Graduation Reflection *- Enzo Ree Boeter*

Tallinn Timber

Objective and design

My architectural design project aims to celebrate the Estonian timber culture. As abundant local resources, timber and limestone have been the traditional building materials in Estonia. Nowadays, in a time where wood is considered a key element in making the construction industry more sustainable, the Estonian timber market has evolved into one of Europe's most prominent engineered wood industries, specialising in prefab housing. However, 90% of Estonian timber is exported abroad[1] as a cheap commodity, rather than adding spatial value to its own cities and buildings. A contemporary flagship timber project that represents this rich tradition and industry has the potential of reintroducing timber into the architecture of the city. This is where my project taps in.

My graduation project explores its spatial-, functional- and architectural potential in the context of the urban coastal zone of Estonia's capital city, Tallinn. Estonian engineered timber is introduced as a solution to contemporary challenges in the architectural field of Tallinn. These challenges include sustainability and urban densification, while at the same time developing a clear spatial and programmatic identity of its coastal zone.

Preliminary research showed that the Tallinn coastal zone can be seen as a series of expressive architectural projects that once had a clear function, with its trade activities of the Hanseatic town and military industry during the USSR occupation. However, since Estonia's independence in 1991, the role of these formerly distinctive areas in the urban fabric has become unclear. Buildings such as the Olympic Linnahall (1980) and Patarei prison (1830) are acknowledged for their cultural and historical significance, yet they currently stand vacant.

Kalasadama, located between the Linnahall and an old fishing harbour, is an area amidst the beads of the chain of expressive projects. Once part of the biggest Estonian energy company, it is now mostly unoccupied. This graduation project aims to reintroduce the industrial character of the area by reviving the timber construction industry and integrating it with the natural qualities of wood and human-scaled residential timber architecture to create a distinctive urban environment.

Like the Linnahall, the proposed building ensemble serves a pedestrian oriented public space, in contrast to Tallinn's mainly car centralised planning. Three building volumes relate to the original longitudinal industrial halls that used to be part of the energy company, by accommodating timber workshops. Rotating the building 90 degrees compared to the former halls, the three buildings create two car-free streets that serve as visual and functional axes linking the city to the sea. Where the axes connect to the city, a mobility hub, the revitalization of the existing buildings, and two squares form an attractive, lively urban atmosphere that serves as the entrance to the area. The seaside zone of the project emphasizes the natural coastal qualities, contrasting with the adjacent coastal spaces that are paved and manmade. In this area a wide variety of animals, plants, and, of course, the local trees that are so essential to this project, offer the peace and nature that Tallinn's inhabitants can usually only find in bogs outside the city.

[1] In 2014, 90,8% of timber, not used for energy generation, was exported. Source: Puuinfo

The ‘Tallinn Timber’ buildings themselves are functionally and architecturally subdivided in an outer skin expressing the industrial qualities of timber, and an inner street, that offers the more intimate residential qualities of craftmanship, human scale, and social interaction.

The outer facades show the new possibilities of timber architecture that have followed from recent standardized production of massive timber and climate awareness. Around the building volume the construction, skin, and insulation are separated, creating an expressive layering of various timber construction methods. This buffer zone offers architectural quality with its spatially defining structure, but also acts as a transition zone between the busy and cold streets, and the warm cosy apartments, pre-heating the air and offering private balconies.

The ‘inner world’, where residents enter their apartment, is more intimate and personal. The facade planking and custom doors relate to traditional timber architecture. Facades are more closed due to its more collective nature, with the entrances and dinner rooms located on this side. The building roofs are pitched inwards to enhance sunlight entering from above, just like in an inner street. The buildings on either side enclose the more intimate space and offer some protection to the harsh wind. Between the bridges and galleries, neighbours have the space and opportunity to interact, pass each other, or put down a chair. The apartments themselves serve the personal needs of different users. Due to the extra height, the compact lofts are both suitable for transformation into office spaces, and are surprisingly spacious. The core of the apartment is a modular system that is produced in the wood workshops, linking the residents to the workers of the area. The core incorporates basic functions like the bathroom, kitchen, storage, and installations, as well as a clear spatial division between a more intimate private zone and an open living space. This division continues onto the private balconies. The more private space, visually protected by glulam diagonals, serves as a place for laundry, while the open part of the apartment offers an unobstructed view of the city and features glass panes that can be opened for cross-ventilation.

The mutual influence of research & design and the value of my approach

Both group- and individual research influenced the design process at different stages. At the start of the project, the contextual analysis (figure 1) influenced the direction of this graduation topic by creating a general understanding of the historical, spatial, sociocultural, environmental, technical and architectural context of Tallinn. In combination with a personal interest in dwelling and urban development, a more in depth individual researched followed, focussing more on housing history (figure 2) and timber construction culture both in Tallinn, and around the world. As the project progressed, this personal research influenced the design process, leading to well considered positions regarding building typology, construction methods and the urban context. My approach was mainly focussed on construction methods and material. However, at some points the architectural perception and quality of the project were cross-evaluated with the optimal construction methods. In this way, the approach was unique and iterates between constructional logic and design logic.

