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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 Spaarndammerdijk Pic 1 (North) and the Heilige weg Pic 2 (south) Fig 1 and 2. Soon after the Haarlemmer trekvaart was realised and trade with Haarlem was faster and on 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.
Urban Analysis

Defining the areas

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

In figure 5, 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’s not far from each other.
Urban Analysis
Research Questions

The conclusion after the urban analyses are set and made to make an overview of the questions before I started with the Urban analysis. One of the first questions that occurred to 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 split up into four main areas (Figure 9). Each area has a border, which are defined by the research results. The three borders in figure 10 “separates” the four areas.
Urban Analysis

Conclusions

The first is the natural border of the Brettenzone that developed due to the historical growth of the City of Amsterdam. The Lobbenstructure that was the overall expansion plan of Amsterdam made this zone even more protected from urbanization. (Figure 11)
The Brettenzone had an important part in the earlier days, but now it still has the role of separating the working and the living area from each other, even though the harbour is not fully in use anymore.
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 residential 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.

How to connect different structural and social economical areas of Amsterdam West?
After the GVB (Amsterdam transportation) was moved to a different location in 1996 the tram remise-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 tram remise 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 parts of the tram remise 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 39 (see figure.) 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 all 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 Tollenaarstraat.
Historical growth of the Westergas factory at the Brettenzone, and that from the tram remise, south west, were exactly the same during the same period in time as well.

When comparing both industrial areas with each other you can see that both used to be on the outer parts of 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, yellow, 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 tram remise 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. Today the tram remise and the cleaning company are not in use anymore because the functions were moved again more to the outer skirts of the city. Now only the tram remise 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 tram remise and its context is at the Bellamysquare. 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. The Kinderstraat at the south is a busy shopping street with a public transportation spot just in front of the Ten Kate street. This is one of the busier streets to the West of Amsterdam.

The facade at the tollensstraat functioned as a main entrance with a big gate and a smaller one. The big one was for Tram entering or leaving and 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 a employee home as well. Jugendstil elements were made in the hardstone 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
Architectural Analyses

Facades

connected to this part of the remise. You can see a clear rythm that shows the Rythm of the construction inside.

When looking saw shaped facade from the west, green, the relief of the high facade at the kwakerstreet or Bellamy square is clearly visible. The employee house on the kwakerstraat or Bellamy square is build 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. These pictures are giving a more detailed description of the facades combined with the explanation and architectural elements.
The Facade at the Tollensstraat is clearly a different building block than that from the rest of the Halls. The outline of this facade is clearly seen in both brick facades at the Tollensstraat and the Bellamy Square.

What clearly is visible in the outline, are the small extensions on top of each building part. It's something that is coming back in the Berlage architecture as well. Also the thicker roof construction edge, made from hard stone, shows that the building is build and designed in one period. When I visited the site for the first time I couldn't figure out if the building and especially these brick facades were build at the same time.

Now that I've made the analysis of these facades similarities could be seen in style and materials.

Continuing to the right you can see the back facade of hall 1, this part of the facade is visible since the demolished city cleaning office adjacent to it. See picture. to see this blind wall, now its been used for artistic graffiti.
The Facade at the Bellamysquare has been built later then the tollenstraat, the asymmetrical facade with an extension on the facade in the middle and corners results in relief in the facade. The windows have hard stone slabs that are 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 comparison 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.
Architectural Analysis
Value Assesment

The conclusion after the Architectural analyses are made by a value assessment based on historical contextual and architectonical values. I’ll first start with the relation with the direct context such as the Bellamy Square and the open field next to the remise. The remise 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 façade 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 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 skylights throughout the building and this should be kept. The context again of the GVB terrain is the big infrastructural routing around it. With the Kinkerstraat as traffic artery and the Ten Katestraat as daily market at the back. The reconnection of the Tollensstraat is needed. The façade at the Tollensstraat is representing a highly architectonic ending/entrance of the whole complex.
Architectural Analysis

Value Assessment

The Facade at 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 a unique value to the complex. 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 remise.

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 relief 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 tram remise has not been built at once. The first part was built in 1901 by the ingenious 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 Traverseerhall perpendicular to these halls.

