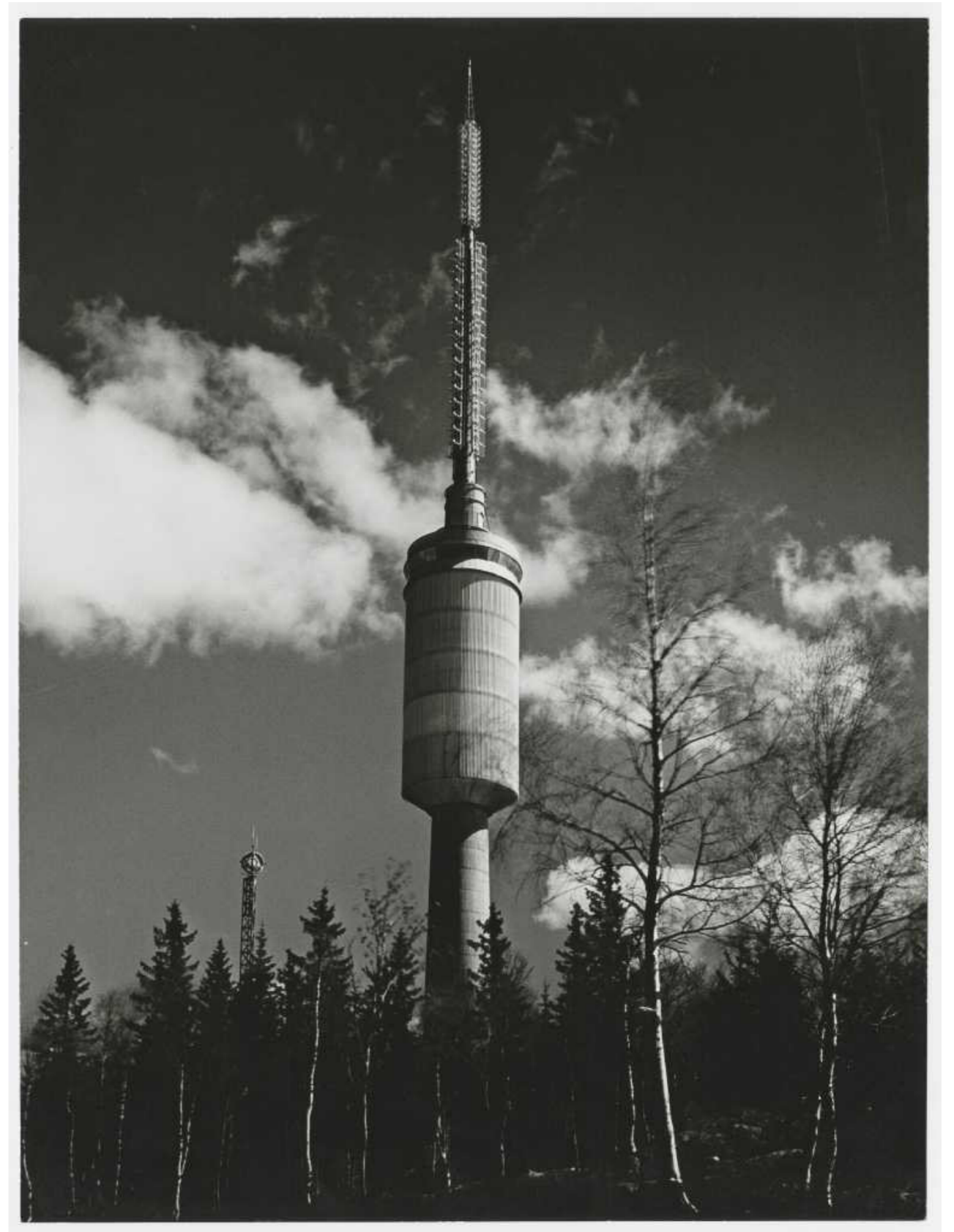


Ascending

T r y v a n n s t å r n e t

Decending

Abstract & Architectural Program



*Photos for the Norwegian Review of Architecture nr. 1 1963 August 1959
Bjørn Winsnes, Norwegian national museum*

Background

Between forest and city, 529 meters above the sea overlooking the city of Oslo, sits “Tryvannstårnet”. The 118 meter high broadcasting tower is a well known landmark in the city landscape. Its silhouette, visible from both the city and the forest. The tower is as much a part of the horizon as the trees that surround it.

Tryvannstårnet has through its 150 years of existence become a multifaceted monument. As a technological monument, the tower is a symbol of how Norway was linked together through radio and television and became a modern society. As a cultural monument, the tower has played an important role in telling the story of Oslo city’s strong relationship with Oslomarka; the 310 km² forested park surrounding the city. Over the last century, Oslomarka has been carefully cultivated into a popular recreational area as well as an important industrial resource, defining the nature of Oslomarka as a part of our culture. These two apparent opposites, the technological tower and the observational tower in the landscape, in many ways describe the city of Oslo, where urbanity and technology are tightly linked with the forest as a recreational and industrial area. With this in mind, Tryvannstårnet has become a great symbol for the city of Oslo.

Tryvannstårnet stands in a long line of infrastructural architecture constructed during the years after the second world war. As with many of its equals, constructional longevity has resulted in Tryvannstårnet outliving its initial program. Due to receding public interest and new fire regulations demanding extensive and costly work, the public viewing platform offering Oslo’s undoubtedly best view was closed in 2005. With new technology, the tower was finally decommissioned in 2017. This raises the question of optimal management of cultural heritage like Tryvannstårnet, a building whose construction has outlived its program. One could ask if different approaches are needed regarding protection of industrial and infrastructural architecture in contrast to more classical examples of our cultural heritage such as the Stave Churches.



*Tryvannstårnet, unknown date
Unknown fotografer, Norwegian museum of science and technology*

Viewing Tryvannstårnet as an important part of Norwegian cultural heritage and therefore worth preserving is not necessarily a self-evident conclusion. The discussion regarding what to do with the tower has been ongoing since its decommission in 2017. Opinions are divided between tearing it down and building a new tower, preserving it or selling it. In 2021 Oslo municipality listed the tower as worthy of protection, establishing its importance as a modern monument, however not securing it against destruction. At the same time, authorities have recommended that the tower should be sold to private investors. With the prospect of private ownership, the future of Tryvannstårnet holds numerous opportunities.



As a main design element of The Norwegian Broadcasting Corporations (NRK) during the 70's and 80's, the tower proclaimed its importance in delivering radio and television to every Norwegian home.
Unknown date
NRK

Hypotheses and Aims

This thesis endeavors to reactivate the functional and symbolic machinery of Tryvannstårnet in a modern perspective to again serve the public. This will be carried out by focusing on the technological and cultural history of the tower.

Hypotheses

The technological and cultural history of Tryvannstårnet can be a fundament for future use and purpose.

Tryvannstårnet is a modern monument and can again serve the public.

Aims

To uncover the history of the tower through archival research by mapping out its impact and function on a national and local scale, as well as analyzing and understanding its relationship to the landscape in the past and present.

To fulfill current fire regulations in the tower, thus enabling public use and at the same time maintaining the integrity of the monument.

