Personal analysis document P5
My view on the design process

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General introduction on the reflection to the graduation process

In this final textual product coming from the graduation process, I will try and reflect on said process. It is essential to a good scientific research to make sure ones process is in fact –somewhat- based on empirical thinking. It is often said that an architectural study on a subject is anything but scientific, and I can partially agree with this way of thinking. This statement mainly comes from people not working in architecture and who have never been in the process of architectural design. The design and research of buildings is based on the initial analysis of context, subject matter and precedents. If one makes a precise execution of this initial phase, the design will be partially funded in a scientific discourse. I say partially, because the phase following up the analysis will have to deal with design choices that are less tangible. In this document I will try to make a precise description of the graduation process, with the goal to make sense of all the choices I have made. A linear stable graduation would be preferable. This implies that the questions that I have asked myself are answered in the right way. That they correspond. Because sometimes, during an architectural process of this length, one loses track of what the initial question was. That is why it is crucial at this time, to do an analysis or reflection of the work that has been done. After this period (meaning the P4) some small adjustments can make the process more scientific!

The graduation process is built up in segments. These are part of the graduation to give the graduate the ability to grasp the subject. At each evaluation the feedback will give an indication on the progress that is made. This reflective product will follow the same development of evaluations. Starting with the analysis phase and building up to the current condition.

Introduction to the subject matter

Arnhem is situated on the border of one of the biggest national parks in the Netherlands. It is fair to say the national park reaches into the city, but it is better to put it the other way around. The city grew into the green. From the beginning of the 19th century on wealthy people resided on the boundaries of Arnhem. It is here where they made large estates. The defensive city walls were demolished and opportunities rose to exploit the archaic landscape close to the Veluwe. The geo-graphical characteristics of Arnhem are quite special to the Netherlands. Great height differentiation -almost 100 meters- is present in the North of the city, created in the last ice age. When the cold resided, so did the ice and large ice-pushed-ridges were left behind. These features were popular with the new inhabitants. It referred to the fashion of the Napoleonic time. Large English garden style landscapes with moderate height fluctuations. In the South of the city a whole different landscape is present. The city is crossed by the river Rhine. It is at this division that the river landscape begins. The Rhine and also the IJssel were forced to find new ways because of the new formed hill landscape. This landscape is characterised by a flat land formed by sedimentation deposits left there by the rivers. It is at this meeting point of these two typical landscapes, that the KEMA site is located. Figure 2 depicts the city fabric in the present day. It is clear to see that the city expanded at the cost of ecological structure. The city grew into the green, but in a very clever way, preserved the cultivated early 19th century estates. Once these estates were opened to the public, the park-like gardens were transformed into city parks. Arnhem is now famous for these ecological veins reaching into the city centre. They ensure a very healthy environment, not only by having an ecological valuable space next to residential areas, but also through other means. The parks serve as recreational spaces with numerous activities held by the residents and the municipality. Permanent art exhibitions, sports activities and leisure functions ensure a lively area. The KEMA site was developed on one of these valued ecological veins. The KEMA site was developed one of these valued ecological veins. The KEMA site was developed right next to the city centre in the West of Arnhem. Lying on the border of two municipalities, namely Renkum in the West and Arnhem in the East. Due to this fact KEMA has difficulties deciding what side to pick. In early days this was not a problem. KEMA was a very well established firm clearly belonging to Arnhem and its residents. This manifested in the way the company represented itself to the outside world. Workers were proud to work for KEMA Arnhem and the site had a clear identity. This was one of a secret nature. Due to the way KEMA approached -or in a way did not approach- the public, people knew it was one entity. The site also has a rich history even before KEMA decided to make it its head-quarters in 1934. The location, as figure 3 shows, is at the end of one of the green areas entering the city.
Or the other way around. Who knows? KEMA became an established firm in Arnhem in 1937 when the first testing facilities were finished at the Den Brink site. It soon became one of the biggest players in the business of testing and developing big electronic appliances. From this period on, KEMA expanded greatly building new additions until the 1970’s. Then this tendency of growth stagnated and the company focussed more on innovation and outsourcing. Yet, still new buildings were build but in a different style and also in different areas. KEMA now focuses its business more on the global market, increasing its interest in other company’s and decreasing the activi−ties at the headquarters in Arnhem. Slowly but surely the old testing buildings and office spaces are traded for a new headquarter leaving these valued monumental buildings redundant. These buildings are mainly located on the Den Brink area. This implies that this will become a -somewhat- deserted area from 2015 onwards. The challenge of the design will be to activate this site again so that it will matter to the surrounding area and Arnhem.

