

A photograph of a room with several chairs and a table, overlaid with text. The room appears to be a meeting or study area with a tiled floor and large windows in the background. The text is overlaid in a black, monospace font.

CFAA

CREATIVE FACTORY ARTPARK ARNHEM

REFLECTION

JUDITH_RODENBURG_B1279750

RMIT_KEMA



COLOFON

“Factory becomes factory again”

Redesign by conservation, human scale and zoning

Reflection

Judith Margot Rodenburg

Hof van Delftlaan 73

2613BK Delft

J.M.Rodenburg@student.TUdelft.nl

Tel: +31-0652696251

Student number: B127970

R-MIT studio

Master in Architecture, Urbanism and Building Sciences

Faculty of Architecture

TU Delft

Date: 20-01-2013

AR3AR111 RMIT Graduation Studio (Conservation, Modification, Intervention, Transformation)
(2012 -2013)

Supervisors: Lidy Meijers, Frank Koopman

External examiner: Marietta Haffner





CONTENT

Position as a Re-use architect /designer

Aims of the project

Research questions

Value Assessment

Starting points

Themes

Research method

Social & scientific relevance

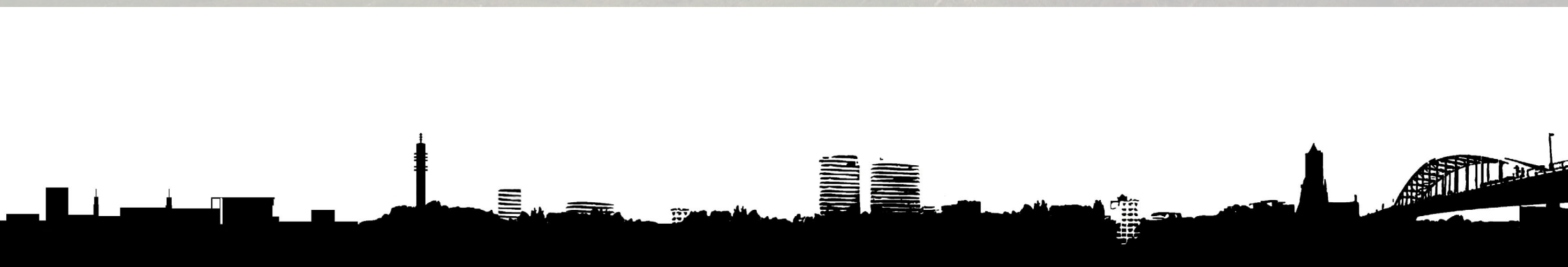
City exposure level

Urban level

Architecture & building technology level

Recommendations

Literature



POSITION AS A RE-USE ARCHITECT / DESIGNER

Position as a Re-use architect / designer

First and foremost I would like to clarify my position as an architect regarding renovations, restorations, modifications, interventions and transformations of existing buildings and its surroundings, in other words my position in the re-use of buildings. Each Re-use project is different and needs therefore a different solution each time. I think that the challenge of re-use projects is to strengthen the qualities of the existing building and change the low values of a building into high qualities or values. So this means that every re-use project needs a different approach against the existing building. It depends what kind of the qualities and values the building itself has and what kind of future function is going to take place in the building, how your position regardign the building is. What do you use and what isn't useful anymore and is better to demolish?

The building I have chosen to redevelop is the "Zoetenlab". It was constructed in three phases in 1936, 1946 & 1956 by Schoemaker and van Fels. The building is of high value, particularly the main hall, the difference in facades, the play of the facades and the layering structure of the building. This together with the fact that there is an enormous demand for culture exposure in Arnhem has inspired me to design the Zoetenlab building into a Creative Factory incorporated into a masterplan of an Artpark. Because of the high value and the chosen cultural function of this building and its surroundings it is desirable to have a conservative attitude regarding the building.

During my research and design process this

position regarding how to deal with the re-use of buildings and sites has been more and more developed. In the first half year the idea was already there, but it wasn't clear for others. But by rethinking it over and over again, it became clearer for myself and therefore also for others. This is the general position of re-developing existing buildings, however this is not the way I have chosen to deal with the Zoetenlab in particular. Throughout this reflection my aims of the project will become clearer using such things as value assessment, research questions, starting points as a basis. But also how to deal with the existing building in combination with the new parts of this redesign.



AIMS OF THE PROJECT

Aims of the project

The "Den Brink" area is a protected city part with several monuments. As I already explained in my thesisplan, my aims of this graduation project are in short that the residents of the close surroundings of the "Den Brink" area, the people of Arnhem and the rest of the Netherlands or even on an international level can experience this unique park / industrial site in the Netherlands.

How can we achieve those aims?

By introducing an Artpark at the "Den Brink" area in the masterplan, which I made together with fellow students Rikst Dijkstra and Maartje Meijs. We want to give people the opportunity to experience the special site that is "Den Brink" together with the various culture activities, which we find in Arnhem. Only the last link is missing in the culture chain of Arnhem and that is where everything comes together, from initial design to the actual end product. This could attract different kinds of people. Which is one of the aims of this graduation project, because it is such a unique site for the Netherlands.

Why could an Artpark work to achieve the goals for this area?

Culture and nature are each others classic counterpart. Nature is everything what culture is not and vice versa. But that is why they are so good together, they strengthen each other, so you see the contrast between each other more and therefore each aspect is clearer¹. This way the beauty of the "Den Brink" site together with her buildings will

become obvious for everyone.

By introducing an Artpark at the "Den Brink" area in the east of Arnhem, this unique park could be experienced by many different kinds of people and much more than we see nowadays at the terrain. But that is not all, the experience of this park with her many different nature characteristics and her buildings with their typical architectural style are emphasized even more by introducing the Artpark at this site.

¹ Schetsen Voor Een Nationaal Historisch Museum, Kenneth Frampton & Hans Ibelings, SUN, 2011

RESEARCH QUESTION(S)

