Future University @ TramRemise
the educational hotspot of Amsterdam

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Introduction

Structure

This Thesis plan will function as a guideline for my research and design through the Graduation project of RMIT TuDelft.
Firstly I will start with my personal motivation for this studio, the reason why I have chosen to graduate in this direction of Architecture and the interests of RMIT.
Then I will continue with a short introduction of this Graduation Studio and finally I will end with the introduction by giving a topic, which I think is an interesting one.
The next chapter I will describe the whole context by the analysis I’ve made during the first period of this graduation project. This is split into three levels of scale due to the method we have chosen for the research. The urban scale of Amsterdam West and Haarlem. Then the Architectural scale where we have chosen one of the 12 buildings that were given to us.
And the last scale is the building Technological scale.
Also we have made a historical analysis of every scale that will give an extra layer to the different scales.
After the context the reflection, or aims of the project will be described. This is the main chapter where the research question and subquestions developed and asked.
Also I’ll try to give a goal that I want to achieve at the end of this semester, that is maybe to early in this stage of the graduation project.
In chapter four the approach for this graduation project is described and given. I will end with a conclusion and the time schedule or planning for the whole graduation project.

Personal Motivation

The main reason why I choose to graduate in the RMIT studio is because I have always had some affection with the old existing structures in cities, especially old industrial buildings or areas also known as brown fields. During my study in Delft I have experienced different design programs and during my Master track my choice went out for RMIT. Before I started this graduation project I did an exchange project in Australia, Sydney at the UTS, where this Master direction is not very popular yet. There, I have seen almost the opposite way of working in comparison to the working ways belonging to RMIT. At UTS the design stage was very short, three weeks, and the research to it was very intense and long. The research can be seen, as a story and backbone for the new design. Thus not re-use object but something completely new and conceptual. From my point of view the way of working related to RMIT is something completely different. With RMIT the context and history of the context is telling the story instead of the building alone.
RMIT concentrates more on the context and the historical values of the existing structures, which is more within my philosophy of Architecture.

Since I have started studying I have lived in Amsterdam. Therefore, I have always travelled by train in between Delft and Amsterdam. When I needed to go to Delft for one lecture, I spent more time on traveling than the duration of the lecture. In Amsterdam we only have one major library, the UB, which is the closest and most central university library. However, you are only allowed entrance when studying at the UvA or HvA. Students attending all other universities were not allowed in. So neither was I. There is no other place offered to work then at your own faculty, home or the public library that already closes at 6pm. I have always wanted to come up with a solution for this. On the one hand a place to practice Architecture, but also to interact with other studies from different faculties, a better version of the UB. I think that the UTS in Sydney has given me the extra input for this idea, as it is a University that connects with other faculties and the city 24/7.
Introduction

The Studio

Amsterdam aan Zee’ is a graduation studio that focuses on the area between the old Amsterdam-Haarlem line. This covers amongst others the historical trading route the haarlemmertrekvaart, which is a canal that forms a direct connection between the two historical city gates of Haarlem and Amsterdam. The area intrigues due to the large variety in landscape, urbanization and functional program. Harbours in the south and recreational areas such as the Westergas Fabriek, today one of the most popular cultural hotspots of Amsterdam, succeed each other. From the very old industries, that where built in the time of the industrial revolution at the borders of the city, to the modern office buildings and dwellings of the 20th century. Railway and roads have absorbed the long historical canal that connected Amsterdam and Haarlem that have resulted in a physical barrier for the south.

The site has beautiful chapters of history, all kinds of flora and fauna, yet also numerous intriguing buildings with divers functions, infrastructural interventions and civil fortifications.

Topic

The topic I believe to be of interest is the change in work and study environment. It can be questioned how these changes will affect the office or university of today. However, before I start to discuss this topic, I want to point out a smaller topic that will be important and used during this graduation project.

All the cities in the world are changing due to diverse factors such as growth, industrialization, technological improvements and changes in transportation. As a consequence different infrastructures have emerged.

When considering the industrial revolution for instance, it can be observed that Amsterdam pushed all industries just outside the city border away from the residential area's. Today some of these areas are still intact, Westergas Terrain in Amsterdam West for example or the NDSM Warf in North Amsterdam. Their production stopped a long time ago, but are of great cultural value today. The Westergas factory is now a cultural hotspot of Amsterdam and the Warf at the north is now used for creative industries. Space is offered to big or small creative companies.

