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Studio
Name/theme: The architecture of the interior: the healthy environment
Teachers: Mechtild Stuhlmacher, Laura Alvarez and Irene Cieraad
Argumentation of choice of studio: The choice for an interior studio, arises from my preference for the used design methods within this chair and my positive experience I had with other interior studios. During my Bsc 6, I participated in an interior studio, namely ‘Europees Cultureel Instituut’. This studio showed me a new perspective on designing with focus on the user and attention for both the inner and outer world of a building and especially the transition between these worlds. Beside this, I learned not to try to implement to much within one design and that often a simple but clear scheme is a lot stronger.

The healthy environment studio, in particular, appealed to me, because of my great interest in the way the built environment can influence the state of mind of the user. Especially within health care, this quality can be of great importance, as it can ease the stress and anxiety of a patient that are caused by for example a visit to the hospital. In addition, I can relate strongly to this subject, due to my own experiences. I have had asthma since a very young age and trough this I have been in contact with health care regularly. I have also been hospitalized a few times for my asthma. Therefore I have experienced the influence of an environment, in relation to recovery and comfort, by myself. For example, the room was high with large windows and light colours, in order to effectuate a feeling of air. This is preferable if you’re dealing with a lung disease. However, I have also been in contact with health services in a very different way. My grandmother is demented and lives in a nursing home. Here, I have seen the importance of recognizable and confidential furniture in order for my grandmother to feel at home in a new place. These experiences have inspired me to want to do more research into healthy environments and to design an environment that is in line with the needs of the specific user.

Graduation project
Title of the graduation project: The Hoboken Centre for asthmatic children
Location: The Rijndam rehabilitation clinic on the Westersingel, Rotterdam
Goal
The posed problem, research questions and design assignment in which these results:

In the Netherlands asthma is a very common disease and it is even the most common one amongst children. Over 0.5 million people in the Netherlands suffer from this disease and whereof 119,000 are children. This comes down to 2 to 3 children in each school class, who will have to deal with their asthma on an everyday base. In the larger cities, including Rotterdam, the numbers are even worse, 1 of every 6 children.¹

Not everyone of these children will visit an asthma centre and most of them will go for check-ups to the hospital or visit the general practitioner a few times a year. In addition, most of the asthma centres in the Netherlands are inpatient rehabilitation clinics, where a child will have to stay for a few weeks or even months, such as Heideheuvel in Hilversum. There are some outpatient asthma centres within the Netherlands, but these mostly focus on adults. These inpatient clinics are meant for children (or adults), that suffer from severe and uncontrollable asthma. This means, that only when the medication is not successful and both the asthmatic child and his or her parents can’t control the home situation any longer, the child will be referred to such a centre.²

In other words, the majority of asthmatic children and their families just deal with the possible difficulties of asthma within their everyday life. What are these limitations and is it related to ethnicity? To what level do existing asthma centres answer to the needs of the everyday asthma patient?

From my own experiences and research, I found out that these (social) limitations are of such significance that one could wonder if these centres shouldn’t be available for every asthmatic child. Social limitations, such as a lack of knowledge (which is one of the malefactors for loss of asthma control) can easily be solved by a more public outpatient centre. Why should asthmatic children wait until the asthma is really out of control, when this can be prevented in a lot of cases by providing such a treatment earlier on. In my opinion, this should be offered as soon as possible, from the first moment a child is diagnosed with asthma. Indeed, the treatment of asthma is not only about finding the right medication, but often about a significant change in lifestyle (f.e. avoiding triggers, enough exercise, medication discipline.)

My goal is, to design a rehabilitation centre in Rotterdam for children, with asthma or other lung diseases, from the Randstad region. This way the centre will be close to their home. This makes it possible to create the envisioned outpatient centre, so the children will be able to live at home while following the treatment. When I imagine this centre, I see it as a place that exudes light, space and, most importantly, air. The centre should feel as a place where you can breathe. Light, space and

¹ www.longfonds.nl
² www.merem.nl/heideheuvel/
air were the ideals of the hygienic city movement (during the reconstruction period in the thirties) for a reason. In what ways, the site can contribute to this idea, I researched in my second report.

