

Revitalizing Centraal Beheer

*Discovering the future potential of Structuralism, by redesigning Centraal Beheer and
revitalize its inherent concepts*

MSc Architecture, Urbanism & Building Sciences

Graduation reflection paper

Track: Architecture

Studio: Heritage & Architecture: The Future of Structuralism

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This reflection has been set up to evaluate the research in relation with the design that were carried out during the graduation phase so far (from the start up to the P4 presentation). Self-observation on the topics of product and process will give me a deeper understanding on whether my chosen approach and method for research and subsequently design were appropriate. It also shows how I, as a designer, went through the process of designing to achieve my intended goals and what role research played in this process. Awareness on this matter will increase the level of self-consciousness which will help me in my future career as being a designer. A substantiated explanation will account for the preliminary results of the research and design, and how society and science can benefit from it. Finally, it describes how the final part of the graduation period will be filled in, by planning ahead.

1. Start

The first chapter describes the start of the graduation phase, which is the educational context and my personal approach and intentions towards this context and the project itself.

Graduation studio, approach and methodology

The graduation project is the final phase of the Architecture master, which is a separate specialization track of the master program MSc Architecture, Urbanism and Building Sciences. Generally, the Architecture master track is about developing creative and innovative building projects that use design as a means to deal with the technical, social and spatial challenges encountered in the built environment. The Architecture master track consists out of several design or research studios, each having their own scope towards architecture and the built environment¹.

My graduation project is part of the Heritage & Architecture chair, which focusses on *'the transformation of cities and buildings, which is one of the main themes in architecture today. An appropriate balance between the old and the new is a fundamental interest for contemporary design in architecture. Heritage & Architecture is concerned with preservation and renewal in existing architecture. The research by design concentrates on the architectural and technical aspects involved in the growing need for the conservation and transformation of buildings, including those of cultural significance'*².

The chair offers several design studios which change quite frequently, responding to new and relevant societal and/or scientific needs. The topic of this design studio is the architectural movement named Structuralism. *'Structuralism represents a human, social architecture that can interact, grow and adapt. Starting in 1959, Structuralism became a very influential movement in The Netherlands. But what happened ever since? Some of the Structuralist buildings became icons, but many are facing drastic transformation or demolition. Despite the design of open structures, flexible for the future by extrapolation or adaptation, the buildings show shortcomings in indoor climate, aesthetic appearance and programmatic possibilities'*³. The studio aims on researching the future value of Structuralist buildings by making a redesign of an existing Structuralist building, a case study which is in my case the Centraal Beheer office building by Herman Hertzberger from 1972 in Apeldoorn.

The Heritage & Architecture chair describes their approach as follows: *'The Heritage & Architecture chair defines research and design on all levels of scale: the use of materials and technology, the reuse and redesign of a building or a building complex, and the development of landscape and urban structure. For all scale levels the value of the entire context is taken into account, which is of vital importance to address the challenges and face the responsibilities of working on existing built structures. Particular attention is paid to values regarding architecture, urbanism, construction and interior, related to architectural history and current questions on sustainability'*².

The proposed Heritage & Architecture research methodology is described as follows: *'Program, design concept and elaboration of the design proceed from an analysis of the original building and its context from an architectonic, cultural-historical and technological angle. The*

*chair prioritizes the research questions for this and is receptive to the research results*⁴. *‘Students observe, explore, identify and prioritize the historical, cultural, architectural and technical qualities of the existing building and site in order to formulate starting points for a meaningful redesign’*⁵. Then, *‘students formulate their position as an architect confronted with the current design assignment. The student’s position, the analyses and the conclusions altogether are translated to the ‘Transformation Framework’. This Transformation Framework sets the starting points for a redesign project and addresses key values and dilemmas that are fundamental for the design approach. The Transformation Framework provides the basis for substantiated decisions on preservation, redesign, demolition or addition*⁵.