Segment one. The initial phase.

After the first weeks a notion of the subject matter was formed. In this phase a first analysis of the context and site was made within a group. I was assigned to do research on the history of the site and KEMA. This meant we visited several information sources, such as the local public library in Arnhem and the city archive. Here we already formed the opinion that a proposal for the design would have to be grounded within the historical context. This was because the subject site had undergone several stages of development trough time. It became clear that the present and past values had to be incorporated into the design in order to make a mature outcome.

The information that we gathered was shared between the different subject groups, and put together in an analytical background document. Some of the important subjects were the tangible present state of the site, the social and economical background, an analysis of the structures present on the KEMA terrain and the plans the municipality already had for the site.

After this general analysis came a more personal part of the P1 report. This meant that a precise analysis was made through the different scale levels. It soon became clear to me that these levels were intertwined to a great extend. The estate values were still present in the current state of the park. It's structure was reflected in the placing of the testing buildings. The old ecological structure was kept through conservation. The buildings reflected the same building technological and architectural significance as when they were build. It seemed preservation had put a mark on the site. It looked and felt archaic, as going back into time.

It became clear to me in order to maintain this tendency of preservation something had to change. One of the conclusions of the exploration phase was that the conglomerate of buildings would become vacant in the upcoming years. The functional lifespan of the buildings had expired. In order to make them suitable for future use with the same functional implementations, would mean large investments from the developing parties. It seemed to me that different functional use was in place in order to maintain this historic city park.
To come up with a functional statement I started looking at that other transformed estate in Arnhem. Sonsbeek is also one of the green stretches of land reaching into the heart of the city. I was interested in finding similarities in order to get a grip on the design proposal. That is why I was glad to find that there were comparable aspects between Den Brink and Sonsbeek. Park Sonsbeek has been open to the public since it was bought by the municipality in 1889. Since then the old structure of the built environment and the ecological structure have been maintained or further exploited. Currently it offers a variety of interactive buildings and elements, such as: two restaurants, a museum, visitor centre, a working watermill and an ongoing art exhibition. It has also a direct connection with the rich ecological structure of the Veluwe. In its physical form, Den Brink is comparable to Sonsbeek. The park like structure reflects the notion of early nineteenth century garden values. They differ in the fact that the Den Brink park has had an industrial phase with a building development of 40 years. The area was known for its secrecy, not many people were allowed access to the park. Yet, it was also known as a big source of employment to Arnhem. The nature of the work that was done in the area, reflected the feeling of innovation, heightened spirits and attractive danger. These factors meant that the KEMA was a big part of the city and the image people had of Arnhem.

It became clear to me something had to be done to re-vitalise the area. The comparison with Sonsbeek told me that more access to the park would mean more preservation. Yet the newly added functions would have to reflect a different atmosphere than the current one. I wanted to implement my design with the existing values, in a way that was also done with Sonsbeek park. Through a strong connection with the hinterland and interactive buildings people are drawn in the area and are tempted to use Den Brink as a crossing to the Veluwe. The goal is to connect the residential area around Den Brink with the park by introducing people with the industrial heritage through a semi public structure. The functions that will be added make the visitors want to stay there and be part of the newly added activities.

Segment two. The defining phase.

Now that my goals were set, it was time to come up with a research question that would define my choice of function and implementation into a building. For me this was quite a struggle. I wanted my function to reflect my statements that I have towards society. I saw my graduation project as a moment to step up and make a choice towards new forms of living and social interaction. At the time I remember watching a programme on television which talked about these new notions of social media and the sharing of services between persons. It touched on the subject of what the ongoing crisis did in changing society. Although the show was much broader than that, I did pick up a few points that sounded to my liking. The show told about an indication of changing tendencies. For instance the sharing of property and services, more communal grounds and possessions, a fading in the separation between public and private areas and the wish for local thinking instead of global solutions.