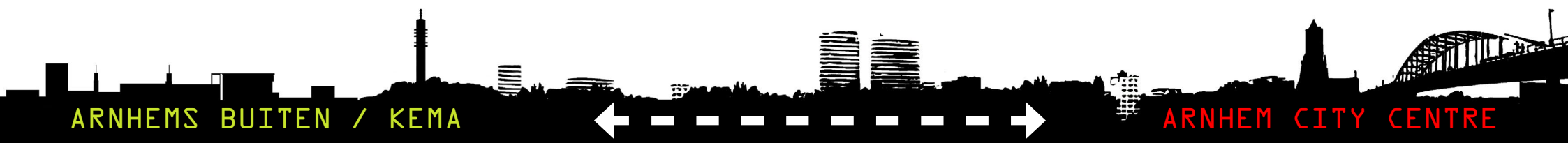
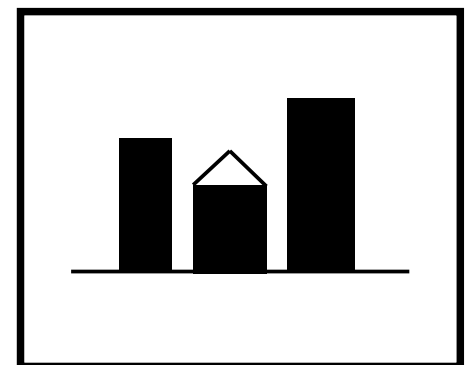
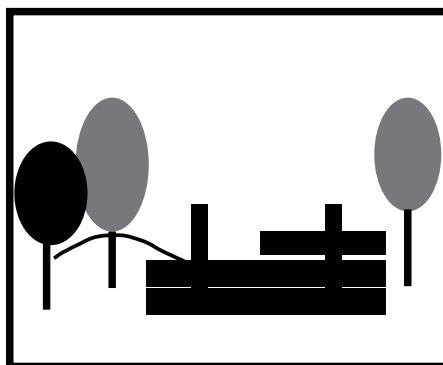
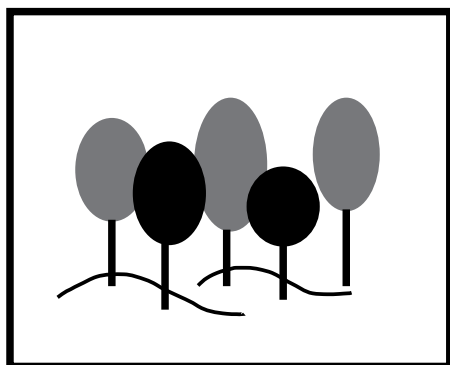
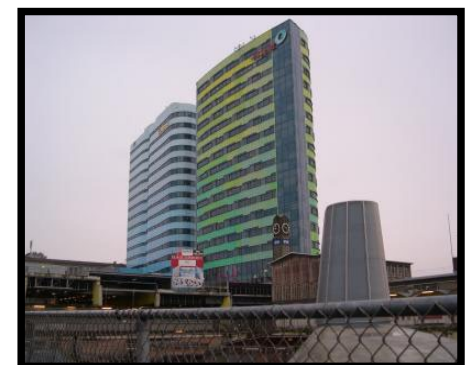
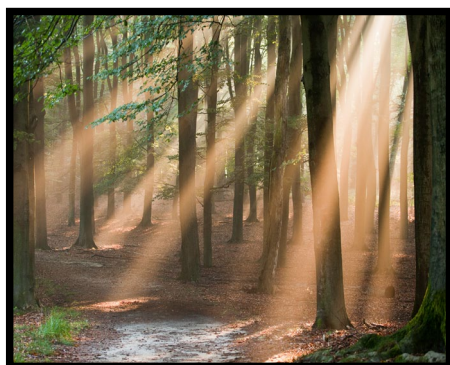
Research questions?

How could an intervention of the Zoetenlab ensemble in the area of "Den Brink" with a cultural function induce the experience of transition from Arnhem City to the naturepark "De Veluwe" for the neighbourhood as well as the rest of the Netherlands?

First of all I created some sub research questions to give more direction and focus regarding my design. For instance, "How to achieve a culture park into the area of 'Den Brink', which is a stimulator for its surroundings, Arnhem and the East of the Netherlands?" And "How to create a better connection between the area of 'Den brink' and

the city of Arnhem and in this way with the rest of the Netherlands?" By asking these questions you come closer to your design answers, which in turn were asked in the main research question.

To get answers to all these questions there was a lot research and analysis involved. First and foremost, I heavily researched the Zoetenlab building and its surroundings. What are the values of the surrounding and the building itself? Besides this I did a lot of research about the possible function of the Zoetenlab building.



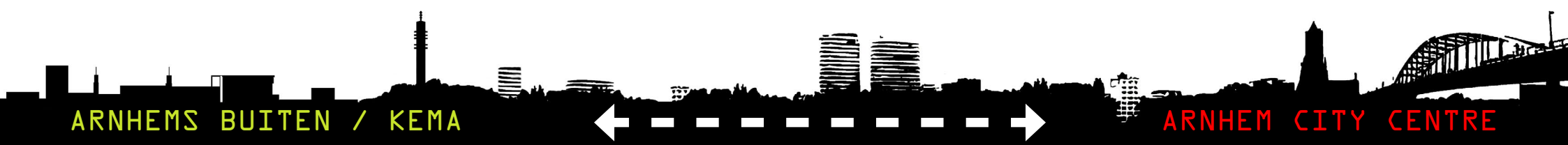
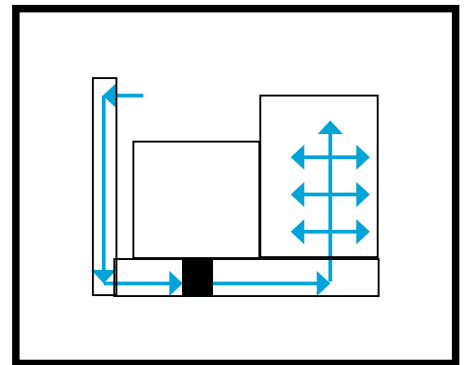
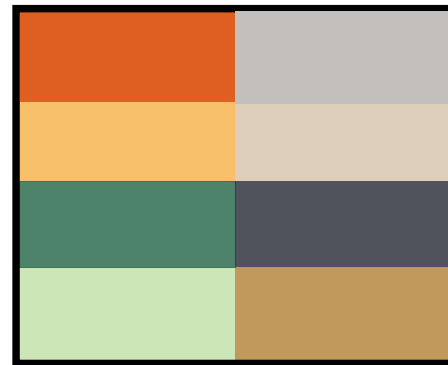
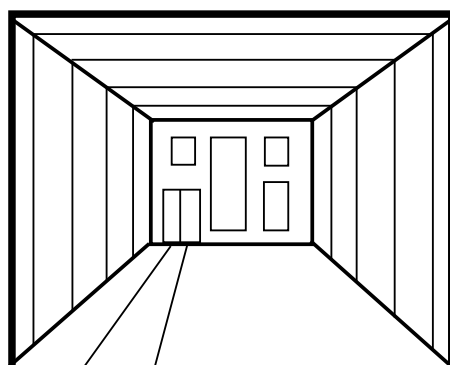
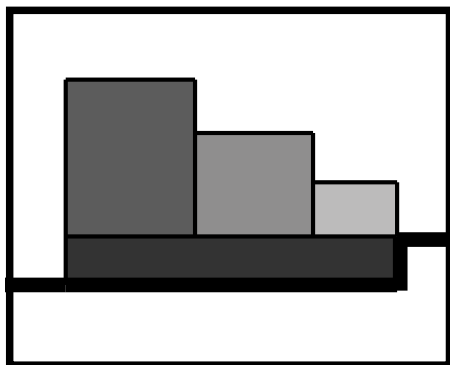
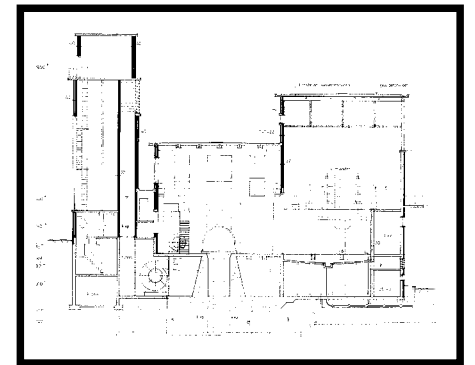
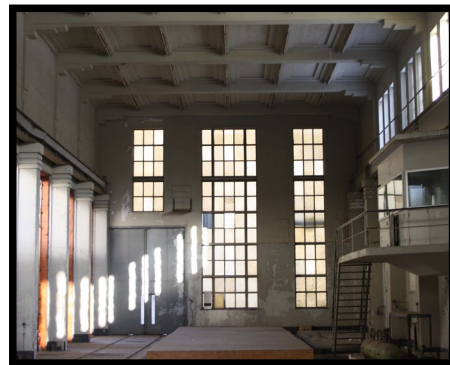
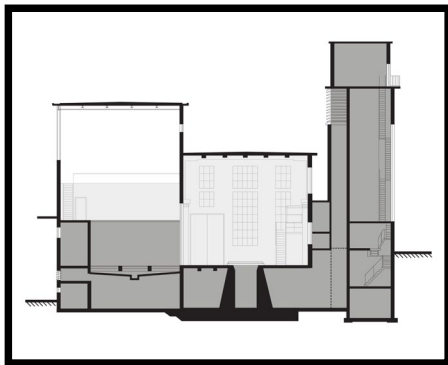
VALUE ASSESSMENT