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

The next big face in the design of the tram remise 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 the office on top of hall 2 and 4 could be entered by a new staircase half above hall 3. This stair could be reached at hall 6, 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 Ballemy 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 ing. 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 traverser hall that connected all the other halls with a steam train on a track that could transport wagons perpendicular to other halls.
In figure... the measurements are made to give a better idea of how big the complex is. With a 11795 m² surface it is almost two football fields. Halls 1 till 4 have a grid of 6100 mm with the characteristic polonceau trusses. But hall 5 has a smaller grid of 5500 mm. This hall has a different construction 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.
In this section made from the traverseer hall several things are clearly visible. Such as the heavy foundation of this hall because of the heavy loads it needs to transport from each hall to the next. The transport was done by a steam powered rolling system that could transport whole wagons perpendicular through the hall. On the left in top section and right in lower section hall 8 is situated, also known as the turning hall where the trams on the traverseerhall could be turned 900 so they go out through the Tollensstraat.

Furthermore I've described the relationship between the Bellamy square, the halls and the Traverseer hall at the end. In this section all the high doors are visible and ending in this great hall.

Another relationship can be made with the Ten Kate street, the traverseer hall and the Tollensstreet. That are almost connected with each other trough the traverseerhall.

I've shown the traverseerhall in section because the whole tram remise would not exist without this hall. It is the most important element of the Tramremise that connects all the different halls with each other. Even the offices on the next level can be entered by the staircase situated at the traverseerhall.
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 on 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 in constructed for both loadbearing but mostly separation of the different halls. The poloneau 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 makes the tram remise 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 tram remise 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 impressive 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’s 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.
How do I stand within the field of Architecture?

I want to create something extraordinary that can be realized a tailor-made solution. I want to design a piece of quality in this existing structure and not something big and based on quantity and hugeness. The field of Architecture is changed and now consists of small interventions and/or projects. Today we don’t talk about quantity anymore. (Meurs, P, 2012) I know that money isn’t the binding factor when you talk about quality, although it has a lot to do with one another. I think with relatively small but qualitative high improvements, the more it will be reliable and a success in the future.

Firstly there are different approaches to make a value assessment and thereby making your own conclusions and finally the program. But what will be my role within the field of RMIT. What way of redesign fits in my Architectural Philosophy? I think this is very interesting to figure out what you motives will be or always were. I’ve never thought about that before and so I will try to explain this on the hand of different approaches in RMIT. Maybe every approach is different depending on the chosen object, with each a different story to tell and maybe more values in history for instance then architecture.

So I’ve chosen the Tram Remise for my graduation project. The value of this project are all been told and explained so we know that it has design value because its one of the last in its kind and thereby also a bit of an age value, but that doesn’t mean that I cannot do anything to the building because everything is something from the past. That’s why on these values I will approach the design more as a craftsman where I will deal with the historic value of the details such as the Polonceau trusses, the details in the facades in the in and outside of the building and the high doors at the entrances and inside of the Halls.

Another value is the location it has within the urban structure of Amsterdam, old industrial ring, but also at the scale of the neighbourhood. With this value I as an Architect need to see how to recharge this area, just as the Westergas Factory is transformed into another function. To do this with the Tramremise in Amsterdam-West I want to give another function to the Tramremise that can complete the old industrial ring but still can keep its story as a Tramremise that guarantees the historical value and story of the place.

So I want to keep the monumental values of the Tramremise and where it is necessary improving by making a modern extension as long as it relates or continues to the rhythm of the existing structure without making some kind of extreme contrast between the old and new. But also, when necessary, demolish low monumental parts to improve the quality of the design.
In my main topic in the beginning of this thesis plan I’ve 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 travel by public transport, the student is now more bound to the city where they need to study. While offices are more spreading into smaller enterprises the student is forced to move to a city of their faculty.

So what has this to do with the research questions? How can this be an answer to this topic?

During my years of study I’ve travelled a lot because I first started with a different study in Amsterdam. I’ve never left Amsterdam since then and have been traveling 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, weather it’s at home by someone, or at a small office space somewhere a faculty is not needed. But a faculty is needed to go to lectures or to interact with other students and so on.

I want to propose the dependence of the TUDelft in Amsterdam. This would be a place for the students of the TUDelft, that live or work in Amsterdam, but still can study at the TUDelft. They can follow lectures through live stream live from Delft and they can work or study in the studios especially made for students from all faculties of the TUDelft.

Also there will finally be a podium for the students to show their projects at the end of each study year. The student can stand on a bigger podium now, but the TuDelft as well.

Furthermore I want to design a place where you can work as an answer to "het nieuwe Werken" this is becoming more popular and a place to work is needed. 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)