

From public realm to vertical living

A study of the extension of the city into the building

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Introduction

Traditional public spaces are often perceived as vibrant by individuals. These places serve as corridors from the city to the individual residence. They not only connect the home to the outside environment, but also form a connection to the urban fabric. The public space is an integral part of the city, while everything behind the door is private, serving as a space where people meet and engage, thereby encouraging social interaction that contributes to a sense of community and connectedness (Bodnar, 2015).

Certain areas of the public realm possess specific qualities that promote social cohesion and spatial connectivity. What are the qualities of the public realm that enhance the interaction between individual residents and the city? Upon examining the characteristics of such spaces, it becomes apparent that residents tend to appropriate their front doors, adding personal touches to their entrances (Astuti et al., 2017). The prevalence of numerous front doors likely contributes to the vibrancy of the area.

The framework of life within a residential block presents a different scenario. Here, a group of individual units are clustered and stacked within a single building. This arrangement diminishes social interaction on the street, as the opportunities for encounter are significantly reduced (Kearns et al., 2012). The individual units are not directly connected to the street via their front door, but can only be reached via a communal entrance. Additionally, there is an issue wherein no one takes ownership of the building's entrance, as it is a communal space. Behind this door lies a long corridor with "front doors" leading to private apartments.

The corridor, where the individual units are connected, apparently does not have the same qualities as the public space. These communal spaces, which primarily function as circulation areas, seem to be lifeless zones. Whereas the traditional street is an integral part of the city, the corridor in the residential block is not part of the urban fabric. Although the buildings may appear to be part of the city, the shell and communal front door often serve as the delineation of the urban space. Why not consider the corridor of the residential complex as part of the urban fabric, similar to how we recognize the public realm? The private domain actually starts behind the front door within the communal corridor. Is there a possibility of activating the corridor, effectively extending the city into the building itself?

Problem statement

Social interaction is important for the sense of community, and it can increase the well-being of residents. The built environment can play a role in encouraging people to leave their private residences and engage in social interactions within public spaces (Holland et al., 2007). Urban growth has led to an increase in vertical development, and this led to a decrease in social interaction among residents, which negatively affects their well-being (Kearns et al., 2012). Therefore, it is important to create spaces and facilities inside residential blocks to promote social interaction.

Expanding the public space within the building and integrating public functions could contribute to this.

Research questions

The objective of this research is to identify and analyze strategies that can contribute to the activation of communal spaces within a residential building while at the same time promoting social interaction and respecting the privacy of residents. Central to the study is the exploration of how a public space can be created within the building, thereby transforming parts of the interior space into an extension of the city. The following research question therefore has been formulated to lead the research:

What strategies can be employed to integrate (semi-)public functions in a housing complex that encourage social interaction, while maintaining the privacy and well-being of the residents?

The answer to the main question will be found through several sub-questions.

1. *What are the characteristics of spatial domains: private, communal, shared, and public space?*
2. *What architectural and social elements contribute to the quality of vibrancy of the public realm?*
3. *What role can the qualities of vibrancy play in optimizing the internal space of a residential complex?*
4. *To what extent does the expansion of public space within the residential complex contribute to the improvement of living quality for the residents?*

The research begins with an explanation of the spatial domains. The elements of private, communal, shared, and public space are discussed, along with the distinctions among them. The second sub-question focuses on the architectural and social qualities of public space that create vibrancy. In the third question, an attempt is made to apply the qualities discussed in the previous chapter, to the internal space of a residential complex, where vibrancy and social interaction often lack. The fourth sub-question builds on the third question by assessing the effects of a lively internal space of a residential block as part of the public space. The last question deals with the legal aspects of the integration of the public space into the complex.

Theoretical framework

For this study, several theories and terms are relevant, forming the foundation of the subject. The following overview of terminology provides clarity and insight into the research framework.

Public realm

It is the public space where people gather and interact. It shapes the social and cultural identity of an area and fosters a sense of community. The public realm is very broad, so this research focuses on the street, the square, and the alley. This delimitation is partly based on the human scale.

Human scale

It refers to designing spaces that align with the proportions and needs of people, making environments feel comfortable and inviting.

Territorial dynamics

This refers to the changes and interactions within a specific area, such as usage and control. It concerns how areas are formed and how certain groups claim space.

Spatial justice

This involves the fair distribution of spaces within the public realm through inclusive spatial planning. It emphasizes equal access to space and reduces spatial inequalities.

Design for permeability

This means designing the physical structure in a way that allows people to move easily through an area. It promotes connectivity between different parts and creates open and accessible spaces.

Transitional zones

These are areas that function as transitions between two different spaces or functions, such as from private to public. They strengthen the transition and reduce conflicts between different zones.

Methodological framework

This research aims to integrate the qualities of the public realm within a residential block to enhance social interaction. To achieve this, a comprehensive methodology will be employed, including a literature review, case study analysis, comparative analysis, spatial analysis, interviews, and an investigation of relevant legal and policy documents.

Literature review

For this research, it is crucial to clarify the definitions of public domains. To understand the elements of private, communal, shared, and public spaces and how they differ from each other, a literature review will be conducted. The qualities of the public realm will also be examined through a literature review, considering both the social and architectural dimensions, which have likely been documented in existing literature based on prior observations and case studies.

As a starting point, the book "The Death and Life of Great American Cities" by Jane Jacobs (1961) is taken. This book is the foundation of the approach to urban planning as part of the social life of city residents. The book criticizes the monofunctional zones, and states that vibrancy depends on mixed-use areas. Although this book is over sixty years old, it remains a critical reference framework for urban development.

Case study and comparative analysis

Another methodology is conducting research through a case study. This case study will be conducted partially in a group setting and aims to outline the qualities of large residential blocks within the city. These residential blocks feature mixed functions and are considered progressive by contemporary standards. By investigating these case studies, the typology and scale of the project will become clearer. Additionally, there will be a case study that examines existing projects where public space extends into the building itself. By analyzing these projects with internal public spaces, valuable insights can be gained regarding the advantages and disadvantages of such blocks. Through comparative analysis, the projects from the case study will be examined in relation to one another to identify differences and similarities.

A project related to this topic is the Barbican Estate in London. This project was completed in 1976 and designed by Chamberlin Architects in the Brutalist style. The project features many walking routes, open spaces, gardens, and squares that are accessible to the public. These gathering spaces are designed to encourage social interaction. In addition to residential units, the complex also houses cultural institutions such as a concert hall, cinema, theater, and exhibition spaces (Bryant-Mole, 2016). In this way, the public space is integrated into the vertical city.