As mentioned earlier the working and educational environment is changing rapidly. Due to technological developments and improvements this will likely change even further. The office is not a place anymore where the employee has to be every single day. The office will for a bigger part of the time be used for staff meetings and/or client meetings. In the Netherlands we call this: ”Het nieuwe werken”, translated in English as ‘the new way of working’. One or even two days a week you can work somewhere else then at the office. It is expected that this will develop even further and I think it will eventually result in smaller offices and spread out throughout the Netherlands.

To further illustrate this change the following examples can be put forward. University lectures can be given through live stream as a result of the Internet. Nowadays you do not have to travel to one big faculty to learn or study. Course files, communication and ideas can all be exchanged through the Internet. Today the occupancy rate of the university libraries in Amsterdam is 100% during the exams and this becomes even more critical when all educational departments are having the same 8-8-4 timetables. (M. Straathof CSR, 2012)

Also the minister of economics, Henk Kamp, wants to counter the shortage of technical personnel by investing more in all initiated projects that expand the teaching of technology. (ANP, Dec 2012)
Approach of research and Design
Research

The studio ‘Amsterdam at sea’ covers a large area to research and thereby it has showed to be challenging at times to set a clear overview. At times the project description has not been very clear and specific. Nonetheless, the fact that I live in Amsterdam has not always simplified my ability to gain a clear overview. In order to set clear guidelines, I aim to be specific in the way this project will be analyzed.

This will be done by making a research relied on time, with the past present and the future serving as guidelines. Additionally, to be more specific it is also divided on different scales to deliver a well-integrated analysis of this project, viewed at from different scales.

The following elements will contribute to the analysis.
- To formulate the parts of the analysis: what am I going to investigate and why?
- To gather and show information
- To display what is important
- To make a representation of reality
- To be able to make comparisons
- To formulate the problems, (or I would say possibilities)
- To display a snapshot of time as a result of the process.

It starts with a question because information is needed; following the information is gathered and evaluated. Here after, to information is filtered in order to reach an answer to the relevant questions. Interpreting the given information does this. Finally the conclusions and positioning can be put forward.

The methods contributing to the different scales will be introduced in the following paragraphs. Some parts are covered individually and some as teamwork. The first scale is the urban scale of Amsterdam West and the given research area that is partly also Westerdok in the North.

When making an analysis of the research area and beyond, a historical analysis is made but with questions asked to give a certain direction in the field of research. This is done in order not to get lost in all the historical documents. A simple example would be: How did the brettenzone develop? Or how did the water infrastructure develop in Amsterdam West? The goal is to find out the period that the area was created.

However, before starting to search all the information on the web and libraries, you have to start with what is not in the books or on the web. This can be done through the following ways. Observing, making pictures, drawing and using all senses during the excursions I make. This method is also used in the ABCD research method Analysing Buildings, ‘Visit and investigate in situ’ (Zijlstra, 2009)

By visiting the area you can feel the vibes and get an un-described feeling without even looking into the books. As you know Amsterdam is a city surrounded by water and that is why a boat trip is of great use for seeing the west from the water and using the bike for further investigation.

Not only observations are needed, but also all different maps are important for understanding the area.

Everyone needs to split into different analysis, for example we have: Functional/economical spatial connections, Cultural Historical spatial planning, spatial mapping, and future urban master plans. All these topics can be as extensive as possible depending on the amount of questions asked by the person.

At the end conclusions are made per group so that other groups can see the important (filtered) values of the given analysis.

At the end of this analysis, a value assessment is based on the given conclusions to refine your research question for later.

The next step in analysing is the Architectural phase, a smaller scale. Already the opportunity is offered to give a preference for one building when you want to. Nonetheless, the choice of the building will be made at the end of the first quarter. At this scale the groups are split in groups of two or more. In this phase all aspects are important to gain as much information so that you can make a framework for the value assessment and thereby the research question and program.

Again at this scale the past present and the future is split into: Cultural Historical analysis (past), Physical analysis (present) such as typology organization structure etc. and the last future plan.

Once again asking questions is essential to work within a research frame and to make a structure for the presentation and conclusions.

A good method for this structure is from Lidy Meiers where the object is in the middle, the present time.

With this method a web of information can be put inside with for example the architect and his earlier works, the social and economical demography during time etc.
Approach of research and Design

Research

Finally, conclusions and a value assessment will be made based on the given conclusions.

The last step in this research phase is the scale of the type or Technological information or the building technology. At this point the student needs to analyse the technical state of the building with the underlying research question: “What possibilities do the building offer for a new use? (F. Koopman, 2012)

The research will be conducted in the current state of the load bearing structure, the materialization and detailing of the existing building and as earlier told for adaptation and change in relation to a new use. (F. Koopman, 2012)

In order to provide this sort of information you need the existing drawings from the architect or engineer and a visit to the archives or NAI is important. Almost all the drawings in the archive are not digital, so drawing on sketch paper is the best way to analyse the different plan. At the end a value assessment and conclusions are made based on the conclusions of the analysis.

