

# **62<sup>nd</sup> INTERNATIONAL MAKING CITIES LIVABLE**

*Conference Proceedings*

*October 15-19, 2025 \* Potsdam, Germany*

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62<sup>nd</sup> IMCL CONFERENCE  
*Selected Discussion Posts*

October 1  
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## Is the Shape of Our Cities and Towns Eroding Our Critical Social Fabric and Stoking Divisiveness?

*Among more obvious geopolitical and environmental threats, the threat of civic and cultural degradation may be just as important, if much less obvious. But the answer may be around the corner - literally - in how we shape our neighborhoods and streets.*



NOTE: This article is part of a series of discussion posts leading up to the [62nd International Making Cities Livable \(IMCL\) conference](#) in Potsdam, Germany, 15-19 October, 2025.

POTSDAM - Recent research literature has been full of cautionary findings about fraying social fabric around the world, in the wake of social media and other influences. Less discussed -- but perhaps deserving more scrutiny -- is the connection to the patterns of our cities, towns and neighborhoods.

After all, it is in our cities and neighborhoods that we move around, consume resources, interact, produce wealth, and generate all the impacts on our well-being and quality of life, for better or worse. While the shape of our neighborhoods doesn't *determine* our social condition -- an old straw-man argument too often used to dismiss the importance of our environments altogether -- the pattern of neighborhood and building connections certainly *affords*, or conversely prohibits, our ability to connect with people and places. As the saying goes, if you don't believe that, try walking through a wall.

Equally clear is the decline in daily social connections, and the increase in social isolation, as we increasingly isolate ourselves in the capsules of our cars, our homes, and even our offices -- where we generally meet people we already know, and with whom we have so-called "strong ties" of existing social connection -- co-workers, family members and so on. But the research is demonstrating the importance of "weak ties" -- people we don't know, or don't know well, but who bring new knowledge and new ways of looking at things.

The insightful urban journalist Jane Jacobs observed that it is exactly these "weak ties", formed on the "sidewalk ballet" of the street and its adjoining "third places," that accounts for the knowledge expansion and creativity of cities. Her insights -- now known as "knowledge spillovers," or "Jacobs spillovers" in her honor -- are now well-documented in the literature. (See for example Roche, M. P. (2020). Taking Innovation to the Streets: Microgeography, Physical Structure, and Innovation. *Review of Economics and Statistics*, 102(5), 912–928. [https://doi.org/10.1162/rest\\_a\\_00866](https://doi.org/10.1162/rest_a_00866).)

Put differently, if we want to move beyond existing (likely diminishing) economic assets to create new knowledge and new wealth, we should pay close attention to the role of our public spaces in supporting this expansion. We need "propinquity and serendipity" - the happy accidents that occur when we encounter others up close in public spaces. [There is also evidence](#) that this new wealth can come with increasing resource efficiency and lower rates of emissions and depletion - an important goal for a durable, sustainable economy, and healthy people and planet.

It also appears that the resilience of a neighborhood in crisis depends to a surprising degree on the physical structure of that neighborhood, down to its "lowly" sidewalks. For example, [the sociologist Eric Klinenberg](#) documented that in the 1995 Chicago heat wave, neighborhoods with well-connected sidewalks, good connections between the houses, and adjoining "third places" -- shops, cafes, libraries and the like -- had dramatically lower death rates than neighborhoods without them. Klinenberg called these assets "social infrastructure" -- and they are not just an amenity, they can be a matter of life and death.

Evidence is also beginning to emerge that our increasing social isolation is having a dramatic impact on our social fabric, and our ability to interact with, and tolerate, people who may not share our views. Of course, social media allows us to be in contact with vast numbers of people -- but too often, these are people with whom we already agree, or have dismissive or even hostile attitudes. Rarely do we learn from those who are different, or share common bonds.

By contrast, in public spaces, and in their well-connected private spaces, we do tend to come into a more sociable form of contact with different people -- at least, if they are well-structured to afford this kind of contact. A good example is the office of the Lennard Institute in The Dalles, Oregon -- which is also the home of Leslie Barrett, our conference manager. The neighborhood, dating from the 1920s, is a classic walkable layout on alleys, with small cottages lining the street. Leslie's house, like most others, has a friendly wrap-around porch that faces the street, and that allows people to chat in passing, and perhaps to be invited up for longer chats.



*ABOVE: The Oregon office of the Lennard Institute, and also Leslie Barrett's home, features a street-friendly wraparound porch. Photo by Aiden Chanter.*

In fact, Leslie reports that she has had a number of friendly conversations with neighbors of widely differing political and social views, all of them cordial. The sidewalk and porch bring them into proximity, they begin to chat, and one thing leads to another. Soon, they are gathering on the porch to discuss a wide range of topics -- the weather, pets, and yes, political and social issues. As often as not, Leslie says, if they disagree, they "agree to disagree." They are neighbors, after all, and they know they can rely on one another in a crisis.

This friendly exchange of different views is in dramatic contrast to online encounters, which tend to be all-or-nothing, fully agree or, in effect, be seen as "the enemy". Meanwhile, it's not surprising that the social fabric of the physical neighborhood also

unravels when residents retreat indoors -- typically because there are no appealing, well-connected adjacent public spaces to lure them into contact.

The literature on this growing social isolation is telling. In 2000, the American professor of public policy Robert Putnam published *Bowling Alone*, famously documenting the collapse of civic associations, clubs, and neighborhood organizations, and showing how Americans were retreating from the community bonds that once provided connection and social capital. Even earlier, Richard Sennett published the classic *The Fall of Public Man* (1977), warning of a retreat from vibrant urban public life into privatized, individualized realms, where anonymity and spectacle displaced genuine civic engagement.

Most recently, Jonathan Haidt, in *The Anxious Generation* (2024), has documented the alarming trends especially among young people of increasing social isolation, mood disorders, and even suicides. From 2010 to 2019 -- the decade when smartphones and social media surged -- Haidt reports that rates of depression, anxiety, depression and suicide more than doubled on most measures. He observes that smartphones and social media are replacing direct social encounters in public spaces with algorithm-driven, too often anxiety-producing online interactions.

In Japan even earlier, a worrisome trend of social isolation was observed, known as hikikomori, literally “pulling inward, being confined”. It is described as a state of prolonged, severe social withdrawal and isolation, where individuals -- often adolescents and young adults -- remain confined to their rooms, often for years or even decades. The environment seems to play a contributing role to this phenomenon, since many young people live in small apartments in tall buildings, with limited opportunities for daily incidental encounters in safe, inviting public spaces. This can reinforce social isolation, when combined with personal or cultural stressors.

These phenomena are not only happening in the USA and Japan -- they now have growing prevalence in other countries too, along with growing political divisiveness. Researchers in environmental psychology note that access to restorative green spaces,

parks, and “third places” (cafés, community hubs, libraries) can buffer against isolation, depression and alienation. Their absence may exacerbate withdrawal.

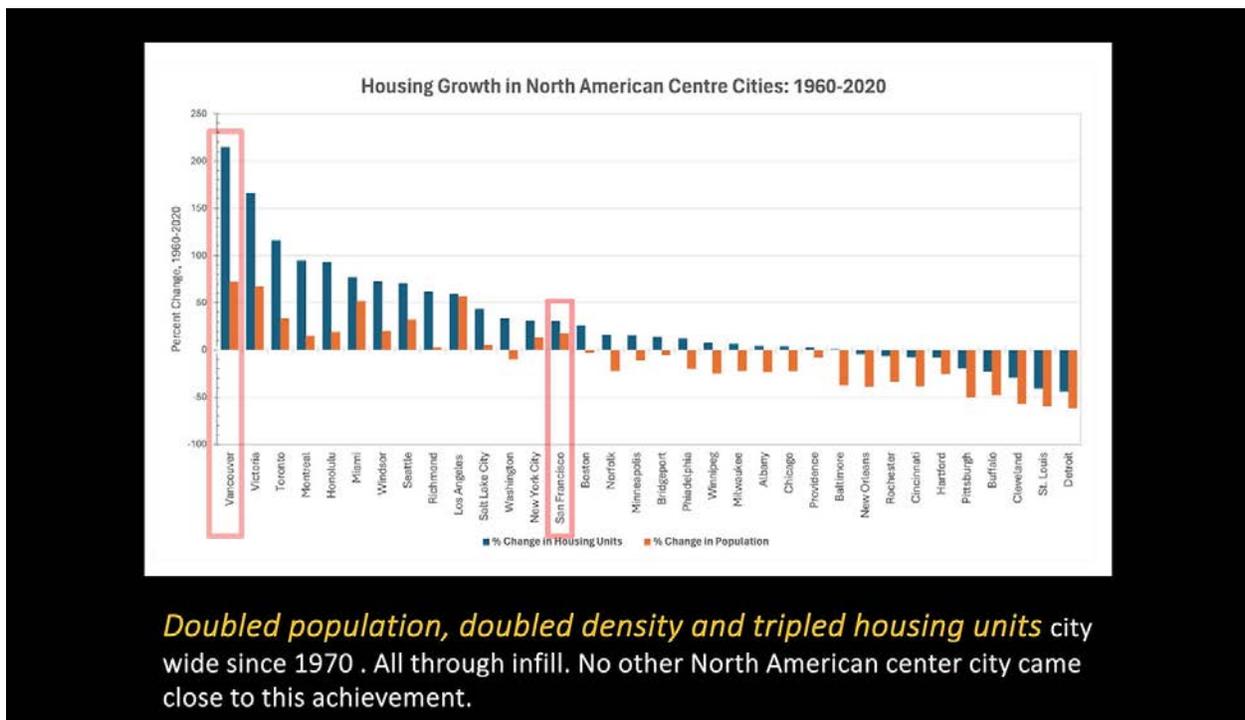
Taken together, these authors chart a sobering arc: as face-to-face interaction diminishes, and as civic and public spaces are hollowed out, societies risk losing the connective tissue that sustains democracy, trust, and the everyday experience of belonging. There is at least one obvious antidote: better cities, towns and neighborhoods, with better streets and public spaces, able to bring us into contact, and to create, and sustain, a flourishing society.

August 26

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## The Housing Crisis Is Not About The Price of Buildings. It's About the Price of the Dirt Beneath Them.

*A discussion post for the 62nd International Making Cities Livable conference in Potsdam, Germany, October 15-19, 2025*



ABOVE: In spite of tripled housing units from 1960 to 2020 - far outpacing population growth - the city of Vancouver B.C. not only did not reduce housing costs, it saw the highest costs in North America. The lesson is clear: adding supply alone does not lower housing cost.

**By Patrick Michael Condon**

*James Taylor Chair in Landscape and Liveable Environments  
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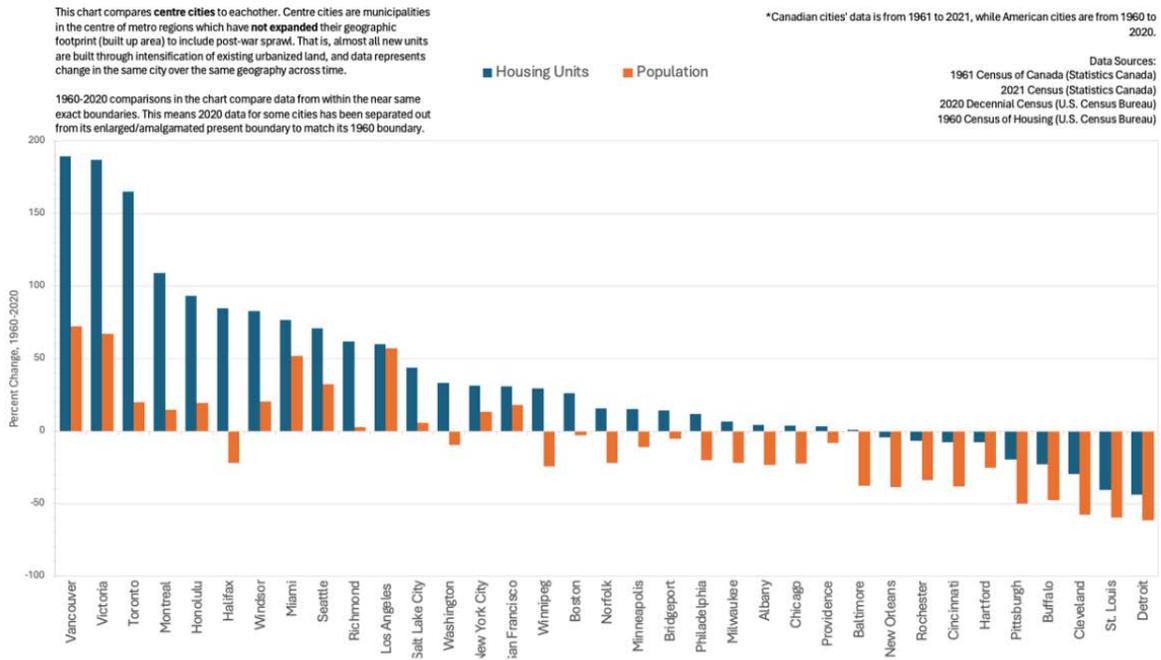
For more than four decades, urbanists like myself have tirelessly championed walkable neighborhoods, mixed-use developments, and communities of diverse incomes and backgrounds. We fought for places where children could walk to school, neighbors could meet over shared stoops, and housing didn't come at the cost of one's mental health or financial ruin. And to some extent, we succeeded. Today, these ideas appear in planning documents across North America, their language absorbed into the bureaucratic vernacular of city halls.

Yet despite this apparent progress, the results have been devastatingly clear: we have failed.

Housing is more expensive, more unequal, and more elusive than at any time in living memory. Middle-income families are increasingly locked out of the communities they serve. The very idea of an affordable home near one's work, friends, or family has slipped out of reach for half the population. And during the crucible of the Covid-19 pandemic, this quiet disaster screamed into full view: how we organize our cities is not just inefficient—it is killing people.

So what went wrong? Is there malice behind our planning decisions? A conspiracy of developers and planners? I prefer a less cynical answer. The problem is not one of intention but of omission. For decades, we have chased shadows—tweaking form, scale, and use—while ignoring the single most powerful force in urban life: the price of land.

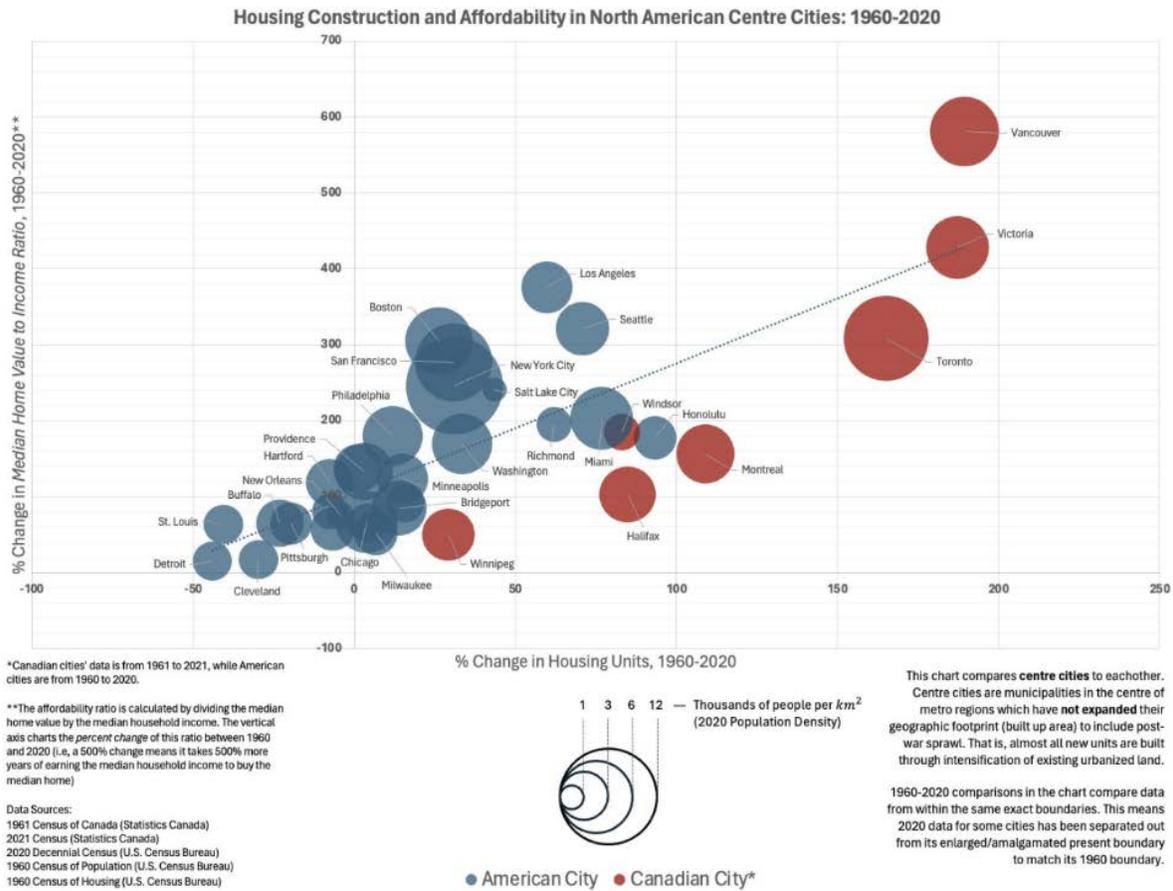
### Housing Growth in North American Centre Cities: 1960-2020



Let us call things by their true names. Land rent—the unearned income that accrues to landowners merely by virtue of owning a finite, immobile resource—is the root of our crisis. Cities grow, infrastructure is built, workers labor, businesses invest—and the lion's share of the resulting wealth is quietly siphoned off in the form of escalating land values. Whether you pay it to a landlord or to a bank in the form of a mortgage, land rent is a toll on civilization itself. It produces nothing. It absorbs everything.

This was not always so starkly felt. In the three postwar decades, the malign effects of land rent were temporarily subdued. Mass homebuilding, vast tracts of inexpensive land, and strong labor protections created a fleeting period when even a grocery clerk could support a family and buy a modest home. But in the past forty years—and most acutely in the last twenty—the machinery of rent extraction has roared back to life. In cities blessed with job growth and human talent, prosperity itself has become a poison. Wages rise, businesses thrive—and land prices soar beyond all proportion, consuming every gain.

This is not a paradox. It is exactly what Henry George foresaw more than a century ago: that progress, under conditions of land monopoly, does not lift all boats. It raises the tide and sinks the workers.



Urbanists today face a bitter truth. We have clung to the belief that by simply allowing more housing—by removing zoning barriers and permitting greater density—the market would heal itself. But the market cannot correct a pathology embedded in the price of land. When land is privately monopolized, every act of good—every new transit line, every new job, every permitted duplex—only inflates the underlying value of dirt. The landlord wins. The renter does not.

So what can be done?

The answer, as George taught, lies not in punishing wealth creation, but in reclaiming the unearned increment—the rise in land value that society itself creates. Cities like Vienna

have shown that when land rent is captured for the public good—through social ownership, value capture, or public housing on publicly owned land—housing can be both abundant and affordable. It creates room for labor to flourish and capital to invest, without being strangled by parasitic rent.

The tragedy is not that the problem is complex, but that its solution is so boringly simple. We already have the tools. Zoning, development controls, land use planning—these are the legal levers we need. But instead of using them to tame land speculation and demand affordability, we have turned them into scapegoats. We blame “supply constraints” and “NIMBYs” for housing stress, when in truth we are misdiagnosing the disease. The culprit is not the refusal to build more units. It is the mechanical process by which land absorbs every benefit and leaves workers with the bill.

In this light, our housing crisis is not a natural disaster. It is the foreseeable result of public policies that have surrendered to private land interests. And yet the opportunity is immense. By restoring the principle that land should serve the people, not the other way around, we could reverse course. We could build not only **more** housing, but **just** housing.

Henry George died trying to teach this truth. That labor and capital are not enemies. Their common adversary is land monopoly—land rent that demands payment without work, innovation, or contribution.

Our cities do not suffer from a lack of buildings. They suffer from a lack of justice in how we allocate and price the land beneath them.

We can fix this. But only if we remember what we have forgotten. And only if we act with the moral clarity this moment demands. Our children—and their cities—are counting on us.

*Professor Patrick M. Condon*

*James Taylor Chair in Landscape and Liveable Environments*



*ABOVE: Patrick Condon at the 61st International Making Cities Livable in 2024.*

New book on housing equity <https://www.ubcpres.ca/broken-city>

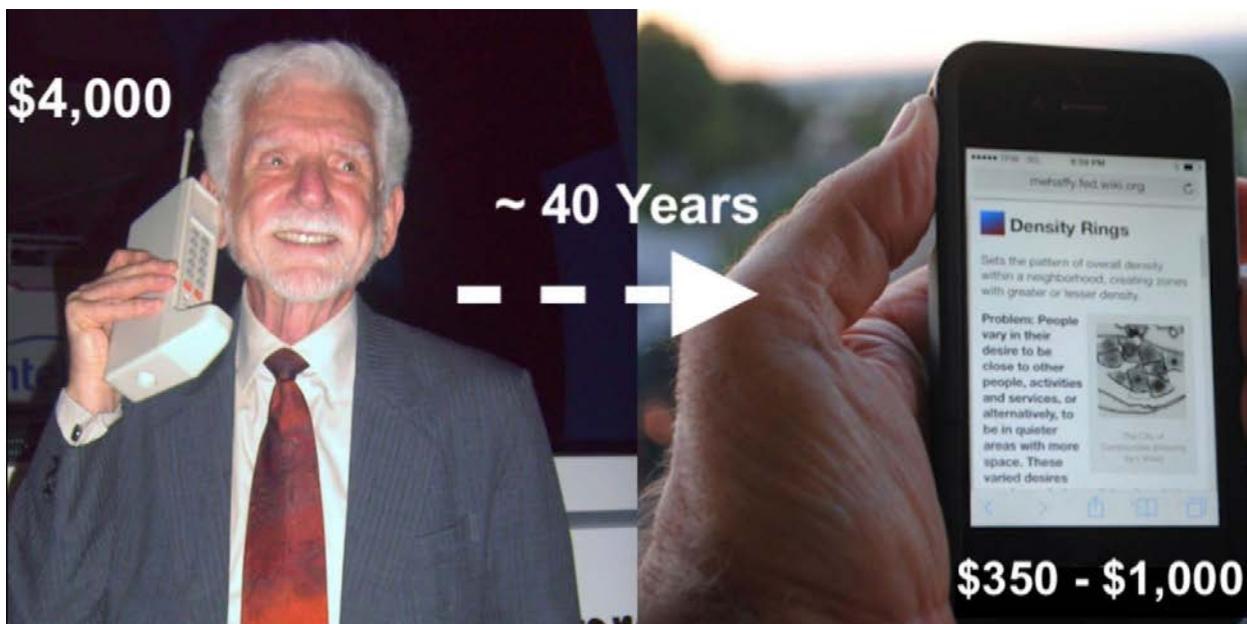
Current initiative: <https://designinganddemocracy.blogspot.com/>

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# Why We Need "Plug-and-Play Urbanism"

*Making cities livable will require an optimum combination of standardization and customization, drawing lessons from other industries—and from natural systems.*



ABOVE LEFT: Martin Cooper, inventor of the Dynatac 8000, shows one in 2007. (Photo by Rico Shen via Wikimedia Commons.) Right, an iPhone today, showing a pattern from the wiki companion to the book *A New Pattern Language for Growing Regions* (photo by the author).

POTSDAM, GERMANY - Imagine that it's 1983, and you are in the very young business of cellular telephones. The only unit available is the massive Motorola DynaTAC 8000x, a brick-like object that costs \$4,000, takes ten hours to charge,

and provides just 30 minutes of talk time—IF you happen to be in the very few areas that have cell coverage.

How do you get from there to where we are today? How do you overcome the many formidable barriers to cost and availability, and get the economies of scale and standardization that you will need to become competitive with (and eventually overtake) land lines? You will need innovation, regulatory changes, and a willingness to standardize many elements (like computer chips) while customizing others (like design features). In time, the reductions in cost and availability will pay off, to the point that in 2025, 94 percent of Americans will have a cell phone, and whole continents (like Africa) will rely on them almost exclusively instead of the old land lines.

We could say that the challenge of making cities livable today is similar to the challenges of 1980s cell phones. Our successes, though individually impressive, still represent a small niche—perhaps a few percent of all settlements—and they're often not competitive against garden-variety sprawl, or economically viable in dysfunctional inner-city areas. Why is this still the case? What can we do about it?

First, consider almost any example of modern development -- most common, say, in a sprawling suburban neighborhood. All of the elements are plug-and-play modules that can be dropped in almost anywhere. The big box, the fast food pad, the garden apartment, the housing six-pack—they can work anywhere in the USA or increasingly, globally. Their cookie-cutter aesthetics is standardized too, often making their design approvals standard and rapid.

But that's only the beginning of the story. Also standardized are their technical specifications, regulatory approvals, financing structures, and design systems from building to operations, allowing great economies of standardization and scale. McDonalds—love them or hate them—created a marvel of standardized,

low-cost production, not only in their food products but in their buildings, and their kit-of-parts franchise system.

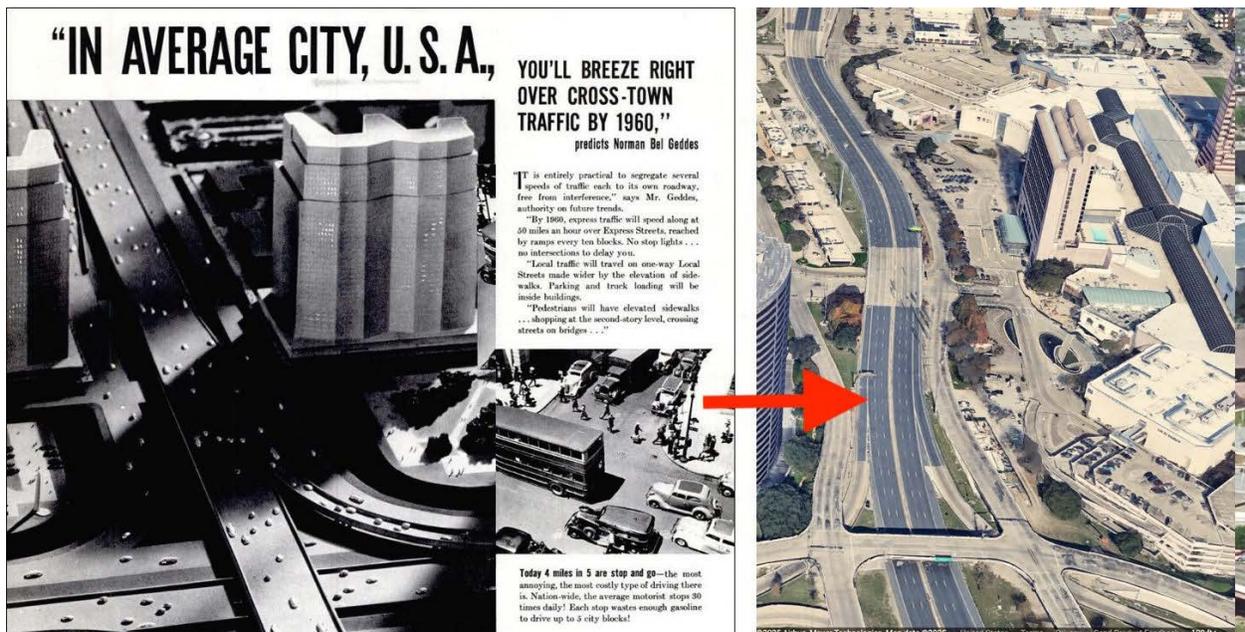
We might conclude that these economies of scale and standardization are just destructive forces that we must reject. In their extremes, they certainly are destructive, and unsustainable. But there are two problems with the idea of rejecting them wholesale. First, at this point in history at least, these economies are what makes the world go around, and any hope of changing things has to recognize the necessity to compete with them.

But second, and more fundamentally, economies of scale and standardization are not pathological human characteristics, except in their extremes. Fundamentally they are properties that are abundant in natural systems, including sustainable ones. Think of the billions of near-identical seeds made by plant species (economies of scale), or the limited genetic codes that generate them from just four chemicals (economies of standardization), for example.

The real problem, as my colleague Nikos Salingaros and I [have written about](#), is that in a healthy system, these economies need to be counter-balanced with economies of *place* and *differentiation*. In natural systems, economies of place (ecological structures) and differentiation (biodiversity) matter enormously. Too much of the wrong thing in the wrong place and you have a toxic condition. Too much of the same thing, and you have a monoculture, a system that is vulnerable to catastrophe.

In urban systems too, it matters, say, whether our homes are near our workplaces (an economy of place), and whether our homes fit our own local family needs (an economy of differentiation). Too much of the wrong land use in the wrong place (functional segregation) and you get sprawl. Too much of one kind of structure and you are poised for disaster—like the 2008 housing mortgage collapse.

In a sense, we could say that today we have a kind of “operating system for growth.” Some kinds of urban patterns will “plug and play” on this system, while others will not—just as we can’t run Mac software on a PC, say. This settlement “operating system” consists of all the elements that produce the urban forms around us: the laws, codes, standards, models, incentives and disincentives, and other institutional structures, formal and tacit, that shape our built environment.



ABOVE LEFT: An ad for Shell Oil Company in 1937 lays out the blueprint for modern suburban development. Almost 90 years later, that model has reached world dominance, thanks to its plug-and-play economies - but now an alternate model is in view. Photos: Public Domain, Google.

The problem is that this model relies too much upon economies of scale and standardization: the “cookie-cutter” syndrome of every chain restaurant and every tract house looking the same, and creating the same maladaptive, toxic condition. But it is not just individual products that are the problem, but the entire system, with its inability to adapt to place and to generate diversity.

As we can begin to see, there are ways that we might get the best of both worlds, as natural systems do. Perhaps, for example, we might create standardized models of entitlement and finance, for fairly standardized “plug and play”

building and place types. But then the local expression of these buildings might be created through unique façade changes that are a small fraction of the full building cost, and a minor aspect of the permitting requirements. Local residents might also work together with city agencies to create libraries of pre-approved design types, expressive of their local place and its diversity. This “win-win” approach to entitlement could overcome many of the formidable barriers to lowering cost and avoiding the divisive “NIMBY” battles, replacing them with something more like “QUIMBY” – [Quality In My Back Yard](#).

One of the most important aspects of the “operating system for growth” is the way the flow of money works, often in hidden ways that are financially a bad deal for the public sector—that is, the taxpayers. As [Joe Minicozzi](#) and others have written, when the long-term return on investment for municipalities is assessed, sprawl infrastructure looks a lot less attractive financially than investments in compact walkable infrastructure. Too many developments extract quick profits at the expense of long-term benefits—what economists call “externality costs.” Charles Marohn has gone so far as to call this arrangement a “[Ponzi scheme](#)”—one that will catch up with us if we don’t reform its hidden financial transfers.

But to change the equation, innovative new financial tools will be needed. Some of these will involve tax policy changes, like new policies for land taxation. (There is a fascinating debate about so-called “[Georgist](#)” tax policy, for example.) There are other ways of directing funds to level the playing field, including grant programs for pilot projects, “feebates,” credits to system development charges, and other forms of “monetizing externalities” by the public sector.

But beyond public financial tools, we will need private tools too, including new investment instruments—for example, the “[time tranche bonds](#)” proposed by [Christopher Leinberger](#). As Leinberger also points out, New Urbanists need to be able to package up real estate projects into simple investment vehicles,

as [alternatives to the highly standardized 19 types](#) that exist in conventional suburban development.

There is a telling but overlooked line in Jane Jacobs' classic *The Death and Life of Great American Cities*, talking about the importance of feedback mechanisms, especially financial ones, and the need for their reform. "In creating city success," she said, "we human beings have created marvels, but we left out feedback. What can we do with cities to make up for this omission?"

The answer is that we can patiently re-wire the "operating system for growth" to restore these healthy feedback systems. We can concede that the built environment changes slowly, and the systems that generate it change even more slowly—unfortunately much more slowly than software and cell phones. But they do change, as they did in the 20th Century—and now they must change again, in the 21st Century.

August 6

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# Beyond the Architectural Style Debates: Why We Might Say "It's the Geometry, Stupid" (?)

*New research confirms the transcendent (and surprisingly cutting-edge) qualities of built environments that enrich our lives and promote our well-being – and that may be the key to the durable, flourishing, livable cities, towns and suburbs we must build for the future*



*ABOVE: A few examples of the endless rich geometries from around the world and across eras, including a contemporary example. Also included are several examples of naturally occurring geometries that are related. We naturally perceive these geometries as beautiful -- and as research shows, they promote our well-being, and the livability of our environments.*

Amid the often-heated arguments over modern versus traditional architecture, we risk missing a deeper and more consequential truth: that the human response to the built environment is not primarily an issue of *style*, but one of *geometry*. New research shows that, from Kyoto to Cairo, from Renaissance Florence to indigenous villages in Africa and the Americas, traditional architectures around the world and across history all have exhibited commonly recurring geometric patterns—hierarchical scales, gradients of detail, symmetry and asymmetry in balance, spatial enclosure, and other perceptual cues that foster a sense of harmony, coherence, and livability.

Yet too often, debates rage about the “correct” style that is appropriate to our time. So many of those debates over architecture devolve into shouting matches over who is “pastiche”, who is “arrogant”, who is “modern”, who is “reactionary”, and so on—but it seems these arguments miss the point. Perhaps, paraphrasing the famous slogan of the 1992 Clinton campaign about the economy in the US, we could say, it’s not the style, “it’s the geometry, stupid.”

Cutting-edge research across multiple disciplines, including neuroscience, environmental psychology, urban planning, and architecture, is revealing that certain geometric qualities of the built environment are deeply connected to our health, our well-being, and our sense of beauty and enjoyment. These qualities go beyond style or historical period. Instead, they reflect a kind of spatial logic, found across many cultures and eras: patterns of complex symmetry, web-network relationships, integrated scales, fractal complexity, and coherent structure featuring “organized complexity”—all of which mirror characteristics of the natural world.

These qualities are found in abundance in many traditional architectures around the world and through history. Unfortunately, they are all too rare in contemporary environments, where technocratic or artistic prerogatives dominate - often with harmful consequences for health and well-being.

Studies show that environments exhibiting the geometric properties of natural environments tend to reduce stress, promote cognitive restoration, and improve well-

being. They're also more likely to be perceived as beautiful or harmonious. This isn't merely a matter of taste—it's a matter of how our brains and bodies respond to the spaces around us, and whether that's conducive to our well-being, or harmful.

These geometric characteristics also shape how we engage with our environment in practical and ecological ways. Neighborhoods that embody such qualities often include human-scale proportions, walkable street networks, and diverse, textured façades. Their appealing characteristics encourage walking, cycling, lingering, and outdoor activity -- behaviors that are not only healthier for individuals, but also for communities and the planet. They reduce car dependency, lower emissions, and allow people to live well in more compact, resource-efficient neighborhoods. The form and pattern of these places—tree-lined streets, public squares, and intricate streetscapes—often mimic ecological systems themselves, with diverse, layered, and interconnected structures that support resilience and adaptability.

Importantly, these qualities also foster stronger social interaction, an important antidote to the social isolation and divisiveness that is increasingly common today. When people feel comfortable, stimulated, and safe in their environment, they are more likely to spend time outside their homes—walking, lingering, talking to neighbors, and engaging in public life. Urban form that supports this kind of sociability tends to include pedestrian-friendly streets, places to gather, mixed-use buildings, and visual cues that draw people out and invite engagement. The geometry of these places—whether a graceful curve in a pathway or the nested rhythm of doorways and windows—subtly guides our movements and interactions. The result is not just a more aesthetically pleasing city, but one that cultivates stronger social ties and a greater sense of belonging.

As this body of evidence grows, it challenges the assumption that beauty and function are separate, or that style debates are the most important design issue. Instead, the focus is shifting to measurable structural properties of spatial geometry that support life—biological life, social life, and ecological sustainability. The possible combinations of these geometries are vast, as we can see from the endless varieties of beautiful traditional architecture around the world. This research opens up a powerful path forward: to design

cities not merely as collections of buildings, but as living systems shaped by the same structural principles that have guided nature and culture for millennia.

Nor is this a mandate to reproduce only the successful forms of the past—although revival is certainly a time-honored practice, resulting in so many of the most beloved and enduring places in human history. Our contemporary attitudes forbidding it have resulted in a vast impoverishment of the rich genetic material available for placemaking. But there is also ample space for innovation, for a mix of the new and the old, and for new artistic expressions -- so long as they are aimed at enriching the lives of people and place.

There is also a hard truth in these findings for those of us working to build contemporary environments: too often, we have let our artistic prerogatives and ideologies, or our technical concerns, obscure the fundamental human properties needed in our built environments. The evidence is clear that we have to do better. It's ultimately a matter of professional responsibility, and an imperative for professional reform in our time.

At the 62nd International Making Cities Livable conference in Potsdam, Germany (October 15-19, 2025), we will hear from several leaders in this exciting new field of research, as well as practitioners, policymakers and educators who are driving forward reforms. Here are a few of them:

**Dr. Alexandros Lavdas**, from EURAC Research in Bolzano, Italy, will discuss how organized complexity in urban form—hierarchical scaling, richness, and coherence—engages the brain in ways that promote comfort, interaction, and emotional connection. Drawing from neuroscience and urban theory, he shows how these spatial properties foster both individual and social flourishing.

University of Cambridge researcher **Cleo Valentine** will present new findings on how certain visual patterns in building façades—especially repetitive, high-contrast designs—can induce subtle neurological stress known as allostatic loading. Using AI-generated façade studies, her work shows how the visual environment can contribute to chronic

physiological strain, adding to our understanding of how architecture affects health at a biological level.

**Professor Justin Hollander** will explore how spatial design influences cognitive function, emotional comfort, and mental clarity. His research in cognitive architecture shows that complexity, coherence, and legibility in urban form can reduce stress and support better memory, navigation, and mental restoration—critical benefits for dense, walkable neighborhoods.

**Dr. Nikos Salingaros** will highlight how fractal geometry—patterns found in nature and in traditional architecture—supports human well-being through biophilic responses. His work shows that mid-level fractal structures can reduce stress and enhance our experience of beauty, helping to reframe ornament and geometry as essential to human-centered design.

These and many other speakers will dive into the new research, and its practical implications for design, building and governance today, aimed at making cities livable. Their work shows that the geometry of our built environments—and the beauty we perceive—is deeply connected to our human biology, behavior, and ecological well-being. Their insights point to a new paradigm in design—one that supports livability life-affirming spatial qualities, with specific tools and strategies to drive forward positive change.

Why Contemporary Buildings are Often Alienating and Inhumane:  
Design Semiotics and the Metaphysics of Modern Architecture  
Introduction and History  
Shane J Casey

## Introduction

"Every scientific man in order to preserve his reputation has to say he dislikes metaphysics. What he means is he dislikes having his metaphysics criticized."  
-Alfred North Whitehead, (Conger 1927)

My aim is to question and criticize design as an architectural methodology, or more precisely, to argue against scaled symbolic representation as the primary tool of creativity and aesthetic decision making about buildings. I am not against the use of designs to record and communicate architectural decisions or assist in those domains where they are useful. Instead, I will argue that the reason why contemporary buildings are often alienating and generally disliked is because they are designed, i.e. architectural possibilities are conceptualized, tested, and evaluated primarily as scaled representations. These representations correspond to possibilities of building through a system of semiotic rules, meaning we necessarily understand physical reality according to these rules in the design process. In other words we inherently take particular metaphysical positions—stances on the fundamental nature of physical things—in representing those physical things in a design. The particular shortcomings of this metaphysical system inevitably and predictably lead to the particular failures associated with modern architecture.

I think it is best to begin by defining terms.

By *metaphysics*, I do not mean anything supernatural, incorporeal, mystical, or otherwise extra-physical, but the base ideas and logical structures through which we understand physical things. Any thoughtful creative activity necessarily involves methods of conceptualization—the interrelation of foundational notions such as *object*, *substance*, *causation*, *properties*, etc.—with which we categorize and explain what's before us, and predict or imagine future possibilities. How we define these fundamental ideas in connection to each other is our *metaphysics*. Even if we as individuals choose to avoid metaphysics as a reflective study, we still have a metaphysics underlying our understanding, we merely leave it unexamined and uncriticized.

By *semiotics* I mean signs and the study of sign systems. My subject is not a semiotics of buildings, in the sense that Charles Jencks and others interpreted the meaning of built buildings, but an analysis of the architectural design as a semiotic system. A semiotic system is a set of rules and processes by which defined signs have defined meanings within a social group. Western musical notation, spoken English, and standardized traffic signals are sign systems. We are often able to use sign systems, to successfully interpret signs according to their rules, without consciously knowing those rules, in the sense of being able to articulate them or even accurately estimate their complexity.

I use the term *design*, or *architectural design*, to refer both to the semiotic system through which aspects of buildings are represented symbolically in drawings and other media called *designs*, and to the cultural practice that decisions about building should be conceived, tested, and recorded in this semiotic system prior to construction. A professional *architect* today is not, in training or practice, the *archōn* “first, highest ranking, leader” of a team of *tektōnes*

“craftsmen, carpenters, builders”. Instead, defined in the modern real estate industry between clients, who decide what to build, and contractors, who do the actual construction, the contemporary architect is principally a *designer*, in that their output (construction documents, renderings, etc.) and creative process (iterative production and evaluation of drawings, sketches, diagrams, models, etc.) is principally *design* in the etymologically original sense of *de-* “to, of” *signum* “sign, symbol, mark”. To *design* is literally *to sign*; to make signs; to represent symbolically.

Design as a cultural practice is so deeply embedded that we sometimes assume that all buildings have been designed; that it is impossible to build without first drawing lines on paper. As I will show, not only is this not the case, but both the semiotic system and cultural practice of design are relatively new phenomena, emerging in recognizable form in the 15th and 19th centuries respectively. The cultural practice of architectural design was not a logical inevitability or intentional choice, but a rather odd result of a series of historical contingencies, technological adaptations, and class dynamics. For most of human history, decisions about building, especially aesthetic decisions involving creativity and artistic agency, were made at the construction site, at a one-to-one scale, by artisans working directly in the material crafts of construction. In contrast, the modern practice of architecture can be succinctly and accurately referred to as *design* (as in *Graduate School of Design*) because it is essentially semiotic; drawings are not only the essential product, recording and communicating decisions, but the modern architects’ creative and problems solving process—conceptualization, iteration, and evaluation—is, with very rare exception, mediated through small scale symbolic representations.

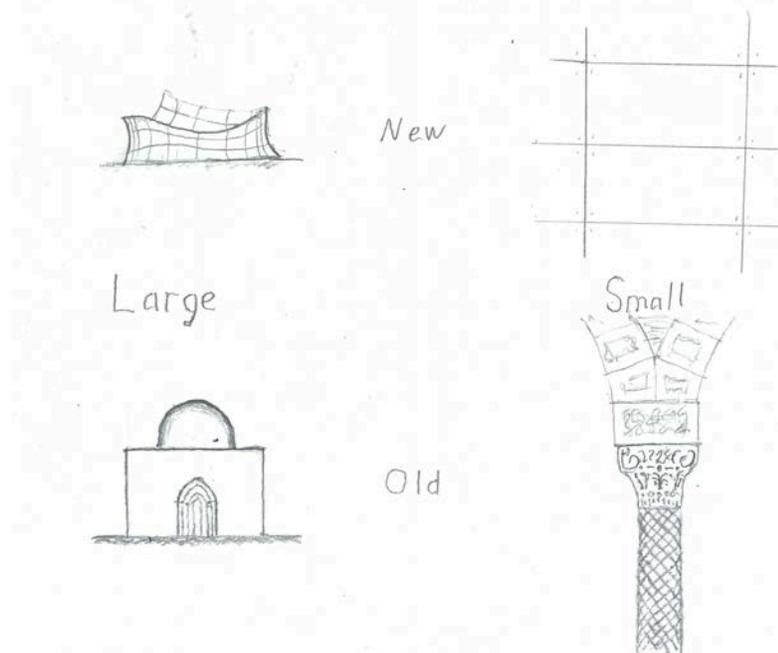
Because the modern practice of architecture is in practice design, that is architectural decisions are formulated and evaluated as abstract representations, the metaphysics of architectural design, how architects understand physical things, is determined by the semiotic structure of these modes of representation, the complex but largely unexamined system of conventions, assumptions, reductions, and abstractions by which marks on paper, bits in a CAD file, or cardboard in a scale model signify aspects of real buildings.

The essence of this semiotic connection is atemporal analogy: referrers (particular drawings, models, etc) can stand for physically dissimilar referents (actual buildings) by limiting both our interpretation the drawing (the signifier) and our understanding of the building (the signified) to only those aspects of each that can continuously and repeatedly correspond between them. Both the building and the representation are therein comprehended as abstract *spatial forms*—infinitely scalable combinations of points, lines, planes and volumes—the logical construct which emerges within this semiotic practice as that range of measurable attributes in which both a building and drawing can be recurrently analogous. Within the metaphysics inherent in this semiotic system, the world in general and buildings in particular are axiomatically atemporal, hylomorphic, and surficial; things are understood as the geometry of their assumptively rigid outer surfaces, notionally filled by inert homogeneous isotropic material. Anything beyond the static geometry of smooth surfaces, involving time, physicality, history, chemistry, energy, movement, causation, or tangible relation to our own bodies, is not directly expressed in the terms of the sign system and is therefore, at best, a secondary consideration awkwardly tacked on to the core spatial design process (e.g. “Sustainability”).

Not only does this semiotic practice define the fundamental ideas in which architectural designers understand the world, it lays out the array of creative possibilities available within the design process; how and when any particular option arises as a possibility to the designer is determined by the immediacy of that particular sign combination in the physical process of

manipulating their specific design medium. Resulting buildings therefore follow the generative logic of the means of representation in a way that is viscerally discordant within their true physicality; their spatial form palpably conflicts with their corporeal scale and manifest assembly because it arose through the materials, scales, and tectonic processes of the design mediums rather than their actual construction. This discernible imposition of the morphogenetics of the means of representation on the physically unrelated crafts of building defines *Modern Design* as a distinct style. What allows us to intuitively identify a building as *Modern Design* is not that it is modern, in the sense of new techniques of construction, but that it is evidently designed, in the sense that the building appears to be mimic enormous versions of design media, i.e. composed of large abstract lines and planes rather than the actual materials and techniques of its construction.

**Fig. 1** - Diagram of artistic complexity and scale in Modern and Pre-Modern Buildings



It is my contention that there is a direct relationship between the logical principles that allow lines on paper to signify particular material states of affairs and the common attributes which distinguish so-called *Modern* buildings distinct from all other human practices of constructing shelter. Modernist buildings often feel disconcertingly oversized and ignorant of the human-scale because they are developed and evaluated as small-scaled representations. What we call *Minimalism* is defined by flat white planar surfaces meeting at crisp unarticulated corners, despite the relative difficulty of construction and maintenance, because these are the built forms represented by the simplest signs of orthogonal drawing: lines at right angles in plan or section. When contemporary architects have the budget and directive to be inventive and expressive, they iteratively create and evaluate within their design mediums, resulting in tectonically contrived gigantic imitations of interesting cardboard models and non-uniform rational B-splines, while the creative possibility and human scale artistic potential of modern construction is ignored.

I think most of the people involved in this conference share broad opinions about a significant portion of buildings built today, perhaps especially the most expensive and publicized buildings that win prestigious awards and are taught as examples in most design schools. Michael Mehaffy and Nikos Salingaros have used the terms *Geometric Fundamentalism* and

*scale incoherence* (Salingaros et al., 2013). I think most of us generally agree about what we don't like about these buildings; they feel impersonal and alienating, detached from context, composed of abstract planes rather than physical materials, frivolously playful and the largest scale, while ignoring the human scale.

My aim here is to show that these failures are not the result of the moral or intellectual failures of architects individually or collectively, but a failure inherent in the system by which they formulate and evaluate possibilities; that most of what people don't like about contemporary construction corresponds directly to the ways in which the representations used by architects in a studio fail to correspond with the architectural realities they represent. This is also why buildings that are monstrously ugly to the general public are often lauded in design circles; because design constitutes a system of understanding physical objects, the peculiarities and failures of design as an architectural methodology are invisible within that way of thinking. Similarly, designers have a hard time imagining complex thinking about buildings that doesn't involve scaled representations, because they are already limiting their understanding of the physical world to how it can be represented in a design. The incontrovertible fact that every aesthetic judgment of a physical object is a judgment by a person, of that physical object, in relation to their own body, and therefore that beauty doesn't scale in the sense of scaled drawings or models, means that it is hard to imagine that anyone consciously choosing architectural design as a methodology to develop beautiful buildings.

This raises the important question of what alternative architectural methodologies are available besides design. How did people understand buildings and organize decision making before the cultural practice of architectural design, and are these methods of conceptualization and creativity viable alternatives today?

The rest of this paper, taken from my Master of Architecture thesis at Boston Architectural College (2025) will briefly explore the history of how the contemporary role of architect as a designer arose. This is meant to show two things; that for most of human history, people thought about the art of building very differently, that there are other ways to conceptualize the art of building instead; and that the emergence of our modern organization of the building industry was the result of particular historical forces, prejudices, and happenstance, rather than an inevitability.

This is a very dangerous premise for two reasons. First, I'm attempting to analyze the methods of artistic creativity and social structure of building over the course of human history in a short paper, and therefore will be painting with a precariously large brush. Second and more importantly, these are difficult ideas to bring up in front of people who are heavily invested in the current organization of the building process, in that architects and adjacent professionals have put their life's work into filling a particular role in that system. Questioning or critiquing that system therefore can come across as an insult, which is very much not my intention.

The central lens through which I am approaching this question is craft and making: the idea that man-made objects are not an imposition of preconceived form onto passive matter, but instead a result of the interactive back and forth between maker and material, each possibility emerging within the language of that particular craft; a dialogue between artist and their art in which they explore ideas and make decisions together. As explained by anthropologist Tim Ingold in his book *Making: Anthropology, Archaeology, Art and Architecture*:

“The making of anything is a dialogue between the maker and the material employed. This dialogue is like a question and answer session in which every gesture aims to elicit a response from the material that will help lead the craftsman towards his goal. It is, in short, a correspondence. The final form, far from having been known to the maker all

along and forced upon the material, is only fully revealed once the work is finished”  
(Ingold, 2013)

In this sense material arts are ways of thinking. Therefore my interest in the history of architectural decision making is not just concerned with who is making decisions about building, but what are the material crafts through which possibilities are conceptualized, altered, iterated, evaluated,

### **Building as Ongoing Process**

We should start at the very beginning. The root of the word *building* is the same as *be* and meant “*to be, to exist*”. *To be* is to be alive, to live. *To live* is to live at, so this same word came to mean living place, as in “*where do you live?*” (This is the central starting point of Martin Heidegger's *Building, Dwelling, Thinking* and was the subject of my undergraduate thesis in Philosophy at Swarthmore College). Finally, the present participle of this verb—ending with *ING*—became a noun, in the same sense that a *meeting* is where and when people *meet*, a *wedding* is when and where people *wed*, or a *dwelling* is where people  *dwell* (Harper).

A building is the ongoing event where and when one builds in the old sense of *to be*. It is only after referring to where one lives does building come to mean construction. In this sense, a building is at heart not a spatial form or even a material object, but an event or activity which those who live there are actively engaged in through creating and maintaining the material structure of the building, while the material structure actively shelters and preserves the lives of those living there.

This foundationally temporal idea of a building as an inherently on-going process or event is incompatible with the conception of building in architectural design as atemporal spatial form. How space and time emerge as separate concepts in opposition to each other within the semiotic practice of design, as well as a deeper understand of physical things as nested, interacting, and overlapping events, actions, processes, doings, and activities, that happen over the course of time, and thus inherently have an irreducible temporal dimension, are beyond the scope of this essay.

However, there are a few points we can take from the idea of buildings as ongoing events. First, we generally think of the event/process of building as three separate things: the process of building in the sense of construction, the on-going process that is the building sheltering its inhabitants, and the process of building in the sense of living within it. In this ancient conception the inhabitant is not separated from the builder (in the sense of construction), and maintenance is indistinguishable from construction. The building arises from and is maintained by the daily living-there that it preserves and protects.

Second is how this temporal conceptualization changes how we think about buildings as works of art and the ontological status of ornament. Rather than understood as static objects, the experience of which may be pleasurable (what Karsten Harries confusingly calls the aesthetic approach) the artistic value of building is conceptualized through the crafts by which it is made (Harries, 1997). Ornament, in this understanding, is not something added to the building like ornaments on a christmas tree, but additional work or consideration--not strictly necessary but done out of a sense of beauty--added within the crafts and processes of construction; something additional done, rather than an object. It will become clear that for most of human history, this is how people understood and valued buildings as works of art.

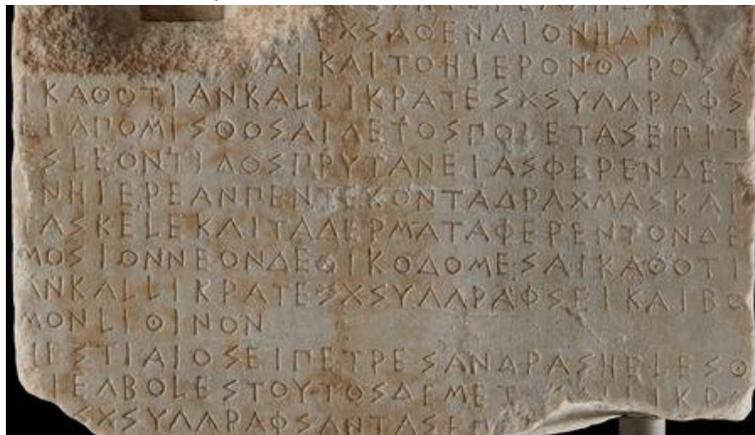
### **Ancient Greek *Architektōnes***

The first move towards the modern idea of architecture was the division of the singular builder as dweller into separate occupants and professionals who did the work of making and repairing buildings. In ancient Greek a professional builder was called *techne*. Related to the Proto-Indo-European word for axe, *techne* referred in particular to those who worked and joined wood into roof frames, more generally to any construction worker, and even more generally to any productive craft from poetry to pottery.

The next step is the emergence of a leader (Greek *archi-*, “first, leader, head”) among the professional craftsmen (*techne-*). Thus we get the term architect, from the Greek *Architektōnes*.

So what did architects do in ancient Greece? There's a lot we don't know. But we know from public contracts between city states and architects what deliverables they were expected to produce (Fig. 2). The most important thing was called a *syngraphai*, which we can translate as specifications. A few are preserved. They are textual descriptions, usually quite detailed, of materials, prices, dates, dimensions, techniques, etc., organized temporally according to when in the building process each step would need to occur. Architects were also, depending on the project, expected to produce *metra* (measures), *paradeigmata* (models), and *anagrapheus* (templates), though we're not fully sure what any of these were or the role they played in construction (Coulton 1982).

**Fig. 2** - Stele with decrees for the Temple of Athena Nike

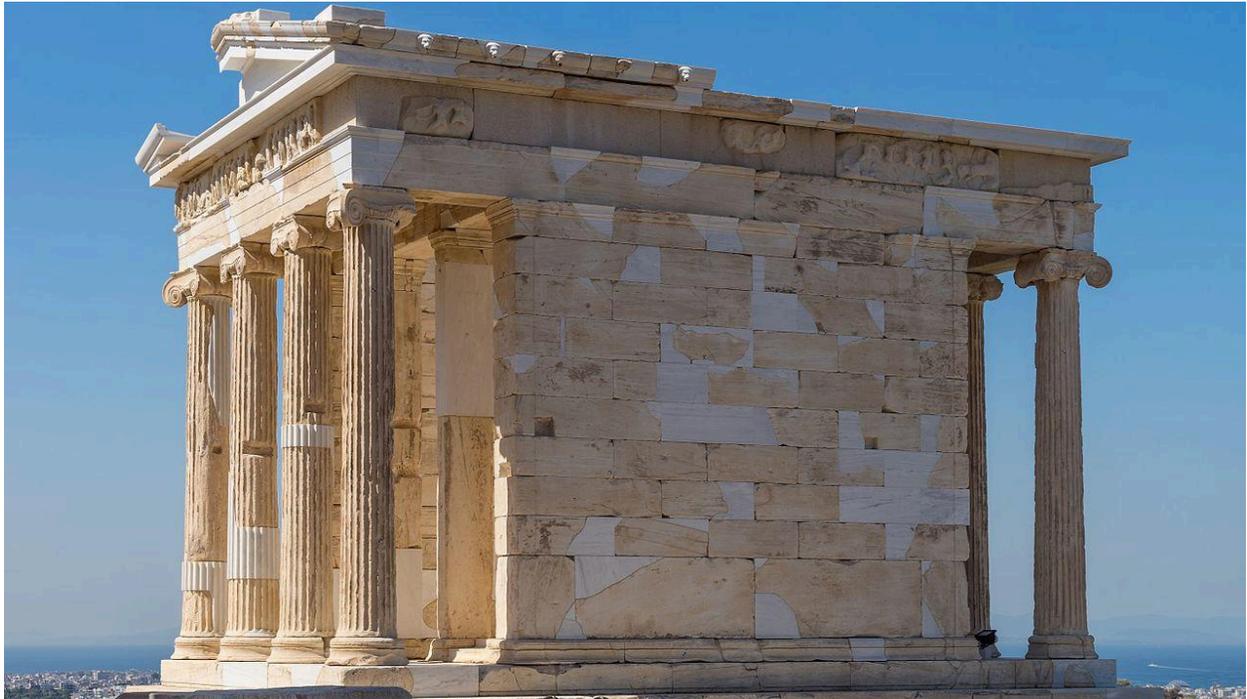


In fact there is a lot of disagreement in the secondary sources over whether ancient Greek architects used or made scale drawings. Spiro Krostof, arguing that they did, could only find one reference to architectural drawings in primary sources, and it is asking the public, not the architect, to submit ideas in the form of a drawing:

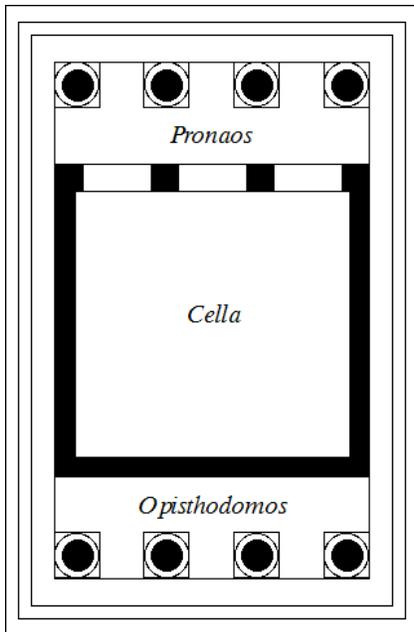
“In one other instance, a drawing is clearly implied. A decree dated about 400 B.C. speaks of the doorway of the temple of Athena Nike on the Akropolis; it invites suggestions from the people, and asks that “anyone who wishes make a drawing [grapsai] and exhibit it, not less than a cubit [long or wide]...” Now the verb here cannot logically be understood to refer to a description, since the metric dimension specified clearly makes sense more for a drawing than a piece of writing.” (Krostof, 1976 p. 15)

Let's look at the building mentioned in this inscription as an example. The temple of Athena Nike is smaller than other temples of the Acropolis like the Parthenon, but follows a similar simple rectilinear module plan. The large scale form of the building is so simple and so easily explained that any sort of small scale drawing or model depicting the general shape of the building would have been useless on the construction site (Fig. 3-5).

### Temple of Athena Nike: Large-Scale



**Fig. 3, 4, & 5** - The form of the building is simple and rectilinear. Scaled plans and sections would have been superfluous in recording and communicating the form of the temple





### Temple of Athena Nike: Small-Scale

**Fig. 6** (above) - Scene of the Battle of Plataea, from the south frieze of the Temple of Athena Nike, British Museum (London)

**Fig. 7** (left) - *Nike Fixing Her Sandal*, Temple of Athena Nike, Acropolis Museum, Athens

Refinement in human-scale craft, rather than complexity of large scale form, was the artistic focus of Classical Hellenic Architecture

Instead what was important about the building—what was considered art—what was given the most attention in the planning and construction, what people talked about when discussing this and other temples—was the sculpture carved into the stone of the building (Fig. 6-7). These realist depictions of the human form in motion, or revealed in the subtle folds of draped fabric, rendered by hand in stone, can seem almost banal from today's perspective. Realistic sculpture is nothing special to us. But at that time and place they were understood as the improvement of the practice of stonework that only a generation or two before would have looked blocky and cartoonish to modern eyes. This representational carving in general should be understood as a refinement and artistic elaboration on the very idea of cutting stones to fit together in a temple: if I am chiseling the stone anyway, and its face will be visible on the temple, then I should try to work it into the most beautiful version I can.

The artist is the mason (even more so than the architect), and the material they are in dialogue with is the stone of the temple itself.

### Vitruvius

By far the most important source on architectural processes from the classical world is *De Architectura* (or *Ten Books on Architecture*) by Marcus Vitruvius Pollio (c. 25 BC). The most striking thing about Vitruvius is the great breadth of knowledge--the sheer array of fields--in which a competent architect was expected to have moderate skill.

Despite the length, breadth and depth of the book, designs, in the sense of scaled drawings, are mentioned only twice and given very little attention compared to Vitruvius' discussion of more practical matters. There are a couple sentences in 1.2.2 in which he is discussing the three qualities of architecture Order (τάξις), Arrangement (διάθεσις), and Economy (οικονομία), and mentions the three forms of expression (ιδέαι) of Arrangement as floorplan (*ichnographia*), elevation (*orthographia*), and perspective (*scaenographia*). They are each described in one sentence each. There is no discussion of technique, scale, iterative drawing, aligning multiple orthogonal projections, or how (or if) they are to be presented to clients or workmen. (Pollio et al., 1914 p. 13-14).

The other mention of something resembling design in the modern sense is 1.1.3 into 1.1.4 in which Vitruvius is listing the many skills needed for a good architect:

“Let him be educated, skilful with the pencil [*peritus graphidos*], instructed in geometry [*eruditus geometria*], know much history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinions of the jurists, and be acquainted with astronomy and the theory of the heavens.

“4. The reasons for all this are as follows. An architect ought to be an educated man so as to leave a more lasting remembrance in his treatises. Secondly, he must have a knowledge of drawing [*graphidos scientiam*] so that he can readily make sketches to show the appearance of the work which he proposes. Geometry [*geometria*], also, is of much assistance in architecture, and in particular it teaches us the use of the rule and compasses, by which especially we acquire readiness in making plans for buildings in their grounds, and rightly apply the square, the level, and the plummet” (Pollio et al., 1914 p 5-6).

There are two important things to note about the role of drawings in Vitruvius.

First is that skill with the pencil (*graphidos scientiam*) is separate and distinct from the skill

Vitruvius calls *geometria*. While we may think of geometry as something done with pen and paper, the art of geometry referred to the methodology of precisely measuring and constructing spatial forms at a one to one scale using compasses (including string compasses) and straight edge (also sometimes string), which master builders would continue to use (and call geometry) well into the modern period. While mistranslations have led some to interpret the phrase “plans for buildings in their grounds” as a scaled drawing, the evidence is overwhelming (including the mention of levels and plummets, which have no role in scaled drawing) that this refers to the full scale laying out of a buildings footprint on the ground at the building site, a well attested practice through the ancient and medieval world. The utility of using the same methods to draw a small scale version would have been *de minimis* (Klug, 2024 p. 119-125).

Second, this ability to sketch proposed work (*exemplaribus pictis quam velit operis*) seems to be optional rather than critical for any given project (one could make a sketch of proposed work, but it wasn't necessary), and a quite small part of the skills and knowledge an architect is meant to possess. Based on the very brief mention in Vitruvius' *Ten Books*, I think it is fair to conclude that while Roman architects had the ability to produce representations of proposed work for clients, and undoubtedly sometimes did, scaled drawings as a whole did not play a significant role in the construction process or the general conceptualization of buildings.

### Cassiodorus

We have little other writing about the art of architecture in the Roman Empire until the end of the classical period, when there are two passages from Cassiodorus discussing architects, both of which show that it was still sculpture and small scale craft that was most appreciated and valued in architecture. Cassiodorus was a latin speaking bureaucrat who worked as Praetorian Prefect --essentially a prime Minister--to the Ostrogothic King Theodoric the Great in the early to mid sixth century, who despite reigning after the “fall” of the Western Empire, continued the Roman administrative state for almost a century.

The first passage is from a letter to the Prefect of the city of Rome directing him to host an architecture student in the city. The overwhelming emphasis on what in particular should be studied is statues and sculpture. He is to “Let him read the books of the ancients; but he will find more in this City than in his books. Statues of men, showing the muscles swelling with effort, the nerves in tension, the whole man looking as if he had grown rather than been cast in metal. Statues of horses, full of fire...you would think the creature longed for the race, though you know that the metal moves not...The ancients speak of the wonders of the world, but this one of the City of Rome surpasses them all.” (Hodgkin, 1886, p. 331)

The second passage is even more interesting. It is a letter to a palace architect describing his duties, status, and value to his superiors. It is one of the few descriptions of what clients valued in architects from the ancient world and thus worth quoting in full

“5. Formula of the Palace Architect: Much do we delight in seeing the greatness of our Kingdom imaged forth in the splendour of our palace. Thus do the ambassadors of foreign nations admire our power, for at first sight one naturally believes that as is the house so is the inhabitant. Take then for this Indiction the care of our palace, thus receiving the power of transmitting your fame to a remote posterity which shall admire your workmanship. See that your new work harmonises well with the old. Study Euclid—get his diagrams well into your mind; study Archimedes and Metrobius.

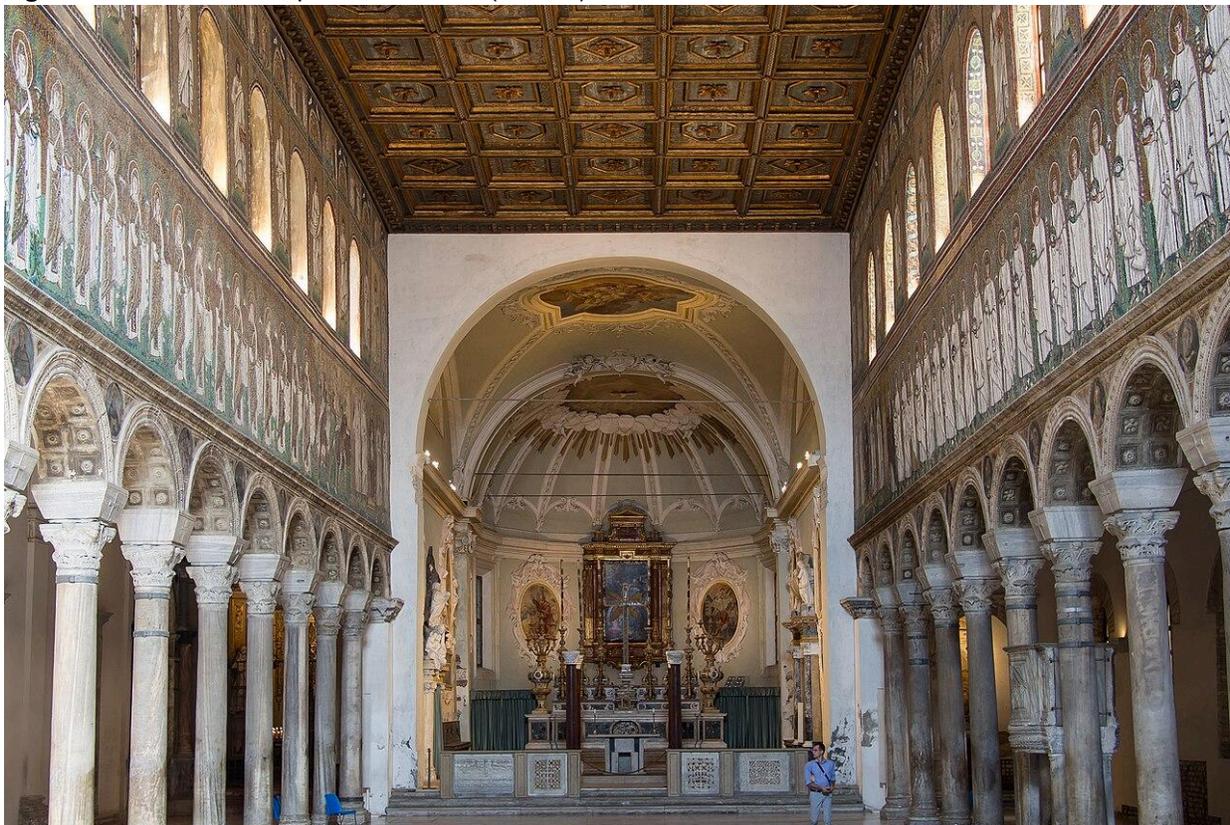
“When we are thinking of rebuilding a city, or of founding a fort or a general's

Basilica di Sant'Apollinare Nuovo, Ravenna, Italy c. 504 CE: Large Scale  
Fig. 8 -Basilica di Sant'Apollinare Nuovo (exterior).



Note: the round tower is medieval, while the portico and semi-circular apse are Baroque

Fig. 9 - Basilica di Sant'Apollinare Nuovo (interior)



### Basilica di Sant'Apollinare Nuovo, Ravenna, Italy c. 504 CE: Small Scale

**Fig. 10 - *The Three Magi***, Mosaic, Basilica di Sant'Apollinare Nuovo. Tile began as a way to have a hard durable finish on the surface of a floor or wall. In those situations where a client had the money and inclination for the tileworker to work more than they strictly needed to, the tileworker would get creative and deliberately arrange different colored pieces of stone and ceramic to form geometric patterns or images. Eventually this craft evolved into the refined, even sacred, practice seen here.



**Fig. 11 - Column Capital**, Basilica di Sant'Apollinare Nuovo. Though it takes a back seat to mosaics, the Basilica of Sant'Apollinare Nuovo has impressive stone work as well. This is a great example of column capital that seems to be a transitional form between the classical Ionic or Corinthian and the later Romanesque or Gothic. This is a reminder that though today we think of these as standardized 'types' that are rotely copied, this understanding is a product of the historicism of Neoclassicism, Neo-gothic, etc. These 'historical' forms were in every case the result of stonemasons being creative and inventive in their skilled craft, even if the general practice was conservative.



quarters, we shall rely upon you to express our thoughts on paper. The builder of walls, the carver of marbles, the caster of brass, the vaulter of arches, the plasterer, the worker in mosaic, all come to you for orders, and you are expected to have a wise answer for each. But, then, if you direct them rightly, while theirs is the work yours is all the glory.

“Above all things, dispense honestly what we give you for the workmen's wages; for the labourer who is at ease about his victuals works all the better” (Hodgkin, 1886, p. 5)

The first paragraph explains why architecture and an architect are valuable; in short they make their clients look good. The second paragraph is even more interesting because it tells us two things about the particular sense in which architects were useful or valuable in late antiquity.

First, the ideas that the architect puts down on paper come from the client (in other words Cassiodorus and Theoderic), not the architect, a dynamic that architects today might find both troubling and familiar. It's unclear if this expression on paper referred to written descriptions like the Greek *syngraphai* or drawings.

The second thing to note is what this says about the value of the architect, what it means for him to be good at his job. To Cassiodorus, a good architect's purpose is to get the highest quality craftwork out of his craftsmen because it is the quality of this work that the building, and therefore the architect and client, will be judged on. While each of the craftsmen work in dialogue with their own materials, the material the architect is working in is the craftsmen, and it is his skill in coordinating and motivating their work (most importantly through making sure they are paid) that is the value of the architect.

It's worthwhile looking at the sort of building Cassiodorus' architect might have been working on. The most significant surviving building completed under the patronage of Cassiodorus' master, Theoderic the Great, is the Basilica of Sant'Apollinare Nuovo in his capital city of Ravenna, Italy.

The overall form of the building is a Basilica, a standard building type of the late Roman period used for legal and administrative purposes that was then adopted by early Christians as the standard plan for a church. It is essentially a rectangle with colonnades along its long sides, the entrance on one short side and a semicircular apse at the other. It is, like the Greek temples, very simple, standard, modular, and rectilinear in its overall form.

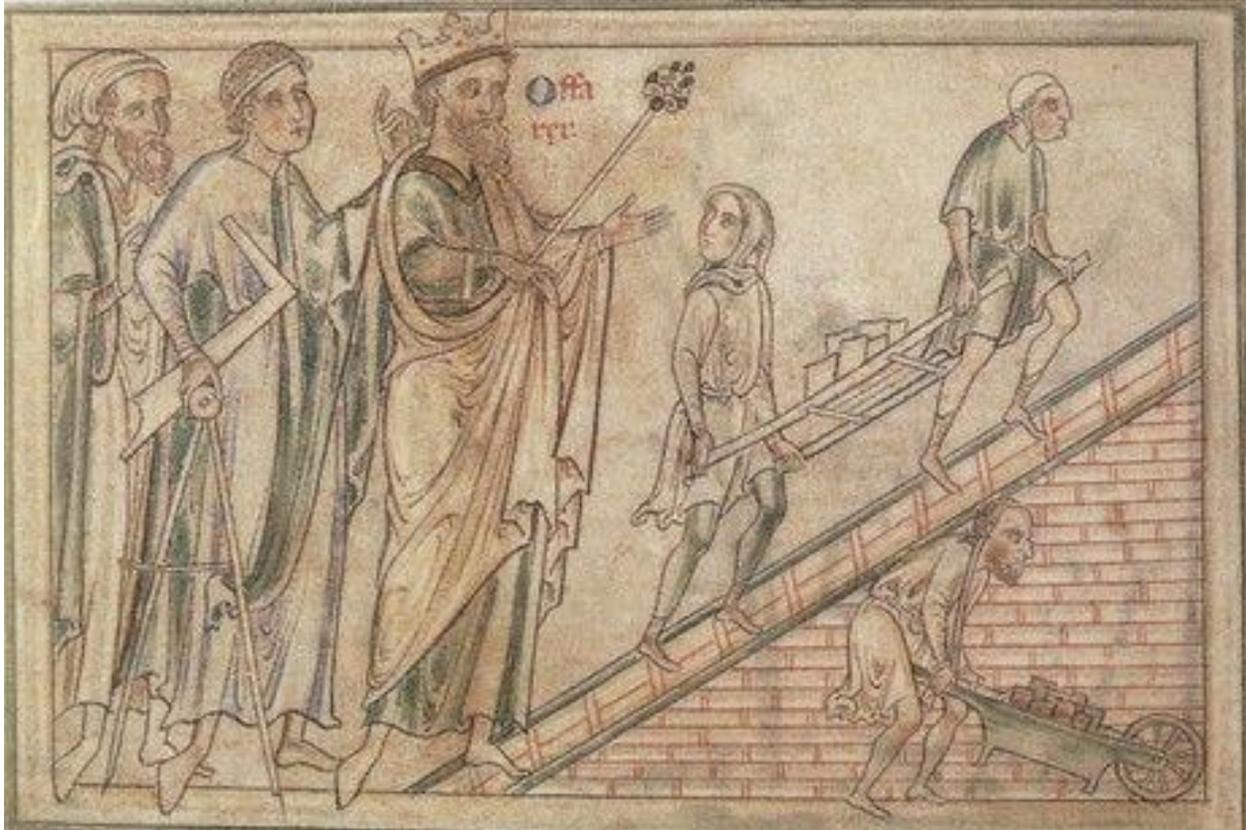
Like the temple to Athena Nike, it is the small scale details of the Basilica of Sant'Apollinare Nuovo that are the focus of attention for both those who constructed and visit the building. Here the principle craft is mosaic. Like the stone relief sculptures of the Greek temples, we should understand these mosaics as the creative and expressive outgrowth of common building crafts: craftsmen attempting the most beautiful version of their work.

### Medieval Europe

While we have virtually no written description of western building practices from the fall of Rome until the late middle ages, we do have a good idea of the tools those directing building would have used based on images, such as Fig. 12, a depiction of a king and an architect directing the construction of a cathedral from the *Life of Saint Albans* by Matthew of Paris (c. 1240). We know he is a king because he has a crown and a scepter, and we know he is an architect because he has a compass and a square. Notice how large the compass is. It is not for paper.

So why were compasses so important? In her book *Passion for Compasses; Medieval Master Builders and their Building Plans* Dr. Sonja Ulrike Kug summarizes medieval building practices:

## Tools of the Pre-Modern Architect

Fig. 12 - Image from Matthew of Paris' *Life of Saint Alban* (c. 1240)

**Fig. 13** - Tracing floor at Wells Cathedral Cloister: A tracing floor is a room set aside in the jobsite where the floor is covered in thin plaster. The master mason would draw building elements through scratching the plaster, laying out precise measures using the compass. This was used as a template by stone cutters



“Throughout the middle ages people continued to use the planning techniques that had been handed down since antiquity: Floor plans were marked directly on the construction site using string compasses, great compasses and other instruments, as documented since Vitruvius... The work was simplified, for example, by coordinating the proportions of the floor plans and elevations. The floor and elevation dimensions of Chartres Cathedral, for example, appear to have been derived from a single compass radius. Plans were fragmentary, if they existed at all, because buildings were not planned in detail as they are today. Churches and cathedrals were worked on for centuries even decades” (Klug, 2024 p. 210)

This practice called geometry should be understood as part of a continuous technological methodology for producing precise consistent spatial forms in repeating building elements going back to the ancient Greek use of *anagrapheus* (templates) and *paradeigmata* (directly related to the modern word *paradigmatic*). These could be stationary, as in the tracing floors (Fig. 13), or mobile templates made of wood, stone, metal or other materials. The medieval master mason or classical architect would create their own personal templates that could be copied repetitively, even spreading ideas geographically. In the 1980s, John James undertook a rigorous analysis and cataloging of the stone work of early gothic churches in northern France, a study he called *toichology*, and was able to identify individual master masons and their movement over different building seasons through the evidence of their individual templates. In his book *Template-Makers of the Paris Basin* he writes:

“These great works were in fact assemblages of sequential yet semi-independent acts of expressing the separate ideas of many men. They were not designed at one instant, but were the accumulation of many decisions over a period of decades, and even centuries... [I]n many buildings there was no overall control, nor any model that others followed, but that they were assembled from bits and pieces of different men’s ideas. As these pieces are found in buildings elsewhere, the assemblers would have carried the templates with them as they moved from site to site... In any building the consistent use of the same design and templates was rare, and few cared that the changes were obvious to every passerby. Just as no two leaves or branches of the plants they so loved to carve on capitals were ever precisely the same, so no master exactly reproduced the work of a predecessor, and in many cases completely ignored its implications for the style of his own work... In all ways these men demand our respect - for their organizational skills, their ability to cut and place intractable materials, and for the imagination shown in solving problems that we too would find difficult. They accepted - and indeed made a virtue of the fact - that a building was more a process than a project. Construction was a natural growth which might take more than a generation to unfold, an accumulation of historic events in stone that, like a living organism, evolved towards a common image of the Heavenly City, while at the same time reflecting something of each man’s personal vision.” (James, 1989, p 206-208)

We get a fuller idea of this art Vitruvius calls *geometria* from a short instructional work entitled *The Booklet Concerning Pinnacle Correctitude*, published in Regensburg in 1486, just one year after Alberti’s *De re aedificatoria*. It was written and published by Mathes Roriczer,

Fig. 14 & 15 - Pages from Mathes Roriczer's *The Booklet Concerning Pinnacle Correctitude*, 1486

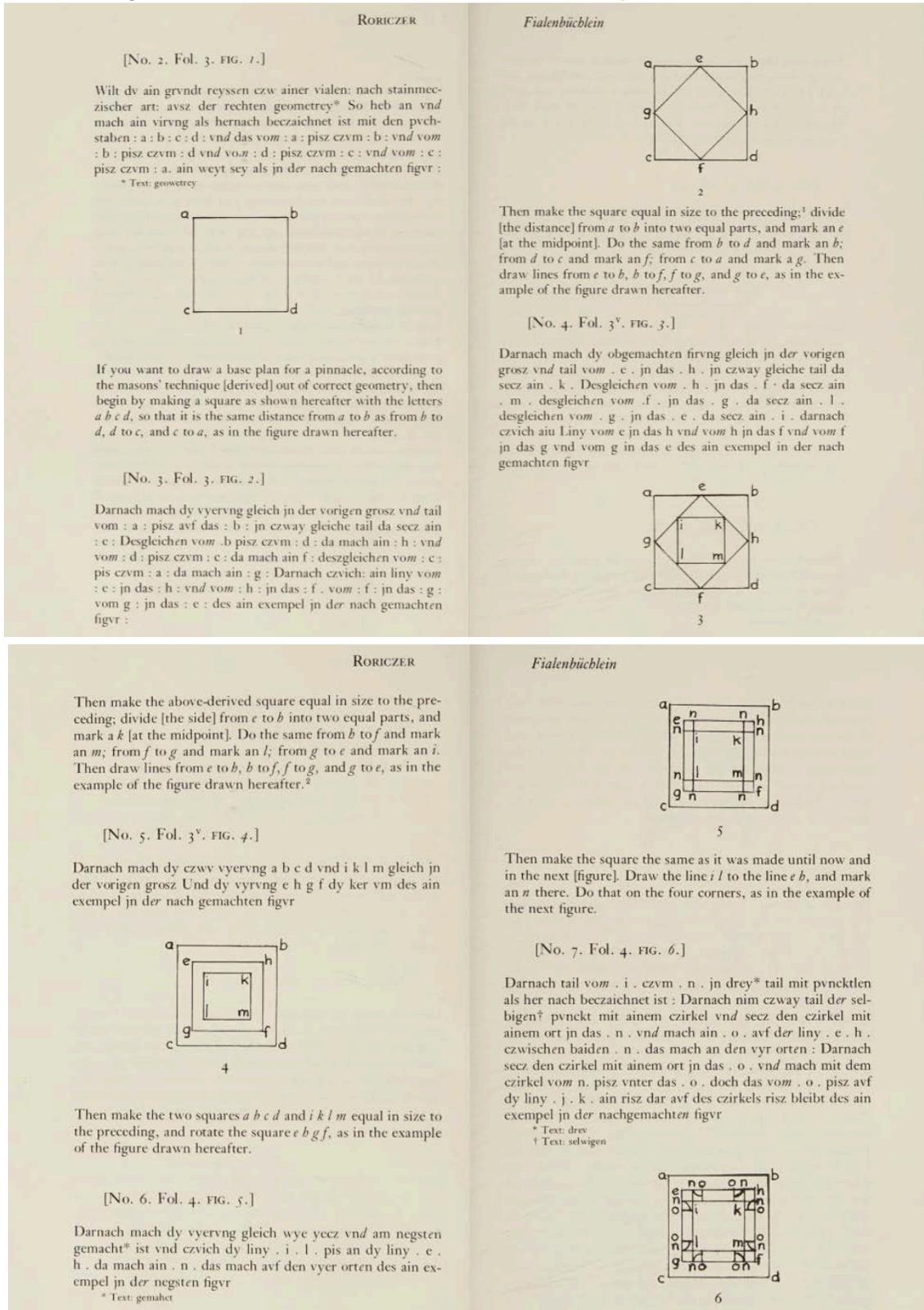
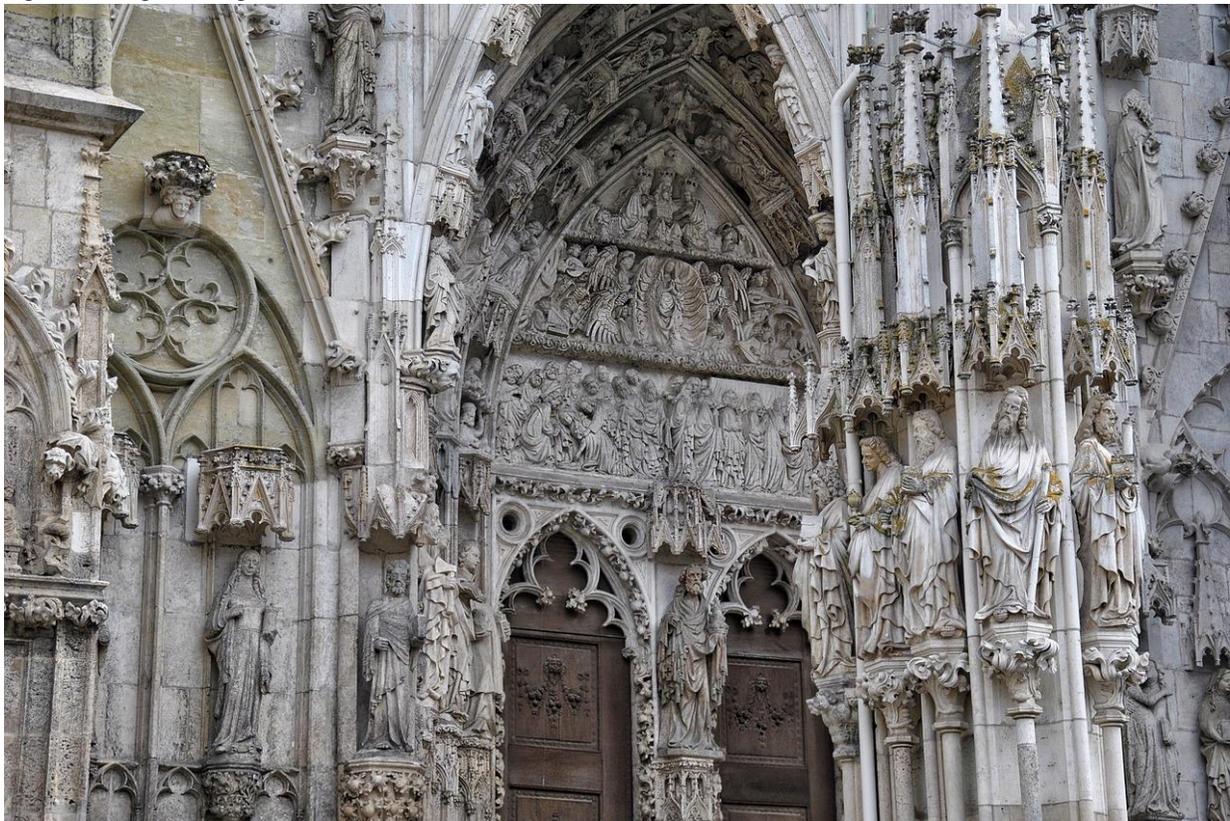


Fig. 16 - Regensburg Cathedral: Large-Scale



Fig. 17 - Regensburg Cathedral: Small Scale



the Baudommeister (cathedral master builder), who seems to have bought a printing press as a side-hustle. It contains his instruction for the correct way to construct the geometry of a cathedral pinnacle using a compass and straightedge based on any given unit length (they did not generally measure numerically the way we do today). A cathedral pinnacle is both a practical part of the structure—providing a balancing downward force on the outer edge of a flying buttress—and an ornamental and aesthetic piece of stonework (Figs. 14-17).

It is noteworthy because of how foreign the idea of spatiality and methods of communicating geometric ideas are to modern eyes. Precise space is conceptualized as successive operations of a compass.

### **Historicism: Design as a Tool of Emulation**

As we know from Vitruvius, drawings were sometimes used by those involved in building, but they never played their modern role as a creative medium or recording all important decisions prior to building. Rather they played two separate relatively minor roles. The less common role was rough ground plans, such as the speculative plan of St. Gall Monastery (c. 825 AD in modern Switzerland), that functioned something like an adjacency diagram where one could work out the relative size of different spaces and their proximal relation to each other (Klug, 2024. p. 8-15)

The more common role of pre-modern architectural drawings is recording extant architectural details, usually in elevation, presumably to be emulated later. Large parchment elevations began to be produced in masonic guilds in the Rhineland in the late middle ages. Based on where they are found and what they depicted, we know that most of them were not design documents in the modern sense (because the details shown are usually not those of the cathedrals where they are found), but as a sort of medieval Pinterest or idea journal, depicting “sample” details of other buildings that those masons may have liked. In this context we find the earliest drawings that could be called construction documents in that some of these elevations are of ornamental schemes the cathedrals at which they are found (Klug, 2024. p. 95-107).

Based on the range of subject matter and ad hoc composition, the earlier “sketchbook” of Villard de Honnecourt was likely a recording of things he found interesting (rather than a purposely composed architectural manual), but who exactly he was and why he drew what he drew is a matter of speculation (Klug, 2024. p. 47-54).

In the Islamic and Persianate world, evidence suggests that there were no architectural drawings before the twelfth century AD; skilled builders in modern Iran were entirely unfamiliar with the idea of architectural drawings as late as the 1920s. When architectural drawings do appear, such as the Topkapi scrolls (likely produced under Timurid rule in the fourteenth century) they, like their European counterparts, primarily depict ornamental detail constituting a sort of pattern book not connected to any particular building (Klug, 2024. p. 73-80).

A major reason for the relative lack of drawings in the middle ages was the lack of suitable drawing materials. Parchment was expensive and prone to subtly stretch and contract in unpredictable ways, thus making it problematic for precise scaled drawings. Drawings that were made were more likely scratched on wax tablets and other temporary “hard” media. Paper arrived in Europe in the 12th century through Islamic Spain, but like in the Islamic world, it was extremely expensive. However, unlike parchment which was limited in supply by the number of animals, paper was expensive because of the labor intensive process of pounding the raw materials (at this point used rags) into pulp. Most likely in 1267 in Fabriano, Italy, (though there is evidence for other cities and dates), the technology of a watermill used to crush grain into flour

was adapted to process paper. This was one of the most important moments in human history because it led to a cycle in which lower prices led to more use of paper, increasing demand, leading to more paper mills, leading to lower prices, on and on. This cheap material was soon used to make woodcut prints, an existing technology used to put images and patterns on cloth. People were soon carving letters into the wood blocks to mass produce leaflets and books. The idea of movable metal type came about soon after (Klug, 2024 p. 31-36).

The cheapness of paper allowed people to draw and sketch more, leading to immense improvement in Europe's graphic ability. Compare Albrecht Dürer (using as much paper as he likes) to Villard de Honnecourt (reusing parchment). Meanwhile in Italy, nascent humanists, interested in emulating classical culture, utilized this newly cheap drawing surface to produce an up-to-then unbelievable amount of sketches of Roman buildings. Cheap paper was essential for the rise of neoclassicism; portable visual records of the ancient precedents to be followed. These early renaissance drawings initially played the same role as the elevation details of the German masonic guilds or Timurid design scrolls: a recording of observed architectural ideas, usually decorative details, that could potentially be copied in new buildings.

The ease of disseminating knowledge, both textual and pictorial, brought about by the mechanized production of paper led to a revolution in how people thought about building in Renaissance Italy. The practice of drawing (and printing) ancient Roman buildings, joined with Humanist neoclassicism as a normative goal, changed the conception of the architectural object to something essentially timeless (they of course studied and sketched only those portions of ancient buildings that survived until their time). Though it is a while before this conceptualization makes it into practice, this change in temporal conceptualization allowed writers such as Leon Battista Alberti to think of the Art of a building as something to be found its "lineaments" meaning outline, or abstract form, rather than the actual building as built. In his book *Building in Time: From Giotto to Alberti and Modern Oblivion*, Art Historian Marvin Trachtenberg calls this conceptual transition a move from "Building-In-Time", in which the artistry of the building is to be found its long emergence as a crafted object (often over generations), to "Building-Outside-of-Time", in which the architectural form emerges as a singular whole from the mind of the architect, the craftsmen being, in the words of Alberti "no more than an instrument in the hand of the architect." (Trachtenberg, 2010)(Alberti, 1986)

When we see this way of thinking spread to other areas of Europe at different times (e.g. France in the 1540s, England in the 1570s), several ideas and changes come together:

Neoclassical replaces "Gothic"

Term "Architect" begins to be used

Publish printed books (with scaled orthogonal drawings)

The question in all these places is who should take on this new role and title of "Architect". It is answered throughout Europe in two ways, by craftsmen moving 'up' into the role of architect, and by patrons or their administrators moving 'down' into the role.

Focusing on England, a great example of a master mason moving into the new role of Architect (and the new style of Architecture) is Robert Smythson (1535 – 1614), arguably the first person to be consistently called by the new term "Architect" in the English language. The son of a mason and a mason himself, he rises through the ranks while working on building

*Longleat* (1568–1580) for Sir John Thynne (who directed much of the work himself), before moving on to become the most famous architect of Elizabethan Prodigy Homes including Wollaton Hall (1580-1588) and Hardwick Hall (more window than wall, 1590–1597). By the end of his life he had become moderately wealthy in his own right and is buried under the epitaph: “Architecter (sic) and Surveyor unto the most worthy house of Wollaton with divers others of great account” (Girouard, 1983 p. 82–83).

However, what Robert Smythson never did was go to France or Italy, like the prototypical English Gentleman-Architect Sir Roger Pratt (1620 – 1684). Pratt was born into the gentry, educated at Oxford and admitted to the bar, but fled England from 1643-49 because of the English Civil War. He spent his time on the Continent studying Roman remains, the work of Renaissance Architects, and modern Italian building techniques. When he returned to England, he devoted himself fully to Architecture. His views on the professional roles around architecture at the time can be seen in the advice he gives to other gentlemen thinking of building a new stately home:

“First resolve with yourself what house will be answerable to your purse and estate, and after you have pitched upon the number of the rooms and the dimensions of each, and desire in some measure to make use of whatsoever you have either observed, or heard to be excellent elsewhere, then if you be not able to handsomely contrive it yourself, get some ingenious gentlemen who has seen much of that kind abroad and been somewhat versed in the best authors of Architecture: viz. Palladio, Scamozzi, Serlio etc. do it for you, and to give you a design of it in paper, though but roughly drawn, (which will generally fall out better than one which shall (*sic*) be given you by a home-bred Architect for want of his better experience, as is daily seen)” (Pratt, 1928).

There are several points we can take from this. First, he advises the client to do as much of the designing as possible themselves, going to a professional if necessary. Second, he has a low opinion of, and does not consider himself an “architect” who were likely former master masons who had begun marketing themselves with the latin term. Finally, the real skill of architecture is not craft or construction, but knowledge gained through books and foreign travel.

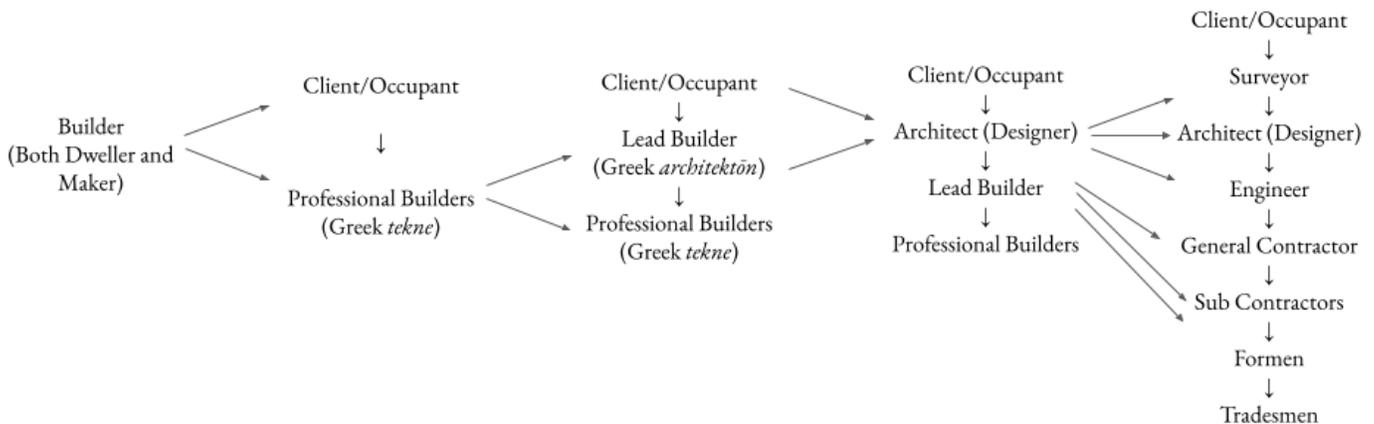
Though he uses the term in reverse, Pratt perfectly illustrates the emerging distinction between Architecture as an art form and building as a practical craft as essentially one of class; Architecture was not found in the dirty labor of construction, but in Grand Tours to Italy and discussions of Palladio's *I quattro libri dell'architettura*. The effect and function of historicism—which both necessitated and facilitated the movement of artistic control from the job site to the scaled drawing--was to justify the dominance of European elites (over both non-Europeans in their colonies and the lower classes in their own societies) through literally and figuratively constructing the idea of Western Civilization; an imagined cultural superiority stretching back through ancient Rome. The scaled architectural drawing was essential in constructing this affected historical superiority; codifying standards of cultural value through published works on architecture, allowing elites to easily participate in this culture via these books and drawings, physically separating the architect and his art from the low work of construction, and, most importantly, moving the artistic value of the built environment from the manual work of artisans and craftsmen to an abstract cultural practice that required elite education and foreign travel.

