Regeneration of the Hamerstraat area in Amsterdam
- A multidisciplinary approach -

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1. Introduction

1.1 Why regenerating the Hamerstraat area?

Because of the international transformation of a production economy into a knowledge economy, industrial areas all over the world tend to become deprived and marginalized. These prominent inner city locations, however, have several inherent qualities, and there is the potential to keep intact some of its original buildings. An excellent example is the area along the water side in Amsterdam-North, more particularly the Hamerstraat area, where new purposes had to be defined for its original industrial functions. Actual reports show (Aardse, et al., 2004) that the area has lots of qualities, and its regeneration thus opens a dialogue between its present state and its future possibilities. In this train of thought, all along the IJ shore recent developments are taking place. Areas with new identities are arising, varying from housing, to more mixed settings. The first public programs are crossing the river, but despite this new focus on Amsterdam-North, the absence of a bridge emphasizes its self-sustaining character over the years. The coming of the North-South line places the area in a new perspective. In recent visions (Gemeente Amsterdam, 2010a, 2010b), the transformation from an industrial area to a working-and-living area was recommended. More elaborate functions could make the area more vivid. However, it can be questioned how a durable working-and-living area can be generated that improves and utilizes the original qualities of the area and its surroundings.

1.2 Towards a multidisciplinary approach

In order to answer this question, I made an attempt to follow a multidisciplinary approach, integrating an urban and an architectural design approach. For a long time in the twentieth century, the relation between urbanism and architecture was the following (Meyer, 2006). To begin with, there was the municipality debating and studying an area. Then, an urban designer came in to make a design for the location to be approved by the municipality. Finally, the architects took on the wheel and started to make designs in the established framework so that it became ready for its use. The last ten years of the twentieth century the relation between these actors became much more complex. How complex this may be in the end. In urban design, there will still be certain rules that the buildings should follow. By combining urban design and architectural design, I made an attempt to accomplish my goals and utilize the different disciplinary...
possibilities. The concepts identity, accessibility and durability played a leading role throughout my research. The emphasis in the urban design was on the structuring of the networks, whereas the architectural design focused more on the activation of the area. By using this regeneration project as an example, my graduation project will give insight in the considerations of how to regenerate old industrial areas into vivid durable communities. Because the project concerns many scales, it will at the same time give an insight in the interaction between architecture and urbanism.

My design of ‘The Hamer’ is aimed at the improvement of the qualities that can be made in the transformation of an industrial area into a mixed working living area. The different actors are: the owners of the land and its properties, the municipality and its responsibility for the public space, the current inhabitants, and of course the possible new inhabitants. In this transformation, I tried to attribute the Hamerstraat area a prominent place on the map of Amsterdam and to provide it with abundant values for the area and its close surroundings by taking a multidisciplinary perspective, integrating insights from architecture and urbanism. In my project, I started out with a pilot study on the location in order to arrive at a well-articulated problem definition. This resulted in the idea to regenerate the old industrial area of the Hamerstraat into a work living community. As a next step, I conducted a problem analysis to define basic principles which would enable me to translate the optimal transformation of the Hamerstraat area into a proposal for urban design and another one for architectural design. By continuously formulating and testing hypotheses, I tried to come up with the design of the region that would give the most suitable answer to the analysis. The design of the Hamer is directed in the first place to improve the accessibility of the whole area. In my plan for urban design, the East-West connections string together the different neighborhoods and the park whereas the North-South connections make the waterfront accessible. The strip can be seen as a place where public programs can be implemented while taking into account the historical morphological structures and monumental buildings and give them new meaning. In this way it integrates the existing industries with possible new developments on the waterfront. My plan for architectural design resulted in the construction of a ROC Plaza with opportunities for student housing and public facilities while focusing on the transformation of urban morphology and changes in building typology.

Figure 1.2 The Hamer can earn a prominent place on the map of Amsterdam. By creating a central strip that will structure future developments, this will provide a bridge between existing industry and waterfront developments, and the surrounding neighborhoods. As first building on this central strip, the ROC Plaza with student housing will function as a catalyst.
1.3 Outline of this thesis

This multidisciplinary thesis project will not only shed light on the considerations of how to regenerate an old industrial area into a working living community. It will also provide insight into the pollination between architecture and urbanism that becomes evident in such regeneration processes. In Chapter 2, the focus is on the urban design approach which I followed to regenerate the Hamerstraat area into a working living area. I will go into the analysis of the problem, the design and strategy being followed, and the evaluation and conclusion from this approach. In Chapter 3, the architectural design approach will be focused on. Again, attention will be given to the analysis of the problem, the design and strategy which I followed and my reflection and conclusion. In the final Chapter 4, the results of the present thesis will be discussed and final conclusions will be drawn.

2. Urban design approach

Within the urban design approach, the composition of the city plan can be seen as the essence (Heeling, 2002). Although the ultimate result of an urban design or image can change when realized, the city plan will not change. Even when buildings are renewed, the city plan will often stay the same. A city plan is called strong when it can accommodate changes over the years. A nice example is the city plan of Manhattan that was made in 1811. Two hundred years later, this plan is almost the same while the image of the city has been changed completely. Urbanism creates conditions for urban land use - often for the long term. When a plan once is established, with the borderline between public and private as most important aspects, it will usually be continued for a long time. In case of a good design this does not need to be a problem, since the composition of the public space and private plots can accommodate the future urban life. The accomplished plan is in most cases anchored in the daily use of the city and the jurisdictional system of society. A strong city plan is the essence of durable urbanism. To contribute to the field of knowledge, research by design is important: the systematic investigation of the constituent parts (Heeling, 2002). It is partly about using existing typologies and composition principals, and partly about the development of an own vocabulary. For the discipline it is important that the designer can name the typologies and composition principles that are built on a tradition (Meyer, 2006). Moreover, the urban regeneration studio should also be aimed at understanding the social developments in relation to the physical and spatial composition of the city. There is a variation of processes and actors that define the context about the city and its qualities, on the larger scale and on its composition in parts.

