To the next level

Redefining the common between the Horizontal and Vertical realm

A Case Study of Rotterdam

Feline Kaaij | 5068851 | 2025

Words of appriciation

Coming from a small village in Noord Holland and now living in booming Rotterdam, this thesis is an elaboration of my fascination for the verticalization of the urban world and the consequences of high-rise development on societal relations and wellbeing of its habitants.

I want to thank my first mentor Francesca Rizzetto for tirelessly helping me declutter my brain every week and inspire me to go the extra mile. When I would not see the forest for the trees, she always approached me with a smile and motivated me to persevere. Although meeting less frequent, my second mentor Erwin Heurkens, played a big role in getting the project to the level that it is currently at. Without his pragmatic approach and never wavering smile I would not have got to the point that I am currently at.

Additionally, I want to thank all the professionals who took time to listen to my ideas and answered my infinite stream of questions. In no specific order: Fred Hobma, Jeroen Bleijs, Kees van Oorschot, Derek van den Berg, Sjoerd Soeters, Marina Dondras, Suardus Ebbinge andLucas Vroom,

Finally, I want to thank my family and friends who have believed in me and helped me study by bringing me snacks, Spotify study playlists and words of encouragement. With a special thanks to my study buddies Floor, Marieke and Koen.

Colophon

To the next level: Redefining the common between the Horizontal and Vertical realm

P5 Report

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"To understand the Bee,
one must also understand
the Beehive"

C. Raap 2024

Abstract

Combining insights from urban design theory and political philosophy, this research aims to bridge the gap between public and private spaces in cities. While existing approaches to urban design have successfully enhanced social cohesion at the street level, they fail to address the potential of spaces within and on top of buildings.

This thesis proposes a cross-disciplinary framework for embedding semi-public functions in and around high-rise developments, functions that invite social interaction, inclusivity, and civic presence in the vertical dimension of the city. By integrating perspectives from Urban Management, Urban Planning, and Urban Design, the research addresses both conceptual and operational barriers that inhibit the vertical expansion of public life.

Achieving this ambition requires a shift in how ownership, access, and publicness are understood, alongside practical tools to navigate legal complexities and spatial hierarchies. Through spatial design strategies and organisational models, the research demonstrates how elevated spaces can become legible, accessible, and socially meaningful extensions of the urban commons.

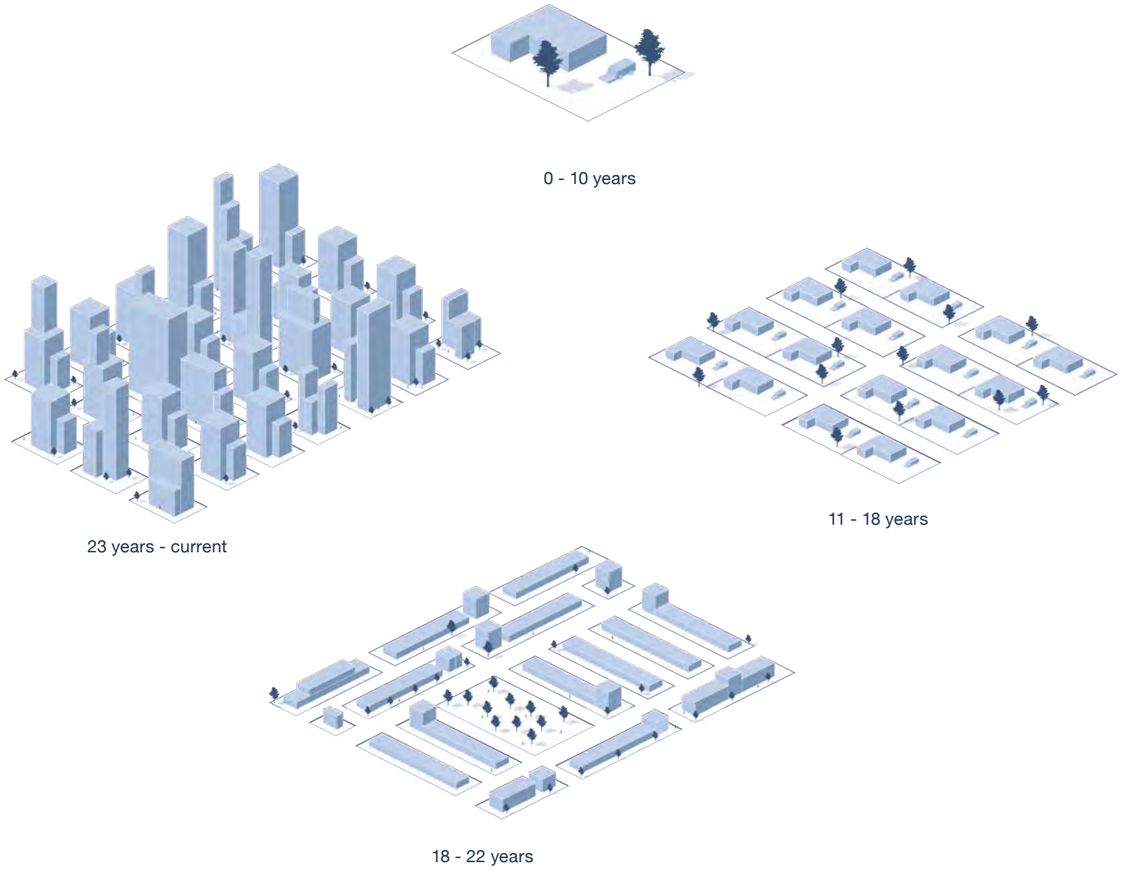

Image 1.1 Circle of life, from small village to booming Rotterdam.

Preface

I was raised in a small village, surrounded by open spaces and a close-knit community. My childhood was spent playing in our large garden and the adjacent park, where life felt interconnected and grounded. At the age of ten, I moved to a larger town, an environment that offered a glimpse of city life with its cultural diversity and opportunities yet maintained a sense of familiarity and community. This transition marked my first exposure to the dynamic interplay between different scales of urban living.

After graduating high school, I moved to Delft; a student-driven town nestled in the Randstad, close to the bustling energy of major cities. Living in Delft was an eye-opener; it brought me closer to urban life in all its vibrancy and complexity. During my four years there, two of which were shaped by the pandemic, I shared a compact living space with 18 other students, navigating communal kitchens, bathrooms and a tiny balcony. The experience reshaped my understanding of shared spaces and urban living. Now I am living in Rotterdam, in an apartment with 5 close friends and I find myself captivated by the city's density and vertical layout, while challenged by the stark contrast between the city and the smaller towns and villages I once called home. In Rotterdam, individuality seems to dominate, with little spontaneous interaction among neighbours. Unlike the village where everyone knew each other, or the towns where you at least knew what was happening in your neighbourhood, the city's density often fosters anonymity. I barely know my next-door neighbours, let alone the people across the street.

Following my observations and discussions with friends and family on how they have experienced moving from villages to bigger cities in the Netherlands, I notice our shift in urban life is tied to the rising prevalence of high-rises. I have come to wonder why people who live in neighbourhoods with houses seem to disagree with my statements about the anonymity of the city and people who live in taller building structures are more often inclined to agree. These high-rise structures, built predominantly for functionality, often lack the social sustainability inherent to Dutch urban culture; the openness of facades, the connection between indoors and outdoors, and the casual interactions that happen at street level. Foreign visitors often remark on how Dutch streets feel open and connected, with living spaces that invite a dialogue between private and public realms while taking the Dutch culture openness into account. High-rises risk eroding this vital aspect of our urban identity.

I love city life, the diversity, proximity to activities, and energy of urban living are unparalleled. However, I feel a desire to make cities more liveable for everyone, ensuring equal opportunities and a sense of belonging. High-rises, as they are currently designed, often fail to support the social fabric necessary for a thriving urban life. This thesis tries to give an answer to the questions: Can we preserve the social connectivity of Dutch culture while embracing the inevitability of vertical urban growth and can we extend the public realm into high-rises, allowing it to weave through their spaces instead of halting at their facades? To answer this question, I aim to explore how high-rises can foster community bonds, sustain social interaction, and integrate public spaces, making them places where urban living is not just functional but fulfilling.

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Part I
The Perception of Height

I | Introduction

Since the Industrial Revolution in the 19th century, the dynamics of work and settlement have shifted, spurring a global trend of migration to cities (Czaika & Reinprecht, 2022). Today, over 50% of the global population resides in urban areas, and by 2050, this figure is projected to reach 68% (United Nations, 2024). The urbanization is driven by two primary factors: the pursuit of better opportunities for future generations and the economic decline of rural regions, which compels migration to urban centres (Ritchie et al., 2024). Meanwhile, the rapid growth in urban populations places immense pressure on housing availability, leading to widespread shortages of housing in many cities (Sabatini, 2024). Constrained by physical boundaries, environmental considerations, and infrastructure limitations, cities have largely turned to high-rise buildings as a solution.

High-rise construction maximizes housing provision within limited urban spaces, offering efficiency from environmental and economic perspectives. However, concentrating populations in vertical living environments presents unique challenges such as logistical complexities, reduced social interaction, and psychological strain (Lehmann, 2016). These challenges raise critical questions: What is the most sustainable and inclusive urban form for growing cities? How can urban design balance residents' well-being with environmental sustainability? And how can high-density environments foster a sense of community? (Oldfield, 2019). Addressing these questions requires rethinking the integration of communal spaces within high-rise developments.

While traditional public spaces are managed by public authorities, most high-rise buildings are privately owned, creating a key obstacle for social interactions in the form of ownership and maintenance. Privately owned yet publicly accessible areas could bridge the gap, offering the qualities of public spaces without exclusive private use (Ehab, 2023). For this reason, Stipo's "The City at Eye Level" emphasizes the importance of activating ground-floor plinths to enhance urban life, a strategy that has shown promise in fostering vibrant and inclusive streetscapes.

Building on the principles of enhancing urban life and social interactions, this thesis investigates the question; In the context of Rotterdam's vertical urban ambitions, how can a combined toolkit of spatial design, public programming, and legal frameworks be developed to create socially inclusive and publicly accessible elevated spaces in high-rises?

By adapting strategies from Stipo's work to elevated spaces within high-rises, a new type of urban commons is conceptualized; privately managed spaces designed to encourage social interaction and a sense of community. The concept is further informed by the theoretical perspectives from "Multitude: Democracy and War in the Age of Empire" that claims that A new global form of democracy is possible; one that arises not from nation-states or empires, but from the collective power of the multitude: a decentralized, diverse network of people resisting domination and creating alternative, democratic forms of social life.

I | Problem Statement

The challenges of climate change, high-density urbanization, and the evolving role of public space are deeply interconnected within the context of urban design. This thesis takes the position that, while vertical urban development offers cost-efficient and environmentally sustainable solutions to housing shortages in densely populated cities, it frequently undermines social sustainability by neglecting provisions for communal interaction. The compounded pressures of climate change and rapid urbanisation necessitate a reimagining of high-density environments. Vertical expansion can effectively accommodate growing populations while mitigating urban sprawl; however, this approach also introduces critical challenges, including the erosion of public space, threats to environmental sustainability, and exacerbation of social inequality.

I | Research Aim

As traditional public spaces become increasingly scarce in high-rise urban areas, innovative interventions, such as elevated communal spaces, emerge as vital strategies for addressing these issues. These spaces have the potential to enhance community engagement, improve residents' well-being, and integrate nature into dense urban settings. This research seeks to advance the discourse on sustainable urban development by offering actionable strategies to balance high-density living with social cohesion. By ensuring that high-rise developments prioritize inclusivity, environmental resilience, and vibrant community life, this study aims to contribute to the creation of urban environments that address both the functional and social needs of their residents.

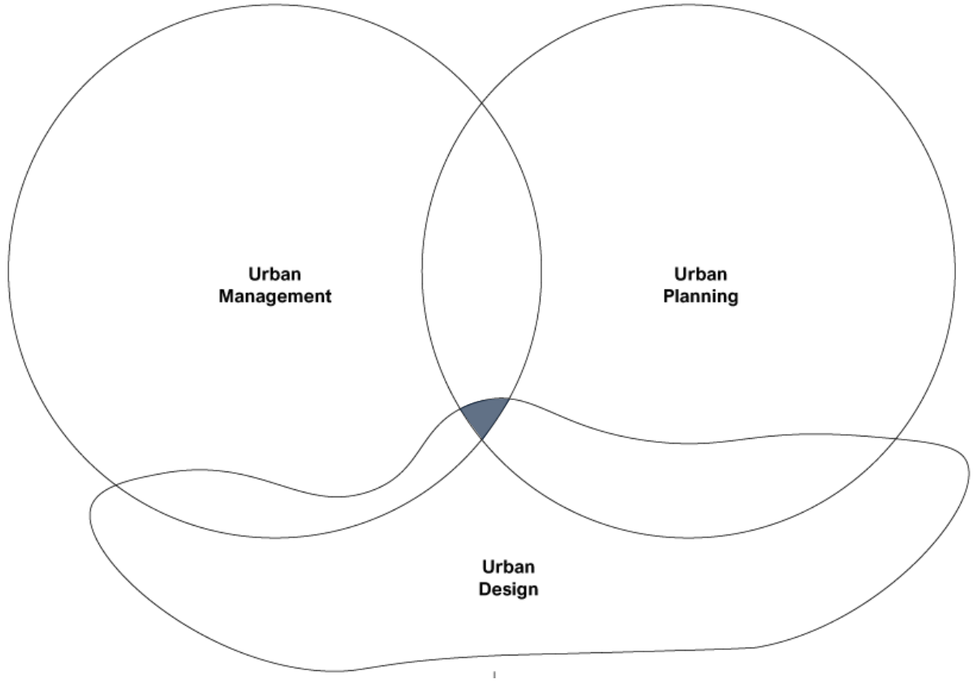


Image 1.1 The overlap of the urban development tracks

I | Paper Outline

This paper starts with an introduction to the urban challenges that the world is currently facing and that inspired this thesis project. After the introduction a problem statement is presented together with the research aim. Subsequently the history of public spaces & the public realm, the importance of public spaces, high density urbanisation and climate change will be elucidated. To illustrate how these concepts come together and intersect in the city of Rotterdam a case study is presented as an interlude.

In part 2 the main research question and additional questions will be presented, and a hypothesis that leads to research framework is discussed. Additionally, a theoretical framework and design aims are combined into a conceptual framework. The design aims are further explored through operationalising the conceptual framework. These frameworks are in the second interlude illustrated by a case study of Manilla.

In part 3 the different tracks within urban development, viz urban management, urban planning and urban design, are discussed separately. Subsequently they are combined to interpret how they depend on one another and to research what factors determine how the publicness and success of an elevated public space. In the interlude examples of barriers, way finding and transitional spaces in Rotterdam are presented.

In part 4 possible design solutions are introduced that connect the public realm and public space using the concepts of elevating platforms with multiple purposes such as communal places, commercial spaces and coworking or meeting spaces. The Hofplein-area in Rotterdam, a mobility hub that was transformed at the time of writing is introduced as a case study area in the final interlude to illustrate the connection between the horizontal and vertical urban fabric in Rotterdam and the regulation hinder the designers faced.

The paper ends with a conclusion of the research, connecting all the answers to the questions and discussing the implications of the results on the way we think about urban development and its role on societal cohesion. In an ethical review the moral and ethical responsibility of this urban research is discussed, followed by a personal reflection.

Interwoven in this paper are micro stories or interludes that are introduced to support the chapters. These interludes, although having been essential for the development of the research for the author, are not necessities to understanding the research but show a wide variety of side roads that have been explored ranging from a fieldtrip to Metro Manila in the Philippines to smaller field trips in Rotterdam.

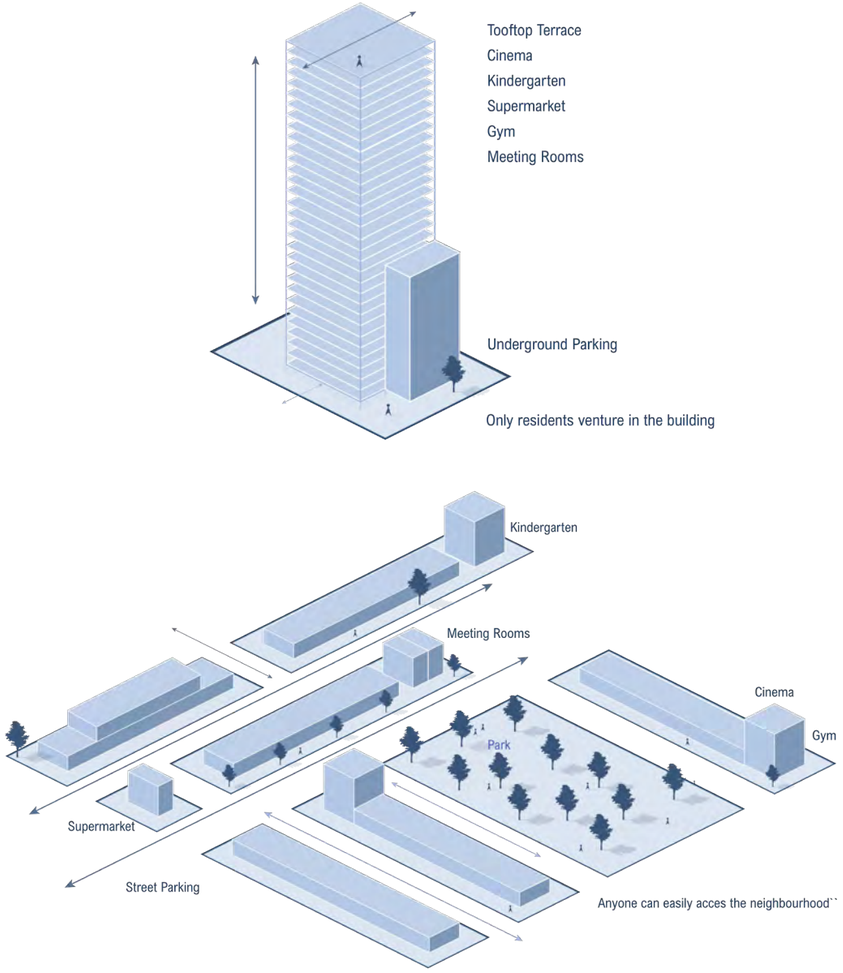


Image 1.2 The difference between function in a low-rise neighbourhood vs. in a heigh-rise building

I | Challenges in Urban Development

Every design project is guided by key concepts or challenges that the designer must address and communicate to provide context for their choices. In this project, the guiding themes include the history of urbanization, the dynamics of high-density living, the critical role of public spaces, and the growing impact of climate change.

Urban Design in a Time of Transformation

To understand where we are going, we must first reflect on where we came from. Before the widespread use of mobile phones and other broadcasting technologies, the public realm and public spaces played a vital role in daily life. If someone wanted to learn the news or connect with others, they had to step outside and engage with their community. Over the centuries, this changed; from gathering in town squares to hear a town crier, to reading newspapers, and later listening to the radio. Yet even with these advancements, people still needed to leave their homes to socialize, discuss events, or simply move through the city.

Additionally, physical mobility was limited. Most people walked; only a small elite could afford transport by horse-drawn carriage, and cars were even more exclusive. This slower pace meant more face-to-face encounters, more spontaneous interactions in the public realm. What once required physical presence can now be done from a couch, thanks to mobile phones and constant connectivity. We are now, quite literally, chronically online.

This transformation raises important questions about social bridging, social bonding, and the evolving role of the mobile phone. Does the public realm still hold the same meaning in a society where digital interaction dominates? If we compare this to Krier & Rowe (1979) their view of public space, and acknowledge that online platforms now replicate many of its functions, shouldn't the digital world be considered part of the public realm? This is a complex question that lies beyond the scope of this thesis. Instead, I will focus on the verticalization of the public realm. As cities densify, people live in smaller homes and in smaller family units. Naturally, this reduces casual exposure to diverse social networks, where once a family of five children might bring home multiple friends, smaller families limit such variety.

Furthermore, the rise of mixed-use high-rise buildings allows residents to meet many of their needs, such as living, working, shopping, within a single vertical structure. A prime example is The Valley in Amsterdam, where residents rarely need to leave the building. While interaction still occurs, it is largely with others who can afford to live or shop there. These vertical communities risk becoming socially homogenous, excluding those from different walks of life.

High-density urbanization

High-density urbanization has become a central strategy for accommodating the world's growing urban population, particularly in the face of spatial constraints. One prominent approach involves the development of compact city models characterized by super-tall buildings, which concentrate urban functions vertically. These models improve land-use efficiency by consolidating residential, commercial, and recreational functions within a limited footprint, thereby freeing up ground-level space for public use. As a result, cities can expand sustainably while minimizing urban sprawl (Shin, 2013). Moreover, by promoting proximity and mixed-use environments, high-density urbanism reduces reliance on automobiles, enhances resource efficiency, and contributes to lower levels of environmental pollution (Bibri et al., 2020).

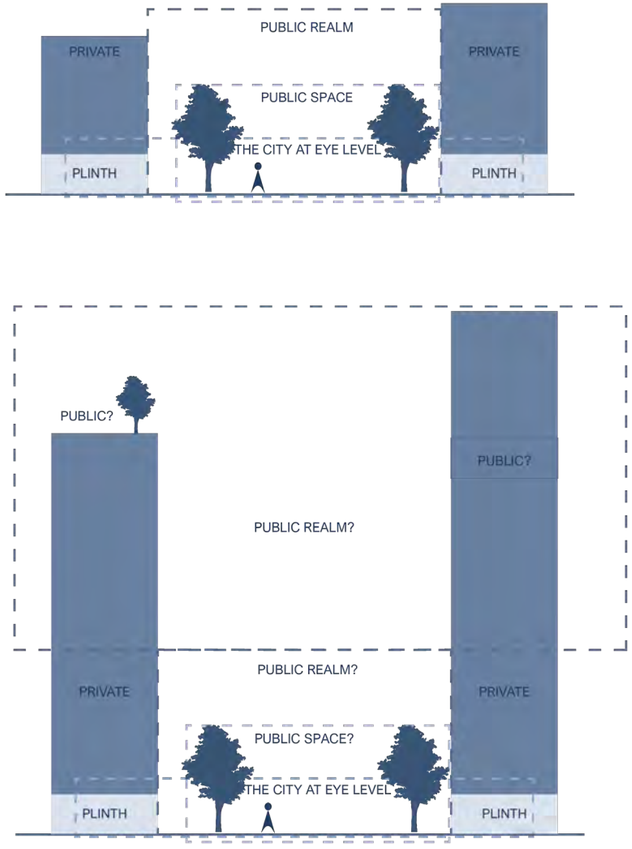


Image 1.3 Definition of public realm and space in a low-rise vs. high-rise situation, made by author inspired by Karsenberg et al, 2016

"The key distinction lies in proper urban planning —density itself does not inherently lead to overcrowding."

Jane Jacobs, 1691

Historically, high-density living has often been misunderstood, with density frequently being conflated with overcrowding. As Jane Jacobs argued in The Death and Life of Great American Cities (1961), density itself is not inherently problematic; the issue lies in how it is planned. Overcrowding results when too many people are confined to inadequate living conditions, whereas well-designed dense environments can support comfort, accessibility, and liveability. Recognizing this distinction requires a shift in how hyper-density is approached: beyond merely increasing units per hectare, planners must emphasize the quality of urban life through thoughtful, human-cantered design.

Research increasingly highlights that well-executed high-density environments can provide numerous social and environmental benefits. These include shorter commutes, increased walkability, and more opportunities for social interaction, all of which contribute positively to physical and mental health (Oldfield, 2019). Nonetheless, high-density urbanization also presents "wicked problems": complex, interrelated challenges that resist easy solutions. Rising energy demands, growing social inequality, and the loss of green spaces are among the most pressing issues, placing added stress on already fragile urban ecosystems (Bibri et al., 2020). Without comprehensive and inclusive planning, dense development can intensify these problems, ultimately undermining residents' quality of life.

Well-designed high-rise developments, however, can mitigate these challenges. By incorporating accessible green spaces, enhancing contact with nature, and providing communal areas for leisure and social engagement, they can support more sustainable and liveable urban environments. As cities like Rotterdam continue to grow vertically, the challenge is not density itself, but ensuring that density is matched with high-quality, inclusive public spaces, spaces that enrich the urban experience while safeguarding ecological balance.

The Critical role of Public Spaces

High-density urbanization has transformed the shape of cities, often at the expense of accessible public space. Transportation networks, parking structures, and the expansive footprints of tall buildings reduce opportunities for shared outdoor environments, particularly affecting residents of small apartments who lack private space and rely on communal areas for social interaction and well-being (Oldfield, 2019). This reality highlights the crucial role of public space in maintaining urban liveability and fostering social cohesion.

As traditional ground-level public spaces diminish, cities have begun to explore alternatives in the form of elevated social spaces, such as rooftop gardens, sky decks, and terraces. These spaces offer much-needed access to greenery, daylight, and fresh air, all of which support physical and mental health in hyper-dense environments (Lehmann, 2016; Ehab, 2023). When carefully designed, elevated spaces can function as social hubs that encourage community-building while visually softening the intensity of vertical urban forms (Ehab, et al. 2025).

However, integrating elevated public spaces comes with design and governance challenges. Unlike traditional public areas managed by municipalities, these spaces are often privately owned, raising concerns about access, inclusivity, and long-term stewardship (Ehab, 2023). Effective public space in high-rise settings requires a balance between private interests and broader public benefit,

ensuring that spaces remain open, welcoming, and meaningful to a diverse urban population.

Design is also essential. Accessibility, especially for people with disabilities or mobility limitations, must be prioritized. Integrating greenery, flexible activity zones, and informal gathering areas can transform sterile rooftops or terraces into vibrant urban commons (Kassenberg et al., 2016). This reflects the principles of placemaking, where a space becomes a place through social interaction and human-cantered use (Kassenberg et al., 2016).

In response to the limitations of ownership-based definitions, scholars like March and Lehrer (2019) propose a hybrid concept of public space, where publicness is defined by use and social negotiation rather than legal status. Corridors, shared lobbies, and terraces in high-rises can thus become public if they encourage interaction.

Following Arendt (1958), true publicness is rooted in plurality and negotiation, not uniformity. A space that reflects individual needs and fosters dialogue may be more democratic than one designed for an abstract "public." In this sense, elevated public spaces, if inclusively designed and governed, hold potential to enrich vertical urban life while reinforcing the public realm in new and meaningful ways.

The difference between private and public spaces

Public and privately owned urban spaces differ not only in terms of ownership, but also in accessibility, control, and social function. Public spaces, such as parks, streets, and squares, are owned and maintained by governmental entities and are intended to be openly accessible to all, serving as arenas for civic life, public expression, and informal interaction (Birch, 2008). In contrast, Privately Owned Public Spaces (POPS), such as plazas, atriums, or seating areas within commercial or residential developments, often appear publicly accessible but are, in fact, privately owned and regulated. While these spaces offer certain public benefits, particularly in high-density urban environments, they are frequently governed by implicit or explicit rules that restrict behaviour and may exclude marginalized groups (Nadi Group, 2025). As Lee (2022) notes, such regulatory control can reproduce socio-spatial inequalities by undermining the openness and inclusivity typically associated with public space. The distinction between public and private, then, lies not only in legal ownership but also in how space is perceived, experienced, and governed, raising important questions about equity, inclusivity, and the right to the city.

Traditionally, public space has been understood in opposition to private space (Jacobs, 1961), with a binary framework based on ownership, access, and control. However, more contemporary perspectives recognize that publicness exists along a spectrum rather than as an absolute category. This conceptual shift allows for a more nuanced understanding of how varying levels of access, visibility, and regulation influence the experience and function of urban spaces. (Kassenberg et al., 2016) expands this view by introducing the notion of the public realm as the entire visible urban environment at eye level, regardless of whether a space is legally public or private. This broader interpretation highlights the interconnected nature of urban experience, suggesting that both public and privately controlled spaces contribute to the collective life of the city.

In practice, mapping and categorizing spaces along the public–private spectrum proves far more complex than it may appear. While some boundaries are clearly marked by physical or legal barriers, many others are blurred by nuanced factors such as conditional access, surveillance, or behavioural codes. The subjective perceptions of users also play a crucial role. For example, a semi-public lobby or a privately owned plaza may seem open and inviting yet be governed by hidden controls or restrictions that subtly limit who can use the space and how. Several visual examples in this thesis illustrate these ambiguities, showing that the classification of space often depends as much on how it is experienced and regulated as on how it is legally defined.

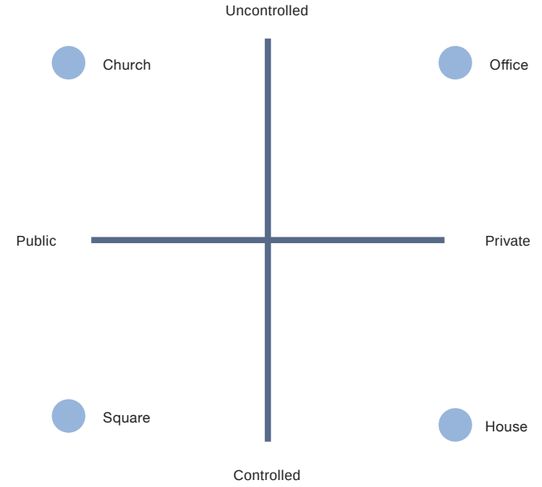


Image 1.4 Defining if a space is public or private

Image 1.5 Natural boundaries for urban expansion

Climate Change as an additional challenge

As cities worldwide grapple with rising populations, they are also increasingly confronted by the pressing realities of climate change; forces that are reshaping the foundations of urban planning and development. Historically, urban expansion has often encroached upon natural landscapes, particularly through low-density, sprawling development patterns. While these forms of growth offered private benefits to residents and developers, they significantly increased cities' vulnerability to climate-related hazards. For example, expansion into coastal and waterfront areas has heightened exposure to flooding due to sea-level rise and more intense rainfall, which often overwhelms limited natural drainage systems (Mariano & Marino, 2019). Similarly, extreme air pollution, exacerbated by events like wildfires, can be linked to urban heat island effects and disrupted water cycles that intensify drought conditions (Wheeler et al., 2021).

In response to these growing risks, there is now widespread recognition of the social and environmental costs associated with urban sprawl. These include higher infrastructure demands, increased automobile dependency, and reduced efficiency of public transportation systems (Bengston & Youn, 2006). Research by Reckien et al. (2015) indicates that cities more vulnerable to climate-related disasters tend to be more proactive in adopting climate action plans and engaging in climate-focused networks. Thus, a city's exposure to risk often directly influences its planning strategies.

Many urban centres have responded by implementing containment policies such as greenbelts, urban growth boundaries, and service limits to encourage compact and sustainable development. For cities constrained by natural features, like coastlines, rivers, or protected green zone, outward expansion is no longer a viable solution. In these contexts, vertical urbanization becomes not just a strategic option but a necessity. It enables continued population growth while conserving critical natural and agricultural land. This paradigm shift toward dense, vertical urban forms brings new urgency to the design of sustainable high-rise environments. Such developments must integrate green public spaces and ensure access to nature, even within tightly built settings. Urban centres, as both major contributors to and victims of climate change, hold a unique responsibility in crafting effective strategies for mitigation and adaptation.

Ultimately, the challenge is not merely to build higher, but to reimagine growth in a way that enhances inclusivity, fosters resilience, and creates high-quality public spaces. In the face of an uncertain climate future, this "new urban question" demands innovative and responsive planning that prioritizes both environmental and social sustainability.

In conclusion

As cities continue to rise vertically in response to population growth, spatial limitations, and climate imperatives, the way we understand, and shape urban life must also evolve. This paragraph on challenges in urban design has explored how the challenges of high-density living, environmental risk, and diminishing public space are driving a shift in urban planning toward more compact, integrated, and resilient forms of development. Vertical urbanization is no longer a futuristic concept; it is a present necessity. Yet the success of this transition depends not simply on accommodating more people in taller buildings, but on cultivating inclusive, accessible, and ecologically sensitive environments that support everyday life. By rethinking the role of public space, embracing hybrid models of publicness, and grounding design in principles of social equity and environmental stewardship, cities can transform vertical growth from a constraint into an opportunity. In doing so, they can meet the demands of a changing climate while enhancing urban liveability for generations to come.

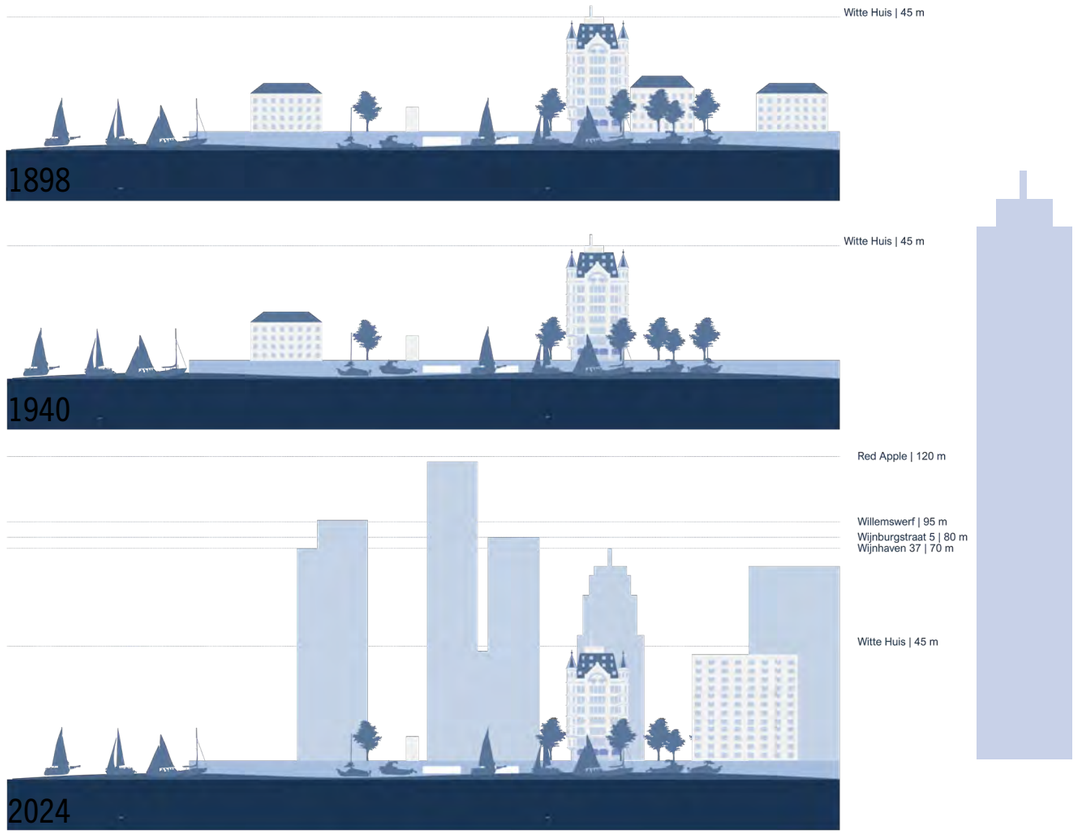


Image 1.1.1 The skyline of Rotterdam over time.

INTERLUDE I | Rotterdam, A City Aiming for the Sky

"The city without a heart"

Bokern 2021

Rotterdam, a dynamic metropolis with a population of 670,610 as of 2024 (Allecijfers, 2025), exemplifies how contemporary cities must navigate the interconnected challenges of urbanization, density, public space, and climate change. Over the past decade, Rotterdam has grown by more than 50,000 residents, placing increased pressure on housing supply. In response, the municipality has implemented ambitious building strategies aimed at accommodating a rising number of smaller households and individuals living alone (Gemeente Rotterdam, 2022).

History of Urbanisation

Rotterdam's urban development has been deeply shaped by its strategic role as a global port city. Once home to the world's largest port, still the largest in Europe today, the city experienced rapid industrial and economic expansion. However, the bombing of May 1940 drastically altered its trajectory. The destruction of the historic centre, including all pre-1900 housing, left a blank slate for planners (Bokern, 2021). While the Witte Huis once held the title of Rotterdam's tallest building at 43 meters, the post-war destruction of the city created opportunities for large-scale redevelopment, ultimately paving the way for modern high-rises like the Zalmhaventoren, which now soars to 215 meters (image 1.1.1). The post-war Basisplan, led by W.G. Witteveen and Cornelis van Traa, emphasized light, air, and space through wide roads and large-scale zoning, prioritizing infrastructure and automobile mobility (Groenendijk & Vollaard, 2004). While effective for rapid reconstruction, this modernist vision produced a fragmented, low-density inner city that lacked diversity in scale and public life (Reinik, 2023).

High-Density Urbanization

Criticism of post-war urban monotony in the 1970s prompted urban renewal programs. Demolition of substandard housing and increased investment in architectural innovation transformed the cityscape (Reinik, 2023). Plans like Waterstad and redevelopments such as Kop van Zuid and Rijnhaven introduced dense, mixed-use districts integrating residential, commercial, and cultural functions; signalling a shift toward vertical urbanism. Rotterdam's current High-Rise Policy promotes the construction of buildings over 70 meters, particularly along the river, to absorb population growth while preserving open ground-level space (Gemeente Rotterdam, 2022).

The Importance of Public Spaces

Rotterdam's redevelopment has increasingly prioritized public space. The city's post-war flat rooftops, spanning over 18 km², are now seen as assets for climate-adaptive and social interventions. Through initiatives like Rotterdamse Dakendagen and the Rooftop Vision, rooftops are being reimagined as green public terraces, solar platforms, and community hubs. The legacy of large, unused flat surfaces is thus repurposed for collective benefit.

The Beurstraverse, also known as the "Koopgoot," is a notable example of public space transitioning into private hands. Originally a public thoroughfare in Rotterdam's city centre, it was redeveloped into a semi-underground shopping arcade (Bergenhenegouwen & Van Weesep, 2003). This transformation involved the sale of public land to private entities, leading to a space that, while still accessible to the public, is managed privately. Such privatization can lead to restrictions on activities like protests or loitering, as private owners may impose rules that limit the traditional freedoms associated with public spaces.
Conversely, Rotterdam has also seen private spaces repurposed for public use like Luchtsingel Pedestrian Bridge; This crowdfunded project transformed underutilized rooftops and private plots into a continuous public walkway, reconnecting fragmented parts

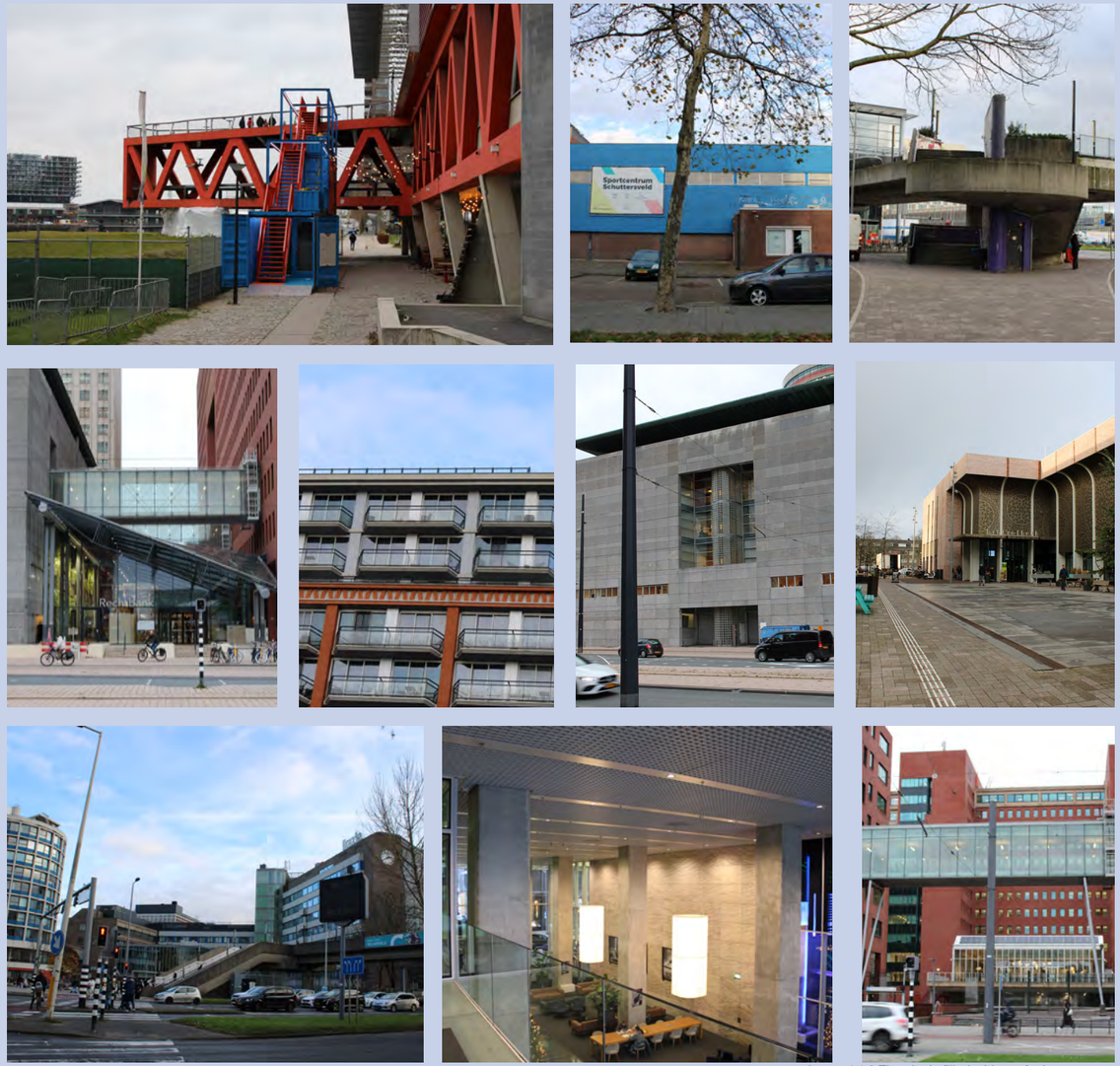


Image 1.1.2 The city is filled with confusing spaces.

of the city and demonstrating a grassroots approach to urban regeneration. Another example is Waterplein Benthemplein; An innovative “water square” that combines water management with public space.Designed to collect and store rainwater, it also serves as a recreational area, illustrating how functional infrastructure can double as community space. These examples highlight Rotterdam’s dynamic approach to urban space, where the lines between public and private are continually negotiated and redefined to meet the city’s evolving needs.

