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

<table>
<thead>
<tr>
<th>Name</th>
<th>Jeroen van Lith</th>
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<tbody>
<tr>
<td>Student number</td>
<td>1524313</td>
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<td>0031681895273</td>
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### Studio

<table>
<thead>
<tr>
<th>Name / Theme</th>
<th>Hyperbody</th>
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<tbody>
<tr>
<td>Teachers</td>
<td>Dr. Henriette Bier and Dr. Nimish Biloria</td>
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<tr>
<td>Argumentation of choice of the studio</td>
<td>I want to focus on generative and interactive architecture, topics which will be addressed in the Hyperbody graduation course.</td>
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### Graduation project

<table>
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<tr>
<th>Title of the graduation project</th>
<th>Adaptive Living</th>
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### Goal

<table>
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<tr>
<th>Location:</th>
<th>Rotterdam, The Netherlands</th>
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<tr>
<td>The posed problem,</td>
<td>In the Netherlands, the reduction of need for office spaces resulted into a large amount of vacant high-rise buildings. The Marconitorens in Rotterdam are an example of this phenomena. At the same time, there is a growing need for living spaces. The posed problem will be how to alter and add the existing Marconitorens in order to let them meet the requirements of a contemporary living environment, focusing on the addition of green spaces and interactive furniture systems.</td>
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<td>research questions and design assignment in which these result.</td>
<td>Research questions are both related to the alterations of a typical office building as well as the generation of adaptive green living spaces. Sub-questions are related to the use of the interactive spaces, considering what could be preferable and what not. How to alter the Marconitorens as such that the existing empty spaces can be transformed into a green living environment which responds to changing needs of users and green?</td>
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This should be formulated in such a way that the graduation project can answer these questions. The definition of the problem has to be significant to a clearly defined area of research and design.
### Process

#### Method description
The project will be developed by utilizing mainly bottom-up generative processes which can be parametrically altered. In more detail, the main structure will be generated through agent-based modelling of the activities, in which environmental, structural and economical issues will be addressed.

### Literature and general practical preference
Michael Fox and Miles Kemp, Interactive Architecture (Princeton, Princeton University Press, 2006)
Kas Oosterhuis, Towards a New Kind of Building (Rotterdam: NAI Publishers, 2011)
Kas Oosterhuis and Henriette Bier, Robotics in Architecture, (Heijningen :Jap Sam Books , 2013)

### Reflection

#### Relevance
Because the project embodies not only the generation of new architectural spaces, but specifically alters an existing one, it is able to address larger societal issues which countries in the Western world are facing today. Vacant office buildings are unsustainable and new strategies are needed. Furthermore, this project specifically encapsulates the implementation of a green adaptive living environment into this existing structure. In this, scenario’s become more flexible while users can enjoy not only different configurations within their own living environment, but also green spaces in close proximity.

### Time planning

**Weeks 1-8:**
Making of an extensive analysis of the site and its surrounding, considering not only existing, but also future needs, requirements and pressures. Furthermore, first ideas for implementation as project will be tested and discussed.
Robotic fabrication workshop
Week 9: P1 Presentation
Weeks 10-18:
Research on contemporary housing issues;
Research on applicable robotic systems;
Gain knowledge in the preferred computational workflow during the Python for Rhino workshop;
Generate computational sketches of generative systems;
1:200 plans, sections, facades;
Graduation plan;
Week 19: P2 Presentation
Weeks 20-27:
Further development of the generative system;
Elaboration on the smaller scale – in this project, the interior of the apartment;
Considering structural and climatic issues;
Explore strategies for specific details
Week 28: P3 Presentation
Weeks 29-34:
Finalize the design;
Incorporate details
Making plans, sections and elevations;
Rough 4D representations of interaction scenario's;
Week 35: P4 Presentation
Weeks 36-41:
Working on the final presentation;
Finishing details of the 3D model;
Finalizing the 1:5 details;
Making renderings, drawings and diagrams for the presentation;
4D media for explanation of the interactive systems;
Preparation and fabrication of a 3D model;
Week 42: P5 Final Presentation