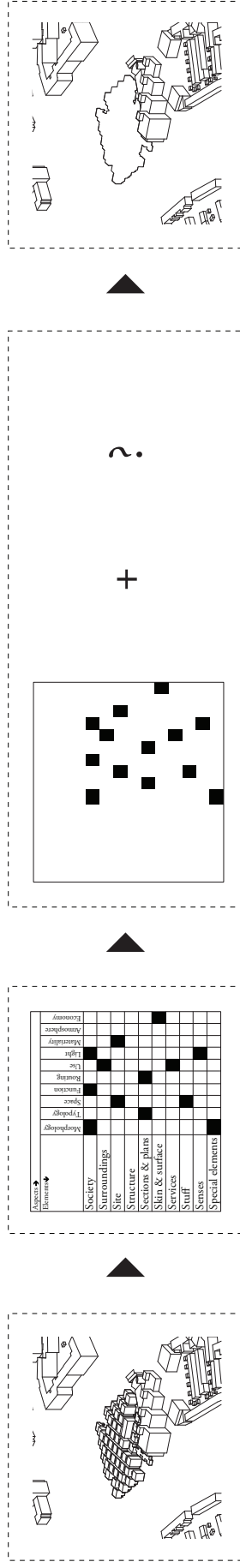
To conclude, the Heritage & Architecture approach and research methodology can be summarized as conducting an in depth and all-scaled analysis on the building and its context, depicting the most important heritage values by filling in an proposed Heritage & Design matrix, transform these values into a framework that sets the starting points for the redesign, meaning that every intervention, as well as finding a suitable and relevant design brief is based on this framework, resulting in a design that respects the existing heritage values. Scheme 1 illustrates this methodology.

Chosen approach and methodology

In order to respond to the studio’s aim the most directly, which is trying to discover the future potential of Structuralist buildings, it is essential to give priority on the inherent characteristics that make the Centraal Beheer building a Structuralist building. Also, Structuralist buildings can be seen as modern and specific buildings which were based on revolutionary and conceptual ideas that were supposed to change, and did change, the perception of architecture. They are buildings that, as one of the first, took into account the notion of time and were directed at the future. Therefore, they also demand a specific approach that acts on these strong, conceptual intentions. Compared to more historical, heritage projects where the emphasis is on freezing and enclosing heritage values, I believe Structuralism has the inherent capacity of continuing its legacy. Although the buildings show a very strong and recognizable formal language, most of them were designed from the inside out, starting from the human perspective and the perspective of (future) use. I believe ignoring all these great concepts and ambitions would be disrespectful, freezing and enclosing them would be a missed opportunity.

In, *‘Designing from Heritage, Strategies for Conservation and Conversion’* (Kuipers, de Jonge, 2017), often suggested within the Heritage & Architecture chair, freezing and enclosing heritage values and carefully choose an appropriate use predominates the content of the book. My chosen methodology slightly differs from this by putting emphasis on the Structuralist values and see how these relate to the contemporary, societal situation, so that the future potential of such buildings is exposed. The chosen methodology is shown in scheme 2. It can be seen as a revitalization of the Structuralist values where a reinterpretation or optimization might be necessary to meet contemporary, societal needs defines the design process. This shift in depicting what values are most prominent, affects the proposed Heritage & Architecture research methodology. Within the Heritage & Design matrix, values relating to Structuralism are filtered, so that the Structuralist essence of the building

Scheme 1. Proposed Heritage & Architecture research methodology (own illustration)



Analysis

Of the original building and its context from an architectonic, and cultural-historical and technological angle.

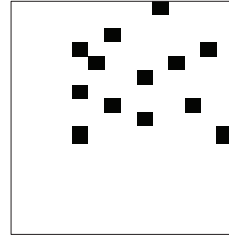
Value Assessment

Prioritizes the cultural - historical, architectural and technical values in order to formulate starting points for a meaningful redesign.

Value Assessment	Typology	Space	Function	Routing	Time	Light	Materiality	Economy
Society								
Surroundings								
Site								
Structure								
Sections & plans								
Skin & surface								
Services								
Stuff								
Senses								
Special elements								

Transformation framework

Addresses the key values and dilemmas that are fundamental for the design approach and sets starting points for the design.



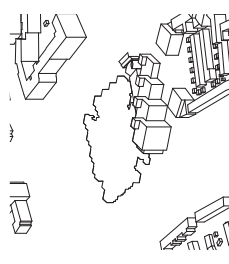
Brief

In close connection with the transformation framework, a suitable and relevant brief is being researched.