Spatial analysis

Spatial analysis is conducted to collect and visualize spatial data. This involves the execution of various techniques such as spatial clustering, hot spot analysis, and buffer zones among others to recognize patterns of human activity in relation to the built environment. In addition to the spatial features, attention is also given to design features, such as materiality, aesthetics and forms.

Legal and policy documents

To contextualize the literature review within the research framework, an analysis of the existing adaptive strategies of the municipality of Amsterdam will be conducted. This involves a study of policy documents and urban development plans, including the 'Environmental Vision 2050'. The Environmental Vision 2050 provides insight into the municipality's approaches regarding urban development. By examining these documents, the project can align itself with the plans of the municipality of Amsterdam.

The legal documents will also be examined. It needs to be assessed whether the extension of the public realm within the building has legal implications, such as ownership rights and regulations concerning the layout of the public space.

Research aims

This research aims to identify and analyze strategies that can contribute to the activation of communal spaces within a residential building. A more inclusive approach to the design and management of public spaces is essential to foster a diversity of environments that accommodate various social interactions. Such an approach aims to create a vibrant and livable public sphere that supports the needs and interests of different communities.

According to Burgers and Oosterman (1992), urban public space should no longer be solely associated with participation in public life, because not all spaces and buildings within the city are equally relevant to the social fabric. Consequently, the creation of public spaces within residential complexes can serve multiple functions and serve different segments of the population without disturbing the residents.

This research is a step closer to making the inside of residential blocks a part of the public space. The scale of these blocks is increasing, which creates the potential to activate the internal space. Consequently, it is essential to analyze the development of these residential blocks. This research aims to gather knowledge regarding the qualities of the public realm, so that these qualities be integrated into the project. Furthermore, this research may contribute to a renewed dynamic between private and public spaces, which will benefit social interaction within the city.

Relevance of research

Historically, public spaces and public life were closely connected, which resulted in urban planning being adapted to the demands of social interactions. However, public spaces do not automatically become vibrant (Gehl & Svarre, 2013). The municipality of Amsterdam has established goals for 2050, including the activation of various parts of the city and stimulating a mix of functions within existing residential areas (Municipality of Amsterdam, 2021). By not only focusing on the traditional use of public space but also exploring how communal areas within residential blocks can be integrated into the public space, an enrichment of the public space in Amsterdam can be achieved.

Although architects and urban planners design with the expectation of where people come together, human behavior doesn't always align with these predictions. Therefore, it is important to conduct research on public space and patterns of movement and areas where people tend to linger during the design process. Movement is influenced by location and accessibility. For example, a private area reduces interaction because it is not accessible to the public. Furthermore, the extent to which people can personalize their environment, for example through the placement of furniture, contributes to the overall vibrancy of space (Gehl & Svarre, 2013).

What are the characteristics of spatial domains: private, communal, shared, and public space?

It can be stated that the extremes of the spectrum within the spatial domain are private and public space. Public space is accessible to everyone at all times, whereas private space is only accessible to an individual or a small group. While individuals are free to decide whether to access public space, it is the residents of private space who determine who may enter the space. The responsibility for maintaining the public domain is a collective obligation, while the private domain falls under the responsibility of the small group (Hertzberger, 1991).

Private space

Private domains are areas consisting of individual residential units with smaller surface areas. Creating smaller private spaces encourages the utilization of shared areas (Hertzberger, 1991).

Communal space

These are spaces primarily used by a smaller group. Examples include transitional areas such as front gardens and balconies, which serve as buffer zones facilitating a smoother transition between private and public domains. These spaces also contribute to spontaneous interactions. Key principles for these areas include adequate visibility, accessibility, and proximity. If the distance is too great, residents are less likely to utilize these communal spaces frequently.

It is important to consider interpersonal distance when designing communal spaces, particularly in the context of interactions. On average, individuals maintain a distance of between 1 and 3 meters during conversations. Therefore, the size of the space is a significant factor (Gehl, 2011).

Public space

The public realm is the space in the city that is owned by the public and available for public use, such as streets, public squares, parks. But also buildings and spaces that are privately owned but accessible to everyone, such as building lobbies, shopping centers, plazas, arenas, roof gardens fall under this. Within the public realm there is a spectrum of public, semi-public and semi-private space with gradations in between (Barnett, 2015). However, people often do not realize where the boundary of private ownership is when there are no barriers.

In modern cities, there is often insufficient attention paid to our emotional needs, both as individuals and within our relationships with others. Urban environments tend to foster a sense of disconnection among residents, leading many to feel detached from their surroundings and from one another. Streets, parks, and similar public spaces present opportunities to restore these connections. However, they must be thoughtfully designed to serve this purpose effectively. Public space is not solely intended to bring physical objects together within the city, but is also vital for creating social cohesion. When public spaces function optimally, they positively influence

community well-being (Barnett, 2015). Conversely, poorly functioning public spaces can result in negative experiences and social disconnection.

Transition zones

The zones situated between different domains are referred to as transition zones. These areas serve as a transitional and connective interface between domains, possessing the spatial conditions necessary to foster social encounters. Herzberger (1991) introduces the concept of the threshold, which functions simultaneously as the entrance to the individual dwelling and as a link to the public realm. Spending time within this buffer zone creates a perception of being in public space and at the same time the proximity of the private dwelling provides a sense of safety. In the Netherlands, it is common to place a bench within transition zones. The entrance zone effectively becomes an extension of the private dwelling and despite remaining outdoors, residents maintain contact with their private domain. The utilization of soft transition zones is particularly significant because they serve as greeting and farewell areas, symbolizing hospitality.

In residential blocks, this transition zone has a different character. A 'threshold' of the dwelling may still be present, but emphasis should not solely be placed on residents' privacy. Instead, efforts should be made to promote social interaction within the residential complex. The traffic space need not only function as a passageway but can also be activated to encourage social engagement. For instance, communal stairs may serve as gathering places or play areas for children.

Streets that are actively used by residents, and which individuals can personalize, are perceived as more pleasant and become integral components of the communal space. It is therefore crucial that the local community feels connected to and responsible for the public realm by being given opportunities to claim and personalize the domain. Such involvement fosters a sense of ownership and attachment to the space, thereby reducing feelings of disconnection.