Climate Change and Urban Adaptation

As a low-lying coastal city, Rotterdam is acutely vulnerable to climate change. Flooding, heat islands, and air pollution are key concerns. This has led to a shift in infrastructure design focused on ecological resilience. The Hofplein area, part of the centrally located Rotterdam Central District, illustrates this transition. Once dominated by a heavily trafficked roundabout and symbolic fountain, Hofplein is now undergoing transformation (2024–2025) into a green mobility hub, one of five designated urban growth cores. The redesign will replace asphalt with vegetation, improving water retention, lowering temperatures, and purifying air; an emblematic move toward climate-conscious urban design (Arends, 2023).

In conclusion

In conclusion, Rotterdam exemplifies how historical events, and socio-economic constraints have shaped a complex urban fabric, resulting in a patchwork of architectural styles and spatial arrangements that are not always equipped to address contemporary challenges such as urban warming. Over time, key structures have been added or removed, often without a cohesive vision, creating fragmented and sometimes confusing environments.

A clear manifestation of this tension can be seen in the rise of so-called hostile architecture. For instance, public benches and lounge areas near the central station have been removed in response to complaints about perceived safety concerns (NOS, 2023). Rather than offering humane alternatives to unhoused individuals seeking warmth and shelter, authorities opted to eliminate the seating altogether. This approach not only displaces vulnerable populations without addressing their needs but also reduces comfort and accessibility for everyday users and travellers, undermining the inclusive potential of public spaces. (image 3)

In recent years, there has been growing recognition of the vital role public spaces play in urban life. Special attention is now being given to semi-public or privately owned public spaces, where the boundaries between public and private are often blurred. These hybrid spaces, such as corporate lobbies, rooftop terraces, or privately managed plazas, are shaped by factors like ownership, access policies, and the perceptions of their users. Their publicness is not fixed, but rather negotiable and context dependent and their publicness might not be known by the public due to their unwelcoming entry or unclear signage.

Image 1 | Metro station Rijnhaven
- Visible from street level
- Semi-Privately owned
- Regulated
- Accesible for anyone who pays

Image 2 | Rooftop deck Boijmans Depot
- Semi visible from street level
- Semi-Privately owned
- Said to be Public Space
- Regulated
- Accesible for anyone who buys a ticket

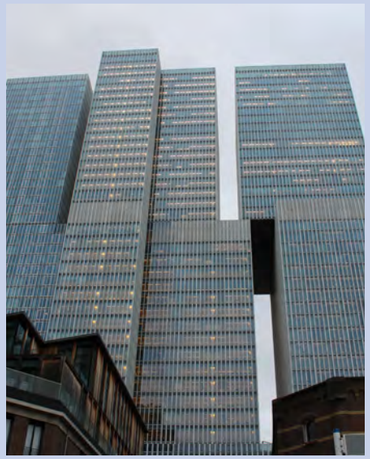
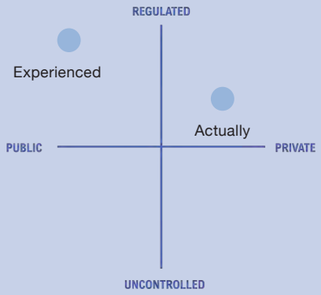
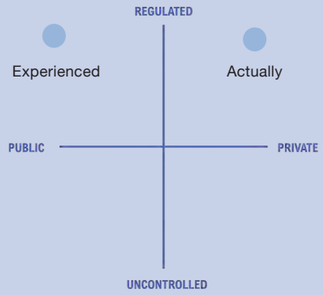


Image 3 | De Rotterdam
- Visible from street level (only if you look up)
- Privately owned
- Regulated
- Semi-Accesible for anyone





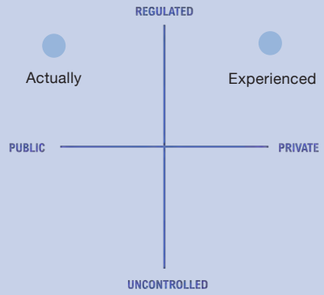


Image 1.1.3 Possible classifications.

Image 4 | Roofdeck Erasmus MC
- Not visible from street level
- Patients do not know how to get there
- Privately owned
- Regulated
- Accesible for anyone

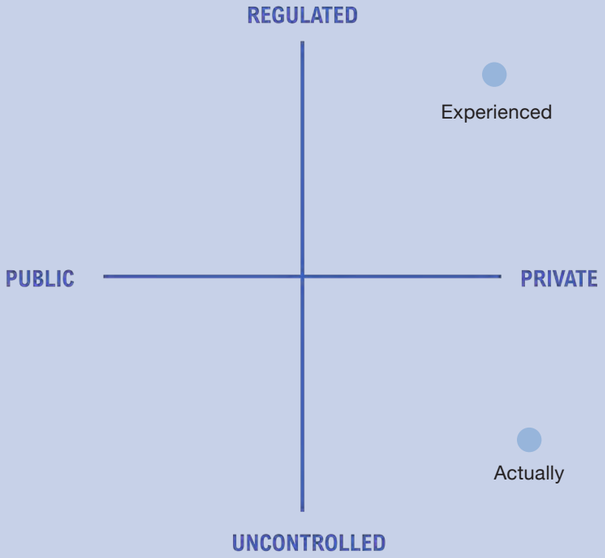


Image 1.1.4 Possible classification of the Erasmus MC Roofdeck.

Part II
The Common and the Public

II | Introduction

In this chapter, I present the main research question and sub-questions that emerged from the urban design challenges and the problem statement. Building on my initial research, I explored how private ownership can be integrated with public programming in practice. These insights are discussed within the theoretical framework and translated into a practical approach in the conceptual framework. The methodology and research framework then guide the reader through the structure and narrative of the study. The chapter concludes with a summary of the design objectives.

In cities with vertical urban ambitions, how can the horizontal and vertical realm be connected to create publicly accessible spaces within high-rise developments?

1. Why is it important for cities to establish a connection between the vertical and horizontal realms of the urban environment?
Introduction – Part I

2. How does the concept of the public realm transform when approached from a vertical, rather than traditional horizontal, perspective?
Literature Review – Part II

3. Which factors influence the degree of publicness and the success of elevated public spaces?
Literature Review & Field Study – Parts II & III

4. What design interventions can effectively connect horizontal and vertical urban spaces while ensuring accessibility and safety?
Field Study & Research by Design – Part III

5. How can current policies be revised to facilitate the development of elevated public program?
Document Analysis & Interviews – Part III

6. Who holds responsibility for establishing connections between the horizontal and vertical dimensions of the urban realm?
Management – Part III

7. How can the connection between horizontal and vertical urban spaces be meaningfully integrated in the context of Rotterdam?
Research by Design – Parts III & IV

Image 2.1 Research Questions

In a vertical context, the definition of public space, and the broader public realm, evolves to accommodate hybrid spatial forms that go beyond traditional ground-level boundaries. When considered vertically, public space becomes “common space,” encompassing not only streets, parks, and plazas, but also elevated environments such as rooftops, corridors, and upper-level walkways. This expanded understanding encourages new patterns of social interaction and ownership, challenging conventional conceptions of the public realm.

Elevated common spaces that are accessible, either to the public or specific user groups, well-connected, and inclusively designed are more likely to function successfully as social hubs. Key determinants of their effectiveness include physical and social accessibility, integration with surrounding public areas, perceived and actual safety, and the capacity to support multiple functions. These qualities serve as indicators of a space’s publicness and can be identified and evaluated through comparative analysis of existing elevated public environments.

Existing regulations and zoning laws pose substantial obstacles to the development of hybrid vertical spaces, highlighting the need for policy reform to support elevated public realms. Legal frameworks frequently limit public access to privately owned upper-level areas and constrain design interventions that could facilitate greater openness. Addressing these regulatory constraints is important to enabling the feasibility and accessibility of elevated common spaces.

Design interventions that establish seamless connections between ground-level public spaces and elevated areas have the potential to redefine the urban public realm. Strategies such as vertical circulation systems (including stairs, elevators, and ramps), open access pathways, and integrated visual connectivity are essential for transforming elevated spaces into functional extensions of public life. These interventions must balance utility and aesthetic quality to create a cohesive and engaging urban experience.

A conceptual framework that brings together social, regulatory, and design dimensions will form the basis for developing viable elevated public spaces in Rotterdam. By synthesizing insights from the literature review, case studies, and regulatory analysis, this framework will serve as a strategic guide for the design of such spaces. It aims to ensure that proposed interventions are both practical and context-sensitive, while supporting the city’s broader objectives of social cohesion and vertical urban development.

Research-by-design methodologies facilitate the creation of innovative, site-specific solutions for vertical public spaces. When applied to a high rise, this approach generates design interventions that respond directly to the central research question while offering a prototype for the future vertical expansion of public space across the city.

II | Methodology

To address the main research question, "*In cities with vertical urban ambitions, how can the horizontal and vertical realms be connected to create publicly accessible spaces within high-rise developments?*", this thesis employs a multi-method research approach.

The study begins with an introduction to answer the sub question: *"Why is it important for cities to establish a connection between the vertical and horizontal realms of the urban environment?"*. Subsequently a literature review addresses the redefining of the concepts public space and public realm. Key sources include Multitude: War and Democracy in the Age of Empire, The City at Eye Level, and other relevant publications. This theoretical exploration informs the theoretical framework and provides a foundation for answering the first sub-question: "*How does the concept of the public realm transform when approached from a vertical, rather than traditional horizontal, perspective?"*

The literature review also contributes to answering the second sub-question:*"Which factors influence the degree of publicness and the success of elevated public spaces?"* However, a more comprehensive understanding of this question is achieved by combining literature insights with findings from field studies of existing elevated public spaces.

A Research by Design approach, supported by the field study, addresses the third sub-question: "*What design interventions can effectively connect horizontal and vertical urban spaces while ensuring accessibility and safety?"* This design exploration leads to the fourth sub-question: "*How can current policies be revised to facilitate the development of elevated public program?"* And "*Who holds responsibility for establishing connections between the horizontal and vertical dimensions of the urban realm?"* To answer this, interviews with professionals and document analysis of planning policies and regulations are conducted.

Finally, the case study of Hofplein in Rotterdam synthesizes the outcomes of the preceding investigations to respond to the fifth sub-question:*"How can the connection between horizontal and vertical urban spaces be meaningfully integrated in the context of Rotterdam?"* The thesis concludes with a reflection on the main research question and a synthesis of all sub-questions, discussed in the final chapter.

II | Research Goal

This research aims to bridge the divide between public and private spaces in urban environments by creating common areas that promote social interaction. In cities with a significant presence of high-rise buildings and vertical growth, public spaces are typically confined to ground level. This study advocates for reimagining spaces within and around buildings as accessible, welcoming environments that enrich the public realm. The objective is to generate ideas aimed at solving the challenge of public accessibility in privately owned high-rise, particularly focusing on how to arrive at a solution rather than presenting a final solution itself, merging a conceptual shift in ownership models with practical design strategies and legal reforms. In doing so, these elevated spaces can transform into essential, interconnected extensions of the urban public realm.

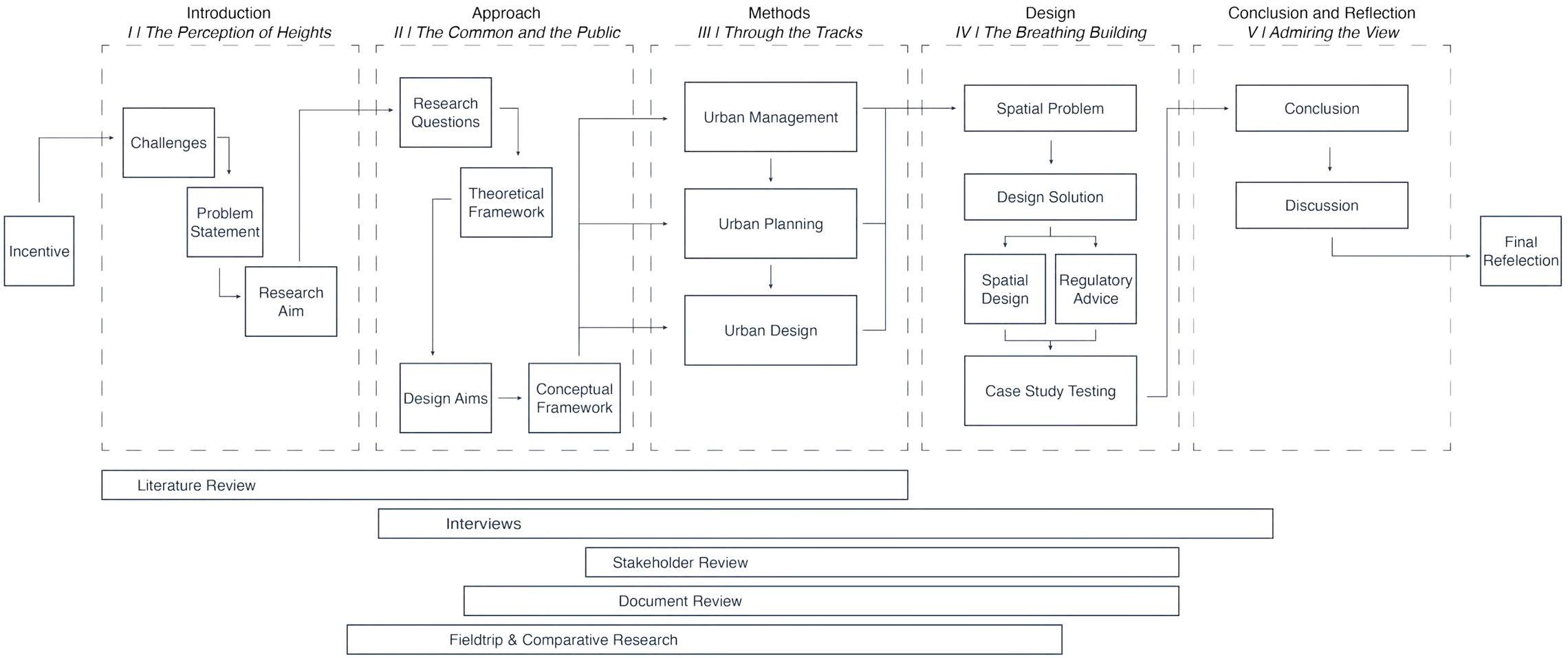


Image 2.2 Methodological framework

To address the research question "In cities with vertical urban ambitions, how can the horizontal and vertical realms be connected to create publicly accessible spaces within high-rise developments?" Some key conceptual terms need clarification. This begins with the second sub-question: "How does the concept of the public realm transform when approached from a vertical, rather than traditional horizontal, perspective?" This chapter introduces the two main theoretical perspectives that inform the development of a new conceptual framework of the common realm. Following this, additional literature is integrated to further define and operationalize the term within the context of vertical urbanism.

The first theoretical perspective examines prevailing societal and professional interpretations of public and private space in urban environments, with a focus on fostering social interaction. The second introduces the concept of common space; a spatial category that exists between traditional notions of public and private. This chapter challenges both established definitions and the emerging discourse on common space by incorporating the dimension of urban verticality. It explores how elevated spaces, such as hallways, elevator lobbies, and rooftops, can meaningfully contribute to the public realm traditionally confined to the ground level. Additionally, it considers the tensions between this redefined notion of common space and existing legal frameworks.

Public Space and Social Cohesion: Ground-Level Perspectives

By the late 20th century, urban planning began to shift its focus from car-oriented design to pedestrian-friendly environments, aiming to create more walkable and socially engaging cities. A key contribution to this movement is The City at Eye Level by STIPO (2016), which compiles international case studies demonstrating how the redesign of streets and public spaces can foster social behaviour. The publication showcases successful interventions, such as the transformation of neglected alleys into vibrant public destinations and emphasizes the critical role of building plinths, to create safe and inviting streetscapes. While these strategies have proven effective in cultivating social cohesion at street level, they often neglect the spatial and social potential of elevated areas, including upper floors, hallways, and communal interior spaces.

By concentrating primarily on the ground plane, current approaches overlook opportunities for enhancing social interaction within vertical urban environments. This research aims to broaden the scope by examining how interior and elevated spaces, typically regarded as private, might also contribute to public life, offering moments of engagement not only for building users but also for passersby navigating the city.

Rethinking Ownership: Public, Private, and the Common

One of the primary obstacles to adapting interior building spaces for social cohesion is the issue of ownership. Unlike streets and public parks, which are typically managed by local governments, interior spaces within buildings are generally under private ownership. This rigid division between public and private limits opportunities to create shared, community-oriented environments.

At this intersection, the theory proposed in Multitude: War and Democracy in the Age of Empire by Antonio Negri and Michael Hardt becomes particularly relevant. The authors introduce the concept of the multitude, a decentralized, diverse collective capable of resisting the diffuse and

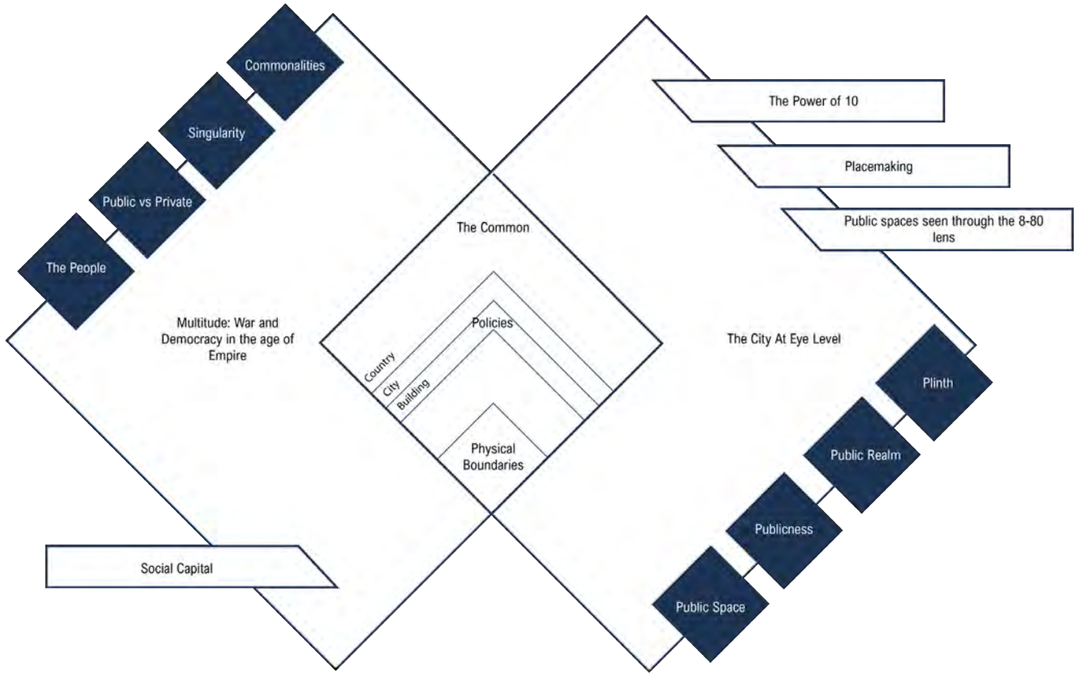


Image 2.3 Theoretical framework

borderless authority of what they term the Empire, representing contemporary capitalist power structures. Central to their argument is the notion of the common, which exists beyond the binary of public and private. The common encompasses shared resources and spaces managed collectively by communities, rather than controlled solely by state or private actors.

When applied to urban environments, this idea offers a compelling framework for rethinking ownership in vertical spaces. Areas such as hallways, communal terraces, and shared lobbies might be reinterpreted not as exclusively private, but as elements of a collectively held and socially valuable domain. However, despite the conceptual potential of the common to foster inclusivity and interaction, current legal frameworks are not structured to accommodate such hybrid spaces.

This research will investigate how these legal limitations manifest at multiple governance levels, local, municipal, and national, and will propose strategies for adapting policy to support common spaces within high-rise developments. In doing so, it aims to bridge the gap between theoretical models of collective ownership and practical urban implementation.

Application to the study

The theories of public, private, and common realms, when combined with placemaking principles, offer a complementary lens for analysing elevated urban spaces. The concept of the common challenges conventional notions of ownership and access in high-rise architecture, highlighting areas such as shared lobbies, rooftops, and circulation zones as potential extensions of the public realm. Placemaking theory, in turn, provides the tools to activate these spaces through thoughtful design, purposeful programming, and inclusive governance structures. Applied to both existing and future high-rise developments, this integrated framework reveals underutilized spatial opportunities. It facilitates the identification of vertical zones that could be reclassified or reimagined as common spaces, while offering strategic guidance for their transformation in ways that foster social interaction, inclusivity, and public accessibility.

Overview of the key theoretical concepts

This research builds on several foundational concepts. The public realm is understood as the network of visible and accessible urban environments where collective life takes place, typically at street level, encompassing streetscapes, plazas, and building facades (Kassenberg et al., 2016). In contrast, public space refers more specifically to physically

> "We need to begin to imagine an alternative legal strategy and framework: a conception of privacy that expresses the singularity of social subjectivities (not private property) and a conception of the public based on the common (not state control)-one might say a post liberal and postsocialist legal theory. The traditional legal conceptions of private and public are clearly insufficient for this task." *P. 217 (Hardt & Negri, 2004)*

open areas that are accessible to all, while publicness describes the degree to which a space is socially, culturally, and psychologically inclusive (Kassenberg et al., 2016).

To expand this framework, Hardt and Negri (2004) introduce the notion of the common as a third spatial category, distinct from both public and private realms. The common is characterized by collective management and shared use, shaped not by state authority or private ownership but by community stewardship. Crucially, it differs from the traditional idea of 'community' by embracing singularities, individuals who maintain their distinct identities while collaborating within a shared space.

These theoretical distinctions are made spatially actionable through the framework of placemaking, defined as the iterative and participatory process of shaping spaces through physical, social, and institutional dimensions (Verheul, 2017). Placemaking involves four interrelated layers: hardware (spatial design), software (everyday use), mindware (perception and meaning), and orgware (governance and management). Together, these layers offer a comprehensive model for activating and reimagining spaces, both at ground level and within vertical urban environments.

Before operationalizing the concept of common space, it was necessary to further investigate the intended social function of such a space. This inquiry began by examining the relationship between the multitude and the mass, and the types of spaces each is typically associated with. To support this analysis, I drew on Robert Putnam's Bowling Alone (2000), which explores the decline of social capital, and the spatial conditions linked to collective and individual behaviour. This provided a foundation for understanding how spatial typologies relate to forms of social organization.

Building on this, I turned to placemaking theory to explore how space can be actively shaped to support communal use. Key sources included The City at Eye Level (Kassenberg et al., 2016) and the Project for Public Spaces (2025), which offer both theoretical insights and practical examples of how physical design, programming, and governance can transform spaces into socially engaging environments. These frameworks collectively informed the development of a common space model aimed at fostering interaction, inclusivity, and collective stewardship.

Social capital

While it shares similarities with the notion of "civic virtue," social capital is distinct in that it is rooted not in political institutions, but in the relationships between individuals. Putnam (2000) conceptualizes social capital as a public good; the collective reservoir of participatory potential, civic orientation, and interpersonal trust available to communities, cities, or nations. According to Putnam, the persistence of social capital relies on the presence of trust, which emerges through networks of civic engagement and is reinforced by norms of reciprocity; two key components that Häuberer (2011) identifies as additional forms of social capital.

Social capital is closely linked to the broader social theories of the multitude and the mass. This relationship becomes particularly evident when Putnam introduces the concepts of bridging and bonding social capital. Bridging social capital is outward-looking and inclusive, connecting individuals across diverse social groups; an idea that aligns with Hardt and Negri's (2004) concept of the multitude as a plural and cooperative collective. In contrast, bonding social capital is inward-looking

and exclusive, fostering cohesion within homogenous groups, and reflecting the characteristics of the mass.
When translated into spatial terms, these two forms of social capital offer important guidance for placemaking. Effective design and programming must be informed by a clear understanding of whether a space is intended to encourage bridging, supporting diversity and openness, or bonding, fostering intimacy and cohesion among specific groups. This distinction is essential in shaping the social function and inclusivity of a place.

Placemaking

Placemaking is a multidimensional approach to the creation and revitalization of public spaces, encompassing more than just physical design (Verheul, 2017). It involves a holistic integration of spatial form, social activity, public perception, and governance structures. Scholars and practitioners increasingly emphasize that successful placemaking requires attention to four interrelated dimensions: hardware (the physical design and infrastructure), software (the use and programming of space), mindware (the perceptions, values, and meanings attached to a place), and orgware (the institutional and organizational frameworks that support its management) (Gehl, 2010; Chang, 2023; Karssenberg et al., 2016).

Hardware: Designing for Human Experience

The "hardware" dimension of placemaking refers to the physical design interventions that shape how people navigate, interact with, and experience public space (Verheul, 2017; Chang, 2023). Foundational works in urban design, such as those by Whyte (1980), Jacobs (1993), and Gehl (2010), provide extensive insight into the spatial qualities that support vibrant and inclusive public environments. A unifying theme across these texts, and one frequently echoed in The City at Eye Level (Karssenberg et al., 2016), is the imperative to design from the perspective of the user, particularly the pedestrian. This user-centered approach emphasizes features such as seating along walking routes, shaded areas or shelter from the elements, transparent or porous façades that reveal interior activity, and the clear separation of slow and fast-moving traffic.

Despite the broad dissemination of these principles, inadequate spatial design remains widespread. Moreover, certain public space interventions actively undermine inclusivity. Examples include the removal of benches to deter houseless individuals or the elimination of dense vegetation to reduce concealment, strategies collectively known as hostile architecture. These design choices highlight how hardware can be used not only to invite but also to exclude, raising critical questions about equity and accessibility in the built environment.

Software: Activating Space through Use

The second dimension of placemaking, known as "software," pertains to the programming and activities that bring public spaces to life (Verheul, 2017). While physical design establishes the conditions for use, it is often the presence of organized events, cultural programming, and informal social activities that transform underutilized spaces into vibrant and inclusive places. This approach aligns with the principles of the "lighter, quicker, cheaper" methodology advocated by the Project for Public Spaces (2025), which emphasizes the power of low-cost, temporary interventions to catalyze change in public behavior and perception.

Software-oriented strategies reveal that effective placemaking extends beyond spatial design; it requires intentional programming that resonates with local communities, encourages everyday participation, and supports the ongoing social vitality of public space.
Mindware: Transforming Perception and Place Identity
"Mindware" refers to the psychological and symbolic dimension of placemaking, how individuals perceive, interpret, and emotionally connect with their environment. Changes in public space can significantly alter how areas are understood, experienced, and valued. A notable example is the long-term transformation of Rotterdam's Zomerhofkwartier by public developer STIPO and its partners, which successfully redefined a marginal urban zone into a dynamic hub of social and cultural identity.
Insights from environmental psychology emphasize that people experience the greatest satisfaction in public spaces that align with their individual needs, whether for passive observation, active engagement, or quiet retreat. This concept is echoed in the "Power of 10" rule proposed by Project for Public Spaces (2016), which argues that successful public spaces should offer at least ten different activities or reasons to attract users. In this way, mindware is crucial for fostering emotional resonance and creating spaces that are not only physically accessible, but also socially inclusive and personally meaningful.

Orgware: Governance, Collaboration, and Institutional Support

The final dimension, "orgware," refers to the organizational and institutional structures that support and sustain placemaking initiatives. It encompasses stakeholder roles, modes of collaboration, and the distribution of power and responsibility among actors. Increasingly, both municipalities and private developers are moving away from traditional top-down planning models in favour of more participatory, adaptive approaches that engage local communities as co-creators of urban space. A relevant example is the LockHal project in Tilburg, discussed by Ebbinge (2022), which illustrates how decentralized collaboration can generate strong local engagement.

However, as Ebbinge also notes in his thesis, orgware reveals a critical vulnerability: many placemaking initiatives rely heavily on the enthusiasm and dedication of a small number of individuals. This dependence can threaten long-term sustainability once those individuals step back. To ensure continuity, successful placemaking must be underpinned by a resilient and diverse network of actors, institutional backing, and shared governance structures. Furthermore, the field must advance toward systematic research and impact assessment, moving beyond anecdotal success stories to develop more rigorous, evidence-based evaluation methods.

The power of 10

The concept of the "Power of 10," developed by advocates at the Project for Public Spaces (2016), was created as a practical framework to identify and cultivate the qualities that make public spaces vibrant and successful. It emerged from a need to evaluate and enhance the usability and inclusiveness of urban spaces. At its core, the framework posits that great public places are characterized by diversity and richness of experience: they provide multiple overlapping uses and attractions, where the collective impact is greater than the sum of individual elements.

For instance, while a park on its own may offer recreational value, its effectiveness as a public space is significantly enhanced when paired with additional features such as a playground, water element, food vendors, or seating areas. This effect is magnified when

II | Theoretical Framework

the surrounding urban context contributes further layers of activity, such as a nearby library hosting community events, the presence of cafés and retail, connections to public transit, or adjacent walking and cycling routes.
The Power of 10 framework thus underscores the importance of spatial and programmatic interconnectedness in placemaking, advocating for environments that serve diverse needs and foster inclusive, meaningful engagement across a broad spectrum of users.

8 80 Cities framework

Once a place offers a minimum of ten distinct programs or attractions, as outlined in the "Power of 10" framework, the next critical consideration is its accessibility and inclusivity across age groups. This research draws on the 8 80 Cities framework (Fonseca, 2021), which promotes urban design strategies that ensure comfort, safety, and usability for individuals from eight to eighty years old. Grounded in the belief that a city designed for both a child and an elder will function well for everyone, the approach emphasizes equitable, engaging, and universally accessible public spaces.

A central tenet of this framework is the creation of comfortable places. Even the most active users of parks and public spaces need opportunities for rest. Strategically placed, high-quality seating, especially valuable for older adults, encourages prolonged and repeated use. Comfort also encompasses a sense of welcome, safety, and intuitive usability, which together contribute to longer, more meaningful visits.

Equally important is the inclusion of essential amenities, such as drinking fountains, clean and accessible restrooms, and well-designed, legible signage. These seemingly minor features play a critical role in shaping perceptions of care and quality. For example, clear and aesthetically consistent signage not only aids navigation but also strengthens a user's emotional connection to the space. Similarly, the presence of well-maintained waste infrastructure supports cleanliness and environmental stewardship.

Designing for all ages also requires support for diverse physical activity. Public spaces should incorporate features that cater to a range of age groups and physical abilities. Playgrounds, for instance, should offer elements that engage not just young children but also adolescents and adults, encouraging intergenerational interaction. Natural features such as community gardens or sensory landscapes can further promote physical activity, local identity, and collective care. In larger parks, the programming should span from active recreation (e.g., sports fields, jogging paths) to quieter, reflective environments (e.g., open lawns, art installations, or shaded retreats).

Finally, the didactic and cultural role of public space can be acknowledged and promoted. Public environments can thus serve as informal learning settings that foster civic engagement and social participation. When design interventions invite observation, interaction, and reflection, they help cultivate a deeper sense of ownership, identity, and community connectedness (Erek & Krasznahorkai, 2024). In this way, public space becomes not only a site of leisure but also a platform for social learning and collective meaning-making.

Conclusion

Viewed through the lens of the key theoretical concepts, public space becomes a symbolic and cultural landscape, a setting where collective memory, identity, and social interaction are both expressed and sustained. Any intervention in such spaces must begin with a deep understanding of the local community and its relationship to place. Recognizing this cultural dimension ensures that design does more than fulfil functional requirements; it also supports the development of citizenship by embedding everyday life within a rich social and cultural context.

II | Theoretical Framework

The Common and the Community | Multitude: War and Democracy in the age of Empire (Hardt & Negri, 2004)

The common stands directly across from the crowd, the mob and the mass. Eventhough they exist out of mutiple people they must be by one opinionte singularity and cannot act by, or think for, them themselves. This is also why they are susceptible to manipulation from external forces, may it be other people or proucts. Still, the common is susceptible to change, though adaptions of the environment, experienced by all. The common is also different from the community, the community is based of individuals. The common is based of singularities. Where the individual disolves in the community, the singularity epresses themselves through the common without diminishing. These spaces are defined by commonality and collective cooperation, fostering inclusivity and resisting traditional hierarchies. The common space therefor is the

The singularity and the people | Multitude: War and Democracy in the age of Empire (Hardt & Negri, 2004)

The singularity retain their uniqueness while participating in a larger collective effort. singularity suggests that uniqueness exists in relation to and interaction with others. is inherently relational: it gains meaning and expression through its interactions with other singularities. This reflects the multitude's emphasis on cooperation and collective action, rather than isolation or competition.

The people implies a unified, singular entity that represents an entire nation or community. This concept suppresses differences and pluralities within society, creating an illusion of uniformity. It often aligns with the sovereign state's power, where "the people" are represented as a single body under one authority. In forming "the people," some individuals or groups are inevitably excluded. For example, minorities or dissenting voices may not fit within this singular framework and are marginalized. The concept tends to erase the multiplicity of identities, interests, and experiences present in any society.

The public and the private | Multitude: War and Democracy in the age of Empire (Hardt & Negri, 2004)

The public sphere has historically been understood as the realm of collective interests, such as governance, civic engagement, and shared resources. The private sphere, in contrast, is associated with individual ownership, family, and personal autonomy.

The authors critique both the public and private spheres for their complicity in systems of control and exclusion. Public spaces, as traditionally defined, are often controlled by state power and do not genuinely represent the interests of all. The private sphere, meanwhile, is shaped by capital and serves as a site of exploitation and inequality, especially under neoliberalism.

Public Realm | City at Eye Level (Kassenberg et al., 2016)

Public realm encompasses all elements of the city that contribute to collective experience and interaction, not limited to physical spaces. It includes streetscapes n building facades. The book even refers to it as "everything that can be seen at eye level". Public realm focuses on how people experience and engage with the city at a broader level, integrating sensory, emotional, and cultural dimensions. It emphasizes the connectivity between different public spaces, creating a cohesive and accessible network for movement and interaction. Public realm focuses on engagement on the human scale.

Placemaking | City at Eye Level (Kassenberg et al., 2016)

Active efforts to enhance the public realm through community-driven, context-sensitive interventions.

"Public space is the opposite of private space"

Jane Jacobs 1961

Human Scale | City at Eye Level (Kassenberg et al., 2016)

Ensuring the public realm feels inviting and accessible by designing elements that align with human proportions and activities.

Public Space | City at Eye Level (Kassenberg et al., 2016)

Public spaces refer to tangible, open spaces in cities that are accessible to all people, such as streets, squares, parks, and plazas. These spaces are defined by their inclusivity—they are open to everyone regardless of socioeconomic status, background, or purpose. It is important to design public spaces at "eye level," ensuring they cater to human scale, activity, and interaction. Maintaining the walkability, safety and comfort though this. Public spaces serve as hubs of social activity, fostering connections among diverse groups. When designed well, public spaces contribute to the economic success of urban areas by encouraging foot traffic and supporting local businesses.

Publicness | City at Eye Level (Kassenberg et al., 2016)

Publicness refers to the extent to which a space is accessible, inclusive, and open to a broad range of users. This includes physical access, but also social, cultural, and psychological accessibility. Publicness exists on a spectrum ranging from fully public spaces to semi-public spaces to private spaces. Publicness of a space influenced by design, ownership, regulations and, cultural and social inclusion.

The Plinth | City at Eye Level (Kassenberg et al., 2016)

The plinth refers to the ground floor of a building and its interaction with the public realm. It is the interface between private property (the building) and the public space (the street or square). The plinth plays a crucial rol in activating urban environments and influencing how welcome and attractive a space feels on street level. The design of a plinth depends on the context and function of the building.

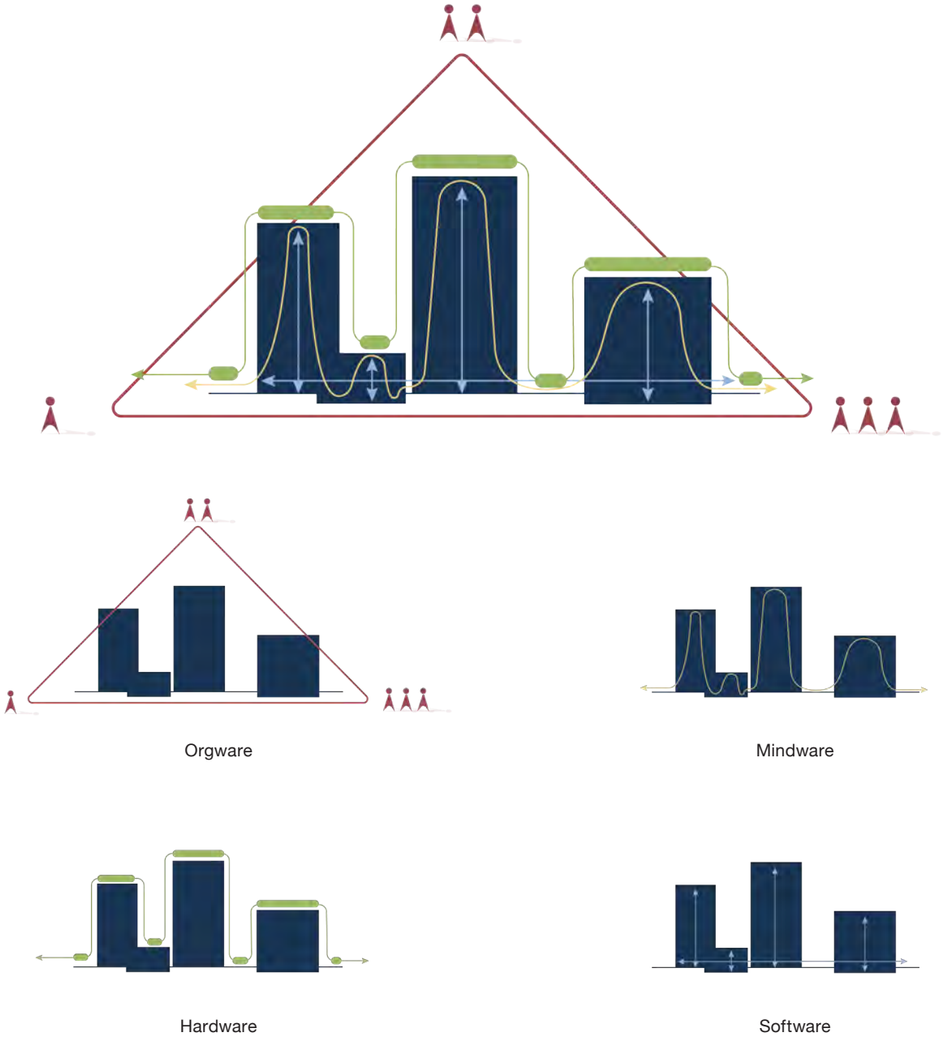


Image 2.4 Design Aims

II | Design Aims

Before addressing how common space can be designed, it is important to define what this design should aim to achieve. As introduced in the theoretical framework, the concepts of hardware, software, mindware, and orgware, drawn from placemaking theory of Verheul (2017), serve as the foundation for this section. When combined with the broader urgencies mentioned in the introduction, of climate adaptation, spatial justice, and urban fragmentation, these four components help to structure the design logic of this thesis.

Each element offers a different mode of intervention, physical, programmatic, perceptual, or organizational (Kassenberg et. al, 2016). Together, they define how a common space can function as both an inclusive destination and a meaningful connector across vertical and horizontal urban layers.

Orgware

Structuring governance, ownership, and long-term maintenance. This includes legal agreements, contracts, and management models that determine who controls the space, how rules are enforced, and how conflicts are resolved. Importantly, this category connects public ambitions to private actors and civic stakeholders through enforceable mechanisms.

Design Aim: Integrate management responsibilities early in the development cycle to ensure long-term public access and operational stability.

Mindware

Shaping perception and meaning through placemaking strategies. This includes the symbolic and emotional associations people form with space, which influence whether they feel welcomed, excluded, or encouraged to linger. Elements such as local storytelling, participatory design, or visual cues can help shift mental models around ownership and accessibility.

Design Aim: Use visual identity and cultural cues to make elevated spaces feel publicly approachable and intuitively open.

Hardware

Designing the physical infrastructure of common space. This includes vertical and horizontal connections such as stairs, ramps, bridges, and atriums, as well as material interventions that respond to environmental challenges. These might include shading devices to address heat or permeable surfaces for water infiltration. Hardware strategies aim to create spatial legibility and enable the layering of uses.

Design Aim: Remove physical barriers and enhance spatial connectivity between levels, while also supporting climate-resilient infrastructure.

Software

Programming the space to encourage movement, interaction, and diversity of use. This involves not just event scheduling, but also wayfinding, signage, and digital layers (e.g., apps or online platforms) that connect physical access with virtual orientation. Wayfinding becomes particularly important when guiding users between indoor and outdoor or lower and upper levels.

Design Aim: Introduce adaptable programs that foster inclusivity and improve orientation across levels.

