

# P5 REFLECTION

24-01-2018  
Jelmer Dankers  
4161882

Project title: NHV Academy  
Studio: Heritage & Architecture: The Future of Structuralism  
Location: Centraal Beheer building, Apeldoorn, The Netherlands  
Tutors: Lidy Meijers, Frank Koopman, Ivan Nevzgodin

## RESEARCH AND DESIGN

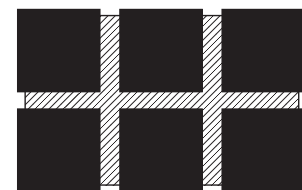
Before choosing the project location and the existing building to redevelop during this graduation project, the first step in research was to elaborate on the architectural style of these buildings: structuralism. As a group we concluded that there were four core principles that defined structuralism and also defined both optional buildings (the Centraal Beheer building by Herman Hertzberger and the Faculty of Humanities by Joop van Stigt):

1. Use of units
2. An open ended structure
3. Building as a city
4. Social interaction

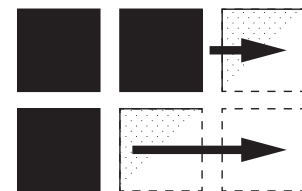
These four aspects define the framework which the structuralist buildings were based on, creating unique buildings with very intriguing appearances and experiences.

These four principles will later also be addressed in the graduation project as they are an essential part of the original building that forms the base for this redevelopment project.

After visiting both project locations I made the choice to graduate on a transformation design for Centraal Beheer in Apeldoorn by Herman Hertzberger. This building gave me a feeling of discomfort, as it was technically in a very bad shape, but also because the building was so big and repetitive and lacked spaciousness, hierarchy and orientation, making the building incomprehensible at first experience. As much as this was discomforting it was also intriguing and challenging at the same time.



Use of units



Open ended structure



Building as a city



Social interaction

fig 1: Four core principles of structuralism

During the analysis process that followed, a number of qualities of the building were found to be essential to this building:

- Its iconic exterior composition: the visibility of the use of units is very high, making it a true icon of structuralism.
- Its open floor plan which creates a non-hierarchical workspace and connects people by horizontal and diagonal sightlines.
- Its vertical connections through voids in the office floors, allowing for contact between separate floor levels.
- Its division in four main quadrants connected by an inner street.
- Its extraordinary construction principle consisting of a concrete primary and secondary beam construction, constructing the separate units but also connecting all units together.



fig 2: Vertical connections through the building

Along with the abovementioned qualities the building does also contain certain problems that leads to the dysfunctionality of the building as it currently stands:

- The building is old, vacant and not maintained. As a result its building performance is quickly degrading and the building is turning into 'a ruin'.
- The tight and over dimensioned grid of the construction leads to a lack of hierarchy, orientation and spaciousness.
- The building lies isolated from its surroundings because of the lack of connection to its context and its introvert character.

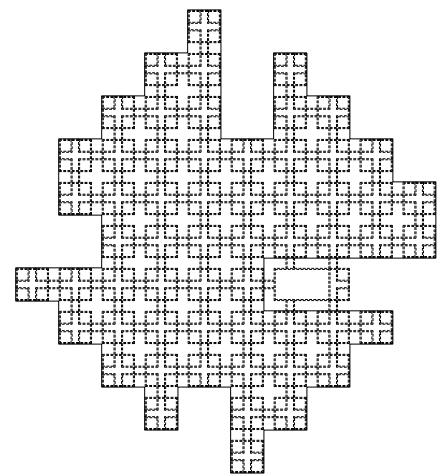


fig 3: A tight grid constructs the building

These positive and negative values of the building lead to a research question that I stated for the P2 phase as follows: *"What are the possibilities and limitations of a structuralist building when transforming to a new function, without detracting from its iconic, cultural and structuralist values?"*

With this research question the aim is to use the design phase as a tool to find out to what extent this structuralist icon allows for transformation without losing the values that made the building so iconic and important.

## DESIGN APPROACHES AND HERITAGE POSITIONING

When working on a transformation design dealing with an existing building, there are a number of approaches one can use to redevelop the design, being:

**-Preservation/renovation:** Preserve the building as it is, or improve the technical aspects of the building without changing its original appearance and experience.