Nuance of the public and private space

The character of public space can be nuanced. Individuals have the opportunity to utilize public space and use and adapt it to serve their personal interests. This temporary utilization by a limited group influences the overall character of the public space. When individuals use public space, they claim that space. This can lead to a sense of privatization. Boundary-defining elements further reinforce this impression. For example, the placement of panels between tables in a public area allows users to assert a personal domain within the shared environment (Hertzberger, 1991). The distinction between public and private is therefore not always entirely clear in practice, as public spaces are also used privately.

Through the use of form, material selection, and the application of light and color, a coherent relationship between private and public spaces can be established, as well as ensuring appropriate accessibility. Herzberger (1991) refers to the levels of public accessibility within a building as 'territorial differentiation.' This concept pertains to aspects of accessibility in architecture, such as the manner in which spaces are partitioned and who holds responsibility for them.

The privatization of space depends on how users utilize it. However, this usage is also influenced by the architectural qualities of a public building or space. The transparency of a space affects the extent to which people perceive it as public. A more enclosed space possesses qualities that encourage individuals to claim ownership of the area. It creates a sense of enclosure, making the space feel more intimate.

A publicly accessible space with a restricted entrance, such as closed doors, can give the impression that it is less accessible. Public spaces should therefore be more transparent, for example by incorporating glass entrances. This promotes a rational organization and use of the building (Hertzberger, 1991). Transparency also plays an important role from the outside. For instance, a public building with a large open façade facing the street will appear much more inviting compared to a closed library. An interaction between the interior space and the public realm is created, which enhances vibrancy (Gehl, 2006).

Safe zone

The appropriation of space by individuals within a public environment is contingent upon the form of that space. The space must, through its form, provide opportunities for individuals to personalize and adapt the environment. An architect, when designing buildings, can address the distinction between public and private space, as well as the appropriation of space

Hertzberger (1991) emphasizes the importance of ensuring that users feel secure. The sensation of a safe haven' free from disturbances by others, contributes to a sense of community. Each individual and group requires a domain they can rely on and return to. This domain should be minimally disturbed by outsiders. Consequently, multifunctional spaces run the risk of hindering a sense of community, as they are utilized by diverse groups with potentially conflicting interests. There is a risk that a collective group may not truly appropriate the space, due to concerns that personal modifications introduced by one group will be reversed by the other users.

What architectural and social elements contribute to the quality of vibrancy of the public realm?

Conditions defined by Jane Jacobs

Jane Jacobs (1961) emphasizes that urban planning design should consider the extent to which an area exhibits sufficient diversity and variety of uses to be self-sustaining. Generally, cities naturally generate diversity in usage because they attract different types of people. Four conditions are identified as crucial for urban development.

Firstly, neighborhoods should incorporate more than one function. This ensures that residents have diverse objectives and that the area remains active at multiple times of the day. Relying on a single function tends to attract only a specific group of people at fixed times. The second condition is that city blocks should not be excessively large, thereby creating more space for streets and corners. The third condition requires that buildings within districts vary in age, reflecting different periods of construction. Finally, districts should exhibit a higher density of people with shared objectives, fostering vibrant and diverse communities.

Mix of functions

A successful street is a location where various types of people congregate at different times. Prior to integrating new functions, it is essential to consider the objectives behind the functional mixing. These objectives may include increasing the number of visitors at specific times, but it is important to respect existing users. Jacobs (1961) emphasizes that primary uses refer to functions that bring people together because they are anchored in the area, such as educational institutions and offices. To ensure the effectiveness of primary use mixtures, it must be facilitated that users of different functions intersect by utilizing the same street. If streets do not intersect, no mixing occurs. Additionally, it is crucial to prevent the separation of different user groups. Finally, an appropriate proportion of users from various functions must be maintained, ensuring that no single group dominates the street. It is important that it is externally clear what types of functions are contained within (Gehl, 1991).

The Necessity of Small Residential Blocks

Longer residential blocks diminish social activity because movement flows are confined to the main streets. For daily activities, residents primarily utilize these routes. By introducing additional streets and subdividing larger blocks, greater opportunities for movement and exploration within the city are created. However, these secondary streets risk being ineffective if their design does not align with actual usage patterns. It is important to recognize that these secondary streets are not the main purpose, but serve as means to achieve a more adapted urban network (Jacobs, 1961). They contribute to fostering diversity through their functional roles. An inflexible design that disregards movement patterns is likely to fail in promoting active and vibrant neighborhoods.

The Necessity of Historic Buildings

Jacobs (1961) emphasizes the importance of historic structures, as they often impose lower operational costs for commercial activities compared to new developments. These old buildings enhance affordability, thereby promoting diversity. Additionally, neighborhoods from the same era tend to exhibit limited spatial variety, which is frequently perceived as monotonous. Consequently, this results in a diminished attractiveness of such neighborhoods.

The Necessity of concentration

Jacobs (1961) argues that a high degree of concentration fosters a mixed and diverse environment where various functions, people, and activities converge. This promotes social interaction, economic vitality, and safety, as the anonymity and the presence of a sufficient number of people create a deterrent effect on crime. An optimal mix of functions combined with a compact urban form is essential for maintaining such dynamism.

There is no specific threshold at which an efficient concentration is achieved, because it depends on contextual factors, such as the size of the city. This includes considerations of the relationship between developed and undeveloped areas. When a neighborhood predominantly consists of vacant land, it detracts from the area's overall quality. Additionally, land use in such cases tends to be inefficient, as only a small portion of the area is actually utilized for residential purposes. Segregated neighborhoods, where residential, working, and recreational functions are spatially separated, are discouraged because they reduce interaction between different groups and functions. Such segregation undermines social dynamism and community cohesion (Jacobs, 1961).

Fostering a sense of community

The above emphasized the connections where improved social interaction occurs and a sense of community is created. The question arises as to how this sense of community can be observed. The community must possess certain qualities that enhance social interaction. MVRDV (2012) identified the following qualities as the puzzle pieces of the sense of community: density, individuality, critical mass, flexibility, collectivity, evolutionary growth, diversity, human-scaled, publicness, informality, and identity.

A high density, as previously discussed, contributes to urban vibrancy and intensity by attracting multiple individuals to a specific location. Additionally, a community must provide space for self-development, which entails the availability of sufficient amenities to facilitate individual growth. The community represents a form of collective living that requires flexibility to accommodate potential changes and adaptations. Its members live in a manner that fosters a shared identity, thereby creating a sense of cohesion through their integration within the social fabric (MVRDV 2012).

Community members encounter each other at communal spaces equipped with mixed facilities. The sense of collectivity depends on the integration of private and

public spaces, as well as the variety of shared activities. A diverse range of programs, architectural styles, and building scales enriches the neighborhood. It is essential to consider human-scale design, as it ensures spatial proportions that promote a sense of intimacy and foster meaningful social interactions (MVRDV 2012).