Thus while historicist buildings involve fine detail and (before the industrial revolution) precise craftsmanship, this work was not admired as art itself as in the classical and medieval

periods, in that the artisans themselves had no artistic agency. Instead, craftsmanship had value only in accurately reproducing idealized historic form found in printed images. The “Art” of architecture was found in the design; the arrangement and proportion of correct historical elements by the architect working through drawings.

Over the course of the Industrial Revolution drawings became more complex as the roles involved in the building industry proliferated. This involved new trades dealing with new technologies, and also new positions responding to the growing scale of construction (Fig. 18). Though architects still supervised construction, the separation of daily on-site decisions away from the architect required a new level of detail and precision in architectural drawings and accompanying written specifications. This transition sees the growing separation of drawings made to work out ideas and get a client’s approval, and construction documents meant both to inform construction and to establish enforceable contracts between clients and contractors concerning what exactly was to be built (Lloyd, Amhoff, 2015). The biggest change came with the rise of the General Contractor. Whereas formerly the architect would hire sub-contractors and individual workers themselves, the large scale of new developments in the early 1800s led to the practice of putting the construction of an entire project out to bid, which in turn required that every important architectural detail be specified in the bidding materials, lest the contractor cut corners in construction. (Wilton-Ely, 1976 p. 180-208). Even with everything codified in drawings and specifications, actual communication and direction from architect to builders was primarily verbal as late as the mid 19th century (Ortenberg, 2010).

**Fig. 18** - Simplified diagram of the development of building professions



While the industrial revolution was transforming the materials and techniques of construction the elite western conceptualization of the “Art” of architecture as something essentially contained in drawings continued to be refined and solidified, most importantly at the École des Beaux-Arts in France. Whereas wealth and power in England in the early modern period was relatively decentralized throughout the country in the landed elite, France was highly centralized around the Monarch and his court. Therefore while England’s gentry and aristocrats built stately homes, the most important buildings in France were residences of the King. This led to a centralization of the discipline of architecture in France, culminating in the founding of the Académie Royale d’Architecture in Paris in 1671 by King Louis XIV and Jean-Baptiste Colbert (Rosenfeld, 1976).

Renamed and organized as the École des Beaux-Arts after the Napoleonic Wars, this was the first, and for a considerable time only, institution dedicated to training architects. As such it

defined, especially over the course of the 19th century, what an architect was, what skill they should have, what activities they should engage in, what principles they should follow, and what constituted “good” architecture. The training of the institute centered around *ateliers*, the precursor to today’s design studios. Students worked on drawings—both straight forward plans sections and elevations, as well as artistically elaborate *renderings*—which were critiqued by the patron of the atelier, an established architect who was likely successful at the school himself. The emphasis was as much on the quality and beauty of the drawing itself as on the buildings represented. The goal was to progress through the *concours*, competitions where the students’ drawings would be judged, working towards the *Prix de Rome*, the winner of which would study in Rome. Designs could be quite inventive at the large scale but small scale details were limited to well defined classical types, extensively documented and catalogued for reference. In short, the École des Beaux-Arts trained architects to make visually pleasing drawings showing the spatial arrangement of imitation classical elements (Baudez & Cassidy-Geiger, 2021).

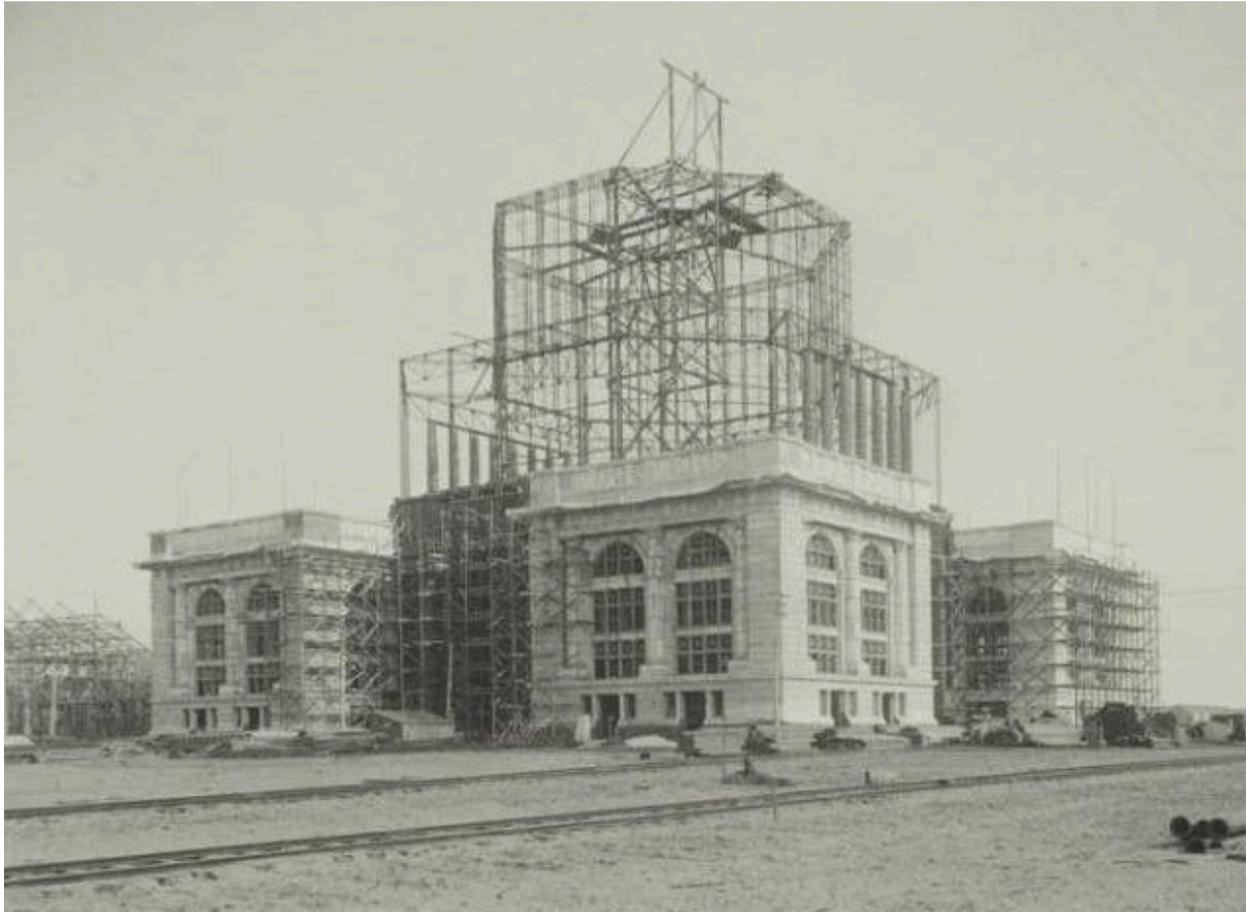
This tradition was extremely important in the development of a standardized profession of architecture in the United States in the 1800s. The most prominent American architects, including Richard Morris Hunt and H.H. Richardson attended the school themselves (there were no schools of architecture in the US). More importantly, when university architecture schools in the US were founded, they explicitly emulated the École des Beaux-Arts, with most early department heads having been attendees. The goal in creating independent schools of architecture was not generally to improve American architects technical abilities in creating functional buildings (they had ample practical experience with engineering and construction because these were not yet entirely separate professions), but to improve the aesthetic sensibility of American Architects (and public) along Parisian lines (Draper, 1976).

These two conflicting trends—the radical change in building technology caused by the industrial revolution, and the elite western conceptualization of the “Art” of architecture as something essentially contained in drawings—continued over the course of the nineteenth century. Whereas a grand neoclassical building built in 1750 would have been constructed using broadly similar technologies as the Roman or Renaissance buildings it was mimicking (e.g. load bearing masonry walls, timber supported roof spans), a building designed along similar Beaux Arts methods and standards in 1900 would likely be constructed of entirely different materials and processes (e.g. structural steel, reinforced concrete, mass-produced finishes) that would then be covered with ‘ornament’--often cheap molded stucco over hollow wood frames--to give an outward appearance that the building was the same sort of masonry construction as its Roman and Renaissance precedents.

Thus we see the emergence of ‘ornament’ as something entirely applied and foreign to the actual crafts of the building; something that can then be easily and cleanly rejected by Modernists. This applied ornament, which covers and disguises the actual construction, is diametrically opposed to the origins of the historical forms it emulates, which emerged as elaborations and celebrations of and within the crafts of construction, often as embellishments of the joints and connections that united individual elements into an ancient temple.

Perhaps the best example of this trend is the Chicago World's Fair in 1892 (Fig. 19, under construction). Despite the dissonance between the hollow wooden and plaster columns on the outside and the structural steel columns on the insides, the so-called “White City” was instrumental in buttressing the Beaux Arts style, allowing it to continue to dominate architectural education and the most prestigious commissions well into the 20th century.

**Fig. 19** - Construction of the Administration Building at the Columbian Exposition World's Fair (*The White City*), Chicago. March 3, 1892.



The tragedy of this faux-antique aesthetic was that the new building materials and techniques—e.g. structural steel, reinforced concrete, plate glass, etc.—were not, with notable exceptions, explored as artistic mediums at the level of hand craft. We could have had beautiful, monumental, authentic buildings in the industrial age if buildings were allowed to wear their gorgeous rivets on the outside, instead of covering the actual columns and joints of the building with a whitewashed plaster emulation of architecture developed in and for the ancient Mediterranean (Fig. 20).

### **Modernism and Post-Modernism: Design as a Creative Practice**

It is in this context that architectural design emerges in more or less its current form as both a semiotic system (i.e. formal conventions of drafting) and cultural practice (decisions about buildings are made at a drafting table), but the architect's role was different than today. The professional architect's output was primarily drawings, but their study and expertise was capital-A Architecture, in the sense of the cannon of existing buildings that could be drawn from to align oneself within the dominant culture. The particular signs architects drew stood for real extant physical things—even though the building had not been built yet—in the sense that they signified the elements of architectural precedents they were emulating.

**Fig. 20** - Railroad Bridge over Market St., Kingston Pennsylvania. c. 1914. No one involved in this column's design or fabrication thought of it as a work of art. Yet I find it beautiful in its ordered complexity, the rhythm of the rivets, the unintentionally regal capital and base, suggesting an industrial classicism which emerged organically without our knowledge or consent



Modern Design as an architectural style emerged when the cultural value of connecting oneself to the imagined past collapsed, but the professional practice of the Architect, as someone who works at a drafting table, remained. The cultural value of antiqueness underlying the practice of architecture was slowly undermined by the technological advances of the industrial revolution, but completely fell apart in the aftermath of the First World War, which saw the defeat and bloody disintegration of all four great powers claiming direct descent from Rome (the Ottoman Empire and Tsarist Russia through the Eastern Roman Empire, and the German and Austro-Hungarian as successors to the Holy Roman Empire). The war made clear that power rested, not in how long you have held power, but how well you could develop and deploy modern technology. The cultural association of power thus decisively shifted from the imagined past to the imagined future; projecting power and prestige no longer meant trying to look old, that you have had power forever, but trying to look new, that you were master of whatever was coming next.

Importantly, while the Modernist revolutionaries of the early twentieth century firmly rejected the historicism of the Ecole des Beaux-Arts, (which by that point had developed into applied ornaments unrelated to underlying arts of construction), the essential procedure (formulating and evaluating architectural ideas through scaled drawings) was not questioned. Therefore when Adolf Loos or Le Corbusier removed ornament, they did not eliminate particular components in the edifice or particular tasks in construction (which would have resulted in very different buildings), but eliminated the signs representing ornaments from their design, leaving the elemental signs of drafting--straight lines, right angles, and smooth flat white planes--to define unornamented, minimal, simple, functional, rational, etc. What was minimized in minimalism, or what Mies van Der Rohe wanted less of in his maxim less is more, were signs in the design, e.g. fewer lines and marks in drafted orthogonal drawings, even if this meant more material and labor in construction, maintenance, and inhabitation. For example, Mies van der Rohe uses labor intensive (but invisible) plug welds (Fig. 21) to attach the roof to the visible exterior columns, instead of using cheaper bolted connections that are used with the beams hidden within the roof.

That the minimalist form is not the cheapest or easiest to produce is openly acknowledged by Hitchcock and Johnson in *The International Style*:

“...brick is undoubtedly less satisfactory than other materials, including stucco. Indeed, brick is often covered with stucco even by architects who claim to be uninfluenced by aesthetic considerations. This concession to the principle of achieving a smooth surface is an important instance of the exaggeration of the functionalists’ anti-aesthetic claims” (Hitchcock & Johnson, 1997).

The joints of the underlying structure are covered up with stucco and painted white, not to serve any utilitarian purpose, but because the flat smooth white plane is wholly simple from the perspective of the designer, in that it is what is represented by a single straight line in plan, section, or elevation. To make the wall less in Mies’s formulation, requires more material, more labor, and additional steps in the construction process to cover up the reality of the actual wall assembly.

The abstract semiotic origin of early Modernism’s idea of simplicity is apparent in many other defining features of Modernist buildings beyond the flat white planar wall. Modern designers understood convex right-angle corners as abstract intersecting planes, ignoring the

**Fig. 21** - Edith Farnsworth House, Plano, Illinois. Ludwig Mies van der Rohe, 1951



**Fig. 22** - Villa Savoye, Poissy, France. Le Corbusier and Pierre Jeanneret, 1931



greater physical stress inherent at a corner (normally dealt with through rounding, articulation, and reinforcement) in favor of stark sharp edges that were simple to draw, but required intentionally hiding the additional structural complexity needed to make the corner durable (such as metal or vinyl corner bead in stucco or drywall construction). Similarly, International Style columns and piers lack a discernible base or capital, even though physical stresses and the complexity of joining separate elements requires both more material and intricacy of form at the top and bottom of the column than along its length. The minimalist steel columns typical of Mies van der Rohe could have been structurally stronger or even more slender if they were connected at top or bottom with small diagonal bracing or visible fasteners and gusset plates. But diagonal forms and articulated joints would have conflicted with the rationality of the design, which was always only rationality within the abstraction of the design process, not the physical reality of the building. Likewise, Modernists generally preferred flat roofs over pitched roofs, which are a lot simpler to draw in elevation. These appear comparatively simple to the designer because the movement of water, thermal expansion, chemical hydrophobia, and material wear are not easily represented with lines on paper. The actual task of moving rain water off of a roof through joining together real materials in order to keep occupants comfortable and dry is generally more readily achieved with a pitched roof than the low sloped roofs we call flat. This dissimilarity is at the heart of the shortcomings of Modern Design: designs and buildings are different things, generated in vastly different ways, with different constraints, possibilities, internal logic and aesthetics. Good designs are often terrible buildings.

The emulation of the tectonics of drafting that we call minimalism was daring and captivating at first, but became boring as more modernist buildings were built and the novelty had worn out. Clients and architects are both incentivised to have certain buildings stand out. Like throughout the history of building this was done with complex, creative, original forms, clearly not there to solve a practical problem, but to make the building (and therefore, like in the time of Cassiodorus, the client and the architect) stand out for praise. The difference was that the status of artist had moved from the craftsman working in the materials of construction, to the designer working in scaled representations. Meanwhile, the engineers, material suppliers, fabricators, etc., who are responsible for turning the beautiful model into an actual building are not 'Artists' like the modern architect-designer or ancient craftsman. They have no artistic agency—no authority or mandate to be artistically expressive. Instead, their decision making is practical: how to achieve the architects' specified form effectively and efficiently.

Therefore while the large scale form of these buildings (what is represented at the human scale in the material crafts of the architect/designer) is artistic and complex, the human scale is unembellished rectangular panels (Fig. 23-28).

Because the complexity and artistry that does emerge at larger scales in late Modern buildings arises through manipulation of the particular representative mediums in which it is developed, it displays the tectonic and morphogenetic logic of these modes of depiction rather than that of the components and materials that constitute the real building. In the design process, the possibilities of artistic expression exist within and are determined by the particular medium the designer designs in and the semiotic rules by which those representations correspond to real buildings. The curvilinear forms, jutting angles, staggered boxes, and manipulated planes that are typical of contemporary prestigious architecture arise from, and only sensible within, practices of abstract representation in which possibilities are defined in terms of, and as deviation from, abstractly immaterial straight lines and flat planes. To someone physically involved in or thinking about the complex effort of building a building, flat smooth white surfaces larger than

Guggenheim Bilbao, Spain. Frank Gehry, 1997: Large & Small Scale  
Fig. 23 - Large Scale



Fig. 24 - Small Scale

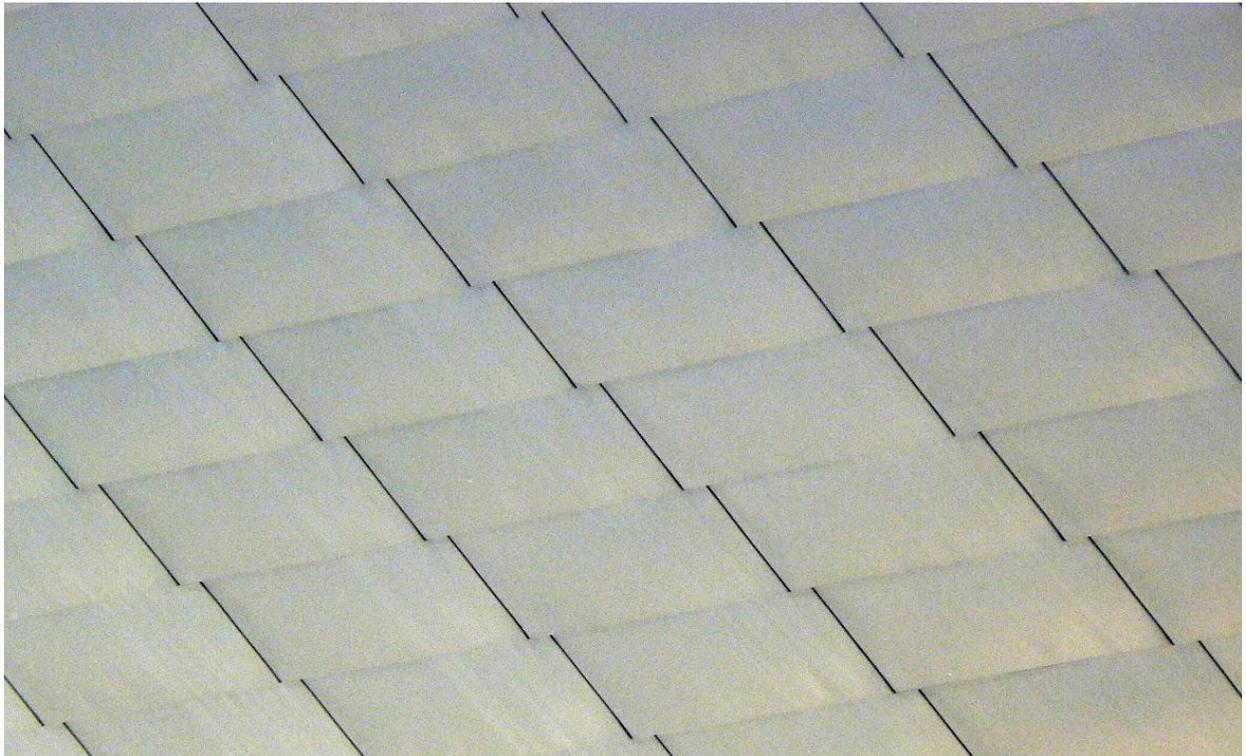


Denver Art Museum, Frederic C. Hamilton Building. Daniel Libeskind, 2006:  
Large & Small Scale

Fig. 25 - Large Scale



Fig. 26 - Small Scale



Heydar Aliyev Center, Azerbaijan. Zaha Hadid, 2012: Large & Small Scale  
Fig. 27 - Large Scale



Fig. 28 - Small Scale



the materials you are working in are an imposed and contrived ornamentation. However, to someone drawing orthogonal drawings, building a scale model out of chipboard, or “experimenting” in Rhino or SketchUp, large perfectly smooth and flat planes are the primordially simple basis from which more complex ideas originate. Adding complexity or artistry within the craft of building a building will involve expressions that naturally arise from the real components and building techniques. This is the origin of vernacular ornament, which arises as a celebration of the art of construction through creative manipulation of the actual materials and procedures constituting the building. However, for someone operating as a designer, adding complexity and artistry involves the forms that naturally arise from the movement of their hand in a drawing, the tectonics and materials of their scale model, or the underlying mathematics and user interface of the particular computer program they are designing in. These expressions that are sensible or even beautiful in their original medium are then transposed, through the semiotic system and the hugely expensive process of modern construction, into incommensurable scales, materials, and situations, in which they are senseless, foreign, and uncanny. The result is illogically large manipulated planes, sharp angles, obtruding slabs, and curvilinear edges, that were likely very appealing as a desk model, free form drawing, or digital rendering, but are awkward, outlandish, and unsettling to actually be around in person.

These buildings are so disconcerting and uncanny to interact with in the real world (while generally looking great in images and scale models) because their superficial form arose through a completely foreign morphogenetic process involving completely different materials, scales, artistic methods, and tectonic logic, and therefore discernibly conflicts with the actual physical reality of the built building. It looks as if each form was developed as a miniature representation of abstract geometry that others then figured out how to ‘fill in’ with real materials at a much larger scale, precisely because this is exactly how these buildings came to be.

## Conclusion

I will consider my ideas understood and this essay to be a success to the extent that, within the context of architectural discourse, I am able to use the word *design* as a pejorative and have my meaning understood. If I say that a building or aspect of a building is a design, I mean that it looks like an attempt to construct a supersized facsimile of an interesting cardboard model, that it ignores the complexities of reality beyond hylomorphic form, that it seems to be composed of abstract geometric ideas rather than its actual materials, or that the architect seems to have been concerned with making a better image instead of a better building.

If we think the real concern of architecture is making better buildings, we must recognize that buildings and their representations are very different things. What is easiest or simplest to draw with lines on paper is not generally what is easiest or simplest to construct or operate. The most beautiful scale model will more often than not translate into a profoundly ugly building. What looks sublime in a digital rendering is likely to be bleak and dehumanizing in person. Buildings are not designs and designs are not buildings. The modern practice of architecture fails to recognize this distinction, inevitably leading to predictable and consistent failures directly related to the ways in which buildings and their representations differ.

What I am calling for instead of architectural design, I call architectural realism, in that I want to engage with the building as a real thing, understood through the material crafts by which it really comes to be, rather than as a design, understood as the signs necessary to represent it in drawing or model. As I have attempted to show, this is how people engaged with and understood

buildings for the majority of human history, resulting in buildings we admire as great works of art. If we wish our buildings to be works of art in this sense then we must similarly prioritize the material crafts of modern construction as creative artforms themselves. What most people don't like about Modern Architecture is not the result of any innate properties of modern construction techniques, but the failure of design as an architectural methodology; there is nothing innate to the crafts of reinforced concrete, structural steel, or extruded aluminium mullions that means they cannot be developed as beautiful artforms, as stone carving, woodwork, or stained glass were in medieval cathedrals. It is the cultural practices of contemporary construction that places artistic authority and creativity solely with the designer working in miniature geometric representations in the studio, that has prevented the development of modern construction technologies as artforms in themselves. Conversely, what draws so many of us toward so-called traditional building techniques is not that older crafts of construction are inherently more beautiful, but because there is human scale artistic complexity developed within the crafts of construction that is lacking in Modern Architecture.

Therefore what I advocate as the alternative to the abstract inhumanity of Modern Design is not a retreat to emulating the building crafts of the ancient Mediterranean, but the elevation of modern construction crafts to the status of creatively expressive art forms. The advances in building technology of the last two hundred years should not be ignored in favour of older methods of construction, merely because our predecessors have ignored their artistic potential. We cannot hope to have modern buildings that are works of art unless we practice the modern material crafts of construction--steel, concrete, glass, etc.--as art forms capable of great beauty.

Understanding buildings as active processes and events is the foundation on which to rehabilitate the practice of architecture beyond the contemporary reduction to design. The task of the architect is to lead building (the work, skill, craft, labor, and art of construction) to facilitate building (in the sense of the living that we wish to take place) by way of the building (the on-going, relatively stable event that is the floors, walls, and roof sheltering, organizing, and cultivating living within them). These three senses of building are aspects of the same fundamental phenomena (being a human being living on earth) which have been separated from each other by the division of labor and social and technological complexity through the arc of human history. The job of the architect should be to understand all three processes with the aim of harmoniously reuniting them in a coherent whole; to resolve as best as we are able the tension resulting from the tripartite separation of the primordial process of building (being, living).

Furthermore, understanding buildings, and the smaller things we bring together to build them, as ongoing processes/events that are actively doing (even if they are minimally moving) opens the possibility of conceptualizing the qualities and properties of real built buildings that are necessarily ignored when they are reduced to abstract spatial forms in design. As lines in a section, bits in an AutoCAD file, or a piece of paper in a model, a roof membrane, for example, is merely its spatial dimensions; its length, breadth, and width, understood either as straight lines and flat plains or in terms thereof. It is neither hot nor cold, hard nor soft, hydrophilic nor hydrophobic. It does not absorb the energy of the sun, or resist the force of the wind, or make a sound in the rain, or wear away over years, because, understood as signs in a design, it does nothing, because doing is not directly representable in paper models and orthographic drawings.

In contrast, these essential properties of buildings are essential parts of our understanding if the elements of architecture--the floors, the walls, the roof, and the particular things we build them out of--are understood as things that are necessarily doing; actions and events that are in their own particular way continuing to be as part of the event, process, and activity of building.

The continuous symphony of subatomic electromagnetic forces that manifest as the molecular structure of a piece of wood react and resist various forces, in complex and particular ways that are very different from the resistance and reaction of limestone, steel, or plaster. This resisting (or not resisting), and the nuanced ways forces are absorbed and redirected, are actions and events that the particular building materials are participating in. The atoms of the wood are doing something when the floorboard creaks (and when it doesn't creak). The paint on the wall is active in the process of reflecting light as color and absorbing it as heat. The smell of brick, or polyurethane, or pine, is the result of the ongoing process of those particular molecular bonds breaking apart and dissolving into the solution of molecules that is the air in the room. The asphalt shingle on the roof changes and stays the same with each storm and gust and freezing and thaw that slowly wears it down until it needs to be replaced. The building is an event happening in time. The proper aim of the architect is to harmonize this event (the modern noun the building) with the living we aim to facilitate (the etymological origin of the word building as being, dwelling, living) through the labor and art of construction (the modern verb building).

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## THE CIRCLE AND THE GRID: A CASE STUDY OF MONUMENT CIRCLE, INDIANAPOLIS, USA

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Figure 1: The Soldiers and Sailors Monument, Indianapolis, in winter. Figure 2: The monument in summer. Figure 3: A Belgian waffle, carrying a variety of toppings. 1: Photo by Author, 2007. 2: Photo by Author, 2008. 3: Photo by Author, 2018.

### INTRODUCTION

This paper begins by comparing the form and experience of cities to a Belgian waffle. The baked grid of popular street food is an inexpensive vehicle for a spectrum of diverse ingredients, ranging from sweet to savory. They can even be enjoyed with no toppings at all. Waffles are sold in small, makeshift spaces and structures, offering sensory delight and bringing people together. Great cities and urban experiences are arguably similar. Indianapolis was first platted by Alexander Ralston and Elias Pym Fordham in 1821 and can be examined in printed materials (W.H. Bass, 2008). The central circle was first conceived as a plot of land for the Governor's residence. Later, the circle was recast with a monument honoring its fallen soldiers and sailors. It was designed by Berlin-born Architect Bruno Schmitz beginning in 1887 and completed in 1902. Schmitz is also known for the 1813 Monument to the Battle of the Nations (Völkerschlachtdenkmal) in Leipzig, Germany, and the 1897 Kaiser Wilhelm Denkmal in Koblenz, Germany. Across its history and to today, Monument Circle is a compelling gathering space and rally point for nearly every seasonal civic celebration on the calendar, a rally and celebration site for hosted events in athletic and motor sports, and an accommodating venue for organized protest and free speech expressions from across the political spectrum.



Figures 4 and 5: Views of the Kaiser Wilhelm Denkmal in Koblenz, Germany. Photos by Author, 2006.

Indianapolis continues to examine the best configuration of Monument Circle for the public interest. The recent debate has centered on the presence of automobiles versus partial or full pedestrianization. Arguments for both sides persist, beginning with a 2008 report by the Project for Public Spaces, an international ideas competition held in 2011 (in which the author's team took third place), and most

recently, the advent of SPARK on the Circle, a temporary installation placed from May to November that is now in its third offering in 2025. This paper will examine the metaphor of a waffle as it relates to city grids and public spaces, the role of a monument in a growing and changing American city, and whether communication, creativity, and compromise can be a vehicle for freedom, safety, and self-expression into the 21<sup>st</sup> century, following Schmitz's original design and construction after the bloodshed and tumult of the American Civil War. The structural grid and versatility of a waffle, as it can carry a variety of ingredients, serve as a whimsical yet metaphor for how well-designed, well-constructed, and well-preserved civic monuments and spaces serve as a host to the spectrum and diversity of human activity and aspiration.

**WAFFLE THEORY: How the sensory experience and the grid geometry of a waffle inform us about the quality of a place**

The waffle is a versatile food, as it can accommodate several toppings and flavors, ranging from sweet to savory. Found in several cities, the waffle vendor contributes much to the sensory experience of that street. Aromas drift and entice more consumers of these rich and hearty treats. Handmade waffle cones from popular ice cream vendors have a similar effect. Their irresistible scent is the first step in the experience. The engagement of multiple senses in the urban context contributes to an overall sense of place.

It is a walkable environment that supports such a draw. In the automobile-centric environment, these sensory experiences are lost in the heat, exhaust, danger, and noise. They are also lost due to the contained environment of the automobile cabin, which now provides conditioned air, soundproofing, and concert hall sound experiences, further isolating the driver and passengers from the diverse sensory experiences of the city. The efficiency of movement, calculation, and distribution has led us to the grid organization for centuries. The grid pattern of the Roman military encampment, or castrum (Johnson, 1983), has a grid form for reasons of organization, discipline, distribution of resources, vectors of movement, and defensibility. It also resembles the grid pattern of what we now know commonly as the Belgian waffle.

Waffles are a complex and balanced mixture of flour, milk, sugar, oil, baking powder, salt, vanilla extract, and eggs that mean nothing until whisked together and baked. These ingredients must be in balance for a successful bake. Too much milk, and the batter runs. Not enough air in the whisk can lead to a hard bake. Waffles, like cities, are sensitive to a fine balance of ingredients and are even temperamental in different weather. William Whyte referred to triangulation (Whyte, 2021) when considering the ingredients of placemaking. The batter, as a complex mixture, can serve as a metaphor for the invisible economic forces that drive demand in our situation here. Because of this complexity, the waffles from a shop can thus be favored over making them at home, though it certainly isn't prohibitive. Waffle irons and toaster waffles are widely sold to consumers. However, the joy of the experience of going to the shop is the point. The same argument and imagery could be applied to the pizza (as the late urbanist Leon Krier spoke and diagrammed) (Nicholl-Smith, 2015), the ice cream dessert, the crepe, or any food that a local population entrusts and favors to a human specialist and not a machine. Waffle and crepe vendors tend to be very small spaces, become very popular, and sensory interventions, teaching us much of what the small change / high impact project can be. The waffle and its vendor, therefore, can help lead us to concepts and practices that can lead us to good urbanism.

The elements of good placemaking come together similarly. Spaces and corridors are the negative spaces that we forge into the shape of the waffle iron. When we shape spaces for the batter mixture to fill, we have a hand in their success or failure. When we consider the circulation and accessibility and overall connectivity of these spaces, along an ordered pattern (usually a grid), we consider the batter's ability to be distributed evenly, from an even pour, to the compression of the iron as it distributes the batter before it bakes. When isolated spots of batter do occur, they can become unique flavors or places unto themselves, but they may also burn out.

We should also consider the application of heat from the iron itself in the process of baking. Metal is a good material for the iron, as its thermal mass takes heat from a source and distributes it across its pattern and structure. Hot spots or cold spots in this structure would lead to an uneven bake. The iron serves as a metaphor for the practices and disciplines of urban design and planning. A plan gives a structure and direction of intent for the batter to take shape during the bake. Without heat, the batter remains in liquid form and never takes shape. Without heat, the essential flavor or essence of a community is never formed.

When the waffle does take shape, the structure is influenced by the template or structure of the iron. An outer crust is formed, and a soft, chewy interior remains. Like the divide between public and private, our buildings have a robust, protective exterior, with intimate, soft, and welcoming interiors. Like the divots or coffers of a waffle, a variety of plazas, forecourts, and courtyards bridge the divides between the public and private and work to hold the variety of toppings that we enjoy adding to the surface of the waffle. Like the variety of amenities, activities, gatherings, festivals, and other daily occupations of space, we add character and flavor to the voids of the waffle, allowing it to carry a plethora of tastes throughout the seasons.

We tend not to introduce these new flavors or toppings at the edges for fear that they may fall off. We tend to introduce them at the center. The recognized center of our city, town, district, or neighborhood becomes an identified and strong place for these new inputs. As they flow, they tend to occupy primary corridors, avenues, and spaces around the center first. Like a pat of butter applied to a warm waffle, visitor experiences in your community will likely begin at an identifiable center and work outward. Applying the discipline of aesthetics and critical thinking, we enhance the flavor of the waffle, but we would not want these new inputs or stimuli to overpower the essential flavor of a waffle. Too much of any input can cause oversaturation, making the structure of the waffle disintegrate.

We should not eat a waffle in one bite. We need to experience and savor it one bite at a time. The experience of urban life is in a series of small details and experiences strung together. Each bite potentially holds a slightly different combination of flavors. Our communities can change with the time of day and with the seasons. This variety of experiences, held together with a clear, consistent structure, is the key to a delicious, flavorful waffle. It is also key to a memorable, meaningful place.



Figures 6, 7, and 8: A Belgian waffle performs certain duties in its making to hold, carry, and disperse a variety of ingredients. Photos by Author, 2018.

### QUALITY OF PLACE

A quality place is less of a selfish or boastful destination; rather, it is a generous vessel for the meaningful memories that are made there. Communal perception of the quality of place is the guarantor of economic development and success in the 21st century. As Richard Florida, author of *The Rise of the Creative Class*, argues, “Quality of place can be summed up as an interrelated set of experiences. Many, like those provided by the street-level scene, are dynamic and participatory. You can do more than be a spectator; you can become a part of the scene.” (Florida, 2019). Economic development today rotates around increasingly judgmental and perception-based conversations of character and quality. Author Ed Glaser, as quoted in a *New York Times* article by Claire Cain Miller, argued, “The most successful economic development policy is to attract and retain smart people and then get out of their way.” (Miller, 2014) Character and quality are both subjective measures of whether a place matters, or, as James Howard Kunstler argues, whether a place “is worth caring about.” (Kunstler, 2004) He forms this argument around loose definitions of places and spaces that are friendly to the user, versus places that are designed cheaply, a modernist dogma (or rejection of traditional urban design principles), or merely around laziness. Civic leaders, policy makers, and urban planners have the most influence in the public realm, where civic space can be manipulated to improve the quality of place. Once this is achieved, the desired economic development and job creation will follow. Creative workers are motivated by where they most want to live, not where traditional job growth might occur. Entrepreneurial activity, once resource and transportation-based, is now largely based on knowledge, creativity, tolerance, and initiative. The traditional urban planning process can reveal these critical issues. The United Nations Global Report on Human Settlements of 2001 indicated, “The new planning is less codified and technical, more innovative and entrepreneurial. It is also more participatory and concerned with projects rather than whole urban systems” (UN-Habitat 2001). A community’s relevance in the 21st century can be evaluated and measured by the quality of its placemaking efforts and details. Knowledge and awareness of these details are critical to making appropriate decisions in a design or planning process in forming memorable experiences for the first-time visitor or potential resident.

With a global economy and global design practices now the norm, the psychological phenomena of place-identity and place-authenticity are potentially at risk. The replication of a North American main street into an automotive-oriented, privately owned shopping mall is gaining traction in North America. There are cultural risks to the mere replication of shopping streets with international brands. This is a relevant discussion regarding design in the public interest, as to whether large urban design and development projects work to reflect the local context and culture, or instead reflect a monoculture of transnational corporations, brand label clothing, and processed food. Arguably, the process of place-making is about humans expressing their culture locally through the building of their cities, towns, and villages, not merely importing or replicating a waffle iron pattern from elsewhere.

### Civic Spaces

At the heart of traditional urban dwellings of any scale is a space for human gathering and co-existence. These spaces grew around water sources, two paths crossing and facilitating trade, or around a spiritual, cultural, or civic institution or landmark. These spaces accommodated simple and slow means of transport. But the story of public space in the modern era is a very different one. Many traditional civic spaces simply became car parks with the introduction of the automobile. The modern era has been a balancing act between the spatial demands of the vehicle and the safety and comfort of the pedestrian.

The work of William Whyte, Christopher Alexander, Suzanne Crowhurst-Lennard, and Henry Lennard reminded a generation of designers and planners that observing human behavior, not a blank check for the automobile, could allow newly designed and revitalized civic spaces to succeed. The work of the Project for Public Spaces continues to promote the principles of civic design and placemaking that William H. Whyte first outlined. Investing in the knowledge of the community, retaining good sightlines and views,

allowing for movable seating, sunlight, shade, a source of moving water, plant-life, wild-life, humanly scaled sub-spaces, and encouraging the sale of food are a few of the principles (PPS, 2007) that informed designers, planners, and civic leaders.

But for much of the 20th century, the design of places was arguably buried in aesthetic dogma or even embedded in a political ideology that intended to lessen the individual in favor of the image of the ruling state or the identity of a corporation. Young people are now voting with their feet, transit passes, and bicycle wheels, with the mobility options now available. The threat to public space in the 21st century is the privatization of open space, or in some cases, additional upper-level government intervention and takeover of municipal spaces. The design of mixed-use districts that appear to have public rights-of-way and gathering spaces that are privately held, with a list of rules, is a potentially disastrous message to all people. The loss of the ability for citizens to express themselves creatively, democratically, and in protest can create confusion, apathy, and conflict for many years to come. This turn toward isolation and loneliness in Western culture is now manifesting in American cities and could be accepted in the name of perceived comfort and security. To put it another way, as author and workplace strategist Mita Malick argued in an April 2025 article for Time Magazine, “sometimes we need to stretch ourselves and compromise in order to build community” (Malick 2025).

#### **IN DETAIL: *Monument Circle and the Soldiers’ and Sailors’ Monument, Indianapolis, Indiana, USA***

In this portion of our examination of civic spaces, the author will share reflections and discussion of Indiana’s most centrally located and widely recognized public space, Monument Circle, and the Soldiers and Sailors Monument. This portion of the planned city of Indianapolis was once reserved for the governor’s mansion in Alexander Ralston’s 1821 original plat (Weintraut, n.d.) but was later chosen as the site for a soaring war memorial following the American Civil War in 1887 (IWM, 2025) designed by Berlin-born Architect Bruno Schmitz, and built in a city that became home to waves of Germanic immigrants at the time.

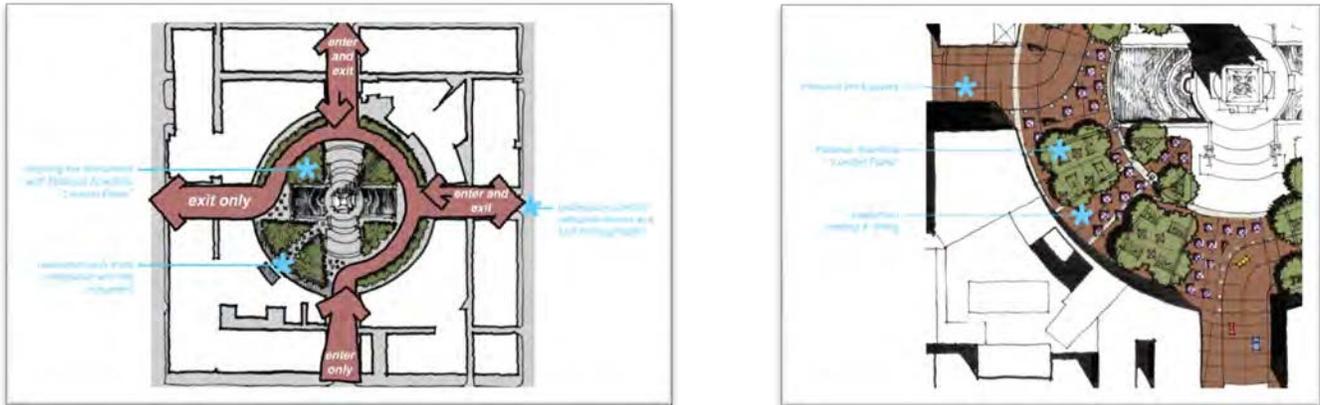
As part of an international ideas competition held in 2010, the author led a third-place winning proposal to consider the revitalization of the circle. This competition informed requests for proposals that were later awarded to the local landscape architecture, urban design, and planning firm of Rundell Erntsberger Associates (Tuohy, 2014). The frequent closure of the circle or portions of the circle to vehicular traffic surrounding seasonal and sporting events at this time served as inspiration for both the competition and the RFPs, raising questions as to whether the circle in its then-current state was serving its full potential as the most visible public space in the state of Indiana. However, as of 2018, the city had not funded any major design or infrastructure project for the circle beyond general maintenance. (Bradley et al., 2018).

In the author’s opinion and memory, that debate has exclusively lingered around the presence of automobiles in a traffic circle and a centralized urban feature that was planned in the era of the pedestrian, bicycle, and horse. The sensory-rich, monumental architecture and statuary, and ornate metalwork and lighting were built for an age of slowness and contemplation of the sacrifices of military service personnel. Efforts to realize the full potential of the circle as an event space in the mid-2010s led to a wave of opposition from property and business owners alike, despite recommendations and mayoral leadership who simply wished to explore the temporary partial or full closure of traffic within Indiana’s premier urban space (Lester, 2008). Mayor Greg Ballard reportedly explored the notion of closing the circle for August in 2010, to great opposition (Bradley et al., 2010). Such assertions as to why the circle should retain full access to automobiles were included in the briefing book for the Monument Circle Ideas Competition, held in the spring to summer of 2011 (Collyer, 2011). The author and two colleagues at a small architecture and design firm in Muncie, Indiana, entered the competition purporting to explore an alternative to the predictable design proposals that would permanently close the circle (despite some very clear hints not to in the official briefing book) and proposals that would retain the automobile dominance of the space, hedging the full event and people-friendly potential that the circle arguably deserved.

The author and two colleagues felt that to truly appreciate Monument Circle and the Soldiers’ and Sailors’ Monument as it was planned, designed, constructed, and crafted, the pedestrian needs more than the few events and businesses that draw people to the circle and give them a reason to want to be there. The design the author and colleagues proposed sought to actively engage the pedestrian and the monument with renewed and refreshed spatial definition, spatial enclosure, and meaning. The necessity for some kind of contiguous pedestrian space with the monument was reinforced by our observation of human behavior on the site. The sometimes horrifying disconnect between the perimeter sidewalk of the circle and the fountains, lawns, and statuary weighed heavily on our minds. For example, on one Sunday morning, the author observed several small children darting into traffic toward the water features. Arguably, children are naturally drawn to water, and this was no surprise. To see them dart across traffic and be pursued by rattled parents was a stressful experience. It became apparent to the author that the Soldiers’ and Sailors’ Monument should be part of a contiguous pedestrian space bounded and protected to strike a balance between vehicular traffic and the natural desires of visitors to enjoy the features of the monument.

In response, a realignment of the traffic pattern became a central part of our proposal. Having studied, entered, and lectured about several design competitions in history (a popular subject in academia), we intuitively thought that several entries would seek to temporarily or permanently close the circle to automobiles, creating a pedestrian-only zone, and that several entries would not change the traffic pattern at all. Our proposal would seek to (in so many words) bridge the gap and seek a compromise. We decided to close only one quarter of the circle to traffic, namely, the southwest quarter of the circle. We proposed this for three reasons. One, the circle could retain automobile and emergency vehicle access for all the so-called spokes, or streets radiating to the north, southeast, and

west. The circle effectively would function as a three-quarter roundabout. Second, the southwest quadrant already hosted pedestrian-oriented businesses, and third, the street wall naturally shades the southwest quadrant in the summer months (Figures 9 and 10).



Figures 9 and 10. The author’s diagram recommended the closure of the southwestern portion of Monument Circle. Such a move would create a contiguous pedestrian-friendly zone with the street and the monument and preserve vehicular access to neighboring streets. Source: S3 Architects, Muncie. Brian Hollars, Kerry LaPrees, and Lohren Deeg, 2011.

To close only one quadrant of the circle to traffic struck an effective compromise in our minds. Cars could still enter the circle, service the institutions and businesses that depended on vehicular access. Institutions such as the Columbia Club, Indiana Roof Ballroom, and the Hilbert Circle Theatre (home of the Indianapolis Symphony) had clientele who were not used to walking long distances to surface or structured parking. However, the southwest quadrant featured pedestrian-oriented businesses, including a breakfast and lunch-oriented delicatessen and a chocolate/coffee house. To increase pedestrian space here could improve their daily business, not hinder it. Shade in the summer months could achieve a pleasant outdoor seating environment and create a world-class urban space in a centrally located, iconic, and prominent urban space that the entire state of Indiana could recognize.

It is worth mentioning that Monument Circle is connected to an extensive urban trail known as the Indianapolis Cultural Trail (ICC, 2024) and that Monument Circle was considered a central part of the trail’s planning and direction, given its historic significance and its identity. The city brands itself as “The Circle City” (City of Indianapolis, 1988) as a nod to its planned central geometry and radiant street grid. The very concept of the Indianapolis Cultural Trail made the city progressive in the worlds of bicycle, pedestrian, and alternative transportation advocates early in its process, as it was one of the first American cities to consider eliminating a portion of the public right-of-way usually devoted to drive lanes or parallel parking. This portion of the right-of-way given exclusively to pedestrian and bicycle use was a novel thought in early 2000s Indianapolis, a city well known for its automotive manufacturing history and motor sport races such as the Indianapolis 500.

A few other concepts inspired the author’s design team. First, the location of Monument Circle at the crossed lines of Market and Meridian streets was cause for intrigue, as these two streets are named for invisible, intangible things. In the Roman city, the primary north-south street was classified as the *Cardo Maximus*, and the primary east-west street was the *Decumanus Maximus*. Where these two paths crossed was called the *Groma*, and the *Forum* was the public square that resulted from the commerce and exchange that derived from the proximity to the *Groma* (Stambaugh, 1992). Arguably, Indianapolis’s plan could very well have followed these principles as derived from Roman colonial encampments and cities. As the competition guidelines stated, Monument Circle should be the most important and best space in Indianapolis, given its spatial orientation in the city, state, and as the so-called “crossroads of America” (City of Indianapolis, 1988) or more specifically, the continental United States.



Figure 11. (Left) The author's artistic interpretations of a Roman castrum (with gratitude to Francis D.K. Ching, 2023). Figure 12, Center: Author's interpretation of Alexander Ralston's 1821 plat of Indianapolis (Bass, 2008). Figure 13 (Right) author's interpretation of a Belgian waffle. (All) Graphite pencil on paper, 2025.

As it was observed by the author, to truly appreciate the statuary crafted out of Indiana limestone and bronze, it arguably does not help that the circle was bounded by a collection of limestone and metal buildings clashing and competing with the monument itself. Taking the perspective of a photographer, a cinematographer, or anyone who has carefully taken a so-called selfie with a mobile phone, one observes that the quality of the background (of said photo) matters. The fine statuary contained within the monument deserves a colorful (contrasting) background, and enclosing the monument with more trees became a central part of our proposal. A green backdrop to the architecture and statuary could arguably allow these elements to be better appreciated. Currently, when photographing the monument or its details, the background architecture either blends, occludes, or even competes with the monument as it contains similar materials (Figures 14, 15, and 16).



Figures 14, 15, and 16. The lack of foliage enclosure surrounding the Soldiers' and Sailors' Monument makes the structure compete for attention with the architecture surrounding it. When the monument was first built, the sky provided contrast with its architectural elements, materials, and artwork. Photos by author, 2017.



Figure 17. The cross-sectional diagram makes the argument for more trees around the Soldiers' and Sailors' Monument in Indianapolis. Source: S3 Architects, Muncie. Brian Hollars, Kerry LaPrees, and Lohren Deeg, 2011.



Figures 18 and 19. These perspective images also make the argument for more trees and visual enclosure around the Soldiers' and Sailors' Monument in Indianapolis. Source: S3 Architects, Muncie. Brian Hollars, Kerry LaPrees, and Lohren Deeg, 2011.

### **An experiment in tactical urbanism: SPARK on the Circle**

Beginning in the Spring of 2023 and at the tail end of the COVID-19 pandemic, an Indianapolis placemaking agency named Big Car Collaborative and a Landscape Architecture firm by the name of Merritt-Chase led an effort to install a seasonal urban park space from roughly the months of May to September, entitled SPARK on the Circle (Merritt Chase, 2023). SPARK combined several interactive displays, games, seating, vendors, and an artificial turf installation into an example of what could be classified as temporary or tactical urbanism (Lydon & Garcia, 2015). SPARK was located on the southwest quadrant of the circle in 2023 and 2024 and then was moved to the north-west quadrant of the circle in 2025. Like the author's third-place entry to the 2011 competition, it took advantage of the shade and breezes that occur due to the physical manifestation of the circle and the buildings that define the space. SPARK has proven popular with sports and convention visitors, children, downtown workers during the lunch hour (Gutierrez, 2025), and as an armature for other events that are held on the circle. As of this paper's writing in 2025, SPARK had been renewed for its third seasonal installation and had become a familiar part of the cultural life of Indianapolis. In a conversation with Danicia Monet Malone, Yale Environmental Research fellow and principal of Rokh R&D, in July of 2025, Malone informed the author that the design was the result of dialogue with multiple partners that included Big Car Collaborative, the city of Indianapolis Department of Metropolitan Development, Indianapolis Downtown Inc., and the Indiana War Memorials Commission. While locating SPARK on the southwest quadrant opened a level of practicality about traffic flow and microclimate opportunities (as noted by the author), the temporary park installation also displaced an informal seasonal motorcycle gathering that arguably brought another layer of community and evening vitality to summer evenings in downtown Indianapolis (Malone & Deeg, 2025). This finding reminds us that good urbanism should consider and respond to a constantly changing flow of information and observation in response to social and cultural forces. As Julius Caesar wrote and as quoted in the book *Mutations* by Rem Koolhaas, Stefano Boeri, Hans Ulrich Obrist, Sanford Kwinter, and Nadia Tazi, "the city is the relationship of constantly changing flows superimposed onto a generic template." (Koolhaas et al., 2000) Like the grid of a Roman encampment, or the grid of a waffle, the city holds and adapts to a continuous flow of diverse ingredients and change.

### **CONCLUSION: Recent issues and the future**

The real estate development climate around the circle continued to change in 2025, with three major holdings totaling around one million square feet acquired by the Indianapolis-based developer Keystone Group (Sergio, 2025), signifying another major turnover in spaces around the circle since the Ideas Competition and the COVID-19 pandemic. The release of an Indianapolis Downtown Inc. sponsored survey speaking to perceptions of safety and cleanliness in downtown Indianapolis was released in the early summer of 2025, with only 56% of respondents reporting that they felt safe downtown (Runevitch, 2025). This survey sought to shed more light on some of the perception issues facing downtown businesses, streets, and public spaces, and was launched just days before a fatal mass-shooting incident involving hundreds of young people during the Fourth of July holiday of 2025. Various opinions and proposals to improve public safety in downtown Indianapolis have been raised, including a concept of state government takeover of the downtown (Briggs, 2023). As of August 2025, the question of the sustainability and vitality of walkable retail continues to persist in downtown Indianapolis, with storefronts that have remained vacant since the COVID-19 pandemic, the decline of business inside the nearby Circle Center Mall, and continued delays experienced in the restoration and redevelopment of the nearby historic City Market building and Whistler plaza (Sheridan, 2025). Given the number of issues raised and lessons learned throughout the competition and in the years since, the author is confident that projects of this nature can inform and inspire civic spaces like it. Attention to pedestrian safety and comfort, as well as the economics of real estate, commerce, and circulation, was raised. Furthermore, the attention to the flexibility of spaces to adapt and carry a variety of human events, like a delicious waffle, continues to offer valuable lessons for future civic spaces and projects in design, planning, programming, and revitalization.

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**Enhancing Legibility of Urban Ensembles at a Range of Distances,  
Utilizing Compositional Techniques of 19th Century Urban Architecture**

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### **Abstract**

19th Century urban architecture features a design vocabulary of nested compositional articulations of graded scale. These layers of building articulation evolved to be seen at a range of distances, calibrated with regard to atmospheric perspective and human optical capabilities, to aid in spatiotemporal legibility of both individual buildings and urban ensembles. This layered, nested compositional organization assists in environmental legibility when moving through urban sequences. This paper examines specific compositional parameters of 19th Century urban architecture, and conventions for their use to enhance legibility of urban ensembles when viewed at: 1. a range of distances and 2. within a range of common, real-world lighting / weather conditions. The goal of this paper is to clarify specific ways in which compositional techniques of 19th Century urban architecture optically enhance urban legibility, and to distil actionable, testable compositional principles which may prove useful to architectural designers working within urban contexts today.

*Keywords:* 19<sup>th</sup> Century urbanism, architectural composition principles, spatiotemporal legibility

### **Enhancing Legibility of Urban Ensembles at a Range of Distances, Utilizing Compositional Techniques of 19th Century Urban Architecture**

The architectural design of European buildings of the late 19th Century followed the methods which proliferated through the influence of the Ecole des Beaux-Arts and related academies across the continent (Harbeson, 1927). This resulted in a design approach that is quite consistent (Robinson, 1908). As many cities were rapidly growing and becoming increasingly urban in physical form, the architects became particularly adept at the design of large urban, attached building types with façades, often 20-30 meters in width and often up to 6 or 7 stories on height (Curtis, 1923).

The design approach centered on a series of nested compositions, one within the next, which served to subdivide and articulate the expansive façades of the buildings into what is perceived by the viewer as comfortably human in scale (Harbeson, 1927; Robinson, 1908; Varon, 1916).

When one views façade drawings of this period through the eyes of today's contemporary designers, there is often a reflex to condemn them as too proliferating in detail. This is often the result of seeing façades of various size buildings all at the same size on a computer screen. One should bear in mind that these are façades of quite large buildings. When seen in actuality, the density of detail per square meter usually feels quite comfortable (Harbeson, 1927; Magonigle, 1922; Robinson, 1908).

The designers of the late 19th Century understood that this detail, particularly when properly placed within the governing lines of larger orders of composition, serves important functions for pedestrians as they go about their day, moving through the urban fabric (Robinson, 1908).

The nesting of layers of composition helps to ensure that all the elements of a building façade are geometrically inter-related in a manner that results in architectural harmony and unity within a façade (Robinson, 1908).

#### **Layer 1: Massing, Continuity vs Individuality**

From a great distance, only the silhouette of a building is perceivable, particularly in the manner that it influences the 'skyline'. When the same building is viewed from a bit closer, perhaps from a block or two away, only the main lines of the overall massing are perceivable (Robinson, 1908; Varon, 1916).

The expression of continuity vs individuality occurs at the skyline. Individuality is massing with verticality of emphasis; continuity is massing with horizontality of emphasis (Robinson, 1908). As the skyline is the most important compositional line in the design of façades within an urban context, this is where the largest value contrast should typically occur (Magonigle, 1922).

#### **Layer 2: Horizontal Layering**

When one moves closer still, perhaps half a block away, the subdivision of masses into horizontal layering becomes perceivable (Varon, 1916).

Building masses are typically visually divided into one, two or three primary horizontal layers. This division is usually accomplished with a projecting band of moldings, or string course, which runs continuously around the building mass (Robinson, 1908).

### **Layer 3: Vertical Rhythm of Openings**

Still closer, perhaps a quarter of a block away, the rhythm of the vertical void and structure centerlines becomes evident, along with the pattern of façade openings (Varon, 1916). Vertical structural and void centerlines alternate with one another and typically run from the top of the building straight down all the way to the ground. Façade openings (windows and doors) are organized symmetrically about void centerlines (Robinson, 1908).

The legibility of the pattern of door and window openings is very important in urban buildings, as these openings are the ‘eyes on the street’ which provide natural surveillance and are integral to the architectural sociability so critical for pedestrians’ comfort (Jacobs, 1961).

### **Layer 4: Silhouettes of Details**

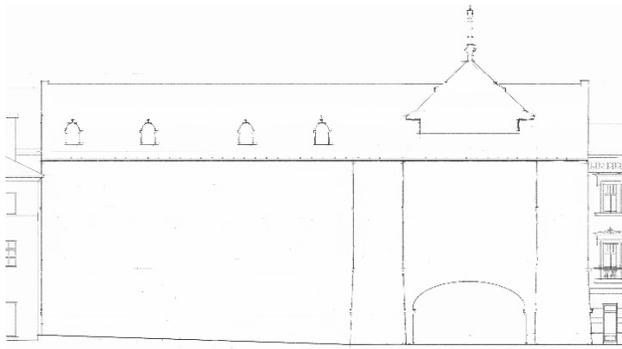
From perhaps 15 meters away, the details such as door and window surrounds become clearly visible and small details such as sculpture at the lower floors can be clearly appreciated (Varon, 1916).

At a greater distance, these elements are perceived as piquage - embellishments that lend punctuation and emphasis to the larger order compositional layers, often located at the points of focus where the horizontal layer lines intersect with vertical structural and void centerlines (Magonigle, 1922). When viewed from relatively close distance, these architectural and sculptural elements are individually seen clearly as complete compositions (Varon, 1916).

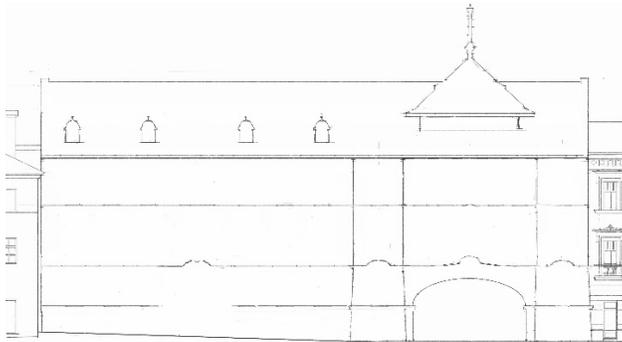
### **Layer 5: Modeling of Details**

From 5 meters away, richness of composition still abounds as faces on sculptures, details of column capitals, and other such fine elements can be appreciated (Varon, 1916).

A magical sense of wonder is felt when standing very close to many buildings of the turn of the 20th Century. Surfaces are enlivened with compositional expressions that can only be appreciated when viewed in close proximity. The modeling and relief that often occurs within the silhouettes of the door and window surrounds and the architectural sculptures can be a mesmerizing world of their own (Magonigle, 1922).



Layer 1: Massing



Layer 2: Horizontal Layering



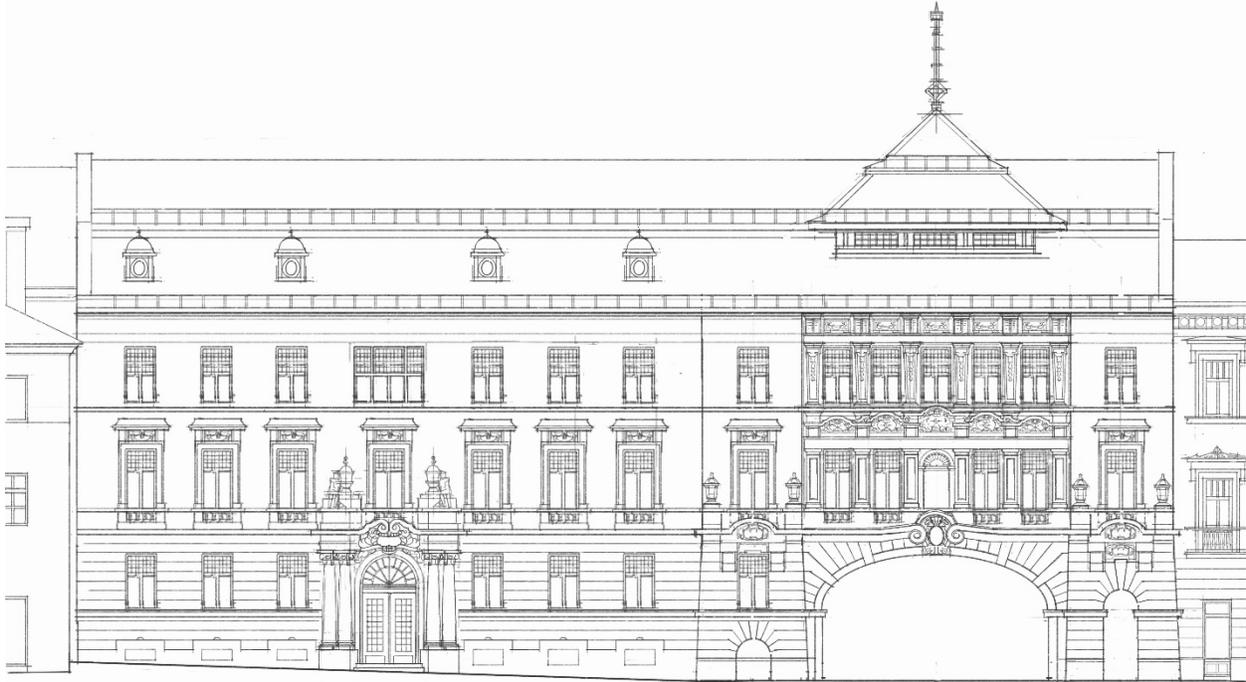
Layer 3: Vertical Rhythm of Openings



Layer 4: Silhouettes of Details

**Figure 1.**

*Compositional Layers 1-4. SNP Square No. 8, Banská Bystrica, Slovakia (J.Dougherty, 2025).*



Layer 5: Modeling of Details

**Figure 2.**

*Compositional Layer 5. SNP Square No. 8, Banská Bystrica, Slovakia (J. Dougherty, 2025).*

### **Nested Levels of Architectural Composition and Movement Through an Urban Environment**

The nesting of layers of composition serves to help ‘propel’ pedestrians through the urban environment. The design of each building rewards the pedestrians with an unveiling of successional layers of compositional wonderment as they approach (Loomis, 1947; Varon, 1916).

When one building after another throughout an urban fabric is designed in this manner, as one approaches the first building, the unveiling of the next building and the next after that can be perceived as an unbroken succession that serves to propel one joyfully through the city (Loomis, 1947; Varon, 1916). This is a compositional basis for the sense of delight one so often feels at moving through cities designed in the late 19th Century (Jacobs, 1961).

### **Techniques for Effective Design of Nested Levels of Architectural Composition in Various Lighting Conditions**

Cities are experienced in a wide variety of lighting and weather conditions. The aforementioned system of late 19th Century architectural legibility achieved through nested layers of façade composition evolved specific characteristics to be effective in a wide range of conditions (Robinson, 1908). In this paper, we shall examine specific techniques for legibility for each of the layers of composition as seen in full direct daylight, contre-jour lighting, at nighttime, and in inclement weather.

The types of lighting we shall discuss are direct lighting, reflected lighting and ambient lighting. Each lighting type is associated with distinct shadow types. Direct lighting casts direct shadows. Reflected lighting creates lighting gradations within direct shadows and can cast back shadows. Ambient lighting creates ambient occlusion shadows (Gurney, 2010). We shall use these lighting and shadow types as we examine the various compositional layers when viewed in the various lighting conditions.

### Direct Daylight



**Figure 3.**

*Compositional Layers (1-5) in direct daylight. Kapucínské Náměstí, Brno, Czechia (J.Dougherty, 2025).*

**Layer 1: Massing.** In locations with extremely bright light the delineation of massing can be accomplished simply by contrasting the tone of the façade with that of the sky - for example, the white volumes of the townscape of the Greek islands outlined against the brilliant azure sky of that region (Magonigle, 1922). In locations with more moderate sun exposure, the use of an entablature featuring projecting moldings is typically used to enhance the marking of the tops of façades (Robinson, 1908). The projecting cornice of this topmost entablature tends to have the deepest projection on a façade so that it will have the most robust horizontal shadow underneath it. In strong direct lighting, reflected light can reach all the way to the undersides of the projecting cornice as well. This reflected lighting serves to modulate the strong cornice shadows and infuses it with gradations. The reflected lighting, if strong enough, can also cast upward facing back shadows, which further add depth and visual complexity to the cornice shadows (Magonigle, 1922).

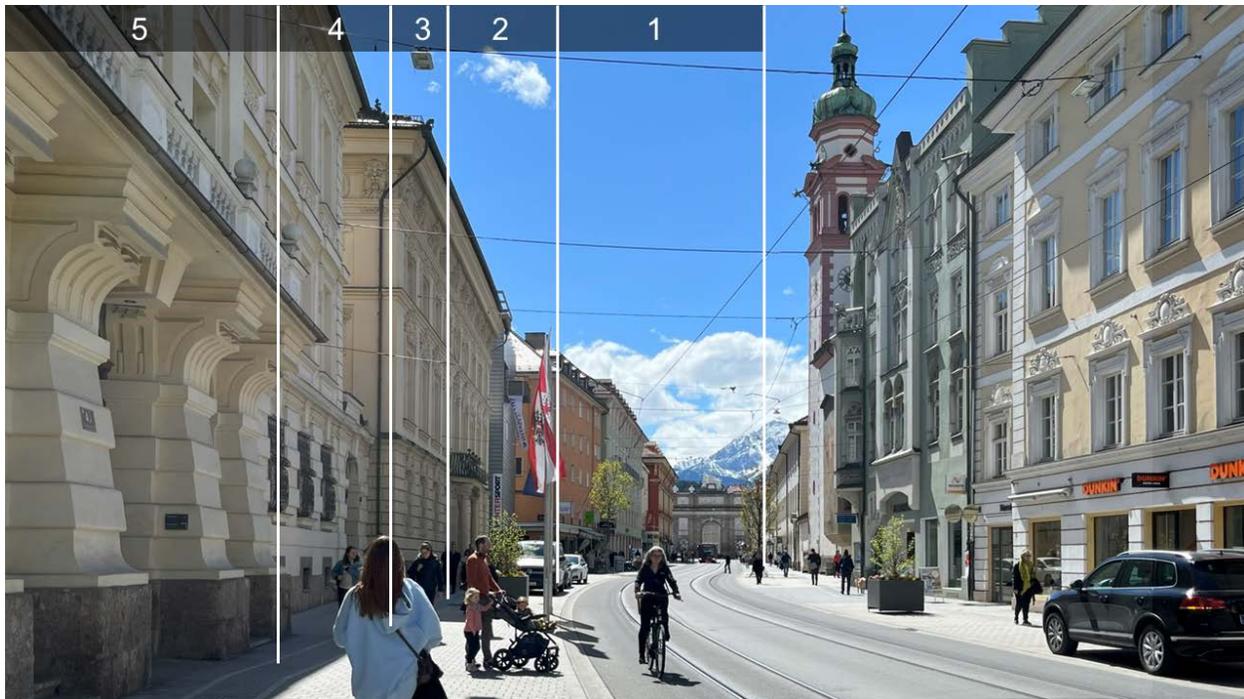
**Layer 2: Horizontal Layering.** Within direct daylight, string courses are designed to cast horizontal shadow lines on the façade (Robinson, 1908). As the horizontal layering of a mass is hierarchically less important than the marking of the top of the mass, the projections of the string courses are less than that of the cornice of the entablature at the top of a façade (Magonigle, 1922).

**Layer 3: Vertical Rhythm of Façade Openings.** In direct daylighting, the reflective visual effect of glass tends to result in wildly varying visual effects. Glass reflecting its surroundings can appear very low in value or very high in value depending upon what is being reflected (Gurney, 2010). Therefore, to achieve reliable consistency of expression of the pattern of solids and voids, openings should feature depth and three-dimensional relief which can cast reliable shadow patterns. Typically, the surfaces of windows and doors should be recessed within the surrounding plane of the façade into which they are placed (Robinson, 1908). This will result in cast shadows at the top and side of each window. Recessed openings can also cast back shadows at the bottom of the opening if reflected light is intense enough (Magonigle, 1922). The rhythm of these shadows across a given façade is a major determinant of that façade's particular compositional personality (Harbeson, 1927).

**Layer 4: Silhouettes of Details.** Door and window surrounds and architectural sculpture often project forward from the façade that they inhabit. In direct daylight, these elements cast shadows onto the plane of the façade (Magonigle, 1922). The silhouette of these elements, and the shape of the shadows they cast should receive careful design consideration, as this is a great opportunity for introducing distinct identity and expressive character into a building's composition (Harbeson, 1927). These cast shadows usually receive reflected light from the ground plane below, causing a distinct gradation in value, with the shadow shape lighter nearer to the plane casting the reflected light (Magonigle, 1922).

**Layer 5: Modeling of Details.** In direct daylight, the full range of cast shadows graded by reflected light, back shadows, and ambient occlusion shadows are available to enliven architectural details modeled in three dimensions (Magonigle, 1922).

#### Contre-jour Light



**Figure 4.**

*Layers (1-5) contre-jour light. Maria-Theresien-Straße, Innsbruck, Austria (J.Dougherty, 2025).*

**Layer 1: Massing.** In contra-jour light, the entire façade is cast into shade (Gurney, 2010). The value contrast at the skyline typically remains the strongest compositional line, but with values reversed. In Contre-jour lighting the sky is typically a lighter value, and the façade is unified into a darker value. Reflected light is typically cast back at façades seen in contre-jour lighting. This reflected light tends to lighten the values closest to the ground and diminishes in strength toward the top of the building. This preserves and enhances the skyline as the preeminent compositional line (Gurney, 2010). However, if the sun is very close to the skyline the sky glow can illuminate the air, and will visually obscure the value contrast between building and sky at the skyline (Gurney, 2010).

**Layer 2: Horizontal Layering.** With the lack of direct lighting characteristic of contre-jour lighting, the relief of string courses tends to be visually very subtle. With no cast shadows, the primary definition of string courses in contre-jour lighting is provided by ambient occlusion shadows. These ambient occlusion shadows can be enhanced by patterned carved relief of the string courses. In contra-jour lighting, reflected light is often cast upward on a façade and so back shadows may occur above the string courses, aiding in their visual definition (Gurney, 2010; Magonigle, 1922).

**Layer 3: Vertical Rhythm of Façade Openings.** In contra-jour lighting, with the elimination of cast shadows on the façade, the effects of recessing window and door openings are diminished, however ambient occlusion shadows can often be seen around the edges of recessed openings (Gurney, 2010; Magonigle, 1922).

**Layer 4: Silhouettes of Details.** The typical forward projection of window and door surrounds and architectural sculptures is helpful in contre-jour lighting. In the absence of cast shadows, this projection produces occlusion shadows from the ambient light which reinforces the delineation of the silhouettes of these forms, albeit typically with relatively low value contrast. The value contrast of these occlusion shadows is enhanced if the forward projecting elements are comprised of a material of lighter value (Gurney, 2010; Magonigle, 1922).

**Layer 5: Modeling of Details.** When a building in contre-jour lighting is approached and viewed from very close proximity, one is typically standing well within the shadow cast by the building. The sky glow effects of the contre-jour lighting are therefore less evident, and architectural details are illuminated by ambient and reflected light. Reflected light tends to be quite warm in temperature and ambient light can be warm or cool, depending on whether the part of the sky projecting the light is nearer or further from the direction of the sun (Gurney, 2010; Magonigle, 1922).

## Nighttime



**Figure 5.**

*Compositional Layers (1-5) at nighttime. Rua Nova del Carvalho, Lisbon, Portugal (J.Dougherty, 2025).*

**Layer 1: Massing.** At nighttime the sky is darker and the building, if illuminated even weakly, will be seen as a lighter value. Streetlights will illuminate the bottom of the building and cast reflected light from the ground onto the façade. This reduces in intensity as it ascends the façade, much like the reflected light in contre-jour lighting. The value contrast of the top of the façade with the sky at night tends to be quite slight, unless the building is strongly illuminated by artificial light sources. If sufficient up-lighting is provided, the underside of the projecting cornice of the topmost entablature will be illuminated forming a distinct, light line marking the top of the façade and functioning similarly, but with reversed values, to the strong cornice shadow seen in direct light (Gurney, 2010; Magonigle, 1922).

**Layer 2: Horizontal Layering.** String courses can receive illumination at night from artificial lighting cast upward onto a building façade. The bottom planes of the string course will receive the light and appear as a light value horizontal line. The upward light may cast a shadow above the string course resulting in a dark value line above it (Gurney, 2010; Magonigle, 1922).

**Layer 3: Vertical Rhythm of Façade Openings.** At night when looking upward toward windows which contain no illumination from artificial lighting from within, the surface of the glass tends to appear quite dark as it is primarily the night sky that is reflected. This dark glass tends to read distinctly against the medium low value of a light-colored façade when seen in low light conditions. When illuminated from within by artificial lighting at night, windows appear noticeably higher in value than the surrounding medium low values of the façade seen in low light conditions. Additionally, artificial light from within can serve to illuminate the edges of recessed fenestration openings (Gurney, 2010; Magonigle, 1922).

**Layer 4: Silhouettes of Details.** When a façade is up lit at night, the forward projection of window / door surrounds and architectural sculptures creates opportunities for truly dramatic and expressive upward cast shadows. The downward facing planes of these elements will also receive illumination from up-lighting. A particularly striking variation in this lighting arrangement can occur at the “blue hour” of dusk, when down planes receive warm-toned illumination from artificial sources and upward facing planes in shade receive a contrasting cool coloration from the ambient glow of the deep blue sky (Gurney, 2010; Magonigle, 1922).

**Layer 5: Modeling of Details.** Illuminating architectural details and sculptures at night with artificial light presents a universe of creative design possibilities. From bold arrangements of lighting color and temperature to surprising directions of cast shadows, to dramatic effects like spotlighting; the designer is awash with variables to explore (Gurney, 2010; Magonigle, 1922).

**Inclement Weather**



**Figure 6.**

*Layers (1-5) in inclement weather. Annankatu and Kalevankatu, Helsinki, Finland (J.Dougherty, 2025).*

**Layer 1: Massing.** Inclement weather increases the effects of atmospheric perspective, and the contrast in values diminishes as distance from the viewer increases. There is also usually a dramatic reduction of direct lighting and reflected lighting. The primary lighting source is diffused ambient lighting. The value contrast at the skyline is diminished, as both the sky and the top of the façade tend toward mid-range values. With little or no direct lighting, there are no cast shadows under the projecting cornice to mark the tops of the building masses. In inclement weather, the primary source of value

contrasts on façades are formed from occlusion shadows which occur in sculptural undercuts and surface recessions where ambient lighting cannot easily reach. The carvings often seen in the bed moldings under projecting cornices help serve to multiply the effects of ambient occlusion shadows in these areas, which cumulatively help form a dark band under the projecting cornice, somewhat similar to the visual effect of a cornice shadow, even when there is no direct light. Carved and sculpted bed moldings therefore serve a function of enhancing the expression of façade composition when direct and reflected lighting are not readily available (Gurney, 2010; Magonigle, 1922).

**Layer 2: Horizontal Layering.** Inclement weather tends to illuminate string courses only with diffused ambient lighting. Therefore, patterned relief carving incorporated of the string course can help enhance the visual expression by augmenting ambient occlusion shadows (Gurney, 2010; Magonigle, 1922).

**Layer 3: Vertical Rhythm of Façade Openings.** In inclement weather with the elimination of both direct and reflected lighting, door and window openings tend to read primarily as the result of ambient occlusion shadows around the edges of recessed openings. Also, in inclement weather the glass of windows will tend to appear rather dark, as bright reflections are rare. The darkness of the glass can be seen in contrast to the lighter value of the surrounding façade in order to communicate the rhythm of façade openings. The value contrast of dark openings within a lighter façade can be enhanced by encircling fenestration openings with an even lighter value lintel, sill and surround. When façade openings are lit from within, inclement weather presents the opportunity for dramatic downward reflections of these lighted shapes in the wet ground plane of the street pavement (Gurney, 2010; Magonigle, 1922).

**Layer 4: Silhouettes of Details.** In inclement weather, forward projection of details from the façade is helpful. The occlusion shadows around the perimeter of these architectural elements serves to define their silhouettes. If comprised of a material of contrasting value to the mass it projects forward from, this contrast can influence the value within reflections cast downward into wet street pavement. These street reflections are particularly striking if occurring at night, or at dusk and combined with the “blue hour” effects discussed above (Gurney, 2010; Magonigle, 1922).

**Layer 5: Modeling of Details.** When viewed from very close distance, the atmospheric perspective effects of inclement weather on building details are minimized. In daytime, cloud cover will reduce or eliminate direct lighting, and architectural details will be modeled with ambient illumination the color of the sky. Upward facing surfaces of architectural details that receive rain (or snow) can receive and reflect illumination in dramatic and sometimes surprising ways. At night in inclement weather, all of the dramatic possibilities of artificial lighting mentioned above are multiplied by the effects of wet, reflective surfaces (Gurney, 2010; Magonigle, 1922).

### **In Conclusion**

The above exploration outlines key points for creative consideration to be kept in mind by those designing urban buildings featuring nested compositional layers in the manner of the cities of the late 19th Century. By utilizing these principles, architectural designers today can improve the experience they provide for people moving through their urban ensembles in a diverse range of real-world lighting and weather conditions.

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Allumette Houses in Gatineau:  
Heritage and Densification in Comparative Perspective with Soviet-era  
Khrushchevka Apartments

by

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## **Abstract**

Rapid urbanization and housing shortages in cities like Gatineau, Québec, and former Soviet Bloc cities (Warsaw, Białystok, Kaunas, Vilnius) necessitate densification strategies that balance affordability with heritage preservation. This paper compares Gatineau’s Allumette-style houses—narrow, wooden dwellings built for early 20th-century industrial workers—with Soviet-era Khrushchevka apartments, prefabricated concrete units designed for post-war urban migration. Both housing types, rooted in working-class needs, addressed physiological requirements through climate-adapted designs, such as deep foundations and wood stoves for Allumette houses and centralized heating for Khrushchevkas. Today, Gatineau employs renovations, accessory dwelling units, and heritage-inspired redevelopment to preserve Allumette houses amid densification pressures, while Soviet Bloc cities retrofit Khrushchevkas for energy efficiency or replace them with modern towers, often retaining grid-like facades. Drawing on municipal reports, urban studies, and Maslow’s hierarchy, this analysis reveals shared challenges: high renovation costs, gentrification risks, and tensions between utilitarian heritage and bourgeois urban aesthetics. By examining case studies, such as Vieux-Hull’s Allumette ensembles and Vilnius’ Šeškinė district, the paper argues for policy interventions—tax incentives, zoning reforms, and social housing protections—to ensure affordability and cultural continuity. These findings offer lessons for urban planners navigating heritage and housing in rapidly growing cities.

Despite Canada’s low national fertility rate of 1.40 children per woman, the population of urban zones, such as Ottawa-Gatineau, continues to rise at a rapid rate (Statistics Canada, 2022a, 2022b) due to the attractiveness of urban life and federal immigration policies (Veronis et al., 2025; Statistics Canada, 2022b).

As a result, in Ottawa-Gatineau, there is increasing pressure to extend municipal services beyond existing suburbs (Ville de Gatineau, 2020), resulting in urban sprawl characterized by a 49.9% increase in urbanized land from 2001–2021 (Hemson Consulting, 2021, as cited in Radio-Canada, 2022). This sprawl is both expensive and destructive to surrounding natural areas, including wetlands and forests (Hemson Consulting, 2021, as cited in Radio-Canada, 2022; Ouranos, 2020).

Urban core densification in Ottawa-Gatineau is essential to curb urban sprawl and promote vertical rather than horizontal growth (Ville de Gatineau, 2020). This drives pressure to revitalize urban cores and increase housing density (Radio-Canada, 2023), but it requires careful management to preserve built heritage (Passerelles, 2024), mitigate negative impacts of over-densification, such as infrastructure strain and reduced green spaces (Ouranos, 2020), and maintain or enhance aesthetic quality in urban centres (Gouvernement du Québec, 2022).

Ottawa-Gatineau’s capacity to invest in essential infrastructure—housing, roads, water supply, sewage systems, and waste management—and community amenities, including parks, libraries, sports facilities, and cultural centres, is constrained by municipal budgets (Ville de Gatineau, 2024). Rising infrastructure costs due to inflation (Radio-Canada, 2024a) and reliance on property taxes (Union des municipalités du Québec, 2025) limit funding, while property owners struggle to afford rising taxes (Radio-Canada, 2025).

In Gatineau, densification projects targeting the low-income housing market address these challenges by revitalizing urban cores. Historically, Allumette-style houses, narrow wooden dwellings built in the early 20th century for workers in Gatineau’s lumber and paper industries, provided affordable housing on small lots (Passerelles, 2024). Today, these structures face pressures from the need for densification to accommodate growing low-income populations (Passerelles, 2024). They are managed through either preservation and renovation, often adding accessory dwelling units to increase density (Radio-Canada, 2024), or demolition with

redevelopment into multi-unit buildings that retain Allumette-style features, to preserve Gatineau’s working-class heritage (Ville de Gatineau, 2025). This paper compares Gatineau’s Allumette-style houses, such as the one shown in Figure 1, with Soviet Bloc Khrushchevka apartments (see Figure 2) to analyze how municipalities balance working-class heritage with modern densification and affordability demands.



[Fig. 1: “Maison Charles-Eusèbe-Casgrain.”, an Allumette-style house at 1 Rue Garneau, Gatineau, QC, showcasing narrow wooden facade constructed in 1902. (Google, 2025)]



[Fig. 2: Khrushchevka apartment building in Šeškinė, Vilnius, Lithuania, showcasing grid-like concrete facade demonstrating prefabricated concrete panels. (Google, 2025)]

### *Shelter, Place, and Belonging in Urban Densification*

To address urban housing challenges, this paper compares working-class housing in Gatineau with the former Soviet Bloc Khrushchevka-style apartments for their modular design and practicality in accommodating urban migration (Meuser & Zadorin, 2015). In the Soviet-bloc, Khrushchevkas, built from the 1950s to 1970s, provided low-cost, prefabricated housing for working-class families moving to cities during rapid industrialization, alleviating severe housing shortages (Varga-Harris, 2015). Their modular, concrete-panel construction enabled mass production, with centralized heating and solid foundations to withstand freeze-thaw cycles, though small apartment sizes limited livability (Meuser & Zadorin, 2015). These construction adaptations parallel Gatineau's Allumette houses, designed with wood stoves and deep foundations for Québec's cold climate (Passerelles, 2024). Today, Khrushchevkas face varied fates: some are renovated to improve energy efficiency, while others are demolished for modern multi-unit developments, reflecting tensions between heritage and densification (Kalyukin & Kohl, 2019). These dynamics mirror Gatineau's management of Allumette-style houses, balancing affordability, heritage, and urban densification.

The provision of adequate housing in urban zones like Ottawa-Gatineau addresses a fundamental human need, as outlined in Maslow's hierarchy, which identifies shelter as a core physiological requirement alongside food and water (Maslow, 1943). While Maslow focuses on individual needs, collectively, shelter as an essential of life protects against environmental elements, such as Québec's harsh winters, and fosters safety, enabling higher-level collective needs like belonging and a sense of place (Norberg-Schulz, 1980). Figure 3 reproduces Maslow's hierarchy of needs, while in Figure 4 the author adapts this framework to qualify necessity among the multitude of municipal services (Ville de Gatineau, 2024). Norberg-Schulz's *Genius Loci* (1980) emphasizes that housing's aesthetic and spatial qualities shape collective identity, as seen in Gatineau's Allumette houses. Their narrow wooden facades and cohesive streetscapes on rue Garneau (see Figure 1) evoke a shared working-class heritage, fostering a sense of belonging that strengthens urban communities (Passerelles, 2024). These facades, preserved or replicated in rebuilding projects (see Figure 9), anchor residents to a cultural landscape, mitigating the disruption of rapid urban change.

In contrast, the grid-like patterns of Khrushchevka apartment blocks, surrounded by green spaces,

create a collective urban identity rooted in communal living (Norberg-Schulz, 1980). In Vilnius' Šeškinė district, these layouts with shared courtyards (see Figure 2) promote social cohesion, aligning with Maslow's belonging needs adapted for collective quality-of-life enhancements. In Gatineau, hyper-urbanization exacerbates housing shortages, particularly for low-income communities, making affordable shelter critical to prevent social exclusion and uphold the right to the city (FRAPRU, 2022). Well-designed housing, with aesthetic qualities like Allumette's heritage-inspired facades or Khrushchevka's functional grid patterns, enhances urban livability by providing essentials of life while fostering quality-of-life enhancements, such as collective identity and social connection (Ville de Gatineau, 2020).

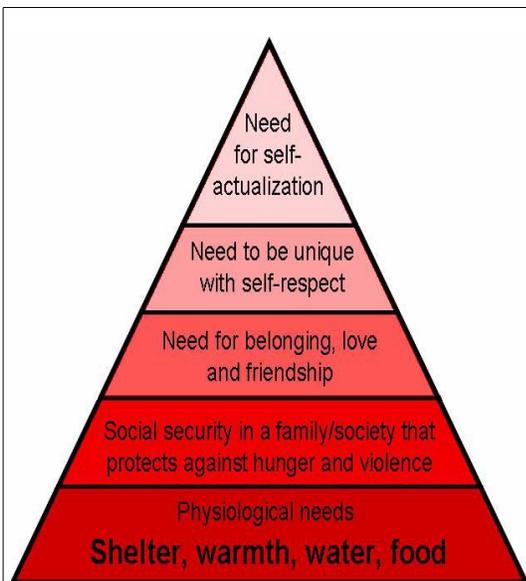


Figure 3 – Maslow's hierarchy of needs (Maslow, 1943)

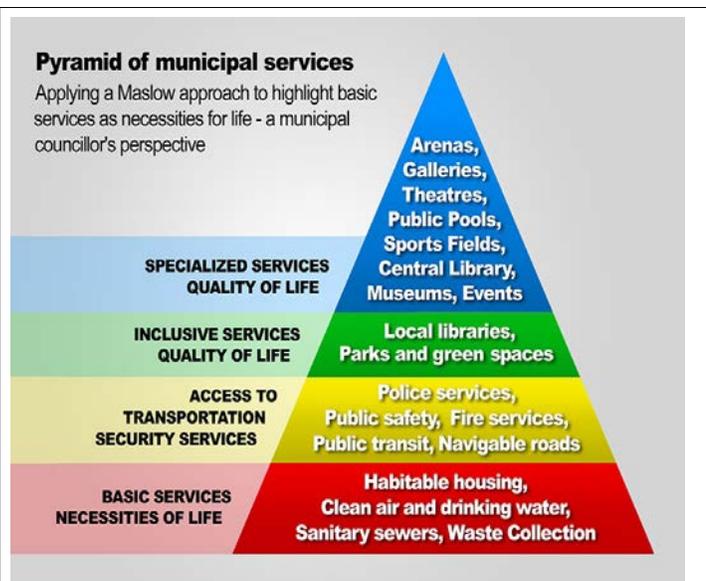


Figure 4 – created by the author, applies a Maslow-like hierarchy to municipal services (Ville de Gatineau, 2024)

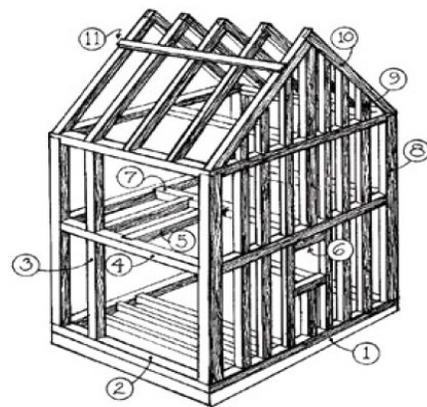
For both Gatineau's Allumette houses and Soviet-bloc Khrushchevka apartments, construction designs address Maslow's physiological needs through adaptations for cold northern climates, such as wood stoves and deep foundations for Allumette houses and centralized heating with concrete panels for Khrushchevkas (Meuser and Zadorin, 2015; Passerelles, 2024). These functional elements, complementing the aesthetic qualities discussed above, ensure shelter's role as an essential of life while supporting urban livability in challenging winter conditions.

*Allumette-Style Housing in Gatineau, Québec: Historical Context and Necessity*

In the early 20th century, Gatineau (then known as Hull) emerged as a hub for Québec’s lumber and paper industries, driving rapid population growth and an urgent need for affordable working-class housing. Allumette-style houses, named for their narrow, matchstick-like footprint, were a pragmatic response to this demand. These wooden dwellings, typically 20–25 feet wide and built on small lots, maximized land use in densely packed urban areas to accommodate mill workers and their families (Passerelles, 2024). The design prioritized affordability and speed of construction, reflecting the industrial boom’s pressure to house a growing labour force quickly. Constructed primarily from local timber, Allumette houses relied on wood stoves for heating, a cost-effective solution suited to Québec’s harsh winters, though this posed fire risks due to the flammable materials and close proximity of structures (Passerelles, 2024) as shown below in Figures 5 and 6. Deep foundations were incorporated to withstand the region’s freeze-thaw cycles, ensuring structural resilience despite the temporary mindset of their initial construction (Passerelles, 2024). The necessity for Allumette housing stemmed from economic and social realities of the era. Gatineau’s industrial expansion, particularly through companies like E.B. Eddy, attracted low-wage workers who required immediate, low-cost shelter near mills and factories. Unlike permanent, upscale residences, Allumette houses were not intended as long-term solutions but as functional, modular units to meet immediate needs (Passerelles, 2024).



Figure 5 – Allumette-style construction on narrow adjoining lots (Passerelles, 2024)



43. Dessin schématique d'une structure en charpente de bois à poteau-poutre.

- |                      |                       |                       |
|----------------------|-----------------------|-----------------------|
| 1. Fondation         | 5. Solive             | 9. Colomage de pignon |
| 2. Lisse basse       | 6. Linteau de fenêtre | 10. Arbalétrier       |
| 3. Montant ou poteau | 7. Poutre centrale    | 11. Panne             |
| 4. Tablier           | 8. Poteau de coin     |                       |

Figure 6 – Allumette-style structure with post-and-beam construction (Passerelles, 2024)

Their small size—often under 1,000 square feet—limited privacy and comfort, yet their affordability made home ownership feasible for working-class families in a period of scarce resources (Passerelles, 2024). While these homes played a critical role in supporting Gatineau’s industrial growth, their utilitarian design and fire-prone materials later raised concerns as urban standards evolved. Today, their heritage value is recognized for embodying the region’s working-class history, though preservation efforts must address challenges like outdated infrastructure and spatial constraints (Passerelles, 2024).

*Khrushchevka Housing in the Soviet Bloc: Historical Context and Necessity*

Having established the historical necessity of Allumette houses, the paper now turns to Khrushchevkas, which similarly addressed urban housing crises in the Soviet Bloc. In the mid-20th century, the Soviet Union faced an acute housing crisis, spurred by rapid urbanization, post-war reconstruction, and the need to accommodate industrial workers in expanding cities. Khrushchevka apartments, named after Soviet leader Nikita Khrushchev, emerged in the 1950s and 1960s as a rapid, cost-effective solution to this demand. These prefabricated, low-rise concrete buildings, typically five stories tall to avoid costly elevators, were designed for mass production and quick assembly, housing workers in compact units of 300–600 square feet (Smith, 2010).



Figure 7 - Khrushchevka-style apartments separated by green spaces (Markin, 2019)



Figure 8 - modular design and assembly of Khrushchevka-style apartments (Markin, 2019)

Constructed using standardized panels, Khrushchekas prioritized speed and affordability over durability, with an intended lifespan of 20–30 years, reflecting their provisional nature (Harris, 2013). Their small size and basic amenities—central heating but minimal plumbing and thin walls—addressed immediate shelter needs but sacrificed comfort and privacy. The necessity for Khrushchekas arose from the Soviet state’s push to industrialize and rehouse populations displaced by World War II and rural-to-urban migration. With millions living in overcrowded communal apartments or makeshift shelters, the state required a scalable solution to provide individual family units, aligning with socialist ideals of universal housing (Attwood, 2004). Khrushchekas were built en masse across the Soviet Bloc, from Moscow to Warsaw and the Baltic States, housing factory workers, miners, and other labourers critical to the planned economy (Varga-Harris, 2015). Their utilitarian design, while innovative for its time, led to issues like poor insulation, structural degradation, and limited space, which became evident as urban standards evolved. Despite these limitations, Khrushchekas remain a significant part of the Soviet Bloc’s urban landscape, valued for their historical role in addressing a dire housing shortage, though many now face demolition or costly retrofitting due to their temporary construction (Smith, 2010). Table 1, presented below, compares Allumette houses with Khrushchekka apartments in terms of design, construction, and other aspects.

Table 1 : Comparison of Construction and Management of Allumette-Style Houses and Khrushchekka-Style Apartments

Aspects	Allumette-Style Houses (Passerelles, 2024)	Khrushchekka apartments
Historical Period	Early 20th century (1900–1930)	1950s–1970s (Meuser & Zadorin, 2015)
Purpose	Affordable housing for lumber/paper mill workers in Hull, Gatineau	Mass housing for urbanizing workers during Soviet industrialization (Varga-Harris, 2015)
Land ownership and construction	Built on privately owned or rented land; constructed by private individuals or firms.	Built on state-owned land; constructed by government authorities or state firms. (Smith, 2010)
Construction Materials	Wood-frame with wooden cladding, leveraging local timber	Prefabricated concrete panels, emphasizing industrial scalability (Meuser & Zadorin, 2015)
Heating Adaptation	Wood stoves, later upgraded to electric heating, suited for Québec’s winters	Centralized district heating, designed for northern Soviet climates (Meuser & Zadorin, 2015)
Freeze-Thaw	Deep wooden or stone foundations to prevent cracking in freeze-thaw cycles	Solid concrete foundations to withstand freeze-thaw cycles in Baltic/Russian regions

Resilience		(Markin, 2019)
Design Features	Narrow (6–8 m) lots, steep gabled roofs to shed snow, compact for affordability	Modular 3–5 story buildings, small units (9–12 m <sup>2</sup> /person), grid-like facades (Meuser & Zadorin, 2015)
Modern Preservation	Renovations add accessory dwelling units (ADUs) or duplexes, retaining narrow facades and wood aesthetics	Energy-efficient upgrades (e.g., insulation, windows) in Baltic states (Kalyukin & Kohl, 2019)
Modern Redevelopment	Demolition for multi-unit buildings with heritage-inspired narrow facades (e.g., Hull project, 200 units, 2021)	Demolition for modern multi-unit buildings, some retaining grid-like facades (Hess & Tammaru, 2019)
Gentrification risks	Rising property values in Vieux-Hull displace working-class residents; speculative development threatens heritage.	Gentrification in Warsaw, Vilnius (e.g., Šeškinė apartments at €1,500–€2,000/m <sup>2</sup> ); displacement of elderly residents (Dudek-Mańkowska and Iwańczak, 2018; Hess & Tammaru, 2019).
Heritage Focus	Preserves working-class heritage through facade retention and adaptive reuse	Limited heritage preservation, with some Baltic projects mimicking modular aesthetics (Hess & Tammaru, 2019)

### *Modern Handling of Allumette-Style Housing in Gatineau*

In recent years, Gatineau has grappled with balancing the preservation of Allumette-style houses—narrow, wooden dwellings emblematic of its industrial past—with the pressures of urban densification and modern housing demands. These modest structures, built in the late 19th and early 20th centuries for working-class families in Vieux-Hull, face threats from deterioration and speculative development. Gatineau’s strategies include renovating Allumette houses to incorporate accessory dwelling units (ADUs) or convert them into duplexes, preserving their narrow facades and wooden aesthetics, or demolishing them for multi-unit buildings with heritage-inspired designs. These efforts reflect a broader tension between heritage conservation and economic pressures, with significant implications for affordability and community identity.