Design

During my study in delft I discovered that the way I study is by Design by research, which slowly changes into Research by Design.

First I will get to know the typology of certain programs or functions that I want to use for my final design. I will focus very on the existing information and will implement these in my design later. Along this designing phase the program and design are becoming more specific and difficult questions need to be answered depending on the phase of the design. These can be answered by research to these same kind of problems. At this point I’ve switched from Design by research to Research by Design.

But in every designing process feedback is needed and redesigns are needed to be made at certain points during the design phase. But that is for the designing part of the plan. The other part which is very important to have and I know that is not my strongest points, is planning and making sure that I have enough time for all the stages in the design. But before you know its already three weeks before the deadline and you wont have enough time for redesigning or extra research. At a certain point the design phase has to stop and you need time to make it presentable. But I know that when the next semester starts there is no time for doing nothing because you think there is enough time for the rest. This part of design by research is the most important and needs to consume most of your time.

That is one other thing I have learned in Sydney, we did a intense research of 3 months without thinking or drawing a design. Everything and every bit of research done during that period, was translated into a design in 2.5 weeks time.
What is the influence of historical growth and expansion of the city on the research area?

Amsterdam started as a port for trading with the rest of the Netherlands. Especially with Haarlem, which was more important during that period than Amsterdam. Both cities were connected with each other through two trading routes. The Spaarndammer dijk (North) and the Heilige weg (south) figure 2. Soon after the Haarlemmer trekvaart was realised and trade with Haarlem was faster and on a bigger scale. Amsterdam expanded even further and became one of the most important and richest cities of the world in the 17th century (Golden age). But still during this period Amsterdam kept on growing within the city borders and therefore it became denser. After this wealthy period in the 17th century the industrialisation came at the doorstep of the Netherlands and Amsterdam had to develop behind the city walls. But more importantly, the harbour was too small for the higher demand and the bigger scale. The harbour had to move to the west part of Amsterdam, Amsterdam Westerdok.
The Urban Context

Amsterdam West, Research Area

What causes or defines the different typologies/building environment in the research area.

In figure 7c (yellow) is the first development plan from Kalff in 1900's. It is the first time Amsterdam is developed behind its city borders. The density is a bit less than the Jordaan neighbourhood, which is adjacent to Amsterdam west, that of course because of more square meters.

In 1920 till 1940, Orange, new development plans were made by Berlage and others that also would act as a backbone for further development in the future. Plans were made for the AUP, general extension plan, but because of the war this was stalled. After the war a new AUP, purple, was developed and built for Amsterdam West. However, it was clear that the designers had in mind: light, air and space, the principle of the Modern Movement.

The density map shows the amount of people per square meter. Amsterdam west is the densest area of the whole of Amsterdam, but still not as dense as Amsterdam city centre, even though it has the industrial area included.

The density is getting less and the streets are wider when going towards the west. When you look at the plans of Kalff this is not directly noticed. But when I compare it with the rest of west it is a big difference although it is not far from each other.
The conclusion after the urban analyses are set and made to make an overview of the questions I’ve asked myself during at this scale. One of the first questions that occurred me was the following:
What causes or defines the different areas and its borders in our research area?
To find that out I split this question into sub questions:
Where is the barrier in between these areas and why?
As seen in this value assessment or conclusion drawings is the research area in Amsterdam west is been split up into four areas. Each area has a border, which are defined by the research results. Three borders define these four areas. The first is the natural border of the brettenzone, the second is the border at the food centre where three different types of urban development has been realised. And the last and third border is that from the historical city border combined with the connections it holds with the old city and the outer ring, A10.
In this scheme I want to explain the disconnection between the areas and why I think it should be reconnected with a public function. Take the brettenzone for instance, it used to be a buffer zone between the industrial North and the resi-
dential South, but now that the Industrial North is not fully in use anymore and is already re-used for residential purposes, the buffer zone was not needed anymore. Now the westergas terrain is a great example for this. They designed a place for cultural use and thereby gave the whole neighbourhood a new impulse. The only thing that makes it hard to connect the whole North with the South is the train track at the back of the Westergas terrain. Its what the Vondelpark does for the two city borders of Amsterdam South and Amsterdam Old-West.