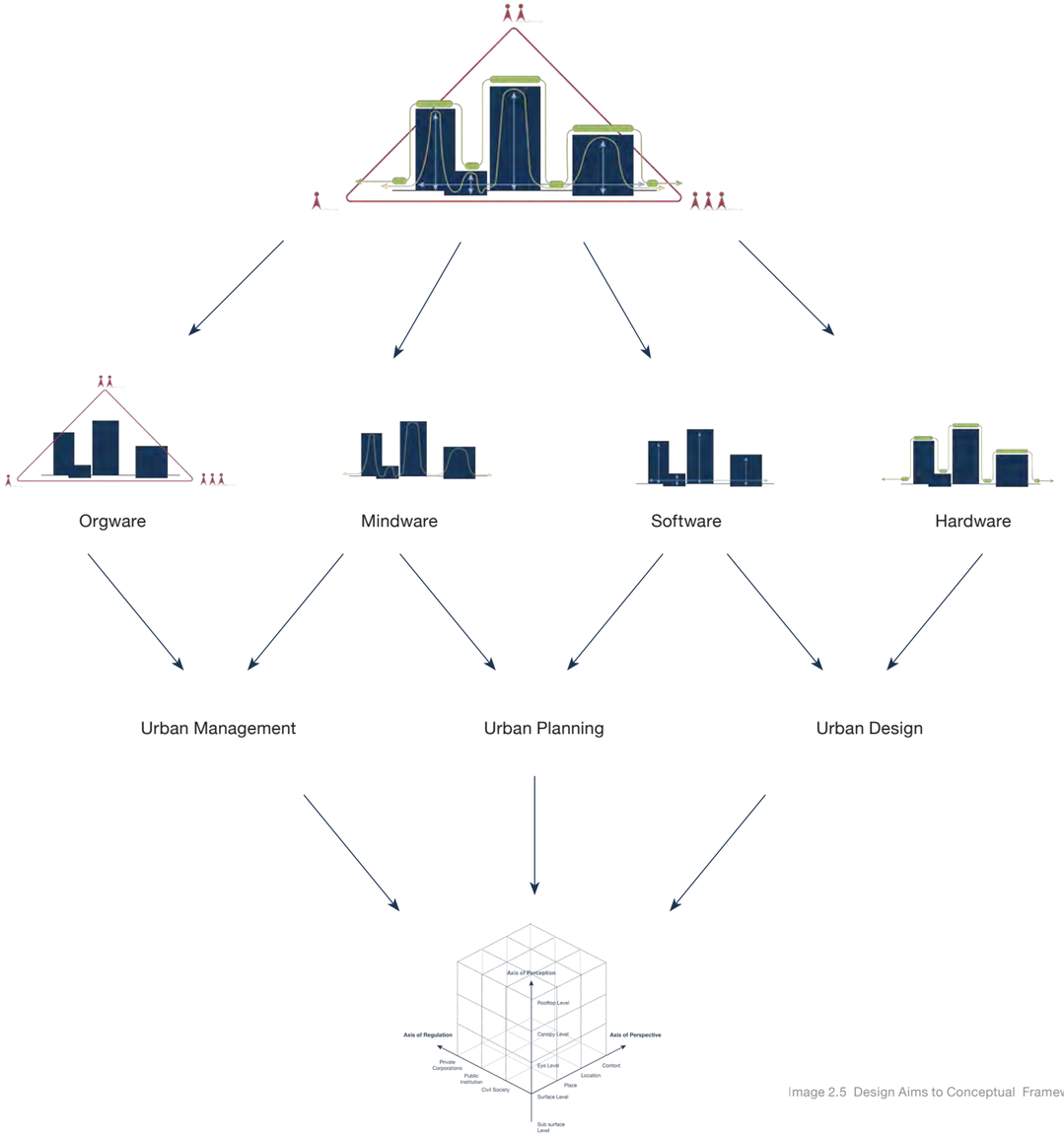


Image 2.5 Design Aims to Conceptual Framework

II | Conceptual Framework

A conceptual framework has been developed as an original analytical tool for this thesis. It builds on the four components of placemaking and reorganizes them along three metaphorical axes, regulation, perception, and perspective, each representing a different dimension of how publicness is experienced and negotiated in the urban vertical. Together, they offer a new lens to evaluate and compare elevated spaces, particularly those that exist in the ambiguous zone between public and private.

Traditionally, public space is distinguished from private space through ownership and access. Yet this binary view is increasingly insufficient, particularly in vertical urban environments where the lines between public, semi-public, and private are often blurred. This thesis instead adopts a spectrum-based understanding of publicness, recognizing that access, control, and perception vary depending on regulation, design, and social norms.

The term public realm in this context extends beyond legal definitions to include the full sensory and visual experience of the city at eye level. This includes spaces that appear public, like a corporate plaza or building lobby, but operate with private restrictions. The thesis proposes the term common space to describe these intermediate areas, which exist at the intersection of public intention and private governance.

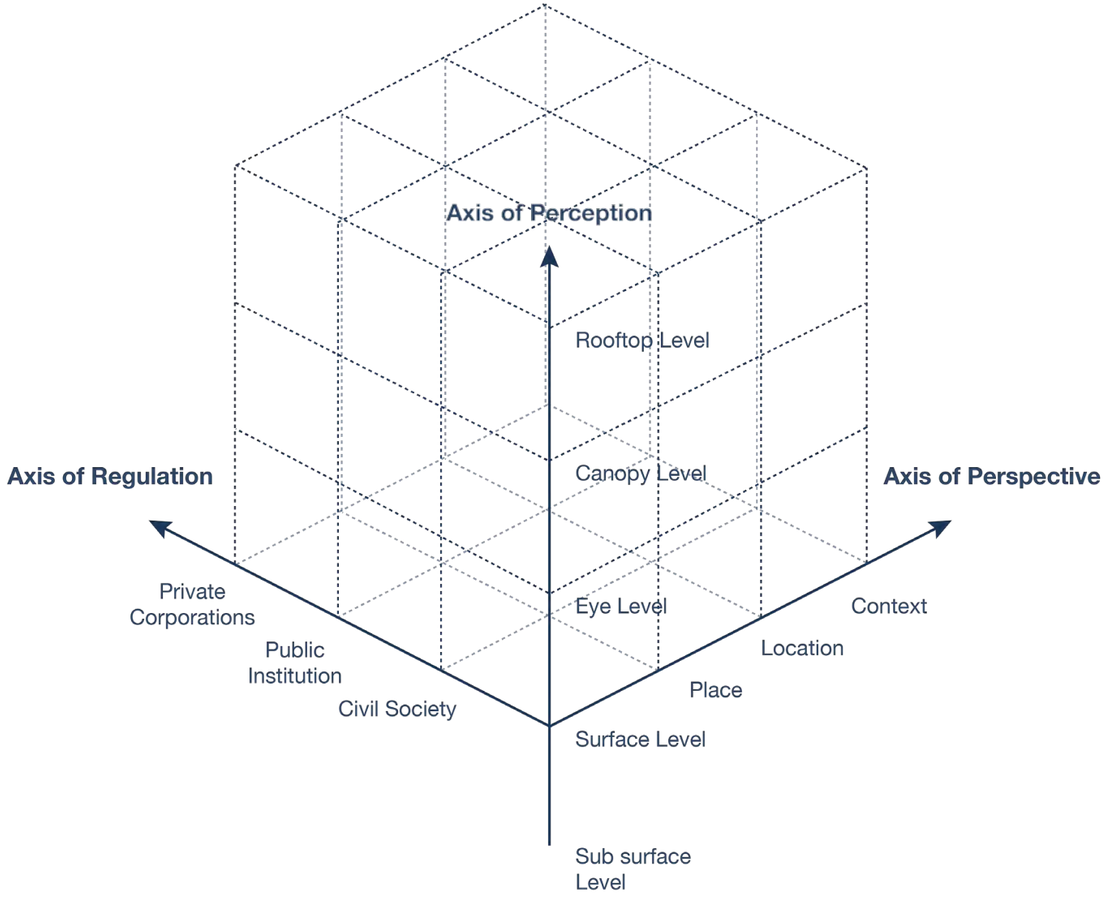


Image 2.6 Methodological framework

II | Conceptual Framework

The conceptual framework uses three metaphorical axes to structure the analysis:

Y-Axis: Regulation (Who controls?)

This axis describes the balance of power among civil society, public institutions, and private actors. It focuses on the rules, legal structures, and ownership models that shape how a space is used and managed. At one end is grassroots civic engagement: at the other, corporate or institutional control.

X-Axis: Perspective (From where the space is viewed?)

Adapted from The City at Eye Level (Kassenberg et al., 2016), this axis maps how space is framed and understood, from the intimate scale of a place to the functional location, to the broader urban context. This helps distinguish between localized design interventions and system-wide implications.

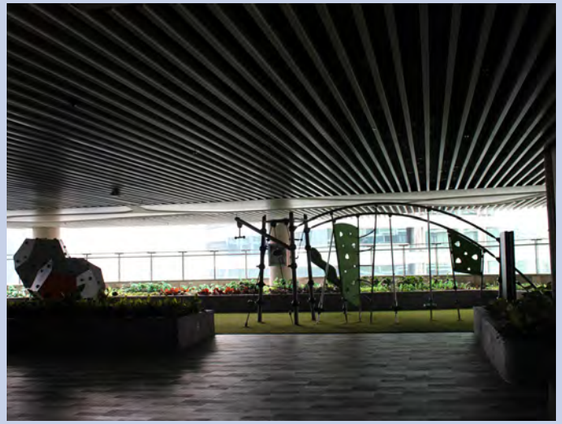
Z-Axis: Perception (At what level is the space experienced?)

This vertical axis looks at how space is perceived at different heights: from the subsurface level (e.g., underground bike parking), to eye level, to canopy and rooftop levels. It reflects both physical conditions (wind, visibility, elevation) and psychological ones (orientation, comfort, control).

Integrating the Axes

The intersection of these three axes forms a multi-dimensional matrix through which common spaces can be understood and evaluated. This matrix does not prescribe one ideal condition but instead highlights how publicness fluctuates depending on spatial level, regulatory control, and the user's frame of reference. It enables analytical comparison across case studies and design proposals, revealing how design choices, legal frameworks, and programming strategies interact to shape experience.

Image 2.2.1 Manilla Skyline, a seemingly endless urban landscape.



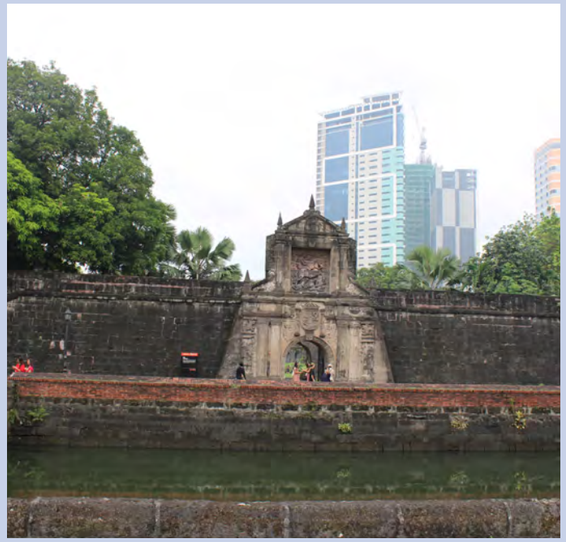


Image 2.2.2 Manila through the urban lens

Part III
Through The Tracks

III | Chapter Introduction

This part of the thesis explores the methodological foundation of the research by examining how the three primary urban development tracks, urban management, urban planning, and urban design, each address the central research question: *In cities with vertical urban ambitions, how can the horizontal and vertical realms be connected to create publicly accessible spaces within high-rise developments?*

Recent developments in Rotterdam reveal the consequences of a disconnect between these disciplines. For instance, benches were removed from the Central Station concourse due to concerns about public safety, particularly regarding homeless individuals seeking shelter(NOS, 2023). This response, rather than offering alternatives, displaced vulnerable people and simultaneously diminished comfort for everyday users. Such cases illustrate how poorly coordinated decisions across design, planning, and management can lead to exclusionary or even hostile urban environments. These issues underscore the urgency of a more integrated and reflective approach to public space development; especially in contexts where the boundaries between public and private are increasingly blurred.

Building on the previous chapter, which outlined the conceptual framework and design aims, this section distinguishes the unique perspectives and challenges inherent to each track. By analysing these tracks independently, the chapter deepens understanding of their respective roles in urban development and positions them as integral contributors to the subsequent design interventions. This analytical separation ensures that the eventual synthesis in the design phase is not only creative but also grounded in a thorough appreciation of each domain's constraints, objectives, and logics.

The chapter unfolds in three parts. It begins with an examination of urban management, focusing on its theoretical basis, institutional logic, and the key stakeholders involved in the urban development cycle of public spaces and programs. Emphasis is placed on governance structures and the administrative challenges of integrating public programs within privately owned buildings.

Next, the lens shifts to urban planning, which operates at the intersection of policy and spatial organization. This section investigates the planning tools, regulatory frameworks, and experiential considerations that shape the city and influence user interaction with vertical environments. It also considers how legal ambiguity and regulatory tension complicate the classification and treatment of elevated semi-public spaces.

Finally, the chapter turns to urban design, where management and planning are translated into physical form. This section explores how spatial strategies address physical constraints and user needs, and how design can mediate between top-down directives and bottom-up initiatives. Several built examples, such as the rooftop terraces of the Erasmus MC and the Boijmans Depot, serve to illustrate both the potential and the current shortcomings of elevated urban spaces as inclusive public realms.

A concluding reflection synthesizes insights from all three tracks, laying the groundwork for the design proposal. This structure ensures that the design interventions in the following chapter are not only spatially grounded, but also contextually, politically, and socially informed.

III | Urban Management

Steering public program in vertical development

III | Introduction

This chapter explores the urban management perspective in relation to the central research aim: enabling publicly accessible and socially inclusive elevated spaces in high-rise buildings. Specifically, it examines how urban management mechanisms (orgware) influence whether public programming ambitions, often introduced during the design phase, are carried through into actual use and what influence they have on the public opinion of a place (mindware). The recurring failure of public-oriented initiatives in the management and usage phase signals a need to better structure the entire development process to safeguard public program.

Urban management in this research is defined as the process by which stakeholders, such as municipal authorities, developers, investors, and civic groups, coordinate decision-making across scales (TU Delft, 2025). This includes both the object level (concerning individual buildings and development sites) and the supply level (involving real estate portfolios and broader urban areas). What distinguishes this form of management from regular management is its location-sensitized approach: it not only handles investment and regulation but seeks to foster spatial outcomes that reflect public interests.

The chapter proceeds by first discussing the legal frameworks; what distinguishes public and private law and defines the main stakeholders and actors of the public program in privately owned developments. Subsequently two key analytical models are outlined, the urban development cycle and urban management mechanisms, and integrated to identify intervention points that can support the delivery of public program in vertical development.

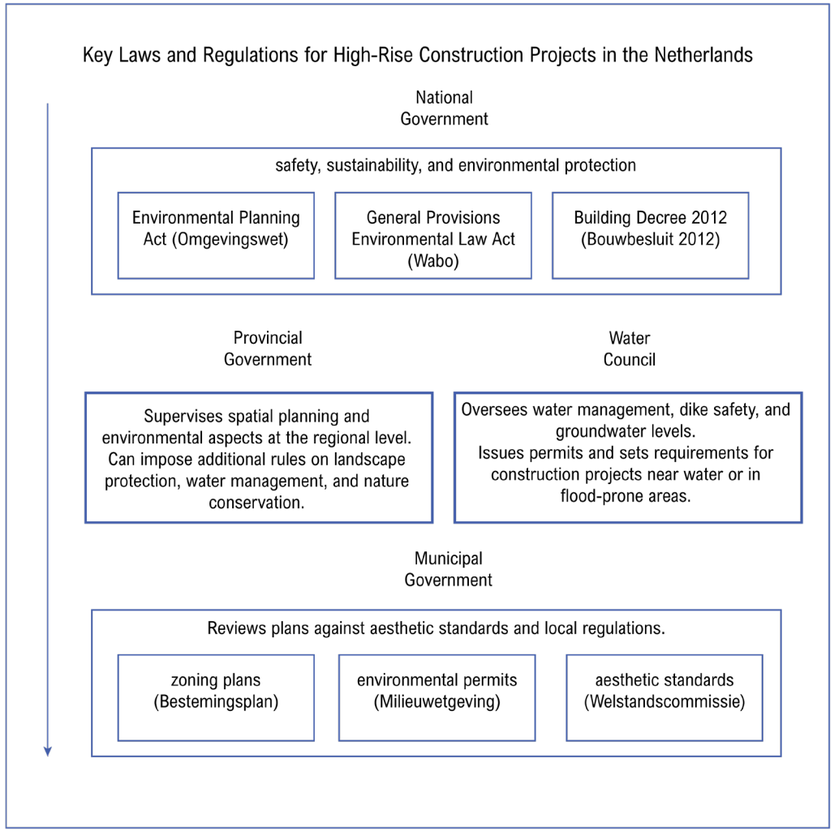


Image 3.1 Key public laws, regulations and institutions for building development in the Netherlands

To evaluating how public agendas are negotiated in private-led development the boundary between public and private law needs to be defined. Public law instruments, such as zoning plans, laws, decrees, and regulations, give municipalities influence in the early phases of development, the image in the left shows the different public law instruments in the Netherlands. An example of this is that amendments of the zoning plan can be offered conditionally, allowing authorities to negotiate public program requirements during the initiative or design phase (Hobma, 2011). This public leverage, however, diminishes significantly once a project reaches the management and usage phase.

In contrast, private law, through contracts, agreements, sales conditions, and ground leases, provides the more durable tools for safeguarding public access over time. Cities like Amsterdam have an advantageous position due to retained ownership of land via long-term ground leases, enabling them to enforce conditions on land use. Cities like Rotterdam, however, have sold the land instead of providing lease contracts, requiring them to embed public interest conditions in legally binding sale contracts at the point of transfer (Ploeger & Bounjouh, 2017).

A particularly effective legal mechanism arises from the use of intention agreements; private law contracts made prior to the issuance of a public zoning or environmental permit (omgevingsvergunning). These agreements, negotiated between the municipality and developer, outline commitments that may include public accessibility within privately owned buildings (Interview 2, 2025). Municipalities can make such accessibility a precondition for issuing the permit, justifying it on the grounds of spatial quality or the statutory requirement to ensure a “balanced distribution of functions and locations” (evenwichtige toedeling van functies aan locaties), as stipulated in Dutch planning law (Interview 2, 2025).

In practice, these agreements can regulate access conditions, surveillance, whether entry fees are permitted, and physical barriers such as fencing. While such conditions may seem restrictive, they are necessary to reconcile public safety and spatial openness. The corresponding requirement for public access is then embedded in the final permit decision, making it enforceable and open to public scrutiny, including legal objection or appeals. Although legal challenges are common, this process provides a formalized and transparent route for embedding public access in private developments. However, if such agreements are not established at the permitting stage, the municipality loses its legal standing to enforce public access retroactively. Without a binding agreement, public authorities cannot unilaterally demand public access to private property, underscoring the critical importance of early legal integration of public ambitions within the development process.

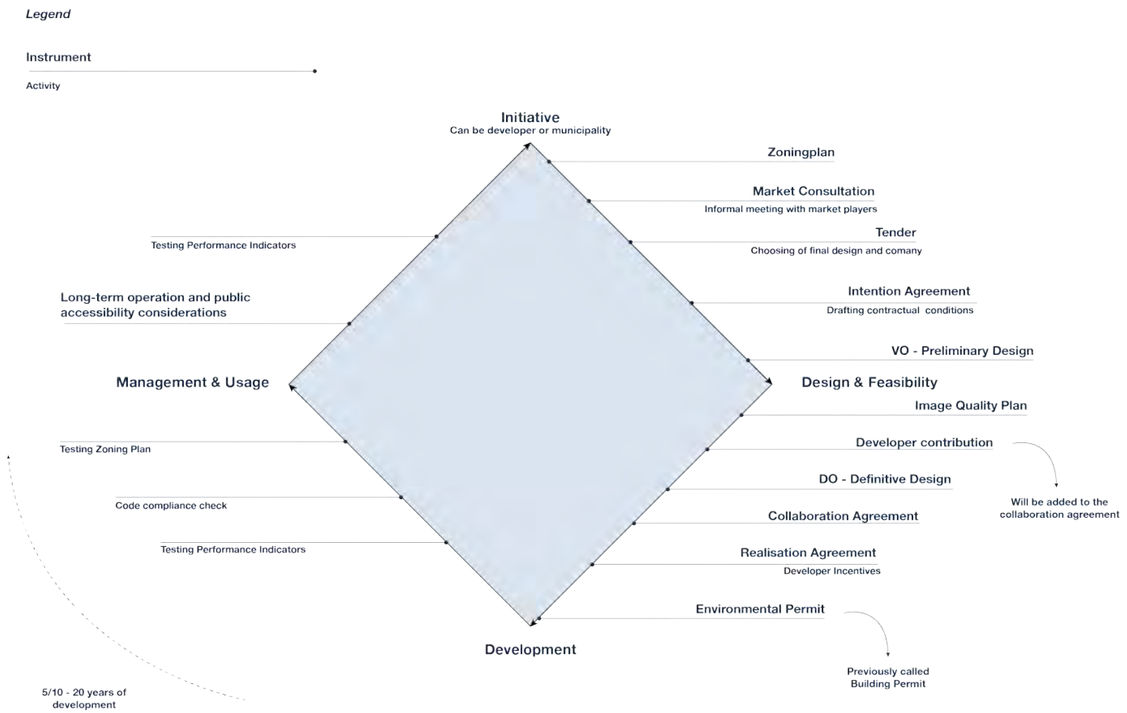


Image 3.2 Urban Development Cycle and management instruments

III | The urban development cycle, shifting leverage over time

The urban development cycle, adapted from the "Instruments for safeguarding public interests in private sector-led urban development" (Figure 10.2) from Heurkens (2012), serves as a temporal framework for understanding how stakeholder influence and public program evolve across the different stages of a project. The model distinguishes four core phases:

- Initiative phase
- Design and feasibility phase
- Development phase
- Management and usage phase

Each phase provides varying opportunities for embedding public interests, depending on the instruments available and the balance of power between actors.

During the initiative phase, the municipality often has the most influence, particularly if it controls land ownership or the zoning framework. This is the phase when intentions can be aligned, and public aspirations can be formalized through legal instruments such as sales conditions or ground lease agreements. The municipality may also use tools, like zoning plan amendments, to negotiate features that support public access or common use. Thus, design decisions become political instruments translating public frameworks into spatial form.

In the Design and feasibility phase the municipality already loses a lot of leverage power. Once the zoning plan is irrevocable neither municipality not civic rights groups have power to stop the development of a project. The success and ability of a project to move onto the development phase are dependent on the funds and agreements with private parties surrounding the development site.

In the development phase construction is often delegated to private contractors, and the municipality's role shifts toward oversight rather than steering. By the time the project reaches the management and usage phase, the influence of public actors is significantly reduced. If public interests have not been safeguarded contractually by this stage, there is limited capacity to enforce them, unless the building violates safety codes or specific contractual obligations. It is precisely in this final phase, when a building is operational and fully tenanted, that the risk of closure to the public emerges most acutely, often due to complaints from users, liability concerns, or shifts in management priorities. This makes early phase embedding of public value not simply preferable, but structurally necessary.

Urban management is inherently multi-stakeholder. In projects involving the common realm, the space between public and private, embedded in shared vertical environments, stakeholder coordination becomes both more complex and more critical. For this research, stakeholders will be grouped into three general categories: civic society (residents, visitors, advocacy groups), local authorities (municipal departments, utilities), and private sector actors (developers, investors, real estate owners).

Each stakeholder group brings different interests and degrees of power, which shift across the development cycle. According to Magalhães and Trigo (2016), stakeholder influence is shaped by three key types of rights:

1. Access rights: Who can physically enter or use the space
2. Use rights: What behaviours and functions are permitted within the space
3. Control rights: Who has decision-making power over changes, funding, and maintenance

In the case of (elevated) common spaces, building owners (e.g., residents, companies occupying space and renters), often gain disproportionate control rights during the management and usage phase, enabling them to restrict access or repurpose space originally intended for public program. This dynamic illustrates how formal ownership structures interact with informal norms, resulting in the dilution of the public agenda.

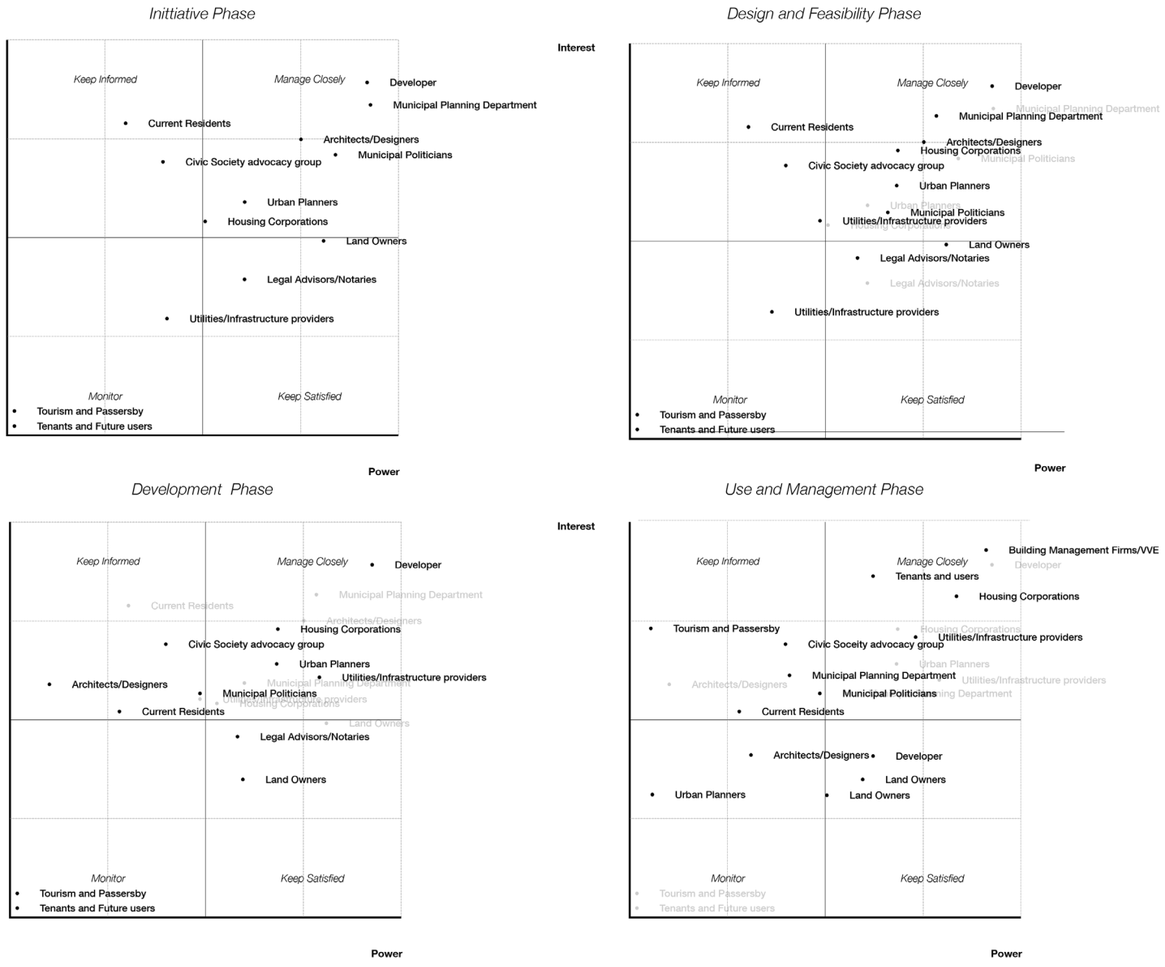
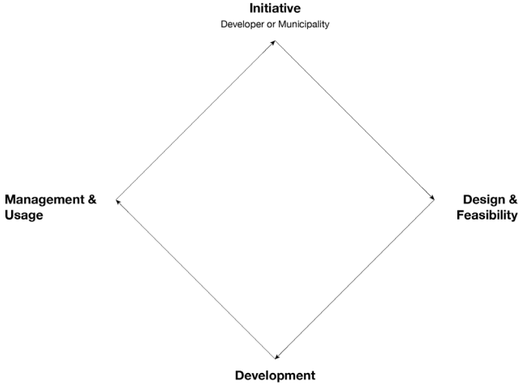


Image 3.3 Power Interest devide through different phases of the urban development cycle.



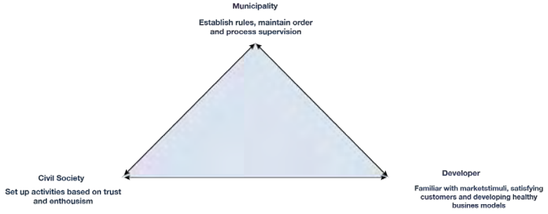


Image # Methodological framework

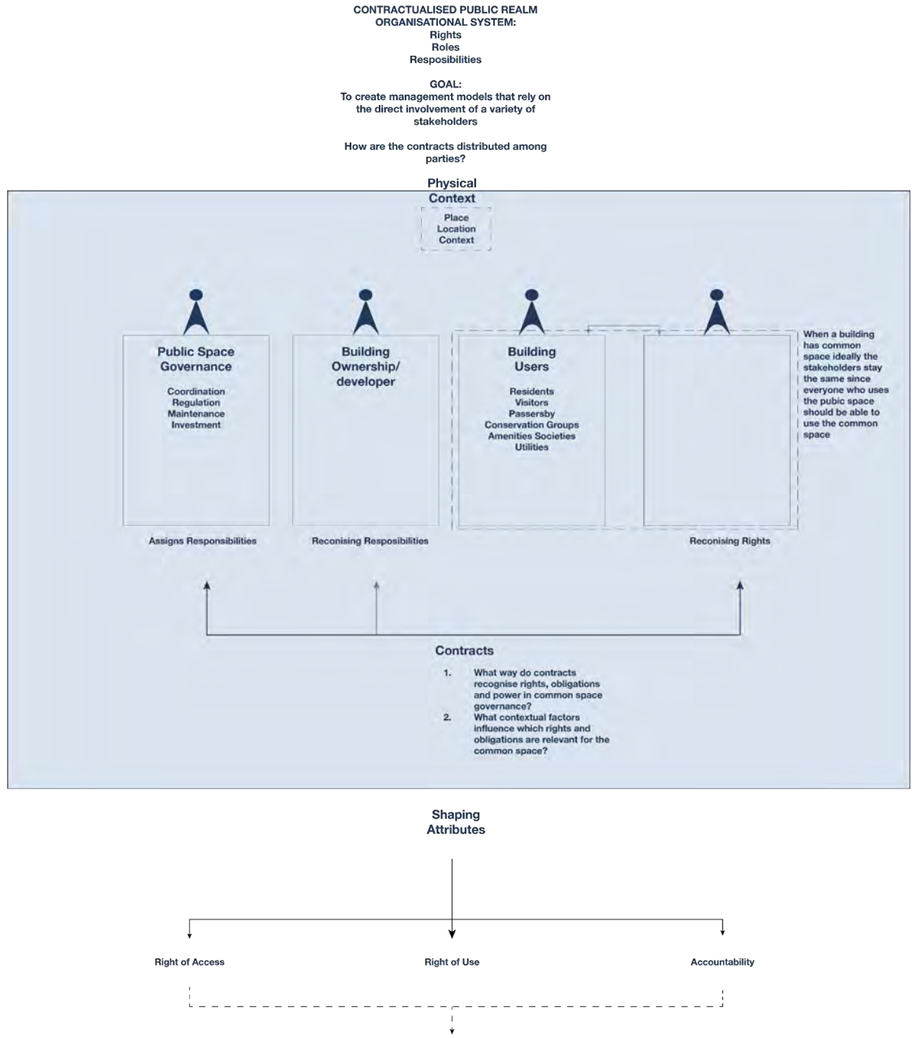


Image 3.4 Organisational System Diagram

III | Organisational Systems: Rights Roles and Responsibilities

Alongside the development cycle, organisational systems shape the governance of a project, determining who is responsible, under what conditions, and through which instruments. Drawing on the work of Magalhães and Trigo (2016), whose original model mapped the delegation of public space management in the UK to non-state and private actors, this thesis repositions their framework within the context of building-level common spaces in high-rise developments. Rather than streets and parks, the focus shifts to shared rooftops, lobbies, terraces, and interior corridors, spaces whose publicness is both spatial and contractual.

Organisational systems operate through a set of interlinked mechanisms. Legal agreements establish the scope of each actor's responsibility, while maintenance and oversight are supported by funding streams that may be public, private, or hybrid. Most critically, governance arrangements define how decisions are made and who holds decision-making power. In the vertical city, these questions become particularly charged, as publicness becomes more difficult to perceive, more dependent on user behaviour, and more vulnerable to institutional drift.

When applied to high-rise developments, this model reveals a structural shift: the users of a space are also its legal stakeholders. Residents and private owners, acting as collectives, such as homeowners' associations (VvE's), developer-formed consortia, or professional property managers, gain both formal and informal control over shared environments. These collectives become gatekeepers. They are not only responsible for cleaning, safety, or repairs; they also decide whether space should be open to non-residents, whether programming is desirable, and what levels of surveillance or access control are acceptable. In effect, they define the terms of publicness.

This represents a reversal of the traditional public management model, where municipalities act on behalf of civic society. In vertically layered environments, public authorities are often sidelined, their influence limited to initial planning permissions or soft forms of persuasion. Once the building is occupied, governance tends to solidify into private hands.

A telling example is De Groene Kaap in Rotterdam, a residential development where the internal courtyard was initially designed as a semi-public space. Over time, however, residents experienced noise from a neighbouring school and voted to install fences, cutting off public access during weeks days (Interview 1). The space became gated not because of a policy change, but because the private collective, acting as both resident and regulator, redefined its purpose. This example underscores the fragility of publicness when governance is not clearly stated from the outset.

To counteract this, the thesis argues for early-phase legal safeguards, zoning plans, development covenants, or binding intention agreements, that can embed access rights and operational responsibilities before power fragments. By defining clear expectations regarding use, programming, and openness, these instruments can help preserve public value throughout the life cycle of a building.

At stake are several urgent questions. How can rights of access and use be protected when private collectives hold the keys? What forms of governance are suited to balancing resident influence with civic accountability? And how can public authorities maintain leverage when their role becomes advisory rather than directive?

The answers, this research suggests, lie not in a single governance model, but in a flexible, context-aware framework that anticipates the role of gatekeepers and adapts accordingly.

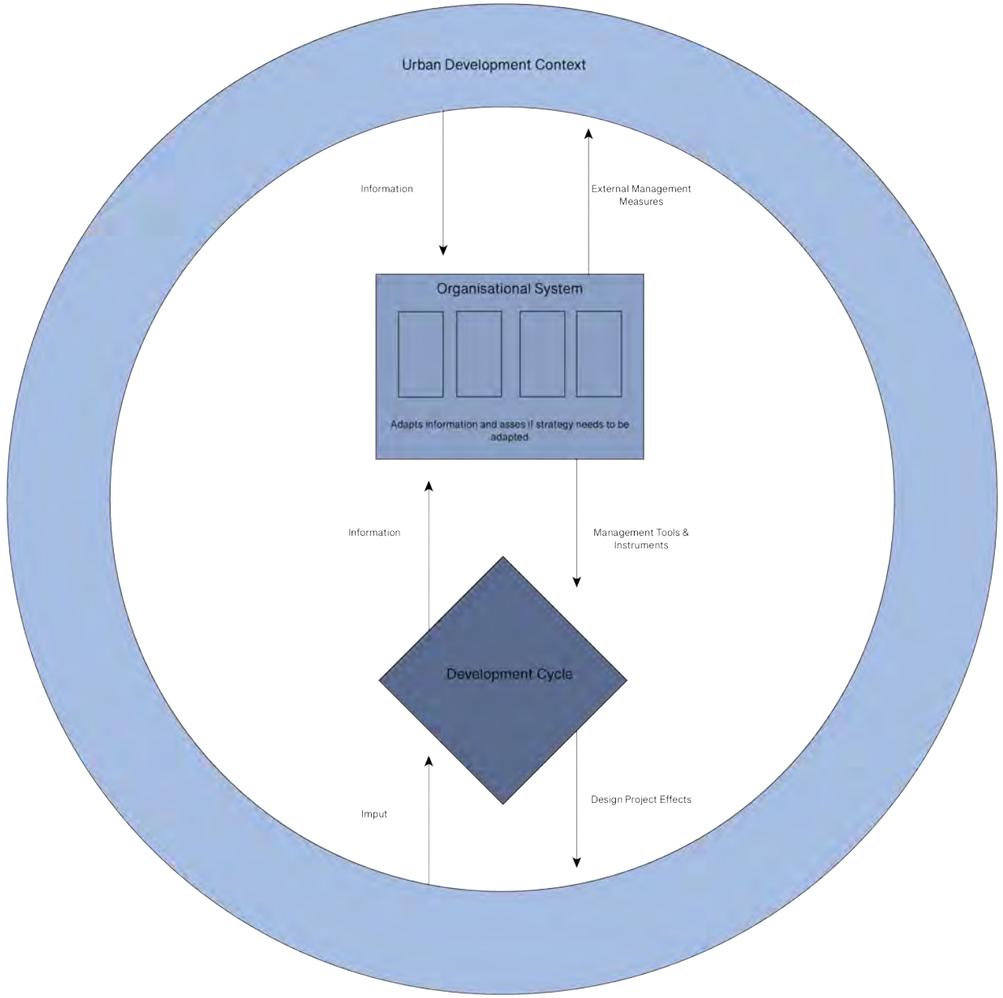


Image 3.5 Urban Development Diagram

The urban management perspective reveals that the success or failure of public program ambitions in high-rise developments is not merely a matter of good design. It is fundamentally a function of how rights, roles, and responsibilities are distributed across the urban development cycle. As the capacity for municipalities to intervene diminishes in later phases, early-phase alignment between public and private actors becomes the only structural safeguard for long-term accessibility.

Management mechanisms adapted from public realm models offer tools to address this challenge, but only if they are integrated throughout the entire development process, from intention to usage. Rather than treating management as an afterthought, it must be reconceived as a design-supporting instrument, helping to sustain the public identity of a building well after it is constructed and occupied. Without proactive urban management, backed by legal clarity, strategic planning, and inclusive governance, the concept of the common realm risks being reduced to private convenience.

By synthesizing the urban development cycle with the organisational systems model, this thesis identifies strategic moments when public value can be introduced, defended, or lost. These are moments when contracts are written, zoning is negotiated, and stakeholders are formally brought into the process. The goal of this integrated model is to move beyond fragmented approaches and toward a more continuous alignment between public aspirations and private development trajectories. It allows us to see where responsibilities shift, where leverage is strongest, and where continuity of purpose is most vulnerable.

At each stage of the development cycle, specific actors gain or lose influence. Understanding this choreography is essential for safeguarding the three Rights that define publicness in vertical space: the right to access, the right to use, and the right to experience programming. Each right is fragile, but it can be reinforced through tailored interventions by the right actors, using the right instruments, at the right time.

At the land acquisition phase, public authorities and private landowners can set the stage for future accessibility by embedding public use conditions into sale contracts or leasehold agreements. This ensures that public value is secured before development even begins. During zoning negotiations, municipalities hold significant leverage and can exchange development incentives for concrete public benefits, provided those benefits are precisely defined and legally binding. Terms like “openness” or “accessibility” must be operationalized, not left as vague intentions.

In the early design stages, architects, developers, and civic groups have the opportunity to shape spatial meaning through participatory design and stakeholder engagement. However, unless these ambitions are contractually formalized, they risk dilution or reversal later in the process. Governance design, which emerges during the management and use phase, is perhaps the most fragile of all. By this time, the building is complete, and resident associations, property managers, or investors often control both access and programming decisions. If these actors are not bound by prior agreements or accountable to external oversight, public space becomes precarious.

III | Conclusion: Toward a Publicly Minded Management Model

As Ebbinge (2022) underscores, public ambitions must be translated early into clear responsibilities, particularly around who will activate, manage, and sustain these spaces. Without this, civic values are often displaced by market incentives or local complaints. Social placemaking can provide an anticipatory solution by involving future users in the design process and embedding their expectations into agreements. However, when legal documents fail to articulate specific programming, use, or access requirements, it becomes nearly impossible to later assess whether the intended public function has been fulfilled.

One category of space remains especially underregulated: mobility infrastructure. Corridors, elevators, and lobbies, essential connectors in vertical environments, are often overlooked in zoning plans and intention agreements. Their legal and functional ambiguity leaves them vulnerable to control by building residents or commercial owners, who may cite safety or liability concerns to restrict access. Without early-stage regulation, these transitional zones become friction points that slowly undermine the larger public agenda.

To counteract this, the alignment of actors, instruments, and timing is crucial. The design must not only propose a form, but establish the institutional scaffolding that allows publicness to persist, contractually, socially, and spatially. This chapter has shown how that scaffolding might be built. The next part of the thesis, “V | Design”, takes these insights and applies them to Rotterdam’s high-rise context, demonstrating how management structures and spatial strategies can together sustain an elevated public realm.

III | Urban Planning

Connecting Layers of Perspective

This chapter explores the role of urban planning as the intermediary between mental perception and spatial programming, between mindware and software. Within the conceptual framework introduced earlier, planning is represented along the X-axis, which captures the perspective from which space is interpreted. This axis is subdivided into three interrelated layers: Place, Location, and Context.

Each of these layers contributes to how space is used, understood, and navigated. Together, they form a gradient between the intimate and the infrastructural, the designed and the systemic. Urban planning operates precisely within this gradient. It does not produce the built form directly, nor does it dictate the psychological associations of a place. Instead, it frames the conditions under which space is accessed, organized, and experienced, both horizontally and vertically.

This positioning of planning between mindware and software allows it to translate values into structure. Planning mechanism, such as zoning, mobility strategies, and land-use coordination, shape how spaces are made available to the public, who they are meant to serve, and how they connect to other places across time and elevation. As cities grow vertically, planning becomes essential not only for guiding what happens on the ground, but also for ensuring that elevated spaces are readable, reachable, and socially embedded.

This chapter will first introduce the three levels of perspective, Place, Location, and Context, and define how each influences publicness. It will then analyse how these layers relate to mobility, circulation, and accessibility, both in physical and psychological terms. Finally, it will explore how these insights inform the conditions for publicness in vertical urban environments, preparing the ground for the design analysis that follows in the next chapter.

