

Reflection of Graduation project

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Part I: Project description

Introduction:

This graduation project aims to transform the former ice skating rink of Linnahall in Tallinn into a market, with the purpose of exploring how to reuse the long-abandoned monumental building. Situated by the seaside near the harbor, just beyond the city walls of the Old Town, Linnahall features a circular theater with 5000 seats and a skating rink with 3000 seats. It was built for the Olympic games 1980. One of its special features is the pedestrian roof providing a magnificent view over the sea and the city. However, because the scale of the building was too large for the city of Tallinn, people didn't know how it could function with a balanced budget. As a result, the whole building closed in 2010. Since then, the Tallinn city government has made several attempts to renovate Linnahall, but with no success. Linnahall has become a colossal abandoned unsafe structure, occupying a prominent position along Tallinn's coastline and negatively impacting the surrounding environment.

This graduation project selects the ice skating rink section of Linnahall as a case study, utilizing the imagination and introduction of new functions, along with spatial transformations both inside and outside the building. The aim is to revitalize it as a vibrant public space that will also invigorate the surrounding urban and waterfront areas. This project provides a new model for the restoration of Linnahall.

Market as a new function:

During the initial stages of conceiving new functions for the building, several features of the Linnahall became important considerations. Firstly, its publicness; as a former sports and cultural venue, the building inherently embodies a sense of publicness, thus the new function of the building needs to maintain this public aspect. Secondly, its symbolic significance; Linnahall's monumental appearance gives it a unique identity, contributing to Tallinn's cityscape, thus the proposed settings should convey Tallinn's distinctive cultural heritage. Combining these two considerations with site research in Tallinn, a market emerges as a suitable function: On one hand, it is sufficiently open and public to accommodate diverse demographics, injecting new vitality into Linnahall. On the other hand, the market can serve as a platform for local culture promotion through the display of various goods.

Spatial Layout:

After determining the building's new functionality, the next stage involves spatial transformations. The original skating rink features a distinct spatial layout: a vast open space in the center surrounded by seating. The new market design follows this spatial logic, with the central area becoming the

main market hall, allowing people to freely explore within. The surrounding seating is retained, repurposed as areas for showcasing specialty crafts, with the spaces beneath the seating transformed into studios for crafting these goods. Some of the original seats are removed, replaced by new wooden pavilions distributed throughout the building, introducing a new spatial atmosphere. These new 'pavilions' for restaurants and commercial activities are connected by a circular elevated walkway, enhancing the connectivity between different areas within the building and reinforcing the centrality of the market hall.

Openness:

Currently, when viewed from the surrounding grounds, Linnahall's skating rink appears as a highly enclosed structure, with only one entrance on both sides and no windows for natural light. Such enclosure is unsuitable for a market space and hinders Linnahall's reuse as a public space. Therefore, in the new renovation scheme, I aim to introduce openness to the building, integrating it with the adjacent squares and allowing natural light to penetrate the interior, creating a vibrant atmosphere. To achieve this, the entrances on both sides of the building are reinforced, transformed into prominent entrance canopies to attract people into the building. Additionally, a series of windows are added to the exterior walls as spaces for selling goods, facilitating interaction between the building and the surrounding squares. These windows and entrance canopies collectively form the new external system of the building.

Furthermore, another significant transformation is the introduction of new roof skylights. With the skating rink's considerable width of over 50 meters on each side, relying solely on side openings cannot provide sufficient light to the central area of the building. Therefore, in the new design, a skylight system is installed above the central area (the market hall). The new roof skylight is consisted of glass and wooden lattice, bringing light into the center of the building while also connecting indoor and outdoor vistas, infusing the building with more vitality.

Materialization-Warmth of wood:

The existing building Linnahall is constructed primarily of concrete and steel, materials that convey a sense of heaviness and coldness, which are not conducive to the atmosphere desired for a market. Thus, the transformation of the interior ambiance becomes a crucial consideration. In the new market design, wood emerges as a primary material, bringing a sense of warmth and attractiveness to the space. Simultaneously, wood is also a more environmentally friendly material, enhancing the sustainability of the building.

Specifically, GLT (Glued Laminated Timber) has been chosen as the primary material for the new structural system due to its excellent structural properties, making it particularly suitable for use in such large-span structures. Furthermore, in terms of finishing materials, oak will be predominantly selected to adapt to the usage requirements of the market space. These new wooden materials establish a new architectural language, signifying that the former ice rink will be repurposed and revitalized as a vibrant market for public use.

Part 2: Reflection

Design process

Reflecting on the entire design process, I think I have gained extensive knowledge and have come to understand the multitude of considerations required for a comprehensive design project. From the initial site research and problem identification to proposing solutions, and then step-by-step designing the market space—dividing service and served spaces—followed by considerations of building structure and climate, each phase of this complete design process has imparted valuable knowledge and insights.

The value of case studies

During the design process, studying different case studies greatly assisted me in refining spatial designs. For example, I spent considerable effort and made multiple revisions on the design of the new entrance, aiming to create an attractive entry point that invites people into the building. However, I initially struggled to find an optimal entrance form. During this process, I studied the Termini Station Building in Rome, where the roof undulates as people enter, creating a sense of invitation and interaction. This concept inspired the new entrance design, which, in combination with Linnahall's spatial characteristics, creates a space that rises and falls with the movement of people, enhancing the sense of invitation.

Additionally, Jørn Utzon's Bagsværd Church was another important reference. The way light filters through skylights and interacts with the dynamic ceiling brings brightness and a sense of monumentality to the space. This idea is reflected in the skylight design above the market hall in my project, contributing to a similarly luminous and commemorative atmosphere.

The hidden details

Furthermore, analyzing the original building was also crucial to the development of the project. The design process required a detailed understanding of the existing structural conditions, leading me to devote considerable effort to researching drawings, photographs, and other materials. Through this process, I came to appreciate some of the "beautiful" aspects of this abandoned building, such as the elegant circular openings in the massive steel beams and the texture created when light illuminates these large structures. Consequently, in the subsequent design, these old steel structures were integrated with the new wooden ceilings and skylight designs, forming a composite system. This allows people to experience the renewed vitality of Linnahall while also sensing subtle memories of its past.

Insights for the whole building:

My design offers some insights for the reuse of entire Linnahall:

- a. It is crucial to consider the needs of the surrounding population (mainly Kalamaja residents and visitors from the harbour) to attract a diverse audience and create a vibrant space.
- b. Given Linnahall's vast size, some areas could/should be scaled down to better suit human use, enhancing the usability of these spaces.
- c. It is essential to consider Linnahall's design within the new urban context—determining new entry points, how people will access the building, and how different parts of Linnahall will be connected.

d. Designers should discover and appreciate the original building's spatial aesthetics, preserving and showcasing them while integrating them with new spaces.