I know this is not refined yet but I know that this will develop along the more specific the field of research will be. But before I want to go into a smaller scale I want to have a research question that could be implemented on the urban scale. After I did this research I refigured the question to:

How to connect different structural and social economical areas of Amsterdam West?
After we made the analysis for the urban analysis a choice of building was required and all were within the parameter of the research area. However I’ve chosen another building that was not on the list but could help me further with the connection between the different neighborhoods.

It is the Tramremise that in Amsterdam-West just south of the research area.

So what does the Tramremise have to do with the Brettenzone and the area of research? Before I answer that an Architectural analysis has been made to understand the direct context and building. What is the value of the Tramremise and why is it a monument?

After the GVB (Amsterdam transportation) was moved to a different location in 1996 the Tramremise- complex at the Bellamysquare lost its function. Temporarily it is now a space for artists and creative companies. But now that it has been squatted it has not the effect that they thought it would have. This Tramremise is one of the last existing best kept remise- complex in the Netherlands. That’s why this now belongs to Dutch heritage list and is one of the oldest remnants of Amsterdam West with its facade at the north facade.

One of the oldest part of the Tramremise dates from 1901. This part consisting of five halls with each six rail tracks was built next to the already existing city cleaning station on the east side, for the electric trams. Perpendicular to these halls was the sixth ‘traverseerhal’, that was there to transport small wagons on a rolling bridge to other halls. At the facade on the Bellamysquare, each hall could be entered through two doors. This now contemporary characteristic facade is a result of the construction made in 1914, to extend the halls 2 and 3 (see figure17)

Furthermore the complex was accessible at the Tollensstraat from where a rail track was connected to halls 6 and 8, the Traverseerhal and the turntable hall. This part at the Tollensstraat has a rich valuable detailed facade with Jugendstil elements in the hard stone, but is not that visible anymore due to the dead-end Tollensstreet that used to be connected al the way up to Kwakerstraat. On the Facade the text: “Gemeente Tram” is written, so this was probably the formal head entrance of the Tramremise. After the extensions of the GVB and the City cleaning station, they built the whole terrain and thereby closing of the Tollensstraat.
Historical growth of the Tramremise shows some comparison with the growth of other industrial buildings realised in the same period. All were placed outside the city borders by safety and health regulations, also the scale of production was grown and there was not any space left within the city.

In the second half of the 19th century there became a shortage of housing. And almost in the same period just before Kalff, they started to build between the Bilderdijk Kade and Kostverlorenkade, now the Costakade.

Soon after this period the rest of West Amsterdam was designed by the AUP and the Tramremise with the cleaning company adjacent to it were lying in the middle of the city. The terrain was within the borders of the 1878 plans from Kalff.

Since 1996 the Tramremise is not in use because the function has been moved again further more west. The city cleaning company has been demolished for future development, and now the open field is used for urban farming programs and little festivals. This shows that there is a need for public space in this neighbourhood.
Architectural Context

0.5 km radius of location

Now only the Tramremise is still standing and is used by squads and in very bad shape but still in use for small events such as markets and small festivals. When looking at the development of the building itself, it was not constructed at ones. It took almost 50 years before they stopped expanding it.

The most important relation with the Tramremise and its context is at the B elmamysquare. This Square is triangular in shape because of the way the tram was directed around it into the halls. Seen the fact that the characteristic saw shaped facade was a result of this shape it has now a big value to this public space.

The Ten Katestraat at the east side of the complex is a busy open market street such as the Albert Kuyp, also a famous market in Amsterdam. On this street small cafes and restaurants are situated that are used by the neighbourhood very often.

The ten Kate market is one of the last open markets in Amsterdam and has thereby a great value. In the analysis I came to the conclusion that the Tramremise is hidden behind from the Ten Kate Markt and the Kinkerstraat in the south by a large building block. The Kinkerstraat is a busy shopping street with all kinds of stores and merchandise.

The Kinkerstraat is only a one-way street to get in Amsterdam centre; if you want to go to out of Amsterdam then you have to go north or south from the location. That's why this is mostly destination traffic and public transport route.

When looking at the analysis of the connection and accessibility of the Tramremise you can see that its pretty bad accessible from the Kinkerstraat. No direct connections can be made, but with the open field on the east of the complex are possibilities to improve this. Furthermore the open field at the east will be build up again when looking at the future plans of this site.
Architectural Context

Starting points

Connection with the Tollensstraat is one of the first improvements that could be made and will increase the accessibility of the Tramremise to make it a better public place.

Reconnecting the Bellamy Square with the Tramremise. At this moment the Tramremise has no relation with the Bellamy square and that needs to be restored. This side of the building is the most characteristic for the Tramremise, but today is in bad condition. Windows are broken and doors are gone and replaced by blind walls. Also the Bellamy square is nothing but a fountain and some trees, also in a very bad condition.

