Children-led Healthcare Architectural Design

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INTRODUCTION

My fascination in involving children in architectural design decisions, is rooted in my experience of co-running a design and self-build project for a group of children in Glasgow. As a group of designers we came in with ideas of the opportunities of the site, what arrangements would be best, what functions it could have - all done based on conversations with children's care taker. However, we were confronted with the reality of kids' needs and preferences, vastly different to ours. Involving them and bringing their perspective into the design resulted in a project that became truly theirs, a place they felt the most comfortable in. This is the goal of participation.

In the recent years the notion of participatory design (PD) has gained traction and popularity. PD concept has its roots in Russia and Germany, but gained real popularity in 1980s Scandinavia. It was based on the idea of a democratic workplace, where workers were empowered and could 'codetermine the development of the information system and of their workplace' (Hartson & Pyla, 2019).

With community engagement sessions and design workshops, the users have gotten more agency and power over their surroundings. However, there is one group that is often left out or whose involvement is significantly limited - children. According to research children's involvement in participatory process is often 'fast', 'reduced' and 'child participants are oftentimes only engaged in isolated, short-term design sessions while being left out of the decision-making process' (Schepers, Schoffelen, Zaman & Dreessen, 2019). One of the studies showed that in research papers only 31%reported practices where children were not only testers but also design partners (Yarosh, Radu, Hunter & Rosenbaum, 2011).

GOALS

The goal of this research is to investigate how participatory processes are conducted, to test them and to understand the children healthcare environment in the Netherlands. The investigation will focus on the motivation behind practicing community engagement, used methods, ethics and outcomes. Interviewed professionals have experience working in the realm of participation, with children or community groups, and are architects, researchers or activists. The interview outcomes will be used to explore how different methods and participation strategies can be adapted and used to facilitate children involvement in designing a healthcare setting.

The understanding of the healthcare environment will be heavily based on observation. It will happen in a number of medical buildings, to see what are the similarities and differences between them, how patients use the spaces.

I will aim to conclude the research by testing the adapted strategies with a group of healthy children, ages 10 to 14, in a neutral environment (due to coronavirus restrictions and hospital policies), in a form of workshops and activities. They will be centred around areas where patients spend the most time - waiting rooms, circulation spaces (corridors, staircases, etc.), entrance hall, common areas and patients' rooms. The aim will be to see what architectural aspects make children patients comfortable and uncomfortable (interiors, scale, way-finding, orientation, outdoor-indoor connection, etc.), what are their needs and how they're met and how suitable are those patient spaces.

RESEARCH QUESTION

The main research question centres around how we can improve the ownership of children healthcare buildings, using participatory processes. To answer that I will also explore the existing context of children healthcare architecture in the Netherlands and find examples of children participation in healthcare design in Europe. To understand the participatory process I will research the most suitable engagement methods. Finally, I will investigate how children perceive comfort of healthcare institutions.

CONTEXT

Dutch healthcare system for children works on multiple levels across different types of medial institutions. Suitability of those depends on the health concern and child's age. They split between GP's surgeries, children's health clinics, Centres for Children and Families and hospitals (The Hague International Centre, n.d.). Each hospital has a paediatric unit, moreover there are eight specialist children's hospitals in the country (Radboud UMC, n.d.). They're located in Leiden, two in Utrecht, Amsterdam, Groningen, Nijmegen, Den Haag and Rotterdam.
Due to the severity and gravity of the services provided there, healthcare buildings are heavily adult-controlled (Hart, n.d.). It is not a place of joy and happiness, no matter how colourful the walls or how entertaining the activities. It's a place were anxiety and stress are high and where uncertainty mixes with fear. Because of that, it's even more crucial to provide as much comfort to the young patients as possible.

https://www.vandenbeemd.nl/emc-rotterdam/

https://www.erasmusmc.nl/en/sophia/education/directions

https://www.amsterdamumc.org/nl/vandaag/nieuwe-logo-op-gebouw-amsterdam-umc-aan-zuidas.htm

https://kinderen.julianakinderziekenhuis.nl/naar-het-jkz/vervoer-en-parkeren

https://bplusb.nl/nl/werk/prinses-maxima-centrum/

https://www.heartbeat5.nl/wilhelmina-childrens-hospital-utrecht/

https://www.architonic.com/en/project/villeroy-boch-university-medical-center-groningen/5103369

https://suzanneholtz.nl/sh-studios-wint-interieurarchitectuuropdracht-amalia-kinderziekenhuis-nijmegen/