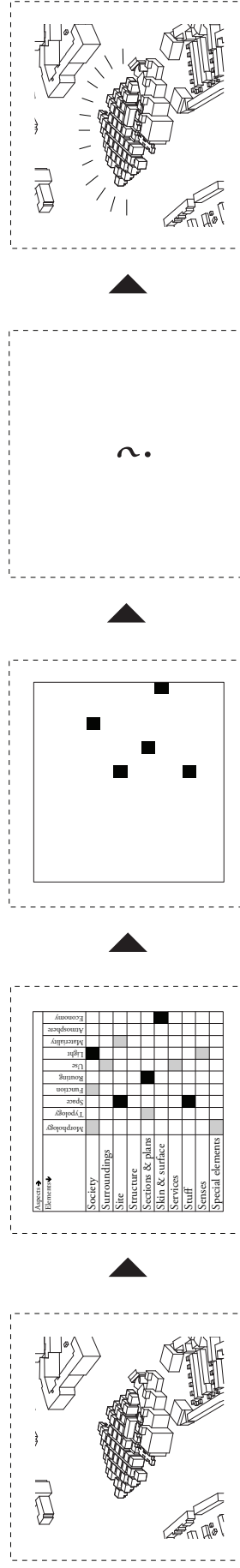


Design

A design that respects the cultural - historical, architectural and technical values but might loose the Structuralist essence of the building.



Scheme 2. Chosen research methodology (own illustration)



Analysis

Of the original building and its context from an architectonic, and cultural-historical and technological angle.

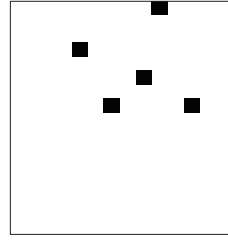
Value Assessment

prioritizes only the cultural - historical, architectural and technical values relating to Structuralism, in order to formulate starting points for a meaningful redesign.

Value Assessment	Typology	Space	Function	Routing	Time	Light	Materiality	Economy
Society								
Surroundings								
Site								
Structure								
Sections & plans								
Skin & surface								
Services								
Stuff								
Senses								
Special elements								

Transformation framework

Addresses the key values that are fundamental for discovering the potential of Structuralism that determine the design approach and sets starting points for the design.



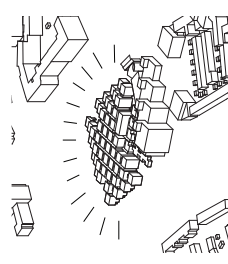
Brief

Finding a suitable and relevant brief, that is reactive on the transformation framework and enriches the values relating to Structuralism.



Design

A design that revitalizes the values relating to Structuralism and exposes Structuralism's future potential.



becomes clear. Within the Transformation Framework priority is given to these values. This then results in a redesign that arises from the building's inherent values, with a carefully chosen program that matches with these values, altogether showcasing the future potential of a Structuralist building. By doing so, a certain topic receives full attention and can be researched without any 'distractions'.

2. Process

This chapter reflects on both, the research and design process. It describes how I continued my approach and how my chosen methodology served during this process. The structure of this chapter is based on the different steps that make up the chosen methodology, which were shown previously in scheme 2.

Analysis

The first step was carrying out brief, historical research on the topic of Structuralism as an architectural movement. Then the focus shifted to build examples of the Structuralist paradigm by looking at multiple iconic, Dutch Structuralist buildings. This study gave me fundamental knowledge on the context in which the Structuralism movement existed, what where the general ideas and concepts of Structuralism and how they were integrated in the buildings it produced but also led to the surprising realization that within Structuralism, its build examples can still strongly differ from each other and therefore knowing that each building requires its own approach.

The second step was a qualitative plan-analysis of the Centraal Beheer building and its (urban) context. The goal for this analysis was, collectively, trying to objectively discover the architectonic, cultural-historical and technological values. By doing this research collectively, with each sub-group using a different perspective to look at the topics, my knowledge about it was extensive.