Old tram-tracks are still visible and give an historical value to the site.

The Bilderdijkkade is not build up as the rest of all the canals of Amsterdam because of demolishment of the old city-cleaning company. Reintroduce a form of enclosure at the Bilderdijkkade.

The open space where the formal cleaning company was standing is now one of the biggest opportunities to this project. Introducing another direction for the building. The space can be build-up, but can also be used to attract more people into the location.
The facade at the Tollensstraat functioned as a main entrance with a big gate and a smaller one. The big one was for the tram entering or leaving, the smaller one was for the employees to enter. On the left side a small house was built for the head of maintenance and on the right side an employee home as well. Jugendstil elements were made in the hard stone window and doorframes. And the facade where the entrance of the employees is is a bit in front of the others. This will result in a relief rich facade.

When continuing over the Tollenstraat towards the Bellamysquare, a clear closed facade is visible, it was closed because of the formal City cleaning office that was connected to this part of the remise. You can see a clear rhythm that shows the Rhythm of the construction inside.

The Facade at the Bellamysquare has been built later then the Tollenstraat, the asymmetrical facade with an extension of the facade in the middle and corners results in relief in the facade. The window element with hard stone is influenced by Berlage. A remnant of the expansion is still visible in the lower left facade where the damage was made during demolition. Each hall has two entrances each jumping in front of each other, the saw like facade. But today some entrances are closed and could not be opened or windows are made for other functions. In hall 4 and 5 the facade is not copied. This facade is not jumping but straight and the amount of entrances are doubled compared to the others. Each hall had six rails to maintain, repair or stall the trams.

An extra office space is made on top of hall 5 that has a more modern look then the other facades; this facade has no match with the other facades only the two small extensions on top at each side. Also a small annexation is built next to hall 3 that end at hall 2.
When looking Saw-shaped facade from the west, green, the relief of the high facade at the Kwakerstraat or Bellamy Square is clearly visible. The employee house on the Kwakerstraat or Bellamy square is built at the same time as the other high facade at the east side of the north facade. Same elements are coming back in the facade. Only the height is different and is because of the surrounding buildings that are all four stories high, so they were able to build higher at this point.
The conclusion after the Architectural analyses, are made by a value assessment based on historical contextual and architectonical values.

I will first start with the relation with the direct context such as the Bellamy square and the open field next to the Tramremise. The Tramremise complex is partly disappearing into the building blocks of the Kinkerstraat and Ten Katestraat, the parts that are visible are very nice in detail, except for the blind facade at the west.

As seen, and written in the results of the Architectural analysis, it is obvious that the relation with the square is from great value. Furthermore the amount of space that is left from the formal GVB terrain is a great value and can be used for design purposes.

Another architectonic value is the building itself that consists of skylights throughout the building and this also should be kept. With the Kinkerstraat, as main traffic and shopping street, and the Ten Katestraat as daily market at the back. The reconnection of the Tollensstraat is needed. The facade at the Tollensstraat is representing a highly architectonic ending/entrance of the whole complex.
The Facade of the offices at the Ballemy Square is also from high architectural value except for the remnants of the extension of 1948. The “jumping” facade front is giving the unique value. Also not totally forgotten is the value of the gate constructed or renovated in 1984. It defines the border between the square and the inner court of the Tramremise.

The extended halls from 1914 are now one of the most characteristically parts of the whole complex. This was for me the point that I decided to choose this building. This texture or jumping of the facade gives the adjacent square its lively character.
The Tramremise can be separated into different parts due to their construction type and the year that it was built. As earlier told the Tramremise has not been built at once. The first part was built in 1901 by the engineer Reinders & van ’t Ende. The architect is still unknown. Later hall 1 and 2 were built in 1903 where the roof construction of only hall 1 was constructed with lattice trusses so that they could span all the way without a column in the middle. Also this hall was a little bit longer than hall 2 with the offices at the front of Bellamysquare.

The other halls were constructed the same way, with the polonceau trusses that I will tell more about later.

As told earlier, each hall had six rail tracks that again were connected with the Traverseer hall perpendicular to these halls.

Hall 2 and 3 were used for the motor wagons, so each rail track had two working ditch to work underneath the motor wagons. You can see this clear when looking at the foundation plans. (GA)

The next big phase in the design of the Tramremise was in 1914 where the offices were built on top of hall 2 and 4. Also the characteristic facade of today was built then, it was a result of the extensions of halls 2 and 3. Furthermore, a new staircase could enter the office on top of hall 2 and. This stair can be reached at hall 6 at the Traverseer hall. (GA)

In 1930 the employee home at the Bellamystreet was topped with two extra floors.(GA)

The last big construction was made in 1948 where the extension was made at the offices of the Ballemys Square. This extension is now demolished again, but left its marks on the facade.