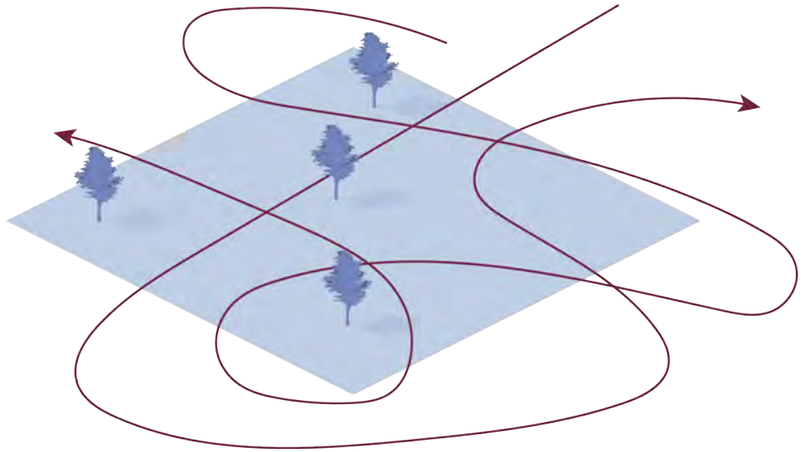


Image 3.6 Place Layer

III | Place

The first layer of urban perspective is Place. In this framework, a “place” refers not simply to a physical location, but to a spatial condition shaped by program, usership, and atmosphere. While parks, plazas, lobbies, cafés, dog runs, galleries, and food courts all function as public or semi-public spaces, they are distinguished not merely by their design but by their varying capacities to attract, include, or exclude particular social groups.

Each place carries with it a logic of publicness defined by both material and immaterial factors. Physically, a place can be open and legible; featuring seating, vegetation, lighting, and a sense of welcome. But place is also governed by temporal conditions such as opening hours, maintenance patterns, or programmed events, which regulate who can use the space and when. These regulations are often invisible; yet they determine the rhythm and reach of accessibility just as much as any physical intervention.

Equally important is the social character of place. The type of program and whether it is passive (e.g., a garden), active (e.g., a skate park), or commercial (e.g., a food kiosk) will tend to attract different demographics. Thus, place design reflects and reinforces social scripts; assumptions about who belongs, who lingers, and who passes through. A playground, for instance, might appear open but functionally exclude older adults without children. A rooftop bar might be advertised as public but subtly discourage entry through pricing or dress codes.

In vertical cities, these dynamics become more complex. When places are lifted off the ground, placed inside buildings or located above eye level, their visibility and spontaneity are reduced. People must choose to seek them out. This means that place-making alone is insufficient; the qualities of place must work in tandem with its location and context to maintain its accessibility and relevance.

In short, Place is not only about what happens in a space, but also who the space is designed for and under its conditions. It is the layer of intention, what a space is meant to be, but subsequently its success depends on how that intention is perceived, enacted and reinforced through planning and regulation.

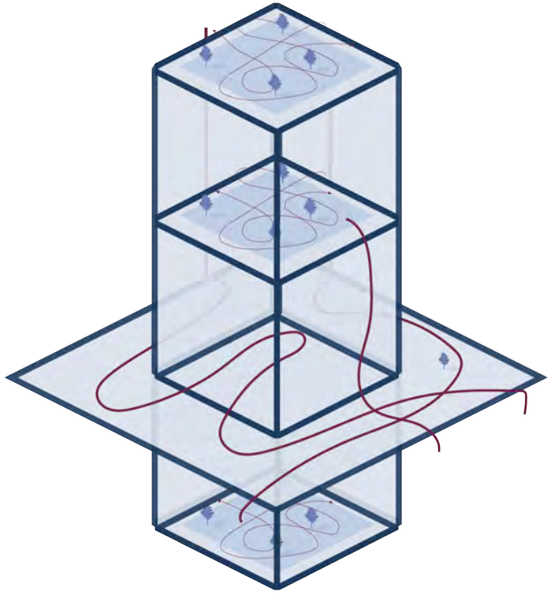


Image 3.7 Location Layer

III | Location

The second layer in the axis of perspective is Location. While Place is defined by function and social association, “Location” situates that place in a three-dimensional space: it tells us where something is, not only in terms of geographic coordinates, but also in relation to ground, visibility, and circulation. In high-rise environments, location is inseparable from verticality.

A park or plaza on the ground is visible, walkable, and encountered incidentally. But when a similar space is located inside a building, on a mezzanine, rooftop, or mid-level floor, it is removed from public view. his shift in location introduces additional challenges: people must first be aware of the space, choose to enter it, and then navigate a sequence of transitional areas, such as doors, thresholds, lobbies, corridors, staircases, and elevators. These elements are not neutral; they signal who is welcome, how the space is managed, and how much effort is required to access it.

Vertical location is therefore a determinant of publicness. The higher a space is positioned above (or below) the ground, the more intentional the act of entry becomes. An elevated space might be technically open to the public, but functionally invisible or psychologically inaccessible. Subtle design cues, such as mirrored walls, locked doors, or absence of signage, can discourage casual use, while use of other materials, lighting, and openness invite entry.

Indoor vs. outdoor distinctions further complicate this layer. Outdoor public spaces are generally perceived as open by default, while indoor ones are coded as conditional, subject to private rules, surveillance, or behavioural expectations. A rooftop terrace may offer a panoramic view, but its publicness is compromised if the only entrance is through a camera-monitored hallway.

Moreover, circulation within buildings, how people move through vertical space, becomes a spatial negotiation. Elevators, for example, may require key access. Staircases may be poorly lit or hidden behind locked doors. Lobbies may look more like reception areas than public entrances. These in-between spaces, where decisions are made about whether to continue onward or turn around, are critical thresholds in the making of common space.

Planning instruments tend to conceptualize elevators, corridors, and vertical connectors as technical circulation elements, rather than as experiential spaces with public implications. However, these mobility zones are not spatially neutral, they are interpreted and navigated by users in ways shaped by visibility, control, and expectation (Lynch, 1960). When a space above ground is reachable only through an unmarked or controlled hallway, it ceases to register as part of the accessible city. For vertical planning to succeed, mobility infrastructure must be addressed not just in policy terms, but in its cognitive and social dimension as part of the public realm (Gehl, 2010).

In this layer, Location is not just a neutral descriptor. It is a spatial condition that determines how likely, easy, and inviting it is for someone to access a place. When overlooked, it becomes one of the most persistent barriers to vertical publicness.

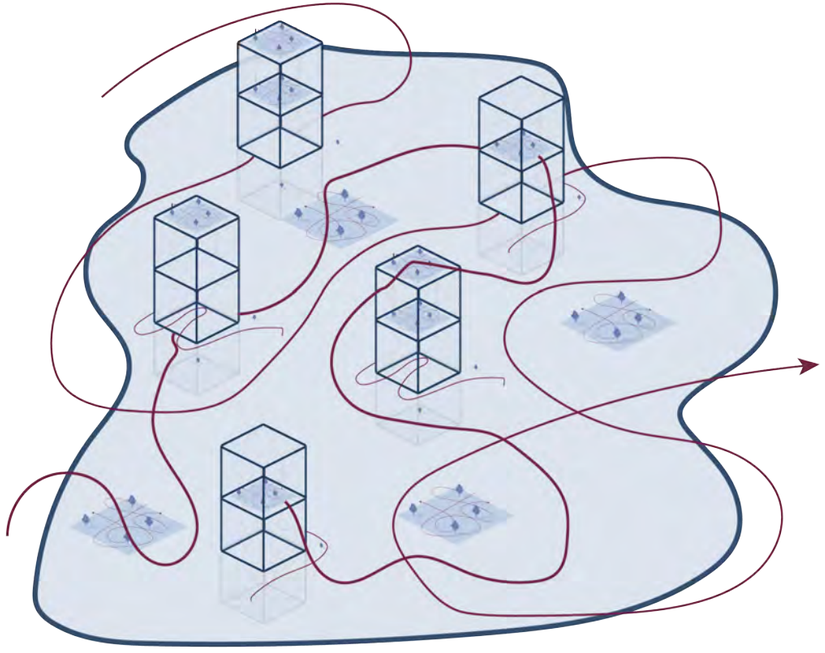


Image 3.8 Contaxt Layer

III | Context

The third and outermost layer in the axis of perspective is Context. While Place defines what happens in a space and Location describes where it occurs in vertical and spatial terms, Context addresses how that space is embedded in the larger urban fabric on a physical, social, and perceptual level. Context sets the rhythm of public life and determines how spaces connect with one another through infrastructure, flow, and expectation.

On a spatial level, context describes the urban structure surrounding a place: whether it sits within a residential district, a commercial boulevard, or a business park. These zoning and land use designations not only shape building typologies, but also influence what kind of people are nearby, what times of day they occupy the area, and how regularly they return. For example, mixed-use neighbourhoods support continuous footfall, while mono-functional office districts tend to empty out after business hours. These patterns of movement influence how frequently public or common spaces are encountered, and by whom.

Equally critical is connectivity, it determines how people move into and through an area. This includes not only walkability and pedestrian logic, but also access to public transport, bike networks, and intuitive movement routes. When elevated or interior common spaces are poorly linked to these urban systems, they risk becoming isolated and underused, regardless of their design quality. In this way, infrastructure, both hard and soft, plays a foundational role in shaping publicness.

Context is not only about spatial proximity; it is also about perceptual framing. People navigate cities not as objective maps, but as cognitive networks of familiar landmarks, perceived boundaries, and remembered experiences. Mental mapping influences whether someone feels confident entering a space, or whether they instinctively avoid it. If a public rooftop space is buried behind a nondescript façade, surrounded by office buildings, and absent from signage, it may be effectively invisible, even if open in principle.

Planning mechanisms can also shape context. Municipal tools such as zoning overlays, environmental quality standards, or mobility plans directly influence what kind of activity is permissible or encouraged in an area. For example, a pedestrian priority zone may increase foot traffic and enable more ground-floor interaction, which in turn raises the chance that vertical common spaces are seen, used, and maintained. By shaping access, function, and density, such instruments subtly reframe how space is experienced.

Ultimately, context is the systemic background against which all other planning interventions operate. It determines not only who passes by, but whether they notice, enter, or linger. Without a sensitive understanding of context, even the best-designed places may fail to integrate into the urban experience.

III | Barriers: physical and psychological

Accessibility is the connective tissue that links Place, Location, and Context into a coherent urban experience. It determines not just whether a space is open in principle, but whether it is approached, entered, and used in practice. In high-rise environments, accessibility must address both horizontal movement across the city and vertical movement within it, a dual challenge that tests the limits of publicness.

This section examines accessibility thematically, tracing how barriers and incentives operate across the layers of perspective introduced earlier.

Place and the Logic of Program

At the level of Place, accessibility is shaped by the clarity and openness of a program. Is the function of a space obvious? Is it inviting to a broad demographic? In the Rotterdam Central District, for example, the entrance to the Timmerhuis is physically accessible but visually ambiguous. The building's closed-off façade and subtle signage create uncertainty about what lies inside, and for whom it is meant (Interlude III). In contrast the entrance with text 'Welcome, you are here!' (Interlude III) feels inviting eventhough I still have no idea what lays behind.
Accessibility at this level can also be enhanced through incentives. Drawing on Henri Lefebvre's (1991) theory of the production of space, one might distinguish four broad categories:

- Commercial incentives (e.g., shops, cafés)
- Social incentives (e.g., seating areas, hangouts)
- Cultural incentives (e.g., exhibitions, performances)
- Experiential incentives (e.g., views, quiet retreats, sensory appeal)

Each adds a layer of motivation to enter and remain in a space. Without incentives, even a well-placed and well-located space may go unused.

Location and the Vertical Barrier

At the level of Location, accessibility becomes a matter of mobility infrastructure, corridors, stairways, elevators, signage, and the mental cues that accompany them. Spaces above or below ground introduce hesitation: Who is allowed there? What will I find at the top of these stairs or past that glass door?

The vertical challenge is especially acute in common spaces. For instance, the police station of the Rotterdam Central District includes clear signage and is centrally located. Meanwhile, a nearby church fails to signal its function at all, its entrance is hidden, its threshold unclear. These examples show how architectural form and orientation can support or suppress access, particularly when stacked vertically.

Effective vertical accessibility combines spatial elements (e.g., elevators, atriums, transparent thresholds) with design signals (e.g., lighting, signage, line of sight). If either fails, common spaces at height become functionally private.

Context and Navigational Legibility

Context determines whether a space is discoverable. Mental maps, what Kevin Lynch (1960) called "imageability", guide people through the city not as architects would, but as users do. A rooftop garden in a quiet business zone may remain unused simply because people do not expect it to be accessible. Even if open in principle, it is out of sync with the rhythms and expectations of its context.

This is where planning must align infrastructure, programming, and perceptual cues. A place in context needs not only to be reachable but also to feel part of the urban network, not an isolated pocket.

Equity in Access

Accessibility is never neutral; vertical spaces often privilege the mobile, the informed, and the confident. Those with physical limitations, or who feel culturally excluded by design, are less likely to engage with elevated public spaces. These dynamics are particularly important when designing for common spaces, where publicness depends on both invitation and navigation. These equity dimensions will be explored further in the Urban Design chapter.

Table 1: Eamples of placemaking throught the lens of perspective layers

	Hardware	**Software**	**Mindware**	**Orgware**
Place	Seating, paving, lighting	Seating, paving, lighting	Demographic appeal, signage language	Rules of use, open hours, maintenance roles
Location	Elevators, thresholds, staircases	Wayfinding, digital maps, directories	Psychological barriers, trust in access	Entry control, contractual obligations
Context	Transit nodes, pedestrian zones	Area branding, scheduled programming	Mental maps, imageability, area identity	Zoning overlays, land use planning

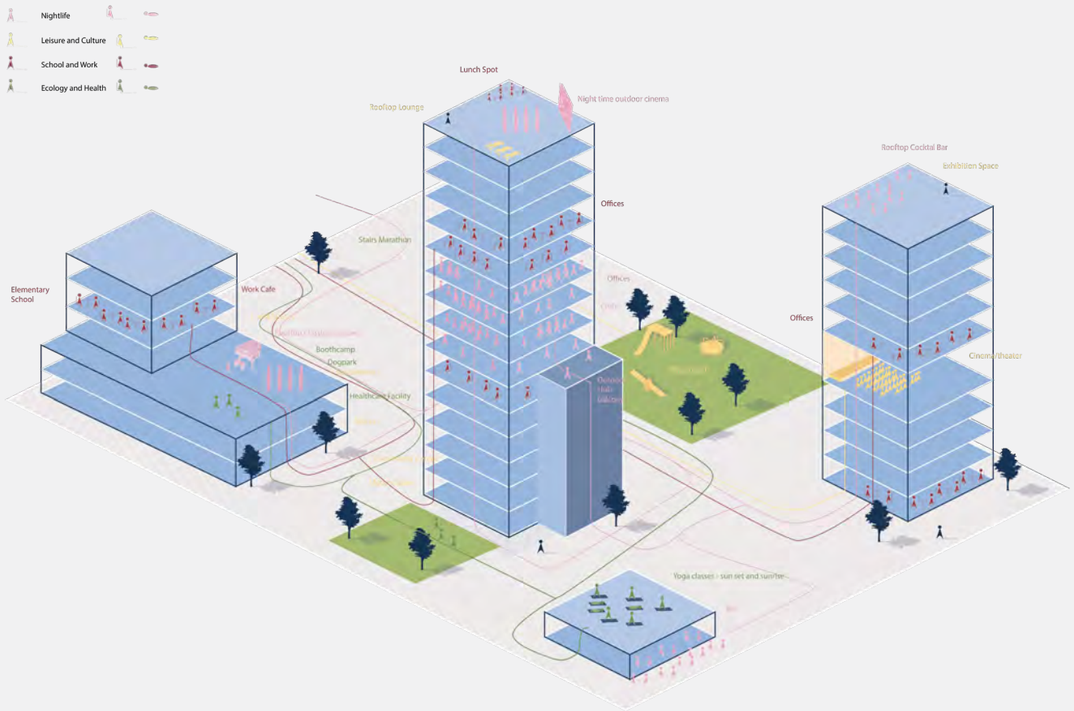


Image 3.9 How to get there?

III | Chapter Conclusion

Urban planning provides the structural and strategic foundations for publicness. Through the layers of Place, Location, and Context, it defines how space is programmed, situated, and embedded within the city's social and infrastructural flows. These layers offer essential insight into how accessibility and publicness are shaped across both horizontal and vertical dimensions.

Yet as this chapter shows, planning alone cannot guarantee public use, especially in vertically layered environments. Even when spatial logic is sound, elevated or interior spaces may remain underused, misread, or inaccessible. This is where planning must be interwoven with management and design, as shown in the earlier placemaking matrix. Hardware, software, mindware, and orgware must align not only across urban layers, but also through time, perception, and user experience.

Urban planning excels at organizing intentions and defining access. But to bring elevated common space into lived experience, design must translate those intentions into perception, through form, materiality, and legibility. The next chapter will shift focus to the design scale, exploring how spatial perception, wayfinding, and placemaking strategies can reinforce and animate the planning ambitions introduced here.

III | Urban Design

Experiencing Vertical Space

Urban design is where public ambitions (software) and spatial form (hardware) converge. While urban planning frames accessibility, and urban management governs rules and responsibilities, it is design that renders these systems perceptible, transforming abstract intentions into physical encounters. This chapter focuses on the role of design in shaping the experience of vertical public space, with particular attention to how people interpret, move through, and use elevated environments.

In the conceptual framework introduced earlier, urban design is situated at the intersection of hardware and software, the material and the programmatic. It encompasses not only the built environment itself, but also the patterns of use and atmosphere that emerge from it. These two forces co-produce what we perceive as publicness: benches that invite lingering, signage that orients movement, views that reward ascent. In high-rise contexts, such cues become essential to overcoming the invisibility and ambiguity of interior or elevated common space.

Design in this thesis is examined through the lens of the Z-axis: the axis of perception. This axis is composed of several spatial thresholds, including subsurface, eye level, canopy level, and rooftop level, which are not fixed categories but fluid experiential conditions. Whether a rooftop feels public or private, open or closed, is shaped not only by elevation, but also by facade design, spatial layering, and visual continuity. These design decisions determine whether a space invites entry or inhibits it.

While the planning chapter examined how space is positioned within the urban fabric, this chapter shifts focus to how space is perceived and experienced at the human scale. It explores how elements such as materials, orientation, and spatial sequencing shape intuitive or hindered experiences of publicness. It starts with elaborating the levels of perception along the Z-axis and discussing how elevation affects legibility. It will then analyse how placemaking strategies, including the Power of 10, temporary programming, and responses to hostile architecture, can enhance inclusivity. Finally, it will focus on wayfinding as a key design mechanism that bridges visibility and access across vertical space.

III | Perception Levels: An Overview

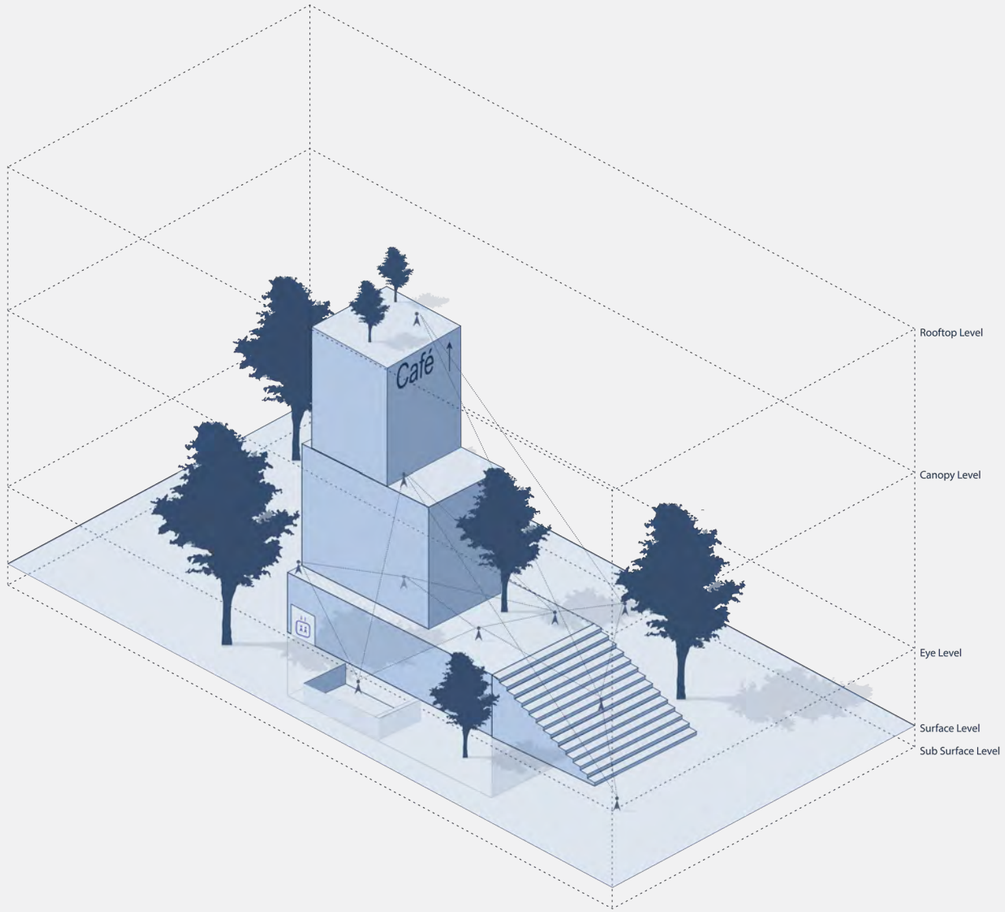


Image 3.10 Levels of perception

As the city expands upward, the nature of publicness transforms, not just in terms of physical access, but in how space is felt, sensed, and navigated. Movement through a vertical environment introduces shifting atmospheres, shaped by height, enclosure, exposure, and sensory feedback. Understanding these layers is essential for designing elevated common spaces that remain legible, welcoming, and socially embedded.

At the subsurface level, spaces are often defined by absence: the absence of daylight, air circulation, and intuitive navigation. Underground bike garages and metro entrances, such as those below Rotterdam Centraal, require strong visual and material cues to avoid confusion or discomfort. Without clear sightlines or spatial openness, users may feel uncertain, disoriented, or even unsafe. Ventilation, lighting, and acoustic treatment thus become critical design elements, not as extras, but as baseline conditions for usability.

At eye level, spatial cues are at their most legible. Entrances, signage, sightlines, and material continuity all reinforce a sense of invitation. This is where people move most freely and where passive social cues, like open windows, café seating, or human presence, signal that a space is meant to be shared. Places like the Water Square in Rotterdam exemplify this scale well: its function as a stormwater basin is embedded within an accessible public plaza that invites use through openness, integrated seating, and playful design. At this level, sensory feedback is immediate: the smell of food, the warmth of sun-exposed surfaces, or the sound of passing trams, all contribute to a sense of urban liveliness.

As one rises to the canopy level, spatial clarity begins to erode. Balconies, sky bridges, and mid-level terraces, such as those along the Hofbogen Park, often suffer from fragmented circulation and poor program integration. Users must intentionally seek out these spaces, and their accessibility is frequently undermined by locked gates, passive surveillance, or lack of maintenance. Yet when designed well, these intermediate levels offer unique sensory opportunities: quieter environments, views filtered through tree canopies or rooftops, and shelter from street-level chaos.

At the rooftop level, height becomes both an opportunity and a barrier. Spaces above 30 meters, like the terrace By Teds, atop buildings near Hofplein, face harsher exposure to wind, rain, and sun. The sensory experience is more extreme: wind whistles, shade vanishes, and acoustic isolation heightens the sense of detachment. Without intentional programming, these spaces risk becoming inert; beautiful but empty. The Valley in Amsterdam, with its layering of public rooftops, semi-public offices, and privately rented terraces, shows both the potential and complexity of designing for this height. Here, perception is shaped as much by thresholds and transitions as by the space itself. Who can access these rooftops? What path must they follow to get there? And once there, what makes them stay?

The usability of elevated common space is often determined less by its destination than by its path. Vertical connectors, elevators, stairs, lobbies, are more than architectural links; they are filters of perception and permission (Whyte, 1980). If these spaces are ambiguous, uninviting, or heavily controlled, users may choose not to continue, regardless of what lies above. As Könst (2017) notes, successful vertical placemaking depends as much on seamless wayfinding and transparency within circulation zones as it does on destination programming. This makes mobility infrastructure a primary site of design intervention in enabling vertical publicness.

Perception is not simply a matter of elevation, it is a relationship between design and interpretation, between sensory cues and social cues. As elevation increases, so does the need for spatial reassurance: openness, legibility, and layered activity must compensate for the reduced spontaneity that ground-level space allows. These vertical atmospheres are not neutral, they are built, curated, and experienced differently depending on who enters and how.

Image 3.11 10 Types of Program

Creating great public spaces requires more than physical openness, it requires reasons to be there. This insight is at the heart of the Power of 10 principle, developed by the Project for Public Spaces (PPS). The idea is simple yet profound: a successful public space should offer at least ten distinct things to do. These can be active or passive, formal or spontaneous, from drinking coffee to people-watching, from playing sports to attending a performance. The more options a place offers, the more likely it is to attract diverse users, encourage return visits, and support unplanned interaction (PPS, 2025).

This principle becomes even more critical in vertical urban environments, where accessing a space often requires greater intentionality. Elevated spaces must not only be visible and accessible, but they must also be worth the effort. This means programming must be layered, legible, and diverse.

A Typology of Programmatic Use

To apply this logic to vertical common space, I propose a typology of ten program types that together support a resilient, inclusive, and dynamic public realm:

- Work – informal co-working, outdoor desks, flexible office extensions
- Education – workshops, student projects, public lectures, school engagement
- Art – exhibitions, installations, community murals
- Performance and culture – music, theatre, dance, spoken word, religious space
- Protest – assembly space, freedom of expression infrastructure
- Sports – small courts, exercise trails, urban gyms
- Play – children's zones, interactive installations
- Leisure – food courts, picnic zones, lounging spaces
- Sustainability – green roofs, gardens, water retention
- Recreation – walking paths, social games, observation decks

This typology is deliberately broad, allowing overlap between categories. For example, a rooftop garden may simultaneously support sustainability, leisure, and education.

Two categories that remain under consideration are mobility-related functions (such as parking or bike storage) and spiritual/religious practice. While parking is critical to access, it does not typically constitute a "use" that adds to social or civic vitality. It may be better framed under infrastructure than program.

Connecting Program to Incentives and Management

Each program type brings with it a different kind of incentive, introduced earlier in the planning chapter:

- Commercial incentives: cafés, markets, kiosks
- Social incentives: play, seating, co-working
- Cultural incentives: art, protest, religious expression
- Experiential incentives: views, interaction, quietness

These incentives align closely with the psychological dimension of mindware, helping users identify with a space and feel motivated to use it. But they also link directly to orgware, the institutional and managerial logic behind each program. For example, leisure may be maintained by a business improvement district (BID) or private café operator; protest requires coordination with civic authorities and legal frameworks; education might be co-managed with schools or cultural institutions; and sustainability is often maintained through collective stewardship or city-run initiatives. Understanding the governance structure behind each program is essential. Without a clear management model, spaces deteriorate

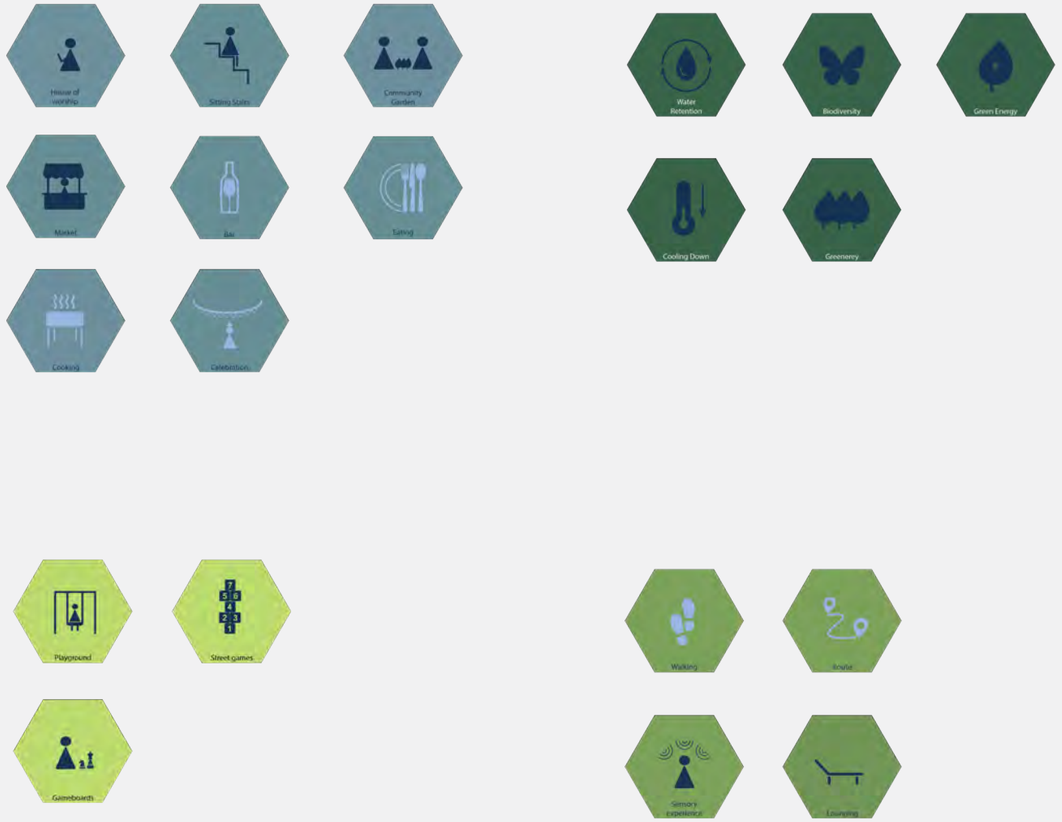


Image 3.12 Types of Program

or become co-opted by exclusionary interests, particularly when privately owned but publicly accessible.

This typology, in combination with the Power of 10 framework, allows us to analyze whether a space invites repeated use, serves multiple publics, and encourages co-stewardship. Conversely, mono-programmed spaces, those dominated by a single function like a luxury rooftop bar, often appear vibrant but reinforce exclusivity, limiting broader civic use.

Adapting Use to Height

The eye level remains the default zone of urban publicness. It is where people linger, encounter one another, and form spontaneous connections. Nearly all program types introduced in the previous section; work, play, education, protest, leisure, performance, sports, sustainability, recreation, and art, naturally thrive at this level. Not because they cannot exist elsewhere, but because their success depends on proximity, visibility, and permeability.

However, as spaces ascend, the design and governance requirements of these programs change. To be effective in canopy or rooftop spaces, activities must overcome the physical and psychological barriers associated with elevation: wayfinding ambiguity, weather exposure, access restrictions, and lower spontaneous footfall.

Before exploring these adaptations, it is important to repeat the distinction between public space and common space. Public space, as traditionally defined, refers to land or buildings managed by governmental institutions. However, public space can also exist on private land if regulatory conditions (such as zoning agreements or public easements) enforce open access. Common space refers to semi-public environments, like lobbies, terraces, or interior courtyards, that are privately owned but collectively accessed. These often require stronger incentives or clearer spatial cues to maintain inclusivity.

At eye level, both public and common space may appear equally accessible. But as elevation increases, public programming requires more deliberate interventions to function as intended. Work, leisure, sustainability, and art are relatively adaptable to elevation; they demand less footfall and can thrive in quieter, more contemplative conditions. Protest, play, and performance, on the other hand, rely heavily on visibility, crowd dynamics, and civic symbolism, all of which are harder to achieve at height.

Where elevated public programming is pursued, it must be tailored to context and reinforced through design. A rooftop gym needs more than just equipment; it needs safe surfaces, social energy, and maintenance. A protest terrace, if such a thing is even feasible, would require legal clarity, symbolic visibility, and a public-facing entry.

This variability underscores the importance of matching program type to elevation, and of planning publicness not only by what a space does, but where and how it does it.

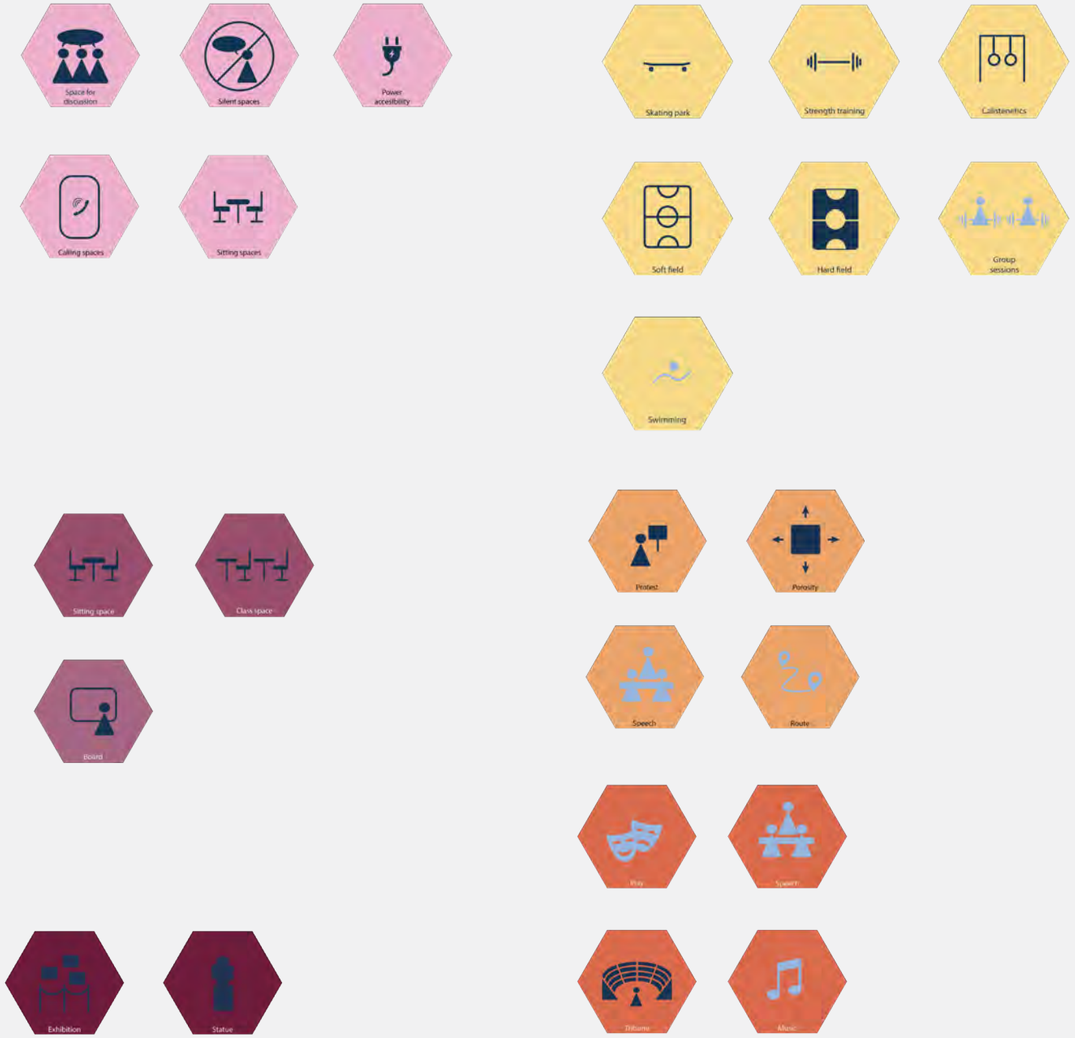


Image 3.13 Types of Program

III | Program Adaptability Across Vertical Levels

Visibility, Legibility, and Spatial Confidence

In vertical environments, wayfinding is not a convenience, it is a condition for use. Unlike eye-level spaces that can be stumbled upon in the flow of daily life, elevated and interior common spaces must be sought out. This introduces a critical friction: if people cannot see where a space is, or do not understand how to reach it, it will remain unused, regardless of its design quality or public designation.

Wayfinding is the spatial strategy that mediates this gap. It is the design language that guides users from curiosity to confidence: from noticing a space, to understanding it is open to them, to knowing how to enter, and finally to choosing to stay.

Effective wayfinding begins with visibility. From the street or plaza, can users see a staircase, elevator, or canopy? Are there physical cues, transparent facades, vertical openings, visible human activity, that suggest accessibility? Amsterdam's The Valley offers a case in point: despite its layered public programming, many upper-level spaces remain underused due to opaque transitions and unclear entry points.

The second dimension is legibility. This refers to how clearly users can interpret spatial sequences. Is there signage? Are paths intuitive? Are thresholds marked by changes in material, light, or enclosure? Without these cues, vertical circulation becomes uncertain. As Kevin Lynch (1960) argued, people mentally map cities through paths, nodes, and landmarks. In the absence of these, elevated spaces fall off the cognitive grid.

The third and most critical element is spatial confidence, the psychological sense that one is allowed to proceed. This is especially important in semi-public zones like lobbies, interior bridges, or rooftops, where ambiguity of ownership can lead users to self-exclude. Design plays a vital role here: low lighting, security cameras, or mirrored glass signal exclusion, while open stairs, social noise, and human presence suggest inclusion.

Wayfinding, then, is both physical and symbolic. It is made of lines of sight and loops of circulation, but also of subtle social codes. For elevated common spaces to succeed, circulation must not only exist, it must invite.

This design logic ties directly to earlier concepts. A rooftop with ten uses still fails if no one reaches it. A protest terrace with symbolic power still falters if the route is hidden or guarded. Publicness is not simply a matter of designation, it must be designed into movement.

In exploring the adaptability of public programs across vertical levels, it becomes clear that not all functions translate seamlessly into elevated space. Drawing on Rem Koolhaas's Delirious New York (1994), we observe that vertical environments can support complex, layered functions, but these often remain internalized or exclusive, stacked without true permeability or civic presence. Jerold Kayden's Privately Owned Public Space: The New York City Experience (2000) reinforces this tension by showing how many rooftop or interior POPS, while technically public, fail in usage due to invisibility, inaccessibility, or lack of programmatic draw. Visibility, legibility, and ease of access are critical for programs to remain socially effective at height.

Dovey (2016) adds that urban design succeeds when it aligns spatial affordances with public life. Elevated public space requires more than physical placement, it must foster perception, invitation, and participation. The adaptability table accompanying this text draws

Table 2: Program Adaptibility to Elevation

Program Type	Eye Level	Elevated adaption required	Ease of elevation
Work	Sidewalk cafés, co-working patios	Reliable Wi-Fi, seated comfort, flexible layouts	4/5
Education	Workshops in civic buildings, school yards	Institutional partnerships, safe access	3/5
Art	Murals, public exhibitions	Visibility, anti-vandalism design	4/5
Performance	Street music, squares	Acoustics, staging, vertical visibility	3/5
Protest	Public plazas, city halls	Visibility, legal recognition, symbolic accessibility	2/5
Sports	Courts, skateparks	Safety, surface, buffer zones	3/5
Play	Playgrounds, splash pads	Guardrails, parental supervision, soft edges	3/5
Leisure	Benches, sunbathing lawns	Wind protection, shading, comfort	4/5
Sustainability	Community gardens, bioswales	Structural capacity, long-term stewardship	4/5
Recreation	Jogging paths, chess tables	Loop circulation, diverse age appeal	3/5

III | Program Adaptability Across Vertical Levels

from such theoretical insights to evaluate ten program types on their vertical potential. For instance, mobility infrastructure or observation functions adapt easily, while spontaneous social programs, protest, or ground-based leisure become increasingly difficult to sustain the higher they go. The assessment is thus not only about logistics, but about social visibility, institutional support, and architectural affordance, factors that must be proactively designed if we wish to lift public life into the sky.

III | From Spatial Insight to Design Intervention

Throughout this chapter, the role of urban design has been explored as a mediator between spatial potential and lived experience. Where urban planning structures access and management defines governance, design renders space perceivable, navigable, and usable. Especially in vertical urban environments, design is the decisive layer through which publicness must be communicated and sustained.

The discussion of levels of perception revealed how elevation complicates visibility, atmosphere, and psychological accessibility. As spaces move away from the ground, their success as common or public space increasingly depends on how well they are designed to overcome vertical friction, through materials, openness, orientation, and multi-sensory cues.

The Power of 10 framework and program typology emphasized that space is only as public as it is useful. Diversity of use, across work, play, protest, leisure, and culture, is essential not just for vibrancy, but for resilience. Yet elevated programs require special adaptation: they must be incentivized through legibility, incentivized through form, and supported through inclusive management models.

Finally, the section on wayfinding made clear that design is not only a matter of physical intervention but also one of social choreography. Entrances, stairs, thresholds, and transitions all communicate something, about control, about invitation, and about who a space is truly for. Design must go beyond meeting regulations or aesthetic goals. It must invite presence.

The insights gained here now feed directly into the next part, which moves from analysis to intervention. The design proposal will synthesize the urban development tracks, management, planning, and design, and apply them to Rotterdam's high-rise context. The goal is not only to imagine elevated common space but to strategically construct the conditions that make it usable, visible, and inclusive.

This chapter marked a transition from analysis to design intervention. Drawing from the preceding explorations of urban management, planning, and design, it moves toward a spatial response situated within Rotterdam's high-rise context. Rather than repeating earlier insights, this chapter builds on them, translating conceptual, procedural, and perceptual challenges into strategic design choices.

Throughout the previous parts, urban design emerged as a mediator between spatial potential and lived experience. Where planning structures access and management define governance, design makes space perceivable, navigable, and usable; especially in vertical environments where publicness is not assumed but must be actively communicated and maintained. The analysis of vertical perception showed how elevation introduces unique forms of friction: reduced visibility, altered atmosphere, and psychological distance. As public space rises above the ground, its effectiveness depends less on regulation and more on how it is felt through materials, spatial openness, orientation, and sensory cues. Frameworks like the Power of 10 and program typologies reinforced the idea that publicness is linked to usefulness. Diverse programming, spanning work, leisure, protest, and culture, is not only vital for vibrancy, but also for social resilience. Yet in elevated settings, these programs require intentional adaptation. They must be legible, form-driven, and embedded in inclusive management systems. Wayfinding, finally, underscored that design is not only physical but choreographic. Elements such as entrances, thresholds, and staircases silently script behaviour and convey who a space is for. In this sense, design is not just about meeting formal requirements; it is about inviting presence and enabling belonging.