**-Intervention:** Using and adjusting the original structure to transform to a new appearance and experience.

**-Addition:** Adding a new layer to a building, creating a new appearance and experience.

However, it is also possible, and the Centraal Beheer building allows itself as a good research object for this matter, to use these three different approaches on the one building, trying to find the possibilities and limitations that this building has to offer.

It is not possible to give a simple and clear answer to the research question posed, because the different approaches all expose different essential elements that cannot be pulled together as a single possibility or a single limitation. However, the building is already clearly divided into four separate building quadrants divided by an inner street, allowing for a separate treatment per quadrant. This way it is possible to interpret and define an approach for each quadrant, which gives the possibility to investigate all three abovementioned approaches for redevelopment, within one building.

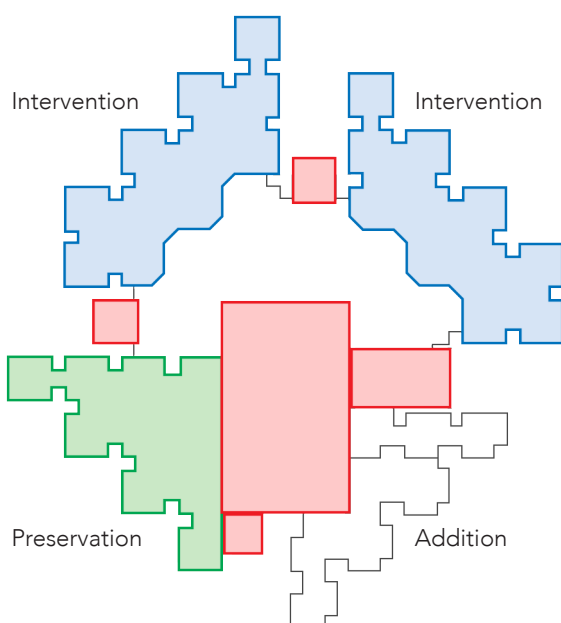


fig 4: Three different approaches to the building

Firstly the quadrant of the building which has been approached from a **'preservation'** position offers an interesting look back into history, showing how this revolutionary building used to function when it was just built. However, this quadrant also exposes the more practical problems that these open office floors had: a lack of privacy, especially when besides the horizontal connections to every other office space, the floor levels above are able to directly look onto your desk. Another problem is the repetitiveness and lack of surface finishing of the construction, which gives the building a lack of orientation, and especially if unfamiliar with the building feels like a maze. On the level of building technology, the building also poses some problems that are not to be overlooked. The building was built in a time where construction and experience were most important for the building, whereas the more technical aspects such as applying a good thermal insulation was not that important. As a result the Centraal Beheer building has not been insulated very well and is not acceptable to function as an office now and in the future. This leads to the challenge of how to improve the technical quality of the building, without changing its appearance and experience, as the intent of this quadrant was to 'preserve' the building as it was.



fig 5: How the building used to function as an office space

On the other hand, with the use of the **'intervention'** approach it has been tried to maintain the original qualities such as the diagonal sightlines and the visual connection from the workspaces outwards, whilst also trying to use intervention and redesign of the spatial experience of the quadrants to tackle some of the aspects that were found to be problematic in the original building experience. An example of this is the implementation of closed off classroom spaces in the middle of the office floors, creating a barrier between the spaces located next to the outer facade of the building and the spaces which are located on and connect to the inner street of the building. This creates a natural sense of hierarchy and privacy in the quadrant without having to actually close off the spaces from one another, allowing for the spaces located to the facade to be used for quiet and independent studying spaces.

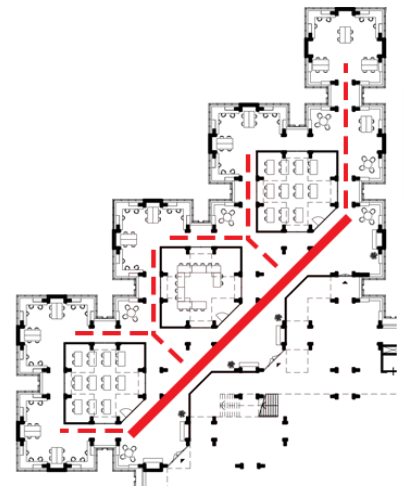


fig 6: 'Intervention quadrant' and how it redistributes functions

The third and final approach of **'addition'** was also the one I mainly focussed on, as this is arguably the most challenging of the three approaches and asked for a very well defined strategy. As earlier mentioned, one of the core principles of structuralism is the 'open-endedness'. This means the building allows for new additions to be made without losing its original values, and offers the possibility to extend on the existing building as it is.