Value assessment

Then, individually, I depicted the most prominent, inherent values that relate to Structuralism. By doing this, the large amount of information got converted into manageable core-aspects, which I can work with during the following design phase. This resulted in the perception of the building as an *open system*, which is:

- *Open for internal changes*
- *Open for social interaction*
- *Open for individual appropriation*

Due to the extensive group research, It felt save to narrow it down and categorize the values that relate to Structuralism into three, core aspects. However, this categorization of results can, and turned out to be tricky. I started to see the building as a mere diagram of these 3 core-aspects. I tended to think that by focusing on these three core-aspects, I take into account every Structuralist aspect of the building. I learned that it is of great importance to regularly scope the entire analysis and freshen up your memory, especially for the aspects that are easily overseen.

Transformation framework and brief

The next step was juxtaposing the before mentioned 3 core-aspects to the contemporary, societal situation and see if I can manipulate the 3 core-aspects in a way that they become relevant again. I will describe my line of thought for each of the core-aspects below:

Open for internal changes: This meant, the capability of absorbing different office-related arrangements within a 3x3m zone, which Hertzberger called 'the interpretable zone' that was the 'basic building block' of the entire complex. This concept saw the building not as a finished object, but more as a continuity. It took into account that changes will occur during the life span of the office and that a building should be able to absorb such changes. Nowadays, societal changes occur even more often and drastic than before. This leads me to the decision of reinterpreting this concept and expand it in a way that the building is able to accommodate any program, at any given time. An open structure in which any program can be added, removed, grow or shrink.

Open for social interaction: A concept that is part of the building's DNA. The building breathes openness, both, physically as conceptually. This openness stimulates social and visual interaction and perceiving its users as one community, instead of separate individuals. The openness is also non-hierarchical, making sure the building treats every employee the same way. All of this was structured in such a way that the building resembles a small city, with interior streets accompanied with small squares, places for meeting. With the pressure on public space due to urbanization and privatization, and the increasing influence of digital media on our social behaviour, the demand for spaces that stimulate direct social interaction is increasing. Due to unforeseen developments in the surrounding, urban context and the fact that the building was used by a single organisation which moved out, these concepts need to be respectively optimized and reinterpreted according its new intended use.

Open for individual interpretation: Centraal Beheer was designed as a canvas, unfinished and open for individual interpretation and customization by the offices employees. By intensively decorating their own working places, a sense of belonging was send out to the employees, enhancing the community feeling. The individual identity was not lost in the structure, on the contrary, it was strongly expressed. Personal expression and freedom of choice have always been important values for mankind. In terms of the built environment, Modernism has proven its failure in its attempt to architecturally engineer society. These personal findings were confirmed by doing research. The book '*Spatial Agency: Other Ways of Doing Architecture*' (Awan, Schneider, Till, 2011)⁶ refers to an understanding of design that takes into account other spatial agencies than that of the architect and both define the architectural project beyond the articulation of a perfected image. Something that is acknowledged by Tom Avermaete in *The Agency of Structuralism* (Avermaete, v.d. Heuvel, 2013). He claims that that '*people these days are more aware of their spatial agency than they were in the 70s*'⁷. So seeing the building as a canvas, unfinished and open for individual interpretation remains relevant and shows even more potential, but needs to be reinterpreted since the company left, resulting in a tabula rasa-like stage of the building again.

Design

After having determined how the core-aspects can become relevant for the contemporary situation again, it was important to start doing research by designing, supplemented with several sub-studies that served to rationalize my design decisions and theoretically support them.

Open for internal changes: Doing a precedent study on projects that were aimed on a similar concept, gave me insight why these projects simply didn't turned out to be more than just projects of great ambitions. Yona Friedman proposed *Ville Spatiale* in 1958, a project that can be seen as an elevated, urban super structure, which can be filled in by a variety of programs, initiated and built by the users themselves, which was simply too unconventional and rigorous. A more contemporary precedent, in 2011, two so-called 'Solids' were realized in Amsterdam, an idea by Frank Bijsterveld. Solids can be seen as buildings of which the actual program remains undefined and therefore shows great similarity with my ambitions. But still, only 2 examples were built, mainly due to the high pre-investment costs, in order to guarantee every program can be accommodated. Both studies made me realize that, in general, the ambition redesigning a building that is open for internal changes had to be realistic and feasible with relatively low pre-investment costs. Next, I worked on the functional, architectural and technical sides of this ambition.

