Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences
### Graduation Plan: All tracks

**Date of this document:** 20-12-2018  
**Date of P2 presentation:** 14-01-2019

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<tr>
<th><strong>Personal information</strong></th>
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<th><strong>Studio</strong></th>
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<tr>
<td><strong>Name / Theme</strong></td>
<td>Heritage &amp; Architecture / Hembrug - Revitalising heritage</td>
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| **Teachers / tutors** | Annette Marx (Architecture)  
Lidy Meijers (Architecture)  
Frank Koopman (Building Technology)  
Ivan Nevzgodin (Cultural Value) |

**Argumentation of choice of the studio**  
I have always been fascinated by old buildings; their history, how there are changed overtime and especially how they are built. What I really appreciate in the Heritage & Architecture is that you almost immediately start to investigate on all the scales of architecture, from urban environments to building details. I always felt that, in other studio’s, there is far more focus on form instead of material and material is something that you fill in at the end of the assignment. But in this studio, you have to respond on the scale of materialisation as well. At last, there is the consciousness of the human impact on earth, which is for me a reason to graduate in a redeveloping project, instead of designing a totally new building. Because, sites such as the Hembrug area have so much atmosphere and there is so much left to use.

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<th><strong>Graduation project</strong></th>
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<td><strong>Title of the graduation project</strong></td>
<td>The Ladder: from grenade factory to a sport and living centre</td>
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<th><strong>Goal</strong></th>
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<td><strong>Location:</strong></td>
<td>Hembrug Zaanstad</td>
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<td><strong>The posed problem,</strong></td>
<td>The Hembrug area is a former military production site located South of Zaandam. Within the fortification “the stelling of Amsterdam” the Hembrug site functioned as the central point where weapons and ammunition were not only produced, but also tested. With the military leaving the site in 2000 it has become a large area to redevelop in the metropolitan area of Amsterdam.</td>
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The object of the graduation is a building ensemble named the Ladder. The Ladder consists of 5 factory buildings, with a total floor surface of 7400 m², located in the South-East part of the military terrain. Notable is the fact that buildings in this ensemble are built within a span of 50 years (1926-1969). The buildings, standing in a row, are clearly distinguishable from the outside, see figure 1. However, they are connected with each other in a sequence of unique atmosphere inside, see figure 2. This means that while walking through the ensemble you experience the different structural styles of building and especially the various ways how daylight enters via the roofs.

The current trend in development of the industrial harbour area along the IJ and the Noordzeekanaal is to develop into living and working areas. What is also the case at the Hembrug site. This means that the problem of the graduation project is that the area needs to be developed (also to restore the historic buildings), but the buildings are not in a usable state and have specific cultural historic values.

<table>
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<tr>
<th>research questions and design questions</th>
<th>The main design question is: How can the Ladder be transformed to a neighbourhood reinforcing complex, but at the same time keep its cultural historic and atmospheric values?</th>
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<td>RQ: how can we explain the impact we as humans have on the earth? (investigating the theories of the Anthropocene and Capitalocene)</td>
<td>To come to an answer and thus a final design, a number of research questions (RQ) and design questions (DQ) have to be answered that also include topics on larger scale than just the area and the specific building ensemble.</td>
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<td>On the world scale:</td>
<td>On the scale of the port of Amsterdam:</td>
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<td>RQ: how is the future development of the Port of Amsterdam related to the Hembrug area?</td>
<td>RQ: how is development the Port of Amsterdam involved in the Olympic Games in 2028?</td>
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On the scale of the Hembrug area:
RQ: *how can the Ladder contribute to the community of the Hembrug area*? *(masterplan area)*
RQ: *how can the Hembrug area contribute to the Olympic Games in 2028 and the development of the industrial harbour area?*

On the scale of the Ladder:
DQ: *which transformation strategies are suitable to use for the transformation of the Ladder?*
DQ: *how can the ladder relate to the surrounding area, but still keeps its mysterious indoor atmospheres?*

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<th>design assignment in which this result.</th>
<th>The main assignment will be the transformation of the Building ensemble named The Ladder, including the empty plot on the west site, to a sport and living centre, see figure 3.</th>
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<td>The most important issues of this transformation are:</td>
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<td>- Respond to future developments and events of the industrial harbour area.</td>
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<td>- React on the architectural, technical and cultural historical values of the building.</td>
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<td>- Maintaining the identity of The Ladder which consists of different exterior and interior atmospheres.</td>
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**Process**

**Method description**

The methods of the research of the analysis of the existing situation: archive investigation (for drawings and photo’s), and analysing literature about the historic location and historic building and constructing techniques.

