Reflection

On the regenerating process of the high voltage laboratory into a media centre
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Research question:
How a High Voltage Laboratory will be transformed into a modern Media Centre while maintaining its relation to its history.

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INTRODUCTION

December 2011, the moment was there to decide in which studio the academic studying experience would find its ending. This document will be a description and reflection on the design process of the last 12 months of this exciting journey.

After some explanation of the graduation studio and the assignment we take a look at the expectations at the beginning of the project. In this way a clear reflection can take place on the different phases of the design project. The different parts of the project will be illustrated, commented on and be compared to the initial planning.

Now, at the end of this journey, a look back can tell us if these statements were correct and what we can learn from them for future projects. In the conclusions we can find the lessons learned, and recommendations for future projects. First of all a small introduction to the assignment is in place.

RMIT(Research & Education of Modification, Intervention and Transformation)

Picking a graduation studio is the first decision a student can make. By picking a studio a first preference already becomes visible. Where transformation of the current building envelop is one of the main themes in architecture today, it is a currently relevant subject to tackle and research. This studio gives the student insight in the existing values by analysis on all scale levels, by the definition of these values the student/designer will be able to come to a balance between the old and the new.

STUDIO: KEMA

This Rmit studio is called after the former owner of the industrial buildings it is going to research and redevelop. This area bought by development company TCN in 2005 possesses some strong 1930’s industrial brick buildings in a unique green park setting. Despite these seemingly positive qualities in the area the users are moving out to new offices and the old buildings are becoming vacant.

Kema had their company here since 1931. Over the years KEMA grew and added buildings. Now the old buildings don’t meet the demands of the KEMA anymore and the company moved out of the area and sold the property to investment company TCN in 2005. TCN is now researching the possibilities to regenerate this area. This is where the investigation for the students takes off.

During the semester research and design are treated on different scale levels so the final design is well founded and all of the decisions will be explainable. This results in a redesign of the high voltage lab on the KEMA terrain. The red highlighted building on the map is the high voltage laboratory (1937) (Vredeberg, 2003), this building is the final subject of this graduation. Together with the other buildings in the red cloud this was part of the testing facilities of KEMA.

The buildings is situated around a big open space (hall) where testing of electrical equipment took place. In this open space it is still noticeable that some big scale electrical testing activities (see cover) took place here, this is a quality which needs to be preserved for sure. Next to this main hall is a second smaller hall. It still is a nice space but is less impressive that the main space and they are at the moment not connected. The building has clear different elements to it. The smaller spaces around the main hall are on a human scale but in the middle the buildings is completely out of scale. This is noticeable in the North-West facade. The facade on the South-East however is on normal human scale, this also due to the height difference. The ground level is about 4 meters higher in the South-East. The new function for this building is a direct consequence of the research on an urban scale and the design of a master plan. This redesign means for the high voltage laboratory that it will be transformed in to a media center.
THE BEGINNING

THESIS PLAN
In the beginning of these two semesters a thesis plan and a vision on heritage where written. In this document a schedule, research method, personal goals and research question were stated. By thinking about this process in the beginning it is possible to write this reflection in the end.
To be completely honest it is always hard to write a planning for a design project. Of course there are the deadlines, but the time in between is hard to define. In the methodology this is described as research by design.

METHODOLOGY
Within Rmit the common design method is to do research by design, this means that the design of the project will lead the direction of the research.

Study by design is the ultimate challenge, ever-changing boundaries and one to be expected anywhere, at any design institution. However, by definition, it entails that one must reach beyond the known scientific domain and methods, at the risk of being considered unscientific. However, if that risk is not taken, no ways are to be found into an unknown territory. (Jong, T.M,2002).

This also means that it is hard to come up with a detailed research plan or planning on forehand. The investigation develops in the same way/direction as the design is. The design is leading for the direction of the research.
The reality is for more complex than this. With a design there is often not a single optimal solution, for this reason it hard to set up a precise path or method on forehand. For me a design project is a continous circle of wishes-research-options-decisions-...

Each time you finish this circle you go one step further. Personally I try to make as many steps forward, however you can’t make a good design without reflecting on your previous decisions and matching them to the new wishes.
By using this method it is possible to use the found qualities of the existing and (re)use them for the future design. In this way it is possible to give a building several interesting layers which strengthen each other in a way a new building will never be able to.