Communities are accessible to all, and this public nature reflects an open society. At the same time, communities are also informal, as residents often view small spatial modifications positively, which they implement within their neighborhoods. These adjustments demonstrate residents' desire to personalize their environment, making it more functional. Lastly, the identity of the community is highlighted, which can be expressed through the built environment as a reflection of the residents' characteristics (MVRDV, 2012).

The street

Historically, streets have been utilized to organize the city, and the presence of these spaces contributes to the perception of a city (Gehl, 2011). The street was also considered as communal living rooms where residents gathered to utilize public space and foster social interaction.

Over the years, this function of the street has significantly diminished. Several factors have contributed to this decline. The volume of motor vehicle traffic has increased substantially over the past century and was prioritized for a considerable period, leading to the neglect of pedestrian and cycling infrastructure. Other factors contributing to the decreased activity in the street include the construction of lower-density housing, as well as a decline in the number of residents per dwelling. These developments result in a reduction in the number of street users (Herzberger, 1991).

From a socio-economic perspective, there is a trend of decreasing social interaction amidst rising incomes. Residents ask less of each other and have less need for one another under improved financial circumstances (Hertzberger, 1991). An architect could respond to this trend by, for example, providing appealing facilities within the communal circulation spaces, thereby encouraging residents to continue engaging with one another and maintaining social contact.

Existing qualities of basic activities, such as walking, standing, sitting, and talking, can serve as foundational elements for activating public spaces more effectively. Achieving this requires careful consideration of the target groups, as each demographic perceives and experiences a space in a distinct and inviting manner. Children, adults, and seniors each have different needs and preferences, which should be taken into account in the design process.

Walking

Primarily, walking functions as a means of transportation to reach a specific destination. From this perspective, pedestrians prefer to encounter as few obstacles as possible along their route. An acceptable pedestrian flow rate on a sidewalk is approximately 10 to 15 pedestrians per minute per meter of street width. When pedestrian volumes are very high, sidewalks are often subdivided, which can restrict

movement by forcing pedestrians into single-file lines, thereby reducing social interaction.

Research indicates that an average walking distance of 400 to 500 meters is considered acceptable. A straight path of 500 meters often feels very long, whereas meandering, narrow streets with the same total distance tend to feel shorter. Additionally, a variety of street types and small squares enhances the perception that the distance is shorter, as attention shifts from the journey itself to the experience of moving between open and public spaces. Thus, acceptable walking distances depend on street length and route qualities. Generally, people prefer direct routes and shortcuts when aiming to reach a destination. Interestingly, they are more inclined to use stairs than to walk up slopes, as significant elevation changes are perceived as uncomfortable. In such cases, ramps are preferred over stairs. When the perception of height difference is minimized, the walking experience remains unobstructed. The key to a well-functioning pedestrian system is ensuring that the shortest possible distance between destinations is maintained.

Standing

People often pause during their movement for various reasons, such as waiting at traffic lights or stopping to converse when encountering someone on the street. According to research by Derk de Jonge, people tend to linger at the edges of public spaces, only occupying central areas when space is limited. These transitional zones are often located close to building facades, park edges, or thresholds, largely due to safety considerations—these locations offer a sense of security because they provide a vantage point or barrier against potential approaching threats. Additionally, people tend to gather near objects such as poles, columns, or gates. When spaces lack such features and are vacant, less lingering activity is observed.

Sitting

Providing ample seating is crucial for the quality of public spaces. Seating along building facades and spatial boundaries is generally perceived as more comfortable than seating in the middle of open areas. People prefer sitting in places that offer some form of visual or physical interest. The primary factor appears to be what is encountered at eye level. Additionally, no clear relationship exists between the size and shape of plazas and their usage: plazas with various geometrical configurations are utilized to a similar extent as standard square-shaped spaces.

However, different demographic groups have varying requirements for seating. For seniors, comfort is important because mobility limitations restrict their ability to sit everywhere. Conversely, children and youth are more flexible, valuing open space over seating opportunities. For them, the quality and versatility of the space itself are more important than the availability of seating. Gehl (1991) highlights that social activities develop when conditions allow people to pause and spend time within the area. The perceived safety of a space significantly influences whether it is considered pleasant. The focus should not only be on identifying potential locations for seating but also on exploring opportunities to creatively utilize the design features of the environment. For instance, ledges within a plaza can be intentionally designed to

serve as seating or lounging areas. Conversely, if a structure such as a railing is too narrow or if a surface is obstructed by barriers, it cannot fulfill a seating function.

According to Gehl (1991), it is important to create spaces that encourage social interaction and facilitate gathering. However, even more important is the manner in which activities are developed within these spaces. Favorable conditions must be established to enable movement, presence, and participation in social activities. The outdoor activities and the qualities of the outdoor space influence each other in a dynamic interplay. Outdoor activities enhance the qualities of the space, while, conversely, these qualities contribute to the facilitation of better outdoor activities. Simultaneously, these outdoor activities tend to diminish when the qualities of the space decline.

Woonerf

In the Netherlands, during the 1970s, a new urban typology emerged, known as the "woonerf." The woonerf represents a specific interpretation of the street, whereby the open space remains central but is endowed with a collective rather than a public character. It is primarily utilized by local residents. Although woonerfs were designed as collectively shared areas that remain accessible to the public, it has become apparent that residents wish to maintain their privacy. Nevertheless, inhabitants are generally open to social interactions with neighbors. Achieving a balance between privacy and collectivity is therefore essential. Positioning kitchens and storage areas at the front of the dwellings serves to enhance privacy while simultaneously preserving the informal character of the shared space (Nio, 1990). These principles of the residential area could also be applied in high-rise buildings, for example by creating apartments around communal open spaces.

Plaza

A plaza is an open, central space where people gather. This area is frequently utilized by local residents. For instance, individuals working nearby often spend their lunch breaks there in the afternoon. Typically, office buildings are within walking distance of the plaza. Such central spaces also serve as meeting points, where people arrange to meet each other. Additionally, informal, permanent gathering spots may develop, attracting specific groups such as youths seeking social interaction (Hertzberger, 1991).

The primary reason people visit a particular location is the presence of other people. These plazas are highly suitable for social events, because of their open spatial characteristics. Observations indicate that individuals tend to linger in these crowded environments, even when engaging in conversation. This tendency is driven by a desire for spontaneous social interaction, whereby individuals prefer the flexibility to leave a conversation or join another group as desired (Hertzberger, 1991).

