

# Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



## Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners ([Examencommissie-BK@tudelft.nl](mailto:Examencommissie-BK@tudelft.nl)), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information	
Name	[Lisa Gerritje Cornelissen]
Student number	[4477952]

Studio		
Name / Theme	[Management of the Built Environment]	
Main mentor	[A.C. (Alexandra) Den Heijer]	[Real Estate Management]
Second mentor	[P.W. (Paul) Chan]	[Design and Construction Management]
Argumentation of choice of the studio	[I choose the track MBE because, I found it very interesting to work with a lot of different stakeholders. To include all their different objectives and goals into one strategy that fits all, that is a challenge I find interesting to work on.]	

Graduation project	
Title of the graduation project	[Smart Tooling The Outpatient Department: To efficiently make use of the scarce resources]
Goal	
Location:	[-]
The posed problem,	[Due to transformation in the healthcare sector hospitals are coping with scarcity of resources. Due to the pressure on hospitals to reduce costs and improve health service accessibility, there is an increasing demand for outpatient services. There is a growing interest among hospital organisations in digitalisation, but a the lack of research on a real estate strategy for hospitals that includes smart tools.]
research questions and	[Main Research Question: "How can smart tools contribute to the efficient use of the scarce resources in the outpatient department of a Dutch hospital?" Sub-questions:

	<ul style="list-style-type: none"> <li>• What are the characteristics and activities that take place in the outpatient department before Covid19?</li> <li>• What are the values of the stakeholders of the outpatient department and how can real estate be aligned to these values?</li> <li>• What does the outpatient department of the future look like, according to Hospital 4.0?</li> <li>• Which smart tools are already existing in other public buildings?</li> <li>• How are smart tools already used in hospitals?</li> <li>• Who will have to work with these smart tools and how will this be implemented in the organisation of the hospital?]</li> </ul>
design assignment in which these result.	[-]
<b>Process</b>	
<b>Method description</b>	
<p>[Qualitative research, with the main goal to generate theory, since there is not yet a lot of research on smart tools in the outpatient department.</p> <ul style="list-style-type: none"> <li>• First a literature review is conducted, however literature will be used throughout the whole research.</li> <li>• Empirical research; case studies &amp; semi-structured interviews. <ul style="list-style-type: none"> <li>○ Case study on what type of smart technologies the outpatient department of Dutch hospitals are already working with.</li> <li>○ Interview: to implement the experiences and ideas of the patients, the clinicians and the facility managers into the research.</li> </ul> </li> <li>• Pilot study: It would be a great opportunity to conduct quantitative measurement on capacity in the outpatient department.]</li> </ul>	

## **Literature and general practical preference**

[The literature I tend to consult is background information on the organisation of the hospital and the values and objectives of the stakeholders involved in the outpatient department. Information on how the clinicians possibly think of a change in work process when implementing smart tools, are they open for change. Information on the latest developments of smart tools. And how smart tools can add positively to the values and objectives of the stakeholders.

## **Reflection**

1. The relation with the master track is the built environment. MBE focuses, among other things, on solutions for the development and management of buildings, with this research a solution is trying to be found for the outpatient department of the hospital. The relation with Real Estate Management is about the alignment between the organisational values and the real estate portfolio. The relation with Design and Construction Management is about the process of implementation and how to make this project work in real life.
2. The goal of this research is to give real estate managers of the hospital a better insight into the possibilities of using smart tools in the outpatient department of the Dutch hospital and provide them with advice to manage the scarce resources as effectively and efficiently as possible. This way the hospital can go back to focus on its primary task; deliver high-quality healthcare. This is the societal relevance. In terms of scientific relevance, very little research has been done on the use of smart tools in the outpatient department. Therefore, this research will provide an addition to the body of knowledge on the use of smart technologies in general and in hospitals.