Value assessment:

On an urban level the most striking feature of the site was the fact that this area is a transmission zone from Arnhem city to the nature park "De Veluwe". It isn't just a normal transition zone between two contrasts, but a unique one with an English landscape architecture in combination with industrial buildings. This could give a lot of opportunities for this terrain.

After this analysis the next step was to choose a building on this terrain which could be the stimulator for the rest of the KEMA area. As I mentioned before in this reflection the chosen building is the Zoetenlab, a former Energy laboratory. The building is of an enormously high value. Especially the main hall with its interesting roof and different colour ranges. Another notable thing is the difference in facades.

The north façade is a very vertical oriented elevation with an industrial look. The south façade is the opposite of this. It has a very horizontal oriented elevation with a human scale. This contrast helps people when they are in and around the building. This is strengthened by the architectural style 'De Nieuwe Haagse Stijl' which the building was built in. We find a balanced play of horizontal and vertical lines in both façades, but in the north façade the vertical directions are predominant and in the south façade the horizontal directions are predominant. And last but not least the building has a clear three-zone structure, this was done mainly for function. In each zone a different activity took place, but they were all linked to each other. And that brings me to the fact that the building was really built as a machine itself. All of these aspects of this building are of a high value for its future design.



STARTING POINTS

After analyzing on different scale levels (from urban till building technology scale) and defining the research questions of this project, the starting points became clear.

The existing building has clear zoning in architecture as well as the former functions. This structure is again used in the new function and even more emphasized by using the basement and adding a new zone on the front of this basement. This way you strengthen the structure of the zones of the building. And the typical architectural style, "De Nieuwe Haagse School Stijl" reveals itself even more by the extra play between horizontal and vertical lines in a certain balanced way. Also the difference in the south and north façades will become clearer. To clarify that even more, there is also an extra volume placed on the back (the north) side of the building. And by decreasing the surrounding ground the basement becomes actually the ground floor, which creates a lot of opportunities for the use of the basement in the existing building. In order to get enough light into the basement, which is now the actual ground floor, patios are introduced on the south facade. This also strengthens the transition from nature to building.

The relationship between old en new is very clear. The newly developed parts of the building are all there to serve the existing structure. These new parts contribute to the experience of the extraordinary spaces that already existed in the building, which you may or may not have noticed before. The existing structure determined which form, material and colours could be used in the new parts of the design.



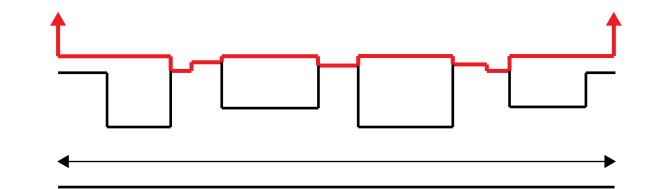
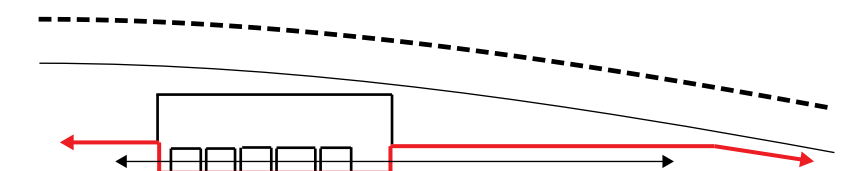
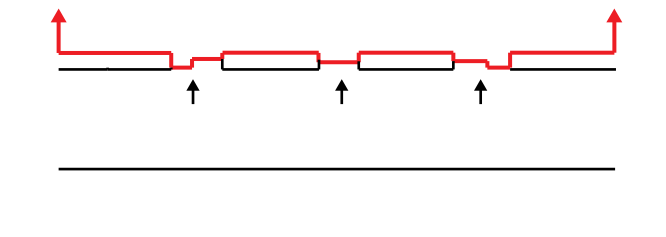
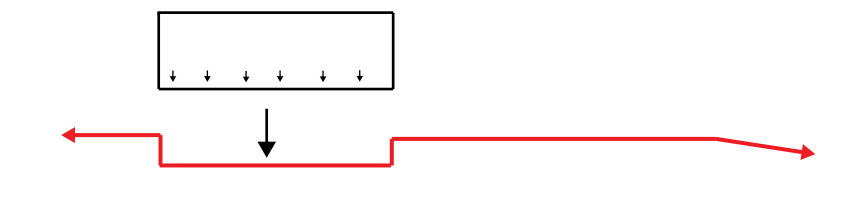
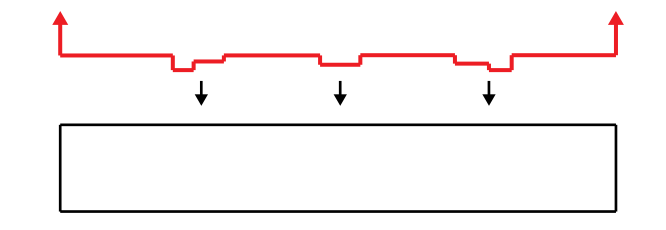
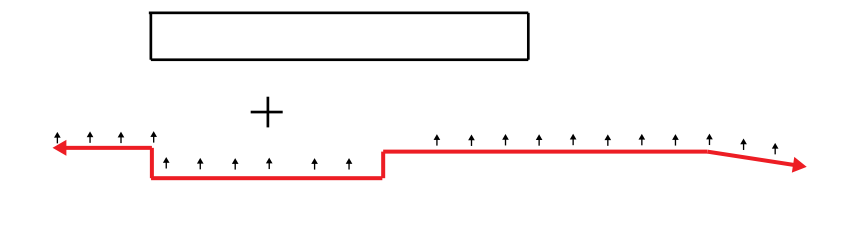
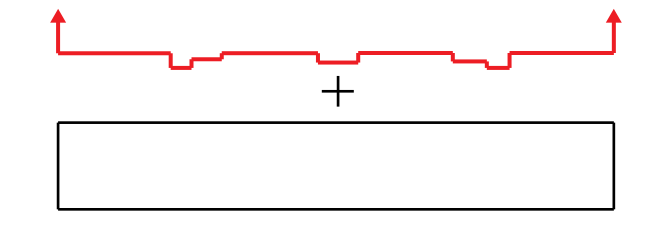
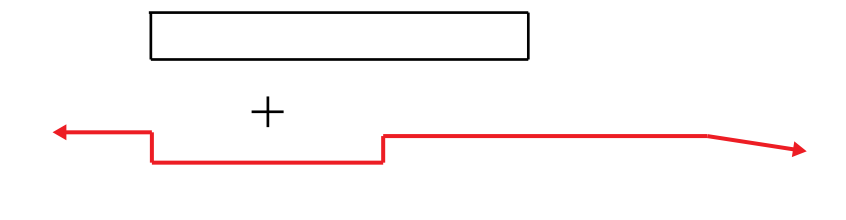
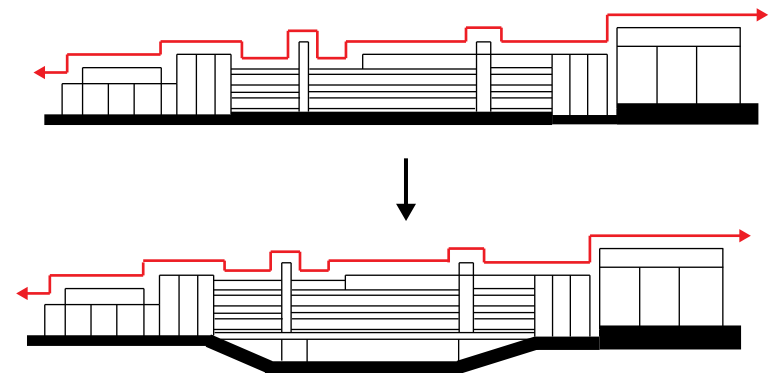
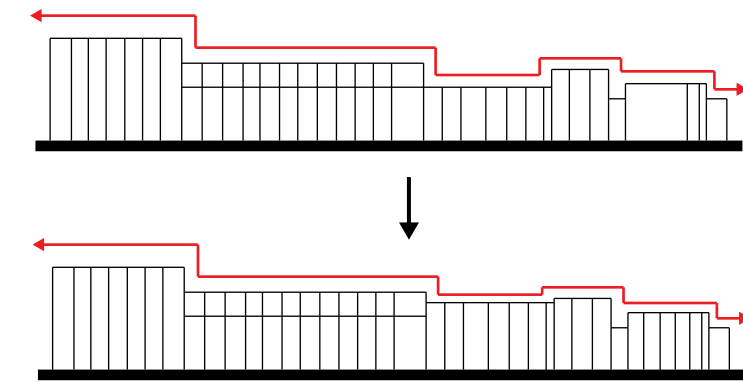
1:500 model, transmission from nature to buildig