Furthermore, the presence of objects, such as statues, stairs, or water features, around the plaza often encourages people to gather in these areas. Conversely, the central part of a plaza is frequently underutilized (Hertzberger, 1991). Another reason why some public spaces are highly vibrant is due to the sale of food. A plaza where

food is consumed tends to be more lively because it attracts people, which in turn draws even more visitors.

What role can the qualities of vibrancy in public spaces play in optimizing the internal space of a residential complex?

At the collective level, the significance of public space continues to increase. It serves as the place where individuals meet and maintain social connections, both intentionally and serendipitously. Economic activities also take place within these areas; more importantly, public space constitutes the environment in which we collaboratively organize our daily lives and build the social networks that are essential for a community. People gather informally in public spaces, but they also organize events to celebrate shared goals or to demonstrate. Parks and open spaces are utilized for both organized and spontaneous recreation—outdoor activities that are vital for our health and well-being. Local authorities thus devote considerable attention to the management and design of these spaces. Furthermore, numerous other communal activities must be considered in the planning, design, management, maintenance, and programming of public spaces.

Shared pathways

Shared pathways within a complex are often underutilized for socialization, despite their potential to stimulate social interaction among residents. The extent to which the internal spaces of a residential complex become vibrant, thereby fostering social interaction, is largely dependent on the architectural features of the overall layout design of the complex (Abu-Ghazzeh, 1999). Several factors can contribute to enhancing the quality of internal spaces.

Social interaction primarily depends on proximity to others, the availability of meeting places within an area, and the social homogeneity of the complex. By social homogeneity, reference is made to the extent to which neighbors share similar characteristics or preferences. Importantly, the space should facilitate opportunities for spontaneous encounters, as the barrier to spontaneous interactions is significantly lower than that of planned meetings (Abu-Ghazzeh, 1999).

Research by Abu-Ghazzeh (1999) indicates that small, enclosed outdoor spaces, such as alleys, courtyards, or narrow squares, are more effective in promoting social interaction than large, open areas. This is primarily because human-scale environments offer a sense of intimacy and security, encouraging people to linger and engage with others and such spaces often serve multiple functions, making them adaptable and more socially engaging. Enclosed spaces also naturally limit movement and increase visibility of others, making encounters more likely.

Social interaction is influenced by factors including physical proximity and functional distance, as well as the importance of shared pathways and gathering spots. These spaces help cultivate a sense of community. Key contact points include shared areas such as stair landings, entrance zones, sidewalks, and internal courtyards, as these are locations where residents are most likely to engage in spontaneous contact.

Residences with distinct front and back gardens create semi-private zones that encourage contact and informal conversations between neighbors. Internal courtyards within residential blocks enhance the sense of community and are effective for fostering social interactions. Views of outdoor spaces via windows and balconies also promote engagement. When residents lack visibility of shared spaces, they tend to feel disconnected from these areas and interact less frequently with neighbors. This contributes to a sense of anonymity, negatively affecting social interaction. Additionally, it has been observed that ground-floor residents encounter neighbors more often than residents on higher floors.

Research further indicates that social interaction peaks in clustered housing arrangements, such as courtyard-style developments, where units face each other around a central core, increasing opportunities for residents to meet.

The semi-public spaces within a residential building serve as a buffer that connects individual dwellings to the external environment. They function as semi-private zones that simultaneously ensure the safety of the residents.

Physical design

The physical environment significantly influences the social interactions among residents. For instance, the closer the physical proximity between residential units, the higher the chance that residents encounter one another. This is referred to as physical distance. The functional distance is more nuanced than mere physical proximity. Functional distance considers other factors such as the spatial arrangement of dwellings relative to each other, the pathways utilized by residents, and the distance to service units. All these factors collectively determine the frequency with which residents access communal spaces, thereby increasing the probability of encounters. The greater the likelihood of such encounters, the higher the potential for social interactions and the development of friendships (Whyte, 1980).

Meeting each other in communal spaces can lead to passive contacts. These passive contacts are important for the sense of community, but take time. This unintentional encounter of people forms a confirmation of being neighbors and offers the opportunity to get to know each other better. The extent to which people meet each other depends on how often certain paths are used. The more often people share a path, the greater the chance of meeting each other. Limiting the number of shared routes can contribute to this (Abu-Ghazze, 1999).

The scope of human experience is significantly broader horizontally than vertically. Within a radius of 100 meters, the eyes can perceive the environment, whereas vertically this range is limited to only a few meters. Placing similar functions on the same floor ensures they remain within this perceptual range. However, positioning the same functions across different floors restricts experiential opportunities, according to Jan Gehl. William H. (51) emphasizes the importance of sightlines, noting that people tend not to utilize spaces that are not visually accessible. Therefore, functions should be located on the same floor, and it should be ensured that functions on other floors are clearly visible from different levels.

Accessibility of the apartments

Residences must be easily accessible from the street. However, this is not always feasible with high-rise buildings. To reach the dwelling, occupants often rely on communal halls, elevators, and stairwells, which are frequently impersonal spaces that hinder the development of social interactions. Additionally, considerations must be given to where visitors are welcomed, whether at the front door or outside the building, raising questions about the boundary between private and public space. Therefore, it is essential to foster a street environment that possesses a "living-room" quality within residential areas (Hertzberger, 1991). Such streets can serve as venues for everyday activities, casual conversations with neighbors, and social gatherings during special occasions.

Social activity occurs spontaneously and results from individuals moving and converging at the same location. The nature of social activities is contingent upon the spatial context. For instance, a residential neighborhood facilitates different social interactions compared to other areas, as residents are familiar with one another within that environment. In city streets and centers, social activity tends to be more passive due to the presence of numerous unfamiliar individuals. Social interaction typically begins when at least two persons encounter each other at the same place, serving as the initial step towards more profound engagement within the area (Gehl, 1991)

Proximity and Clustering

Architectural social design principles that contribute to the vibrancy of public spaces include proximity and clustering. This entails ensuring that the distances between residential units and communal areas are minimal. Proximity increases the likelihood of spontaneous encounters, as the spaces are used more frequently. Additionally, it is recommended to promote clustering within smaller building blocks. Living within smaller clusters results in fewer individuals utilizing the shared spaces, thereby reducing anonymity within residential blocks. Consequently, residents are more inclined to engage in informal conversations.