To do right to the relationship in my project between research and design, I made an attempt to discuss the design in a rational way in relation to the established theoretical field of knowledge. At the same time, however, I tried to add some new knowledge to the existing body of knowledge in a creative way. I started out with an analysis of the existing area and the problem. Then I used aspects of urban design to generate a hypothesis in order to get a better insight in the problem of the area. As a next step, my design was aimed at the improvement of the qualities that can be made in the transformation of an industrial to a mixed working living area. The different actors are the inhabitants of the surrounding neighborhoods the owners of the land, the municipality and its responsibility for the public space, and of course the possible new inhabitants of the Hamer. In this transformation I tried to put the Hamerstraat area on the map of Amsterdam and let it have abundant value for its close surroundings. For my urban design and analysis, I used an approach in layers: the existing urban structures, the network of public space, and the architectural constructions and their rules. With this toolkit, I tried to make the optimal design that respects best all of these layers. Then I developed a strategy to develop the area in such a way that there is sufficient structure for the future as well enough flexibility in the long term. This was followed by an evaluation of the former steps in perspective of a final conclusion.
2.1 Analysis

In my problem analysis, there are three points of focus: (1) the meaning of the identity by the transformation of the area, (2) the improvement of the accessibility and (3) the provision of enough structure for a long-term durable future. The Hamer is an industrial area surrounded by garden villages that change from heavy industry to a mixed use working-living area. The strategy is to activate and structure these developments through a central strip with architectural constructions and in this sense increase the accessibility. The opportunities of the waterfront may transform the identity of the area and can be used to give more quality to the area while providing new meaning to some historical characteristics.

If we consider the identity of the area there are three important elements. Firstly, the area consists of reclaimed land and in the nineteenth century it engaged its industrial function surrounded by garden villages for the workers. Secondly, the original structures that are still appreciable, like the former canal structure and some characteristic industrial buildings. Thirdly, the water with its prominent location along the IJ is important for the identity of the area. In their report about the cultural and historical effects of the area, Aardse, et al. (2004) explain the rise of Hamerstraat area. The area east of the spit Volewijk had been a creek for centuries when the municipality of Amsterdam bought this piece of land in 1853. The municipality wanted to use it for the storage of sludge gathered in the dredging of the route in the IJ. In the nineteenth century the accessibility of the harbor was a major point of attention. First, the North-Holland Canal was built in 1826. And second, they started with the construction of the much larger North-Sea Canal. Earlier plans for this canal were not possible because of technical problems with incidental breaks through the dunes. In 1965, the authorities decided to make a connection between the North-Sea, Amsterdam and the inlands. The development of this canal came under the wings of the Amsterdam Canal Company. They did not so much dig out the canals but rather reclaim parts of the IJ while leaving the route of the North-Sea canal open. The Orange locks at the beginning of the IJ and the North-Sea locks near IJmuiden made the IJ tide-free from Schellingwoude to the North Sea. This made it possible to establish the Northern, Eastern and Western dock islands. Those islands were of major importance for the trade position of Amsterdam. From then on, the IJ eastwards of the Orange locks formally was baptized to the closed IJ, which because of its popularly is still called the IJ. In 1876 the North-Sea canal was finished and the newly reclaimed land was publicly auctioned.

The Hamerstraat area has been an industrial area where the cargo of the Amsterdam harbor was produced. The neighborhoods surrounding were developed as garden villages. There are small houses with the typology of the garden city that has been the place where the workers lived. This is one of the reasons that Amsterdam North still has a self-sustaining character. After 1870, the first developments north of the IJ were initiated and Willem III laid the first hands on the Orange locks. In this time the municipal boundaries were established, which meant that the area south of the Waterland Sea Dike became Amsterdam’s soil. Yet, it took the municipality till 1906 to finish a zoning plan for the Nieuwendammerham. This plan meant that the other side of the IJ was organized as an industrial area with harbor basins, such as the Motor- and Hamer Canal and the East-West connection of the Johan van Hasselt Canal. In the following years, the strip directly along the IJ was indeed engaged by industries. More inland though, along the Noordholland Canal, there was an area designated for housing. This was following a plan out of 1915, in response to the serious housing shortage of that time. This would lead to a unique series of garden villages in Amsterdam North. The industrial and residential areas were separated by the Meeuwenlaan. The soil of the Nieuwendammerham was an attractive location because of the position along the IJ and the presence of large steamship companies. The employees could be accommodated in the established surrounding neighborhoods. In the following years several companies settled, mostly connected to the shipping industry. The North-Western area was even more popular because they were not bothered by the small and busy transit route at height of the Central Station. In Nieuwendammerdam companies established like the Dry-Dock Company, the machine factory Kromhout and Stork, the engine parts factory BREVO, and several other different companies. They did choose this location because of the favorable water transport possibilities and the market of Amsterdam North: Companies that made railway material, the machine factory Voorwaarts, but also the Electric Chocolate and Sugar Factory, the rubber tire ‘Schone Bullion Factory’, the cookies factory ‘de Onderneming’, the lemonade factory Fina-Cola, the paper factory annex printing office ‘Ten Have’ and the international carbon paper and ribbon factory ‘Kores’.
In 1979 there was a radical intervention of the Hamerstraat area. This was an important project for the Amsterdam economy. The main goal of the intervention was to improve its accessibility. The waterways that were so important for the transport of the goods became less significant while the transport by car took its place. This led to the draining of the canals which had dominated the infrastructure of the area for years. With this redevelopment, the main urban structure remained intact. The notable wide profiles of the streets gave away their formal canal purpose. Examples are the 'Gedempte Hamerstraat' and the first part of the Motorkanaal. Also the asymmetric profile of the streets perpendicular to the Hamerstraat show still their previous function as wharf. You can see this in the 'Spijker-en-Beitel' quay. Several buildings situated along those formal canals still have their industrial hoists. The sharp alignment of the lots marks the place where the water was. In contrast, the Johan van Hasseltweg has also a wide street profile but the buildings situated here are more recent. The urban significance of the Stork complex is a typical 20th century industrial area with a sharp alignment of the lots on the edges. The inside edges have a more varied structure. This varied structure is also notable in the different heights of the buildings. The profile of the quads is very high and hard and shows a clear industrial identity. The public space around the hall is really rough and undefined. The situation at the IJ can be considered really valuable, so that it has a lot of potential for the future. In the eighties, Rem Koolhaas developed west of the Hamerstraat area the 'IJ-plein' neighborhood.

