Gradual Transition Architecture
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IMPROVING THE NEED FOR INTIMACY AND THE DESIRE TO INTERACT WITH THE PUBLIC ENVIRONMENT OF THE CITY

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This book is a product of the individual research and analysis of the graduation studio 'Transparency'. This studio has been jointly initiated by Prof. Dipl.-Ing. Christian Rapp, ir. R.P.J. Roorda and ir. B.C.I.M. Kuit MArch RA as Supervisory Committee

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ABSTRACT

The private and public domain, in today's urban setting have been divided by hard edges. This has been done for the sake of privacy of the inhabitants, as a respond to the transparency of the public space for the citizens. As a respond to that, anonymity has appeared in the public urban area and enclosure to preserve privacy.

Since the sixties, the industrial city gradually transformed into the entertainment city, where entertainment, leisure and consumption became the main activity. This transformation made the factories in the city redundant and forced them to move to the outskirts of the city. The public spaces in the city remained the same, only their function changed.

This trend and the rapid digitalisation of the society have had consequences for the use and the experience of the public and private spaces. The preservation of privacy was one them, which led to more anonymity and lack of social control. This has resulted in a rapid increase of criminality in the city. Due to that, public spaces will lose their social function and evoke feelings of distrust and deep sense of insecurity. This feelings of insecurity leads to more regulations and control, so measures are taken like a separation of the public and intimate space by hard edges.

As a respond to that the urban designers and architects came with a new concept. A living area where the physical partitioning of the space is a typical characteristic, resulting in an enclosed collective domain. The so-called ‘New Urbanism’. A similar example of this New Urbanism is the controversial US ‘gated communities’, which has been criticized a lot, because of its completely isolation from the outside world and hereby withdraws from society. This creates a widening gap between public and private domain within the city.

This graduation project is based on the intimate space in its physical state and nonphysical state in architecture. The former usually refers to a dwelling, where people feel “HOME”. The latter refers to an invisible medium in the space around us. Based on the spatial perception, this medium is constantly influenced by its environment.

As a respond to the hard edges between the public and private domains, this aims on a gradual transition from the public(openness) to private (intimacy). Intermediate spaces have been deployed to maintain the conditions of the different domains where users preserve the freedom to move undisturbedly through this gradient.
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INTRODUCTION

This thesis is based on the intimate space in its physical state and mental state in architecture. The former usually refers to a dwelling, where people feel ‘HOME’. The latter refers to an invisible medium in the space around us. Based on the spatial perception, this medium is constantly influenced by its environment.

Preliminary to this graduation research, an architectural analysis was done to create comprehension of a building and theme. In this case the S- House of Japanese architect Yuusuke Karasawa has been analyzed on the solutions for the relationship of transparency and architecture. The main purpose of the analysis was to determine the architects interpretation and translation of transparency to architecture. This allowed me to formulate an initial thought regarding the theme ‘Transparency’.

To determine my interpretation of transparency I have conducted a literature study, which has been presented in a paper. The distinction between the public and intimate domain is the main subject of the paper. This literature study led me to conclude that in order to make the experience pleasant, the spaces in both domains should be separated by intermediate spaces with soft transitions. Research into the intimate space of people and the interaction with the environment has inspired me during this graduation studio. Writing an essay on this subject has given me the desire to go deeper into this theme. During this graduation project I will continue the research on the public and intimate space.

The analysis and paper have formed a base from which, in the last semester, a design is developed as a solution to the formulated transparency related issues in architecture.

The fact that the transformation of the city is causing conflicts between the private and public domain, will not be excluded in this thesis. According to the book “Public and private spaces of the City” (A. Madanipour, 2003) this transformation even leads to violation of the intimate space around an individual.

The boundaries of the private and public domain should conduct the structures and functioning of the city. Therefore, it is important that the functioning of the city is based on the boundaries and transitions of these two domains.

These boundaries and transitions will be discussed and an attempt will be made to find an optimum balance between them by investigating the following research questions as formulated in this research;

**How and to what extend can the architectural design provide gradual transition between the public and private domain?**

- Can a dwelling, by needs of architecture, meet the desire of individuals concerning the personal/private space?
- Can the addition of semi-public function(s) to a residential building, help to gradually make transitions from public to private?
- How to create a balanced interaction between the public urban area and the social spaces in the building?

 Responding to this subject, the research methodology employed by this thesis included both a theoretical and a designing approach that questioned the meanings of ‘transparency’ and the ‘gradual transition’ between the two domains.

This thesis is devided into four parts. The research first synthesized existing (architectural) theory on transparency and privacy and mapped its use in the modernist movement to contemporary design. This preliminary research is done through a case study analysis and a state-of-the-art literature study to form an interpretation of transparency and privacy, and to provide an appropriate concept solution to the earlier mentioned issue.

The second part describes the urban analysis of the chosen location where the concept will be applied. Followed by the urban design, which is set out in multiple design steps. The last part examines the application of the concept at the building level. This is done by examining each design step in order to come to an optimal translation of the concept to architecture.
1. PRELIMINARY RESEARCH
Preliminary to this graduation research, an architectural analysis have been done to create a better understanding of the interpretation and translation of transparency applied in S-House, by the Japanese architect Yuusuke Karasawa.

This architectural analysis was an important tool for creating comprehension of a building and a theme. The S-house is fully cladded with transparent glass panes to strengthen the concept of the client, who has spent years studying the networking of space and nature, and how humans interface with the space around them.

This analysis has allowed me to formulate an initial thought regarding the development of a research topic and question. This question is later used for writings a paper regarding the common theme of transparency. The paper and the analysis together, form a starting point from which a design will be developed in order to come to a solution to the .

The second part of the preliminary research consists of writing a paper. One takes a stand regarding the topic in a personal explorative, argumentative and provocative way.

The written word allowed me to organize my thoughts and leaded to defining and refining the individual thesis statement for the design-project, the concept.

The third part will discuss the concept translation of the statement made in the paper to physical space. From this translation, the main research question has emerged, which is supported by three sub-questions.
S-House is a small house built in a dense residential area near Omiya station in Saitama. Two 50m² floors are cross over in two levels on a site that measures around 104 m². Each level is divided in four, two opposing floors of which are elevated. The eaves, surrounded at the middle of the ceiling height of the other two floors, intertwine with the elevated floors, creating a space characterized by a complex network. The elevated floors of the two levels continue to a diagonal wall, as well as to the floors above.

It is built for an academic client, who has spent years studying the networking of space and nature, and how humans interface with the space around them. The design of this home is a practice in the client’s studies, a philosophical execution of his life's work.

After the client moved in, Karasawa says, “he thought the house succeeded in realizing network philosophy as his lifelong theme of study, and was also quite a comfortable space for daily living.” (Karasawa, 2014)

While entering the S-House, a solid white door leads from the main entrance, leading through
to a reception room on the ground floor. A dining room is also located on this level, but residents have to go up through either the mezzanine kitchen or living room to access it. A master bedroom, bathroom and storage area occupy the lowest floor of the house, which is sunken below ground level by almost two meters. A guest bedroom and study can be found on opposite corners of the penultimate floor, while the uppermost level boasts a pair of secluded roof terraces.

The thin, white-painted steel plate that forms the primary structure of the S-House extends beyond the glazed perimeter.

Each floor above the ground is clad in glass panes to strengthen the concept of the client for the S-House and allows plenty of natural light and views. The private functions, like the master bedroom and the bathroom are thus located below grade in blind walls and fully enclosed volumes that serves as the ground-level floor at the entrance.