**Process method description**

**AR3Ai050 – studio specific research 1:**

For the first research course of this studio, we collaborated with Willemijn Wilms Floet. She is working on the typology of the well-known Dutch ‘hofje’ for her PHD. Together with her, we analysed multiple modern and traditional, Dutch and foreign courtyards, in order to discover qualities and design tools that are used within this strong typology. These found principles can be used within the envisioned asthma centre as a way to not only bring light inside the building, but to create beautiful well-functioning outdoor spaces.

The second part of this course entailed a design for a garden within one of the healthcare design projects of the Msc 4 students. Through this design we learned to implement both the needs of the particular user as the wishes of ‘the owner’ of the project within the garden.

Alongside with this course I analysed the location of the Westersingel together with colleagues who design on the same site. We focused on different aspects, such as the history, the functions and present green structures.

**AR3Ai055 – studio specific research 2**

The focus of this course was on the future user of the design project and his/her needs and wishes. During this second research course, I researched different aspects in regard to asthmatic children. For my first report I addressed, inspired by the ‘hofjes’ and garden workshops, garden design for asthmatic children. For this report I used the following research question:

- How can one design a well-functioning and safe garden for asthmatic children, that can contribute to their wellbeing?

It concluded that these children should be seen as normal children in the first place and therefore are in need for a playful and adventurous garden. However, the garden should also contain elements that are not only activating, but can also decrease triggers or symptoms of hay fever and/or asthma. Some examples of these elements are given.

For the second report I focused on the site in relation to the envisioned centre. A location in Rotterdam might not seem to be obvious as a site for an asthma centre, because large cities are often associated with air pollution. These possible flaws as well as the qualities of this site were examined in this second report. The main research question for this subject was the following:

- What can the site offer the centre and vice versa?

The conclusion was that the development of an asthma centre on this site will create great possibilities for both the centre as the surroundings. One of these possibilities is a public route, with functions as a café or small shop, through or around the centre will connect the
Westersingel to the Museumpark, making the site more lively. Enclosed courtyards could be a great contribution to this route.

The third and last report was the most extensive. I used this report to explore the main goal of my centre more. Therefore, I researched the social limitations through multiple interviews. In addition, I researched on the relationship with ethnicity, as Rotterdam entails many different ethnicities. In addition, I archived the flaws and qualities of one asthmatic centre, Salem, that is the most similar to my envisioned centre. My main research question was:

- *In which ways can an outpatient asthma centre in Rotterdam improve the everyday life of asthmatic children?*

The accompanying sub questions are:

- What are the social limitations for children with asthma within their everyday life?
- What is the relationship between ethnicity and asthma and asthma limitations?
- What are the qualities and flaws of existing outpatient asthma centres for children?

The research resulted in an extensive list with so-called points of action. These point are elements and facilities my centre should offer in order to fulfil the needs of asthmatic children and in particular children in Rotterdam and the Randstad.

**Literature and general practical preference**

In order to find answers to my research questions, I used multiple resources. Besides scientific sources I interviewed multiple people, who have dealt with asthma form a young age as well as a pulmonary nurse at an existing asthma centre (Salem). In addition I visited this Salem, to find out the qualities and flaws of such centre and the overall visions such centres carry out.

**Literature:**

- Asthma Foundation WA  

- Bouwhuis, C.  

- Cooper Marcus, C. & M. Barnes  
  1999 *Healing gardens: Therapeutic Benefits and Design Recommendations.* Canada: John Wiley & Sons

2014 “Risks and benefits of green spaces for children: A cross-sectional study of associations with sedentary behavior, obesity, asthma, and allergy.” *Environmental Health Perspectives* 122, 12: 1329-1335


Gemeente Rotterdam
2009 *Gebiedsvisie Rotterdam Hoboken 2030: international topmilieu met ruimte voor lichaam en geest.* Rotterdam: Gemeente Rotterdam

Gemeente Rotterdam A
2014 *Gebiedsplan Rotterdam Centrum.* Rotterdam: Gemeente Rotterdam

Gemeente Rotterdam B

Levy, M., Hilton, S. & G. Barnes

Nichol, J., Thompson, E. & A. Shaw

Reumer, J. & B. van Muijen
1996 *Het Rijndamterrein Rotterdam: natuur, geschiedenis en huidig gebruik.* Rotterdam: Natuur Historisch Museum Rotterdam

Rudestam, K., Brown, P., Zarcadoolas, C. & C. Mansell
Van Dellen, Q.  
2007  *Asthma care in children from different ethnic origins: A study among children from Moroccan, Turkish, Surinamese and Dutch origin with asthma living in Amsterdam, the Netherlands* (Doctoral dissertation). Amsterdam: University of Amsterdam.