**Renovation and ADUs:** Gatineau has explored integrating ADUs into Allumette houses, spurred by Québec’s Bill 31 (effective until 2029), which permits secondary dwellings on residential lots to address housing shortages (Gouvernement du Québec, 2024). Renovations often focus on converting basements or adding attached units while maintaining the narrow, 20–25-foot facades and wooden exteriors that define the Allumette aesthetic. Gatineau’s adoption of accessory dwelling units (ADUs) represents a key strategy for increasing urban density while preserving the cultural heritage of Allumette houses, aligning with the city’s commitment to balancing essentials

of life with quality-of-life enhancements (Maslow 1943; Norberg-Schulz 1980). The Société d'habitation du Québec (2022) promotes ADUs as a tool to integrate additional housing within existing Allumette structures, such as those on rue Garneau, without compromising their historic wooden facades (see Figure 9). Financial assistance programs, offering subsidies for owners housing family members or caregivers, aim to make ADUs accessible, supporting densification while maintaining the cohesive streetscapes that define Vieux-Hull's identity (Société d'habitation du Québec 2022). For example, converting basements or attics into ADUs allows multi-generational living, reinforcing community bonds and the sense of place articulated by Norberg-Schulz (1980).

However, high renovation costs—estimated at \$60,000–\$100,000 for a basement ADU—pose significant barriers for low-income owners, risking exclusion from these benefits and exacerbating gentrification pressures in Vieux-Hull (Passerelles, 2024). These costs, compounded by municipal budget constraints and reliance on property taxes, limit the scalability of ADU programs, particularly for working-class residents who historically occupied Allumette houses (Union des municipalités du Québec, 2025). Without robust subsidies or stricter regulations, such as those promised in the 2024 Passerelles study, ADU initiatives may inadvertently favour wealthier homeowners, undermining the equitable access to shelter as an essential of life (Passerelles, 2024).

### *Preservation Efforts*

Preservation strategies aim to maintain the visual coherence of Allumette house clusters in Vieux-Hull, where streets like rue Garneau showcase intact ensembles (see Figure 1). The 2024 study by Passerelles, commissioned by Gatineau, recommends listing Allumette houses in heritage inventories and developing restoration guides to ensure authentic materials, such as wood siding (Passerelles, 2024). Gatineau has imposed a demolition moratorium until a comprehensive heritage plan is adopted by late 2025, addressing concerns from historians like Michelle Guitard, who advocate protecting cohesive streetscapes as 'urban, economic, and social landscapes' (Passerelles, 2024). However, preservation is challenged by the houses' original recycled lumber construction, which accelerates deterioration and raises restoration costs, often exceeding \$150,000 for structural repairs (Passerelles, 2024).

### *Demolition and Heritage-Inspired Redevelopment*

Where preservation is deemed unfeasible, Gatineau has permitted demolitions, with 36 Allumette houses authorized for destruction since 2021, 10 in 2024 alone, despite provincial recommendations to pause until heritage studies were complete (Radio-Canada, 2024b). A notable Vieux-Hull case study is the 207 rue Notre-Dame-de-l'Île house, where a developer's plan to demolish a century-old Allumette house for a 159-unit, 10-storey building sparked controversy. The 2025 Court of Appeal decision allowed demolition due to the building's advanced decay, but the developer proposed replicating its facade in the new structure to nod to heritage (Le Droit, 2025). Critics, including Michel Prévost of the Société d'histoire de l'Outaouais, argue that developers' neglect of Allumette houses, such as the 207 rue Notre-Dame-de-l'Île, encourages deterioration to justify demolition, circumventing heritage preservation efforts. This practice, exacerbated by speculative land markets, undermines Gatineau's cultural legacy, despite municipal and provincial calls for stronger heritage protections. (TVA Gatineau, 2025).

A growing practice in Gatineau involves demolishing Allumette houses and rebuilding with design elements that preserve their cultural heritage. Recent decisions by Gatineau's Demolitions Committee and recommendations from the Urbanism Committee to Council have gained community support while advancing urban revitalization and densification goals. Figure 9 and Figure 10 illustrate a recent example of such a rebuilding project (Ville de Gatineau, 2025).



Figure 9 - Allumette-style house at 56, rue Charlevoix in Gatineau, Québec approved for demolition (Ville de Gatineau, 2025)



Figure 10 – Digitally rendered proposed replacement project for 56, rue Charlevoix with 6 units (Ville de Gatineau, 2025)

### *Gentrification Risks and Municipal Narratives*

Gatineau's strategies carry significant gentrification risks. In Vieux-Hull, rising property values, driven by speculative development, often make lots more valuable than the aging Allumette houses themselves, encouraging demolitions for high-density projects (Le Droit, 2022). For instance, between 2022 and 2023, Gatineau's median single-family home price increased from an estimated \$400,000 to \$450,000, a 12.5% rise, with Vieux-Hull's central location amplifying demand for land that can be developed (WOWA.ca, 2022). This price surge pressures low-income residents, particularly in areas like rue Garneau, where Allumette houses face replacement with modern condominiums (see Figure 9). Renovations and accessory dwelling units (ADUs), while promoting density, may exclude original working-class residents if costs outpace subsidies. Municipal narratives, as articulated by Mayor Maude Marquis-Bissonnette and Minister Mathieu Lacombe, frame Allumette preservation as vital to Gatineau's identity, with promises of financial aid and stricter regulations (Radio-Canada, 2024b). However, the approval of demolitions and reliance on private developers for heritage-inspired designs suggest a pragmatic compromise, prioritizing economic viability over comprehensive preservation. These trends highlight the need for a comprehensive socio-economic review of gentrification risks to assess the displacement of Vieux-Hull's working-class communities, a critical area for future research.

In summary, Gatineau's management of Allumette houses navigates a complex balance between preserving their cultural heritage and addressing modern urban demands, reflecting a multifaceted approach that integrates preservation, adaptation, and selective redevelopment. Heritage inventories and restoration guides, as recommended by the 2024 Passerelles study, aim to maintain the aesthetic and historical essence of Allumette houses, such as those on rue Garneau, fostering a collective sense of place and belonging for working-class communities (Passerelles, 2024; Norberg-Schulz, 1980). Similarly, accessory dwelling unit (ADU) conversions incentivize densification while aligning with shelter's role as an essential of life, enabling higher-level needs like social cohesion, as seen in Maslow's hierarchy adapted for municipal services (Maslow 1943; Passerelles, 2024). These efforts, exemplified by heritage-inspired rebuilding projects (see Figure 9), underscore Gatineau's commitment to urban livability amid hyperurbanization pressures (FRAPRU, 2022).

Nevertheless, financial and social challenges threaten the sustainability of these initiatives. Municipal budgets, constrained by reliance on property taxes and rising infrastructure costs, limit funding for preservation and affordability programs, placing Allumette houses at risk of becoming inaccessible to their original residents (Union des municipalités du Québec 2025; Passerelles, 2024). The tension between economic viability and heritage preservation, evident in the city's pragmatic reliance on private developers, echoes the socio-economic struggles of the 19th-century working-class communities that built these homes (Passerelles, 2024). To ensure Allumette houses remain viable as both essentials of life and quality-of-life enhancements, a comprehensive socio-economic review of gentrification risks is essential, offering a critical direction for future research to safeguard Gatineau's cultural and social fabric.

#### *Modern Handling of Khrushchevka Buildings in Warsaw, Białystok, Kaunas, and Vilnius*

Khrushchevka apartment buildings, constructed across the Soviet Bloc from the 1950s to 1970s as temporary housing for industrial workers, face significant challenges in adapting to modern urban needs, mirroring the preservation and densification issues of Gatineau's Allumette houses. With Warsaw and Vilnius as national capitals and Białystok and Kaunas having populations similar to Gatineau's, around 300,000 inhabitants (Statistics Canada, 2022b; GUS, 2023; Statistics Lithuania, 2023), these cities provide a comparative framework for analyzing heritage and densification. Strategies in these former Soviet-bloc cities include energy-efficient renovations to improve livability and selective demolitions for higher-density buildings, often retaining grid-like facades to honour their Soviet-era aesthetic. These approaches reflect efforts to balance heritage with urban growth, but regional variations and displacement risks highlight ongoing tensions, similar to those seen in Gatineau's working-class neighbourhoods.

#### *Renovation and Energy-Efficient Upgrades*

In the Baltic states and Poland, energy-efficient retrofitting is a common strategy for Khrushchevkas, driven by EU funding and national policies to reduce energy costs. In Vilnius, neighbourhoods like Šeškinė and Fabijoniškės have seen renovations involving facade insulation, new windows, and heating system upgrades, reducing energy consumption by up to 50% (Hess and Tammaru, 2019). Kaunas' Kalniečiai district has similar projects, with prefabricated insulation panels and solar installations improving thermal performance, though costs of

€15,000–€40,000 per unit often burden private owners (Kuusk and Kurnitski, 2019). In Warsaw, Praga-Północ and Targówek Khrushchevkas undergo retrofits with EU-backed grants, focusing on insulation and ventilation to address poor original construction (Kowalczyk, 2017). In Białystok, the 2017–2023 Municipal Revitalization Program prioritized renovations of Khrushchevka-style apartments in Osiedle Białostoczek to address dilapidation, including thermal modernization of facades and heating systems, alongside selective demolitions for modern multi-unit buildings (Urząd Miejski w Białymstoku, 2017). Osiedle Piasta and Dziesięciny, developed in the 1970s with concrete panel buildings, are recognized as Khrushchevka estates and are likely undergoing similar modernization efforts to improve technical conditions, as inferred from city-wide revitalization trends in Białystok (Frankowska, 2008; Urząd Miejski w Białymstoku, 2017). These municipal-led initiatives reflect Poland’s broader urban renewal trends (Kowalczyk, 2017), balancing heritage preservation with densification, though limited funding constrains affordability for low-income residents, paralleling Gatineau’s Allumette house challenges (Passerelles, 2024). These renovations parallel Gatineau’s Allumette ADU conversions, as both aim to extend the life of aging structures while enhancing functionality, though high costs limit accessibility.

### *Demolition and Heritage-Inspired Redevelopment*

Demolition is more prevalent in Poland than in Lithuania due to differing economic and policy contexts. In Warsaw, urban renewal in the 2010s involved selective demolitions and renovations of Khrushchevka-style apartments in areas like Praga-Północ, driven by market demands and contributing to gentrification (Dudek-Mańkowska and Iwańczak 2018). In Vilnius and Kaunas, high private ownership rates (over 80%) discourage demolition, as seen in Kaunas’ Dainava district, where renovated Khrushchevkas dominate due to cost-prohibitive rebuilding (Kuusk & Kurnitski, 2019). This mirrors Gatineau’s selective demolition of Allumette houses, where new multi-unit buildings incorporate narrow wooden facades, balancing heritage with densification.

### *Case Study: Vilnius’ Šeškinė District*

In Vilnius’ Šeškinė district, a Soviet-era estate built in the 1970s with over 200 Khrushchevka buildings, a 2023 municipal initiative funded by the EU’s Horizon 2020 program has transformed

120 buildings into energy-efficient structures, such as the one shown in Figure 11. Renovations include facade insulation, modernized heating systems, and green roofing, achieving 45% energy savings and enhancing public spaces with new courtyards (European Commission, 2025). The project, supported by Vilnius University’s urban planning research, used 3D laser scanning to ensure precise retrofits, similar to Tallinn’s Mustamäe but tailored to Šeškinė’s denser layout (European Commission, 2025). Despite these advancements, high costs and resident contributions (up to €10,000 per household) have raised concerns about affordability, with some elderly residents facing financial strain or relocation (Hess & Tammaru, 2019). This case parallels Gatineau’s Vieux-Hull, where Allumette renovations also struggle with cost barriers and heritage preservation.



[ Figure 11 – Khrushchevka retrofitting in Lithuania, example from Vilnius’ Šeškinė district (Vavilova and Zhdanova, 2017; European Commission, 2025)]

### *Regional Variations and Displacement Concerns*

Regional approaches to Khrushchevka-style apartments vary significantly. In Warsaw, the market-driven economy encourages redevelopment, including selective demolitions and renovations of older housing stock in central areas like Praga-Północ, where rising property values drive gentrification, often displacing long-term residents (Dudek-Mańkowska and Iwańczak, 2018). In contrast, Vilnius and Kaunas benefit from EU subsidies, enabling widespread retrofits, but private ownership complicates coordination, as seen in Kaunas’ Šilainiai district (Kuusk and Kurnitski, 2019). Like Gatineau’s Allumette houses, where gentrification in Vieux-Hull threatens working-class communities, Khrushchevka neighbourhoods, including Białystok’s Osiedle Białostoczek, face displacement risks as renovated or redeveloped areas attract wealthier residents (Urząd Miejski w Białymstoku, 2017; Passerelles, 2024). In Vilnius,

apartments in renovated Šeškinė Khrushchevkas now sell for €1,500–€2,000 per square meter, pricing out original occupants (Ober-Haus Real Estate Advisors, 2019). Critics argue that without robust social housing policies, both regions risk eroding the working-class identity of these neighbourhoods (Hess and Tammaru, 2019; Passerelles, 2024).

### *Parallels with Allumette Houses*

Khrushchevkas and Allumette houses share origins as pragmatic, temporary solutions for working-class housing, now challenged by modern densification needs. Gatineau’s ADU conversions and Vilnius’ energy-efficient retrofits both aim to modernize aging structures while preserving heritage elements (narrow facades vs. grid-like patterns). However, both face high renovation costs and gentrification pressures, risking displacement of original residents. Warsaw’s demolition-heavy approach contrasts with Kaunas and Vilnius’ renovation focus, similar to Gatineau’s mixed strategy of preservation and selective redevelopment. These parallels underscore the challenge of adapting utilitarian housing to contemporary needs while honouring its historical role in supporting industrial communities.

### *Conclusion: Heritage, Densification, and Affordability in Allumette and Khrushchevka Housing*

The preservation and adaptation of Allumette houses in Gatineau, Québec, and Khrushchevka buildings in cities like Warsaw, Białystok, Kaunas, and Vilnius embody a delicate balance between honouring working-class heritage and addressing modern urban challenges. Both housing types, born from the urgent need to house industrial workers in the late 19th to mid-20th centuries, reflect democratic and socialist values of collective equity, providing affordable shelter to under served communities (Passerelles, 2024; Smith, 2010). Their utilitarian designs—narrow wooden facades in Gatineau and grid-like concrete panels in the Soviet Bloc—stand as testaments to a working-class ethos prioritizing function over ornamentation. Yet, these structures now face pressures from a bourgeois aesthetic of urban beauty, which favours polished, high-density developments and often clashes with their modest origins. This cultural tension profoundly shapes their modern handling, as municipalities and developers navigate heritage preservation, densification, and affordability.

Preserving Allumette and Khrushchevka heritage supports collective equity by maintaining

tangible links to the working-class histories that shaped industrial urban landscapes. In Gatineau, efforts to list Allumette houses in heritage inventories and restore their wooden aesthetics uphold the city's identity as a lumber and paper hub (Passerelles, 2024). Similarly, in Vilnius and Kaunas, energy-efficient retrofits of Khrushchevkas, like those in Šeškinė, preserve Soviet-era grid-like facades, honouring the socialist ideal of universal housing (Hess & Tammaru, 2019). These preservation strategies align with UNESCO's (2016) emphasis on urban heritage as a tool for social cohesion, fostering community pride and continuity. However, the bourgeois aesthetic—evident in Warsaw's selective demolitions for modern buildings in areas like Praga-Północ (Dudek-Mańkowska and Iwańczak, 2018) or Gatineau's heritage-inspired multi-unit buildings—often prioritizes market-driven urban beauty over the raw, functional character of these structures, risking the erasure of their working-class ethos (Kalyukin & Kohl, 2019). This clash manifests in developer pressures to demolish aging structures for profitable, upscale projects, as seen in Vieux-Hull's 207 rue Notre-Dame-de-l'Île case or Warsaw's Praga-Północ demolitions (Passerelles, 2024; Kowalczyk, 2017).

Densification, a pressing need in both regions, addresses housing shortages but exacerbates the cultural divide. Gatineau's conversion of Allumette houses into ADUs or duplexes and Vilnius' retrofitting of Khrushchevkas into "smartkovkas" increase urban density while attempting to retain heritage elements (Société d'habitation du Québec, 2022; European Commission, 2025). These strategies satisfy stakeholders—municipalities, residents, and developers—by blending functionality with aesthetic integration, such as replicating narrow facades or grid-like patterns in new designs. However, high renovation costs (\$60,000–\$150,000 for Allumette ADUs, adjusted from Passerelles, 2024's \$50,000–\$90,000 for inflation and structural upgrades; €15,000–€50,000 for Khrushchevka retrofits) threaten affordability, particularly for low-income residents, mirroring the original working-class communities these houses served (Passerelles, 2024; Kuusk & Kurnitski, 2019). Gentrification, driven by rising property values in Vieux-Hull or Vilnius' Šeškinė (where renovated Khrushchevkas reach €1,500–€2,000/m<sup>2</sup>), risks displacing these communities (Ober-Haus Real Estate Advisors, 2019; Hess and Tammaru, 2019).

To reconcile these tensions, affordability must be prioritized through robust policy interventions. In Gatineau, expanding tax incentives for accessory dwelling unit (ADU) conversions, as

proposed in the City's 2025 plan, could offset renovation costs, enabling working-class homeowners to remain in Vieux-Hull (Québec, MAMH 2022). Similarly, zoning reforms to allow mixed-use developments with affordable units could mirror EU-subsidized retrofits in Kaunas and Vilnius, ensuring Khrushchevka apartments remain accessible (Vavilova & Zhdanova, 2017). These measures align with the democratic and socialist principles embedded in both Allumette and Khrushchevka housing, countering the exclusionary impact of bourgeois aesthetics. For instance, limited renovation funding in Vilnius and Kaunas highlight the need for equitable investment to prevent speculative redevelopment, a lesson Gatineau could apply to avoid Vieux-Hull's gentrification pitfalls (Hess and Tammaru, 2019).

Ultimately, the handling of Allumette and Khrushchevka housing reflects a broader struggle between preserving a working-class ethos and embracing a bourgeois urban ideal. By prioritizing heritage-inspired designs, affordability through subsidies, and inclusive zoning, municipalities can honour the equitable roots of these structures while meeting modern housing demands. Gatineau could lead by implementing tax incentives for ADU renovations and stricter demolition regulations, ensuring Allumette houses remain a living legacy rather than a bourgeois facade. Similarly, Warsaw, Białystok, Kaunas, and Vilnius must expand subsidies and social protections to preserve Khrushchevkas as affordable, functional homes, not merely relics of a socialist past. Balancing these priorities ensures that heritage, densification, and affordability coexist, sustaining the democratic spirit of collective equity for future generations.

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**Accessible & Attractive Wayfinding Renewal for Metrorrey:  
A World Cup–Driven Project**

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## **Accessible & Attractive Wayfinding Renewal for Metrorrey: A World Cup–Driven Project**

### **Abstract**

Monterrey is leveraging the 2026 FIFA World Cup as a catalyst to improve its urban transit infrastructure. A major initiative is underway to modernize the Metrorrey metro system, including renewing wayfinding across existing Lines 1–3 and designing signage for new Lines 4 and 6 scheduled to open by 2026. These World Cup–driven upgrades address the immediate need to guide an influx of visitors while aligning with long-term urban mobility goals.

The redesign combines universal accessibility and local cultural identity to create an inclusive, attractive wayfinding system. A new design manual integrates accessibility features—clear visual cues, Braille/tactile elements, intuitive maps—with aesthetic enhancements to signage and station environments. Notably, heritage-inspired pictograms for each station are being introduced, drawing on the model of Mexico City’s Metro, where unique icons reflect cultural heritage and aid navigation, thus transforming wayfinding into an artful placemaking element that fosters community memory and pride. In parallel, key stations are being upgraded with better lighting, greenery, and pedestrian-friendly access to ensure safe, inviting “first and last mile” connections. This human-centered approach improves usability for all—including people with disabilities—and projects a modern, welcoming image of the city.

Monterrey’s experience shows that investing in accessible, well-designed transit infrastructure contributes to healthier, more livable cities. The new wayfinding system encourages transit use and walking by making city navigation effortless, supporting walkability and a sustainable urban form. Emphasizing universal design ensures the metro’s benefits are

shared by all users, aligning with the New Urban Agenda and the principle of “Access for Everyone.” By timing these upgrades with a global event, the project exemplifies rapid urban improvements that will leave a lasting legacy beyond the World Cup—inclusive mobility, enhanced public spaces, and a strengthened urban identity for Monterrey.

### **Context**

Monterrey stands at a pivotal moment in its urban development trajectory. As one of Mexico’s most dynamic metropolitan regions, it has long grappled with the paradox of rapid economic growth paired with mounting mobility challenges. High levels of car dependency have congested its road networks, sprawling urban expansion has lengthened commutes, and integration among different transit modes has remained limited. Public transport options exist, but they are often fragmented, underused, or difficult for new riders to navigate with confidence. Against this backdrop, the city has been awarded the role of host for matches in the 2026 FIFA World Cup, an event that will draw global attention and bring tens of thousands of visitors into the metropolitan area. For Monterrey, this occasion is not merely a sporting spectacle but an opportunity to rethink how its mobility systems present themselves to the world and how they serve their residents in the decades ahead.

At the core of this opportunity is Metrorrey, the city’s metro system. With three operational lines and two more—Lines 4 and 6—under construction, Metrorrey forms the backbone of Monterrey’s mass transit. It connects dense central districts with peripheral neighborhoods and integrates with other modes such as Transmetro feeder buses, Ecovía’s bus rapid transit lines, and the slowly growing network of bicycle paths and pedestrian corridors. Yet despite its centrality, Metrorrey has long struggled with a reputation for being difficult to navigate. Passengers encounter inconsistent signage from one station to another, maps with

irregular geometries that confuse more than they clarify, and a proliferation of prohibitive messages that clutter the visual environment. Affirmative guidance is often absent, leaving users unsure whether they are traveling in the right direction. For a city expecting an influx of global visitors, many unfamiliar with Spanish, such shortcomings present not only an inconvenience but a reputational risk.

The World Cup thus becomes a catalyst for a fundamental renewal of wayfinding. The project goes beyond installing new signs; it seeks to create a comprehensive system of orientation that aligns with international best practices, embodies Monterrey's cultural identity, and ensures accessibility for every rider. By treating wayfinding as an integrated system rather than a collection of isolated pieces, the city intends to solve not just the immediate challenge of guiding international visitors during the tournament, but the long-term need to make public transport legible, attractive, and inclusive. This vision resonates with global urban agendas, including the principle of "Access for Everyone" articulated in the New Urban Agenda (UN-Habitat, 2017), which emphasizes the role of inclusive mobility in creating healthier, more sustainable cities.

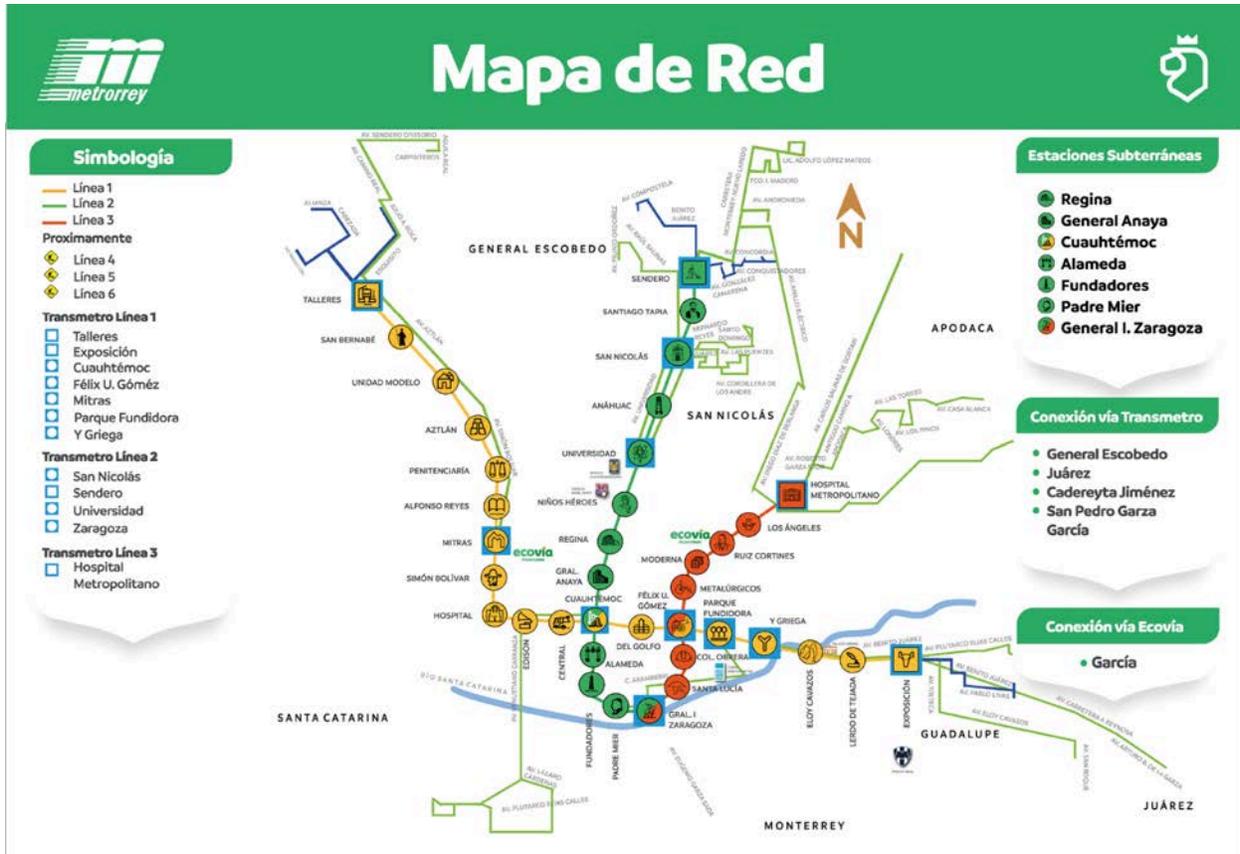
The renewal is also a response to local realities. Monterrey's growth has been accompanied by socioeconomic diversity, and Monterrey carries a wide range of passengers: daily commuters rushing between work and school, residents who use the system occasionally, tourists drawn to cultural events or sporting fixtures, and people with disabilities who require accessible infrastructure but too often encounter barriers. Designing a wayfinding system for such a heterogeneous population means embracing universal design, ensuring that information is perceptible, understandable, and actionable regardless of language ability, literacy level, or

physical capacity. This is not only a matter of compliance with accessibility laws but a matter of equity and dignity.

The diagnosis of the existing system left little doubt about the need for change. In some stations, signage had aged to the point of being unreadable. Colors faded, dovela panels became dated, and information was patched in ad hoc ways, resulting in environments that looked improvised rather than planned. Arrows sometimes pointed downwards, a practice known to confuse riders, particularly those unfamiliar with local conventions. Maps did not follow consistent geometries, making it difficult to form a mental model of the network. Regulatory signs multiplied, warning passengers of what not to do while offering little affirmation of where to go. For occasional riders and tourists, these flaws were intimidating. For people with disabilities they were exclusionary. For daily commuters, they simply added friction to an already demanding routine.

**Figure 1.**

*An earlier version of the Metrorrey network diagram*



*Note.* An earlier version of the Metrorrey network diagram is shown. Due to the large number of elements, the map has been difficult to read and understand. It shows the previous configuration and design of the system.

It is within this context that Monterrey's decision to tie the renewal of Metrorrey's wayfinding system to the World Cup acquires strategic importance. The timeline imposes urgency, the global spotlight demands quality, and the long-term needs of the city ensure that the project cannot be reduced to a temporary fix. What is being built is a living system, one that must endure beyond 2026, expand with new lines, adapt to technological changes, and continue to project a coherent identity for decades to come.

## Guiding Principles

The vision of a renewed wayfinding system for Metrorrey is grounded in a set of principles that translate aspirations into concrete design decisions. These principles are not abstract declarations but working rules that emerged from diagnosis, benchmarking, and iterative design discussions. Together, they frame wayfinding as more than a technical necessity: it is a civic language that communicates inclusion, reliability, and identity.

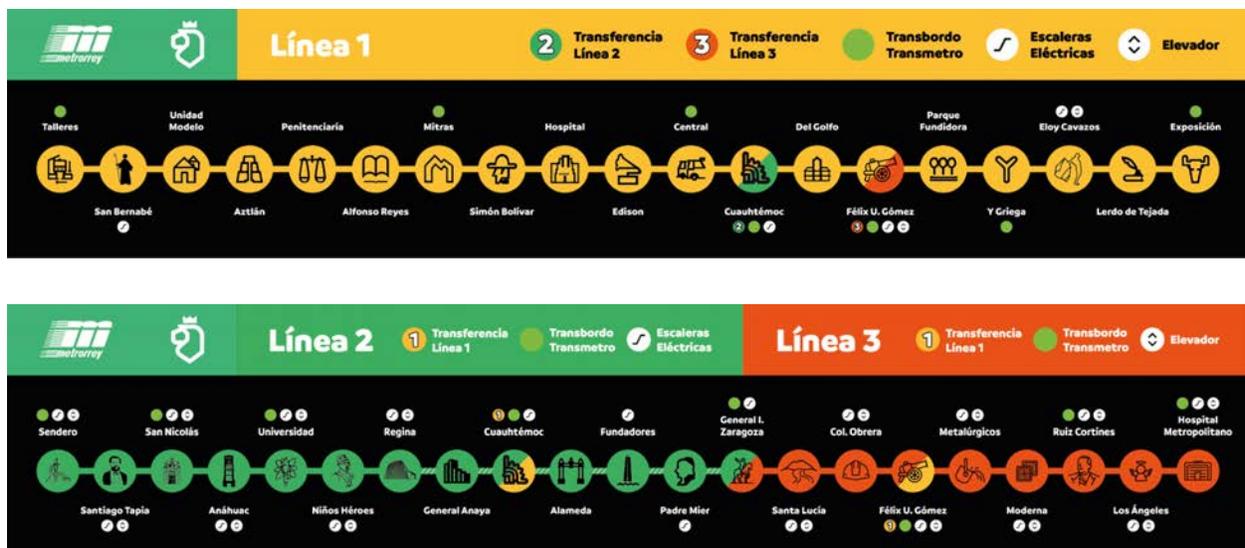
At the foundation is accessibility, understood in its broadest sense. The design process adopts the philosophy of universal design, which holds that environments should be inherently usable by all people without the need for special adaptation. This translates into a commitment to redundancy across sensory channels so that no passenger is excluded. Information about direction or orientation is never delivered in a single modality; text is accompanied by pictograms, visual maps are paired with tactile or Braille elements, and critical instructions are reinforced by audio. Signage employs sans-serif typography with open counters and generous spacing, while minimum font sizes are calibrated to viewing distance. Contrast ratios are strictly enforced to meet or exceed international accessibility standards. Confusing downward arrows that appeared in legacy signage are eliminated in favor of universally recognized upward or horizontal cues, simplifying comprehension for both local riders and international visitors. Elevators, ramps, and other accessible routes are highlighted with equal clarity, signaling that the system is designed to be barrier-free. These commitments embody the principle of “Access for Everyone” articulated in the New Urban Agenda (UN-Habitat, 2017), making inclusivity not an afterthought but a structural premise.

Equally important is the pursuit of consistency. In the legacy system, passengers encountered a patchwork of visual messages: typography changed from one station to another, colors shifted subtly or dramatically, and maps adopted varying geometries. The renewal rejects

this improvisational approach in favor of a disciplined visual grammar. Metrorrey’s institutional green remains the cornerstone of its identity, but to enhance legibility and provide contrast, it is paired with black and white as grounding colors. Dovela panels that once appeared faded are now redesigned with black backgrounds that maintain freshness and durability. Diagrammatic maps follow a strict geometry of forty-five and ninety-degree angles, ensuring clarity and scalability as new lines are introduced. Terminology is standardized so that a single function is always described in the same way, whether in Spanish or through pictograms. Information is categorized into clear families—directional, confirmation, regulatory, safety—so that passengers can intuitively prioritize what they see. By encountering a coherent system rather than a fragmented one, riders gain confidence that the system is reliable and trustworthy.

**Figure 2.**

*Dovela diagram*



*Note.* Schematic representation of the Metrorrey network, installed inside the cars as an orientation tool to locate the user within the system.

Another defining principle is the integration of cultural identity. The design team drew inspiration from Mexico City's Metro, whose iconic pictograms for each station have become part of the city's collective memory. Monterrey now adopts a similar strategy, creating heritage-inspired pictograms that represent local landmarks, historical references, or cultural narratives. These icons perform a functional role by aiding non-Spanish speakers and low-literacy users, but they also perform a symbolic one by embedding Monterrey's identity into the fabric of daily mobility. A station is no longer just a point on a map; it is a node in a civic story, remembered through a simple yet meaningful image. For locals, these icons strengthen attachment to place; for visitors, they offer a way to connect with Monterrey's culture even while in transit. In this way, wayfinding becomes not only a navigational tool but a form of placemaking.

Human-centered design underlies every choice. Rather than designing for abstract "users," the project team modeled actual journeys: the daily commuter rushing to make a transfer, the occasional rider attending a cultural event, the tourist seeking the stadium during the World Cup, the blind passenger navigating independently, the crowd responding to an emergency. Each scenario was used as a test of clarity and inclusivity. Decision points within stations are treated as high-stress nodes where information must be instantly available. Confirmation signage follows decision points to reassure passengers that they are moving correctly. Lighting, greenery, and the configuration of station peripheries are considered part of the navigational experience, guiding the first and last steps as much as those inside platforms. By grounding decisions in real use cases, the design ensures that the system does not remain theoretical but becomes genuinely usable.

Finally, the renewal treats governance as a principle in itself. A well-designed system can quickly deteriorate if not supported by rules, tools, and oversight. The design manual provides specifications for all contractors and vendors, but it is accompanied by asset libraries, update protocols, and maintenance schedules to ensure continuity. Templates for maps and panels are modular, enabling updates without redesigning from scratch. Digital repositories use version control so that outdated pictograms or layouts are retired systematically. Maintenance cycles distinguish between preventive tasks such as cleaning and corrective responses to damage, with timelines that guarantee swift replacement. Staff and vendors undergo training that integrates both technical specifications and cultural understanding of the system's values. By embedding governance into the design itself, the project seeks to prevent the drift that plagued the legacy system and ensure that wayfinding remains coherent for decades.

Together, these principles—accessibility, consistency, cultural identity, human-centered design, and governance—form the backbone of Monterrey's wayfinding renewal. They transform wayfinding from a utilitarian exercise into a statement about what kind of city Monterrey aspires to be: inclusive, legible, distinctive, and future-oriented.

### **Navigation Experience**

The true measure of any wayfinding system lies not in the elegance of its manuals or the precision of its specifications, but in the lived experience of those who navigate with its guidance. For this reason, the Monterrey renewal project approached design through the lens of modeled journeys, asking how different types of users would interact with the system from entrance to exit, under both ordinary and extraordinary circumstances. These journeys illustrate how principles of accessibility, consistency, cultural identity, human-centered design, and governance manifest in practice.

For the daily commuter, the system must offer speed and reliability. Picture an office worker traveling each morning from San Bernabé to Niños Héroes, transferring between lines in a rush to make it to work on time. In the old system, entrances were inconsistent, fare information was scattered, and transfer corridors were confusing. In the renewed environment, entrances are marked by standardized totems and station pictograms visible at a distance, making recognition immediate even in a crowded streetscape. Fare information is consolidated on modular panels, placed at eye level with clear icons that reduce transaction time. Transfer corridors use upward and horizontal arrows, never downward, eliminating the misinterpretations that previously plagued orientation. After each decision point, an affirmative sign confirms direction, lowering cognitive load for those who ride daily. For commuters, who already know their routes, these measures do not teach them something new but remove friction and mental effort, allowing them to focus on their day rather than on wayfinding.

For the occasional rider, the challenge is different. A resident who seldom uses the metro, perhaps to attend a cultural event downtown, must rebuild familiarity each time. In the legacy system, irregular maps and inconsistent station signage left many feeling like outsiders in their own city. The renewed system provides a clear network diagram built on geometric discipline, with consistent spacing and lines constrained to forty-five and ninety degrees. This rationalization allows the occasional user to quickly form a mental model of the system. Station pictograms add a mnemonic layer, enabling riders to remember destinations visually even if they forget station names. Ticketing instructions use icons alongside text, so procedures feel intuitive. The result is confidence restored, a sense that even those unfamiliar with the system can participate in it without stress.

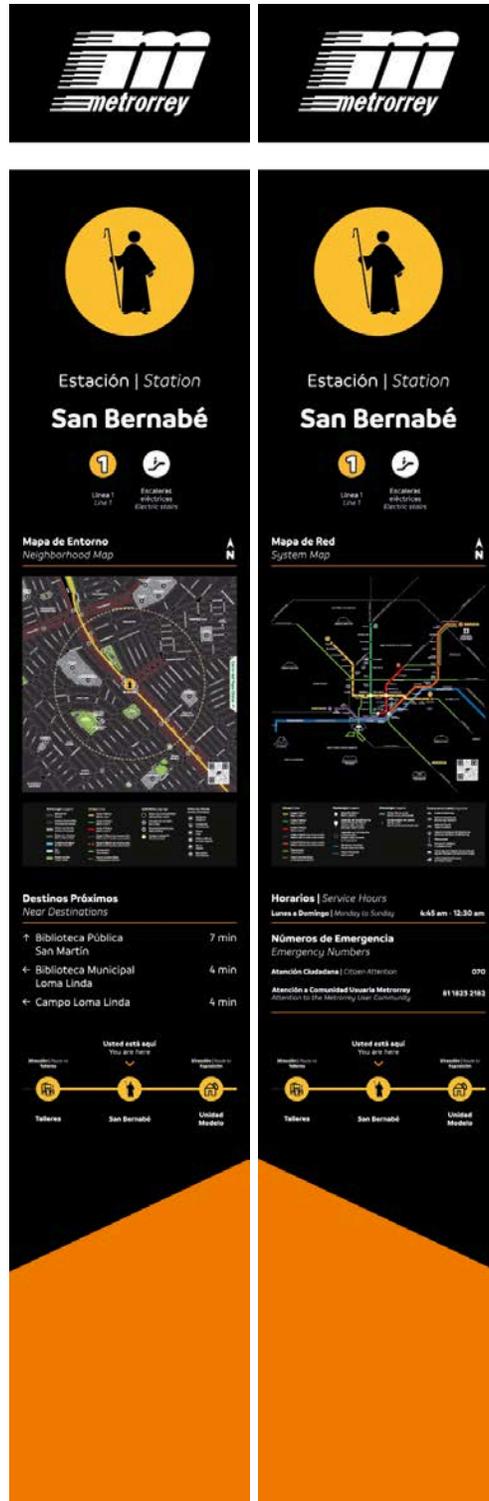
For tourists, particularly the influx expected during the World Cup, the stakes are higher. Many will arrive with limited or no Spanish proficiency, navigating from airports and hotels to stadiums and cultural sites. The renewed wayfinding system integrates multimodal information so that metro access points connect seamlessly with bus stands, rideshare pick-ups, and pedestrian routes. Pictograms carry the burden of communication, supplemented by bilingual text where necessary. The heritage-inspired station icons provide distinctive anchors, so a visitor can associate a pictogram of a mountain or historical monument with a destination, even if the written name is unfamiliar. Lighting upgrades and greenery at key stations not only improve safety but project an image of a modern, welcoming Monterrey. For visitors, this transformation is crucial: it allows independent travel without constant reliance on staff or locals, projecting Monterrey as a city that is both accessible and hospitable on the world stage.

The renewal also places at its core the experience of people with disabilities, whose needs are too often treated as secondary. Consider a blind passenger traveling between Universidad and Hospital. In the legacy environment, independence was limited, requiring frequent assistance. The new system embeds tactile paving that leads from sidewalks directly to station entrances, aligned with standardized entrance totems for consistency. Inside concourses, tactile maps with raised reliefs and Braille provide spatial overviews. Directional totems and station nameplates include Braille labels, embossed to international standards. On platforms and inside trains, auditory announcements of upcoming stations are paired with tactile line diagrams above doors. Elevators and ramps are clearly marked with high-contrast signage. For the blind passenger, this redundancy across senses enables true independence, reducing reliance on others and signaling respect for dignity. By designing for those with the greatest challenges, the system improves

usability for all riders, including parents with strollers, travelers with luggage, and older adults with limited mobility.

**Figure 3.**

*Totem*



*Note.* Signage totem located outside stations contains the network map, surrounding area map, a diagram of how to navigate within the network and nearby stations, main directions to the

nearest landmarks, and Metrorrey system information, such as schedules and emergency numbers.

Even under emergency conditions, the renewed system ensures clarity. Imagine a fire alarm triggering at Alameda station during peak hours. In the old system, inconsistent exit signage and poor lighting created risk. The renewed design employs high-contrast emergency signs with standardized ISO pictograms, ensuring universal comprehension. Backup illumination guarantees visibility even under power loss or smoke conditions. Exit routes follow the same directional logic as everyday navigation, so that in stressful moments, passengers rely on familiar cues rather than unfamiliar ones. Regulatory and prohibitive signs are minimized in daily contexts so that emergency signals stand out sharply when activated. In this way, the system demonstrates resilience not only during normal operation but also during crises.

The navigation experience extends beyond station interiors to encompass first and last-mile connections. A university student alighting at General I. Zaragoza to walk to campus encounters not only clear exit signage but also orientation maps with “You are here” markers that display nearby streets, landmarks, and walking routes. Exits are improved with lighting and greenery, transforming ambiguous spaces into welcoming gateways. Connections to buses, bicycle racks, and rideshare areas are clearly indicated, making the metro a seamless part of a multimodal mobility chain. This approach recognizes that the rider’s journey does not begin or end at the station doors but flows through the urban environment beyond.

Taken together, these user journeys reveal how principles come alive in practice. Accessibility enables independence for those with disabilities; consistency reassures commuters and occasional riders; cultural identity provides anchors for tourists and locals alike; human-centered design reduces stress in both routine and emergency situations; and governance

ensures that these benefits persist over time. Wayfinding, in this sense, becomes not just about signs but about how people feel as they move through the city—confident, safe, and connected.

### **System Elements**

A comprehensive wayfinding system is not an abstract idea but a collection of tangible elements that, when designed consistently, form an intelligible whole. Each component plays a distinct role: maps offer overviews, directional signs guide choices, affirmative messages provide reassurance, regulatory signage enforces rules, safety elements protect under stress, pictograms embody identity, typography and color provide coherence, and materials and lighting ensure durability. When these elements align within a unified visual grammar, passengers experience clarity rather than confusion, trust rather than doubt.

The network map lies at the heart of orientation. In Monterrey's legacy system, maps were often cluttered, with irregular line geometries that made it difficult to form a mental model of the network. The renewal introduces diagrams governed by strict geometry, limiting line angles to forty-five and ninety degrees. This seemingly simple decision has profound implications: it creates rationality, scalability, and visual clarity, enabling passengers to comprehend the system quickly and extending usability as new lines, such as Lines 4 and 6, are added. The network map is displayed prominently in concourses, above platforms, and inside vehicles, so that passengers can reference it during all phases of a trip.

### **Figure 4.**

*New version of the Metrorrey network diagram*

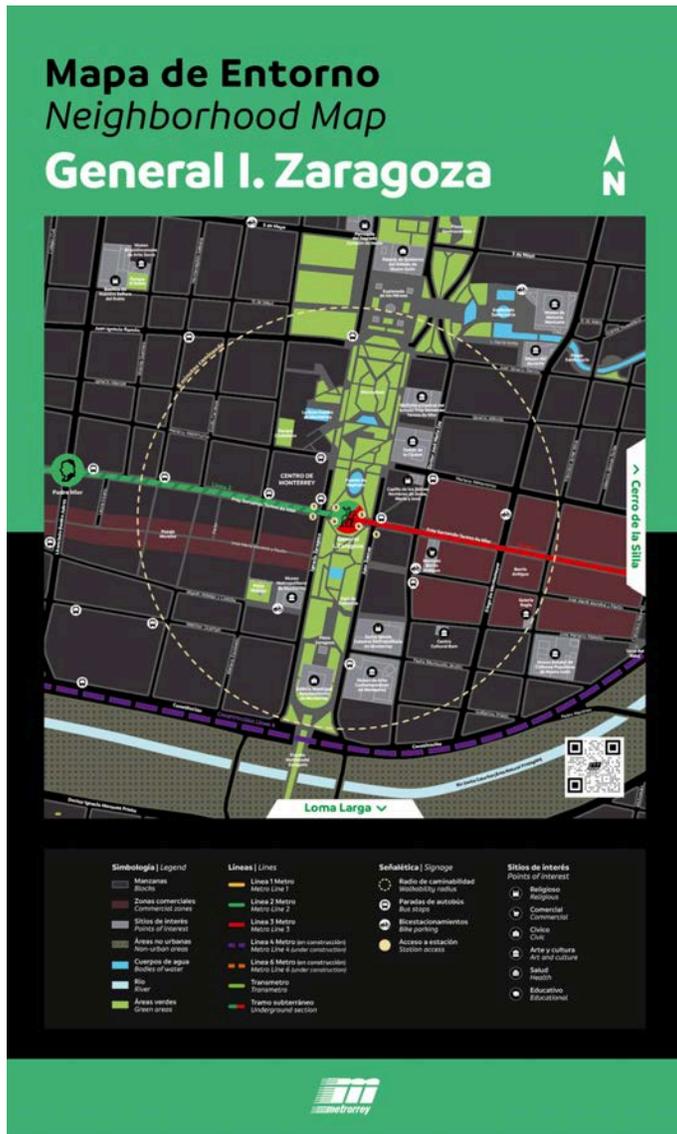


*Note.* The Network Map is a schematic representation of the current Metrorrey network, showing all lines (in operation and under construction), stations, transfers and interchanges, as well as the city's main landmarks and their relationship to the hills.

Beyond the system overview, vicinity maps help riders connect stations to the city itself. These “You Are Here” diagrams display exits, nearby streets, landmarks, and transfer opportunities. They are designed with a consistent cartographic style and symbol library, ensuring that whether a station is in the dense urban core or a less built-up periphery, the maps feel coherent. Internal design discussions recognized the challenge of balancing detail: central stations must not be overwhelmed with excessive information, while peripheral stations must not appear empty. The solution lies in the consistency of design rules and thoughtful calibration of scale.

**Figure 5.**

Vicinity map



Note. Vicinity Map shows the location map showing the relationship of Metrorey stations to their immediate external context, considering landmarks, roads, green areas, commercial and industrial zones, and including a 5-minute walk radius to guide users when exiting the station.

Fare and service information, too, has been reorganized into modular panels. In the past, riders confronted a confusing array of posters and signs announcing timetables, fares, or rules in inconsistent formats. The renewed system consolidates this information into structured panels

that are clear, replaceable, and uniform across the network. This modularity ensures that when fares change or schedules adjust, updates can be made without redesigning entire boards, supporting efficiency and governance.

Directional and orientation signage forms the next layer. Arrows are standardized to upward and lateral positions, eliminating downward arrows that caused misinterpretation. At each decision point within a station, a sign directs the rider, and immediately afterward a confirmation sign reassures them they are moving correctly. Transfer signage is clear and consistent, marking connections not only to other metro lines but also to Transmetro buses, Ecovía, and other modes. This structure creates a predictable rhythm of information, reducing hesitation and stress.

Affirmative signage, often neglected in the past, is now central. These signs confirm direction along corridors and platforms, preventing the uncertainty that comes from relying only on occasional directional cues. By regularly reinforcing that passengers are on the correct path, affirmative signs build confidence, particularly for occasional riders and tourists unfamiliar with the network.

Regulatory and prohibitive signage is rationalized. The legacy environment often overwhelmed passengers with prohibitions, many inconsistent or poorly designed. The new approach follows a minimalist philosophy, limiting messages to what is essential: no smoking, no entry, no photography in restricted zones. Icons are standardized according to international ISO 7010 symbols, ensuring comprehension across languages and cultures. Regulatory signs are placed separately from navigational signs, avoiding visual clutter and ensuring that rules stand out without interfering with orientation.

Safety and emergency signage must function under the most demanding conditions. In the renewed system, emergency exits are clearly marked with high-contrast red backgrounds and white symbols, compliant with global standards. Backup illumination ensures that signs remain legible during power loss or smoke conditions. Evacuation maps provide simplified diagrams showing routes to safety. Fire extinguishers, alarms, and first aid stations are marked with standardized pictograms that leave no room for ambiguity. These measures address the inconsistency and neglect of the legacy system, transforming safety signage into a reliable and universal layer of communication.

Perhaps the most distinctive feature of the renewed system is its iconography. Each station is assigned a pictogram inspired by Monterrey's heritage, whether a natural landmark like Cerro de la Silla, a historic figure, or a cultural symbol. These icons are designed with simple geometry and bold lines to ensure legibility at multiple scales, from large totems outside stations to small reproductions on maps. For those with limited literacy or unfamiliarity with Spanish, the pictograms provide immediate recognition. For locals, they embed cultural memory into daily routines, transforming wayfinding into a civic art form that strengthens identity and pride.

Typography and color are the backbone of graphic identity. Sans-serif typefaces with uniform strokes and open counters maximize readability, while minimum sizes ensure visibility at distance. Monterrey's institutional green, historically central to its brand, is preserved but paired with black and white contrasts that provide clarity and durability. Internal debates confirmed that green alone was insufficient, particularly for printed materials where color reproduction varied. Black backgrounds for dovela panels ensure long-term freshness, while line colors are carefully assigned to avoid confusion and maintain harmony—for example, Line 6 is designated orange and Line 3 red, freeing blue to represent the Santa Catarina River. These

choices combine tradition with functionality, preserving institutional memory while enhancing usability.

Materials and lighting support both resilience and comfort. Durable substrates coated with anti-graffiti treatments extend the life of signs and reduce maintenance burdens. Reflective and backlit elements ensure visibility under all conditions. Mounting heights are standardized, eliminating the ad hoc placements that once varied across stations. Stations' exits are enhanced with pedestrian-scale lighting and greenery, ensuring that wayfinding extends into the first and last mile. Together, material and environmental design elements contribute not only to usability but also to the aesthetic quality of the system, projecting a modern and welcoming image.

When viewed together, these elements form a layered wayfinding environment. The network map provides an overview, vicinity maps connect to context, directional signs guide decisions, affirmative signs reassure, regulatory messages protect, emergency signage secures, pictograms symbolize, typography and color unify, and materials and lighting sustain. None of these elements functions in isolation; their strength lies in their consistency and integration. This coherence transforms wayfinding from scattered cues into a structured information landscape that passengers can trust.

### **Technical Criteria**

The strength of a wayfinding system rests not only on its design intent but on the rigor of its technical execution. Elegant diagrams and carefully chosen colors can fail if signs are mounted inconsistently, if contrast is insufficient, or if maintenance is neglected. For this reason, the Metrorrey renewal project embeds precise technical criteria that transform broad principles into enforceable rules. These criteria establish accessibility standards, installation guidelines,

maintenance protocols, and update mechanisms, ensuring that the system remains coherent and usable not just at launch but throughout its lifecycle.

Accessibility is translated into measurable standards that can be inspected and enforced. Signage must maintain a luminance contrast ratio of at least seventy percent, meeting benchmarks such as ISO 21542:2011 on accessibility of the built environment. Font sizes are scaled to distance, with minimum letter heights of fifty millimeters for information intended to be read at ten meters. Typeface selection is restricted to sans-serif fonts with open counters and uniform strokes, avoiding decorative or condensed designs that reduce legibility. Tactile elements are integrated across the system: raised-relief vicinity maps are installed in concourses at heights accessible to wheelchair users, typically between one thousand and twelve hundred millimeters. Braille is included on station nameplates, directional totems, and elevator labels, embossed according to NOM-008-SSA3-2010 in Mexico and ADA standards in the United States. Every critical message is delivered through at least two sensory channels, so that visual cues are reinforced by tactile or auditory signals. In this way, universal design becomes a set of practical standards rather than aspirational rhetoric.

Installation guidelines are equally precise. Directional signs are mounted consistently between 2.1 and 2.3 meters from the floor to the bottom edge, high enough to be visible above crowds but low enough to remain within comfortable reading range. Tactile maps are positioned between one and 1.2 meters for accessibility. Signs are oriented perpendicular to passenger flow at decision points, ensuring maximum legibility, and never at oblique angles that require effort to interpret. Clear zones of at least half a meter are preserved around signage, preventing obstruction by structural elements or advertising. Lighting is considered integral: signs are either placed under sufficient ambient light or designed with backlighting to guarantee legibility at all

times. These rules eliminate the improvisational mounting practices that plagued the legacy system, where signs appeared at inconsistent heights, orientations, and contexts.

Maintenance is structured around preventive and corrective protocols. Preventive cycles include monthly cleaning to prevent grime and maintain visibility, weekly checks of illuminated or backlit signs to ensure lighting remains operational, and the reapplication of anti-graffiti coatings every three years to extend durability. Corrective protocols mandate that damaged or vandalized signs be replaced within forty-eight hours of being reported, minimizing periods of dysfunction. Content updates, such as fare changes or timetable adjustments, are managed through modular panels that allow swift replacement without requiring wholesale redesigns. Annual audits compare installed signage against the official asset library, identifying inconsistencies or drift from standards. These measures ensure that the system does not degrade gradually into a patchwork, but remains faithful to its design intent.

Update protocols, prepare the system for future growth, particularly with the imminent addition of Lines 4 and 6. Templates for maps and panels are created as modular parametric files, allowing new lines or stations to be inserted efficiently without redrawing entire diagrams. Line colors are predefined and codified, preventing ad hoc choices that compromise visual harmony. Digital asset libraries use version control to manage changes, ensuring that outdated icons or layouts are retired systematically. A formal change control process requires that new signage requests be validated by a central authority before fabrication, embedding governance into expansion. These mechanisms respond to the lessons of the legacy system, where uncoordinated updates produce inconsistency, and ensure that growth strengthens rather than weakens coherence.

Compliance with norms situates Metrorrey's renewal within national and international frameworks. Mexican law, including the Ley General para la Inclusión de las Personas con Discapacidad and NOM-008-SSA3-2010, provides the baseline for accessibility. Internationally, the project aligns with ISO 21542 on built environment accessibility, ISO 7010 on safety symbols, ADA standards for accessible design in the United States, and European EN 81-70 standards for vertical circulation. These standards are not simply legal obligations but tools for benchmarking against global best practices, ensuring that the system is intelligible not only to locals but also to international visitors.

Technical criteria, therefore, convert values into rules. Accessibility becomes ratios, dimensions, and tactile specifications. Consistency becomes heights, orientations, and clearance zones. Governance becomes audits, version control, and change management. Maintenance becomes cycles of cleaning, inspection, and replacement. Together, these standards safeguard the system against entropy, ensuring that the clarity and inclusivity promised by design persist through years of use and expansion.

### **Normative Framework in the Mexican context**

A project of this scale and visibility must rest on more than aesthetic ambition or technical ingenuity; it must be anchored in a normative framework that ensures legal compliance, international benchmarking, and scholarly legitimacy. The renewal of Metrorrey's wayfinding system therefore situates itself within a constellation of national laws, global standards, comparative case studies, and academic discourses that together form a foundation of credibility and resilience. This framework guarantees that decisions are not arbitrary, that they respond to obligations as well as aspirations, and that they can withstand scrutiny both locally and internationally.

Nationally, the system aligns with the Ley General para la Inclusión de las Personas con Discapacidad, enacted in 2011, which affirms the right of people with disabilities to access public infrastructure on equal terms with others. While often unevenly implemented, the law provides a clear mandate: transit systems must not only accommodate but proactively design for inclusion. Technical guidance is reinforced by NOM-008-SSA3-2010, a Mexican norm originally written for health facilities but widely applied in public infrastructure to regulate tactile and Braille standards. Local regulations, including Monterrey's building codes, further establish requirements for emergency exits, signage placement, and public safety measures. Together, these frameworks establish a legal foundation that the project embraces not as a minimum threshold but as a baseline to be exceeded. The retention of Monterrey's institutional green in the renewed design, balanced with black and white contrasts for legibility, demonstrates how local identity is preserved within regulatory compliance, respecting continuity while improving function.

International standards provide another layer of authority and consistency. ISO 21542:2011, governing accessibility of the built environment, guides decisions on contrast, tactile information, and dimensional standards. ISO 7010:2019 provides globally recognized safety symbols, ensuring that emergency and regulatory signage can be understood instantly by international visitors. The 2010 ADA Standards for Accessible Design, though developed in the United States, offer detailed specifications for tactile and Braille signage, contrast requirements, and mounting heights, which Monterrey adopts as references. European norms, such as EN 81-70:2018 on accessibility for lifts, inform vertical circulation signage and integration. By aligning with these standards, the system positions Monterrey as a city that operates within

global best practices, signaling to both residents and visitors that its infrastructure meets international expectations.

Comparative case studies enriched the design process by offering lessons from other metro systems. Mexico City's Metro provided perhaps the most influential precedent through its station pictograms, which have achieved near-universal recognition and accessibility despite the city's linguistic and literacy diversity. For Monterrey, the adoption of heritage-inspired pictograms is both homage and evolution, embedding cultural identity into infrastructure. London's Underground contributed lessons on consistency, from the timeless Johnston typeface to the discipline of its iconic map first drawn by Harry Beck in 1933. Paris's Métro provided insights into vicinity maps and how to integrate station surroundings into navigation tools. Vancouver's SkyTrain offered models for multimodal transfer clarity, particularly relevant to Monterrey's integration with Transmetro and Ecovía. Madrid's Metro highlighted durable materials and modular installation strategies, ensuring long-term coherence. Even smaller Mexican systems, such as those in Guadalajara and Puerto Vallarta, were examined, illustrating pitfalls in contrast and signage consistency. By studying these systems, Monterrey avoided repeating mistakes and adapted successful strategies to its own cultural and operational context.

Beyond regulations and precedents, the project draws on academic and policy frameworks that articulate the broader value of inclusive wayfinding. The New Urban Agenda, adopted by UN-Habitat in 2017, emphasizes inclusivity, safety, resilience, and sustainability in urban development. By making navigation effortless and equitable, Monterrey advances these global goals. The principles of universal design, codified by the Center for Universal Design in 1997, provide a philosophical foundation: wayfinding must be equitable, simple, perceptible, and adaptable to diverse users. Scholarly work on wayfinding behavior underscores these

commitments. Arthur and Passini's research highlights the importance of redundancy and clarity in navigational information, while Golledge's studies on cognitive mapping illuminate how people build internal representations of space from signage and environmental cues. More recent studies, such as those by Nakamura and Zeng, emphasize the cross-linguistic effectiveness of pictograms in public transport systems, reinforcing Monterrey's choice to prioritize non-verbal communication. By grounding itself in these discourses, the project demonstrates that wayfinding is not only a matter of design but also of psychology, sociology, and policy.

The normative framework extends into governance. Procurement specifications require vendors and fabricators to comply with the same standards, ensuring that implementation aligns with design. Inspection checklists are derived from normative references, giving auditors concrete criteria to verify compliance. Training programs introduce staff not only to technical specifications but also to the cultural and ethical dimensions of accessibility, embedding norms into daily practice. By weaving regulation, benchmarking, and scholarship into its governance, the project ensures that standards are not external impositions but internalized commitments.

Taken together, this normative framework elevates the renewal beyond aesthetics or utility. It grounds the project in law, anchors it in international best practice, validates it through comparative experience, and enriches it with scholarly insight. This foundation not only legitimizes the project but also ensures that Monterrey's wayfinding renewal is defensible, durable, and transferable. It signals to the world that the city is serious about inclusivity and modernity, and it provides a template that other cities may emulate.

## **Annexes**

A project as ambitious as the renewal of Monterrey's wayfinding system cannot end with design specifications alone. To secure its endurance, it must be accompanied by tools, resources,

and training mechanisms that allow the system to be applied consistently and safeguarded against erosion. In this sense, what might appear as annexes or supplementary documents are in fact central instruments of governance, embedding the design into the daily practices of those who fabricate, install, maintain, and update it.

Visual examples form the first layer of these resources. For each type of sign—directional, affirmative, regulatory, safety—graphic templates are provided, showing not only typography and color but also dimensions, mounting positions, and spatial relationships with architectural features. These examples act as a visual grammar book, ensuring that vendors and contractors cannot reinterpret the system to suit expediency. By setting explicit precedents, they prevent the drift toward improvisation that undermined the legacy system. Alongside these, pictogram libraries are made available as scalable vector files, protecting the fidelity of Monterrey’s new heritage-inspired icons across applications and scales.

Installation diagrams accompany these templates, mapping where and how each element should be deployed in station environments. For example, vicinity maps are placed near main entrances and at concourse nodes, while directional arrows are positioned before and after each decision point. Minimum and maximum heights are specified, as are clearance zones to prevent obstruction by advertising, furniture, or structural elements. These diagrams ensure that the visual consistency of the design is reinforced by spatial consistency, allowing passengers to rely on predictable information placement throughout the network.

To support supervision, checklists are developed that transform specifications into actionable items. Inspectors can confirm whether font sizes meet standards, whether Braille is present and correctly embossed, whether contrast ratios comply with ISO 21542, and whether installation heights fall within the required range. By translating abstract rules into binary

checks, these tools empower staff to enforce standards systematically. They also create accountability, providing a record of compliance that can be audited over time.

Training programs extend these resources into human capacity. Staff are introduced to the principles of universal design, not as distant academic concepts but as practical commitments that ensure dignity and independence for all passengers. Maintenance teams are trained to distinguish preventive from corrective tasks, to use appropriate cleaning agents that preserve anti-graffiti coatings, and to recognize when illumination or contrast has fallen below standards. Contractors learn not only how to fabricate signs but why consistency matters, understanding the role of visual language in shaping confidence and usability. This investment in training embeds culture into practice, ensuring that the system is upheld not by rules alone but by values internalized by those who operate it.

Digital repositories provide an additional layer of governance. Asset libraries are stored in centralized platforms with version control, ensuring that outdated maps, colors, or pictograms are not reused. Updates, such as the future addition of Lines 4 and 6, are distributed through these repositories, guaranteeing that every station and contractor works from the same templates. This prevents the proliferation of inconsistent or obsolete signage, a flaw that had eroded coherence in the past. In this way, digital infrastructure becomes as critical as physical signage, safeguarding the system's integrity through disciplined information management.

All of these annex-like resources converge toward a broader conclusion: the renewal of wayfinding is not a cosmetic exercise but a civic transformation. By embedding accessibility into standards, cultural identity into icons, consistency into templates, and governance into checklists and repositories, Monterrey ensures that the system will outlast the immediate pressures of the 2026 World Cup. The event provides urgency and visibility, but the project's significance

extends far beyond a single tournament. It repositions Monterrey as a legible, inclusive, and attractive backbone of mobility, inviting residents to embrace it as part of daily life and projecting to the world an image of Monterrey as modern, hospitable, and committed to equity.

The legacy of this investment will manifest in multiple ways. For passengers, it means confidence: the ability to move independently, safely, and without hesitation, regardless of language, literacy, or ability. For the city, it means sustainability: a modal shift toward public transport and walking, reducing congestion and pollution while fostering healthier lifestyles. For the community, it means identity: station icons and signage that reflect cultural heritage, embedding pride into infrastructure. And for global observers, it means an example: a demonstration that rapid urban improvements, when grounded in universal design and cultural sensitivity, can leave lasting benefits long after an international event has ended.

In the end, Monterrey's wayfinding renewal tells a story larger than itself. It shows that signs and maps are never neutral, but act as civic instruments that shape how people experience their city. By investing in a system that is accessible, attractive, and enduring, Monterrey asserts that mobility is not only about moving from point A to point B but about belonging, dignity, and memory. This is the true legacy of the project: not just a network that is easier to navigate, but a city that is easier to live in, more welcoming to outsiders, and more reflective of its own culture.

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## Seeing We: Organic collective development

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### Abstract

This paper strives to fill the gap between local governments and community members, knowing what needs to be done to develop and implement urban interventions to achieve shared outcomes. Recent developments in the “collective intentionality” literature are shedding new insight into how interpersonal relationships organized for collective action work in establishing common ground, framing collective goals, and devising coordinated paths to action toward achieving shared outcomes. “Seeing we.” The focus of this paper is to operationalize the “seeing we” in the collective intentionality literature and use it as a point of departure to visually better understand organic community developments.

### I. Introduction

Sometimes everyone gets it. There are moments when a problem/opportunity presents itself that strangers see it similarly from their individualized vista and have a shared awareness of what needs to be done next. Cognitive behavioral scholars have a name for this: “collective intentionality.” It is when a grouping of persons that hold a “we” perspective co-operate with each other to achieve a shared collective benefit (Tomasello, 2014, p.x).

Why is “seeing we” important to *making cities livable*? Cities are complicated and require cognitive awareness among different systems of people working together to survive and thrive (Inness, and Booher, 2018). This paper strives to fill the gap between local governments and community members, knowing what needs to be done to develop and implement urban interventions to achieve shared outcomes. Recent developments in the evolutionary / cognitive behavioral literature are shedding new insight into how interpersonal relationships organized for collective action work in establishing common ground, framing collective goals, and devising coordinated paths to action toward achieving shared outcomes.

This paper has two goals. First, on an interpersonal scale, what are the key requirements that allow people with different perspectives to see something in a shared workable format. Second, how can urban planners cooperatively create organic situations that allow different groups of

people who are motivated to intentionally work collectively to achieve a shared outcome. To achieve these two goals, the paper is organized into three sections. I first review the urban “change” literature -- community organizing and social movements, civic governance, and citizen participation – connect these three paths for change with urban planners relationship with communities and local neighborhoods. Next, I review the collective intentionality literature and show how it connects to urban change literature strategies to help local governments and community groups improve their chances to “see we” more effectively and develop resilient interventions that make cities more livable. Lastly, I discuss my research of U.S. “hippietowns” as one way to diagnostically document how collective intentionality directly impacted urbanization.

### Collective Intentionality Within Urban Change Literature

Urban change that improves the livability of a city requires cooperation between local government and the community. For over 60 years, city planners in democratic societies have been working with local community groups in the development and implementation of urban interventions. The “urban change” literature can be organized into three historic routes to achieving local collective outcomes: community organizing / social movements, citizen participation, and civic governance. What becomes clear in discussing each of the three routes to urban change is how they each hold very distinct roles for government, individual, and community and how these roles define how urban planners interact with community / individuals in the planning process. Lowndes (1995) calls this the “citizenship triangle” and argues that when looking at local change “requires an understanding of the diversity of communities, and what motivates individuals to get involved, and stay involved, in local politics and civic life (Lowndes, 1995, p. 179). T.H. Marshall’s defines the three “elements” in the citizenship triangle as: *local government*, the right to “exercise political authority;” *society / community*, the larger community organized according to “standards prevailing in society;” and, *individual* the rights to exercise individual civil rights to liberty, speech, and own private property (Marshall, 1992, p.8). I use Lowndes “citizenship triangle” as a rubric to identify the moving parts in each of the three routes to urban change and how it frames their relationship to urban planners.

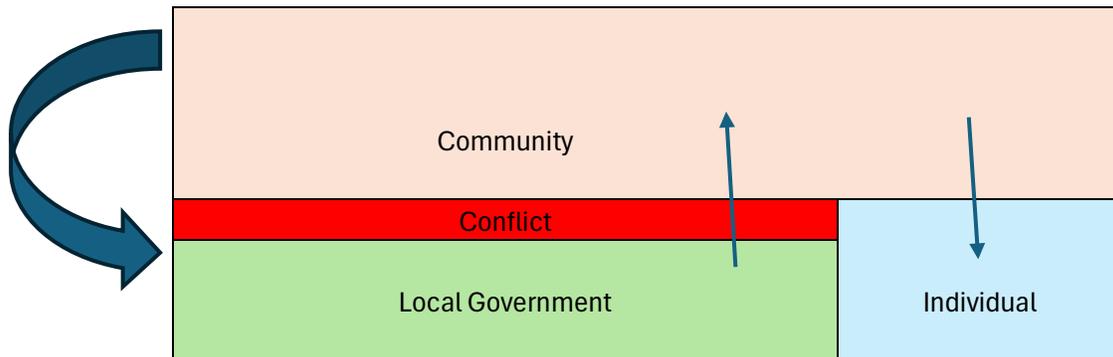
### Community Organizing / Urban Social Movements

Community organizing and social movements are “outside the whale” local community-based efforts focused on changing government actions/positions on a very specific topic or place (Kraushaar, 1988). In the U.S., urban social movements have included very large-scale and dramatic societal issues: Abolitionism (ending of slavery) in the late 18<sup>th</sup> century, Woman’s Suffrage (right for woman to vote) in the mid-19<sup>th</sup> century, Civil Rights (universal civil rights regardless of race, gender orientation, and religious choice) from the early 1950s to 1970s. The protests in the late 1960s mostly erupted in cities and targeted local government agencies (Fainstein and Hirst, 1995, p. 186). Over the last two decades, most urban community organizing efforts have been less dramatic and aggressive and tend to focus on specific urban interventions

(e.g. sidewalks to improve walkability). The phrasing “social movement” captures both the societal foundation of the action and the life cycle of the effort: rise, pinnacle point of organizational capacity, and post-facto fading.

Community organizing as a process for urban change operates on two principles: 1.) one community with a clear desired outcome that is ignored by local government, and 2.) aggrieved community organizing resources to challenge / agitate / expose so that government changes their position and capitulate to the requests by the organizing community group (e.g. build more sidewalks) (Cloward, and Piven, 1972, p. 21). As shown in Figure 1, community organizing is a confrontation process that pits community group against local government and singular accentuates that they are not on the same page as government (Davidoff and Davidoff, 1972, p. 57). According to Lowndes “citizenship triangle,” the following distinctions can be made:

- Community organizing on a single topic strives to be salient to a cross-section of different communities as possible (e.g. everyone walks) so to isolate local government in a position that they are out of touch with what is going on in the city. The organized community has an adversarial relationship with local government and local government is clearly in the wrong.
- Individual expression and experiences are either re-packaged to the larger social movement topic (e.g. everyone needs a place to walk and be healthy) or are overlooked for the larger social movement effort.
- Local government is the problem, not the solution.



*Figure 1. Community organizing process for urban change*

### Strengths

The largest and most meaningful long-term strength to community organizing is the transformation of marginalized community groups to a new position of significance and political relevance as a respected stakeholder in the day-to-day operation of local government. To this end, community organizing pushes governments outside of their comfort zone and adopts new

ways of thinking and seeing the urban environment (e.g. the construction of new roads should include sidewalks).

### Limitations

From an urban change perspective, community organizing is an “all-or-nothing” option for local community groups that comes with three drawbacks. 1.) Social movements tend to be a “one-and-done” effort that once it achieves (or fails) its goal, the community organizing efforts fades away (Boyte, 1980, p.7). 2.) The one topic focus in community organizing sucks the life out of the room temporarily peripheralizing smaller neighborhood topics (Boyte, 1980, p.xiii). 3.) Not a good way to build a long-term positive relationship between community groups and local government. The positioning of the community group as “good” and on the right side of urban change automatically places local government as “bad” and on the wrong side of urban change. Community organizing efforts tend to result in a post-facto recovery for local government where they need time to re-tool, re-organize, re-direct fiscal resources, and heal from the loss and as a result are not very adept to take on new less dramatic topics any time soon.

### Citizen Participation

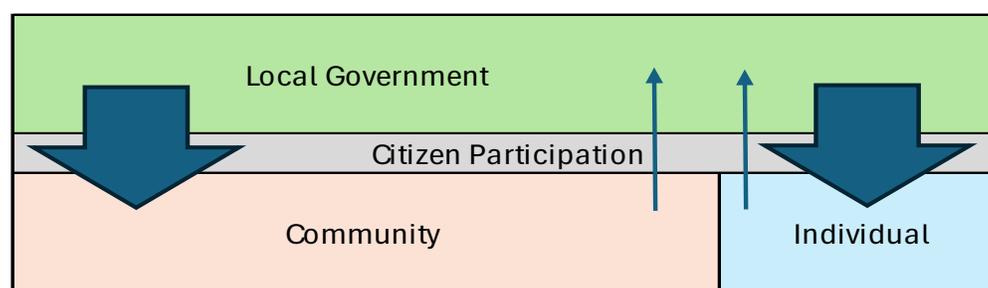
The rise of urban social movements and communities organizing against the government status quo in the early and mid-1950s to the late 1960s, resulted in local governments implemented citizen participation procedures to better “listen” to what the community had to say. Citizen participation was put into law and standard planning practice in 1968 with the Model Cities Program and the requirement for ‘maximum feasible participation’ in the funded planning projects (Leighninger, 2006, p. 140). The context for “citizen participation” in the Model Cities program was President Johnson’s “new federalism” approach to governance where local government can learn from local impacted residents in the development and implementation of Great Society programs (Gaber, 2019, p. 200).

As documented by Sherry Arnstein, the combination of an unclear definition of citizen participation mixed with local governments having little to no experience in working with community groups in developing urban programs, resulted in citizen participation being very ineffective in creating change (Arnstein, 1969). It is in the initial failure of citizen participation in the Model Cities program that led Sherry Arnstein to create her famous “Ladder of Citizen Participation” to help guide future local governments to make citizen participation more meaningful to local impacted communities. Recent research on Arnstein’s Ladder, shows that the key to impactful citizen participation is the requirement that local government and community groups be on equal political footing to ensure community experiences are heard, valued as data, and integrated in the proposed planning outcome (Gaber, 2019)

As a route to achieving urban change, citizen participation is standard operating procedure (SOP) used by local planners to learn from the community how governments’ proposed plans and projects will impact their day-to-day lives and how they can make adjustments to their plans to

improve in their effectiveness (Arnstein, 1972, p. 55). As shown in Figure 2, citizen participation appears in the program development phase and the program evaluation phase in the local government planning process. According to the Lowdnes (1995) three elements in the citizenship triangle, citizen participation has the following characteristics:

- Local government dictates the topic for programming and dictates how and when community groups can “participate” in the planning process.
- Community groups (“stakeholders”) organized on a single topic and/or are representative of a particular urban area are the focal point in the dynamic.
- Smaller neighborhood groups are relevant but may be seen as ‘too small of a stakeholder’ to local government to warrant much attention.



*Figure 2. Citizen participation process for urban change*

### Strengths

The largest strength in the citizen participation route to urban change is recognizing the unequal power relationships between local government and community groups and how this can impact the meaningfulness of urban interventions. Here, local government needs to take the initiative to solicit community input and do so in a fashion that allows overlooked and under-resourced community groups to participate in the planning process.

### Limitations

A very large weakness to the citizen participation route, and actively recognized by Sherry Arnstein, is the fact that citizen participation is one step in a multi-step planning process with local government is in control of everything. The community is reacting to what local government thinks is important and the decision-making process to operationalize the topic into a program. Citizen participation is blind to community initiatives, that are defined, developed, funded, and implemented with zero government involvement (Fainstein and Hirst, 1995, p. 200)

### Civic Governance and Working within the System

The civic governance literature focuses on how individual citizens working with their local governments via the democratic process can achieve outcomes desired by citizens. The leading framer of the “civic governance” approach is Harry Boyte (1980) and his book “The Backyard

Revolution: Understanding the New Citizen Movement.” The historic point of departure for the “new citizen movement/neighborhood movement” started in the 1970s with the fading of the 1960s social movements (Boyte, 1980, p.43, Fainstein and Hirst, 1995, p. 187. As the U.S. social movements of the 1960s started to achieve desired collective outcomes (e.g. Equal Pay Act of 1963, The Civil Rights Act of 1964 and 1968, Social Security Act of 1965, Fair Housing Acts in 1968, and National Environmental Policy Act of 1969), individual citizens had a smaller list of causes to organize for. As such, more minor neighborhood urban issues filled the void in actively discussed urban initiatives by local communities. “How does this impact my backyard?” The neighborhood movement had become significant influencing local policies particularly in the area of planning and zoning (Boyte, 1980, p. 70, Fainstein and Hirst, 1995, p. 188)

Boyte documents the “new citizen movement” as the rise of “everyday politics,” where local individuals are creating “citizen solutions” to achieve desired government actions (Boyte, 2004). So how does this process work? The key to the citizen movement is the confluence of a critical mass in organizational capacity mixed with increasing empirical sophistication, resulting in small groupings of individuals at the neighborhood level becoming more effective in influencing local government to be more responsive to their day-to-day needs. Everyday citizens have become superheroes. “Now citizens are not merely voters forming and expressing preferences – to agents who steer government on their behalf – but experts with distinctive knowledge, association builders promoting particular interests, and sometimes coproducers of change who engage in the operational work – the collective ‘barn raising’ – that change requires, through their behavior as consumers, parents, peer advisers, and so on” (Briggs, 2008, p.311) Here, local government, more specifically democracy, is part of the “problem solving” formula for urban change (Boyte, 1980, p. 1999, 2000, p. 162, Speyer, 1984, p.36). The “role of government is a ‘catalyst’ for citizen problem solving and ‘partner’ in multisided collaborative efforts. ... (G)overnment is an important provider of tools and resources to aid citizens in their work” (Sirianni and Friedland, 2001, p. 242). The more organized, strategic, and armed with data local neighborhood organization become the more responsive local government is to meeting their needs. (See Figure 3.) The result is a new government / citizen relationship. “This is a new kind of deal: citizens give their consent, their support, and their volunteer time to public activities, in return for the chance to help direct them” (Leighninger, 2006, p. 197).

According to the citizenship triangle rubric, the citizen movement route to urban change can be characterized as follows:

- Small groupings of individuals at the neighborhood level is the moving force for change.
- The rise of small groupings of individuals in neighborhood organizations comes at the decline in larger community power organizations that are locked in a single issue and take an adversarial role toward local government
- Local government is good and is receptive and eager to work with small neighborhood groups to execute small local projects.

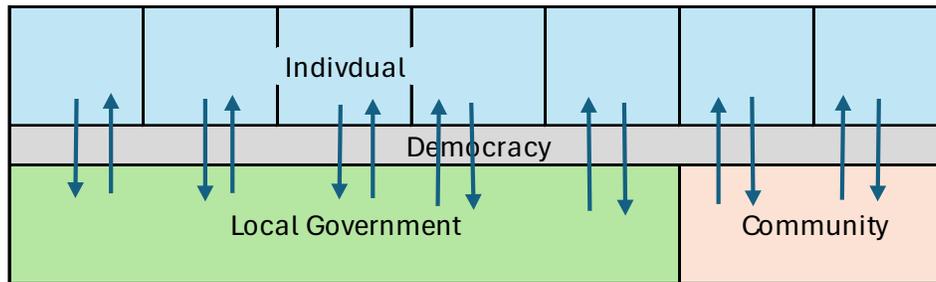


Figure 3. Civic governance process for urban change

### Strengths

The citizen movement route does a good job documenting the growing capacity and sophistication of neighborhood groups and their ability to push for change. As well as the delineation of local government as a positive force oriented to developing relationships with local residents to create change is a workable context

### Limitations

There is an unusually high expectation that any neighborhood group that is well organized, narrowly focused on a good workable problem, and is well armed with data will generate new resources and be able to achieve their desired outcomes (Boyte, 2000, p. 166, 2004, p. 146). The urban reality of local fiscal constraints, not good timing in relation to other pressing urban issues, different neighborhood groups may want a different direction, and local government organizationally unable to execute desired outcomes can make the best laid plans go unanswered (Fainstein and Hirst, 1995, p. 198). There is zero discussion about how local government connects with local neighborhood groups to get on the same page to address specific issues. It just assumes that “everyday politics” is now situated to act on the “citizen solutions” put forward by well-meaning neighborhood groups.

### Collective Intentionality

Collective intentionality is a socio-behavioral approach to collaborative action. Although the thinking behind collective intentionality has been around for over 30 years (Searle, 1995), recent cognitive behavioral and primate research has broadened its applicability in city planning (Hasanov and Beaumont, 2016). In this section I first provide an overview of collective intentional afterwards operationalize this approach to seeing urban change from multiple vistas.

Research by Michel Tomasello’s is most relevant to city planning as he makes the distinction between “shared intentionality” from “collective intentionality” (Tomasello, 2014, Moll and Tomasello, 2007, and Tomasello and Rakoczy, 2003). Shared intentionality is exhibited in early human and children development and is described as “joint attention ... a kind of self-other

equivalence, leading to activities that are ‘shared’ ...” (Tomasello and Rakoczy, 2003, p. 132, Tomasello, 2014, p. x). A critical account in shared intentionality that is particularly relevant to urban planning is on “differing perspectives.” Here, “each partner in joint attentional engagement has her own individual perspective – and knows that the other has her own individual perspective as well” (Tomasello, 2014, Moll and Tomasello, 2007). An urban planning explanation of shared intentionality would be different individuals sharing an urban experience (public park) and seeing it similarly but respecting and acknowledging that they are experiencing it differently and will make individualized motivated actions (e.g. walking paths vs. tennis courts) that are respectful (“shared”) to each other.

According to Tomasello (2014), collective intentionality only exists in modern humans (this is what separates us from our great ape ancestors). It is the movement away from joint individual intention (my goal is X while your goal is Y) to collective ‘joint intention’ (my goal is X, your goal is Y, our shared goal is Z which is somewhere in the middle of goal X and Y). (See Figure 4 p.49). As such, individual perspective evolves beyond non-connecting joint intentional engagement (we see the same thing differently) to the creation of ‘we’ space of collective intentionality where different perspectives see a shared “common ground” that is separate from individual intentions (Tomasello, 2014, p.83). This is the definition of “seeing we.” It is the “we” visualization that Dewey calls “cooperative intelligence;” (t)he measure of civilization is the degree in which the method of cooperative intelligence replaces the method of brute conflict” (Dewey, 1935, p. 81).

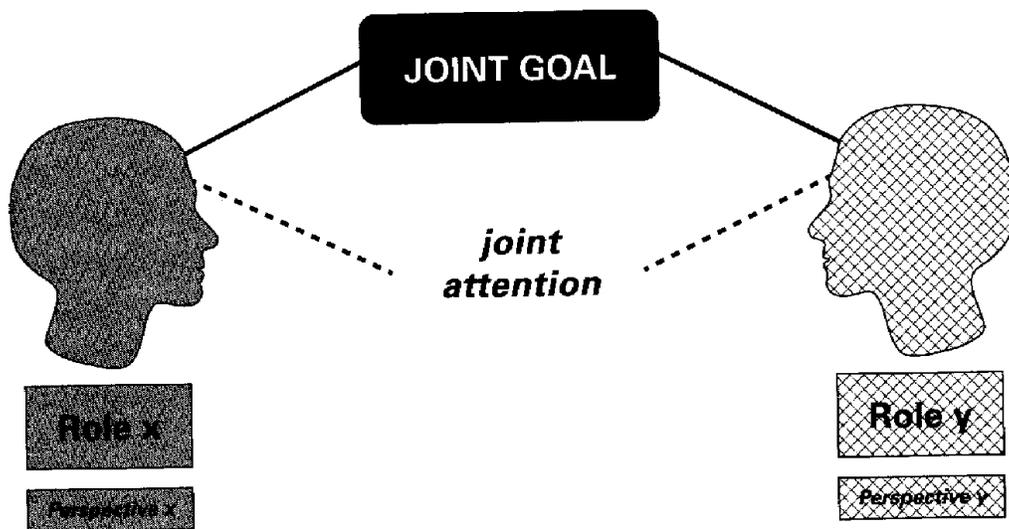


FIGURE 3.1 The dual-level structure of joint collaborative activity

Figure 4. Tamesello (2014) Figure 3.1, “The dual-level structure of joint collaborative activity”.

With the common ground of a shared goal, individuals will coordinate their behavior and actions (intentions) so that they can collaboratively work with other individuals with the intent to execute coordinated cooperative actions for the benefit of the collective good (Tomasello, 2014,

p. 5). Hasanov and Beaumont (2016) connects the collective intentionality literature to their analysis Urban self-organizations (USO) and contemporary participatory planning in The Netherlands. “The processes of USO are carriers of social constructive collective intentionality, which relies on interpersonal behavior and shared human action” (Hasanov and Beaumont, 2016, p. 239). Examples include local collectives of persons developing neighborhood gardens, housing for homeless persons, and coordinating with local government on urban development.

#### Four corners to collective intentionality

Collectively intentionality is a “shared decision-making process” based on four requirements in order for it to work effectively. First, all participants share “equal power in their situation where one person cannot just tell the other or others what to do” (Tomasello, 2014, p. 109). Practically speaking, everyone in the collective intentionality decision-making process are equally valued and that all observations and actions are part of single and level playing field.

Second, the development and existence of shared knowledge that belongs to the common good. Here, individuals will communicate and add to the shared knowledge what they think is relevant to the situation (Tomasello, 2014, p. 54). When individual community members contribute information to the collective as a whole is called “face validity.” Face validity observations are practical assessments of what a person sees “without having to give, or expecting to hear, detailed reasons” (Krippendorff, 2004, p. 313). In a city planning context, “face validity judgements provided by affected citizens are based on their lived experiences in the community (Gaber and Gaber, 2010, p. 138).

An important detail needs to be highlighted when discussing individuals contributing shared knowledge; everyone in the collective need to maintain their independent perspective. This is important for two reasons. First, diversity of experiences prevents the development of “group think” solutions. This is when a homogenous grouping of people are “too much a like in worldview and mindset” that shut out different bits of contradictor information as “not useful” because it goes against accepted grain of the group’s collective relationships (Surowiecki, 2005, p. 36). Second, cognitive diversity matters because it creates a deeper and more nuanced understanding of the situation. “Independent individuals are more likely to have new information rather than the same old data everyone is familiar” (Surowiecki, 2005, p.41).

Third, clear establishment of convention and rationale that is shared by all collective individuals. This is important for several reasons, but most importantly in city planning, is the acceptance of ground rules on what is objectively important to the collective (a type of second-person ranking system) so individuals can communicate, add data, and evaluate observations and values as they relate to the benefit of the collective. Fourth, establish a neutral cultural space where a grouping of individuals can collaborate and work together to the benefit of the collective.

### Seeing ‘We’ in relation to the urban change literature

Upon understanding the collective intentionality literature, it becomes clear that we have much work to do in getting the three approaches to urban change (community organizing, citizen participation, and neighborhood change) closer to “seeing we” if we want to make cities more livable for all. Beginning with the community organizing process, from this point of departure we are not starting from collective intent. This approach to urban change purposefully pits the three elements (community, citizen and local government) at the farthest points from each other, creating huge spaces that need to be traveled in order to get to the point of being able to collectively see we. Here, local government is the problem (from the community’s view) in not being able to see an issue the community clearly sees. As such, the community is forced to take drastic measures in creating a confrontative context and going outside of the norms of governmental due process to get local officials to “start paying attention” to what the community is actively seeing. To better amplify the significance of what the community is seeing, local individual neighborhood expressions and observations are dampened to ensure clarity and depth to the “big picture” problem that is community-wide.

In response to the community’s presentation of new understanding, local government has one of two options: a.) accept their oversight and work with the community to recalibrate how they see the situation and take corrective actions, or b.) protest, or more commonly, ignore what the community is sharing and hope the issue will fade away. If the local government accepts the community’s new visual paradigm, they will choose to either go down the citizen participation path and address the issue in total or go down the neighborhood civic path and break down the large community-wide issue into smaller neighborhood projects.

The citizen participation approach puts the 3 elements for urban change much closer than the community organizing approach. In addition, the citizen participation approach provides a clear framework and process by which the community and/or individual neighborhoods can come together and work with local government to collectively see and act on specific projects. An inherent limitation to the citizen participation approach is an unequal playing field among local government and community and neighborhood groups with government being in control of the entire venture. The local government defines the topic at hand, provides the majority of the background research, controls the calendar in how the topic is managed, and ultimately determines if the project is adopted or not. Like a casino with “house rules,” if community stakeholders and neighborhood groups do not like how local government is going about seeing, defining, and managing a particular topic, the only options they have to change how things are going are to either change tack and take to the community organizing path or drop down to the neighborhood path.

The civic governance neighborhood approach best meets the collective intentionality literature in seeing we for urban change with two caveats. As shown in Figure 4, civic governance is extremely conversational / interactive between neighborhood groups and local government. For

better or for worse, community wide issues are downgraded to smaller topic issues as neighborhood issues. There is a tremendous amount of equality of perspectives in the civic group approach with local government, community stakeholders, and local neighborhood groups all operating on the same level of vista and are actively sharing what they see and how things are changing.

The first caveat with the civic governance approach is that lack of path/due process in how individual neighborhood groups images of what is going on gets to local government and how local government processes / learn from neighborhood groups. This is largely a problem with theory and the level of adoption this approach has been taken on by planning scholars. For now, local government as a function of “democracy” works with well-organized local neighborhood groups to create urban change.

The second caveat is that large-scale community wide urban issues are largely ignored and are broken down into much smaller neighborhood interventions. The concern / result is that the civic approach, neighborhood groups in particular, simple lack the up-scaling capacity to address systemic urban issues which get ignored. For example, the causes of homelessness in a city are not addressed, but a neighborhood group can come together to create a local homeless shelter (for families) in their area.

The “neighborhoodizing” (this is my term) of systemic urban issues results in two negative outcomes. First, large-scale urban issues tend to be ignored by neighborhood groups leaving local government less accountable resulting in a type of “intentional blindness” to very pressing problems (Mack, 2000) Second, neighborhoodizing large systemic issues results in city-wide issues being reformulated into much smaller and digestible neighborhood issues. As of now, the jury is out if this is a good outcome or a bad outcome. On the good side, large-scale issues are being addressed at the neighborhood level and maybe the culmination of hundreds of little local projects is ultimately the best solution than one big solution that never gets implemented. According to Thaler and Koval (2009) it are “the small day-to-day actions and decisions that, together with the actions of millions of others, can transform the world” (p.122). On the negative side, local neighborhood communities with resources will be able create their own little oasis (at least visually) in their backyards, while less resourced communities who are operating with much larger magnitudes of urban problems are held responsible for their “lack of social capital” to be able to fix their problems resulting an urban landscape of “good” communities and “bad” communities.

### What does Seeing We look like? Visualizing collective intentionality

In this concluding section, I discuss the visualization of “seeing we” from the collective intentionality perspective. What does seeing we look like in an urban space? The foundation to seeing we in urban space is recognizing that collective intentionality is organic to time, place, people, and moment at hand. Unlike New Urbanism that comes with a long checklist of formulaic urban interventions (roads, sidewalks, front door porches) that the city planner plug-n-

play together to create pedestrian-friendly spaces regardless if they are in, Detroit, Dubai, or Dresden, seeing we can only identify a few visual “evidence” indicators that collective intentionality was in place in the creation of a specific urban space. In this regard, seeing evidence of collective intentionality is visualizing the relationships involved in the urban design / urban planning decision-making process that make the urban interventions real.

I use my multi-year field research of U.S. hippietowns to provide the visual database documenting evidence of seeing we in urban interventions that are the result of collective intentionality. Hippietowns are urban enclaves that exist all over the world. A product of the counterculture movement starting in the 1960s, “hippies” created unique urban communities based on shared values of freedom, peace, and respect for others and the earth (Gaber, 2024). Several of these communities have translated these values into their day-to-day existence and observable urban places.

Identification of hippietowns and their nonhippie peers used in the investigation was purposefully sampled via a sequential analysis of quantitative and qualitative data. First, a “master” hippie communities database was created with an internet search. A total of 105 hippie communities were identified in the master database of possible hippietowns. Next, the master hippie community’s database was winnowed-down to a working-list of hippietowns through two database cleaning processes. First, the overriding hypothesis is that hippietowns used local tax dollars to help create measurable urbanization outcomes based on their shared counterculture values. As such, a hippietown must have a recognized stand-alone local government structure (‘government criteria’) that collected taxes, passed local ordinances, and set a position in relation to how the community was going to evolve over time that directly effected local residents. The ‘government criteria’ eliminated hippie enclaves in large cities, such as Haight-Ashbury, in San Francisco. In addition, the ‘government criteria’ illuminated large rural hippie communes (e.g. The Farm, in Tennessee) that operated like a hippietown, but lacked the fiscal resources and civic capacity to execute their hippie agenda. This narrows the list of reviewable hippietowns to 15 communities.

Second, I conducted in-person field reconnaissance of the 15 hippietowns to see if they exhibited a physical sense of place that conformed to an obvious collective hippie community presence (e.g. public display of community connection). This further narrowed the list to a final short list of 10. Three observations become very clear in the listed hippietowns. First, hippietowns are a nationwide occurrence and were found on the west coast (California, Colorado, Oregon), east coast (Massachusetts), south (Arkansas), and southwest (Arizona, Colorado, New Mexico). Second, there is not a one-size-fits-all hippietown population size. Some hippie communities are very small (e.g. Eureka Springs, AR with 1,991 residents) while others are fairly substantial small cities (e.g. Boulder, CO with 105,673 residents). Through these data cleaning measures, the short-list of hippietowns analyzed in this paper are listed below. (See Table 1.) Third, hippietowns share a handful of visual cues that are transitive to all analyzed communities across the U.S. that clearly show evidence of collective counterculture values that shape their urban landscape.

Table 1. Analyzed Hippietowns: 1960 Population

Hippietown	State
1. Arcata (5,235)	California
2. Amherst (13,718)	Massachusetts
3. Bisbee (9,914)	Arizona
4. Boulder (37,718)	Colorado
5. Eugene (50,977)	Oregon
6. Eureka Springs (1,437)	Arkansas
7. Manitou Springs (3,626)	Colorado
8. Nederland (272)	Colorado
9. Santa Cruz (25,596)	California
10. Silver City (6,9727)	New Mexico

Source: U.S. Census, 1960.

Per my field research of U.S. hippietowns, I generated an extensive image database per community. Three transitive visual cues stand out in all of the reviewed hippietowns that conform to the collective intentionality approach to urban intervention. They are:

- 1.) Urban diversity: buildings, urban space, and open space representative of the diverse perspectives in the community
- 2.) Affirmation of collective we intention: visual cues that convey diversity of lived experiences are welcome and that local residents and businesses see themselves as being a part of a larger collective working together for the benefit of the community
- 3.) Public art / aesthetic: Public art and aesthetic are a shared communal experience that forces us to pause, reflect, and talk about what we see.

### Seeing Urban Diversity

Seeing visual diversity in hippietowns breaks all the rules in thematic urban design. The built environment is more of a canvas for individual expression than a display of any form of design principle. As you can see in Figure 5, if there was a design review board in these hippietowns, they would be guided by two visual guidelines; keep it funky and keep real to what you believe.



Figure 5. Silver City, N.M, Diversity of urban expression in the built environment.

### Seeing the Community's Affirmation of Community

Visual affirmation of “we” in hippietowns is obvious in all of the researched communities. Throughout each community, are small insightful verbal touches in public and private spaces to let everyone know the collective intent of the community. (Figures 6 and 7).



Figure 6. Nederland, CO, clear messaging on “peaceful we.”



Figure 7. Bisbee, AZ, “Let’s be better humans.”