(www.archdaily.com & www.dezeen.com)
The thin, white-painted steel plate that forms the primary structure of the S-House extends beyond the glazed perimeter. Each floor above the ground is clad in glass panes to strengthen the concept of the client for the S-House and allows plenty of natural light and views. The private functions, like the master bedroom and the bathroom are thus located below grade in blind walls and fully enclosed volumes that serves as the ground-level floor at the entrance.
1.15 Schematic overview of the blind spaces from the neighbours (West)

1.16 Schematic overview of the blind spaces from the neighbours (West)

1.17 Schematic overview of the blind spaces from the neighbours (East)

1.18 Schematic overview of the open and blind spaces from the neighbouring houses of the S-House (East & West)
A major concern for the S House is its extreme exposure to the public. Much of its interior is visible from outside. As a result an intimate or personal space is becoming very rare in this ‘open interior’ layout. The top levels are largely hidden from the lower view, but there is too little to protect the inhabitant from the views of the neighboring houses. This has been solved by furniture and a well-placed blind walls that hides the bathroom from a direct view from the street. This is, for example, not sufficient against a view from the neighbouring on the west.

Beyond the lack of privacy, the S-house is an iconic design. Each floor is open to the next, allowing the flow from the bottom levels to the top levels without any blind walls. Thus the interior looks much larger than it actually is. In most (traditional) dwellings, where most of the spaces are enclosed by blind walls and doors, the spatial flow of the S-house, can not be experienced. The spatial flow was one of the main desires of the client, as it relates to his studies of nature and space. It is a well designed building with the wrong function, one which could become a hype for contemporary architecture, but it will not be an universal design for living.

After experiencing the fully transparent way of living, it seems the client has come to the conclusion that being fully exposed in a private home only works in theory. By placing book shelves and privacy curtains the client has reduced the views into the house in order to meet the indispensable desire for a shelter.

A home should function as a shelter, where you can recover and recharge both mentally and physically. A shelter where you can withdraw from the outside.
1.2

PRIVACY VS TRANSPARENCY

Preserve privacy by limiting transparency
In this essay the privacy of individuals is set out against the desire for interfacing with our surrounding and nature. Should transparency be limited to preserve privacy in the daily life? Or can the need for privacy be combined with the desire to interface with the public environment?

To come to a well considered answer to these questions, a short history of transparency in architecture and the definitions of privacy and transparency will be discussed. By reading the essay ‘Transparency; Literal and Phenomenal’ by Rowe and Slutzky, the books ‘The Transparent Society’ by Brin and ‘The Transparent State’ by Barnstone, the different forms of transparency in architecture and society are explained. Following from these sources and examples of daily life, an attempt is made to clarify the relation and the connection between the private and public domains.

1.21 Relief model; variation of sequences and different spaces between public and private
Interfacing with our surrounding has become a basic need, which has cost us a part of our privacy. Humans demand their privacy as a basic need of life and want to interface with their surrounding at the same time. But can the need for privacy be combined with the desire to interface with outside world? The focus of this essay is to explore the importance of both transparency and privacy within residential architecture.

In order to achieve a well-founded answer to the question above, the definitions of transparency and privacy within architecture will be explained. After describing the different definitions of transparency and relating them with each other. The application of transparency will be examined as a design tool in the contemporary residential architecture.

The term transparency is originally formed from Latin “trans” for “through” and “parere” for “appear,” describing a material condition in which light and views penetrate its surface. Therefore glass is the material which is most often associated with transparency. Modernist architects have emphasized words such as transparency, openness and clarity, discussing their fascination with the potentials of glass as building material. The Post-modern discourse shifted this discussion to translucency and opaqueness. Contemporary discourse assigns terms as ‘vagueness’ and ‘double meanings’ in discussing the interest in the conditions of translucency.

The use of glass as an element to achieve transparency in architecture, can be traced back to the late 19th century. Significant social changes and innovations in the commercial production of glass then fascinated the modernist architects. Transparency became a metaphor in architecture to express a certain vision or ideology, like ‘modernity’ for.

In the book, “The Transparent State,” Ascher-Barnstone discusses that the metaphor “transparency equals democracy”. This phrase suggests that the use of transparency in parliamentary architecture is a desired and valued characteristic in a democracy and in its institutional representation. At the same time, the metaphor identifies these qualities as ones that are associated with democracy versus other forms of government. Thereby implying that where transparency is, there is democracy, and not totalitarianism, despotism, monarchical rule or communism. (Barnstone, 2005)

Furthermore Ascher-Barnstone asserts that transparency acts as a metaphor in political and architectural discourse, but not in the architecture itself because metaphors relate to ideas and architectural language but not to things, buildings.

The German architect Günter Behnisch, for instance, seemed to use transparency in order to celebrate the successful establishment of the Germany’s democratic system. It represents a desire, an ideal democracy, with perfect transparency. Despite the open forms, open plans and sections and the tremendous amount of glass used, the architecture of the Bundeshaus, in Bonn, is only partly transparent. (Barnstone, 2005)

Transparency provides clarity about different architectural elements that can be very important to the perception of a design. Mies van der Rohe wrote the following on transparency in 1933:

“The glass skin, the glass walls alone permit the skeleton structure its unambiguous constructive appearance and secure its architectonic possibilities. […] Now it becomes clear again what a wall is, what an opening, what is floor and what ceiling. Simplicity of construction, clarity of tectonic means, and purity of material reflect the
Mies described transparency as a means of making the architectural elements clear and perceivable.

Researching the development of transparency revealed the three main definitions in which transparency is addressed: Literal transparency (material and spatial), phenomenal transparency and social transparency.

Literal transparency
As Rowe and Slutzky mentioned in their writings, transparency can be categorized in literal and phenomenal transparency in which they distinguish Literal transparency as material transparency that describes the opacity of the material as being see-through, engaging the eye. Phenomenal transparency engages the mind of the viewer to discern (the interpretation or reading of) spatial organization.

Material transparency
Material transparency is the inherent, physical property of a material that renders the material visually permeable or impermeable. (Rowe & Slutzky, 1963) Materials, depending on their properties, can be transparent, translucent, or opaque. Materials that allow direct transmission of light and view are considered transparent. Materials that block the transmission of light and view are considered opaque. Finally materials that diffuse light and view are considered translucent.

Spatial transparency
Spatial transparency is researched in designs that seek to fade the distinction between site and architecture. Spatial transparency can also be used to describe the physical experience of a space. Barnstone describes spatial transparency as occurring when the boundaries between distinct spaces in plan or section are visually permeable or non-existent. Modernist architects attempt to obtain spatial transparency by replacing the old division of ‘inside and outside’ with transparent walls, and merging in outdoor spaces (such as patio’s) that strengthens the access of light and sight.

Within architectural discourse, literal transparency is mainly used to describe the material conditions of translucency within a building. Strictly taken, literal transparency within architecture means a simultaneous perception of different spatial locations (by using translucent materials or building volumes).

Phenomenal transparency
The phenomenal transparency mainly describes cubism, and is often hard to bring in relation to architecture, because it is three dimensional. A painting mainly implies the 3rd dimension, which architecture can not suppress. Generally speaking, phenomenal transparency in architecture has been hard to discuss. However, in this essay the risk of misinterpretation will be taken in an attempt to describe phenomenal transparency within architecture, as it is also partly done by Rowe and Slutzky in relation to villa Stein by Le Corbusier.