In the Hamerstraat area there are a lot of industrial buildings that all have their value. Some of them have a monumental status because of their historical significance, esthetics and functional potential. The Kromhout hall with its enormous space is one of them. Then there also is the Ponthaven where the workers past the Amstel, and the Eastern Gas Union with its characteristic profile. The important criteria in the conservation is, that those buildings can and will not be made again, and should therefore be cherished. An important structure that has formed the urban tissue is the former Hamer Canal. The area was because of its industries distributed by a central canal that formed the urban structure. A lot of the monumental buildings are positioned with their face to this former water structure.
An important part of the identity of the area is the waterfront. If we take a look at the growth of Amsterdam we can see that from 1600 it started to expand on the outer side of the city. This growth can be related to the infrastructure in at least three ways. First, it was established at the Amstel because of its infrastructural advantage for trading and for two-hundred years it grew on the outskirts. Second, when the railroad was established we can see that the expansion follows the direction of the railroad. Third, the ring road of the car caused development in this direction and Amsterdam got filled in this ring road structure and the fingers of the outlet locations were established. Only since the last decades a new tendency emerged: a clear focus on the domain of the waterfront. In a lot of European cities a focus on the waterfront could be evidenced because of the fact that the industries were leaving the inner cities. Moreover, there was a draw on the water because it was seen as a structuring qualitative element in the city.

With respect to the accessibility of the Hamerstraat area, the following factors can be considered important: its infrastructural location, the shortage of public program in Amsterdam North and the networks on the neighborhood scale. On the metropolitan scale, it has a good accessibility by car but that there is no connection by train. Also the connection with the center of Amsterdam is difficult. It is very close by but the absence of a bridge makes that you have to go by ferry. This causes that you can visit the center only by daytime and emphasizes the isolated character of North. The North-South line is going to make a lot of change here. It will make sure that one can go really easy to every other part of Amsterdam. The central station can then be reached in about ten minutes. Because it was a mono-functional industrial area there are very few public facilities in the area. This is also a problem with the surrounding neighborhoods. On the local scale, the area has no connections with the surrounding neighborhoods and there is no connection with the waterfront.
In the analysis, the concept of durability has three different meanings: (i) the long term perspective of the area, (ii) its environmental perspective and (iii) the options of flexibility. The current developments in the area are directed at the short term with creative breeding policies. For the development of a long term vision, it is really important to consider the constraints. On the one hand, if you want to change something out of a vision there has to be sufficient structure. On the other hand, we are talking about a long term so we do not know what we will do and how we will think in the future. The economic recession connects to this, but also the change of the public to the private sector that is expressed in Urbanism during the last few years. Therefore there should be a balance between regulation and freedom between old and new. If we take a look at the Hamerstraat area documents of the municipality we find that the authorities are currently focusing on the axis east of the Hamerstraat area, after a former focus on the part in the North of the Hamer canal. This area exists of different owners and shows a large freedom of buildings on its plots. The arms of the former canal structure are still appreciable. According to the municipality documents, the area along the IJ may be further developed between 2020 and 2030. If we take a look at this area we can see that there are besides the Kromhout hall and the Ponthaven mainly industrial buildings out of the eighties. They have a lot of potential in the coming years, especially in times of recession. A big real estate company, Eigen Haard, has already bought half of the land along the IJ. They are currently renting out these halls to creative industries. It can thus be concluded that the land along the IJ has a lot of potential for development in the long term.

![Image](image.png)

*Figure 2.4* In the urban design the three concepts out of the analysis area are used to give an appropriate solution to the defined problem. This scheme can be used to activate and structure the whole area and provide it with a lot of qualities.
2.3 Design

The goal of my urban design was to generate a durable living-and-working area that improves living qualities, while enhancing the industrial identity, using the identity of the waterfront, structuring and activating the networks in a flexible framework of urban design in which old and new structures and functions in the area merge together. For the identity, the connection of the morphological and historical structure can be seen as important. For the improvement of the accessibility, the integration of the network of public space and its arrangement seems highly relevant. And for the durability, the rules versus freedom for the architecture are important for flexibility in the future. The city plan can be considered an important instrument in the urban discipline. In this design are the most important urban compositional characteristics (Heeling, 2002). But this can be interpreted and executed in different ways. The ultimate use and image depend on the different actors and forces that interact. A good urban design is prepared for an uncertain future. The city plan can be defined as a map where the territorial organization is displayed: from neighborhood to metropolitan scale, both for housing and other activities of people. There is always a motive and there is a territory where these activities are being realized, starting from a ground level that should be equipped for the use of men. The essence of the city plan is that it plays a mediating role between the public domain within the network of public spaces, and the private domain. The structure of the underground networks and morphology, the arrangement of the public space and the street profiles are structured in the public domain. And in the private domain there are regulations for the buildings. The city plan, the arrangement of the public space and the buildings together is often called the urban tissue of which the different layers are not autonomic categories. It is their relation that is summarized in the city plan. The consideration of the different motives should lead to a final composition of the plan. Since the sixties there has been a broad criticism on the modernistic urbanism (Heeling, 2002) which was primarily directed to the culture historic dimension. In the historic structures, a richness of meaning can be found that can be considered an intrinsic part of the urban civilization. Important critics are Aldo Rossi, Robert Venturi, Jean Castex and Colin Rowe. As reaction on monotonous post-war neighborhoods, the identity of area becomes really important. It must give space to new urban developments (Heeling, 2002). The rational clarity and transparency of the functional city does not seem to be in accord with the complexity of contemporary urban life. The interference of the government with the social domain became in the eighties an important subject of criticism too. It was felt as an obstacle in personal development, societal dynamic and economic freedom. Freedom for the private sector, free market, in all spheres of the urban life was the recipe for the future.