PLANNING
Deadlines are the main structural element in every students design planning. These dates and demands cannot be changed. To reach these deadlines it is useful to make a planning but not always realistic.
For this planning the deadlines where leading. For further information, references of other graduate students where a source of inspiration and finally of course a part of experience from previous projects helped to finalize this schedule (see appendix).
In these type of schedules the time in between the deadlines stays uncertain.

PERSONAL GOALS
In this project one of the goals was to deal with a renovation/intervention project. Where I have never handled such a project before.
How qualities and stories from the past can be translated to the new era in the lives of these buildings.
This is a delicate matter where different techniques can be used, but not all of them will be appropriate. Getting to know (some of) these methods is one of the great lessons which can be learned in this studio. Especially when dealing with buildings containing a clear and rich history.
For each project a with a new function new research is demanded, this project wil contain a media centre which is new so an investigation in to the future of the media center is interesting. How is it possible to anticipate on possible changes in the current and future society? Dealing with this question is a valuable lesson for every design task! And to fill such a big space and making one really spectacular space is great for ending my graduation.
HERITAGE

WHAT IS THE GENERAL CONSENSUS TOWARD RENOVATION?

2012: The development of new buildings has come to a near standstill. The economic crisis is pushing heavily on the developer’s wallet and new buildings don’t seem to be the main necessity any more. In the past decades investors, companies and even private house owners initiated the design and construction of new buildings. New was always better and the financial risk was at a minimum due to the increasing values of the buildings. In this period the amount of new buildings exceeded the demands. As a result there is now a huge stock of vacant buildings. Even perfect new buildings are empty because of this surplus in stock. These new buildings aren’t the most interesting buildings, often this are generic office spaces unable to find a tenant.

It is the other part of the vacant stock which is much more interesting. The buildings which were build many years ago, the buildings who have had a whole live already and were left because they could no longer meet the demands of the user. These are the buildings which are already part of something. They are part of history, they represent another era of architecture and culture, companies evolved in there and people gained and spent their emotions in these buildings. Now these buildings are vacant and what should we do to them?

WHAT IS MY POSITION AS AN ARCHITECT IN RELATION TO CULTURAL VALUA AND THE REDEVELOPMENT ISSUE?

Rmit is a great studio dealing with this question, because of this it can deliver projects with a depth of layers new buildings hardly can. The buildings or areas have a whole life behind them, some good some bad. From this history lessons can be learned to improve or change the building and more important it can give projects an additional layer. This additional layer makes the building much more than a building, it tells a part of history, makes you rethink the present or perhaps renews your view on the past(or even future).

CASE

The KEMA area in Arnhem is such a place, on this site multiple buildings were constructed in the life of the KEMA company. Currently the buildings are no longer up to date and are becoming vacant. The fact that this isn’t a single building but a whole site showing a part of histry makes this site even more special. Some of these buildings can be called spectacular, in the buildings big open spaces are very common and some of the buildings were used to do tests with big explosions and show this in their architecture, when you are inside the buildings you immediately realize that you are in a unique space.

The former function of these buildings shaped these buildings but also the site as a whole. The site is a real conservation of the history in which it is still possible to experience something of this past although the original functions already moved out. This is even strengthened by the (strong) border surrounding the site. A strong border and difficult connections enclose the area from its surrounding and are in my eyes good values. It strengthens the unity of the park itself, due to this frame it becomes stronger just like a painting gets stronger in the right frame.

WHAT ARE THE CULTURAL VALUES OF THIS AREA AND WHAT CAN THEY MEAN FOR THE FUTURE DESIGN OF THE AREA?

The cultural value for this site is mainly the place in history and the story connected to this time. Next to the testing mentioned earlier, the KEMA terrain stands for the electrical revolutions of the daily household. KEMA tested the equipment and made them save to use, at the same time they ‘teached’ housewives to work with these new electrical equipment. These functions can be seen in the different buildings on the site. As such the building represents different elements of the period between 1937 and 1980. In the architecture it is clearly visible the buildings had different functions, the public building have a much higher presentational value than the testing buildings.