Contrary to literal transparency, phenomenal transparency has little to do with material conditions that can be compared to the degree of see-through. Instead, the term is used to describe to describe a certain level of ‘readability’ within the design of a building. This can be clarified by next notation from the writing of Rowe and Slutzky:

"Recognizing the physical plane of glass and concrete (in Villa Stein) and this imaginary (though scarcely less real) plane that lies behind it, we become aware that here transparency is effected not through the agency of a window, but rather through our being made conscious of primary concepts which ‘interpenetrate without optical destruction of each other.” (Rowe & Slutzky, 1963)

In short, the shape of the building reveals the concept of its design, without damaging the image of the design itself. There is a dualism between the concept and the design. In other words, the shape of the building acts as a unit consisting of two independent principles, which are the concept and the shape of the design.

Transparency of meaning, is a definition of transparency that explains there should not be any distinction between the form and the content nor between object and meaning. This explanation lies at the very heart of arts in general, including architecture.
Figure 1.25 The Phenomenal transparency, categorization of functions in the elevation, of the Unité d’habitation by Le Corbusier
Much like Rowe and Slutzky stated:

“[...] through our being made conscious of primary concepts which interpenetrate without optical destruction of each other.” (Rowe & Slutzky, 1963)

The ideal behind this sense of transparency is that modern architecture does not need any interpretation, because whatever meaning it has, it could contradict the experience of the work.

Generally, there has been a strong tendency to assume that translucent materials are the natural meaning of achieving this condition, transparent. Transparency of meaning is more commonly expressed in relation to its converse ‘opacity’, the condition to which many buildings with literal transparency revert mostly.

Social transparency
Social transparency embodies themes of openness, honesty, and accountability “of the self, of the self to others, and of the self to society” (Vidler, 1992) and has become a metaphor of social and political openness. It is a condition in which society is equally open to everyone.

According to the online Oxford dictionaries, the definition of privacy is “the state of being alone and not watched or disturbed by other people.” In his book, The Transparent Society, Brin discusses that the protection of our privacy may preserve the most intimate interactions. He finds that the privacy will remain protected due to the need and desire of the people.

This means we should not only demand these rights, but we should also have the power and ability to use and detect when these rights are being abused. Brin continues that it would be beneficial for the society to share the powers of surveillance with the citizenry, and allowing “sousveillance” to enable the public to look back to the observers. In other words, if we have the power to look back, we can vote ourselves privacy and seize our privacy. (Brin, 1998)

Institutions and companies with shared concerns for instance, should be obligated to be completely transparent to its investors and partly to its customers in order to give the investors, as its backbone, an honest look into their activities. in the case of innovative companies, for example, investors are not adequately informed about how and where their capitals are invested. Investors have to rely on the qualities and success of the past of those companies. This increases the chance to lose the confidence of its investors by each setback. These companies prefer to be semi-transparent to their customers to be successful, therefore they carry out business strategies in an closed and confidential environment.
Conclusion

The term transparency within architecture is far deeper and more extensive than expected at first sight. The term ‘transparency’ is taken literally on a daily basis to describe the material condition of a building or a building element.

However, it seems the phenomenal explanation of the term is also used in the design process, although not always consciously. Phenomenal transparency is applied in the concept stage, in which the basis for the design is made. At this stage, concept, that results from an ideal or vision, is translated into sequence of spaces into a readable building design.

Anticipated in the hypothesis, that individuals should limit transparency in their personal life in order to preserve privacy whereas institutions and companies with shared concerns should be completely transparent. Challenging the second part of this hypothesis, Behnisch Bundeshaus represents the desire for an ideal democracy, an illusion, one with perfect transparency. This illusion of perfect literal transparency is meant to prevent others from thinking that dark and secretive powers are operating there.

Transparency of business (social transparency) is an opportunity for corporations and other institutions as well as an obligation. However social transparency is not an obligation for individuals. Individuals have the right to withhold and protect their personal information. Humans would not be humans without being able to share secrets intimately with their beloved and trusted ones without uninvited supervision. These are the fundamentals of a free man.

The ideal residential building should enclose itself to obtain privacy and tranquility. In addition, it should provide the impression of openness at the same time. Important elements are the boundaries and transitions between the public and private areas, that serves the building and its users to preserve privacy.

Stretching the transition between public and private domain by applying multiple transparent or translucent layers takes the goals, desires and ideals seriously that are associated with connecting to the surrounding while maintaining privacy. The enclosure should make the building understandable so that people have an fade impression of the inner spaces but not knowing what activities are taking place. Providing freedom and tranquility to its residents.
Writing the paper gave me the motive to zoom deeper in the subject of personal and public spaces. By reading the books ‘De warme stad’ (T. Muller, 2002) and ‘Public and Private Spaces of the City’ (A. Madanipour, 2003), I started with an theoretical study of the personal spaces and the public spaces in the city. I have focused primarily on the personal space where people feel comfortable and relate it to the feeling of ‘HOME’.

The main aim now is to, through theoretical study, learn more about the needs of an individual in order to feel comfortable and secure in a space, the so called ‘personal space’.

The personal space can be divided into physical and non-physical space. For this research there will be mainly focused on the former, which is more relevant to the design of physical spaces.

According to Madanipour, a brief description of the nonphysical personal space would be ‘the invisible space around the body of a person’. A space that is used as interpersonal medium, an invisible protective mechanism that regulates privacy and interactions. It protects the mental state from influences and individuals from the public space.

“Personal space is defined as a small but invisible protective sphere or bubble that individuals maintain around them.” (A. Madanipour, 2003, p. 19)

The physical state usually refers to a dwelling, where people feel save an secure. It is an area where the non-physical personal space around the body expands to the physical limits(Figure 1.30). This physical domain is of a different scale but is also crucial for the personal protection in a society. It is the most private and personal space where a person can retreat and where personal interactions can take place. In this physical state of personal space the concept of territoriality is of major importance. This spatial behavior focuses on psychological control and personal protection. Guarding the borders of this private domain is again of major importance for the mood and well-being of the owner.

According to Madanipour, a city is made up of a complex composition of public and private domains. This dynamic composition may provide a wide range of conflicts in urban areas. This can affect the physical and non-physical personal space, which can lead to serious consequences. The elements
that influence these personal spaces are the private and public domains and the edges and transitions between them. It is essential to examine the links between these domains. And how it can influence the personal space. It is therefore very important to understand the public space as well.

The book “De warme stad” of Thaddeus Müller was the reason for me to approach the public domain and its experience in a positive way. The book is based on sociological studies that consider the public domain as negative. Unlike the book “Public and Private Spaces of the City’, Müller describes the public space of the city as a place of leisure and meeting new people. In recent decades, the change of the city is clearly visible, where the industrial city has been transformed into the city of entertainment, consumption. According to Müller, the public domain has become a place where there is positive engagement in form of various activities and users.

Based on the theoretical study, several criteria are drawn up, which a physical space must meet to create a comfortable and secure feeling. These criteria will be leading in design decisions and architectural solutions of this research. An intermediate space, for example, which could function as an intermediate space between the public and private domain. By adding functions that are less accessible, it automatically creates a logical intermediate step between both domains.

This intermediate space is also called “the intermediate space”, which consists of overlapping and blurring boundaries between public and private domains. It can be defined as a ‘conflict space’, where the boundaries of different domains search the conflict with each other. The intermediate space remains a difficult phenomenon, but people have to deal with it daily. This intermediate space, where boundaries of the public domain and the private domain intersect has a great influence on the perception, the user behavior and thus the understanding and functioning of the city. It is therefore of major importance to highlight the intermediate space on both the urban level as well as on the building level. This concept of blurring the boundary between different spaces, especially between the public and private spaces is of a great social support within the urban community.