To render the vast underground facility and thus facilitating a new modern program for the tower based on its technological and cultural history.

Methods

To achieve the aims of this thesis and thus enlightening the hypotheses, a set of methods were used. As a backbone to achieve thorough understanding of the tower in a past and present context, extensive archival research has been an integral part of the investigation. Thereby uncovering the history of the tower and mapping out its impact and function on a national and local scale, as well as analyzing and understanding its relationship to the surrounding landscape.

Construction of the models has enabled creation of an index of the monument and thus provided a vast base of knowledge about the tower as a whole as well as its components. Further, mapping and testing the possibilities of interventions was carried out with emphasis on avoiding disruption of the integrity of the monument.



*Construction, 05.05.1961
Knudsens Fotosenter, Norwegian museum of science and technology*

Results and Architectural Program

The history of Tryvannstårnet tells the story of an infrastructural machinery closely connected to nature; similar to Oslo city's strong connection with Oslomarka. In its golden years, the tower's most important role was in developing Norway's broadcasting infrastructure as the lead protagonist in a network of main transmitters. As with all great works of technology, the tower lost its grandeur and relevance. By the end, what was left was a tower without purpose, an obsolete monument.

The tower standing today is the fourth generation of Tryvannstårnet. Thomas Heftye, the founder of The Norwegian tourist association (DNT), built the first Tryvannstårn in 1867. With an observation tower on the top of Oslo, he intended to draw people from the city into the wilderness of Nordmarka. When Tryvannstårnet was entrusted to the municipality of Oslo, it came with a clause that the property would always be regulated for public outdoor activities.

Like the follies of the highly curated English and French 18th century gardens, Tryvannstårnet has in many ways become a folly in the forest. An object of decoration hinting at a purpose it does not possess. As an object or a landmark to observe, the tower plays an important role on the nexus between city and forest. A symbol connecting the two together. Its presence is enhanced by the forest that surrounds it. However, originally Tryvannstårnet was not only a folly to observe in the landscape, with its viewpoint, it was also a place to observe the landscape.

The concept of Tryvannstårnet as a monument of duality between technology and nature has been a driving factor in the effort to open and repurpose Tryvannstårnet to the public, both to restore the best view in Oslo, as well as to utilize the underground facilities. As the monument bears importance not only as a watch tower, but also as a symbol of Oslo and



*Tryvannstårnet, unknown date
Unknown photographer, Norwegian museum of science and technology*

Norway, preserving the integrity of the tower's facade and silhouette has been a key challenge due to the fire regulations demanding two individual fire escapes.

Movement is a key factor in the experience of Osloomarka. By foot, ski or bicycles the inhabitants of Oslo use a network of roads and trails spanning thousands of kilometers. This network is both a part of the industrial infrastructure as well as a means of recreational experience. In approaching the task of opening Tryvannstårnet, a similar concept has been the idea. By looking at the facility of Tryvannstårnet as an extension of Osloomarka, letting the public experience the different architectural qualities of the tower as a curated route. Every part of the path is a unique experience. By creating two paths of movement; horizontally through the underground facilities and vertically up and down the tower, this way of moving through the tower reflects the ascending and descending movement through the surrounding forest as well as recreating the incomparable 360 degree view from the viewing platform. Multiple comparable examples worldwide show that such viewpoints tend to attract people, stating a primal need to observe the evolving landscape from a birds eye view.

In light of these two axis of movement, this thesis explored the possibilities in transitioning movement from the surrounding landscape to movement within the tower, letting the public again experience the tower and previously inaccessible areas in the underground facilities.

In order to fulfill current fire regulations in the tower, thus enabling public use and at the same time maintaining the integrity of the monument, the tower with its one spiral staircase and elevator had to be recreated into two fire escapes, each an individual firecell. Taking inspiration from the third generation of Tryvannstårnet, a double helix staircase was designed inside the tower cone in order to maintain the integrity of the iconic facade and silhouette. By creating each



*Tryvannstårnet, unknown date
Unknown fotografer, Norwegian museum of science and technology*

path as an individual fire cell, two unique paths for ascending and descending the tower were established. Ascending the tower, one moves through an enclosed space in stark contrast to the open space at the top. In the ascending path, the tower provides two small glimpses; one of the city and one of the forest - a reference to the tower's link with city and forest and the view to come. Descending the tower, one moves through a space spanning from 64 meters above ground to 30 meters below ground. This provides a new and unique experience of the vast dimensions of the tower.

From the middle of the tower, you exit the tower cone and enter the tower house. Like climbing a mountain peak through the fog, the opaque corrugated fiberglass cladding gives a unique and changing lighting experience throughout the day. Comparable with climbing a misty mountain, the light will hint at what lays ahead, but only the top will reveal the view of the landscape.

At the apex of the tower the main attraction is revealed: A 360 degrees view of 30 000 km² of landscape. On clear days one can see all the way to Gaustatoppen (110 km) in the east and all the way to the Swedish border (80 km) in the west. On the three top floors, the old staircase inside the tower cone is kept as a fire escape and memento of the past. A new staircase is added as a primary means of communication between the indoor and outdoor viewing platforms.

As a means to render the vast underground facility and thus facilitating a new modern program for the tower based on its technological and cultural history, a pathway enabling movement through the facility had to be created. The pathway can also be viewed as an extension of the landscape, an axis between city and forest. Inspired by the original service tunnel, similar techniques were applied to create a transition between landscape and the underground facility, thus giving the user an experience of moving through the earth crust and bedrock.

In light of the likely future sale to private investors, the focus of this thesis has been on making the whole facility of Tryvannstårnet better equipped for a new purpose. This was



Construction started by digging a 30 meter deep hole for the concrete foundation.
Construction, 19.10.1959
Knudsens Fotosenter, Norwegian museum of science and technology

achieved through creating new ways of movement through the facility, both vertically and horizontally, both fulfilling fire regulations and strengthening the monuments dual connection with technology and nature. Though perhaps not the mandate of the architect to define a program of the new tower, the programmatic approach could have a strong basis in the history of the tower, where key actors like DNT, SkiforeningenTM and The Norwegian museum of Science and Technology potentially could operate Tryvannstårnet.