The choice of function came from this personal need to make a statement. I wanted my cooperation between the old and new, to reflect the tendencies in society. I came up with a space where people are able to live and relax, and at the same time have their own working environment. An additional function would provide for interaction between people that pass through the park. The public boundaries are less clear in my design. The communal aspects are larger than in normal living conditions. Spaces and functions are shared –to a certain extent- in order to increase social interaction.
On a more practical note concerning the P1

In the time building up to the P1 I had difficulties working in field of RMIT. I had little experience with the way of working and this meant my approach towards existing structures was skewed from the way one would normally do this. The thing I can recall now is that my value assessments made were not accurate enough. I described the existing structure mainly from the viewpoint of an architect. I saw the buildings as useful elements in a bigger picture, as opposed to looking at more tangible measurable features of the structures. The value assessment that I made for the P1 was quite vague and not precisely described. This of course was made clear to me by my tutors, but I still did not quite understand the concept of what redevelopment of old structures really meant. After my P1 I started looking into the history of the site and was happy to find that I could use parts of the urban history to strengthen my project. But I still did not make an accurate value assessment of the building I chose. I saw the old structure as something I could do to, whatever I liked, not realising that if one makes the accurate statements, this can work together very well with the newly added. In fact, that this is the only approach that is viable. If one works with an existing structure a carefully defined value assessment is essential.

On a more practical note concerning the P2

In the beginning of the second period (this was after the analytical phase) the choice for a building had to be made. For this I started looking at the Den Brink building envelope. This was the oldest part of KEMA with a lot of historical significance. I felt the values present on Den Brink could make a significance to the surrounding neighbourhoods, but this can only happen if the area can be exploited by these residents. I made a plan to reconnect the surrounding residential areas with Den Brink and use certain buildings on the site to draw public in.

I came across the story that Den Brink –before it was developed in the beginning of the 18th century- was a resting place for herders of sheep going to the Veluwe. When looking at other city parks in Arnhem, this connection is still present. Den Brink has the unfortunate circumstance that this ecological connection was lost in 1817, when the first railroads were build. Nowadays Den Brink still has the same values as the parts running up to the Veluwe.

At this point I started to develop my research question. I felt that Den Brink should be a connecting link within the surrounding structures. Together with my newly formed interests on new ways of living and interacting, I put together the following question: ‘Which interventions are needed for the Den Brink buildings and terrain to make a transition and connection between the Veluwe and the residential areas of Arnhem and Renkum?’

I figured that this, together with sub-questions about my personal interest would form a good starting point to begin with my research by design.

The research by design is demarcated by several boundaries. It is defined in the value assessment, the questions one asks himself and the research for precedents in literature. When starting the work after my P1, I first began just designing what I thought would be a suitable intervention into the building. Keeping my research question in mind, I figured the building should have an interaction between public and private areas. But I did not make a proper value assessment so that this statement could form my initial design.

Later on in the process, I looked at the building technological opportunities the building had, and what interventions could be done to transform it. I found out that when using the building and keep the original values visible (texture of brick, steel structure, original glass windows), I had to make a division in what parts could be insulated. Because none is insulated in the present day. I made a decision to keep the texture and values visible. This meant the main hall would remain un-insulated. To me this is one of the important choices I made, as it would define my design for the most part.
The structure of the building follows a very simple principle. It is basically a machine solely constructed for the purpose of testing large machinery on short-circuiting. This meant a large hall was constructed with a very rigid steel crane structure. The hall had to be of considerable height (15.8m) to accommodate the electrical transformers. Apart from that, the grand hall has several adjoining spaces that were used as testing laboratories and offices. This all was done in 1937 when the KEMA permanently established itself in Arnhem. In 1967 an addition was made to the building. A similar structure was build next to it to accommodate for different tests. It has the same structure of a central hall with working spaces next to it, although made in a smaller fashion than the initial complex.