Figure 9. Manitou Springs, CO, Artistic seating.



Figure 10. Eugene, OR, Public art: fish, earth, dog, car.

### Closing Comments

Where do we go from here? How do we move in the space between everyone seeing the same problem / opportunity to getting on the same visual page about what is going on and moving forward to coordinated collective action? How do we see we? It is to this last question that is focus of this paper. The collective intentionality literature provides one framework on how urban planners can better calibrate what they can see we with community stakeholders and neighborhood groups to improve the clarity in getting on the same page to achieve urban interventions to make cities more livable for all.

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# WATER-SENSITIVE URBAN DESIGN GUIDANCE FOR THE LIVABLE FUTURE: THE CASE OF ZEYTINLI, TURKIYE

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## Abstract:

*In November 2023, Izmir (Turkiye) witnessed a severe pluvial flood damaging 502 buildings. In February 2019, Crete(Greece) encountered two high-impact storms causing old Keritis bridge collapse. In Valencia (Spain) the flood in October 2024 caused 236 lives lost, affecting about 1.1 million acres. Such challenges, among many, drive us to discuss the future of urban design and architecture from the lens of sustainable water management.*

*In parallel to the global challenges brought by climate change, cities of the 21st century suffer from an intense water crisis. The quantity, duration and intensity of events, such as flash rains and heat waves, increase the vulnerability of both urban and rural areas. Climate change effects pose similar risks in settlements with similar climatic conditions. The magnitude of climate change events calls for immediate action to be taken via nature-based solutions. In the biggest picture, the world tries to combat the problem via Water Sensitive Urban Design (WSUD), Low Impact Development (LID), Sustainable Urban Drainage Systems (SuDS) and Best Management Practices, as evident in the vast literature and guidance materials mainstreaming resilience in planning and design of cities. However, the number of guidance materials, namely WSUD Guides, are not common in all cities of the world. There emerges an urgent need to proliferate and implement the number of guidance materials, because they provide the shortest route to take immediate action in facilitating the use of WSUD tools on the urban scale.*

*There is the need to attract attention to the fact that the WSUD techniques and tools must now be an integral part of current building practices. Our approach to integration of engineering practices in sustainable stormwater management with urban design should grow as an inclusive agreement for the livability of future cities.*

*Based on this approach, this study includes the overall analysis of around 270 urban design guides for rainwater management from mostly Western cities. The selection criteria were mainly concerned about their placemaking approaches, adoption of spatial analyses, use of spatial typology, provision of technical details and availability of graphic materials. The comprehensive analysis of guidance materials provides us with a matrix for structural implementations and spatial typologies. This paper intends to propose a method for designing an urban design guide for a small-scale urban settlement, which is selected as Zeytinli village in Edremit, Balıkesir in Turkiye. The case of Zeytinli is unique in the sense that its relationship with water has given the village its urban character. The target is to dwell upon the topic of water sensitive urban design in case of a small settlement of Zeytinli, but with further implications for livability of cities, proposing the ways of how settlements can be designed with and for water in times shaped by climate change.*

## 1. Introduction: The Urgency of Designing with Water in an Era of Climate Change

The stark realities of a changing climate are no longer distant projections but lived experiences, etched into the urban landscapes of our time. The intertwined processes of rapid urbanization and climate change have placed unprecedented stress on urban ecosystems worldwide. Historically, cities have been engines of human progress, but their development has often come at the cost of environmental degradation. The expansion of impermeable surfaces, the alteration of natural drainage patterns, and the pollution of water resources are hallmarks of conventional urban development. As a consequence of these practices, the natural water cycle in urban areas has been severely disrupted. This disruption manifests as increased frequency and intensity of flooding, prolonged periods of drought, the urban heat island effect, and the degradation of aquatic ecosystems (Türkeş, 2008). The Intergovernmental Panel on Climate Change (IPCC) has consistently reported that human activities are the primary driver of these changes, with cities being both major contributors to the problem and highly vulnerable to its impacts (IPCC, 2023).

In November 2023, the city of Izmir, Türkiye, was struck by a severe pluvial flood that damaged over 500 buildings<sup>1</sup>. In October 2024, a catastrophic flood in Valencia, Spain, resulted in the loss of 236 lives and devastated vast areas<sup>2</sup>. These events are not isolated incidents; they are part of a global pattern of intensifying extreme weather, a direct consequence of anthropogenic climate change. Cities of the 21st century find themselves at the epicenter of this crisis, grappling with an intense water paradox: an overabundance of water during catastrophic floods and an acute scarcity during prolonged droughts. This volatility, driven by changes in the quantity, duration, and intensity of weather events, exposes the profound vulnerability of our urban and rural settlements.

The magnitude of this challenge calls for immediate and transformative action, pivoting away from the rigid, centralized infrastructure of the past towards more adaptive, resilient, and nature-based solutions, a paradigm that seeks to work with nature rather than against it. Globally, a consensus has emerged around a suite of integrated approaches—Water Sensitive Urban Design (WSUD), Low Impact Development (LID), Green Infrastructure (GI) and Sustainable Urban Drainage Systems (SuDS)—as the most promising pathways to building urban resilience. These strategies aim to manage stormwater at its source, mimicking the natural hydrological processes of infiltration, evapotranspiration, and storage (Wong & Brown, 2009). By doing so, they not only mitigate flood risk but also provide a suite of co-benefits, including improved water quality, enhanced biodiversity, urban cooling, and the creation of more amenable public spaces. Underpinned by a vast body of academic literature, these philosophies advocate for

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<sup>1</sup> For more information: <https://www.raillynews.com/2023/11/Sea-stones-flooded-streets-in-Izmir/>.

<sup>2</sup> For more information: <https://edition.cnn.com/2024/10/30/world/video/spain-flash-flooding-ldn-digvid>.

managing stormwater as a resource rather than a waste product, using the principles of nature to create safer, healthier, and more livable cities.

However, the implementation of these approaches often relies on universally applicable technical manuals and design guides. Yet, the comprehensive review of all reveals that practical, accessible, and context-sensitive guidance materials—specifically WSUD Guides—are not common in all cities of the world. Thus, a critical disconnect persists between the well-established principles and their widespread implementation.

Water is not merely a technical or environmental issue; it is deeply interwoven with the history, social practices, and identity of communities as well. While many historic settlements possess a rich "water culture" where traditional knowledge and practices used to create a resilient and sustainable relationship between the community and its water resources, this relationship could not be inherited in modern ways of building under rapid pace of urban growth. This is the reason why technical manuals and guides for water-sensitive urban design should be regarded as the key in creation of climate-resilient environments mimicking the "water culture" in local vernacular knowledge. Given that the manuals and guides are widespread throughout the world, this "guidance gap" can be deemed as a critical bottleneck, preventing the rapid, on-the-ground adoption of WSUD tools at the urban scale. There is an urgent need to not only proliferate but also to innovate in the preparation of these guides, ensuring they are effective tools for change.

This paper addresses this challenge directly. It argues that for water-sensitive design to become an integral part of current building and planning practices, we must move beyond the simple cataloging of techniques. Instead, we need a robust and replicable *method* for developing design guides that are deeply rooted in their local context. Based on a comprehensive review of approximately 270 international urban design guides, this paper argues that for cities to become truly climate-resilient, a strategic approach is needed that synthesizes the best global practices with local vernacular knowledge. The aim of this study is to develop a replicable method for creating a site-specific Water-Sensitive Urban Design guide. This is achieved through an in-depth case study of Zeytinli, a neighborhood in Edremit, Turkey, which possesses a unique, gravity-fed canal system that has shaped its urban form and social life for centuries. This paper demonstrates how a deep analysis of a place's unique character, including its spatial typologies and vernacular water culture, can be synthesized with global best practices to create a tailored, effective, and actionable design guide. The ultimate target is to move beyond the specific case to propose a universal methodology for how settlements can be designed *with and for water*, ensuring their livability in a future shaped by climate change.

## **2. The Global Consensus: Key Approaches to Water-Sensitivity and the City**

The traditional approach to urban water management, often referred to as "grey infrastructure," relies on a centralized system of pipes and channels designed to collect and convey stormwater away from urban areas as quickly as possible. This "end-of-pipe"

philosophy treats stormwater as a waste product to be disposed of, ignoring its potential as a valuable resource. This paradigm has proven to be unsustainable; it is expensive to maintain, inflexible in the face of changing climate patterns, and contributes to the degradation of receiving water bodies by transporting pollutants (Fletcher et al., 2015).

The contemporary practice of sustainable urban water management is built upon a foundation of several key concepts that, while originating in different parts of the world, have largely converged into a shared philosophy. These approaches collectively represent a paradigm shift from the "grey" infrastructure of pipes and concrete channels to a "green-blue" network of nature-based systems. Understanding this conceptual landscape is the first step for any urban planner or designer seeking to build climate resilience.

## **2.1. A Shared Vision: From Grey to Green Infrastructure**

The core principle uniting these approaches is the transition from a philosophy of "rapid conveyance"—getting water out of the city as fast as possible—to one of "integrated management," which seeks to mimic the natural hydrological cycle. This shift from conventional drainage to integrated, sustainable water management represents a significant evolution in planning and design thinking. It involves strategies to slow down, store, infiltrate, and treat rainwater close to where it falls. The goal is to manage the entire urban water cycle in a way that minimizes environmental harm and maximizes social, ecological, and economic benefits.

This transition was driven by the growing recognition that stormwater is a resource, and that managing the entire urban water cycle—including rainwater, groundwater, wastewater, and potable water—in an integrated manner is essential for urban resilience. Several interconnected concepts have emerged globally, each with a slightly different emphasis but sharing a common set of principles.

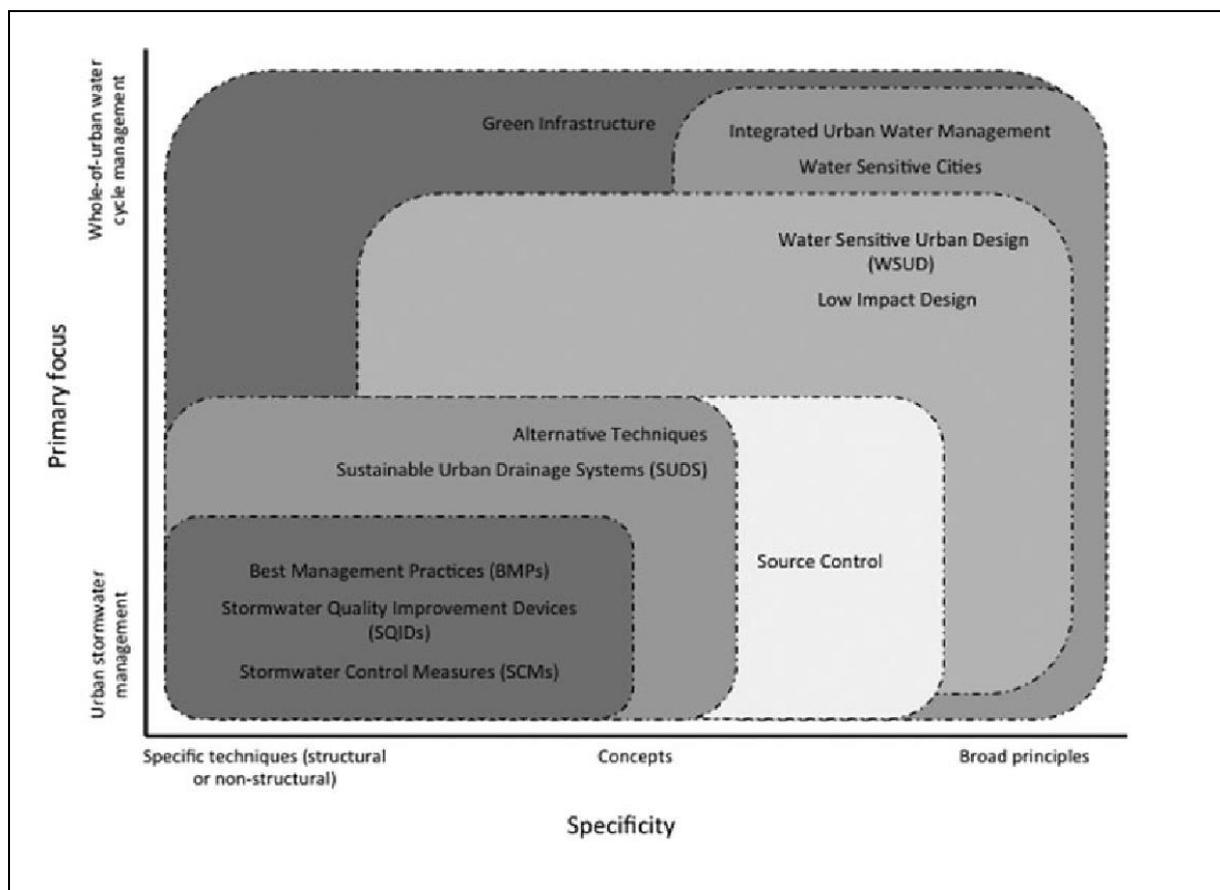
The foundation of this new paradigm is the concept of **Green Infrastructure (GI)**. Originating in the USA in the 1990s, GI refers to a network of natural and semi-natural areas, green spaces, and water bodies that provide ecosystem services. In the context of water management, GI uses vegetation, soils, and natural processes to manage stormwater, providing an alternative or supplement to traditional grey infrastructure (Çağlayan et al., 2020). Unlike conventional systems that concentrate and convey flow, GI strategies—such as green roofs, parks, and riparian corridors—are designed to be multifunctional, decentralized, and to provide ecological, social, and economic benefits. Green Infrastructure is a broader planning concept referring to the network of green spaces and water systems that provide ecosystem services within a city.

Within the broad umbrella of GI, several specific approaches have been developed and adapted in different parts of the world. While the terminology varies, their core objectives are largely aligned.

- **Water-Sensitive Urban Design (WSUD):** Pioneered in Australia in the 1990s, WSUD is a holistic approach that integrates the management of the urban water cycle into urban planning and design. Its goal is to minimize the negative impacts of urbanization on the natural water cycle while maximizing the benefits of water as a resource (Wong & Brown, 2009). WSUD goes beyond simply managing stormwater; it considers the entire water cycle, aiming to reduce potable water demand through rainwater harvesting, treat wastewater for reuse, and restore aquatic ecosystems. It explicitly frames water management as a central element of urban design, influencing the layout of streets, parks, and buildings. WSUD is a holistic approach that views all components of the urban water cycle—stormwater, drinking water, wastewater, and groundwater—as part of a single, integrated system. It seeks to weave water management into the very fabric of urban design, influencing the layout of streets, the design of public spaces, and the form of buildings to create a "water-sensitive city" (Wong & Brown, 2009).
- **Low-Impact Development (LID):** Developed in North America around the same time, LID is a land planning and engineering design approach to managing stormwater runoff. The primary goal of LID is to mimic a site's pre-development hydrology by using design techniques that infiltrate, filter, store, and evaporate runoff close to its source (Fletcher et al., 2015). Techniques such as rain gardens, permeable pavements, and bioswales are core components of LID. While very similar to WSUD, LID has historically had a stronger focus on site-level hydrological performance, often with less emphasis on the broader integration with urban planning. Therefore LID can be regarded as a design philosophy with its focus on maintaining a site's pre-development hydrological conditions. It employs a range of small-scale, decentralized techniques to manage stormwater at its source, thereby reducing the "impact" of development on the natural water cycle (Fletcher et al., 2015).
- **Sustainable Drainage Systems (SuDS):** This is the term predominantly used in the United Kingdom since the early 2000s. SuDS are designed to manage stormwater runoff in a way that is more sustainable than conventional drainage systems. The philosophy is based on replicating natural drainage processes, managing rainfall close to where it falls, and treating runoff on the surface (Woods Ballard et al., 2015). SuDS aims to manage both water quantity (flood risk) and water quality (pollution), while also enhancing amenity and biodiversity. The approach is very similar in practice to both WSUD and LID. In short, the SuDS philosophy is often described through the "management train," a concept that advocates for a hierarchical approach to drainage, starting with source control (e.g., green roofs), moving to site control (e.g., permeable paving), and finally to regional controls (e.g., wetlands) (Woods Ballard et al., 2015).

- Best Management Practices (BMPs):** This term, originating from the US Clean Water Act of 1972, is often used as a catch-all for the specific tools and techniques used within GI. The specific techniques used to achieve the goals of WSUD, LID, and SuDS are often referred to collectively as Best Management Practices (BMPs). BMPs can be either **structural** (physical installations like bioswales, retention ponds, rain gardens, constructed wetlands or green roofs) or **non-structural** (institutional and procedural measures like public education, protective zoning ordinances, and pollution prevention plans) (Fletcher et al., 2015).

As Fletcher et al. (2015) illustrate (**Figure 1**), these concepts are not mutually exclusive but exist on a spectrum of scale and scope. GI is often seen as the broadest, landscape-scale concept, while WSUD and LID operate at both the city and site scale, and SuDS and BMPs often focus more specifically on stormwater management techniques. Although these approaches differ slightly in their origins and emphasis, they collectively represent a paradigm shift towards a more resilient, sustainable, and integrated approach to urban water management and provide a robust and globally recognized toolkit for designing resilient cities. The challenge for practitioners lies not in a lack of available techniques, but in the absence of a clear process for selecting, adapting, and integrating these techniques into a specific local context.



**Figure 1:** Classification of urban drainage terminology according to its characteristics and primary focus points ( Fletcher et al., 2015)

### 3. A Critical Review of Global Guidance: Towards a Context-Sensitive Methodology

To build a more effective framework for implementation, this research began with a large-scale critical review of existing guidance materials. An extensive search was conducted to identify and analyze approximately 270 urban design and stormwater management guides from a diverse range of international contexts, with a primary focus on Western cities where these practices have been most extensively documented. The goal of this extensive review was not merely to compile a list of BMPs but to understand the *methodologies* used in creating effective, place-based guidance. Many guides were found to be generic, presenting universal design standards, yet lacking sufficient consideration for local context.

From the perspective of urban planners and urban designers, the comprehensive analysis of the 270 guides reveal a critical and pervasive weakness: the vast majority are structured as technical, engineering-focused manuals rather than as strategic design guides. These documents excel at providing detailed cross-sections, material specifications, and hydraulic calculations for individual BMPs. However, they frequently fail to provide a strategic framework for their application. They tend to be rather "placeless," presenting universal solutions that are detached from the specific climatic, geographic, social, and morphological context of the cities they are meant to serve.

This approach can be considered to have several significant drawbacks for urban planners and architects. First of all, it promotes a "checklist" approach, where without a strategic framework, practitioners may be tempted to simply select techniques from a menu, leading to the implementation of isolated, disconnected features that fail to function as a coherent, city-wide system. Then it can lead to neglect of the importance of scale, meaning that many guides fail to differentiate their recommendations based on the scale of application, offering the same solutions for a single residential lot as for a large urban district. Furthermore, it overlooks the social and cultural dimension. By focusing solely on technical performance, these guides often ignore the critical role that water plays in placemaking, cultural heritage, and public life. This can lead to solutions that are technically functional but socially sterile.

Given these shortcomings, it can be argued that water management guides and manuals should cover major sets of knowledge to be adopted as a methodological blueprint that is both technically robust and deeply rooted in place. Absence of these criteria calls for the need to overcome a methodological gap.

To move beyond these limitations, a set of five criteria was established to identify a smaller cohort of exemplary guides that could serve as models for a more effective methodology. These criteria were:

1. **Placemaking Approach:** There must be an emphasis on site-specific conditions. The guides must prioritize the analysis of local geography, climate, soil, and

hydrology. The guide must treat water not just as a problem to be managed but as a central element of urban design and placemaking.

2. **Adoption of Spatial Analysis:** The guide must be founded on a deep and multi-layered analysis of the local context. There is need for a transparent analysis process. The guide should clearly articulate the steps taken from initial site analysis to final design recommendations.
3. **Use of Spatial Typology:** The guide should categorize the urban landscape into distinct typologies (e.g., residential, commercial, streetscape) and provide tailored solutions for each. It must disaggregate the city into recognizable typologies and provide tailored recommendations for each.
4. **Provision of Technical Detail:** It must balance strategic vision with clear and practical technical guidance.
5. **Availability of High-Quality Graphic Material:** There must be clear technical and graphical communication. This means that the guide must effectively communicate complex technical details through accessible graphics, diagrams, and text. It must use visual communication effectively to make complex information accessible to a multidisciplinary audience.

This filtering process highlights the need for a new type of guide—one that is structured as a clear, replicable *process* that empowers local practitioners to develop their own context-sensitive solutions. This research uses the case study of Zeytinli to develop and illustrate such a process.

#### **4. The Case of Zeytinli: A Living Lab for Water-Sensitive Design**

The village of Zeytinli, located in the Edremit district of Türkiye at the foot of the ecologically significant Kazdağları (Mount Ida), was chosen as a "living laboratory" to develop and test a method for creating a context-sensitive design guide. Zeytinli is unique in that its entire urban character has been shaped by a centuries-old relationship with water, making it an ideal case for exploring how to integrate modern WSUD principles with a pre-existing "water culture." Therefore, Zeytinli was selected as the case study area due to its unique combination of characteristics that make it an ideal laboratory for exploring the integration of traditional and modern water management. The primary reasons for its selection include having a living water heritage (the presence of a historic, gravity-fed surface canal system used for both irrigation and domestic purposes); the rural – urban interface (exceptional characteristics of location surrounded by olive groves by the Mount Ida, yet experiencing pressures of urbanization); embedded social practices (a long-standing community culture of water management, including collective maintenance of

the canals -*imece*) and finally the environmental challenges (increasing pollution of the water, threatening both the ecosystem and the cultural heritage).

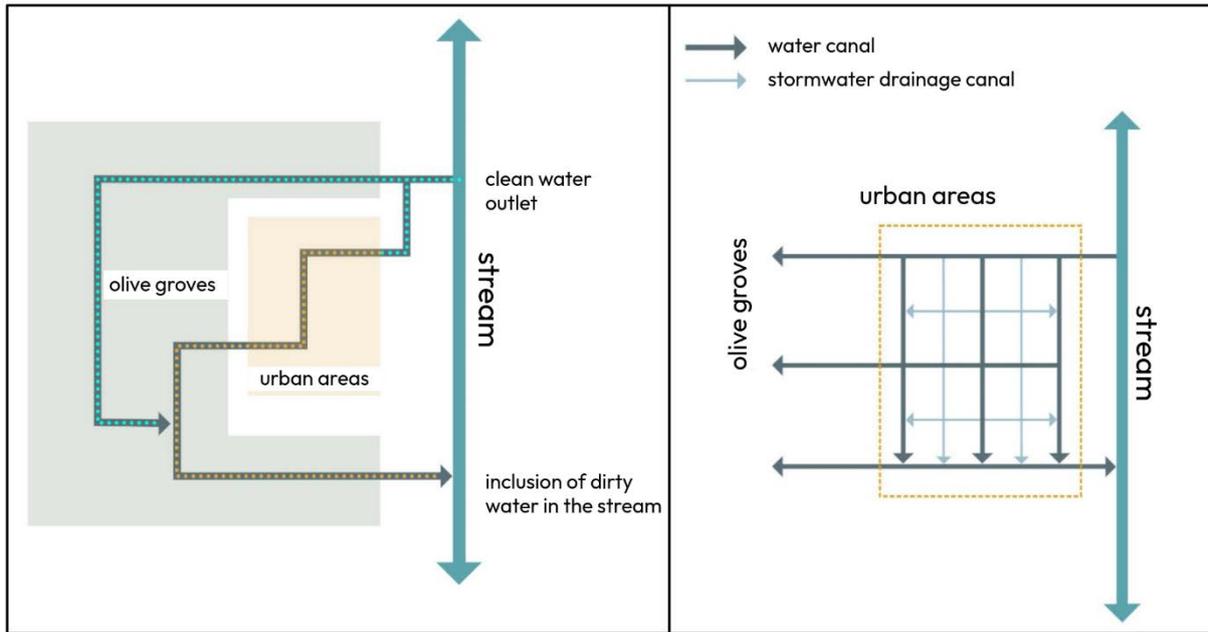
In Zeytinli, the distinct rural character and historical fabric provide a valuable context for analyzing a deeply embedded, non-industrial water system. Central to this is the existence of a canal network that carries spring water directly through the settlement, a feature that has defined its urban form. This is not a recent development; the settlement's relationship with water is historically profound, dating back to ancient times. This heritage is kept alive through local practices that actively integrate water into the public realm, making it a visible and social element of daily life.

Furthermore, the system's socio-cultural resilience is remarkable. The water canals were originally constructed and maintained using *imece*, a traditional Turkish method of communal voluntary work, and this collective management approach is still practiced today. Finally, and critically for this study, this unique heritage system faces a pressing modern challenge: the presence of significant pollution pressure. This is a direct result of wastewater and surface runoff from within the urban area mixing with the clean spring water transported by the canals, creating a complex problem that demands an integrated solution.

#### **4.1. Diagnosing a Vernacular Water System and Current Challenges**

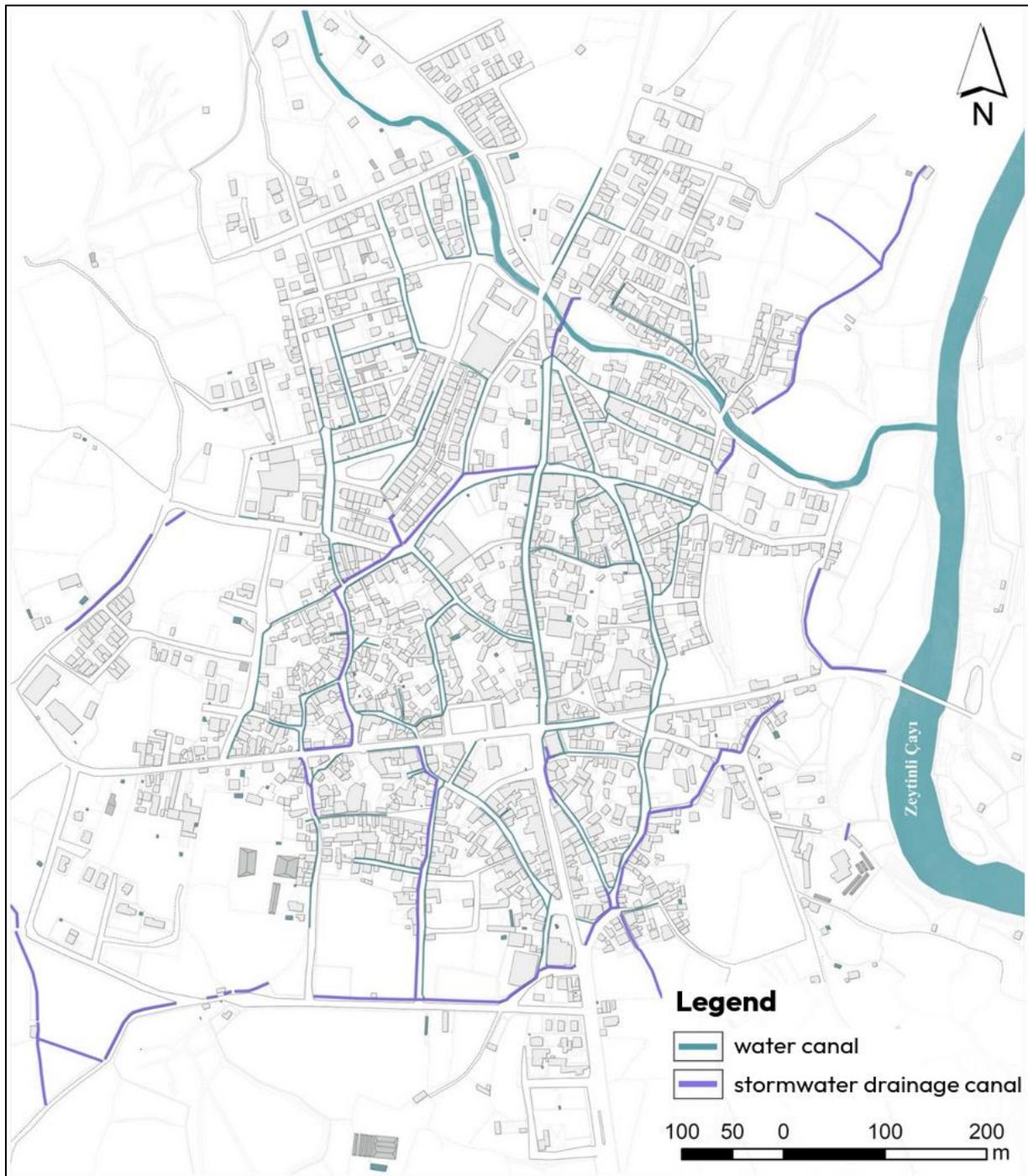
A detailed site analysis, combining GIS mapping, extensive field surveys, and semi-structured interviews with community elders and officials, revealed a complex, gravity-fed water system. Zeytinli's water system is characterized by two distinct but interconnected networks. The first is the **water canal system**. These are typically open, concrete channels that transport fresh spring water from the Zeytinli Stream, which originates in the Kazdağları mountains. This network operates entirely by gravity, flowing from the higher elevations in the north of the settlement, through residential areas, and out towards the surrounding olive groves for irrigation (**Figure 2**). Historically, this water was also the primary source for households for non-potable uses.

The second network is that of the **stormwater drainage canals**. These are shallow channels, often located in the center of streets (in concave streets) or along the edges (in convex streets), designed to capture and convey stormwater.



**Figure 2:** Relationship between Zeytinli water canals and stormwater drainage channels (Budak, 2023).

Crucially, these two systems are not separate. In many parts of the settlement, the stormwater drainage canals are designed to drain into the main water canals (**Figure 3**). Furthermore, wastewater from households (greywater) is often discharged directly into both the troughs and the canals. This creates a complex, hybrid system where fresh spring water, rainwater, and wastewater intermingle, a practice that was sustainable in a low-density past but has become a major source of pollution today. Water from this mixed system eventually flows back into the Zeytinli Stream, carrying pollutants from the settlement downstream.



**Figure 3:** Pattern of water canals and stormwater drainage in Zeytinli (Budak, 2023).

The water canals are not merely hidden infrastructure; they are a visible and integral part of the public realm. They flow through residential backyards, emerge to run alongside streets, and are bridged by simple stone slabs or metal grates at building entrances. This constant presence of moving water defines the acoustic and aesthetic character of the neighborhood.

The system has also generated a unique social infrastructure. Numerous public fountains, fed by the canals, are found throughout the village, serving as social gathering points. The management of the canals has historically been a collective responsibility, governed by the community through a system of communal voluntary work. Decisions about water distribution, canal cleaning, and repairs were made collectively, reinforcing social bonds. Today, this is formalized through a local cooperative, but the principle of shared management persists, with residents often using temporary diverters (metal sheets or stones) to direct water into their gardens for irrigation.

This traditional system embodies many of the core principles of modern WSUD: it is decentralized, gravity-fed, and highly integrated into the public realm. Water is a constant and visible presence, shaping the social life of the community through shared local management practices and the creation of social nodes around public fountains.

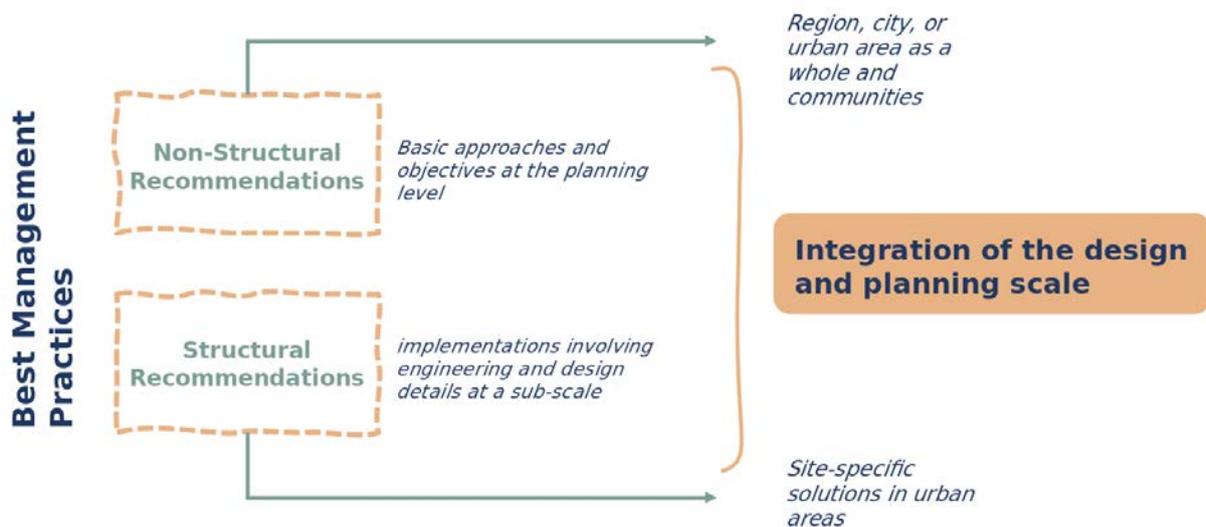
However, this valuable heritage is under severe threat. Increased pollution is the most critical issue. Increased population density, runoff from expanding tourism activities (campsites) in the upper watershed, and direct discharge of household greywater and effluent from small-scale olive oil factories have severely degraded the water quality in the canals. As a result, many residents no longer use the canal water for household purposes and have abandoned their subscriptions to the cooperative, further weakening the communal management system (Interview #3 in Budak, 2023). Secondly, the modern urban development in Zeytinli is completely disconnected from the traditional water system. New multi-storey buildings are constructed without integrating into the canal network, and new roads are built with conventional curb-and-gutter drainage systems. The official 1/1000 scale Land Development Plan and higher-scale regional plans fail to recognize, map, or protect the canal system as a unique cultural and environmental asset. They treat it as an outdated utility rather than a central piece of green-blue infrastructure. Thirdly, the canals, many of which are over 60 years old, are deteriorating. Lack of a systematic maintenance model has led to cracks, leaks, and blockages, diminishing the system's efficiency and aesthetic quality. Furthermore, the fourth challenge is commingling of water flows. The mixing of rainwater, spring water, and wastewater in a single channel system is a fundamental problem. It prevents the realization of the system's full potential, as the resource value of the spring and rainwater is lost through contamination.

In summary, Zeytinli presents a paradox: it possesses a unique, decentralized, gravity-fed water system that embodies many principles of modern WSUD, yet this system is on the verge of collapse due to pollution and a failure of contemporary planning to recognize its value.

## 6. A Proposed Method for Designing a Context-Sensitive Urban Design Guide

The insights gained from the critical review of global guides and the deep analysis of the Zeytinli case were synthesized to create a replicable, two-stage methodological framework. This framework is designed to be used by urban planners and architects to create their own localized WSUD guides.

The framework operates at two scales: non-structural recommendations at the master planning and governance level (**Figure 4**), and structural recommendations at the site design level, articulated through a spatial typology matrix.



**Figure 4:** Structural and non-structural recommendations (Budak, 2023).

### 5.1. Non-Structural Recommendations: A Foundation for Change

For site-specific interventions to be effective, a supportive policy and governance framework is essential. The guide proposes the following non-structural strategies:

At the core of the non-structural recommendations is a necessary transformation in **planning and policy**, beginning with the creation of an overarching strategic document. This process must begin at the highest strategic level with the development of a comprehensive "Sustainable Water Management Master Plan" at the sub-catchment scale, formally acknowledging the interconnectedness of the settlement with its surrounding landscape. Crucially, this overall vision must be translated into legally binding instruments by integrating WSUD principles into all existing planning documents, especially the 1/1000 Land Development Plan. This would involve officially recognizing the historic canal network as critical green-blue infrastructure and establishing protective buffer zones. This updated regulatory framework should be further strengthened by

specific, enforceable requirements, including a mandate for source control in new developments that requires rainwater harvesting and on-site detention/retention while prohibiting the discharge of untreated wastewater. To complement these regulations, the framework must also actively promote the reduction of impervious surfaces through mechanisms such as zoning incentives, encouraging more sustainable site design across the settlement.

Alongside these planning reforms, a robust **governance and management** framework is essential to ensure the long-term success of water-sensitive initiatives. A crucial first step is to establish a dedicated "Water Management Unit" within the municipality, moving beyond the current ad-hoc system to a professionalized body staffed with interdisciplinary experts responsible for overseeing the implementation and maintenance of all WSUD projects. This institutional capacity must be supported by a clear operational plan, specifically the development of a clear maintenance protocol for both the traditional canals and new WSUD infrastructure, with its sustainability secured through a fair and transparent utility recommendations (Budak, 2023).ee. Finally, to bridge the gap between municipal action and community engagement, this framework must include the launch of comprehensive community education programs focused on water conservation, pollution prevention, and the benefits of WSUD, aiming to rebuild the sense of collective stewardship that is vital for the system's enduring success.

On the **infrastructure** front, the most critical long-term strategy is the implementation of a phased separation of the currently commingling water systems. This fundamental overhaul is essential to address the root cause of water pollution and unlock the resource potential of the different water streams. The ultimate goal is to create three distinct and purpose-driven networks: first, a dedicated system for clean spring and rainwater, which would flow through the restored historic canals, preserving their cultural and aesthetic value; second, a separate collection system for greywater, designed for local treatment and strategic reuse in irrigation, thereby creating a circular resource loop; and finally, a modern sanitation system for the safe conveyance and treatment of blackwater, completely isolating it from the other water streams. This phased approach acknowledges the complexity of such an undertaking, positioning it as a strategic, long-term vision for the settlement's sustainable future.

## **5.2. Structural Recommendations: A Spatial Typology Matrix**

The core of the proposed guide is a matrix that links specific, identifiable spatial typologies within Zeytinli to a palette of appropriate structural WSUD interventions

(Figure 5). This moves away from a one-size-fits-all approach to a context-responsive design strategy.

IMPLEMENTATION	SCALE	URBAN															
	REGION / BASIN	SPATIAL TYPOLOGY															
		Playground	Recreation Area	Square	Sport Facility Area	Vacant Lot	Parking Lot	Main Street	Street and cul-de-sac	Walkway	Refuge	Sidewalk	Water Canal	Stormwater Drainage Canal	Stream and Creek	Structure	Structure Garden
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Rain Garden/Bioretenion						6(A)	7(A)										
Bioswale								8(A)		10(A)							
Permeable Pavement								8(B)									
Constructed Wetland	1(A)	2(A)														15(A)	
Filter Strip	1(B)							8(A)*					13(A)	14(A)			
Riparian Buffer	1(C)												13(B)		15(B)		
Retention Pond)																	
Green Roof																	
Rainwater Harvesting/Cistern																	
Detention Pond	1(D)	2(B)			5(A)												
Infiltration Basin																	
Infiltration Trench											11(A)			14(B)			
Soil Amendments	1(E)																
Planter Box						6(B)		8(C)	9(A)								

Figure 5: Structural recommendations and Spatial Typology Matrix for Zeytinli (Budak, 2023).

This is the innovative core of the proposed method. It involves translating the strategic toolkit into spatially explicit design guidelines through the creation of a **Spatial Typology Matrix**. This matrix disaggregates the complex urban landscape into a series of recurring, recognizable components. For each typology, a set of primary and secondary WSUD interventions is proposed, complete with key design considerations. This ensures that solutions are not applied in a generic, "one-size-fits-all" manner but are instead carefully tailored to the specific characteristics of each part of the urban fabric, within a context-responsive design strategy.

An abbreviated example of such a matrix, developed for Zeytinli, is shown below:

**Table 1:** Structural recommendation prioritization for Zeytinli

<b>Spatial Typology</b>	<b>Primary WSUD Interventions</b>	<b>Secondary WSUD Interventions</b>	<b>Key Design Considerations</b>
<b>Central Square</b>	Permeable Pavement	Planter Boxes	Retrofit impervious surfaces to allow infiltration.  Use planter boxes to treat runoff from adjacent buildings and add aesthetic value to a key social space.  Add greenery to the dense urban core.
<b>Arterial Roads</b>	Bioswales	Infiltration Trenches  Permeable Pavement	Utilize road verges and medians to create linear biofiltration systems that capture and treat the high volume of polluted runoff from road surfaces.  Redesign streets based on their function. Major streets should incorporate bioswales to treat runoff, while narrower organic streets can use planter boxes.  The use of permeable asphalt/pavers should be prioritized.
<b>Pedestrian Roads</b>	Planter boxes	Infiltration trenches	Utilize linear spaces like sidewalks to install infiltration trenches and planter boxes, intercepting runoff from adjacent road surfaces before it enters the main drainage system.
<b>Parking lots</b>	Permeable Pavement	Bioswales	Convert planned and existing parking areas from impermeable asphalt to permeable pavers, with bioswales along the perimeter to capture and treat runoff from the vehicle surfaces.
<b>Narrow Residential Streets</b>	Planter Boxes	Rainwater Harvesting	In space-constrained areas, focus on vertical and building-integrated solutions. Planter boxes can be integrated with traffic calming measures.
<b>Public Parks</b>	Constructed Wetlands	Detention Basins  Soil amendment	Design parks as multifunctional landscapes that provide recreation while also serving as major flood storage and water treatment nodes for the surrounding catchment.  Constructed wetlands can be sited to intercept polluted runoff from

			upstream areas before it enters the town, providing both ecological and amenity benefits.
<b>Recreation Area</b>	Constructed Wetlands	Detention basins	Design the recreational area along the Zeytinli Stream as a multifunctional landscape that also functions as a flood plain and bio-filter, integrating recreation with ecological restoration.
<b>Private Gardens</b>	Rain Gardens	Rainwater Harvesting	Incentivize homeowners to manage runoff on-site through the use of small-scale rain gardens and cisterns for irrigation.
<b>Buildings</b>	Green Roofs	Rainwater harvesting	Promote building-level interventions through incentives. Mandate rainwater harvesting (cisterns) for new buildings to reduce potable water use and control runoff at the source. Encourage green roofs on suitable structures.
<b>Stream / river</b>	Riparian Buffers	Constructed wetlands	Restore the natural riparian corridor of the Zeytinli Stream. Implement buffer zones to prevent encroachment and use constructed wetlands at key inflow points to treat water entering the main body of stream.
<b>Water Canals/ Troughs</b>	Filter Strips	Riparian buffers	The most critical intervention. Rehabilitate the existing canals. Where canals run alongside streets or through open land, establish vegetated filter strips along their edges to pre-treat incoming runoff. This helps to slowly clean the water within the system itself.
<b>Vacant lands / Underused Lots</b>	Rain Gardens	Planter boxes	Activate small, scattered vacant lots throughout the neighborhood as a network of "pocket" rain gardens to manage local runoff, increase green space, and improve biodiversity.
<b>Sports field</b>	Detention basins	-	Design the currently disused sports field as a dual-purpose facility that acts as a detention basin during heavy rainfall events, storing floodwater temporarily and releasing it slowly.

This matrix serves as a powerful and intuitive tool. It provides a clear, logical, and evidence-based framework that allows planners and designers to develop a coherent, city-wide network of interventions, ensuring that each individual project contributes to the greater goal of urban resilience.

## **6. Conclusion: A Way Forward for Livable, Water-Sensitive Cities**

The challenge of creating climate-resilient cities requires a fundamental shift in how we perceive and manage urban water. The conventional model of centralized, grey infrastructure is no longer viable in a world of increasing climatic uncertainty. The reactive, control-oriented paradigm of the past must be replaced by a proactive, integrated approach that designs *with and for water*. The future lies in developing integrated, decentralized, and nature-based systems that are adaptable, multifunctional, and deeply embedded in the local context.

The international principles of WSUD, LID, and SuDS provide the essential conceptual and technical tools for this transition. Given the findings of the research, it can well be asserted that the successful implementation of these tools depends on the development of robust, context-sensitive methodologies.

This study, through the case of Zeytinli, demonstrates that a rich repository of sustainable water management knowledge can often be found within the traditional practices and vernacular landscapes of historic settlements. Zeytinli's gravity-fed canal system is a testament to a "water culture" that has, for generations, integrated water into the daily life of the community. This system represents a form of proto-WSUD that offers a powerful foundation upon which to build a modern, climate-resilient future. However, as the research has shown, this valuable heritage is under imminent threat from pollution and the disconnect with contemporary planning practices, which fail to recognize its ecological and cultural significance.

By applying this methodology, it is possible to create a roadmap for Zeytinli that not only addresses its urgent problems of pollution and flood risk but does so in a way that restores and celebrates its unique water heritage. This approach ensures that investments in climate adaptation also serve to strengthen cultural identity, enhance public space, and improve ecological health. Ultimately, the case of Zeytinli suggests that the most resilient cities of the future will be those that learn to skillfully weave the threads of their past into the fabric of their future.

The critical review of 270 international manuals highlights a pressing need for a new generation of design guides—guides that function not as static technical catalogues but as dynamic, process-oriented frameworks. The methodology proposed in this paper offers a clear and replicable process to fill this gap. It provides a blueprint for urban

planners and architects to develop their own localized guides, empowering them to translate global knowledge into effective, place-based action.

For urban planners, this framework offers a systematic way to integrate water management into statutory planning, using the typology matrix to develop more nuanced zoning regulations, targeted capital investment plans, and evidence-based master plans. For architects and landscape architects, it provides a strategic design tool that connects site-level decisions to city-wide performance, fostering a more integrated and impactful design practice.

Designing for livability in the 21st century apparently means designing for water. By embracing a methodological approach that is both analytically rigorous and sensitive to the unique character of each place, we can move beyond simply mitigating risk and begin to create cities that are not only resilient but also more equitable, ecologically vibrant, and culturally rich.

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**Livable Places and Green Machinery**

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## ABSTRACT

A serious obstruction in the search for sustainable ways of life is the chasm that separates engineering and experience, or more precisely the engineering approach to low-impact buildings and the experience of thoroughgoing liveability. Though much is known on both sides, about cost-effective, low-impact heating and cooling, for example, and about truly satisfying dwellings and workplaces, the professions of architecture, development and construction have generated few examples in which they come together. This paper provides orientation to the nature of the problem; it is preparation for a workshop aimed at identifying patterns of the Alexander style for bringing the green engineering side of design and construction together with experiences of spaces that are truly and deeply liveable.

The work concentrates on buildings because almost all waking and sleeping hours in dominant world societies are spent indoors. A key distinction needs to be noticed between machine and place as these notions apply to buildings. The paper discusses the need for both, their recent histories, and the promise of Alexander-style patterns for showing where the chasm between them can be bridged, including a few examples of this happening in aid of sustainability. The goal is an agenda for further exploration of this critical issue.

## Livable Places and Green Machinery

Life needs connection. Every organism grows up in and needs to be part of a complex network of nourishment, shelter, and interspecies relations. I go so far as to say that without substantive connection to the world, a being is not really alive. The occasional moments at the summit of Everest or on the Moon may look like free-standing life, but they are really signs of how intricate and resilient the networks of life can be.

We humans actually know this. The big question we face is whether, with our extraordinary inventiveness, adaptability and talents for collective action, we can commandeer the rest of the planet to fashion our own network on our own terms. Some think we can, but unfortunately for them, evidence is growing that we can't: we humans are not collectively knowledgeable, smart, or wise enough to run the kind of network that's needed.

The pattern language approach to building, as pioneered by Christopher Alexander, takes a step away from the notion that we humans can and should be in charge. Buildings are still a human project, but pattern languages start from a conviction about our limits. Our imaginations, rationalities and memories, though prodigious, are still quite finite in relation to the intricacy and subtlety of the world connections needed for enduring, flourishing life on this planet. The pattern languages address this in two ways. They call on traditional knowledge, arguing that the test of time discards our less fruitful impulses. And they tell us that the most important guide to design and construction is intuition about how alive a building is.

What follows is a call and some preliminary suggestions for a possible alliance between this insightful way of understanding buildings and the much less immediate but inescapable knowledge we now have of threats to sustainability.

Sustainability as we now understand it came on the scene only about 40 years ago. In the mid-1980s, activists and scholars concerned about the health of the planet feuded over the relative importance of environmental protection and economic development. From the Brundtland Commission (1983-87) came a conceptual bridge: development should "meet the needs of the present without compromising the ability of future generations to meet their own needs".<sup>1</sup> In other words, business as usual, with its focus on short term, purely economic gains, would prove unsustainable; future conditions must be protected against all-too-visible present threats from air and water pollution, destructive resource extraction, and ecological disruption.

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<sup>1</sup> United Nations General Assembly (20 March 1987). Report of the World Commission on Environment and Development: Our Common Future.

## Livable Places and Green Machinery

Concern for sustainability thus arose from awareness of threats of global scale. This awareness originates in quite a different mode of thinking from pattern languages. I will call it the machine perspective, and contrast it with the mode which nourishes pattern languages, which I will call the place perspective.

In the machine perspective, a building is very like a clock or a car. It is a well-defined assembly of parts which operates predictably and reliably to do the building's intended work. It may have interactions with neighboring buildings or open spaces, but it is not defined by them. It could be picked up and put down in some other location, and still be the same building. In the place perspective, by contrast, a building is like a garden or meeting spot. It is the physical setting for activities which humans (or other beings) do as part of their lives. Unlike machines, places are partly defined by what is around them. Gardens, for example, have their character shaped very much by nearby locations and what typically happens in them. The same pathways and plantings would work quite differently in industrial, rural or inner city locations.

In truth, buildings are both machines and places. When it comes to sustainability, both perspectives have importantly different strengths, but also significant blind spots. The machine view has been able to identify and gauge the extent of buildings' involvement in the processes of regional or planetary scale that most threaten sustainability. This has taken measurement and theorizing, which the machine view excels at. However, the machine view has treated building services as irrelevant to lived experience in buildings, encouraging a trend toward greater and greater invisibility. Heating, cooling, lighting and waste handling have become ever more silent, out of view, and automatically controlled, and the unsustainable effects of providing them have been put at greater and greater distance from those who use them. This stifles awareness of these effects: it distances them from users mentally as well as physically. Out of sight and out of hearing may not put these things out of mind entirely, but does put them very much in the background.

The place perspective informs us about what it means for a building to be alive and about practical ways of achieving this, but it is uncritical about the large-scale impacts of its recommendations. It enables profound understandings of the varieties of experience in buildings, neighborhoods, and settlements, what enriches and what impoverishes them. But it has disparaged as mere engineering the efforts over the past 50 years to soften the unsustainable effects of modern patterns of building and urbanism. This amounts to climate denial, albeit of a high-minded kind.

## Livable Places and Green Machinery

Both perspectives have had much to offer in architecture, urban planning and construction, but neither by itself will bring us what we need: buildings that are both sustainable and alive. The search, then, is for an alliance of strengths. The fruits of such an alliance will be patterns of the Alexander form that can truly be called green. The discussion which follows is intended to help the search get started.

Can buildings be alive? Yes, says the pattern language school, in the sense of generating coherent activity in the world. The life of buildings is not biological, but it can be powerful. Buildings get things to happen. This can be dramatic, as when seventy thousand people in a stadium surge up from their seats in a roar of triumph or amazement. The stadium did not act by itself in this. The players on the field had a major role. But put those same players in a cleared space on a prairie, and have the seventy thousand fans in ranks of chairs on the flat ground, and the surge and roar will never happen. Other places have other life. The solemnity of the worship space in a cathedral, the peacefulness of a small sitting room with windows overlooking a nicely shaded garden, the agitation of a fast-food eatery all depend enormously on the buildings they occur in, the walls and their materials, the light, the height of the ceilings, the colors and patterns of the finishes, the temperature and humidity of the air, and all the other physical arrangements. The same people in different spaces might be made to speak the same words to each other, eat the same food, look about in the same directions, but their experience will be very different. Buildings get things to happen. And the best buildings get good things to happen. Life has ways of keeping itself going in all sorts of settings, but in the best buildings it flourishes.

For this flourishing to occur, a building must be coherent internally in the right ways and must also join coherently with its surroundings. This is where pattern languages and ecological thinking reach toward each other. The need for coherent joining has been a major focus of pattern language work. Entries, exits, windows, porches, archways, transitions of all kinds and scales turn out to matter a great deal. So much so, indeed, that boundaries become important zones of activity in their own right.

This [life] can only happen when the boundary between the two [i.e. inside and outside] is so thick, so fleshy, so ambiguous, that the two are not sharply separated, but can function either as separate entities or as one larger whole which has no inner cleavage in it.<sup>2</sup>

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<sup>2</sup> *A Pattern Language*, p. 1148

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Think about doorways to the outside, for example. The most practical and welcoming have provision for weather outside being different from what's inside. Umbrellas and raincoats have their place, there may be a seat for getting boots on or off, there is decoration on or around the door itself that has something to say about its function and about the values and priorities, conscious or unconscious, of the inhabitants in relation to their world. Screen doors, locks, eye-level peepholes, the very heaviness or lightness of the door as one swings it, the differences in flooring or paving—all such things make entering or leaving a building an experience in itself. It may be very routine, very much without grandeur, but it is experience distinct from what happens all the way inside or outside. As such, it can enhance or diminish life, according to the character of the connection.

Doorways to the outside are just one of the multiple significant places in a building. The machine perspective tells us they matter for sustainability, because much heat can be lost through them if designed badly. But for an example where threat and enlivening are more closely entwined, let us consider daylight. More accurately, not daylight, but daylighting, the architect's term for making use of natural light inside buildings. The machine paradigm, as understood and practiced over the past century, found ways to make reliable, low cost electric light. The same paradigm found it obvious that one could determine what lighting level is optimal in buildings and provide it at all times when light is desired, regardless of time of day, weather condition, season, or location. There ensued decades of homogeneous lighting in commercial and institutional buildings, the kind that are generally guided by expert technical advice. Complaints about the results being sterile, soulless, and deadening arose quite early and fairly often, but got scant attention. Conditions were not unworkable, costs were predictable and quite manageable, and bosses and architects liked the resulting flexibility in floor plans and use patterns. Good enough became a synonym for good.

Tellingly, this kind of lighting was rare in homes, at least when their occupants had any choice. Variety of fixtures, locations, and brightnesses were usual. People embraced the cleanliness and flexibility of electric light early, but never used it to create homogeneous indoor light levels.

Alternatives to this regime of uniformity began to appear in the 1970s and 1980s, when sustainability was emerging as an issue and reducing energy use in buildings began to be desirable. Designers began to explore the greater use of natural light, and when occupants were asked, they commonly said they got enjoyment and even delight from its variability of intensity and color. Yes, they wanted enough light; yes, they hated glare; but natural variability was a

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good thing. This is a place where less and more come together—less need for fossil-powered electricity and more relaxed and harmonious indoor experience.

This 50-year history of daylighting is powerful encouragement to the hope that moves toward sustainability can enhance life. We can articulate it in Alexander’s terms and format, i.e. as a pattern—a recurring problem, a context, and the kernel of good solutions:

### Daylighting Comes First

Problem: The inhabitants of buildings need light for almost all their activities. It may come from either natural or artificial sources, but both have too many drawbacks to be satisfactory as the sole means of meeting all these needs.



Discussion: Artificial light can be provided cheaply in ample quantities at any time of day, but is only straightforward when uniform and unchanging, which diminishes life in buildings. Present-day techniques also require significant amounts of electric energy. Natural light from sun and sky is enlivening, partly from its variability, and incurs no need for energy, but it is only available for part of each day and poses its own difficulties of control, such as glare and overheating. The situation is complex, and not well addressed by any single design move or stance. Lisa Heschong’s *Visual Delight in Architecture* lays out the considerations very well.<sup>3</sup> Building form, orientation and services and surrounding topography, vegetation and other settlement are all intimately involved.

Given the profound need for life in our buildings, natural light should be used as much as possible. The ways of doing this will vary greatly between residences and workplaces, and between locations on the planet.



Therefore, give high priority to daylighting in design of buildings and neighborhoods, whether new construction or adaptation and renewal of what already exists.

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<sup>3</sup> Lisa Heschong, *Visual Delight in Architecture*

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As always with patterns, good results from using this depend on knowing and properly using finer-grained patterns connected to this overarching one. Handling glare, for example, is essential to design for daylighting, and needs to be part of the work on windows, rooms and furnishings, all of which have their own clusters of patterns.

Unfolding the implications of this very general pattern about daylighting is an area of active work, sometimes guided strongly by its emphasis on life, sometimes less so. This should get us asking what other aspects of building have green patterns to be discovered. How would we look for them?

I propose three approaches, two for sniffing out where patterns are likely and one for testing candidate patterns that have come to light.

First, for people most comfortable and fluent with the machine perspective—I urge you to notice and contemplate the ways that you are partly defined by beings and places in the wider world, even at great distance, and they by you. Let me explain.

The machine perspective has probably made you familiar with impact thinking. Environmental impacts are bad effects on the planet from the ways we do things. Since we are focussed on buildings, consider the impacts of producing the lumber for framing standard American houses. It largely comes from clear-cutting segments of evergreen forest, with attendant destruction of habitats, disruption of streams and watercourses, and so forth. The bad effects are real, they come from our widespread use of certain housebuilding practices, and attention to them is justified. But this way of thinking takes house-builders and forests to be separate entities that happen to collide in a certain way. Entity A (house-builder) strikes entity B (forest), much the way one billiard ball strikes another. (Or buyer and seller at an auction, for that matter.) A and B both leave the encounter, redirected in greater or lesser degree, to carry on with their separate fates.

Impact thinking regards humans as separate from Nature. Impact thinkers may regard Nature lovingly and with concern, they may struggle bitterly with each other over what needs what kind of attention, they may tax themselves directly or indirectly to establish alternatives with lower impacts, they may get angry over avoidable damage to places or beings in Nature. But in this impact-centered consciousness they do not see damage to Nature as damage to themselves. It is happening somewhere else, in some place they might visit. If it brings a sense of loss, it is loss of opportunity, not the loss of an arm, leg or other defining feature of the self.

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There is another way of understanding what is proper connection with the planet. It comes from attending to ways the rest of the planet is part of making us who we are, and to ways humans are part of making the rest of the planet what it is. To use a not very familiar word, the planet helps constitute us. And we help constitute it.

We can look again at lumber and forest with these eyes. Lumber as it comes to a house-builder is more than a load of same-sized pieces with rectangular cross-section. To mention only a few of the ways it shapes the house-builder, it is a stepping stone to a livelihood, a token in commercial relations between builder and dealer, a candidate for the use of certain tools and not others, a harbinger therefore of certain dangers and not others. These relations and experiences are important in making builders who they are, individually and as a group. Builders are partly constituted by their lumber.

Forests are much less constituted by builders, but more than one might think. Substantial amounts of construction timber come from managed forests. Trees of selected species are planted in orderly fashion and thinned on schedule to eliminate slow-growing or somewhat twisted individuals, trees and surrounding ground are treated with chemicals to reduce unwanted understory plants and insects, harvests are done with heavy machinery. This kind of human intervention flows from the needs and preferences of builders, paper producers and other users, and forests are distinctly shaped by it, as well as by non-human actions.

Lumber is one way the wider planet shapes us, defines us, and it is one way we contribute to defining the planet.

There are certainly others. A search for green patterns can start by noticing the existence of these intimate connections, or by seeking them out.

Noticing this kind of connection amounts to realizing that one is larger than just one's ordinary body. What happens to the distant part is happening to oneself. If there is now some recurring problem in the distant part, there is a new immediacy to addressing it. And two of the ingredients of a pattern are present—the problem and its context. It then is natural to consider solutions one has heard of or solutions one can imagine, and weigh them as experiences. Do they provide symptomatic relief, the way aspirin does? Or is there deeper healing, regained energy, some new sense of capacity?

Let me give one quite personal example of this. I happened, through my wife's family, to become acquainted with Edward Larrabee Barnes, the architect, and his wife Mary Barnes, a noted designer. I visited their house outside New York City once, and had a swim in their pool. It was ordinary in size, but circular and painted black inside instead of the customary turquoise. The experience was strikingly like swimming in a lake or natural pond, and quite

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unlike a normal pool's. My world truly got bigger in this brief encounter. My sense of how one could be connected to Nature, or to the planet at large if you like, was deepened in a way that has stayed with me. It is part of what I am. It is a small part, not dominant or even much in view, but it is really present in this way. By contrast, ordinary pools, bordered by very similar concrete aprons and filled with the same kind of purified water, but holding it in a bright blue-green shell, came to seem glaringly unnatural, definitely divorced from the planet.

The Barnes pool was a solution to a recurring problem for sustainability. American swimming pools exist mainly for the pleasure of being in and near water, which is a genuine, valuable delight. For a variety of reasons, however, they have taken a form which reinforces the mindset that we humans are separate from Nature, which is one of the root causes of the unsustainability of the status quo.

I suggest, then, that one can productively look through one's experiences of places—and I mean places, not machines—to find moments or occasions which made one larger, more extended, more intimately connected with the world than one's ordinary body. These can help us all find our way from conceptual, metric, statistical, or logical notions about finding sustainability to an experiential, enlivening embodiment of it.

The second approach I propose is for people who start more readily from the place perspective. Consider the following useful variation, also from Alexander, in the definition of patterns:

Each pattern is a relationship between a certain context, a certain system of forces which occurs repeatedly in that context, and a certain spatial configuration which allows these forces to resolve themselves.<sup>4</sup>

In this way of putting it, the problem to be addressed is how to resolve a certain system of forces. What might these forces be? When design for sustainability is the goal, it is natural to start at large scale. The atmosphere and its CO<sub>2</sub> content is an extreme case, but very relevant. It seems scientifically clear that elevated CO<sub>2</sub> generates regional climate change and extreme weather.<sup>5</sup> The buildings where we live and work must then be a major focus of analysis,

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<sup>4</sup> *Timeless Way of Building*, p. 247

<sup>5</sup> My personal stance on this is simple: the additional energy stored in the Earth's atmosphere when it gets one degree Celsius warmer on average is about the same energy as would be released in about 90 days worth of typical Caribbean hurricanes. It will not necessarily come out as hurricanes, but we know that the atmosphere is very good at concentrating the diffuse energy of the Sun into intense wind and cloud of many kinds. The added energy in a single degree's warming will certainly show up somewhere, most likely making something more intense or extreme than it would have been.

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because climate and weather bear heavily on the experience of buildings, and we of the industrialized, digitized societies spend upwards of 85% of each 24 hours in buildings of one kind or another.<sup>6</sup>

Notice that this information is conceptual, not experiential. Like the previous mode of searching, this calls on its users to reach across from familiar to less familiar territory. People based in the place perspective will likely be used to sensing qualitative tendencies, appeals, repulsions, potential openings or closings. Alexander would regard these as forces as real as wind pressure or magnetic attraction. But they will typically be local or short range, acting within a building or neighborhood space. Sensing forces acting on regions or the whole planet, the scale which governs sustainability, will be less familiar to place-oriented people.

Faced with this, there will be a temptation to feel the place perspective to be irrelevant. But places are where people will experience the effects of sustainability-related forces, and the place perspective is what enables the purposeful weighing and shaping of experience. The search for green patterns by this approach therefore should be asking how the global or regional shows itself in the local.

Tradition already has things to teach us about this, because in many places tradition has responded sensitively to expected weather and climate. Roof overhangs, pylons to raise houses above ocean storm surges, ample south-facing and minimal north-facing windows in snowy locations—these are only some of what tradition has had on offer. With climate now changing, one can no longer simply copy traditional patterns, but they have much to teach about possibilities and starting points for further adaptation. One does need to reach into the territory of the machine perspective for indications of what changes may be underway at a given location, and this means becoming an intelligent listener. Computer models of climate are not authoritative, only indicative, however, and those who run them seldom know local tradition enough to make use of it.

Climate-informed building relates directly to the pursuit of sustainability. Proper orientation, sensitivity to annual patterns of solar availability and wind regimes, readiness for heavy rain or the possibility of flooding and similar design and construction choices can have big effects on energy used and construction-related carbon emissions, for example.

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<sup>6</sup> Klepeis, Neil E., et al. "The National Human Activity Pattern Survey (NHAPS): a resource for assessing exposure to environmental pollutants." *Journal of Exposure Science & Environmental Epidemiology* 11.3 (2001): 231-252.

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Another large-scale effect important to sustainability is known as embodied carbon. The materials that go into building are produced through processes that emit CO<sub>2</sub>; the carbon burden in the atmosphere would be lower if they were not produced. So we can consider each ton of steel or concrete, wood, or glass in building as responsible for its increment of CO<sub>2</sub> in the atmosphere and for the global warming and extreme weather that come from excess of this gas.<sup>7</sup> We know about this extra CO<sub>2</sub> and its effects from machine thinking, that is from considering the relevant atomic processes to be little machines at work, operating according to fixed rules we know a good deal about. Feeling, meaning, and system behavior have no bearing on what happens. The atoms just do what they have to when they come together or are bathed in solar radiation or whatever. From this conceptual, analytical thinking come strong indications of how the atmosphere and oceans will behave as ambient CO<sub>2</sub> increases.

This large-scale behavior is a force to be considered in the search for green patterns. One response by designers has been to reduce embodied carbon due to buildings by reusing building materials much more extensively than in the past. Nothing can be done about the carbon emitted when existing steel, wood, or concrete was made. It is out of our hands. But if they get reused, less new steel, wood, or concrete gets made, and the total of embodied carbon in the world increases that much less.

The machine-thinking analysis thus far does not by itself create places worth striving for. But it can motivate their creation, as the striking work of French architects Anne Lacaton and Jean-Pierre Vassal demonstrates. Over the past 40 years, they have made a body of work recognized by many awards, including the Pritzker Prize (2021), considered by many to be architecture's crown jewel. A core principle in their designs is

Never demolish, never subtract or replace, always add, transform or use, update, start off with the existing to do more and do better.<sup>8</sup>

A powerful instance of this principle at work is their 2017 project in the Grand Parc section of Bordeaux. Three apartment blocks, tall rectangular slabs with a total of 530 units, had been built as social housing in the early 1960s and had deteriorated by 2011 to the point where demolition and replacement by new construction would have been normal. Lacaton and Vassal's successful proposal was not to demolish. Instead, as one commentator put it,

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<sup>7</sup> Just to be clear: when analysts refer to embodied carbon in buildings, they do not mean carbon that has become part of the building, they mean CO<sub>2</sub> emitted as part of the building process and now circulating in the atmosphere.

<sup>8</sup> Puente, M. ed., 2024. *Lacaton & Vassal: Free Space, Transformation, Habiter: Espacio Libre, Transformación, Habiter*. Verlag der Buchhandlung Walther und Franz König.

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They have erected freestanding, precast-concrete structures along the southern facades of two 16-story buildings and the east and west facades of an 11-story building, extending the floor plate by almost four metres. Mean windows have been opened out with full-height glazing, flooding the apartments with light, and partition walls sawn away to allow flexible occupation.<sup>9</sup>

Each unit gained a sizable new room, whose exterior face was full-height, sliding glass panels. This “winter garden” was connected to the rest of its unit by wide, full-height openings, also fitted with sliding glass panels and with thermally effective curtains. The result was an enormous increase in daylighting and views of the outside world, not only in the winter garden but also well into the existing rooms, which were otherwise unchanged in layout.<sup>10</sup>

The heating needs of this new configuration were almost 90% lower than previously, thanks to the large amount of solar heating allowed by the glazed exteriors, the buffering effect of the winter garden, and added exterior insulation on the north-facing walls. Air conditioning is not needed, mainly because the summer climate is fairly favorable, but also because the design makes good use of local breezes. Each apartment could be opened very thoroughly to cross-ventilation in warm weather, and cold weather could be addressed by closing one or more layers of glass or curtain as desired. Control was in the hands of the occupants.

The existing structure remained in place, providing stability for the relatively lightweight structure of the extension. Aside from cutting the new openings, almost all construction work was outside the existing units, so tenants could remain in place except for the short time when that cutting was happening for their particular unit.

The commentator concluded,

And the cost of this wizardry? Just €65,000 per home—roughly half the price of building new apartments.

What is most striking about this project is Lacaton and Vassal’s determination that the system of forces to be resolved included inhabitants’ experience of light, openness, personal control of indoor climate, and stable occupancy as well as the impersonal forces of budget, heat flow, structural mechanics, regional climate, and the like. The machine aspects and place aspects of the situation got equal attention of a profound kind, and the result is truly livable and genuinely green.

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<sup>9</sup> Oliver Wainwright, *L’Architecture d’Aujourd’hui* no 412 (2016)

<sup>10</sup> Lacaton & Vassal projets/projects web page; accessed August 2025 via <https://www.lacatonvassal.com/index.php?idp=80#>. A thorough treatment of their handling of climate and livability is Anne Lacaton and Jean-Philippe Vassal, *It’s Nice Today: Climate, Comfort, and Pleasure* (Ruby Press; 2023)

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A third approach looks at candidate patterns, asking how well they meet the criteria. Do they put forward a notable recurring problem, and do they find the kernel shared by good solutions to it? Not always emphasized, but very important is that solutions embodying a pattern should not be identical everywhere. Each instance should be sensitively, even poetically adjusted to the particulars of its building. Every use of a pattern should have a family resemblance to its fellows, but coming out just the same is likely a sign of not attending closely to the meshing of the given pattern with others being used in the design.

As a test case, here is a candidate pattern of my own. I find it appealing in certain ways, but it needs testing. Can one call to mind instances where it was present, or instances that would have been improved by its presence? Are there instances that fit what's described, but work against sustainability or livability? Ideally, these instances would span a great variety of projects from different locations, cultures, levels of affluence, ages. Direct experience is most valuable, but close encounters via report or account are also good for this work. Reactions based largely on theory or interpretation are unlikely to be helpful.

### **Celebrate Heating and Cooling.**

Problem: Heating and cooling of modern buildings involves fuels or other energy supply, devices for using them to supply heat or cooling to the various spaces, and greater or lesser amounts of machinery, mess and noise. There is strong temptation to hide all this away. Yet tradition shows many examples across cultures of using heating or cooling and the means of getting them as organizing centers of indoor living, as sites for decorative art, and as sources of meaning and memory.

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Discussion Notes: Notice fireplaces, saunas, fountains, hand-held fans, Russian stoves, and so forth. Notice passive solar design, despite its pitfalls. Critique the pure utility approach to heating and cooling. Critique the effort to make homogeneous, unobtrusive indoor environment. The silent invisibility of electricity has a down side. A classic reference is Heschong's *Thermal Delight in Architecture*. Beware false solutions, e.g. gas heated fake logs.

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Therefore, find ways for the immediate sources of heating or cooling to be visible in handsome forms that bring delight.

Having assembled a number of instances, there can then be useful discussion of how this pattern relates to sustainability. Is it really a green pattern? My personal feeling is that as stated it carries only a light shade of green. I believe it is correct on the issue of visible versus hidden services. People cannot pursue sustainability in a grounded way if heating and cooling, currently responsible for a large fraction of carbon emission by buildings, are hidden from the awareness of building occupants. However, many of the examples mentioned in the discussion notes are carbon-intensive, so in celebrating them one would be delighting in steps taken backwards. Possibly there is a revision of this trial version that would more forcefully support low-carbon heating and cooling. On the other hand, it is possible that the experiential delight of some carbon-intensive modes of heating or cooling is enough that they should be used despite their contributions to atmospheric CO<sub>2</sub>. It is very important for the experience of buildings to be as profoundly healthy, rewarding, and delightful as possible within the conditions their use creates. CO<sub>2</sub> is not poisonous or destructive in itself. This planet would not be habitable by us without its presence. It is excess that should concern us, and excess can be managed in many different ways. It is activities everywhere on the planet that create it, only some of which bring experiences of actual delight and satisfaction. We should not lightly dismiss them.

I put Celebrate Heating and Cooling forward by way of indicating how candidates can be part of the search for green patterns. An initial notion like this needs thought about whether it points to a design move, a physical feature or an organizational or management practice that genuinely advances both sustainability and livability, but it has even greater need for experience, present or remembered, of moments and places where the notion seemed to be at work. Experience is the real test of a pattern, not eloquence or elegance. Gathering as much experience as possible is vital. So I invite readers to consider what experiences they have had that may relate to this candidate, and what thoughts they inspire about making it better, that is, more likely to inspire designs and practices that enhance and support life.

Here are the names of several further candidates that have occurred to me. This is the wrong place for unfolding, discussing, and improving or discarding them. I hope this can happen in future collaborative settings, like conference workshops. Finding patterns takes insight and imagination, which arise in individuals, but they also have

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profound need for group consideration, because it is only the ones that work for many people that deserve to be called patterns. My hope is that some of these names will provoke thinking about ways to bring machine and place together in buildings, and will encourage wide enough discussion for us to home in on the ones that really work.

Open Wide and Close Tight	Other Life in Your Life
Personal Heating/Cooling	Loose Fit
Layered Wall	Big Slow Fan
Weather Eye	Home Workplace
Keep What You Can	Buildings That Murmur

As I warned at the outset, this discussion has been exploratory, not definitive. It leaves plenty of loose ends from which readers can make further fabric if they choose. I hope to have contributed to joining the challenge of sustainability to the possibilities of enlivening the built environment, a joining I remain convinced is vital to a survival worth having.

Biometric methods are increasingly employed across commercial and research domains, and the advent of affordable wearable sensors has further expanded their applicability. In parallel, the development of software enabling remote recording of participant responses, without the need for laboratory visits, facilitates the recruitment of larger and more diverse volunteer cohorts. Building on work presented at the previous IMCL conference, the present study leverages these newly accessible biometric tools to extend beyond eye-tracking, examining biometric correlates of the participants' emotional responses to visual stimuli. The aim is not to supplant human intuition or aesthetic judgment—emotional responses, by definition, are subjectively experienced—but to complement them with objective, quantifiable evidence. Given the continued dominance of architectural and urban design paradigms widely perceived as misaligned with user preferences, such data-driven insights have the potential to support a shift toward more human-centered approaches in the shaping of the built environment.

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## **THE NORTHWEST ARKANSAS HOUSING INITIATIVE OF 2018: Making Housing, Making the City**

**Kent Macdonald and Anne Fougeron**

### **Introduction**

In early 2018 the Walton Family Foundation, the endowment arm of Walmart Inc., the multinational retailing corporation, sponsored the Northwest Arkansas Housing Initiative, focused on Bentonville, Arkansas, a city of approximately 55,000 people and home to the company's corporate headquarters.

There were three parts to the Initiative: a public symposium on housing issues held in Bentonville, a housing studio at the Fay Jones School of Architecture at the University of Arkansas in Fayetteville, and an international housing competition. This paper will discuss the Initiative's background, purpose, our conclusions about the results (particularly of the competition), and recent developments on the ground.

### **Bentonville and the Rise of Walmart**

Located in the extreme northwest corner of Arkansas, the city of Bentonville sits on the Springfield Plateau, a part of the Ozark Mountains that is characterized by low wooded hills and large open fields. The area was originally the hunting grounds of the Osage Nation until the first European settlers arrived in the early 1800's. Soon after, the Osage people were forcibly removed to Oklahoma, and Arkansas became the U.S.'s 25<sup>th</sup> state (and 13<sup>th</sup> slave state), with a population of barely 60,000 people. Though part of the Confederacy, Arkansas largely escaped the ravages of the Civil War (1861-5), owing to its isolated location and geography. For most of the next hundred years or so, Bentonville remained a small backwater, largely dependent on subsistence agriculture and chicken farming in the region around it. Until the 1950's, the population of the city itself was at most 3,000 people.

This humble narrative began to change in 1951 when Sam and Helen Walton established the Walton Five-and-Dime in a non-descript, two-story commercial building on Bentonville's historic main square. Over time, thanks to Sam Walton's large-scale discount retail strategies, the company experienced steady, even astounding growth. By 1972, Walmart was listed on the New York Stock Exchange, and by 2002, with hundreds of new stores across the nation, it had become the U.S.'s largest corporation. Today, it's the world's largest retailer with sales in the hundreds of billions of dollars and over two million employees. In the process, the Waltons became extremely wealthy: today, the founders' heirs, the children and grandchildren of Sam and Helen, are worth a combined 430 billion dollars. They are the richest family in the world.

With strong family ties to Northwest Arkansas, the senior Waltons had chosen early on to keep their corporate headquarters in Bentonville. Thus, as the company's size and fortunes grew, so too did those of the city, in terms of both population and area. This growth was helped also by the presence of two other Fortune 500 companies, Tyson's Foods and the J.B.Hunt Trucking Company, as well as the hundreds of outside vendors aiming to do business with them.

## Growth Begets Growth

As Bentonville’s “physical plant” grew through the latter part of the 20<sup>th</sup> century and into the 21<sup>st</sup>, it did so in a way that most American cities and towns grew in that time: outwards.

The heart of the city – its symbolic and historic heart anyway – is its small Downtown Square, across the street from the first Walmart store, and part of a small historic district comprised of older, brick, street-fronting, commercial buildings in the neighboring blocks. All around this zone is what we’ll call the central ring; in it, the buildings and uses are a mixed bag, but nonetheless a walkable and pleasant one. There are neighborhoods of tidy homes on narrow, shady streets, a handful of historic Victorian homes, as well as a few stand-alone commercial buildings, churches, the city library, and some newer mid-rise commercial buildings, including a new “bikeable” one: a sloped ramp winds up and around its five stories. There are also many low-rise industrial storehouses as well as a few newer townhouse/condo projects. But the central ring is also marked by innumerable open lots, either for parking or just vacant and overgrown, and so the place feels half empty and, in places here and there, a bit down at heel.

The ring is hemmed in on the north by hilly terrain containing tracts of single-family houses on large lots; on the east, it’s cupped by an interstate freeway, U.S. 49. To the west and south, however, the terrain is unencumbered; it’s flatter and more open and so the city leaks out beyond two wide commercial arterials, Walton Boulevard and U.S. Highway 71, both lined with the usual auto-oriented uses (fast-food franchises, gas stations, etc.) and low-slung office blocks and strip malls. Beyond these two streets, the terrain is more open still — and this is where much of Bentonville’s more recent growth has taken place. Here, along narrow country lanes, many newer residential developments have sprung up – widely isolated with expanses of flat, featureless fields in between. Together, the fields and subdivisions make a kind of checkerboard – of built vs. unbuilt – with the zig-zagging city-limit lines giving an indication of how growth has occurred here – in bits and pieces – each time pushing farther and farther away from the center.

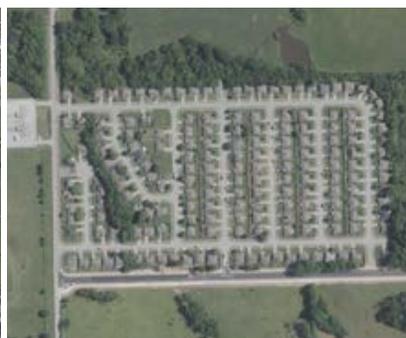
These enclaves seem to consist only of single-family houses on large-lots; there are no apartments or townhouses, nor do there appear to be any parks or playgrounds within them or near them. There are also no sidewalks or bike trails, which is perhaps inconsequential as there are no places to walk or bike to. Most of these rather imposing houses are long to the street, clad in brick with exaggerated, humped roofs – some so tall that if you stand in the middle of the street, they’re all you see on the horizon. The images below give a sense of this environment: from the left, a typical street scene in one development, an overview showing developments surrounded by farms and fields, and a close-up of a tract of homes, rigidly aligned.



Street scene in newer development



Checkerboard landuse pattern



Newer single-family development

This type of leapfrog development – of residential tracts set amidst unspoiled countryside – would create numerous problems for any city: increased traffic congestion and commute times; housing types and prices that discourage many home-seekers; the loss of valuable farmland; the loss of scenic and natural amenities; and most importantly for Bentonville perhaps, the loss of social connection with the cultural heart of the city.

Bentonville’s two landscapes – the older, more diverse central ring and the newer outback “monoculture” – are markedly different in character but they share many of the same underlying traits. Both lack the kind of intimate cohesion that builds the connective tissue of a city, and both lack the kind of housing that can serve a wider segment of the city’s population. A single-family home, whether in town or out of town, is not everyone’s ideal – but that’s practically all Bentonville has on offer.

### **The Walton Family Foundation (WFF)**

Along with their preference of keeping their headquarters in Northwest Arkansas, the Waltons were interested in fostering their hometown as a prosperous and pleasant place to live. It may be that part of this motivation was simply sentimental, i.e., a desire to do “good works” in the place they call home. At the same time, this desire may also be part of what one could call enlightened self-interest. To attract and retain a skilled workforce in the region, the company would have to work on “selling” Bentonville as a desirable, affordable place to live, work, and perhaps raise a family.

In this, the Foundation had its work cut out. The entire state of Arkansas, even recently, has continually been ranked very low – often in the bottom ten of all 50 states – in any number of metrics used to rank livability: income levels, educational performance, access to health care, crime (70% higher than the national average), poverty rate, child well-being, literacy, and so on. Whatever the positive attributes Walmart might offer to prospective employees, the reputation of Arkansas in general was less than stellar.

In 1987 the Waltons formed the Walton Family Foundation (WFF), a charitable foundation guided by the following vision, per its website:

We are guided by the belief that communities can thrive when they have access to opportunity. In Northwest Arkansas, that means building one of the most economically and culturally vibrant communities in the nation. One that promotes inclusive growth and a sense of belonging among all who live and work here. It also means developing a new generation of diverse, innovative leaders to drive a shared vision for Northwest Arkansas filled with opportunity for all.

In its first year, the total amount of grants was relatively modest, only one million dollars. Each year since then, however, the Foundation’s grantmaking has grown considerably: in 2024 it awarded nearly \$550 million dollars, and the total spent since its inception has been estimated to be in the billions of dollars; fully a third of the grants have been in what Walmart calls its “home region.”

At first, most of the grants had been for local community organizations doing work related to the environment, education, arts, recreation, and entertainment. But over time, this focus began to change from the intangible to the tangible. Beginning in the 2000’s, the grants became more ambitious, supporting the construction of several new cultural institutions. These have fundamentally changed the physical plant of the city.

The project with perhaps the deepest impact has been the Crystal Bridges Museum of American Art, established in 2011 and set in a beautiful creek-side park just north of the downtown. Designed by esteemed

architect Moshe Safdie, the museum has world-class holdings, thanks to the munificence of Alice Walton, the only daughter of Sam and Helen Walton, and a billionaire in her own right. Another Walton project that has proved very successful and popular is the Razorback Greenway, a 40-mile-long bike trail connecting seven cities in the region.

The list of other Walton-funded projects is extensive. The Thaden Charter School, a K-12 private school, and Brightwater, a culinary school, both opened in 2017. That same year, Alice Walton endowed a new school of medicine – complete with free tuition. The Momentary, a venue for contemporary performance art and culture, opened in 2020. Most recently, in early 2025, separate from the Foundation, the company completed a new 350-acre campus as the new home office of 15,000 Walmart employees, replacing the old headquarters on Walton Boulevard.

All of these new buildings have been in the blocks close to the main square, and their cutting-edge, ultra-modern designs are in sharp contrast to Bentonville’s traditional, down-home architecture. As infill buildings, they have created the outlines of a more walkable center, and as destinations, they have become draws for tourists and residents alike. All of this has furthered private development around the center: a new hotel, several new restaurants and bars, and boutiques are now in place.

These amenities have also changed Bentonville’s reputation, giving the city a new caché altogether different in character from its humbler beginnings, pre-Walmart, and different, too, from that of Arkansas in general. Several national news outlets have noted the transformation: in 2019, MONEY rated the city number seven on its list of Best Cities to Live in American; in 2023, the Wall Street Journal hailed Bentonville as the “capital of cool” for its arts and culinary scene; and just this year, USA today declared it to be one of America’s “hidden jewels.”

While these projects have brought landmarks and distinction to the city, the problem of the larger context of the city remains: much of the outlying parts of the city are enmeshed in a formless, auto-oriented, urban pattern, while the fabric of the central part of Bentonville, though pretty and walkable in parts, is still a disjointed patchwork. Something different was needed to weave a more refined grain of physical and social connectivity, especially in the central core.



The Thaden School



Rice House in Downtown Bentonville

### **The Northwest Arkansas Housing Initiative**

In 2018, the Foundation undertook an effort that would address several issues at once: the city’s problems with sprawl, its lack of housing diversity, and its lack of attainable housing. Working in partnership with the

Fay Jones School of Architecture at the University of Arkansas in Fayetteville (some 20 miles south of Bentonville), the Foundation sponsored the Northwest Arkansas Housing Initiative, bringing together a variety of stakeholders and interested parties in an effort to kickstart the development of new housing options – and with it, create a more livable city.

There were three parts to the Initiative: a public symposium on housing issues held in Bentonville, a housing studio at the Fay Jones School of Architecture at the University of Arkansas in Fayetteville, and an international housing competition. Together, these separate parts of the Initiative were the means to a very specific end: promoting “attainable” housing in a region under tremendous pressure to provide it.

## The Symposium

In February 2018, the Initiative began with a one-day symposium held at the Fay Jones School of Architecture on the campus of the University of Arkansas. The symposium’s byword, “Inform,” served to identify the many conflicting housing-related issues, both local and national, to a wide audience of architects, urban planners, developers, community organizers, political figures, teachers/scholars, and citizens.

A specific focus was identifying roadblocks to the creation of housing that is affordable for middle-income families, that is, families earning 60 to 120% of median income, a demographic that typically doesn’t qualify for subsidized housing and that is priced out of the kind of housing – large lot, single-family homes – that have been the most prevalent in the market.



Diagram of missing middle housing

The means to providing what’s called attainable housing (as opposed to affordable housing) is widely seen to lie in creating the smaller-scale building types known as the “missing middle,” a catch-all term for the middle of the density spectrum – rowhouses, duplexes, garden apartments, bungalow courts, and so on – that lie between the two extremes of single-family housing and large apartment complexes. These denser housing types bring with them particular advantages. Their smaller sizes mean they are more economical to build and more appropriate for certain populations: young families and empty nesters, for example. They are also more compatible with the scale of existing single-family neighborhoods, which means they are less likely to be opposed by current residents. Daniel Parolek, the Berkeley architect who coined the term, also sees the missing middle types as essential components of walkable cities.

The symposium brought out, too, the fact that housing – of whatever type – does not exist in a vacuum. In his opening remarks, Stephen Luoni of the University of Arkansas Community Design Center stressed that

housing costs must be paired with transportation costs to fully gauge their impact. By this measure, he said, Northwest Arkansans pay an astonishing 55% of their household incomes on those two items alone.

The speakers and panelists raised several other issues impeding attainable-housing development: gentrification that prices out long-term residents; land speculation that raises housing prices; growing income inequality between high-income corporate employees and service workers; public sector and non-profit developer inactivity; and, finally, a housing market that skews towards upper-income earners by focusing almost exclusively on single-family homes.

The symposium was a watershed moment for the city. Gathered together in one place were many individuals representing many different organizations – both public and private – each one with different perspectives and areas of expertise in the problem at hand. There was, too, an urgency and seriousness of purpose to the proceedings; in this, the support of the Walton Family Foundation was no doubt key. Walmart and the Foundation had already shown its commitment to the city – to the tune of hundreds of millions of dollars – and it was clear to all in attendance that the Walton family was committed to implementing workable solutions. In addition, the support of the Fay Jones School of Architecture, located at the University of Arkansas in Fayetteville, was significant. Led by Dean Peter MacKeith, the involvement of the school and its faculty members, was likewise important in raising the stakes for all involved. People understood that much was riding on a successful outcome.

In his keynote address, Shaun Donovan, the former U.S. Secretary of Housing and Urban Development, paid tribute to architects' abilities to "help people see and build the things they can only imagine." He went on to note the many advantages in the region: intellectual capital, a beautiful environment, and the authenticity of the historic downtowns. But he also issued a warning of failing to take seriously the problems now on the rise: accelerating housing costs, lack of workforce housing, unplanned sprawl, "placelessness" – and in the end, the loss of the attributes that might bring people to Bentonville. He urged his audience to tackle these issues together, as a community and as a region, and to build on the things that could make the place special. His speech, and indeed the Initiative as a whole, were calls to action.

### **The Studio: Making Housing, Making the City**

The Initiative also funded a senior housing studio at the Fay Jones School of Architecture. Anne Fougeron and Kent Macdonald took the lead in teaching the class, titled "Explore," and supported by design Professors Allison Turner and Carl Matthews of the Fay Jones School. The purpose of the studio was to introduce future architects and designers to the complexities of housing design – usually not a focus of most design studios in school – while also encouraging them to consider this important area of design as a potential part of their professional lives.

The problem the students were given was the design of a multi-story, multi-use housing project on any one of four sites, all chosen by the Foundation, and all located only a few blocks from Bentonville's historic town square. Defining the problem in this way was already a kind of double victory: it acknowledged that, first, any new housing should be located close to the center of things – i.e., not on the periphery – and, second, that any new housing should be different from what had been typically built before – i.e., not single-family housing on large lots. Thus, the problem was set to suggest the development of the city in more "livable" terms: walkable, connected, and diverse in the range of available housing types.

The studio was, for nearly all the students, their first foray into the design of multi-family housing. To boot, about half the students were interior design majors with little to no experience in designing at the scale of a building, let alone of a city. To get around this impediment, we formed the students into teams, with each team comprised of at least one architect and one interior designer; we needed to ensure that the interior design students could participate fully in the design process.

In the U.S., the projects in an undergraduate design school are not intended to be taken to an advanced level: there is a general emphasis on developing the formal language of the exterior – its overall form and skin – with a secondary emphasis on creating interior volumetric drama. The students are not weighed down with too much technical or practical baggage; instead, they're implored to "think big" or "outside the box."

In the design of mass housing, poetic license (i.e., thinking big) can become a fault line. Housing can't work solely on a conceptual level, however profound; its design requires finesse. Thus, the students were warned away from "spinning their design mojo" on "too speculative" buildings, stressing instead that we hoped the studio would result in buildable design proposals. In this, the Foundation's participation and public scrutiny, as well as the reputation of the Fay Jones School, were not lost on the students. They were made to understand that their work was significant.

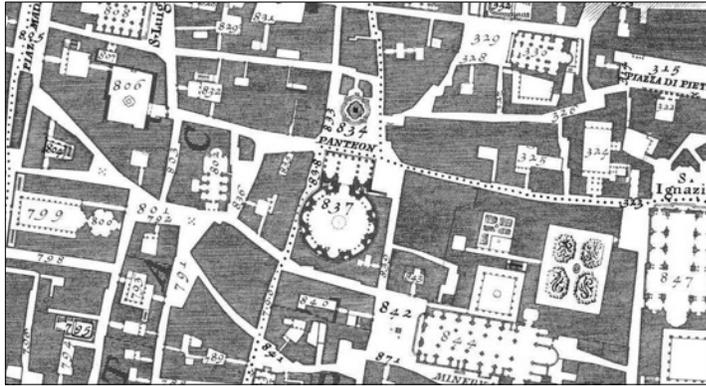
If the studio were to be at all helpful in building support for the development of marketable housing in the region, the students would need to get up to speed quickly on the complex formal and technical requirements necessary for their designing. At the same time, given the hope that new housing could serve to improve Bentonville's urban predicament, we would have to help the students see the city at a scale beyond that of their particular site.

Thus, in the end, the students would need to work at three different scales:

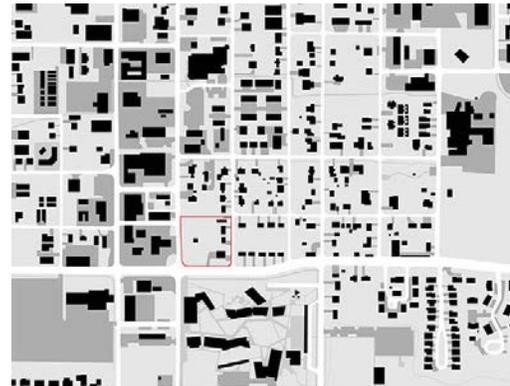
- At the smallest scale, that of the dwelling unit, the design would have to be suited to the needs of daily living for individuals, families, or other groups. It would have to be livable in particular ways: furnishable, comfortable, efficient in its layout, and offering access to light, air, and outdoor space. We warned the students that unit design is harder than it looks: dimensions matter.
- At the scale of the building, the design would have to function as a coherent architectural artifact that works as a home to a small community of people: it would have to offer privacy and but also opportunities for social interaction; it must offer a sense of safety within the confines of the building and any public spaces. In a low-density project, issues of livability are likely to be solved more readily. But as the development "load" intensifies, livability is stressed. The students would have to make tough choices about any number of different issues, such as the relationship between public and private spaces or the tension between security and openness.
- And finally, at the scale of the city, the design would have to function in – or at least respond to – the context of the surrounding uses, scale of buildings, building traditions, social patterns, architectural traditions, and overall urban form. How could the design improve all of the various criteria that we associate with livability: walkability, connectivity, neighborliness, et cetera?

Thus, the studio began with a series of exercises over the course of the first few weeks designed to familiarize the students with each of these issues of scale. One of the most important ones was a comparative mapping

assignment of a portion of Bentonville based on Giambattista Nolli's famous map of Rome (1748). The exercise was particularly helpful in getting the students to understand the city's relative sparseness: how buildings were isolated with poor connections to the ones around them, that is, how they existed as objects in space. The students could also see how void spaces were used less often as public gathering spaces, and more often as streets and parking lots for cars. With this quick exercise, the students had their eyes opened to the fundamental nature of the auto-oriented American City.



Nolli Map of Rome (partial)



"Nolli Map" of Bentonville (student work – 2018)

Following this series of exercises, the students began applying their new-found understanding and perceptions into design schemes over the course of the rest of the semester. Their designing was helped by visits to several newer mid-rise housing schemes on a trip in April 2018 to San Francisco, sponsored by the Foundation; for many of the students this was their first sojourn outside the Midwest. The final review was held in May of 2018 at the Fay Jones School of Architecture and was attended by several prominent architects and reviewers. Two projects deserve special mention; the schemes are described below.



Thaden School Site (student project)



Center Street (student project)

**Thaden School Site** (Students: Caleb Bertels, Victor Iwuna, and Sarah Kardell): This ambitious and well-presented scheme was for a site near the Thaden School, just south of the historic center. Each part of their project, tailored to different populations, responded to the diverse uses and building types in this fragmented neighborhood. A finely scaled courtyard, filled with a multitude of uses, tied the pieces together.

**Center Street Site** (Isaac Stanton and Hunter McCalla): These students took quite a different approach for their difficult, sloping site, just off Center Street and overlooking the Razorback bike trail. Their U-shaped building formed hard edges on three sides but opened to the trail below with a series of stepped terraces. With its dramatic slanting roof, bold assing, and stark white material palette, the building would serve as a striking landmark at the edge of the downtown core.

## The Competition

The professional design competition invited nationally and internationally recognized designers to “present mixed-income and attainable housing solutions that embrace the local challenges, culture, values, and vision of Northwest Arkansas.” From a field of 100 invitees, twenty-five design teams submitted entries for five sites in and around Bentonville, most of them close to the historic downtown. There were outright winners (and one commendation) on four of the sites and two commendations on the fifth.

The design competition’s imperative was “Advance:” to deliver ideas that would aid implementation of mixed-income and attainable housing. And this the competitors did. The twenty-five projects depicted an impressive array of responses to virtually every facet of housing design: building type, with low-rise, mid-rise, and even one high-rise scheme; unit type, seen in schemes with flats, townhouses, artists’ lofts, and combinations thereof; circulation type, seen in both walk-up and elevator/corridor buildings; and issues of orientation and aspect, seen in single-loaded and double-loaded corridor buildings. There were also a wide range of solutions for parking, construction, and sustainability, as well as ideas for compatible non-residential uses integrated with the schemes.

Below are the four winning schemes with short descriptions.

### **Ozark Podium (Site One Winner): Digsau Architects, Philadelphia**

The project site straddles the Razorback Greenway about a half mile from the Bentonville’s town center. It is in a very mixed neighborhood of older homes, new condos, vacant lots, and industrial sheds.

The winning design riffs on the idea of an Ozark farmstead, which is to say that it is composed of several buildings in four different sizes arranged informally on a slightly raised podium containing commercial space and enclosed parking. The sides of the podium are stepped and landscaped to provide access to a central courtyard. The smaller two-unit buildings are arranged around the edges of the site and serve to mask the scale of the larger apartment blocks clustered around the courtyard. All of the buildings use the same material palette of vertical wood siding with most of the black aluminum-framed windows set flush with the walls. The whole effect is to recall traditional farm buildings – but the aesthetic is decidedly modern.