The design proposal that follows draws together these insights. It synthesizes the three development tracks, management, planning, and design, and applies them to Rotterdam's high-rise fabric. The objective is not simply to visualize elevated public space, but to construct the conditions that make it possible, legible, and inclusive.

Image 3.3.1 Barriers in Rotterdam

INTERLUDE III | Rotterdam At Eye Level

When walking through Rotterdam, I began to notice how many buildings seemed to resist entry. Not through closed doors, but through silence. Blank facades, reflective glass, badge-only elevators. The buildings were not inviting me in, but rather keeping me at a distance, not through locked doors, but through visual silence. They seemed to withhold information, offering no clues about what lay beyond, no gestures of welcome, no signs that I, as a passerby, was part of the intended audience. I wasn't being physically blocked, but the absence of signage, sightlines, or any hint of invitation made the message clear enough: this space isn't for you.

This became especially evident in my fieldwork. The barriers weren't always aggressive. Often, they were designed as security, or efficiency. But they still shaped the way I, as a member of the public, engaged with the city. If there was a garden, it was hidden; if there was a rooftop, it was invisible. Even buildings that claimed to have "open" lobbies felt like lobbies for someone else.

I realised that publicness in the vertical city was rarely about pure openness, it was about perception. If you can't see it, you can't desire it. These observations shaped how I thought about design: that the threshold, the entry, the first five seconds of the spatial experience, might be more important than the space itself.

Image 3.3.2 Wayfinding in Rotterdam

On other walks through Rotterdam, a few buildings stood out, not because they were tall, but because they seemed to be speaking. I could see inside. I could see people moving. There were visible staircases, wide doors, ramps, signs.

These moments shifted something in my understanding of design. Wayfinding was no longer just about signs, it was about storytelling. A transparent elevator told me I could go up. A glass railing showed me people already there. A visible path made me curious, and that curiosity pulled me forward.

In these buildings, although sometimes halted due to small letters or unpermeability. I walked in. And that experience helped me understand the importance of what Kevin Lynch called “legibility”, not just of cities, but of buildings. A place must show you its logic, its welcome. Otherwise, it remains a blockage.

These encounters informed how I developed my own proposals: with vertical movement that doesn’t hide, with transitions that are not just functional but social. The city needs vertical spaces that aren’t just reachable, but discoverable. Because in a vertical city, people don’t stumble into public space, they must be invited and enticed.

Part IV
The Breathing Building

IV | Introduction

At its core, the design seeks to transform Hofplein into a multifunctional vertical node, where public programming, mobility infrastructure, and spatial circulation converge to form a new kind of common realm. While the spatial interventions are tailored to this site, the conceptual model is broadly transferable, offering a framework for integrating vertical publicness into dense urban environments worldwide.

Despite the strong conceptual groundwork laid in the thesis, addressing governance, spatial logic, programming, and perception, one persistent challenge cuts across every design dimension: mobility. None of the placemaking strategies can succeed if the circulation systems that support them are not legible, welcoming, and socially accessible. The threshold into vertical space often acts as a filter; elevators, stairwells, lobbies, and gates silently regulate who enters and how space is used.

Even when elevated spaces are well-programmed and spatially inclusive, they are vulnerable to reclassification as liabilities when their access routes are perceived as unsafe, exclusive, or confusing. Residents or owners may impose restrictions, reduce maintenance, or even remove public designations altogether, not because of design failure, but because of compromised mobility. Vertical friction, in other words, undermines publicness at its root.

Thus, mobility space must be reimagined not as neutral infrastructure but as a vital interface of urban life. These transitional spaces, corridors, lifts, thresholds, are where public identity is made and unmade. If the path to public space does not feel public, then the space itself ceases to function as such.

This section positions mobility infrastructure as the core design bottleneck for vertical publicness and proposes its redesign as essential to integrated urban life. The remainder of the chapter explores how spatial legibility, sensory cues, and programmatic overlap can transform these in-between zones into socially meaningful spaces.

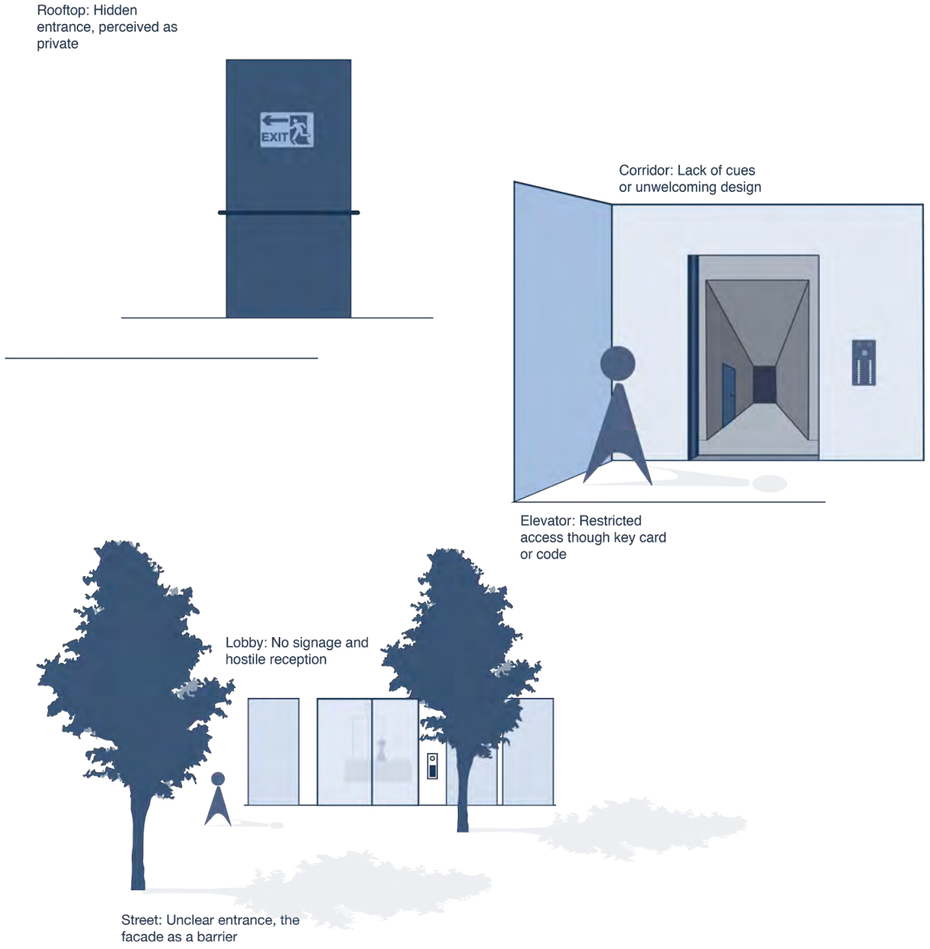


Image 4.1 Barriers Along Vertical Access to Elevated Publlic Program

IV | Mobility as the Design Bottleneck

While the previous chapters have unpacked the technical, social, and managerial strategies necessary for creating elevated public space, they also reveal a common limitation: none of these strategies, whether spatial (hardware), programmatic (software), managerial (orgware), or perceptual (mindware), can succeed if the mobility infrastructure connecting them is not trusted, legible, and inviting.

From a design perspective, much of the theoretical groundwork has already been laid. On a hardware level, elevated common spaces can be made safe and spatially legible through open sightlines, material transitions, and the layering of uses. Software solutions, such as adaptive programming and inclusive scheduling, can ensure activity is sustained across age groups, cultural interests, and time. The orgware dimension offers increasingly sophisticated governance tools, including long-term stakeholder agreements and accountability structures. Mindware, finally, shapes the emotional atmosphere of space: cues of inclusion, clear wayfinding, and symbolic accessibility reinforce a sense of welcome.

Yet across each of these pillars, one issue consistently remains unresolved: mobility. If the route to an elevated space is perceived as unsafe, confusing, or exclusive, the space itself, regardless of how well it is designed or managed, will fail to function as public. This is especially acute in vertical environments, where elevators, corridors, stairwells, and lobbies act as social filters and symbolic barriers.

Public programming may be contractually embedded, spatially robust, and symbolically open, but if mobility spaces are perceived as threatening or marginal, they become vulnerable to reclassification by residents or owners as liability zones. This can lead to restricted access, reduced maintenance, or even removal of public designations altogether. In such cases, the space does not fail due to lack of intention, but because the access infrastructure undermines the broader project of inclusion.

Thus, mobility space must be reconceptualized not as a neutral transit corridor, but as a critical interface of publicness. It is in these transitional zones, lobbies, stairwells, lifts, entrance gates, that the identity of a space is contested, negotiated, and too often, quietly withdrawn. If the path to public space is not public in feeling, then the space itself ceases to be so in function.

This section identifies mobility space as the bottleneck of vertical publicness, and positions its redesign as the key challenge for urban integration. The rest of this chapter explores how spatial strategies, perceptual cues, and programmatic overlaps can be leveraged to turn transitional infrastructure into socially legible and emotionally secure spaces.

Image 4.2 A platform should be a mix between an elevator, public transport and a city square

IV | Elevating Platforms

At the heart of this design proposal lies a new typology of public space: the elevated public platform. These platforms are not fixed floors or rooftop terraces, but large mobile decks that move vertically along dedicated spines attached to high-rise structures. Mechanically lifted like a freight elevator or gondola, each platform can dock at multiple levels, from ground floors to mid-height atriums, rooftops, or even suspended positions between buildings, forming an ever-shifting spatial layer of urban life.

These platforms are more than infrastructural innovations; they function as programmable public squares in the vertical dimension. Like plazas, markets, and pavilions in traditional horizontal cities, these decks support a rotating sequence of uses, shifting throughout the day or week in response to temporal rhythms, user needs, and environmental conditions:

- Morning (Weekdays): Coffee kiosks, fast dining, open-air workspaces
- Afternoon: Community gardens, playgrounds, lounging areas
- Evening/Weekends: Social gatherings, concerts, rooftop cinema

Depending on location, these platforms may serve the general public, tenants, or curated community groups. Positioned at eye level, they may be visible from the street and invite broad participation. Embedded mid-building, they may cultivate community life within a tower or complex. Spanning between buildings, they form connective tissue, like alleys, bridges, or shared rooftops, enabling new forms of inter-building urbanism.
The temporal flexibility of these platforms reflects the influence of the X-axis of the conceptual framework, Place, Location, and Context. A platform's design and programming must adapt to:

- The place it embodies (e.g., a space for rest, play, or protest),
- The location it occupies (ground, mid-level, rooftop),
- The context it interacts with (civic square, residential street, commercial core)

This allows the system to support multiple types of platforms across different buildings and neighborhoods, each calibrated to its spatial and social setting.

As such, elevated public platforms must be conceived as both infrastructure, serving mobility, accessibility, and ecological adaptation, and as cultural interventions that reimagine how cities breathe, pulse, and connect across height. In their movement, rhythm, and variability, they propose a new model for responsive, vertical publicness, one that reshapes the logic of building use and collective experience. In a way these platforms are a cross between an elevator, public transport and a city square.

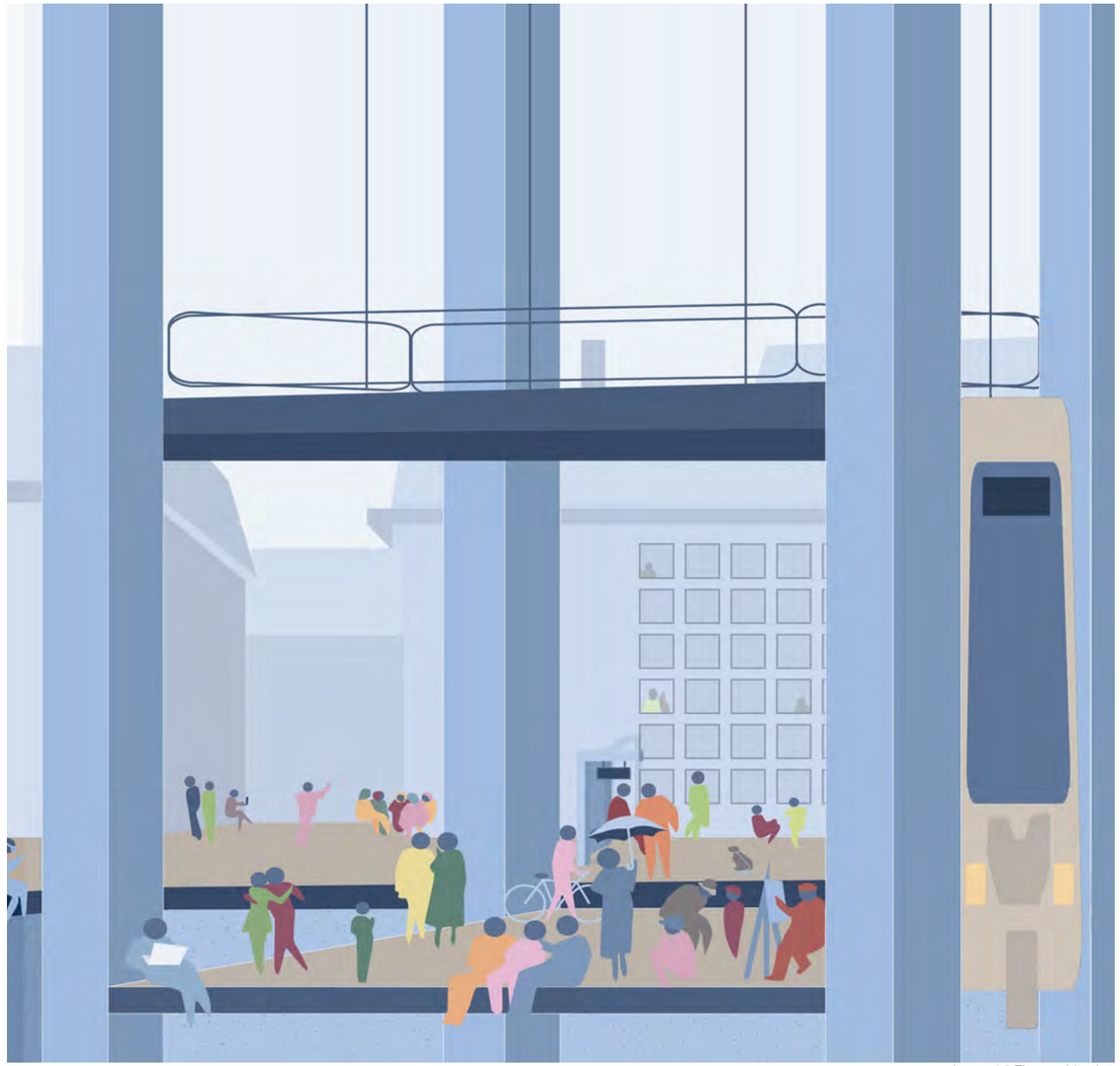


Image 4.3 The combination

IV | Programme Through Time

Public space is never static. It adapts to social rhythms, seasonal patterns, and temporal shifts. This design proposal embraces that fluidity through time-based programming, transforming elevated platforms into dynamic stages for shifting urban life. Rather than serving as singular-use balconies or static rooftop parks, these platforms function like vertically stacked squares, each calibrated to change not only with its physical context, but with time itself.

Drawing inspiration from contemporary parks and plazas such as Bryant Park in New York and Yokohama masterplan of OMA , spaces known for their daily and seasonal transformations (Fernandez et al., (2022); OMA (2025)), the elevated platform adapts through a flexible temporal structure that governs both program and atmosphere. The changes are subtle or dramatic depending on the platform type, its elevation, and its embedded context, all framed through the X and Z axes of the conceptual framework.

Program Transitions Over Time

Each platform follows a temporal schedule of overlapping use:

- Morning (Weekdays): Light commercial activity (coffee, kiosks), quiet workspaces, walking routes
- Afternoon: Playgrounds, seating zones, leisure programming, open markets
- Evening/Weekend: Cultural events, dining terraces, film screenings, music

Spatial elements such as modular furniture, retractable shading, or programmable lighting and sound systems enable this fluidity. The software dimension of the framework supports this through design elements that facilitate easy transformation. The mindware layer ensures that users understand and embrace these shifts, associating certain times with particular activities, and building familiarity and rhythm into public life at height.

Platform Tech as Urban Interface

As in public transport systems, technology becomes a mediator of public space. Users can engage with platforms through a mobile app or digital display, much like transit schedules. These interfaces show where platforms are, what programs are active, and what is upcoming, mirroring the logic of event apps or festival schedules. Just as a train station communicates when and where to board, the vertical platform system announces its next arrival, its next transformation.

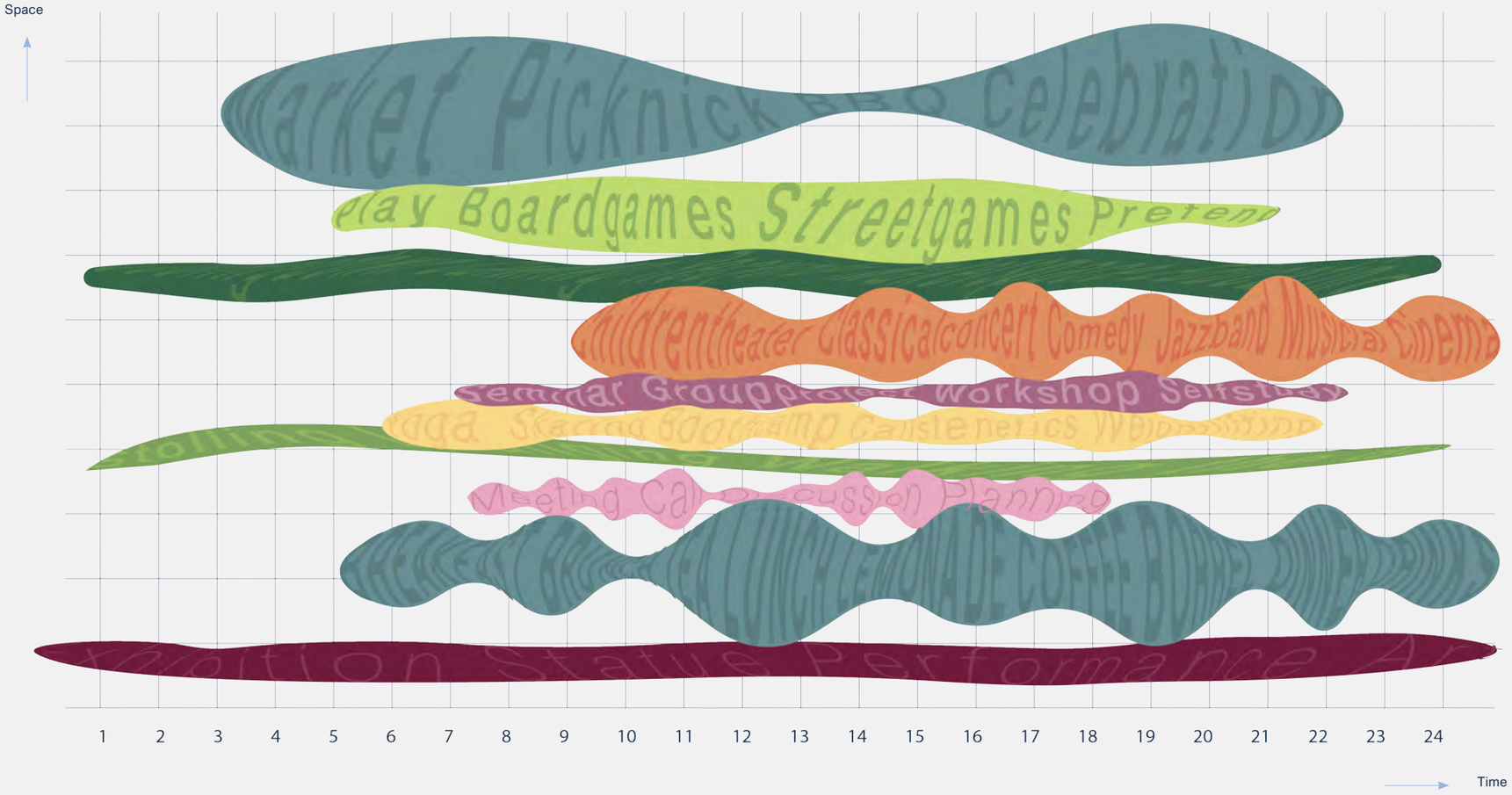


Image 4.4 The space the 10 types of program could take up on the most public version of the platform during a non specific day

IV | Programme Through Time

Reversibility and Ground-Level Opportunity

When the elevated square lifts, it doesn't leave emptiness behind, it reveals latent public ground. The vacated space becomes an opportunity for temporary installations, artistic expressions, or spontaneous occupation. The moment of departure is also an act of creation. What is lifted and what is revealed together form a dual program. Meanwhile, each stop the platform makes offers its level a fleeting simulation of life on the street, democratizing ground-floor vibrancy across vertical space.

Balancing Use Conflicts

Time-based programming also mitigates potential conflicts between user groups. For example, a platform that serves as a children's play zone from 10am to 2pm might transition to a social workspace or food plaza in the late afternoon. Zones can be divided with physical markers, light shifts, or scheduled time blocks, allowing different demographics to use the same platform without spatial friction.

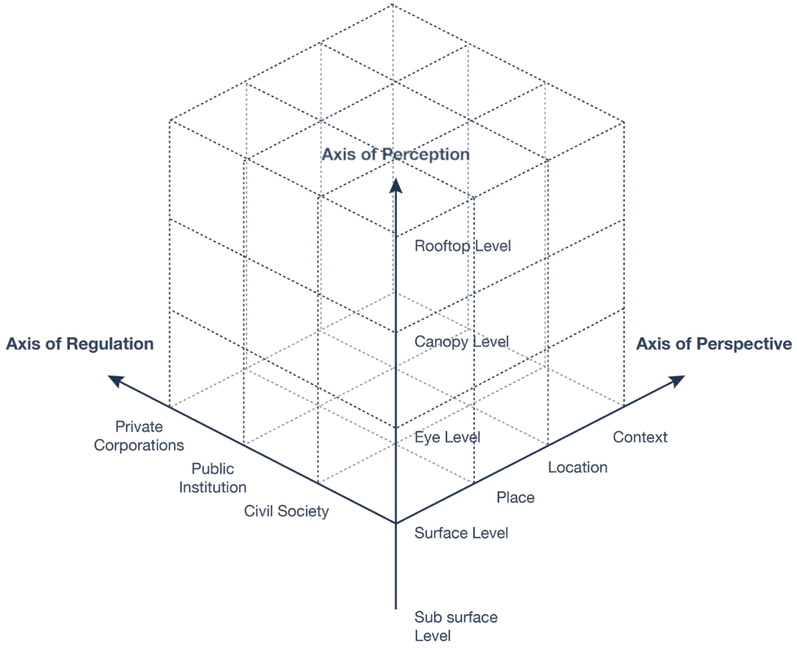


Image 4.5 The Conceptual Framework

IV | Adapting Program and Design to Urban Context

The success of an elevated platform is never determined by design alone, it emerges through its alignment with the context in which it is situated. Context influences not only what the platform does, but also how large it should be, when it is used, and by whom. These variations in use patterns, spatial logic, and stakeholder involvement are particularly sensitive to whether the surrounding area is residential, corporate, or commercial.

Within the conceptual framework of this thesis, context is addressed as part of the X-axis, interacting directly with both location and place. As this section shows, contextual dynamics determine not only the programmatic fit of a platform, but also its physical form, temporal rhythm, and governance structure.

In all contexts, program and design are inseparable. Each use imposes spatial demands, power, drainage, surface materials, seating, shading, sightlines, and each form constrains the type and diversity of program. A platform cannot simultaneously host a tranquil garden and a noisy concert; nor can it serve a community if its materials signal exclusion. These tensions must be resolved at the interface of context and form.

Platform design must also accept certain limits: not every site can support full publicness, and not every use can occur simultaneously. Recognizing this helps prevent overdesign and reinforces the importance of local calibration. The most successful platforms will be those that match their surroundings not only in form, but in timing, identity, and intention.

IV | Residential Contexts: Embedded Community Infrastructure

In residential settings, platforms must support local rhythms and foster collective ownership. Programs in these contexts often emphasize play, leisure, sustainability, and recreation, activities that integrate seamlessly into everyday life and remain active throughout the day, not just dur-ing peak hours. These platforms may support morning yoga, afternoon gardening, or after-school events, and can foster a strong sense of community resilience.

The size and design of a residential platform must reflect its embeddedness. They are likely to be smaller, more intimate, and softer in edge conditions, incorporating greenery, shading, and passive seating rather than large-scale infrastructure. Design and program are intertwined: a community garden requires storage, a play zone requires surface safety, and a shared terrace demands sun exposure and shelter.

Peak usage here tends to cluster around early morning, mid-afternoon, and evenings, reflecting family rhythms and work-from-home trends.

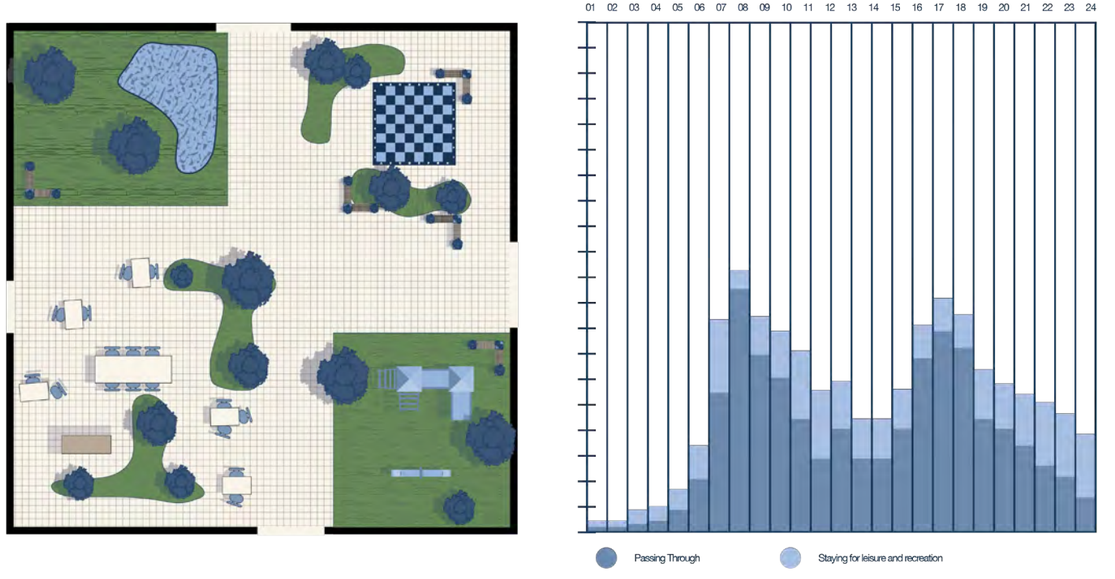


Image 4.6 Possible platform layout and usage of people through time for the platform in a residential context

Stakeholders

Stakeholders are primarily residents, housing associations, and neighborhood groups, and plat-form management may fall to resident boards or cooperatives. Public authorities may support these spaces for their contribution to neighborhood vitality, though financial investment is limited unless the platform demonstrably enhances social equity or climate resilience, then there is a possi-bility of a grant to help with the initiative (Interview 5, 2025).

Developer Incentive

For developers and investors, the incentive to include an elevated platform in residential develop-ments lies in its capacity to add perceived value, not only through enhanced amenities but through long-term social resilience. Platforms that support everyday life, childcare, gardening, informal gathering, contribute to resident satisfaction, lower tenant turnover, and potentially higher property valuations. Where rooftops or podium levels are often underutilized or serve only tech-nical functions, the platform offers a narrative of livability that can distinguish a development in an increasingly competitive market (Interview 3 & 4, 2025).

The shared ownership model offers an alternative management logic. Rather than rely-ing entirely on public funding or private hospitality partners, platforms in residential buildings could be managed by owners' associations or housing cooperatives, with initial costs partially offset by pre-sale contributions or service charges. For socially oriented developers, especially those engaged in public-private partnerships or climate-resilient urbanism initiatives, the platform can also serve as a policy-aligned feature that demonstrates responsiveness to local au-thorities' public space and health agendas.

IV | Corporate/Business Contexts: Scheduled Utility and Symbolic Identity

In a corporate setting, platforms must justify their existence through efficiency, identity, and controlled access. Programs are typically more restrained, supporting work, recreation, education, and performance, and often curated for employees and visitors rather than the general public. Flexibility is still critical, but it occurs within tighter operational constraints: platforms might serve as lunch terraces, presentation spaces, or after-work social zones, but must shift back to neutral forms outside of business hours.

Here, the platform's size must support group gathering but avoid excessive spatial or cost burdens. Design becomes more architectural, with sleek materials, branding integration, and smart infrastructure. Peak usage closely aligns with working hours, often compressed between 09:00–17:00 on weekdays.

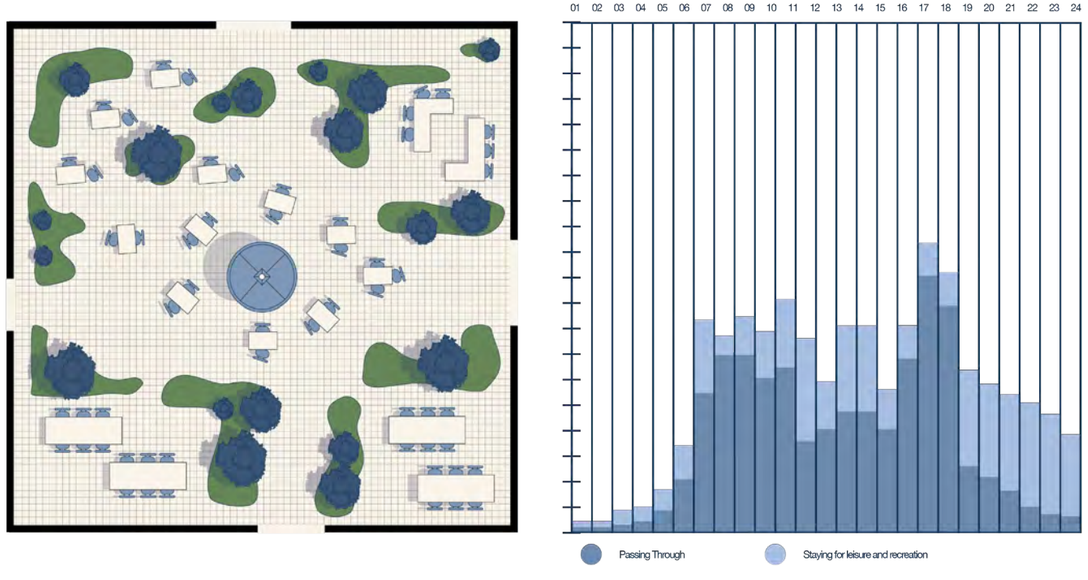


Image 4.7 Possible platform layout and usage of people through time for the platform in a buisiness context

Stakeholders

Stakeholders include facility managers, building owners, and often investors, who will only support the platform if it contributes to brand prestige, employee wellbeing, or leasable value. In some cases, platforms may be run by third-party operators (e.g., flex office providers), shifting the burden of programming and maintenance. Public authorities may view such platforms as semi-public at best and will demand that public access is clearly articulated and enforceable if municipal support is involved (Interview 3 & 4, 2025).

Developer Incentive

For developers, a well-designed platform contributes to the marketability of office floors, helping justify premium rents or lease incentives. From an investor perspective, platforms can also act as flexible return spaces, leased to third-party operators for pop-ups or seasonal events during off-hours. This hybrid-use model allows the platform to contribute financially even when it isn't directly part of a company's operations. Integration with ESG (Environmental, Social, and Governance) benchmarks can further strengthen the investment case, framing the platform as part of a building's sustainability and community-building strategy(Interview 3 & 4, 2025).

In business settings, the argument for including elevated platforms is rooted in employee wellbeing, prestige, and tenant retention. As workplace culture evolves to prioritize flexibility, mental health, and collaboration, developers can position the platform as a strategic amenity that enhances daily routines while reinforcing brand identity. Platforms can function as spillover work zones, event terraces, or spaces for client engagement, adding value not just per square meter, but per experience.

IV | Commercial Context Dual-Purpose Publicness

Commercial platforms are the most visibly public but also the most exposed to economic tension. Their viability often depends on a hybrid model: to attract investment and maintenance partners, these platforms must host commercial components, cafés, kiosks, or restaurants, alongside more inclusive public programming. During business hours, the platform might serve as a public square with shaded seating and lunchtime amenities. Outside of those hours, it could lift to the rooftop and become a ticketed viewing platform, generating income from tourists or evening visitors.

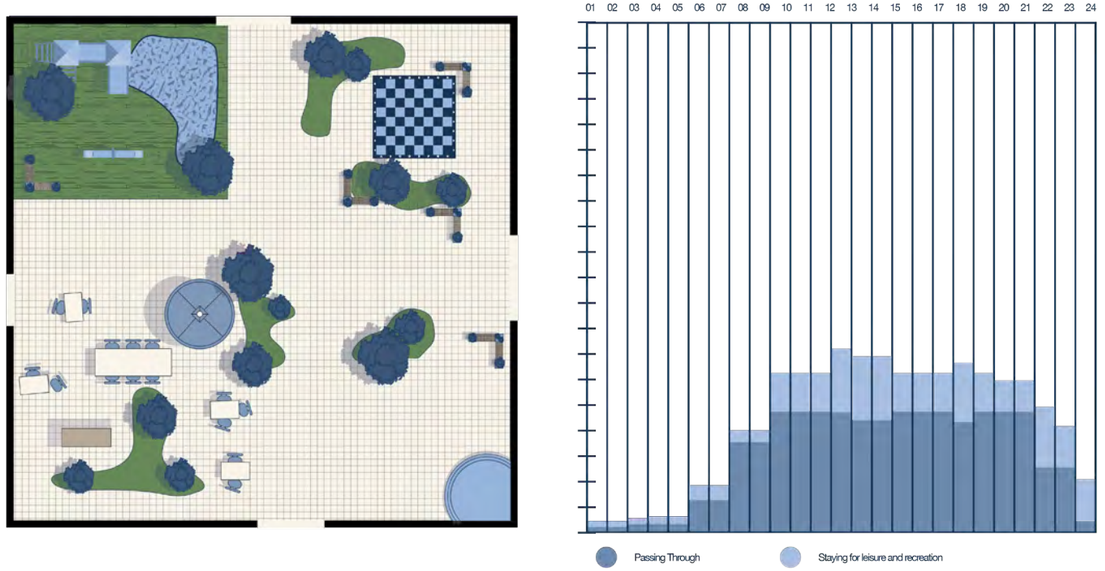


Image 4.8 Possible platform layout and usage of people through time for the platform in a commercial context

Stakeholders

In this context, public authorities will only support the platform if it is truly accessible to a broad demographic. It must contribute to the public realm, not merely serve as a branded addition to retail space. Platform size and design here are more flexible, as visibility and spectacle are desirable. Interactive lighting, water elements, or performance space may be integrated to support social media visibility or temporary events (Interview 5, 2025).

Stakeholders in commercial contexts include developers, hospitality partners, branding agencies, and event managers. Management may be public-private or outsourced entirely to a commercial entity, as long as accessibility, safety, and programming diversity remain monitored and enforced through policy or design agreements (Interview 3 & 4, 2025).

Developer Incentive

In commercial zones, the business case for a public platform is inherently tied to activation and foot traffic. For developers, the platform becomes a spatial amplifier, extending the commercial life of the building into the sky. By hosting events, temporary markets, or rooftop dining, the platform drives engagement not just with tenants, but with the wider public. This makes it a powerful tool for placemaking and destination branding.

Importantly, the inclusion of a commercial operator (e.g., café, bar, exhibition partner) offers a clear revenue pathway. Rather than being a sunk cost, the platform becomes a micro-venue, bookable, promotable, and profitable. This shifts it from a passive amenity into a programmable asset, which can be monetized directly through leases, tickets, or concessions, or indirectly through higher visitor flows and greater consumer dwell time (Interview 3 & 4, 2025).

For investors, this model provides both return potential and risk mitigation: while the public-facing function enhances brand perception and fulfills city planning requirements, the commercial aspect ensures the platform's maintenance and operational viability. If well-executed, it can even function as a signature element of the development, anchoring it in the urban narrative and social memory of its users.

Groundfloor General Layout

Safety wall

Entrances and exits depend on the context.

Barriers with sound to signal when the platform is going down just as one can find at a railway crossing or bascule bridge

Image 4.9 Technical layout of the platform

IV | Technical Standards as Spatial Preconditions

While the programmatic logic of each platform is guided by its context, its usability is ultimately governed by a more basic condition: the ability to safely, comfortably, and accessibly host people in motion. This section outlines the technical foundation on which platform life is built, not as a blueprint for spatial function, but as a universal chassis for adaptable publicness.

A Platform is Not a Room

Unlike a terrace or lobby, the elevated platform exists in flux. It must dock, detach, lift, and return, all while ensuring stability, dignity, and inclusivity. The design of such a system must therefore follow standards not only from elevator engineering, but also from public transport, stage rigging, and urban access infrastructure.
The platform's layout must accommodate:

- Safety enclosures: railings, glazed balustrades, or integrated benches at all edges
- Access control: barriers or gates, such as retractable booms (akin to metro turnstiles)
- Sliding or swing doors: for fluid interface with the host building or docking bay
- Docking tolerance: a flush or adjustable landing zone within ±2 cm of the building's platform edge
- Service core: including embedded power lines, drainage, and lighting fixtures

These components are not decorative, they are non-negotiable architectural elements that enable platforms to be public.

Technical Standards and Accessibility Norms

To meet Dutch and EU accessibility legislation, each platform must comply with core spatial thresholds, as specified in NEN 1814, NEN-EN 81-70, and NEN-EN 81-20 (Appendix I). At a minimum, the cabin or deck area must accommodate:

- A wheelchair user + assistant (110 cm x 160 cm minimum)
- Flat, non-slip flooring with integrated drainage
- Entry width ≥ 130 cm for wheelchairs, strollers, and crowd flow
- Weight-bearing capacity > 800 kg, equal to at least 10 passengers
- Flush entry threshold and visual/tactile indicators on floors and gates

These values exceed typical private elevator standards and approach those used in large-format public lifts, such as IKEA visitor elevators and metro carriages.
For comparison:

- IKEA visitor elevators support 13–15 persons, with widths around 140–160 cm and capacities up to 1600 kg
- RET (Rotterdam Metro) uses double sliding doors of 135–140 cm width to enable rapid, inclusive flow

In this way, the platform bridges the spatial logic of elevators and public transport.

The Platform as Spatial Vehicle

The layout of the platform should be understood not as a floorplan, but as a sectional vehicle, a modular unit designed to move, connect, and transform. Its performance is defined by how safely and seamlessly it can transition:

- Onto the building (docking accuracy)
- Into public life (visual permeability, signage, intuitive orientation)
- Across vertical space (engineered lift systems and weather resistance)

Much like a train car or metro wagon, the platform must accommodate predictable density, circulation routes, and multi-actor coordination. Yet unlike trains, its destination is symbolic as well as spatial: each stop creates a moment of ground-floor experience at height.

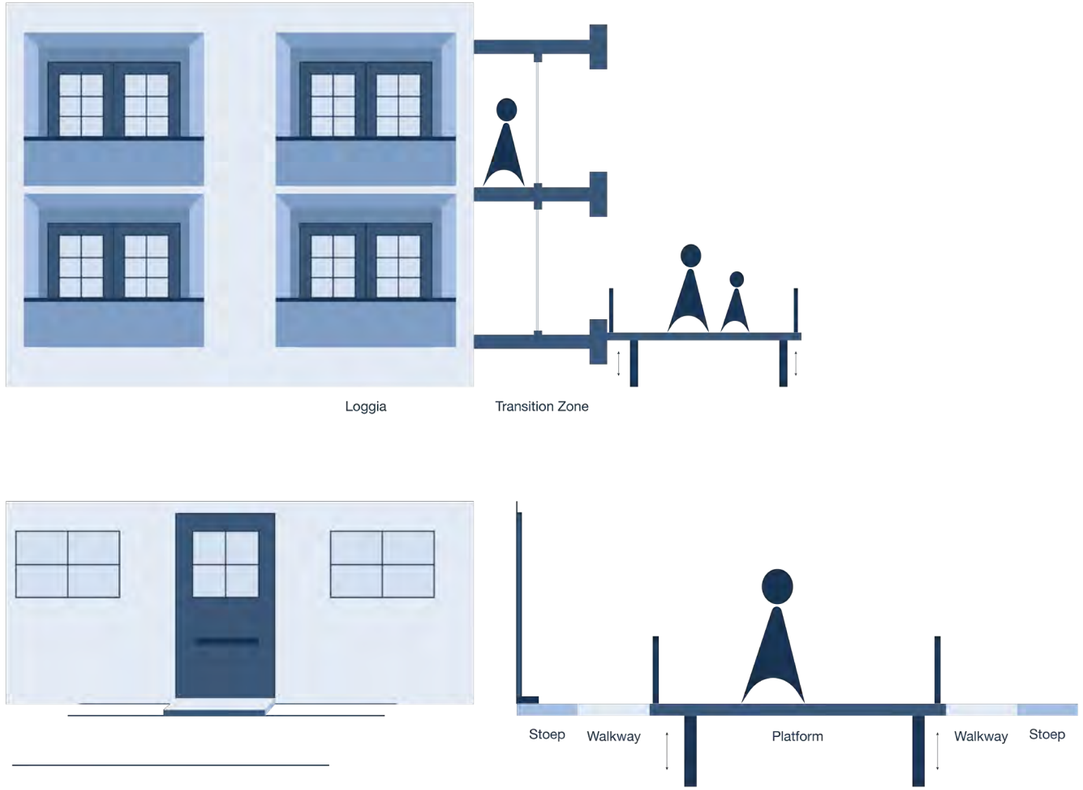


Image 4.10 Privacy and transitional spaces between the building and the platform

IV | Spatial Transitions and Privacy

As platforms ascend and descend along building facades, they navigate a complex interplay between public activation and private sanctity. To ensure harmonious coexistence, it's imperative to integrate design strategies that respect residents' privacy and comfort.