Together these buildings tell more stories than the sum of all individual stories. Together they tell about the growth of the Dutch energy sector, they resemble the Haagse School style in industrial buildings, form a nice example of the English landscape design and are an example of the development of old industries.
WHAT TO DO WITH THESE VALUES?
These values are the elements which make these buildings, and the site, unique. They should be used to ‘brand’ the site. In the current society, branding becomes more and more important. People want something which is unique and recognizable. People used to have an utopian view of the future but this is shifting to a utopian past. Buildings referring to this past are becoming more popular. People are even willing to sacrifice part of their privacy to live in a dwelling relating to these historical elements.
An example is ‘Pakhuis Jobsveem’ on the Lloydpier in Rotterdam.
Next to the branding on a private level the city of Arnhem can use this site to fit in to their ambition of becoming an ‘Energy City’. By using the strong characteristics and the story of the KEMA buildings, Arnhem can present themselves through time as ‘Energy City’ making their arguments.
How the functional infill of the individual buildings will be is hard to predict, this will be for a big part an outcome of the master plan. To maintain the identity and coherence for the whole area is more important.

HOW TO COMBINE ALL OF THIS IN THE FUTURE DESIGN
Important for this project is the detached experience of this site. Within the site there is a strong coherence between the different buildings, also the urban set up of this buildings in the park design is a strong characteristic. The different elements create an experience, this experience is the biggest value. In order to maintain this value the ensemble need to be maintained, the relations within the site should be part of the new design. In this way the building keep forming an ensemble referring to the past, the individual execution of the buildings is less important. The border of this area is of great importance as well.
Like old inner cities often have water or historic city walls outlining their areas, this area should have its outline as well. In this way it becomes clear where the ‘experience’ starts/ends. In this way it is easier to frame the qualities of the site. This doesn’t mean there should be no connection to the surrounding, just that the border should be clear. This means the future of the project will be determined in different stages. First of all a master plan needs to be designed. In this master plan it is of big importance to maintain the given values. To do so in my opinion, five methods for intervention are worth considering;
- CONTINUITY OBJECT; here the old stays important and maintained but a new layer can be added to the site without disturbing the original.
- CONTINUITY SITE; Each new part has its architectural style but follows the logic of the site.
- CONTRAST; new build contrasts with the old, danger is the new overpowers the old.
- RE CONCEPTUALISATION; a new function or interpretation of the site building without relating to the old. The structure is used to make something/concept new.
- PROGRAMMING – Look for a function first and make this fit in the site, adjust the buildings so the new program fits better.
- NARRATIVE – continue the non-material, the story of the site.

From this master plan new outlines will follow. The new functions need to be determined on this level because of the coherence of the site. On the building level the execution of the design need outlines from the master plan as well. The most characteristic buildings will probably be leading in this. Especially the Zoetelab (which is the generator building) and the explosion buildings have unique aesthetic qualities so it will be unlikely for these buildings to be stripped down to bare construction after which they will get complete new looks. The current expression of the buildings should be maintained but updated, the level on which this is done for the prominent buildings should be leading for the other buildings.

ORIENTATION

At the beginning of the semester the planning, goal and set up of the assignment isn’t completely clear yet. This period, and most time in the first two weeks are used to discover the assignment, the location and also the process. Different elements of the design process come to you with a lot of information. In this first period it is necessary to arrange all of this information in a for the student usable manner.

For the design I used this first period to gain as much and broad knowledge as possible. Luckily this first phase is done as a group work, by sharing each other’s discoveries there is a much broader foundation to make decisions on. In this way I feel more confident in picking a direction in the next phase of the design.

Next to this exploration is the first period filled with a lot of deadlines which stimulate the student to start working and defining fast.

DEFINITION

The next step in the process was to define qualities and points of interest out of this information. Due to the quick deadlines of three scales of analysis (urban, technical and architectural) I was forced to define these points already in the first few weeks.

The urban composition of the KEMA terrain, also known as Arnhem’s Buiten, interested me deeply. I had never encountered such a combination of a park and industry. Very quickly in to the assignment I knew I wanted to work on the Den Brink part of the location. These unique qualities should be available for the people surrounding the site. These “park qualities” are one of the most interesting in the assignment at this moment.

I don’t agree with the vision of the owner of the terrain with their vision of LIVING IN THE PARK in the whole area. Only Den Brink is gifted with these qualities.