CHILDREN'S PARTICIPATION IN DESIGN

Involving children in the design decisions for their healthcare environments has been practiced in countries across Europe. At the Hillerød Hospital in Denmark Aase Eriksen conducted a project, using user-participation process, for a design of a children's wing. It involved children as the main user, their parents and medical staff. She used observation methods at the first stage of the project and followed with separate meeting with user groups, meetings with children and 'design-ins'. (Eriksen, 2000) Kids used drawings and informal conversations to express their needs and wishes regarding the spacial design, which they later discussed and presented at a special event. Some of the statements included 'there is nothing to do', 'it is boring here because there are no nice colors, no decorations, no plants' and 'there is no place to be alone or to keep something private'. (Eriksen, 2000) Parents and professionals' comments were also collected and analysed together with children's' remarks. All the data and information was used as a base for the new wing design which opened in 1999.

University Hospitals Coventry and Warwickshire NHS Trust in the U.K. also involved children in a participatory design study for a new children's unit in Coventry. Unlike Eriksen's study, this one focused solely on thematic design and colour. (Coad&Coad, 2008) The research was conducted in two phases. The first one (40 participants) focused on individual and group discussions about themes and colours of the relevant hospital areas and used images from other healthcare institutions as a base for the conversation. Colour leaflets were also distributed and participants were choosing most suitable colours. Additionally, leaflets were sent to home participants - children who had been in-patients at the hospital in the past. Phase 2 (140 participants) involved spreading a questionnaire to build 'the emerging picture'. (Coad&Coad, 2008) Coads' study found children's preference for natural themes in interior design, such as sea, water, plants and flowers, as well as yellow and blue colours schemes.

THEORETICAL FRAMEWORK

Healthcare architecture

Discussion about the role healthcare architecture has taken a shift towards its indirect function. The obvious role of health typologies is patient's physical cure or support. According to Roger Ulrich's psychologically supportive design concept, it should have an equal focus on patient's mental well being - particularly stress level. He emphasises the role of medical buildings in stress reduction and importance of lack of stressors and triggering features (Ulrich, 1991). His theory is supported by Charles Jencks'. He also focuses on the role of architecture in mental health improvement but in a more metaphorical sense. He sees 'healing architecture' as a mix between a metaphor and a building type - an analogue of placebo.

Participatory design theory

Participatory design (PD) has many definitions and positions within design and architectural fields. Muller and Kuhn describe is as a 'democratic process', involving future users in the design. (Hartson&Pyla, 2019). It doesn't however, specify the extent of this involvement. A somewhat similar conclusion regarding PD was drawn by Mumford. Her theory also mentioned external input into design decisions but not form the user, from other professional designers. This format is described as consultative design. (Mumford, 1983) Although participatory process have widely been considered positive and valuable, it has also gained criticism. According to Johann Albrecht PD is a failure. He views it as a weapon against the elites and challenges the view that PD creates better environments. He claims it reduces the role of an architect to 'a mere facilitator and co-ordinator'. (Albrecht, 1988)

Children involvement in participatory design

Roger Hart stresses the importance of involving children in the design process. He represents PD as a ladder, where each rung symbolises an increase in children's participation. It starts with manipulation (on the bottom) and ends on child's initiated shared decisions (on the top). (Hart, 1992) Differently to Hart, Druin splits children's participation into four groups - user, tester, informant and design partner. Both of these theories describe PD levels as an ascending scale.

