

## **Transformation of Centrale Markthal Amsterdam**

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## COLOFON

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## 1. INTRODUCTION

This reflection report contains the reflection on the design product, process and planning. The purpose of the reflection report is to see to what extent did my approach work and to understand why some decisions are made. Firstly, the project will be described. Afterwards, the definitive design and the used methods and tools, and social relevance of the project are reflected. My graduation project is about the transformation of the building Centrale Markthal in the neighbourhood Food Center Amsterdam.

## 2. RESEARCH QUESTION

The redesign results of Centrale Markthal are described in this chapter. The problem is that the neighbourhood is still isolated by its surrounding water structure. Although the new masterplan results in certain liveliness, without a specific function, it doesn't attract many people. The market hall as an important monumental building in the neighbourhood must have certain qualities that can be used. So the research question was 'How can the architectural qualities of the market hall be used to enhance the liveliness of the neighbourhood?' In urban public space, liveliness refers to the presence of pedestrian and activities in addition to the various uses and interactions. So the goal can be defined as designing a building that stimulates the presence of pedestrians and activities in the building's surrounding.

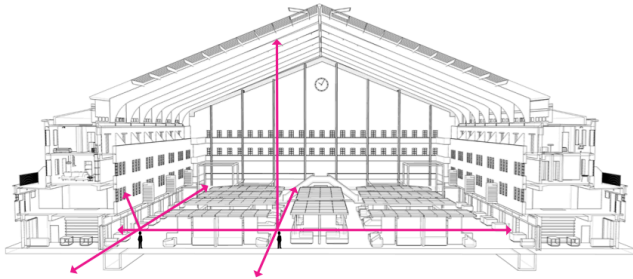


Fig.3.1. Experiencing the large scale of the hall and human scale of the facades

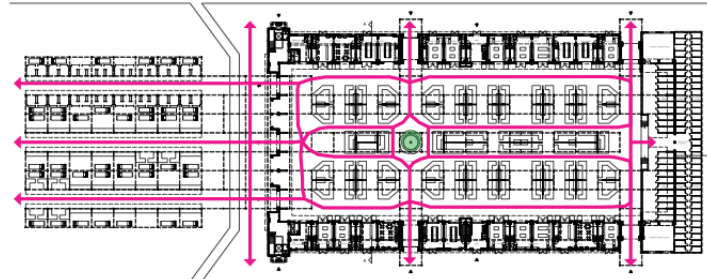


Fig.3.2. Market circulation

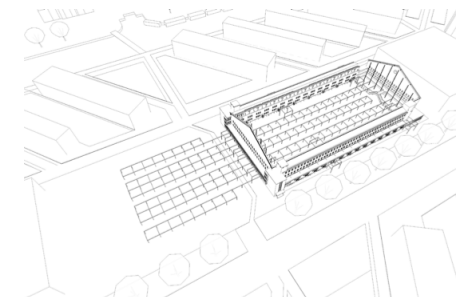


Fig.3.3. Connect the hall and square with a frame structure

### 3. DESIGN RESULTS

The aim was to create a motor that generates liveliness in the neighbourhood. To do this, on the one hand, the building must have a people attracting public function that attract visitors to the neighbourhood and help to stimulate the presence of pedestrians and activities in the building's surrounding. On the other hand, the connection between the longitudinal facades and the street must be strengthened to create a pedestrian friendly streetscape, since that the existing façades are too enclosed. When the people are attracted to the building, the square is better used, and the streetscape is friendly for pedestrians, the liveliness in the building's surrounding increases, and the building's meaning increases.

The Centrale Markthal has been transformed into a mixed-use building with a food market in the hall and non-food market on the square, food related shops in the aisles and 24 dwellings on top floors. All functions

together achieve 24 hours occupancy. The dwellings don't necessary have a relationship with the market. While the food related shops are closely connected with the food session of the market. The main architecture themes used in the redesign are connection of the existing building with square/streets, large scale, human scale and circulation. The large scale of the hall, and the human scale of the facades are important characteristics of the existing building. While the connection between the existing building and its surrounding is the weakness that is to be solved. Lastly, the circulation is crucial for the market function.