The research on the building level is still in an exploring phase because the goals for the building design haven’t been set yet. But for me is sure I will use one of them more industrial buildings.

From this research it became clear what I wanted to do with this area.

REFLECTION

QUESTION: What does this assignment have to offer?

In this phase it was crucial to get a good grip on the location and get an insight in the possibilities. Only by understanding the assignment/area on different levels will help to define points of interest and see what is possible (and what isn’t possible)

METHOD: This phase is characterised by analysis. Doing research in archives and on location, but also the contact with stakeholders and physically undergo and understanding the site is been of great importance.

RESULT: The value statement, defined points of interest and a general understanding of the assignment.

REFLECTION: Looking back this phase it is crucial to the following design phase. Although it feels free and exploring at that moment, a lot of valuable knowledge is gained at this moment. Especially for the RMIT studio it is of great importance to get a good overview of the past and current (and possible future) situation of the subject. Links between different scale levels are of vital importance to come up with a strong research later on.

In this way the values which later on give the additional value to the design are researched the best. Because of this importance I would have liked to spent a bit more time here. Time is lost by finding your way through the information and in the end there is not a lot of time left to make your value statement.
**MASTERPLAN**

In this part of the process the definitions set up during the first phase are brought to another level. By translating the discoveries in to a design for a master plan I made the outlines for project. Together with Wesley Duijs en Bas Rougoor we decide to make this park public, we did this to share the qualities of the site with the direct neighborhood. If this direct neighborhood starts using the park, then we will be able to continue its live and tell the KEMA story to a broader range of people.

In order to make it function as a public park we needed attraction points in the new design. Like stated earlier we needed to attract two groups; the locals and people from further away. In order to do so we made a differentiation within the park of urban and more park qualities.

**BUILDING**

The next step was to pick out 1 building and come up with a design proposal for this building. From my own experience I have learned that it is good to go with my first feeling on this kind of choices. I’m convinced a good designer can make something special from every design task as long as he perseveres when he is going through a rough design process. So I took the high voltage laboratory, which I also did my analysis on for the group work. This building wasn’t the most characteristic building but appealed to me due to its big void on the inside.

From the direction I took in the master plan my research continued to public functions and which ones would fit here as well on an urban as a building scale level. During the function workshop in the studio I came across the media center, which fitted the plan for several reasons (attracts people to centers, there wasn’t one around, in other parts of the city where libraries were missing new libraries were created.)

From the analysis I learned that the coherence between the buildings was one of the big values within this design assignment. As a consequence I didn’t want to interrupt this strong relation between buildings. Following on this I said to myself I couldn’t do too much with the outside of the building. New interventions should be inferior to the current building expression. This should be done within a combination of the 6 positions stated in the heritage chapter.

Other research to the program of a media center showed however the building needed an additional 1000m². To realize this I searched for possibilities to make these additional meters on the inside without disrupting the inside quality of the big open main hall. Within reference projects I found a solution of Book Mountain in Spijkenisse. I implemented this in the design together with a new floor hanging in the big main hall.

Under pressure of deadlines I made this my preliminary design.

**REFLECTION**

**QUESTION:** What will be the precise design task? What will be the function and outline/frame of the project? **METHOD:** It is important to make steps forward, this can only be done by making decisions (derived from the gained knowledge) In this phase I also did a lot of research about the history presence and future of the media center. **RESULT:** The function was the determination of the function and the attitude towards the design task. **REFLECTION:** Looking back on this phase I made some decisions I am still happy with, maintaining the main open hall and relation to other buildings are features I couldn’t do without. Because of the location of the building in the middle of the park, it would have been hard to expand the building on the outside without giving the building a strong direction and definition of the surrounding (which I didn’t want to do). The implementation of Book Mountain had certainly some opportunities but with more time I would have tried to peel down the layers of this reference a bit more and place it in my own design on a less literal way. However by implementing this idea I learned a lot about the building with height differences, spaces, differentiations and possible solutions. So I couldn’t have come to my final design without this step.
REDEFINING
The things I planned to do before my P2 happened after. After a summer holiday break I looked at the project with fresh eyes and started a value assessment of my design so far. From this fresh second look, two big changes found their way in to the project. Doing nothing on the outside wasn’t adding a layer, while I stated at the beginning that this is one of the big possibilities of an RMIT project. In order to add this layer on the outside as well, I looked to spatial language of the building and it surrounding. Here I found the building could use two well defined (1 new) entrances and to expand the building a cubic shape could best be placed on top of the building. In this way I could reach an additional layer on all sides of the building without overpowering the existing. By making a contrast in materialisation of the old and the new it becomes clear the building has different layers, but my following the cubic language of the existing building it stays 1 building where the old and new are merged but recognizable.