The design of ‘The Hamer’ is directed in the first place to structure the transformation of the area and to improve its accessibility. The East-West connections string together the different neighborhoods and the park. The North-South connections make the waterfront accessible. The strip can be seen as a place where public programs can be implemented. This place connects with the network of public space, representing inhabitants of the whole area. The strip allows the waterfront to develop while the Northern industries can still maintain. By doing so, the historical morphological structures and monumental buildings were fully taken into account in perspective of new meanings. The water plays a major role for the identity of the area. The inlet of the water provides a lot of quality and structure to the area. The establishing of a durable future depends for a large part the transformation of the industrial city plan into a plan with conditions for new building typologies and forms of cultural life. In this sense the conditions for the architecture as well as the distribution of public and private lots are really important. In my urban design we can distinguish two areas. The northern part exists of smaller plots of light industries which are functioning fine. It has different owners, and thus only slow regenerations are possible. On the southern part along the IJ there are only two owners. With the heavy industry leaving, half of the area is already owned by a real estate company, waiting for the economy to stabilize. After the economic recession, it is expected that there will still be a large demand on qualitative housing areas on top-locations. Housing areas along the water could be developed in phases, increasing the housing differentiation in the area. These housing areas could be developed in the garden city typology that opens itself to the water. With the toolkit which I established in my analysis, I started my design with the implementation of housing. I made a scenario for the development of three separate islands that have a good connection with the existing networks, and bring the quality of the waterfront into the area.
For the identity, a good integration of new developments with the existing reality is very important. There was something needed to respond to former developments. In between the slowly developing northern part and the faster growing southern part, just at the formal canal structure, I designed a central strip with different building typologies. The arms of the canal are used to provide the openness in the area. Given the fact that this waterfront is important for the identity of the area, it is used as a central distribution system that has been there originally. This strip forms the bridge between the old and new functions. The implementation of the strip will make room for waterfront developments. It will also give new meanings to the industrial monuments and the formal canal structure.

For the accessibility, the strip connects surrounding neighborhoods from east to west with the park and the ferry, and from north to south with the water. It structures and activates the existing networks to generate new opportunities. Because of the open space, people are able to move freely through the area. The positive energy that is generated by these interactions will enchain a lot of new possibilities. On the crossings, there are places that represent the area. They function as a stage to the water. Alongside the buildings there are green parks where people can meet, hangout and interact with each other.

For a durable future, there has to be sufficient freedom on top of the necessary regulation. In this way the transformation can be structured while there is still flexibility. This flexibility is provided in the regulations for the architectural constructions. On the pivot points, the buildings have height accents, and two axes in east west direction make a route through the buildings. This makes it possible to activate the area from the architectural scale. The buildings exist of a lower building with a tower. The lower building is intended to activate the area while the tower is for its structuring. The interaction with the ground floor can be seen as really important. The buildings have a plinth that tells that they are placed on the ground. The diversity in the relation between public and private space in the city plan makes a durable accommodation of life possible.
2.4 Strategy

In my urban strategy, there is for the identity an emphasis on the integration of old and new. For the accessibility it is aimed at the structuring and activating of the networks and for the durability at the relation between the long term and short term developments. My design exists of three parts. Part one deals with the current industries in the northern part that will be developing slowly according to the plan of municipality with only implementation of the adjusted building lines for the opening of the canal structure. Part two relates to the structuring strip on the former canal structure on which there are some architectural constructions possible. The third part is related to the new developments along the IJ. For my urban design, I started with the development of the strip with the architectural intervention in combination with as much as possible the public space being involved. In this way this strip plays a structuring role in the development of the area. For my urban strategy, some changes in the city plan need to be made. This might be a difficult procedure taking a lot of time. However, in the change of an industrial area this is a once in a life time opportunity and the potential of extra qualities should be measured. The ground company that was baptized to development company plays an active role in the economic policy of the municipality (Heeling, 2002). Because of this there was a tendency of economization of urbanism in general. A lot of developments have therefore demonstrated a short term character. The average time span of developments is 10 or 15 years. When it is for the longer term, there are higher demands on the part of urban design.

To see the possibilities of the change in the city plan, I watched the ownerships of allotments closely in the design phase. In the analysis, I made a differentiation of the monuments and the buildings that are particularly valuable for the short term. If we want to let the water into the area, and use it as connection to the former canal structure, changes have to be made in the city plan. The monuments are enhanced while the short term buildings make place for the canals. Other possibilities are to not let the water into the area or to do it at another place. My basic idea was that we should do it at the optimal spot for the networks, canal structure and to divide the area into understandable parts. This is also possible because the land is only of two owners. The first part already of a project developer. So, on the one hand, it seems a big gesture, but, on the other hand, there are a lot of qualities, given that the land is accessible and the buildings are not valuable on the long term. The development of the canal structure should thus start with the demolition of buildings on the northern arms and its physical arrangement. In the second phase, changes in the ground ownership can be made. One part of Eigen Haard needs to be changed into leasehold and the other parts are already owned by the municipality. In this way the whole strip belongs to the municipality and can be arranged and directed by the municipality. This includes the buying of a small part of the Draka land. The third and final phase is to buy the land along the IJ of Draka so that a new distribution of the private allotments can be made. Selling the land to the private sector, which fund the development of the public space and the canals is a way.
In the first phase, there will be a part of the public space arranged. In the second phase, the first canal structure can be implemented and the arrangement of the public space to the waterfront established. In the third phase, the public space can be developed. The bonus malus procedure will be used by the development of the public space of the strip. Here the builders get more freedom if they insert more quality to the environment (Meyer, 2006). In New York, the urbanist developers realized the public programs in the plinth with this system. In this way, builders could build higher and in bigger volumes. Likewise, in San Francisco, they realized public facilities like schools, crèches, and healthcare in this same matter. For the architectural constructions in the Hamerstraat region, certain rules need to be followed depending on the areas. In the northern area, there is the building envelope the maximum height, FSI and parking solutions. Everything can be developed here without interference of the rest. For the strip, new rules need to be invented. Important here is the interaction with the ground level in relation to the activation of the area. The form of the buildings should be in relation with the network of public space and their structuring character, as much as possible. The buildings consist of a lower part that refers to the direct environment and a tower that has a relation with the environment. In the second line, there can be height accents to the waterfront which in its public space and architecture can be considered a place for representation of the area. For the rest, the buildings are placed as object in the area representing their industrial character. The industrial buildings are thus integrated in the expression of the strip. For the housing on the waterfront, the height can differentiate up to 18 meter so that it connects to the scale of the Kromhout hall and IJ-Plein. The islands should have a character of the garden village to give way to a diverse character of public, collective and private space. Also should there be east west connections between the different islands. The scale of the blocks should be measured to the garden villages on the north side, the housing on IJ-plein and the islands of Java-Island. In this way, a garden village will emerge that opens itself to the water. The industrial buildings could easily be integrated in the blocks. Important instruments to structure these developments are the provision of building envelops, street profiles, and typological prescriptions.