*Photos for the Norwegian Review of Architecture nr. 1 1963 August 1959
Bjørn Winsnes, Norwegian national museum*

Tryvannstårnet

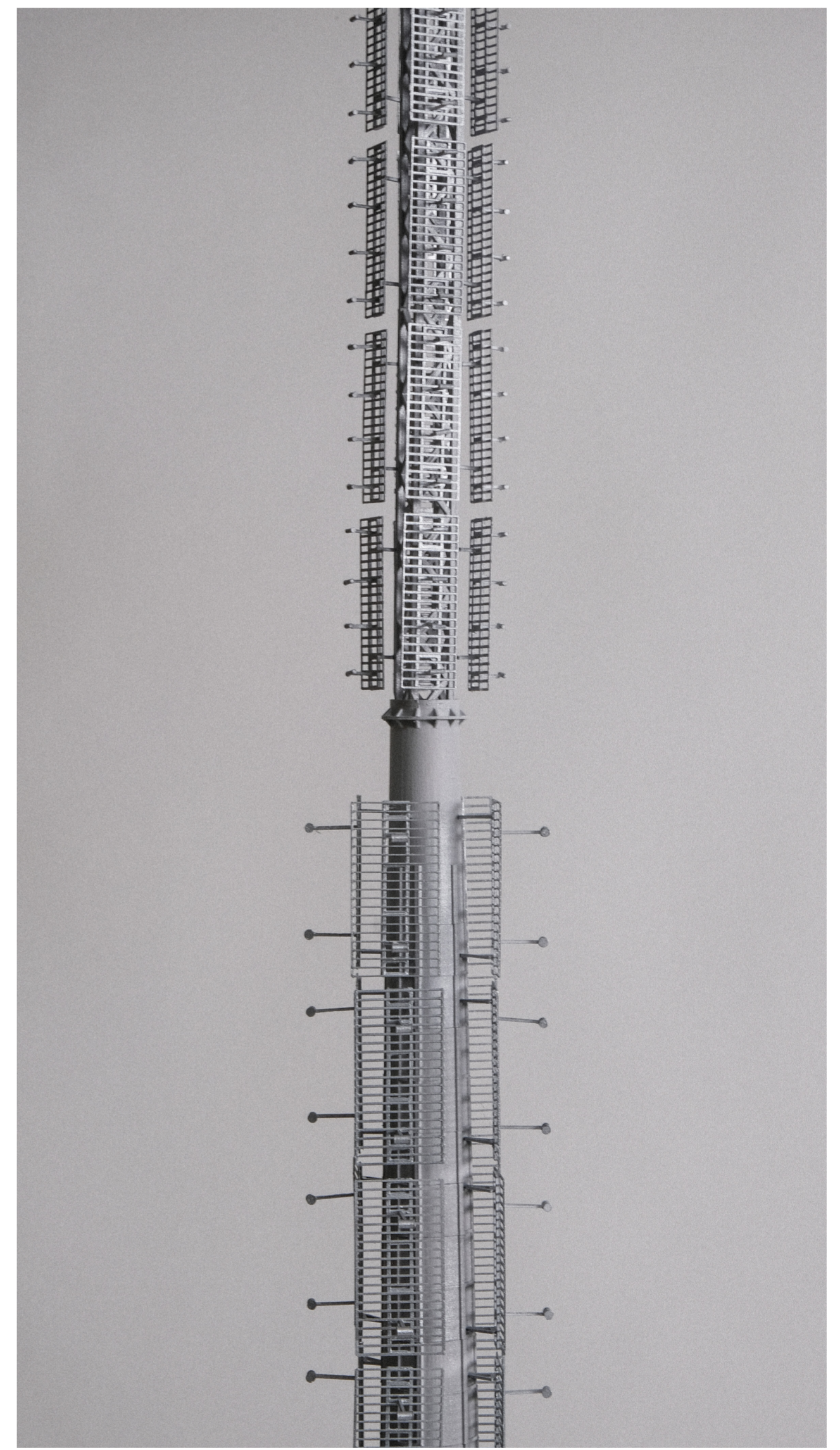
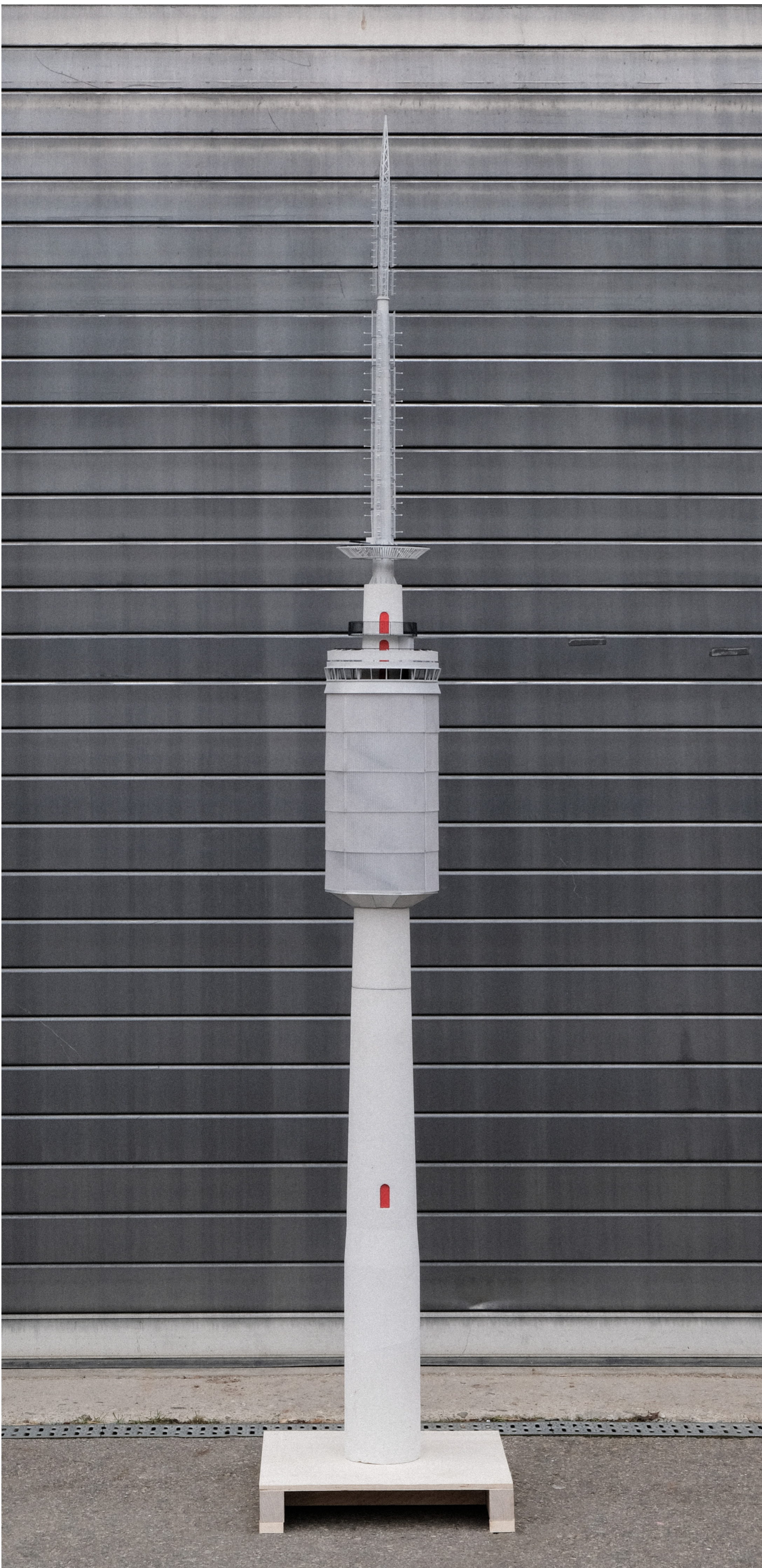
Ascending / Descending