Finding a way to research and get a grip on the functional requirements of basically any program was difficult, simply because it is never ending. That's why it was essential to find a feasible way of dealing with this problem. A research on reference projects containing a list of contemporary, either big or small, programs gave me an idea of how, for instance a hotel, is functioning and what kind of spaces it contains. Next step was overlaying this list on the existing building to find out what is directly possible and what possibly needs further design interventions. But also the other way around, starting by looking at the dimensions of spaces and functional organizations the existing building offers to see its capabilities on accommodating different programs. By consulting *'Architects data: Neufert'* (Neufert, Baiche, Walliman, 2000)⁸ I got a more accurate idea on smaller parts of multiple programs by for instance checking how big a classroom actually is, what dimensions are the minimum for 6 people to have dinner on a table, etc. Although I intuitively started working on this topic early in the process, these before mentioned ways of rationalizing it, should have been given more attention and priority, within an earlier stage in the process. Simply because the ability of accommodating any program, at any given time is the main goal of this ambition.

Rationally thinking about the architecture of the building, whereby in my case the façade is the most determining element, was very interesting to me. At first I was struggling with the question, how do you redesign a façade for an existing building of which its new content, the program, is undefined? What design or identity can be architecturally sufficient in any programmatic scenario? After intuitively proposing a façade that cherishes the composition of the original façade, my tutor advised me to do more research on the topic of facades in general. The PhD research named *'De gevel - een intermediair element tussen buiten en binnen'* by Birgit Jürgehake (2012)⁹ on the historical development and different functions or roles a façade can fulfil, made me realize how facades in general have developed from an architectural element that represented something, for instance status or function, to becoming a mere blank envelope, which is in favour of my ambition. The research also

describes how designing a new identity can be risky and that for instance Gottfried Semper relied upon the then conventional ways of designing facades, as long as no new theories appeared. This led to the conclusion that, when redesigning a façade for an existing building of which its new content, the program, is undefined, the best thing to do is continuing on the original façade design. Besides the fact that it is a listed building, the original façade is familiar to people, they can associate with it and it is a façade that already has proven itself because of the building's global significance. It turned out that a Structuralist façade is generous in making such a transition.

Technically, it was important to find out what elements of the building (f.i. structure, services, fire safety etc.) have to be fixed, which then meet the highest technical requirements during each possible programmatic scenario, and what elements of the building have to be adaptable, in order to respond to the different needs of each possible program. This concept and study was introduced by the Dutch architect John Habraken in his book '*De dragers en de mensen, het einde van de massawoningbouw*' (1961). By using this theory and making small adjustments because of the different nature of the project, I could determine what elements are fixed or adaptable, what the average life span is of those elements and who the actor is when changes will occur. The next step was assessing the precise technical regulations of each fixed or adaptable element for each program and see which ones of these set the standard and are therefore fixed and which ones are exceptional and are therefore adaptable. To get a grip on this I consulted the strict regulations of the Dutch Bouwbesluit which shows the minimum requirements for each group of programs. Even though this gives an indication of what requirements each program must meet, it does not take into account the exceptional cases that have a heavier requirement than the minimum requirement the Dutch Bouwbesluit prescribes.

Open for social interaction: For defining a strategy on how to reinterpret and optimize this aspect, the analysis was useful again. It gave me insight on what were the initial ideas around these concepts and what developments changed the notion of it, to know what parts of it need reinterpretation and optimization. The design strategy relating to this aspect is similar to the overall approach of the project, trying to revitalize or strengthen the original ideas. However, since the building will no longer accommodate a single organisation, the physical, interior openness is affected. Therefore it was necessary to re-create the community feeling, which was the result of the interior openness, by other means. This done by revitalizing the original concept of the building as being a small city where different users can benefit from each other and by providing a platform on which the new users can connect, share ideas and sell or trade their infill elements.

Open for individual interpretation: Means conceiving the building as something that is continuous and temporarily 'finished' by the users who can come up with their own initiatives and self-build/customize their own plot. To find out how such an ambition can be realised in practice, the 2011 Solids project by Frank Bijdendijk was again useful. For this project the municipal zoning plans were liberalized making it easier for users to add and/or change programs. Then, users can add their own infill elements in order to create the desired space plan and finishing. They are owners and responsible for their infill elements. However, the marketability of these infill elements turned out to be uncertain,

resulting in users that were stuck with the infill elements. By adjusting this concept and making use of the modularity of the Centraal Beheer building, this problem can be minimized because the infill elements are exchangeable and directly suitable in all other locations within the building. But, looking at contemporary technical developments such as do-it-yourself building packages or 3d printing of building elements, this concept could be lifted to a higher level.