Principal section of existing building to the design principal section of the transformation



STARTING POINTS



Schemes of the several steps of the interventions on the north (back) & the south (front) facade.

schemes made by author



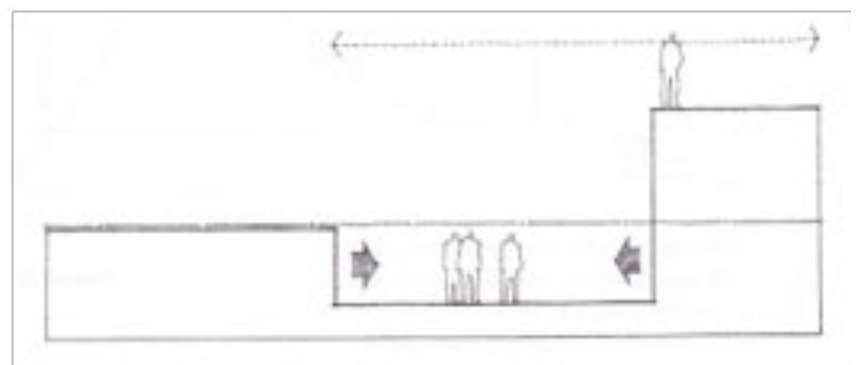
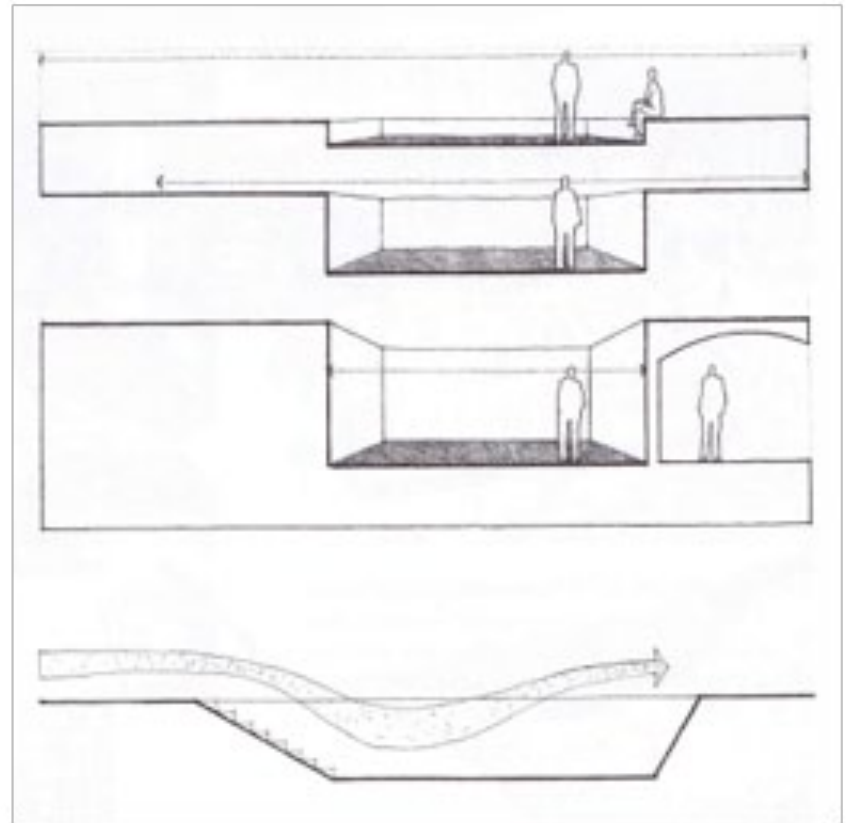
Themes:

There are a lot of different scale levels involved that pertain to the research question of this project. That is why one of my graduation project main themes is in fact 'human scale' or the 'approach' to a space in the widest sense of the word. Together with two other main themes, Layering / zoning and conservation, which were very influential in my design decisions. Using this I tried to tackle the different design issues during my process to answer my research question.