Figure 2.7 In the first phase a large part of the public space will be developed to activate and structure the area.

Figure 2.8 Typological prescriptions are used to guide developments along the waterfront.
2.5 Evaluation

In my evaluation, there are some important considerations as regards the identity, accessibility and durability of the area. The relation between old and new, the way of activating and structuring the networks and the relation between the long and short term should therefore be continuously questioned. However, in my design and strategy I tried to come up with a vision that would really put the area on the map of Amsterdam and provide the surroundings with a lot of qualities. It is expected that the metropole region of Amsterdam will be growing in the next ten years. The new prognosis of the Planbureau voor de Leefomgeving (2012) predicts that around the year 2040 there will be a growth of 300,000 dwellings. The growth of the number of inhabitants appears to be of great importance for the strengthening of the international competitiveness of the region. Research reveals that Dutch regions do not have enough agglomeration strength compared to European competitors. Amsterdam can be seen as a positive exception in this trend. However, to strengthen its position there is a higher mass of inhabitants needed. Investment in knowledge and quality of living can therefore be seen as highly important.

The border between public and private domain is important to regulate (Heeling, 2002). Not because formal of jurisdictional reasons but just because of the fact that it is difficult to change. The private allotments themselves are relatively flexible. They can change of owner, building or use. Also the relation of the allotments can be changed, since they can be separated or joined. The arrangement of the public space can be changed easy, as well in that street profiles can be changed and streets can be closed for traffic. If you want to change the boundary between the public and private you have to have good reasons. This could be an expensive and long procedure. It can only be changed when there are big societal problems or when there is a great consensus. To obtain this consensus for a structural change is not only hard for the ownerships and the complicated jurisdictional procedures. But also the cultural and social appreciation of an area they are used to, could play an important role. Often the landscape and geomorphologic conditions, like waterways, heights ground compositions are too expensive to change. Also, technically spoken, is this really hard, since there is the network of underground cables and piping that make it these days harder to realize big structural changes. To generate urban quality it is important that the public and the private domain are integrated in one design for the city plan (Heeling, 2002). Identity is a concept that became really important in this sense. Quality is described as cultural value, users value and future value. Variety, individuality and identity are important concepts. The aim to regulate the city became in contrast to individual commissioning, change and complexity. The urban quality is not in the tight control of the image, but, on the one hand, in the art of creating different lots in form and size, urban islands, buildings and public space. On the other hand, it is concerned with the integration of these components to one whole. Urban quality should therefore be expressed in the composition of the city plan. Attention should be paid to differential primordial values, including cultural values, users’ values and future values. Two important components are here important. One is the definition of the urban elements and the other an understanding of concepts to talk about the composition.
My evaluation makes it clear that for my urban strategy changes in the current city plan are urgently needed. This is a difficult procedure and may take a lot of time. However, in the change of an industrial area this can be seen as a unique opportunity for the Hamerstraat area to realize the potential of extra qualities being discussed. My graduation project shows the possibilities of the change in the city plan, at least for the Hamerstraat area. This plan is made with the reminiscence of the ownerships of allotments. In my plan, I made already a selection of buildings depending on their value in the long term, including monuments. If we want to let the water in to the area and use it as connecting structure to the former canal, however, changes need to be made. In my design hypothesis, water provides the area with a unique chance to strengthen its networks, to articulate its canal structure and to divide the area into understandable parts. The fact that two land owners, including a project developer, are involved in this area makes the proposed transition of the Hamerstraat area also doable. Although the transformation of the existing morphology may seem a big gesture, the area is highly accessible and most of its buildings are not really valuable on the long term. My graduation project aims to improve a lot of qualities in the area by opening up opportunities for new developments in the area itself as well as its surrounding neighborhoods in perspective of a durable, accessible area of working, living and recreation.

![Figure 2.10](Changes in the city plan are urgently needed to increase the area’s accessibility, using the identity in a flexible framework.)

2.5 Conclusion

By using the concepts identity, accessibility and durability, in combination with the definition of a well-defined goal, it is possible to let the urban design work as a hypothesis that gives a solution to the problem. By reminiscing the actors that play a role in the process, it is possible to early integrate the strategy into the design. The urban discipline is about life, its structure and its representation. In this way, the networks, the existing morphology and its change have an interesting relation. Regulations are important to manage developments in the future, as if the development of the public space. Important is the consideration of adapting the current city plan if we want to change the function of our inner city industrial areas. In this consideration, the additional qualities should be weighed against the changes that need to be made. To make sure that we make the right decisions, phased developments and protection of our heritage can be seen as really important. To bring structure to these developments is the essence of urbanism and will provide the infrastructure for future possibilities, in the present case for the Hamerstraat area.
3. **Architectural design approach**

In the book *Wat is architectuur*, Engel and Claessens (2007) explain the elements of the discipline. Just like every other discipline architecture has its own thinking. This moves itself parallel with the actual business: designing. Concept and image are two forms of representation that determine architecture since the renaissance. In architecture there is a theoretical framework. Architects write about the instruments, drawing and model, and the knowledge, typology and language, in order to involve and bring to elaboration in varying proportion the core of the discipline: designing. Monestiroli (2005) describes the definition of architecture as a construction, that in aesthetic property consists of the representation in stable forms, of sense of the whole and its parts. The description, classification and comparing of buildings are the rational principles to establish a vocabulary of names, concepts and terms (Engel & Cleessens, 2007). In this way, we can interpret the architectonic objects and their constituent parts. The relationship in my project between research and design becomes visible by the fact that I do not start from scratch in my project and discuss the design in a rational way in relation to the established theoretical field of knowledge and with the ambition to add some new knowledge to the established world. This is done by the deduction of elements that are acknowledged in the discipline and also by induction of new elements. I first did a research about the place and the theme in the form of analysis, and then I used both my urban and architectural design as hypothesis to give the suitable answer to the analysis. The Hybrid Building studio is concentrated on the transformation of urban morphology and changes in building typology. It focuses on urban transformation where large structures deal with the accommodation of complex and changing uses.