“The public-private distinction has been a key organizing principle, shaping the physical space of cities and the social life of their citizens”

(Madanipour, 2003, p. 1)
2. URBAN ANALYSIS
2.00 An abstract map of Eindhoven, with an indication of the study area (Emmasingelkwadrant)
In addition to theoretical studies, I started simultaneously searching for a location. The choice for the location, with this topic, is very crucial for the development of this project. The second and third sub questions are related to the location, so finding a suitable location is very essential. A location that would be interesting for this research, is a large city where the public and private domain are conflicting.

The Book ‘Public and Private Spaces of the City’ and ‘De Warme Stad’ name several criteria for the location. Both books outline a certain image of the public space that has much influence on the personal space. A location surrounded by a busy public space has great potential for the conflict between the public and private domain.

From these books the following criteria are taken which the location for this project should meet.

- Big deindustrialised city
- Densely populated urban area
- Diverse public domain
- Room for improvement and public activities

Looking at these conditions, I have come to the conclusion that Eindhoven is a perfect city to study for this project. Because it meets all four conditions.

The area studied for this research will be located in the urban area of Eindhoven. Eindhoven is located in the southern province of North Brabant in the Netherlands (Figure 2.00).
As the fifth largest city in the Netherlands, Eindhoven forms an important node in the national road network and has good accessibility by train at national and international level. On the other hand, due to its eccentric location at national level, it is relatively far from Schiphol Airport in Amsterdam, which limits its accessibility by airways; since the local airport has a small number of direct connections to the large European cities.

The origin of Eindhoven’s industrial development dates back to the late nineteenth century. In the beginning of the twentieth century, the city went through a period of explosive industrial growth, mainly driven by a spinoff company, set up by Gerard Philips, which developed later into one of the largest Dutch multinational companies. Still today, Eindhoven is known in the Netherlands as Philips town. After the Second World War, Eindhoven gradually developed into the most important industrial centre of the Netherlands. In addition to Philips, Eindhoven also houses large companies such as DAF.

In the late twentieth century, deindustrialization caused great job losses in Eindhoven and its region. In the early nineties, both Philips and DAF went through a difficult period which led to a major reorganization. Due to a series of policies, by both public and private sector, the region gradually overcame its employment problems in the nineties and became the main node of the Dutch knowledge-based manufacturing industry. In 2004, the Eindhoven region was appointed national ‘Brainport’ by the Dutch government, being selected as one of four innovation regions to receive public investments to strengthen the Netherlands as a dynamic and competitive economy. (Fernández-Maldonado, 2010)
Figure 2.03  Public spaces and accessibility

- Public
- Semi-public
- Private

Legend: 1000m scale.
Figure 2.04 Concentric structures of Eindhoven
Figure 2.05  Transformation map of the built environment of Eindhoven between 1980 and 1995
Figure 2.06 Transformation map of the built environment of Eindhoven between 1995 and 2005.
Figure 2.07 Promoted characteristic image of Eindhoven
Compared to many other Dutch cities, with attractive and well-preserved historic city centre, Eindhoven has never been an important medieval city. Furthermore, the center was partially hit by airstrikes during the Second World War, which damaged and destroyed a number of the few historical buildings.

The Eindhoven is promoting a mixture of culture, leisure and retail in the city centre, to present Eindhoven as an innovative, design-oriented high-tech city. Therefore, Eindhoven as a city with an attractive heart has become a spearhead of the vision for Eindhoven’s development.

Due to these efforts, Eindhoven’s industrial image is gradually transforming. The shift toward design and creativity is helping in that direction. The spatial transformations of the last decade illustrate that movement, in which old industrial buildings are now accommodating functions related to culture and design. The Design Academy and the city library, are located in Philips’ former headquarters building (de Witte Dame) in the centre of Eindhoven. More important, the old factories and labs of Philips, which formerly were forbidden terrain for public, is becoming Eindhoven’s second heart. Due to large investments, the former Philips manufacturing estate ‘Strijp-S’ is becoming ‘the heart of creativity’ of Eindhoven. The regeneration of this area will transform it into a multifunctional complex with a strong cultural and design edge.(Fernández-Maldonado, 2010)
Figure 2.10 Overview of functions inside the ring of Eindhoven

- Stores
- Hospitality
- Public buildings

Scale: 1000m
The developments that will take place over the next few years in the centre of Eindhoven, are part of a larger socio-economic transition that has occurred in the rest of Eindhoven.

The shift towards design and creativity for the contemporary cities and particularly for Eindhoven, will be discussed further in this chapter. In the current ‘global playing field’, the quality of the area takes a central role in choosing a location of people and companies to settle. In general, cities with a high quality of life often also economically successful cities. A convenient image leads to a higher attractiveness of the city and region. Generally, investors and consumers are led by the image of a city, and therefore attractive cities can bind more money to themselves.

Aesthetic quality of a city can be seen as a catalyst for economic growth. Based on this reasoning many cities are trying to increase their attractiveness, in concrete terms, this means that city administrations proceed to invest in facilities regarding culture, sport, recreation, leisure, consuming, green facilities and accessibility.

Harvard Economist Glaeser (2000) mentions four criteria, which for a city in the contemporary time-spatial context are essential. The criteria are:

- Good public services (among other childcare, education and safety);
- A rich variety of goods and services (retail and hospitality, cultural facilities);
- An attractive physical environment (homes, living environment, architecture, landscaping);
- Fast transport connections (of goods, people and information).

Glaeser explicitly mentions the presence of cultural facilities and hospitality as being important for the city and its competitiveness compared to other cities. The increased emphasis in the last few decades on the quality of the living environment is the result of structural changes in the environment in which cities function. The visible developments over the past century, have affected the location behavior of people and companies and thus the role of cities in the economy.

These changes in the current West European economy and society have led to an economy and society that best could be described as post-industrial or post-modern.
Figure 2.13 Urban clusters of Eindhoven
A brief description of a cultural cluster will be given in this paragraph, in which the location for this project should fit. Mommaas (2004) describes a cultural cluster as follows:

“Mixtures of cultural functions and activities, from production to presentation and consumption and from theatre and the visual arts to pop music and the new media, are grouped together in a great variety of spatial forms. Projects may restrict themselves to standalone buildings or larger building complexes, or they may include entire quarters or networks of locations. Mostly, the projects are housed in former industrial complexes, but quite often they also imply the building of new sites. While some clustering strategies are restricted to genuine artistic/cultural activities, most of them also incorporate a great variety of leisure and/or entertainment elements: from bars, restaurants and cultural retail spaces to health and fitness complexes.”


In this quote, Mommaas provides a clear description of a cultural cluster. It means that a cultural cluster can consist of one building and of a complete district.

In the inner city of Eindhoven there are five well-known urban clusters, which are very characteristic of the image of Eindhoven (Figure 2.13). Eindhoven is rich in cultural and artistic events and activities. Some events and activities involve the whole (inner) city, such as the Glow and Dutch Design Week. Others generally take place in one of these urban clusters, such as music events at Strijp S and Philips Stadium.
Figure 2.17 Characteristic 'architecture' and 'urban clusters' of Eindhoven
These urban clusters are evenly distributed within the ring of Eindhoven. In the current situation, these clusters are divided into two groups; the eastern and western group. The University Campus and the train station are located in the east of the city centre and the Philips Stadium and Strijp S in the west. It is important that these clusters are easily accessible both on foot and by public transport. Even more important for the readability and image of the Eindhoven, is a cohesive element that connects these clusters.