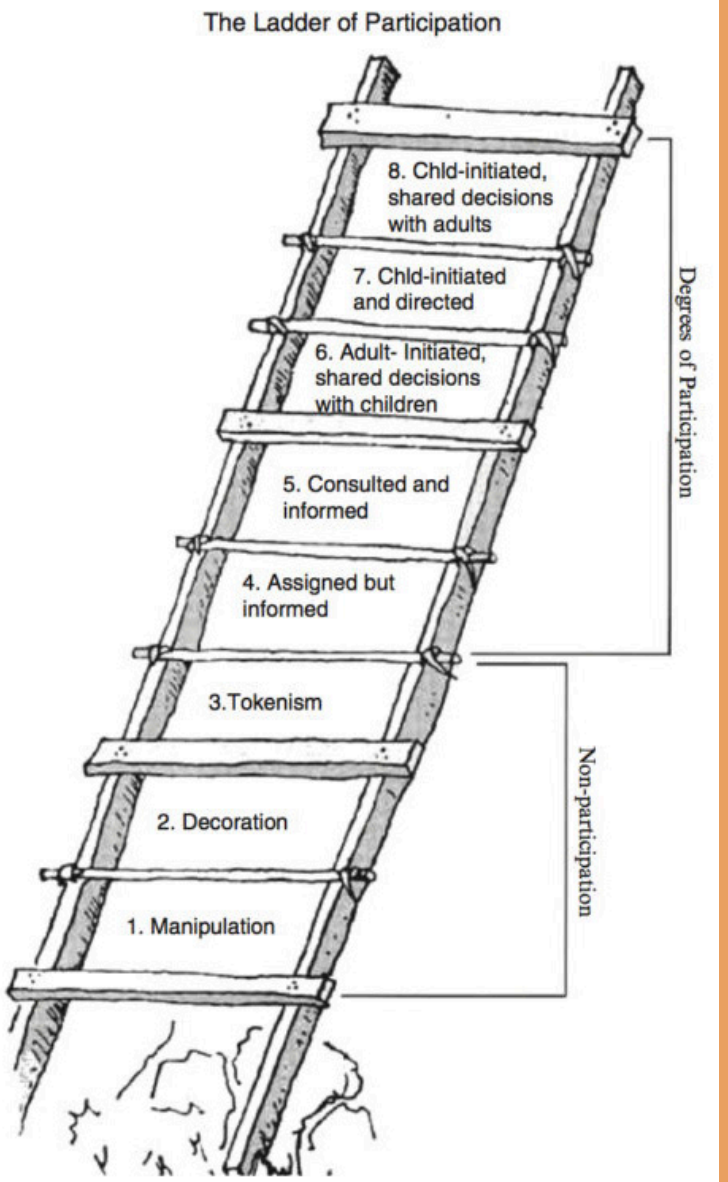

fig.Ladder of children's participation. Organizing Engagement. (2019, November 5). Retrieved October 7, 2022, from https://organizingengagement.org/models/ladder-of-childrens-participation/

My position

These theories were considered to evaluate how they can inform this research process, as they all relate to different aspects of my investigation. The focus on the indirect benefits and influence of healthcare design is particularly interesting to me. As my research aims to address queries of comfort, feeling and perception (all mental more than physical aspects), Ulrich's psychologically supportive design seems to be the most closely related to the scope of my research.

I believe it's important to compare contrasting views to get an in-depth understanding of PD concept and that was the role of Albrecht's theory in this theoretical framework. He raises a valid point about the change in the role of an architect. However, it could be disputed whether it is a negative change. The role of an architect as a facilitator could be strived for. I would certainly attempt to reach it.

fig. Theoretical Framework diagram

METHODOLOGY

Literature review

In this research the literature review is used for two main reasons - to understand the context of Dutch children healthcare and its architecture and the context of participatory design (PD). In the children's healthcare research I am primarily looking for the history of it in the Netherlands, mapping main typologies and institutions and reading on the healthcare system in general.
The research into PD focuses on its theories and methods. It touches upon the background and origins of it. I am particularly interested in the participatory design in the context of children and the most appropriate kids involvement methods.

Case studies

I use case studies to investigate previous examples of children's participation in design decisions in care buildings. It will help me in planning of my field-trip methodology, as the case studies focus on how children were involved, what exercises or activities were conducted to gather different kinds of information and how the information was processed and visualised. Case studies will also act as a source of information on design preferences of children, their needs and opinions.