Tryvannstårnet: The Folly in the Forest

Drawing: Elevation

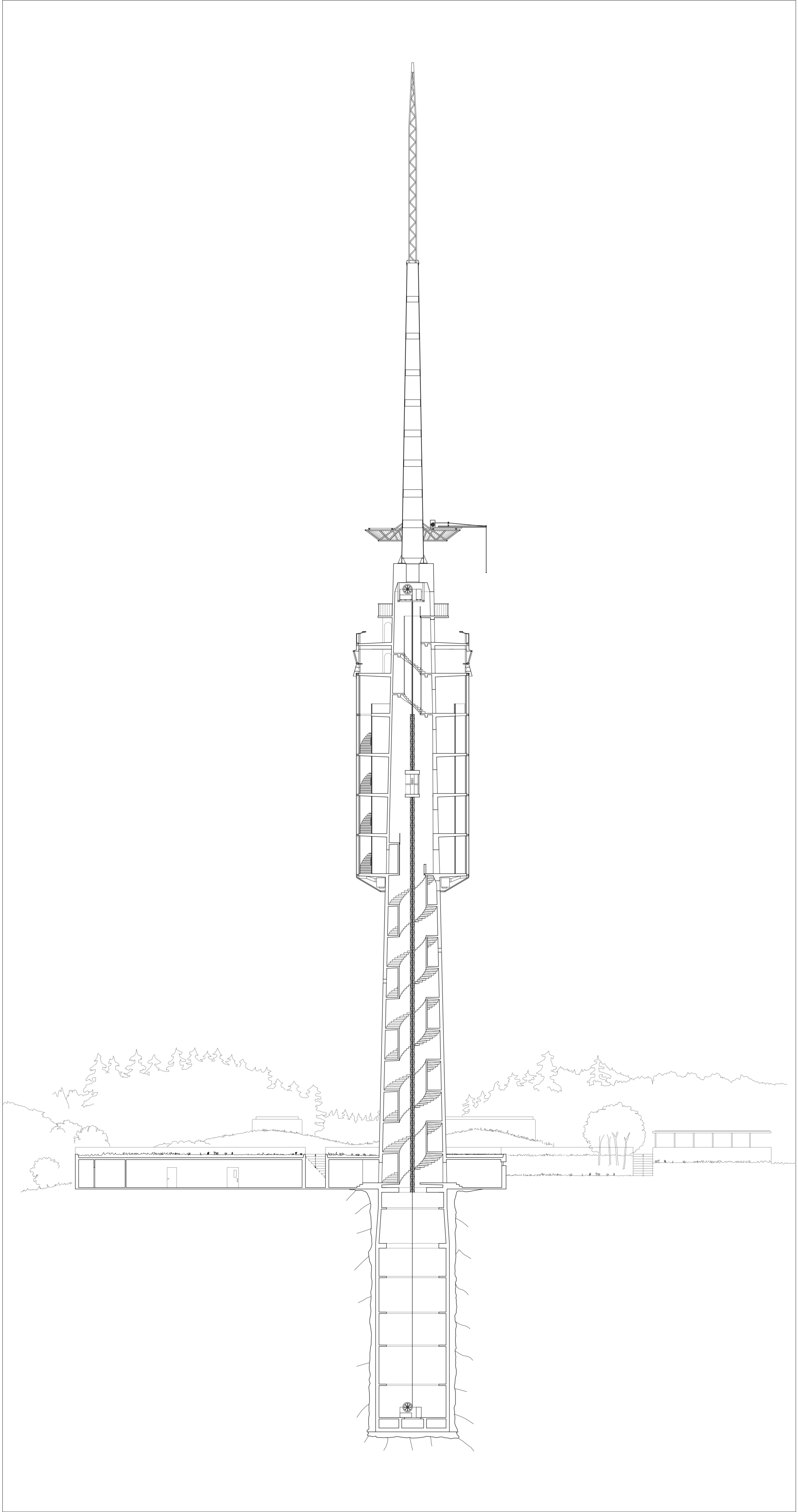
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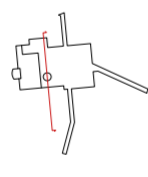