The large scale of the hall can be experienced by the position of the market stalls in the hall (Fig.3.1). 3 rows of market stalls are placed in the hall. The market stalls are positioned in a way to let people experience the human scale in the facades on the one hand, and on the other hand to experience the large scale of the in its full length, full width and full height.

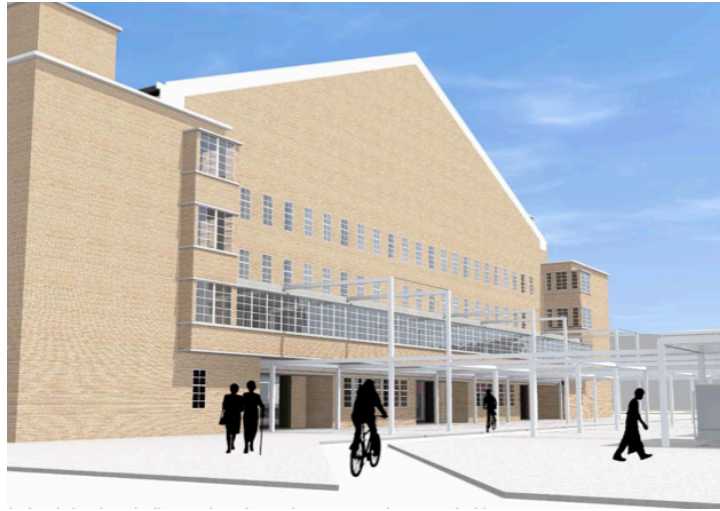
The circulation (Fig.3.2) of the market is connected to the 7 existing entrances that are located in the front and longitudinal facades. The circulation of the indoor and outdoor market are well connected through 3 large entrances in the front facades. The other entrances connect to the most important streets in the neighbourhood. All entrances are emphasized with a higher frame structure that seems to extend from the inside to the outside, to stimulate the pedestrian flows. In the food market, the circulation is stimulated by the form of the market stalls; the corners of market stalls are chopped off, and a rounded object (a bench with tree) is placed at important crossing and meeting points).

The connection between the building and the square (Fig.3.3) is created by having, a frame structure that connects both the hall with the square. The indoor and outdoor market appeared to belong together as one. This frame structure has a connection with the existing building by using

the rhythm of the existing façades and construction bays, and following the striking horizontal accents of the existing facades, which are the other important characteristics of the existing building.

The food market is opened 6 days a week. The restocking happened outside the opening hours of the market. The market storage can be entered at the back the hall, and is partly located at the same place as the demolished annex from the past. Also, the extension covered up the ugly damaged lower part of the back façade. In the hall, the market storage looks like a metal box that extend through the back façade to the outside. In the exterior, this can be seen as a metal box that is carried by the earlier mentioned frame structure. Technically, the extension is supported by another steel skeleton behind the façades, while the frame structure is a decoration that gives the desired architecture expression.







The food market stalls are designed into a system that can be attached to the frame structure. There are 5 types of market stalls that support all categories of the food retailers. Overall, the frame structure stays well visible. The stall beaneries, shelves and roof structure are prefab elements that are attached to the frame structure. Outside the opening hours, the stalls can be closed with used truck tarpaulin that can be rolled down manually. For the materialization of the frame and the market stalls, metals with neutral colours such as raw painted structural steel structure and stainless steel stall shelves, and a polished seamless concrete are chosen. This is on the one hand to give the market an industrial character, and on the other hand to fulfil the technical, functional and hygienic requirement of a food market. The light and smooth look of the metal creates a contrast with the heavy and textured existing facades. Furthermore, neutral colours such as white and shiny metallic grey, doesn't disturb the colour of food displayed in the stalls.

The outdoor market is 5 days a week opened. The volume is a low and light structure that doesn't blocks the view of the front facade, and provides permanent shelter and simple furniture. The furniture can be folded aside when the truck have to be drive in and out, and outside the opening hours. A bended cycle path between the indoor and outdoor market, slows down the cycle speed and allows cyclists to have a better view on the front façade. The connection between the hall and the square is created by having, a similar function, a structure that connects

the inside and outside, and a similar architecture expression of the indoor and outdoor market. With the intervention in front of the building, an inviting atmosphere is created at the front side. Furthermore, visitors of the outdoor market are led into the indoor market with the circulation that connects both markets.

