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), 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	**Felix Evenblij**
Student number	

Studio		
Name / Theme	Heritage & Architecture – Studio: Revitalizing Heritage | Zero Waste Church	
Main mentor	Catherine Visser	Architecture (Heritage & Design)
Second mentor	Mo Smit	Building Technology
Third mentor	Wido Quist	Research (Heritage & Technology)
Argumentation of choice of the studio	In the field of Heritage and architecture 3 elements are addressed: value, technology and design. Personally this combination intrigues me. Old meets new, the existing meets the intervention. As an architecture master student I am used to the intervention and what the new is, but what is the existing? What values define heritage? What role does heritage have in society and in what ways can we deal with heritage? Furthermore the question of ownership of heritage intrigued me. Is society owner of a cultural heritage or is the investor? Especially with churches this simple question is relevant, why can a project developer more or less decide what will happen with a piece of build heritage. We are all owners of our heritage, but in reality in the decision making process this ownership is often ignored. This contradiction is what I want to do research on in order to find out if there are solutions that do justice to the 'real' owners of cultural heritage, that are sustainable and at the same time financial feasible. And last, but not least, after a little research on the amount of churches in the Netherlands, there is no way that all these physical pieces of history will be gone in 100 years simply because we couldn't figure out a way to 'unlock' their	

	value. And I think there are many creative ways to show their value, but also to create new value.

Graduation project	
Title of the graduation project	Transformation of the Kruispuntkerk through participatory design.

Goal	
Location:	Kruispuntkerk, Voorschoten (Schoolstraat 2)
The posed problem,	Due to ongoing secularization today and in the coming years more and more religious heritage will no longer be used by a congregation as a church. The case study in Voorschoten is one of these churches. The Kruispuntkerk was taken out of service in 2013. The debate what to do with the building started and maybe surprisingly hasn't settled yet. City council, investors and the owner couldn't find a proper use which satisfied all their wishes and was financially feasible.
	The church and the area surrounding are considered characteristic for Voorschoten due to its location at the city center entrance and the sophisticated architecture of the architect Herman Onvlee. This is also recognized in its listing as a municipal monument.
	In this graduation studio I want to introduce participatory design into the transformation of religious heritage. As a starting point I will be looking at serious gaming as a tool for participatory design in order to come to a more economic and social sustainable development of religious heritage. The aim is to test whether serious gaming in complex cases of development of religious heritage is possible. This encompasses how design problems being wicked and ill-defined should be methodically addressed; how the complexity of multiple actors with contradicting views can be addressed; how through participatory design a social and economic sustainable outcome can be realized; how the values related to religious heritage can be considered within the serious game.
research questions and	Therefore the main research and sub questions are: In what way can serious gaming contribute to a more participatory transformation of religious heritage? - How can a design problem be methodically addressed within the game?

	- In which way can the actors and their views be incorporated in the project? - How is the chance of a social and economic sustainable outcome maximized? - In which way can values given to religious heritage be addressed within the game?
design assignment in which these result.	The church, the additional buildings and the surrounding areas will be part of the design assignment. The goal is to propose a design which satisfies all the stakeholders to a certain degree. The research on participatory design will mainly focus on the building mass and the exterior of the church. Which is expected to be the key intervention level to reach a consensus among the stakeholders. Furthermore the architectural design assignment also encompasses the interior of the church and of course the transition from exterior to interior. A key element in the proposal for the transformation will be the architectural position that is taken towards the existing. How do I as an architect react with the proposed interventions on the work of Onvlee. As the main new function of the church a primary school and childcare are proposed. 3 out of 8 primary schools in Voorschoten are in desperate need of new facilities. The idea is to create a so could integral child center(IKC) to house around 250 pupils. The main discussions concerning this function are: how will the children interact with the church? What kind of opportunities does a school housed within I church create for the educational, social/emotional, cognitive and moral development of the pupils?

Process

Method description

As already mentioned the Kruispuntkerk in Voorschoten will act as the case for research and design. The research will focus on the design and evaluation of a serious game which can act as a tool for participatory design. The design interacts with the research mainly on the intervention scale of the building mass and programme.

Principles for the game were taken out of generative design processes and participatory design processes which are further discussed in the discussion of the literature. These processes are combined into a proposal of a process which consists of three steps. The first step is the planning of the game. In this step decisions should be made on the intervention scale, the site boundaries, design principles and stakeholder participation. The second phase is the configurational phase in this phase the game is played. The third and last phase will be the implementation of the outcome of the game into the design.

