Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences
Graduation Plan: All tracks
The graduation plan consists of at least the following data/segments:

<table>
<thead>
<tr>
<th>Personal information</th>
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<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Student number</td>
</tr>
<tr>
<td>Telephone number</td>
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<td>E-mail address</td>
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<tr>
<th>Studio</th>
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<tbody>
<tr>
<td>Name / Theme</td>
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<tr>
<td>Teachers</td>
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<tr>
<td>Argumentation of choice of the studio</td>
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<table>
<thead>
<tr>
<th>Graduation project</th>
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<td>Title of the graduation project</td>
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<tr>
<th>Goal</th>
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<tr>
<td>Location:</td>
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<td>The posed problem,</td>
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architectural implementation of adaptive multi agent systems based on the flow of knowledge and how architecture can adapt to these constantly changing circumstances and the technical abilities. Complex algorithms are all about complexity through networks. One simple cell can be part of a super complex network. The way these financial algorithms work is making one big transfer but first splitting it up in millions of little transactions. Can the same be done to create dynamic systems in architecture? Could we be able to take one big building and splitting it up in little cells of agents, and let the connections of those agents generate the complexity for the whole?

<table>
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<tr>
<th>Research questions and</th>
<th>Main question: How can a building be designed to actively participate in the flow of knowledge and adapt to the change of flow over time? Scientific-theoretical question: What are complex systems or complexity science and how can it inform architecture to be adaptable to changing requirements and growth? Computational question: Why is complexity science and agent-based modeling beneficial for the creation of intelligent and adaptable architectures? Conceptual-design question: In what way can complexity science and computational techniques be translated in order to create intelligent and adaptable architecture designs?</th>
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<td>design assignment in which these result.</td>
<td>The case location, Merwe-Vierhavens has a number of distinct features like the partly empty Marconi towers by</td>
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SOM architects on the site as well as some significant nearby locations like the RDM campus across the river and the Erasmus MC to the east. Also, the recently created Climate Campus initiative will be situated in this area. Being a port area, the water is also a fundamental feature in the area at hand. The design will relate to these external connections and incorporate parts of the Climate campus.

The goal for this design is to use computational methods and complexity science in order to understand the interconnecting relations. Through analysis of parametric models, simulations and generative formations, the design alternatives can be evaluated so that the final design can gain a higher level of intelligence. Making use of the water in the harbor area as foundation, new possibilities for dynamic solutions can add another level of intelligence to the design process and the final building design.

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**

Complexity science and computational techniques will be used to create simulations for water, wind and other important elements from that area. Multi-agent system simulations will be used to inform the main relations and functions within the building and, along with path simulations, determine the core and interface of the project as well as the proposed relations and probable flow of knowledge. Computational design tools like Rhino and Grasshopper will help to translate these inputs of information into a unified architectural concept. Along with these computational design tools, diagrams, sketches and model making can also help during the design process to visualize thoughts and ideas, and to show them to explain my process.
Literature and general practical preference

The literature (theories or research data) and general practical experience/precedent you intend to consult.

- MOREL, Ph. A few Remarks on the politics of ‘radical computation’
- BILORIA, N. 2012. Interactive morphologies: An investigation into integrated nodal networks and embedded computation processes for developing real-time responsive spatial systems

Reflection

Relevance

The value of the graduation project in the larger social and scientific framework.

This project will try to generate an architectural typology that is adaptable over time based on parametric systems and informed by computational simulations. It will try to use its water environment and floating behavior in intelligent ways like energy production and a high degree of flexibility. This could set a precedent for new intelligent buildings and future water-based societies.

Time planning

A scheme of the division of the workload of the graduation project in the 42-week timeframe. Compulsory in this scheme are the examinations at the middle and end of the semester, if required, the minors you intend taking and possible exams that have to be retaken. The submitted graduation contract might be rejected if the planning is unrealistic

1. Introduction
2. General Analysis - Group / Deadline History Thesis
3. Socio-Economic Analysis - Group
4. Socio-Economic Analysis - Group
5. Socio-Economic Analysis - Group
6. Workshop: Scalable Porosity - Group
7. Workshop: Scalable Porosity - Group / Research Methods Discussion
8. Workshop: Scalable Porosity - Group
9. P1: Midterm Presentation - Group
10. Exam Period
11. Personal Proposal / 3C Conference
12. Finishing Socio-Economic Analysis – Group
13. Workshop Informed Computational Form-Finding
14. Workshop Informed Computational Form-Finding
15. Personal Analysis / Deadline Media Studies Paper Abstract
16. Parametric System Experimentation
17. Vacation
18. Vacation
19. Multi-Agent System Design / Computational Analysis
20. Form Finding & Graduation Plan
21. Final Preparation & P2: Final Presentation
22. Exam Period / Deadline Media Studies Paper
23. Vacation
24. Multi-Agent System Design & System Integration
25. Multi-Agent System Design & System Integration
26. Multi-Agent System Design & System Integration
27. Multi-Agent System Design & System Integration
28. Multi-Agent System Design & System Integration
29. Urban Plan
30. Urban Plan & Architectural Design
31. Architectural Design
32. Architectural Design & Structural Design
33. P3: Midterm Presentation
34. Architectural Design & Structural Design
35. Architectural Design & Structural Design
36. Architectural Design & Model Making
37. Architectural Design & Model Making
38. P4: Go | No Go Presentation
39. Finalizing
40. Finalizing
41. Finalizing
42. P5: Final Graduation Presentation