The shops in the building aisles are redesigned as a system that operates by linking the shop units. When also taking the fire safety requirement into account, the system results in 4 different shop types. The shops can be vertically connected through firstly, the existing staircases, secondly, a horizontal connection through holes in the partition walls. Furthermore, all shops have two-sides orientation. These shops create the friendly streetscape, with their entrances opening out as well as the large shops windows on both the street and market side.

The dwellings located on the second and the third floor, are designed to be a system. A corridor with 3 fire escape staircases connects the 24 dwellings. All dwellings are duplex with a balcony on the existing rooftop. For this reason, there are fewer disruptions in the existing structure and the facades. The living and sleeping areas are located on the street side, while other supporting functions are located on the market side. A new staircase is added in each dwelling with extra supporting structure on the floor

## 4. REFLECTION ON DESIGN RESULTS

### Answer to the research question

My design answers the research question by enhancing the liveliness in the building's surrounding in a few steps. The striking expressions of the existing building, such as the rhythm in the horizontal accents and construction bays and/or façades, are used in the redesign. The large scale of the hall and human scale of the facades, the other two important characteristics, are experienced by users in the hall. The value assessment was furthermore well respected, by maintaining the existing roof, inner and outer facades well. In the end, the presence of pedestrians and activities in the building's surrounding is enhanced, by having a people attracting function, a pedestrian friendly streetscape and a connection of the building with the square, a better pedestrian flow around the building. Additionally, the square becomes livelier with the market activities.

### Relationship old & new

The building Centrale Markthal, is a cultural heritage that is by definition unique for its irreplaceable values, therefore it is worth being preserved for future generations. A monumental building, such as the Centrale Markthal, is reused to make a place vital and more pleasant, and the history associated with the building tends to make a place more interesting. In other words, the refurbishment of the Centrale Markthal is an instrument to trigger the liveliness, and the continuity of history and memory. The refurbishment is achieved by interventions that operate on

transformation. The transformation of a monumental building is necessary, but it must not cause a competition between the old context and new addition. My approach is to ensure that the new addition is appropriate to the old context, in order to allow a harmonious co-existence of the old and new. In the design process, the interventions done to the monumental building are considered by looking at the consequences to the old context. Rather than classifying what is considered as architecturally beautiful or not, it is more relevant to classify what really works cohesively and is respectful of the old context. Contrast in the material is respectful as well as authentic to the old context, because contrast creates a clear legibility of the old context and the new addition, and truly speaks for the present to the old context. In the end, I like my design approach when dealing with old and new, and how the design turns out to be. Considering the whole building reaches a balance in which both the old and new appear to be harmonious yet contrasting to each other. To elaborate, the extension is in harmony with the existing building by using the striking existing rhythm and horizontal accents as architectural expression, and respecting the massing composition of the whole building in both the interior and exterior. At the same time, the extension has its own character that derives from its contrast with the existing building in terms of the materialisation (light and heavy, smooth and textured) and space (solid and void); this makes the old and new clearly distinguishable.

## 5. REFLECTION ON DESIGN PROCESS

### Changing architecture concept and program

My process for choosing a program and developing architecture concept was not straightforward, because too much time was spent on repeating a process before making a daring step forward. As a result, it caused a delay. In the second quarter, I wanted a building program that fits the existing building and the masterplan well in a rational manner, and fulfil the research question; that is about enhancing liveliness to the neighbourhood on the social aspect. I was not satisfied with the previous design that was made for the P2, because the function was not public enough and the architecture concept was a hurried albeit a reasonable decision. After the long holiday, I began to review the starting points, and looked for new possibilities for a new program and architecture concepts with a fresh mind. At a certain moment, a decision was made to change the P2 architecture concept and program (gym, offices and dwellings) to a concept and program (market, shops and dwellings). From my perspective, the time was not wasted, because daring to start again makes you see and learn more. Hereby, I understood the context

better and became clearer about what I wanted for the context. Most importantly, the starting points are furthermore tightened and clarified. As a result, the new design and program brought new perspective and insights into the existing building and resulted in more design possibilities. The new design and decision also better answer the research question and is more suitable for the existing building and the location. Lastly, the function also touched on my personal interest in markets; therefore it motivated me to work.