This approach, compared to the other approaches, offered more freedom in designing and creating new spatial experiences, as the existing construction of Centraal Beheer was no longer defining the size and (lack of) spaciousness inside the building. It allowed for a free interpretation of the grid within the building, however it did not completely separate itself from the existing grid. It is important to realise what impact the addition of new volumes/spaces does for the building and how it connects to the existing structure. For example when building on top of the existing structure and also using the existing structure as a part of the new construction, which is the case for the new sports hall in the building, the construction below and next to it defines the placement of the steel construction for the hall. However, because the new volumes allow for a new construction, it has been able to place a full-sized sports hall within the building.

The relation between the three different approaches is very important, as they all have an influence on each other since they have been applied within the same building. The most important one is the direct relation between the 'preservation' quadrant, and the main 'addition' made, being the sports hall. As they connect directly with each other, and the construction of the preserved office quadrant is used to construct the sports hall, these function will have an influence on each other. As a result it is important to define to what extents this influence is allowed. If you are working in the office space for example it is important that you are not able to hear all loud noises that are created within the sports hall, which is right next to it.

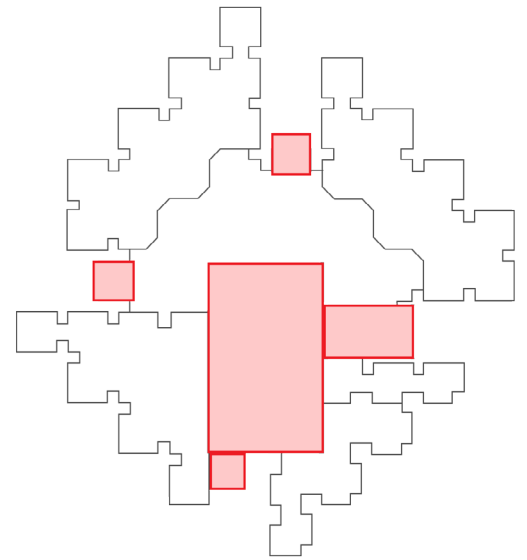


fig 7: The new additions to the building

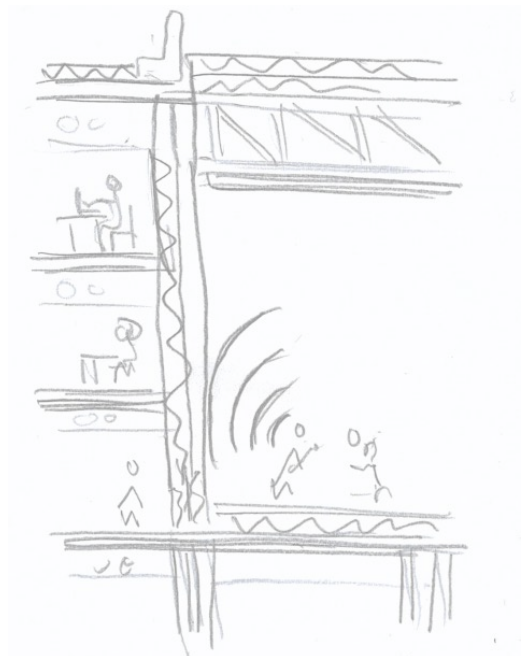


fig 8: The sports hall and office space have a direct influence on each other

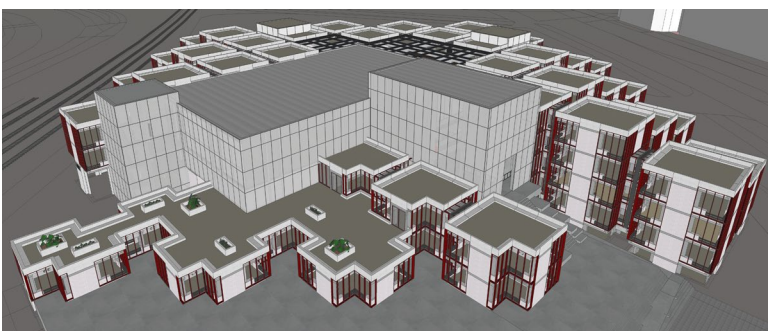


fig 9: composition including the new 'additions'