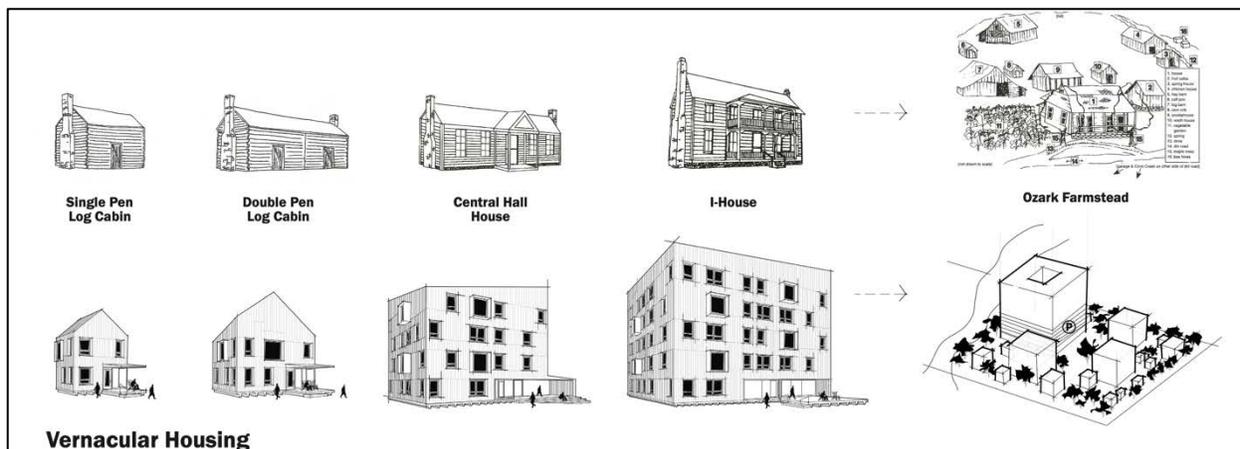
The simple forms, the slight skewing of the roofs, and sensitive treatment of the massing allow this scheme to fit well into the eclectic mix and scale of the neighborhood. The project is currently under construction.



Ozark Podium: View from Southeast (rendering)



Ozark Podium: Aerial View from Southeast (Drawing)



Ozark Podium: Diagrams showing Farmstead Inspiration and Interpretation

### NWHI (Site Two Winner): Kevin Daly Architects, Los Angeles

Located on (what was) an open, six-acre site just south of the Momentary, the contemporary art venue endowed by the Waltons, Site Two is a mile or so south of Bentonville's historic center and a few blocks west of Walmart's new corporate campus. The Razorback bike trail is just north of the site.

Bentonville's ubiquitous tree canopy became the generating idea for Daly's scheme, which, he said, was "deceptively straightforward." It's comprised of some 40 buildings arranged in loose, broken pinwheels around the site, each pinwheel comprised of three or four buildings surrounding an intimate communal space between them, sheltered by a new forest of trees linking the site to the Razorback. Various ground-floor uses in the different buildings tie the scheme to surrounding uses: arts and live-work spaces are in the buildings facing the Momentary; incubator and creative office spaces face the 8<sup>th</sup> Street Market. The open pinwheel scheme also had the advantage of creating more units with solar access on multiple sides of the buildings.

The buildings were all three stories and consisted of a mix of unit types and sizes: flats below duplex units, mostly, with some triplexes. The arrangement of the buildings created a series of open spaces of different sizes, emphasizing social interaction in more informal ways, rather than one large courtyard. In addition, each pinwheel group was linked by a second-floor walkway, facilitating movement between the units. The walkway was clad in a distinctive, over-scaled sunscreen intended to recall the tree canopy. All units have either ground floor open space or balconies.

The scale of Daly's scheme had perhaps the most modest, humble, and appropriate scale of all the submissions, perhaps due to his subtle reading of place – its informality – and the poetic choice of the Ozark's most prominent feature as inspiration: its tree canopy. He claimed, too, that his purpose was not to change the character of the city, but to work with it.

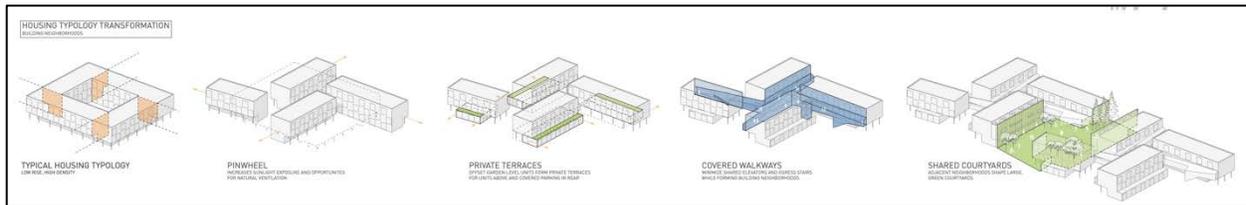
Since the competition, the northern half of the site has been turned into a multi-story parking lot for the Momentary. Daly has said that talks are on-going about revising the scheme to accommodate the garage.



Daly Scheme: Aerial View from Southwest (rendering)



Daly Scheme: View of Typical Open Space (rendering)



Daly Scheme: Diagrams showing Pinwheel Formation



Daly Scheme: Night View from the North (rendering)



Daly Scheme: View of Shared Courtyard

### 14<sup>th</sup> Street Housing (Site Three Winner): 5468796 Architecture, Winnipeg, Canada

The five-acre site comprises about half of a large open field about one mile south of Bentonville's central square, and less than a mile to Walmart's new corporate campus. Both SW 14<sup>th</sup> Street and SW A Street are heavily trafficked arterials, the "main drags" of the city, lined with the usual assortment of widely separated commercial uses.

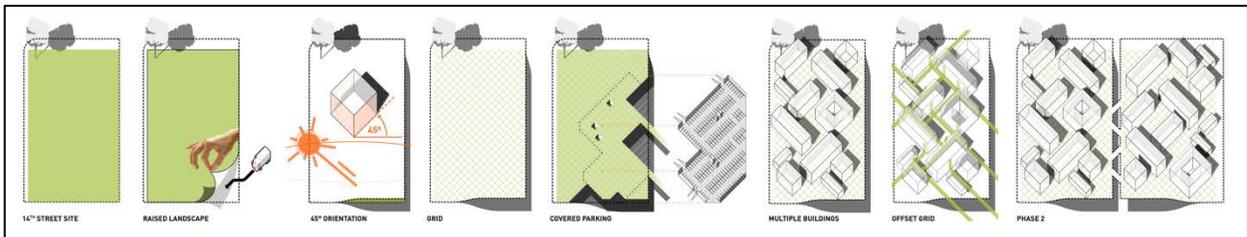
The scheme is conceived as a series of four-story bar buildings, all on a continuous 10x10 timber-frame grid, forming courtyards of different sizes on the interior, some of them at grade, the rest on a podium covering a parking garage. The entire project is turned 45 degrees to the surrounding streets, a strategy that creates a series of small triangular areas on the periphery and that break up the scale of the building. The courtyards on the podium level have a number of different communal or public uses: a gym, café, bike storage, workshop, and a convenience store, among them.

5468796 Architecture's scheme was a rather more formal project than the other winners. With uniformly scaled timber-frame buildings, it would be an imposing presence in the fabric of the town. Its award stemmed from the well-developed variety of its ground plane, the richness of its communal spaces, and the simplicity of its unique construction type.

Despite the massive and somewhat monotonous appearance, such a scheme could work in the low-slung environment that is Bentonville – and especially on this prominent but underbuilt intersection.



14<sup>th</sup> Street Housing: View of Central Courtyard (rendering)



14<sup>th</sup> Street Housing: Parti Diagrams



14<sup>th</sup> Street Housing: View of Ground Level



14<sup>th</sup> Street Housing: View of Ground Level

## Bentonville (Site Five Winner): Merge Architects, Boston

The site is located about two miles east of Bentonville's historic town center, off East Central Avenue, a major east-west arterial that connects the center with US Highway 49, a half mile to the east. The site itself is flat and currently an open field. The surrounding uses are varied, and the area typifies the kind of built environment so prevalent elsewhere in the city: a bit of housing (some modest single-family homes and an apartment complex) but also a strip mall, some industrial buildings, and a self-storage complex.

Nearby is a large community park with a pool, some playgrounds, as well as several basketball, baseball, and soccer fields. There is a Walmart Neighborhood market a half mile or so away; the new Walmart corporate campus is just to the south of that market. But like elsewhere in Bentonville, the low-slung buildings are far apart, and the wide, grassy setbacks along the streets, combined with the open play fields, seem to expand the distances and overall sense of emptiness. This is not a place for walking.

The Merge scheme shows the kind of deft thinking needed in such a featureless environment. The architects propose a new lane cutting into the site from the east but potentially continuing westward, and thus creating a new, more walkable connection between the site itself, the parks, and the downtown. There are six buildings arranged on either side of the lane the street, all of them artfully skewed and open to the center of the site, which is pedestrian-friendly and lined with outdoor spaces of various sizes.

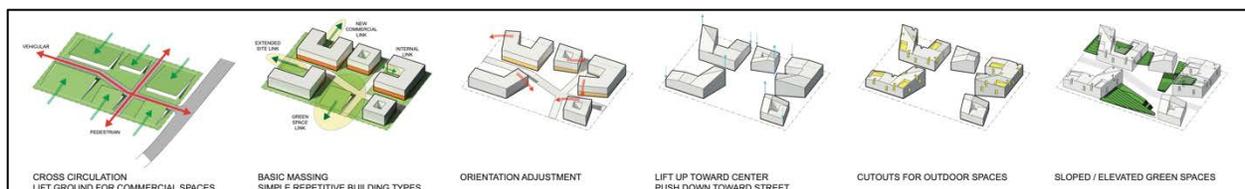
The buildings are of two types: bar buildings and courtyard buildings, three of each type. They yield a total of 220 units, mostly flats and a mix of live-work, studio, and one- and two-bedroom units. The architect's proposal suggests that the scheme could be repeated to the west, thus doubling the unit count, and also completing the east-west connection. Parking is below grade. A series of stepped gardens mask the ground floor on the exterior, while various commercial and social spaces occupy the interior.



Bentonville: View of Central Courtyard (rendering)



Bentonville: View from Rooftop (rendering)



Bentonville: Parti Diagrams

## Conclusions

The Initiative reinforced our belief that housing, particularly “missing-middle” housing, can be an essential element in transforming the urban fabric of a city like Bentonville. As suggested earlier in this paper, the Symposium brought together like-minded professionals, representing fields with different stakes in the production of housing, and seeded a conversation that would continue in the studio and the competition. The Studio provided a workable model for teaching housing at the undergraduate level; moreover, it engaged the students in an important issue of the day and empowered them to regard their own work with purpose and seriousness, especially given the fact that they were working simultaneously – on the same sites, at the same time -- with design professionals from around the world. in a sense – participating in the Competition

With its numerous empty or derelict spaces – parking lots, vacant lots, open fields, old barn or warehouse buildings – the essential and obvious task in rehabbing the city of Bentonville is to fill the interstices with new uses. Given the lack of housing diversity that exists, it is natural to look to denser housing types to accomplish it. Going beyond that, it would make sense to try to connect new uses with old ones; to have a range of housing types within a given project (flats and duplexes, for example); to incorporate other uses within a given project (a day care center or a workshop, for example); and to have a variety of open spaces for the residents to use (a tot lot and a basketball court, for example). All of the competition submissions had – in different ways – ascribed to this sensible recipe.

Furthermore, it would also make sense — for reasons of environmental responsiveness, convenience, and economy – that this new denser housing would occur close to the center, rather than on the periphery. Perforce, the competitors were all working with this constraint.

But first, one needs to be clear, in a place like Bentonville, **not any housing will do.**

One must correctly understand the nature of the city’s character that exists. Bentonville has been a small town for most of its two-hundred-year history. It is only recently a city, thanks to Walmart, of course, but it is still not a very large one. The place still retains a small-town atmosphere, ambience, and sensibility, even as the Foundation pushes an ambitious agenda – first, upgrading its cultural life, and second, improving its physical plant by sponsoring this competition.

But architectural competitions can be tricky. It’s tempting for competitors to “think outside the box” by making the problem bigger than it really is – as the students were warned not to do – and in doing so, missing the big picture, which is, of course, that the place is rather humble, “down-home.” And it seems that many of the submissions overshot the mark by inflating the scope and scale of the individual project. Several submissions were *grand ensembles* that might work in a denser, more cosmopolitan context – like Paris or Berlin – but were frankly out of place in Bentonville.

Three of the winning schemes – Ozark Podium, the project submitted by Kevin Daly’s office, and Bentonvillage – seemed especially thoughtful in their approach. As Daly succinctly stated in the preface to his submission: his “big” idea was to “address housing density without changing the character of the city.” The others, Bentonvillage and Ozark Podium, also seemed, in different ways, to adhere to this idea, and so it was easy to imagine any of the three fitting well into the fabric of the city. They did so by employing the following strategies:

- The massing was broken up: there were numerous buildings, not just one large complex, and their heights and sizes varied.
- The site planning was informal: the buildings were set at various angles to each other, not aligned in long bars or rows.
- The sites were porous: there was no imposing “streetwall” at the edges of the sites.
- There were a series of differently sized outdoor places for social interaction, not just one big courtyard.
- There was some recognition of the concept of place in the design: the materiality of Ozark Podium and Bentonville, and the shading devices of Daly’s constructed “tree canopy.”

The fourth winner, 14<sup>th</sup> Street Housing by 5468796, was more monumental and formally strict than the others, but it made up for this with an energized ground plane and faux topography. The scheme works because its site is a tabula rasa – straddling the line between the central core and the periphery. A monumental approach is appropriate because anything smaller would disappear in this environment.

## Recent Developments

It seems often that competitions end with the announcement of the winners. In this case, though, we can report that at least one of the winning schemes, Ozark Podium, is under construction. Another project, Kevin Daly’s proposal for the Momentary, has had to be revised due to the construction of a large parking garage on the site.



Ozark Podium: Nearing Completion (2025)



Ozark Podium: Nearing Completion (2025)



Daly Scheme: Aerial Rendering (2018)



The Momentary (Upper Left) with Parking Garage (2025)

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FOR 62nd IMCL CONFERENCE, 15-19 OCT 2025

## White Paper

on

# **TALL BUILDINGS RECONSIDERED The Growing Evidence of a Looming Urban Crisis**

Michael Mehaffy and Rachelle Alterman

Ax:son Johnson Foundation  
Centre for the Future of Places – Stockholm

And

Neaman Institute for National Policy Research at Technion – Israel Institute of Technology



**TALL BUILDINGS RECONSIDERED:**  
*The Growing Evidence for a Looming Urban Crisis*

**EXECUTIVE SUMMARY**

At a time of unprecedented speed of construction of tall buildings around the world, evidence-based evaluations of their drawbacks as well as claimed advantages are remarkably infrequent (Ng, 2017). Given the potential for long-term impacts of unknown magnitude, this situation seems to warrant urgent remedy. As a contribution to that goal, this research summary looks specifically at negative impacts, which we find are under-reported. Specifically, we find significant negative impacts in the following categories:

1. ***Economic externalities.*** There is evidence that tall residential buildings with for-sale units are significantly more likely to fail economically over time. A hardly addressed but important issue is the built-in market failure in meeting the maintenance costs of towers – especially residential towers – with condominium type ownership. Contrary to intuition, the maintenance costs broadly rise with height, reaching prohibitive sums that many households will at some point not be able to afford. Towers are thus destined to faster deterioration, greater difficulties in upgrading to newly expected standards, and major, unaddressed economic and urban challenges when the time comes to replace these towers. There is also evidence that the higher cost of tall residential for-sale buildings can fuel gentrification and make surrounding housing less affordable (Lehrer and Wieditz 2009).

There is also some evidence that tall buildings tend to suppress small-scale entrepreneurial activity by replacing older, smaller, more affordable commercial spaces with larger more expensive ones.

2. ***Social impacts.*** There is abundant cautionary research on the negative social impacts of residential tall buildings and their associated urban typologies, both for residents and for adjacent communities. These include greater isolation and loneliness for some populations, greater rates of depression and even suicide, and suppression of street-based social interaction (particularly for tall buildings with garages for private automobiles).
3. ***Impacts on the natural environment.*** There is evidence that tall buildings do not contribute significantly to urban sustainability, and that arguments to that end are often greatly exaggerated. Evidence shows that many tall buildings with claims to sustainability have performed poorly on environmental criteria in actual post-occupancy evaluations. Tall buildings also have higher embodied energy and resources than lower building typologies, greater exposure to energy heat and loss, and higher negative impacts on access to natural daylight and passive heating by adjacent buildings.
4. ***Impacts on the human environment.*** There is ample research indicating that tall buildings have many negative impacts on the livability of their adjacent public and private spaces. These include shading effects, wind effects, loss of sky view, canyon effects (concentration

of pollutants at street level), and aesthetic effects for larger numbers of residents, which, when judged by residents to be negative, affect more residents negatively for taller buildings. This problem is compounded by evidence of a significant divergence between what professionals and non-professionals judge to be a proper and pleasing building design, which becomes more consequential for more residents when buildings are taller, and thus more conspicuous. There is also an inherent cognitive bias in any profession, which in the case of architecture and development, can have negative ramifications for laypersons' quality of life.

## **Background**

In the last several decades, the number and height of tall buildings has greatly increased in many cities around the world. The benefits of these new buildings are widely discussed: symbols of civic identity, profitable engines of economic development, new homes and offices affording beautiful views, and accommodations for new urban growth in a more compact and (it is alleged) sustainable form.

Indeed, it has become a truism among many sustainability advocates that tall buildings are, by sheer virtue of the higher volume of building they provide per given footprint, paragons of sustainability. Some architects and other boosters now offer highly exuberant prescriptions for the building of many more “sustainable skyscrapers,” often with fanciful designs and technological features. Some proponents advocate a wholesale move to super-dense “skyscraper cities,” while others simply tout the green credentials of particular tall buildings, like London’s Gherkin or Manhattan’s New York Times Building.

These are strong claims, which should require strong evidence. In fact, troubling evidence points to many problems with tall buildings, on social, economic and even ecological grounds. Far from being paragons of sustainability, evidence indicates on the contrary that they are a highly problematic urban typology. At the very least, in light of this evidence, the burden should be on those who (for often understandable reasons of self-interest) are exuberant boosters of the type, to show that their negative impacts have been mitigated, and claims for their positive contributions have been fully substantiated. In particular, this should be a minimum prerequisite for any move to deregulate building height rules – which is indeed under way in a number of cities.

We must certainly acknowledge the numerous advantages and appealing qualities of tall buildings for their own residents (and to the developers’ profit margin). They can afford wonderful views to residents, or at least they can when not blocked by other similar tall buildings. However, it seems clear that, given the pace of growth of tall buildings – in both number and height – a sober assessment of the evidence is long overdue.

### *Looking at the evidence*

To be clear, the research does show that places like Manhattan and Vancouver, BC, perform well on ecological criteria: They conserve farmland and natural areas, they have relatively low energy use and emissions per person, and they have relatively efficient use of resources per person (notably in

things like buildings, pavement, etc.).

But how much of this is due to the presence of tall buildings? Is it possible that tall buildings are not a significant contributor in and of themselves?

More pointedly, does the research show that there significant negative impacts that we, as responsible practitioners, must bear in mind?

In a word, yes -- on both counts. One problem is that the current knowledge about the impacts of tower buildings is still rudimentary, especially regarding residential towers, and it is replete with unsupported assumptions about the ostensible benefits of tower buildings.

To be sure, there is a small but growing body of research on the benefits and drawbacks of tall buildings, and this research gives a decidedly mixed picture. This research shows that there are significant negative ecological and even economic impacts of tall buildings, as well as other negative factors, and the ecological benefits are not as great as is often assumed. We summarize some of this research below, and offer a sampling of citations.

### Definition

First, for the purposes of this paper, we define a “tall” building as any building more than fifteen storeys. This is a somewhat arbitrary definition, since both positive and negative impacts of taller buildings increase with height, and there are many complex factors at play, including materials, engineering requirements, local building codes, view sheds, and other variable factors. Nor are the impacts continuous by height, but rather, they are influenced by a series of “tipping points” above which different materials, structural designs, lift and egress designs, and other changes are required. Nonetheless, there is a significant difference between a ten-storey building and a twenty-storey one, sufficient to draw a line of definition between them.

### Three common types

Where tall buildings do exist in these cities, they often fall disproportionately into two categories. They are usually either single-use or limited mixed-use office buildings, or they are residential towers inhabited primarily by upper-income families. A third type of building is the public housing project created by government. Since these structures are rarely above fifteen storeys, we will not focus on that type in this paper.

However, it is worth noting that many of the taller (but below fifteen storeys) buildings that house the poor have an unhappy history. There is extensive research on their dysfunctions, calling into question their social suitability for families, their impact on children, their psychological impacts, their relation to their open spaces and propensity for crime, and other social issues. Moreover, in most cases these are not simply correctable design defects, but inherent problems stemming from isolation from the ground, lack of eyes on the street, and other attributes of taller buildings. These problems are clearly present and even exacerbated when residential buildings are above fifteen storeys.

Office buildings, a common type of tall building within city centres, by definition don't by themselves increase residential density, but depend for many of their claimed benefits on their location and the pattern of commuting. If they are confined to largely single-use office districts whose employees empty out in the evening, decamping to remote residential enclaves, then this is clearly not much of an ecological benefit.

## **A. Economic and legal impacts**

### *1. The illusion of internal economic efficiency masks the real cost of long-term maintenance of towers.*

Contrary to conventional wisdom, tall buildings often entail *higher* rather than lower maintenance costs per unit, despite the large number of owners; the taller, the more complex, although not quite in a linear relationship (for details see Alterman 2010). A further problem is related to the structural attributes of tower buildings, which operate like complex, closed machines that are not amenable to structural changes. Unlike regular buildings, in towers it will not be possible to grant additional development rights in the future (incentive zoning) to finance the necessary updating costs. Tower buildings are less amenable to structural modifications, so there is a greater danger that their relative value will eventually diminish, causing them to lose their position in the housing market, and thus to deteriorate faster than smaller apartment buildings. In addition to current expenditures for routine maintenance, comparatively larger investments are required for periodic repair and replacement of expensive machinery, large scale upgrading and renovation of the whole building and so on, than applies to regular buildings.

The problem of financing maintenance is much more severe in residential towers (almost always in condominium ownership) than in office towers. These edifices have built-in susceptibility to market failure in their decision structure. The large number of households in a tower along with the high absolute costs of maintenance are breeding ground for "free riders". This means, that even if the monthly payment is not met by a few households, the elevator is likely to continue to run and the stairs cleaned for many months before the "free rider" effect leads to organizational or economic collapse. Especially challenging would be the higher periodic investments needed for upgrading the technologies, or Any initial socially based understanding among the original owners is likely to erode over time, as apartments change hands or are rented out, and as the costs rise due to building deterioration. As the time range expands, and higher investments are needed for renovation, it becomes increasingly likely that many of the original owners will have moved out. An 'intergenerational' problem then arises, whereby upon sale, each owner has an interest in passing on the onus of financing maintenance to the new purchasers. When this happens on the large scale of a residential tower, the effect on deterioration is inevitable.

### *2. The legal frameworks differ across countries, but their impacts are barely researched.*

Since residential towers are almost always in condominium ownership (called strata in Pacific countries), there is a special legal structure that determines or guides decision making and the mutual obligations of the apartment ownership; However, the differences in the legal structures are

not socio-economically neutral. The decision-making rules may have direct or indirect implications for participation, social inclusion or exclusions. Furthermore: various legal requirements in the law to prevent payment defaults along with the legal powers of the condominium association could have major impacts on the costs of maintenance and thus on the future of the buildings' good functioning. The different legal formats can also impact the socio-economic composition of the ownership and reinforce the inherent exclusionary attributes of towers.

Condominium laws differ from country to country. There is no published large-scale comparative research on a wide span of countries' laws and practices and their urban impacts in practice. There are however a few published papers on one or a few countries. Harris (2011) analyzes British Columbia. Alterman's 2010 paper compares Florida and Israel, and Garfunkel's paper (2017) presents part of the findings of a larger research project in-progress by Alterman and Garfunkel encompassing four countries.

Alterman's comparison of Florida and Israel reports on two legal regimes which may represent the two extremes on the range of condominiums laws: In Florida the law is very sophisticated in its attempt to assure funding for long-term maintenance of condominiums. It grants the condominium association a draconic legal right - to take over any apartments if the owner has not paid the monthly fees for more than a month! The Association can then sell the apartment, deduct what is owed, and give the rest to the owner. In addition, the law requires that apartment buyers put aside a hefty fund for future repairs, to be managed by the association. These drastic rules come hand in hand with scores of pages of legal caveats and rules placed both on the developer and on the buyers. To meet these legal and financial requirements, buyers would need to hire a slate of legal and economic experts, thus raising the costs of apartment purchase. These are exclusionary factors built into the legal requirements. (Despite all these protections many condominiums did not survive the 2008-9 crisis when the condo associations found themselves with too many defaulted apartments and a weak market).

At the other extreme is the Israeli "thin" law, which is typical of many other countries as well. It has the minimal elements necessary to run a condominium, and has served the country well for 70 years – a country where the vast majority of urban residents live in condominiums (spanning most price levels). However, the simply condo laws are not geared to assure the long-term maintenance of tower buildings. With scores and hundreds of owners the social fabric that could work with 10-20 owner is silenced. The absolute maintenance costs, as noted, are also much higher. Although the law does not require hiring of building-management corporations, towers have not practical choice but to do so. The entrance of maintenance companies changes the entire decision-making structure, adding third players in the game, with many unanticipated repercussions. Research on these repercussions is still embryonic. The Israel Ministry of Justice is currently considering legal changes, but these are not likely to tackle the inherent costs of maintenance – probably even exacerbating the problem.

### *3. The claims that tall buildings provide a stimulus for economic development are weak.*

Another issue that should be considered is the relation of real estate development, and tall building development specifically, to the economic development strategy of a city. Indeed, tall buildings are

often linked to economic development and the growth of jobs by many proponents. Some advocates of tall buildings, like Harvard economist Edward Glaeser, favor a kind of “supply-side” development strategy using real estate development to create jobs, and to lure wealthy people into the city to generate additional economic opportunities for others.

To be sure, there is strong evidence that real estate development can serve as a spur to economic growth. Cities like Phoenix, Las Vegas and Atlanta have explicitly used suburban real estate development in exactly that way. Arguably the economic development of the American middle class was fueled in part by suburban real estate development, along with the growth in automobiles and household goods. The question now is what is the quality of this economic growth, and how sustainable is the model?

There is some evidence that real estate development per se is a short-lived contributor to a regional economy, and that it can also produce unintended negative consequences. Vancouver, for example, experienced explosive growth of tall buildings beginning in the 1990s, and the surging wealth in the city also contributed to its high cost of living. The city is now in the midst of a broad civic debate about the wisdom of tall buildings, with many people expressing misgivings – a debate that is not typically acknowledged in proponents' arguments.

There is a strong alternative argument about the dynamics of cities, most famously articulated by the urbanist Jane Jacobs. She argued for a diverse city, with diverse uses, and diverse building ages and costs. In such a city, she argued, there are opportunities for entrepreneurship at a range of economic price points and “rungs of the ladder.” The problem with the supply-side model may be that it focuses too much on one end of the economic spectrum, and it thereby exacerbates inequality and the under-performance of some sectors of the economy. Jacobs' “slow burn” approach, while it may not produce the quantity of riches for some sectors that the urban supply-side model does, nonetheless produces a steadier, more sustainable form of urban growth – and one most likely to preserve a city's livability, which is also a key economic asset.

## **B. Resource and ecological impacts**

### *1. The claims for benefits from density are not supported by the evidence.*

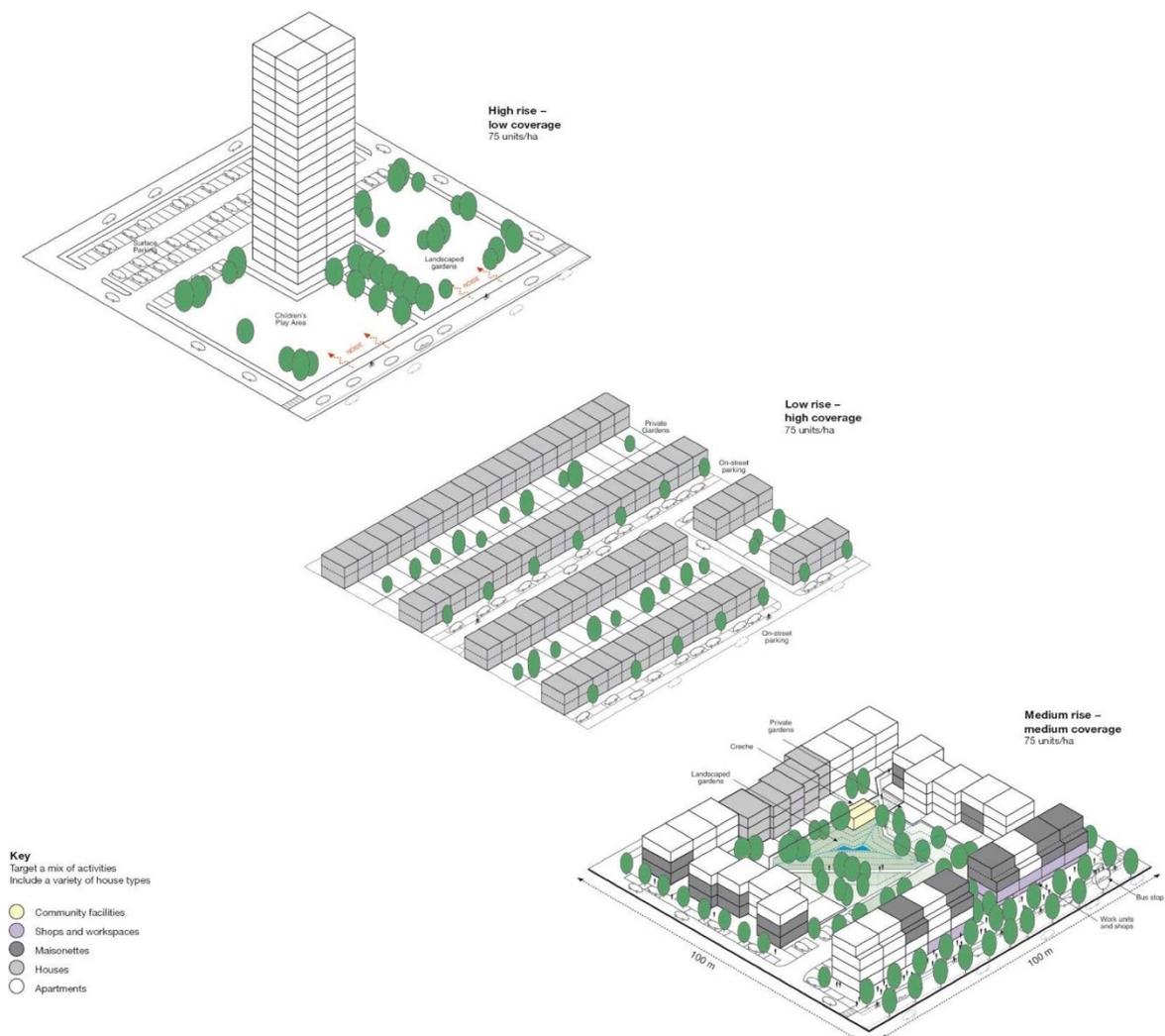
One of the most common arguments for the benefits of tall buildings is that they create dense settlement patterns that are inherently beneficial in reducing energy, resource consumption and emissions. A related argument is that the denser form of tall buildings reduces sprawl.

But as a recent UK House of Commons report concluded, “The proposition that tall buildings are necessary to prevent suburban sprawl is impossible to sustain. They do not necessarily achieve higher densities than mid or low-rise development and in some cases are a less-efficient use of space than alternatives.”

Often cities like New York and Vancouver are cited as stellar examples of dense ecologically superior cities with tall buildings. It's usually assumed that it's the tall buildings in these cities that give them the edge.

As noted earlier, these cities are indeed very positive when it comes to carbon and other ecological metrics. But it's often overlooked that tall buildings are only a fraction of all structures in these places, with the bulk of neighborhoods consisting of rowhouses, low-rise apartment buildings, and other much lower structures. They get their low-carbon advantages not only from density per se, but from an optimum distribution of daily amenities, walkability and access to transit, and other efficiencies of urban form.

Figure One. Density and tall buildings are not synonymous. A drawing by Sir Richard Rogers shows the same density in three completely different urban typologies. From the Urban Task Force, 1999.



From an urban sustainability perspective, it is not just density, but the efficient placement of people and their activities, that is important. A dense downtown, far away from a dense bedroom community, may actually be worse, from a carbon point of view, than a less dense mix of the two.

Furthermore, research shows that the benefits of density are not linear, but taper off as density increases. In other words, there is an optimum density, above which the negative effects of density start to increase over the positive ones. That "sweet spot" seems to be in the neighborhood of about

50 people per acre. Many cities around the world achieve this density without tall buildings, while creating a very appealing, livable environment (e.g., Paris and London, as well as the aforementioned parts of New York, Vancouver et al.).

*2. There is other cautionary evidence about the negative ecological consequences of tall buildings.*

Research literature documents the following problems:

1. Increasingly high embodied energy of steel and concrete per floor area, with increasing height, requiring more resources and energy per unit of useable floor space.
2. Relatively inefficient floorplates due to additional egress requirements (e.g. multiple stairs).
3. Less efficient ratios of common walls and ceilings to exposed walls/ceilings (compared to a more low-rise, "boxier" multi-family form — as in, say, central Paris).
4. Significantly higher exterior exposure to wind and sun, with higher resulting heat gain/loss.
5. Challenges of operable windows and ventilation effects above about 30 stories.
6. Diseconomies of vertical construction systems, resulting in higher cost per usable area (not necessarily offset by other economies — these must be examined carefully).
7. Limitations in insulation and solar gain of typical lightweight curtain wall assemblies (there are efforts to address this, but many are unproven).
8. Challenge of maintenance and repair (in some cases these require high energy and cost).

*3. Evidence from post-occupancy research on environmental performance is not encouraging.*

When actually measured in post-occupancy assessments, many tall buildings have proven far less sustainable than their proponents have claimed. In some notorious cases they've actually performed worse than much older buildings with no such claims. A 2009 New York Times article, "Some buildings not living up to green label," documented the extensive problems with several noted sustainability icons. Among other reasons for this failing, the Times pointed to the widespread use of expansive curtain-wall glass assemblies and a failure to account for increased user consumption of energy.

Partly in response to the bad press, the City of New York instituted a new law requiring disclosure of actual performance for many buildings. That led to reports of even more poor-performing sustainability icons. Another Times article, "City's Law Tracking Energy Use Yields Some Surprises," noted that the gleaming new 7 World Trade Center, LEED Gold-certified, scored just 74 on the Energy Star rating — one point below the minimum 75 for "high-efficiency buildings" under the national rating system. That modest rating doesn't even factor in the significant embodied

energy in the new materials of 7 World Trade Center.

Things got even worse in 2010 with a lawsuit [“\$100 Million Class Action Filed Against LEED and USGBC”] against the US Green Building Council, developers of the LEED certification system (Leadership in Energy and Environmental Design). The plaintiffs in the lawsuit alleged that the USGBC engaged in “deceptive trade practices, false advertising and anti-trust” by promoting the LEED system, and argued that because the LEED system does not live up to predicted and advertised energy savings, the USGBC actually defrauded municipalities and private entities. The suit was ultimately dismissed, but in its wake the website Treehugger and others predicted, based on the evidence uncovered, that “there will be more of this kind of litigation.”

This is a paradoxical outcome. How can the desire to increase sustainability actually result in its opposite? One problem with many sustainability approaches is that they don’t question the underlying building type. Instead they only add new “greener” components, such as more efficient mechanical systems and better wall insulation. But this “bolt-on” conception of sustainability, even when partially successful, has the drawback of leaving underlying forms, and the structural system that generates them, intact. The result is too often the familiar “law of unintended consequences.” What’s gained in one area is lost elsewhere as the result of other unanticipated interactions.

For example, adding more efficient active energy systems tends to reduce the amount of energy used, and therefore lowers its overall cost. But, in turn, that lower cost tends to make tenants less careful with their energy use — a phenomenon known as “Jevons’ Paradox.” Increasing efficiency lowers cost, and increases demand — in turn increasing the rate of consumption, and wiping out the initial savings. The lesson is that we can’t deal with energy consumption in isolation. We have to look at the concept of energy more broadly, including embodied energy and other factors.

There are often other unintended consequences. A notable case is London’s sustainability-hyped “Gherkin” (Foster & Partners, 2003), where the building’s open-floor ventilation system was compromised when security-conscious tenants created glass separations. Operable windows whose required specifications had been lowered because of the natural ventilation feature actually began to fall from the building, and had to be permanently closed. The ambitious goal of a more sophisticated natural ventilation system paradoxically resulted in even worse ventilation. (See also Capeluto et al 2003).

#### *4. Life-cycle costs and energy retrofitting affect towers’ role in emissions*

The life-cycle costs of constructing towers in various specific geographic contexts are also not factored into the cost calculations by developers or consumers. These too are worthy of more research.

Because most older buildings are low or mid-rise, there is little research on environmental retrofitting of towers, especially not on residential towers. The global agenda is increasingly focusing on zero-energy consumption and on installing renewable energies in building, and standards and technologies are in flux. For example, new solar energy technologies to paste on windows and walls, will soon be economically viable . Tower buildings consume much energy, but

also offer a lot of potential window and wall surface areas . But towers, especially condominium towers, are likely to prove recalcitrant. The legal framework and the already high costs of maintenance (without counting in energy ) are likely to make such retrofitting difficult. Towers might not be good friends of the climate-change agenda.

### *5. No building is an island*

Another major problem with green building programs happens when they treat buildings in isolation from their urban contexts. In one infamous example [“Driving to Green Buildings”], the Chesapeake Bay Foundation moved its headquarters to the world’s first certified LEED-Platinum building — but the move took them from an older building in the city of Annapolis, Maryland to a new building in the suburbs, requiring new embodied energy and resources. The added employee travel alone — what’s known as “transportation energy intensity” — more than erased the energy gains of the new building.

The theory of resilience points to the nature of the problem. Systems may appear to be well engineered within their original defined parameters — but they will inevitably interact with many other systems, often in an unpredictable and non-linear way. We look towards a more “robust” design methodology, combining redundant (“network”) and diverse approaches, working across many scales, and ensuring fine-grained adaptivity of design elements. Though these criteria may sound abstract, they’re exactly the sorts of characteristics achieved with so-called “passive” design approaches.

Passive buildings allow the users to adjust and adapt to climactic conditions — say, by opening or closing windows or blinds, and getting natural light and air. (Capeluto and Shaviv 2001). These designs can be far more accurate in adjusting to circumstances at a much finer grain of structure. They feature diverse systems that do more than one thing — like the walls that hold up the building and also accumulate heat through thermal mass. They have networks of spaces that can be reconfigured easily, even converted to entirely new uses, with relatively inexpensive modifications (unlike the “open-plan” typology, which has never delivered on expectations). They are all-around, multi-purpose buildings that aren’t narrowly designed to one fashionable look or specialized user. And perhaps most crucially, they don’t stand apart from context and urban fabric, but work together with other scales of the city, to achieve benefits at both larger and smaller scales.

### *6. Older, shorter buildings often perform surprisingly well.*

Many older buildings (prior to the age of cheap energy) took exactly this “passive” approach, simply because they had no alternative. In an era when energy was relatively expensive (or simply not available) and transportation was difficult, buildings were naturally more clustered together in urban centers. Their shape and orientation exploited natural daylight, and typically featured smaller, well-positioned windows and load-bearing walls with higher thermal mass. The simple, robust shapes of these buildings allowed almost endless configurations. In fact, many of the most in-demand urban buildings today are actually adaptive reuse projects of much older buildings.

The results of this passive approach are reflected in good energy performance. While New York’s 7

World Trade Center actually scored below the city's minimum rating of 75 out of 100, older buildings in the city that had been retrofitted with the same efficient heating, cooling, and lighting technologies fared much better: the Empire State Building scored a rating of 80, the Chrysler Building scored 84.

But age alone is clearly not a criterion of success. The 1963 MetLife/PanAm building (Walter Gropius & Pietro Belluschi), now a half-century old, scored a dismal 39. Another mid-century icon, the Lever House (Skidmore, Owings & Merrill, 1952), scored 20. The worst performer of all was Ludwig Mies Van der Rohe's iconic Seagram building, built in 1958. Its score was an astonishingly low 3.

What's the problem with these buildings? As the earlier New York Times article noted, they have extensive curtain-wall assemblies, large window areas and other limitations. On a fundamental level, as we can now begin to see from resilience theory, they lack many crucial resilient advantages of older building types. There may be something inherent in the building type itself that is non-resilient. The form language itself could be an innate problem — something that, according to systems thinking, no mere bolt-on “green” additions can fix.

#### *7. Perhaps it's time to re-assess “Oil-interval” architecture?*

Architectural critic Peter Buchanan, writing recently in the UK magazine, *The Architectural Review*, placed the blame for these failures squarely at the feet of the Modernist design model itself, and called for a “big rethink” about many of its unquestioned assumptions [“The Big Rethink: Farewell To Modernism — And Modernity Too”]. Modernism is inherently unsustainable, he argued, because it evolved in the beginning of the era of abundant and cheap fossil fuels. This cheap energy powered the weekend commute to the early Modernist villas, and kept their large open spaces warm, in spite of large expanses of glass and thin wall sections. Petrochemicals created their complex sealants and fueled the production of their exotic extrusions. “Modern architecture is thus an energy-profligate, petrochemical architecture, only possible when fossil fuels are abundant and affordable”, he said. “Like the sprawling cities it spawned, it belongs to that waning era historians are already calling ‘the oil interval’.”

### **C. Social and health impacts**

*1. In addition to ecological and economic impacts, the research literature also paints a rather damning picture of social impacts, for both residents and those around them.*

1. Psychological effects on residents, especially children. After surveying the literature, Gifford (2007) concludes that “the literature suggests that high-rises are less satisfactory than other housing forms for most people, that they are not optimal for children, that social relations are more impersonal and helping behavior is less than in other housing forms, that crime and fear of crime are greater, and that they may independently account for some suicides.”
2. Social effects, particularly at the street. Tall buildings can function in effect as "vertical

gated communities,” failing to activate longer stretches of streets with ground-level doors and windows. (We discuss this problem in more detail below.) This problem is exacerbated with tall buildings that have their own internal garages, through which residents may enter and depart without ever setting foot in the public realm.

3. Shading of other buildings and public spaces. This has obvious impacts on degree of sunlight and skyview, and impacts on those who are using the public realm.
4. Ground wind effects. Some of these effects can become quite strong (e.g the so-called “Venturi effect”) which can make public spaces unpleasant. The proverbial “windswept tower plaza” seems to be more than a stereotype.
5. Heat island effects. Tall buildings clustered together are known to trap air and heat it, placing increased demand on cooling equipment in warm climates, and making adjacent public spaces less habitable.
6. "Canyon effects". Similarly to heat island effects, canyon effects can trap pollutants, reducing air quality at the street and in public spaces.
7. Psychological impacts for pedestrians and nearby residents. This is a more difficult area to evaluate and depends greatly on the aesthetics of a particular building. However, there is research to show that a design that is (or comes to be) experienced as ugly by adjoining residents can significantly degrade their experience of the public realm and quality of place.

## *2. Vertical gated communities?*

Residential towers – almost inevitably in condominium ownership - have a built-in capacity to take on aspects of gated communities, whether intentionally or not. Towers must be self-contained in controlling vertical traffic. They have expensive machinery that must be maintained and thus, as noted, must charge significant maintenance costs. Towers have many housing units, and therefore must have an effective decision-making mechanism that is unlikely to be in a “town meeting” format. The inevitable anonymity and the physical inability to see who comes in and out, increased issues of security. Gated communities thrive on the perception of need for security (Atkinson & Blandy, 2005; Blandy 2011). Tower condominiums invest sizable resources in technologies such as key fobs, CCTV and reception desks. This, in turn, serves to support claims that tower condominiums, as urban enclaves, act as a source for urban fragmentation (Warner, 2011; Webster and Glastz, 2006)

Thus, even if tower condominiums don’t exercise overt selection of owners based on income, lifestyle, number of children etc., they do become “vertical gated communities” to some extent. Gatedness limits interaction and social capital across socio-economic groups (Margalit 2009). Moreover, like horizontal gated communities, they bottle up the activity of residents that might otherwise help to enliven the public realm. Lastly, there is the simple and rather embarrassing fact that when it comes to residential density, you can’t count people more than once: if wealthy tower residents have two or three homes, then their residential population count has to be divided between

these. This fact alone reduces the conventional density count of some higher-end residential tower neighborhoods (like those in Vancouver) significantly.

## *2. Additional evidence from research on the divergence between architects' and laypersons' aesthetic judgments*

A basic question about any building is its contribution to the public realm, and to the aesthetic qualities that are most valued by citizens. This comes down to the even deeper question, “for whom do we build?” Do we build only for our own buyers, or for our own professional community? Or do we need to take into account, in a democracy, the preferences of others whose experience of our buildings is within the public realm? If so, what are those preferences, and how do they align, or diverge, from those of professionals?

In the case of tall buildings, this question takes on much greater importance. A six-story building that is disliked by non-architect residents might be a problem for the neighborhood, but a sixty-story building that is disdained by non-architect residents (and possibly visitors too) becomes a problem for the entire city.

Here the research is also quite cautionary (see Appendix II for citations). In a widely cited survey of other research, psychologist Robert Gifford and his colleagues reported that “architects did not merely disagree with laypersons about the aesthetic qualities of buildings, they were unable to predict how laypersons would assess buildings, even when they were explicitly asked to do so.” The researchers pointed to previous studies showing cognitive differences in the two populations: “Evidence that certain cognitive properties are related to building preference has already been found.”

The researchers stressed that architects did not simply disagree aesthetically with non-architects: they literally *could not see* the difference between their own aesthetic preferences and those of non-architects. “It would seem that many architects do not know, from a lay viewpoint, what a delightful building looks like. If we are ever to have more delightful buildings in the eyes of the vast majority of the population who are not architects, this conundrum needs study and solutions.”

Of course, every profession has its own biases and cognitive limitations, and it’s unfair to suggest that architects are unique. Every profession is a bit like the proverbial “carpenter with a hammer, for whom every problem looks like a nail.” We see the world through the lens of our own training and experience, and sometimes our specialized concerns become detached from the concerns – perhaps even the common sense – of our own clientele.

In social psychology, this well-known problem is described by what is known as “Construal Level Theory.” The more removed we are from the concrete experience of, say, how buildings affect real people in ordinary life, the more we must construe our work and its goals in abstraction – and the more remote those “construals” can become from human beings and their needs. Of course the same is true for planners, developers, business owners or anyone else working in the built environment.

But in the case of architects, the research is helping to explain a particularly consequential way of seeing the world. It seems that, where most people see objects in context, architects as a group (and, we should add, their art-connoisseurs and media boosters) tend to focus on objects in isolation from their contexts. Where most people look for characteristics that help buildings to fit in and to increase the overall appeal of their surroundings, architects seem to focus narrowly on the attributes of buildings that make them stand out: their novelty, their abstract artistic properties, their dramatic (even sometimes bizarre) contrast.

Some researchers have concluded that this peculiar way of seeing comes from architects' unique studio education. Students must stand out in a highly competitive environment, and they do so by winning praise for the clever novelty of the art-objects they produce. In the abstracted world of studio culture, those objects are usually very far removed indeed from their real-world contexts – as anyone who has taught studio, like me, can readily observe.

But of course, this training turns out to be useful preparation for the role that architects must too often play in the modern development process: they must “brand” their buildings, their clients and themselves as attention-getting novelties, the better to compete as commodities with others. This focus on the design of novel art-objects is a historically exceptional development. Up to the 20th century, architecture was by necessity a close adaptive response to its human and natural context. On that concrete foundation, architecture explored its more abstract expressions.

As the urbanist Jane Jacobs pointed out, this is a healthy relationship between life and art: namely, life serves as the foundation upon which the art is an enrichment of meanings. But as Jacobs warned, when this relationship is confused – when abstract art seeks to supplant concrete life – the results are very bad for life, and probably bad for art too.

But as Jacobs also observed, this is precisely what professionals allowed to happen – even encouraged to happen – in the 20th century. The marketing allure of their fine art was used to rationalize, even glamorize, a toxic industrialization of the built environment. The results of this malpractice are evident today in ugly, dysfunctional cities and towns all around the globe.

Of course many architects blame others for this degradation of settlements: developers, engineers, or the non-architects who design a large percentage of structures. But architects occupy a singular leadership position, whether by action or inaction. It is architects whose influential ideas about cities and buildings profoundly shape what others can do in the built environment – perhaps by deeming certain kinds of designs “fashionable” or “edgy” – or conversely, “reactionary” or “inauthentic.”

Historically, it was also architects who helped to shape the most beautiful, enduring, well-loved cities, towns and buildings of human history. As we enter a time of unprecedented urbanization – on track to produce more urban fabric in the next five decades than in the previous 10,000 years – it is architects who now have an urgent responsibility to lead a humane, sustainable form of settlement for the future.

But the new research findings make it clear that this will require some major soul-searching.

Outmoded ideologies and practices must be fundamentally reassessed. The distorted conception of architecture as fine-art novelty, in dramatic contrast with its context – with its environment, and with its history – must be reformed. In its place we require an architecture of life – one responsive to human need, and to the patterns of nature and history.

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## APPENDIX I:

### RELEVANT EXAMPLES FROM RESEARCH ON TALL BUILDING IMPACTS

Guedi Capeluto, Abraham Yezioro, Daniel Gat and Edna Shaviv (2003). "Energy, Economics and Architecture." Proceedings of the Eighth International IBPSA Conference, Eindhoven, NL August 11-14, 2003.

Excerpt:

"Very often, high rise buildings are proposed as a means of achieving high urban density. However, **tall buildings may cause environmental problems like high wind velocities in open spaces around them, as well as extended shadows over nearby houses and open spaces** (HELIOS, 1999, 2000). Moreover, the construction cost of high-rise buildings is steep (Tan, 1999, Gat, 1995). **When all these factors are taken into account it is not a priori clear that the desired high urban density can be achieved by tall buildings along with an acceptable solution to the above mentioned environmental problems. Recent studies have shown that a reasonable density may be achieved with six stories high buildings while preserving the solar rights of neighboring buildings, as well as open spaces among them** (Capeluto and Shaviv, 2001)."

Citations given above:

Shaviv, Yezioro and Capeluto. (1999) The Influence of High-Rise Buildings on their Energy Consumption and Urban Shading. HELIOS Ltd., 1999.

Tan W. (1999). "Construction Costs and Building Height." Construction Management and Economics, Vol. 17, pp. 129-132.

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G.J. Treloar, R. Fay, B. Ilozor, P.E.D. Love (2001). "An Analysis of the Embodied Energy of Office Buildings by Height." *Facilities*, 2001 Volume: 19 Issue: 5/6 Page: 204 - 214 ISSN: 0263-2772 DOI: 10.1108/02632770110387797 Publisher: MCB UP Ltd

Abstract:

"Aims to compare the energy embodied in office buildings varying in height from a few storeys to over 50 storeys. The energy embodied in substructure, superstructure and finishes elements was investigated for five Melbourne office buildings of the following heights: 3, 7, 15, 42 and 52 storeys. **The two high-rise buildings have approximately 60 percent more energy embodied per unit gross floor area (GFA) in their materials than the low-rise buildings.** While building height was found to dictate the amount of energy embodied in the "structure group" elements (upper floors, columns, internal walls, external walls and staircases), other elements such as substructure, roof, windows and finishes seemed uninfluenced."

Excerpt from conclusion:

**"Alternatives to tall buildings should be sought, but where unavoidable, measures to reduce the size of the building, reduce the intensity of material usage (especially energy intensive and**

**nonrenewable materials) and to minimise wastage should be fully explored."**

Gifford, Robert (2007). "The Consequences of Living in High-Rise Buildings." *Architectural Science Review* 02/2007; 50(1):2-17. DOI: 10.3763/asre.2007.5002

Abstract:

A full account of architectural science must include empirical findings about the social and psychological influences that buildings have on their occupants. Tall residential buildings can have a myriad of such effects. This review summarizes the results of research on the influences of high-rise buildings on residents' experiences of the building, satisfaction, preferences, social behavior, crime and fear of crime, children, mental health and suicide. Most conclusions are tempered by moderating factors, including residential socioeconomic status, neighborhood quality, parenting, gender, stage of life, indoor density, and the ability to choose a housing form. However, moderators aside, **the literature suggests that high-rises are less satisfactory than other housing forms for most people, that they are not optimal for children, that social relations are more impersonal and helping behavior is less than in other housing forms, that crime and fear of crime are greater, and that they may independently account for some suicides.**

Kunze, J. (2005) "The Revival of High-rise Living in the UK and Issues of Cost and Revenue in Relation to Height." Masters thesis, UCL (University College London).

Abstract:

"The following report explores the recent revival of tall residential buildings in the UK as well as issues of costs and revenues for such projects. The first part of the paper focuses on the background and the preconditions of the revival. The history of tall residential buildings and its impact on the image of highrise living is explored as well as some of the debate that surrounds the topic. However, the vast amount of related social, urban design and environmental issues are not part of the analysis. The phenomenon of the revival is described in numbers of completed buildings and with examples of built and proposed projects. Characteristics like the new type of occupiers and the provision of affordable housing are highlighted. The second part of the report and the main part of the research focus on the economic drivers behind tall residential developments. The issues of building costs and sales prices in relation to height are explored and values are gathered in several interviews with professionals. The findings are analysed and applied in a series of model calculations for developments with heights from 5-50 storeys. It seems that the disadvantages of building high are not balanced out by a premium in sales prices for height. **The evidence found suggests that the economics of tall residential buildings change dramatically above 20 storeys.** This corresponds with the height of structures that were built in recent years. However, the paper concludes that the data available was not sufficient to establish robust quantitative relationships between residential developments of different heights and that it is necessary for the benefit of all that more research on this topic is made publicly available."

Buchanan Peter (2007). "The Tower: An Anachronism Awaiting Rebirth?" *Harvard Design Magazine*: "New Skyscrapers in Megacities on a Warming Globe" Number 26, Spring/Summer 2007

Excerpt:

"Is the tall building an anachronism? Does it, like sprawling suburbia and out-of-town shopping malls, seem doomed to belong only to what is increasingly referred to as "the oil interval," that now fading and historically brief moment when easily extracted oil was abundant and cheap? The answer is probably "Yes"....

" ... What kind of city nurtures [today's] very different workforce that is in touch with and wants to live in accord with its deeper values? Ask people how they believe they should really live; the clearer they become about this, the more obvious it is that such a lifestyle is very difficult in the contemporary city. Do we want to live in a city of glistening towers, of spectacle and the restless excitement that fuels and is fuelled by excessive consumption? Or would we prefer a mid-rise city with a more finely grained, more intricately rich and varied urban fabric offering choice, contrast, respite, and surprise - a convivial city where community has a chance of being reestablished?

**Sustainability requires not only that we lessen our ecological impacts, but also that we create the urban and cultural frameworks in which we can attain full humanity, in contact with self, others, and nature. This might be the real reason that the tower seems an anachronism.** There may be a few clusters of green towers here and there, but their presence might be limited in the compact and convivial cities of the future."

Bowker, G. E., D. Heist, S. G. Perry, L. Brixey, R. S. Thompson and R. W. Wiener (2006). "The Influence of a Tall Building on Street-Canyon Flow in an Urban Neighborhood. U.S. EPA Office of Research and Development, National Exposure Research Lab. Presented at 28th NATO/CCMS International Technical Meeting, Leipzig, Germany, May, 2006.

Mead, M. Nathaniel (2008). "Canyons Up the Pollution Ante" Environmental Health Perspectives, July 2008; Vol. 116, No. 7, p. A28.

Excerpt:

" ... a new study focuses on how traffic emissions are dispersed within urban street canyons -- **streets that are lined with tall buildings on both sides. Within these domains, large quantities of pollutants are released near the ground from motor vehicle exhaust, then trapped and concentrated within the canyon walls.** Urban street canyons also tend to contain a lot of people, potentially making these areas high-risk zones for big cities. ... population exposure to traffic pollutants in New York's urban street canyons can be up to 1,000 times higher than exposure to a similar amount of emissions in other urban settings."

House of Commons (2001). "Tall buildings: Report and Proceedings of the House of Commons Transport, Local Government and the Regions Committee." Sixteenth report of Session 2001-02. London, UK Stationery Office, 4 September 2002, HC 482-I

Excerpt:

"The main reason that the Committee held an inquiry into tall buildings was to identify the contribution which they can make to the urban renaissance. We found that contribution to be very limited. **The proposition that tall buildings are necessary to prevent suburban sprawl is impossible to sustain. They do not necessarily achieve higher densities than mid or low-rise development and in some cases are a less-efficient use of space than alternatives.** They have, for the most part, the advantages and disadvantages of other high density buildings. They can be energy-efficient, they can be part of mixed-use schemes and they can encourage the use of public

transport where there is spare capacity, but so can other types of high density developments. Tall buildings are more often about power, prestige, status and aesthetics than efficient development."

## APPENDIX II:

### RELEVANT EXAMPLES FROM RESEARCH ON DIVERGENCE OF ARCHITECTS' AND LAYPERSONS' AESTHETIC JUDGMENT

Brown, G., & Gifford, R. (2001). Architects predict lay evaluations of large contemporary buildings: whose conceptual properties?. *Journal of Environmental Psychology*, 21(1), 93-99.

Abstract

**Evidence suggests that architects as a group cannot predict the public's aesthetic evaluations of architecture.** In this study, practicing architects predicted laypersons' responses to large contemporary building, and again these predictions were poorly correlated with ratings by laypersons, although some architects' predictions were better than others, and architects were able to predict accurately that lay ratings in general would be more favourable than their own. To understand why most architects are unable to predict reactions to particular buildings, the architects' predictions were analysed in relation to their own and lay ratings of the buildings' conceptual properties. **The results suggest that architects are unable to exchange their own criteria for conceptual properties for those of laypersons when they predict public evaluations, which leads to self-anchored, inaccurate predictions.** This was supported by showing that the best-predicting architects related their evaluations to buildings' conceptual properties in a manner similar to that of the laypersons. Implications for design are suggested.

Ghomeshi, M., Nikpour, M., & Jusan, M. M. (2012). Evaluation of Conceptual Properties by Layperson in Residential Façade Designs. *Arts and Design Studies*, 3, 13-17.

Abstract

**When it comes to aesthetic evaluation of a design, architects and non-architects differ from each other.** This study demonstrates how aesthetic evaluation of buildings could be predicted. These predictions are important for architects as they can be used to find the users preferences and expectations of the design. Preference is considered to involve conceptual evaluation about whether the design is liked or disliked. In environmental preference, this type of conceptual evaluation might be conscious or unconscious. The aim of this study is to identify the essential conceptual properties that are related to aesthetic evaluation of façade designs using qualitative methodology. As a result it can be concluded that not all the conceptual properties are related to aesthetic evaluation of the design. Some conceptual properties are not important from the eye of non-architects and some are highly important. Findings of this research could help architects to understand the perception of non-architects.

Hubbard, P. (1984). Diverging evaluations of the built environment: Planners versus the public. *The urban experience: A people-environment perspective*, 125-133.

Hubbard, P. (1996). Conflicting interpretations of architecture: an empirical investigation. *Journal of Environmental Psychology*, 16(2), 75-92.

Abstract

The idea that environmental preferences are not solely determined by the characteristics of individuals, but instead are socially constituted, has fundamentally challenged many traditional

psychological analyses of landscape preference and meaning. In this paper, an attempt is made to suggest that the two interpretations are by no means incompatible, and that there is a growing need for an environmental psychology that recognizes the importance of both individual and social factors. Drawing on traditions within European social psychology, this paper demonstrates how the quantitative analysis of social representations can be used to identify both differences and commonalities in peoples' interpretations of architecture. Specifically, **this study reports on one segment of a larger empirical study investigating differences in architectural interpretation between planners, planning students and public respondents.** These interpretations were examined using multiple sorting techniques, with respondents asked to sort 15 examples of contemporary architecture according to their own criteria. INDSCAL analysis of this data facilitated the recognition of a shared conceptualization of these architectural stimuli, but also demonstrated a number of important inter-group and inter-individual differences in architectural interpretation, which were evident as variations from this common conceptualization. The paper concludes by discussing the implications of this study for research in environmental psychology, particularly stressing the need to consider notions of power and ideology.

Trope, Y., Liberman, N., & Wakslak, C. (2007). "Construal levels and psychological distance: Effects on representation, prediction, evaluation, and behavior." *Journal of Consumer Psychology: the official journal of the Society for Consumer Psychology*, 17(2), 83.

### APPENDIX III

#### RELEVANT EXMPLES FROM RESEARCH ON ECONOMIC DEVELOPMENT, REAL ESTATE AND URBAN FORM

Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York: Random House.

Jacobs, J. (1970) *The Economy of Cities*. New York: Vintage Press.

Glaeser, E. L., Kallal, H. D., Scheinkman, J. A., & Shleifer, A. (1991). *Growth in Cities* (No. w3787). National Bureau of Economic Research.

Glaeser, Ed. (2011). "How Skyscrapers Can Save the City." *The Atlantic*, February, 2011. Available on line at <http://www.theatlantic.com/magazine/archive/2011/03/how-skyscrapers-can-save-the-city/308387/>

(TBC)

## ***Para~Doxa: Historical immanence in the Bremer Landesbank Building by Caruso St John Architects***

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### **Abstract**

This text addresses the relevance of the notion of *historicity*—the immanence of the past, and history, in who we are and what we do—in a contemporary context, as manifested in the conception and experience of a building in the city. Conceptually, the subject is elaborated based on a conceptual construct around the idea of *para-doxa*—Greek term appearing in Aristotle that Paul Ricoeur refers to in his studies on metaphor (2003, pp.29). Architecturally, it is exemplified with the building for the Bremer Landesbank Headquarters in Bremen (2011-2016), by Caruso-St. John Architects. It is argued that the work in question gives evidence of a form of *historicity* or *historical presence* that—unlike pre-post-and neo-modernist stylistic approaches—defies chronologies. Poetically and ontologically, the work embodies accumulated know-how and experiential resonances embedded in architectural forms, techniques, and traditions, affording “attunement” to place (Pérez-Gómez, pp.2016) thus favouring subjective and social existential orientation.

### **Introduction**

In the context of this study, *Para-doxa* is interpreted as a polysemic word that concatenates various *alternative doxas*, and *paradoxes*, which comprise:

A question of creative method, *metaphorizing* and *metamorphosing*, a praxis of *seeing* what is familiar and local in terms of what is distant and *other*—Aristotle’s idea of “*allogtrios*” (Ricoeur, 2003, pp.18-19)—by virtue of finding subtle but pertinent resemblances.

Spatiotemporal *dislocation*, which brings the trajectory or *arc* of the past and history to our presence and experience (Nöe, 2012, p.77)—questioning positivistic, linear historical approaches—and connecting time and location in diverse configurations: rhizomatic (Rajchman, 2000, p.6), spiral, or exploded (Eco, 2000, p.214), which may give origin to a form of *poetic historicity*.

A new appreciation and use of anachronism—as critical and generative strategy to embrace our contemporaneity—which identifies a profound lack, or void in the present and creatively searches for relevant resonances in the ‘past’ (Agamben, 2009).

The project (conception) and building (presence) of the Bremer Landesbank exemplify *para-doxa* for urban architecture considering it in the context of:

A historically *charged* site and context (Unesco World Heritage Convention, n.d): an urban palimpsest made one with the new building, superseding linear (Hegelian) temporality, stylistic conceptions, and chronological interpretation of architectural

history, in consonance with the multi-temporal—complex, juxtaposed and non-linear—lived experience of historical time that occurs *in place*, in the city, the European one in this case. The building unifies the site integrating pre-existences and various historical presences—from medieval to modern, and regional architectures.

An open contemporary interpretation of architectural tradition—arguably seen in reverse—as reciprocal *future-past* relationship that introduces the new and rejuvenates what precedes: what Eliot (1982) proposed in the field of literature (p.199-201), and Juhani Pallasmaa (2018) has brought to architectural discourse (Q/A. 39-40).

The use of poetic *tropes* and metaphorical praxis as creative device. Like a mythological creature the building metamorphoses ‘precedents’—resonances and poetic images—from diverse temporal and spatial Nordic traditions. Elaborating on brick-masonry traditions, the building’s exterior generously greets the city while a modern semi-public oval court at its core—a selective re-creation of a poetic *image* from a meaningful modern precursor—invites the public realm in.

### **Expanding the notion of *para-doxa***

As creative action translatable to architecture, *pa-doxa* implies “metaphorizing,” “borrowing” from, or bringing *other*, or “alotrios”: a “displacement” or substitution of one thing for another, that, by subtle, not ordinary, affinity or pertinence, paradoxically fills the gap of an absence (Ricoeur, 2003, pp.19-20). Metaphorizing in that sense is giving a “paradoxical attribution” and “uncovering a relationship hidden beneath the paradox. (Ricoeur, 2003, p.29). But metaphor, Gaston Bachelard (1943) reminds us, often manifests as metamorphosis, a union, distortion, amalgamation of poetic images (pp.7-13), and, in the field of imagination, the metamorphosis of a being is already an adjustment to a new environment (Bachelard, 1971, p.34). An architectural analogy with Bachelard’s observations comes to place: metaphor and metamorphosis may conduce to sensible and all-sensorial design based on poetic, “embodied” images (Pallasmaa, 2011). Such poetic-phenomenological approach to *praxis* arguably offers a more meaningful avenue, a *para-doxa*, alternative to patent formalism and functionalism in architectural practice (Pérez-Gómez 2011, p.2).

Transfer of knowledge underlies the poetics of imagination; a power to discover and interpret reality, place and time, that allows us to overcome the limitations of rational logic and chronology which characterize the still prevailing positivistic thinking and worldview. Metaphor offers a tensional conception of truth that enables temporal and spatial displacement. (Pérez-Gómez, 2006, p.70; Lay, 2024, pp.89-112). Borges (2000) suggested that the *prosaic* history is too concerned with “causality” and “circumstances” compared to the immanence that one *verse* may condense and convey (pp.74-75). Similarly, José Lezama (2010) stated that “poetry sees the sequential as simultaneous” (p.81): a truly Aristotelian aphorism (Lay, 2024, p.100; Aristotle, 1999, pp.157-158). Let’s explore now the core *para-doxical*, almost oxymoronic pairing of “poetics” and “historicity” (Rueda, 2019, pp. 143-144, 159-160; 2016, pp. 8-9).

### **Poetic historicity**

*Time present and time past*

*Are both perhaps present in time future,*

*And time future contained in time past.*

*If all time is eternally present*

*All time is unredeemable* (Eliot, 1943, p.3)

T.S Eliot condenses a dissertation on experiential temporality that resonates with an idea of *poetic historicity*. The present becomes one expanded moment of eternity, and time paradoxically detains while the past resonates shedding light to a moment of lived-experience, *vis à vis* one current circumstance. As David Leatherbarrow (2021) put it: “temporality is not only nor always moment-by-moment succession” (pp.31). According to Adrian Johnston (2008) Slavoj Žižek lucidly identified the paradox that resides in the same notion of historicity that resonates with Eliot’s above quoted stanza: the “motor” of historicity is *ahistorical* as it both contains and transcends passing time, aspiring to a sense of the eternal (pp.119-20).

Concerned with the European crisis of historical consciousness—as patent today as it was a century ago (Miettinen, 2013)—Walter Benjamin (2007) drafted an alternative conception of history based on a “time filled by the presence of the now” (p.261), a very contemporary idea in our times of *presentist historicity* (Hartog, 2016). Benjamin urged for historical immanence as alternative to empty historicism and the abstract idea of universal history, I quote: “[to] articulate the past historically does not mean to recognize it ‘the way it really was’ (Ranke). It means to seize hold of a memory as it flashes up at a moment of danger” (2007, p. 255). Benjamin seemed to allude to *rememorating* in the phenomenological sense, making history the subject of selective and imaginative poetic re-creation, *attuned* with a present situation. He appears to have claimed for poetizing our historical vision to better make use of it.

### **Futures-past: *now***

Giorgio Agamben (2009) has proposed that being a “contemporary” —philosopher, poet, architect—truly means not going with the stream of one’s times but perceiving a *lack* or deep void in the epoch we happen to live in: a critical *anachronistic* position which, nonetheless is not reactionary but productive and creative (p.17). Such paradoxical position *vis à vis* contemporaneity comes from contravening the spirit of time—or Hegelian *zeitgeist*. The creative toolkit comes from what exists, a ‘past’ or precedent; it is anachronistic in that regard but also *projective* (Agamben, 2009, pp.17-18). From the perspective of architecture—seen as an *atmosphere* or immersive experience, an event in time that happens in space and configures place—one could say that a material presence can imaginatively make the past resound in a kind of *now-time*, or *jetztzeit*, which transcends historical ‘sequence’ into the perceived sense of an eternal present (Benjamin, 2007, p.261). Such collapsing of time in contemporaneity may give way to the space of *presence*; a historicity of—and from—now (Roberts, 2021, p.23).

### **Dislocated temporalities and re-creation**

On the question of time in the contemporary context Umberto Eco (2000) challenged the modern notion of linear progress and the traditional circle or temporal cycle, pointing out instead towards “spiral shapes and exploded temporalities (pp. 256). Similarly, inspired by Lewis Mumford and James Joyce, Marshall McLuhan conceived historical time, and creativity itself, as a spiral: “there is a real movement forward in this process—it is not just a circle—and so it might better be termed a spiral (Oldenhof & Logan, 2017, p.6). In the sources of McLuhan, the notion of spiral historical time and *deviated* return goes back to Giambattista Vico’s (1948c 1744) *New*

*science*. We may call those conceptual affinities on historical temporality, the historical spiral of re-creation.

### **Disciplinary affinities with *para-doxa***

In *Lateness*, Peter Eisenman and Elisa Iturbe (2020) elaborate a theory and analyze the work of three meaningful architects, A. Loos, A. Rossi, and J. Hejduk, who took distance from *orthodox* design practices of their times. Significantly, *Lateness* reintroduces the relevance of anachronism and the notion of fragment, detaching it from historicist connotations, and suggesting contemporary creative divergence: “[a]nachronisms no longer operate as historical reference; as fragments they acquire a different capacity to identify with other moments and other eras—including those that had not yet occurred” (Eisenman & Iturbe, 2020, p.9). However, *Lateness* focuses on formalistic aspects of architectural design and its resulting ‘objects’, seen with the kind of “stylistic” almost “taxonomic” reductivism that Pérez-Gómez (2011) has properly criticized (p.2).

It is in tangible lived experience that the patent or embodied historicity of a building and/or a place becomes present. By historicity in some way one can understand as well that “feeling” of “things” and “history” of which rather colloquially some meaningful contemporary architects have recently spoken (Caruso 2008, p.43; Zumthor, 2018). In dialogue with Mari Lending Peter Zumthor (2018) comments how: “almost everything that surrounds us, our landscapes, villages, and cities, down to our houses and rooms where we live is full of history; we just have to see it” (p.15). *Experiencing* is implicit in the idea of *seeing* or *feeling* history. It refers us to minding the “experience” of architecture as “place” (Malpas, 1999). Historicity in that sense is phenomenological and atmospheric (Böhme, 2017, 57-61), but also materially based. In David Leatherbarrow’s (2021) words: “[by] virtue of its physicality, suitability, and familiarity, every work keeps its past present [... and the] only aspects of settings that show themselves to be ‘of the past’ are the few that have lost their tacit relevance” (p.31). Latencies inhabit buildings in *our presence*, or experience.

Adam Caruso (2008) has advocated for cultural continuity in architectural practice, arguing that, a generalized cult of novelty in late capitalism promotes and patently generates a “tyranny of the new” —a baseless approach to producing new architectural form for its own sake—which is ultimately tautological and deteriorates urban environments. Lucidly, Caruso in the same source stresses the *ontological* nature architectural form as culturally built *in place*, as coming from materials and constructive processes cultivated and evolved in time, and history (pp. 27-36). Referring to his own architectural practice with Caruso St John Architects, he elucidates how they see all historical buildings as *contemporary* ones, as, factually—in lived-experience—they make part of the contemporary world, and the contemporary city. This is particularly true and relevant for the European city as living *palimpsest* of historical times, and—in agreement with Caruso’s reflections—arguably, the highest and largest collective work of art of in society; as he put it: “[the] European city is one of the great human inventions” (Luisiana Channel, 2017). With the previous prolegomena and some initial remarks on the practice of Caruso St John, let’s proceed to *visit* and review the case of the building for the Bremer Landesbank Headquarters in Bremen.

## Site interpretation

Adam Caruso (2020) started a conversation about the building in Bremen jokingly referring to the fact that “it was very easy [...] as it is located] in [a designated] Unesco World Heritage site.” One might interpret such seemingly contradictory or paradoxical statement as a veiled, very acute call for what should be obvious, but it is rare to find in actuality: a careful look at sites in their historical value, material, spatial and formal characteristics, and importantly: in its *re-creative* potential, unfortunately, a disappearing attribute in current architectural practices. David Leatherbarrow (1993) has questioned abstract, reductive notions of “site plan” proposing instead that the process of architectural invention starts from and with the site by *seeing* it not merely as “*division of space, [...] an opening in a context, [...] or] parcel of land,*”(p.7). Sites unfold in multifarious temporal, spatial, and material dimensions as a potential for new re-creative wholes.

Arguably, all architectural sites could be considered of historical value since they are not *tabula rasa* but bare traces and latencies of the forces that have transformed them over time. Built urban sites might condense historical transformations making present, in lived experience, a form of “collective identity that is more felt than articulated” (Ladd, 1997, p.2). Such is the urban *situation* of the building for the Bremer Landesbank Headquarters, with two public squares in its immediacy, meaningfully the *Domshof*—grand trapezoidal cathedral square—and an intimate florist market square from where one flows in meanders to the neighboring *Markplatz*, the main market square. Forming the edges of those meaningful places one finds, significantly: *St. Petri Dom*, the medieval, millenary cathedral, rebuilt from Romanesque to Gothic and restored from destruction after World War II; the originally Gothic town hall intervened with a Renaissance façade and further re-created by architect Gabriel von Seidi in late historicist manner; the medieval Church of our Lady, and a series of also highly valuable more modest brick buildings.

## From site to project: metamorphosing traditions

Bremen was a Hanseatic League city, and its characteristically elaborate brick architecture resonates *in place* as tangible part of its heritage and identity. In a letter response for *OASE* Journal, Adam Caruso was explicit about it and the fact that they wanted to act in consequence: “At Bremen we certainly were interested in the Hanseatic tradition of brick architecture, and in the exceptional historical richness of the site in the *Domshof*, a context that includes grand public buildings alongside food and flower markets” (Avermaete & Teerds, 2021, p.13).<sup>1</sup>

The Northern European tradition of Hanseatic architecture—beginning in the late Middle Ages, subject to regional revival and eclectic reinterpretation during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries—is characterized by its highly elaborate exposed brick work often enveloping relatively simple architectural forms. Mostly lacking stone, brick was the material that the region’s geography adopted, and cultural processes developed, thus a refined technical masonry tradition evolved (Kouzelis 2020, 77-113). Caruso anecdotally comments that the project had its origin in a design competition with other architectural practices—all German firms—paradoxically none of which proposed a brick building (Louisiana Channel, 2017).

For Caruso, a contemporary reinterpretation of such Hanseatic brick tradition extended to revisiting early 20<sup>th</sup> century *modern*—not strictly ‘modernist’—regional reinterpretations with

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<sup>1</sup> See in the source cited for comparison the relevant synthetic interpretation the authors make to frame a question on the interpretation of the ‘modern’ in Caruso St John’s building in Bremen.

expressionist and eclectic connotations: [the] “handling of the brick facades refers specifically to Hans Poelzig’s Hanover Office building (1924)” (Avermaete & Teerds, 2021, p.13). In their website description of the Bremer Landesbank Headquarters they acknowledge Poelzig’s building along with other relevant regional examples as explicit “references,” with illustrations, authorship and construction dates, almost in the manner of ‘works cited’ in an academic text (Caruso St John Architects, n.d.). Caruso also disclosed that they associated their referents as well with the Arts & Crafts tradition and certain early 20<sup>th</sup> century American architecture (Louisiana Channel, 2017).

Although haptically appealing to a Gothic spirit and sensorially reminiscent of the referents already mentioned the material *presence* of Caruso St John’s façade for Bremen manages to avoid stylist (taxonomical) classification. The building’s brick envelope seems to metamorphose those diverse “references” treating them as material, *poetic images* which reverberate with an ascending, gothic aura: the piers reducing in mass, successive undulations and perceived vertical sense of dematerialization. In civic design terms, probably the most significant attribute of the façade itself—and the intention of its conception—resides in being truly generous with the city and the public realm: a consequential but rare attribute in today’s architectural practice, when the imperatives of late capitalism privilege private luxurious interiors.

Delightfully elaborate, rich in details, but certainly expensive, the self-bearing brick façade took years to conceive and built. Six different types of brick were used, made by a local brick manufacturer. The actual conception and execution of the façade required multiple horizontal representational sections, numerous construction details and high construction standards by very skilled local masons, all in the effort of achieving their “own version of a Hanseatic building” (Louisiana Channel, 2017). Caruso (2021) makes note that the building was kept within average budget for an office building of its kind by compensating the certainly expensive façade with contrastingly simple and austere office space interiors.

### **Urban configuration**

The entrances or thresholds between the city and the building’s interior allow one to continue to perceive a poetic interpretation of architectural traditions and historical presence, and consistent intentionality to achieve continuity with qualitative civic design, in, and with the *city*—of Bremen in this case—being acknowledged as meaningful form of collective cultural creation, *over time*, by communities and societies with changing civilizational approaches. Its experience instead is one *present presence*.

The brick archway inviting the public from de cathedral square into the banking hall of singular depth, funneling inwards—fold after fold of material inversions, in a strange coming together of density and levity—suggest to have been subject to re-creation and poetic *distortion* of some poetic, all sensorial or *incarnated* images coming from an American modern tradition of making symbolic and civic arched entrances that begins with H-H Richardson, moves to Louis Sullivan and culminates with Frank Lloyd wright. Romanesque and modern at once, sensorially and materially but not literally in style, Caruso St John Architects seem to have built an architectural *metaphor*—the *right* association of poetic images, as J. L. Borges (2000) put it (pp. 29-30)—which fits into, and wonderfully transforms, the *renewed* environment of Bremen’s *Domshof*.

Northwest of the market square, facing the Medieval Church of Our Lady and tangentially leading to a modest flower and food market square one comes across another entrance to the

Bremer Landesbank building. Walking past a long archway one discovers an oval courtyard. This semi-public space, serving as entrance to the regular office workers, distills city life into the building's architectural core. This urban configuration—subtly extending architectural space into the public realm and inviting the city in return—makes one think of analogous urban imbrications displayed on the Nolli Map of Rome (1748), still a referent in the disciplines of urban design and planning to address desirable public and private space interaction (ji & Ding, 2021, p. 542). Arguably, the introduction of a contained open interior that connects directly to the city, and the clever solution that the oval shape gives to the somewhat irregular and composite urban form of the building in question—an infill that completes the traditional block structure and harmoniously integrates a preexisting façade—testifies to an intention to endow this 'private' commission with a public character which transcends functionality, makes it adaptable in time and favours urban and cultural sustainability. By virtue of its well-adapted architectural form this urban building defies short-term obsolescence and feels endowed with a sense of the perennial, an attribute proper to great urban public buildings. The *experiential image* of the oval court, Caruso openly declared, was borrowed from the modern—non-modernist—Nordic architect Sigurd Lewerentz' National Insurance Institute building in Stockholm (Avermaete & Teerds, 2021, p.133). In such associative *borrowing* Caruso St John resorted, once more, to metaphor and metamorphosis as creative devices.

#### Coda

Many are the generative process nuances in this exemplar urban building concerning a poetic, *para-doxal*, re-creative approach to architectural culture, history and traditions: not all evident to the observer, or possible to elaborate on, in this short textual format. I have attempted to present some of its most salient demonstrative attributes that speak of a sensible and creative way of addressing tradition and cultural continuity in a contemporary context, in response to the complexities and challenges of intervening urban environments with dense historical sediment and high heritage value.

We have seen how the *ring* of site interpretation for the design of an urban building might expand in space and time, in poetic associations where the nearby and the remote metaphorically connect and metamorphically transform in the new project: a *para-doxa* that makes *present* a historical 'past' and adds singular richness and complexity to the understanding of the notion of *context*, seen, in Adam Caruso's words as one "infinitely rich topographical, cultural, formal and material resource, within which the whole of the project can be found" (Avermaete & Teerds, 2021, p.133).

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## TRANSPORT 2060 – FUTURE SYSTEMS By Chris Stapleton

22 Intervention as an optimistic look at how Autonomous Vehicles and Artificial Intelligence can be harnessed to reuse our current infrastructure more efficiently whilst addressing demographic changes, Zero fatalities and Climate change.

I'm generally going to keep to an Australian perspective; everyone will come from a different and often better perspective.

### PLAYERS.

F1 Mode has changed every 90 Years since Canals took over from Horse and Car –1770 Western History Time. Therefore, we are in a constant state of change at 10% per 9 years. I've been looking at this for 60 years; has 70% changed? Well we've gone from the Electric Milk Float to E-Bike Deliveries. And more.

F2 Society is made up of demographic groups the proportion of which is also changing. I work using 14 groups of 7% each. Children to school, etc, and including 7% walk distance limit, 7% vulnerable to fear from E-Bikes on the footpath.

Everyone should be able to move about their Community with Zero Fatalities.  
~50% of movement occurs within communities, if possible.

F3 The same principles of supply apply to Vertical Cities – density 1000's Dwellings per hectare, 6 Story Paris 80 d/h and Dispersed Cities Sydney 25 d/h and less.

- Density is proportional to Demand
- That is proportional to distance to destination
- That is proportional to Mode Choice or not being available
- And this is where we introduce new interventions (I)

## **FLEET**

**Autonomous Vehicles** (AVs) - controls within the vehicle to optimise safety and driver comforts.

**Artificial Intelligence** (AI) – management of vehicles into groups or paths to optimise safety and capacity or more importantly improve public amenity.

**E-Bikes** – Quick cheap longer distance Mobility increasing the throughput of movement by Square Metre. And conversely too fast on Footpaths, dangerous for pedestrians and inexperienced riders.

**MICROs** - narrow covered vehicles, passenger and freight (Eg Denmark). Too fast even for small bike lanes. Could be managed to increase capacity on streets and include non-experienced riders.

## **NETWORKS.**

Everyone should be able to leave their dwelling and get to essential destinations.

### **1 FOOTPATHS AND LOCAL STREETS**

Many new Suburban Streets in Australia do not have footpaths, reducing the opportunity for many to walk unaccompanied, "all" trips tend to be by car.

I1 (I for intervention) **Local Streets with AV limited to 20kph and a limit of 60 Vehicles per Hour** [vph], irrespective of the presence of footpaths allowing mix of Bikes and vehicles on the carriageway.

This will allow mostly unimpeded passage of most pedestrians along and across the roadway.

The 20kph this will generally happen without the passenger/driver noticing; particularly for the short end-of-journey link to home.

I2 **Drivers (of non-Avs) to be limited to 20kph on Local Streets (Now)**, with monitoring. With some complaining.

I3 **I would go as far as to require that pedestrians have Right of Way on all Local Streets.**

I4 AI **Limit the volume of Local Streets by not allowing AI to use them as diversions in the case of congestion on busier roads.**

This still begs the question that some Vulnerable pedestrians will not share a roadways or footpath used by bikes of any sort.

I5 **Hence, all new Streets should have Footpaths** not to be used by Bikes and Micros.

### **Touching on Climate change.**

I6 Add **shallow usually dry drains - Swales – at the edge of new streets.** This addresses The increase in the intensity of storms combined with longer periods of drought. Small retention basins can double as seating and play areas most of the time.

I7 **Trees, and/or solar panels can shade all streets and paths Avoiding suburban heat sinks.** (All part of experience in Dubbo, NSW)

## **2 MICROS and Bike network**

I8 **Identify a Network of Local Street, Laneways and links as the shortest ways for through movement of pedestrians, Bikes and later MICROS. .**

Hence these through ways will attract E-Bikes away from the remaining local Streets and lessen the impact on vulnerable pedestrians.

I9 All E-Bikes should be monitored by AI – perhaps with cut offs for busy footpaths.

### 3 LANEWAYS

More in line with the Jacobs styled denser city blocks many terrace house/duplex developments include 6m rear lanes serving off-street parking. Reducing the speed to 10kph and serving less than 60 garages assists most pedestrians. The front door might be onto a Local Street or busier roads. (I know private vehicles will become less-and-less attractive so these rear garages will become Granny Flats).

- I10 AV **Rear Laneways should be restricted to 10kph.** Encouraging use by Vulnerable Pedestrians – only relevant if they connect to destinations. OR as part of the Micro/Bike Network.

Two “active” networks are appearing.

(1) Footpaths and crossings free from Wheeled Vehicles.

(2) Another for E-Bikes and MICROs not mixed with large traffic flows and <60vph.

### 4 PERMEABLE WAYS

Many pedestrians do not like to cross streets with a traffic demand of more than 60vph.

- I11 **The Permeable Way has a limit of 300vph requiring drivers to stop for pedestrians plus a pedestrian “crossing” available every 80m.**

The spacing of Permeable Ways within the communities will be something like 400m apart, very similar to the busier internal roads of the Jewar in Abu Dhabi brilliant examples of mixing pedestrians and internal circulating traffic.

## 5 COMMUNITY WAYS

Counter to the mix in a Permeable Way; there's been an increasing (UK, Germany, Holland [Permanently!]) move towards **the Community Way as an active movement directed at a local attraction**, a High Street or larger transit stop.

I12 My Community Way consists of: -

- Two "No-Wheels" Footpaths serving the front doors. One a SHADEWAY for long distance trips by the vulnerable to major destinations.
- A third path is a separate Bikeway becoming a MICROWAY over time, also shaded.
- And a single lane Shared Way providing direct front door access for vehicular Pick-Up.

Importantly the Shareway should not run through to the Attraction because this would create a rat run.

This profile for **the "Ultimate Active Street" is generally intended to be the front side of Terrace houses** – possibly with rear parking.

I see this a prime extrovert address in the neighbourhood and tend to locate community facilities near Community Ways. Variations include Communal parking.

And btw here I'm still not addressing the complete collapse into the provision of Community facilities in new Australian Suburbs.

## 6 TRAILS

I13 **Active Movement networks, Trails, to extend regionally.**

A 4k Trail Network around a small town – following riparian and electricity easements is also being used to manage changes to flora (in Dubbo). Trails are not necessarily bikeways – they can be duplicated – and provide long distance suburban movement to natural wild areas. Big smile. And with small parks forming the structure for local amenity.

## 7 HIGH STREETS

The conflict of modes also occurs in High Streets that by default require some through movement for impulsive buying, take aways not in the Mall (my least favourite urban element).

- I14 **The volume for High Streets would be set by the scale of pedestrian movement say 400 to 800 vph. The speed 20kph, reduces conflict to hopefully minimal impacts – especially with AV.**

For Short Stay parking on the High Street I added a condition for Mobility Limited Parking every 40m to suit my Mum's walk limit of 20m; long term parking around the back.

MICROs will populate the High Street along with Bikes; pedestrians would have the right to cross at will. (MICRO parking will need to be addressed sometime in the future).

- I15 **Importantly all AV's can be disengaged if they enter the footpaths**, e.g. the E-Bikes as AVs would just stop; the first of the limitations for AV.

### More Players

**A major influence by 2060 will be fully autonomous MODs and PODs.** They alone will increase capacity of existing systems. We will not need nor want Flying Vehicles.

**MICROs** The already mentioned 1.2m wide MICROs (for the conflicting use in Bike Lanes) will operate at 30kph and be more for private use – and parcels, expanding the range of localised trips including EBikes from a few to 20km or more.

**The POD will derive from MICROs with owners generally seeking vehicles greater than the 1m wide.** These AV vehicles can be individually outfitted; a Palace on wheels, a studio or workshop, speed limited to, say, 120kph. Smaller PODs will be like the “walking luggage” and over time be standardised for loading onto MODs.

**The Module or MOD will derive from Uber as general shared vehicle with pick up from all addresses;** capable of 140kph. MODs will have varying sizes and purpose. The

simple versions will be ~1.8m wide and 4m long with 7 or less seats and space for 1 or more PODs. Hence people can carry their tools of trade or their luggage/shopping without lifting. Group transport MODs will accommodate up to 16 seats. Over time the dimensions will standardise.

## 8 THE GUIDEWAY

AI will alter the way our existing arterial roads operate.

I16 AV **Use AI to limit the speed of AVs on the inner lane to 30kph, 47kph in the 2nd lane and 75kph in outer lane.** This btw takes into account the fast reaction time of the AVs.

This is crazy. Too long ago I identified that pedestrians running out into the roadway could be avoided if the vehicle was travelling slow enough or the drivers had time to see the impending collision. I named this the Area of Hazard and used it writing "The Streets Where We Live" 1986.

Using the Run Out Hazard as a zero conflict approach pedestrian/ vehicle conflicts can be reduced to close to zero on a typical 3x3 lane Arterial Road with active footpath.

I17 #1 **Use AI to tighten headways and lane changing to regroup platoons by destination and increase the capacity** of a 3 lane Arterial Road by at least 25%. This can be accomplished using the different speed requirements for each lane to "swop" platoons. Hence delays at intersections will be reduced.

## 9 THE INTEGRATED PARKWAY.

Another, more flexible option reducing run our conflicts, suitable for a demand of 1200vph travelling at 75kph is **the Integrated Parkway**. Typically for use through a residential or light commercial area.

I18 AV #2 **The Integrated Parkway** with a central two-lane carriageway, (8m) 75kph; two 7m wide landscaped buffer zones where run-outs can be observed; and two 5m Service Roads for commercial or residential access; also used by MICROS and Bikes; (that do not mix with traffic >30kph)

Simple low cost but somewhat space consuming, maybe an Australian answer, but on the other hand imagen other natural uses in the buffer. Could be wider buffers and faster!

## 10 MOTORWAYS

I19 Repurpose **Motorways to give priority to MODs and optimise person movement** (not simply financial benefit).

The introduction of MODs will change cross regional demands. For example, with 15% suburban travel by MOD the shortest route for some of this demand will be on existing Motorways. The typical hourly directional capacity should increase from say 5,000 persons to 15,000 or even 25,000 persons per hour. Stay turned. This ensures social benefits are made from increased productivity.

Maintaining the random behaviour of Private vehicles on Motorways will be managed indirectly by AI, freedom but not compromising safety.

## 11 THE GLIDEWAY

I20 #3 **New 2- lane GLIDEWAYS with slide through existing urban areas with a 120kph alignment and used by practically silent MODS only.** Capacity, 2500\*10\*2, not bad.

Maintaining a 120kph alignment is not geometrically challenging. The way of the future is happening in Chinese Cities.

The final revelation started again back when (1982) I replaced the concept for a straight 2x2 distributor road for a new area (Glenmore Park, also visited yesterday and they still love it) with dual single lane carriageways curving independently about under or close to an electricity easement, holding its speed to 50kmh and less at pedestrian crossings. **The resulting rate of accidents was measured at 91% less that the typical rate of**

### **collector roads in the area!**

Looking at opportunities for growth in a conservative NIMBY area (the NSW Central Coast) it took no time to realise that undergrounding some existing power lines and replacing them with Glideways will be the option of the future, not quite ready yet

### **Conclusion.**

So we complete the urban model; from Footpaths and Local Streets and Permeable Ways; two, even three, levels of "Small AV Transport", to the safe Integrated Parkway and the high capacity repurposed Guideways and Motorways.

## **12 ALSET**

There's one more level to introduce into medium sized Cities, London, Paris and so forth.

Private enterprise will of course play a major role in future mobility, I've concentrated on how this can be used to cross subsidise general mobility.

So we now have these GLIDEWAYS and independent MODs appearing out of the urban fabric. But without the demand to support the huge Transfers happening in China; 4 or 5 HST, served by 4 or more Metros, through put 125,000 per hour, fabulous and good for high density but requiring lots of back tracking in smaller Cities including the US.

**I21 THE ALSET. I see the GLIDEWAY merge along a typical Peripheral Motorway (M25) to link into an Automatic Transfer of varying sizes SETS of Modules, all whilst moving.** (ALSETS) This means that privately owned Modules for 1, 2 or many passengers can be merged into "trains" then disassemble to multiple destinations. Transfer on the move.

In this way the private PODs are loaded onto MODs and could transfer to HST allowing the Billionaire intercontinental travel without meeting the peasants, now that's what we want.

**13 KSUM** And quite possibly the privatisation will encourage KSUM, (Kinetic SuperTrains Under Mack1) so emanate from these ALSETs.

And I have been warned that not everybody gets the Australian humour, or mine at least.

Or is this MUSK and TESLA reversed.

Seriously; the moveable transfer could be a way to the future of less dense Cities. But would it be too much change?

**SUMMARY SLIDE**

**PLAYERS**

Mobility Limited,	14%	1k
Vulnerable,	14%	1k
Amble,	14%	4k
Bike,	14%,	15k
Ebike/AIV,	14%,	20k (1990)
Micro	++	
Dog Walk,	14%	6k
Scramble,	7%	20k

**FLEET**

Private incl. AIVEV,	1 -6 seat	160kph, unlimited
Micro/AIVEV, 14%+,	1, 2 seat	30kph, range 30k
PODs AIVEV, Private & at call	1, 4 Seat	120kph, range 160k;
MODs AIVEV, Private & St call	1 - 16 Seat	140kph, unlimited
(GLIDETRANS, Orbitals for Modules	200m+	120kph, ALSETS)

**NETWORKS**

- 1 Local Steets      20k, 300vph 100% Perm/ Bike, Ebike, MICRO, POD MOD, Pri  
Footpaths      Walking only/ Mobility Limited, Vulnerable, Amble
- 2 Bike/MICRO)      Bike, Ebike, Micro
- 3 Laneways      10k 60vph (2 way) 100% perm/ML,Vul
- 4 Permeable Way      30k 300vph 80m Fixed Net, at call Crossing
- 5 Community Way      MICRO, Shadeway, Shareway, MICRO  
Shade Way Mobility Limited, Vul, and/or MICRO Access to Community
6. Trail      Bike, Amble, Ramble, Trial, Bridle      Connection to nature
7. High Street      20kph 800vph,-
8. Guideway - 60k multi lane, Mixed LRT, ≈ 3600vph      Cross Streets min 90m, ML,  
Edge Arterial,      - 60/80k platoon, Varied      Cross Streets min 90m,
9. Integrated Parkway      - 60k, 7m buffer, 1200vph      Frontage, signal cross, ML
- 10 Repurposed MWay      - 120/180k AV only, ≈ 24000 pph      ≈5km Interchanges
11. Glideway - 120k+, Module only 50,000 pph      Development instigators
- 12 ALSET GlideTrans - 120k Module Transfer
13. KSUM      Super High Speed Trains

to HST,

## Abstract

### INTERNATIONAL MAKING CITIES LIVEABLE CONFERENCE

Potsdam, Germany

Theme: What is the Architecture of the (Liveable) Future?