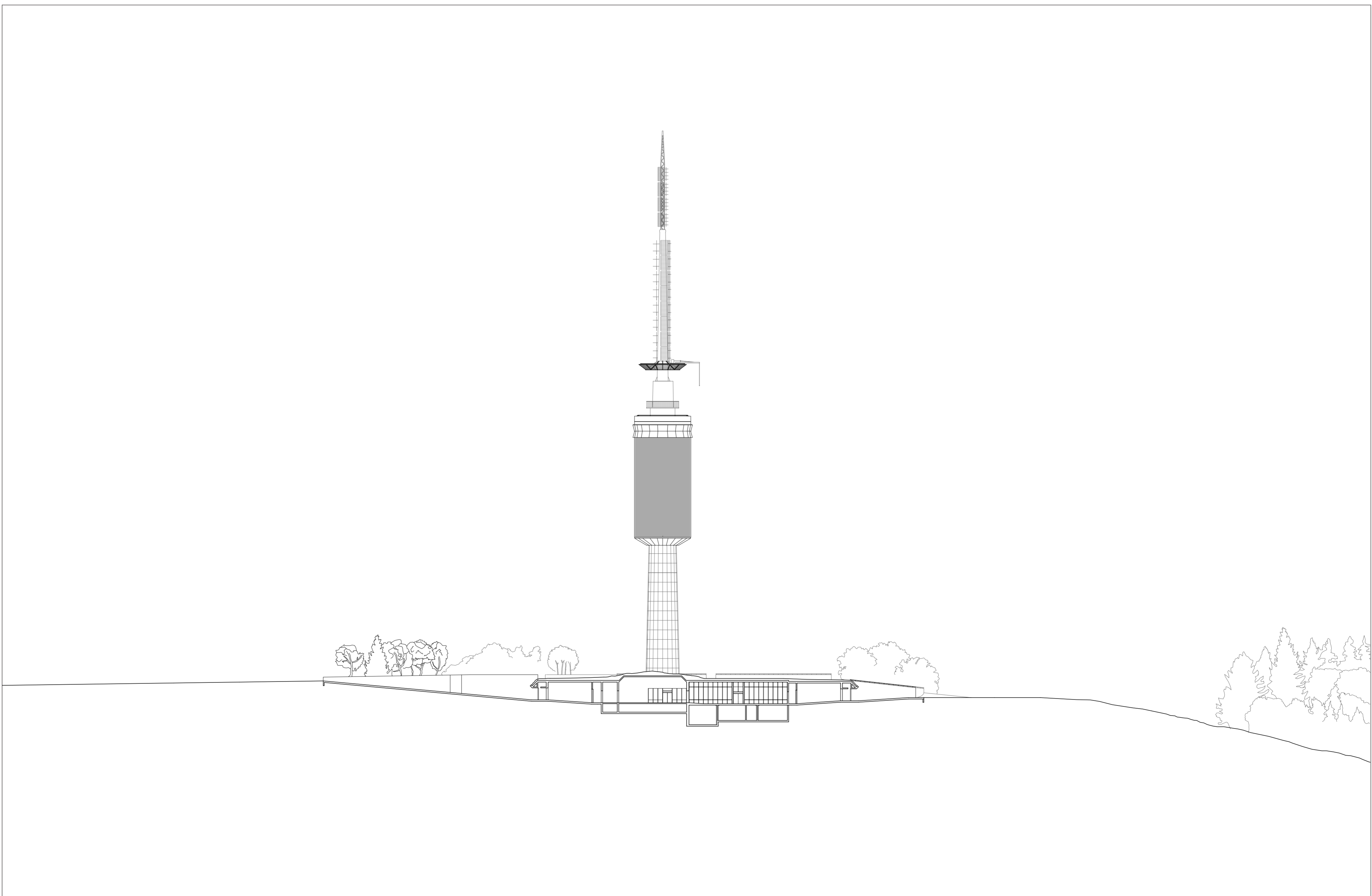
Tryvannstårnet: The Obsolete Monument

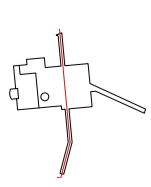
Model: Index of the Monument

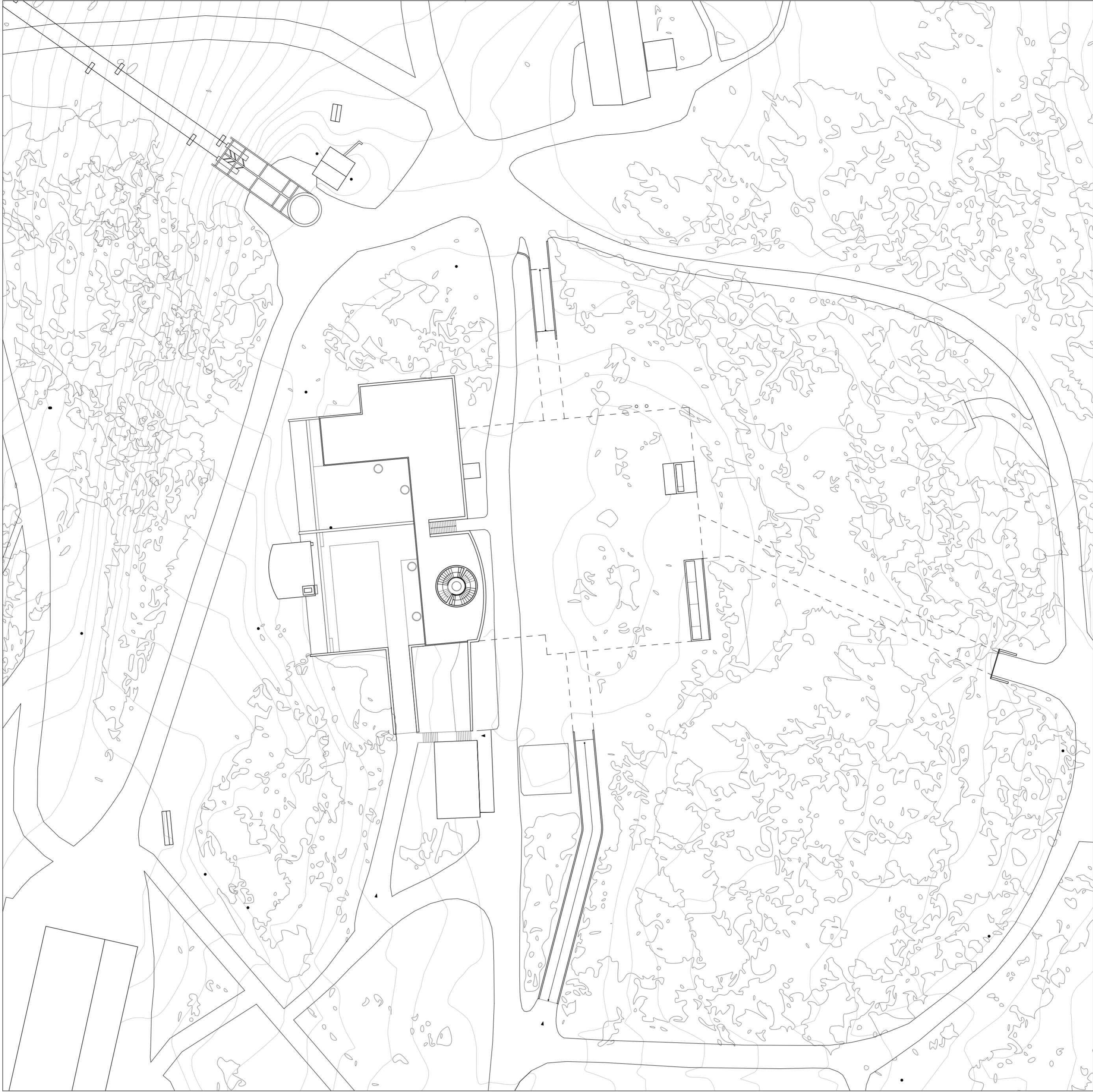
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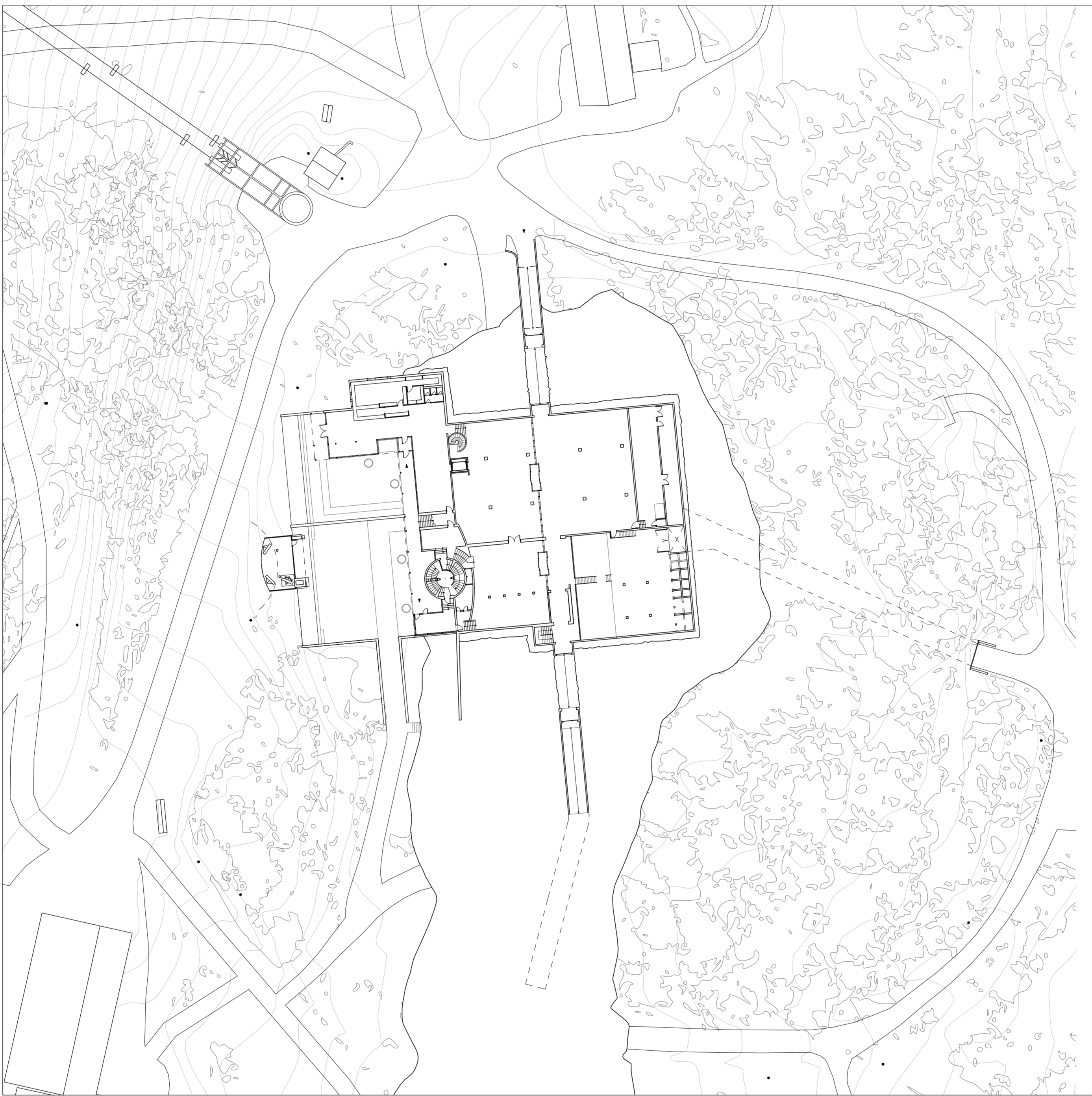
 **Tryvannstårnet: The Vertical**
Drawing: Section AA
Scale: 1:200