Next to this I spend a lot of time on the design of the inside of the building, where different functions should be positioned was clear early in the process but the design and ambiance of the main hall has undergone a lot of minor changes.

I came up with a new floor filling the secondary hall of the building on the first level. By extending this floor into the main hall the different spaces where physically and directionally connected to each other. The shape of the floor is derived from the direction visitors take from the entrances of the building. With this shape the visitors are directed to the library and cafe part of the building. Here are also the stairs to continue to other parts of the building.

TECNICAL
Alongside the redefinition of the design, technical aspects of the building got introduced during this period. Here the approach was to start out with the technical implementation which could have the biggest impact on the design. Structure and climate design where thought out quite thoroughly. The construction of the extension determined the place, shape and presence of this big intervention in the building which became the new unique feature of this design.

Due to the strong demands for installations, it was nessecary to calculate them. These results had no major effect on the design.

REFLECTION
QUESTION: What are the qualities of the concept and how can i improve these?
METHOD: After the P2 the concept whas capable of creating spatial and functional qualities, mostly the spatial qualities needed a lot of improvement. This was done by a trial and error method in digital 3d model building mainly.
RESULT: A stronger spatial design and insight in the connections between different part of the design, spatially and technically.

REFLECTION:This period was a mix of trying out many options with hard calculations. Especially the comparism between different options is a part I sometimes struggled with. To make founded decisions I worked for these options in (mainly digitial) 2d drawings and 3d models at the same moment to see the real effect the changes had. Only by being able to look at the project with different views it is possible to make strong decisions. In the end I was convinced I took the (for myself) right direction. However I still wasn’t completely satisfied, happy I had another period to define it all a bit more.

Furthermore I struggled a bit to make the step into the details and materials at this moment. Looking back I should have tried some options for this as well but I was probably trying to finish other decisions first.
**P3 - P4**

**DESIGN**
The design needed one more review to tie it all together. The new floor I introduced earlier which replaced the book mountain, had some defining angled lines in it. By bringing these lines back in the rest of the building it became more of coherent space with subdivisions in it. Now I couldn’t continue without paying attention to the details and materials of the building. This new layer of materials started with a definition of wishes for the materials (human scale, differentiation between new and old) and wishes for the construction (connect to current construction in a translated way). This was followed by a research into possibilities after which materials and details where chosen and improved. The new parts of the building have their main construction in steel (like the construction of the old hall). Although the new construction is in steel and the appearance is connected by overhanging roofs for instance, a clear difference between old and new is visible. Materialization had some more differentiation in it. Moving areas have hard materials which refer to the old and connect different spaces in the building, as where the sitting areas have warmer, softer and more human scale materials like wood and carpet.

By using this layer of materialization together with the predetermined shape of the floor continuously throughout the building (including new additions) is becomes a clear and readable collection of spaces which find their differentiation in the shape of the spaces.

**TECHNICAL**
The technical investigation in this point is mainly focusing on the realization of the designer’s wishes. With this research I can proof the designed elements are feasible. It is also interesting to see how the technical aspect is influencing the design. In this case there was hardly any influence because most of the design elements where possible, and due to the over dimensioning of the current building there was a lot of freedom to solve technical installations.

**REFLECTION**
**QUESTION:**What should be the final product and what do i need to do re reach this

**METHOD:** Planning the wished and demanded products for this final period is quite important. In this phase it is less creative designing what is going on and more the translation of all the ideas in to the real world. In this process you come across some new aspects but these are quickly solved with little trial and error exercises.

**RESULT:** A P4 presentation which makes the project clear, the masterplan, the concept, the spaces materialisation and the technical aspect of the design.