Topic: Evolution and Change in Cities and Buildings (And How they Change or Don't)

Author: Christine Storry, Utopia Architects

#### The Classical and the Contemporary: A Tale of Two Cities - Cologne and Cincinnati



*“Cologne: The city has 2,000 year old Roman roots...today it blends the few medieval structures that survived World War II with reconstructed areas designed to look as they did before the war. Add to these, the modern architecture of the postwar city....”<sup>1</sup>*

*Cincinnati: The area settled by Benjamin Stities in 1788 near the mouth of Little Miami was home to the Shawnee people. Cincinnati emerged as a river port after 1811, when the first steamboat, New Orleans, arrived from its down river voyage from Pittsburgh.<sup>2</sup>*

#### Abstract [300 words]

The form cities take, and their architecture, have very important connections to their geography, history and culture, that are often overlooked in their desire to modernise. What remains a challenge for each living city, is how it adapts to the challenges modernity presents it with, while staying true to these foundational elements of its character. It is these layered accretions that often create the delight we experience in historic cities, and provides way-finding, reassurance, continuity and renewed inspiration in younger cities.

So it is no contradiction in the discipline of architecture for it to be both backward looking and forward looking, in the present era, at the same time. After-all, both Neoclassicism and Modernism, take their cues from the architecture of Ancient Rome and Greece.

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<sup>1</sup> One Day in Cologne, Germany, Two Parts Italy, <https://www.twopartsitaly.com/blog/2023/6/17/one-day-in-cologne-germany> (24/04/25)

<sup>2</sup> Cincinnati, Ohio, Britannica, <https://www.britannica.com/place/Cincinnati> (24/04/25)

To better explore this contradiction, and the complexity it reflects, this paper explores in more depth, two lesser known cities, Cologne in Germany (from the Old World) and Cincinnati in the USA (from the New World), as a side by side comparison, to tease out the implications of a city rooted in the Classical past and another city rooted in the dawn of modernity, consequent on European exploration of, and settlement in, the Americas.

Cologne, the fourth largest German city, located on the Rhine River, today is famous for its unique pale yellow Kolsch beer and having the tallest twin spired Cathedral in the world.<sup>3</sup> While Cincinnati, the third city of the American midwestern state of Ohio, located on the Ohio River, is best known for the Taft Museum of Art and the Cincinnati Oktoberfest, the second largest outside Munich.<sup>4</sup>

To begin our exploration of these two cities we are going to consider both a downtown walking tour and daily life residing in the city, to see what we can learn about liveability, from the lens of both tourists to the city and residents within the city.

## Introduction

It seems controversial to suggest that cities have their own unique cultures. However, to recognise that they offer different lifestyle opportunities, is less so. But the two aspects of city life are intimately connected.

The concept of culture itself is contested, and is often given multiple definitions, some aesthetic (Arnold 1867), some socio-anthropological (Tylor 1870) and others the quality of uniqueness (Boas 1949). However, from an architectural perspective, the insight of Amos Rapoport - although critically for the profession he does not believe architecture should be an artistic expression - is an important starting point;<sup>5</sup>

“Design must respond to culture. ie, be culture specific....Design must be based on knowledge of how people and environments interact.”

In this paper, we are exploring two different manifestations of German culture, in two geographically, socially and aesthetically different locations. When we say German culture, we are referring to cultures which have their origin within the geographical boundaries of what now is refer to as the German nation state. The modern German State was formed in 1871, during the period known as the 2nd Reich, from an amalgamation of duchies, principalities, kingdoms, free cities and bishoprics.<sup>6</sup>

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<sup>3</sup> 48 Hours in Cologne, Germany's Most Laidback City, *The Guardian*, <https://www.theguardian.com/travel/article/2024/may/13/48-hours-in-cologne-germanys-most-laid-back-city> (24/04/25)

<sup>4</sup> This claim is contested with an Oktoberfest in Brazil and Canada purportedly taking no 2 and 3 spots. Cincinnati - The Queen Sign, Visit the USA, <https://www.visittheusa.com.au/destination/cincinnati> (24/04/25)

<sup>5</sup> Amos Rapoport, *Culture, Architecture and Design*, 2003, 1.

<sup>6</sup> Germany, *Encyclopaedia Britannica*, <https://www.britannica.com/place/Germany> (12/07/25)

To understand German culture, an exploration of the history of one of its oldest cities, Cologne, is helpful;<sup>7</sup>

“After Julius Caesar destroyed the Eburones<sup>8</sup> in 53BCE, the Roman General Agrippa colonised the area with another tribe called the Ubii, who came from the right bank of the Rhine.”

The Rhine river which divides the city of Cologne, is an important landmark in the city’s founding story. It is said that Marcus Agrippa transplanted the Ubii tribe from its right to its left bank in 38BC. The Ubii had their religious and civic centre, Ara Ubiorum, where Cologne is located.<sup>9</sup> The Germanic tribe known as the Ubii are believed to have originated in a homeland in southern Scandinavia, displacing earlier Celtic populations.<sup>10</sup> Although human habitation in the area can be identified as early as 100,000 BCE, much of its genesis is lost, for now, in the mists of time.<sup>11</sup>

In antiquity, the city is identified with its Roman foundations, being declared a city in 50AD named ‘Colonia Claudia Ara Agrippinensium’.<sup>12</sup> The city began as a colony of veterans under the patronage of Agrippina, daughter of Germanicus.<sup>13</sup> Here was born Julia Agrippina, wife of Emperor Claudius.<sup>14</sup> A stretch of the Roman road which linked Rome to Cologne still exists and can be visited today.<sup>15</sup> “The inhabitants of the two settlements mingled freely with each other” and the Germans gradually acquired Roman customs.<sup>16</sup> For a short period around 258CE Colonia was the capital of a splinter empire consisting of Gaul, Britain and Spain.<sup>17</sup>

“In 310 CE Emperor Constantine the Great built a castle and a permanent bridge to it across the Rhine.”<sup>18</sup> The Jewish community had a presence in Cologne from this time, early in the Christian Holy Roman Empire, until their expulsion in 1424. From their

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<sup>7</sup> History of Cologne, Early Settlement and Medieval Growth, *Encyclopaedia Britannica* <https://www.britannica.com/place/Cologne-Germany/History> (14/07/25)

<sup>8</sup> It is believed the Eburones were exterminated after an uprising was put down by Julius Caesar. Ambiorix’s Revolt, *Wikipedia*, [https://en.m.wikipedia.org/wiki/Ambiorix's\\_revolt](https://en.m.wikipedia.org/wiki/Ambiorix's_revolt) (02/09/25)

<sup>9</sup> The City, *New Advent*, <https://www.newadvent.org/cathen/04116a.htm> (12/07/25)

<sup>10</sup> European Kingdoms - Germanic Tribes, *The History Files*, <https://www.historyfiles.co.uk/KingListsEurope/BarbarianUbii.htm> (12/07/25)

<sup>11</sup> Joseph P Huffman, *The Imperial City of Cologne; From Roman Colony to Medieval Metropolis* (19 BC to 1125AD), 2018, 14.

<sup>12</sup> History of Cologne, *Wikipedia*, [https://en.m.wikipedia.org/wiki/History\\_of\\_Cologne](https://en.m.wikipedia.org/wiki/History_of_Cologne) (12/07/25)

<sup>13</sup> Ibid n9

<sup>14</sup> Ibid n7

<sup>15</sup> Roman Harbour Road, *Cologne Tourism*, <https://www.cologne-tourism.com/arts-culture/sights/detail/roman-harbour-road> (12/07/25)

<sup>16</sup> The City, *New Advent*, <https://www.newadvent.org/cathen/04116a.htm> (12/07/25)

<sup>17</sup> History of Cologne, Early Settlement and Medieval Growth, *Encyclopaedia Britannica* <https://www.britannica.com/place/Cologne-Germany/History> (14/07/25)

<sup>18</sup> Ibid.

expulsion until 1794, with the French Revolutionary Wars, the Jews were forbidden to stay overnight in the city.<sup>19</sup> French rule and religious liberty under the Napoleonic Code saw the first Jewish person, Joesph Isaac, successfully apply to reside in Cologne.<sup>20</sup>

The founding of the modern city of Cologne is largely identified with the ancient inner city, formed when several formerly separate parishes, the seat of elector archbishops,<sup>21</sup> were enclosed by walls in 1200.<sup>22</sup> At this time the area was identified as an ecclesiastical principality within the Holy Roman Empire, and Cologne became its capital.<sup>23</sup>

It is this unique beginning as a self-governing parish within a monarchical political structure that laid the foundations for Germany's historical evolution and political system, with continuing importance in the present era.<sup>24</sup>

In 1288 Cologne became a self-governing city, receiving formal recognition as a free Imperial city in 1475.<sup>25</sup> An imperial city is "any of the cities and towns of the Holy Roman Empire that were subject only to the authority of the Emperor, or German king, on whose demesne (personal estate) the earliest of them originated."<sup>26</sup>

From the Middle Ages onwards trade became an increasingly important element in shaping the political economy of Europe;<sup>27</sup>

"In England merchants from Cologne were granted the privilege of establishing their own branch in London by King Henry II as early as 1176. This developed into a powerful Hanseatic office, the London Stalhof. But it was not until 1282 that the merchants in England used the term Hanseatic League for the first time."

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<sup>19</sup> History of Cologne, Early Settlement and Medieval Growth, *Encyclopaedia Britannica* <https://www.britannica.com/place/Cologne-Germany/History> (14/07/25)

<sup>20</sup> History of the Jews in Cologne, *Wikipedia* [https://en.m.wikipedia.org/wiki/History\\_of\\_the\\_Jews\\_in\\_Cologne](https://en.m.wikipedia.org/wiki/History_of_the_Jews_in_Cologne) (20/08/25)

<sup>21</sup> History of Cologne, *Wikipedia*, [https://en.m.wikipedia.org/wiki/History\\_of\\_Cologne](https://en.m.wikipedia.org/wiki/History_of_Cologne) (12/07/25)

<sup>22</sup> Cologne, *Encyclopaedia Britannica* <https://www.britannica.com/place/Cologne-Germany> (12/07/25)

<sup>23</sup> Electorate of Cologne, *Wikipedia*, [https://en.m.wikipedia.org/wiki/Electorate\\_of\\_Cologne](https://en.m.wikipedia.org/wiki/Electorate_of_Cologne) (12/07/25)

<sup>24</sup> Richard C Schlag, The Imperial Court and the Localities during the Reign of the Holy Roman Emperor, Frederich III, *German History*, Vol 42, Issue 1, March 2024, 1. (Pp1-19).

<sup>25</sup> History of Cologne, Early Settlement and Medieval Growth, *Encyclopaedia Britannica* <https://www.britannica.com/place/Cologne-Germany/History> (14/07/25)

<sup>26</sup> Imperial City, *Encyclopaedia Britannica* <https://www.britannica.com/topic/imperial-city-Holy-Roman-Empire> (20/08/25)

<sup>27</sup> The Origins, *The Hanse*, <https://www.hanse.org/en/the-medieval-hanseatic-league/the-origins> (20/08/25)

As a Hanseatic city, Cologne played an important role in trade, including in cloth, with England<sup>28</sup> until the late sixteenth century.<sup>29</sup> At this time nation States started to play an increasing role in sponsoring global trade. In 1589, Queen Elizabeth I banned all Hansa merchants from their headquarters at the Steelyard in London.<sup>30</sup>

## German Culture

Popular descriptions of German culture note that it is based on Christian values (religion), “with literature, art, philosophy, logic, reason” (education) and a love of “beer and sausages.” (food)<sup>31</sup> Others emphasise the German reputation for being “hardworking and punctual.”(character)<sup>32</sup> Whereas, Nina Evason, also referring to character, in *The Cultural Atlas*, points to ‘core cultural concepts’ of pragmatism, honesty, privacy, critical thinking, organisation and pacifism.<sup>33</sup> Of course, the traits you associate with the German culture, will depend ultimately on the definition of culture that you accept.

A course on exploring German Culture through film, taught at the University of New South Wales (UNSW) asks “is there more to German culture than pretzels, beer and Lederhosen?” that is, food and clothing, taking an evolutionary view of German culture.<sup>34</sup> While the University of Sydney in its Twentieth Century German Culture course, looking at the historical period between 1908 and 2000, explores this time period through “relevant visual and written (German) texts,”<sup>35</sup> or art and literature. The language group, Berlioz, suggests that language and culture are intricately linked, and point to German contributions to “art, science and philosophy.”<sup>36</sup>

If we take seriously the idea that culture has a relationship to time, we can then turn to that period in German history, when Germans were migrating to North America, and the city of Cincinnati was founded.

The city of Cincinnati was founded in 1788, just as Australia was being founded as a colony across the other side of the Pacific Ocean. While Cincinnati doesn’t refer back to a

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<sup>28</sup> Cologne, <https://www.hanse.org/en/hanse/koeln> (20/08/25)

<sup>29</sup> Aidan Lilienfield, City of London v Strangers: The Fall of the Hanse in England, and the Rise of State Sponsored Trade, *Eras Journal*, Edition 24, No 1, 2022, 1.

<sup>30</sup> Ibid.

<sup>31</sup> German Culture, *Expatrio*, <https://www.expatrio.com/about-germany/german-culture> (12/07/25)

<sup>32</sup> Study in Germany, <https://www.studying-in-germany.org/german-culture/> (12/07/25)

<sup>33</sup> Nina Evason, *Cultural Atlas*, <https://culturalatlas.sbs.com.au/german-culture/german-culture-core-concepts> (12/07/25)

<sup>34</sup> German Culture through Film, *UNSW Handbook*, <https://www.handbook.unsw.edu.au/undergraduate/courses/2025/ARTS2550> (12/07/25)

<sup>35</sup> GRMN3011: Twentieth Century German Culture, *Sydney University Units*, <https://www.sydney.edu.au/units/GRMN3011>, (12/07/25)

<sup>36</sup> Marie Schmoll, 28 February 2024, An Amazing Guide to German Culture, Traditions, Customs and More, Berlioz, *UNSW Handbook*, <https://www.handbook.unsw.edu.au/undergraduate/courses/2025/ARTS2550> (12/07/25)

first fleet of sailing ships, it does reference “the arrival of pioneers by flatboat into Yeatmans’ Cove.”<sup>37</sup>

In 1788 in Germany, the different States, which would eventually comprise the German nation, were gaining in importance;<sup>38</sup>

“Before 1750 the German upper classes looked to France for intellectuals, cultural and architectural leadership. By the mid-eighteenth century the Enlightenment had transformed German high culture in music, philosophy, science and literature.”

It was the Age of Bach (1685-1750), Haydn (1732-1809), and Mozart (1756-1791).<sup>39</sup> From 1763, the German Enlightenment began to politically transform the States of Prussia and Austria, economies developed, compulsory education was introduced, peasants started to be emancipated and legal reforms began “including the abolition of torture and improvement in the status of Jews.”<sup>40</sup>

In 1788 Francis I of Austria (who would become the final Holy Roman Emperor) and Elizabeth of Württemberg wed.<sup>41</sup> In the same year the Prussian Emperor, Fredrick the Great died.

## **German Settlement of Cincinnati**

The founding father’s of the city of Cincinnati are considered to be Major Benjamin Stites, John Cleves Symmes, Matthias Denman, Robert Patterson, John Filson and Israel Ludlow.<sup>42</sup> Symmes was a land Barron who purchased two million acres from the government to create an “Ohio River trading centre.”<sup>43</sup> Stites (Steitz) brought settlers from New Jersey on flatboats to the village he called Columbia.<sup>44</sup> Columbia Tusculum is the oldest district in Cincinnati. Among the settlers were German Dunkards, a conservative Anabaptist sect.<sup>45</sup> Baptists under the leadership of Rev John Smith arrived circa 1790. Denman, Patterson and Ludlow farmed land on the site in the river basin that would

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<sup>37</sup> Cincinnati, Ohio, *Advisory Council on Historic Preservation*, <https://www.achp.gov/preserve-america/community/cincinnati-ohio> (12/07/25)

<sup>38</sup> Emerging States: The History of Germany between 1740 and 1788, *Sporting History*, <https://www.spottinghistory.com/historicalperiod/emerging-states-germany/> (12/07/25)

<sup>39</sup> Ibid.

<sup>40</sup> Ibid.

<sup>41</sup> The Wedding of Francis I of Austria and Elizabeth of Württemberg (1788), *German History in Documents and Images*, <https://germanhistorydocs.org> (12/07/25)

<sup>42</sup> Brent Coleman, Cincinnati’s Founding Fathers: Six men from the prestigious to the penniless helped to mold region, *American Broadcasting Corporation (ABC) Cincinnati*. <https://www.wcpo.com/news/insider/six-men-who-laid-claim-to-land-that-would-soon-become-hamilton-county-are-arguably-the-regions-founding-fathers> (12/07/25)

<sup>43</sup> Ibid.

<sup>44</sup> Ibid.

<sup>45</sup> Germans in Hamilton County, Ohio, *Family Search*, [https://www.familysearch.org/en/wiki/Germans\\_in\\_Hamilton\\_County,\\_Ohio](https://www.familysearch.org/en/wiki/Germans_in_Hamilton_County,_Ohio) (13/07/25)

become the location for the city of Cincinnati.<sup>46</sup> Their partner, Filson, who helped select the site “didn’t make it.”<sup>47</sup> Symmes wrote;<sup>48</sup>

“I am mortified to see people running away from these settlements, merely because no care is taken by their superiors to save them and their families from the rage of the savages - they feel themselves abandoned to destruction.”

Among the pioneers in the first flat boat was attorney William McMillan.<sup>49</sup> The land where they disembarked was densely forested.<sup>50</sup> A year later, in 1789, Fort Washington (Cincinnati) was established by the government of Philadelphia, with subsequent development “clustering around the fort.”<sup>51</sup>

In 1790, Arthur St Clair, the governor of the Northwestern Territory, renamed the settlement from Losantiville to Cincinnati, in honour of the Roman soldier, Cincinnatus.<sup>52</sup> At this stage of the city’s development, the settlers were primarily of English and Scottish heritage,<sup>53</sup> and were Protestant.<sup>54</sup> Skirmishes with the Indian populations continued until the Treaty of Greenville was made in 1795;<sup>55</sup>

“After St Clair lost 613 troops to Miami chief Little Turtle in the heaviest US military loss ever to Indians, Major General ‘Mad’ Anthony Wayne took control of the Fort.

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<sup>46</sup> Brent Coleman, Cincinnati’s Founding Fathers: Six men from the prestigious to the penniless helped to mold region, *American Broadcasting Corporation (ABC) Cincinnati*, <https://www.wcpo.com/news/insider/six-men-who-laid-claim-to-land-that-would-soon-become-hamilton-county-are-arguably-the-regions-founding-fathers> (12/07/25)

<sup>47</sup> “Filson made a quick survey before he disappeared in the wilderness, probably a victim of an Indian attack.” Jeff Seuss, 28th December 2013, Cincinnati’s Beginning: The Origin of the Settlement that Became this City, *Cincinnati*, <https://www.cincinnati.com/story/ourhistory/2013/12/28/cincinnati-beginning-the-origin-of-the-settlement-that-became-this-city/5363707/> (13/07/25)

<sup>48</sup> Ibid 46.

<sup>49</sup> Celebrating the CBA’s Sesquicentennial, *Cincinnati Bar Association*, <https://www.cincybar.org/About-Us/News/CBA-Blog/CBA-Blog-View/ArticleId/27763/Celebrating-the-CBA-s-Sesquicentennial> (12/07/25)

<sup>50</sup> Jeff Seuss, 28th December 2013, Cincinnati’s Beginning: The Origin of the Settlement that Became this City, *Cincinnati*, <https://www.cincinnati.com/story/ourhistory/2013/12/28/cincinnati-beginning-the-origin-of-the-settlement-that-became-this-city/5363707/> (13/07/25)

<sup>51</sup> Cincinnati, Ohio, *Advisory Council on Historic Preservation*, <https://www.achp.gov/preserve-america/community/cincinnati-ohio> (12/07/25)

<sup>52</sup> Ibid.

<sup>53</sup> “Cincinnati’s earliest settlers were predominantly native born, ethnically English, Swiss and French.” OTR History, *Over-the-Rhine Foundation* <https://otrfoundation.org/otr-history/> (13/07/25)

<sup>54</sup> German 1830-1950, *Cincinnati- A City of Immigrants*, <http://www.cincinnati-cityofimmigrants.com/german/> (12/07/25)

<sup>55</sup> Jeff Seuss, 28th December 2013, Cincinnati’s Beginning: The Origin of the Settlement that Became this City, *Cincinnati*, <https://www.cincinnati.com/story/ourhistory/2013/12/28/cincinnati-beginning-the-origin-of-the-settlement-that-became-this-city/5363707/> (13/07/25)

Wayne's victory in the Battle of Fallen Timbers led to the Treaty of Greenville in 1795, which ended Indian hostilities in Southwest Ohio.”

The small settlement was a shipping hub connecting Eastern cities with New Orleans.<sup>56</sup> Memories of the Indian populations of the area were recounted by settler families to their children and grandchildren;<sup>57</sup>

“I listened with wide eyes to stories of Indians in canoes skimming swiftly and silently on the stream which had been taken up by large noisy steam boats with heavy cargoes of passengers and freight, or of the large war canoes manned by twenty or thirty painted savages making a surprise attack on other tribes.”

German settlement in Cincinnati began in earnest in the 1830s and continued through to the 1950s.<sup>58</sup> Prior to 1830, only 5% of the city had German heritage, but by 1840 the proportion of settlers with German heritage had reached 30%. And the population went on to double in the following decade.<sup>59</sup> The Germans were of a mixture of Christian cults, Catholic, Lutheran, Reformed and Jewish.<sup>60</sup>

Germans left their home country for a variety of reasons, economic opportunity, family reunion, as well as “famine, religious persecution and political strife.”<sup>61</sup> In the 1870s under Otto van Bismarck, Catholics were persecuted.<sup>62</sup> In Cincinnati “they established Catholic schools among the Protestant natives.”<sup>63</sup>

Germany had been experiencing political turmoil since the Napoleonic wars (1803-1815). In July of 1830 the French Revolution broke out, sparking a rise of liberalism in Germany,<sup>64</sup> the German Industrial Revolution was in full swing, and general social tumult led to what is known as the German Revolutionary Period (1830s-1870s).

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<sup>56</sup> OTR History, Over-the-Rhine Foundation <https://otrfoundation.org/otr-history/> (13/07/25)

<sup>57</sup> T W Records, Flatboats, *Indiana Magazine of History*, 1946, 323.

<sup>58</sup> German 1830-1950, Cincinnati- A City of Immigrants <http://www.cincinnati-cityofimmigrants.com/german/> (12/07/25)

<sup>59</sup> Ibid.

<sup>60</sup> Ibid.

<sup>61</sup> The Great German Immigration, *Elseberry Historical*, <https://elsberryhistorical.org/items/show/148> (12/07/25)

<sup>62</sup> Ibid.

<sup>63</sup> Goetta: The Cincinnati German-American Breakfast Staple, *Serious Eats*, <https://www.seriousseats.com/goetta-the-cincinnati-german-american-breakfast-staple> (14/07/25)

<sup>64</sup> James Joll, Chapter XIX, Prussia and the German Problem (1830-1866), *The New Cambridge Modern History*, 1960, xx. [493-521]

Mass immigration began when Cincinnati experienced a boom in the 1830s in its meat packing (predominantly pork<sup>65</sup>) and shipping industries.<sup>66</sup> The late 1840s brought political refugees from the 1848 Revolution.<sup>67</sup> “By 1890, 57% of the total population of nearly 300,000 was either born in Germany or had German parents.”<sup>68</sup> Cincinnati in the nineteenth century was the most German of the American cities.

## German Culture in Cincinnati

In 2025, it is estimated 25% of Cincinnati’s population has German heritage.<sup>69</sup> The pork meat processing heritage of the city is commemorated in the flying pig symbol seen throughout the city, but especially in the Flying Pig Marathon held on the first weekend in May.<sup>70</sup>

The Over-the-Rhine<sup>71</sup> historic neighbourhood in Cincinnati is the most visible aspect of the city’s German heritage and “the largest intact historic district in the United States.”<sup>72</sup> The area, with its cobblestone streets, was named Over-the-Rhine because it was settled by German’s with origins predominantly from the Rhineland.<sup>73</sup> When the German immigrants first started arriving en masse, the area north of the Miami and Erie Canal was “mostly gardens and farmland.”<sup>74</sup> Once the area had been transformed into a bustling neighbourhood, crossing the many bridges over the canal began to be referred to as “going over the Rhine.”<sup>75</sup> By the late 1800s the majority of the population were “working class German Americans.”<sup>76</sup> Prohibition had a devastating effect on German cultural identity and the city’s booming beer brewing industry.<sup>77</sup>

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<sup>65</sup> Earning Cincinnati the nickname ‘Porkopolis’. Jay, 11th June 2024, Trading on History in the Cincinnati-Germany Relationship, *REDI Cincinnati*, <https://redicincinnati.com/trading-on-history-in-the-cincinnati-germany-relationship/> (13/07/25)

<sup>66</sup> Germans in Hamilton County, Ohio, *Family Search*, [https://www.familysearch.org/en/wiki/Germans\\_in\\_Hamilton\\_County,\\_Ohio](https://www.familysearch.org/en/wiki/Germans_in_Hamilton_County,_Ohio) (13/07/25)

<sup>67</sup> Ibid.

<sup>68</sup> Ibid.

<sup>69</sup> Jay, 11th June 2024, Trading on History in the Cincinnati-Germany Relationship, *REDI Cincinnati*, <https://redicincinnati.com/trading-on-history-in-the-cincinnati-germany-relationship/> (13/07/25)

<sup>70</sup> Flying Pig Marathon Weekend, *Flying Pig Marathon* <https://flyingpigmarathon.com> (02/09/25)

<sup>71</sup> The term was originally intended as an insult “for those who lived in affluence below the canal.” Goetta: The Cincinnati German-American Breakfast Staple, <https://www.seriousseats.com/goetta-the-cincinnati-german-american-breakfast-staple> (14/07/25)

<sup>72</sup> Discovering Cincinnati’s rich German Heritage, Laura Barfield, 24th June 2025, *Visit Cincy*, <https://www.visitcincy.com/blog/post/discovering-cincinnati-rich-german-heritage/> (13/07/25)

<sup>73</sup> Ibid.

<sup>74</sup> OTR History, *Over-the-Rhine Foundation*, <https://otrfoundation.org/otr-history/> (13/07/25)

<sup>75</sup> Ibid.

<sup>76</sup> Ibid.

<sup>77</sup> Ibid.

After the Depression many of the Germans who could afford to, began moving out of the neighbourhood, and Appalachians moved in, transforming the culture of the neighbourhood.<sup>78</sup> Daniel Boone and “the name ‘Hill Billy’ are often associated with this peculiarly American, Appalachian sub-culture;<sup>79</sup>

“The name ‘Hill Billy’ [...] comes from the Scotch-Irish, who were supporters of William of Orange. During a war with King James II in Ireland, the followers of William called ‘Billy Boys’, carried out sneak attacks while hiding in the Irish hills. When the Scotch-Irish descendants settled in the Appalachian hills, the nickname came too, and many Appalachian settlers came to be known as hillbillies.”

The foundations of German culture in Cincinnati were also embedded in the institutions its German population began; religious, educational and secular societies, musical conservatories and the Cincinnati Symphony Orchestra.<sup>80</sup> Germans in Cincinnati became prominent not only in the brewing industry, but also in banking and German language media.<sup>81</sup>

During Oktoberfest, Cincinnati holds ‘The Running of the Wieners’, which is essentially a sausage dog race, where the dashhounds are dressed in ‘German hotdog costume!’ While sausage dog is not on the menu, bratwurst, schnitzel, sauerkraut and of course, “light fizzy”<sup>82</sup> beer, is.<sup>83</sup> Particular to Cincinnati, is the breakfast sausage patty, goetta.<sup>84</sup> Goetta is believed to be a descendant of German grain sausages or *grutzwursts*.<sup>85</sup>

## The Influence of German Culture on American Culture

According to Kathleen Neils Conzen German-American identity is distinct from that of other ethnic groups;<sup>86</sup>

“not only by differences in background and history, but also - and more significantly-because of different patterns of assimilation and acculturation.”

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<sup>78</sup> OTR History, *Over-the-Rhine Foundation*, <https://otrfoundation.org/otr-history/> (13/07/25)

<sup>79</sup> What is Appalachian Culture? *The Collector*, <https://www.thecollector.com/what-is-appalachian-culture/> (13/07/25)

<sup>80</sup> Grace Hitt, ‘Germans Must Go’: German-American Diversity and the Cincinnati Post’s Anti-German Campaign, Paper HIST327: *US Immigration and Ethnic History*, 22 November 2020, 3.

<sup>81</sup> Ibid.

<sup>82</sup> Building Institutions, Shaping Tastes, *Library of Congress*, <https://www.loc.gov/classroom-materials/immigration/german/building-institutions-shaping-tastes/> (14/07/25)

<sup>83</sup> Discovering Cincinnati’s rich German Heritage, Laura Barfield, 24th June 2025, <https://www.visitcincy.com/blog/post/discovering-cincinnati-rich-german-heritage/> (13/07/25)

<sup>84</sup> Goetta: The Cincinnati German-American Breakfast Staple, *Serious Eats*, <https://www.serious-eats.com/goetta-the-cincinnati-german-american-breakfast-staple> (14/07/25)

<sup>85</sup> Elizabeth Nolan-Brown, Aug/Sept 2025, Cincinnati’s Beer Loving German’s Endured Anti-immigrant and Anti-alcohol Resistance, *Reason*, <https://reason.com/2025/07/03/cincinnati-ohio/?nab=1> (21/10/25)

<sup>86</sup> Philip V Bohlman, Prolegomena, to the Classification of German-American Music, xxxx, 34.

For Conzen, specific cultural values, rather than “formation of ethnic communities enclosed within cultural boundaries” are relevant to the German-American ethnicity.<sup>87</sup> By the late 1800s, second only to English, German was the most widely spoken language.<sup>88</sup> The first American Kindergarten - or the children’s garden - was founded in 1856 by a German immigrant in Wisconsin.<sup>89</sup> Some of America’s most prestigious universities, Harvard, Yale and John Hopkin’s, all follow the Phd, German model of education.<sup>90</sup>

The Germans also introduced physical education into the school curriculum and built gymnasiums.<sup>91</sup> They also brought with them a commitment to the Sunday outing, and introduced large scale recreational facilities into American life, “picnic grounds, bandstands, sports clubs, concert halls, bowling alleys and playgrounds.”<sup>92</sup> The Sunday outing, together with the keeping of the Sabbath by Puritan communities is believed to have given rise to the American weekend;.<sup>93</sup>

“Anyone who uses one of today’s theme parks, civic orchestras, swimming pools or urban parks owes a debt to the German passion for recreation.”

The much beloved American hotdog, has its origins in the German Bratwurst and Frankfurters.<sup>94</sup> In terms of Christmas fare, or festive food, the Germans contributed both ‘Stollen’ and gingerbread cookies.<sup>95</sup>

Heinz, creator of a tinned baby food line, baked beans and ketchup, is a famous American food producer of German heritage.<sup>96</sup> Perhaps the most iconic food associated with German heritage, now quintessentially American, is the hamburger.<sup>97</sup>

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<sup>87</sup> Ibid.

<sup>88</sup> The Influence of German Culture on American Culture, *German Culture*, <https://germanculture.com.ua/german-traditions/the-influence-of-german-culture-on-american-traditions/?amp=1> (12/07/25)

<sup>89</sup> Ibid.

<sup>90</sup> Ibid.

<sup>91</sup> Building Institutions, Shaping Tastes, *Library of Congress*, <https://www.loc.gov/classroom-materials/immigration/german/building-institutions-shaping-tastes/> (14/07/25)

<sup>92</sup> Ibid.

<sup>93</sup> Ibid.

<sup>94</sup> The Influence of German Culture on American Culture, *German Culture*, <https://germanculture.com.ua/german-traditions/the-influence-of-german-culture-on-american-traditions/?amp=1> (12/07/25)

<sup>95</sup> Ibid.

<sup>96</sup> Building Institutions, Shaping Tastes, *Library of Congress*, <https://www.loc.gov/classroom-materials/immigration/german/building-institutions-shaping-tastes/> (14/07/25)

<sup>97</sup> How German Immigration Shaped American Culture, *By Burk*, <https://letters.byburk.net/p/how-german-immigration-shaped-american-culture> (14/07/25)

The Germans also brought with them the tradition of the Christmas Tree or 'Tannenbaum', a now ubiquitous custom, not only throughout America, but much of the Christian world.<sup>98</sup> St Nicholas celebrations in Germany influenced the American tradition of Santa Claus.<sup>99</sup> Germans can also take credit for introducing the Easter Bunny into American culture.<sup>100</sup>

In music, a wave of German immigration after 1848;<sup>101</sup>

“brought a host of performers and educators, German music publishers and soloists and conductors who laid the foundations for conservatories, chamber music performances, symphonic music, opera and amateur choral activity.”

Engelhard Steinweg founded the company producing the Steinway piano, an American institution.<sup>102</sup> However, even more fundamental to American culture, Hill Billy music became Country Music, becoming central to the Nashville identity and the American music industry. Oscar Hammerstein II, whose grandfather had immigrated from Berlin, wrote the lyrics of some of America's most famous musicals, [The Sound of Music], Showboat, Oklahoma, South Pacific and the King and I.

Famous American industrialists with a German heritage include Rockefeller (petroleum) and the car makers, Chrysler and Studebaker.

Carl Schurz, a 'forty-eighter', was an “early member of the conservation movement.”<sup>103</sup>

Today Cincinnati attracts a large number of German companies to invest in the city including DHL, Mubea Inc, Robert Bosche Automotive Steering, Siemens, Hubert Company LLC and Bilstein.<sup>104</sup> All are local employers.

## The History of the City of Cologne

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<sup>98</sup> The Influence of German Culture on American Culture, *German Culture*, <https://germanculture.com.ua/german-traditions/the-influence-of-german-culture-on-american-traditions/?amp=1> (12/07/25)

<sup>99</sup> Ibid.

<sup>100</sup> Building Institutions, Shaping Tastes, *Library of Congress*, <https://www.loc.gov/classroom-materials/immigration/german/building-institutions-shaping-tastes/> (14/07/25)

<sup>101</sup> Pamela M Potter, 10- German Musical Influences in the United States, in Detlef Junker (Ed), *The United States and Germany in the Era of the Cold War, A Handbook*, 2004, 451.

<sup>102</sup> Building Institutions, Shaping Tastes, *Library of Congress*, <https://www.loc.gov/classroom-materials/immigration/german/building-institutions-shaping-tastes/> (14/07/25)

<sup>103</sup> Ibid.

<sup>104</sup> Jay, Trading on History in the Cincinnati-Germany Relationship, <https://redicincinnati.com/trading-on-history-in-the-cincinnati-germany-relationship/> (21/10/25)

The city of Cologne is located on the Rhine River, the capital of the Rhineland region. The Dom or Cologne Cathedral, which took nearly 500 years to complete, is UNESCO world heritage listed.<sup>105</sup>

Charlemagne made the Cologne an Archbishopric in 785.<sup>106</sup> The Archbishops collected tolls and custom duties from the city's inhabitants.<sup>107</sup> The first crusade of 1096 had a particularly devastating impact in the Jewish population.<sup>108</sup> The Jewish population paid for and received protection privileges from the Archbishops.<sup>109</sup>

During the Middle Ages, when the city was part of the Holy Roman Empire, Cologne was also a place of pilgrimage. In 1164, the shrine of the three Magi, purporting to hold the relics of three skulls, was bought from Milan to Cologne by Frederick Barbarossa.<sup>110</sup> When the Cologne Cathedral was completed the three Magi became its principal attraction. "To the middle of the thirteen century the principle motive for pilgrimage was to venerate relics and to procure the protection of saints."<sup>111</sup>

After Cologne became free in 1288, a protection privilege of ten years for the Jewish people was procured from the city, and life became more precarious.<sup>112</sup> A trend of increasing protection money, short durations and increasing burdens and restrictions on the Jewish population resulted finally in the expulsion of 1424.<sup>113</sup>

As the fourteen century closed and the fifteenth century dawned "the host had displaced the relics of the saints at the centre of liturgical and popular religious practice."<sup>114</sup> In 1330, a priest in the city of Walldurn, who was having doubts about his faith experienced a Eucharistic miracle which he kept hidden until his deathbed confession.<sup>115</sup> When the relic of the corporal with its miraculous image was discovered,

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<sup>105</sup> Cologne, *Eurocities*, <https://eurocities.eu/cities/cologne/> (14/07/25)

<sup>106</sup> Cologne (Koln) Germany: City Guide for Expats, Olivia Logan, *I am Expat*, <https://www.iamexpat.de/lifestyle/german-cities/cologne-koln-city-guide> (14/07/25)

<sup>107</sup> Ibid.

<sup>108</sup> Cologne, Germany, *Virtual Jewish Library*. [https://www.jewishvirtuallibrary.org/cologne-germany-virtual-jewish-history-tour#google\\_vignette](https://www.jewishvirtuallibrary.org/cologne-germany-virtual-jewish-history-tour#google_vignette) (14/07/25)

<sup>109</sup> Ibid.

<sup>110</sup> Norbert Lennartz, Cologne, *The Palgrave Encyclopaedia of Urban Literary Studies*, April 2021, 1.

<sup>111</sup> Diana Webb, Pardons and Pilgrims, in *Promissory Notes on the Treasury of Merits: Indulgences in Late Medieval Europe*, 2006, 241.

<sup>112</sup> Cologne, Germany, *Virtual Jewish Library*. [https://www.jewishvirtuallibrary.org/cologne-germany-virtual-jewish-history-tour#google\\_vignette](https://www.jewishvirtuallibrary.org/cologne-germany-virtual-jewish-history-tour#google_vignette) (14/07/25)

<sup>113</sup> Ibid.

<sup>114</sup> Charles Zika, Hosts, Processions and Pilgrimages: Controlling the Sacred in Fifteenth Century Germany, *Past and Present*, No118, February 1988, 25.

<sup>115</sup> Germany, Eucharistic Miracle in Walldurn, *OFM Conventual*, <https://www.ofmconv.net/en/germania-miracolo-eucaristico-a-walldurn/> (20/08/25)

the church of St George, now cared for by the Franciscans, became an important pilgrimage site. A pilgrimage to the church of St George on foot begins on the front steps of the Cologne Cathedral.

During the period known as the German Confederation, the city was heavily fortified, with two rings of fortifications;<sup>116</sup>

“Forts, bunkers and wide defensive areas surrounded the city and prevented its expansion. This led to very dense construction within the city.”

The city of Cologne suffered an economic decline with the discovery of America, due to the travel routes shifting more towards the Atlantic Ocean,<sup>117</sup> but recovered again during the Industrial Revolution with its 84 hour working week.<sup>118</sup>

In 1794 the French occupied Cologne, and the city lost its status as a free Imperial city and once again had an archbishop elector until he died in 1801.<sup>119</sup> “The city was then governed according to the French municipal constitution.”<sup>120</sup> Religious convents, monasteries and colleges became public property and many churches and chapels demolished leaving vacant lots.<sup>121</sup> It was these lots that were filled with the factories of the Industrial Revolution.<sup>122</sup>

In 1815 Cologne became part of Prussia.<sup>123</sup> Under Prussian rule the historic walls of the inner city were demolished in 1880, and “replaced with a chain of semicircular boulevards.”<sup>124</sup> Fortunately three of the twelve medieval city gates remain.<sup>125</sup> Construction on Cologne Cathedral recommenced after the original 13th century plans were rediscovered and the Cathedral was completed in 1880.

Adolf Hilter seized power in 1933.<sup>126</sup> The Jewish population soon felt his impact;

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<sup>116</sup> Cologne: Reconstruction as Preservation of Urban Identity, Kateryna Oshemkova, *Pragmatika*, <https://pragmatika.media/en/keln-rekonstrukcija-jak-zberezhenja-miskoi-identichnosti/> (2/09/25)

<sup>117</sup> History of Cologne, *Lat-Lon Europe*. [https://www.latlon-europe.com/cologne/en/history\\_T05.htm](https://www.latlon-europe.com/cologne/en/history_T05.htm) (23/08/25)

<sup>118</sup> Cologne (Koln) Germany: City Guide for Expats, Olivia Logan, *I am Expat*, <https://www.iamexpat.de/lifestyle/german-cities/cologne-koln-city-guide> (14/07/25)

<sup>119</sup> History of Cologne, Early Settlement and Medieval Growth, *Encyclopaedia Britannica*, <https://www.britannica.com/place/Cologne-Germany/History> (14/07/25)

<sup>120</sup> History of Cologne [https://www.latlon-europe.com/cologne/en/history\\_T05.htm](https://www.latlon-europe.com/cologne/en/history_T05.htm) (23/08/25)

<sup>121</sup> Ibid.

<sup>122</sup> Ibid.

<sup>123</sup> History of Cologne, Early Settlement and Medieval Growth, *Encyclopaedia Britannica* <https://www.britannica.com/place/Cologne-Germany/History> (14/07/25)

<sup>124</sup> Cologne Germany, Earth Observatory, NASA, <https://earthobservatory.nasa.gov/images/144465/cologne-germany> (14/07/25)

<sup>125</sup> The Top Things to See, Do and Eat in Cologne, Germany, *Tall Girl, Big World*, <https://tallgirlbigworld.com/what-to-do-in-cologne-germany/> (14/07/25)

<sup>126</sup> History of Cologne [https://www.latlon-europe.com/cologne/en/history\\_T05.htm](https://www.latlon-europe.com/cologne/en/history_T05.htm) (23/08/25)

“In the November pogroms of 1938, synagogues and other Jewish institutions were destroyed.”<sup>127</sup>

A system of concentration camps were established. And the previous Lord Mayor, Konrad Adenauer was detained there until his escape.<sup>128</sup>

Carpet bombing in March of 1945 destroyed 95% of the city centre, with remarkably only the Cathedral left relatively intact.<sup>129</sup> Only the most important historic buildings were reconstructed. The city’s economic revival was driven by the construction of cars and engines for Ford.

Cologne, Germany’s fourth largest city, is now considered the economic centre of West Germany.<sup>130</sup>

## Famous Cologne

The University of Cologne is one of the oldest and largest in Germany. Three giants of scholasticism, Albert Magnus, Thomas Aquinas and Duns Scotus all taught in Cologne schools. The University reopened quickly in the aftermath of the Second World War.<sup>131</sup>

In the 18th century, an Italian perfumer working in the city of Cologne invented a lighter fragrance than traditional perfume, and Eau de Cologne was born.<sup>132</sup> The fresh, citrusy scent was destined for the Royal Courts of Europe, and Cologne became a centre of perfume production. According to the perfumer the scent was reminiscent of;<sup>133</sup>

“a spring morning in Italy, mountain narcissus, and orange blossom just after the rain.”

One of the two perfume houses is located at 1147 Glockenglasse in the Old Town. The ‘Cologne water’ runs in a fountain beside the door.<sup>134</sup> However, the rival Farina’s is “the first registered cologne in the city”<sup>135</sup> and “the oldest still standing fragrance factory in the

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<sup>127</sup> Ibid.

<sup>128</sup> History of Cologne [https://www.latlon-europe.com/cologne/en/history\\_T05.htm](https://www.latlon-europe.com/cologne/en/history_T05.htm) (23/08/25)

<sup>129</sup> Ibid.

<sup>130</sup> Ibid.

<sup>131</sup> Ibid.

<sup>132</sup> The History of Perfume and Eau de Cologne, *Czech and Speake Journal*, <https://www.czechandspeake.com/fragrance/journal-posts/history-perfume-eau-de-cologne/> (14/07/25)

<sup>133</sup> One Day in Cologne, *Two Parts Italy*, <https://www.twopartsitaly.com/blog/2023/6/17/one-day-in-cologne-germany> (23/08/25)

<sup>134</sup> Cologne: Germany’s mix of Chocolate, Perfume and God, *Rick Steins Europe*, <https://www.ricksteves.com/watch-read-listen/read/articles/cologne-perfume-chocolate-god> (23/08/25)

<sup>135</sup> Local’s Guide to the Coolest Things in Cologne, *Austlander*, <https://auslanderblog.com/what-to-do-in-cologne/> (23/08/25)

world.”<sup>136</sup> The Farina family in its eighth generation are still involved in the business and they keep the original recipe a closely held secret. Originally considered medicine, Eau de Cologne was the first perfume to be based on 86 percent alcohol, and herbal fragrances.<sup>137</sup>

Claudius Therme is a thermal bath and spa complex located in the middle of Cologne’s River Rhine Park, where you can relax in mineral rich indoor and outdoor pools, hot and cold plunge pools and saunas (naked and covered).<sup>138</sup>

The Millowitsch theatre was established by the theatre family of the same name in 1936, after a tradition dating back to 1792.<sup>139</sup> The theatre has been reinvented several times as a live theatre and cinema venue and as a venue for a variety of performance types.<sup>140</sup> Today it remains in the family’s hands.

When chocolate first reached Germany from the Americas, it was considered a medicine, as a restorative, As a luxury drink, chocolate like coffee, was highly taxed, expensive and enjoyed only by Princes and celebrities.<sup>141</sup> However today the Chocolate Museum operated in collaboration with Lindt, is one of the city’s most popular attractions. Perhaps followed by the experience of drinking the geographically protected (GI) Kolsch beer in the Aachen Pond Beer Garden;<sup>142</sup>

“Where else can you drink tiny beers that are refilled automatically until you throw a coaster over the top of the glass as a sign of defeat?”

Nugatbretzel, a sweet pretzel with a yoghurt glaze covered in almonds, can be enjoyed with coffee in the morning.<sup>143</sup> Other midday dishes to try are Himmel un Aad, sweet apple sauce and caramelised onions, and Halve Hahn, a rye sandwich with Gouda cheese and onion.

Also highly recommended are the Cologne Christmas Markets, where you can take the opportunity to indulge in warming Gluhwein, taking a turn on the skating rink, while enjoying “market decor so sumptuous, detailed and romantic, that I was instantly zapped

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<sup>136</sup> Eighteen Unique and Fun Things to do in Cologne, Germany, Happy to Wander, <https://happytowander.com/things-to-do-in-cologne-germany/> (23/08/25)

<sup>137</sup> Cologne: Germany’s mix of Chocolate, Perfume and God, *Rick Steins Europe* <https://www.ricksteves.com/watch-read-listen/read/articles/cologne-perfume-chocolate-god> (23/08/25)

<sup>138</sup> Ibid n136.

<sup>139</sup> Millowitsch Theatre, *Wikipedia*, [https://en.m.wikipedia.org/wiki/Volkstheater\\_Millowitsch](https://en.m.wikipedia.org/wiki/Volkstheater_Millowitsch) (23/08/25)

<sup>140</sup> Ibid.

<sup>141</sup> Chocolate-The History of Chocolate, Chocolate Molds Museum, <https://www.chocolatemoldsmuseum.com/history/chocolate/> (23/08/25)

<sup>142</sup> Ibid n136.

<sup>143</sup> Local’s Guide to the Coolest Things in Cologne, *Austlander*, <https://auslanderblog.com/what-to-do-in-cologne/> (23/08/25)

into a state of child like glee.”<sup>144</sup> Cologne offers abundant Christmas fare including potato pancakes and waffles in the shape of Cologne Cathedral.<sup>145</sup>

Undoubtedly the highlight of a visit to Cologne is a tour of Brühl Castle and grounds, or rather two castles, Augustsburg Palace and Falkenlust (a hunting lodge), the 18th century home of Clemens August, the Prince of Cologne (1729-37).

## **Cologne and Cincinnati: A Walking Tour**

The ideal walking tour of a city lasts approximately two hours<sup>146</sup>, is select in its composition and takes in sights both popular and secret.<sup>147</sup> “Walking tours locate people within a vast cultural and physical landscape.”<sup>148</sup>

Wynn in his book, *The Tour Guide: Walking and Talking New York*, muses on the role of the intersection of unique topography and characters related by tourist guides, which perhaps contribute to the ‘sidewalk ballet’, so beloved of Jane Jacobs.<sup>149</sup>

According to Wynn tour guides have been around since antiquity;<sup>150</sup>

“The ancient Greeks called those who showed foreigners to sacred sites periegetari (leaders around) or exegetai (explainers), and the Romans called them mystagogi (those who show sacred places to foreigners).”

For E B White, there are three (New York) cities, one of the born and bred local, one of the commuter and the third of the migrant, while for Coulson Whitehead there could be millions!<sup>151</sup> Wynn continues;<sup>152</sup>

“The city of the commuter who traces his daily steps from suburban Long Island to Wall Street, will be different to that of the West Indian who lives in Harlem and sells fake Gucci watches on big blankets in Battery Park. The city of the Columbia graduate will be different from that of the retiree.”

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<sup>144</sup> Eighteen Unique and Fun Things to do in Cologne, Germany <https://happytowander.com/things-to-do-in-cologne-germany/> (23/08/25)

<sup>145</sup> Ibid.

<sup>146</sup> Jonathan R Wynn, *The Tour Guide: Walking and Talking New York*, 2011, intro 3.

<sup>147</sup> Emanuela Guano, Touring the Hidden City: Walking Tour Guides in Deindustrialising Genoa, *City and Society*, Vol 27, Issue 2, August 2015, 160 (-182).

<sup>148</sup> Wynn, 2011, intro 7.

<sup>149</sup> Ibid.

<sup>150</sup> Ibid.

<sup>151</sup> Ibid.

<sup>152</sup> Ibid.

Wynn believes it is these insider perspectives - 'living like a local' - that locals and visitors alike are keen to learn from tour guides.<sup>153</sup>

Culturally the key to Cincinnati is disclosed as its northern location with immigrant and southern influences.<sup>154</sup> One of its more interesting museum collections is a collection of vintage neon highway signs.<sup>155</sup>

Cologne is culturally said to be a city of contrasts, "its flamboyant carnival festivities can sit rather uneasily with the city's strict Catholicism."<sup>156</sup> In Cincinnati the weirdness of the Bockfest mirrors this German unease with festival and religion.

Cincinnati marks the beginning of Spring, Over-the-Rhine, with the three day Bockfest. Bockfest is based on the tradition of monks brewing beer for the Lenten fasting season in the lead up to Easter. These origins, despite the Franciscan blessing at the start of the Bockfest, are significantly obscured in the modern Cincinnati Spring rites festival. In Germany the Bockfest is called Starkbierzeit or strong beer time. Traditionally in Bavaria, thick, malty, dark beers were brewed during Lent, as a form of 'liquid bread' for the monks' fast.<sup>157</sup> In Cincinnati Bockfest is essentially a beer festival celebrating the city's German beer brewing tradition dating from the 1800s and showcasing German style craft bock beers.<sup>158</sup>

Significantly, Hudepohl Brewing Company, created Christian Moerlein, was the first American craft beer to pass the strict German beer purity laws or 'Reinheitsgebot'.<sup>159</sup> Christian Moerlein was originally founded in 1853 by a Bavarian immigrant to Cincinnati, while Hudepohl was founded in 1885 by the son of Bavarian immigrants.<sup>160</sup>

Unique to Cologne, are its perfume walking tours. While in Cincinnati one of the more unusual walking tours on offer is a geologic tour of the city, via its stone buildings!<sup>161</sup> Cincinnati is known for its historic classical and art deco buildings as well as the historic German Over-the-Rhine neighbourhood.

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<sup>153</sup> Wynn, 2011, intro 3.

<sup>154</sup> Robert Schrage, *A History Lover's Guide to Cincinnati*, 2023.

<sup>155</sup> Cincinnati Travel Guide, *National Geographic*, <https://www.nationalgeographic.com/travel/destination/cincinnati> (30/08/25)

<sup>156</sup> Norbert Lennartz, From Bonne Ville to 'body and soul-stinking town: Romantic Cologne, *The Palgrave Encyclopaedia of Urban Literary Studies*, 2021, 1.

<sup>157</sup> Bockfest is called Starkbierzeit, *The Food Etymologist*, <https://dannwoellertthefoodetymologist.wordpress.com/2024/03/21/bockfest-is-called-starkbierzeit-in-germany/> (30/08/25)

<sup>158</sup> 33 years of Celebrating Over-the-Rhine, *Bockfest*, <https://www.bockfest.com/history.html> (31/08/25)

<sup>159</sup> Ibid.

<sup>160</sup> Elizabeth Nolan-Brown, Aug/Sept 2025, Cincinnati's Beer Loving German's Endured Anti-immigrant and Anti-alcohol Resistance, *Reason*, <https://reason.com/2025/07/03/cincinnati-ohio/?nab=1> (21/10/25)

<sup>161</sup> Joseph T Hannibal, *Guide to the Building Stones of Downtown Cincinnati: A Walking Tour*, 1996.

German architects after the Fall of the Roman Empire;<sup>162</sup>

“under the Merovingian, Carolingian and Ottoman dynasties continued to build large stone buildings, developing a new architectural style in Western Europe known as the Romanesque, that combined features of ancient Roman and Byzantine buildings with local traditions.”

The relatively simple architectural style is noteworthy for its thick walls, pillars, semi-circular arches, symmetry and large towers.<sup>163</sup> The twelve Romanesque churches of Cologne, of which at least one feature on most walking tours, date from this period of German architecture.<sup>164</sup> The Romanesque style developed into the Gothic, of which the famous UNESCO listed Cologne Cathedral with its twin spires, buttresses, and soaring light filled spaces, is an outstanding example.<sup>165</sup> The Renaissance style of architecture, with its emphasis on classicism, followed on from the Gothic. The Cologne Town Hall was built in this period.<sup>166</sup>

The Over-the-Rhine district is one the largest intact historic districts in the United States and is believed to be as significant as the more famous French Quarter in New Orleans.<sup>167</sup> Cincinnati's Over-the-Rhine district has architecture dating from the nineteenth and early twelfth centuries including predominantly Greek Revival, Italianate and Queen Anne with examples of the Gothic Revival and Art Deco styles.<sup>168</sup> The tall narrow fronted buildings mirrored the German experience of taxes being raised based on the width of a building.

The limestone Renaissance revival building at 12th and Walnut Streets exemplifies the historical challenges that from World War One and the torpedoing of the Luistania, until the civil unrest of 2001, characterised the Over-the-Rhine district;<sup>169</sup>

“It was built by an immigrant named Rattermann, it had a statute of Germania built into the design, and then there was the name: Deutsche Gegenseitige Versicherungs Gesellschaft von Cincinnati.”

From after the First World War the German population of Over-the-Rhine began to assimilate into the American population and moved out to the suburbs, and the district

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<sup>162</sup> From Baroque to Bauhaus: An Overview of German Architectural Styles, Abi Carter, *I am Expat*, <https://www.iamexpat.de/housing/property-news/baroque-bauhaus-overview-german-architecture-styles> (31/08/25)

<sup>163</sup> Ibid.

<sup>164</sup> Ibid.

<sup>165</sup> Ibid.

<sup>166</sup> Ibid.

<sup>167</sup> A Guide to OTR Architecture, *OTR Foundation*, <https://otrfoundation.org/otr-architecture/> (31/08/25)

<sup>168</sup> Ibid.

<sup>169</sup> Over the Rhine's building's German history scorned no more, *Cincinnati*, <https://www.cincinnati.com/story/news/2014/07/18/building-otr-embraces-scorned-german-history/12871919/> (31/08/25)

began to decline. Unfortunately the Miami and Eyrie canal, which gave Over-the-Rhine its name, was filled in in 1920.

## **Reconstruction and Urban Renewal in Cologne and Cincinnati**

After the extensive bombing of World War II little of the historic old city of Cologne remained apart from the city's famous cathedral. Approximately 60% of all of Cologne's buildings had been destroyed and decisions on rebuilding had to be made. This decisive moment saw a reaction against Modernism;<sup>170</sup>

“Hitler wanted to see all German cities modernised, with wide streets for cars and skyscrapers. So many city councils had planners who started thinking about reconstruction even before the war. When the bombing began, they even thought it would speed up modernisation, but it turned out to be the opposite. After the war, many cities rejected both planners who supported the Nazis ideas and modernisation as such.”

In Cincinnati the civil unrest of 2001 following the shooting of Timothy Thomas, led to the acceleration of urban renewal of the Over-the-Rhine District, which had begun in the 1990s. As part of the urban renewal, Washington Park was levelled, redeveloped and expanded from 6 to 8 acres to create a stand alone destination with underground parking, a performance stage, lawns, plaza with interactive water feature, children's playground and dog park to name a few of its features. The park redevelopment was intended to support surrounding residential and commercial development.<sup>171</sup>

The residential areas of Cincinnati are marked predominantly by an east/west divide along Vine Street. Although there is a north side, and a south side of the city, including Newport and the Madison districts, in Kentucky! Cincinnati is also known as the city of seven hills, which include the districts of Mount Adams, Walnut Hill, Mt Auburn, Vine Street Hill, College Hill, Fairmount and Price Hill. Although 88% of the residents of Cincinnati live within a ten minute walk of a park, neither walking - rather than driving - or visiting parks are high on the list of activities that residents actually indulge in.

In the Over-the-Rhine or OTR district speciality stores and boutiques line Vine and Main Streets. The district is home to over 5,000 residential who live in close proximity to bars, restaurants and a thriving arts scene as well as the historic Findlay Market.

## **Conclusion**

The culture of cities, and distinct cultural districts, are often overlooked attributes which contribute to urban vibrancy within cities. Culture is not simply artistic activity, nor the presence of educational institutions. Culture, like language, is inherently a shared understanding and expression of a peoples who have lived together as a community for an extended period of time. Cultures are deeply connected to place. Thus the settling of a migrant community in a new land, and the community's commitment to their new home,

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<sup>170</sup> Kateryna Oshemkova, Cologne: Reconstruction as Preservation of Urban Identity, <https://pragmatika.media/en/keln-rekonstrukcija-jak-zberezhenija-miskoi-identichnosti/> (2/09/25)

<sup>171</sup> Washington Park, 3CDC, <https://www.3cdc.org/project/washington-park/> (22/10/25)

creates a fascinating hybrid culture, as in the Over-the-Rhine District of Cincinnati, at once German, and distinctly American attests.

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# A Fragile Town Tapestry: Urban Regeneration Mechanisms as Catalysts for the Revitalisation of Connaught Street, Athlone.

**Teresa Josephine Sweeney Meade**

## **Abstract:**

In the depths of the Covid-19 global pandemic, a project was initiated to look at disused and forgotten urban areas of Athlone, a large town in the centre of Ireland<sup>1</sup>. This was intended to complement a large infrastructural Irish government and EU funded flood alleviation scheme taking place there. The potential became apparent that this was a unique opportunity to bring back a sense of connectivity and celebration of the town's rich and turbulent history to the community. It could be realised through the reintegration of the forgotten and disused public spaces into the town fabric. New uses were also proposed which recalibrated the relationship between the town, its past history and the river Shannon. A number of key areas were identified, using figure-ground map analysis of the evolution and development of the town<sup>2</sup>. For example, the town walls were built in 1251<sup>3</sup> following the approval of a murage grant from King Henry III of England. While rebuilding and upgrading occurred in the 16<sup>th</sup> and 17<sup>th</sup> centuries, critical research already published made it possible to re-present and reintegrate them into the story of the urban richness and historical significance of the town.

Some planning decisions made were short-sighted; particularly in the last century, and in retrospect, the decisions made to fill in part of the canal in the town, the abandonment of one of the railway station buildings and the creation of public open spaces, utilising unattractive surplus-to-requirements pockets of land, were not very successful. Green spaces were generally assigned from left over spaces. They were often out of scale with their surroundings and crudely connected to surrounding social housing estates. However these well-intentioned 'Garden City' inspired developments were welcomed by the community when first built. Most are still inhabited. The period envisioned for the realisation of this project is seven years: from 2020-2027.

Key words: urban voids, age-friendly movement, neurodiversity, dereliction, intangible heritage, community

## **Part 1: Literature Review: Seeking Solutions – 21<sup>st</sup> Century Issues in Heritage Towns**

By applying the principles and mechanisms invoked in successful urban fabric renewal case studies, one can envision the key success factors that might work for Connaught Street and its environs. This literature review looks at successful examples and seeks to harvest their potential in the case of Connaught Street. The case studies explore a number of critical themes:

- A third level institution as catalyst for urban renewal
- The Age Friendly Movement,
- Rebalancing of place: the role of community engagement: how to turn a place around
- Neurodiversity
- Irish town vacancy study

### **Connaught Street: can a third level institution act as catalyst for urban renewal?**

One important aspect of engagement on the historical town rejuvenation process is 'the sharing of objectives and strategic choices' Negri, M. and Lelli, G. (2022, pp. 21- 22). Key to this is the relationship between local authorities and stakeholders. Ideally, this is where the scoping of fieldwork is facilitated and the expectations of the local community are recorded. Grunwell, S., and Ha, I.S. (2014, p.47) state in their research based around the case study of Dillsboro, North Carolina, USA, that the creation of a vision statement was undertaken. Its aim was to set out the ambition to improve the town's quality of living for its inhabitants and to make Dillsboro a place to 'live, work and invest, as well as an interesting place to visit.' ([www.dillsboronc.info](http://www.dillsboronc.info)). In this case we are applying

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<sup>1</sup> Athlone town's population was 22,869 in 2022 according to the *Athlone Joint Urban Area Plan*, p.10.

<sup>2</sup> Over the last almost 900 years, the town has evolved. Even before the 12th Century, Athlone or Baile Átha Luain in the Irish language, was a strategic crossing point at the river Shannon, with evidence of Bronze Age and Early Christian settlements having existed there. A wooden fort was built by the High King Turlough O'Connor to protect the crossing around 1129, and later, in 1210, Bishop John De Gray constructed a stone castle and bridge. In 1240 the Franciscans established a friary near the settlement.

<sup>3</sup> Source: Murtagh, H. (1994). *Athlone – Historic Towns Atlas No.6*. Dublin: Royal Irish Academy.

the findings of that study of a small American town to Connaught Street, Athlone that is situated to the west of the Shannon river. This area acts as a microcosm of the wider urban area predominantly east of the river. The advantages of having the university–community model brought in as an initiative is explored and insights offered as to how to replicate what the case study trialled. Grunwell and Ha (2014) examined the advantages of partnering a small historic town with a third level institution and developed a workable methodology for evaluation of the status quo through the opportunities that surveying the various communities revealed. At the time of this study, just over ten years ago, Dillsboro, NC, had 110 Households with an average of 2.2 people per household and a population of 249 residents. Connaught Street, Athlone is of comparable size to this if the areas where there are housing developments as infill developments to the rear of the street are included. This exercise also led to evidence based clarity around how improvements could be introduced to help the town to thrive again. Grunwell and Ha (2014, p.35) asserted that this model promoted initiatives around student volunteering and presented opportunities for academics to conduct locally relevant studies that could be transformative for both local community members and wider groups. As a related key issue in their research, Grunwell and Ha, (2014, p.44) stated that most of those surveyed looked for the return of a visitor attraction that had shut down, namely a heritage railway attraction. This took all tourists and related revenue as well as economic prosperity away. In the case of Connaught Street, the canal being filled in and no longer navigable was a great loss to the area. It was an important diverted waterway of the river and allowed for an easier passage of boats via a canal route, avoiding the navigational hazards of the open water and bypassing the Shannon at Athlone.

### **The Age Friendly Movement: Older people, accessibility and the ‘High Street’**

Phillips, J., et al., (2021) note the opportunities for the older generation and the ‘high street’ of a town to be supportive of each other where availability of services and facilities will keep the street from being deserted during the day. Referencing Lovatt, A. (2017), Phillips, J., et al., (2021, p.15), they state that the older generation avoid the town centre at night-time but successively keep the day-time economy alive. Phillips, J., et al., (2021, p.14) assert that ‘spatial concentration of health and social care, leisure, entertainment and hospitality services’ provide important points of contact for everyone and for older people, most specifically, when existing accessibility issues are addressed. Physical improvements made to allow mobility and accessibility, undertaken by designers and planners, are key to the success of the rejuvenation of the high street for all. Phillips, J., et al., (2021, p.14) refer to the worldwide success of the World Health Organisation Age Friendly Cities or AFC Movement (WHO, 2007). It was designed to incorporate eight special areas of liveability in an urban context, these are ‘*outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, work and civic engagement, communication and information, health and community services*’ (WHO, 2007). Where urban analysis is undertaken, these eight domains of liveability are well-tested criteria against which their ‘age friendliness’ can be measured. They are applied in order to account for prevailing conditions and to allow for continuous evaluation. Improvements are then incorporated in that urban area, using site appropriate themes (Warth, 2016). For the last five years, the *Age Friendly Ireland Shared Service* is assisting every local authority to create age friendly strategies across Ireland. It was set up under the 2020 Programme for Government: Our Shared Future. This incorporates a multi-agency approach to address inclusivity built around the 8 World Heritage Age Friendly Themes. Connaught Street would be a great location in which to adapt these principles, particularly if the canal was re-opened as a waterway and linked to the adjacent *Shannon Banks Nature Trail* and houseboats encouraged.

### **Rebalancing of place and the importance of community engagement: methods used to reverse decline**

Case studies from actual examples of successful rejuvenation are show-cased in ‘How to Turn a Place Around’ (Project for Public Spaces, 2018). This is an important handbook for working with the community using tried and tested people centred place making mechanisms. The authors developed a concept for analysing problem spaces called ‘*The power of 10+*’ (Project for Public Spaces, 2018, p.151). The premise is that an urban area will prosper when there are 10 or more reasons to go there. It is emphasised by the authors that urban areas thrive or fail at the human or ‘place’ scale (Project for Public Spaces, 2018, p.151). This study is usually conducted at the start of a place-making improvement process to understand the connectivity or lack of it across an urban area or district. Out of that process comes the next step which is behaviour mapping; but the caveat is that the observers have to be trained in this, as leaving out any critical data will result in inaccurate pictures of uses of the urban landscape. The type of activity to be recorded is also crucial. Following this, a place-making workshop would be conducted to provide a forum for people to voice what is important to them about the area. Another option that has been successful in the United States is the ‘Lighter, Cheaper, Quicker (LQC)’ Option (Project for Public Spaces, 2018, p.141) which is centred on the concept that the most important step in place-making projects is the implementation of the vision. These are usually short span changes on a small budget and timescale that test ideas that might have merit on a larger scale of implementation, i.e., a Sunday Market has been introduced in Connaught Gardens at the

rear of Connaught Street. LQCs are not a solution long term, but are designed to test an idea. A checklist usually devised by stakeholders, containing a list of improvements. These could include movable pavement seating, a temporary library kiosk, signage, the provision of a facelift to an existing vacant building, temporary public toilets. It could even be the forging of an identity using signage, a street poster or a website set up specifically for street promotion. Development of a budget and drawing small scale funding from private, public and various grant authority sources would also be a positive development, together with a governance structure around the spending of the funds.

### **Neurodiversity<sup>4</sup>**

Neurodiversity in public spaces emerged as an area of research in the 1990s (Tovar, 2025). The definition of neurodiversity was re-set and separated out from psychiatric conditions and seen as an attribute, the same as other differences like race, or gender (Ortega, 2013 in Kenna, 2023, p.370). Increased awareness around neurodiversity is leading to research being conducted relating it to the built environment and to urban areas. It is also looking more closely at how neuro-diverse individuals relate to it (Kenna, 2023, p.371). The public realm is fraught with flashing lights on advertisements and signage as well as sudden noises from cars and construction sites (Tovar, 2025). The average person is the point of reference for designers and policy makers. Therese Kenna in her article Kenna (2023) presents insights into the complexity of addressing neurodiversity in urban settings and calls for further research in this area to enable spaces to become more inclusive. This is timely for the regeneration of Connaught Street where the potential to address the various areas along the street and the canal area are opportunities to rethink the strategies that will bring the street and its environs back to a new and informed reality. This would incorporate both physical built solutions that offer spatial, social and sensory spaces of inclusion and the development of temporal information that assists in decision making of when to go to urban places like shops or pathways as may be the preference (Kenna, 2023, p.375). Ironically, some of the strongest feelings of being excluded and feeling as if one does not belong in a place occur in the public spaces of an urban area. These forms of exclusion remain 'largely invisible and undocumented' (Kenna, 2023, p.379) and are in need of more research.

In the case for Connaught Street there is an opportunity to include neuro-diverse research to make it a core part of the revitalisation and re-centering of the street with values that reflect the needs of all its inhabitants and visitors. Kenna (2023, p.379) cautions that this research has to be conducted by trained professions who are experts in this area but that the rewards are great to make public spaces more accessible and inclusive.

### **Irish town vacancy study: the persistence of urban voids**

No literature review in relation to Urban Dereliction and Rejuvenation in the Irish context could be considered without reference to the research recently conducted by Heaphy et al., (2024) on typologies of building vacancy in Ireland. This was a two year collaboration study between universities and government agencies under the Environmental Protection Agency Research Programme of the Government of Ireland. In reference to urban vacancy it was noted that local government programmes like the Collaborative Town Centre Health Check (CTCHC) and Town Centre First (TCF) have assisted in extending local building capacity (Heaphy et al., (2024, p.18). Clusters of vacant buildings were surveyed using GeoDirectory and the boundary files of settlements available from data.gov.ie, combined with Google Earth Street-View, postal service collection data and examining the rental properties website known as *Daft.ie* (Heaphy et al., 2024, p.6). The GeoDirectory lists vacancy rate in percentages by County, with Westmeath having 4.5% vacancy of residential buildings in Quarter 4 of 2022. This analysis ties in with the situation on Connaught Street where a number of residential properties are vacant. Interestingly urban vacancy clusters were found where 10 or more properties were in evidence 'affecting most of a street or block' (Heaphy et al., 2024, p.18) in western and border counties. Connaught Street is situated just west of the river Shannon. The study was limited by information collected in the GeoDirectory datasets, which are available only since the 2000's. A stark finding is that the overall pattern of reduced vacancy and redevelopment in Irish Towns has been addressed. This has been possible through initiatives like the Collaborative Town Centre Health Check (CTCHC) and Town Centre First (TCF). However this study has found that persistent vacancy and

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<sup>4</sup> Neurodiversity is a term that describes neurological conditions including autism spectrum disorder (ASD), attention deficit and hyperactivity disorder (ADHD), sensory processing disorder (SPD), obsessive compulsive disorder (OCD), borderline personality disorder (BPD), seasonally affected depression (SAD), dyslexia, dyspraxia, Tourette's and others (Singer, 1999, in Kenna, 2023, p.370).

dereliction still appears prevalent in the streets, squares and alleyways of many Irish towns, ‘where vacancy rates further erode community capacity to self-renew over time, resulting in urban voids.’ (Heaphy et al., 2024, p.24).

## Part 2: The Historical Context of Athlone and Connaught Street

Antoni, J.P. (2023, p.32)<sup>5</sup> explains the origins of the urban development in the high middle ages. This is applicable to Athlone as a microcosm of larger settlements. In his example, referencing France, he notes ‘a period of relative peace conducive to technical innovations, (...) provokes an extraordinary urban densification and which transforms a small port’ i.e. like Athlone. This was then constrained by some form of a boundary wall or ramparts, designed to protect the town and keep certain populations outside of it. The area which was to become known later as Connaught Street was outside of the 13<sup>th</sup> century wall. Between 1218 and 1315, Athlone was destroyed by fire six times. The Anglo-Norman settlement is thought to have failed by the 1350s. By the end of the 14<sup>th</sup> century the control of Athlone from the centre of power in Dublin was minimal and the area was very isolated from its control or administration. Late medieval 15<sup>th</sup> and early 16<sup>th</sup> century settlement of the area between the Connaught Street area and the river Shannon was Gaelic<sup>6</sup> as opposed to English, with Cluniac and Franciscan religious communities living and administering to the community there. It included the now demolished priory of Saints Peter and Paul de Innocentia, run by the Cluniac order on Abbey Lane,<sup>7</sup> close to what is now known as Connaught Street. Following the recognition by the Tudors of Athlone as a strategic location in 1537, followed then by the takeover by Cromwellian forces, the dissolution of the religious orders took place in the mid-16<sup>th</sup> century. New gate-houses were built. Athlone received a Charter in 1599 and again in 1606, which gave the merchant class there the right to have parliamentary representation within a radius of a mile and a half of the centre of the new bridge built across the Shannon. The new bridge was constructed under the direction of Sir Henry Sidney, the then lord deputy<sup>8</sup>. The town was rebuilt by the mid 1630s. The area of Connaught Street was in the province of Connaught, an ancient legal and administrative entity up until the ending of the Connaught presidency in 1672<sup>9</sup>. In the plan drawn up of the town in 1685 by military surveyor, Thomas Phillips, the area around Connaught Street has some buildings indicated with ‘half-timbered fronts and roofs of both thatch and slate’<sup>10</sup>. This is important as it sets out the emerging modern urban extents of the street that prevail today. In 1691, the nearby Athlone Castle was under siege and was reduced to rubble by the Williamites as a consequence of its prominent role in the Jacobite War. The west of the town was subsequently left in ruins. But new buildings and military installations were constructed in the early 1700’s and the castle was rebuilt. Defences were constructed flanking both sides of the Shannon river as part of the protection measures undertaken against the possible invasion by the French during the Napoleonic Wars, between 1803 and 1815<sup>11</sup>. By the mid 18<sup>th</sup> century, when the canal was built, Connaught Street was a trading centre for farmers bringing their produce to Athlone from the surrounding hinterland. ‘Connaught Street’ in its own right is first mentioned on a 1715 deed together with ‘Fair Green Lane’ later known as Cemetery Lane or Pipe Lane<sup>12</sup>. A stage coach service operated from there to connect travellers to all parts of the country and beyond. The last stage coach operated by Charles Bianconi ceased there in 1850<sup>13</sup>. The arrival of the Great Northern and Western Railway Company in 1857 changed the focus of the town’s infrastructure forever<sup>14</sup>. As the street grew and prospered commercially, many families trading along the street lived over their premises on the upper floors. Up until the late 19<sup>th</sup> century, Connaught Street was in the province of Connaught, only being absorbed into Leinster province as a result of redistricting from county Roscommon to county Westmeath under the Local Government (Ireland) Act of 1898. The 20<sup>th</sup> century was prosperous for the street traders until the advent of larger commercial shopping centres in the outskirts of the town

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<sup>5</sup> Antoni, J.P. (2023). *Urbanism and Town Planning: Understanding and Anticipating Urban Renewal*. John Wiley & Sons, pp.31-2 ‘The Medieval City Explained’.

<sup>6</sup> Source: Murtagh, H. (1994) *Athlone – Historic Towns Atlas No.6*. p. 2. (Dublin: Royal Irish Academy).

<sup>7</sup> Source: Murtagh, H. (1994) *Athlone – Historic Towns Atlas No.6*. p. 2. (Dublin: Royal Irish Academy).

<sup>8</sup> Source: Murtagh, H. (1994) *Athlone – Historic Towns Atlas No.6*. p. 2. (Dublin: Royal Irish Academy).

<sup>9</sup> From *A New History of Ireland*, (1968-2011). Vol. IX., p.534. Moody et al., (eds.)

<sup>10</sup> Source: Murtagh, H. (1994) *Athlone – Historic Towns Atlas No.6*. p. 2. (Dublin: Royal Irish Academy).

<sup>11</sup> Source: Murtagh, H. (1994) *Athlone – Historic Towns Atlas No.6*. p. 3. (Dublin: Royal Irish Academy).

<sup>12</sup> Gearóid O’Brien, ‘Street Wise Athlone – Connaught Street, in the *Westmeath Independent*, 12 May, 2022.

<sup>13</sup> Gearóid O’Brien, ‘Street Wise Athlone – Connaught Street, in the *Westmeath Independent*, 12 May, 2022.

<sup>14</sup> Source: Murtagh, H. (1994) *Athlone – Historic Towns Atlas No.6*. p. 4. (Dublin: Royal Irish Academy).

and the filling in of the canal. Gradually the commercial focus changed and vital services like banking and the social welfare office moved premises from Connaught street to closer to the centre of Athlone. Small business could not compete with the larger supermarkets and chain-stores that sprung up in the suburban areas of the town, which had large areas for car parking and were easy to access from the outskirts of Athlone.

Fast forward to the 21<sup>st</sup> century. Connaught Street is at a pivotal moment in time. The reopening of the infilled canal waterway, which runs perpendicular to Connaught Street, would bring back an important amenity and potential tourist attraction to the area. This would contribute to increased biodiversity and encourage sustainability practices, as well as acting as a safeguard against further urban fragmentation of the street, its narrow alleyways and extensive back-lands. Already, in 2025, a mapping exercise has been completed through grant assistance to allow for a survey of the properties along the street to be carried out to indicate levels of vacancy, occupation, use or dereliction. Some businesses are still thriving. A travel agency, Grenham Travel, still operates out of 1-3 Connaught Street, which was established over a hundred and thirteen years ago. The next step is for an analysis of the findings to be made, with a view to reaching the potential for the repurposing of vacant street units. It is particularly important to establish where some plots could be interlinked internally for student accommodation or expanded in section to create a double or triple height performance or rehearsal space. For a study of Intangible Cultural Heritage (ICH) of this part of Athlone, methodological practices would be necessary to include ‘comprehensive fieldwork, ethnographic research and geographic systems to combine qualitative and quantitative data.’ (Forero, in *Heritopolis Working Papers Vol.2*, 2024, p. 60).

On a wider scale other factors could be brought forward like the possibility to join the ‘Slow city’ movement, or for the town of Athlone, the Transition Town Movement (TTT)<sup>15</sup> might be investigated as it is the required size and scale. This initiative was first developed in Kinsale, County Cork, Ireland, in 2004, and later moved to Totnes, in the United Kingdom. It was initiated by Rob Hoskins. The principle was to apply permaculture principles to make an urban area energy-independent, develop local food networks with local farmers and growers, and create more space for allotments, so that people could cultivate plots to grow food themselves. The concept has now spread worldwide. It centres on collective action to build resilience and champions community visioning (Steel, 2008, p.323).

### **Part 3: Fragmented Identity**

Case Study: The Urban Flood Relief Scheme in Athlone from 2000 to 2027:

The Athlone Flood Alleviation Scheme, built on behalf of the Commissioners of Public Works in Ireland, in collaboration with Westmeath County Council provided an opportunity to design a number of public realm improvement projects in areas that had previously been prone to flooding. Now they would have flood barriers and engineering structures and interventions mitigating flood risk in these areas and making them more attractive to the local residents and visitors to the town. Interventions were put forward for consideration through the identification of key public areas, which merited specific architectural improvements.

Highlighting the significance of certain historic structures was a priority. Renewed celebration of local materials and reusing them as a design palette was key to the success of the interventions. The connections to the town's amenities from the River Shannon were also a priority in the design concept. In the course of the upgrading and reinstating of small pockets of urban spaces, the challenges between heritage setting and the practical needs of the local population emerged. In one instance, in an area called The Strand, the architects had to take into account that a Firm of Undertakers had a funeral parlour located on the street corner. In the evenings, it was observed that there was often a high sudden demand for car parking and this was randomly happening in front of residents’ homes, trapping them in for several hours. The now flood protected open space created an informal square which was redesigned. It was decided to redeploy the parking to a space beyond the back-lanes. A small carefully landscaped courtyard space with seating was proposed, together with additional tree planting to give shelter to the queues of people forming a line to sympathise with the bereaved. The concept at the beginning of this design brief was always to protect and frame the intangible heritage of this funerary tradition, which is still prevalent across the towns and villages of rural Ireland. The collective memory that is preserved and held in trust by the community for the act of sharing the burden of grief is enshrined and protected here, by this recently enhanced public space. It has been consciously upgraded and saved. It acts as a backdrop to the events that unfold there, as if choreographed, in all weather, all year round. A concept that was important to the architects here was the

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<sup>15</sup> ‘TTT’ stands for ‘Transition Town Totnes’ (Steel, 2008, p.323).

protection against loss of urban ‘memory landscapes’ (*Heritopolis Working Papers*, 2024, p.54) particularly for younger generation. They might not see this intangible activity as ‘a part of their identity that can be lost’ (Núñez Camarena in *Heritopolis Working Papers*, 2024, p. 53) referencing Purépecha towns in Mexico (2024) until it was no longer there. For instance, if the small scale urban elements had been cleared for a larger scale redevelopment instead of repaired, as one would a medieval tapestry, the relationships of the space to the activity that occurred there, i.e., a funeral wake, would never be acted out there again.

### **Towards 2027: a combination of solutions for a fragile town tapestry**

The matter of building new management structures for heritage developed around creating a holistic way of looking at heritage, involving different professions and skillsets on a range of scales and centred on the community is important, as emphasised in the Faro Convention (Faro Convention, 2005). Residents must be assigned decision making roles (*Heritopolis Working Papers*, 2024, p.30).

Public Realm Objectives<sup>16</sup> have been set out in the recent *Athlone Joint Urban Area Plan - Strategic Issues Paper*, (2023) prepared by Westmeath County Council. It does not go far enough for Connaught Street stating just that there is ‘considerable potential identified for the Connacht Street and Pearse Street environs and the town’s network of secondary side streets’ Westmeath Co. Co., (2023, p.16). In this context, small and medium scale interventions as well as transformative changes were proposed for Connaught Street. These were presented by the author to the local community, tenants and building owners on the 20<sup>th</sup> August 2025 in Athlone, at the request of the Minister of State with responsibility for the Office of Public Works, Mr. Kevin Moran. These are outlined below:

- **Small but important Improvements:**
  - Public Enhancement and extension to the footpath for outdoor seating and additional circulation at McNeill’s Bar front pavement area.
  - Renewal of paving, realignment of the levels, new tree planting, seating for mixed ability.
  - Series of events planned with students and other groups and covered marquee for shelter to be designed for the space with outdoor seating.
- **Medium scale improvements:**
  - Develop a Music Skills Development Workshop for youth and youth workers in purpose built facility in an infill derelict vacant plot at top of Connaught Street. Access to enclosed outdoor space for break out spaces would be desirable at the rear for outdoor rehearsals and would vehicular access for recording and stage equipment.
  - Entry to Connaught Street Carpark one way system and returning via Patrick Street to facilitate part pedestrianisation from Beaumont’s No.18 and APA Nos. 17 and 19 to the top of the street at Walshes’ Centra No.72 and No. 65 McNeill’s Bar.
  - Pedestrianised portion of Connaught Street to have level paving where possible and suitable wooden bench seating following Accessibility Audit.
- **Transformative changes and Stewardship Methodologies:**
  - The filled in Canal grassed linear park between Dooley’s Fruit shop on Magazine Road and the Lock House (demolished) will be reinstated with water to be navigable to the River Shannon again. This would mean that the lockhouse, lockmills and the lockgates and associated mechanisms might all be reinstated<sup>17</sup>.

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<sup>16</sup> The on-going identification of opportunity sites, and the iterative assessment of targeted pipeline projects, will be catalysts for the strategic regeneration of Athlone’s derelict properties and streetscapes with considerable potential identified for the Connacht Street and Pearse Street environs and the town’s network of secondary side streets such as Lloyd’s Lane and Friary Lane. Achieving a quality built environment is essential to supporting healthy communities, sustainable mobility, climate resilience, and overall, successful urban living. (*Athlone Joint Urban Area Plan - Strategic Issues Paper*, (2023) Westmeath County Council, p.16)

<sup>17</sup> A project was carried out by the OPW in the 1990’s reinstating the Ballyconnell Canal and the drawings and specification would be on file in the Office of Public Works’ Drawings Collection, which could inform the reinstatement works.

- The Canal was cut in the 1750's to make through-traffic possible avoiding the main channel of the river. This can be in place again as an amenity for youth and sport and leisure groups.
- The rebuilt Lockhouse would act as a beacon and be roof-lit at night. There would be a Lock Keeper assigned to manage passage of boats through the canal and an associated dwelling house built for them.
- Three 57-foot residential barges could be located below Battery Bridge and Canal Banks for permanent homes and there is a need to provide security around these with railings and associated services along the Street that include safe storage, showers, services hub and an internet café.
- New Canal Footbridge to be constructed to connect across the newly reinstated canal to connect to the Shamrock Lodge Hotel side.
- Student housing and services could be prioritised here and built in the next 2 to 3 years to come.
- Closed to traffic, part of Connaught Street to also include whole life apartments and associated shops and services like laundrette and security services and social spaces.
- The Playground could be relocated to the Connaught St. Carpark from its present location in the former waterway 'hollow' of the Canal.
- Relocated playground to have a sensory garden incorporated between Harry's Lane and College Park.
- Connaught Gardens to have amenities and services to accommodate weekly markets including water and power stands which are taking place at the moment. This could be expanded.
- Review St. Aloysius' College future use and opportunities<sup>18</sup>. Could it be developed as a centre for the performing arts as part of the locally based Technological University of the Shannon's (TUS) expansion?
- Presentation to the Canal side tow paths could be improved and pavements widened to accentuate the link to the nearby *Shannon Banks Nature Trail*.
- *The Ritz Cinema Reimagined Project*; an art house cinema could be re-built in one of the vacant infill sites along Connaught Street. Site to be selected is ideally to be in public ownership, in memory of and in homage to the original, now demolished *Ritz Cinema* designed by architect Bill O'Dwyer of Michael Scott and Associates. It was located beside the River Shannon on Custume Place and designed in the Art Moderne style. This would also feature other facilities including a lecture hall, rehearsal suites and recital spaces.

#### Part 4: Conclusion

This paper acts as a mid-term review of potential interventions of varying scales and complexity, some requiring a number of years to realise, others that are achievable in the short term, as set out in this paper in three categories of possible improvements. Urban Interventions that have been completed already, as part of the Athlone Flood Alleviation Scheme works, serve as important exemplars, on a number of levels, for other projects of this scale, similarity and complexity in the future. Athlone, and Connaught Street in particular, represents the best opportunity for future proofing the tangible and intangible heritage of that fragile part of the town, which will slowly disappear over the next few years, unless a focused, empowered and determined effort is made to save it.

One of the themes of the 62<sup>nd</sup> International Making Cities Livable (IMCL) Potsdam Conference is 'Architecture and the Edges of Public Space'. The revival of the canal is representative of an edge, a linear counterpoint to a street that if restored, would connect that part of the town to the river again. It would bring its own momentum and act as a conduit for activities and vibrancy to be present again in that location, connected to the fact that there is an accessible water-course there. It was mentioned locally that the lock gate metal hinges and cut stone elements of the canal are still embedded in the rubble beneath the surface of the infilled watercourse. Imagine the potential if they were excavated and reused in the regeneration of the canal? The buried masonry and forged elements could be restored or at the least re-purposed. The cut stone is largely still in-situ from discussions with a local historian

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<sup>18</sup> St. Aloysius' College was sold on the open market, by the local Diocese, in 2021. Present ownership unknown to the author at this time.

who witnessed it being filled-in.<sup>19</sup> It could be relined and the disturbed cut-stone masonry blocks could be conserved. Resource conservation and industrial ecology represent an area of emerging research known as ‘urban mining’ (Thomsen et al., 2011, p.328). The demolition of several shops and public houses and the amalgamation of the plots in the back-lands of Connaught Street, have added to the phenomenon of ‘town shrinkage’. This can assist in the ‘eradication of culturally important buildings and ensembles’ (ICOMOS, 2007, in Thomsen et al., 2011, p.328). Where planners and developers control losses to streetscapes and urban fabric, the consequential reduction in services and supports that occurs, has a serious impact on buildings, neighbours and communities that ‘can take a generation or more to heal’ (Thomsen et al., 2011, p.331). Climate crisis and sustainability related research opportunities could be studied with the support of European, Local Government or University led grant assistance or funding. It has the potential to become a hub of activity related to pilot studies, which if successful, could in turn inform future town policies. Connaught Street might become connected internationally to other urban sites, with research conducted on the impact of the climate crisis on water quality and biodiversity, for example. It could be part of the growing wave of community participation projects, where interested parties and stakeholders are engaged in finding future solutions, based on local case studies. The recent publication of a roadmap by UN-Habitat promotes ways to create more affordable housing including: smarter policy and planning, new financing models, upgrading informal settlements without displacement, rethinking housing supply. Housing should be focused near jobs, schools and transportation, with local communities engaged in the decision-making. Connaught Street would be an ideal place to activate this roadmap as an early adopter.

Connaught Street has, at this moment in time, the potential to turn from being ‘a left behind place’ to somewhere that leads on a blazing trail of innovation, hope and rejuvenation. This could be based on the potential symbiotic relationship it would have with a restored canal waterway, against the backdrop of the surviving medieval fabric of an extraordinary town and the river Shannon. These proposals for its future prosperity would generate a critical mass of elements that could be a catalyst for regeneration of the wider urban setting, for both its current inhabitants and those that would choose to study, settle or visit there, in the years to come.

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<sup>19</sup> This was confirmed to the author by an audience member at the *Connaught Street and Environs Community Group* public meeting on the 20<sup>th</sup> August 2025 at the launch of the Visionary Document for Connaught Street.

## Appendices:

### Appendix A:

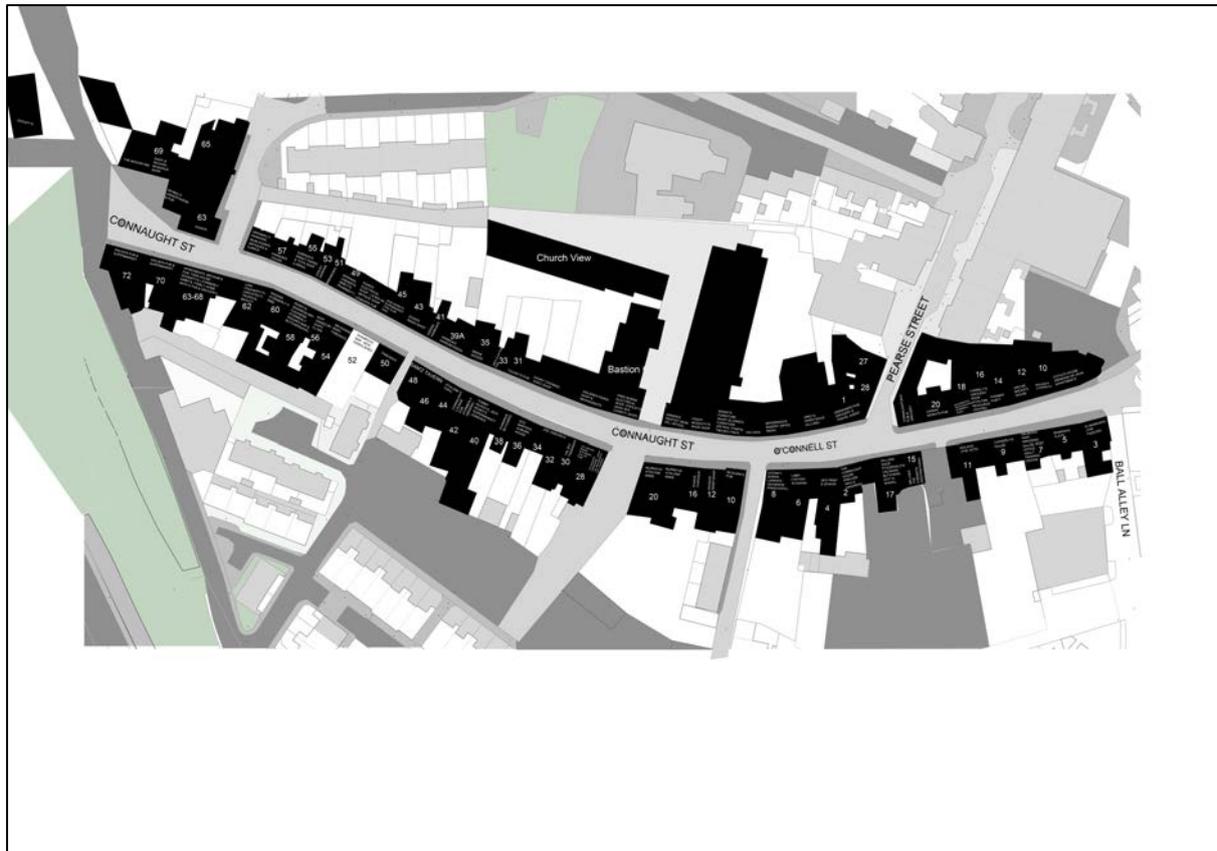


Figure 1: Plan diagram of Connaught Street showing plot uses and designation. ©

Drawn by Timothy Dowling MRIAI reproduced by kind permission.

Appendix B:



Figure 2: Front page of the Westmeath Independent unveiling the Visionary Document on Connaught Street.

Carey, T. (2025, August 30). New Vision for Athlone's Connaught Street Unveiled. *Westmeath Independent*.

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## **Lessons from Central Vermont (USA): Small Homes + Tiny Lots + TIF funding = Neighborhoods for Everyone** *Sandra Vitzthum, AIA, Vermont (USA)*

Located in the northeast corner of the United States, Vermont has historically been rural and sparsely populated. Its 250-year economy has focused more on timber products and agriculture than industry, and while its inhabitants have historically not earned much, they have enjoyed high rates of home ownership and ample domestic space.

National-scale demographic changes have significantly reshaped Vermont’s housing situation in just five years. These trends include inbound migration, increasing natural disasters, and speculation due to land scarcity. As housing becomes scarcer and more expensive, the difficulty of finding a new home has contributed to labor shortages. Our cost of living has increased as goods, taxes, and services get more expensive. While central Vermont median income (\$79,853 in 2023) is higher than the national median income (\$77,700 in 2023),<sup>1</sup> the number of renters who can afford to purchase a home has dropped dramatically. Whereas home ownership has increased in most of the United States in the last five years, especially for young families,<sup>2</sup> the reverse is true in Vermont.

Is this a problem? Not if Vermonters prefer to rent. In fact, Vermont officials have focused on the construction of apartment buildings, typically large apartment buildings. However, most central Vermonters prefer to own their home, however small. They describe benefits such as stability, equity growth, ability to have a garden and independence, and a stronger sense of community.

This paper examines how one can use research methods such as surveys and interviews, as well as community engagement, to define what a local population really wants and how new financing tools such as tax increment funding can make these dreams possible. Enabling home ownership can have wider benefits, such as strengthening communities and fortifying municipal finances.

### **Status Quo – Identifying the Problem**

#### **1) Americans are used to big homes on large lots.**

Many, many works compare the broad landscapes of “virgin” America to the dense, millennia-old settlements of Europe. Vermont was settled as a network of tiny villages in the vast Green Mountains. This neighborhood



in Montpelier was settled soon after the American Revolution, and it never got denser. Most properties had room for a cow and chickens, and many residences housed ten or more people. Besides many children and domestic help, even wealthy families took boarders.

As land values and population declined by mid-century (1930s – 1960s), central Vermonters grew used to occupying these aging homes with far fewer people. Frequently very large houses were subdivided by floor yet remained owner-occupied.

<sup>1</sup> United States Census Bureau, “Washington County, Vermont”

[https://data.census.gov/profile/Washington\\_County,\\_Vermont?g=050XX00US50023](https://data.census.gov/profile/Washington_County,_Vermont?g=050XX00US50023)

<sup>2</sup> USA Facts, “Homeownership is Rebounding, Particularly Among Younger Adults” (2024)

<https://usafacts.org/articles/homeownership-is-rebounding-particularly-among-younger-adults/>

While in 1949 the average American house was 909 sf (85 sm)<sup>3</sup>, by 2025 it has ballooned to 2,164 sf (201 sm). Vermont’s average dwelling size is just a bit smaller at 2,016 sf (187 sm).<sup>4</sup> With an average family size of 2.3 people, this is 877 sf/person (81 sq m/person). Dwelling sizes are significantly smaller in many other developed countries. According to the World Population Review, just a few dwelling size comparisons for 2025 are:

Germany:	1,173 sf (109 sm)	Average household size:	1.95	Area per person:	602 sf (56 sm)
Sweden:	893 sf ( 83 sm)		2.2		406 sf (38 sm)
Finland:	880 sf ( 82 sm)		1.95		451 sf (42 sm)
United Kingdom:	818 sf ( 76 sm)		2.35		348 sf (32 sm)
China:	646 sf ( 60 sm)		2.75		235 sf (22 sm)
Russia:	614 sf ( 57 sm)		2.3		267 sf (25 sm)
India:	504 sf ( 47 sm) <sup>5</sup>		4.4		115 sf (11 sm)

Lot size comparisons are even more outstanding. As mentioned, Vermont is a predominantly rural state, and central Vermont is about average in the state. Vermont has the largest average lot size in the country at 78,408 sf (about 1.8 acres or 0.8 hectare).<sup>6</sup> Even our villages are not dense. A common lot size after 1945 in Montpelier, for example, was ¼ acre (10,890 sf or 1,012 sm). Compare this with typical rowhouse lot sizes on the East Coast: In Washington DC, “the median lot size for a rowhouse is 1,633 sf (152 sm), and ninety percent of rowhouses are built on lots that are smaller than 2,700 sf (251 sm).”<sup>7</sup>

**2) Attitudes towards land and real estate are changing.**



July 2023 flood in Montpelier, Vermont

Vermont has a 200-year pattern of settling in flood plains. Rivers were used for power generation and transportation. Increasing climate disasters in Vermont – mostly floods and landslides for us – are removing a significant number of properties and acreage from use as communities fortify themselves.