The university campus, the train station and the city centre are connected by one or more public squares, which are enriched with impressive architecture and plenty of shops, bars and restaurants. The university campus and the train station are connected by Kennedy Square. Due to the positioning of the impressive buildings and the layout of the square there is a strong emphasis of the connection between these two areas. The connection between the train station and the city centre is realized by the merger of the two contiguous Station Square, 18-September Square. Here too, the layout of the squares and the positioning of the buildings have an important role in guiding the pedestrians.
Unlike the aforementioned clear connections, the connection between the city centre and the train station with Philips Stadium is less evident. Between the city centre and Philips Stadium is a former Philips industrial (Emmasingelkwadrant) located, which is surrounded by residential buildings and the Witte Dame and the Philips Light Tower, originally Philips’ light bulb factory and later the company headquarter. Due to this closed enclave and the current function of the inner courtyard (parking), the atmosphere has become very disconsolate. This discourages pedestrians to go through this area. Instead they take public transport, which has resulted into disconnecting the chain of the main characteristic urban clusters of eindhoven.
By transforming the Emmasingelkwadrant into a new cluster, the city centre and train station area will be connected with Philips stadium. This would result in linking the broken chain of the clusters within the ring of Eindhoven and a logical and continuous connection will be made between them. (Figure 2.22)

Based on the criteria of Glaeser and the traditional connecting approaches through squares in Eindhoven, efforts will be made to develop a new cultural cluster, at Emmasingelkwadrant, within the urban characteristics of Eindhoven.
The public domain is a space where people experience relaxation and euphoria. This new use of the city is in line with the change of socio-economic infrastructure of the urban environment, which is characterized by a gradual transition from working city to a city of entertainment, consumption and leisure. The image of this new city is the greater openness and the dominant character of the urban entertainment.

People create a mental map of the public world. Here they are gradually sketching the dimensions of the meaning of the public domain. Involvement in the public space appears to be determined by physical and social characteristics of the urban space. In Eindhoven, the appearance of streets, squares and buildings play a major role. A fundamental feature of the public domain is ‘audience role prominence’, which sets up the people as spectator of the urban scene, fulfilling the condition of public visibility necessary for a public space. (S. Tonnelat, 2010)

The public space can be viewed in a cooperative way as to bring people together. Visual commitment begins with finding a suitable place for watching and meeting people, such as a square, a terrace or a spot in a park. The public spaces have become an essential ingredient to the sustainability of Eindhoven for political, economic and social reasons.

During this analysis, I have come to discover that there is little green to be found inside the ring of Eindhoven. Public parks, for example, are in high demand in an urban environment. They embody the presence of nature in the city. Therefore, a new green public area would be a great asset for the inner city, which can offer respite to the people from the daily agitation.

So an expansion of Light square, towards the courtyard, in combination with public greenery and hospitality, will bring the area to life and more inviting to the public. Such a transformation would not only become a transition zone, but also a venue for entertainment and relaxation.
3. URBAN DESIGN
The resulting strategy of the analytical and theoretical approaches will be applied on the site-specific location. The starting point of the research which in the methodological point of view can be defined in terms of researching by design. The study area is located in the center of Eindhoven and south of the railway, called Emmasingelkwadrant. It is bounded by the Mathildelaan, Emmasingel, Willemstraat and Vonderweg. North of the railway is the area bounded by Fellenoord, Pastor Peter Street and the Dommel. The planning area includes the neighborhoods Fellenoord and Witte Dame.

At present state the study area is an enclave in the centre of Eindhoven, because this is hardly incorporated into the urban fabric of Eindhoven. The challenge is therefore to bring the area to fit into the patterns of surrounding areas, with streets, squares and sightlines. The buildings, both new and existing buildings characteristic that must be preserved, should also be integrated into these new patterns. The main connecting axes in the area will go from the old Philips factory on the Emmasingel and from 18th September Square to the Philips Stadium. These axes will mainly be introduce as boulevards. This way the area will become a stepping stone between the city center, Philips stadium and Strijp S.
Prior to the draft decisions, a step of major importance is to analyse and determine the traffic flows and its intensity between the train station, city centre and Philips stadium. This will be determinative for way of connecting these areas. (Figure 3.02)

To enhance the logic of routing from one area, to the other, the connecting strategy, as applied to Kennedy Square between the University campus and the train station, will be leading from the beginning of the design process. Hereby the square is used as an intermediary element in connecting the two different areas.

Simultaneously this connection is enhanced by making an incision in line with the orientation of the 18 September square and the buildings adjacent thereto. (Figure 3.03) Due to that, the extension from the eighties along Mathildeelaan (Figure 1980-1995) and the small buildings in the courtyard will be demolished, which leads to a transformation of the closed character of Emmasingelkwadrant to a more open and natural atmosphere. (Figure 3.04)
3. URBAN ANALYSIS

Figure 3.07 Abstract layout siteplan

Figure 3.08 Intensity flow of public activities
The main theme of this project is based on the relation and transition between public and private domains. Therefore, a gradual transition is chosen between the ‘crowded’ city centre and the ‘less crowded’ Philips village and stadium. This has been realized by means of the organization and program of the courtyard.

The concept of this masterplan is based on the operation of shopping malls and passages. Such as the operation of a passage, the buildings are facing the courtyard. Transparent plinths and central entrance features the look of the buildings.

The lack of social cohesion is generated by the operation of this location. The lack of transparency and the lack of facilities underlie the ‘colorless’ atmosphere. Because the different types of traffic, parking spaces and industrial building masses intersect and there are few obvious walking areas, it is a very confusing and cluttered space. Specifically marked footpaths, could significantly improve the operation of the area, as well as the social aspect. By creating clear walkways, the scattered pedestrian flows between the city centre and Philips stadium will be bundled. A funnel effect would to bring people closer to each other. Car-free route in the form of a runner with high quality green, creates more involvement among the people.

By making the public spaces interact with the surrounding architecture, the connection and transition between the public and private domain can be improved significantly. The perception of the social cohesion and interaction has great influence on my approach for the location. By creating gradual and soft transitions between the different spaces, both public and private domains will flourish, which will be characterized by a natural and warm atmosphere.

Both the strategy and the guidelines resulted in the masterplan shown above (fig 3.09). In the new plan, a number of building sites will be included. Generally, the aim is to position the building blocks within these fields so that they meet the outside area, while on the inside, between the walkways, public squares and green areas with cultural and public functions are incorporated.
The Emmasingelkwadrant will fuse culture and nature into a vital social network in the centre of Eindhoven. Rejecting the industrial appearance of the industrial Philips buildings, the park extends the surrounding urban fabric through a three-dimensional interconnections across the site. The flowing urban lines support both the cultural activities, conjoining the historical identity with the contemporary. The network of the pedestrian paths will crisscross the site, linking the city centre and the Philips stadium on all sides to each other.

The wide variety of the shops, restaurants and terraces makes the site interesting livable experience when moving through it. The variety of functions in relationship with the open and green street-scape make the activity level changing over the different parts of the park and interesting moving through.

As an extension of Lichtplein, a three meter lowered square, is incorporated in the middle of the plan. Above four footbridges connect the north and south sides of the square. These bridges meet in the middle of the square and form a kind of stage with an overview of the whole area. The square is connected to the street level by grandstand stairways, one can enjoy the natural green surrounding.

The residential buildings will be about six to eight stories high, with occasional high-rise. This way more balance will be provided to the residential towers “the Regent and the Admirant”, which also strengthens ‘downtown’ character of this area.

