

## Graduation plan

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## **Problem Description**

Every year in The Netherlands around 31.000 new patients need to be rehabilitated, most of them after an injury or a disease. These patients rehabilitate in so called medical rehabilitation centers. In Rotterdam we can find such a rehabilitation centre. This graduation project is about designing a new medical rehabilitation centre on the location of the existing one in Rotterdam. During the design process the following parts must be examined: the context of the building, the program derived from the existing rehabilitation centre, the way how rehabilitation centers work, the shape and size of the building (composition), the changing perspectives on care and how this could influence the use and design of the building, the materials, the construction, the spatial qualities and the division of spaces.

The location of the rehabilitation centre in the middle of the city of Rotterdam creates an extra challenge for the design. At this moment the existing rehabilitation centre has almost no interaction with the city. The introvert character of the building (mainly because of the organization of the program and to protect the patients) doesn't allow a lot of interaction with the public outside the rehabilitation centre. As a result to this patients have a bigger chance of becoming socially segregated. The wish of the board of the rehabilitation centre is to blur the borders between the rehabilitation centre and the city. As a result of this the patients of the rehabilitation clinic could become more part of the public life in the city and become less secluded from society.

## **Goal of the project**

My goal for the project is to design a rehabilitation centre that is more connected to the public life. The reason to do so is to improve social interaction between the patients and the public life. Blurring the borders between the rehabilitation centre and the city can roughly be done in two ways. Either the patients are 'invited' outside the rehabilitation centre for example by offering special activities or the public life is invited inside the building. For my design I will mainly focus on the second option. This means that I will design spaces within the building that can not only be used by the patients but also by the public life. By doing so I hope to achieve more social interaction between the patients and public life.

Most of the program inside the rehabilitation centre is only used by the patients mainly because this program is specially designed for them. But there is a part of the program within the building that can possibly be used by the public life as well. For the research of my design I will investigate the possibilities of using the sport facilities to achieve this.

Apart of the program, the context of the rehabilitation centre within the city centre of Rotterdam asks for a specific design approach. The existing rehabilitation centre is positioned on the plot in such a way that it closes off the park from the single (that provides direct access to the city). Rotterdam only has a few parks. One of the most famous parks is the Museumpark. The municipality wants to improve the connection between this park and the city. The location of the existing rehabilitation centre could answer to this request but only if the design of the new rehabilitation centre answers to this. Therefore within the design of the building I will focus on establishing this connection between the park and the city as well.

## **Process (methods and techniques used for analysis and design)**

Within the framework of the studio we started as a group to analyze the existing rehabilitation centre and its context. After this analysis different mass studies were made by the group to see what the effect of different building shapes was when projected onto the location. This provided me with helpful information because it showed how different areas can be defined when the shapes are positioned onto the location in different ways.

Apart from the group work, I did some research myself on rehabilitation centers. I visited multiple rehabilitation centers, spoke with the nurses, doctors and patients and analyzed afterwards the floor plans of the rehabilitation centers to understand the configuration of the program. By doing so I was able to understand not only the way how the program is organized in terms of architecture but also what it meant in relation to the use. The outcome of this research I will use for the design of the rehabilitation clinic. In order to check if the design strategy derived from the research works, I will discuss the design strategy with a handicapped sports person. This feedback should allow me to get an inside in the user perspective.

For the design process itself, I use different methods and techniques. By making use of sketches, 3d models, maquettes and drawings I am constantly visualizing the design. By discussing the design with not only teachers but also patients and doctors I am trying to improve the design in such a way that it adapts to needs of the user.

### **Literature (theory and research data)**

I have done my main research on sport facilities inside rehabilitation centers. What is the role of sports in rehabilitation centers? Is it possible to integrate public life into the rehabilitation center by making the sport facilities publicly accessible? By visiting existing rehabilitation clinics, analyzing the buildings and speaking to the users, I tried to answer these questions (report 3).

The research for the design is part of a Research Seminar. Apart of the research on sport facilities I also investigated the possibilities of introducing the patients into the public life outside the clinic to enhance more social interaction (report 2). To get more insides in the way how patients are treated inside a rehabilitation centre a report has been written about a specific patient group inside the clinic (report 1). All of the research can be read in the three reports handed in for the Research Seminar.

### **Reflection**

Most of the rehabilitation centers are in general private buildings. Sometimes they are accessible for the public but because the activities inside the building are only for the treatment of the patients they have no reason to be there. In the last couple of years there is a changing perspective on the way how the rehabilitation centers work and represent themselves. The board of rehabilitation centers want to make their buildings less private so they can become more part of society. Functions that used to be only there for the patients can then possibly be used by people from outside the clinic. Unfortunately a problem that most of the rehabilitation centers run into when they want to make their buildings less private, is that they have to handle within the limits of the existing building. Most of these buildings are not designed to become more public. For example the sport facilities inside these buildings. On itself they can be used by people outside the rehabilitation center because they are not that much different from sport facilities outside the rehabilitation center, but the facilities are most of the time not positioned in the most ideal way in terms of social control. This means that the rehabilitation center can't control the users. When the rehabilitation centers can't control the users of the building, public use of the functions isn't possible. The patients need to be safe at all time.

For my design I have the possibility of starting with a blank page. This means that I don't have to deal with an existing building and that I have the possibility of arranging the program in such a way that it is possible to make the program more publicly accessible without disturbing the safety of the patients. By making the building more publicly accessible the borders between the rehabilitation clinic and the city can be blurred. As a result of this the patients can become more part of society. In the old rehabilitation centers patients are being isolated from society during their rehabilitation, by making the rehabilitation center more part of the city I hope to change this.

## Planning

The graduation project started in September 2012.

I will be working on the following points for the P1:

- Group analysis of the location
- Mass studies
- Analyzes of the program
- Visiting rehabilitation centers
- Concept
- Designing a one of the patient departments (floor plan scale 1to200)
- Analyzing a rehabilitation center outside the Netherlands
- Writing the introduction for the position paper

I will be working on the following points for the P2:

- Finishing mass study
- Designing the floor plans (scale 1to200)
- Structuring the floor plan (routing, construction)
- Researching and designing the façade (scale 1to200)
- Interview with patients about the research topic
- Designing the urban context around the building
- Research on sport facilities
- Visiting the sport department of rehabilitation centers

The P2 presentation will be on January 25th.

I will be working on the following points for the P3:

- Finalizing the concept of the building in relation to the research
- Adjusting the layout of the building (entrance, elevation points, construction, program)
- Further development of the façade
- Construction
- Materialization
- Climate design
- Designing the detailing of the building
- Investigating spatial qualities of the building by making use of models (scale 1to20 / 1to50)

I will be working on the following points for the P4:

- Finishing the floor plans
- Developing the details and the design of the façade
- Designing the façade by making use of models (1to20, 1to100)
- Finishing building physics (climate design and construction)
- Developing diagrams to explain the design
- Working on the final model

P4 presentation (date unknown)

For the P5 all points discussed at the P4 will be improved and further developed.