Nationally, perception of real estate as an investment – either for rental or as speculation on raw land - has been increasing for many years, especially during the easy-credit boom of 2003-2007 and COVID (2020-2021).<sup>8</sup> Vermont has been particularly coveted with agents knocking door to door to identify possible sales.

**3) Land scarcity in Vermont is also caused by “climate refugees” and remote-worker immigration.**

The first year of COVID, 2020 saw a dramatic increase in immigration from other states. The rate of net migration into Vermont surged in 2021 such that the state’s population growth due to net inbound migration in 2021-2022 was more than the prior 10 years combined, according to a recent analysis by the state Office of the State Treasurer:

<sup>3</sup> Rebecca Safier, “Exploring US Home Square Footage Trends” (The Olympian, 2024), <https://www.theolympian.com/news/business/article296808944.html>

<sup>4</sup> Ibid.

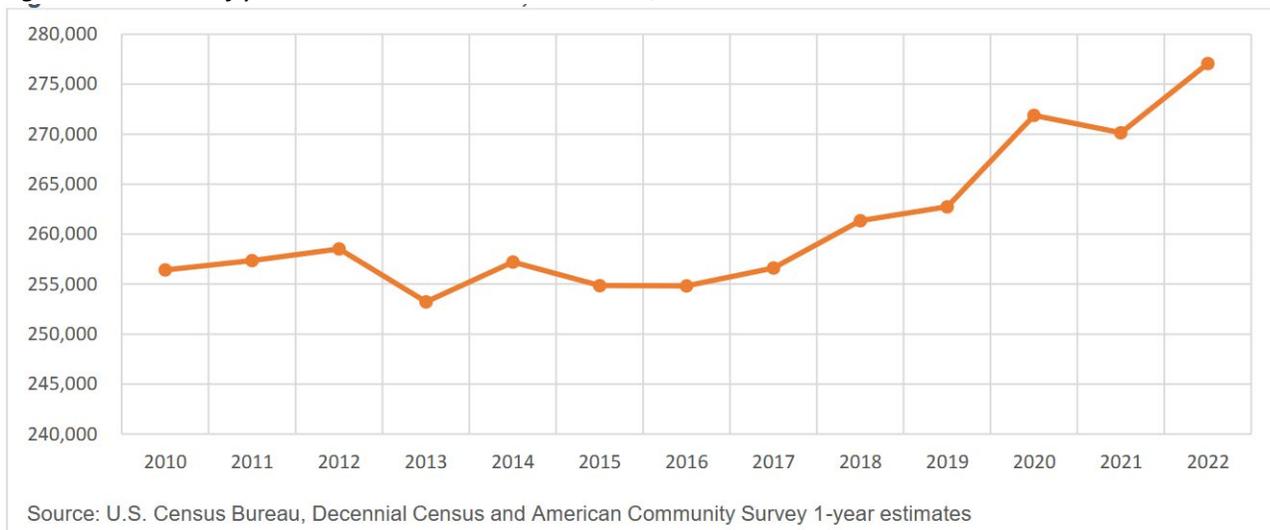
<sup>5</sup> World Population Review (2025), <https://worldpopulationreview.com/country-rankings/house-size-by-country>

<sup>6</sup> Kaitlyn Pacheco, “The 2022 Lot Size Index” (Angie, 2022) <https://www.angi.com/articles/lot-size-index.htm>

<sup>7</sup> Yesim Sayin, “Single-family zoning and neighborhood characteristics in the District of Columbia” (D.C. Policy Center, 2019) <https://www.dcpolicycenter.org/publications/single-family-zoning-2019/>

<sup>8</sup> Josh Kirby, “Charting a 22-Year Roller Coaster of Investor Activity (John Burns Research and Consulting, 2024), <https://jbre.com/insights/charting-a-22-year-roller-coaster-of-investor-activity/>

Figure 1. Number of year-round households in Vermont, 2010-2022<sup>9</sup>



While there are many other causes of real estate inflation, the parallel upward trend real estate values in Vermont during the same time period is noticeable:

Figure 2. Vermont median primary home sale price, 1988-2023<sup>10</sup>



**4) High real estate costs and high interest rates make it difficult for first-time buyers to afford a home, and for low-income families to keep their homes. This puts pressure on rental stock, driving up rents, creating a vicious cycle for real estate costs.**

Until 2021 in Vermont, 32% of renters had the income needed to buy a median-priced home but this plummeted to 6% in 2023.<sup>11</sup> With this log-jam in ability to purchase, an increasing number of families have to rent. This has stressed Vermont's rental housing stock: Vermont's rental vacancy rate of 3% is among the lowest in the country, and well below the 5% rate of a healthy market. The most populous area, Chittenden County, had a vacancy rate estimated at just 1% in 2023.<sup>12</sup>

<sup>9</sup> Vermont Housing Needs Assessment: 2025-2029 (Vermont Department of Housing and Community Development, June 2024), p. 10. [Vermont Housing Needs Assessment: 2025-2029](#)

<sup>10</sup> Ibid, p. 78.

<sup>11</sup> Ibid, p. 7.

<sup>12</sup> (Entire paragraph) Ibid.

Now one quarter of all Vermont renters are paying more than half of their income for housing. This further inhibits those people's ability to save for a home purchase and puts them at high risk for eviction. The number of Vermonters experiencing homelessness has tripled between 2019 and 2023. Vermont has a per capita homelessness rate of 51 per 10,000 people, the 2nd highest nationally.<sup>13</sup>

**5) Fewer central Vermont families are able to build equity and enjoy a sense of security.** This is the heart of my concern. Land and home ownership is a foundation of American democracy,<sup>14</sup> and ownership has been the primary means of accumulating wealth (and stability) for most Vermont families.

### Current Solutions Aim to Solve the Symptoms but Are Not a Cure



*Recent development in Vermont.*



Like many states, Vermont began tackling its housing crisis by incentivizing apartment construction. Vermont has well-established community trusts<sup>15</sup> that build and/or subsidize large apartment buildings. While this is an important solution, these developments typically require the municipality to forgo tax revenue by perpetual abatement. Often municipalities are forced to offer further incentives, such as free land. This in turn increases tax burden on moderate-income families, and at a certain point makes them ineligible for a mortgage.

Another established community trust program is shared equity ownership. The trust contributes up to \$80,000 to a home purchase price, making the mortgage affordable for qualifying families. In return, the buyer agrees to these (perpetual) deed restrictions:

- 100% owner occupancy: no rental (even part) or any other use;
- 75% of profit from sale returns to the community trust.

Again, this is an important tool in central Vermont – and Vermont leads the nation in shared equity programs – but it impacts a family's ability to build equity, and it impacts municipal finances due to lower property values.

While both of these tools – incentivized apartment construction and shared equity ownership – are important solutions to Vermont's housing crisis, they do not solve the heart of the problem: a sense of stability for families by being able to build equity over time, at a rate that is similar to the that of wealthier families. By conducting a survey and interviewing affected people, I identified this core need and have begun – with their help – to envision a different solution.

### What People are Trying to Tell Us

- 1) Build smaller homes.** Home sizes – both existing stock and new construction - are too large. Even targeted affordable single family homes, such as those built by Habitat for Humanity, are too large. They are typically 3-4 bedrooms, 1200 sf (111 sm), because that leverages the most subsidies.<sup>16</sup>

<sup>13</sup> (entire paragraph) Ibid, p. 5.

<sup>14</sup> Michael Albertus, "Homeownership Has Always Impacted American Democracy" (TIME, 2025) <https://time.com/7266072/homeownership-impacted-american-democracy/>

<sup>15</sup> A community trust is a non-profit organization that acquires and holds land for community benefit, such as affordable housing and community projects, and leases it to residents and developers.

<sup>16</sup> Sandra Vitzthum, interview with Habitat for Humanity, a partner of our local community trust.

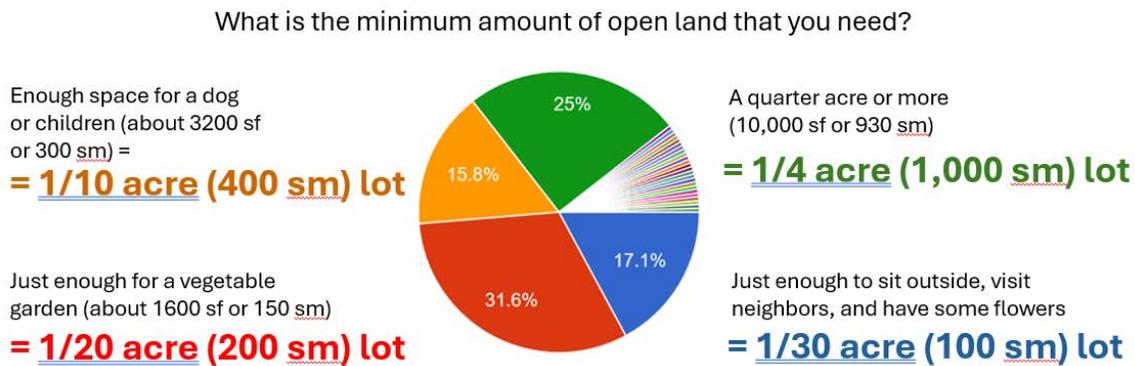
But family size is shrinking; nearly three-quarters of all central Vermont households are one or two people.<sup>17</sup>

While many people like an extra bedroom, or even a bedroom, when faced with the question “own a smaller home or rent a larger one?” they quickly reduce the size of house they desire, even to a home of 350 sf (106 sm) with no bedroom.<sup>18</sup> Especially if they own the land, so that they can later add to the home and even rent out part of it, they are very happy to start with a very small home.

**2) Structure development for full ownership.** More than 80% of central Vermonters want to own their own home. According to my survey in Montpelier, more people would rather live in a yurt or tiny house that they own than rent in a large apartment building.<sup>19</sup>

Given this response, it makes sense to design for land and house ownership, even 100%, with incentives for homeowners to build duplexes, small multi-family, and accessory dwelling units. In my survey, the number of families who wanted to own a small multi-family building was about the same as the number of families who want to rent a small multi-family building. I believe the free market will supply the 10-20% rental units respondents ask for.

**3) Minimize lot size to fit budgets.** Especially in Vermont, in keeping with tradition, most developers assume buyers want lots that are as large as possible. This was not the case in my survey, where I asked what people need:

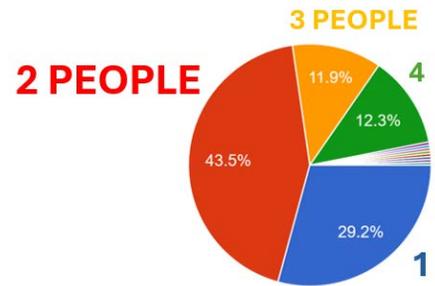


This suggests that developers provide an even mix of small lot sizes, much smaller than is common, in order to meet a mix of budgets.

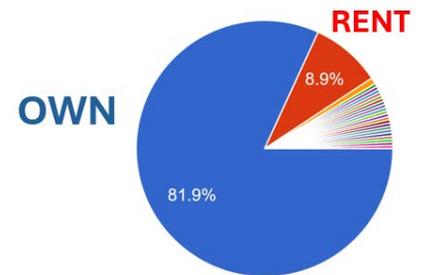
I further believe that if this mix of lot sizes is created in a traditional subdivision, with freedom for owners to build exactly the size and type of home they want, both short-term needs and long-term wishes can be met.

**4) Garages are optional, but not essential. They can be eliminated for initial sales if budgets are tight.** Most developers assume buyers want a two-car garage. This is not borne out by experience:

What is your household size?



For this home, would you prefer to:

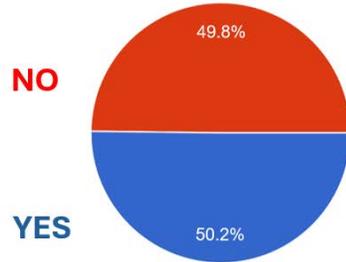


<sup>17</sup> Sandra Vitzthum, “Montpelier Area Unofficial Housing Survey” (Montpelier, VT, May 2025). 262 responses yielded a 6% margin of error. Also, these numbers correlate with the State of Vermont’s Housing Needs Assessment.

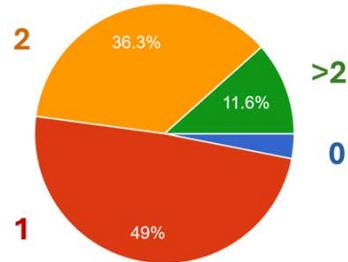
<sup>18</sup> Sandra Vitzthum, interviews with prospective owners.

<sup>19</sup> Sandra Vitzthum, “Unofficial Survey” (op cit)

Do you need space for a workshop, garage, or artist's studio?



How many vehicles do you have?



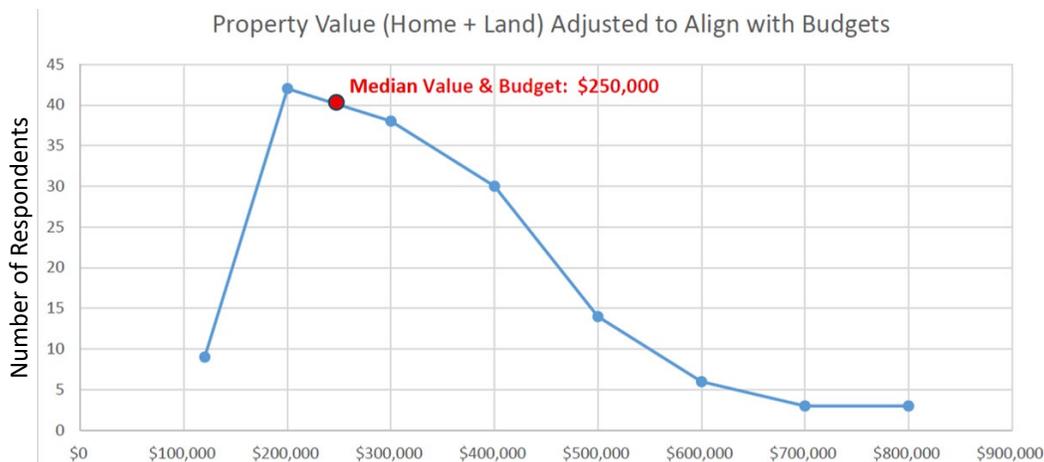
If space is allowed on at least some lots, a garage can always be built later as the owners accumulate equity.

### Aligning Desires and Budget

When I first analyzed my data, I found a significant gap - \$130,000 or 43% - between desires and budget, particularly in the affordable (below median income) range. I believe much of this disparity is due to lower-income families not having opportunities to seriously consider home ownership; they may not have a clear idea of their budget.



By adjusting the three aspects of property – house size, lot size, and garage – I was able to align respondents' desires with budgets. This was borne out in interviews. Note the median aligned value, \$250,000, is more than median budget alone as more houses shifted down in cost.



The next step is to create a simple matrix or chart of properties, a development profile. This is the spread of aligned home and lot sizes, by building type, for each income group in my survey:

Quantity of homes for each house type and size per 145 homes, according to survey:

Type	Affordable (0-80% AMI)				Median (80-120% AMI)				Above Median (>120% AMI)				Total	%
	0 BR	1 BR	2 BR	3+ BR	0 BR	1 BR	2 BR	3+ BR	0 BR	1 BR	2 BR	3+ BR		
Single Family*	5	13	14	8	-	8	17	8	-	1	7	6	87	60%
2-4 Multi Fam**	3	19	9	1	-	2	7	3	-	-	6	-	50	34%
5+ Multi Fam**	1	2	-	-	-	1	1	-	-	-	3	-	8	6%
(Total)	9	34	23	9	0	11	25	11	0	1	16	6	145	100%
(Percentage)	6%	23%	16%	6%	0%	8%	17%	8%	0%	1%	11%	4%	100%	

\* SFHs - all prefer owned \*\* Multi - 50% prefer to own; 50% prefer to rent

Quantity of lots for each lot size and house size per 145 homes, according to survey:

Type	Affordable				Median				Above Median				Total	%
	0 BR	1 BR	2 BR	3+ BR	0 BR	1 BR	2 BR	3+ BR	0 BR	1 BR	2 BR	3+ BR		
Porch Only	2	3	-	-	-	-	2	-	-	-	1	-	8	6%
1/30-1/20 acre	5	14	7	1	-	2	-	-	-	-	4	-	33	23%
1/15 acre	2	8	-	-	-	-	-	-	-	-	-	-	10	7%
1/15 w garage	-	-	6	-	-	3	3	1	-	-	1	-	14	10%
1/10 acre	-	9	8	5	-	5	7	1	-	-	3	-	38	26%
1/10 w garage	-	-	-	-	-	-	9	2	-	-	2	-	13	9%
1/5 acre	-	-	2	3	-	1	1	3	-	-	-	2	12	8%
1/5 w garage	-	-	-	-	-	-	3	4	-	1	5	4	17	12%
(Total)	9	34	23	9	0	11	25	11	0	1	16	6	145	100%

17%  
35%  
20%

From the data, I also created a “shopping calculator,” a matrix of aligned budget/desires for the 145 respondents in my survey, that could be used by other families as a reference for their own search. If one has a budget of, say, \$218,000, they can compare different options for house size versus lot size, with and without a garage.<sup>20</sup>

House Size	Lot Size				
	1/20 acre	1/15 acre	1/10 ac	1/5 acre	1/4 acre
300 sf	0BR - \$115,000	0BR - \$128,000			
350 sf		0BR+ - \$143,000			
400 sf	1BR - \$145,000	1BR - \$158,000			
450 sf	1BR+ - \$160,000	1BR+ - \$173,000	1BR+ - \$185,000		
500 sf	2BR - \$175,000	2BR - \$188,000	2BR - \$200,000	2BR - \$220,000	
500 sf w garage		2BR - \$248,000	1BR - \$250,000	1BR - \$270,000	
550 sf	2BR+ - \$190,000	2BR+ - \$203,000	2BR+ - \$215,000		
550 sf w garage		1BR+ - \$245,000	1BR+ - \$258,000	1BR+ - \$270,000	
600 sf			3BR - \$230,000	3BR - \$250,000	2BR - \$330,000
600 sf w garage			2BR - \$350,000	2BR - \$370,000	1BR+ - \$490,000
650 sf			3BR+ - \$245,000		
650 sf w garage		2BR+ - \$358,000	2BR+ - \$370,000		
700 sf				3BR - \$350,000	4BR - \$300,000
700 sf w garage		3BR - \$378,000		3BR - \$410,000	
750 sf			3BR+ - \$350,000		3BR+ - \$390,000
750 sf w garage			3BR+ - \$410,000		
800 sf			2BR+ - \$450,000		
800 sf w garage			2BR+ - \$550,000		2BR+ - \$590,000
900 sf					
900 sf w garage				2BR+ - \$620,000	
950 sf					3BR+ - \$565,000
950 sf w garage				3BR+ - \$645,000	3BR+ - \$665,000
1000 sf					
1000 sf w garage					4BR - \$690,000
1100 sf				4BR+ - \$620,000	
1100 sf w garage					4BR+ - \$740,000

<sup>20</sup> Pricing assumptions: Affordable house \$300/sf. 300 basic space, add 100 sf/BR. Add 50 sf/office  
 Moderate house: \$400/sf. 400 sf basic space, add 100 sf/BR. Add 50 sf/office  
 Above median house: \$500/sf. 400 sf basic space. Add 150 sf/BR. Add 100 sf/office  
 Lot prices: 1/20 acre = \$25,000; 1/15 acre = \$38,000; 1/10 acre=\$50,000; 1/5 acre = \$70,000  
 Garage: 1 car = \$60,000 2 car = \$100,000

## Examples of Affordable Homes

For one of my pilot projects, Case Study #1 below, I was able research actual affordable home costs in central Vermont. Part of that project was a housing fair for prospective buyers, plus a directory for further use. This was the New Home Fair, held September 6, 2025.

Our local housing fair featured over thirty businesses: pre-fab houses, modular homes, panels and kits, timber framers, design-builders, solar experts, and architects. We also invited banks who finance small homes, community trusts, and volunteer coalitions.

Products exhibited vary from yurts (\$25,000), to insulated shells (\$34,000), to tiny homes on wheels (\$67,000), to manufactured homes (starting at \$90,000), to finished and unfinished pre-fabs (starting at \$105,000).

The directory booklet will be distributed across the state, and is available online: [https://drive.google.com/file/d/1TB-hZdruKuMUqLPc8vDO\\_543ipy2JM89/edit](https://drive.google.com/file/d/1TB-hZdruKuMUqLPc8vDO_543ipy2JM89/edit)

Rising construction costs - both materials and labor costs – are often blamed for the unaffordability of new homes. While they are high, clearly affordable options do already exist. I believe that if we incentivize this market and create new prototypes, there will be more focused competition and many more truly affordable options.

## Infrastructure and Development Costs

A final, and critical, consideration is the alignment of land development costs – raw land purchase, permitting, infrastructure and road construction, overhead – with affordable prices for buildable lots. I find that Vermont’s standard subdivision is poorly aligned, yet there are some simple solutions besides making typical lots smaller to align it better.

**1) Vermont’s development climate allows costly and lengthy appeals.** There is a fair amount of NIMBY (not in my backyard) thinking in Vermont. Vermont’s rules for appeals are liberal, and the process is lengthy. Municipal zoning ordinances need to provide more pre-approved guidelines for homes, lots, and subdivisions.

**3) Many Vermont municipalities – under State guidance – require expensive suburban-like improvements.** These include paved roads, sidewalks, street trees, street lighting, bike paths, and off-street parking behind buildings. Very dense neighborhoods can slow traffic and provide accessible paths in other ways. Further, in many municipalities minimum lot size is far too large due to resistance to densifying neighborhoods by existing residents. While statewide legislation reduced minimum lot size to 1/5 acre (809 sm) in 2024, in most towns lot sizes of 1/30 acre to 1/10 acre (100-400 sm) are at best conditionally permitted and often prohibited.

**4) Private developers lead most projects, but they add substantial cost, making projects unaffordable without significant incentives.** A hundred and fifty years ago, municipalities led land development. Our current governance system has lost its know-how and tends to rely on consultants who are not always familiar with development or construction, or what the local demand really is. Vermont’s typical layers of consultants and developers can quickly price a project out of feasibility.

**TURN – KEY HOMES**

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Sizes starting at studio, 300 sq ft  
Kits start at \$65,500 + shipping

Turnkeys start at \$149,000 + shipping

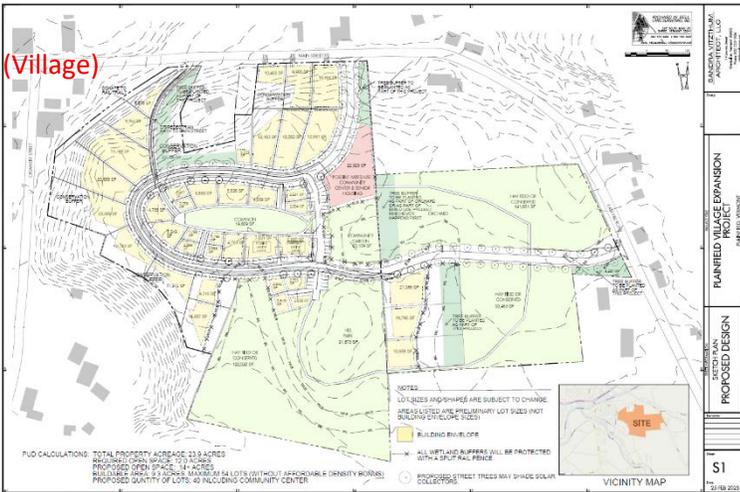
We specialize in locally sourced materials and dense-packed straw walls.



5) By not matching market demand, projects take longer to sell out, adding significant overhead cost, especially when interest rates are high.

**Case Study #1: Plainfield, Vermont**

When a major flood hit Plainfield, Vermont, in 2024, it destroyed 37 dwellings and displaced over 60 people. This was catastrophic: 11% of the tiny town’s grand list<sup>21</sup> and 5% of its population were suddenly hanging by threads. I joined others in asking: “Can we move our village to safer ground?” “Can we create new homes and a new neighborhood with the richness of the old one?” And most importantly: “How can we create new homes that people can afford to buy or rent?”



This 40-lot traditional subdivision on 24 acres (10 hectares) will replace the dwellings lost to flooding on higher ground just above the village of Plainfield, Vermont.

The municipality intends to purchase this land, develop required infrastructure and roads, then sell the lots. The owners will decide the size and cost of their own home.

Note the mix of lot sizes: about one-third 1/20 acre (200 sm) or smaller; one-third 1/10 acre (400 sm) or smaller, and one-third roughly 1/4 acre (1,000 sm).

**PROJECTED LOT REVENUE** **\$1,700,000**  
according to buyer budgets and current real estate values

**PROJECTED PROJECT COST** **\$3,500,000 – 4,200,000**  
with engineering about 50% complete and permitting started

**SHORTFALL** **\$1,800,000 – 2,500,000**

This substantial shortfall is common in Vermont. The primary cause is our large proportion of unbuildable (wet or steep) land. Vermont has a high proportion of unbuildable land, and most developable area has already been settled. This project’s site plan also shows substantial buffers for neighbors, which is common in Vermont to try to limit appeals. The result is a high proportion of road and utility mains per dwelling. Many developers will try to create fewer, larger lots to solve this problem, but very small lots are worth more per acre. Until recently, this shortfall would signal the failure of the project.

**A New Tool for Financing Housing Projects in Vermont**

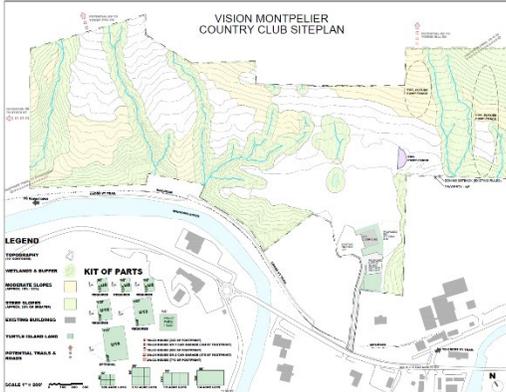
This year Vermont created the Community Housing Infrastructure Program (CHIP), a simpler form of tax increment financing (TIF).<sup>22</sup> For TIFs, both the municipality and the State set aside a substantial portion of property tax revenue (often 80-85%) from newly developed properties to pay down a municipal bond that covers the gap in infrastructure cost. There typically is a twenty-year limit for paydown. After the bond is paid down, both the town and the state can keep their full share of tax revenue. Very briefly, in Plainfield’s case, using conservative values for finished homes one calculates a total grand list value for the 40 properties of

<sup>21</sup> In Vermont, a “grand list” is the official inventory of all taxable property within a municipality, including real estate, motor vehicles, and business personal property.

<sup>22</sup> Tax increment financing is a municipal bond payment tool used widely in the United States. It is gaining popularity in Canada and some Latin American nations.

\$12,045,000. This translates to roughly \$280,000/year for bond payments. A bond for \$2,500,000 would pay down in ten years. Suddenly this project is viable.

### Case Study #2 – Montpelier, Vermont



Montpelier is the capital city of Vermont, with a permanent population of just over 8,000 people. The housing shortage is acute here, with 145 of the 262 respondents in my survey saying they are looking for a new home.

In 2022 the City purchased a former golf course, 135 acres (54 hectares). There are many community goals for the land, including recreation, community food gardens, a place to address our homelessness crisis, and new neighborhoods (up to 300 homes). It is this project that I conducted the survey for, created the lot and house type profiles for, and for which we now have an ideas contest.

The initial design concept, from 2023, was to build four five-story apartment buildings (196 dwelling units) plus 96 townhomes (condominiums) for 292 total dwellings. I calculate the grand list value of this concept at \$53,217,000 based on comparables. Very roughly, it appears that total construction cost of homes plus infrastructure – not including financing or developer overhead/profit - would be \$100,466,000. The yield ratio (new tax base : total invested money) is 53%. Carrying costs would be borne by the City and a few large, private developers. According to my calculations, the City could not even pay down the project infrastructure costs with a CHIP TIF bond without a \$20,000,000 outside subsidy.

Instead, I recommend 292 dwellings on individual lots, in some proportion of single and small multi-family. If I may use my numbers from my analysis and from Plainfield, the grand list value of my alternate concept would be \$84,032,000 and the total construction cost of homes plus infrastructure – not including financing or developer overhead/profit– would be \$104,082,700. The yield ratio would be 81%. Because the City would gain revenue from lot sales, a CHIP TIF would be feasible without subsidy. Significantly, developer overhead/profit should be lower for several reasons: if lots are sold individually, each homeowner could potentially be their own developer. If lots are sold in small clusters, more local developers and builders will be eligible to compete for them, reducing profit. Lastly, by matching size and type of property to market demand, the project should close out sooner with less carrying cost.

### Conclusion

By targeting and reducing components of a new residential property (home, lot, and garage), by finding less expensive ways to develop land, and by using new tools such as CHIP TIFS, we can make home ownership possible for more central Vermonters.

The two case studies suggest that the entire municipality will in turn benefit, with a larger grand list. When

one considers that fully owned properties can continue to be improved over time, and they won't depreciate as commercial structures do, the relative benefit increases even more.



I believe we can shift the trajectory from a future of increasing landless population to a future of rooted and thriving homeowners, however modest, in vibrant neighborhoods. If home ownership is indeed a foundation of American democracy, it is worth trying.

*Many thanks to Stanley Brinkerhoff and Christina Finkelstein for their patient editing.*

# **Transforming Existing Housing: Case Study of Les Coteaux (Mulhouse, France), an adaptable Masterplan for a Fair and Liveable Neighbourhood Transformation**

**Marion Zeller –**  
Student, Landscape Architecture –  
OST Otschweizer Fachhochschule Rapperswil, CH

## **Abstract**

“The Coteaux” in Mulhouse, built in the 1960s, exemplifies the current challenges of rehabilitating large European social housing estates. Currently the eastern section is undergoing a radical reconstruction funded by the National Urban Renewal Agency (ANRU), involving the archaic model of destroying architecturally revealing buildings and displacing socially fragile inhabitants, whereas the western part has so far remained untouched. This area contains significant salvageable landscape and social assets: dense vegetation, varied open spaces, active associations, and a strong sense of belonging among residents.

The “Fréquence Ouest” project proposes an alternative to demolition and reconstruction. Based on six principles—connection, renovation, activation, legibility, social orientation, and participation—it develops an incremental masterplan that enhances existing resources, strengthens social cohesion, and improves ecological resilience. Through the requalification of the central park, the activation of ground floors and garage roofs, the improvement of soft mobility, and the creation of a local agency (Fréquence Coteaux). Finally the project demonstrates how landscape architecture can become the driver of a fair and gradual urban transition.

## Introduction

Large housing estates built during the post-war period remain a controversial legacy of European urbanism. Conceived as a response to the housing crisis, they embodied modernist ideals of light, air, and greenery. Today, many of these neighbourhoods are classified as “Quartiers Prioritaires de la Politique de la Ville” (QPV) —French priority urban policy areas targeted for social and spatial intervention— and faces poverty, spatial segregation, and stigmatization.

In France, the ANRU has been the central instrument of transformation since 2003. Through this program, more than 160,000 social housing units have been demolished, and replaced often resulting in fewer, more expensive habitats. While these interventions set out to improve living conditions and promote social mixing, they have faced criticism as they also result in: forced relocations, the rupture of social networks, and the erasure of architectural heritage. Certain organizations such as “Stop Démolition” denounce these types of approaches and calls for a moratorium, advocating for alternatives based on principals of renovation and the active participation of locals.

The city of Mulhouse illustrates such a “QPV.” Faced with the loss of its industries, it shows an unemployment rate of 24.6%, with 36% of citizens living below the poverty threshold. Nearly 30% of its housing stock is social housing, where poverty and unemployment rates are even higher. One such social housing estate, Les Coteaux, was built between 1961 and 1975 as part of the Zones à Urbaniser en Priorité (ZUP) program—a French planning policy that aimed to rapidly construct large-scale housing estates to meet the post-war housing shortage. Comprising more than 80% social housing, the neighborhood now faces a staggering poverty rate of 58%. While the eastern section is undergoing radical transformation financed by the ANRU, the western part has yet to be “renovated” and retains its historic buildings, large green open spaces, and strong social dynamic. This situation creates a unique opportunity: to demonstrate that transformation is possible without *tabula rasa*, by building on pre-existing landscape and social resources.

## Methodology

Here we propose a methodological farmwork structured around three major axis:

### 1. Territorial and social analysis

The neighbourhood was studied on the local scale of the Coteaux, where 80% of the housing stock is social housing and poverty reaches 58%.

The morphology and landscape analysis revealed a setting punctuated by towers and slab blocks on uneven terrain. Green spaces are not rare but are underused, often reduced to unattractive lawns.

Inspired by the 15-minute city model, further analysis highlighted a paradox. In theory, all the local facilities associated with a high quality living environment are present (tram, schools,

shops, sports facilities). In practice however their quality, accessibility, and perception remain limited, creating a gap between the spatial potential and residents everyday experience.

## 2. Definition of project principles

On this basis, six Leitprinzipien were defined to guide transformation:

- **Connection:** establish connections between the West side with the future Eastern development, as well as opening up the neighbourhood to the surroundings areas (park, landscape, city centre), with an emphasis on soft mobility.
- **Renovation:** improving the quality and comfort of existing housing without displacing the current residence, with the aim of preserving the established social dynamics.
- **Activation:** reanimating underutilized spaces such as ground floors, thresholds, and residual areas such as communal facilities, laundry rooms, micro-commerce, etc.).
- **Legibility:** clarifying the hierarchy of spaces, improving orientation and safety.
- **Social orientation:** supporting existing networks (AFSCO, associations) and creating inclusive places, including new forms of housing (e.g. inclusive places ).
- **Participation:** engaging residents from the inception of the process ensuring the effective participation in decision-making.

## 3. Participatory approach and the Trittsteine tool

The Trittsteine (“stepping stones”) constitute the key operational tool of the strategy. Each Trittstein is a targeted intervention, co-negotiated with residents, and designed to act as a catalyst for broader transformation. Together, they address three interrelated dimensions:

- **Ecological:** green acupuncture on and around existing buildings, green corridors, permeable surfaces, rain gardens, species diversification, micro-habitats for biodiversity.
- **Social:** communal spaces inside buildings, entry plazas, neighbourhood squares, playgrounds, health and fitness trails.
- **Economic:** revitalisation of ground floors and vacant premises, micro-shops, workshops, markets, vocational training.

By weaving together these Trittstein each representing a targeted intervention, they acts as a catalyst for broader change.

## Results: The Incremental Masterplan

The “Fréquence Ouest” masterplan proposes a gradual transformation covering the entire perimeter. It is structured around several key components:

- **The central park as backbone:** a breathing space and a meeting point, integrating biodiversity, fitness trails, playgrounds, and visible stormwater management. It links existing facilities and strengthens cohesion between East and West.

- **Requalified residential spaces:** activation of ground floors and thresholds with shared workshops, community rooms, collective kitchens, and vegetation. Each building will have a neighbourhood square and a small playground at its entrance (existing but improved). Streets are thus transformed into spaces of social encounters and exchanges.
- **Requalification of existing infrastructures:** garage roofs converted into modular community gardens through participatory methods (“Freiraum-Bingo”), restructured parking areas, and reutilized terraces. These underused spaces become laboratories for new practices and initial interventions—less costly than building renovation. Implemented quickly, they bring residents’ needs to light, strengthen trust in future projects by involving them actively from the outset.
- **Strengthened soft mobility:** improved pedestrian and cycling routes, connecting with sports facilities to the south, interconnectivity with the tram, and attractive routes between East and West.
- **Place des Nations:** the new heart of the neighbourhood, together with the Pôle Nord. Multifunctional and accessible (tram, kiosk), framed by the Grand AFSCO, housing, and active ground-floor uses, it becomes a hub between city and park, hosting markets, dining, and play, while reinforcing modernist identity and ecological resilience (permeable materials, planting, new trees).

The overall framework is evolutionary, allowing interventions to adapt over time while progressively involving residents.

## Discussion

This approach contrasts sharply with the *tabula rasa* logic promoted by ANRU. While demolitions lead to the loss of social housing and the displacement of vulnerable families, “Fréquence Ouest” demonstrates that it is possible to work with pre-existing infrastructure. Demolition erases not only buildings but also social networks, collective memories, and a modernist heritage that, despite its shortcomings, still holds spatial qualities: light, air, vegetation, and a certain generosity of scale.

In this project, landscape architecture is not limited to creating green spaces. It functions as social and ecological infrastructure. The central park is not merely a recreational space: it becomes a device for climate regulation, rainwater management, and biodiversity enhancement, while providing a daily space for gathering and appropriation. Similarly, the Trittsteine illustrate a logic of progressive transformation: targeted, visible, and accessible interventions that strengthen both ecological quality and social cohesion.

By placing public space at the heart of the strategy, the masterplan proposes a model of spatial justice, where ecological resilience and social inclusion reinforce each other. Initial interventions—quick, affordable, and visible—address residents’ immediate needs, build trust, and actively involve them in the process. This visible responsiveness strengthens their sense of belonging and legitimizes future, more consequent steps such as housing renovation.

The approach also highlights the importance of local governance. With the creation of a “Fréquence Ouest” agency, envisioned as a mediator between residents, institutions, and housing providers, the project proposes a framework that goes beyond spatial design. It seeks

to guarantee continuity between planning, implementation, and long-term management—an essential condition for ensuring durable transformation.

## Conclusion

The project demonstrates that it is possible to regenerate a large housing estate while respecting both the existing infrastructure and the social ties that sustain it. Rather than following a *tabula rasa* logic, it builds on present resources—landscapes, collective spaces, associative networks, and a residences sense of belonging—to generate a sustainable dynamic of change.

The proposed strategy is distinguished by an incremental and participatory character. Initial, light, and visible interventions—such as the Freiraum-Bingo or the requalification of residential spaces—engage residents to be involved from the outset and build confidence for subsequent, more substantial steps such as building renovation. This progressive approach illustrates that it is not necessary to wait for massive investment to initiate transformation: targeted, appropriable actions can already reshape the neighbourhood’s image and improve daily life.

Within this framework, landscape architecture plays a mediating role: between ecology and society, short-term and long-term, residents and institutions. By placing public space at its core, “Fréquence Ouest” establishes the necessary conditions for climate resilience and social inclusion to reinforce one another.

Beyond the case of Coteaux Ouest, this approach outlines a reproducible model for other large housing estates facing similar challenges. It emphasizes the need to anchor projects in local realities and to establish governance mechanisms that ensure continuity and durability. In this sense, the project offers adaptable guidelines for diverse contexts.

Ultimately, “Fréquence Ouest” points the way toward a more equitable and resilient city, where landscape architecture is not merely a design discipline but an active agent of spatial justice and urban transition.



Suzanne C. and Henry L. Lennard Institute for Livable Cities Inc.

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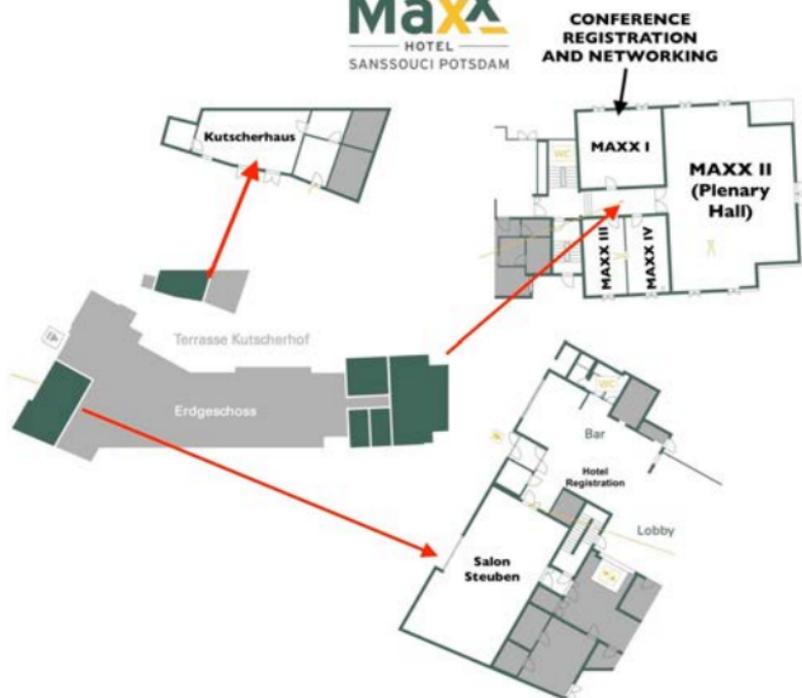
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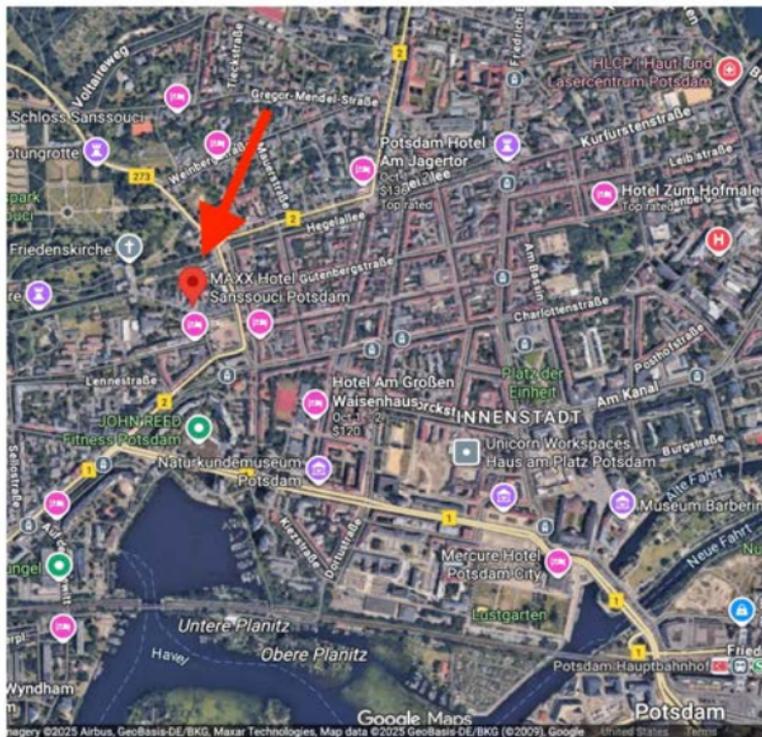
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**MAP OF POTSDAM AND THE VENUE**

## 62nd International Making Cities Livable (IMCL)

*"What is the Architecture of the (LIVABLE) Future?"*

MAXX Hotel Sanssouci, Potsdam, Germany, October 15-19, 2025

### PROGRAM

*(As of October 6 - check online app edition for updates!)*

- Wednesday**  
**October 15th**
- 2:00 PM Walking Tour of Sanssouci Park**  
*Gather in front of MAXX Hotel Sanssouci*  
*Led by Saskia Hüneke, Chair of the Main Committee of the Potsdam City Council and Bart Urban, Deputy Chair of INTBAU Germany, and Co-Host, The Aesthetic City*
- 5:00 PM OPENING RECEPTION (Wine, soft drinks, hors d'oeuvres)**  
*Gather at MAXX Hotel Sanssouci, walk to Friedenskirche*  
*Welcome by Bernd Rubelt, Deputy Mayor of Potsdam for Urban Development, Construction, Economy, and Environment*  
*Welcome by Jim Brainard, Director, Lennard Institute and IMCL*  
*Return to MAXX Hotel Sanssouci for refreshments*
- 7:00 PM End (Dinner on your own)**
- Thursday**  
**October 16th**
- 8:00 AM REGISTRATION (Refreshments served)**  
*MAXX Hotel Sanssouci, Allee nach Sanssouci 1, Potsdam*
- 9:00 AM OPENING PLENARY (MAXX II)**  
*The Role of Heritage as a Living Force in Cities:*  
*Lessons from Potsdam's Reconstructions and New Buildings*  
*Moderated by Michael Mehaffy, Executive Director, IMCL*
- 9:00 AM Overview and Opening Film**  
*International Making Cities Livable: Progress and Work Ahead*
- 9:10 AM Between History and the Future: Discourse in Potsdam since 1990**  
*Saskia Hüneke, Chair of the Main Committee and Member of the Potsdam City Council*
- 9:25 AM Potsdam in Transition: Getting It Built**  
*Willo Göpel, Managing Director, Göpel Development*
- 9:40 AM Designing for Revival: Potsdam Case Study**  
*Thomas Albrecht, Architect*
- 10:20 AM Tradition for the Future: New Designs in Germany and Beyond**  
*Robert Patzschke, Architect*
- 10:50 AM BREAK (Coffee, tea, snacks)**
- 11:20 AM PLENARY TWO (MAXX II)**  
*The Original Green, The Original Livable:*  
*Traditional Architecture as a Deep Resource for Modern Challenges*  
*Moderated by James Dougherty, Director of Design, Dover Kohl & Associates*

**11:20 AM New Frontiers of Traditional Architecture**  
*Steve Mouzon, Principal, Mouzon Design, and Founder, The Urban Guild*

**11:50 AM Ten Strategic Battles for a Transformational Ecosystem**

*Guy Courtois, Founder, Toward an Urban Renaissance*

**12:30 PM The Architectural Uprising: Toward an Architecture of Democracy and Community Engagement**

*Marjo Uotila, MA, Founder, Architectural Uprising Finland and INTBAU Finland*  
*Bart Urban, Co-host, The Aesthetic City and Deputy Chair, INTBAU Germany*

**1:00 PM LUNCH BREAK**

**2:30 PM BREAKOUT ONE (MAXX II)**

*The Architecture of Livability: Better Buildings and Places*

*Moderated by Guy Courtois, Founder, Toward an Urban Renaissance, Paris, France*

**Why Contemporary Buildings are Often Alienating and Inhumane:**

**Semiotics of Design and the Metaphysics of Modern Architecture**

*Shane Casey, Developer and General Contractor, Wilkes Barre PA*

**The New Frankfurt Old Town and the Tyranny of Authenticity: Unpacking**

**The Case Against Reconstruction**

*Michelle Sofje, Editor, Classic Planning Herald*

**The Classical and the Contemporary: A Tale of Two Cities - Cologne and Cincinnati**

*Christine Storry, Principal, Utopia Architects, Brisbane, Australia (via video)*

**The Architectural Uprising: Toward an Architecture of Democracy and**

**Community Engagement**

*Marjo Uotila, Founder, MA, Architectural Uprising Finland, and INTBAU Finland*

**2:30 PM BREAKOUT TWO (Salon Steuben)**

*Flourishing and Democratic Public Spaces for ALL*

*Moderated by Amira Osman, Professor in Architecture, Tshwane University of Technology*

**The Political Economy of Public Space in New York City**

*Lynn Ellsworth, Founder, Humanscale NYC, New York, NY USA*

**Uncovering Places of Connectivity to Address Loneliness and Health**

*Maya Ljubojevic, Researcher, University of Strathclyde, Glasgow, UK*

**Social Cohesion, Extremism, and the Built Environment**

*Crystal Murillo, Aurora, Colorado (USA) City Council Member*

*Juan Marcano, National Director of Governance Programs, New America Leaders*

**Livable and Lovable: Envisioning a Different Way of Inhabiting, Designing and Delivering Our Cities and Public Spaces**

*Amira Osman, Professor in Architecture and South African Research Chair in*

*Spatial Transformation, Tshwane University of Technology, Pretoria, South Africa*

**2:30 PM BREAKOUT THREE (Kutscherhaus)**

*Adaptive Cities I: Design for a Changing Planet*

*Moderated by Jeongseob Kim, Professor, Ulsan National Institute of Science and Technology*

**Water-sensitive Urban Design Guidance for the Livable Future**

*Şebnem Gökçen, Professor of City Planning, Department of Architecture, Faculty of Fine Arts and Design, Izmir University of Economics*

**Strategies for Managing Vacant Lots and Enhancing Thermal Comfort in Shrinking Cities**

*Gukhwa Jang Postdoctoral Researcher, Seoul National University*

**Co-Creating Compact-Network Cities: Lessons from Citizen-Led Living Labs in Shrinking Korean Cities**

*Jeongseob Kim, Professor, Ulsan National Institute of Science and Technology, South Korea*

**Aquapuncture: Applying Rainwater Harvesting for Urban Cooling**

*Thanos Stasinopoulos, Professor, Izmir University of Economics, Turkey*

**2:30 PM BREAKOUT FOUR (MAXX III)**

*(Extra meeting space TBD)*

**2:30 PM BREAKOUT FIVE (MAXX IV)**

**WORKSHOP: Toward New Pattern Languages for a Changing World (Part I)**

*Richard Gane, Builder*

*Robert Knapp, Professor Emeritus, Physics & Sustainable Design, Evergreen State College*

*Robert Krasser, Director, The Pattern Institute*

*Jenny Quillien, Sustasis Foundation, Moderator*

**3:45 PM BREAK (Coffee, tea, snacks)**

**4:15 PM BREAKOUT SIX (MAXX II)**

***The Livable City Shaped: Form and Space***

*Moderated by James Dougherty, Principal, Director of Design, Dover, Kohl & Associates*

**The Circle and the Grid: Case Study of Indianapolis, IN USA**

*Lohren Deeg, Associate Professor of Urban Planning, Ball State Univ., Muncie, IN USA*

**Enhancing Legibility of Urban Ensembles at a Range of Scales Using**

**Compositional Techniques of 19th Century Architecture**

*James Dougherty, Principal, Director of Design, Dover, Kohl & Assoc., Miami FL USA*

**Para-Doxa: Historical Immanence in Contemporary Architecture**

*Carlos Rueda, Associate Professor, Faculty of Architecture, University of Manitoba, Canada*

**Celebrating the heart of Athlone, a fortified town on the River Shannon -**

**Urban fabric reimagined as a catalyst for renewal**

*Teresa Josephine Sweeney Meade, FRIAI, RIBA, Assistant Principal Architect,*

*Office of Public Works, Dublin, Ireland*

**4:15 PM BREAKOUT SEVEN (Salon Steuben)**

***Livability and Affordability for ALL: Metrics, Tools, Strategies***

*Moderated by Nichole Wiedermann, Assoc. Professor, The University of Texas at Austin*

**Livability in First Nations Settlements: Western Australia's Pilbara Region**

*Iain Butterworth, Principal, Iain Butterworth & Assoc., Kyneton, Australia*

**Urban Greening and Gentrification in New York City**

*Glen Johnson, Associate Professor, CUNY Grad. School of Public Health, New York USA*

**Lessons from Central Vermont (USA): Small Homes + Tiny Lots + TIF funding =**

**Neighborhoods for Everyone**

*Sandra Vitzthum, Architect, Montpelier, Vermont USA*

**Messy Maps: Reimagining Representational Tools in Architecture and Urban**

**Design to Better Support Equitable, Livable Cities**

*Nichole Wiedermann, Assoc. Professor, The Univ. of Texas at Austin School of Architecture*

**4:15 PM BREAKOUT EIGHT (Kutscherhaus)**

***Adaptive Cities II: Changing Populations, Changing World***

*Moderated by Saehoon Kim, Professor and the Vice Dean, Seoul National University*

**A Study on Visitors' Perceptions of the Old Downtown Area: Focusing on Daejeon, Korea**

*Hyeonju Jung, Researcher, Seoul National University, South Korea*

**Defining a Shrinking and Livable City: Adaptive Built Environments in an Era of Depopulation**

*Saehoon Kim, Professor and the Vice Dean of the Graduate School of Environmental Studies, Seoul National University, South Korea*

**Sustaining Urbanity through Commercial Power in the Shrinking City**

*Hyein Kwon, Ph.D. Candidate, Seoul National University, South Korea*

**What Happens to Villages and Towns When Populations Decline?**

*Kwangjun Woo, Ph.D. Candidate, Seoul National University, South Korea*

**4:15 PM BREAKOUT NINE (MAXX III)**

***Urbanism, Big Data and AI: Meeting the Opportunities... Confronting the Dangers***

*Moderated by Justin Heejeon Lim, Assistant Professor, Seoul National University*

**A Microscopic Pedestrian Simulation Approach for User-Centered Transit Design**

*Hyein Kwon, Ph.D. Candidate, Seoul National University, South Korea*

**Unraveling the Integrated Impact of Pedestrian Activity Rhythms and Street Spatial Contexts**

*Haeryung Lee, Ph.D. Student, Seoul, South Korea*

**Parametric Simulation of Urban Rainwater Flow Using Grasshopper: Toward Designer-Centered Flood Resilience**

*Justin Heejeon Lim, Assistant Professor, Seoul National University*

**Space Syntax and Visibility Graph Analysis: Case Study of Gwanghwamun, South Korea**

*Hyungyum Seo, Student, Seoul National University, South Korea*

**4:15 PM BREAKOUT TEN (MAXX IV)**

**WORKSHOP: Toward New Pattern Languages for a Changing World (Part I)**

*Richard Game, Builder*

*Robert Knapp, Professor Emeritus, Physics & Sustainable Design, Evergreen State College*

*Robert Krasser, Director, The Pattern Institute*

*Jenny Quillien, Sustasis Foundation, Moderator*

**5:30 PM End; Group Walking Tour to Alter Market Area**

*Led by Thomas Albrecht (followed by dinner on your own)*

Friday  
October 17th

**8:00 AM REGISTRATION (Refreshments served)**

*MAXX Hotel Sanssouci, Allee nach Sanssouci I, Potsdam*

**9:00 AM PLENARY THREE (MAXX II)**

***Changing the "Operating System for Growth:***

***The Role of Mayors and the Public Sector***

*Moderated by Jim Brainard, INCL Board Member*

**9:00 AM Lessons from Carmel**

*Jim Brainard (former Mayor of Carmel, Indiana)*

**9:30 AM Lessons from Bristol**

*George Ferguson (former Mayor of Bristol, UK)*

**10:00 AM Lessons from Vancouver**

*Patrick Condon (Professor, University of British Columbia)*

**10:30 AM Panel with Mayors and Councilmembers**

*With Hon. Robert Sullivan, Mayor of Brockton MA; Mike Duggan, Councillor for Gatineau, Quebec; and Crystal Murillo, Councilmember for Aurora, Colorado USA*

**11:00 AM BREAK (Coffee, tea, snacks)**

**11:30 AM PLENARY FOUR (MAXX II)**

***Not Just Western Classicism:***

***Beauty and the Timeless Way of Building***

*Moderated by Jenny Quillien, Board Member, Sustasis Foundation*

**11:30 AM AI, Living Structure and the "Beautimeter"**

*Bin Jiang, Professor of Urban Informatics, LivableCityLAB, The Hong Kong University of Science and Technology (Guangzhou)*

**12:00 PM Implementing Christopher Alexander's 'Living Process': The Civilla Campus in Detroit**

*Or Ettliger, Building Beauty Program*

**12:30 PM Video and Panel: New Science, New (Old) Architecture?**

*Video: Nikos Salingaros, Urbanist and Mathematician, University of Texas at San Antonio  
Panel: Richard Gane, Rob Knapp, Robert Krasser and Yodan Rofo*

**1:00 PM LUNCH BREAK**

**2:30 PM BREAKOUT ELEVEN (MAXX II)**

***Health, Quality of Life and Vitality in the Livable City***

*Moderated by Patrick Condon, Professor of Urban Design, Univ. of British Columbia*

***Architecture, Air, and Art: Preserving Civic Identity Through Green Retrofitting in a Transit-Oriented Downtown***

*Troy Clarkson, Chief Financial Officer, City of Brockton, Massachusetts USA*

*Hon. Robert F. Sullivan, JD, Mayor, City of Brockton, Massachusetts USA*

***Urban Leisure Environments and Quality of Life in Shrinking Cities: The Mediating Role of Health Behavior***

*Xiuyuan Piao, Ph.D Candidate, Seoul National University, Soouth Korea*

***Greening the City: Rethinking Green Space in the Context of Urban Form***

*Veronica Westendorff, Researcher and Landscape Architect, Davidson, ND USA*

***Water Features in Our Urban Spaces – Recognizing and Promoting their Benefits***

*Josh Stewart, Architect, Salt Lake City, Utah*

**2:30 PM BREAKOUT TWELVE (Salon Steuben)**

***The Accessible City, The Connected City***

*Moderated by Ricardo Fernandez, CUADRA Urbanismo, Mexico City, Mexico*

**Upgrading Metro Systems for Universal Access and Wayfinding for All: Case Study of Metrorrey, Monterrey, Mexico**

*Ricardo Fernandez, Urban Designer, CUADRA Urbanismo, Mexico City, Mexico*

**Evaluating the 15-Minute City: Insights from Seattle and Gothenburg on Accessibility, Mobility, and Urban Form**

*Devon McAslan, Researcher, Chalmers University of Technology, Gothenburg, Sweden*

**The 15-Minute City in Smaller and Mid-Density Contexts**

*Ana Clara Caixeta Szymanski Nogueira, Student, Technical Univ. of Munich, Germany*

**Transport 2060: Pros and Cons of Autonomous Vehicles**

*Chris Stapleton, Stapleton Transportation and Planning, Sydney, Australia*

**2:30 PM BREAKOUT THIRTEEN (Kutscherhaus)**

*Reforming the "Operating System for Growth" I: Codes, Systems, Economics*

*Moderated by John Burrell, Principal, Burrell, Foley, Fischer Architects*

*Grey Land: A Long Campaign to Utilise 'Unseen Land'*

*John Burrell, Principal, Burrell Foley Fischer Architects*

*Remaking Housing, Remaking the City: The 2018 Housing NW Arkansas Initiative*

*Anne Fougerson, Fougerson Architecture, San Francisco, California USA*

*Kent Macdonald, Emeritus Faculty, Cal Poly San Luis Obispo, California USA*

*Strategic Interactions in the Adoption of Prefabricated Construction: A Game-Theoretic Analysis of Government, Developer, and Community Dynamics*

*Xiangyi Li, Ph.D. Candidate, The University of Hong Kong, China*

*21st Century Town: A Regenerative System for Building Livable, Human-Scaled Communities*

*Max LeMarchant, Principal, New Amherst Homes, 21st Century Town, Cobourg, Canada*

**2:30 PM BREAKOUT FOURTEEN (MAXX III)**

**WORKSHOP: Montpelier, Vermont Mini-charrette for a 135-Acre Urban Extension**  
*(An actual RFP by the City of Montpelier)*

*Sandra Vitzthum, Architect, Montpelier, Vermont*

**2:30 PM BREAKOUT FIFTEEN (MAXX IV)**

**WORKSHOP: Building Beauty: Life, Wholeness and The Quality Without a Name**  
*(Part I of a workshop on Christopher Alexander's work and ideas)*

*Or Ettliger, Building Beauty*

*Yodan Rofé, Building Beauty*

**3:45 PM BREAK (Coffee, tea, snacks)**

**4:15 PM BREAKOUT SIXTEEN (MAXX II)**

*Good homes for ALL: Challenges and Solutions*

*Moderated by Patrick Condon, Professor of Urban Design, University of Vancouver, Canada*

*Land Lift and the Limits of Vancouverism: Lessons in Urban Density, Speculation, and Civic Finance*

*Patrick Condon, Professor of Urban Design, University of Vancouver, Canada*

**Allumette Houses in Gatineau: Heritage and Densification in Comparative Perspective with Soviet-Era Krushchevka Apartments**

*Mike Duggan, Municipal Councillor, Gatineau, Quebec, Canada*

**The Invisible Cost of Inaction: Long-Term Neglect in Aging Apartments and the Erosion of Urban Livability**

*Jeonghye Kim, Ph.D. Candidate, Seoul National University, Seoul, South Korea*

**Transforming Existing Housing: Case Study of Les Coteaux (Mulhouse), an Adaptable Masterplan for a Fair and Liveable Neighbourhood Transformation**

*Marion Zeller, Student, OST University of Applied Sciences, St. Gallen, Switzerland*

**4:15 PM BREAKOUT SEVENTEEN (Salon Steuben)**

*(Extra meeting space TBD)*

**4:15 PM BREAKOUT EIGHTEEN (Kutscherhaus)**

**Reforming the "Operating System for Growth" II: Innovative Processes**

*Moderated by John Gaber, Professor and Program Director, Clemson University*

**Seeing We: Community Working Relationships with Local Governments**

*John Gaber, Professor and Program Director, Clemson University, Clemson SC USA*

**Reimagining Urban Futures Through Integrated Design: Case Study of LeBreton Flats, Ottawa, Ontario, Canada**

*Chris Hardwicke, Principal, Agent Urban, Calgary, Alberta, Canada*

**Reframing Urban Decline through Temporal Livability: Developing the Time Vitality Index (TVI)**

*Yeoryung Seo, Ph.D Candidate, Seoul National University, South Korea*

**Smart City 5.0/CSCOPE: The Pattern Way to Asingularity**

*Andrey Volkov, Chief Research Officer, Asingularity Initiative, Moscow, Russia*

**4:15 PM BREAKOUT NINETEEN (MAXX III)**

**WORKSHOP: Montpelier, Vermont Mini-charrette for a 135-Acre Urban Extension**

*(An actual RFP by the City of Montpelier)*

*Sandra Vitzthum, Architect, Montpelier, Vermont*

**4:15 PM BREAKOUT TWENTY (MAXX IV)**

**WORKSHOP: Building Beauty: Life, Wholeness and The Quality Without a Name**

*(Part II of a workshop on Christopher Alexander's work and ideas)*

*Or Ettlinger, Building Beauty*

*Yodan Rofé, Building Beauty*

**5:30 PM End; Ticketed Dinner Guests Walk to Zur Historischen Mühle**

*Discussion and Awards Dinner (tickets at website)*

**Saturday  
October 18th**

**8:00 AM REGISTRATION (Refreshments served)**

*MAXX Hotel Sanssouci, Allee nach Sanssouci 1, Potsdam*

**9:00 AM PLENARY FIVE (MAXX II) 322**

*Still Getting it Wrong: The Perpetuation of Unsustainable Practices*

- 9:00 AM Residential Towers and Condominium Tenure: An Unhappy Marriage and Its Consequences**  
*Rachelle Alterman, Emeritus Professor of Planning and Law, The Technion, Haifa, Israel and Visiting Scholar, Touro Law School, NY*
- 9:30 AM Biometric Readouts of Emotional Reactions to Buildings: Emerging Research and Implications**  
*Alexandros Lavdas, Researcher, EURAC Bolzano*
- 10:00 AM Panel and Video**  
*(With Justin Hollander, Tufts University, and Cleo Valentine, University of Cambridge)*
- 10:30 AM BREAK (Coffee, tea, snacks)**
- 11:00 AM PLENARY SIX (MAXX II)**  
*A Global Network for Public Space and Livable Cities: Collaborations and Next Steps*
- 11:00 AM The Work of the Congress for the New Urbanism**  
*Mallory Baches, President, Congress for the New Urbanism*
- 11:20 PM The Work of UN-Habitat**  
*Dyfed Aubrey, Chief, UN-Habitat Office for Europe and European Institutions*
- 11:40 PM The Work of the King's Foundation**  
*Ben Bolgar, Executive Director of Projects, The King's Foundation*
- 12:00 PM The Work of Educational Institutions**  
*Markus Tubbesing, Professor, University of Applied Sciences Potsdam, and Notre Dame*
- 12:20 PM Panel and Video**  
*(Video with Kristie Daniel of HealthBridge, and panel with speakers)*
- 1:00 PM LUNCH BREAK**
- 2:30 PM PLENARY SEVEN (MAXX II)**  
*Report-back by breakout rapporteurs*
- 3:45 PM BREAK (Coffee, tea, snacks)**
- 4:15 PM PLENARY EIGHT (MAXX II)**  
*Final Discussion and Declaration Document*
- 5:30 PM End; Start of Closing Reception**
- Sunday**    **10:00 AM Walking tour of Central Potsdam, Reconstructions and New Buildings**  
**October 19th**    *Gather in front of MAXX Hotel Sanssouci*  
*Led by Saskia Hüneke, Chair of the Main Committee of the Potsdam City Council*  
*Markus Tubbesing, Professor, University of Applied Sciences Potsdam, and Notre Dame*  
*and Bart Urban, Deputy Chair of INTBAU Germany, and Co-Host, The Aesthetic City*

## SPEAKER ABSTRACTS AND BIOS

*Updated October 6, 2025*

**Rachelle Alterman**

**Professor (emerita), Technion - Israel Institute of Technology**

**Senior Researcher - Neaman Institute for National Policy Research**

**Title: Residential Towers and Condominium Tenure: An unhappy Marriage and Its Consequences**

**Abstract:** Condominium tenure + tall residential towers is a risky combination. Because ownership is fragmented among many unit owners, there's chronic "free-rider" risk and collective-action problems around funding long-term maintenance, renewal, and retrofits. Tall towers have much higher ongoing maintenance costs (elevators, façades, systems), and they're harder to modify as they age—so if reserves aren't robust, deterioration can be rapid.

Neither "simple" nor "enhanced" condo laws fully solve it. In her comparative study of Israel ("simple" condominium law) and Florida ("enhanced" law with stronger reserve and governance requirements), she finds that enhanced regimes work better in stable times, but even they proved vulnerable during economic shocks (e.g., post-2008 arrears, foreclosures, and "death spiral" dynamics in some U.S. condo towers). Simple regimes are more flexible in crises, but that flexibility often undermines long-term maintenance in normal times.

Policy stance: approve tower condominiums only with great caution. Alterman explicitly recommends that policymakers "regard all proposals for tower condominiums with suspicion," and only approve them when there are weighty public goals and strong legal/financial safeguards (e.g., mandatory, monitored reserve funds adequate for multi-level maintenance and future renovations). Otherwise, once a tower begins to decline, it's difficult to rehabilitate and wasteful to replace, with spillover harms to the neighborhood.

Mid-rise can deliver similar densities with fewer risks. She emphasizes that if the goal is urban density, well-designed mid-rise formats can achieve comparable densities and land-use efficiency without the same maintenance and governance hazards inherent to very tall condo towers.



**Biography:** Rachelle Alterman is Emeritus (yet active) Professor of Urban Planning and Law at the Technion—Israel Institute of Technology, where she held the David Azrieli Chair in Architecture and Town Planning. She also serves as a Senior Research Fellow at the Samuel Neaman Institute for National Policy Research. A Canadian-trained planner (B.A. Honours, M.C.P., University of Manitoba) with a Sc.D. (Technion) and later an LL.B. from Tel Aviv University, Alterman’s work focuses on comparative planning law, land use regulation, housing tenure, and the institutional interplay of planning and property rights. She founded the International Academic Association on Planning, Law and Property Rights, and was elected in 2022 to the Israel National Academy of Sciences and Humanities—being the first female faculty member from the Technion to achieve that honor.

**Iain Butterworth PhD**

**Founder, Iain Butterworth & Associates**

**Kyneton, Australia**

**Title: Liveability for Indigenous Peoples: The Case of Western Australia**

**Abstract:** Liveability is not just a concept for considering quality of life in major cities but also deeply important for regional settings. Furthermore, liveability also has relevance to towns and settlements in which First Nations Peoples live. Aboriginal Peoples have lived in Western Australia’s Pilbara Region for at least 50,000 years. Their lives have been impacted greatly by colonisation, including massacres; removal from ‘Country’; intergenerational trauma; industrial-scale mining and offshore gas extraction; systematic underinvestment; and ongoing, institutionalised, settler-colonial control. Despite the rich cultural wealth held by First Nations Peoples, and the vast financial wealth generated in the Pilbara region, residents and workers in Ieramugadu/Roebourne confront issues such as poor housing and overcrowding, extreme lack of prosperity, poor health outcomes, crime and incarceration, unresolved grief and trauma, alcohol

and drugs, and family violence. The Ngarluma Yindjibarndi Foundation Ltd (NYFL) drives social, cultural, and economic empowerment for Ngarluma and Yindjibarndi Peoples and the broader Aboriginal community, particularly in relation to the major North-West Shelf petrochemical gas venture. In line with Indigenous nation-building approaches, NYFL's 2024–2028 Strategic Plan aims to lead social and liveability reform, and drive liveability efforts from the ground up. Strong, positive psychological relationships with place are hallmarks of liveable towns. Community cognitions, social interaction, community cohesion, and community action can strengthen and protect liveable places. It is the meaning people apply to where they live, and the attributions they make about the policies and politics that have led to the conditions in which they live, that impact their psychological wellbeing. Using Indigenous governance, First Nations organisations can lead liveability efforts by integrating the psychological, experiential, ancestral elements of place, health, urban planning and research with Western approaches. Innovative data-sovereignty partnerships and 'two-way' knowledge frameworks can help integrate Indigenous and Western perspectives and create a deeper, shared understanding of place.

Authors:

1. Sean-Paul Stephens, Chief Executive Officer, Ngarluma Yindjibarndi Foundation Ltd (NYLF). sean-paul@nyfl.org.au [final NYFL representative TBC; anticipated presenter]
2. Iain Butterworth PhD (Presenter)
3. Mandy Gadsdon, Director, ThinkCulture, mandy@thinkculture.com.au
4. James Butterworth, Partner, Paramount Projects, james.butterworth@paramountprojects.com.au.



**Biography:** Iain Butterworth has some 35 years' experience in bringing planners, policymakers, researchers and citizens together to build more liveable, healthier cities and communities. Born in England, he and his family were able to migrate to Australia in 1967 for £10 under the then 'White Australia' Policy. He grew up in Boorloo/Perth, on the unceded lands of the Whadjuk

Nyoongar People. With a PhD in community psychology (environmental adult education), Iain has extensive experience working within and across government, higher education, and the community sectors. A Fulbright Scholar, he has expertise in the WHO Healthy Cities program. He was also an Urban Scholar with the UN Global Compact - Cities Programme, from 2017-2021. He helped to establish the Victorian Liveability research program led by RMIT's Healthy Liveable Cities Group in Melbourne, Australia. He is past President of the Australian Fulbright Alumni Association, and is a member of the Society for Community Research and Action (Division 27 of the American Psychological Association).

Iain is editor and lead author of *The Psychology of Place: Rebuilding Sense of Place in a Postcolonial World*, to be published in 2006 by Cambridge University Press. Using Indigenous worldviews, psychology, population health, architecture, and planning, this cross-disciplinary book explores our 'sense of place' to address climate, environment, liveability, and reconciliation with Indigenous Peoples.

**Ana Clara Caixeta Szymanski Nogueira**  
**Student, Technical University of Munich**  
**Munich, DE**

**Title: The 15-Minute City in Mid-Density Cities**

**Abstract:** As urban populations age and expand, the need for inclusive and proximity-based planning becomes increasingly critical. While the 15-Minute City framework offers a promising model for creating compact, livable urban environments, its application has largely focused on high-density metropolitan areas. Mid-dense cities like Geretsried (Germany), characterized by sprawled urban forms, limited mixed uses, and car-oriented infrastructure, face unique challenges in adapting this model to serve older adults effectively.

This research investigates how accessibility by proximity can be adapted to mid-density settings to support active mobility, social inclusion, and access to essential services for older adults by evaluating the public urban spaces ' design. Non-participant observation is employed as the primary method to capture spatial interactions. Observations focus on how older adults navigate the built environment, identifying the existing (or lack) of urban furniture, green and blue infrastructure, and barriers, such as disconnected pathways, insufficient crossings, and conflicts between pedestrians with different transport modes. Special attention is given to variations across time, seasons, and neighborhood typologies.

The design elements not only support functional mobility but also promote placemaking and intergenerational interaction. The initial results highlight the importance of incorporating flexible, universally accessible street furniture and ensuring that public infrastructure does not impede pedestrian flow. The outcome of the research is expected to be a planning framework tailored for mid-dense cities, offering actionable recommendations to improve spatial inclusivity, particularly for older adults. By integrating urban and green infrastructure with observational insights, the study supports the development of resilient and age-friendly cities.

**Biography:** Ana Clara Szymanski is an architect and urban planner with expertise in mobility and urban development. She is currently pursuing her doctorate at the Chair of Urban Structure and Transport Planning at the Technical University of Munich (TUM). Her professional background includes serving as Director of Mobility at the Municipal Department of Transportation and Mobility in Patos de Minas, Brazil, as well as project manager for the city's Master Plan.

In her PhD research, Ana Clara examines the mobility needs of older adults in Geretsried, a medium-sized Bavarian town experiencing demographic aging. Using qualitative methods such as interviews and participatory approaches, she explores how the built environment and public transport services can better support the mobility, independence, and social participation of older residents.

**Shane J Casey**  
**Developer/General Contractor**  
**Wilkes-Barre, Pennsylvania, USA**

**Title: Why Contemporary Buildings are Often Alienating and Inhumane: Semiotics of Design and the Metaphysics of Modern Architecture**

**Abstract:** Cultures throughout history have had unique traditions of creating artistically beautiful buildings, but we produce either imitations of bygone eras (Historicism/ Traditionalism), or alienating geometric abstractions that ignore the human scale and their own materiality (Modernism/Postmodernism).

I argue that this is because architects today are not 'first craftsmen' working in the materials of construction, but workers of signs (de-sign-ers) in the form of drawings, models, etc. Because architectural decisions are formulated and evaluated as abstract representations, architects'

understanding and artistic potential is determined by the semiotic structure of these modes of representation; the complex but largely unexamined system of conventions, assumptions, reductions, and abstractions by which marks on paper, bits in a CAD file, or cardboard in a model signify aspects of real buildings. To de-sign is to adopt a particular hylomorphic metaphysics in which things are understood as the atemporal geometry of their assumptively planar outer surfaces, while anything beyond disembodied form—involving time, chemistry, energy, or tangible relation to our own bodies—is, at best, a secondary consideration awkwardly tacked on the core spatial design process (e.g. “Sustainability”). How and when any particular option arises is determined by the immediacy of that particular sign combination in the physical process of manipulating that design medium, resulting in buildings that follow the morphogenetic logic of the means of representation in a way that is viscerally discordant within their true physicality; their spatial form palpably conflicts with their corporeal scale and manifest assembly because it arose through the materials, scales, and tectonic processes of the design mediums. Meanwhile, modern construction crafts, such as steel and concrete, are not considered high art in themselves, as stonework or carpentry had in previous traditions of building.

**Biography:**

Shane J Casey is a real estate developer and licensed general contractor focusing on post-industrial adaptive reuse in Wilkes-Barre, Pennsylvania. He holds a Master of Architecture from Boston Architectural College and B.A. in philosophy from Swarthmore College.

**Patrick Condon**

**Professor**

**Vancouver, British Columbia, Canada**

**Title: Land Lift and the Limits of Vancouverism: Lessons in Urban Density, Speculation, and Civic Finance**

Abstract: In the late 20th century, Vancouver pioneered a novel urban development strategy now known as “Vancouverism,” characterized by high-density tower housing integrated with public amenities. Enabled by British Columbia’s planning laws, the city negotiated Community Amenity Contributions (CACs) from developers in exchange for rezoning approvals—effectively capturing a portion of the increased land value or “land lift” created through densification. Early successes funded parks, childcare centers, and affordable housing while maintaining a balance between livability and growth.

However, by the early 2000s, this model began to falter. Global capital flows and speculative investment inflated land prices, undermining the city's ability to extract meaningful CACs. As land values surged ahead of rezoning, developers claimed no lift remained to share. Negotiated contributions declined relative to project costs, while housing prices decoupled from local incomes. Once a tool for equitable urbanism, discretionary bargaining became a liability. The city's failure to establish fixed land-lift taxes in advance allowed speculative pricing to capture what had once been public value.

Drawing on planning literature and financial analysis, this paper argues that the discretionary land-lift model, while initially effective, was unsustainable in the face of global real estate pressures. Vancouver's experience reveals the danger of tying urban finance to flexible negotiations amid speculative markets. A pre-set, robust land value tax might have constrained speculation and preserved public benefit.

Vancouver's trajectory offers broader lessons for cities attempting to reconcile growth with affordability and civic equity. It highlights the need for anticipatory land policy that disciplines market expectations and secures public revenue—before speculation consumes it. As cities worldwide pursue high-density urbanism under the banner of sustainability, Vancouver's history serves both as a guide and a cautionary tale.



**Biography:** Patrick has over 25 years of experience in sustainable urban design: first as a professional city planner and then as a teacher and researcher. Patrick started his academic career in 1985 at the University of Minnesota before moving to the University of British Columbia in 1992. After acting as the director of the landscape architecture program, he became the James Taylor Chair in Landscape and Liveable Environments. In that capacity he has worked to advance sustainable urban design in scores of jurisdictions in the US, Canada, and Australia. Patrick has also led the Sustainability by Design project by the Design Centre for Sustainability. For over 20

years, the Design Centre and James Taylor Chair worked on a variety of projects and books to contribute to healthier and more sustainable urban landscapes.

Recognizing the need for collaboration as a fundamental part of designing sustainable communities, Patrick has pioneered public engagement methods. He has successfully focused attention on how to make systemic change in the way cities are built and operated, notably in his East Clayton project in Surrey, BC. More recently, he and his research partners collaborated with the City of North Vancouver to produce a 100-year plan to make the city carbon-neutral by 2107. Patrick and his partners received the Canadian Institute of Planners Award for Planning Excellence and the BC Union of Municipalities Award of Excellence for this work. Patrick is the author of several books on sustainable and equitable urban design including *Seven Rules for Sustainable Communities* and *Five Rules for Tomorrow's Cities* from Island Press, and *Broken City* from UBC Press.

**Guy Courtois**

**Founder, Toward an Urban Renaissance**

**Paris, France**

**Title: Ten Strategic Battles for a Transformational Ecosystem**

**Abstract:** Faced with the immense challenges of our time, how can we build cities that are more humane, more beautiful, and more just—cities that foster happiness? How can we restore meaning and harmony to our territories by reconciling progress with tradition? This book offers an ambitious answer, structured around ten essential battles to create a new transformational ecosystem. These battles represent distinct fields of action in which every citizen, expert, or decision-maker can engage to help shape a renewed urban society.



**Biography:** Guy Courtois has lived in the United States, Italy, Belgium, and China, and currently resides in Meudon, France. A graduate of ESSEC Business School, he worked for several years within the LVMH group before becoming a strategy consultant, a profession he pursued for many years, leading more than 250 missions on a wide range of strategic issues. Co-founder of several companies and associations, he now applies the rigor and methodology of strategic consulting to urbanism. Passionate about cities and their ability to influence mental health, well-being, and happiness, he is the President and co-founder of the think tank Pour une Renaissance Urbaine, dedicated to placing beauty, social connection, and quality of life at the heart of urban projects in France and around the world.

**Lohren Deeg**

**Associate Professor, Ball State University**

**Muncie, Indiana USA**

**Title: The Circle and the Grid: A Case Study of Monument Circle, Indianapolis USA**

**Abstract:** This paper begins by comparing the form and experience of cities to a waffle. The baked grid of the popular food is a combination of ingredients, a centralized organization, and a vehicle for other versatile ingredients that can be facilitated and carried by the grid. Planned cities are arguably similar. Indianapolis was first platted by Alexander Ralston and Elias Pym Fordham in 1821. The central circle was first conceived as a plot of land for the Governor's residence. Later, the circle was recast with a monument honoring its fallen soldiers and sailors. It was designed by Berlin-born Architect Bruno Schmitz beginning in 1887 and completed in 1902. Schmitz is also known for the 1813 Monument to the Battle of the Nations (Völkerschlachtdenkmal) in Leipzig and the 1897 Kaiser Wilhelm Denkmal in Koblenz. Indianapolis continues to examine the best configuration of Monument Circle for the public interest. Debate has centered on the presence of automobiles versus partial or full pedestrianization. Arguments for both sides persist, beginning with a 2008 report by the Project for Public Spaces, an international ideas competition held in 2011 (in which the author's team took third place), and most recently the advent of SPARK on the Circle, a temporary installation placed in May to November that is now in its third offering in 2025. The circle remains the city and state's most readily recognized spaces for protest / free speech events, holiday celebrations, seasonal festivals, and rallies/celebrations of professional and amateur athletic achievements. This paper will examine the metaphor of a waffle as it relates to cities and public spaces, the role of a monument in a growing and changing American city, and whether communication, creativity, and compromise can be a vehicle for freedom, safety, and self-expression into the 21st century following Schmitz's original design and construction.



**Biography:** Lohren Deeg is an accomplished designer, illustrator, and educator specializing in visual communications, urban design, master planning, and downtown revitalization. His interests also include historically appropriate infill, urban housing, greenways, public participation methods, environmental graphics, and way-finding systems. Mr. Deeg is a member of the American Society of Architectural Illustrators (A.S.A.I.). Lohren resides in Muncie, Indiana, where he is an avid cyclist and advocate for healthy communities.

**Jenny Donovan**  
**Principal, Inclusive Design**  
**Hillcrest, Tasmania, Australia**

**TITLE: Railway Stations: more than just places to get on and off trains.**

**ABSTRACT:** Our Victorian forebears ensured that railway stations were temples to the industrial age and celebrations of our ability to hurtle through the countryside and connect people and places. Perhaps less intentionally, stations have often become hubs of an organic ecosystem of care for the excluded and disadvantaged who gather there. This ecosystem comprises the work of formal agencies and the informal kindness of staff and passengers. This presentation will share insights from a study for Transport for NSW by a team from Latrobe University that I was fortunate to be a part of that has sought to create conducive circumstances for this ecosystem to thrive in railway stations whilst retaining and enhancing their transport function.



**Biography:** Jenny is a planner and urban designer. She is the principal of the urban and landscape design practice Inclusive Design. She also works for the Cradle Coast Authority as the Built Environment Projects Co-ordinator and, before that, the UN in Afghanistan where she managed a major human development and security program. Jenny is passionately interested in the social outcomes made more likely by the places we build. Throughout her professional life she has been fortunate enough to work in roles that have focussed on helping people to overcome disadvantage, meet their needs, thrive and fulfil their potential.

Jenny's recent work includes 'Care in Transit', for Transport for New South Wales which provided design and placemaking guidelines to ensure train stations reconciled the needs of all users and the steps towards Sustainability program for Waratah Wynyard Council that installed a suite of pause places in north west Tasmania. She is the author of books on socially responsible urban design, most recently "Designing to Heal" (2014) (CSIRO), "Designing the Compassionate City" (2017) and "Recipes for Urban Happiness" (2024) (Routledge).

**James Dougherty**  
**Principal, Director of Design**  
**Dover, Kohl & Partners**  
**Coral Gables, Florida, USA**

**Title:** Enhancing Legibility of Urban Ensembles at a Range of Distances, Utilizing Compositional Techniques of 19<sup>th</sup> Century Urban Architecture

**Abstract:** 19th Century urban architecture features a design vocabulary of nested compositional articulations of graded scale. These layers of building articulation evolved to be seen at a range of distances, calibrated with regard to atmospheric perspective and human optical capabilities, to aid in spatiotemporal legibility of both individual buildings and urban ensembles. This

layered, nested compositional organization assists in environmental legibility when moving through urban sequences. This paper examines specific compositional parameters of 19th Century urban architecture, and conventions for their use to enhance legibility of urban ensembles when viewed at: 1. a range of distances and 2. within a range of common, real-world lighting / weather conditions. The goal of this paper is to clarify specific ways in which compositional techniques of 19th Century urban architecture optically enhance urban legibility, and to distil actionable, testable compositional principles which may prove useful to architectural designers working within urban contexts today.

Keywords: *19th Century urban ensembles, architectural composition principles, spatiotemporal legibility*



**Biography:** James Dougherty is Principal and Director of Design at Dover, Kohl & Partners town planning. He has dedicated his career to helping communities envision and implement a more walkable, sustainable future. He began working with Dover, Kohl & Partners in 1996 and has participated in urban design and form-based coding projects throughout the United States and abroad. James works closely with the firm's other Principals, Project Directors, and Urban Designers to establish the design direction of each of the office's projects. He participates in all aspects of the office's work, including public involvement, development of master plans, regulating plans, and form-based codes. James also specializes in the creation of many of the company's three-dimensional illustrations, using a blend of hand-drawn and computer techniques.

James is co-author of *The Art of the New Urbanism, Volume 1: (1980 - 2010)*. Wiley, 2025. The book explores how the New Urbanism has dramatically transformed the way illustrations are used to advance the dialogue of community planning and place making. It is the first-ever, comprehensive collection of New Urbanist artwork. James' graphics and visualizations illustrating sustainable urban design and form-based code principles have been published in numerous books including *Retrofitting Suburbia* by Ellen Dunham-Jones and June Williamson,

*Form Based Codes* by Daniel and Karen Parolek and Paul Crawford, and *The Charrette Handbook* by the National Charrette Institute, and *Street Design* by Victor Dover and John Massengale.

James founded the Congress for the New Urbanism's urban design and illustration training series, the CNU Art Room, and co-curated the Congress for the New Urbanism exhibit *The Art of the New Urbanism* featuring over 200 visualization artworks by leading practitioners of the New Urbanist movement.

**Mike Duggan**

**Municipal Councillor for Pointe-Gatineau (Ward 12)**

**Gatineau, Quebec, Canada**

**Title: Allumette Houses in Gatineau: Heritage and Densification in Comparative Perspective with Soviet-era Khrushchevka Apartments**

**Abstract:** Rapid urbanization and housing shortages in cities like Gatineau, Québec, and former Soviet Bloc cities (Warsaw, Białystok, Kaunas, Vilnius) necessitate densification strategies that balance affordability with heritage preservation. This paper compares Gatineau's Allumette-style houses—narrow, wooden dwellings built for early 20th-century industrial workers—with Soviet-era Khrushchevka apartments, prefabricated concrete units designed for post-war urban migration. Both housing types, rooted in working-class needs, addressed physiological requirements through climate-adapted designs, such as deep foundations and wood stoves for Allumette houses and centralized heating for Khrushchevkas. Today, Gatineau employs renovations, accessory dwelling units, and heritage-inspired redevelopment to preserve Allumette houses amid densification pressures, while former Soviet Bloc cities retrofit Khrushchevkas for energy efficiency or replace them with modern towers, often retaining grid-like facades. Drawing on municipal reports, urban studies, and Maslow's hierarchy, this analysis reveals shared challenges: high renovation costs, gentrification risks, and tensions between utilitarian heritage and bourgeois urban aesthetics. By examining case studies, such as Vieux-Hull's Allumette ensembles and Vilnius' Šeškinė district, the paper argues for policy interventions—tax incentives, zoning reforms, and social housing protections—to ensure affordability and cultural continuity. These findings offer lessons for urban planners navigating heritage and housing in rapidly growing cities.



**Biography:** Mike Duggan is an independent researcher and third-term municipal councillor in Gatineau, Québec. With a diverse background in applied science, teaching, network systems, urban studies, and policy analysis, Mike delves into complex systems to understand, document, and propose innovative solutions for improvement. As a self-described "old-school geographer," he explores physical and human worlds through hands-on, first-person engagement, aiming to deepen our understanding of shared realities. His work focuses on fostering health, harmony, and sustainability for a more resilient collective future.

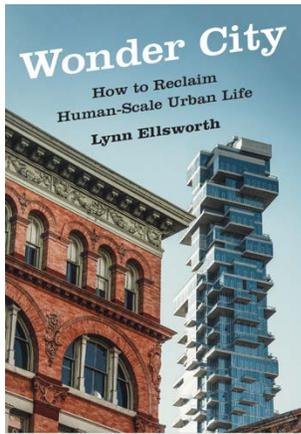
**Lynn Ellsworth**

**Founder, HumanScale NYC**

**New York, NY USA**

**Title: The YIMBY/NIMBY War in NYC- How it Started, How to End It**

**Abstract:** This is a presentation, illustrated, to analyze the political economy of the YIMBY/NIMBY war in NYC and its effect on the built environment of the city's historic core. To make a liveable city, to stop the destruction of what liveable parts we still have, are goals that are ultimately political. Will NY survive the current wave of destruction, legitimized largely to the false God of affordable housing as promoted by economist Ed Glaeser at Harvard?



**Biography:** Lynn Ellsworth is the author of *Wonder City: How to Reclaim Humanscale Urban Life* (Fordham University Press 2025). She is an economist (PhD UW-Madison) living between NYC and Paris and is the founder of Humanscale NYC, the Empire Station Coalition and the Citywide Land use Coalition in New York.

**Ricardo Fernández**  
**Project Manager**  
**Mexico City, Mexico**

**Title: Accessible & Attractive Wayfinding Renewal for Metrorrey: A World Cup-Driven Project.**

**Abstract:** Monterrey is leveraging the 2026 FIFA World Cup as a catalyst to improve its urban transit infrastructure. A major initiative is underway to modernize the Metrorrey metro system, including renewing wayfinding across existing Lines 1–3 and designing signage for new Lines 4 and 6 scheduled to open by 2026. These World Cup-driven upgrades address the immediate need to guide an influx of visitors while aligning with long-term urban mobility goals.

The redesign combines universal accessibility and local cultural identity to create an inclusive, attractive wayfinding system. A new design manual integrates accessibility features – clear visual cues, Braille/tactile elements, intuitive maps – with aesthetic enhancements to signage and station environments. Notably, heritage-inspired pictograms for each station are being introduced, drawing on the model of Mexico City’s Metro where unique icons reflect cultural heritage and aid navigation, thus transforming wayfinding into an artful place-making element that fosters community memory and pride. In parallel, key stations are being upgraded with better lighting, greenery, and pedestrian-friendly access to ensure safe, inviting “first and last mile” connections. This human-centered approach improves usability for all – including people with disabilities – and projects a modern, welcoming image of the city.

Monterrey's experience shows that investing in accessible, well-designed transit infrastructure contributes to healthier, more livable cities. The new wayfinding system encourages transit use and walking by making city navigation effortless, supporting walkability and a sustainable urban form. Emphasizing universal design ensures the metro's benefits are shared by all users, aligning with the New Urban Agenda and the principle of "Access for Everyone." By timing these upgrades with a global event, the project exemplifies rapid urban improvements that will leave a lasting legacy beyond the World Cup – inclusive mobility, enhanced public spaces, and a strengthened urban identity for Monterrey.

**Biography:** Ricardo Fernández founded the first Center for Applied Urban Research within the Government of Jalisco, subsequently serving as General Director of Planning and Tourism Development. In this capacity, he applied urban planning principles to the management of tourist destinations such as Costalegre, with a particular emphasis on integrating biodiversity into sectoral strategies. He has directed multidisciplinary teams responsible for the Comprehensive Sustainable Urban Mobility Plan of León, Guanajuato, México as well as the Strategic Plan for Tacubaya, México City. His professional trajectory further encompasses experience in the development of public spaces and housing projects. At present, he leads the redesign of the wayfinding system for the Integrated Metro System of Monterrey, Mexico, advancing a proposal that prioritizes contemporaneity, clarity, accessibility, and inclusivity for both local and international users.

**Anne Fougeron**  
**Principal Architect**  
**Fougeron Arcchitecture**  
**San Francisco, California, USA**

**Co-presenter:**  
**Kent Macdonald, Emeritus Faculty**  
**Cal Poly State University**  
**San Luis Obispo, California USA**

**Title: Remaking Housing, Remaking the City: The 2018 Housing Northwest Arkansas Initiative**

**Abstract:** Our presentation will discuss our involvement in the 2018 Housing Northwest Arkansas Initiative. Sponsored by the Walton Family Foundation, the endowment arm of

Walmart, the Initiative was aimed at promoting the creation of affordable housing in the company's home region in and around Bentonville, Arkansas. There were three parts: a housing symposium with speakers from around the country, a design studio at the Fay Jones School of Architecture, and an international competition open to professionals.

As a whole, the Initiative was just the latest in the Foundation's long string of programs aimed at improving the region's desirability as a place to live. Grants worth millions of dollars had already established or were providing on-going support for enterprises related to the arts, the environment, recreation, and education. As a result, Bentonville has acquired amenities worthy of much larger metropolises and, with them, a new caché; in some ways it seems to be a modern, "happening" city, even with a population of only some 50,000 people.

The "physical plant" of the city, however, has been stuck in a time warp, its overall growth, fueled with Walmart's rise, has followed a low-density suburban model. Strip malls, gas stations, and vacant lots alternate with new enclave subdivisions (mostly of the McMansion type) stretched out along broad arterials. The city's expansion has brought with it increased traffic congestion and commute times, as well as more profound difficulties: a dearth of appropriate housing choices, leapfrog developments that consume valuable agricultural land, and threats to scenic and natural amenities. All in all, despite the Foundation's largesse, the fabric of Bentonville has remained a patchwork of disconnected uses.

The Initiative was intended to address this fragmented cityscape by encouraging a greater range of denser housing types to create a more refined grain of physical and social connectivity. Such a setting – more walkable, less car dependent – would likely appeal to a larger, diverse population, rather than just traditional families: younger workers (Millennials), as well as empty-nesters, remote workers, and single people.

For the Potsdam conference, we will present exemplary designs from both the design studio and the international competition, as well as from our own work in private practice and architectural education. All of these show, we think, the various ways in which housing is the underlying connective tissue of the city, the essence really of the urban fabric. Remake housing and you can remake the city.

**John Gaber**  
**Director / Professor, Clemson University**  
**Clemson, South Carolina, USA**

## **Title: Seeing We: Community working relationships with local government**

**Abstract:** It does happen (more often than we think). Local community groups can have positive working relationships with local government. Albeit the vast majority of these shared projects are small (e.g., demarcation of an ethnic enclave, recognition of a public marketplace, community open space projects), they all have significant meanings in the day-to-day lives of local residents. This is not a new situation and has been documented as far back as the early 1900s. There are three new things: 1.) Starting from the counterculture revolution in the 1960s, this has been a growing grassroots evolution (not a movement); 2.) Local government and community groups are equal partners in these projects, with local government professionals doing a better job of seeing their actions from the community's perspective. 3) Both community groups and local governments see themselves in brand-new ways.

This paper/presentation is organized into three sections. I begin with a brief theoretical framework on the type of community / government relationships. This is followed with a research-based typology on the four types of community government relationships: a.) best practices, b.) all in this together, c.) seeing the big picture, and d.) data sharing and co-learning. I conclude by identifying a handful of intersections where community groups and local governments can work on seeing situations together to achieve shared outcomes for all.



**Biography:** John Gaber is a Professor and Program Director of City and Regional Planning and Director of the Pennell Center at Clemson University. Dr. Gaber recently had the second edition to his book *Qualitative Analysis for Planning and Policy: Beyond the numbers*, published by Routledge Press. He has over 30 planning research articles published in an assortment of journals including: *Journal of Planning Education and Research*, *Journal of American Planning Association*, *Journal of Architecture and Planning*, *Evaluation and Program Planning*, and *Journal of Planning Urban Development*. His most recent research projects include: Sherry Arnstein's Ladder of Citizen Participation, Hippietowns, and collective citizen participation strategies. John Gaber received his Ph.D. in Urban Planning at Columbia University and has been an AICP certified Planner for over 20 years.

**Richard Gane**  
**Practitioner and Writer**  
**Battle, Sussex, England**

**Title: Toward New Pattern Languages for a Changing World - 2**

**Abstract:** Two subjects will be discussed:

1. **How demographic changes (particularly an ageing population and the growing need for end of life provision) and social changes (single person households ) will shape our future living spaces**

One key option considered is the development of **adaptable houses**. The discussion examines why adaptable housing matters, the extent to which such homes are currently being built in the UK, and the barriers preventing wider adoption. A proposed model of an adaptable house will also be outlined, demonstrating how its design can meet the needs of different occupant profiles across time.