**REFLECTION:** Although I spend a lot of time on the technical aspects of the design, it hardly influenced the final design. With this knowledge I would have liked to spend a little less time on this aspect. I think this part of the design will go quicker during the years because of the gained knowledge about technical aspects. Furthermore I would have liked to spend a bit more time on materialization and furniture design, hopefully I can find this time after my P4. For this aspect again I think experience will help a lot during the years.

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P4 - P5

DESIGN
After the P4 the design was as good as finished (for this course). Now it is case to translate the design even more to the physical world and check and reflect if it works out like planned. A big part of this effort goes in to the making of a scaled model of the whole building. In this model the design is reviewed and finetunned on some small points. Next to this it is case to make ‘selling’ images which will bring forward the qualities of the project during the final presentation. Finally some administrational work need to be done; reflection, uploads to repository and the planning for after graduation (a volunteer project to build a school in Nicaragua).

MODEL
A digital model is nice to work with and can give you a lot of insights during the proces and is usefull to design really precise, however a physical scaled mode is more realistic and will give you more/other insights in your design. It is more capable of showing the ambiances of the designed space. This why a model is (for me) mandatory for a final presentation of a design focussed on spaces.

Making this model takes a lot of time and a lot of decisions need to be made before and during the build. Because it is a model, it is a limited presentation of reality. Choosing what to show is of great importance!

(p.s. Building a model always takes more time than planned or expected)

REFLECTION
QUESTION: What have I designed and what and how do I want to show it in my final presentation. METHOD: By reflecting on my own P4 presentation and building a 1:100 scaled model
RESULT: An improvement of my P4 presentation and a clarifying scale model. Next to this some minor changes in the design have found their way, these were derived from little studies in the physical model.

REFLECTION: In this phase the focus is no longer on the designing of new elements for the project, it is case to translate everything to a presentable state. This period is more about the production of selling images and impressions. I think it a good thing there is a psecial period for this so the graduate can show his/her design to it’s full extend.
RECOMMENDATIONS

What would you advise a coming RMIT-graduation student about the following issues?

-making a design in an existing building
Do a good and thorough research to existing qualities, although it feels free and non-defining, you gain a lot of knowledge here which you can use later as starting point or arguments for your design. The better you get to know the building and its surroundings (tangible and intangible) in the beginning, the better you will be able to found your decisions. Furthermore it doesn’t matter if a function doesn’t fit, this misfit can give you great opportunities. A clear vision towards the old (and it’s relation to the new) will help you a lot during the design, try to formulate your own attitude towards the existing. Even as soon as the analysis such an position will help because you can focus your research already and work more efficient.

-making a design for the same function in an existing building
Media centers are changing rapidly, make sure you have a clear view of these trends so you can adjust your building to them. Media center have a flexible program you can play a bit whit this program. The demands, society and trends in the surrounding are important parameters for the brief of your design. Try to give your media centre a mixed programm to enhance the validation of your project.

-making a design for the same function in the same building (For instance the Zoetenlab)
First of all you should get a good direction what you want to do with the building and its qualities, from there you can fit in your function and program. The qualities of the building are the framework for your design. Due to the big open spaces of this building, and the flexible programm of the media centre the new function can be placed here in many different ways. Again taking position towards the building and the ‘Den Brink’ area in this case, will help how to shape/design a media center in this building.
Relationship between research and design
It is a continuous back and forward between research and design. The design is leading for the research where the outcome of the research is leading for the upcoming design questions.
The design process is focusing on deadlines each time, for each period in the beginning research is a big part of the activity. The closer I got the deadline the more the gained knowledge was translated into design, even when I had the feeling the research wasn’t complete. The good thing about these deadlines is you are forced to make decisions and take the design to the next level. On the other hand it can interrupt the process of research and design.
I often feel an obligation to present my findings as conclusions although I’m not always ready to stop my experiments and finalize a decision

The relationship between the theme of the studio and the subject/case study chosen by the student within this framework.
Where most studios start with a function or programm as goal, the Rmit studio starts out with exisiting spaces and structures and the goal is to work with these given facts. Finding the correct function is one of the goals a Rmit student is should investigate.
The theme of the studio is to work with the exisiting structeres. In this way qualities can be maintained, used, exploited and added to.
In this case study a whole park is the subjected to these questions. The park as a whole but also the individual buildings have a ton of qualities which are not being used at the moment. By intervening in this park and combinning it with the demands of the current age and surrounding these positive aspects can be used again and add to current fabric and history of the site.