Figure 3.10 Program of the public domain, Emmasingelkwadrant
Figure 3.12 Profile section Emmasingelkwadrant (A-A)

Figure 3.12 Profile section Emmasingelkwadrant (B-B)
Figure 3.14 Impression Light square
Figure 3.16 Impression internal park
Figure 3.17 Physical Model of the masterplan (North)

Figure 3.18 Physical Model of the masterplan (South)
Figure 3.19 Physical Model of the masterplan (East)
4. ARCHITECTURAL DESIGN
4. ARCHITECTURAL DESIGN

The starting point of this study which in the methodological point of view can be defined as “researching by design”, in which the merged results and design decisions have been continuously related to the main theme.

In the previous chapter, the main theme, ‘the relations and gradual transitions between public and private spaces’, has been implemented in the masterplan. The starting point for the main shape of the new buildings is the output emerged from the analysis and design on urban level (chapter 2 and 3) and the mass studies in the physical model of the context.

The current chapter will zoom in on the studied area, at the building level. For the continuation of the research a residential tower building has been chosen, on which the main theme will be tested and applied to. This building is shown in red in the context of the masterplan in Figure 4.01.

To start, the design steps of the main shape of this building will be presented in the following pages. These steps are set out in a grid and ordered according to the order undertaken design order during the mass study. Next, the draft translation of the theme, applied to this building will be presented. Then the architectural characteristics of the neighboring buildings will be analyzed through a typological analysis.

The facade characteristics of these buildings will be used in the design in order to strengthen the interaction and relationship of the existing buildings with the new buildings within the context.

In order to maintain the overview of the streetscape, the façades will be analyzed per street instead of each building separately. This way the rules and exceptions of the facades will be mapped in a clear overview.

Subsequently a brief study of daylight will be addressed, which will be determinative for the main layout of the building.

Finally the final design will be presented and explained as the end result of this thesis.

Figure 4.01  Tower building in masterplan
4.1 MASS STUDY

Figure 4.02  Step 1: Incision to guide the passage to Philips Stadium

Figure 4.03  Step 2: Highrise as a reaction to the existing residential towers

Figure 4.04 Step 3: Withdrawing facade to create a courtyard facing the park

Figure 4.05  Step 4: Extension to guide the routing and clarifying courtyard

Figure 4.06 Step 5: Creating threshold to claim the courtyard to the building

Figure 4.07  Step 6: Distinguish the plinth and the upperfloors to clarify the functions
A translation of the intermediate space, as discussed in the first chapter of this thesis, has been applied to the main shape of the tower building (Figure 4.08). The drawing shows a schematic division of the transition between the public and private domain, based on the accessibility of the space. The various shades of gray represent the level of accessibility of each space. The darker the shade, the less accessible to the spaces will be.

*Figure 4.08 Schematic division based on the accessibility on the building level*
The previous chapters cover the transformations of the urban identity and other structures that make up the built environment inside the ring of Eindhoven. At the local scale, it becomes clear that the urban layout and the buildings are related to particular historical highlights and socio-cultural forms and functions, which express a variation of historical and contemporary architecture. Despite the diversity of the different architecture styles from the 19th, 20th and 21st century, the origin of the common characteristics are still possible to identify.

The third sub-question in the introduction of this thesis ushered; How to create a balanced interaction between the public urban environment and the semi-public and social spaces in the building? This chapter mainly deals with the architectural characteristics of the facades of the surrounding buildings, in order to use them as reference and as a starting point in the design process. This will strengthen the cohesion between the existing buildings and the new buildings, which will lead to a clear unity within the urban context.
4.3 TYPOLOGICAL ANALYSIS

Figure 4.13 Drawing of the south facade of Regentkwartier along Willemstraat

Facade Regentkwartier, South

Figure 4.14 Willemstraat, Regentkwartier

Facade Structure

Figure 4.15 Willemstraat, Regentkwartier
4.3 TYPOLOGICAL ANALYSIS

Facade Structure

Figure 4.18  Drawing of the North facade of the Light Tower and Art Hotel along Mathildelaan

Figure 4.19  Mathildelaan, Light Tower & Art Hotel

Figure 4.20  Mathildelaan, Light Tower & Art Hotel
Vertical modular grid 7.2m

Horizontal modular grid 4.5m

Modular grid 4.5m x 7.2m

Figure 4.21 Extension facade grid historical buildings
4.3 TYPOLOGICAL ANALYSIS

Vertical modular grid 7.2m

Horizontal modular grid 3.0m

Modular grid 3.0m x 7.2m

Figure 4.22 Extension facade grid contemporary buildings
Figure 4.23  North façade, along Mathildelaan
The white concrete façade with repetitive windows symbolize the architecture of the former Philips buildings in Eindhoven. In view of new functions (residential), the architects of the buildings from the 21st century, have tried to bring as much consensus as possible in the layout of façades. This is achieved by a basic window type which takes on different proportions according to the functions. This means in the case of the ground floor the openings are derived from the relationship with the public space of the street.

The plinths play an important role as a cohesive element that are presented prominently in all buildings towards the street. For example, most of the buildings have a more transparent and more accessible (commercial) plinth. They differ from the upper floors in height and in the proportion of the open and blind surfaces. The repetitive grid of the facades are adopted, in broad outline, from the former Philips buildings; Witte Dame and Light Tower.

It can be concluded that the architectural style of the former Philips Buildings have been the starting point for the contemporary buildings and the uniform character of the whole ensemble makes it possible to perceive the system of buildings as a unit.

The main structure of the facades of the analysed buildings can be divided into three horizontal layers, namely: the plinth, the middle floors and the top floor(s). The windows of the stairways are arranged vertically, which gives an indication of the elevation points in the building. These vertical lines connect the horizontal layers and bring balance in the layout of the façade.

A role of major importance from this point of view is that of the plinths, which allows to perceive the whole ensemble as coherent and can be seen as the intermediate spaces between the public and private domain.
TYPE A

Gallery principle

Floorplan

Cross section

TYPE B

Corridor principle

Floorplan

Cross section

Figure 4.26 Analysis main division based on daylighting
The difference between natural and artificial light is the positive effects of natural light on the mood and performance of people. Natural light brings a movement with it, whereby artificial light does not have the same effect. The weather and day cycle together with daylight have much influence on the state of the mind. Daylight varies in color temperature and light intensity during the day. In the morning, the color is cooler than during the afternoon. This is an aspect that artificial light does not have. The features of light in a space affect both the atmosphere of that space and experience of its size. Adjusting light on a particular activity reinforces the perception and the mood or satisfaction of the attendees.

The following boundary conditions gives an insight how to deal with light: sleep and facility areas, preferably on the north and the living areas preferably on the south, east and west. Here direct sunlight, especially in the spring, autumn and winter will be experienced as pleasant. In the summer, heat will be transported through the inner spaces to the north or just excluded by shading systems.

The vision for the design starts with using the natural light at the base and artificial light should only serve to optimize and increase comfort. The design must be good at the basics, while technology should create the added value and should not constitute a solution to an unsolved problem.

Within the design, an attempt is made to make optimum use of natural light. Artificial light will hereby form a support, in particular at those moments when there is not enough natural light. Therefore the north-south orientation of the building has been determinative for the main layout of the building.

The lower part will take fully advantage of natural light because of the small depth of 15 meter and the choice for a gallery instead of a corridor. By positioning the circulation areas on the outside, the apartments will have multiple façades. The centrally located core in the tower prevents deep and dark apartments. In combination with multiple façades, will result in bright and high quality spaces.
The design of this tower building of 92 meters high, consisting of a 30-storey tower with 75 large apartments and 26 Maisonettes in the lower part. Together the design of this building forms a spatial unit within the new layout of the Emmasingelkwadrant. The tower stands as an extension of the Light Tower on a prominent spot in front of the Philips stadium. The plinth of the building accommodate semi-public functions that form a logical transition between the public urban area and the apartments on the upper floors. The ground and first floor of the low rise accommodate a combination of an elementary school, kindergarten and a childcare outside school hours. In addition, the ground floor and the first four floors of the tower are accommodated with commercial spaces and forms a logical transition between the existing retail and commercial spaces in the city center area and the Philips stadium.