In the design of the Hamerstraat area, I focus on the transformation of urban morphology and in my architectural intervention building typology. I designed a ROC Plaza with student housing. Interesting here is the relation between the urban morphology and building typology as comes forward out of my multidisciplinary approach. In my project, I started by formulating a problem statement and an architectural brief. For my architectural design I used the Monestiroli design method. This method is used in the Hybrid Building studio to come to a design that roots in time and place. Monestiroli (2005) describes in his book a methodical way to find suitable forms for a situation. To begin with, he tells about the importance of the familiarity with the theme. In this sense the value of the building can be established. This roots the building in the time and society. Because architecture is always rooted in a place it should be carefully studied. It takes on and confers meaning to this place. Nature is seen as the context in which urban elements are positioned. Reflection on the theme, and study of the site, should then lead to the definition of the building type and its positioning. In this step the typological elements needed are considered about their place and the buildings distribution with the acknowledgement of the need for its material construction as first step to reality. In this step the technical elements needed to achieve the typology should be examined. The last step is the translation of technical forms into appropriate, representative forms. Here, the final expression of the technical construction is actualized in the details. All of these steps will be followed in my architectural design approach related to the construction of a major building to accommodate the Hamerstraat area from a primarily industrial site into a mixed working and living area - with the ROC Plaza with student housing as final outcome.

3.1 **Analysis**

To recapitulate the problem, the Hamerstraat area can be seen as an industrial area that changes from heavy industry to a mixed use working living area. In my problem analysis there are three points of focus: (1) the former and new identity of the area, (2) the accessibility of the area and (3) its durability. The main urban strategy is to activate and structure these developments through a central strip with architectural constructions and in this sense to increase the accessibility and durability of the area.

It is a well-established fact that educational institutions accompanied with housing facilities may function as a catalyst in changing industrial areas into mixed work and living areas. Recent years there has been a tendency of building new regional vocational schools, the so-called ROCs. In many places in the Netherlands, the design of such educational services resulted in large buildings along with extremely broad infrastructural locations.
This was also the case in Amsterdam where in the last years four large conglomerations of different parts of this institution have been built. Logistically this was considered to be a great success, although there were also negative voices about the overlooking of students. Therefore it was claimed that smaller practice education institutions could still be placed that would function on a neighborhood scale. This could pre-eminently work in the case of the Hamerstraat area where it might serve as a catalyst to transform the area from an industrial site into a work and living area. Therefore, it was planned to design a ROC plaza with accompanying student housing and facilities for the neighborhood. The program could thus be defined as a school with learning facilities that can activate the area, represent the working mentality and generate a public program in the form of various facilities. The learning facilities are to be managed by students, and aim to provide new public programs for its surroundings: people could eat in the restaurant managed by student cooks, buy their groceries sold by sales students, or get a haircut from future hairdressers, and the greenery department could even start with the development of the strip. In combination with the ROC plaza, student housing is planned to be situated next to the school. In this way the students could activate the area and the place will be lively in day and night. It can be expected that the students will plan a broad range of events and may secure the area. While the industry is leaving the location, this professional gap could be filled by giving the next generation a new education.

![Figure 3.1](image.png)

In spite of the tendency to cluster super ROC’s along the ring road, there are negative sounds of overlooking students. Therefore local ROC’s are still needed to operate on neighborhood level.

To study recent developments in designing ROC plazas, I investigated different actual precedents to see how those institutions work in the current society. Because of the easy accessible learning facilities, the buildings are often really public. In Nijmegen, they took the typology of a shopping mall where on the ground floor there is an actual street with shops that are the learning facilities. In Hengelo, they renovated an old industrial building to be the main meeting place with an auditorium and connected the identity of the practice education with the old monumental hall. For the student housing, I studied some precedents to see what place in society it may fulfill. A recurring theme in student housing is the transition of the public domain to the private domain. In a lot of examples they use a collective space where students can meet each other. In many cases the typology is chosen in an atrium or a hall. Often this collective space is used as distribution. In this way self-sustaining student apartments can be constructed that come together in collective hallways but have their own kitchen, toilet and shower.
The architectural intervention in my graduation project is designed to structure and activate the networks on the location. On the one hand, a lot of students bring life to the location for day and night. On the other hand, the public facilities of the ROC make a durable connection with the surrounding neighborhoods. The building represents the transformation of the industrial area into a mixed working and living area. The architectural intervention focuses on the activation of the networks on the location, maintaining the area’s identity in a durable perspective. The identity of the building should be open, flexible, firm, industrial and accessible. To make the area accessible, I wanted to activate and structure the available networks. For the durability of the area, I intended to make a long-term construction where a change in use is possible within the building type. There are two volumes that come forward out of the urban design. The low building that refers with its scale to the close environment and has an interaction with the direct surrounding. The tower that stands on the crossing of two axes marks the beginning of the strip.