Contextual Privacy Strategies

In predominantly residential buildings, platforms should avoid stopping directly adjacent to private living spaces. Instead, they can be programmed to halt at communal areas or incorporate transitional zones, 'overgangsruimtes', that act as buffers. These spaces, reminiscent of the Dutch 'stoep', provide residents with semi-private areas adorned with benches, plants, or personal artifacts, fostering a sense of ownership and gradual transition from public to private realms (Kassenberg et. al 2016).

Commercial and Mixed-Use Contexts

In buildings with commercial or mixed-use functions, the need for stringent privacy measures may be relaxed. However, considerations for office confidentiality and user comfort remain pertinent. Here, design interventions can be more flexible, focusing on modulating visibility and acoustics as per functional requirements.

Architectural and Landscape Interventions to mitigate visual intrusion and enhance privacy

- Semi-Permeable Screens: Incorporate elements like brise-soleil, louvered panels, or patterned facades that obstruct direct views while allowing light and air penetration.
- Green Buffers: Utilize vertical gardens or planters as natural screens. These not only provide privacy but also contribute to biodiversity and improve air quality.
- Double-Skin Facades: Implementing an additional facade layer can create a buffer zone, reducing noise and enhancing thermal comfort, while also offering opportunities for integrated shading devices.

Dynamic Platform Adaptations

Platforms themselves can be equipped with adaptive features such as responsive Facades which employ materials or systems that adjust transparency or opacity based on proximity to private zones. Or acoustic treatments where sound-absorbing materials or white noise generators are integrated to minimize auditory disturbances during platform movement or occupation.

Zoning and Operational Guidelines

To ensure platforms operate without compromising resident privacy there might have to be designated stop zones to clearly define levels where platforms can pause, ensuring they align with communal or non-sensitive areas. And temporal restrictions to limit platform operations during specific hours to reduce disturbances during rest periods. Finally there could be a resident feedback mechanisms, a system to establish channels for residents to voice concerns or suggestions, ensuring the system remains responsive to their needs.

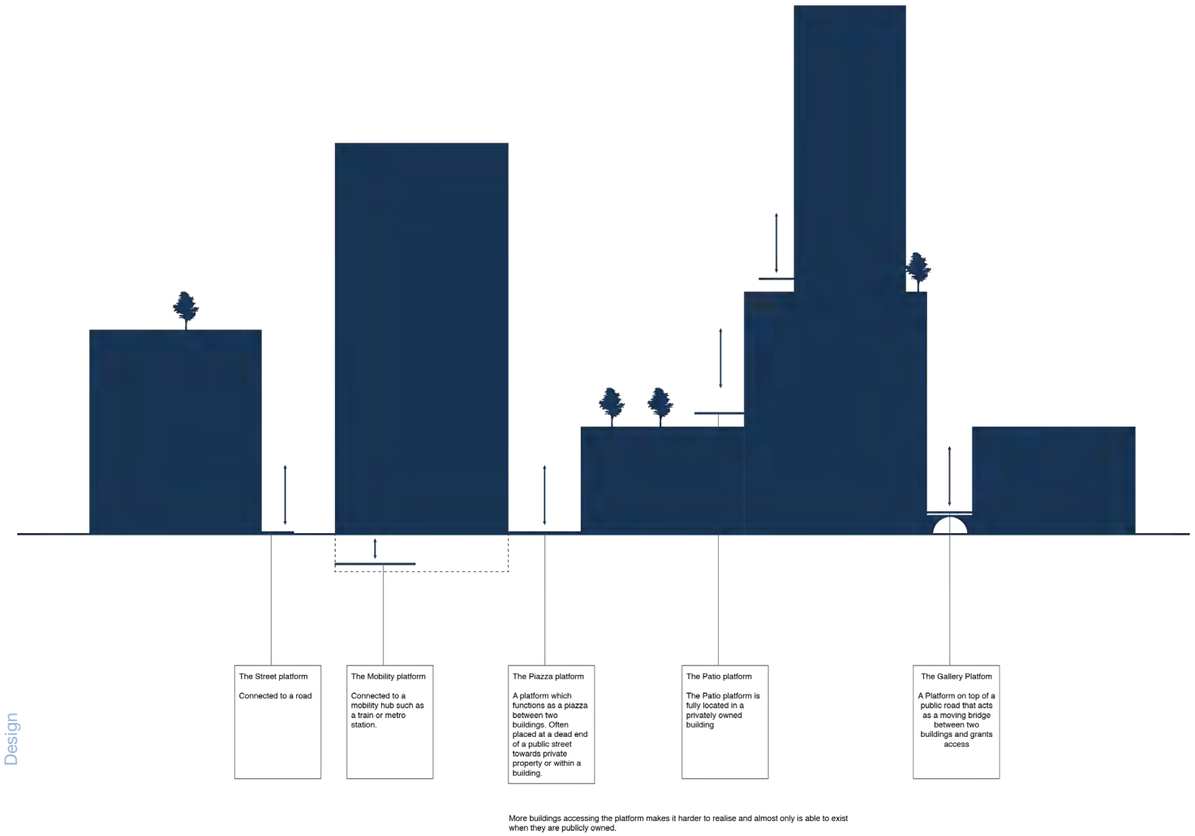


Image 4.11 Types of Platforms

IV | Types of Platforms and general management

Although the platform system proposed in this thesis is unified by a single mechanical logic, elevated decks that dock at various levels; its use, accessibility, degree of publicness, and governance must be carefully adapted to the specific place, location, and context in which it is situated. Much like a street, plaza, or bridge assumes different roles depending on its urban surroundings, a platform similarly transforms in both spatial and social function based on its vertical position and contextual environment.

This section introduces five primary platform typologies derived from an analysis of spatial requirements, user expectations, and infrastructural conditions. While each typology is grounded in the same technical foundation, it reflects a distinct mode of access and use. These types are not rigidly assigned to a single context, such as residential, corporate, or commercial, but are shaped by them. Factors such as programmatic intent, ownership structure, accountability mechanisms, and physical scale are influenced by both vertical location (level within the building) and urban role (context within the city).

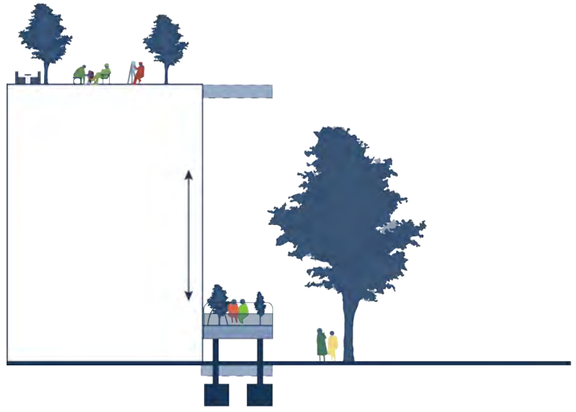
A further distinction is made based on the platform's ownership and access conditions, resulting in four primary classifications:

- Public – Uncontrolled, where the platform is publicly owned and accessible to all users, regardless of building affiliation.
- Public – Controlled, also publicly owned but with restricted access, often limited to building users or specific hours.
- Private – Uncontrolled, where the platform is privately owned yet remains open to the general public.
- Private – Controlled, in which access is restricted, typically regulated by tenancy agreements or institutional protocols.

Table 3 Axonometric View Hofpleinwith future high-rise developments

Platform Types	Publicness Level	Main Use	Typical Ownership	Access Logic	Program Scope	Comparable Typology
Street	High (access), Low (stay)	Vertical public transport and short stays	Public transport operator or city	Freely accessible at grade / transport hub	Benches, signage, lighting	Metro platform / open elevator car
Mobility	Medium-High	Linking mobility infrastructure with surface level	Transport authority or hybrid public-private	Pre / post-ticket control, varies by system	Transit, waiting, orientation	Transport concourse / pedestrian lift
Gallery	Flexible	Connecting buildings; passive stay and movement	Shared between buildings or third party	Connected points define user access	Leisure, exhibitions, crossings	Bridge / skywalk / mid-level plaza
Piazza	Very High	Full destination for diverse public program	Developer, third-party cultural / commercial entity	Open access, can be ticketed or free	Dining, performances, lounging, market	Public square / rooftop destination
Patio	Low-Medium	Courtyard-style, more private or semi-public	Building owner or tenant collective	By invitation, door policy, or semi-open access	Green, informal meetups, garden, lounge	Private courtyard / pocket plaza

Street Platform



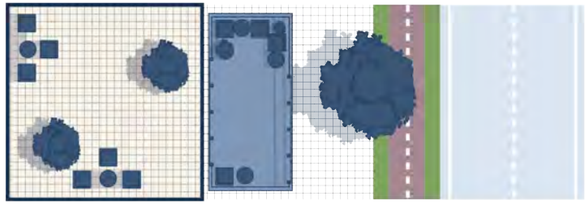
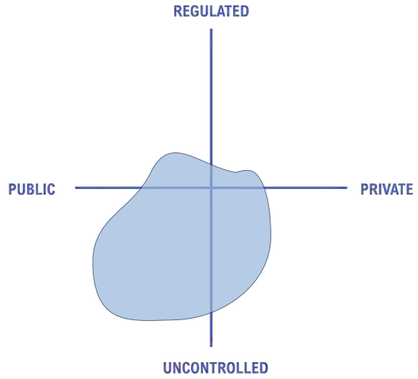


Image 4.12 Street Platform

The Street Platform operates at the intersection of infrastructure and public space. Drawing design influence from metro carriages and large-format elevators, this platform type is envisioned as a form of vertical public transport. Unlike traditional elevators, however, the Street Platform is conceived to invite short periods of stay. It includes benches and informal social nodes, allowing it to function both as a transit connector and as a brief gathering point.

In terms of accessibility, the Street Platform is intended to be fully public, with direct street-level entry and a high degree of permeability. However, its publicness relates more to access than to use: while many people pass through, fewer may linger. Ownership of these platforms typically falls to transport operators or city agencies, and their physical dimensions, often long and narrow, mirror the logics of movement, not static occupancy.



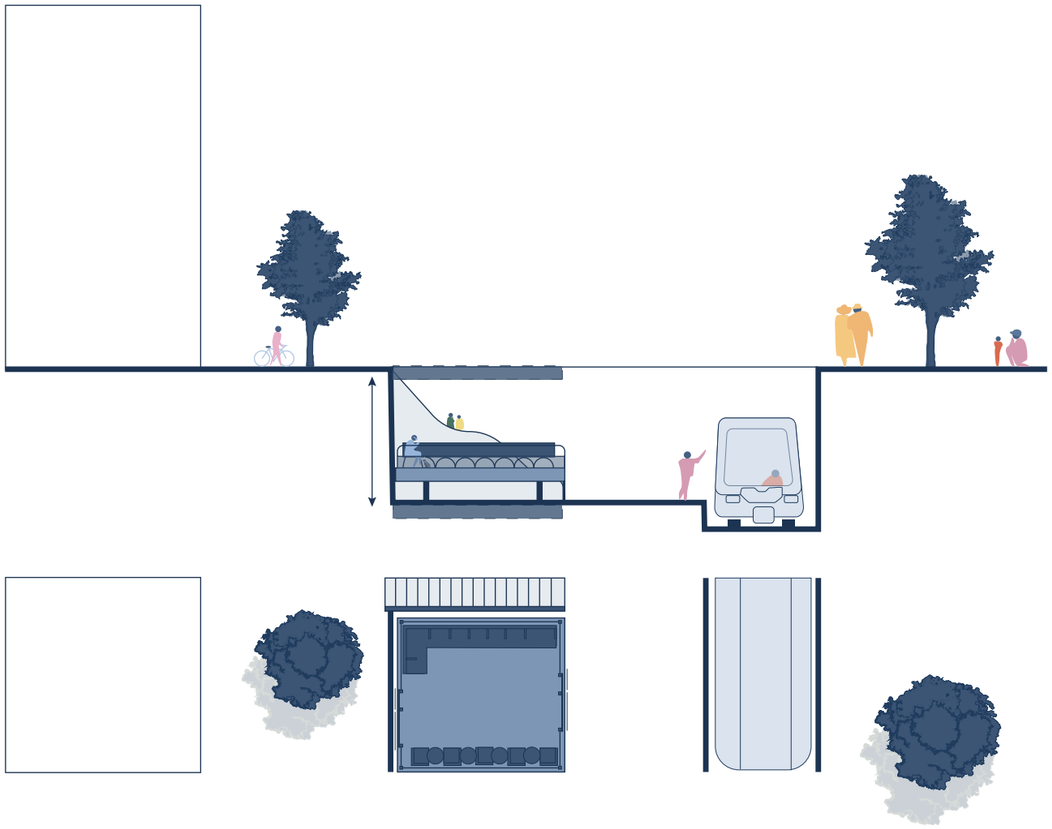
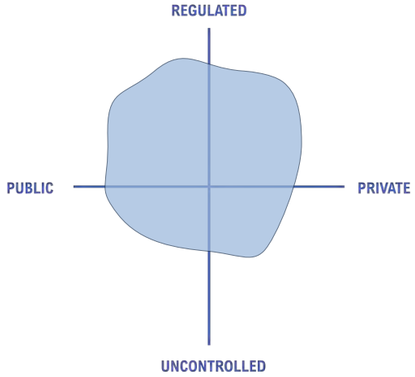


Image 4.13 Mobility Platform

IV | Mobility Platform

The Mobility Platform builds on the transit logic of the Street Platform but connects more directly with existing transport infrastructure. It is best imagined as an intermediate node between a metro station, terminal concourse, or arrival gate and the urban ground or rooftop above. Its use is shaped by flows of people moving through the transportation network, with peak moments determined by departure and arrival times. Unlike a lift, however, it maintains an open character, offering both vertical connection and spaces to wait, orient, or rest.

Depending on its placement, the Mobility Platform may sit before or after ticket barriers, which affects its level of publicness. Ownership typically resides with public-private transport authorities. The platform's dimensions are calibrated to expected peak flows, and its programming includes features such as dynamic signage, information points, or minimal seating. A speculative example could be a vertical concourse linking Schiphol's gate zones to baggage claim, replacing escalators and stairs with a moving public deck.



Gallery Platform

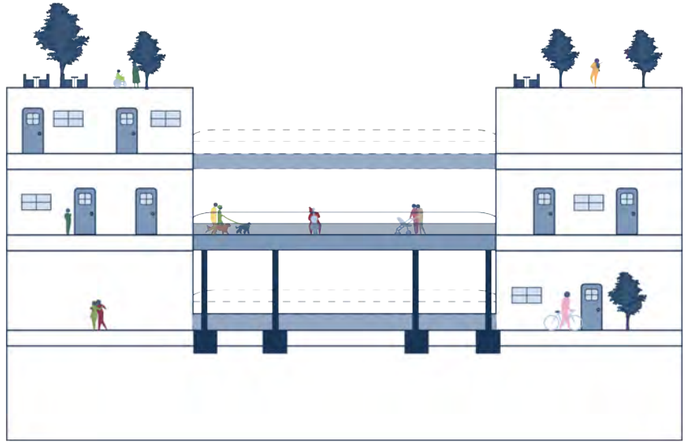
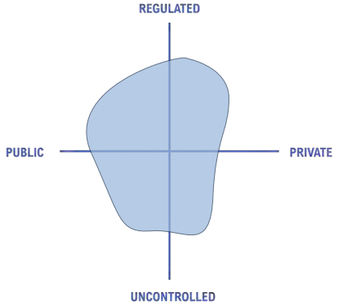


Image 4.14 Gallery Platform

The Gallery Platform shifts the platform's purpose from transportation to circulation. Its primary role is to connect separate buildings or wings of a large complex, functioning much like a skybridge or internal courtyard, but vertically mobile. Unlike previous types, it does not necessarily begin or end at ground level. Instead, it forms lateral links across height, making it especially useful in complex building morphologies.

Gallery Platforms are designed for pause and movement in equal measure. Depending on their location and context, they may serve as contemplative walkways, exhibition corridors, or informal work zones. Their ownership and access rights vary accordingly, ranging from semi-public to entirely private, often co-managed by adjacent building owners. Their form is adaptable, but always conditioned by the buildings they connect and the users they serve.



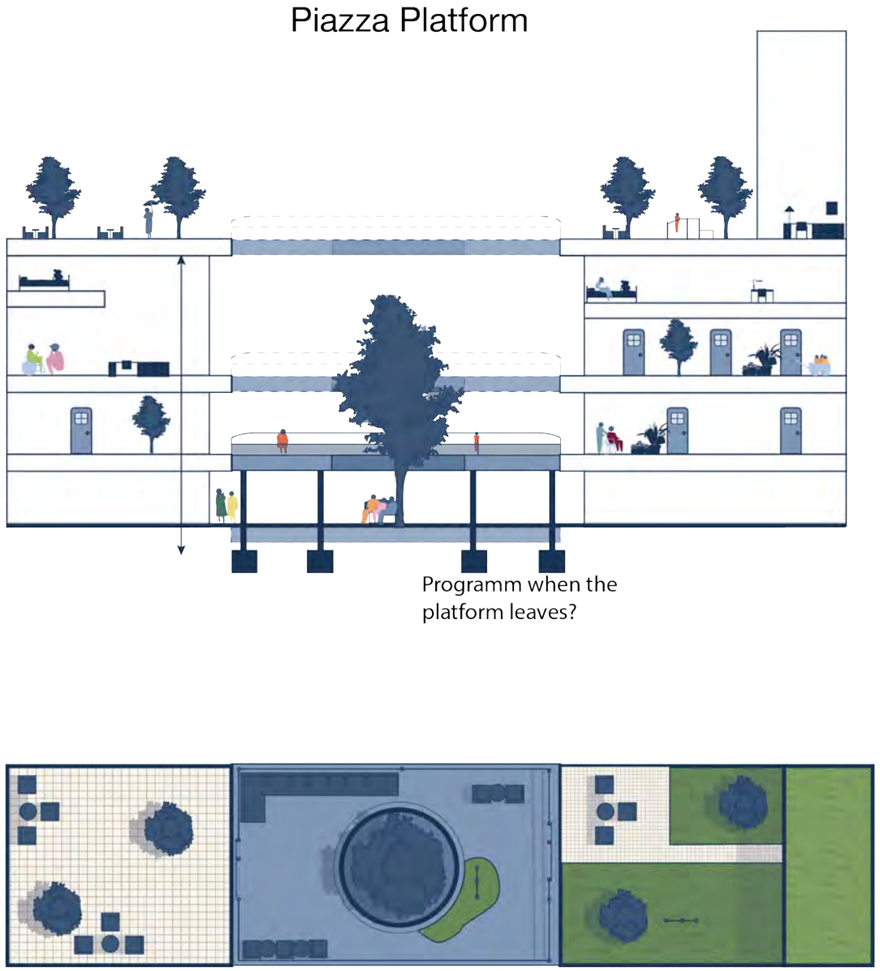
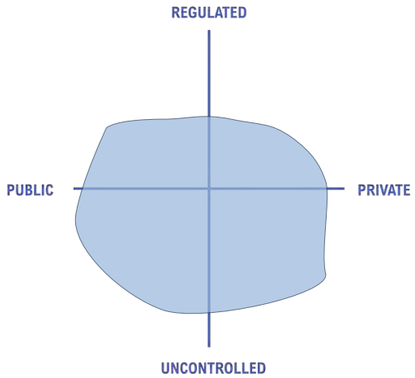


Image 4.15 Piazza Platform

IV | Piazza Platform

The Piazza Platform is the most civic and public-facing variant of the elevated platform. Like traditional urban squares, it is designed to host diverse public programs, markets, performances, dining terraces, or recreational zones, within an elevated architectural envelope. This platform is a destination, not merely a connector or passageway. It may not necessarily reach the ground or rooftop, but it is accessible, legible, and symbolically open.

Its publicness is maximized not only in access but in use. People come to the Piazza Platform for the space itself. As such, it offers the broadest range of management models: it may be developed by the building owner, a cultural institution, or an independent operator acting in coordination with both. In commercial zones, this platform can support ticketed events, while in civic or cultural contexts, it remains freely accessible. In either case, it supports publicness through activity. Piazza Platforms can even extend below grade, into parking structures or underused ground planes, bringing visibility and activity to zones often marked by anonymity.



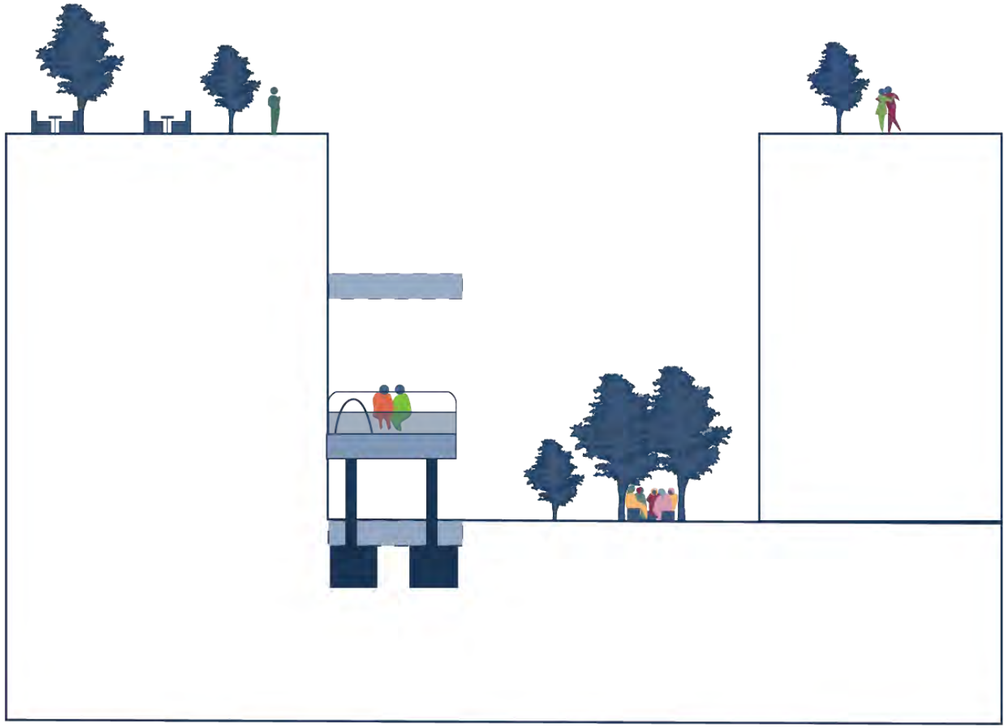


Image 4.16 Patio Platform

IV | Patio Platform

The Patio Platform is the quietest and most intimate of the platform types. It draws inspiration from traditional courtyards and interior atria, offering a semiprivate space embedded deeper within a building or its roofscape. In contrast to the Piazza, which serves a general public, the Patio is more often tailored to specific groups, residents, employees, or institutional members. Its size is usually smaller, and its design prioritizes shelter, greenery, and informal gathering.

While Patio Platforms may aspire to openness, experience has shown that many building owners are reluctant to support fully public access. As such, these platforms are often semi-public or private by necessity, their use guided by building policy or access control systems. Nevertheless, they retain the potential to contribute to broader vertical publicness, especially when connected to a network of platforms at other levels.

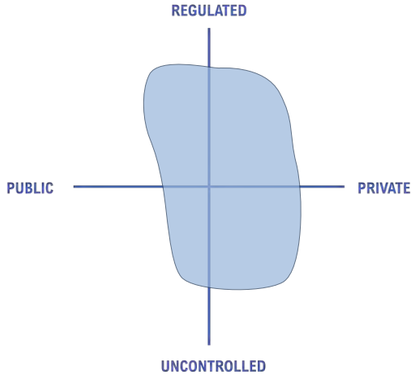


Table 5 Platform types and ownership matrix

Platform Types	Ownership Structure	Access Rights	Governance Mechanism	Management Responsibility
Street Platform	Municipal or Transit Authority with access agreement from building owner	Open during hours of transit operation; physically unrestricted	Access conditions embedded in anterior agreement; regulated by municipality	Transit agency manages maintenance; city oversees access compliance
Mobility Platform	Joint ownership between public transit operator and private building owner	Ticketed or swipe access with defined public use windows	Operational rules codified in PPP transit development contracts	Mobility operator manages operations; building provides safety oversight
Gallery Platform	Private owners with public use clause in development contract	Keycard or app-based access with visitor registration for semi-public use	Use monitored by third-party facilitator with public reporting	Placemaking nonprofit manages programming; owners manage access
Piazza Platform	Civic foundation or cultural NGO leases platform from building consortium	Free access during public hours; rentable for private events	Cultural programming agreement with periodic review by city	Joint committee manages use calendar; funded by events and city grant
Patio Platform	Owned by residential association with conditional public use hours	Restricted access, public use permitted under certain conditions (e.g., events)	Enforced by HOA statute and city-agreed terms for semi-public funding	Building management oversees platform; public use hours scheduled by local group

IV | Platform Management Scenario's

This table brings together the research's conceptual framework and empirical insights to explore how responsibility and control shift across different vertical contexts and ownership types. It outlines how the platform concept, architecturally simple but institutionally complex, can be managed under varying organizational scenarios. Each row represents a combination of context, ownership, and platform type, paired with the corresponding organizational system required to sustain public value across time.

Through six semi-structured interviews, I investigated how these scenarios might function in practice. A recurring theme was the fragility of public ambitions when management responsibilities are unclear or fragmented. Interview 1, a municipal project manager, emphasized that without clear zoning or intention agreements in the early phase, the municipality has little leverage once the platform is operational. This sentiment was echoed in Interview 5, where the urban designer working on Hofplein described the tension between long-term public goals and short-term project pressures.

From a governance perspective, Interview 2, an academic expert in urban management, underscored the importance of a "continuous line of accountability", ensuring that whoever manages the platform also upholds the agreed public values. This aligns with the concept of orgware developed earlier: structure must reflect ambition. Without contractual anchors or co-management strategies, aspirations for openness and shared use often dissipate during the development cycle.

Developers (Interviews 3 and 4) offered a complementary view. While generally open to shared programming, they noted that without a viable financial model or clearly defined access control, the risk of nuisance or liability increases, particularly in mixed-use towers. In these cases, public-private stewardship models or third-party operational partners may be necessary. Interview 6, a project manager with experience in complex urban projects, emphasized how important it is to define not only ownership, but "activation rights", the ability to program and animate the space on a regular basis.

The matrix also reflects a layered view of feasibility. Public ownership tends to allow for broader access, but often suffers from operational inertia. Private ownership enables agility, but risks exclusivity. Hybrid scenarios, bridges between buildings, mid-level terraces shared by multiple stakeholders, require negotiation-intensive solutions, such as shared maintenance agreements, community trusts, or embedded cultural operators.

Ultimately, this table is not prescriptive but diagnostic. It helps identify which organizational systems might sustain access and vibrancy depending on spatial position, ownership, and function.

Table 6 Influence of context on platform types

	Street Platform	Mobility Platform	Gallery Platform	Piazza Platform	Patio Platform
Residential Context	Useful for connecting residential entrances to street level; high accessibility needed	Less likely unless linked to transit or delivery points; could support shared vertical circulation	Could connect residential towers; semi-private, enhances neighbourly interaction	Rare, but viable as communal garden or shared rooftop; privacy buffers critical	Most common; semi-public or private courtyard with flexible access
Commercial Context	Facilitates foot traffic from shops and transit; integrates well into pedestrian zones	Highly effective; aligns with transport flows and customer movement	Links commercial interiors (malls, arcades); good for flow between blocks	Strong potential as event square or food court with economic benefit	Uncommon; could be adapted for quiet breakout or social pause spaces
Corporate/ Business Context	Less common unless it serves multiple tenants or retail clients on lower floors	Effective in linking lobby with transport systems; timed with shift changes	Useful as bridge between departments or towers; enhances internal collaboration	High-impact opportunity for branded public image; visibility important	Good for internal social space; usually private with limited public use

IV | Platform and Context types combined

While platform design aims to support vertical public life, its feasibility and form are deeply shaped by the context it is embedded in. This matrix compares different platform types across three key vertical urban contexts: residential, commercial, and business (office) environments. The goal is not only to evaluate spatial fit, but to anticipate the social, regulatory, and operational dynamics each context introduces.

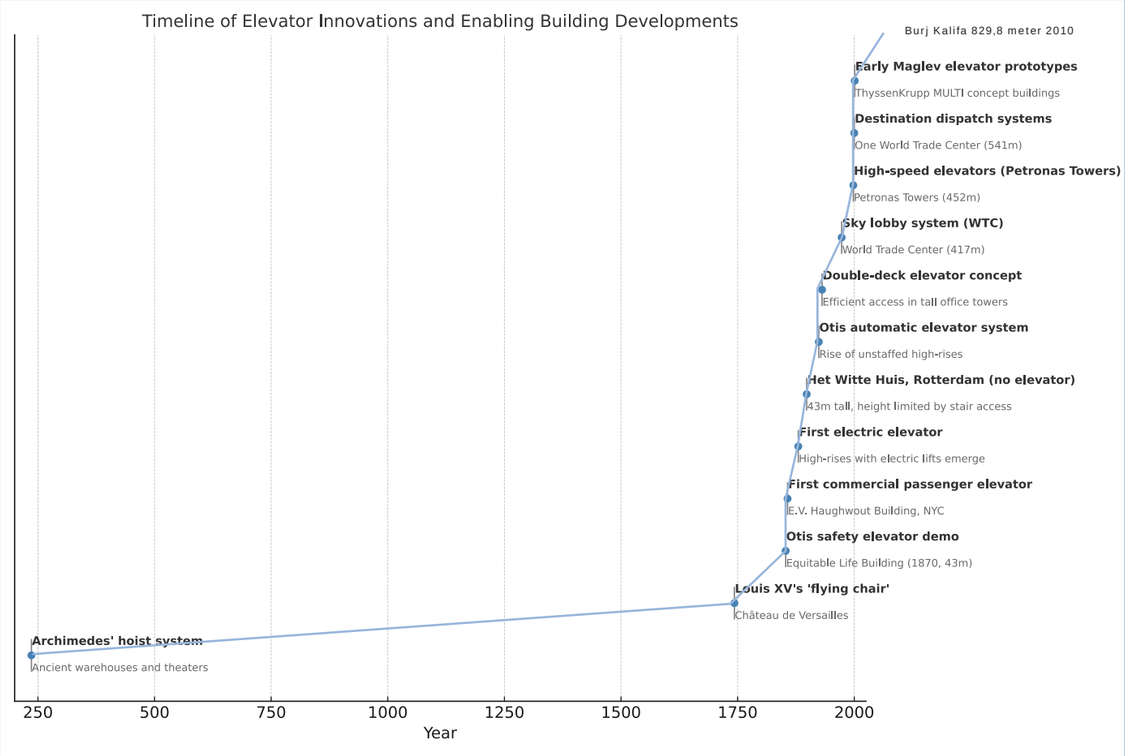
In residential contexts, especially multi-tenant or owner-occupied buildings, platform design faces high thresholds of privacy, liability, and governance complexity. As emerged in Interviews 1 and 5 (municipal project managers), residents often exert significant control over shared spaces, making public access difficult unless obligations are locked into development agreements from the outset. Courtyard platforms or street-to-roof connectors might work best here when paired with clear programming and boundary cues that separate private use from shared civic intent.

Commercial contexts, by contrast, are more outward-facing. These buildings often house amenities already open to the public, restaurants, galleries, fitness centers, making it easier to extend public access vertically. Roof-to-roof platforms or gallery connectors across adjacent properties can enhance movement and visibility. As one developer (Interview 3) noted, platforms in commercial settings may also double as marketing tools or brand extensions, provided maintenance and programming are delegated through contracts or private-public partnerships.

Business or office contexts occupy a middle ground. While daytime occupancy and employee presence offer latent usership, access control and security concerns dominate. Platforms in this setting benefit from semi-public positioning, like rooftop lunch terraces or elevator-linked bridges open to tenants and curated visitors. As Interview 6 highlighted, these spaces often succeed when part of a broader place-branding strategy or employee wellbeing agenda, but they rarely function as fully public without municipal or external stakeholder involvement.

Across all three contexts, one pattern is clear: not all platform types are equally viable everywhere. The match between form and context is shaped by both physical logistics and social management models. As such, this matrix does not prescribe solutions but offers a strategic lens through which to read platform feasibility. By situating design ambition within contextual realities, it becomes possible to identify leverage points for embedding publicness, whether through zoning incentives, shared governance, or design-for-trust strategies.

Graph 4.4.1 Timeline how elevator innovation influenced building height (Jetter, 2019)



INTERLUDE IV | The Elevator as Urban Catalyst

The elevator stands as a pivotal invention in the narrative of urban development, fundamentally altering the trajectory of architectural design, social accessibility, and spatial programming. Its evolution, from rudimentary hoisting mechanisms to responsive, high-speed transport systems, has not only enabled the rise of the vertical city but has also redefined how we conceive of connectivity, hierarchy, and access in built environments.

Historically, the elevator was a technical breakthrough. But today, it is a spatial condition, a public interface that structures experience. Without the elevator, the high-rise typology would remain speculative. Indeed, the design strategies introduced in this thesis are impossible to imagine without it.

From the early innovations of Elisha Otis' safety elevator to contemporary maglev prototypes and sky lobby systems, each leap in elevator design has not only advanced height, but reshaped how people interact with space. Projects like the Maison à Bordeaux, Fondazione Prada in Milan, and De Bevreemdende Lift in Brussels illustrate how elevators can serve not merely as connectors but as inhabited thresholds, spaces of pause, perspective, or even performance (Harford, 2017; Gausa et al., 2003; OMA 2018; Koolhaas & Mau 1995). These precedents demonstrate that elevators can become spatial protagonists, shaping not just circulation but atmosphere, identity, and inclusion.

The accompanying timeline provides an overview of key innovations in elevator technology, correlated with the height of the world's tallest buildings at each point in time. This correlation reinforces a simple but critical premise: as the elevator evolves, so too does our understanding of the city. The vertical platform proposed in this thesis is an extension of this logic. It repositions the elevator as a programmable, perceptual, and performative element of public life, one that does not merely move people, but connects them, reveals them, and invites them into shared space at height.

IV | Hofplein and the Vertical Public Realm

IV | Why Hofplein?

In the centre of Rotterdam, between the traffic-heavy Hofplein roundabout, the waning commercial activity of the Lijnbaan, and the fragmented urban fabric along Coolsingel, lies a critical opportunity for architectural speculation and civic reinvention. Here, commuting flows, short-stay tourism, mixed-use high-rise developments, and a heavily paved public realm intersect without integrating. This site, precisely because of its complexity, offers the ideal testbed for applying the platform typology system developed in the previous chapters.

The Hofplein area encapsulates a microcosm of urban conditions: a transport hub for thousands of daily commuters; a commercial spine that no longer invites prolonged presence; and a field of vertical ambitions that have yet to resolve the challenges of true public accessibility. The platform is inserted here as a tool of reconnection, between levels, between buildings, and between people.

Hofplein has been identified as one of five strategic growth cores in the Hoogbouwvisie Rotterdam (Gemeente Rotterdam, 2022). This designation aligns with the city's broader densification strategy, as outlined in the municipal urbanization map, which highlights areas where high-density urban environments, including high-rise development, can be integrated. These growth zones are intentionally linked to hubs of high-quality public transport (HOV), reinforcing the idea that vertical expansion must coincide with sustainable and accessible mobility. In this vision, Rotterdam is evolving from a monocentric city to a polycentric urban network: a constellation of interconnected centers, each capable of supporting central urban functions. Hofplein, with its strategic location and infrastructural connectivity, is emblematic of this transition and serves as a critical test site for embedding public value in future high-rise development.

In this chapter, the design framework is grounded in a real site, but it does not settle for surface-level intervention. Instead, it engages the architectural, planning, and managerial layers of the city. Platforms are proposed that respond not just to spatial conditions, but to temporal, social, and political flows: office hours from 8:00 to 18:00; tourist peaks on weekends; public holidays and events; and the daily rhythms of residential life that demand visual privacy, acoustic comfort, and the right to retreat.

These rhythms are not static. The Hofplein node also participates in the broader dynamics of the Randstad, connecting residents who live in Amsterdam, work in Rotterdam, and spend their leisure time drifting between. In this setting, the platform is not just a device for vertical movement, but a proposition for vertical destination-making. What if a platform stopped halfway up a building and hosted a temporary market? What if the pause itself became public?

These speculative moves are grounded in a critique of the current ground-level condition. An analysis of Coolsingel, through the lens of The City at Eye Level (Karssenberg et al., 2016), reveals an urban sidewalk strip that fails to deliver continuity. Dead zones,

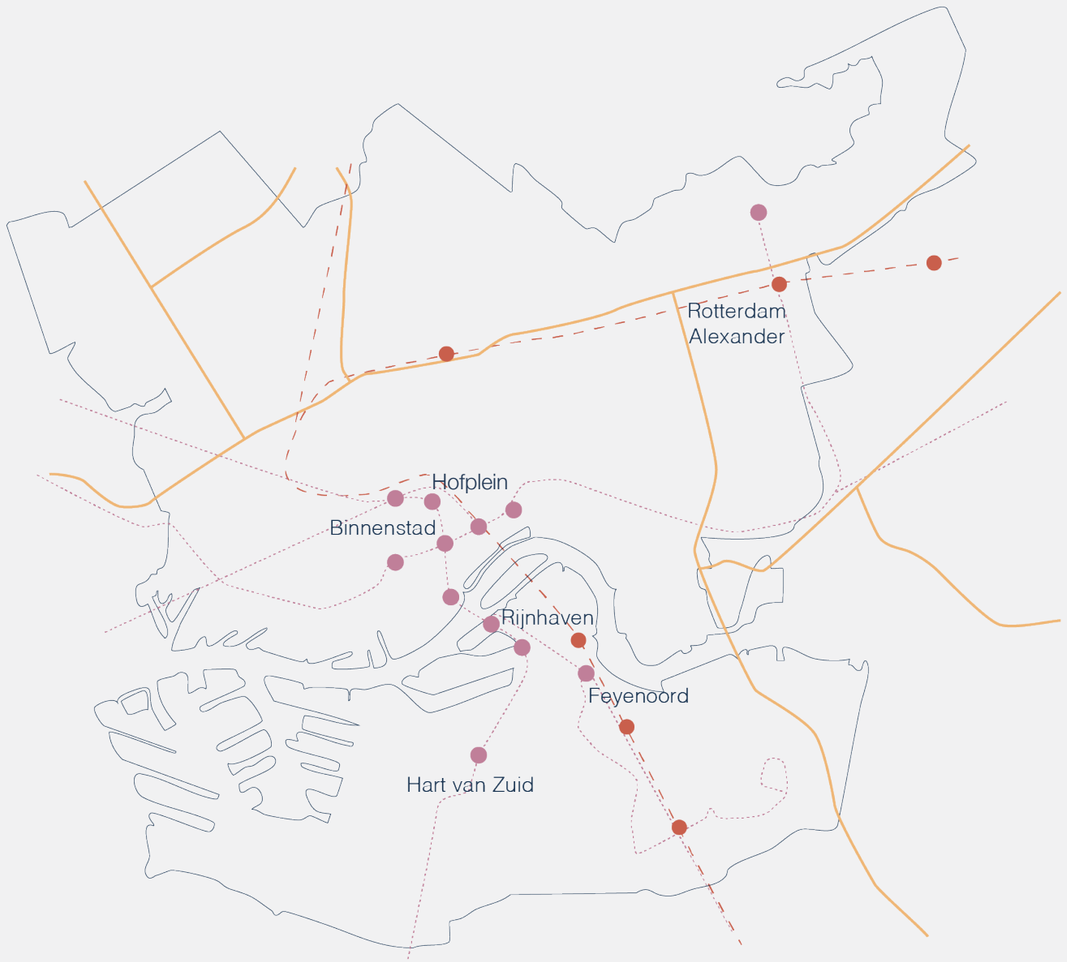


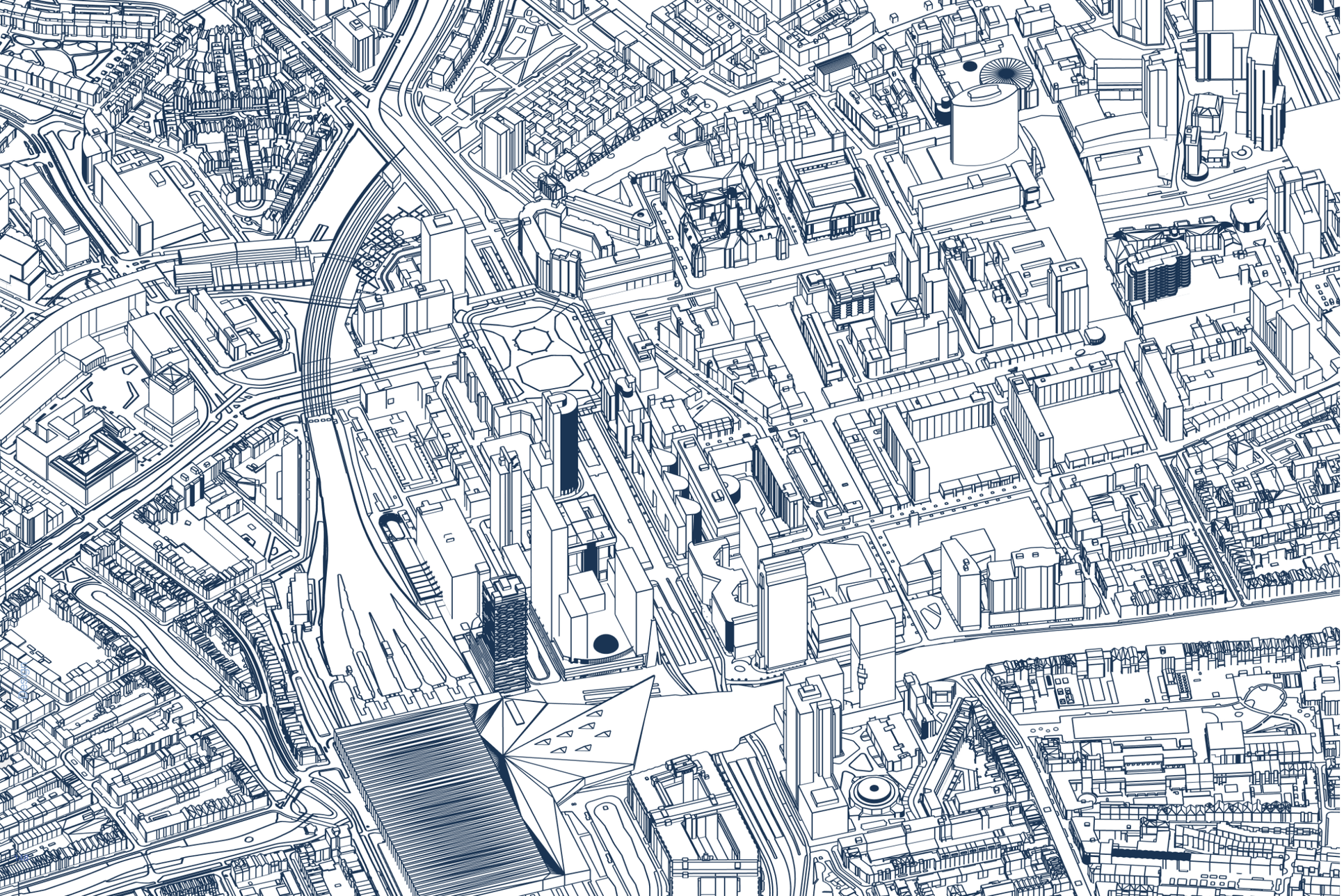
Image 4.17 Mobility HUBS appointed as growthcores and high-rise zones by the municipality of Rotterdam

vacant walls, under-activated plinths, and visual voids, break up what could otherwise be a compelling pedestrian corridor. The rules for good ground-floor urbanism are clear: keep storefronts at the property line, avoid set-backs, activate dead edges. These logics are now extended upward. Platforms are not plinths, but they can act as plinth-like anchors in the sky, interrupting the deadness of high-rise façades and injecting vertical visibility into otherwise forgotten elevations.