The relationship between the methodical line of approuch of the stydio and the method chosen by the student in this framework
The methodical approach is described by a slowly degrading ammount of ressearch and a growing ammount of designing. In this project there was more of a hourglass spread of the research load. In the beginning there is research needed for the determination of the masterplan, function, programm and design borders. After this intens designing starts with in the end research about how to technical realize this building.
This will change with experience as where the technical knowledge can be used over the years and projects.
The inntial research should be done seperately for each project.

The relationship between the project and the wider social context.
This project is meant for the (direct) social context. The functions is serving the local neigborhood with a new function and the new public park. On a medium level this intervention including masterplan is preserving a part of the history of Arnhem and the technical development through the years.
On a large scale the reuse of buildings is a good thingfor environmental reasons but it also shows the possibillities within the exisiting boundries. By making optimal use of the current building envelop, we can also maintain the green area’s surrounding use.
RESEARCH QUESTION

ANSWERING

How can the high voltage laboratory be transformed in to a modern Media Centre in such a way it keeps its historical value and at the same time strengthens the relation between the industrial enclaves from the 30’s and 50s on the regenerated Den Brink area?

(A.S.Dessens, thesis plan, 2012)

The research question excists out of two parts.

1. How can the high voltage laboratory be transformed in to a modern Media Centre in such a way it keeps its historical value,
2. and at the same time strengthens the relation between the industrial enclaves from the 30’s and 50s on the regenerated Den Brink area?

To answer the the second part of the research question first, the urban scale investigation showed the strength of the terrain. The coherence between the buildings in building style as well as in function, together with strong green character make this terrain unique as it is. For this reason it is important to respect these qualities and not to challenge them with a big overpowering architectural intervention.

To answer the first part of the question, it was necessary to investigate the modern media centre as a typology, and at the same time investigate the current value’s of the high voltage laboratory. The typology of the new media centre is one of strong characters and different spaces and functions in one building. Analysis of the building showed a strong differentiation between two different (functional) spaces inside the building, the offices and the testing hall. However in the current building the floorspace wasn’t sufficient to hold the whole new program of different functions. With the second part of research in mind the intervention should take place inside the building or in a submissive way on the outside of the building. The choice was made to do both so the strong interior character of the main hall could be maintained. At the same time the differentiation of spaces on the inside gave plenty of spatial options to convert to the different functions of the media centre.
CONCLUSION

At the end of my journey I am able to say I had a fairly linear design route, there were no elements in my project I completely had to do over. The main change in my project was the refinement of my concept, the frame stayed the same but architectural translation in to the project took a change for the better. Staying calm and aiming for a linear progression is for a part the result of some ‘rules’ I learnt during my studying period. By making founded choices and persevering when the design course is struggling it is for me possible to have the design with the most linear progression (so far).

On the other hand by always making founded choices I found myself a bit more conservative than I would like to be and design. On the moment when I was realizing this, the project was already in full swing and changing would conflict with goal of persevering with my choices to keep the progress up. Like many other aspects there must be a balance found between wondering and persevering, as a designer you will never stop learning and no project will be the same!

If I would have had some more time on my hands I would probably spend more attention to the detailing of the new entrances to the building. The overall shape, composition and materialization are as wished for, on the other hand are these the first spaces to be experiences on the inside of the building and I would like to design these in to more detail. Furniture is another subject which I would to spend another few weeks on, a media centre asks for special designed furniture for the building and now the building design is completed it would be special to top it off with furniture.

Just like all the other projects I did in this faculty the design process is never finished and there will always be more to discover and design. That is why I’m happy the deadline is near, so I don’t lose myself in this project. In a next project I can pick up the next interesting subject and keep broadening my horizon and design skills.
QUESTIONS REFLECTED

1. To what extent have you answered the research question of the thesis plan?
With my final design I give answer to the research question. This is not the only possible answer, but others design could be based on the same research. It is in the decision of the designer how to handle with the results from.

2. What sub questions -are still open, -have been answered in the design?
During my research and design i have answered most of my research questions. Most of them where nesscary to found my design decisions on.

