

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

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

Personal information	
Name	Joey Wagemans
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Studio	
Name / Theme	Architectural Engineering + Technology
Teachers / tutors	Andy van den Dobbelsteen, Marc Ottelé, Arie Bergsma
Argumentation of choice of the studio	Interest in technical side of architecture.

Graduation project	
Title of the graduation project	Modularity of living wall systems
Goal	
Location:	Implementation in general utility building
The posed problem,	Living wall systems aren't implemented on a big scale, even though they offer multiple benefits to both the user as the environment, and can't be easily used on the existing utility sector, due to the lack of a fully modular living wall system façade element.
research questions and	To design a demountable and fully modular living wall system façade out of recyclable and compostable materials
design assignment in which these result.	How to design a fully modular living wall system façade for existing utility buildings that can be fully disassembled and is made out of recyclable and/or compostable materials?
Possible sub problems include; the need for existing buildings to fulfill energy performance requirements and the demand for a sustainable green façade element, which indirectly is a demand for a green façade element that is fully demountable and composed out of recyclable and compostable materials. Therefore, the design questions also takes the materials of the living wall system into account, so the element will also be sustainable on a material level and not just a functional level.	

Process

Method description

The methods and techniques for this design consist of literature research, market research of living wall systems on the current market and a design process in which drawing and creating (scale) models will be used as design techniques.

Literature and general practical preference

Literature that will be consulted consists of masters theses from, amongst others, M. Otellé and A. Mir and other books and websites regarding modularity and vertical green.

Other sources consist of company information such as product information, materials used from various companies such as: ANS, Sempergreen, Modulogreen, Green Fortune, Minigarden, Fytocell and more.

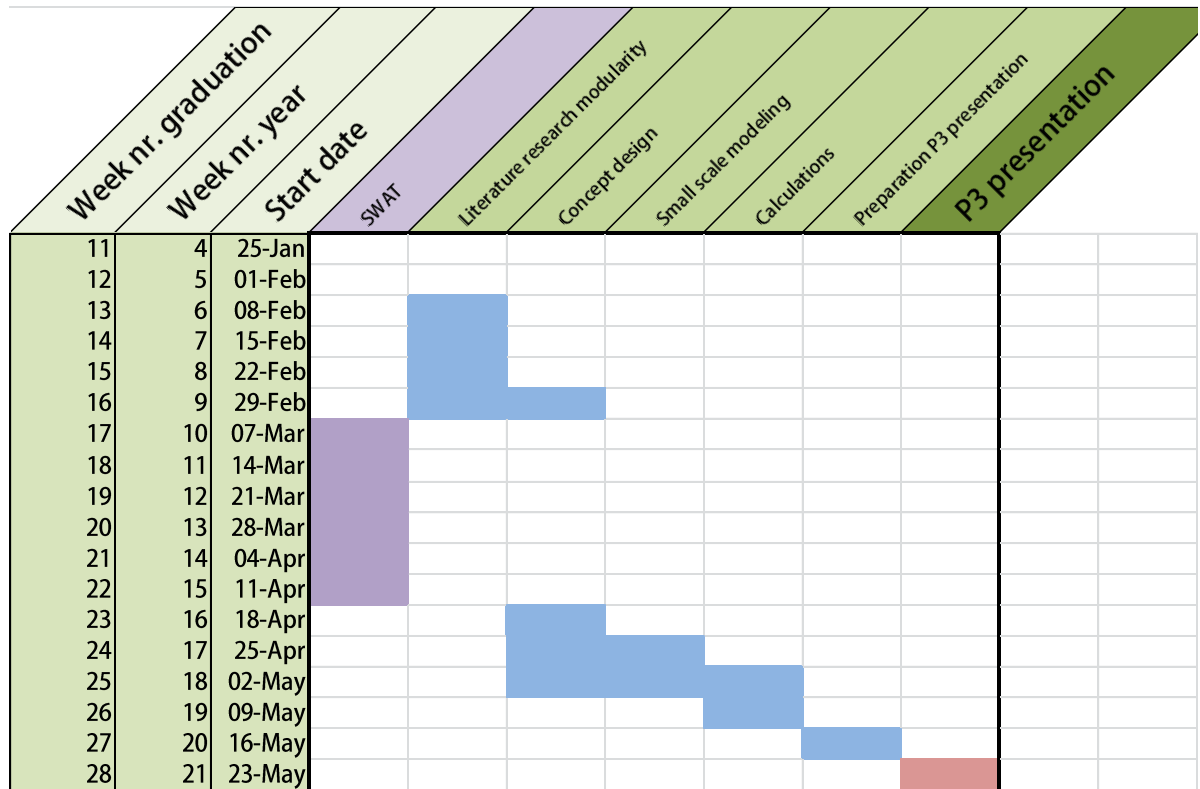
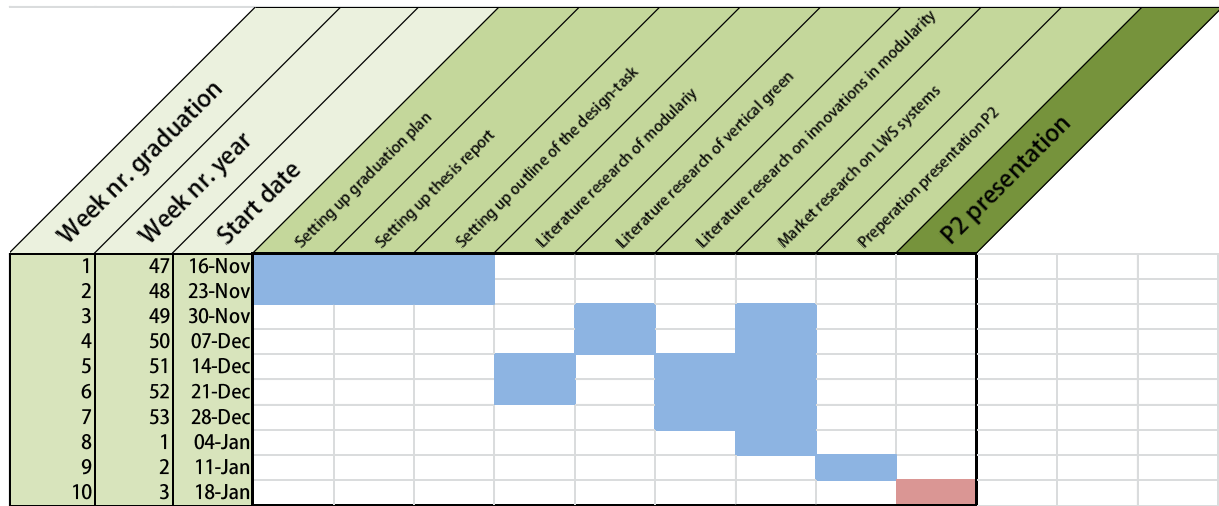
Reflection