Number of shared routes

It is also important to note that the routes to residences are shared by more individuals. As a result, residents are more frequently exposed to one another. This is primarily about the number of routes leading to residential blocks. By limiting the number of routes during the design process, social interaction among residents can consequently be promoted.

Visibility and Surveillance

By integrating large windows and transparent open entrances, opportunities for encounters among individuals are increased. The likelihood of meeting others is enhanced, and visual contact is facilitated. This fosters a greater sense of safety and promotes increased engagement within the complex.

Buffer Zones

By establishing buffer zones, such as front yards, balconies, or small gardens, a gradual transition from private to public space is created. These zones function as

intermediate areas where residents can engage with the street and their surroundings without being fully exposed to public view. They provide an intimate yet inviting setting where inhabitants can, for example, relax, garden, or converse with passersby. Consequently, the boundary between private and public becomes less abrupt, thereby enhancing social cohesion within the neighborhood. Moreover, these buffer zones encourage spontaneous interactions, such as incidental encounters with neighbors or friendly greetings from pedestrians. This fosters not only a sense of safety and community connectedness but can also contribute to a more vibrant and engaged neighborhood. Through the strategic implementation of buffer zones, urban areas and neighborhoods can be enriched both functionally and socially, cultivating a natural and organic dynamic that enhances overall livability.

To what extent does the expansion of public space within the residential complex contribute to the improvement of living quality for the residents?

In contemporary urban residential environments, quality of life is increasingly linked to the availability and quality of public and semi-public spaces within the residential complex itself. While traditional housing developments often maintain a strict separation between private, collective, and public domains, recent decades have seen the emergence of new residential models that deliberately blur these boundaries. The expansion of public space within the housing complex has thus become a crucial tool for stimulating social interaction, mutual support, and shared ownership. This raises a fundamental question: to what extent does such spatial openness contribute to residents' quality of life?

This chapter examines how the introduction and integration of public and semi-public spaces, such as shared internal streets, courtyards, communal facilities, and commercial functions, influence the social, spatial, and emotional dimensions of living. The analysis considers both the potential benefits, such as strengthened community formation, increased social safety, and improved access to amenities, as well as the inherent tensions that may arise, for example regarding privacy and the varying levels of resident engagement.

The analysis will be done by a case study. By analyzing these dimensions, the chapter demonstrates how public space within residential complexes can function as a form of social infrastructure that not only shapes the everyday living environment but also influences the social structure and well-being of residents. The central research question therefore asks: *to what extent does the expansion of public space within the residential complex contribute to the improvement of living quality for the residents?*



Case Study 1: The Canyon

Context and Background

The Canyon is part of the first phase of the Mission Rock development in San Francisco: a transformation of 11 hectares of former parking lots and industrial wastelands into a multifunctional residential district. The intention is not only to create housing, but to combine public space, greenery, workspaces, retail, and infrastructure into a new community hub. The Canyon is therefore not only a residential building, but an element within a broader urban strategy: the design aims to establish a new social fabric interweaving residents, workers, visitors, and neighborhood users. As a result, the project offers potential for social diversity, cross-pollination, and new forms of urban life (MVRDV, 2023).

Architecture and Spatial Composition

The Canyon contains small shops and restaurants on the ground floor, with two floors of office space above. The upper portion of the building consists entirely of housing, with a total of 283 apartments. This mix of functions (retail, work, living) is explicitly intended to keep Mission Rock “active and lively during the day as well as in the evening and at night.” This is an interesting theme, as liveliness is often cited as an argument within other mixed-use complexes. This case study reinforces the correlation between the vibrancy of a complex (both day and night) and the degree of programmatic mixing within it (MVRDV, 2023).

By integrating various functions (living, working, shopping, recreation), opportunities emerge for people with different backgrounds and daily rhythms to encounter one another. Office workers, residents, visitors of shops or restaurants, and recreational users can all share the same spatial environment. This increases the likelihood of spontaneous encounters, neighborly contact, and the emergence of a diverse social network — themes that were highlighted in the previous chapters.

Design Feature: the Landscaped Public Canyon

The most striking design element is the landscaped public canyon: a narrow valley running diagonally through the building’s plinth. This canyon functions as a public axis — a passageway linking, among others, the adjacent China Basin Park with the core of the neighborhood. It is landscaped with greenery and designed to bring life into the district. The canyon is meant to serve as both a place of encounter and of tranquility, while simultaneously functioning as a circulation route that keeps the space active (MVRDV, 2023). This creates an interesting interplay between calm and activity: the spatial layout produces moments of rest, while the functional axis generates movement.

Through the canyon and the mix of functions, a “semi-public zone” emerges where different user groups can intersect. At the same time, the balconies and individual apartments overlooking the canyon provide residents with views and privacy, combining social openness with residential separation.

Amenities and Infrastructure

The Canyon is designed with numerous amenities for its residents: a rooftop lounge, terraces, a fitness center, a co-working lounge, a private cinema room, a private dining room, and more (The Canyon at Mission Rock, n.d.). In addition, there are

facilities such as bicycle parking, EV charging stations, and shared infrastructure for heating, water, and energy management. The podium roofs are landscaped with greenery, creating communal outdoor areas where residents can relax, exercise, or socialize (MVRDV, 2023).

Such amenities foster a sense of connection within the resident community: people can meet one another in lounges, on rooftop terraces, in co-working spaces, and through other shared facilities. This strengthens social capital, a sense of community, and informal networks. In a building with so many units, this can be essential for counteracting anonymity and encouraging social cohesion.

Accessibility and Urban Context

The Canyon occupies a strategic corner, prominently visible upon entering Mission Rock via the bridge. It borders China Basin Park, meaning that natural outdoor space flows seamlessly into both the building and the neighborhood (MVRDV, 2023). The surrounding area is well connected to public transit: the Muni T-line and the San Francisco Caltrain station are within walking distance, providing quick access to the rest of the city.

Strong accessibility and proximity to public green spaces ensure that The Canyon does not function as an isolated “gated community,” but is instead integrated into the urban fabric. Residents can easily enter the city, visit parks, and participate in neighborhood activities. This enhances opportunities for interaction with non-residents and contributes to a stronger neighborhood identity, thereby making the building more vibrant.

Critical Reflection

Although the design of The Canyon is, on paper, highly promising in terms of community-building, inclusivity, and interaction, there are also indications and challenges—based on media reports and user experiences—that may hinder the intended social interaction in practice.

Some online responses note that while the building looks aesthetically attractive, its practical livability can be questioned. It highlights potential issues regarding privacy, sightlines, and anonymity: if apartments are close together and heavily glazed, residents may withdraw from openness—closing blinds, curtains, or windows. As a result, users may unintentionally undermine the building’s intended concept of visibility, openness, and interaction.