If we consider the identity of the building, the urban integration, the programmatic choice and the expression of the building can all be considered important. The architectural intervention should function as a catalyst that represents the transformation of the current industrial area into a mixed use area. It is an industrial object as first building on the strip that refers on the scale and material of the area. The building has the expression of a strong, industrial object. This object accommodates the current school configuration in a rough industrial area. The rough identity of the area connects to the practice education of the school. The ROC Plaza has learning facilities and a restaurant on the ground floor. The auditorium has a connection with the public space on the ground floor and can be used for events but also as place during the lunch. The study places are placed on the second floor with a buffer of meeting rooms to make sure that it is a quiet place. There are instruction rooms at the north side of the building and in the basement is a bicycle stalling. The building consists of floor slabs and columns. The floor slab is connected with the elevation points that have the same identity. In this sense, the shell is formed and gives a synthetic gesture, concentrates on the long side of the building and represents the programmatic parts and their relation. These floor slabs contain the technical installations. It is directed to stand for a long time and its flexibility should adapt the changing use. The facade consists of steel industrial plating that has an industrial character. Between the school and the student housing there is a collective deck that can be used by both programs. The student houses have similar values and have their own facilities. They have a really nice view and are located close to the center. They make an optimal use of the space and have no corridor. On the top side, there are four bigger apartments. The student housing facilities have a collective space that has a connection with the square on top of the school that students can use at the time that the school is closed. On the other side, the student apartments have a relation with the city.
For the accessibility, I integrated existing networks into the building. I used legibility to structure networks and represent functions to improve the accessibility of the building, and made a differentiation in domain to accommodate the different users. Important for the typology of the building was the accessibility of the learning facilities of the practice education that are for the students as well as for the public. The idea was to connect the learning facilities with existing routes on the location where some routes go through the building on the ground floor and other routes into the building. The typology of a street is therefore suitable. Because of the small floor plan of the building it demands that this street continues on the different levels. Another important element is the auditorium that should be easy accessible for visitors but also can function as a main place in the typology. This auditorium is placed on the Southside of the building where people can sit in the sun. This place is connected to the space on the strip between the Kromhout hall. For the restaurant it is important that it is easy accessible from the ground floor and that it has a terrace on the Southside of the building. The study places demand a more open configuration with less columns and visual open connections. The openness of the ground floor shows that the building is carried above the ground floor and in this sense is accessible for the public. The shell has an activating effect in representing its elevation points, the entrances, and the programmatic relation. On top of the school there is a collective square where people can recreate. The students can be the first inhabitants of the underdeveloped area. The private student houses face the long side of the strip. In this sense it represents its private character to the more public strip. The student housing is reached through its own entrance. From here they come first in the collective space, which functions as a meeting place, and from here they can go to their own apartment. Between the collective space and the apartments the facilities are placed that function as a buffer. In this way they can retreat from the fuss. Because the building should function autonomic of the school it should have its own entrance and its own connection to the collective square on top of the school.
For the durability of the building, there should be evidence of an endurable strong construction, with neutral energy solutions, and a high degree of flexibility, given the fact that the school configuration might differ in the future. Therefore an open plan typology with a grid functional for education should fit. The flexible column and facade structure make these future transformations in configuration possible. For the installations, the building is divided into compartments and because of its floor construction it has a lot of freedom for pipelines that improve the flexibility. For the fire escape, the building is separated into two parts. The auditorium is used to escape in one direction and the other stairway in the other. The tower stands on two axes and therefore is symmetrical in both sides. It is a structuring gesture that marks the beginning of the future transformation of the strip. For the student housing there are flexibility possibilities to choose if you want to live with four or eight students, and the middle apartments there is the option to split the room. I designed a firm building for the long term materials. It is flexible for different school and housing concepts and makes the transformation of the area possible by educating the next generation.

3.4 Strategy

The strategy is to activate the area through an architectural object as catalyst. The building envelope was already established in the urban design. However, this has important implications for the building’s program. In the consideration of the program there were some preconditions. To begin with, the building should draw a lot of people to the site to activate it. Furthermore, the building should contribute to the lack of public program in Amsterdam North. Finally, the users should have no problem to set foot on the industrial location in its transformational phase. In this line of thought, the choice of the established program was the educational learning facilities with student housing. The fact that in this combination the location is inhabited day and night is an important surplus. The development of the architectural intervention will be taken in relation to the development of the public space out of the first phase of the urban strategy. In this way the urban morphology can transform from the outside in. The central strip will be activated, and the networks gain meaning in the upcoming years. The location prepares itself to the next phase that will come whenever the people are ready. In this line, changes in conception are respected will providing structure to progress.

Figure 3.5 The building gives an inviting impression and shows the different functions while maintaining its identity as object. Steel is used to give it an industrial expression while wood is used to give it a more softer experience along the central strip.
3.4 Evaluation

In the transformation of the Hamerstraat area into a work living community, the architectural intervention could have a positive effect on the area and its surroundings. The choice of a modern building in the area gives the impression of progress in the area, while the materialization with steel tries to fit in with the industrial character of the environment. The school with student housing can be seen as a really good catalyst. It can be expected that it will draw a lot of people to the area and that the learning facilities will provide the area with new public programs. The students will nicely fit as first inhabitants to contribute to the planned transformation of the industrial area into a work and living area. The connection of the building typology on existing networks can be considered well functioning. The building draws the people in and to structure the location. This is done by the definition and articulation of its construction. In my design, energy considerations were also emphasized. The emphasis of the building on sustainable energy solutions is almost trivial these days. To provide the area with a durable future, the choice of a strong construction with flexibility options still has a very definite outcome, and the stronger the impact of the catalyst on the activation of the area, the more determined the future perspective of the Hamerstraat area will be.

3.5 Conclusion

The Monesteroli (2005) design method has proven to be very useful to have a grip on the design process. It provided me with a tool to determine the building significance out of the culture and environment and to translate this significance into form by using typology and construction. The expression, as result of this construction, is appreciated by the same culture and environment and in this way it forms a cycles. By using the typology, construction and expression in my project, there is a good chance that the building will indeed contribute to the change in identity of the area, and that it will activate and structure the networks and will provide the area and its surroundings with a flexible, durable future.