The last renovation was made in 1983; it was the renovation and redesign of the fence work at the square. It was made by the design of ir. Cohen Paraira. (GA)
The grid of the complex is throughout the building the same even the parts that are extended in 1914 at the square are in the same rhythm. The foundation is the typical Amsterdam Foundation system with two piles underneath a wooden based brick arch structure.

As earlier told the foundation is at some places heavier constructed than other halls. In hall 4 for instance the foundation is only at the walls and columns. Compare it with hall 3 this hall had to carry the heavier motor wagons and needed to go underneath the wagons for repairs.

Hall 6 is the most heavy founded, this hall was the Traverseerhall that connected all the other halls with a steam train on a track that could transport wagons perpendicular to other halls.

In figure 24 the measurements are made to give a better idea of how big the complex is. With an 11795-m² surface it is almost two football fields. Halls 1 till 4 have a grid of 6100 mm with the characteristically polonceau trusses.

But hall 5 has a smaller grid of 5500 mm. This hall has a different construction then the polonceau type. Also the span is free over the whole 22 meters. That is a difference with the "normal" 6900 of the polonceau truss.
The exploded view gives a better overview on how the halls are constructed with the Polonceau trusses. Also the way the forces are going from the roof into the ground via the Amsterdam foundation.

All structural elements are still working properly and in good quality except for the paint that protects the wood in the roof construction.

Every hall is constructed with each two Polonceau trusses that are connected in the middle by a composite column made from casted iron.

The Polonceau trusses are from casted iron as well and can restrain positive and negative forces that could work on the whole construction.

The composite casted iron columns are made from several pieces that were casted into a quarter of a circle. Later they were put together at site with rivets and they did this few times till the right height was met.

The Polonceau trusses were connected to an I profile steel beam that is resting on the iron columns every 6100 mm.

This connection point is not part of the Polonceau truss and is different at the walls. The walls are constructed in the same rhythm as well, but are wider to resist the horizontal forces. In between the primary walls a secondary less thicker wall is constructed for both loadbearing but mostly separation of the different halls.

The Polonceau trusses are connected on the top with wooden beams that carry the roof that is made from bitumen and tiles.

The roof light or skylight is one of the features that make the Tramremise such an interesting place to be. The skylights are constructed on top of Polonceau trusses with a wooden beam that runs parallel with the hall.

Because this is constructed throughout the whole length of the hall, except for halls 2 and 4 because of the extra level for the offices, the Tramremise is a very light and pleasant place.
The building technological part of this complex is in one hand the halls with the iron polonceau trusses and in the other the offices and employee houses that were built with the traditional constructions such as wood beams and roofs. Halls 2 till 6 and 8 are still in the original state with their polonceau trusses that are resting on the masonry walls and iron casted columns in the middle. This is for me from high structural value and should always be kept. Also the steal construction in hall 1 is of great value although it is not the polonceau truss it still a very big span of 21 meters.

When taking the interior into account, the halls 3, 6 and 8 are the biggest architectural value. The large space is kept intact and is resulting in beautiful spatial qualities.

Finally the relation with the halls and the outside of the complex is important to mention. You could say that the formal use of the complex is translated into the relation with outside. Trams entered the complex at the front of Bellamy Square and came in via the high doors. Because Trams had to move from one hall to the other they had to be transported through the Traverseer hall 6. That is why all the halls are strongly connected with the square in front, but also with the Traverseer hall at the back. This relation between outside and inside should be valued.
Aims of the Project

Problem Statement

Problem statement

After looking at the reflections on each scale I have been able to formulate the research question I want to use and answer, for the further research during my graduation period. First of all, before I start to write this down, I will discuss the reasons of the choice for this project.

When we started to do the urban analysis eight buildings were selected and provided to choose from, but other projects were allowed as well when they were within the area of Amsterdam West. Before I started with analysing the research area, I had no idea what building to choose. Just after the urban analysis, we had to choose a building that would interest us, but still everyone was asked to keep an open mind for other buildings as well, because in a group not everyone can choose the same building. I was assigned to The Westergas Factory with the Gasholder group. However, next to this group research project, I also wanted to research and analyze two buildings that I had found to be of interest as well and worthwhile considering as graduation projects. These were:
- Overhoeks tower at the waterfront of Amsterdam North (the old Shell tower)
- Tramremise

I had no idea what building to choose, but the Gasholder at the Westergas Factory was more important because of it was a group project. After having finished the Architectural analysis for all three options, I reached my decision to choose the Tramremise in Old-West. After having chosen the building, I did realize I still had more analysing to do, to formulate a clear storyline of my tramremise plan. After having reviewed the conclusions and the research questions, I was finally able to formulate a general research question satisfying all the scales.