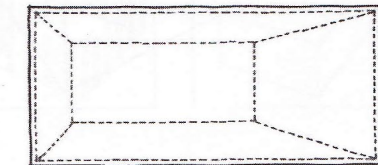
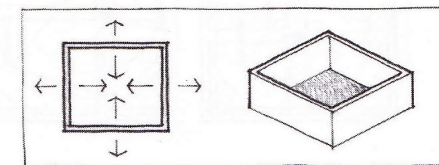
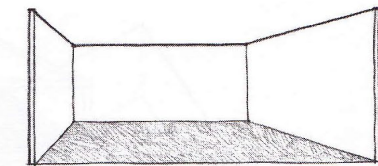
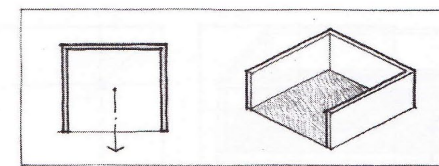
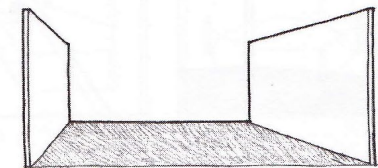
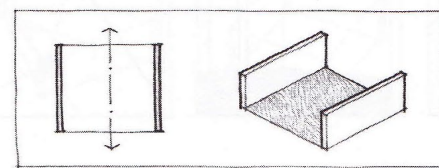
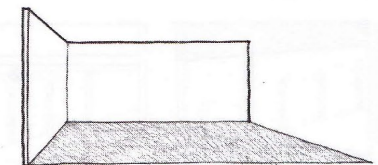
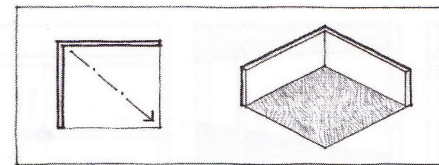
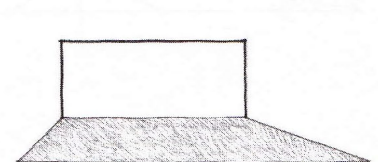
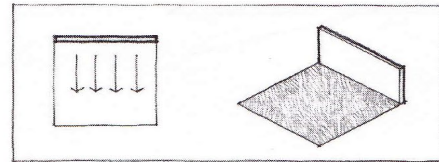
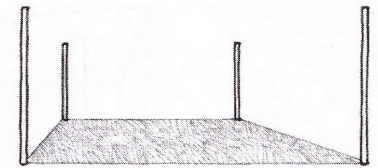
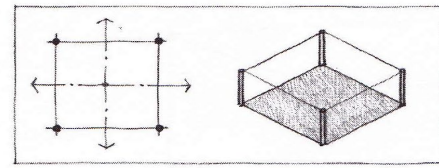
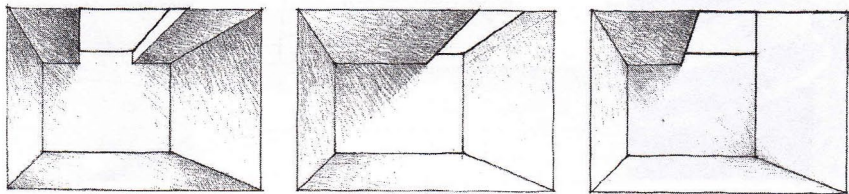
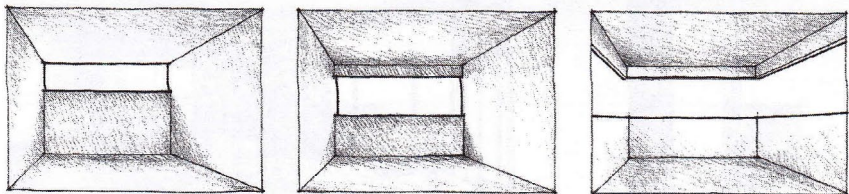
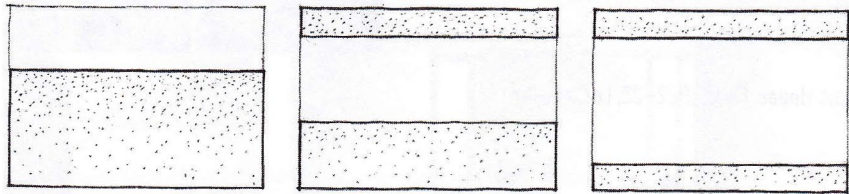
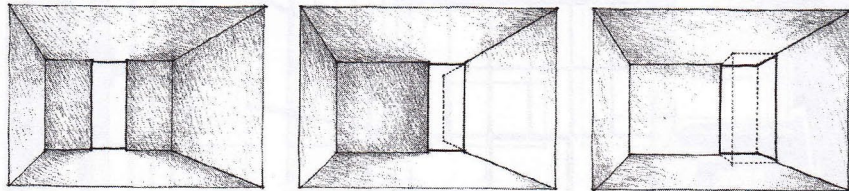
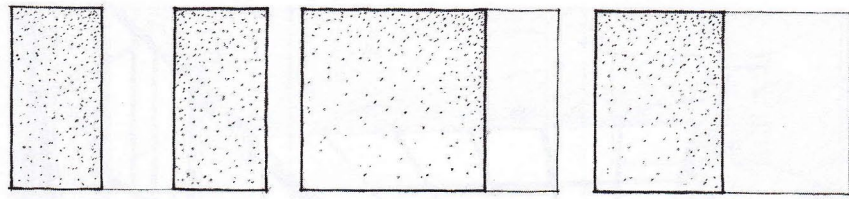
First of all human scale doesn't have to mean that the space is in the scale of a human being. It's about the diversity in scale, so that a human being can relate a certain space with a certain function. You can achieve this by defining spaces in different ways and different proportions.

Diagrams about defining spaces, which provides the human scale in general.

To focus on several main themes it was easier to make design decisions during my design process. Although I worked with these themes from the beginning they weren't that clear during the process as they are now. This is ofcourse logical because in all these aspects there are a many overlaps between themes and a lot similar themes as well. Every aspect of design has a relationship with other aspects of design. By choosing some very important themes you still incorporate other themes in the design process as they are all linked to one another.



THEMES



Diagrams about defining spaces, which provides the human scale in general ²

² Architecture, form, space and order



RESEARCH METHOD

Research method

In my thesisplan I suggested to make use of the following research methods:

Research by design:

- Sketching
- Model making

Research by analysis:

- Mapping
- Taking interviews

Research by reading:

- Collection articles & books

Archive research:

- Collection maps during the years & stories

Field research:

- Taking pictures
- Sketching

In the first phase of analysing I visited the site of our design project very often, seeing new things of the building and its surroundings each time I was there. During your design process you may change your way of looking at building or certain areas. If you are working on a different scale levels, than the last time you visited the site might be under different circumstances therefore realizing things you didn't see before. Doing this provided me with plenty of knowledge of the building and its surroundings.