I made a rule for myself when transforming this building, that the functions chosen should try and follow the spaces that are present in the existing. The smaller adjoining offices and laboratories would be suited for insulating and refurbishment. No real values exist on the inside of these rooms, except for the great views at the park. They also have the advantage of having high ceilings. These features and values gave me the idea to place the living, working, recreation and public areas in these different spaces. The dwellings fitted very well in the smaller adjoining offices. It would lead to a big variation of dwelling types but that would make the project much more attractive. In order to keep the texture and nature of the big hall still visible, and to make people familiar with this piece of old industrial heritage no insulation would be desirable.

The goal of the project was to let it reflect a new kind of society where people would work, live and enjoy social interaction. I placed the working spaces inside the two big halls along with some practical functions such as a bike shed, presentation space/fireplace, and basketball court. The working spaces had to function as generic floors that would be suitable for change in use. As I was planning the housing to form a boundary around the halls, this inside space (hall) would have a communal atmosphere. A problem that I had to solve was that the lighting inside the main halls was very dim. For the offices and working spaces to function properly I had to come up with a solution. This was also the case for the communal space which was now becoming an inner courtyard. I came up with the idea to remove the existing roof to let enough light in. In that way the texture and feel of the industrial values would still be visible and thus create an exciting place to work and play.

This is the structure I presented at my second evaluation. A thing that was still missing, and on which I got feedback, was the lack of a more public function that would interact with the living/working community. This part of the project found maturity after the P2.
On a more practical note concerning the P3

After the P2 a pleasurable time began. The feedback given to me at the P2 presentation was very positive and encouraging to keep going. Now a more difficult part started which I did not know of. I will try to explain what happened. From a design point of view, my P2 proposal was very daring. Yet, it had very little to do with RMIT. I had taken the building and used it the way i deemed right. Not looking very much at the consequences of my interventions, or looking at what the building had to offer. Alongside that, I had the strange idea, that in this economic climate, my intervention and graduation plan should be modest, cheap and sellable. This led to a complete reworking in the design. Not in a programmatic fashion, but aesthetically and construction wise. The approach I took now was more conservative than the work I presented at the P2. The reinvention of my design, was in full progress and peaked when I went too far. It started to look unattractive and dull. The whole purpose of my graduation - to show off for the last time what my capacities as a designer were- was lost. I started detesting my own creation and realised this was not the way to continue. In the sixth week after the P2, Andre and me visited the building for the first time (because prior to that time, this was prohibited).

During the visit I could experience the spaces in a more precise way. The building and its potentials became more clear to me. The most intriguing thing were the smaller adjoining spaces surrounding the main halls. They had great dimensions for fitting in different dwelling types, and the views one could get from these spaces at the park were stunning. Prior to this visit, my focus lay more on the big main hall. The smaller –later build hall- had caught less of my attention. After the visit, I realised that this differentiation of halls could be used to make a difference in functional implementation. The larger hall would house the bigger working spaces. The secondary hall would be used to accommodate individual working spaces.

Still, one of the things I find less attractive in my design, is that my interventions have a very modest appearance. The focus lies at the interior of the building, and the exterior gets less attention. In this I am unsatisfied with my design. When one thinks of a graduation project, the design has to reflect one’s own view on architecture, and more specific RMIT. In this I think I’ve not succeeded. I can ascribe this to the urge of myself to have complete and well addressed final products. This way of working leaves less room for designing and has more conservative products as a result.
Additional MSC4 questions

1. **To what extent have you answered the research question of the thesis plan?**
   This of course is the most important question that gets asked. A right answer to this means that the project is grounded in scientific work. It does not matter if the answer is the desirable outcome. If the outcome is entirely different from the question, it means the initial research question was not right, or that one disregarded its significance. Either way, it will be a learning experience.

   "Which interventions are needed for the Den Brink buildings and terrain to make a transition and connection between the Veluwe and the residential areas of Arnhem and Renkum?"