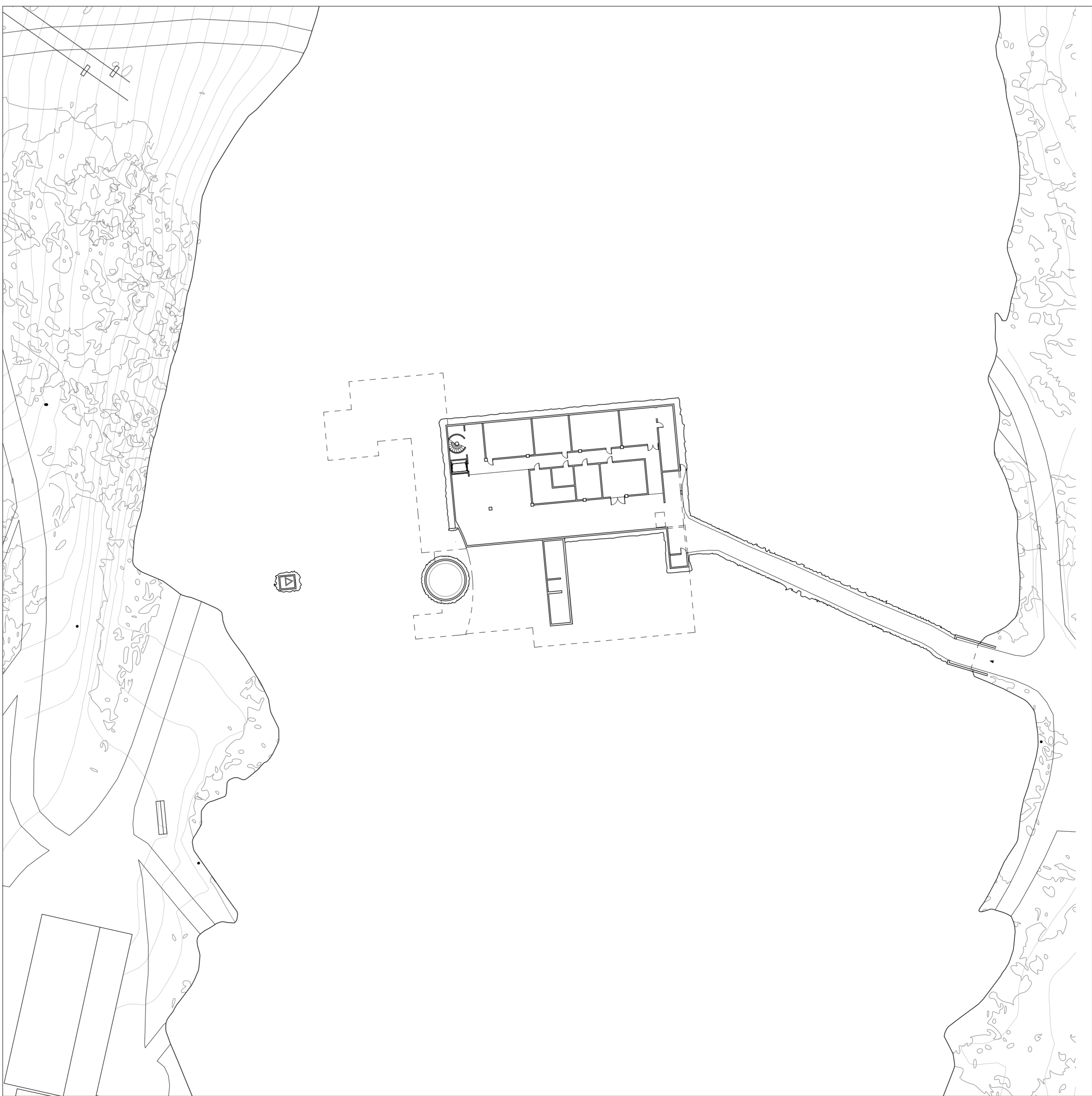
 **Tryvannstårnet: The Horizontal**
Drawing: Section BB
Scale: 1:500