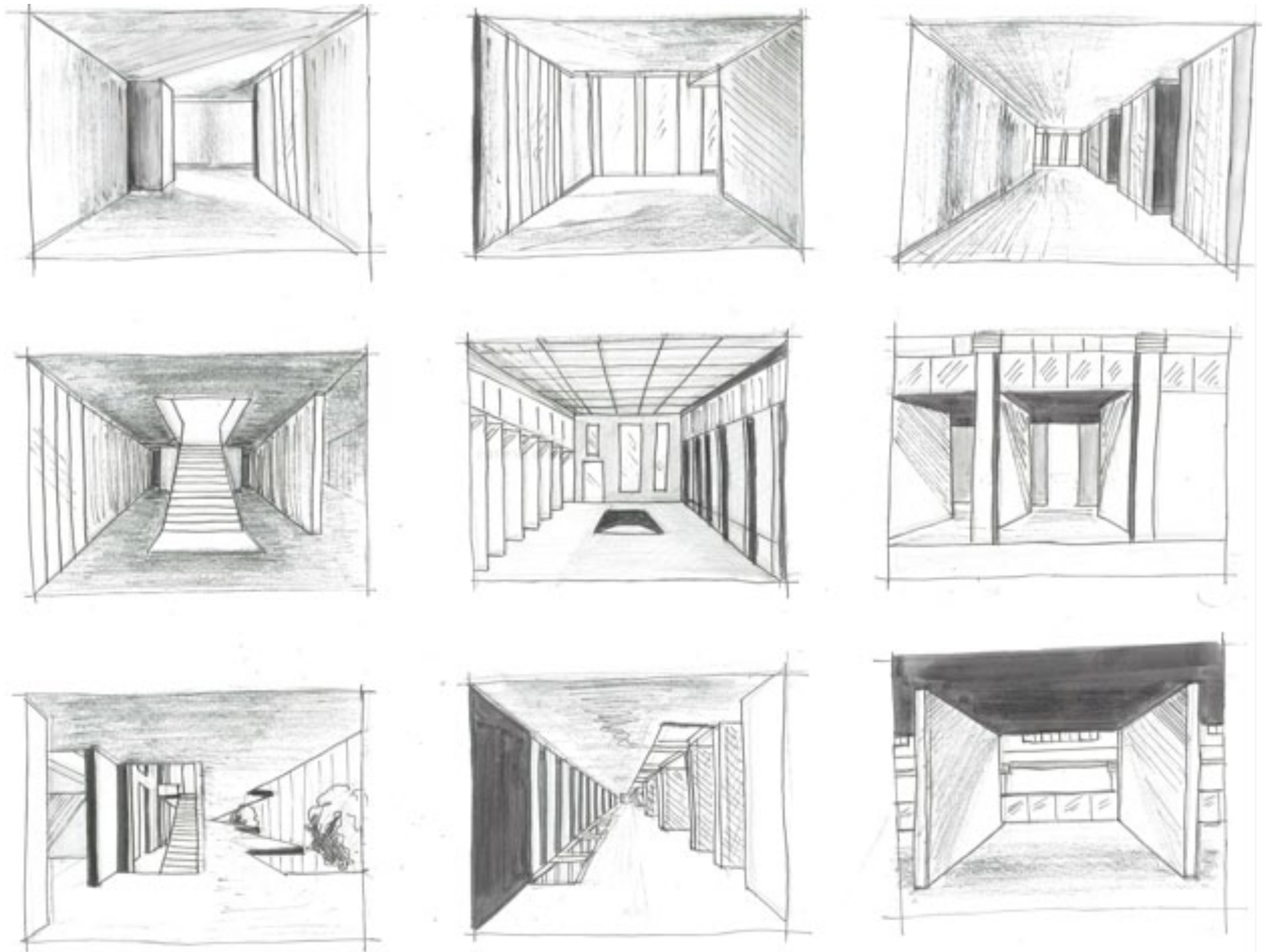
Besides this I did a lot of research pertaining to the actual function of my new design for the Zoetenlab. I read a lot of policy and municipal plans of Arnhem to in-

vestigate the goals of Arnhem with all her different stakeholders. After getting a better picture of Arnhem and what it wants for her future, I made my function choice: a creative factory. This last link of the culture chain, the combination of all different kinds of art, has been missing in Arnhem. To get a better understanding of the idea of a creative factory I visited many reference projects during the last year. By visiting a lot of reference projects during the whole design process I continually was full of new ideas to integrate into my design. I also conducted an interview with William Willems of SLAK, one of the biggest studio and atelier providers in the Netherlands, which is situated in Arnhem. By doing this I realized that despite the economical crisis there was still an enormous demand for ateliers and work studios, especially in combination with the possibility to showcase their creations to the public at the same site.

Looking back at my analysis and design process I used a lot of these methods to eventually make design decisions. However in the future I would have to make more use of models to better test what it is that I am designing. Now most of the time I conducted these tests and therefore design decisions by sketching (see sketches above) a lot. Each time re-evaluating what I am really doing and if it is what I want to achieve. Though this is a very quick tool to use, it is also easy to manipulate. So creating a model is the most reliable way to test if you are creating what you'd like to achieve.



RESEARCH METHOD



Sketches to test what is going to be created

sketches made by author



SOCIETAL & SCIENTIFIC RELEVANCE

Societal & scientific relevance

As mentioned in my thesisplan, my graduation project has a great social and scientific relevance. It was already clear for the CIAM in 1951 that art in a city is enormously important for the development of the city and therefore its inhabitants.

"The core is an artifact, a man-made and essential element of the city planning. She is the expression of the collective thinking and spirit of the community, who gives the city itself a humanizes meaning and form."³

And even more specific; "Urbanity is the framework in which Architecture and other visual arts should be intrigued to recreate a social function to be obtained. This integration will be achieved through synthesis of the efforts of architects, painters and sculptors who work as a closed team."⁴

By using an existing structure of the building, the zoning, I created a small cycle from idea to the actual product. Which you can see in the conceptual model in the pictures.

The first zone, which is orientated to the north, is the zone where all the ateliers and studios are situated. Here the first ideas will be created. For example a new kind of art concept, product, painting, company, fashion show, exhibition, or performance. The next zone, which is the main hall of the building, will be the place were you can actual showcase those ideas to the public. This place will act as the new testing area of a product to see if it will succeed or not, as already mentioned in my thesisplan.



Conceptual model about the use of the design pictures taking by author

³ CIAM, Een korte schets van de kern, 1951

⁴ CIAM, Een korte schets van de kern, 1951

SOCIETAL & SCIENTIFIC RELEVANCE

"The audience at the show is not a passive crowd but an active part of the transformation of the newly presented designs into legitimate pieces of fashion." ⁵ And "Fashion shows are at the same time a market; a demonstration of new tastes, ideas, technologies and skills; and theatre." ⁶ This also works ofcourse for other disciplines in the art world. The public is the way to success.

The importance of artists working together to achieve another level with new concepts can also be seen in the fact that "... the use of spatial authority has to oscillate between acceptance and rejection. Instead of falling back into the traditional patterns of his discipline, the architect has to construct a "thing" that can be shared with other disciplines." Like for instance artists, scientists and curators.

This aspect was created in my design by introducing flexible workspaces, this was all done so that artists can meet and interact with each other. Besides this there are several other shared facilities like a machine hall, restaurant, archive, and grand café. Last but not least is the space to expose and sell your products, this also forms the last zone at the front of the building.

By reusing the old structure and the former functions of the Zoetenlab building I maintained a clear identity for the building. This way the new design of a creative factory for Zoetenlab and her surroundings will create a lot of opportunities for the art world in Arnhem. But not only for the art world itself, but also for the public, who varies from the residents of the nearby neighbourhoods to the rest of the Netherlands, this place will be a new experience for them.