   I think I have answered this question almost entirely. For people to get drawn into the area activating functions had to be added. A physical route is also desirable. In order for people to experience the history of the site and also the unique historic heritage, the functions added should be enticing to the public.

2. **What are still issues after graduation if you would work further at your design project?**
   One of the issues the project still has, is the decay the building would encounter after a few years of use. The roof has come off and I still have not done enough research regarding this feature.

3. **Point out three decisions of your design process that were crucial. (maybe sketches)**
   To point out three design decisions I’d say the first one is a sketch I made right after the P1. This already concerned my current building, and quite early on I had an idea of what I should do with the building. This sketch shows the building and at the south facade, it is clear I wanted to open up the building to a variety of people by making a public passage that would interact with the newly added function.

   The second design decision originated from the first one. By creating a public passage, the design had to get involved with this. After the P3 I started playing with the placement of the route through the building. Eventually the route was situated next to the building because the design got unclear. The route would connect the residential area surrounding Den Brink with the outskirts of De Veluwe. The path also served as an introduction of the passing people with the historic development of Den Brink. As mentioned before, the route passed different types of buildings located throughout the park.

   After trying out several options for the placement of the public route, the clearest solution was to make an entrance to the inner courtyards, but not let it directly pass through the building.

4. **What architectural theory of RMIT or what approach of a reference project was leading for elements in the design?**
   There are some specific elements in the design that originate from a research methodology. When designing the building, I often thought of what the design subject went through in time, and what changes were made to the building. This method is more quantified in the ABCD research method as shown in (Zijlstra 2009). In this method (elaborated in the Thesis plan) one examines the whole timeline of the building, and look at what was done to improve it over time. These parameters can be significant for design interventions, and for me that was just the case.

   For instance, the circulation space and connecting elements throughout the building, is derived from the former circulating bridges. Then there is the second major intervention done over time, which is the addition made in 1964. This extra testing space has the same typology as the first built part in 1937, yet it as a slightly different atmosphere and functional use. When looking at it from an RMIT standpoint, I’m quite pleased with this development that I made in the design stages. It shows me that the decisions made are somewhat valid, and did not come out of thin air.
6. What would you advise a coming RMIT-graduation student about the following issues?
- Making a design in an existing building
   Here I would advice to dig up as much precedents as you can find. Form these into a document and let it be a guiding factor in the design phase. Yet, not a leading factor.

- Making a design for the same function in an existing building
   Describe very clearly who the users will be. Make a specific programme of requirements into what living and working could be. Because I think there is still very much to do in this field.

- Making a design for the same function in the same building (For instance the Zoetenlab)
   Don’t do it. Here I am serious. Not that I did not enjoy working on this project, not at all. It is just the fact that this building is not really suitable for this type of function. The amount of interventions is not too big but the space is limited and making a workable enclave requires more flexible space. The newly added should have a generic base which can be modified by the users. In my design, the newly built is too much a defined entity.

7. What is your method of designing, tackling design issues? (For instance rational)
   I always try to make a clear simple structure with elements that are mostly generic. If a part of my design is not to my liking I learned to always reflect on what the initial requirements were. If one keeps designing with the last outcome as a guidance, it is easy to lose track of what the original idea was.

8. What method of the design development of your graduation project is specific for you?
   The thing that I really like doing, is making clear spaces in floor plans. This means looking at every inch of the plan and try to make it useable in the least intricate way.

9. What is your way of designing that you can or will use in future design processes?
   First off, I was intrigued at what a historic analysis can add to a design. This being my first real RMIT project, we as a group dug through a lot of historic material in order to come with design handles. For me the historic approach added a significant part to my urban plan. It also added a great deal at a building design level.

10. What is the significance of the essay of Heritage Development for your design?
    This was a huge help for me in the design process, because I made it at a later time in the process. But I am sure it would have helped in the same way, if I did it at an earlier time. What it did for me was clarifying the social significance as well as what my design would mean to the industrial heritage redevelopment envelope. When I was writing about the subject, it made clear to me that in order to maintain this piece of historic Arnhem, redevelopment would be needed. Describing this told me that it is viable to restore and redevelop this site.