### Sticking to starting points, conditions and values assessment

In my earlier projects, I noticed that it was important to review and stick tightly to the starting points, conditions and value assessment. When reviewing them during the process, they guided me to the good direction or make me to stay on track. These aspects helped me in developing concepts that fit in the good direction at the beginning, and in making decisions that stay on the right track.

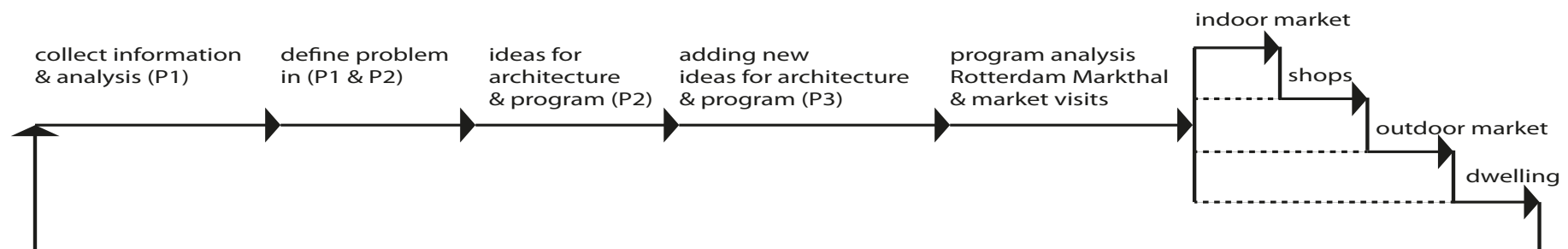


Fig.5.1. Diagram of own design process (Wu, 2014)



Fig 5.2. Physical model for scale study for P2 (Wu, 2014)



Fig 5.3. 3D model for space spatial studies after P2 (Wu, 2014)

#### Analysing reference and visiting markets

The functional research was done by analysing the design of Rotterdam Markthal, and physical visits to markets such as Markt Binnenrotte and Haagsemarkt. I found that when something is unclear, the answer could be found by analysing references and visiting similar projects. In terms of analysing, the analysis of Rotterdam Markthal and the market visits happened too late, otherwise my design process would have been more efficient and the design could be more effective in answering the research question during the third quarter.

#### Architectural tools for designing large building

The architectural and spatial research in the design process was mainly done using 3D computer model. In the second quarter, a physical model was made to see the scale the building and as part of the P2 presentation. By doing this, I realised that hall is much bigger than I expected and I must pay more attention on the massing of the extension to fill up the large hall. Since the third quarter, all spatial studies were done in 3D model. Especially for large buildings such as the Centrale Markthal, working with 3D model is very efficient, because it allows architecture concepts in spaces and human-scaled experience to be well tested and efficiently developed. At later design stage, 3D model allowed me to design architectural elements in detail, since the 3D model gives a more realistic feel of the space and material. Most importantly, designs can be made and visualized without the limitations that I had when working with physical models in the past. The process in the 3D model follows the design development where the decisions are made from spatial studies in 3D model. Therefore, the 3D model became a working tool for both my architecture research (process) and a visualisation (product). At the end, I am satisfied for my choice for starting straight mainly in 3D model, in addition to more traditional methods like drawing and making physical model for the spatial studies.

### Decision-making

The decisions in design are often rationally made based on starting points and results from the analysis, and sometimes based on feeling in spatial studies in 3D model. Hereby, I tend to make safe decisions because of my position in dealing with old and new. As a result, the design is a subtle intervention that fits my approach well; it doesn't disturb the existing building.

#### Example 1: frame structure

For example, the starting point 'connecting the hall with the square' allows 3 initial concepts to be created from. Subsequently, the frame structure is chosen due to its connection with the existing building by following the existing rhythm and horizontal accents. An analysis of the building shows the striking construction bays and rhythm as well as the horizontal accents are considered the important architectural expressions. This frame structure is further studied spatially in 3D model.

#### Example 2: space to experience the human scale and the large scale

The rows of market stalls placed on a distance from the existing facade to let visitors have a good view on the existing facade while experience the human scale of the existing facades. This distance can be too big or too small since it serves as a main circulation space. In finding the best distance, both the analysis of the Rotterdam Markthal and spatial studies in 3D model are used. Therefore, the decision is made both rationally and personal feeling.