4. Discussion and conclusion

4.1 Discussion

Following Heeling (2002) important subjects in an urban design are: The relation to the ground, the relation of the public and private domain, the composition and typology of components, the relation of the components and the main structure, and the relation between diversity and coherence. For these issues are not unambiguous answers. It depends on the nature of the assignment, the area, the societal views and the methods and vision of the designer. In the relation between urbanism and architecture there has been a conception that there has to be a coherent architectural image to the urban plan. But because an urban design should be more durable than a building it cannot depend on it. This does not imply that such coherence is not important. This means that both disciplines have their own specialty on technical and compositorial elements and also in the concerned actors where the designs operate. The urban discipline operates on the composition of the public domain as coherent system. Firstly, while urbanism focuses on the public domain, the architecture concentrates on elements of the private domain. Secondly, the urbanist concentrates on knowledge of the typology, form and construction of the public domain, while the architect is expert on the building typology. Thirdly, there is a difference in order. The urban designer makes rules and considerations to build. It depends on the nature of these rules how much freedom the private clients have for the elaboration of their buildings. In 2008 there is the new Act on Spatial planning executed (Meyer, 2006). This obliges the municipalities to introduce zoning plans for the whole city. Also structure visions and plans become more important these days. Municipalities are obliged to have them. The urban designer is going to play a large role in establishing those documents in the future. The urban design has of course not jurisdictional status. Therefore it is important to document the urban space and qualities in the zoning plans.
Important shifts in the relation between architecture and urbanism are caused by changes in the interference of the government. The economization of the public domain is noticeable in the urban development in the liberalization of the land policy (Heeling, 2002). In the postwar a lot of land policy was placed by the urban service. In this way they could compensate the ground exploitation with yields elsewhere. In this way it was not appreciable that a lot of the postwar neighborhoods were not compensated by the ground yields. In the eighties they established an own company that had to be sure that this would not happen. Ground policy can not only be controlling, but it can also generate financial income or give parts a higher status to attract developers. The quality of the network of the public space, as well in the technical as esthetical sense, and the quality of the buildings can contribute to a favorable business climate. Meanwhile it became clear that the privatization a lot of the time also leads to the decrease of quality in a lot of institutions as, public transport, school, healthcare, safety etc. The answer cannot be the restoration of the old public sector. It could be a system where the government is the market manager. In this system the government is responsible for the inspection, regulations and supervision. They create the conditions for the market. This analogy could be applied also to urbanism. We can see these days a changing private commissioning and different requirements with respect to the public domain. The commissioners have uprooted the municipality. Housing corporations are acting as developers and big developers take their own urban designers. In the nineties there was a lot of experimentation with private commissioning. Their role changed completely and they do not settle with the expectant role of the planning. They interfere often to watch their interests. The definition of the public case is in the design of the public space not always easy. A lot of bodies have their interests. In these sectors there have been a lot of changes and new insights. The increasing mobility imposes a role to the public area. Street profiles have to be changed and parking spaces included. The parking spaces are tried to get them out of the public space into the private courtyard. Also water and nuts services have to be taken into account. The last years also the ecological structures became important.

Monestiroli (2005) talks about the city interpret as a work of art. The city as artwork can be understood as representing the culture of living. This means not only their function but also its value. More than hundred years Camillo Sitte already wrote about the city as a place that represents our culture, a place in whose forms we recognize our identity. The square of the city manifests its representative intent, makes itself recognizable and becomes the theatre of men’s lives. Squares are the places of encounter and representation. Monestiroli states that nature and history are the two poles of our existence and the relationship can constitute the landscape of a new city, which is based on the ancient concept but still has to be built. In the book Architecture and the City, Aldo Rossi (1966) goes into the complex nature of the city and her structure. Important in this understanding is the concept of locus. Despite some elements, that we can distinguish separable of our feelings, we can only conclude that the locus has certain qualities. The uniqueness of a place is determined by space and time, the topographical location and form, the recent and former events that happened, and the memory of those. Because of the historical character of architecture, there is a distinction between the element of origin and the form. Over time, several architectural movements have concentrated on the classical antiquity and its interpretation of form and meaning, as if their relation could be determined. Of course, in reality they come up with individual interpretations. The degree to which there is room for such interpretations, when time decays, defines the durability of those forms. By phrasing Maurice Halbwachs, Rossi explains his ideas about the relation between form and meaning: 'A group that lives in a certain space, forms this space to her own interpretation. At the same time she folds herself and adjusts to the material things that give resistance.' By doing so, Rossi almost considers the city as a living organism, which has her own consciousness, in the collective memory. The city is the locus of the collective memory, and architecture and landscape are her expression. There is a pollination between the cultural change of the community, with her collective memory, and the material things that resist this. The value of history, interpreted as collective memory, as the relation between the urban community and the place and its idea, helps us to understand the meaning of the city-structure. The architecture is the form of her individuality which is linked with the fact that lays in the origin. In this way form and event merge together.
4.2 Conclusion

In the integration of the architectural design and the urban design there are some interesting conclusions to be made. One could maintain that the two disciplines are both about life, the structure of its reality and its representation. In this way it is the relation between form and meaning that is the working field of the architect and urbanist. In this train of thought, there are three concepts of meaning of form: the functional meaning which represents the life that takes place, the technical meaning which represents its constructional requirements, and the aesthetic meaning which tells something about the way the building is appreciated. The task of the architect and urbanist is to define the meaning in the place and culture of the structure under consideration, and to translate this meaning into form. In urbanism there are the networks, the morphology and the rules for the buildings. In architecture there is the building typology, construction and expression. If we consider the difference between architecture and urbanism, there is a difference in time and scale. The lifetime of a building may amount several decennia whereas an urban design could maintain hundreds of years. The urban discipline is about making an infrastructure for the architecture and the definition and construction of the open space between the buildings. This is structured by regulations and guidelines, but also by physical form of the urban environment. The architectural discipline is more about real constructions, how they are built and what they represent. Interesting questions are how the urban networks relate to the building typologies, how the architectural constructions define and articulate the open space between the buildings and how urban regulations provide enough flexibility for the buildings of our future. Identity, accessibility and durability can be seen as useful concepts to connect the two disciplines into a general framework. Important is that in spite of the pollination of the two disciplines and the value that can be generated in the process, it should be defined how the two sub-disciplines are related. By seeing the urban discipline as infrastructure for the architectural discipline, this clarity can easily be provided.

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<tr>
<th>Life</th>
<th>Structure</th>
<th>Representation</th>
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<tr>
<td>Urban discipline</td>
<td>Networks</td>
<td>Regulations</td>
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<td>Architectural discipline</td>
<td>Typology</td>
<td>Construction</td>
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**Figure 4.1** The disciplines are both about life, the structure of its reality and its representation in a continuous cycle. Interesting is the relation between the urban networks and building typology, the urban regulations and possibilities for the buildings of the future and the urban morphology and its expression of the architectural construction.
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Regeneration of the Hamerstraat area in Amsterdam

A multidisciplinary approach


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Axonometric drawing concept
Appendix Architecture

West facade 1:200

North facade 1:200

South facade 1:200

East facade 1:200