During the historical growth of Amsterdam at a certain time the industrial areas were moved outside the city borders, this had everything to do with the regulations on health, but also because of the scale of production and trade was getting bigger. Today these areas are no longer in use and because of further growth of the city they were built in or demolished by city plans. Still some remnants of these areas are visible today. And they are all almost on the same parameter, which is clearly visible in the few examples given in the diagram.

Most of them are renovated or redeveloped for other purposes, such as the Westergas factory, now one of the most popular cultural hotspots of Amsterdam. Secondly, The NDSM Warf, a creative area with lots of creative industries and The old eastern gasholder, now in use as a big sports centre.

It is interesting to question what they have in common. These buildings were almost all built during the same period in time. Additionally, all are successfully integrated into the existing social economical structure of modern society.

In the introduction section of my thesis plan, I briefly discussed the topic about the changing work and educational environment. Also I have already explained some of the future problems regarding the occupancy rate in some of the major University libraries in Amsterdam. This is one of the biggest problems for students that are not from the UvA or Hva. They do not have another place to study then the option of a location 45 minutes away from their home. For me as a student from TuDelft and an estimated 15% of all master students from other universities in the Randstad, it is even a bigger problem. As a consequence of better infrastructures, such as fast trains, the trend of moving to the city of living preference in contrast to moving to the city where the university is located increased.

Based on the previously discussed information I propose the following research question:
What is an educational centre for the universities, situated within the Randstad, located at the Tramremise in Amsterdam West?

With sub questions:
Will an educational centre for the universities, situated within the Randstad, have an effect on Amsterdam West, Amsterdam or even the Randstad?
Why the location Tramremise?
Which universities are affiliated with this new concept?
Aims of the Project

Goal

In the beginning of this thesis plan I have talked about the change in the working environment and the already empty office problem. Now that the former government, Rutte II will introduce the plans to change the compensation for travelling by public transport, the student is like before, more bound to locate in the city of where the study is located. The following paradox can be observed. Whilst offices are changing and spreading out into smaller enterprises and becoming more mobile, the student is forced to move to the city where the faculty is located. Additionally, if a student wants to profit of the universities resources it must make its way to campus, as until now no other option exists. It can be questioned how these problems are related to the research question. By answering the research questions an answer will be provided to these current shortcomings. The educational I plan to realize will be a solution to these shortcomings.

During my years of study I have travelled a lot, because I first started with a different study in Amsterdam. I have not moved from Amsterdam since then and I have been travelling since then from Amsterdam to Delft. That has always made me think of a solution. After my exchange project in Sydney I realised that as long you can work with your co-students in a place, whether it was at someone’s home, or at a small office space, the trip to a faculty was not needed. Currently, the faculty is needed to go to lectures or to meet with teammates and to benefit of the additional faculty resources such as the computer labs and workshop space at the TU.

With my Tramremise proposal I aim to tackle the future educational and working environment changes. My goal is to principally transfer and redesign the Tramremise into an educational centre for selected universities situated in the Randstad. Next to this, a part of the Tramremise will also be designated for entrepreneurs, commuters or to serve as a regional office for bigger companies.

A metropolitan creative educational working environment is provided in a central location in contrast to more over the existing commonly isolated university campuses. Simplified access and connection to diverse universities is offered in combination with a sub-working-environment. An educational creative hub will be offered to students, young entrepreneurs and settled companies in the city of Amsterdam.

A location will be offered for students to follow lectures through Collegerama. Collegerama entails digital live streaming of the lectures given in Delft. Next to a provided work and educational environment, a space is created where interaction between the students at the diverse locations such as the studios, restaurants/café’s or just outside in the city of Amsterdam can take place. Furthermore possibilities of information exchange and collaboration between companies, freelancers and students all in one place is offered. Also an exhibition space will be realised to give the students or university a bigger platform in the city of Amsterdam, instead of their own “isolated” campus.

It fits right into the old industrial ring of Amsterdam, with the cultural hotspot, the creative industries, the sports and health centre, the Museum Square and then the technical and student centre of Amsterdam. Not only will this be for the bigger scale of Amsterdam, but also for the smaller scale of West and even the neighbourhood. Functions as a Food market will be introduced and space for urban farming will still exist for the neighbourhood. It needs to be a place where people can show their work to the rest of Amsterdam. This can be your work of study, presentation or works of art. I want to create a new area where people can come to interact with each other, a new knot in the middle of the city because of this old industrial ring. (Lynch 1960)
Aims of the Project
Societal, Social and Scientific Relevance

In the previous sections I have described the problem statement and goals. With this shortly additionally what the societal, social and even scientific relevance are and will be in the future if this project would be realized.