⁵ Making things, Public Atmospheres of Democracy, The Parliament of Fashion, Pauline Terreehorst, Gerard de Vries

⁶ Making things, Public Atmospheres of Democracy, The Parliament of Fashion, Pauline Terreehorst, Gerard de Vries

⁷ Making things, Public Atmospheres of Democracy, The Architectural Thing, The making of "Making Things Public", Nikolasu Hirsch, Michel Muller



CITY EXPOSURE LEVEL

City Exposure level

The most striking thing about the KEMA site in the East of Arnhem is that this area is a transition zone from the nature park "De Veluwe" to the city centre of Arnhem. Arnhem is a city of Art, in particular fashion, but it is also a city of Energy. So why not combine those two principles in a broader perspective? This can be done by introducing the general theme of "Energy made in Arnhem".

These two main aspects of Arnhem could actually strengthen each other by marketing this thought towards the public. You can 'sell' a city much easier if everybody knows the city in a similar way, a very own brand if you will. So Energy made in Arnhem could be very useful tool for that. Energy could mean a lot of different things, which is very useful. Take a city like Eindhoven for example, which is known as the city of Light. This isn't literally all about real light, but more about design in an enormous diverse range.

Using this there is still a link to the former function of the Zoetenlab building. And having an internationally known identity for the city of Arnhem will contribute to the succes of the creative factory of Zoetenlab.

ENERGY made in **[Arnhem]**



URBAN LEVEL

Urban level

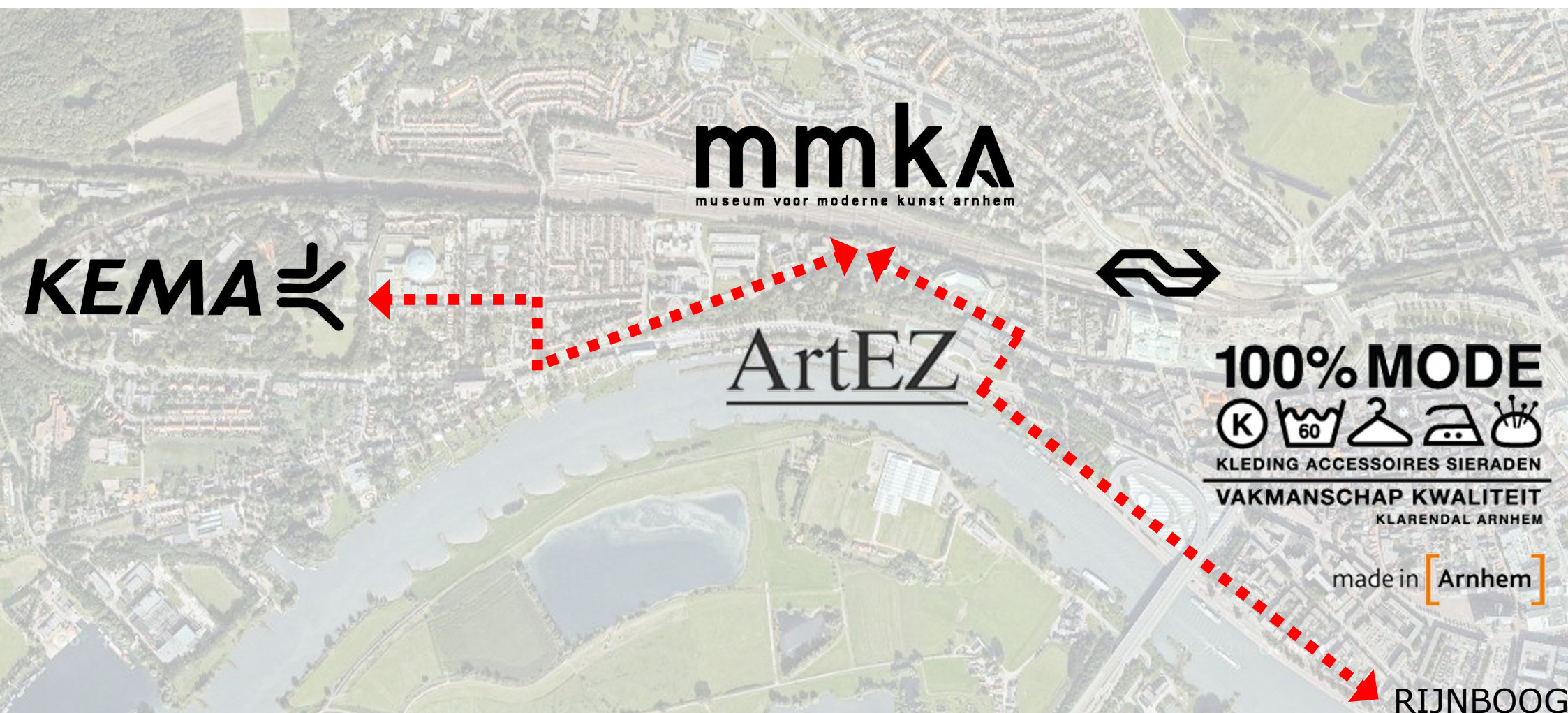
By introducing a culture route from the "Den Brink" site and the city centre of Arnhem there will be a better connection between the city centre and the KEMA area and even with the nature park "De Veluwe". As there are already a lot of cultural activities in the surroundings into the direction of the city centre, this cultural route is easy to achieve. And it's just a 25 min walk from the "Den Brink" site to the city centre.

The second urban intervention is to emphasize some parts of the park more than others, this was done by creating diversity in spaces and therefore focus points to experience. This was strengthened by the dif-

ference between dense and non-dense areas, which already existed by introducing the concept city versus park.

Why not use the things which are already there to achieve the best of the "Den Brink"? By using this, the idea of 'Energy Made in Arnhem' is much easier to spread.

So by introducing a culture route towards the "Den Brink" area with the aim of attracting more people towards this unique location will increase its chances of success. And to give the experience of the transition from the city centre of Arnhem to the nature park "De Veluwe", the concept for the "Den Brink" site "park versus city" will clarify this idea.



ARCHITECTURE & BUILDING TECHNOLOGY LEVEL

Architecture & Building technology level

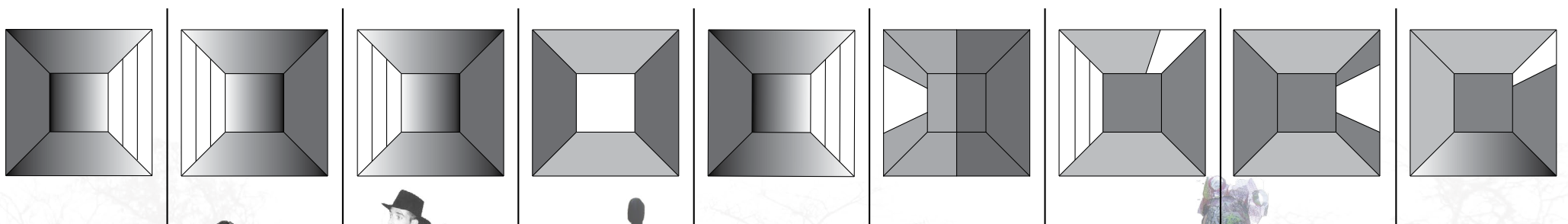
One of the main crucial design decisions was obviously the conservation of the main hall. But by introducing a new kind of entrance towards the main hall, you will experience the main hall much better. So that brings me to my second crucial design decision, namely the two stairs from the basement to the main hall at the spot of two of the four former basements of the generators, which were located in the main hall. Now the machine is no longer acts as the testing part, but rather the public who visits the place. The last crucial design decision, which is actually the first, was as I mentioned before the zoning / layering of the structure of the building.