When adding new volumes to an existing building this has in most cases a big impact on the composition of the building. Whereas this composition is for a large part what makes the Centraal Beheer building as iconic as it is, the placement and exterior appearance of these new additions have to be placed and designed in a delicate way, precisely placing them within the original composition. For the exterior appearance I chose to design these new additions as contrasting volumes. The original composition is based on four quadrants that are built up out of square units of 9x9 meters built in concrete, glass and concrete brick. The new volumes, which will lie in between the four quadrants, will be appearing to be more 'fragile', created by a cladding of perforated steel, which covers the partly open and partly closed wall construction behind. This provides an exterior appearance that seems to be uniform, however the light that comes through the perforated cladding is what creates this feeling of 'fragility'.

Adding new volumes in or on an existing building does ask for a well-defined standpoint of the transformation architect on his point of view on how to deal with original parts of the building versus the new additions to the building.

## ETHICAL ISSUES AND DILEMMAS

One of the most important ethical issues within the track of Heritage and Architecture is the question whether a building is worth transforming/renovating, rather than being demolished. This question also arises for the Centraal Beheer building. It is a building that is technically outdated and degrading, its over dimensioned construction is very limiting and it lacks modern comfort. This would give plenty of reasons to demolish the building and build a new building on this location.

However, the Centraal Beheer buildings has over time reached a somewhat iconic status, being an icon of Dutch Structuralism and of Dutch Architecture in general. Its iconic exterior appearance combined with its innovative and pioneering interior experience have come to be iconic and highly valuable for historic and cultural reasons. Furthermore the building also houses a very strong structure which is able to last for a long time yet to come, making it suitable to transform to a new function that will be able to last for many more years.

As the building is too important for historic and cultural reasons it can not be demolished, which leads to an interesting design challenge. The complexity, lack of spaciousness and lack of hierarchy leads to a very challenging position. On first sight it might seem like not many functions would be suitable to be housed within this building. However, within this graduation project we lack some limitations that the 'real world' would offer us. This allows us to be creative and be bold, and for example create a sports function within the Centraal Beheer building, a function that seems to be very unfitting in this building.

In reality these plans might be very expensive. To intervene this much into the existing structure by demolishing certain parts and placing new structures on the same place. When based purely on financial possibilities and efficiency, this will most definitely not be the best option. It may be more efficient to place the new sports hall outside of the building so it can be built in the most efficient and cheapest way possible.

However it is important to take the use of the building as a city in mind. As previously described one of the core principles of structuralism is 'building as a city'. This is what Herman Hertzberger also used in the design for the Centraal Beheer building, being a city inside of the building, with an inner street that connects the different quadrants, as separate buildings would to an actual street. To progress and continue on this idea of the 'city within a building', it is important that the functions that together create the building as a whole are connected to the inner public space, the inner street.

In the case of the sports hall being placed inside/on top of the existing structure, this makes the sport an essential part of the building, and it 'deserves' the spot right in the middle of the building. Even though there is no direct visible connection between the sports hall and the rest of the building, it is always apparent that the sport, which is the essence of the building, is actually right there in the building. Because of a semi-translucent connection towards the 'inner-street' of the building it is also possible to see whether the hall is actually being used or not through the transmission of light.

## IMAGE SOURCES

fig 1: Illustration by Jelle Hetteema (2018)

fig 2: Photograph of Centraal Beheer interior, retrieved from AHH.nl

fig 3: Own illustration (2018)

fig 4: Own illustration (2018)

fig 5: Photograph of Centraal Beheer interior, retrieved from AHH.nl

fig 6: Own illustration (2018)

fig 7: Own illustration (2018)

fig 8: Own illustration (2018)

fig 9: Own illustration (2018)