The methods of the research of context, masterplan and program: Analysing Urban strategies for the future by municipalities and the government. Analysing referents projects.

The methods for the transformation strategies and design: drawings, sketches, physical and digital 3D models and literature.
Literature and general practical preference

History


Provincie Noord Holland. Leidraad Landschap en Cultuurhistorie 2018
Retrieved 08 October 2018 from: https://leidraadlc.noord-holland.nl/structuren/sva-nhw/


Building technology


Other research


**Reflection / Relevance**

**Social relevance:**

The Hembrug terrain was for a long time a forbidden and very mysterious industrial military area where weapons were made and tested. For decades, enormous amounts weapons (and other products) where made here and it even contained the largest grenade press of Europe. This area is now open for the public and it depends on the transformation whether this history remains legible or not.

**Scientific relevance:**

Because the buildings of the Ladder are built in a time span of circa 50 years, scientific relevance can be found in the development in detailing and material use which is still visible. The church (building 72) with its load bearing masonry walls with steel trusses, is the start of the historical layering. Furthermore, there is a variety of steel structures with different ways of detailing. Last but not least, the unique hyperbolic thin concrete shells in building 436, show a phase in time where concrete is used to enclose spaces and make large spans. This structure is unique in the Netherlands. Due to the visibility of the variety of detailing, the structure becomes a part of the architectural experience. This means that the structure is important in telling the story of these layers of time and should be taken into account when looking for a suitable re-development.

**Time planning**

(given by studio)

**Q1 research; Design – Technology - Cultural Value**

Wk 1-3
- Introduction to studio, courses, theme of the studio
- Study to (the design research framework)
- Study to (a body of references), research in groups (3-5 students)
- Excursions to (2 realised and built locations/sites), organised by groups (3-5 students)
- Collective report on the references + typical (subject-related) drawings

Wk 4-8 **Studio building subject**
- Introduction to design cases: Hembrug
- Excursion to buildings
- Choice for one building
- Research on building complexes in groups of 3 - thematic
- Read book ‘designing from heritage’
- Architectural, technological and cultural historical analysis, by research tool (matrix) and syntheses
- Collective typical contextual drawings of building complexes / ensembles / technology
- Collective research report
- Thoughts on brief, intervention strategy, design ideas, individual
Wk 9-10
- Finalizing report
- P1 presentations, collective + individual

Final RESULTS of the 3 H&A-courses: AR3Ar022-AR3Ar032-AR3Ar142

Q2 Design (defining individual design proposal)
Wk 1-2
- Workshop on program and feasibility
- Formulation of research question (individual), combining values, program, relevance, themes etc
- Scenarios, in groups
- Presentation scenarios
Wk 4-8
- Development of design brief
- Program, relevance, themes, strategies
- Consult (2x) on technology
Wk 9-10
- Finalising research and design proposal
- Finalising report on analysis, research question, dilemma’s, statement and concept
- P2 presentations (midterm exam)

Q3 Individual design (elaboration)
Wk 1-3
- Workshop on designing fragments of the proposal (wk 1-2)
- Workshop on façade fragment, technical aspects (wk 3)
- Presentation of fragments and relation/ reflection overall concept
- Tools: models, sketches, renders, text, and so on
Wk 4-8
- Development of design
- Principles of project detailing
- Reflection
- P3 presentations with visiting critics
Wk 9
- Excursion?
Wk 10
- Reflection

Q4 Individual design
Wk 1-4
- Development of elaborated design
Wk 5-6
- P4 presentations
Wk 7-9
- Finalizing reflection and presentation
- Finalising design drawings, perhaps models, renderings, and so on
Wk 10-11
- P5 presentations
- Exhibition results studio Hembrug
Figure 1 Bird eye view existing situation of the Ladder ensemble plot, with building names and age (drawing by author, building dates and numbers by Steenhuismeurs (2010))

Figure 2 3D floorplan of existing situation of the Ladder ensemble plot, with building numbers (drawing by author, building numbers by Steenhuismeurs (2010))
Figure 3 Design schemes about the relation between the living and sport functions, work in progress.