Through the use of design tools such as light and defining spaces in a certain way creates movement within the building, which in turn creates the Energy of the building. You can lure people towards a site or area within the building by playing with the height, width and light of a particular space. As I wrote earlier it is all about proportions.

Another aspect, which was also leading for my design was the fact that each artist has different requirements to be able to produce their art, so there has to be a great diversity of spaces. But evenly important is interaction. The spaces where artists meet each other and the spaces where the artists meet with the public.

All these main themes; Layering, 'human' scale and conservation can be seen in the detail of my design. For instance in the way I handle the materials, colours and texture of the building. Or the depth of the façade together with more layers of material will lead to more expression of the structure of the building in total.

Looking back at my design decisions on an architectural and on a building technology level, I tried, as much as possible, to combine the technique with the actual design of a space. So it becomes a whole and strengthens each other instead of working against each other. I think I succeeded in this when regarding my details and the way I worked with the existing structure of the building.



RECOMMENDATIONS

Recommendations

If I were to continue this design project after graduation I would investigate how to achieve the same kind of quality, which I created with my design now, with a budget and with the idea that the building has to change functions in for instance 10 years. Then asking myself how to deal with these issues. Especially since these matters are becoming more and more relevant in our society as our standards are constantly changing, and technology is rapidly evolving. This makes flexibility very desirable.

When you are working with existing buildings, learning the ins and outs is essential in obtaining a good design. After making a thorough analysis of the building, it is very useful to make your position regarding the building very clear, mainly because this will lead you to many answers during your design process. And when designing a creative factory into an existing building it helps to look at the structure of the building itself, this will lead you towards some crucial design decisions. To anyone looking at designing a creative factory in the Zoetenlab building on the KEMA site, I would advise them to do more research to the way an atelier or studio can work most efficiently. I think this might perhaps lead towards a different design that I have made.



LITERATURE

Literature during my design process of my graduation project:

Books:

- Architecture, Form, Space & Order, Francis D.K. Ching, John Wiley & Sons, Inc, 2007, USA
- Het ontwerp van de stadsplattegrond, Jan Heeling, Han Meyer & John Westrik, SUN, 2002, Amsterdam
- Refurbishment and Upgrading of Buildings, C. Grose & D. Highfield, Spon Press, 2009, London & New York
- Constructing Architecture; Materials processes structures, A Handbook, Andrea Deplazes, Birkhauser, 2010, Berlin
- Façade Construction Manual, Herzog, Krippner & Lang, Birkhauser, 2004, Berlin
- Omgebouwde Ruimten, Simone Schleifer, Librero, 2006, Spain
- Beton in architectuur, Simone Schleifer, Librero, 2008, China
- Hout in architectuur, Simone Schleifer, Librero, 2008, China
- Concrete design book on Implicit performance, Jef Apers, FEBELCEM, 2009, Rijswijk
- Schetsen Voor Een Nationaal Historisch Museum, Kenneth Frampton & Hans Ibelings, SUN, 2011

Magazines:

- Weervast Staal, W. Hoeckmann & C. Christiaens, Bouwen met Staal, 2008, Zoetermeer
- Dax, Lars Courage, cck media, nr 22, jaargang 4, 2008, Den Haag
- Dax, Abbink X De Haas Architectures, nr 30, jaargang 5, 2010, Den Haag
- Frame, Robert Thiemann, issue 86, May / June 2012, Frame publishers, Brooklyn, NYC, USA

- Frame, Robert Thiemann, issue 87, July / August 2012, Frame publishers, Brooklyn, NYC, USA
- Mark, Arthur Wortmann, issue 38, June / July, Frame publishers, Amsterdam

Readers:

- Draagconstructies - Basis, ir. J.M. Gerrits, 2005, TU Delft, Delft
- Klimaatinstallaties: Intergratie van gebouw en installaties, T.A.J. Schalkoort, TU Delft, Delft

Brochures:

- MHB iso 30 series Steel window profiles
- MHB SkyFrame floating doors
- Alkorproof Green roofs

Sites:

- www.alkorproof.com
- www.mhb.nl



LITERATURE

Literature during my research of my graduation project:

Books:

- Dat is architectuur, sleutelteksten uit de twintigste eeuw, Hilde Heyen, Andre Loecks, Lieven de Cauter en Karina van Herck, CIAM, Een korte schets van de kern, 1951, p. 285
- Making things Public Atmospheres of Democracy. Edited by Bruno Latour and Peter Weibel, the MIT Press / Cambridge, Massachusetts / London, England, ZKM / Center for Art and Media Karlsruhe. 2005
- Paint/Print/Public, Lisa Pon,
- Public Experiments, Simon Schaffer
- The Architectural Thing, The making of "Making Things Public", Nikolas Hirsch, Michel Muller
- The Parliament of Fashion, Pauline Terreehorst, Gerard de Vries

Policy and municipal plans:

- Cultuurnota Arnhem dec 2011, gemeente Arnhem
- Urban Farming, Een onderzoek naar binnenstedelijke voedselproductie, MAAK architectuur, 25-05-2012
- Cultuur in Rijnboog, startnotitie, dec 2005,
- Nota van Randvoorwaarden Nieuwstraat / Rijnboog, jan 2011, gemeente Arnhem
- Rapportage atelier Rijnboog, Ideeën en reacties uit de stad over de Nieuwstraat, jan 2011, gemeente Arnhem
- Rijnboog Nieuwstraat e.o., Schetsontwerp, jan 2011, Urhahn Urban design, gemeente Arnhem en
- Stad in balans, Visie op de Maatschappelijke Ontwikkeling van Arnhem tot 2015, okt 2004, gemeente Arnhem
- "Creatoop-strategie", Sairis, J. v. D.,

S. Metze, T. (2008). Nieuwe ideeën voor oude gebouwen. Rotterdam: Nai uitgevers.

Lectures

- Hielkje Zijlstra lecture, Symposium Re-use Sustainability, 09-05-2012, TUDelft
- Paul Meurs, Lecture series, Heritage Development, feb 2012- mar 2012, TUDelft

Websites

- www.madeinarnhem.nl
- www.rijnboog.nl
- www.arnhem.nl
- www.artez.nl
- www.mmkarnhem.nl
- cultuurenschool.kunstbedrijfarnhem.nl
- www.mssa.nl
- www.edu-art.eu
- www.kcg.nl
- www.interartlab.nl
- www.kunstencultuurkaart.nl/arnhem/





Sketch, Which cultural function could attract the public? (Rodenburg, 2012)