Tryvannstårnet: The Horizontal
Drawing: Plan .2
Scale: 1:500



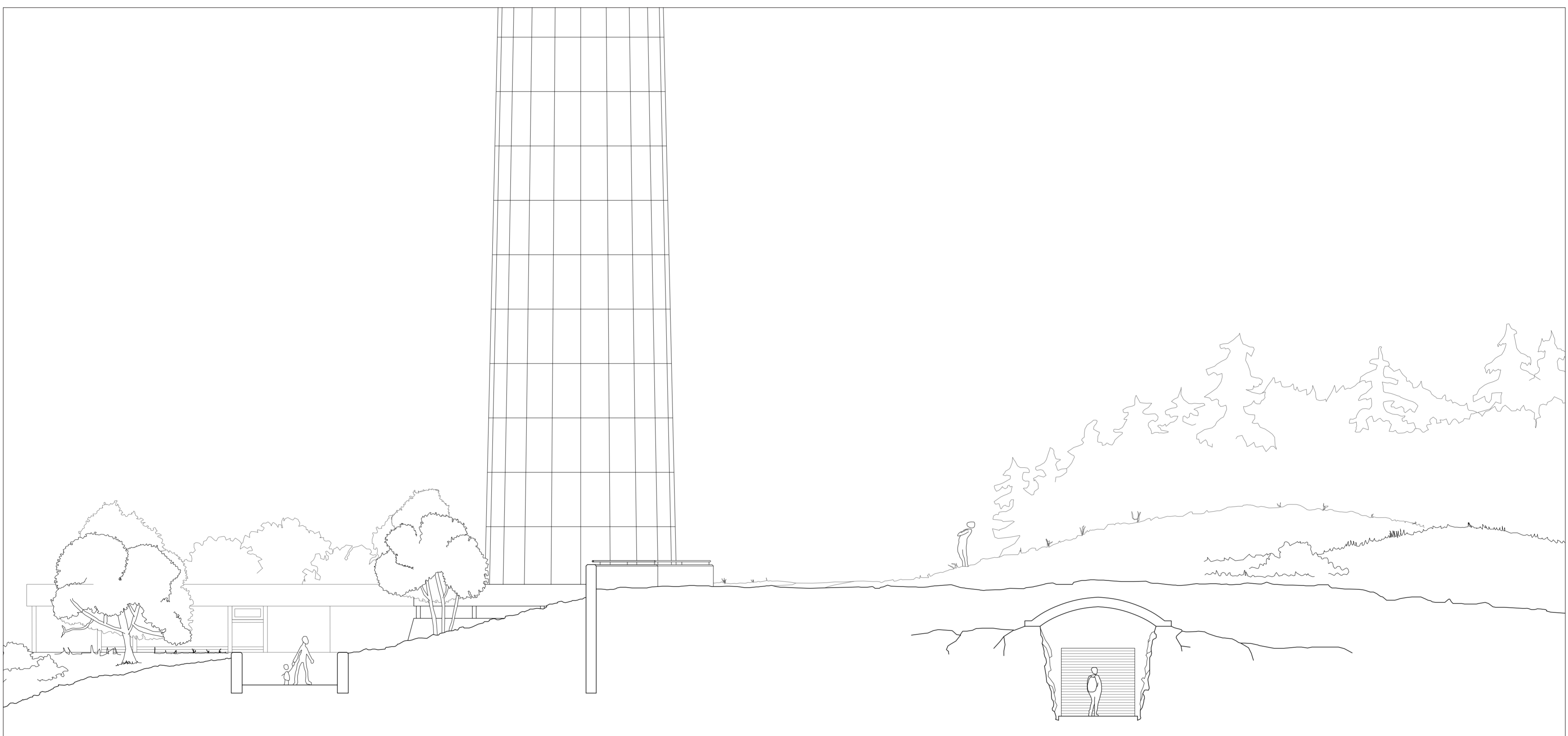
Tryvannstårnet: The Horizontal
Drawing: Plan .1
Scale: 1:500



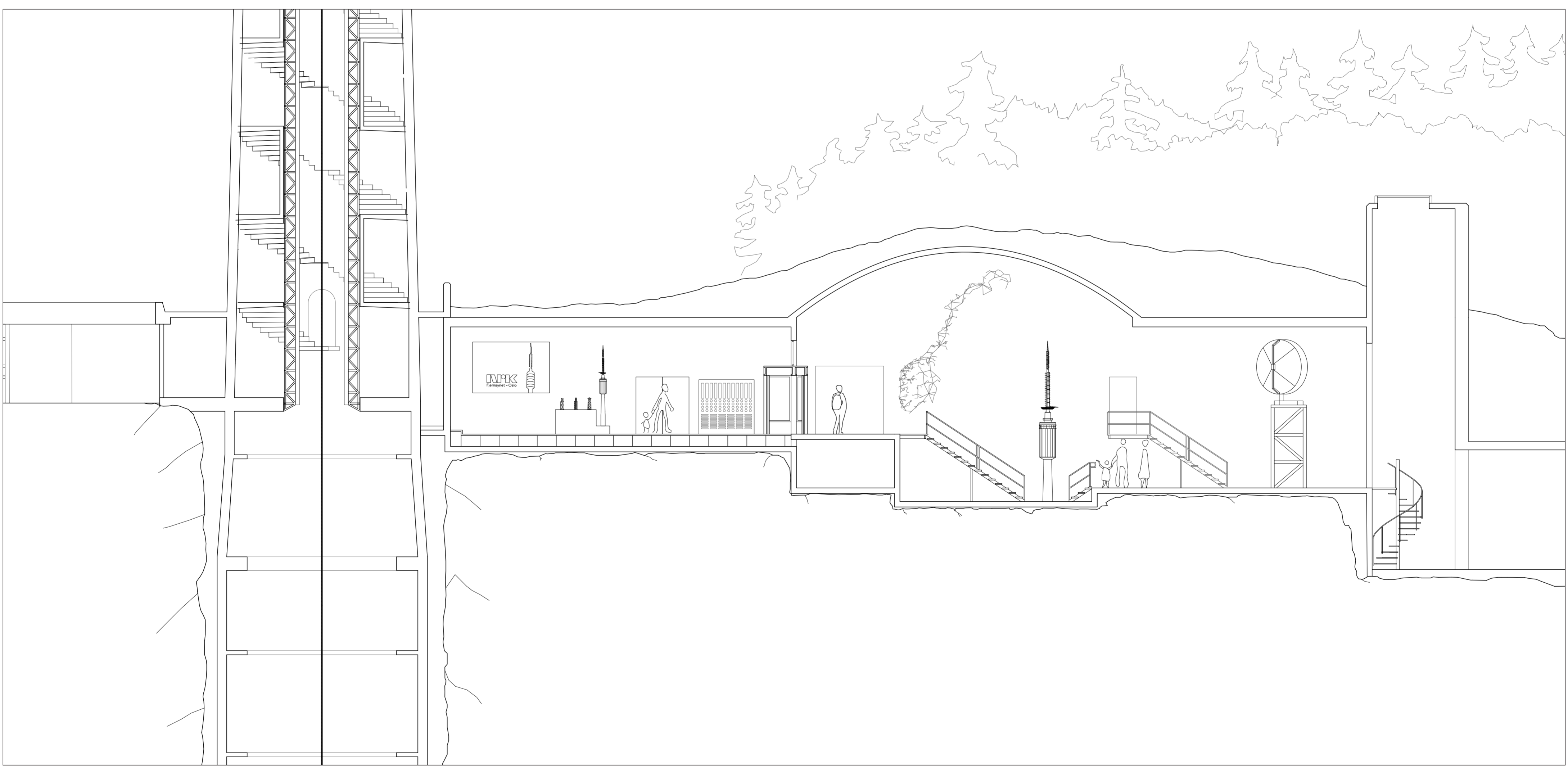
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Drawing: Plan -.1
Scale: 1:500