Figure 4.29 Schematic layout of the program
Figure 4.30 South façade
Figure 4.34 Plan second floor

Figure 4.35 Plan third floor
Figure 4.36 East façade

Figure 4.37 Cross section
4.5 FINAL DESIGN

Figure 4.38 Plan fourth floor

Figure 4.39 Plan fifth to thirtieth floor
Figure 4.41 Plan ground floor: Kinder garden
4.5 FINAL DESIGN
Figure 4.42 Plan first floor: elementary school
Figure 4.43 Plan third floor: entrance floor masionnettes
Figure 4.44  Access and circulation plinth

Figure 4.45  Access and circulation dwellings
The building is primarily accessible from the north, along Mathildelaan. The ground floor is lifted half a meter from the street level, which can be bridged by stairs and ramps. This difference in height serves as an indication of the reduction of the accessibility.

At the park side, in the south, this transition is extended and divided into several intermediate steps. The difference in height from to the street level constitutes the first step between the public and private domain. This is reinforced by the 30 meter deep schoolyard and the low columns, which form a wall between the schoolyard and street. Adjacent to the school, there is on the ground floor and the first floor, a large shared space inside serves as a residence and playground for the children. Then finally there are the classrooms that are least accessible within the school building.

The appartement in the tower have one main entrance. This is accessible from the north facade, along the Mathildelaan. The Maisonettes, on the other hand, can be reached through two entrances. The main entrance is centrally located on the corner of the east facade and the secondary entrance is like most entrances on the north facade. Both entrances lead to the only gallery on the third floor, which functions as an arcade where the neighbours will meet.

Both entrances and the emergency exit on the south facade can be used by the elementary school as an exit in case of emergency.
Figure 4.46 Access and circulation maisonettes
Figure 4.47 Plan maisonettes

Maisonette type 1

Maisonette type 2
Figure 4.48 Access and circulation maisonettes
Figure 4.49 Plan maisonnettes

Maisonette type 3
Figure 4.50 Plan tower appartments

Appartment type 1

5m
Appartment type 2

Figure 4.51 Plan tower apartments
Wall construction
3 mm aluminium (bended)
Damp proof membrane
80 mm insulation

Aluminium sliding window
Solar control insulated double glazing

Interior finishing
140 x 140 mm steel column
2x 18 mm fireproof boards
12 mm plywood painted

Figure 4.53 Technical detail façade (horizontal)
Aluminium sliding doors
Solar control insulated double glazing
Infill
3 mm aluminium (bended)
Steel frame, tubes 2x30x30mm
Damp proof membrane
80 mm insulation

Parapet
3 mm aluminium (bended)
Timber frame
18 mm plywood

Floor construction
15 mm flooring
50 mm cement screed
230 mm structural in situ
50 mm filigree slab

Roof construction
Ballast layer gravel
EPDM roofing
Tapered insulation
120mm insulation (EPS)
200 mm structural in situ
50 mm filigree slab

Infill
3 mm aluminium (bended)
Steel frame, tubes 2x30x30mm
Damp proof membrane
80 mm insulation

Figure 4.54 Technical detail façade (vertical)
Figure 4.55 3D impression eaves
Figure 4.56: Impression tower building
5. CONCLUSION
Before answering the main question, an attempt will be done to respond to the sub-questions in order to provide more understanding of the topic.

*Can a dwelling, by needs of architecture, meet the desire of individuals concerning the personal/private space?*

The most important fact is that every person is different, such as social, cultural and mental differences, but also differences as age and sex. All kinds of factors affect the perception of space and the need for privacy and intimacy. These are the factors which the ‘home’ sense of a person is based on. Because of the differences per person, flexibility is one of the key points in architecture that must be taken into account. By this I mean the flexibility of the environment of the building, of the dwelling and of the architect. The flexibility of the building relates to the changes in the internal layout of the building, for example, in case of users or changes of functions of the building. The flexibility of the dwelling is important, because it is the private domain of a person. This directly concerns the experience and the well-being of that person. The flexibility of an architect is also important during the design process. I will come back to this later.

Flexibility is very important to create a pleasant dwelling based on privacy, intimacy and succeeding of the ‘home’ feeling. Because each person has different needs and wishes, it is of major importance that a dwelling is adaptable to the needs of the resident. Also in case of new residents, the dwelling should be able to meet the needs of the new resident. The more flexible the dwelling, the better it can be arranged by the residents. With a flexible internal layout, the resident can determine the organization of the space for specific activities. This strengthens the home feeling. It ensures a high degree of control, both in terms of flexibility, visibility and thus relates to the privacy and feeling of security. It is therefore up to the architect to take the flexibility into account during the design process. The freedom layout offers, is the aspect which residents can use in order to make it personal.

In addition, the sensory experience is a key component to ensure the home feeling. It may relate to light, color, temperature, or even the smell. The organization of the furniture's and equipment is of great importance for the experience of the space. Here, the architect has little influence. But how can architecture play a role in determining the privacy and intimacy feeling of a ‘home’? The architect has the ability to affect the sensory effect of spaciousness, visibility and light. Thus, the dimensions of a space have great influence on the perception of that space. The shape and visibility to the outside and to the other parts of the home determine the home feeling. Invading light is also an important aspect that can be determined by the architect during the design process. Windows are also determinative for the sensitivity of the privacy of a home. The architect is responsible for both the adaptability and experience of the spaces of a dwelling. The privacy and intimacy feeling of a home is the basis, determined by the architect and can be enhanced to meet the needs of the resident.

*Can the addition of semi-public function(s) to a residential building, help to gradually make transitions from public to private?*

The second sub-question is dedicated to residential building with a public plinth, and thus the concept of my graduation project. The question focuses on the connection of the public and private sectors through public functions. When answering this question, the conditions of the existing domains are very important. Every situation is different and requires a different approach.

The transition between public and private is related to the different characters of the domains. In order to regulate this transition process, the sequence of the amenity spaces must be examined accurately. In order to control this process, a certain form of regulation is required.

The program plays a major role in this process through the appearance of the space and the activities in this space. A particular choice in the character of a room can affect people in their choice to enter the subsequent domain. There are several ways to achieve this. In this project, the choice is made to have social control to serve as a regulatory tool. The transition from a public space to a semi-public space requires a threshold as an indication of the reduction of the accessibility and to allow visitors to experience it as more private. Partly due to the program, it is made possible to flow out the transition to the more private areas in several intermediate steps. The gallery, as the main street in the building ensures that every person going through it, can be viewed by residents.
5. CONCLUSION

and by people on from the street. Because of the school and offices, the plinth of the building will be crowded throughout the day. There is thus an environment with a ‘social’ control, giving it a certain character and creates a threshold. It also reflects the atmosphere of the building. The public activities taking place in the park, gives the building a positive, warm and cozy atmosphere. It therefore has a regulatory function and determines the perception, mood and behavior of the residents and visitors.

In general, an intermediate space can be a solution to achieve a gradual transition between the public and private domain. This (intermediate) space is, in this study, a medium which regulates the relationship and interaction between the public and private domain, and maintains it.