This chapter proceeds through a layered structure. First, it analyses the Hofplein site using the conceptual XYZ framework (Levels of Perspective; Perception; and Regulation). Then, the three urban development tracks, urban design, urban planning, and urban management, are each translated into concrete design and policy strategies on-site. These tracks are not discussed abstractly but tested against real stakeholder dynamics and technical conditions.

The following section then maps the application of five different platform types; Street, Mobility, Gallery, Piazza, and Patio, across the Hofplein area, each located strategically to address specific spatial deficits or temporal opportunities. A stakeholder and phasing strategy follows, outlining how these platforms could be implemented incrementally and sustainably, in partnership with both public and private actors. Finally, the chapter closes with speculative user journeys: imagined days in the life of commuters, visitors, and residents, to illustrate how elevated publicness might be experienced as part of daily urban life.

In this way, Hofplein is not just a location, but a working prototype for the future of vertical public space. It is both specific and symbolic, deeply tied to Rotterdam's civic identity, yet open enough to inspire similar strategies in other verticalizing cities.



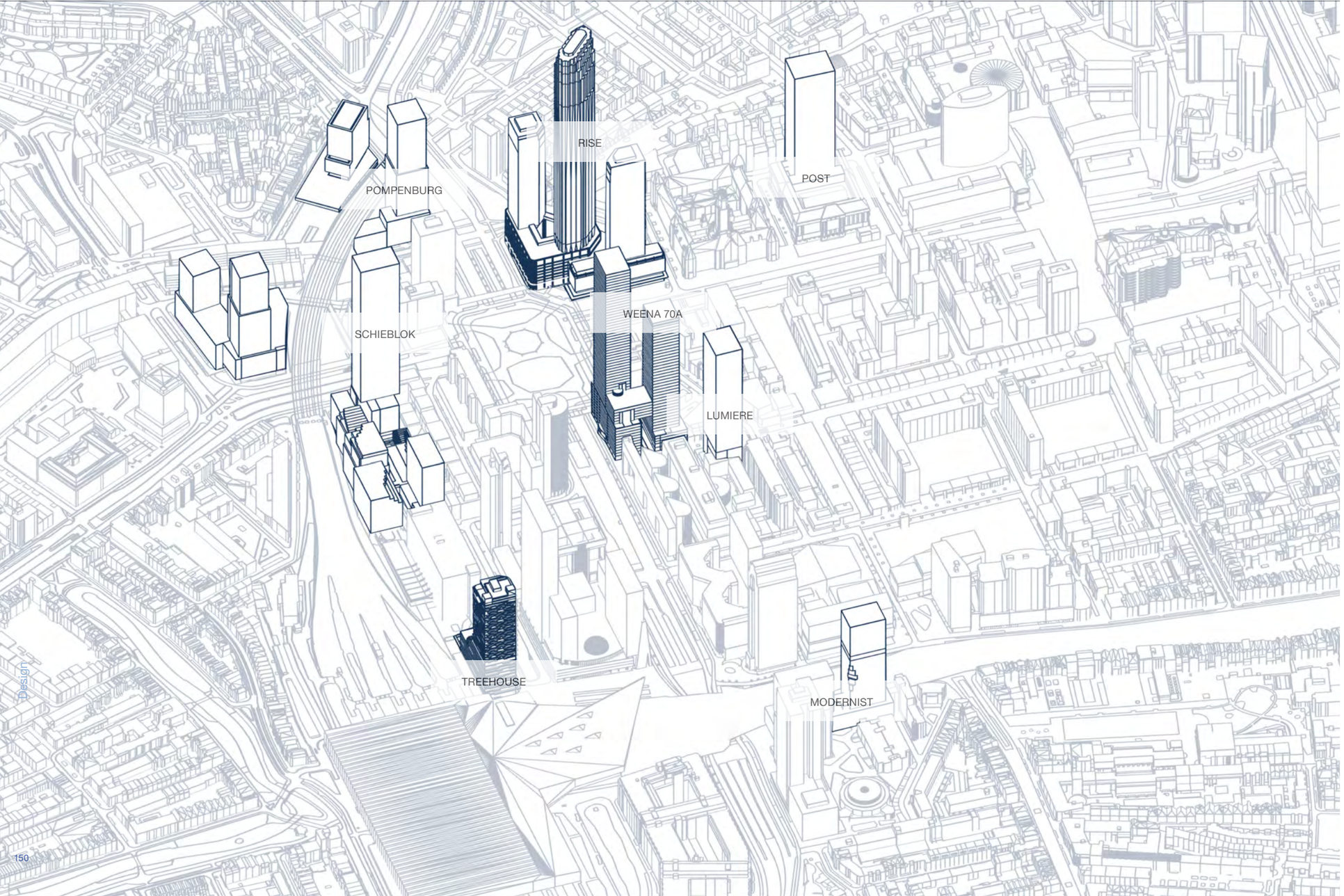
IV | Spatial Analysis
through the XYZ Framework

As the transformation of Rotterdam accelerates, Hofplein stands both as an emblem of progress and a symbol of what gets left behind. It is centrally located, intensely infrastructural, and rich in developmental ambition, but also spatially broken and socially dormant. The contradiction is not abstract. It is walked, felt, and absorbed in the rhythm of everyday life. The buildings are tall, but their invitations to explore inside are few. The sidewalks are wide, but the programs retreat. Publicness exists in fragments, not flows.

Walking through the area, one is struck by the collision between the ambition of the skyline and the inertia of the street. The towers promise intensity, but deliver insulation. Their ground levels, often glazed and polished, act more like mirrors than doors. Rather than inviting you in, the facades reflect you back. Even where architectural gestures appear, canopies, plazas, arcades, they tend to withhold more than they give. The experience remains visually impressive but socially thin (Gemeente Rotterdam, 2025).

This lack of urban reciprocity stems not only from design, but from decades of decision-making that placed efficiency above exchange. Hofplein was shaped to connect, between culture, commerce, and mobility, but its connective role was undercut by single-user buildings, internal logistics, and a growing dependence on car infrastructure. The result is a spatial fabric where movement happens, but interaction doesn't. Where presence is measured by transit flows, not by social encounter.

Image 4.18 Axonometric View Hofplein 2024



IV | Spatial Analysis through the XYZ Framework

And yet, the conditions for change are latent. Hofplein sits within the Rotterdam Central District XL framework, a planning vision that reimagines the area as a core of future public life. Major infrastructural investments are underway, reconstructing the square, softening its traffic dominance, adding climate-adaptive green, and activating dormant edges. These are not superficial upgrades (Gemeente Rotterdam, 2025). They signal a deeper ambition: to restitch the fragmented public realm, to re-center walking and cycling, and to reframe buildings not as enclaves, but as extensions of city life.

This shift opens the door, literally and figuratively, for the vertical platform to intervene. Not as an alien object, but as a spatial and institutional response to the failures observed at eye level. The conceptual framework of this thesis, structured around the XYZ logics of use, access, and governance, has revealed precisely where those failures concentrate: in plinths without program, towers without transitions, and facades without thresholds. If verticality is to serve the city, it must be made accessible, visible, and meaningful.

Image 4.19 Axonometric View Hofpleinwith future high-rise developments

IV | Spatial Analysis

through the XYZ Framework

The proposed platform system emerges here as connective tissue. It docks not just to buildings, but to flows: of people, of views, of responsibility. It starts at moments of disconnection, empty rooftops, underused terraces, sealed mid-levels, and proposes them as opportunities. These are not speculative insertions. They are anchored in ongoing and future developments: Hofplein's own square redevelopment, the transformation of Delftse Poort and RISE, the slow emergence of multifunctional towers. The potential is already latent in the built form. The platform activates it.

But for this system to function, spatial logic is not enough. The real negotiation lies in governance. Who owns these levels? Who funds the elevators? Who maintains the programming? Interviews with professionals, municipal project managers, urban designers, developers, highlighted the difficulty of aligning incentives over time. Public access often begins as an ambition and ends as an afterthought. Residents want control. Developers want certainty. Municipalities want flexibility. The organizational systems proposed in this thesis, varying by context and degree of publicness, respond to these tensions. They are not fixed formulas, but scaffolds for negotiation. They range from co-managed structures in residential buildings to service contracts in commercial towers, from joint-use agreements in business contexts to embedded programming in publicly owned assets.

Image 4.20 Analytical map type of program around Hofplein

Image 4.21 Accessibility area Hofplein

accessiility on ground floor versus the rooftop

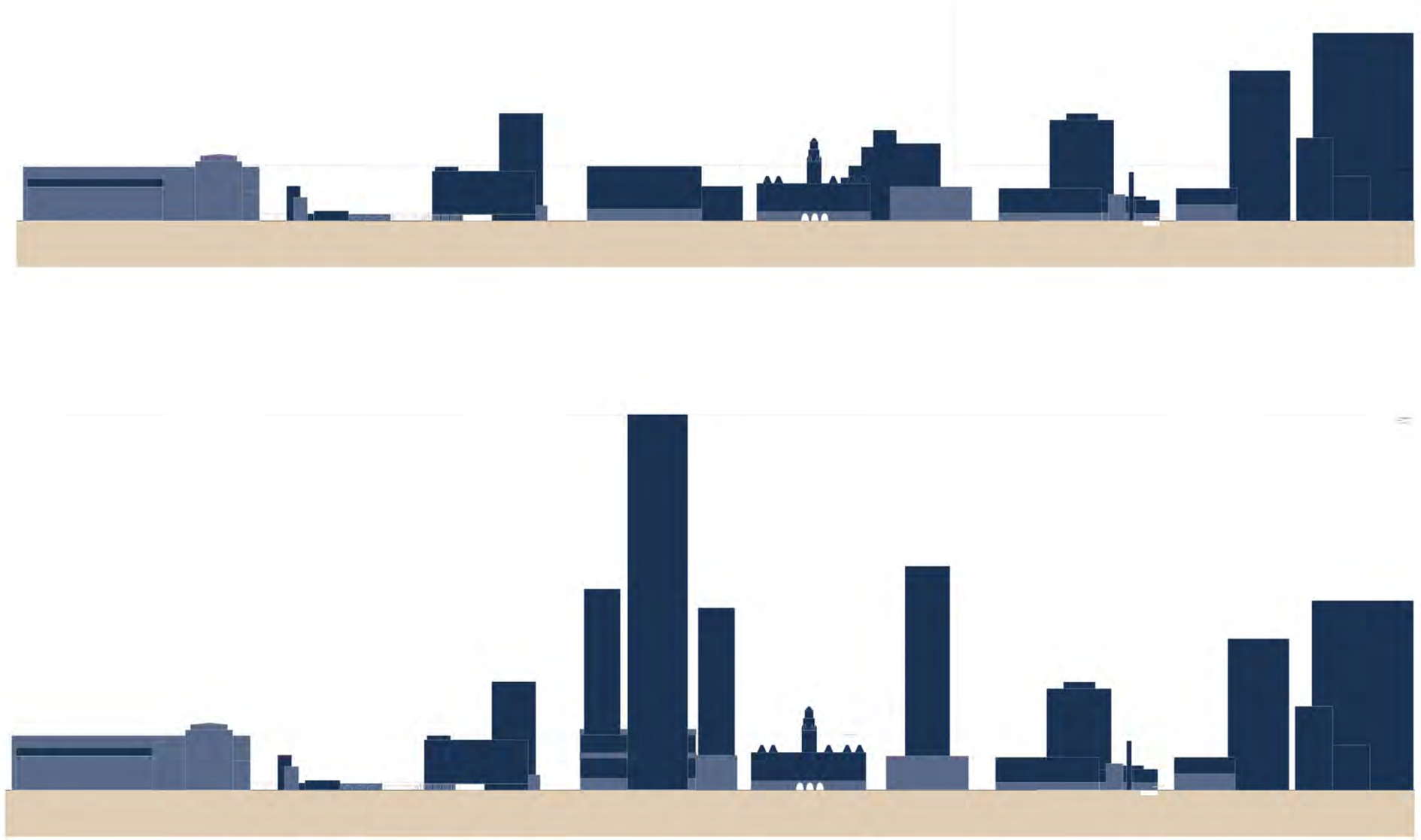
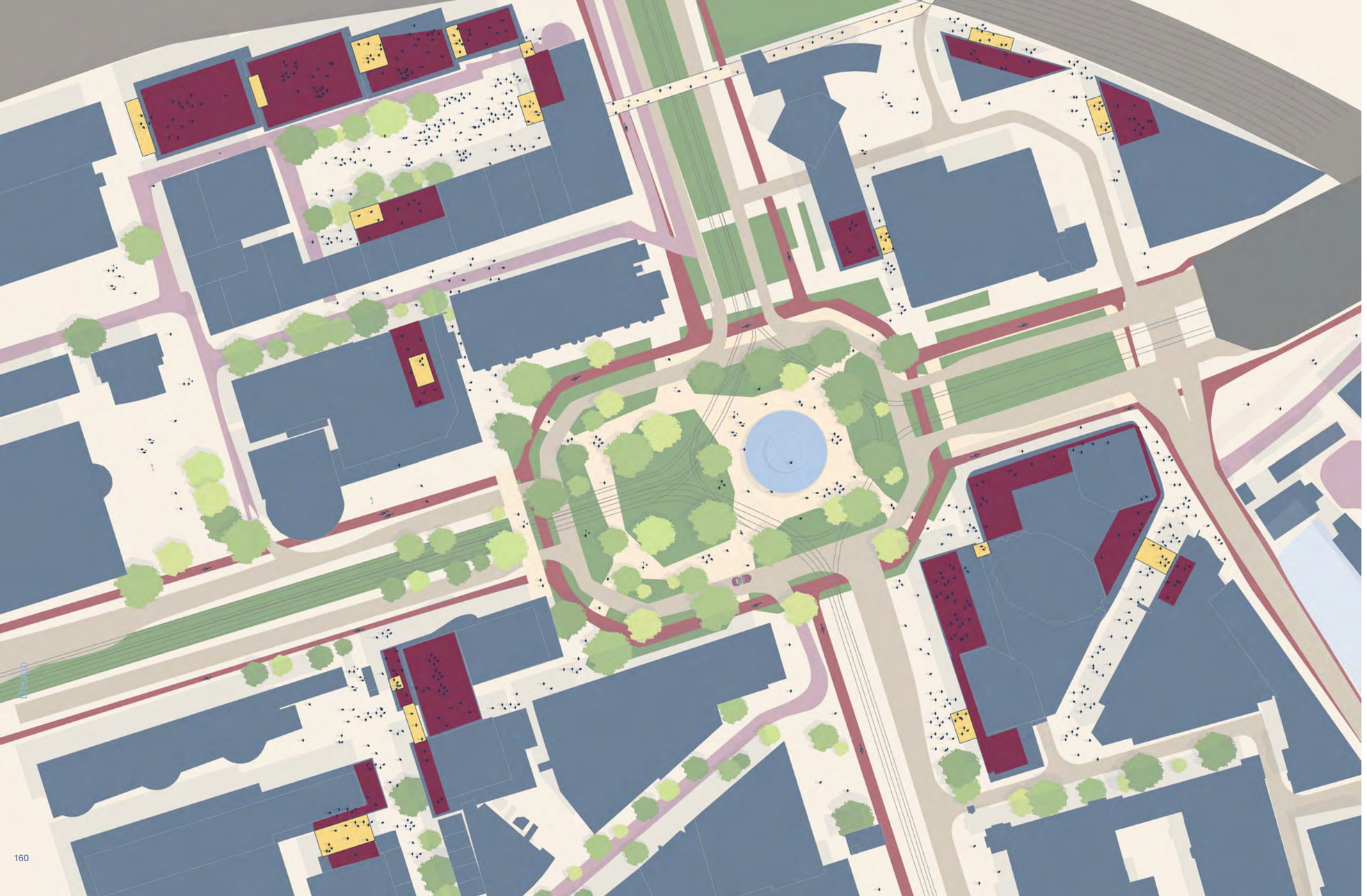


Image 4.24 Sectional Nolli along Coolsinger



IV | Hofplein future prospect

In a place like Hofplein, where the physical is already vertical but the public remains horizontal, a layered system of access is needed. The visual strategy of PublicLink becomes a part of this. Printed on windows of public program, these large-format QR codes transform facades into interfaces. They announce the presence of activity where there were just people behind a window participating in a private activity. They say, “there is something here,” and more importantly, “you are invited.” Once scanned, they guide users into and through the platform system. They reveal what’s open, what’s programmed, and how to get there, not just in theory, but in real time.

The experiential dimension of the platform is equally crucial. It is not a machine or a novelty; it is a civic room in motion. On it, one can wait, read, observe, or connect. People are not processed, they linger. The program adapts: sometimes a co-working terrace, sometimes a music stage, sometimes simply a bench in the sky. Like any good public square, the platform invites use without demanding it. Its social life shifts with the day, the season, the user.

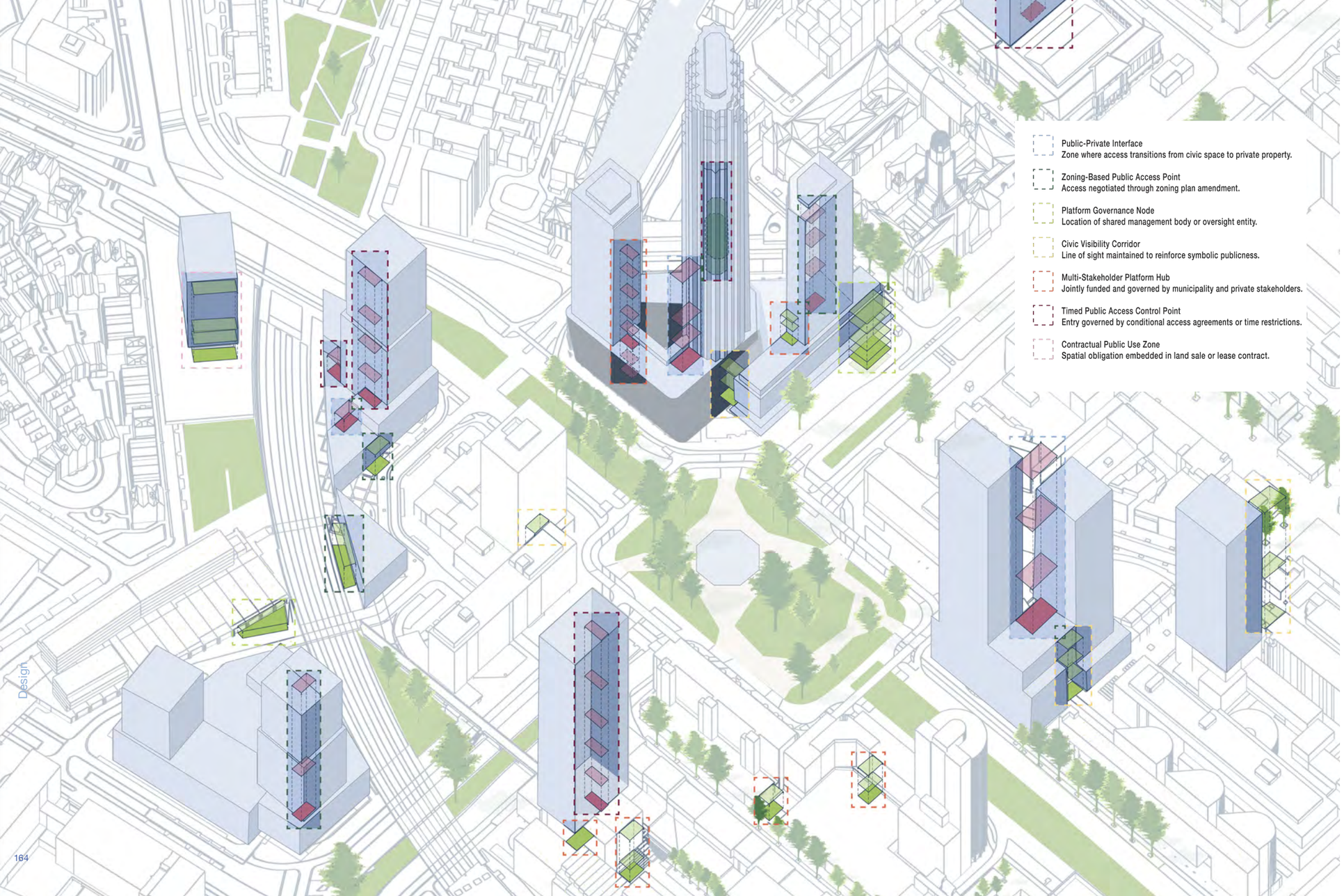
Image 4.25 Possible Platform placement and people streams

IV | The Experience of the Space - platform design

From the street, it is visible, a piazza rising. From the platform, the city unfolds, fragmented, yes, but now connected by a new logic of movement and meaning. And from above, the entire system becomes legible: a network of public life elevated, linked, and held in motion.

In this way, Hofplein is not just a case study. It is a testbed. A site where spatial fragmentation, governance complexity, and developmental ambition collide. And it is precisely here, at this intersection of past planning and future possibility, that the vertical platform finds its strongest case. Not as spectacle, but as structure. Not as utopia, but as interface. A new dimension of publicness, built, seen, used.

Image 4.25 Possible platforms in hte birds eye view



IV | The Experience of the Space: Governance and Management Details

As the vertical city becomes more complex, the question is no longer just where to place public space, but who sustains it, under what conditions, and with which instruments. The table (Table 7) of platform organisational systems outlines various governance scenarios based on ownership (public or private) and contextual use (residential, commercial, business). It reflects the realisation that the performance of vertical platforms depends as much on their legal and managerial backbone as on their architectural form.

These systems were not developed in abstraction. They respond directly to interviews conducted with professionals across municipal governance, real estate development, and urban design. A project manager from the municipality (Interview 1) emphasized the need for legal clarity from the earliest phases of the development cycle, while developers (Interviews 3 and 4) highlighted that any form of semi-public use must be operationally viable and not threaten core building functions. The urban designer involved in Hofplein (Interview 5) stressed that platform logic can only work if it is embedded in site-specific development agreements and tied to both zoning and mobility logic.

What emerges is a layered governance model. In public ownership contexts, the municipality or a cultural institution may act as steward, often supplemented by funding schemes or maintenance contracts. In private buildings, especially in residential towers, access and programming are negotiated through homeowners' associations (VvEs), who must be incentivized or contractually bound to preserve publicness. Hybrid contexts like business campuses may use shared management bodies, business

Image 4.26 Governance and managemment detaisl in the Axonometric view of Hofplein

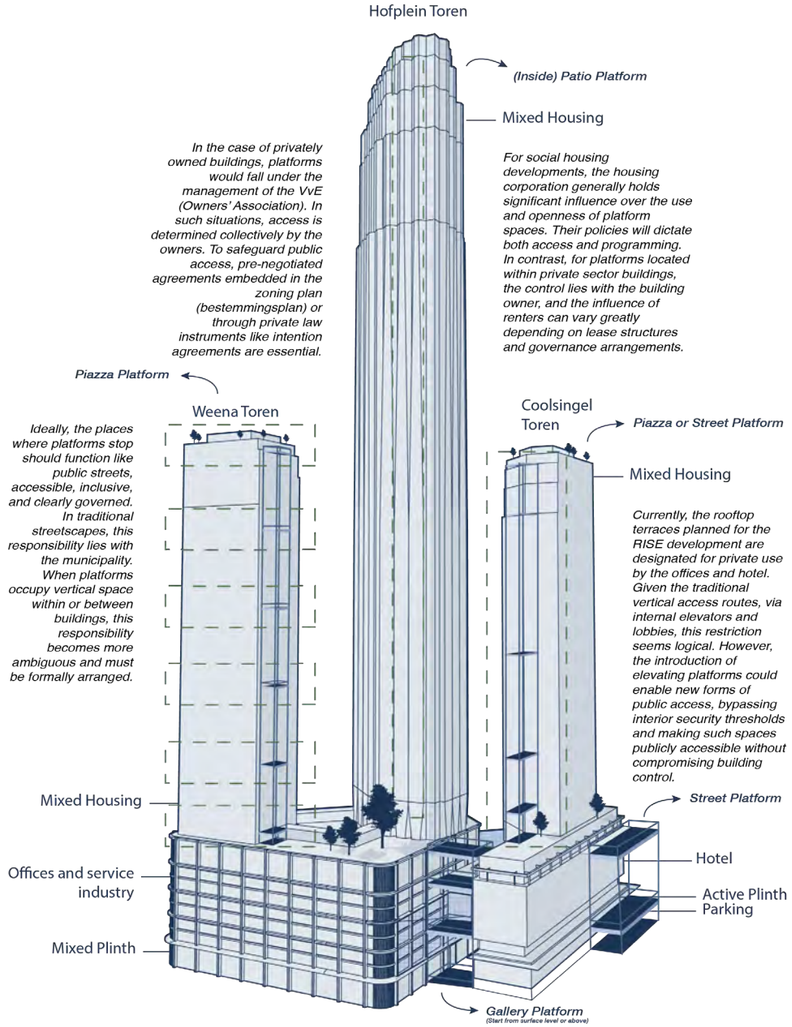


Image 4.27 Zoom in on the functionality of the platforms in the RISE development project

improvement districts (BIDs), or developer-backed programming foundations to maintain platform activity.

Each model implies a different relationship to access, cost, maintenance, and control. By visualizing these differences in table form, the aim is not to prescribe a single solution, but to articulate a range of plausible, scalable governance frameworks that can be adapted per building and per city. The challenge is not only technical or financial. It is institutional: how to maintain a shared commitment to vertical publicness long after the building has opened and the architect has left the scene.

In this way, the table operates not just as a management tool but as a design prompt, encouraging developers, policymakers, and civic actors to see public space as an ongoing process of negotiation, stewardship, and shared authorship.

Table 7 Possible organisational systems in different contexts and levels of publicness (Németh, 2009; Herburger et al. 2022;Kayden, 2000; Lee, 2020; Lippert et al. 2024)

	Residential	**Business/Private market**	**Commercial/Retail**
Publicly Owned	*Public–Civic Cooperative:* Residents co-manage with housing corporation or municipality. Suitable for social housing or co-ops. Civic body handles soft programming. Example: Housing cooperative with municipal ground lease.	*Municipality–Tenant Agreement:* Municipality retains ownership; companies rent floors and co-develop shared platforms via service contracts or place management boards.	*Public–Retail BID Model:* Municipality partners with Business Improvement District (BID) to co-manage public platforms above retail spaces. Incentives to open platforms for events and transit-linked uses.
Privately Owned	*VvE-Plus Model (Owners Association + Public Easement):* The VvE governs the building but public access rights are contractually fixed via easement or legal agreement. Needs regular oversight.	*Foundation-Led or PPP Governance:* Platform space governed by a dedicated foundation or PPP (Public-Private Partnership) with clear terms in notarial deed. Can include rotating board members from firms inside the building.	*Private Place Management Trust:* Similar to high-end shopping centres. Private owner manages, but public use is curated. Often requires profit motive or regulatory push to sustain openness.
Hybrid / Mixed Ownership	*Collective Trust or Housing-Common Hybrid:* Joint management body with both civic and public stakeholders. Experimental models possible.	*Corporate–Municipal Partnerships:* Anchor tenant or building owner co-develops platform in exchange for density or zoning benefits. Shared maintenance agreement.	*Stewardship Model via Cultural Operator:* Retail or leisure developer partners with cultural institution or non-profit to manage rooftop or mezzanine platforms. Aimed at activation and placemaking.

Image 4.28 Possible wayfinding system PublicLink on the windows of public program

Imagine... You turn a corner onto a street you've walked a dozen times before. But something's changed. In the glass of a high-rise window across from you, there's anew sticker on the window, subtle but deliberate. A faint outline of a QR code stretches across the surface, not as an ad, not a brand, but a frame. Inside the glass, past the reflection of the building across from it, you can just make out tables, light, a book wall, it could be a library. You wouldn't have noticed otherwise. And yet, when you pull out your phone and scan the code it gives a soft vibration. "PublicLink," it reads. The interface opens with a clear discription of the place, a public library it reads. It also shows the route, not just to the door but through it, up an elevator, along a corridor, to the fifth floor. "Open now," it shows you as well as the activities hosted that week, tomorrow there will be a reading from one of the authors a friend of you likes. "Quiet reading, rooftop garden." You save it, just in case. Because right now, something else catches your eye.
To your right, a low hum builds. A platform, like a slow, open-air elevator but more like a floating square, rises alongside the building. On it, someone reads the newspaper. A few others sit, chatting. And a musician, violin? saxophone?, lets the sound drift both upward and down. The glass of the tower mirrors them, multiplying their presence.There's a display on the side of the base: "Next platform arrives in 3 minutes." You wait. It's strange, like waiting for a metro, but you're going up. Not into a building, but between them. A vertical pause, a moment of city lifted. And as the platform docks at street level, a small group steps off, laughing, pointing at the skyline behind you.

You step forward, not as a visitor, not as a guest, but as someone invited. Someone expected.

In this future, the city doesn't just open doors, it sends them down to meet you.

Image 4.29 PublicLink Interface after scanning the QR code

Image 4.30 The platform seen form the ground up, ChatGPT generated

Image 4.32 The platform experience seen from the platform , ChatGPT generated

Image 4.32 The platform experience seen from the platform ，ChatGPT generated

Image 4.33 The Platform experience from a higher level above the ground, ChatGPT generated

Image # Axonometric View Hofpleinwith future high-rise developments

INTERLUDE V| The Rotterdam Rooftop Days | The City Above Eye Level

The exhibition The City Above Eye Level explores the future of Rotterdam as it continues to build upward, with residential and office towers reaching heights of up to 300 metres. The exhibition stems from a central question that also guides this thesis: How can high-rise development be integrated into the horizontal public domain of the city?

The aim of the project is to raise awareness about the need to connect high-rise buildings to street-level public life, ensuring that these vertical structures do not become isolated entities, but instead contribute to the social and civic fabric of Rotterdam. This exhibition invites visitors to reflect on how the city might evolve vertically—while still fostering public space and social interaction at every level.

The exhibition takes place on Saturday 7 June and Sunday 8 June as part of the Rotterdamse Dakendagen. Located on the rooftop of the Hofpoort, the installation invites visitors to rise above eye level and consider the future skyline. Through large-scale window-like frames, speculative views are presented that showcase how Rotterdam might continue to grow vertically—supported by AI-generated visualisations.

From the rooftop, visitors will have panoramic views of key development sites such as RISE, Lumière, and POST—the locations that will shape the next phase of Rotterdam's high-rise identity.

What to Expect

Look through architectural frames and explore what Rotterdam's vertical future could look like.

Learn how high-rise buildings can become more than functional structures—they can host new forms of public space and shared interaction.

Programme

Every 45 minutes, a guided tour (max. 16 participants) will take visitors through the conceptual background, the speculative design, and Rotterdam's vertical ambitions.

Join the conversation about the future of Rotterdam—and elevate your perspective.

For more information and tickets, visit: www.rotterdamsedakendagen.nl

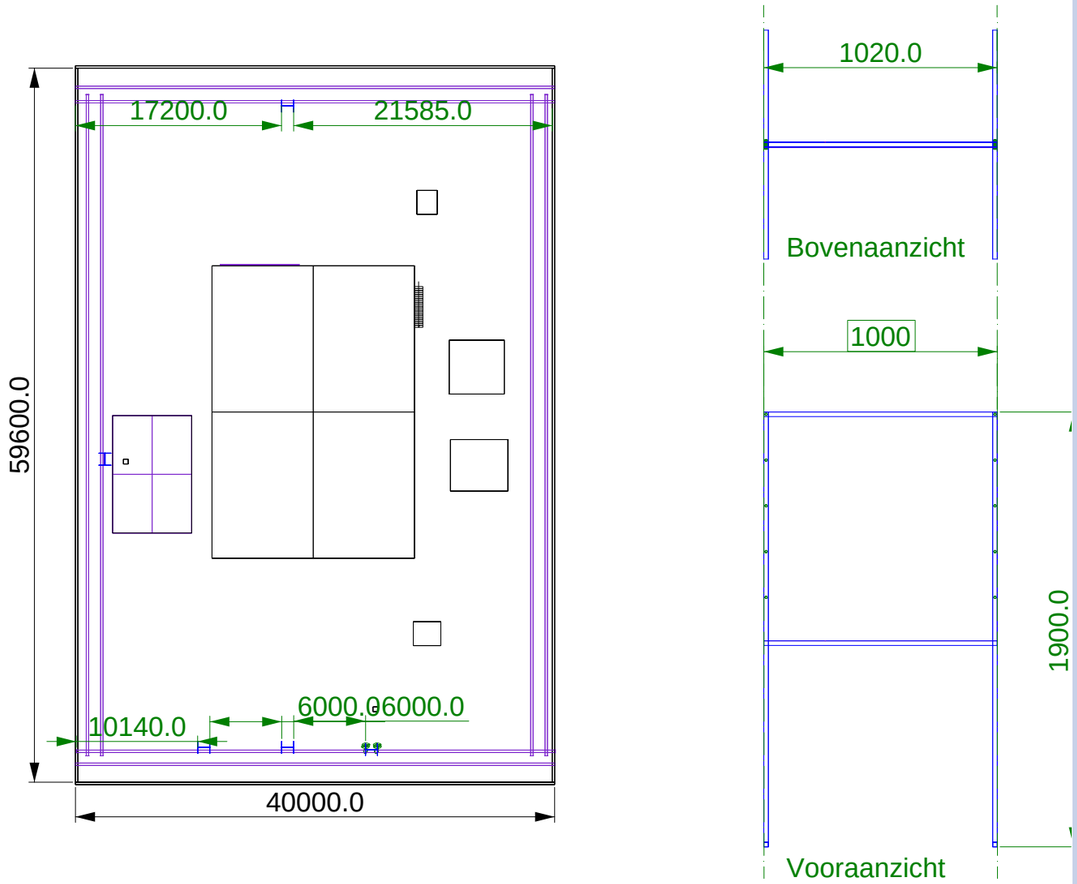
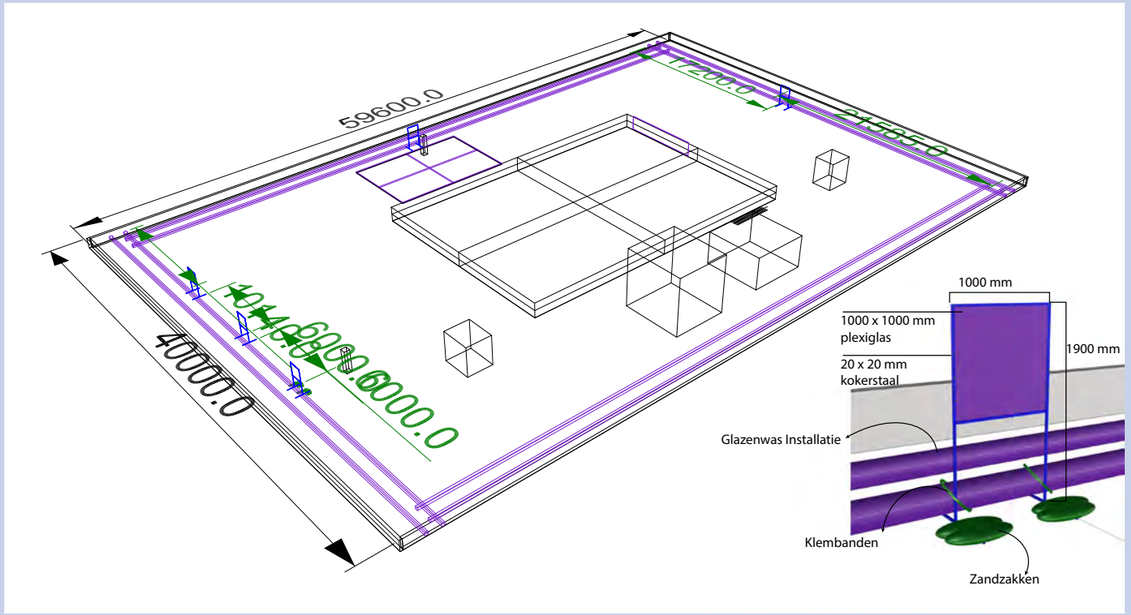


Image # Axonometric View Hofpleinwith future high-rise developments

Exhibition Technical Layout



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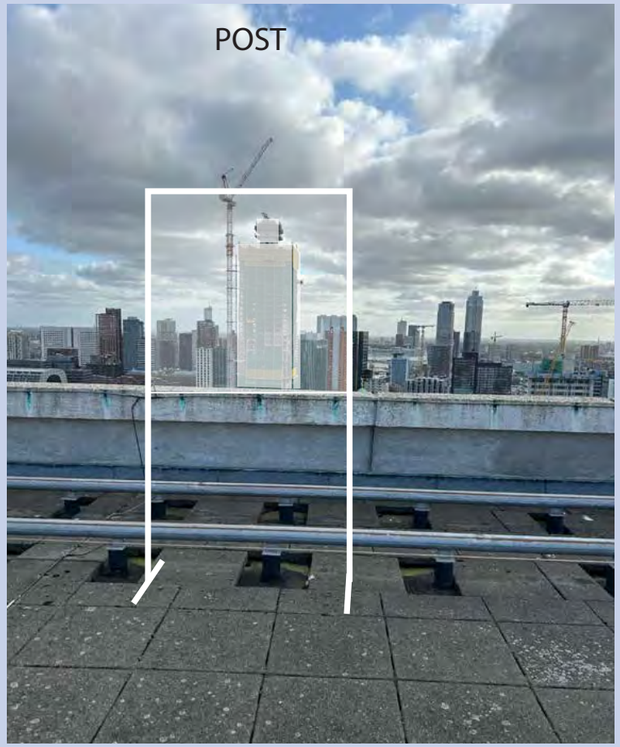


Exhibition Vision

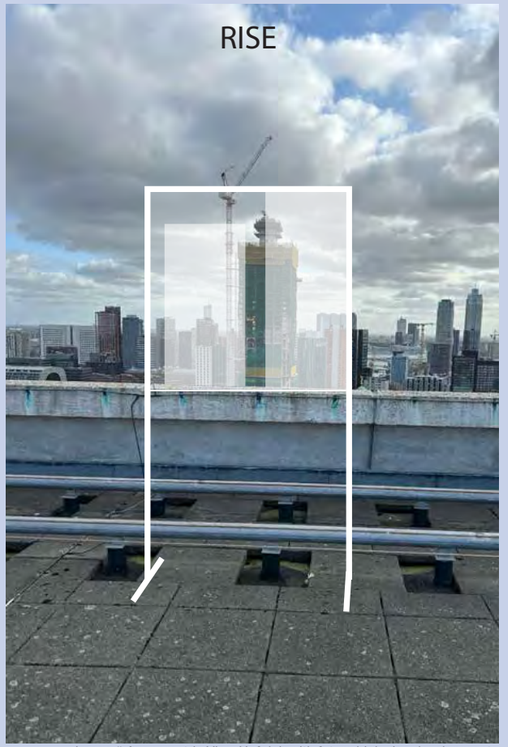


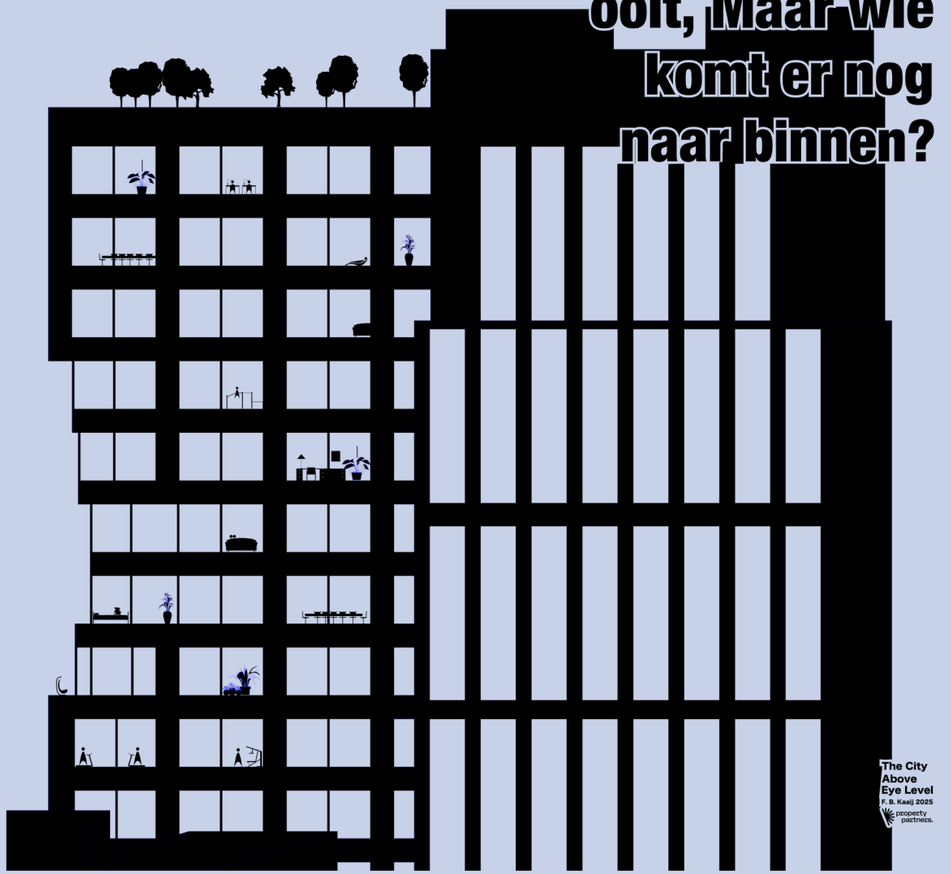
Image # Axonometric View Hofpleinwith future high-rise developments

The City Above Eye Level

Plattedaken : Een zee van onbenut daklandschap

Image # Axonometric View Hofpleinwith future high-rise developments

Image # Axonometric View Hofpleinwith future high-rise developments



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Wat als het publieke weefsel mee de hoogte in groeit?