Whitehouse, S., Varni, J., Seid, M., Cooper Marcus, C., Ensberg, M., Jacobs, J. & R. Mehlenbeck  

Wilms Floets, W.  

Yost, B., Chawla, L. & M. Escalante  

Zantinge, E., Devillé, W. & M. Heijmans  
2006  *Allochtonen met astma, COPD of hooikoorts in Nederland: wat is er bekend?* Utrecht: Nivel

https://archive.is/tbZKa (12-5-2015)  
https://www.longfonds.nl/astma/alles-over-astma/wat-is-astma (26-4-2015)  
http://www.haloclinic.nl/kinderen/ (20-5-2015)

Visit:  
Salem treatment centre for asthma

Interviews:  
Helene Elema (pulmonary nurse at Salem)  
5 interviews with people who had asthma as a child:  
Berber Koopmans  
Jannie Koopmans  
Laura Michon  
Stephanie de Ruijter  
Machiel Pronk
Reflection/ Relevance

As mentioned before, asthma is the most common chronic disease among children, as it mostly starts and is diagnosed during the childhood. Therefore it is important that the treatment focusses on children to prevent as much as possible for the asthma to get out of control. By teaching not only the child and parents as soon as possible the appropriate lifestyle that comes along with asthma, it can be prevented in most cases that the child will have to be taken out of the home situation for treatment inside an inpatient asthma centre. By starting the treatments at a young age, many problems in the future can be avoided. Not only asthmatic children, but also children, who suffer from other (chronic) diseases, could profit from such a building. Think of the impending obesity epidemic.

By opening up such centres, through implementing more public functions, it becomes easier to create awareness as well as making the centres more profitable. Nowadays, the insures are less and less willing to compensate these centres. In order to make the envisioned centre accessible for as many asthmatic children as possible in the surroundings of Rotterdam, the centre should become more profitable than existing centres.

In short, the relevance of my project is to create an updated version of an asthma centre, which can function on its own in this fastly changing healthcare sector. The target groups, in this case asthmatic children, will always be there, but in order to give them the best chances possible and decrease the (social) limitations to the best, there is a need for a new vision for these centres. I am ready to deliver this vision.

Time planning

Before P1:
- Group analysis of the location
- Group masterplan 1:500
- Mass studies 1:500
- Formulating programme
- Diagrams programme 1:500
- Formulating ambition and character of the building
- Schematic interpretation of ‘hofjes’ analysis
- Characteristics and capacity of location in schemes
- Analysis of similar rehabilitation centres
- Research on relationship gardens and asthmatic children (report 1)
- Research on social context of the location (report 2)

Date of P1: 24 April 2015

Before P2:
- Graduation plan
- Structuring programme
- Individual masterplan 1:500
- Mass model 1:500
- Deciding on overall theme/concept
Draft design of plans 1:200
Draft design of facades and research on facades 1:200
Draft design of sections 1:200
Focus on transition inside/outside and wished characteristics of rooms
Designing important parts of building 1:100
Research on materials suited for asthmatic patients
Research on social limitations of asthma in everyday life (report 3)

Date of P2: 25 June 2015

Before P3:
- Refining concept
- Developing plans 1:200/1:100
- Developing facades 1:200/1:100
- Developing sections 1:200/1:100
- Designing important parts 1:50
- Design concept construction, climate and sustainability
- Designing part of façade 1:20
- Designing and researching details 1:10/1:5

Date of P3: unknown

Before P4:
- Site model 1:500
- Formulating theoretic and thematic support of research
- Formulating theoretic and thematic support of design
- Reflection on architectonic and social relevance
- Design of plans 1:200/1:100
- Design of facades 1:200/1:100
- Design of sections 1:200/1:100
- Design of representing building parts 1:50/1:20
- Design part of façade 1:20 (façade elevation with hor. and vert. section)
- Design of details 1:10/1:5

Date of P4: 18 December 2015

Before P5:
- Improve and finish all points discussed at the P4
- Visualization of the building in model 1:200
- Visualization of the building in clear drawings 1:200
- Visualization of the building in images and renders
- Visualization of representing building parts 1:50/1:20

Date of P5: unknown