

Graduation Plan

Margot Corvina Holländer, 4744616

Master of Science Architecture, Urbanism & Building Sciences



Personal information	
Name	Margot Corvina Holländer
Student number	4744616
Telephone number	
Private e-mail address	

Studio	
Name / Theme	Circular Built Environment
Teachers / tutors	Prof. Dr.-Ing. Tillmann Klein, Ir. Eric van den Ham
Argumentation of choice of the studio	Technical fascination for facade design, the related products, as well as circularity and strategies for a sustainable construction industry

Graduation project	
Title of the graduation project	From Product to Product-Service System: Redesigning Facades and their Construction Process, to provide for a Product-Service System
Goal	
Location:	Related to pilot project in Delft
The posed problem,	In the new circular business model of facades as a product service system, façade suppliers need to rethink their current products and operational strategies. The physical implementation of the PSS model has not yet been explored, and a framework of design criteria is required.
research questions and	What are design criteria for products and processes, for a façade builder to provide a product-service system?
design assignment in which these result.	How is the east façade of the CiTG Building of the TU Delft designed as a product-service system?

Process

Method description

See section 5, *Methodology and Timeline* of the P2 report, and the timetable below

Literature and general practical preference

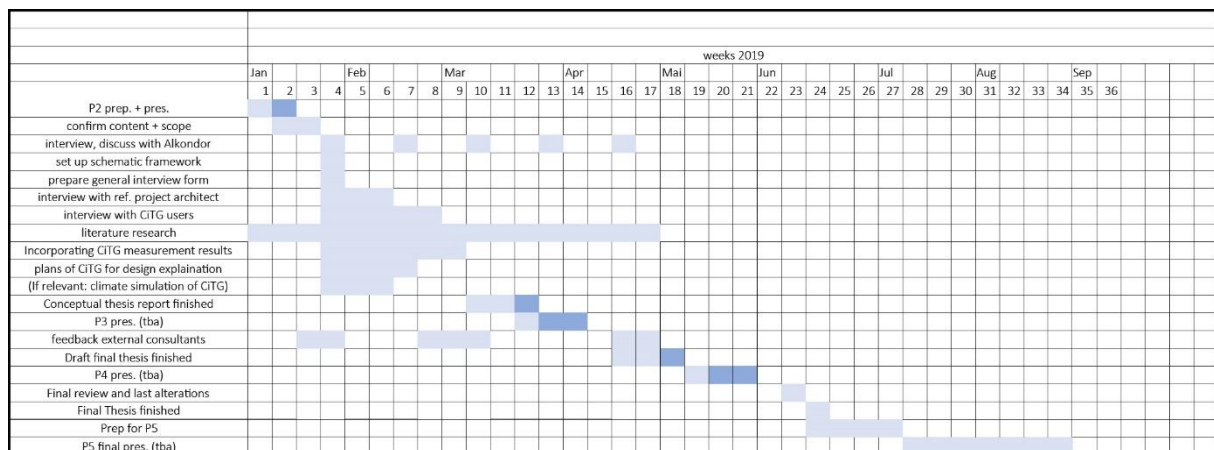
See section 6, *Literature and reference projects* of the P2 report

Reflection

1. The topic "From Product to Product-Service System: Redesigning Facades and their Construction Process to provide for a Product-Service System" touches upon many relevant sub-topics of sustainable design, such as smart buildings and innovation of their components. The research questions in the field of façade and climate design are informed by multiple disciplines of the built environment, in the intersection of architectural design and engineering. The thesis explores a detailed scale of façade engineering, as well as the large scale of integration into the built environment, considering the construction industry and its effect on the

environment, as well as architectural value and urban development. It is situated in the field of Building Technology, as the topic represents a complex new concept in the future of sustainable design.

2. A future-proof construction industry is composed of social, environmental and economic sustainability. The critical assessment of different factors is required. In the field of façade design, the balance of values is constantly needed, to build an environment that provides comfort for its users, while minimizing the use of energy needed to achieve the desired climate conditions. Furthermore, the production of facades should be conducted following the “reduce, reuse, recycle” principle: using materials efficiently, reusing components, and recycling after the end of service life. Circularity is an interesting intersection point of environmental and economic sustainability and needs rethinking and redesign in of most current practices. Therefore, research around facades as product service systems, and their physical implementation is a relevant part of developing strategies for the future of the façade construction industry.



Thesis planning, timetable