Semi-structured interviews

The interviews would be conducted with the built environment professionals to learn how they incorporate participation in their practice. Questions will focus on methods they use while working with children, the sessions preparation and general their development and the importance of children's involvement.

Observation and informal conversations

The aim of the observation will be to investigate how the care building is used. I will observe children patients to gain an understanding of how they move through the space, what are the most often occupied areas and how they spend time there. Special attention will be paid to observing spaces designed specifically for kids - furnishing, play areas, etc. I am aiming to get a general understanding of how they feel in the care building. The observation will take place inside the facility, as well as outside, since the outdoors is a big part of the care functions.

Design workshops

The workshops will consist of design activities and games. The aim of them is to collect practical information on children's needs and preferences for the space on different levels - private room, waiting room, circulation space, larger common areas and the outside surrounding. The next stage of the workshop will be used to visualise children's needs (drawings, models, mind maps, etc.) and their proposed design solutions.

OUTCOME

The outcome of this research will be a set of guidelines for the healthcare architecture design process, involving children as decision makers. This will include an evaluation of participatory methods used and point out the most effective and appropriate ones.

The guidelines will be tested with the children, based on existing examples of healthcare buildings. The test will be done in the context of a long-term stay. I will translate the results of the test, children's opinions, spacial needs and preferences, into a list of architectural design recommendations for 'patient dominated' spaces (waiting areas, circulation spaces, entrance, patient room, communal areas, outdoors) of a healthcare building. Those will inform my final design for a palliative care facility.

STEPS AND TASKS

The first step in this research will be to make a detailed plan of the fieldwork methodology. The field-trip is centred around understanding my target group. It will have a form of interviews with industry professionals, who work with children and involve them in the design process. These will help me to prepare for further stage of the research - design workshops. For the second part of the fieldwork I will try to conduct observation in a children medical environment, specifically in the commonly accessed areas. Accessing the wards and talking to children will most likely not be possible, due to the covid restrictions, as indicated in an email correspondence with some medical institutions.

For the second stage of the research, beyond P1, I would like to run design workshops for children and/or teenagers. These would be based on the knowledge of my target group, gathered through the preliminary field-trip research. Workshop would last two to three hours and have a plan that covers a range of activities. I will aim to discuss this plan with a psychologist to make sure, questions, activities and tasks are phrased and conducted appropriately to avoid stress or any potential triggering. If the psychologist has notes or comments, I will reevaluate the plan and make the necessary changes.

With the approved plan I will embark on the workshop to explore children's perception of the patient-dominated areas in the healthcare building. I will then run a series of sensory activities to explore how they feel in those areas, focusing on different senses. Colours, such as green and red, will be used to mark elements that trigger positive or negative feelings. Children will be encouraged to explain why those elements make them feel a certain way.

Using a veriaty of methods I will run design exercises based on the previously received information. Children will be asked to 'redesign' parts of the building (established at the beginning) to make them as fit for their needs and preferences as possible, hence turning them into spaces triggering positive emotions.

I will photograph the outcomes and analyse the data, finding common threads and solutions. This analysis will then be translated into a set of design guidelines for specific parts of a healthcare institution.