3. What are still issues after graduation if you would work further at your design project?
Further research to the media centre of the future, in this way the buildings stays relevant for a longer time. Make it more sustainable/energy efficient. design more furniture as part of the building. Make interactive elements in the building.

4. Point out three decisions of your design process that were crucial.(maybe sketches)
To be modest with interventions on the outside of the building to maintain to big open hall as character instead of filling it with programm the shape construction and placement of the new study places.

5. What architectural theory of RMIT or what approach of a reference project was leading for elements in the design?
For these theories i would like to refer to P. Meurs professor at the faculty of Architecture. He stated 17 methods of conservation of which I used the following four:
- SYMBIOSIS OBJECT;
  Here the new and the old building are combined in such a way it will be read as one building.
- CONTINUITY OBJECT;
  Here the old staysimportant and maintained but a new layer can be added to the site without disturbing the original.
- CONTRAST;
  New build contrasts with the old, danger is the new overpowers the old.
- NARRATIVE;
  The non material, the story of the object/site. The intangible of the place should be continued.

6. What would you advise a coming RMIT-graduation student about the following issues?
- making a design in an existing building
do a good and deep research to excisting qualities it doesn’t matter if a function doesn’t fit, this misfit can give you great opportunities
- making a design for the same function in an existing building
  Media centre’s are changing rapidly, make sure you have a clear view of these trends so you can adjust your building to them. Media centre have a flexible programm use this to maintain qualities and structures of the excisting building.
- making a design for the same function in the same building (For instance the Zoetenlab)

7. What is your method of designing, tackling design issues? (For instance rational)
I have to see it. I want to see the solutions and also the alternatives. For technical aspects it is than possible to make rational decisions. For design questions however this is different, not only are there endless possibilities but it also far harder to make rational decisions. Optimal choices in term of function don’t make the best spaces. The best space actually doesn’t exist, it is all a matter of taste. But it is still important you can clarify why this a good option..

8. What method of the design development of your graduation project is specific for you?
I have worked in 3d for the whole project. I want to see the results of decisions and the realtion between different aspects within the building. Digital 3d makes this possible to see realtime what the effects are..........

9. What is your way of designing that you can or will use in future design processes?
Personal experience with references have a big influence on me

10. What is the significance of the essay of Heritage Development for your design?
It has helped me to make clear why i am making curtain decisions. It also clearifies the possibilities. By making piking a clear direction it is easier to refer your choices to this direction.
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<tr>
<th>Graduation 2012/2013</th>
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<td>Februari</td>
<td>- Introductie van opdracht</td>
<td>- Kennis over locatie, gebouwen, locatie - 3 maanden</td>
<td>- Stedebouwkundige analyse - 1:5 materiaal</td>
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<td>Maart</td>
<td>- Architecturale analyse - Specifieke gebouwen waaraan de analyse</td>
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<tr>
<td>April</td>
<td>- Reflectie, variant van point of view tot hand van analyse en feedback</td>
<td>- Diagrammen ter onderbouwing van opdracht.</td>
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<td>Mei</td>
<td>- Presentatie materiaal maken</td>
<td>- Maquette (1:200), diagrammen, presentatie</td>
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<td>- Verwerken feedback, systematische onderbouwing</td>
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<td>Augustus</td>
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<td>- Diagrammen, theoretische onderbouwing</td>
<td>- Verdiepen ontwerp</td>
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<td>- Bouwtechnische diagrammen en tekeningen</td>
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<td>September</td>
<td>- Verdiepen ontwerp, systematische onderbouwing</td>
<td>- Visuele werkelijkheden van de opdracht.</td>
<td>- De/finieren 1:100</td>
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<td>- 2 min presentatie</td>
<td>- 5 slides</td>
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<td>- Onderzoek februari - materiaal</td>
<td>- Structuurontwerp materiaal</td>
<td>- Structuurontwerp maquette</td>
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<td>- Onderzoek relevante van ontwerp voor maatschappij</td>
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<td>- Presentatie</td>
<td>- Onderzoek relevante van ontwerp voor maatschappij</td>
<td>- Maquette</td>
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Beroep: Handleiding Willem van der Meulen Architecten Architectuur, Urbanisme & Bouwsciences 2010 – 2011 Academische Jaar

18 Reflection | André Dessens | High voltage lab KEMA Arhem
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