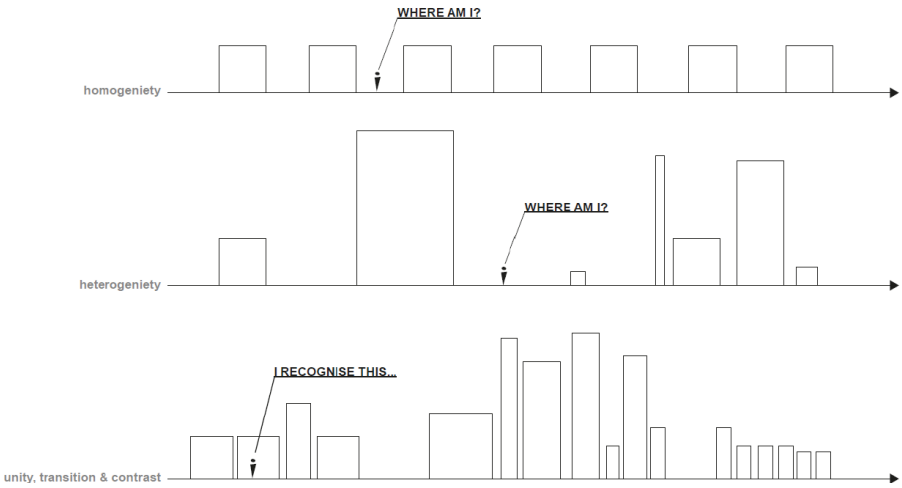

Figure 1: Contextual analysis of Tallinn

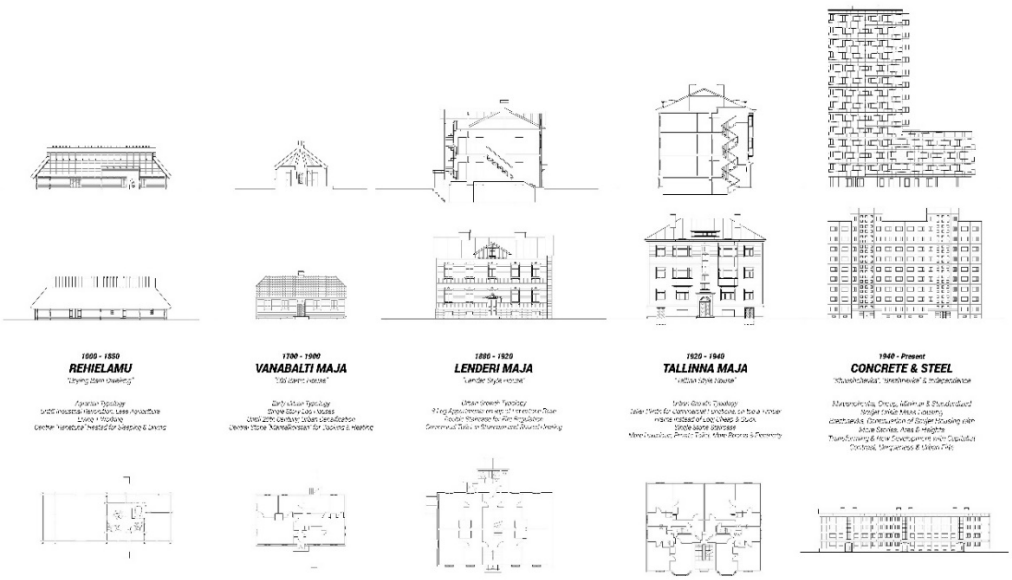

Figure 2: History of Tallinn housing

<u>The academic and societal value, scope and implication of this graduation project, and the transferability of the project results</u>

This graduation project contributes both to building practices in general, as well as insights to redevelopment of coastal zones and the city of Tallinn. In terms of building practices, I contribute to the innovation and attention to timber as a climate-friendly building material. The work also adds regional knowledge and insights on the redevelopment of the city of Tallinn. The function of the area in the urban network is unclear and undefined, and this project forms a critique to this unclear urbanism. Thus, the project 'Tallinn Timber' should be interpreted as an example of how focus on a new scale of timber construction can add quality to a city – as demonstrated for the example of Tallinn. The project aims to stimulate professionals and fellow students to develop cities in a more sustainable manner, with a focus on local materials and innovation. The current society will be in need of architects with skills and knowledge related to wood construction and with this graduation I want to contribute to this shift in building culture.