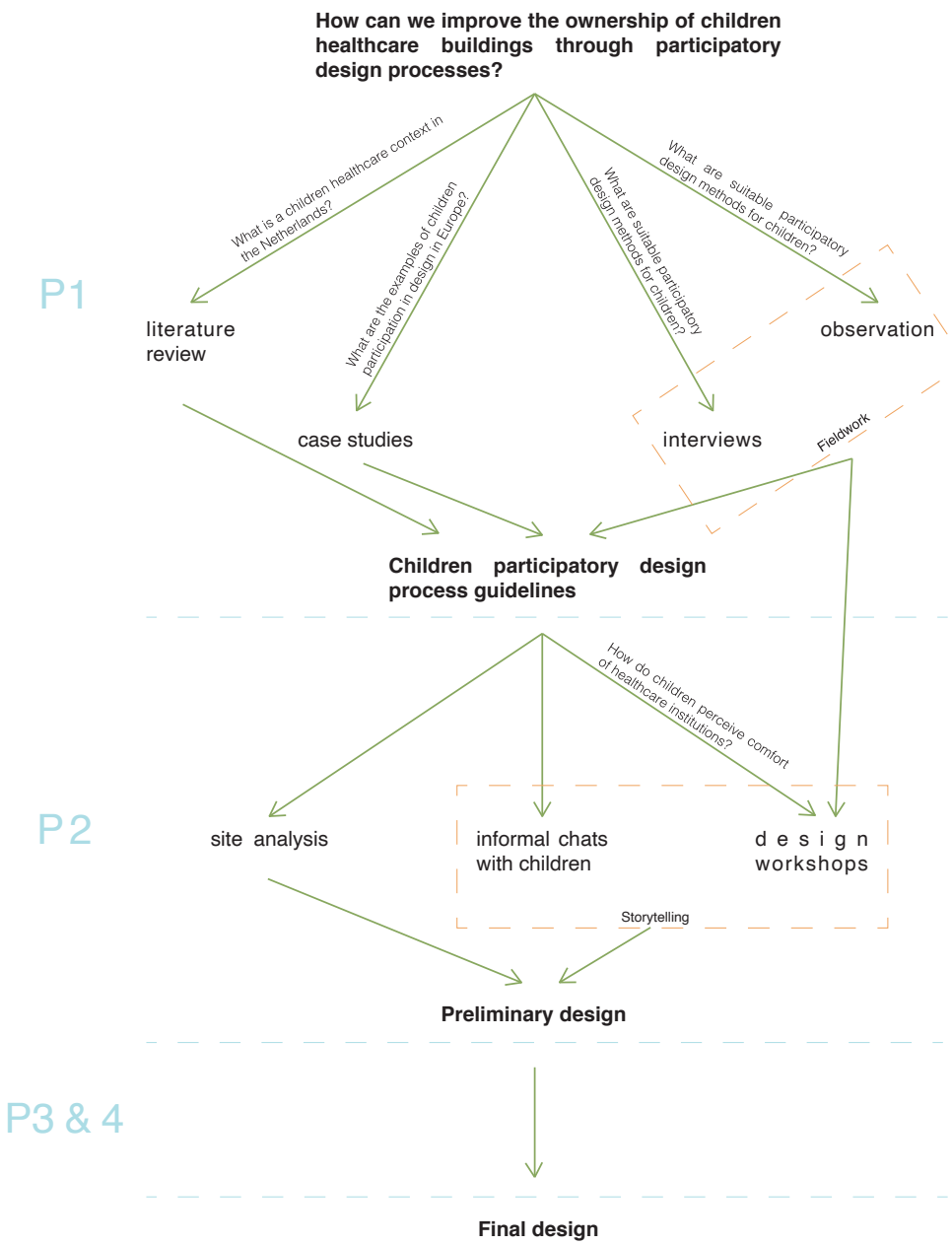

fig. Workplan diagram

DEFINITIONS

Participatory design

Participatory Design (PD) is a collection of design practices for involving the future users of the design as co-designers in the design process. PD's methodology is based on the genuine decision-making power of the co-designers and the incorporation of their values in the design process and its outcome, which is often a high-fidelity prototype for a product or service, or a new way to organise a work practice or to design a space. (van der Velden & Mörtberg, 2014)

Patient-dominated space

By 'patient-dominated' I mean areas in care buildings where patients spend the most time, areas that aren't specifically designed for medical staff or for medical procedures. That includes waiting rooms, circulation spaces (corridors, staircases, etc.), entrance hall, common areas and patients' rooms.

Children

In this research children are understood as minors, ages 10 to 14, so young adolescents to early middle adolescents. This age group has been picked, because they start developing more need for independance and less supervision. (HealthPark, 2020). They are at the sage between childhood and early adulthood.

Healthcare typology

"Efforts made to maintain or restore physical, mental, or emotional well-being especially by trained and licensed professionals" (Merriam-Webster, n.d.)

Based on this definition of healthcare, healthcare typology is any building or architectural form in which trained or licensed professionals attempt to maintain or restore physical, mental and emotional wellbeing.

Ownership

An attitude of accepting responsibility for something and taking control of how it develops. (Macmillan, n.d.)

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