Additionally, the study on the dimension of the hall and the analysis of Rotterdam markthal, gave me an insight that 3 rows of stalls would result in too much circulation space while 4 rows would not fit the hall. Within each row, 4 market stalls are placed back to back against one another

in a group. This group of 4 stalls creates a more open (circulation) space in the cross direction to let the visitors experience the largeness of the hall in its full width in addition to its full length. This decision again is made in regards to another starting point from the building analysis, that is to experience the largeness of the hall.

#### Example 3: 'stedelijk wonen' dwellings types

Choice for the types of dwellings is based on the value assessment of the existing buildings on the one hands, and on the other hand based on the analysis of the dwellings in the Rotterdam Markthal. With value assessment the important facades and the structure are maintained as conditions for design, while the analysis of Rotterdam Markthal indicates what kinds of urban dwellings are compatible with a market function. As a result, the dwelling types chosen are appropriate to the existing building, to the market function and to the theme 'stedelijk wonen'.

### Working on all functions at the same phase

After the program was found and architecture concept is developed, the design process (Fig 5.1) can be seen as working on the different parts in the same phase; food market, non-food market, shops and dwellings. These functions have to be developed together, because I thought they are intertwined. All parts required research at the same phase to find the correct relationship between them and with the existing building. This is to make sure that all functions are compatible and suitable for the existing building. At the beginning, this approach confused me, due to the large number of things that had to be taken into account. However, the approach certainly gave an overview of all parts. In the end, it results in a design that is better integrated in architecture and building technology from my point of view.

## 6. REFLECTION ON PLANNING

I followed my planning, which was to work on the program, architecture and building technology of every function in the same phase. As mentioned, all functions required research in the same phase to find the correct relationship between them and with the existing building. At the beginning, this planning took time and caused confusion, because of the large number of things that have to be taken into account. However, the approach certainly gave me an overview of all functions at the beginning, which helped in making a more integrated design later on. A mistake in the planning was that it did not include the required program research to progress the design at the beginning of P3; I planned the reference analysis and visit markets after the program was found. As a consequence, it led to a less efficient design process at the beginning.

The planning for both the first and second quarter were strictly followed and on time. It was not without struggle, because there were concurrent work coming from the post-subjects work such as the making a booklet for Tools for design and writing History Thesis when I just embarked on the graduation. It took a lot of time and energy from me to do both the post-subject work and P1 analysis well. As a result, it caused that both P1 and P2 not to perform as well as I would expect. On the other hand, thanks to the strict planning, I did succeeded in completing all the work

that was required to progress the design. At the beginning of the third quarter, a more detailed planning for the project was made. There were a lot of expectations and hiccups occur in my planning. This is due to a change in the architecture concept and function after the P2 feedback. It was a difficult but good decision to change the previous building program, as the building program started to arise some questions. This also caused an unexpected delay in the planning for a few weeks. Another delay occurred when I was disapproved for P4 due to a short of 3 ECTS because an elective course could not be counted towards the Master Program and failing an exam that is held every 6 months. As a result, this caused a delay of 2 months that was outside my expectation again. The ineligibility of P4 left me unmotivated, less productive than usual. I had to take other extra electives, just in case that I fail the same exam, during the third quarter to ensure enough ECTS to be eligible for the next P4 enrolment. Although there had been many unforeseen events and delays happened during my design process, I am happy with that extra 2 months that were given to me to make my project better. Unexpected events could happen and could be a part of a design process. In hindsight, I should have planned with some margin, so as to catch any delays from such events.

## 7. REFLECTION ON SOCIAL RELEVANCE

Monumental buildings can be reused to make a place vital and more pleasant, and the history associated with the building tends to make a place more interesting. In other word, the refurbishment of the Centrale Markthal is an instrument to trigger the continuity of history and memory, and to make the neighborhood livelier and more interesting. As the only and still working market hall in Amsterdam, the building attracts residents from Amsterdam West, and daytrippers from the region. On another note, the Centrale Markthal with its central location in Amsterdam West stimulates the encounters of people and consequently strengthens social coherence within the neighborhood or eventually within the district. I am glad with my choice for a market function, because the function offers certainly social activities that are suitable for the building and its location.