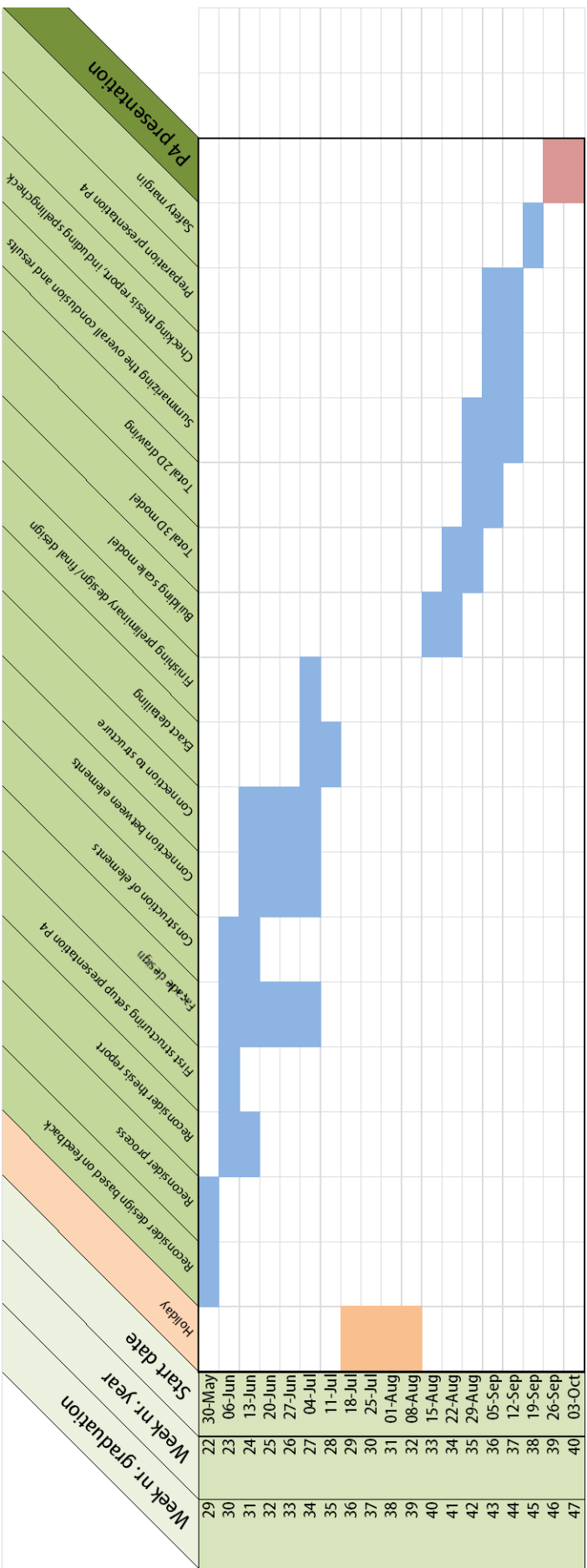
Relevance

Green façades have been around for a long time and, thanks to the benefits green façades have to offer, they are becoming more popular in the last decades. A green façade or living wall system can improve air quality, provide shading to a building and increase the biodiversity, just to name a few of these benefits. Slowly, green façades have developed into living wall systems, which are suitable for a wider range of plants species than green façades and are better in addressing the function of green walls. However, when looking around, one might notice that living wall systems aren't implemented in the building industry on a large scale.

The implementation of these modular living wall systems could be on the existing utility buildings. Three quarters of the dwellings in 2050 are buildings that exist today. Over 90% of this existing building stock has to be effected by energy performance requirements. Possible solutions to this are refurbishing or reskinning these building, which can be done with living wall systems. By designing a fully modular living wall system, it will be easier to implement, which will make it more attractive.

Time planning





			Week nr. graduation	Week nr. year	Start date	Adaptions based on feedback P4	Final thesis report	Preparation presentation P5	P5 presentation
47	40	03-Oct							
48	41	10-Oct							
49	42	17-Oct							
50	43	24-Oct							
51	44	31-Oct							
52	45	07-Nov							