2. **Towards a new pattern language for a changing world**

**A pattern language of the physical frameworks – urban spaces, living spaces and their connected natural spaces**

This part summarises key proposals for a new pattern language designed for the environments where people spend most of their lives: urban and living spaces, and the natural spaces that connect them.

The model, *The Living Whole – A Pattern Language of Transformation*, has been developed over several years, latterly formalising a detailed format that also enables AI to generate and refine patterns.

At its centre is a triad of interdependent processes: the **Dynamic Engine**, the **Coherence Hierarchy**, and the **Pattern Language**. Each has value in isolation, but their true power lies in combination. Together, they transform the theory from a collection of ideas into a coherent system language capable of explaining, evaluating, and guiding transformation. In this integrated form, it becomes a practical method for both diagnosing and generating coherence within complex physical environments.

**Biography:** Richard Gane has developed original theories of design and spatial coherence, grounded in direct practical experience of taking full control of several building projects without relying on an architect, planning consultant, main contractor, or project manager. His first project, *Netherhay*, received multiple awards and was featured as the cover story and main article in the UK's largest homebuilding magazine.

He has since continued to refine his approach through further projects, research, and the development of **The Living Whole – A Pattern Language of Transformation**, a comprehensive model that integrates human needs, spatial design, and dynamic systems. His work bridges practical building experience with theoretical innovation, offering possible new insights into how patterns can evolve across scales, guiding the transformation of homes, communities, and cultural landscapes.

**Şebnem Gökçen**

**Professor, Izmir University of Economics**

**Faculty of Fine Arts and Design, Department of Architecture**

**Izmir, Turkey**

**Title: Water-Sensitive Urban Design Guidance for the livable Future; The Case of Zeytinli, Turkey**

**Abstract:** In November 2023, Izmir (Turkiye) witnessed a severe pluvial flood damaging 502 buildings. In February 2019, Crete(Greece) encountered two high-impact storms causing old Keritis bridge collapse. In Valencia (Spain) the flood in October 2024 caused 236 lives lost, affecting about 1.1 million acres. Such challenges, among many, drive us to discuss the future of urban design and architecture from the lens of sustainable water management.

In parallel to the global challenges brought by climate change, cities of the 21st century suffer from an intense water crisis. The quantity, duration and intensity of events, such as flash rains and heat waves, increase the vulnerability of both urban and rural areas. Climate change effects pose similar risks in settlements with similar climatic conditions. The magnitude of climate change events calls for immediate action to be taken via nature-based solutions. In the biggest picture, the world tries to combat the problem via Water Sensitive Urban Design (WSUD), Low Impact Development (LID), Sustainable Urban Drainage Systems (SuDS) and Best Management Practices, as evident in the vast literature and guidance materials mainstreaming resilience in planning and design of cities. However, the number of guidance materials, namely WSUD Guides, are not common in all cities of the world. There emerges an urgent need to proliferate

and implement the number of guidance materials, because they provide the shortest route to take immediate action in facilitating the use of WSUD tools on the urban scale.

There is the need to attract attention to the fact that the WSUD techniques and tools must now be an integral part of current building practices. Our approach to integration of engineering practices in sustainable stormwater management with urban design should grow as an inclusive agreement for the livability of future cities.

Based on this approach, this study includes the overall analysis of around 270 urban design guides for rainwater management from mostly Western cities. The selection criteria were mainly concerned about their placemaking approaches, adoption of spatial analyses, use of spatial typology, provision of technical details and availability of graphic materials. The comprehensive analysis of guidance materials provides us with a matrix for structural implementations and spatial typologies. This paper intends to propose a method for designing an urban design guide for a small-scale urban settlement, which is selected as Zeytinli village in Edremit, Balıkesir in Türkiye. The case of Zeytinli is unique in the sense that its relationship with water has given the village its urban character. The target is to dwell upon the topic of water sensitive urban design in case of a small settlement of Zeytinli, but with further implications for livability of cities, proposing the ways of how settlements can be designed with and for water in times shaped by climate change.



**Biography:** Şebnem Gökçen is Professor of city planning. Her academic studies focus mainly on urban design, creative and cultural industries, culture-led urban regeneration, and public art. She has taken part in various projects supported by local/national (The Scientific and Technological Research Council of Turkey – TUBITAK, the Ministry of Education, the Metropolitan Municipality of Izmir - MMI and regional Development Agencies, such as IZKA, GEKA etc.) and international (EU Erasmus +) grant programs. One of the major works has been the Izmir Cultural Economy Compendium and Cultural Economy Strategy. She has also participated voluntarily in social projects carried out by local governments in the fields of culture, art, and design and has

served as a jury member in various urban design competitions. She has been the Head of Department of City and Regional Planning in Dokuz Eylul University until her retirement. She currently works as Professor at Izmir University of Economics, Faculty of Fine Arts and Design, Department of Architecture.

**Gukhwa Jang**  
**Postdoctoral Researcher**  
**Seoul National University**  
**Seoul, South Korea**

**Co-presenter: Saehoon Kim**  
**Professor, Seoul National University**  
**Seoul, South Korea**

**Title: Strategies for managing vacant lots and enhancing thermal comfort in shrinking cities**

**Abstract:** As population decline intensifies in some areas globally, the proliferation of vacant lots presents both challenges and opportunities for climate-responsive urban planning. This study focuses on identifying policy implications for developing "decline-oriented strategies" to enhance urban thermal comfort during both summer and winter. We evaluate four surface treatments (concrete pavement, permeable soil, grass cover, and grass with tree canopy) across three spatial configurations (clustered, linear, and dispersed) using ENVI-met microclimate simulations. Our findings reveal temporal variations in planning effectiveness: while daytime thermal comfort showed minimal sensitivity to surface treatments in both seasons (except for tree canopy interventions), nighttime conditions demonstrated significant thermal comfort variations across all treatments. Strategies that ameliorate summer nighttime heat stress consistently exacerbated winter nighttime thermal discomfort, revealing fundamental seasonal trade-offs in passive thermal management approaches. Additionally, spatial configuration emerged as a key moderating factor, with clustered vacant lot patterns yielding superior thermal comfort improvements compared to dispersed or linear arrangements. Therefore, this study confirms that the spatial management strategies of vacant lots influence the local thermal comfort, suggesting that strategic approaches are needed to manage the increasing number of vacant lots and mitigate the extreme weather events caused by climate change.

**Chris Hardwicke**  
**Principal, Agent Urban**  
**Calgary, Alberta, Canada**

**Title: LeBreton Flats Master Concept Plan: Reimagining Urban Futures Through Integrated Design**

**Abstract:** The LeBreton Flats Master Concept Plan represents a transformative approach to urban development that directly addresses the architecture of our livable future. This comprehensive case study examines how the redevelopment of Ottawa's 29-hectare LeBreton Flats exemplifies the "big rethink" required in contemporary urban planning practice, moving beyond traditional development orthodoxies to embrace integrated, human-centered design principles.

Situated at the confluence of the Ottawa River and downtown core, LeBreton Flats presents a unique opportunity to demonstrate how thoughtful urban design can simultaneously address climate resilience, social equity, and ecological restoration. The master plan challenges conventional development patterns by prioritizing mixed-use density, active transportation networks, and green infrastructure systems that work in harmony with natural watershed dynamics.

This study analyzes how the plan's innovative approach to public space design, affordable housing integration, and climate-adaptive building strategies offers a blueprint for sustainable urban futures. By examining the project's community engagement processes, environmental remediation strategies, and economic development models, we reveal how the architecture of livability emerges from the intersection of environmental stewardship, social justice, and economic viability.

The LeBreton Flats redevelopment demonstrates that our settlements can indeed become platforms for addressing interconnected challenges of emissions reduction, resource conservation, and equitable human development. Through its emphasis on 15-minute neighborhood principles, Indigenous knowledge integration, and circular economy strategies, the plan illustrates how built environment professionals can reshape urban orthodoxies to create spaces that truly serve both people and planet.

This case study ultimately argues that the future of urban architecture lies not in singular building solutions, but in the careful orchestration of systems that support human flourishing within planetary boundaries.

**Biography:** Chris Hardwicke is the founder of Agent Urban. He is a registered professional planner, a member of the Royal Architecture Institute of Canada and an urban designer with over 25 years of experience. Chris is guided by the principle that urbanism is a vehicle of social change and renewal. This philosophy extends from the design of public places to embracing the broader principles of healthy cities. His commitment to city building is internationally recognized through award winning projects such as the Building LeBreton Master Plan in Ottawa; exhibitions at the Dieppe Biennale, the Van Alen Institute in New York. His design work has been published by leading design publishers including Canadian Architect, NAI Publishers, Domus, Monacelli Press, Princeton Press, Birkhauser, and MIT Press. Chris has taught as a sessional lecturer at the universities of Waterloo, Toronto, and Calgary where he currently teaches Urban Design Theory.

**Justin Hollander**

**Professor, Tufts University**

**Medford, Massachusetts USA**

**Title: Findings on Spatial Cognition, Stress and Well-Being in Architectural Research**

**Abstract:** This paper explores the intersection of AI, eye-tracking, and empirically based architectural research to uncover how horticultural elements impact spatial cognition, stress, and well-being. Through data from eye-tracking studies, this presentation reveals the cognitive and physiological effects of green spaces, providing architects with insights into designing environments that promote public health, safety, and welfare.

The proposed session addresses the essential role of AI and empirically based research in architecture, demonstrating how understanding human spatial cognition through data-driven insights can shape healthier urban environments. By focusing on horticultural elements and spatial perception, the session highlights how cutting-edge technologies like AI and eye-tracking empower architects to design spaces that promote wellness, reduce stress, and encourage healthier lifestyles. This research-driven approach is crucial to the evolution of the architectural field, as it allows professionals to create more effective, evidence-based design solutions.

In urban design and architecture, there is a critical need to create environments that promote health and cognitive well-being, yet much of design theory remains rooted in intuition rather than empirical evidence. This session addresses the gap by exploring how human spatial cognition—shaped by factors like exposure to green elements—impacts individuals' well-being in designed spaces. Current research using AI and eye-tracking allows for detailed empirical analysis of how horticultural elements affect physiological and cognitive responses, offering insight into factors like stress reduction, attentiveness, and lifestyle behaviors.

**Biography:** Justin Hollander, PhD, FAICP, is a Professor of Urban and Environmental Policy and Planning at Tufts University, where he also directs the Urban Attitudes Lab. He earned a B.A. in Political Science from Tufts (1996), an MRP in Regional Planning from UMass Amherst (2000), and a PhD in Planning & Public Policy from Rutgers (2007). His research spans urban change (growth, decline, redevelopment), the intersection of cognitive science and design, big data urban analytics, and community well-being under physical change. He is Editor-in-Chief of the *Journal of Planning Education and Research*, has published multiple books and dozens of articles, and has been recognized with awards including the 2025 William R. & June Dale Prize for Excellence in City & Regional Planning.

**Jung Hyeongu, Student**  
**Seoul National University**  
**Seoul, South Korea**

**Title:** A Study on Visitors' Perceptions of the Old Downtown Area: Focusing on Daejeon, Korea

**Abstract:** As regional population decline accelerates in South Korea, the importance of visitor populations is growing. In response, policies now aim to attract both permanent residents and repeat visitors through incentives like travel discounts. A notable example is Sungsimdang, a famous bakery in Daejeon, which gained viral popularity in late 2022. Following this, Daejeon's tourist numbers rose from 69 million to 75 million (Korea Tourism Data Lab).

Sungsimdang is located in Daejeon's old downtown, an area facing decline due to urban sprawl and public institution relocation. Despite this, 77.5% of Daejeon's visitors include Sungsimdang in their itinerary (2024 Daejeon Tourist Survey), and many explore nearby attractions within walking distance, suggesting a spillover revitalization effect.

However, existing tourism research mostly relies on quantitative methods, lacking insight into visitors' subjective motivations. To address this, the study applies Kevin Lynch's urban image theory to create mental maps that illustrate how visitors perceive and navigate the old downtown. These maps, constructed via surveys, will be analyzed alongside visitor behavior to explore the relationship between spatial perception and tourist activity.

The study focuses on Daejeon's central areas—Jungang-dong, Daeheung-dong, and Eunhaeng-Seonhwa-dong—as both declining and target zones for revitalization. Expected findings include

Sungsimdang as a key mental map node, along with nearby food and retail attractions, indicating a dominant pattern of culinary and shopping tourism.

This research contributes by examining the psychological motivations behind tourism, addressing a gap in existing studies that focus mainly on behavior rather than perception. The results aim to inform strategies for sustainable tourism and revitalization in urban decline areas like Daejeon's old downtown.

**Bin Jiang**

**Professor of Geoinformatics**

**Director, LivableCityLab**

**Hong Kong University of Technology**

**Guangzhou, China**

**Title: Living structure + AI for generative design in architecture and cities**

**Abstract:** Design in architecture and cities has long been challenged by the need to reconcile structural coherence with stylistic diversity. We propose a conceptual framework that unites the theory of living structure with artificial intelligence (AI) as a foundation for a new mode of generative design. Living structure, as articulated by the late Christopher Alexander, emphasizes hierarchical order, nested substructures, and the principle of “far more smalls than larges” as essential for beauty and human well-being. Building on these principles, we outline a skeleton–skin paradigm in which structural hierarchies (“skeletons”) are iteratively generated to capture coherence, while stylistic requirements are expressed through AI-enabled surfaces (“skins”) that adapt to context and preference. The significance of this work lies not in specific algorithms—still under active development—but in articulating a new design philosophy that brings together human-centered theories of spatial order with emerging generative technologies. By framing design as the integration of skeleton and skin, structure and style, this approach opens a pathway toward adaptive, resilient, and aesthetically grounded environments. We argue that this synthesis has the potential to establish a new field of research at the intersection of living structure and AI, advancing both the science of design and the practice of city-making.



**Biography:** Dr. Bin Jiang is Professor at The Hong Kong University of Science and Technology (Guangzhou) [HKUST(GZ)], with dual appointments in Urban Governance and Design, and Computational Media and Arts. He is the founder and director of LivableCityLAB and serves as Acting Master of Residential College 1. He also chairs the International Cartographic Association Commission on Digital Transformation and sits on editorial boards including *Computational Urban Science*. His research bridges urban informatics, complexity science, and architectural and urban design, advancing living structure theory as a foundation for more sustainable and human-centered cities. He has pioneered quantitative metrics such as the L-score (Living Structure Score) and B-score (Beauty Score), operationalized through the Beautimeter, to scientifically evaluate structural beauty and aliveness in architecture and urban space. These innovations highlight the value of crossdisciplinary approaches that connect spatial analysis, digital technology, and aesthetic theory. Dr. Jiang has held academic roles across Europe and Asia and advises organizations such as Beijing City Lab and the International Society of Biourbanism. His work continues to integrate theory, technology, and design practice to advance the creation of adaptive, livable cities.

**Jeonghye Kim**

**Ph.D Student**

**Seoul National University**

**Seoul, South Korea**

**Co-presenter: Saehoon Kim**

**Title: The Invisible Cost of Inaction: Long-Term Neglect in Aging Apartments and the Erosion of Urban Livability**

**Abstract:** Across the world, mass housing developments built in the mid to late 20th century are now rapidly aging, and many apartment complexes over 40 years old face serious deterioration.

In South Korea, large-scale apartments constructed in the 1970s and 1980s are reaching the end of their design life, yet many remain neglected due to legal, financial, and social constraints.

This study empirically examines the socio-economic consequences of long-term neglect in aging apartment complexes, focusing on a regional Korean city experiencing population decline. A mixed-methods approach is employed, combining quantitative analyses—including a Hedonic Price Model (HPM) and Life Cycle Cost Analysis (LCCA)—with qualitative analyses using text mining, stakeholder interviews, and surveys.

The research is guided by the hypothesis that while asset values decline gradually, maintenance costs and social tensions increase more rapidly and nonlinearly.

Findings highlight how the prolonged inaction on aging housing stock leads to compounding financial and social burdens. They suggest the need for timely public interventions, such as reconstruction, to mitigate future socio-economic costs. The results provide significant implications not only for South Korea's housing management strategies but also for other global cities confronting similar challenges of aging infrastructure.



**Biography:** Kim Jeonghye is a PhD student in Urban Planning at Seoul National University. Her research has focused on urban regeneration and smart cities since her master's program, and now centers on housing policy and strategies for deteriorated housing. She employs urban data analysis and comparative case studies to explore long-term housing deterioration and its policy implications.

**Glen Johnson**  
**Associate Professor**  
**CUNY Graduate School of Public Health**

New York, New York USA

**Title: “Green Gentrification”: Case Study of New York City**

**Abstract:** As programs and policies designed to improve urban health and sustainability have matured, many urban scholars question the fairness of their implementation. Our study addresses this issue by evaluating the association of census tract-level gentrification in New York City with both the creation or renovation of major green spaces and investment in a municipal brownfield Voluntary Cleanup Program (VCP). For each tract, we computed an index of gentrification based on the relative change of key input variables for the years 2000 through 2019. Using a 400-meter edge buffer for each tract, we then computed the percent overlap with major parks that were recently created or renovated and the number of properties remediated through the city’s VCP program. The proportion of remediated VCP sites, relative to the number of properties designated with possible environmental hazards, was significantly higher among tracts in the top 20th percentile of gentrification, relative to tracts in the lowest 20th percentile (9.8% vs 4.3%, p-value <0.0001). Simultaneous autoregressive spatial error models, with or without adjusting for geographic strata (pre-determined from k-means clustering), revealed positive effects from the number of VCP sites, which were consistently strong (p<0.001), and from park proximity (1 if any percent overlap, 0 otherwise), which were marginally significant (0.02<p<0.09) but which modified (p<0.001) the effect of VCP sites. These quantitative results, together with geovisualization, document how the phenomenon of green gentrification may be associated with multiple interacting forces; plus certain sustainability initiatives may distribute environmental improvements unevenly, favoring neighborhoods undergoing redevelopment and subsequent gentrification.



**Biography:** Glen Johnson is an Associate Professor in the Department of Environmental, Occupational and Geospatial Health Sciences at the City University of New York (CUNY) School of Public Health. He specializes in quantitative geospatial and spatio-temporal methods, with a variety of public health outcomes.

Particular research and consulting projects within the past three years include: 1) Developing a small area index of gentrification for New York City (NYC), 2) Identifying environmental health exposure inequities associated with selective public and private spending related to gentrification, 3) Evaluating effects of non-pharmaceutical interventions on Covid growth from a spatio-temporal perspective, comparing the US to Japan, 4) Developing quantitative community health needs indices in New York State to assist public health agencies with resource allocation decision-making and 5) Measuring and mapping soil lead contamination throughout NYC.

**Saehoon Kim**  
**Professor / Vice Dean**  
**Seoul National University**  
**Seoul, South Korea**

**Title: Defining a Shrinking and Livable City: Adaptive Built Environments in an Era of Depopulation**

**Abstract:** The global phenomenon of urban shrinkage presents a challenge to conventional growth-oriented planning paradigms. While many cities worldwide are experiencing population decline, the prevailing discourse often frames this as a narrative of inevitable decay. This presentation challenges that assumption by proposing a new framework for a "shrinking and livable city" — a city that successfully maintains a high-quality living environment and functional vitality despite a decreasing population.

To explore this, I apply the principles of urban scaling laws, developed by Luís Bettencourt, to the context of urban decline. In growing cities, social and economic outputs such as innovation and wealth scale super-linearly ( $\beta > 1$ ) with population. We posit that in reverse, shrinking cities face the risk of a "super-linear collapse," where social connectivity and economic vibrancy decline at a disproportionately faster rate than the population itself.

My central argument is that strategic interventions focused on enhancing and maintaining "livability"—access to quality amenities, robust social infrastructure, and attractive public realms—can serve as a counter-mechanism to this negative scaling effect. By focusing on the quality of life for the remaining residents, cities can foster a new form of adaptive resilience, decoupling urban vitality from population size.

This presentation will provide empirical evidence through case studies of five South Korean municipalities officially designated as population decline areas: Samcheok, Hadong, Yeongam, Geochang, and Andong. I will analyze how these cities are implementing unique strategies to preserve their quality settlement environments, thereby sustaining their attractiveness and social fabric. This research aims to redefine urban success in an age of depopulation, shifting the focus from quantitative growth to qualitative resilience and livability.



**Biography:** Dr. Saehoon Kim is a professor and the Vice Dean of the Graduate School of Environmental Studies at Seoul National University. His research focuses on the challenges of contemporary urbanism, particularly sustainable urban regeneration in the context of population decline. He explores a wide range of topics, including urban design, innovation, lifestyle trends, social behavior, and the use of big data to reshape urban environments. Dr. Kim's recent work investigates effective urban models for an aging society, strategies for shrinking cities, and the impact of the pandemic on urban life, funded by grants from the National Research Foundation of Korea.

**Jeongseob Kim**

**Professor**

**Ulsan National Institute of Science and Technology**

**Ulsan, South Korea**

**Title: Co-Creating Compact-Network Cities: Lessons from Citizen-Led Living Labs in Shrinking Korean Cities**

**Abstract:** Many cities in South Korea's non-Seoul metropolitan regions face continuous population decline driven by low birth rates, aging, and the concentration of people and resources in the Seoul Capital Area. In response, many have pursued urban expansion through new residential and industrial developments on city outskirts to attract population and jobs. However, such strategies are increasingly ineffective amid persistent population loss and shrinking demand, highlighting the need for alternative urban spatial approaches. A compact-network spatial structure—characterized by infill development, concentration of urban functions into walkable neighborhoods, and enhanced connectivity via public transport—offers a sustainable alternative for declining cities. This structure can improve infrastructure efficiency, public service provision, mobility, and overall quality of life.

This study presents the process and outcomes of a citizen-led Living Lab conducted over one year in Miryang and Andong, two representative shrinking small cities in Korea. The Living Lab combined field observations, spontaneous citizen interviews, future visioning workshops, expert workshops, and a civic event called FESTA. The future workshops used a board game-inspired method with cards representing values, places, living zones, and activities to redesign urban space and envision mobility solutions. Participants' ideas were compiled into a "future newspaper" with ChatGPT. Expert workshops refined these ideas into actionable short- and medium-term projects aligned with institutional frameworks. Through FESTA, the results were shared with citizens via exhibitions, public debates, and policy seminars, gathering feedback. Final outcomes were submitted to city governments as policy recommendations. This study highlights residents' perspectives on future urban transformation and offers practical lessons for sustainable regeneration in shrinking cities.



**Biography:** Dr. Jeongeob Kim is a Professor of the Department of Civil, Urban, Earth, and Environmental Engineering at Ulsan National Institute of Science and Technology (UNIST). His research interests lie in housing policy, urban regeneration, and smart cities with an emphasis on applications of AI and urban big data analytics. Prof. Kim is undertaking an National Research Foundation of Korea (NRF)-funded study that seeks to address the complex challenges of shrinking small cities by employing AI and urban analytics for systematic diagnosis, while advancing an innovative citizen participation model grounded in living lab methodologies.

**Rob Knapp**

**Emeritus Professor of Physics and Sustainable Design**

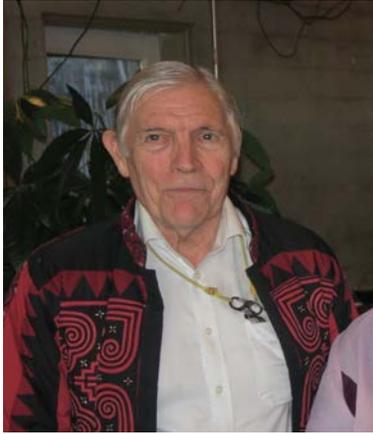
**Berkeley, California, USA**

**Title: Toward New Pattern Languages for a Changing World - 1**

**Abstract: Toward New Pattern Languages for a Changing World – 1**

This is the first half of a two-part workshop (see also Richard Gane) to model the generation of patterns for building and settlement which take account of the major changes under way in this era. This part will center on sustainable design and the serious difficulties of bringing together the engineering approach to low-impact buildings and the experience of thoroughgoing liveability. Though much is known on both sides, the professions of the built environment have generated few examples in which they come together.

A brief orienting talk will address the need for Alexander-style patterns to address this problem, aided by one striking case study. Guided small-group and whole group discussion will follow, assembling related examples of places with strong elements of liveability and sustainability and considering what core elements they share across cultural and climatic differences. The session will not assume specific expertise, engineering or otherwise. The joint work is to find clues to patterns for green building; the goal is an agenda of live possibilities, ripe for further exploration.



**Biography:** Dr. Robert H. Knapp, Jr. joined the faculty of The Evergreen State College in 1972, the second year of full operation for this innovative institution. His training in physics at Harvard (BA magna 1965) and Oxford (Rhodes Scholar, D. Phil 1968) has been the grounding for two kinds of teaching: undergraduate physics (all levels) and ecological design (beginning and intermediate). He has been a recipient of the college’s Burlington Northern Award for Innovation and Excellence in Teaching, and has twice served as academic dean. He has been visiting professor or scholar most recently at Waseda University, Tokyo, and previously at the University of London (Transport Studies Group), Cornell University (Program on Science, Technology and Society), Kobe University of Commerce, and Hawaii Community College. Now retired from Evergreen, his scholarly activity continues, centering on “green” architecture, especially on the interplay of technical, organizational, and emotional forces in mainstream institutional buildings. In such buildings, needs for energy efficiency, resource effectiveness, regulatory fairness, user expectations, and aesthetics may collide, but can also generate resolutions of unexpected integrity; Knapp’s research aims to understand the circumstances of such success stories. The most recent product is *Bananas in Snow Country* (Sustasis; 2024), an extended reflective profile of the iconic Lovins home/office in Snowmass, Colorado.

**Hyein Kwon**

**PhD Candidate**

**Seoul National University**

**Seoul, South Korea**

**Co-presenter: Jaeseung Lee**

**Title: A Microscopic Pedestrian Simulation Approach for User-Centered Transit Design**

**Abstract:** As metropolitan transit networks expand and demand for transit-oriented development (TOD) increases, the efficiency and pedestrian-friendliness of transfer centers have become critical urban concerns. However, many transfer centers remain rooted in supply-driven planning, resulting in long transfer distances, excessive vertical circulation, and insufficient wayfinding—ultimately diminishing user comfort and walkability. This study proposes a simulation-based, pedestrian-centered methodology to evaluate and improve transfer center design, with the goal of achieving Level of Service (LOS) B or higher.

Using the Daejeon Integrated Transfer Center in South Korea as a case study, we developed a detailed 3D spatial model and employed microscopic pedestrian simulation (VISSIM) to quantitatively analyze pedestrian flow and travel times across key transfer paths. The simulation was calibrated with field-measured data, revealing average transfer distances exceeding 270 meters and transfer times over five minutes, resulting in an overall LOS grade of 'F'. Particularly, the KTX–subway transfer route demonstrated the poorest performance due to frequent vertical transitions and spatial disconnection.

Through scenario-based design evaluation, the study identified structural bottlenecks and proposed spatial strategies such as minimizing vertical movement, directly connecting transit modes, and improving pedestrian continuity. This approach offers empirical evidence for transitioning transfer centers from mere infrastructure to inclusive, accessible public spaces. Ultimately, the findings contribute to reducing automobile dependency while enhancing urban mobility, livability, and sustainability.

**Hyein Kwon**  
**PhD Candidate**  
**Seoul National University**  
**Seoul, South Korea**

**Co-presenter: Saehoon Kim**

**Title: Sustaining Urbanity through Commercial Power**

**Abstract:** As urban decline accelerates due to low birthrates, aging populations, and regional depopulation, many mid-to-large cities across the globe are witnessing a profound erosion of their urban character. Among the most affected components is the vitality of commercial districts, which serve not only as engines of economic productivity but also as anchors of urbanity—defined by social interaction, spatial cohesion, and cultural vibrancy.

This study introduces the Commercial Power Index (CPI) as a multidimensional framework to assess how commercial districts contribute to sustaining urbanity in the face of demographic decline. Moving beyond conventional retail metrics, the CPI incorporates six dimensions: economic vitality, structural stability, diversity, spatial anchoring, resilience, and local identity.

Using the South Korean city of Daegu as a representative case of a shrinking metropolitan area, the research analyzes data from 2015 to 2022 to construct and apply the CPI. Findings indicate that commercial areas with high CPI scores are better positioned to retain population, foster social activity, and maintain spatial continuity—ultimately mitigating the pace of urban decline.

The results challenge policy approaches that emphasize cosmetic improvements such as façade renovations or youth-oriented malls, highlighting instead the need for deeper, data-driven strategies grounded in socio-economic realities. By redefining commercial districts as multifunctional, community-rooted infrastructures, this study offers a new paradigm for adaptive and sustainable urban regeneration applicable to shrinking cities worldwide.

**Hyein Kwon**

**PhD Candidate**

**Seoul National University**

**Seoul, South Korea**

**Co-presenter: Yeoryung Seo**

**Title: The Urban Role of Nighttime Commercial Vitality in Population-Declining Cities**

**Abstract:** As global cities increasingly adopt night-time economy policies and 24-hour urban strategies, the focus of urban vitality has expanded from a spatial to a temporal dimension. A growing consensus holds that truly livable cities must function not only during the day, but across the entire temporal spectrum. Cities experiencing population decline often sustain daytime activity through industrial or administrative functions, but see a sharp contraction after dark—rendering the city effectively dormant at night.

This study empirically investigates how nighttime commercial vitality—measured through pedestrian density between 6 p.m. and 11 p.m.—influences broader indicators of urban vitality. Focusing on five population-declining metropolitan cities in South Korea (Busan, Daegu, Daejeon, Gwangju, and Ulsan), the research analyzes approximately 250 commercial districts using 2023 mobile population data and business registry records.

The analysis explores how nighttime vitality relates to the following indicators: (1) business survival rates, (2) startup activity, (3) youth population ratio (ages 20–39), and (4) number of employees (as a proxy for local jobs). Preliminary findings indicate that districts with higher nighttime vitality tend to show greater economic stability, more active entrepreneurial activity, and higher youth retention. Moreover, nighttime commercial clusters often function as spatial anchors in declining inner-city areas, playing a stabilizing role.

This study empirically demonstrates that nighttime commercial districts serve as strategic assets for enhancing urban sustainability. It underscores the need for targeted infrastructure investment, policy support, and integrated 24-hour urban planning to strengthen the long-term vitality of regional cities.

**Alexandros A. Lavdas**

**Tenured Senior Researcher, Eurac Research, Bolzano, Italy**

**Head of Psychology, Webster University, Athens Campus, Greece**

**Board Member, The Human Architecture and Planning Institute, Concord, MA, USA**

**Title: Examining biometric correlates of emotional responses to visual stimuli.**

**Abstract:** Biometric methods are increasingly employed across commercial and research domains, and the advent of affordable wearable sensors has further expanded their applicability. In parallel, the development of software enabling remote recording of participant responses, without the need for laboratory visits, facilitates the recruitment of larger and more diverse volunteer cohorts. Building on work presented at the previous IMCL conference, the present study leverages these newly accessible biometric tools to extend beyond eye-tracking, examining biometric correlates of the participants' emotional responses to visual stimuli. The aim is not to supplant human intuition or aesthetic judgment—emotional responses, by definition, are subjectively experienced—but to complement them with objective, quantifiable evidence. Given the continued dominance of architectural and urban design paradigms widely perceived as misaligned with user preferences, such data-driven insights have the potential to support a shift toward more human-centered approaches in the shaping of the built environment

**Biography:** Alexandros A. Lavdas, MSc, PhD, is a tenured Senior Researcher Neuroscientist at Eurac Research, Bolzano, Italy, Head of Psychology at Webster University, Athens Campus,

Greece and a board member at The Human Architecture and Planning Institute, Concord, MA, USA.

He holds a PhD from University College London (UCL) and has worked at UCL and the Hellenic Pasteur Institute in Athens, and taught at the University of Indianapolis (Athens branch). He has worked extensively in nervous system development and regeneration, and is especially interested in examining elements of visual organized complexity, such as those found in nature and pre-modern architecture, and exploring their psychophysiological correlates.

**Haeryung Lee**

**Ph.D Student**

**Seoul National University**

**Seoul, South Korea**

**Title: Unraveling the Integrated Impact of Pedestrian Activity Rhythms and Street Spatial Contexts**

**Abstract:** Understanding pedestrian activity is a fundamental aspect of urban planning and design, and has long been a central topic in urban research. The diverse and continuous flows of pedestrians play a crucial role in generating and sustaining urban vitality, which in turn serves as a key component in shaping successful urban spaces. Cities exhibit rhythms and patterns shaped by the spatiotemporal repetition of human movement and activity. Street vitality emerges from these ongoing and varied interactions as people navigate urban spaces across different times of day and week. The rapid advancement of digital technologies and big data analytics has opened new frontiers in urban research, enabling the investigation of urban phenomena with unprecedented spatial and temporal granularity. In cities like Seoul, mobile phone signal-based data has become a powerful resource for capturing real-time pedestrian dynamics and urban mobility patterns. This form of big data enables analysis of urban activity and street-level pedestrian flows in ways previously unattainable. Focusing on commercial districts in Seoul, Korea, this study aims to: (1) propose a novel typological framework for streets based on the temporal patterns of pedestrian activity, and (2) examine the spatial and environmental factors that shape these street-level rhythms. This research contributes to urban studies by establishing a new temporal street typology that bridges big data analytics with urban design principles, offering a replicable framework for understanding urban rhythms in other metropolitan contexts. The findings provide data-driven insights for urban planners and policymakers seeking to design more vibrant and economically resilient commercial districts, and offer evidence-based strategies for street-level interventions.

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**Max LeMarchant**

**Owner, New Amherst Homes**

**Cobourg, Ontario, Canada**

**Title: 21st Century Town: A Regenerative System for Building Livable, Human-Scaled Communities.**

**Abstract:** What if we could revive the timeless values of town-making—beauty, walkability, human connection, ecological balance—and deliver them through the tools and technologies of the 21st century? 21st Century Town is a new model for real estate and community development that addresses the most urgent urban challenges of our time: housing unaffordability, social disconnection, ecological imbalance, and exclusion from the development process.

This presentation introduces a regenerative system that empowers communities to conceptualize, finance, and build their own human-scaled, mixed-use towns—reconnecting people to place, to each other, and to nature. Drawing on three decades of practical experience, including the New Urban-designed New Amherst Village in Ontario, and supported by the forthcoming 21st Century Town digital platform, this system blends traditional town planning with cutting-edge financial democratization and ecological design.

At a time when megacities dominate policy and development capital, and urban containment has driven housing costs out of reach for many, this approach offers a proven, bottom-up alternative. It is deeply informed by the principles of New Urbanism, pattern language, and the biological and evolutionary systems that have long shaped successful settlements. At the same time, it embraces contemporary tools—digital syndication, crowd-based investment, and open-source design frameworks—to scale these principles effectively and inclusively.

The presentation will share both the conceptual foundation and real-world applications of the 21st Century Town model, demonstrating how citizen developers, small builders, and mission-aligned investors can participate in creating truly livable, sustainable, and affordable communities.

Aligned with the IMCL 2025 themes of Revival, Urban Form and Social Equity, and The Ecology of Place, this work aims to inspire a new generation of town-makers to shape places that are not just livable—but worthy of love.

**Biography:** Max LeMarchant is the founder of 21st Century Town LLC, a development framework and forthcoming digital platform dedicated to building livable, human-scaled communities for the 21st century. He is also the principal of Plan Master Construction & Development Inc. and New Amherst Homes, the developer of New Amherst Village in Cobourg, Ontario—one of Canada’s earliest New Urbanist communities.

With over 35 years in real estate, planning, and construction, Max brings deep, hands-on experience in creating walkable, ecologically attuned neighborhoods that prioritize quality of life, affordability, and social connection. His work integrates traditional town planning with emerging financial tools to reconnect people with place, nature, and one another.

Max is the author of *The 21st Century Town*, a forthcoming book and web-based platform launching in Fall 2025. He lives in Cobourg, Ontario, and continues to be deeply involved in community development both locally and internationally.

**Xiangyi Li**  
**PhD Candidate**  
**Hong Kong University**  
**Hong Kong, China**

**Title: Strategic Interactions in the Adoption of Prefabricated Construction: A Game-Theoretic Analysis of Government, Developer, and Community Dynamics**

**Abstract:** Prefabricated construction has emerged as a key strategy to promote sustainable urban development, offering benefits such as reduced carbon emissions, lower noise and air pollution, improved construction quality, and enhanced worker safety. In high-density cities like Hong Kong, where land is limited and environmental pressures are growing, the government has actively promoted Modular Integrated Construction (MiC) as a way to modernize the building sector. Despite these efforts, adoption remains limited, suggesting deeper structural and behavioral challenges among key stakeholders.

This study applies a game-theoretic framework to analyze the strategic interactions among three core actors: government, developers, and communities. The model incorporates multiple decision

factors, including government incentives (e.g., additional gross floor area allowances), environmental fines for traditional construction, developers' cost-benefit calculations, and reputation effects. Community behavior is also modeled, particularly its tendency to oppose traditional construction due to its disruptive environmental impacts.

Simulation results based on the Hong Kong context show that while community pressure encourages developers to consider prefabrication, it is not sufficient to drive large-scale adoption on its own. Meaningful change occurs only when strong government incentives are combined with a reduction in the relative cost of prefabricated methods. The model reveals that aligning stakeholder interests through a combination of financial support, regulatory measures, and market-driven benefits is essential to accelerate the transition. This research offers practical insights into how policy and economic levers can be used more effectively to support sustainable construction adoption in urban settings like Hong Kong.

**Biography:** Xiangyi Li is a PhD student in sustainable urban transitions whose work bridges construction and transportation. Using ABM and game theory, [he/she/they] evaluates the environmental and policy dynamics of prefabricated buildings, and assesses EV performance across global climates alongside tariff–subsidy impacts on China's EV industry.

**Justin Heejoon Lim**

**Assistant Professor**

**Seoul National University, Seoul, South Korea**

**Title: Parametric Simulation of Urban Rainwater Flow Using Grasshopper: Toward Designer-Centered Flood Resilience**

**Abstract:** The increasing frequency and intensity of extreme rainfall events, exacerbated by climate change and urbanization, underscore the urgent need for integrative water management strategies in urban design. This study presents a parametric modeling framework for rapid simulation and analysis of rainwater flow using Grasshopper, a visual programming plugin for Rhino 3D. Unlike conventional hydrological tools such as the Storm Water Management Model (SWMM), which require extensive calibration and specialized data inputs, this approach enables early-stage flood risk assessment directly within design environments.

To evaluate surface runoff and flood-prone zones, the workflow integrates Grasshopper plugins such as Kangaroo2 for physics-based particle simulations and Anemone for iterative computation. The script was tested on over 20 flood-prone areas in Seoul, South Korea—a city

increasingly exposed to extreme weather events and associated socio-economic impacts. Simulations were conducted across varied topographies and validated against historical flood hazard maps published by the Ministry of the Interior and Safety. Results show strong spatial correlation between modeled flow accumulation zones and documented flood areas, confirming the tool's reliability for design-integrated flood analysis. While underground drainage systems are not yet incorporated, the framework offers strong potential for further accuracy through additional data integration.

This study reveals the applicability of Grasshopper for environmental and urban flood analysis, demonstrating its potential as a resilient design support tool that adapts across spatial scales, responds dynamically to site modifications, and remains accessible to non-specialists. A key finding is that urban morphology and topography significantly influence surface water flow, underscoring the need to integrate these spatial conditions early in the design process. Compared to SWMM, the tool offers faster, visually intuitive outputs without requiring complex hydrological data. By bridging simulation and design within a unified platform, the framework supports proactive flood mitigation and advances climate-responsive urban planning.

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**Biography:** Justin Heejoon Lim is an Assistant Professor at the Graduate School of Environmental Studies at Seoul National University, where he teaches and researches urban planning, urban design, and climate and sustainability technologies. He holds a Master of Science in Architectural Studies (SMArchS) in Architecture and Urbanism from the Massachusetts Institute of Technology. His current research focuses on simulation-based urban design, using computational modeling, scenario testing, and digital simulation tools to inform resilient and adaptive urban futures.

Before entering academia, he spent over a decade as an urban designer at Skidmore, Owings & Merrill (SOM) in Chicago and Los Angeles, serving as an associate and practice leader for Southern California. During his time at SOM, he led and contributed to international projects including the Nanjing Xiaguan Riverfront Master Plan, Jinan Central Business District, and Nanchang Xianshan South Road in China, as well as Central Barangaroo in Sydney, Australia. His professional practice emphasized integrating ecological systems, resilient infrastructure, and the public realm within large-scale metropolitan contexts.

At Seoul National University, Justin combines academic inquiry with practice-based expertise, fostering collaboration among students, practitioners, and policymakers to reimagine more sustainable, data-informed, and resilient cities.

**Maya Ljubojevic**

**Researcher**

**University of Strathclyde**

**Glasgow, UK**

**Title: Thriving City Initiatives and “Bumping Places” as Places of Connectivity**

**Abstract:** Uncovering places of connectivity in cities helps to tackle urban issues of loneliness and adjoining public health issues. Using participatory methods such as photovoice and participatory geographic information systems (PGIS) methods, we can empower communities to showcase and explain their lived experiences with urban place and connection. This can in turn support the implementation of policy and design surrounding urban planning and governance to create more liveable cities. The concept of ‘bumping places’ could be part of the solution to urban disconnect, isolation, and loneliness and can manifest in a variety of ways from convivial moments at a post box or bus stop to more planned environments such as community centres or sports clubs. This presentation puts forward the final findings of a PhD project investigating Thriving City Initiatives, a novel approach to public mental health in cities, and uncovers the perspectives of those living in these cities. It combines qualitative photovoice data – images taken by participants and descriptions written by them – with quantitative analysis of their mapping of the locations using spraycan software to identify where they feel least and most lonely.

The utilisation of these methods could be of interest to architects, urban planners, and policy makers in cities and the findings of this work can be used to inform practice to improve the connectivity and liveability of our cities worldwide.

### **Biography:**

Maya Ljubojevic is a researcher at the University of Strathclyde who specialises in urban health and wellbeing in the context of loneliness and connection. Maya lectures on place-based inequalities and works for the Centre for Health Policy at Strathclyde. She holds an MPH International Development and a BA Geography & Economics. She has recently completed her PhD in Public Health and Health Policy, exploring Thriving City Initiatives - a novel approach to population-level public mental health in urban contexts. Most recently she has developed a keen research interest in the intersections of human connection and physical spaces, culminating in her published work on 'bumping places'.

**Devon McAslan**

**Researcher in Urban Mobility**

**Chalmers University of Technology**

**Gothenburg SE**

**Title: Evaluating the 15-Minute City: Insights from Seattle and Gothenburg on Accessibility, Mobility, and Urban Form**

**Abstract:** The 15-minute city concept/X-minute city has become an important urban ideal to promote active mobility and increased urban accessibility. Recent studies explore the X-minute city using proximity-based accessibility to examine a range of destinations. However, many studies do not adequately examine a broad diversity of uses called for within the X-minute city, nor do they consider transport options that support active mobility or the importance of a vibrant neighborhood center as a condition of the X-minute city. In this presentation, I present findings from multiple projects related to the X-minute city.

First, I present a proposed evaluation framework for neighborhoods that incorporates considerations for population and density, destinations, mobility infrastructure, and the public realm. The evaluation is applied in Seattle, WA on urban villages, which have been used as a growth management strategy since 1991. Findings show that centrally located urban villages align with the X-minute city concept while those in lower density areas perform well in destination diversity but retain car-oriented urban fabrics and lack alternative mobility options and infrastructure supportive of walking and cycling.

Second, I will present findings on neighborhood destinations from workshops conducted in Gothenburg in spring 2025. These workshops use the ‘flower of proximity’ concept to have residents evaluate and map the relative importance of destinations. This work elaborates on the specific types of destinations that are important to each category of the X-minute city and aims to determine their relative importance in terms of proximity to home.

These two projects on X-minute cities demonstrate the need to expand the X-minute city concept and to include broader ideas of urbanism beyond destination accessibility, to include metrics on infrastructure and built environment factors supportive of walking and cycling. While the 15-minute city has become popular, little work has helped to elaborate the concept or to apply it in the context of existing practices for neighborhood and urban development.



**Biography:** Devon McAslan is a researcher in urban mobility at Chalmers University of Technology. His work explores urban planning, policy and governance issues related to sustainable transportation transitions. His research focuses on how cities plan and build sustainable transportation solutions and emphasizes finding ways to better integrate land use planning, transportation, and urban design that will enable cities to reduce automobile dependence, promote walkability, and transition to low carbon transport systems. Specific areas of work include the role of parking regulations on travel, shared mobility (such as car sharing, bike sharing, and shared cargo bikes), and neighborhood planning and 15-minute cities. A major focus is on the impacts and practices of car-reduced and car free urban development in an international context. This work considers the design, planning, implementation and impacts of different urban environments and their role in fostering more sustainable cities and travel.

**Crystal Murillo, Aurora City Council, Ward 1**

**Juan Marcano, National Director of Governance Programs, New American Leaders, and Colorado Transportation Commissioner, District 3**

**Aurora, Colorado USA**

**Title: Social Cohesion, Extremism, and the Built Environment**

**Abstract:** This presentation will focus on how the North American urban form dissolves social cohesion, segregates “in groups” (ethnic/racial majorities) from “out groups” (immigrants/communities of color), and how a new urbanist built environment is an important part of the strategy for strengthening social cohesion and creating a shared reality.



**Biography:** Crystal Murillo (she/her/ella) is the Executive Director for Colorado People’s Alliance and also serves as the Ward 1, Aurora City Council Member. Aurora is the third largest city in Colorado of 400,000 people and the most diverse city in the state. She grew up in Aurora, Colorado where she and her brother were raised by a single mother and Mexican immigrant. Crystal was the first in her family to graduate from high school and graduate college earning a Bachelors in International Business from the University of Denver.

She began her political career at 23 years old when she made the bold decision to run for office. She became the first Latina and youngest person elected to the Aurora City Council and is currently serving in her second term. Crystal was appointed to the State Council on Juvenile Justice and Delinquency Prevention (JJDP) to center youth lived experience in the criminal legal system. She has also served in various leadership roles and committees including as Co-Chair of Regional Transit District’s Accountability Committee and for 5 years Chair of the Housing, Neighborhood Services and Redevelopment Committee. She led the effort to develop Aurora’s first strategic housing plan to preserve and expand the affordable housing stock and will continue to push for more equitable growth and development throughout the City.

In her role at Colorado People’s Alliance, she continues to advance systemic change by building power and developing leaders in directly impacted communities.

Hobbies: “I love going on adventures with my two dogs – Iggy and Mila – and when we are not binge watching a good TV show you will find us hiking or at a lake kayaking. I also enjoy traveling and experiencing different cultures and have recently found a love of exploring more of the wonderful local places in Colorado.”



**Biography:** Juan Marcano is the former Ward IV Council Member for the City of Aurora. He chaired the Transportation, Airports, and Public Works policy committee for four years, and also represented Aurora on the Arapahoe County Transportation Forum Executive Committee.

Before running for office, Juan was a BIM manager in the AEC (Architecture, Engineering, and Construction) industry, working on a wide range of projects for public and private sector clients, to include K-12 schools, retail developments, residential developments, commercial offices, medical and petrochemical laboratories, and criminal justice facilities.

After leaving office, Juan joined New American Leaders as the National Director of Governance Programs. In this role he works with New American (first- and second-generation immigrants) elected and appointed officials across the nation to provide them with educational opportunities, policy advice, and other supportive programming to help them succeed in their leadership. He also serves as the Operating Board Chair for the East Colfax Mixed-Income Neighborhood Trust, where he puts his public and private sector experience to use in helping guide the MINT’s efforts to acquire and renovate housing along the Colfax corridor in Denver and Aurora.

Juan lives in Aurora, Colorado, with his wife Aly and their two cats, Davos and Olenna.

**Amira Osman**

**Professor in Architecture and the South African Research Chair in Spatial Transformation  
Tshwane University of Technology**

**Pretoria, South Africa**

**Co-presenters:**

**Louis Oosthuysen**

**Tlhogello Sesana**

**Title: Liveability and Lovability: Definitions and Methodologies**

**Abstract:** This paper will distinguish between liveability and lovability in the built environment, both being important qualities to aspire to, and both having specific translations into buildings and space, how they are designed and delivered. Firstly, some definitions will be offered: Liveable = equitable, beautiful, functional and resonating with many people, over many years. Lovable = sustainable by accommodating and embracing diversity, choice, change and embedded in context. This will be unpacked by considering routes, nodes and public space, edges and blocks. Each of these items will then be distinguished in terms of policy, design, finance systems, procurement methods and delivery mechanisms. The study will present an approach that is specific to the cities of the global south, which are seen to be unique yet undermined in global measures of what constitutes successful urban settings. Cities of the global south offer diverse opportunities for low income groups, allow access and affordability, create community and accommodate both locals and migrants. Many, thus, also offer cultural variety, vibrancy and dignity. While it is important not to romanticise or brush over the challenges, we cannot overlook the benefits. From a policy perspective, the argument presented will emphasise how strategies to include informality as part of future visions is crucial (this will be presented as an implementable approach rather than a vague principle as is often the case), as is the development of guidelines for street edge activation and enforcing those guidelines through strict development approval strategies and a reward and penalty system. From a finance perspective, alternative strategies are presented on how government funding must be directed to collective open space and streets rather than to individuals and groups. This immediately takes the focus away from specific buildings or developments and places more importance to the spaces in between buildings, the routes and the parks, the latter also perceived as opportunities for urban forests and food production nodes. From a procurement and delivery perspective, this paper will focus on what it means exactly to support small-scale construction industries. This principle translates very specifically into design, detailing, and implementation strategies which will be explained in some detail. While these specific themes are not exhaustive, they are believed to be key to a broader set of criteria that constitutes liveability and lovability in cities. This paper will build on past and current research being conducted at the Tshwane University of Technology in South Africa.

**Biography:** Amira Osman is a Sudanese/South African architect, researcher, academic, activist, public speaker, and author. She is a Professor of Architecture at Tswane University of Technology and holds the position of the South African Research Chair in Spatial Transformation. Amira is the past President of the South African Institute of Architects (SAIA). Amira has extensive curating international events, coordinating complex programmes and exhibiting and managing diverse teams.

**Biography:** Tlhologello Sesana is an architect, award winning innovator, entrepreneur, designer, maker and storyteller who draws inspiration from her own indigenous culture(s). As the co-founder of Sesana Sesana Studio, she explores her research interests through innovation and artisanship. Her practice uses these modalities to shape narratives, confront history, and foster healing at various scales, from furniture to public exhibitions and building systems. She graduated from Tshwane University of Technology (TUT) with a Master of Architecture degree and is currently a doctoral candidate. She has gained experience in the academic sphere as a lecturer and external examiner for local and international universities.

**Biography:** Louis Oosthuysen is a SACAP-registered Professional Architect and academic collaborator with over two decades' experience in complex South African projects. He leads civic, housing, and educational developments, mentoring students and contributing to research supporting Professor Amira Osman at TUT. His academic and professional engagement is complemented by his contribution to the Architective Building Construction Standards eBook, affirming his dedication to bridging practice, scholarship, and design for social transformation.

**Xiuyuan Piao**  
**Ph.D. Student**  
**Seoul National University**  
**Seoul, South Korea**

**Co-presenters:**  
**Professor Saehoon Kim**  
**Professor Jae Seung Lee**

**Title: Urban Leisure Environments and Quality of Life in Shrinking Cities: The Mediating Role of Health Behavior**

**Abstract:** Urban shrinkage is becoming a globally widespread phenomenon. In shrinking cities, population decline, aging demographics, and underutilized infrastructure have led to a reduction

in the number and availability of public spaces and facilities, eroding structural support for residents' quality of life (QoL). Rethinking livability in this context requires deeper understanding of how the built environment continues to support QoL under decline. This study examines how urban leisure environments affect QoL through health behavior, focusing on two Korean provinces—Jeollabuk-do and Gyeongsangbuk-do—as case regions. Based on Andersen's behavioral model, we employed PLS-SEM analysis on municipality-level data to evaluate effects of four types of leisure environments—cultural, sports, pedestrian, and green—on walking behavior and QoL (physical and mental health). In non-shrinking cities, cultural and sports facilities were significantly associated with increased walking and improved QoL. However, in shrinking cities, these facilities—while physically present—often became “inactive spaces” due to reduced demand, aging populations, inactive programming, and social disconnection. In contrast, green spaces emerged as the only environments that consistently promoted walking and supported QoL. Green spaces in shrinking cities offer more than just places for exercise; they are low-barrier, low-cost, and socially flexible spaces. For older adults, they serve as essential public resources for daily movement, restorative experiences, and a sense of place. In many shrinking communities, they are the last remaining settings for unprogrammed, health-promoting activity. These findings suggest broader implications for cities facing decline. In shrinking urban contexts, QoL depends not on the number of facilities, but on the accessibility and everyday functionality of space. Planning should prioritize the maintenance, activation, and social embeddedness of green spaces to support health equity where traditional infrastructure has failed.

**Biography:** Piao Xiuyuan is a Ph.D. student in the Interdisciplinary Program in Environmental Studies and Landscape Architecture at Seoul National University. During her master's studies, she focused on the theme of creative cities, exploring environmental features and design strategies that can enhance the quality of life for urban residents. Her current research examines the quality of life and health of residents in shrinking cities. Utilizing statistical analysis of urban data, she explores pathways toward “smart shrinkage,” aiming to identify strategies that enable cities to retain a high quality of life even amid demographic and economic decline.

**Yodan Rofè**

**Senior Lecturer**

**Ben Gurion University of the Negev**

**Tel-Aviv - Jaffa, Israel**

**Co-presenter: Or Ettliger, Building Beauty**

**Title: Can We Distinguish Between Good and Bad Environments? - Lecture and Workshop**

**Abstract:** The lecture and workshop proposed concentrate on various concepts and techniques developed by Alexander in his theory and practice, and refined by the author and other instructors in the Building Beauty Program. It will introduce the concepts of "Life", Wholeness and Beauty - as the triad supplementing Alexander's well known Quality without a Name (QWAN) in the Nature of Order. The concept of Centers as a field that emerges from the wholeness and supports it, and the 15 ways (or properties) in which they do so. The personal nature of order will be introduced, and the use of the mirror of the self test as a way to distinguish between places and things that have more or less life.

Participants in the workshop will be able to test their ability to use these concepts in the environment around the conference center, using maps and photographs of the areas visited.

**Carlos Rueda**  
**Associate Professor, Department of Architecture**  
**University of Manitoba**  
**Winnipeg, Manitoba, Canada**

**Title: *Para~Doxa: Historical Immanence in the Bremer Landesbank Building by Caruso St John Architects***

**Abstract:** This text addresses the relevance of the notion of *historicity*—or immanence of the past, and history, in who we are and what we do—in a contemporary context, as manifested in the conception and experience of a building in the city. Conceptually, the subject is elaborated based on a construct around the idea of *para-doxa*—a Greek term appearing in Aristotle that Paul Ricoeur refers to in his studies on metaphor. Architecturally, it is exemplified with the building for the Bremer Landesbank Headquarters in Bremen (2011-2016) by Caruso-St. John Architects. It is argued that the work in question gives evidence of a form of *historicity* or *historical presence* that—unlike pre-post-and neo-modernist stylistic approaches—defies chronologies. Poetically and ontologically, the work embodies accumulated know-how and experiential resonances embedded in architectural forms, techniques, and traditions, affording “attunement” to place thus favouring subjective and social existential orientation.



**Biography:** Associate Professor and former Architecture Department Head at the University of Manitoba, Carlos Rueda's doctoral dissertation (McGill, 2009, ARCC Medal) elaborated on generative processes, hermeneutics, and the phenomenology of place. Dr. Rueda directs and coauthors two series of bilingual, peer-reviewed publications on architecture, place, and landscape history, theory, and criticism: *Syndesis* and *Paths of Modernity*, and keeps a critical practice in Colombia with Monumental Arquitectos <http://www.monumental.com.co>. Dr. Rueda taught at McGill from 2003-2015—where he received the Gerald Sheff Award—and, in Bogotá Colombia, at Uniandes, Unal, UPC, and Javeriana. He has been published in Europe and the Americas and has a book in preparation about the poetics of historicity and tradition in contemporary architecture.

**Yeoryung Seo**

**Ph.D. Student**

**Seoul National University**

**Seoul, South Korea**

**Co-presenter: Saehoon Kim**

**Professor, Seoul National University**

**Seoul, South Korea**

**Title: Reframing Urban Decline through Temporal Livability: Developing the Time Vitality Index(TVI)**

**Abstract:** Urban decline is a complex phenomenon shaped by interrelated factors such as population loss and physical deterioration. Conventional diagnostics, however, overly rely on demographic and socioeconomic indicators, often failing to capture how cities actually function and feel to their residents. These metrics frequently miss early signs of decline—like reduced service access or underused public spaces—which appear long before statistical population loss

is recorded. Consequently, areas with similar demographics can exhibit vastly different levels of livability.

This study reframes urban decline through the lens of temporal livability—a perspective evaluating how urban structures support residents' ability to use time efficiently and meaningfully. While time is a universal resource, the urban environment structurally conditions how it can be used, directly impacting quality of life.

To operationalize this approach, we developed the Time Vitality Index (TVI), a composite metric designed to assess the multidimensional nature of residents' daily time use. As a pilot application, the TVI was tested across 25 administrative districts in Ansan, South Korea, a city undergoing sustained population decline. The results reveal spatial disparities in temporal livability, independent of demographic trends. Notably, the analysis identifies "growth paradox" zones—areas with rising populations but poor temporal livability—and "hidden vitality" zones, which exhibit strong temporal conditions despite population loss.

The TVI offers a new diagnostic lens, shifting the focus from what cities look like to how people live, move, and experience time within them.

**Biography:** Yeoryung Seo is a Ph.D. student in the Interdisciplinary Program in Urban Design at Seoul National University. During her master's studies, she investigated community-based urban regeneration through the lens of Everyday Urbanism, analyzing how residents actively use diverse urban spaces beyond officially provided facilities, and how conflicts, informal practices, and alternative space-making shape the lived experiences of regeneration areas.

Her current doctoral research extends this perspective by developing a new framework to diagnose urban vitality through time and urban experience. Focusing on shrinking cities, she explores residents' temporal experiences to identify new directions for urban design research that can sustain quality of life amid decline.

**Hyungyum Seo**

**Student**

**Seoul National University**

**Seoul, South Korea**

**Title: A Comparative Study on the Spatial Structure of Gwanghwamun Square Before and After Redevelopment - Focusing on Visibility Graph Analysis (VGA) Based on Space Syntax Theory**

**Abstract:** Gwanghwamun Square, a symbolic public space in central Seoul, underwent major redevelopments in 2009 and 2022, reflecting shifts in urban design priorities and civic identity. The 2009 project aimed to restore historical continuity and foster civic engagement with a pedestrian-friendly square, while the 2022 redesign restructured the layout westward and expanded green and resting areas to improve public amenities and environmental quality. Despite these interventions, few studies have quantitatively assessed whether the redesigned square fulfills its intended civic and functional roles.

This study compares the spatial configuration of Gwanghwamun Square before and after the 2022 redevelopment using Visibility Graph Analysis (VGA) based on Space Syntax theory. Digitized plans of the 2009 and 2022 layouts were analyzed to measure visual integration and connectivity, evaluating how spatial changes influence visual coherence, accessibility, and functional performance. The analysis identifies notable shifts in spatial legibility and potential pedestrian experience, revealing both improvements and unintended fragmentation in certain zones.

The findings demonstrate VGA's value as a diagnostic tool for assessing urban square performance, offering insights into how design choices shape civic usability and public perception. The study underscores the critical influence of spatial configuration on accessibility and vitality, highlighting the importance of incorporating quantitative analysis into design and evaluation. By bridging empirical assessment and design objectives, this research contributes to evidence-based strategies for creating more effective, inclusive, and resilient urban public spaces.

**Michelle Sofge**  
**Editor, Classic Planning Herald**  
**Classic Planning Institute**  
**Berlin, Germany**

**Title: The New Frankfurt Old Town and the Tyranny of Authenticity: Unpacking the Case against Reconstruction**

**Abstract:** In 2018, the city of Frankfurt, Germany, completed the reconstruction of its 'Old Town'. The site, encompassing the historic center of Frankfurt, had been destroyed in the Second World War. This initial destruction was then followed by a 'secondary destruction' of postwar rebuilding efforts characterized by auto-centric, modernist constructions. The recently completed 'New Old Town' project removed these postwar layers, replacing them with a mixture of historical reconstructions and new buildings. The project has been variously derided by critics as a

Disneylike theme park, and applauded by residents for its success in restoring the city center's 'original character', with both camps invoking claims to 'authenticity'.

While proponents of the project point to the recently reconstructed Old Town as an 'authentic' expression of the city's identity and history, others claim it is a falsification of history, or even a 'simulation'. Claims to authenticity appear frequently in contemporary architectural debates, particularly those surrounding reconstructions. The term 'authenticity' however, while frequently deployed, is often vague and ill-defined. This is because the concept of authenticity has developed and evolved over time - particularly since the nineteenth century - and is a fluid and contested concept, one with a history of debate and interpretation.

My talk will explore how different concepts of authenticity have been understood and deployed in the discourse surrounding architectural conservation, historic reconstruction and the construction of new historicizing or classicizing structures. The talk will trace the development of the concept from its beginnings in the eighteenth century, to its emergence as a significant criterion in the period following the Industrial Revolution, arriving finally at the recent attempts to codify the concept and its subsequent 'weaponization' in current architectural debates. The aim is ultimately to 'disarm' many of the voices which are critical of reconstructions, by grounding this position in its particular historical context.



**Biography:** Michelle Sofge is an Associate Editor at The Classic Planning Herald International and a PhD candidate in Urban Monument Preservation and Cultural Heritage at the Technical University of Berlin. Michelle specializes in the history and theory of eighteenth and nineteenth century art and architecture as well as in the development of the architectural conservation practice. Her current research examines the controversies surrounding the reconstruction of Frankfurt's Old Town.

**Parker Speaker**

**Graduate Student - Macro Social Work & Urban Planning Researcher**

**Virginia Commonwealth University**

**Richmond Virginia USA**

**Title: Pockets of Justice as Community-Driven Social Infrastructure**

**Abstract:** Municipal agencies trumpet preparedness, yet residents shoulder the daily work of survival. Neighborhood food pantries, mutual-aid exchanges, and ad hoc shelters surface in the gaps of zoning maps. These adaptive arrangements, termed pockets of justice, are community-driven infrastructures that sustain life while remaining precarious, under-resourced, and vulnerable to political co-optation.

Drawing on Roy's urban informality, Gilmore's organized abandonment, and Costanza-Chock's design justice, this work reframes such interventions as double-edged. Life-sustaining on one side, they are also folded into planning as tools of containment, propping up a "livable" image measured by walkability scores rather than housing security or infrastructural equity.

Comparative case studies of Richmond, VA, and other density-driven cities show how neoliberal governance fractures care into disconnected responses. Spatial mapping and policy analysis reveal how carceral urbanism and austerity planning manufacture abandonment while rewarding aesthetic compliance; these same cities often top livability indices yet maintain stark disparities in who is allowed to thrive.

To imagine the architecture of a truly livable future, this work advances structural livability, an approach anchored in spatial interdependence, coordinated care, and democratic community control. Guided by global municipalist experiments such as Fearless Cities and grounded in Indigenous stewardship and abolitionist praxis, this work contends that justice must be woven into the urban fabric rather than appended later as performative reform. A city will be judged not by how many pockets of justice endure, but by whether its built environment has erased the conditions that make them necessary.

**Chris Stapleton**

**Stapleton Transportation and Planning**

**Sydney, Australia**

**Title: Transport 2060: Pros and Cons of Autonomous Vehicles**

**Abstract:** 21 Interventions is an optimistic look at how Autonomous Vehicles and Artificial Intelligence can be harnessed to reuse our current infrastructure more efficiently whilst addressing demographic changes, zero fatalities and climate change.

**Biography:** After completing a diploma of Civil Engineering in 1965 he joined Freeman Fox Wilbur Smith who were conducting the London Transportation Plan and was the first to enter a public transport network for computer analysis. Recognised for his analysis of connectivity he worked in Rotterdam, Edinburgh, Taipei and Kuala Lumpur before joining Ove Arup in Sydney initially specialising in Local Area Traffic Management [LATM] and setting up his individual consultancy in 1975. Four years of research in Europe and Australia led to a commission on Local Street design; and publication of "The Streets Where We Live". At the same time he was instrumental in the design of major rail and tollways roads in Sydney through to the independent publication of the Sydney Integrated Transport Strategy" in 2007.

In the meanwhile after a Masters in Urban Design he conducted many High Street and new area designs in Australia and in 1990 branched out again joining an international team to win a design competition for Taiyuan China, another street design manual in Abu Dhabi, and assistance in the design of the Abu Dhabi Capital City and New Parliament House in Canberra.

The early work on LATM lead to a series of projects understanding the movement of vehicles in traffic streams and enhancing the capacity of Arterial Roads in Sydney; (Military Rd [1970] including S-Lanes – 22% increase in capacity followed by Transit Lanes and signal phasing at micro level in Parramatta Rd 7% increase in capacity [2000].

This information leads to the possibilities of enhancing safety and capacity through AI and AV.

Chris Stapleton  
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**Thanos N. Stasinopoulos**  
**Architect - Professor**  
**Izmir University of Economics**  
**Izmir, Turkey**

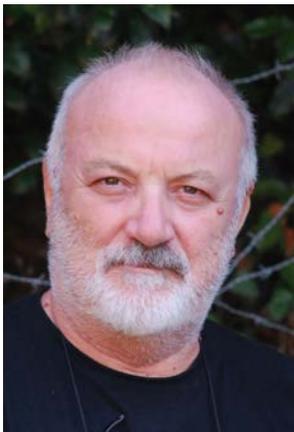
## **Title: Aquapuncture: Applying Rainwater Harvesting for Urban Cooling**

**Abstract:** The Urban Heat Island (UHI) effect intensifies urban overheating, necessitating sustainable alternatives to energy-intensive cooling solutions. While green-blue infrastructure provides passive cooling, its dependence on potable water can be environmentally costly. This paper introduces Aquapuncture, a patented system that utilizes Rainwater Harvesting (RWH) to operate decentralized, evaporative cooling stations.

The methodology involves designing Basic Aquapuncture Units (BAUs)—shaded structures that integrate rainwater collection, storage, and evaporative cooling elements such as misters and fountains. Using Izmir, Turkey, as a case study, we demonstrate how this approach can transform stormwater from a waste product into a resource for mitigating thermal discomfort. The system reduces reliance on municipal water and energy grids by harnessing the latent heat of evaporation to cool local microclimates.

Aquapuncture embodies the 'New Water Paradigm' by proposing a scalable network of urban oases. These oases are designed to enhance climate resilience, social equity, and ecological sustainability by restoring the local water cycle, combating UHI effects, and beautifying the cityscape.

The BAU concept has been granted a patent by the Turkish Patent and Trademark Office.



**Biography:** Thanos graduated from National Technical University of Athens School of Architecture in 1975. He received his Graduate Diploma from Architectural Association Energy Course in 1986, and his PhD from NTUA in 1999 with a dissertation on solar radiation and geometric forms. His long academic career at various schools of architecture in four countries has primarily been focusing on green design, which has also been implemented in his private

architectural practice. His expertise on building construction is accompanied by extensive work on applied geometry, CAD, interior design, and visual arts. He has been with Izmir University of Economics since 2013.

**Josh Stewart**

**Architect**

**Salt Lake City, Utah, USA**

**Title: Water Features in Our Urban Spaces – Recognizing and Promoting their Benefits**

**Abstract:** Great cities and beautiful urban places have traditionally included fountains and water features as part of their urban environments. In addition, religious worship has also included fountains and water as part of sacred experiences.

Environmental psychologists are finding that when we are near, in, or on water, hearing rhythmic sounds of water, like waves or a gentle stream, can have a soothing effect, promoting relaxation, and a sense of peace. Water's calming presence can lower stress levels and decrease feelings of anxiety, providing a natural escape from the pressures of daily life. Water may also encourage mindfulness and lead to improved focus and creative thinking. In addition, boosted compassion and empathy, improved mood and well-being can all be a result of connecting with water.

Despite all these benefits, current trends in institutional cost cutting may cause operations and maintenance managers to eliminate water features.

This presentation will share examples of handsome water features and highlight their positive impacts. It will also focus on how to effectively communicate the benefits of water features. As an architect currently working on religious buildings that have traditionally included water features, little has been done to articulate the benefits of water features.

As public, community leaders and institutional leaders recognize the benefits of connecting with water, the hope is that existing water features will be maintained and cherished and new water features will be added to our shared spaces.



**Biography:** Josh Stewart is an architect and urban designer living in Salt Lake City, Utah. He is a past board member of CNU Utah chapter and current board member of the ICAA Utah chapter. He has worked on urban design and architecture projects in Salt Lake City and various locations around the world. He currently works with the Special Projects Department of The Church of Jesus Christ of Latter-day Saints.

**Christine Storry**

**Principal, Utopia Architects**

**Brisbane, Queensland, Australia**

**Title: The Classical and the Contemporary: A Tale of Two Cities - Cologne and Cincinnati**

**Abstract:** The form cities take, and their architecture, have very important connections to their geography, history and culture, that are often overlooked in their desire to modernise. What remains a challenge for each living city, is how it adapts to the challenges modernity presents it with, while staying true to these foundational elements of its character. It is these layered accretions that often create the delight we experience in historic cities, and provides way-finding, reassurance, continuity and renewed inspiration in younger cities.

So it is no contradiction in the discipline of architecture for it to be both backward looking and forward looking, in the present era, at the same time. After-all, both Neoclassicism and Modernism, take their cues from the architecture of Ancient Rome and Greece.

To better explore this contradiction, and the complexity it reflects, this paper explores in more depth, two lesser known cities, Cologne in Germany (from the Old World) and Cincinnati in the

USA (from the New World), as a side by side comparison, to tease out the implications of a city rooted in the Classical past and another city rooted in the dawn of modernity, consequent on European exploration of, and settlement in, the Americas.

Cologne, the fourth largest German city, located on the Rhine River, today is famous for its unique pale yellow Kolsch beer and having the tallest twin spired Cathedral in the world. While Cincinnati, the third city of the American midwestern state of Ohio, located on the Ohio River, is best known for the Taft Museum of Art and the Cincinnati Oktoberfest, the largest outside Munich.

To begin our exploration of these two cities we are going to consider both a downtown walking tour and a day in the life of an average family residing in the city, to see what we can learn about liveability, from the lens of both a tourist to the city and residents within the city.

**Hon. Robert F. Sullivan, Esq., Mayor**  
**Troy Clarkson, PhD, Chief Financial Officer**  
**Brockton, Massachusetts USA**

**Title: Architecture, Air, and Art: Preserving Civic Identity Through Green Retrofitting in a Transit-Oriented Downtown**

**Abstract:** Brockton, Massachusetts, a historic post-industrial city located in the New England region of the northeastern United States, is reimagining its downtown through transit connectivity, investment in art history, and public health prioritization. At the heart of this transformation is Brockton City Hall, a landmark of Romanesque Revival architecture built in 1894. Known for its original murals, intricate woodwork, and museum-like civic interiors, the building provides not only municipal services but also a publicly accessible home to historical artwork and cultural artifacts.

A recent modernization project focused on upgrading the building's heating, ventilation, and air conditioning (HVAC) systems, along with restoring its slate roof. This effort demonstrates how technical improvements to aging infrastructure can simultaneously advance climate resilience, energy efficiency, and historic preservation. The new systems regulate indoor climate conditions,

helping to protect delicate frescoes, and architectural details that were previously obscured or deteriorating. By restoring access to these features and improving temperature protection, the project enhances both the building's physical integrity and its civic and neuroaesthetic value while building climate resilience.

City Hall is centrally located near regional public transportation, just a short walk from the train station and local bus terminal, making it a prime example of transit-oriented development in a smaller urban setting. Rather than demolishing and rebuilding, Brockton is reinvesting in its historic assets to create a more walkable, inclusive, and climate-friendly city center.

As mid-sized cities around the world confront the dual challenges of aging infrastructure and climate change, Brockton's approach offers a replicable model: preservation and sustainability are not competing priorities, but mutually reinforcing strategies for building healthier, more equitable communities.



**Biography:** Mayor Robert F. Sullivan was born and raised in Brockton, MA.

He is the son of Robert and Susan Sullivan and grew up in Brockton. He attended Brockton Public Schools (Whitman Elementary School, West Junior High School) and graduated from Brockton High School in 1988. He earned his BA and MBA at Boston College, and his JD at the New England School of Law.

Prior to being elected Mayor in 2019, he has served on the Brockton City Council as a Councilor-At-Large since 2006. In that role, he was elected by his colleagues to serve as the City Council President five times.

He previously served as a volunteer Board Member of the Good Samaritan Medical Center (2009-2019), the St. Joseph Manor Nursing Home, and the Brockton Historical Society.

He is a volunteer youth soccer, baseball, and basketball coach within the City of Brockton. He is a member of Our Lady of Lourdes Church. He is married to Maria (Luizzi) Sullivan, who also grew up in Brockton, and they have three children.



**Biography:** Troy Clarkson is a public administrator, author and speaker with more than 25 years of experience of leadership in government and public service, Dr. Troy Clarkson has been involved in public service since his election to the Falmouth Select Board, a local elected office, in 1993. In 2024, he was named as Falmouth’s “Outstanding Citizen of the Year” by the local Chamber of Commerce. He served on the Falmouth Select Board for twelve years before moving into executive positions in local government, serving as Town Manager for both Bridgewater and Hanover and as County Administrator for Plymouth County, the oldest county in the United States. In 2019, Mr. Clarkson was appointed as Chief Financial Officer for the City of Brockton.

Mr. Clarkson holds a Bachelor's degree in Political Science from Boston College, a Masters in Public Administration from Bridgewater State University, and a Ph.D. in Organizational Leadership from Adler University. He is also an adjunct professor at Bristol Community College and Southern New Hampshire University, a published author, and writes a weekly newspaper column in the Falmouth Enterprise.

**Teresa Sweeney Meade (Terri)**  
**Assistant Principal Architect, Office of Public Works,**  
**Head of Conservation,**  
**National Monuments, Historic Properties and Capital Works Delivery,**  
**Jonathan Swift Street, Trim**  
**County Meath, Ireland**

**Title:** A Fragile Town Tapestry: Urban Regeneration Mechanisms as Catalysts for the Revitalisation of Connaught Street, Athlone.

**Abstract:** In the depths of the Covid-19 global pandemic, a project was initiated to look at disused and forgotten urban areas of Athlone, a large town in the centre of Ireland. This was intended to complement a large infrastructural Irish and EU funded flood alleviation scheme taking place there. The potential became apparent that this was a unique opportunity to bring back a sense of connectivity and encourage a celebration of the town's rich and turbulent history. This could be realised through the reintegration of the forgotten and disused public spaces into the town fabric. New uses were also proposed which recalibrated the relationship between the town, its past history and the river Shannon. Critical research already published made it possible to re-present and re-establish the storytelling around the urban richness and historical significance of the town. Some town planning schemes developed were short-sighted; particularly in the latter half of the last century. In retrospect, the decisions made to fill in part of the canal located at the western side of the town, the abandonment of the western side of the river's railway station buildings and the creation of public open spaces, utilising surplus-to-requirements pockets of land, were not positive developments. Green spaces were generally assigned for public use from left over spaces. They were often out of scale with their surroundings and arbitrarily connected to adjacent social housing estates. However, these well-intentioned 'Garden City' inspired developments were welcomed by the community and generations of the people of Athlone raised their families in these housing estates, which are still there. The period envisioned for the realisation of this project is seven years: from 2020-2027.



**Biography:** Teresa Sweeney Meade FRIAI, RIBA is an Assistant Principal Architect and the Head of Conservation at the Office of Public Works. She delivers projects related to the Conservation and Maintenance of more than 780 National Monuments and National Historic Properties under the ownership or guardianship of the State. Terri has focused on a career in Architecture over the last 25 years. She was awarded a Masters' degree in Urban and Building Conservation from University College Dublin in 2003 and in 2022, achieved a Masters' in Professional Leadership from the Atlantic Technological University. She is currently working to fulfil actions set out by

the Irish Government, including the Project Ireland Government Policy for Enhanced Amenity and Heritage. It represents investment in culture and heritage that will drive the creation of a vibrant culture and 'self-sustaining centres of social cohesion'. She is also working on projects that fall within the parameters of the Heritage Ireland 2030 National Heritage Plan, the OPW Biodiversity Action Strategy 2022-2026 Policy Plan and the Strategy for World Heritage in Ireland, 2024-2034.

**Marjo Uotila**  
**Founder & Chair**  
**INTBAU Finland**  
**Turku, Finland**

**Title: Democracy and community engagement: how advocacy campaigns work for better cities**

**Abstract:** In 2025, INTBAU Finland, the Finnish chapter of the International Network for Traditional Building, Architecture & Urbanism (INTBAU), in collaboration with the Architectural Uprising network, launched a public awareness and advocacy campaign engaging key stakeholders, including especially policymakers, municipal election candidates and the general public. The campaign's methodology was rooted in dialogue and democratization—a rejection of top-down planning in favor of co-created urban visions. The campaign was conducted in the context of municipal elections.

The campaign focused on three primary theses:

1. **Beauty and Comfort:** Urban planning must prioritize architectural styles that people find appealing and humane. Buildings should create emotional bonds between residents and their surroundings, reinforcing a sense of place and pride.
2. **Environmental Compatibility:** New construction should harmonize with existing settings—blending with landscape and heritage rather than disrupting it. This includes the use of sustainable materials, local techniques, and scale-sensitive design.
3. **Community Engagement and Inclusivity:** Residents should have real agency in shaping their environments. Planning processes must include early-stage design alternatives and transparent decision-making to reflect diverse perspectives.

The campaign garnered cross-party support, with backing from four party chairmen and a wide range of municipal election candidates, from liberal to conservative. This broad appeal

underscores one of the campaign's central insights: the theses transcend political divisions. They speak to shared values—belonging, memory, beauty—that resonate across ideological lines.



**Biography:** Marjo Uotila is the founder, board member, chairperson, community manager, and content curator of several networks dedicated to promoting sustainable, human-centered architecture, building practices, and urban planning. Her work aims to foster the creation of livable, attractive, and aesthetically enriching environments. With over 25 years of experience, she has led a range of international strategic networks focused on research and innovation, as well as the built environment.

She was honored to be nominated for the Cultural Personality of the Year award by Finland's cultural institutions in recognition of her contributions to the field.

In addition, she serves on the boards of multiple organizations devoted to cultural heritage and historic buildings. She is also a former elected member of the Kaarina City Council, where she chaired the Urban Development Committee. She has co-authored the book *Kohti kauniimpaa kaupunkia* (Towards a More Beautiful City), which advocates for more human-scaled and visually appealing urban design.

She is the founder and chair of INTBAU Finland, which connects Finnish professionals and advocates with INTBAU, the International Network for Traditional Building, Architecture and Urbanism. She also founded *Arkkitehtuurikapina*, the Finnish counterpart of the Architectural Uprising movement, which promotes civic participation in urban design. *Arkkitehtuurikapina* was recognized as a "Positive Action of the Year" by the Finnish Broadcasting Company (YLE).

Building on this extensive experience, she founded her own company, *Zenessens Ltd*, to advance sustainable, human-centric architecture and urban planning—and she welcomes collaboration with individuals and organizations who share this vision.

**Sandra Vitzthum, Principal  
Sandra Vitzthum, Architect  
Montpelier, Vermont, USA**

**Title: Lessons from Central Vermont (USA): Small Homes + Tiny Lots + TIF funding = Neighborhoods for Everyone**

**Abstract:** Located in the northeast corner of the United States, Vermont has historically been rural and sparsely populated.

National-scale demographic changes have significantly reshaped Vermont's housing situation in just five years. These trends include inbound migration, increasing natural disasters, and speculation due to land scarcity. As housing becomes scarcer and more dear, the difficulty of finding a new home has contributed to labor shortages. Our cost of living has increased as goods, taxes, and services get more expensive. While central Vermont median income is higher than the national median income, the number of renters who can afford to purchase a home has dropped dramatically. Whereas home ownership has increased in most of the United States in the last five years, especially for young families, the reverse is true in Vermont.

Most central Vermonters prefer to own their home, however small. They describe benefits such as stability, equity growth, ability to have a garden and independence, and a stronger sense of community.

This paper examines how one can use research methods such as surveys and interviews, as well as community engagement, to define what a local population really wants and how new financing tools such as tax increment funding can make these dreams possible. Enabling home ownership can have wider benefits, such as strengthening communities and fortifying municipal finances.



**Biography:** Sandra Vitzthum von Eckstaedt, AIA, is a traditional architect with a long history of teaching, urban planning, and preservation. After completing degrees at Princeton University and University of Virginia, she taught design and planning at Norwich University and University of Notre Dame. Sandra also was an early student of the Prince of Wales School of Architecture which later became an Institute, then the King's Foundation. Coincidentally, she taught at the Institute's program in Potsdam in 1996 and will bring that course's publication to share at the conference. Besides running a solo practice, Sandra volunteers many hours to improve housing programs and building codes.

**Andrey Volkov**

**Founder and Chief Research Officer, Professor, D.Sc. in System Analysis**

**Asingularity Initiative, Independent International Think Tank**

**Moscow, Russia**

**Title: Smart City 5.0/CSCOPE: The Pattern Way to Asingularity**

**Abstract:** Challenges to the sustainable development of society, accepted values, and human identity, conditioned by the global nature and dynamics of changes in all dimensions of reality, constitute a cognitive imbalance of technological progress (civilization) and societal evolution (culture).

Efficient only in a limited way, indistinct, and often aggressive to humans, these changes form new trends of segmented disruptive and questionable end-to-end technologies, vaguely and exponentially altering the "Nature-Human-Society-Built World" continuum.

The research systemically considers changes in all technology areas (civilization) as a subject, along with the transformation of societal values and individual identity (culture), as an object of the same cybernetic metamodel taxonomy.

The study forms a new academic and applied field of Asingular Built World Engineering (ABWE): the continuous constructive change of human-made components constituting habitat and activity, defined within societal values and individual identity.

The Built World concept is theoretically and practically augmented with the new function: "asingularity" (equilibrium) of technological progress (civilization) and societal evolution (culture).

As the main theoretical result, the research presents the very first exhaustive definition and holistic expansion of the "Smart City" phenomenon within the new architecture of the ABWE

metamodel, cybernetically combining the results, effects, and culture of the Third, Fourth, and the coming Fifth Industrial Revolutions at the system (operational), complex (tactical), and civilization (strategic) metamodel levels of building the future – Smart City 3.0(A)/4.0(B)/5.0(C/CSCOPE – Civilization Socio Cybernetic Omni Parametric Environment).

The primary practical outcome is the Asingularity Meta-Pattern (AMP) as the framework for solving Built World Engineering applied problems, which could not only give new meaning and theoretical foundation to Livable (Sustainable, Cognitive, etc.) Cities projects worldwide, but also be used to reevaluate, define, and align local, national, and global technology development/sovereignty goals across various planning horizons and responsibility levels. In addition, the study includes the Asingularity Evaluation System (AES) as the foundation for a prospective technology certification system.



**Biography:** Professor Andrey Volkov is the Founder and Chief Research Officer at Asingularity Initiative, an independent international Think Tank united by a systemic view of technological and social world transformation, founded by him in 2019 based on twenty-five years of academic and practical experience. He is a former rector of the Moscow State (National Research) University of Civil Engineering (2013–2019); a leading international expert in system analysis and engineering; digital, intelligent, and human-augmenting technologies in Built World Engineering (BWE); the author of the Asingular BWE (ABWE) metamodel and architecture; Smart City 3.0(A)/4.0(B)/5.0(C/CSCOPE – Civilization Socio Cybernetic Omni Parametric Environment) cybernetic definition; and “asingularity” concept, definition, Asingularity Meta-Pattern (AMP), and Asingularity Evaluation System (AES). He has received multiple research grants, supervised over 50 doctoral candidates, published extensively in top-tier journals, registered over 100 patents and certificates, authored several new lecture courses, and is a board member of the International Society for Computing in Civil and Building Engineering (ISCCBE).

**Kent Watkins**  
**Chairman and CEO**  
**American Academy of Housing and Communities**  
**Bethesda, Maryland USA**

**Title: As the World Turns: Navigating Change and Conflict in a Constantly Changing World of Urbanism**

**Abstract:** A shock has recently surged through the American political system, reverberating across its housing and urban policy and implementation sub- or ecosystem. Organizations have been downsized or dismantled or moved to other locations. Longstanding language and assumptions have changed at professional journals and media, creating rhetorical and operational minefields for those who had been on a steady trajectory toward research, demonstration or implementation of policy solutions. While other government sectors, such as health, agriculture, foreign aid, trade, environment, energy, finance, and geopolitics are similarly affected, this paper will focus specifically on housing and urban development, offering a snapshot for coping with the evolving landscape.

Through a historical and international lens, I aim to sketch the contours of a general model or theory of adaptation in one's development strategies. For those in this room, the political disruption in the U.S. from November 2024 through (at least) October 2025, will be familiar. Comparable upheavals are taking place in France, Italy, Germany, Denmark, Ukraine, Russia, South Africa, Mexico, Canada, Panama, China, Taiwan, South Korea, Israel, India, Sudan, Ethiopia, U.K., and so forth, as well as and within regional and world organizations such as the Arab League, NATO, the EU, the UN, the Commonwealth, ASEAN, and COP. The fault lines also cross categories and constructs such as gender, sex, race, nation-states, religion and science, post-colonialism, weather, military technology, and space.

So, where do we start? I will briefly revisit the evolution of American political conflict, tracing how-evidence-based perspectives and innovation has shifted in response. I'll anchor this with my own point of view from the 1960s to the current election cycle. What were the lessons learned, if any? Might each POV have something to offer in terms of a solution other than just trying to reinvent the wheel? Why do we think we have all the truth? Then, I will try to explain and contextualize what is happening from November 2024 to the present and near future.

I have chosen three areas that are relevant for exploration in my field of urbanization.

- Artificial Intelligence: from robotics and smart cards to big data, blockchain, chatbots, and cryptocurrency. From smart cities to general intelligence. For me, from 1988, change was happening unevenly in different sectors and countries. Where do we stand today under the current administration and what does that mean for the future of our cities?
- Transportation and Energy: Transit-oriented development, high-speed rail, infrastructure investment, congestion pricing and climate adaptation are key fields. How are these faring amid shifting political winds?
- Housing – Land use and supply, affordability, home-ownership versus rental, tariff and financial barriers, design innovation, factory-built production, regulatory reform are central to meeting today’s needs. What barriers remain and what strategies are showing promise?to name but a few;

This will begin the Conversation. I look forward to a civilized encounter to share knowledge! My father had many sayings that I always remember: Here are two of them: 1) “What hill do you choose to die on?” And 2) “There’s always another train leaving the station (Opportunity!).” Let us begin.

**Veronica Westendorff, PhD, ASLA, PLA**  
**Researcher, Infrastructure and Environmental Systems**  
**Landscape Architect, founder of Terrain landscape architecture**  
**Davidson, North Carolina USA**

**Title: Greening the City Form: Rethinking Green space in the context of Urban form**

**Abstract:** The evolving relationship between urban form and climate change, emphasizes the critical need to rethink the integration of grey and green infrastructure in cities. Traditionally viewed as separate—built environments versus natural spaces—these elements are increasingly merging, with interior landscapes bringing nature indoors and “outdoor rooms” extending living spaces into the natural environment. Climate change has intensified urban issues, raising heat and energy use, increasing runoff and flooding, and reducing habitats and ecosystem services in cities. Human health is impacted through reduced access to green spaces, local food supplies, clean water and increased vector borne illnesses, mental health issues, and health risks from poor air quality and heat stress. Compounding these challenges is the competition for limited resources, where preserving green spaces often conflicts with housing needs. This research reviews the concepts of mitigation, adaptation, and resilience in the urban context, illustrating each with practical examples such as rain gardens, bioswales, green roofs, water harvesting,

urban and rooftop farming, and policy changes promoting resiliency. By highlighting actionable strategies to transform urban form, a comprehensive framework for cities aiming to reduce climate impacts, adapt to changing conditions, and build resilient, healthy urban environments.



**Biography:** Dr. Westendorff is a registered landscape architect with over 30 years of experience generating a positive impact on the environment and communities through innovative and nature-based solutions. Her projects highlight a deep understanding of ecological solutions utilizing native plants, species diversity, creative design, and cost-effective solutions. Veronica specializes in nature-based solutions, native and heat resistant planting design, sustainable master planning, green infrastructure, grant research and community outreach.

**Nichole Wiedemann**  
**Associate Professor**  
**University of Texas at Austin**  
**Austin, Texas USA**

**Title: MESSY MAPS**

**Abstract:** "...if one takes the 'map' in its current geographical form, we can see that in the course of the period marked by the birth of modern scientific discourse [...] the map has slowly disengaged itself from the itineraries that were a condition of its possibility."

—Michel de Certeau, *The Practice of Everyday Life* (1984)

This paper proposes a reimagining of representational tools in architecture and urban design to better support equitable, livable cities. Conventional representations—maps or plans—often reduce place to measurable abstraction, disconnecting urban environments from the human stories, rhythms, and relationships that define them. In contrast, itineraries offer a narrative-based approach that embeds time, memory, and experience into the reading and shaping of space.

Drawing from geography, philosophy, and pedagogy, the paper presents case studies from architectural education where students engaged with alternative cartographic methods, including annotated journeys, experiential timelines, and layered ecological mappings. These approaches prioritize the lived experience of place—particularly in communities with complex cultural and historical narratives—and resist the flattening effect of conventional planning tools.

By integrating space, time and narrative, these alternative cartographies offer architects, urban designers, landscape architects and planners tools that foster empathy, inclusion, and responsiveness. The paper argues that such methods not only help designers see more clearly but also help communities feel seen—an essential step in creating places that are not only functional, but meaningful and just.

Ultimately, this work calls for a paradigm shift in how we represent urban space: from static objectivity toward dynamic, participatory modes of understanding that reflect the diverse realities of urban life.

**Biography:** Nichole Wiedemann is a registered architect whose research, practice and teaching establishes the importance of context, with an emphasis on environmental and cultural circumstances, in the production of architecture. In all situations, she seeks a responsive architecture across scales that is both conditioned by, and conditions, the site.

As the recipient of the Rome Prize in Architecture at the American Academy of Rome, she studied the cultural narratives, specifically Christian and pagan events, inscribed in place. *Re-Collecting Rome: A Diachronic Guide to the City*, a solo exhibition of drawings and models, explored representation, as both an analytic and creative mechanism, entwining narrative, time and space. Following the devastation of New Orleans by Hurricanes Katrina and Rita, she studied the resiliency of urban form when faced with ecological and economic flux. The resulting research, *Wet Land\_Neutral Ground*, with Jason Sowell, proposed infrastructure in anticipation of, rather than reaction to, extreme circumstances. This research was featured in the *Resilient Foundations: The Gulf Coast After Katrina* in the Venice Biennale and the Pan American Biennale in 2006.

Wiedemann's current research, *El Camino Real de los Tejas: A Cartographic Exploration of People + Place*, explores how diverse people and places –past to present– can be understood through the infrastructure that connects them. Wiedemann's creative work, independent and collaborative, has been featured in exhibitions, publications and presentations, nationally and internationally.

In addition to UT-Austin, she has taught at Rhode Island School of Design (RISD), Massachusetts Institute of Technology (MIT), Dalhousie University, University of Florida and the University of Arkansas, where she held the John Williams Distinguished Professorship. Wiedemann is the recipient of the AIA Honor Award for Outstanding Educational Contributions in Honor of Edward Romieniec, FAIA, and the Texas Excellence Teaching Award.

**Kwangjun Woo**

**Ph.D. Candidate**

**Seoul National University**

**Seoul, South Korea**

**Title: What Happens to Villages and Towns When Populations Decline?**

**Abstract:** In many parts of the world, rapid urbanization is accelerating the demographic and spatial decline of rural areas. As populations migrate to cities, aging communities and deteriorating infrastructure are reshaping the territorial logic of non-urban regions. This trend raises a critical question: What might a livable future look like in places where both people and infrastructure are growing old together?

This study addresses this question through the case of rural South Korea, where aging and regional decline are advancing at a dramatic pace. It focuses on the restructuring of myeon(villages) and eup(towns), sub-municipal units that form the backbone of rural spatial organization. While myeon face severe depopulation and infrastructure withdrawal, eup tend to retain population and receive continued investment, allowing them to adapt or persist. As a result, formerly polycentric territorial systems are collapsing into monocentric forms, while some areas witness a reemergence of polycentricity through new industrial zones and planned town development.

By analyzing ten rural cases across four key functional domains—housing, employment, education, and care—the study identifies distinct patterns of spatial reorganization. It highlights how shrinking rural territories, often excluded from mainstream urban discourse, are actively negotiating their futures. Although grounded in the Korean context, these findings speak to

broader global conditions. Rural and semi-urban regions in many countries face similar challenges: disinvestment, demographic imbalance, and structural neglect. This research reframes rural shrinkage not as a passive symptom of decline but as a crucial arena for reimagining livability and spatial justice. It calls for new policy frameworks and design strategies that respond to the lived realities of non-urban spaces and support more inclusive, adaptable, and sustainable territorial futures.

**Biography:**



Kwangjun Woo is a doctoral candidate in the Urban Design Laboratory at the Graduate School of Environmental Studies, Seoul National University. He completed his undergraduate studies in architecture. His research interests focus on how cities shrink due to population decline and regional extinction, as well as the phenomena that emerge in shrinking cities.

**Marion Zeller**

**Landscape Architect**

**OST – Ostschweizer Fachhochschule**

**Rapperswil, Switzerland**

**Title: Les Coteaux (Mulhouse): An adaptable Masterplan for a Fair and Liveable Neighbourhood Transformation**

**Abstract:** « Les Coteaux » was built following a standard post-war housing estate planning in Mulhouse, France. Today, it finds itself in a socially outdated and structurally dilapidated state. While the eastern section is currently undergoing top-down transformation—marked by

demolition and forced social displacement—the western part remains untouched. Nonetheless, it still holds unique strengths: dense vegetation, vast open spaces, a rich modernist heritage and an active sense of community.

As opposed to destroying; this project proposes a gentle and incremental transformation that builds on the « Coteaux's » rich foundations. Rather than erasing structures and histories, it seeks to transform and improve the neighbourhood from within, guided by six principles: social inclusion & participation, connectivity, renovation, activation of public space and spatial clarity.

Existing structures are reimagined to serve new purposes: garage rooftops become community terraces, ground floors host workshops or local businesses, and new housing is created as elderly residents—allowing them to maintain their communal roots. An exercise circuit and improved pedestrian interconnections promote daily movement and cohesion. In this way, the central park becomes the ecological and social backbone of the area.

The result is a flexible, long-term masterplan based on small-scale, targeted interventions. It avoids displacement, supports social resilience, and offers a reproducible model for a climate-conscious, and community-led neighbourhood rehabilitation.

### **Biography:**



Marion Zeller began her career as a landscaper, where she gained practical experience in horticulture, construction management, and on-site implementation. Seeking to engage more critically with the social and ecological challenges of urban environments, she returned to academia to study landscape architecture. She recently completed her Bachelor's degree at OST – Eastern Switzerland University of Applied Sciences while simultaneously accumulating four years of professional experience in Switzerland.

Her international trajectory—rooted in France, expanded through professional experience in Switzerland, and complemented by an internship in Germany—provides her with a comparative lens on housing, urbanism, and open space design. Building on her degree in information and communication, she combines design and analytical skills to explore how visual strategies and public engagement can enhance landscape architecture. Central to her work is the question of how participatory approaches can strengthen local identity and create frameworks for dialogue between residents, institutions, and their environments.