The program, as one of the connecting elements, has major influence on the way this connection functions. Along with architectural choices it creates the perception of the transition process. How a person experiences the building has also to do with the activities that take place the intermediate space. Here the program determinative, but the use of the spaces may even have a greater influence. Due to a positive influence on the transition process, not only the perception can be promoted, but also the operation of the building. A gradual transition, in both the perception and function of space, can provide major benefits to the operation of the building and to the mood of the user. To lead this in the right direction is a form of regulation required. This could be achieved through the experience of spaces in some way or by creating clear divisions. The transition of domains must be adjusted to the current state of the existing public and private spaces. Therefore, it is important, in any situation, to apply a correct form of regulation. In addition to the proper functioning of the building, it also ensures proper perception of the transition between the public and private domain.

How to create a balanced interaction between the public urban area and the social spaces in the building?

From the beginning of the design process, the architect should always consider the transitions and interactions of a building and its surroundings. This question focuses on the interaction between the internal and external spaces and the surroundings. The success of this interaction will be determined by the perception. The goal is to be able to answer this sub question by means of realizing a functioning connection and transition.

To create a balanced interaction, the current operation of the surrounding public area should be examined carefully. Very important is whether the current operation should be maintained, transformed or just affected. The method of anticipating determines how this interaction will develop. As for the current state of the Emmasingelkwadrant, it neither fits in the cityscape nor in the future plans of Eindhoven. The lack of appearance and public programs shows that it requires attention in order to fit in the cityscape. The public domain is facing problems in social aspects and therefore it does not function optimally. The vacancy of several buildings and therefore the lack of social control have great influence on the evening or night situation of the area. Because the public space does not work optimally, the social aspect is missing. For a balanced interaction and thus creating connection, the goal is to focus on the social aspect. This will affect the experience and safety of both the public and private domain. This requires the definition of cultural spaces, as interpreted by Mommaas (chapter 2.4), as a starting point.

The plan is to make the building communicate with its environment and thus address the problems of the public space. The surrounding public space and a well-functioning plinth should work together to ensure the success of the plan. The appearance of a building determines the interpretation of that building. This appearance does not directly affect the behavior of a person, but it does affect the perception of the public space. This perception is influenced by the existing buildings and activities in that area. Therefore, it is essential to look at the intended purpose for the appearance of the buildings in their context. It may be an aesthetic purpose to trigger people, for example. Equally important is to make clear and logic connections with the surroundings. The facade of a building and the public space should work together for an enjoyable experience. That is crucial for the success of the plans for Emmasingelkwadrant.

Emmasingelkwadrant is characterized as a boring and impersonal area in the center of Eindhoven. It still has the character of the original function, namely industry. This character is not transformed by the years, like the rest of Eindhoven. It is therefore necessary that this aspect should be transformed or
influenced. Operations on urban and building level, in combination with the program, can influence the operation and thus the perception of the public domain positively.

Clarity of the public space and the connection with the buildings also have a major impact on perception and sense of security. The actual connection of the building with the environment takes place on the ground floor. The plinth is where the exterior of a building physically touches the surrounding area. It is the only accessible part of the exterior for users of public space. This makes the plinth essential to the operation of the building in its context.

A good connection and transition will result in better communication of the building and its surroundings. The program and the plinth should cooperate strategically in order to make the connection and transition function properly. The functions on the ground floor and the facade of the building are of great importance for the perception of the streetscape. The facade is an important medium for translating and distinguishing the functions. If the inner space communicates well with the outside, it will strengthens the interaction and operation of the plinth. Both the exterior and the interior are determinative for the interaction of the functions.

Generally, it is not possible to influence the operation of the public space by means of the facade image alone. To also achieve a good connection or transition, the transformation of the public space is required in almost all cases. The same goes for the vacant office. At Emmasingelkwadrant, the problems of public space are too problematic to just improve the public domain with the exterior of the building. Thus, changes in the environment are needed in order to improve, for example, the traffic situations. Adapting the public space gave rise to devise a plan that can solve multiple problems. Excluding automobile was the first step that would benefit the social aspect. This could also be applied to enhance the operation of the building internally as well as with its surroundings. This concept does not only solves problems, it is also crucial for the connection and interaction of the semi-public spaces in the building and the public space. Realizing the transition from the center area to the Philips stadium through 'sight lines, public programs and the design of the buildings', ensures clarity and unity in the area.

Therefore, the purpose the architect or urban designer has in mind with these three elements, is of great importance. To create a balanced connection all components must work together and form a unity. It should be kept in mind that the façade is the medium between interior of the building and the public domain. It provides a logical expression and interaction of the building with the environment. In short, mainly well-considered design where the program, façade and the public space are closely aligned with each other can result in a balanced interaction and well-functioning building.
Through the development of this thesis, enough knowledge is gained to answer the main research question.

Each location has its own variables. Therefore, it is necessary to create specific connections and transitions that fit the specific location. Accurate observations and analyzes are required in order to understand the operation of the different domains. This contributes to anticipate the problems in a correct way. Due to this, the intended goals are of major importance in solving these problems. Therefore, it is very important to make a good estimate for the goals that relate to the building, the surrounding area and the connection between these two. Specifying the main goal should be the starting point of the research, “what do you intend to achieve with these domains?”. The situation of the public domain may remain the same or be changed. The private domain of the building however, is a variable where the user has control. These aspects determine how the connection and transition should be implemented to achieve the intended goals. To come to an optimal connection and transition between the public and private domain, it is important to take the following recommendations into consideration during the design process.

The link between the public and private domains is determinative for the perception of both domains. This has a great influence on the operation of the building. An intermediate area with a regulating effect, is necessary in order to connect these domains. This intermediate area is applicable in various ways. It is again very important to focus on the main purpose.

In order to create a residential building with optimum proportions and transition between the public and private domain, the intermediate area of the building must provide a gradual transition between the domains. The intermediary operation of this area should focus on the connection and perception of public and private. The program is determinative for the success of this operation. It affects the regulating effect and determines the internal operation of the building. Due to the adaption of the intermediate space, the program and the internal layout to the surrounding, a balanced interaction between the public and private domain can be achieved and maintained by the regulating element.

To create a gradual transition between the public and private domain, the adjacent area between these domains must be studied. The confrontation and mutual relation of the domains depend on this specific area. This intermediate area determines the interaction and transition between the public and private domain. In order to create a gradual transition, both the operation and perception of these domains have to flow into one another. Therefore, the intermediate area is divided into different subdomains: semi-public and social domains. By lifting the ground floor half a meter from the street level, an attempt is made to point out the former subdomain. This threshold serves as an indication for the reduction of accessibility towards the more private spaces and provides a gradual transition between the two domains.

The social domain has a more private character, which is mainly accessible by the users and visitors of the building. A proper link and interaction of the domains contributes to a clear sequence in the building. The intermediate area is of great influence on the perception of the sequence, which also ensures the gradual transition. Herein the different domains flow into one another, promoting the perception of the transition process. Architecture has a major role in this. The layout and the perception of the domains determine the influences on the users and visitors. By creating a smooth transition, which can affect the behavior of the user and thereby determine the operation of the sequence.

To create an effective gradual transition, it takes more than just an intermediate area. Creating a gradual transition requires a proper combination of several aspects such as the interior, the exterior and the surrounding area. The design of the façade functions as an connecting element between the interior and the surrounding area. Both the transparent façade elements and open spaces and legibility of the building (the literal and phenomenal transparency as defined by Rowe and Slutzky), should constitute a clear communication between the internal programs and the activities in the public domain. A proper interaction and transition between the public and private domain can only be achieved by making the well-studied design decisions. Through architecture the interior, exterior and the surrounding area should be accurately aligned in order to allow the building to function optimally in the field of gradual transition between the public and private domain.
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