There are also critiques related to the “newness” and lack of rootedness of the neighborhood: while the district is still developing both physically and socially, it remains uncertain how vibrant the public life in the streets and the canyon will eventually become. Some commercial spaces on the ground floor may remain vacant or take time to fill, slowing the activation of the plinth.

Social interaction therefore depends heavily on occupancy, diversity, and community formation over time. Architecture and amenities provide potential, but that potential becomes real only if residents, workers, and visitors actually use the spaces. Designing an entirely new district requires time: a young neighborhood needs time to

build social capacity and a shared identity. High vacancy rates or low resident engagement can hinder community formation.

Conclusion

The Canyon serves as a telling example of how architecture, programmatic mixing, and communal amenities can be employed to facilitate social interaction, inclusion, and community building. The canyon itself is both a metaphorical and practical element: a physical axis that structures public space, movement, connection, and encounter.

At the same time, success is not guaranteed: it depends on occupancy levels, affordability, resident diversity, and the organic development of community sentiment over time. As a case study, The Canyon therefore provides a rich example for examining how contemporary mixed-use housing projects can function as social infrastructure.



Case Study 2: WindSong Cohousing

WindSong Cohousing is a cohousing project located in Langley, Canada. The complex consists of 34 dwellings organized around a set of shared facilities designed to structurally stimulate social interaction. Cohousing is a residential model in which private homes are combined with extensive communal spaces, with residents actively involved in the management and organization of the community. WindSong is an interesting example within this typology due to its combination of architectural innovation, socio-spatial strategies, and a strong emphasis on sustainable collective living. This case study examines how the spatial structure, materiality, accessibility, and social organization of WindSong contribute to community formation and everyday interaction among residents.

Functional Distribution and Use Structure

WindSong is composed of a mix of dwelling sizes clustered around an internal circulation system. The homes are stacked and physically connected to the central indoor street: a semi-public zone that acts as a transitional space between fully private and fully shared functions. The design therefore emphasizes gradual shifts between varying levels of privacy.

The social heart of the project is the Common House, which functions as a multifunctional hub containing guest rooms, play areas, workshops, and other shared programmatic spaces. A wide range of activities takes place here, including communal meals, childcare, and workshops.

The internal circulation structure not only functions as a movement corridor but also as an active social domain. The design encourages spontaneous encounters, as residents enter their homes through this shared street and repeatedly move within close proximity to one another.

Architecture and Material Expression

WindSong's design is explicitly geared toward facilitating community building. A large glass canopy covers the indoor street, creating a light-filled, climate-protected micro-environment that invites residents to use the space daily, regardless of weather conditions.

The project employs warm, natural materials such as wood, combined with a glass structure that encourages transparency and visual connection. The facades include subtle color accents that enhance recognizability and maintain a human scale. These aesthetic choices play a role in the social legibility of the complex, enabling residents to easily identify one another's homes and feel at ease within the intimate, small-scale atmosphere.

Visual Connectivity

Through open sightlines between dwellings, atriums, and shared spaces, a sense of visual connectedness emerges that strengthens the social dynamic. The design allows activities in the indoor street and the Common House to be observed from multiple levels, enhancing the feeling of collective space without enforcing direct participation.

Public and Semi-Public Spaces

WindSong does not contain any shops or public amenities accessible to external visitors. In contrast to urban mixed-use developments, the emphasis here is on internal social cohesion rather than integration with the broader community. As such, WindSong functions largely as a semi-private residential environment oriented toward its own residents.

The indoor street is accessible only to residents and forms the primary meeting space. This area serves as an extension of the private home and as a zone for spontaneous interaction, children's play, plant maintenance, and informal conversations.

WindSong features a communal garden, open green areas, and over four hectares of adjacent natural land collectively used and maintained by the residents. Outdoor spaces are used for gardening, play, and neighborhood activities and act as a buffer between the complex and the surrounding suburban infrastructure.

Accessibility and Infrastructure

The complex is situated near a main roadway. This location provides a sense of calm and separation typical of suburban housing, while still granting access to regional amenities. Parking is located at the perimeter of the site, ensuring that the indoor street remains fully pedestrian-oriented. This enhances safety for children, reduces noise and pollution, and supports social interaction by removing vehicular barriers.

Conclusion

WindSong Cohousing provides a compelling example of how architecture and spatial strategies can structurally promote social interaction. Its organization around a covered indoor street, the prominent role of the Common House, the car-reduced environment, and the blending of private and collective spaces together create conditions in which residents encounter one another frequently without these interactions being imposed. In this project, spatial design, material expression, and community culture reinforce one another to support a cohesive and socially engaged living environment.



Case Study 3: Kalkbreite

Kalkbreite is a project in Zurich consisting of a multifunctional residential–work complex that experiments with alternative relationships between private and collective space, between living, working, and recreation, and between individuality and community. Its primary objective was to create affordable housing, social diversity, collectivity, and ecological sustainability. In addition to residential units, the program includes workshops, commercial functions, and cultural facilities.

Typologies and Housing Forms

The physical form and internal layout of Kalkbreite were deliberately designed to facilitate social interaction and communal living. The complex comprises approximately 85–97 apartments, providing housing for around 250 residents. The dwelling types are diverse: from small apartments for individuals or couples, to cluster units (small private rooms with shared facilities), and so-called “large households”—groups of roughly 20 dwellings that share communal living and dining areas, including a professional kitchen, where residents may opt to cook and eat together.

This diversity of scales enables Kalkbreite to accommodate a broad mix of residents with different household compositions, family structures, ages, and needs. This inclusivity creates potential for social diversity and intergenerational interaction.

Spatial Structure and Communal Spaces

Emphasis is placed on shared use: private floor areas are intentionally limited in order to save space and make collective facilities more attractive.

At the core of the design is the internal circulation system, featuring a wide corridor that connects residential units, communal spaces, roof terraces, commercial functions, and outdoor areas. This “internal street network” acts as the social backbone of the building, functioning as a meeting place and a catalyst for informal interactions.

Situated atop the former tram depot is an inner courtyard: a green, semi-public open space accessible directly from the dwellings, enabling spontaneous encounters. Additional shared facilities include a laundry room, communal kitchen, workspaces, and ateliers.

This spatial configuration illustrates how architectural and design strategies can foster collectivity: through circulation, shared amenities, and collective outdoor space, physical proximity and social encounters are encouraged, supporting both spontaneous and intentional forms of interaction.