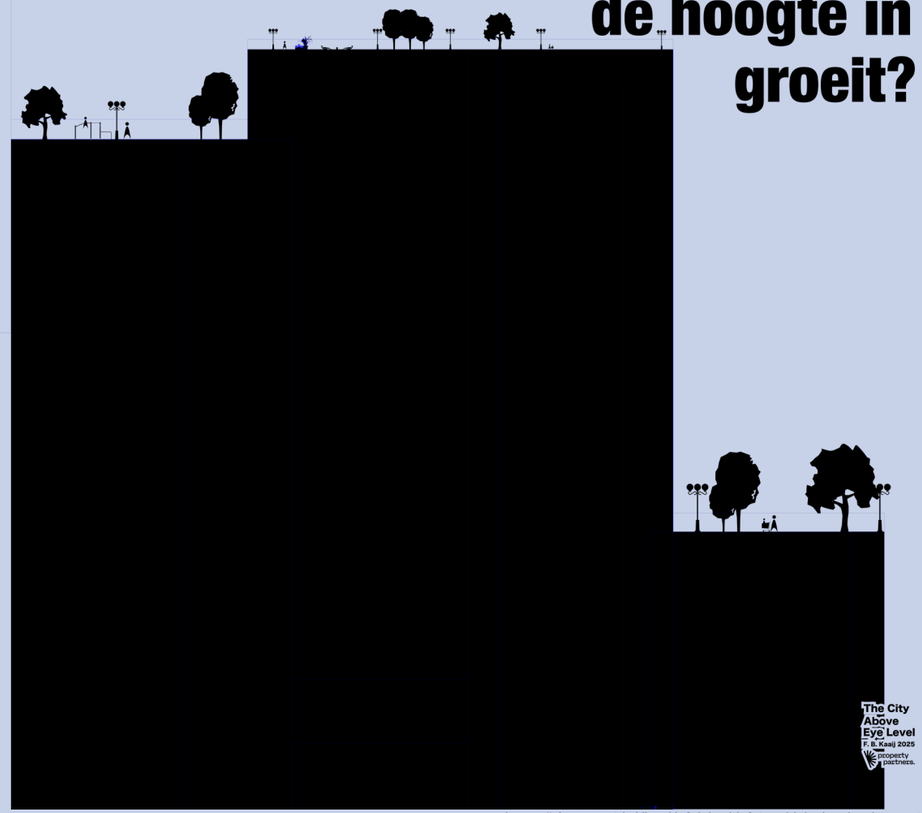

Image # Axonometric View Hofpleinwith future high-rise developments

Image # Axonometric View Hofpleinwith future high-rise developments

De toekomstige stad. Geen torens voor enkelen, maar ruimte voor velen.

Image # Axonometric View Hofpleinwith future high-rise developments

Image # Axonometric View Hofpleinwith future high-rise developments

Exhibition Text

Good day everyone, I welcome you to the rooftop that I get to call my own this weekend.

We're standing here on the Hofpoort, better known as the old Shell building. What's interesting about this rooftop is that, aside from the beautiful view, we can clearly see the fire boundary from the WWII bombing. On this side, the old city still stands, with many low-rise buildings and pitched roofs. On the other sides, it's mostly the new city, taller buildings with flat roofs. Rotterdam is one of the cities with the largest surface area of flat roofs in Europe.

The Rotterdam Rooftop Days originated as a way to open up discussion about the usability of flat roofs and to shine a light on initiatives that are making these roofs functional again. There are many different ways to use rooftops: blue for water storage, green roofs for biodiversity, yellow for energy generation, purple for housing, and red for social functions. And it's that red one I want to focus on today.

This exhibition emerged from my graduation project for the Master of Urban Design at TU Delft, where I explore public spaces in high-rise buildings. The five installations scattered across this rooftop serve as glimpses into Rotterdam's future. My project began because I asked myself why high-rise projects are primarily treated as architecture, while they're actually more like stacked streets. The answer is quite simple: urban design mainly deals with public space, and most buildings are privately owned. That makes it difficult to impose rules on how space within these buildings is used, and we run into the big question: who is responsible for enforcing use of these spaces? In reality, high-rises often function more like gated communities, because the public character of the street is rarely found in vertical development.

In recent years, Rotterdam has been evolving into a high-rise city, and many more such projects are on the way. One of them is ZOHO, or the Zomerhof District. If you look through this installation, you can see where the rooftops of ZOHO will be in the future. You need to align the little tower you see among the greenery with the one on the frame. ZOHO is a fantastic project with initiatives to raise the quality of public space. The question, however, is whether these initiatives will remain intact when the buildings are actually put into use.

Now, please, follow me to the other side of the roof.

Here we look at the new Rotterdam: Central Station, the Millennium Tower, and the future locations of RISE and Lumière. The city is getting taller, more public space is being consumed, but is it becoming more accessible? Standing here, you feel how connected you are to other buildings and how far away the street feels. Yet, your brain doesn't quite grasp how high you really are. From about five floors up, the exact height becomes irrelevant, it's just high, and you feel more connected to the surrounding buildings than to what's happening below.

On this banner, you see the framework of my research. My design is not just an aesthetic choice; it's a reaction to how urban development works. Over the past few months, I've been asking myself what "public" actually means, why public spaces are important for our society, and how the definition of "public" changes when you introduce the vertical axis and privatization. The biggest issue I encountered was access: how do you get to a rooftop? How do you enter a public program inside a building? How do you break through the barrier of the building façade?

Designing a public program inside a building is one thing, but ensuring that people actually go there, and that it really has the public quality of a street, is something else entirely.

Using four placemaking strategies; hardware, software, mindware, and orgware, I've developed solutions across different disciplines of urban design to ensure that public value is not only designed but also safeguarded. I won't go into all the details now, but I'm happy to explain more about my research if anyone is interested.

You can also see a map of the buildings around Hofplein that will be developed in the coming years. Interestingly, while all of these rooftops are being given functions, none of those functions are public.

The final three installations show what the future could look like: more programs at height, clearer wayfinding for how to reach them, and a series of platforms functioning as plazas, galleries, or mobility hubs, but in the sky.

First comes the potential of rooftops, then the opportunities that technological innovations give us. QR codes on façades could tell you what's happening inside, when it's open, and how to get in. You can scan the QR code here to see what that could look like. This makes the city more transparent, literally and figuratively.

Then a more radical idea: A combination of elevator, public transport. Platforms move through buildings like a kind of vertical street, where you meet others, where you can play, work, relax. Each type of platform adapts to its context: a gallery between buildings, a piazza at the top of a tower, or a mobility hub that connects a station to the ground level.

What I want to show with this project is that high-rise buildings shouldn't just be for the elite, or only for those who live or work there.When a building towers dozens of meters above the city, it also bears responsibility to the city itself. We build the city together.

So I now invite you to walk around, to ask questions, and to scan this QR code, to share your ideas with me. What would you want to see on a platform like this? What would invite you to go inside, or to stay?Because if we want high-rises to be more than just steel and glass, we have to fill them with life.

Thank you very much.

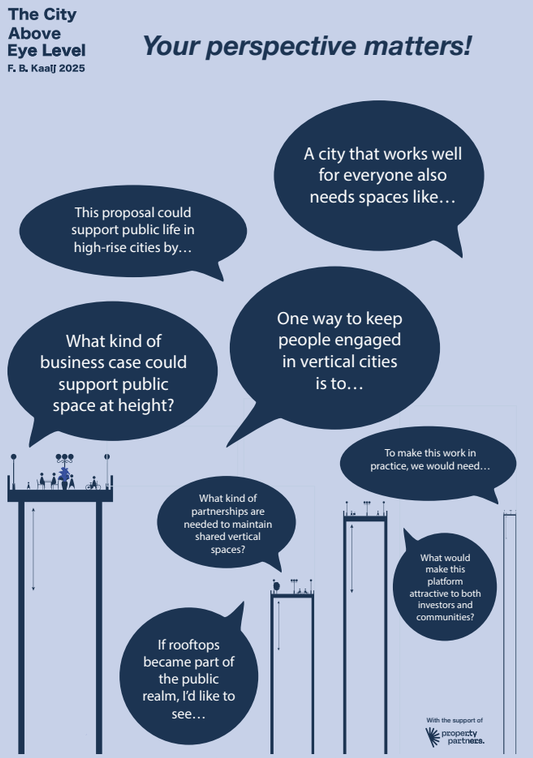

Image # Axonometric View Hofpleinwith future high-rise developments

Insights from the Rooftop Exhibition

Standing above the city on the rooftop of the former Shell building, I invited visitors not only to look out over Rotterdam's skyline, but also to look forward into its future. While the installations offered visual projections and spatial provocations, the real potential of this platform emerged through dialogue. This chapter reflects on the outcomes of that dialogue, collected through a simple questionnaire during the Rotterdam Rooftop Days both through an online form and through physical cards people could write on, image #.

Who Responded?

From the 260 visitors 15 percent filled in the questionare. Among the 41 respondents, a significant share were actively engaged in the city:

22 live in Rotterdam, 17 work on urban projects, 18 identify as students or researchers. Others included government employees, developers, and citizens simply interested in the city's evolution.

The diversity of perspectives was valuable. Although small in number, the sample spanned a wide range of ages (16–71), and responses came both from professionals and from people who simply enjoy rooftop views or worry about the liveability of a densifying city.

What Did They Say?

The exhibition triggered a surprising emotionality and pride, "Super nice installations," one person wrote, "we were able to see the city from a completely different dimension." Another remarked: "Great exposition and explanation… I'm curious what will become of it." And perhaps most concisely: "You should be proud."

Beyond the compliments, what mattered more were the ideas. Many participants instinctively engaged with the central questions of my thesis: how do we access public life in vertical cities, and how can rooftops play a role in this?

Recurring themes in the comments

Desire for rooftop connectivity: Multiple visitors proposed "bridges between towers", some imagined them just above street level, others envisioned horizontal links higher in the skyline. This resonates with my own framing of high-rises not as isolated monoliths, but as "stacked streets" in need of walkable connection.

Call for clarity in public function: One visitor working in development urged that future rooftop programs must be "clearly and concretely defined" already in early design stages. This confirms the thesis' point that public ambition must be embedded in the framework and not left to chance.

Imagining public life at height: Comments ranged from the poetic ("more viewing towers like in NYC") to the playful ("a coffeeshop up high, call it 'High Roof'") to the pragmatic ("what about the weather up there?"). A few imagined rooftop parks, marketplaces, or even light installations as beacons of activity. These responses show that the public does not merely consume space, it also dreams about the possibilities given the incentive.

Technological proposals: Several responses supported the digital wayfinding strategies like QR codes or an app with access to high-rise programming, ideas that align with the "software" and "mindware" layers in my framework. One even suggested that QR-based reservations could double as lift passes.

Concerns about accessibility: One powerful insight came from a respondent questioning the practical openness of vertical public spaces: "I'm curious how public high-rises can actually be in practice." Another advocated for rooftop access that doesn't interfere with residents: "Entering the rooftop from the outside is smart , it avoids disturbing people who live there." These comments sharpen my focus on thresholds and shared ownership.

From Participation to Projection: The responses reflect a collective curiosity, sometimes even urgency, to reclaim rooftops as more than technical leftovers. The public doesn't need convincing that vertical space can be meaningful, they're already imagining it. However, their ideas also reveal the fragility of such ambitions: people wonder whether these initiatives "will actually happen" or if they'll be lost in translation between concept and construction.

If anything, these interactions confirmed the need for a discursive design process, one that doesn't just impose a vision from above, but listens from the rooftop down.

This chapter is not a conclusion, rather, it marks a continuation of the conversation started up on the Hofpoort. If high-rise is to be part of the commons, then public value must not only be designed, but also desired.


The City Above Eye Level
F. B. Kaalj 2025

Participatiekaart – Jouw perspectief telt!

Participation Card – Your perspective matters!

Leeftijd/*Age*:

Vanuit welk perspectief bekeek je de presentatie? (meerdere mogelijk) /
From which perspective did you view the presentation? (you may check more than one)

- ○ Ik woon in Rotterdam/ I live in Rotterdam
- ○ Ik werk met ruimtelijke projecten / I work on urban projects
- ○ Ik ben student of onderzoeker/ I am a student or researcher
- ○ Ik werk voor de overheid/ I work for the government
- ○ Ik werk in projectontwikkeling/ I work in development
- ○ Anders / Other:

Tip/Top/Mening/Idee:
Tip/Top/Opinion/Idea:

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Image # Axonometric View Hofpleinwith future high-rise developments

Part V
A Different View

V | Conclusion

Following a summary of the thesis project, this conclusion reflects on the key insights gained, their broader significance, and the ways in which the work contributes to advancing the discourse and practice of urban design.

Drawing on insights from urban design theory and political philosophy, this research has sought to bridge the divide between public and private space in the contemporary city. Grounded in theoretical frameworks such as The City at Eye Level, The Power of 10, and The Multitude: War and Democracy in the Age of Empire, the study examines the spatial, social, and governance challenges inherent in vertical urban development. Through a case study of the Hofplein redevelopment project in Rotterdam, the research investigates how design can respond to these challenges in practice. Central to this inquiry is the guiding research question: In cities pursuing vertical urban ambitions, how can the horizontal and vertical realms be meaningfully connected to create publicly accessible spaces within high-rise developments?

To address this challenge, a system of elevating platforms was designed, capable of serving multiple functions depending on their level of publicness, programmatic use, management structure, accessibility, and operational schedule.

V | Key Insights

This thesis started of with a spatial and political ambition: to connect horizontal and vertical public life and expand the public realm. But what began as a design problem quickly unfolded into a systems problem, one where architecture, governance, psychology, and capital intersect in messy and often contradictory ways. The key insights that emerged are not only conceptual, but procedural, institutional, and at times personal.

First, the research reveals that designers often enter with strong intentions for public benefit, yet these ambitions are fragile within the long arc of development. Between initial concept and final realization lies a timeline of ten to twenty years, during which users change, stakeholders rotate, and financial pressures escalate. What seems public in early sketches often collapses into private benefit without sustained organizational or legal scaffolding. Designing for the public realm therefore requires more than form, it requires a resilient framework of accountability and coordination that lasts beyond the design phase.

Second, while it is conceptually easy to define the components of placemaking, hardware, software, mindware, and orgware, it is surprisingly difficult to translate these into a coherent and viable public program. Space might be open, but not used; program might be proposed, but not funded; publicness might be claimed, but not enacted. This friction is most visible in vertical environments, where access routes, sightlines, and symbolic cues are just as important as the presence of a bench or garden.

Third, the research exposed how economic logic ultimately shapes public space. It is not enough for a public platform to be desirable; it must also be financially legible. For developers and investors, a public program will only survive if its costs are compensated, through direct returns, indirect value creation, or public subsidy. This means that truly public platforms require public investment. If access depends on payment, the space is no longer public in the civic sense, it becomes private, disguised as accessible. This insight transforms design into negotiation: between value creation and value extraction.

Fourth, the deeper the project moved into Rotterdam's planning system, the clearer it became that urban knowledge is not stored in a single place, but scattered across archives, memory, and bureaucracy. Designing for the city requires not only creativity but patience, the ability to sift through fragmented planning documents, meet with scattered stakeholders, and interpret political shifts over decades. The city is not a single client; it is an ever-changing consensus.

Fifth, the project revealed that connectivity is more important than composition. Vertical platforms only matter if they are meaningfully connected to other spaces, physically, visually, and symbolically. This means designing for transitions, not just destinations. The vertical public realm becomes viable not when rooftops are activated in isolation, but when they are linked through legible routes, consistent wayfinding, and intuitive movement across levels. The design becomes not a series of static plazas, but a networked choreography of access.

Sixth, the research shows that mobility spaces, corridors, elevators, and lobbies, are the true bottlenecks of vertical publicness. These spaces are often treated as neutral or secondary, yet they hold disproportionate power in enabling or disabling access. A stairwell too dim, an elevator too private, a hallway too narrow, each can close down an entire vertical program, regardless of what sits at the top. Mobility must be treated as a public space, not just a connector between them.

Finally, the RISE case study taught that publicness is easier to embed than to retrofit. Existing buildings come with structural, legal, and social inertia. RISE, still in design, offers a rare opportunity to embed public logic from the beginning: structurally, programmatically, and politically. This not only improves spatial integration but also clarifies ownership, funding, and long-term accountability. It shows that timing, the ability to intervene during formation, and preferably in the beginning stages, is as much a resource as design skill or budget since public stakeholders lose influence over the course of the development.

Together, these insights move the thesis from concept to position. They challenge the idea that public space is only about place and reframe it as a system of relationships, between space and time, between access and control, between form and governance. Designing for the public means designing not only for openness, but for persistence, not only for use, but for stewardship.

V | Reflection on Design Decisions

The design process behind the platform system did not begin with form. It emerged gradually, through a growing awareness of the many layers that define public space, not only spatial but temporal, psychological, and institutional. At first, I assumed the project would involve designing a rooftop square or some form of vertical plaza. But the more I studied buildings and their development cycles, the clearer it became that the presence of public space is not guaranteed by its physical outline alone

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A traditional square, even one placed on a roof, is never only about the space it occupies. It is shaped by what happens there (software), by how people feel about it (mindware), and by who owns or manages it (orgware). These layers, introduced in the theoretical framework, became the backbone of the design logic. They shifted my attention from form-making to system-thinking, from designing a static place to enabling a changing condition.

This shift in perspective coincided with a recognition of a core constraint: time. The thesis timeline and the speculative nature of the project meant that no single site could be fully understood at the level required to make detailed spatial designs. Without confirmed stakeholders, end-users, or an existing building to inhabit, designing final architectural interventions felt not only premature, but almost beside the point. Program is fluid. Needs change. A square may begin as a garden and end up as a market, or vice versa. And without an intimate, embedded understanding of a place, there is no honest way to fix its program from a distance.
This is how the idea of the moving platform emerged. Rather than designing a space and hoping it adapts, the platform was conceived as a carrier of potential, a structure that could host different programs depending on where it stops, when it moves, and who uses it. Its form borrowed from multiple sources: the mechanical logic of elevators, the openness of a plaza, and the rhythm and timetable logic of public transport. In this sense, it is not a new typology, but a hybrid of three. It can be occupied, it can move, and it can return.

Designing the platform system through the conceptual framework's XYZ axes gave structure to this flexibility. Each axis, perception (Z), perspective (X), and regulation (Y), offered a lens through which to understand the platform's performance. A Street Platform might thrive at eye level on a busy boulevard but fail at rooftop height if it lacks symbolic pull or visual openness. A Piazza Platform might be viable on a tall building, but only if the perception of access is reinforced through signage and governance.

In this way, the design process became a series of decisions shaped by operational flexibility. With no confirmed tenants or users, the project had to remain speculative. But that did not mean it lacked precision. It simply meant that flexibility had to be designed in from the start, through movement, typology, symbolic layering, and a structure that can support change without losing coherence. The design logic, then, is not about one object or one moment. It is about enabling a system of interlocking spaces that can adapt to context, shift in time, and accommodate both control and spontaneity. If traditional public space is often defined by permanence, the platforms are defined by conditional publicness, inviting, adaptable, and structurally connected, but never entirely fixed. That, in the end, is their strength.

V | The Thesis in a Broader Context

While this thesis is anchored in Rotterdam, its ambitions extend far beyond it. The challenges it addresses, fragmented vertical environments, inaccessible rooftops, and the privatization of public ambition, are not unique to the Hofplein district. They are symptomatic of a wider global condition in which cities pursue vertical growth without a corresponding framework for vertical publicness. As urban cores become denser and high-rise development accelerates, the question is no longer whether cities will grow upward, but how they will do so without losing social cohesion, spatial equity, and public life.

The platform system proposed here is not a singular solution, but a scalable design strategy. It offers a way for cities with vertical ambitions to reconnect their towers to the public realm, not by redesigning every building, but by inserting new layers of common space where thresholds exist, and gaps emerge. The core principles of the platform system, modularity, mobility, typological variation, and governance awareness, allow it to be adapted across a range of contexts, cultures, and regulatory environments.

Cities like Hong Kong, Singapore, Seoul, and New York already possess intricate vertical infrastructures. They stack housing above malls above transit, with rooftops often assigned to mechanical units or premium leisure for the few. Yet even in these cities, the public realm often stops at the groundfloor or at podium level. There are few systems in place that allow elevated common spaces to remain accessible, inclusive, and meaningful to a wide spectrum of users. A vertical square may exist in form, but without a public logic embedded in its access, use, and management, it remains socially closed.

This thesis also connects to larger urban themes that are shaping the 21st-century city. In terms of climate adaptation, rooftops represent a vast, underused ecological surface, spaces for solar collection, green infrastructure, water retention, or urban cooling. But without meaningful public access, their ecological value risks being separated from social benefit. Platforms could act as intermediaries, allowing public life and climate function to overlap.

In terms of urban inequality, vertical cities often mirror economic divides, luxury towers for the few, with little permeability for the many. A system of public platforms could soften these divisions by inserting shared, visible, and inclusive layers within the skyline. This opens the potential for what might be called spatial equity at height, a vertical commons in a largely stratified city.

Post-pandemic, the meaning and socially viewed importance of public space has shifted. Open-air access, adaptability, and flexible programming are more valued than ever. Rooftops and terraces, previously overlooked, have gained new relevance. This thesis positions itself within that context, not only as a spatial intervention, but as a conceptual contribution to how cities might build resilience without losing connection.

The thesis does not claim to have resolved all the complexities of such a system. Rather, it opens a framework for further exploration and implementation. Much remains to be done; particularly in the areas of technical engineering, safety regulation, and economic feasibility. Cost-benefit scenarios need to be developed for platform construction, maintenance, and programming, especially when integrated into new developments or retrofitted into existing ones. Models of public-private cooperation need to be tested: Who pays? Who manages? Who decides who gets access, and when?

There is also a need for cross-cultural research. The way publicness is experienced and defined varies from city to city. In Hong Kong, for example, podium towers already host multiple levels of semi-public space, but rarely in a way that encourages unplanned interaction. In São Paulo, rooftops are often inaccessible due to security concerns. In cities like London or Tokyo, legal definitions of access and liability strongly shape what is possible above the ground. These differences demand careful study, but they also point to a common need: a framework that understands elevation as a civic condition, not just a spatial one.

In that sense, this thesis is as much a call as it is a proposal. It argues that verticality must be rethought not only through the lens of engineering or form, but through the lens of public life. If towers are to become part of the city, then the city must find its way into the tower, not just through entrances and elevators, but through policies, programs, platforms, and perceptions.

High-rise cities need new tools. This platform system is one such tool, conceptually robust, spatially adaptable, and politically aware. Its implementation will require further research, testing, and co-creation. But the urgency is already here. As more cities grow upward, the risk is not only architectural monotony, but civic isolation. The work ahead lies in bridging those heights with systems of inclusion.

V | Limitations

This thesis offers a speculative yet grounded proposal for a new kind of vertical public space. However, as with any exploratory design research, several limitations shaped what could realistically be achieved within the timeframe and scope of the project.

The most significant limitation was the inability to test the platform system in practice. While the design was developed in detail and situated within the evolving Hofplein context, its implementation remains hypothetical. Without access to a real building, site constraints, or a committed set of users, the spatial strategies and governance models proposed in this thesis could not be verified through simulation, user testing, or material prototyping. This means that certain assumptions, about accessibility, safety, legibility, or atmosphere, remain untested.

Second, the project's site-specific grounding in Rotterdam posed both a strength and a constraint. On one hand, Hofplein and the RISE development offered a fertile context for strategic experimentation. On the other hand, this local specificity limited the ability to fully explore how the platform typology might shift in other high-rise cities. Cultural norms, legal frameworks, climatic differences, and spatial hierarchies all play crucial roles in shaping how public space is used and governed. While this thesis speculates on broader applications in cities like Hong Kong, New York, or São Paulo, these were not researched in depth, and any transferability remains hypothetical.

Finally, although this project was informed by literature, planning documents, and multiple expert conversations, the input from professionals, especially in technical fields and local governance, was more limited than ideal. Not all the relevant stakeholders could be reached within the available time. Technical specialists in lift systems, urban mobility, or safety regulation would have helped refine the viability of the platform structure and its integration within buildings. Similarly, deeper engagement with developers, investors, or public authorities could have clarified the thresholds of economic feasibility and accountability in more detail.

Despite these limitations, the core ambition of the thesis remains intact. This project is not presented as a fully resolved model, but as a provocation: a framework that invites further development, discussion, and adaptation. The limitations encountered here also point directly to the research opportunities ahead, technical refinement, cultural calibration, and institutional negotiation. These are not obstacles, but the next essential phases in testing how vertical publicness can be made real.

V | Future Possibilities

While this thesis outlines a conceptual and spatial framework for vertical publicness, its most meaningful impact may lie ahead. The idea of elevating platforms is not a fixed solution, but a generative system, one that can evolve in response to different urban conditions, building types, and stakeholder coalitions. Several future directions emerge from this research, each offering an opportunity to deepen, test, and scale the project.

The first and most immediate future step is technical development. The mechanical feasibility of the platform system, including its structural integration, lift mechanics, safety regulations, and user capacity—requires further engineering input and prototyping. Detailed studies are needed to determine what kind of lift logic (e.g. pulley, hydraulic, rail-mounted) could support a platform that is both mobile and occupiable. Fire safety, wind exposure, and climate control must also be considered if these platforms are to operate in real-world conditions, especially in cities with harsher climates or seismic concerns.

Second, the economic and legal models that support these platforms must be tested. Cost-benefit analyses are essential: how much does a platform cost to build and maintain? Who benefits from its presence, and who should contribute to its funding? Could public-private partnerships sustain it, or should the municipality take the lead through incentives and regulation? Future work should also explore financial models from adjacent fields, such as infrastructure financing, transit station redevelopment, or real estate value capture.

Third, future studies should explore cross-cultural implementation. While the design logic is meant to be adaptable, each city has its own spatial language, publicness culture, and institutional rhythm. For example, in Tokyo, platforms might connect mid-tower transit hubs and compact commercial floors. In New York, rooftops might become civic terraces linked through zoning incentives. In cities like Lagos or Mumbai, where informal urbanism is layered over vertical expansion, the platform system might take on an entirely different social and material form. These cultural shifts offer both challenge and richness, and deserve research on the ground.

There is also space for experiential and behavioural testing. How do people navigate a building when publicness extends vertically? What visual cues increase confidence to enter? How long do people stay on an elevated platform, and why? These questions can only be answered through pilot projects, mock-ups, or user-driven prototyping. A small-scale demonstration, perhaps embedded within a civic building, a university, or a publicly owned high-rise—could provide valuable insights into how perception and use evolve over time.

Finally, there is room for further development of governance models. As the line between public and private continues to blur in vertical development, cities need new ways of defining shared responsibility. This thesis introduced concepts of stakeholder layering, public benefit agreements, and shared accountability, but these tools need to be tested in dialogue with legal frameworks and real development negotiations.

Future work should not only address these questions technically, but also critically. The platform is not just an architectural solution, it is a lens through which to ask deeper questions about visibility, access, and the future of civic life in increasingly vertical cities. If this project has shown anything, it is that design must move in step with governance, planning, and perception. The work ahead is interdisciplinary, political, and deeply spatial. That is both the challenge, and the potential, of designing the vertical public realm.

V | Discussion

The urban development cycle referenced in this thesis is primarily applicable to the Dutch context, reflecting the specific regulatory frameworks, institutional capacities, and roles of local authorities and private actors in the Netherlands. To generalize this model for use in an international context, one would need to undertake a detailed examination of the political, social, and governance structures, and the corresponding development processes, specific to each region.

This thesis has operated at the intersection of design, policy, and theory, attempting to make publicness visible and functional within the vertical expansion of cities. But behind the design proposal lies a larger question: what does it mean to reimagine the city in three dimensions, not only as an object of form but as a framework of rights, behaviors, and responsibilities?

The elevating platform is not a solution in isolation. It is part of a broader shift in how cities must deal with density, fragmentation, and the pressures of vertical development. It acknowledges that high-rise structures are no longer isolated icons or sealed-off towers. They are part of an emerging urban ecosystem, where the horizontal logic of plazas and streets must find its continuation in height. If buildings are becoming cities in themselves, then they must carry with them the complexity, accessibility, and diversity we demand of urban life.

The research also reveals a structural asymmetry in how publicness is approached in cities: while extensive policy exists to guide ground-floor engagement, upper levels remain largely unregulated in terms of civic value. This opens a space for opportunism, but also for design. By recognizing that the elevation of space brings with it a change in perception, in regulation, and in social dynamics, designers and planners can begin to treat height not as a constraint but as a civic dimension. Important to add to this is the use of mainly Dutch development and management models. This research when applied to a new city would, if located in another country, look in to the stakeholders involved in de development cycle.

Importantly, the thesis also exposes the limits of architecture alone. While the platform is physically designed, its performance depends on multiple unseen factors: political will, stakeholder cooperation, management contracts, programming, and trust. This raises questions about authorship and agency in the built environment. Who gets to define publicness in a building? Who protects it when priorities shift? How can design make that protection visible and resilient?

These questions point toward a new kind of design practice, one that is not only about materials and form, but about institutional choreography. It demands tools that operate across scales: from the tactile to the symbolic, from the material to the legal. The platforms proposed here are as much infrastructural as they are architectural. They carry not only people but meaning, offering a mechanism to link fragmented levels, to invite movement upward, and to extend civic life into places where it has been historically excluded.

This discussion is ongoing. The questions raised here, about value, access, responsibility, and design, will only grow more urgent as cities become taller, more complex, and more contested. The work of this thesis is not to conclude these debates, but to place new tools within them. The vertical city cannot be designed in two dimensions alone. It requires layered thinking, spatial invention, and a willingness to work within uncertainty. The platforms are one way of doing that.

V | Ethical Consideration

Designing for publicness in high-rise environments is not merely a technical or architectural challenge, it is an ethical one. As buildings grow taller and denser, the question of who gets access to elevated space, and under what conditions, becomes central. This thesis confronts that question directly, proposing tools that aim to redistribute spatial opportunity in a vertical city that is often stratified by income, ownership, and visibility.

One of the core ethical tensions explored in this research is the gap between formal openness and experienced accessibility. A rooftop may be legally open to the public, but if the entrance is hidden, the elevator private, or the signage ambiguous, then the space is effectively closed. This reveals how exclusion often operates not through walls, but through uncertainty, discomfort, or perceived illegitimacy. The platform system responds to this by making access visible, intuitive, and physically legible, but the deeper ethical challenge lies in ensuring that this access is not revoked over time.

The design also had to reckon with the ethical implications of ownership and responsibility. Public programs inserted into private buildings raise complex questions about accountability: who is responsible for maintaining safety, for resolving conflict, for ensuring inclusivity over time? Without clear agreements, there is a risk that responsibility becomes diffuse and unenforceable, especially in mixed-use towers where stakeholders have competing interests. This underscores the need for legally embedded public value agreements and transparent oversight. A third ethical concern lies in the ambiguity of semi-public space. The platforms proposed in this thesis exist in a spectrum between private and public, they may be funded by developers, managed by third parties, and partially monetized. This hybridity creates ethical risk: if commercial interests dominate, spaces intended for public use may become subtly exclusionary, accessible only to certain demographics or during certain hours. This thesis addresses that concern by foregrounding governance structures as part of the design process but acknowledges that power imbalances persist.

Finally, there is the ethical consideration of design authorship. This thesis was developed without full participation from end-users, tenants, or residents, simply because those groups do not yet exist in a still-unbuilt development like RISE. While interviews with professionals informed many aspects of the design, the lack of direct civic participation highlights a broader issue: speculative design risks speaking for users rather than with them. Future development of the platform system must therefore include co-creation processes to ensure that the resulting spaces are not only inclusive in theory, but in lived experience.

Ultimately, the ethical stance of this thesis rests on a simple proposition: that height should not diminish rights. As cities rise, they must carry publicness with them. If the skyline becomes a place of isolation and exclusion, then urban life becomes fragmented. The platform system is a small step toward countering that trend, a way of making the vertical city not only accessible, but accountable.

V | Reflection of the Research Proces

This research began with a broad question: how can we view high-rises through an urban lens? They are no longer simply residential towers or isolated office blocks. In their complexity of use, flow, and scale, they more closely resemble vertical streets, or even compact cities. But this early framing was too expansive. In attempting to make high-rises more urban, I began to see that their detachment from urban life was not just about form or façade, but something more foundational: ownership.

The inherent private nature of high-rise buildings proved to be the main barrier to publicness. While these buildings often carry public ambition during early development, offering promises of open lobbies, rooftop terraces, or cultural program, this ambition regularly evaporates. Somewhere between the start of the design process and the final phase of use, the idea of publicness is either reduced or completely lost. I became interested in tracing this erosion. Where did it happen? Why? And how could it be prevented?

Before any formal design could take shape, I immersed myself in understanding how buildings are developed over time. I broke down the phases of development, identified the actors involved, and mapped how their power and influence shifted across each stage. I also studied where public value was formally embedded, in zoning, in contracts, in design briefs, and where it fell away during lat-er phases like leasing, management, or building security. This helped me understand that the core challenge was not just one of design, but one of ownership, access, and accountability.

By April, nearly three-quarters through the research timeline, I had a clear case study in Hofplein. I understood that access, especially vertical access, was the critical threshold. Mobility spaces, such as elevators, stairwells, and lobbies, were not neutral corridors. They were symbolic and functional barriers that either allowed public use to rise or cut it off. They were not simply infrastructure, they were the missing public realm. That was the turning point.

It was less than a month before the deadline when the central design proposition became clear: what if these mobility spaces became public or common themselves? What if, instead of isolating publicness to rooftops or lobbies, the movement infrastructure became the host of public life? Ele-vating platforms emerged from that question. They were not envisioned as technological novelties, but as architectural and institutional mechanisms to transform vertical circulation into shared space.

From that point onward, the project accelerated. The platform system allowed me to bring together everything I had learned: the timelines of development, the need for typological variation, the governance structures, and the vertical disconnections across Hofplein. Each design decision had to negotiate between spatial quality, public value, financial logic, and political feasibility.

The process also exposed how fragmented knowledge really is in the city-making process. Information wasn't held in a central plan or single dataset. It was dispersed, across city departments, developers, real estate firms, and archives. Gaining access to it often depended on informal conver-sations, individual generosity, and persistent requests. Even within a single organization, documents were spread across roles and teams. This fragmentation slowed the work, but it also revealed the complexity of designing for the public. No one actor has a complete view. Publicness is not only a spatial outcome; it is a collaborative construction.

The interviews and conversations I had with professionals were essential. Without those dialogues, the thesis would never have reached this depth. Still, I would have liked to speak with more stake-holders in the Hofplein area, especially those directly involved in RISE and its surrounding towers. The barriers to communication were telling. In many ways, they mirrored the very issues the plat-forms are meant to address: limited visibility, restricted access, and broken continuity.

This reflection brings the research full circle. What began as a question about how to make high-rises more urban became a design investigation into how to make publicness structurally, socially, and financially durable within vertical development. That is the core design decision of this thesis, not to design a form, but to design a condition that could survive the long and fragmented journey from ambition to use.

V | Final Say

Growing up, I always had a deep love for the arts and for imagining new worlds. My decision to pursue a bachelor's degree in architecture stemmed from the belief that it represented the highest level of artistic education available in the Netherlands; at least, that's how I understood it at the time. Architecture also offered something more: the opportunity to engage with sustainability and make a meaningful impact to the world around me.

Now, seven years later, I still stand by the perspective I held as a 17-year-old. My understanding of the field has certainly broadened, but what has remained constant is the realization that this path allows me to contribute to society without losing touch with my creativity. Architecture has proven to be a discipline where imagination and responsibility can coexist; and that discovery has kept me inspired through the hard times.

Looking back on this past year, I feel proud of what I've accomplished. When I began this project, I wasn't entirely sure where it would lead. Being creative is a gift; one that opens endless possibilities, visions, and directions. It allows you to imagine what does not yet exist, to explore the unknown, and to shape ideas into form. But this abundance of potential can also be overwhelming. For every path you choose, there are countless others you inevitably leave behind. And with each decision comes the quiet weight of what might have been. The freedom to invent can, at times, feel like a burden; the fear of missing out on alternative ideas or unrealized visions can lead to hesitation, doubt, or even despair. A despair I have surely come across at the end of P1. But, as my mentor Franseca once said, "It's not until P5 that you understand where you were going with this project." I've found that to be completely true; and maybe, just maybe I will find a job in which all the darlings that I killed during the project can see the light in new projects.

"Kill your darlings, kill your darlings, even when it breaks your egocentric little scribbler's heart."

Stephan King On Writing: A Memoir of the Craft, published in 2000.

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Figuren overzicth

APPENDIX

Appendix I | Technical Reference

To comply with Dutch building regulations and ensure platform usability across residential, commercial, and civic environments, elevated platforms must adhere to the technical requirements of the Besluit bouwwerken leefomgeving (BBL) and supporting NEN norms.

Balustrades & Edge Protection
In accordance with BBL Section 4.14 and 4.17, platforms above 13 meters must be fitted with balustrades of at least 1.20 meters; those below this threshold may suffice with 1.00 meter railings. For locations serving the public, collective protection (such as guardrails) must take precedence over personal safety measures, as stipulated in the Arbeidsomstandighedenbesluit.
Source: https://wetten.overheid.nl/BWBR0050662/2023-01-01

Accessibility and Circulation Widths
Communal platforms must meet minimum spatial thresholds comparable to those set for balconies and roof terraces under BBL Article 4.124. These include:

Minimum surface: 4 m²

Minimum clear width: 1.3 m for pedestrian access
These values ensure wheelchair access and inclusive usage, aligning with NEN 1814 and public realm design guidelines.
Source: https://www.bbl-info.nl/

Escape Routes and Stair Dimensions
In reference to NEN 1125 and the “Handreiking Hoogbouw” (Ministerie BZK), vertical circulation paths must be wide, visible, and continuous. Design thresholds include:

Stair treads ≥ 29 cm
Riser height ≤ 17 cm

Handrails on both sides for stairs > 1.2 m
These configurations allow safe evacuation and align with guidelines for buildings over 20 meters in height.

Handreiking Hoogbouw: https://www.rijksoverheid.nl/documenten/publicaties/2011/07/20/handreiking-brandveiligheid-hoogbouw

Surface Materials, Drainage & Load
BBL Chapter 3 requires that outdoor platforms feature non-slip flooring and integrated drainage to prevent water accumulation. Surfaces must be durable, easy to clean, and slope subtly (<2%) toward internal drains. Wind and structural resistance must conform to NEN-EN 1991-1-4 for wind loading and NEN-EN 1990 for safety margins.
Source: https://www.nen.nl

Fire Safety and High-Rise Regulation
For buildings exceeding 70 meters, emergency access and platform integration with building escape systems is mandatory. This includes:

Multiple evacuation routes (BBL Chapter 6)

Integrated fire alarms and emergency lighting

Clearly marked exits with wayfinding systems (minimum 1 lux as per BBL §6.30)
Source: https://wetten.overheid.nl/BWBR0050662/2023-01-01

Lighting, Surveillance, and Maintenance
While BBL prescribes minimum safety lighting, practical use of vertical platforms requires continuous illumination (~100 lux), visible activity zones, and unobstructed sightlines. Surveillance (e.g., CCTV), where used, must respect GDPR compliance while enhancing user safety.
Source: https://autoriteitpersoonsgegevens.nl

Together, these regulatory provisions form the technical and legal baseline for platform implementation, ensuring that the transition from conceptual design to inhabitable structure meets public safety and inclusivity standards.