Phase 1 is conducted by the architect and host of the game(in this case me), he identifies and defines the stakeholders through interviews and questionaries. In the second phase the game is played. The game as designed at this moment is based upon a Lego model. The scale of intervention will be the building mass and function of the design. Through role play MSc architecture students will play the role of one of 5 participatory groups(Municipality, Project developer, Citizen of Voorschoten, neighbor, heritage expert). Students were chosen not only to make the project feasible but also for their better feeling for spatial interventions. Thereby they are more capable of translating the preferences of the stakeholders into a design proposal. Each role has his own goals(e.g. 50% housing, 80% commercial activity in the plinth, etc.), a certain power and a certain interest in/on different aspects. The players only knows his own numbers(goals, power, interest). I will play the role of the heritage expert. My goals in the game are based upon the personal valuation of the church and a guideline by the municipality on transformation of religious heritage. To research the impact of the heritage expert the game will be played both with and without this role to see of it significantly influences the outcome. In the last phase the outcome is implemented in the design. This won't be based purely on the outcome of the game but taken into consideration the interviews of phase 1 and the discussions during the game. A summary of the gameplay (including the given the goals, power and interest of all the players), the outcome of the game and the design proposal will then be presented to the stakeholders. This is crucial to show the stakeholders that they are heard, but also give them an understanding of their influence on the project and the interest of the other stakeholders. This will manage their expectations which in the end creates a stronger connection to the project.

As also already mentioned, is my personal proposal for program of the church a primary school with integrated child care facilities. Ideally the outcome of the serious game defined the program, but due to time limitations a program for the church already needed to be chosen. This problem is tackled in the game by adding to the goals of the stakeholders an certain interest in the program as a school. This is done to minimalize the conflict on the main objective of the research namely the role participatory design can have for the proces of transformation of religious heritage.

Currently I am finishing phase 1 and working on the gameplay of the game. The materials(Lego model) and a monitoring dashboard are there, but how many rounds and on what goals the stakeholders compete are yet to be determined. By P3 phase 2 should haven been completed so that until P4 and P5 the implementation into the design can be done.

Literature and general practical preference

The research touches upon couple of fields, namely religious heritage, social and economic sustainability, participatory design, generative design and serious gaming. In order to come to a well-founded and comprehensive research the theoretical framework is based upon research from all these fields.

In the process of the design of the game some principles of generative design were used. Shervin Azadi and Pirouz Nourian came up with a generic framework for generative design(2021b). In their framework they propose an GD process divided into three procedures: Planning, configuring and shaping. For them planning is the procedure in which a consensus must be reached in a certain way by the stakeholders. An example of this can be seen in the project by equicity in which they use serious gaming(Azadi & Nourian, 2021b). The participant play a serious game in which in a playful manner a consensus is reached. Through configuring and shaping an algorithm creates a design proposal which is in coherence with the reached consensus. This outcome then has real influence on the proposed solution for the design problem. The game proposed in the research of this graduation can't be considered as real generative design but principles were used, for example the principle of discretization. This means that in a model the design is made abstract in order to come to an consensus on a bigger scale first before going in depth into smaller scales and details.

To address the values related to religious heritage, a combination of the work of Veldpaus(2015) Roders (2007) will be used. Roders defined and described in detail the different values related to heritage. Veldpaus addresses the attributes to which these values can be assigned, both tangible and intangible. The combination of the two makes it possible to link values to attributes. This can then be used by the role of the heritage expert in discussion with other participant in the game. This is easier for tangible attributes (building mass, urban element, etc.) than intangible attributes(function, relations, etc.) but it is a way to address the values related to them.

Within the field of participatory design (PD) research is done after the sustainability of PD. In their literature review Poderi and Dittrich (2018) conclude that there are three relations between sustainability and PD: PD for Sustainability, Sustainability of PD Practice and Sustainability of PD Results. PD for Sustainability focusses on a process in which the main goal is sustainability. Sustainability of PD Practice focusses on the length and commitment of the participation and the participant in order to ensure valuable results. Sustainability of PD Results refers to the aim to obtain long lasting and durable outcomes. Because this research focusses on sustainability of the process and outcome the main interest lies in the last two.

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Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

   This graduation touches upon a lot of topics which relate to the other programmes. The two main elements that come together in the studio are both addressed in my graduation namely preservation of heritage and the shift from a linear economy into the circular economy. The design proposal for the transformation of the church should be both circular and do justice to the piece of heritage the church is. In the design this will raise the question how we should deal with the existing. In the research both these elements are addressed through the empowering of stakeholders with weak positions(e.g. the citizens of Voorschoten, future users) and by creating a strong basis for the project. The participation of all groups does justice to everyone's ownership of heritage. Whereas as the involvement in the design creates the feeling of co-ownership which in return gives the project resilience.

   Through the design of the transformation of the church all the aspects from programme proposal, participation to a final design will be addressed. All these aspect relate to the master track Architecture and the Master programme.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

   The research has a three-fold relevance. The main relevance lies in hopefully social and economic sustainable solutions found for the transformation of the Kruispuntkerk. The secondary relevance may lay in an addition to the existing tools within participatory design. The research could provide an innovative way through a hands on Lego model supported by a virtual dashboard to support participation which could be tested on other cases related to heritage. And last but not least the research might also provide a methodology to address the values given to religious heritage within an serious game in order to smoothen the processes related to transformation of religious heritage.