3. Product

The final design can be seen as a revitalization of Structuralism, stemming from the building's inherent characteristics and concepts and rediscovering them. It makes use of these given characteristics and concepts in such a way, that they enrich the final product. This results in a building of openness, which can accommodate a number of programs that can change, grow and shrink. A building that functions like a small city, in which community life can evolve and social interaction is stimulated. Also a building that is never finished, leaving space open, which allows individual appropriation. The infamous and iconic building finally opened up to the public of Apeldoorn.

As the process developed, I began to wonder more often whether this approach was the right one. I started realizing this is just an approach. The answer to the question what is the future value of Structuralism isn't completely covered by revitalizing its own inherent characteristics and concepts. It could be that, by introducing new concepts a synergy can be created between new concepts and Structuralist concepts. Also, in the end Structuralism contains more than the 3 core-aspects I depicted. For instance topics such as the Structuralist formal compositions within an urban context or it's often concrete-like materiality are relevant and interesting topics that should be discovered as well. Therefore, this final product showcases one approach towards the redesign of a Structuralist building.

Besides this conceptual basis of the project, the project can also function as an example that can be seen as a new building typology, consisting of relatively small, repetitive cells, either isolated or linked, forming an changeable configuration of undefined infills that is not only sustainable climate-wise but also use-wise. It proves the programmatic possibilities of a Structuralist building. Showcasing the ability to practice in transformable, adjustable, sustainable ways within an existing building, dealing with the constantly fluctuating circumstances. Also, due to the increasing expertise and advances in communication have led to the situation where organisations could operate at a smaller scale. Therefore, this project illustrates how tactical interventions can chop a relatively big, existing building, into smaller, future proof chunks with more contemporary proportions, resulting in a diverse, vital and high density complex.

The overall methodology can be used for the redesign of existing, Structuralist buildings whereby the emphasis, as far as cherishing its heritage values, is more on giving them a face-lift instead of freezing and enclosing them. Personally, I believe that in the case of modern, but especially Structuralist, buildings this should be priority. These buildings are closer related to the contemporary status of society and are more than others and are directed at the future. Therefore it is more important to find out how these structures can be optimized, creating a new, long-term use, instead of highly respecting every big or small conceptual and/or physical aspect of it. This way, the building can again have a significant contribution to the demanding and fluctuating, contemporary society.

Tom Avermaete makes an interesting in which intrigued me from the beginning of the graduation process (source 10). He says *'Our contemporary fascination with structuralism has*

a lot to do with the ongoing debates concerning the changing role of the architect and alternative definitions of the architectural project. At present a lot of people are searching for alternative roles, 'other ways of doing', as Jeremy Till and Tatjana Schneider have recently called it. Out of this perspective notions like 'openness' and 'generosity', in the way that Lacaton and Vassal use it, become very important. Both notions refer to an understanding of design that takes into account other spatial agencies than that of the architect and both define the architectural project beyond the articulation of a perfected image' (source 7). I believe that this project can be seen as the embodiment of this comment.

4. Planning

This paper reflects upon the period from the start of the graduation phase, up to the P4 presentation, with only the P5 presentation remaining. Theoretically this means 4/5 part of the final product should be finished, which I believe is also the case. Still, the ambitions on which the final product is based, could allow this project to be elaborated further for another year or more. The coming phase will be used for partially doing this. What I believe requires most time in this final phase is the research and design regarding the public and collective spaces that contribute to the reviving of the aspect: *open for social interaction*. Besides this, the P4 feedback will of course be processed for the final, P5 presentation. During the final period the goal is to also work on drawings, diagrams, visualisations etc. that will capture all the information regarding the essence of the project in one or a few strong drawings.

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- 9 Jürienhake, B. (2016). *De gevel – een intermediair element tussen buiten en binnen*. Delft: TU Delft.