Mobility

Automobile infrastructure is almost entirely absent: parking is minimal or non-existent. Instead, the complex provides a large bicycle storage area accommodating hundreds of bikes. In doing so, Kalkbreite discourages car use and promotes active mobility, walking, cycling, and public transportation, which reinforces the human scale of the complex and strengthens local social proximity.

Conclusion

Kalkbreite represents a socio-spatial experiment that offers contemporary urban living an alternative model centered on community, sustainability, and functional mix. The wide corridor and internal circulation system foster frequent, chance encounters: residents pass one another, move along shared routes toward balconies, rooftop terraces, bicycle storage, and communal rooms. This significantly increases opportunities for social contact.

Shared facilities support daily or periodic gathering—collective cooking, laundry, working, meeting, and resource sharing—building community cohesion. Moreover, the presence of collective amenities such as childcare services, restaurants, and outdoor spaces stimulates both internal and external interaction among residents. As such, Kalkbreite functions not only as a residential building, but partly as an urban hub.

The coexistence of studios, family units, clusters, and large households yields a mix of ages, household types, and social backgrounds, creating opportunities for social diversity, mutual exchange, and a robust community culture.

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Appendix: reflection

The design of my residential complex in the Schinkelkwartier aims to enhance social interaction among residents by integrating spatial qualities of social public spaces into the building. My research focused on how the architecture and design of public and semi-public spaces can strengthen social dynamics, with particular attention to encouraging interaction at height. The result is a residential complex with shared terraces, where six dwellings share one terrace. By staggering the terraces, I aimed to soften the experience of “stacking,” allowing residents to feel more connected to each other and to the outdoor space.

Relationship Between the Graduation Project and the Master Track

My graduation project aligns well with the Architecture master track because it explores both the spatial and social aspects of housing. Promoting social interaction in urban residential environments is a relevant topic within architecture, and this design responds to the ambition of making cities more human and community-oriented. In my view, social interaction forms the basis of many housing concepts, especially in urban areas. One may question whether an apartment complex with little to no social interaction can be considered successful, since people are social beings and interaction is essential for a healthy living environment. This forms the theoretical and practical foundation from which the design principles are derived.

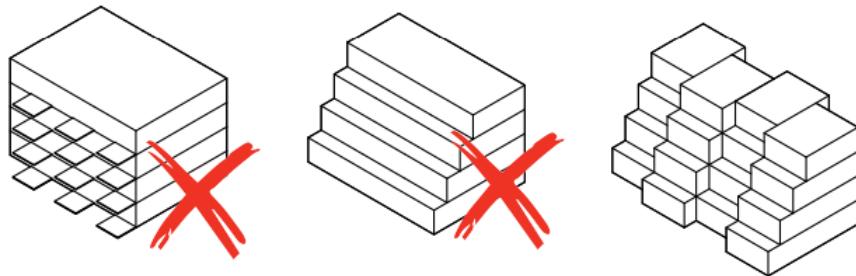
Influence of Research on Design and Vice Versa

My research directly influenced the design of the residential complex. The starting point of the research was to integrate the social qualities that public spaces possess into a stacked housing typology. When translating those qualities, different spatial scales were naturally taken into account. A public space has different characteristics than shared spaces within a housing complex. Therefore, the focus was not on the physical characteristics themselves, but on the *social qualities* associated with those characteristics. The research identified four architectural and social elements that contribute to vibrancy: seating, proximity, transparency, and activity. These four elements are incorporated in my design.

This resulted in a core concept of shared terraces with visual connections. This design ensures that residents come into more frequent contact with each other by bringing them physically closer. The staggering of the terraces reinforces this effect by breaking the typical sense of stacked apartments. Instead of the conventional balcony positioned directly above another balcony, often creating a feeling of isolation, residents of different dwellings can see and address each other easily, without feeling confined to a small private balcony.

Conversely, the design of the residential complex has enriched my research. The physical design of the terraces provided insight into how social interaction can actually be stimulated through the right spatial layout. Although the idea of shared terraces seemed effective on paper, in practice it sometimes introduced more complex social dynamics, such as issues of privacy and the degree to which residents choose to use the terraces. These findings refined my understanding of

social interaction and encouraged me to further investigate and adjust the social aspects.



Assessment of the Methods and Approach

The approach I followed, combining theory with practice through design and research, worked well, though not without challenges. Balancing the social aspect of interaction with the physical space is delicate. The method used to investigate this consisted of a combination of literature review, resident experiences, and the development of concepts that promote social interaction through architecture. This was valuable, but in practice, not every solution worked equally well for every type of resident. I might have conducted more detailed research into specific target groups, such as younger or older residents, to better understand their social interaction needs in the context of shared terraces.

Academic and Societal Value of the Project

This graduation project has both academic and societal value. Academically, it contributes to the ongoing discussion about the role of social interaction in residential design and how it can be encouraged in urban environments. The research into shared spaces and the rethinking of the traditional layout of apartment complexes provides valuable insights for the future of urban housing.

From a societal perspective, the project has the potential to improve the quality of life for urban residents. At a time when urban isolation and lack of community are growing issues, this design offers an alternative that strengthens social connections and enhances the sense of community. Furthermore, the concept of shared spaces is applicable to other urban areas where social cohesion is a challenge. Ethics play a role in this project, particularly regarding respecting residents' privacy, which I carefully considered in the terrace design.

Value of the Transferability of the Results

The value of the project's transferability lies in the applicability of the design principles in other urban residential environments. The idea of shared terraces can be used in other districts of Amsterdam with high housing density, as well as in other European or even global cities where social interaction needs to be stimulated in densely populated areas. The methodology I used, investigating the relationship between spatial layout and social interaction, can be applied more broadly in other

urban planning projects. The principles of staggered terraces can be adapted to various contexts depending on local culture and housing needs.

Personal Reflection Questions:

1. To what extent have the shared terraces actually led to increased social interaction among residents, and how can I measure this more effectively in future projects?
2. What are the potential limitations of the design in other contexts (for example, in smaller apartments or for different target groups)?

Conclusion

The design of the residential complex in the Schinkelkwartier has deepened my understanding of social interaction in urban living environments. By translating my research into a physical design, I have been able to explore both the possibilities and limitations of shared terraces in practice. This process has provided me with valuable insights that enhance not only my design skills but also my understanding of the social impact of architecture. In the final phase of my graduation process, I aim to further refine these insights and develop the project's results both theoretically and practically.