On a societal scale the amount of students could increase when this concept is realized, as a result the student is not stuck to the city where they study in. I can reflect this on my personal experience, when I chose another study because of the city. This can also help in attracting more technical studies, by having a department for the TuDelft for instance. Via the realization of this project, more people will see and get to experience the technical studies. This could lead to the result that the more often people are acquainted with the studies, the more they will turn interested in them.

On top of this, this project is a direct answer to the shortage in study places in Amsterdam due to lack of libraries in the city. I believe that by realizing this concept the student is no longer educated in one field situated in their own faculty for five years, but with this project the student is offered a much larger and broader education because of the opportunity and possibility of more interaction and collaboration with other students from other universities.

The technological innovations have not been used in the educational system as they are used in the working environment. It can be questioned why one should attend the lectures when they can be followed from your laptop. Additionally, why should one go to meetings when there is the possibility of the medium Skype or another platform for facilitating face-to-face meetings online? It can be put forward that when something is needed for better communications or better collaboration the technique will follow and fill that gap. I also agree with the idea that physical interaction and working in groups is a good way to improve the workflow and team spirit, but this is still possible in other ways. This project will decrease the amount of travel time for students per week to university by 2/3.

The fact remains that students are obligated to travel one or two times a week for assignments and consults, but the rest of the week the students can continue and complete their course work at the Tram remise, with access to the necessary resources.

On the social scale this project is not only for the student or entrepreneurs. It also benefits the whole neighborhood and Amsterdam West. In the last 10 years this neighborhood has become safer, healthier and crime has decreased. More students are renting apartment in West because of the relative low renting rates. This public building will be a good injection for the neighborhood.

Next to the educational and working space, the public market, the inside located cafes and restaurants, fitness etc. will definitely enhance the neighborhood even more.

Reference projects

Ego eco-system winner of the BK competition, Architect: Marc Koehler

University library Utrecht centre. Architect: Grosfeld van der Velde

This library is situated in the city centre of Utrecht and consists of different monumental buildings connected with each other and the city.
Planning
First planning

When making a planning it is important to be very accurate, every little thing is important for the planning even small holidays needs to be counted in. By creating a detailed working scheme the risk of mistakes and failure is lowered dramatically, although its very difficult to give an firm planning it already giving you the feeling of the amount of time and the amount of products. Its not that you dont have time but you make time.

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### Products every Presentation

**P1**
- Ontwerp gericht lab
- Thematisch onderzoek
- Situatieonderzoek
- Onderzoeksgericht lab
- Thematisch onderzoek
- Situatieonderzoek

**P2**
- Ontwerp gericht lab
- Stedenbouwkundige schets 1:1000 / 1:500
- Programma van eisen
- Voorlopig ontwerp (plattegronden, doorsneden, gevels) 1:200
- Leerplan
- Onderzoeksgericht lab
- Stedenbouwkundige schets 1:1000 / 1:500
- Programma van eisen
- Schetsontwerp (plattegronden, doorsneden, gevels) 1:500
- Leerplan

**P3**
- Plattegronden, gevels, doorsneden 1:200 / 1:100
- Deel gebouw, pl. en drs. 1:50
- Gevelaanzicht fragment met horizontale en verticale doorsnede 1:20

**P4**
- Situatietekening 1:5000 / 1:1000
- Plattegrond b.g. in situ 1:500
- Plattegronden, gevels, doorsneden 1:200 / 1:100
- Deel gebouw, pl. en drs. 1:50
- Gevelaanzicht fragment met horizontale en verticale doorsnede 1:20
- Details 1:5

**P5**
- Theoretische en thematische onderbouwing onderzoek en ontwerp + reflectie op architectonische en maatschappelijke relevantie
- Situatietekening 1:5000 / 1:1000
- Plattegrond b.g. in situ 1:500
- Plattegronden, gevels, doorsneden 1:200 / 1:100
- Deel gebouw, pl. en drs. 1:50
- Gevelaanzicht fragment met horizontale en verticale doorsnede 1:20
- Details 1:5
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Images and Illustrations

All images are made by the writer and if not its noted in every image or Illustration.

Websites

Het parool:

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http://architectuur.nl/project/universiteitsbibliotheek-binnenstad-utrecht

Ego eco-system