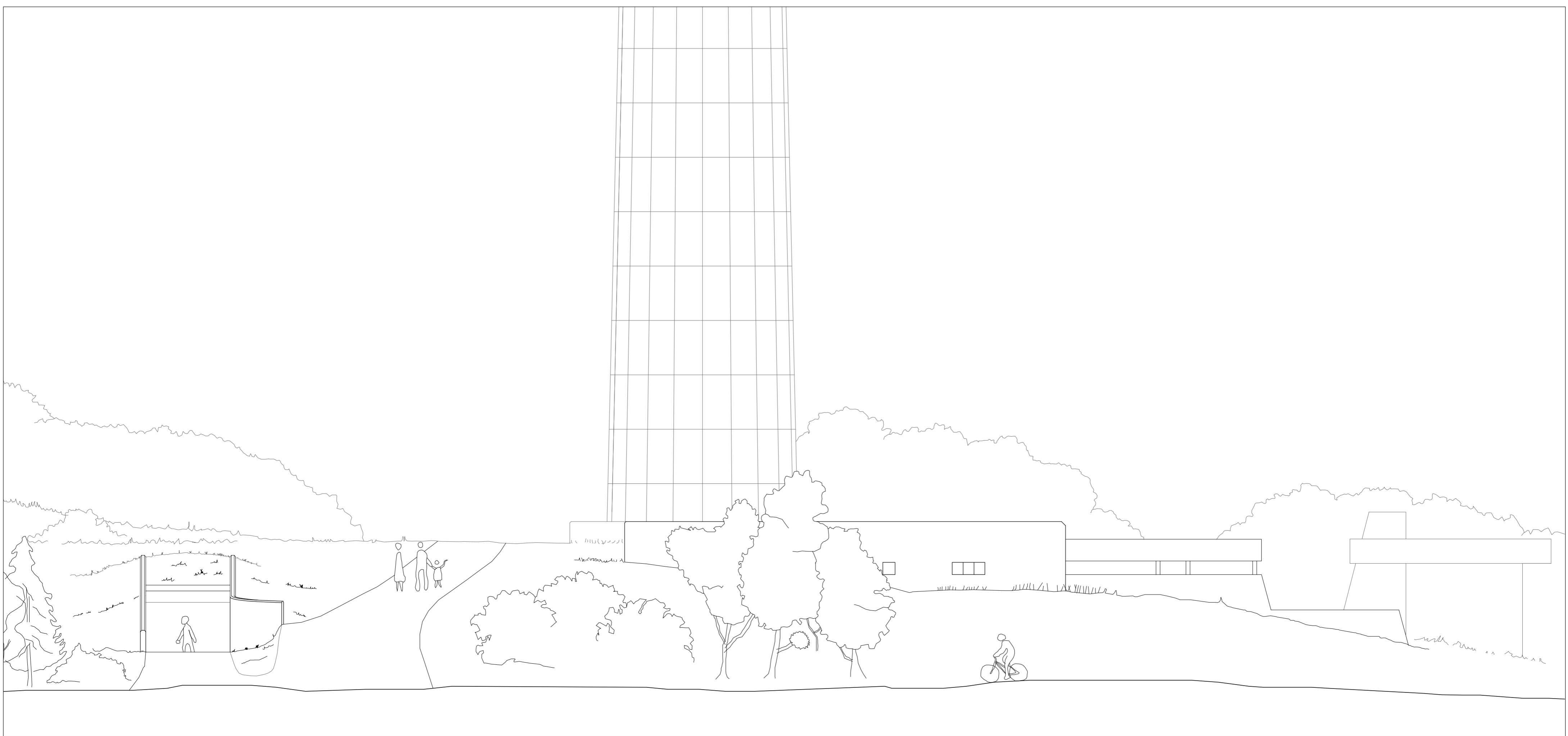
Tryvanstårnet: The Horizontal
 Drawing: Section CC
 Scale: 1:100



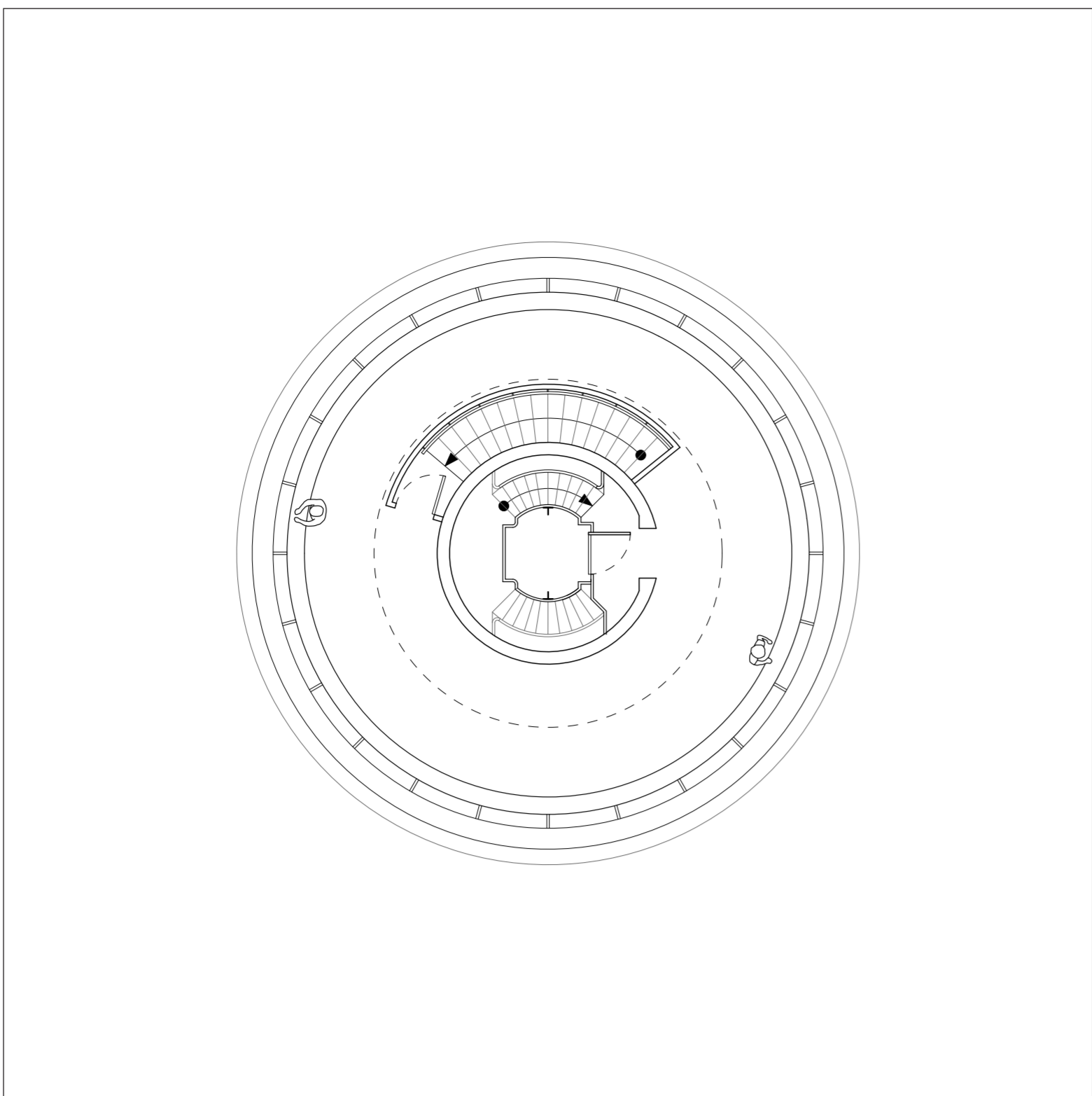
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 Drawing: Section DD
 Scale: 1:100



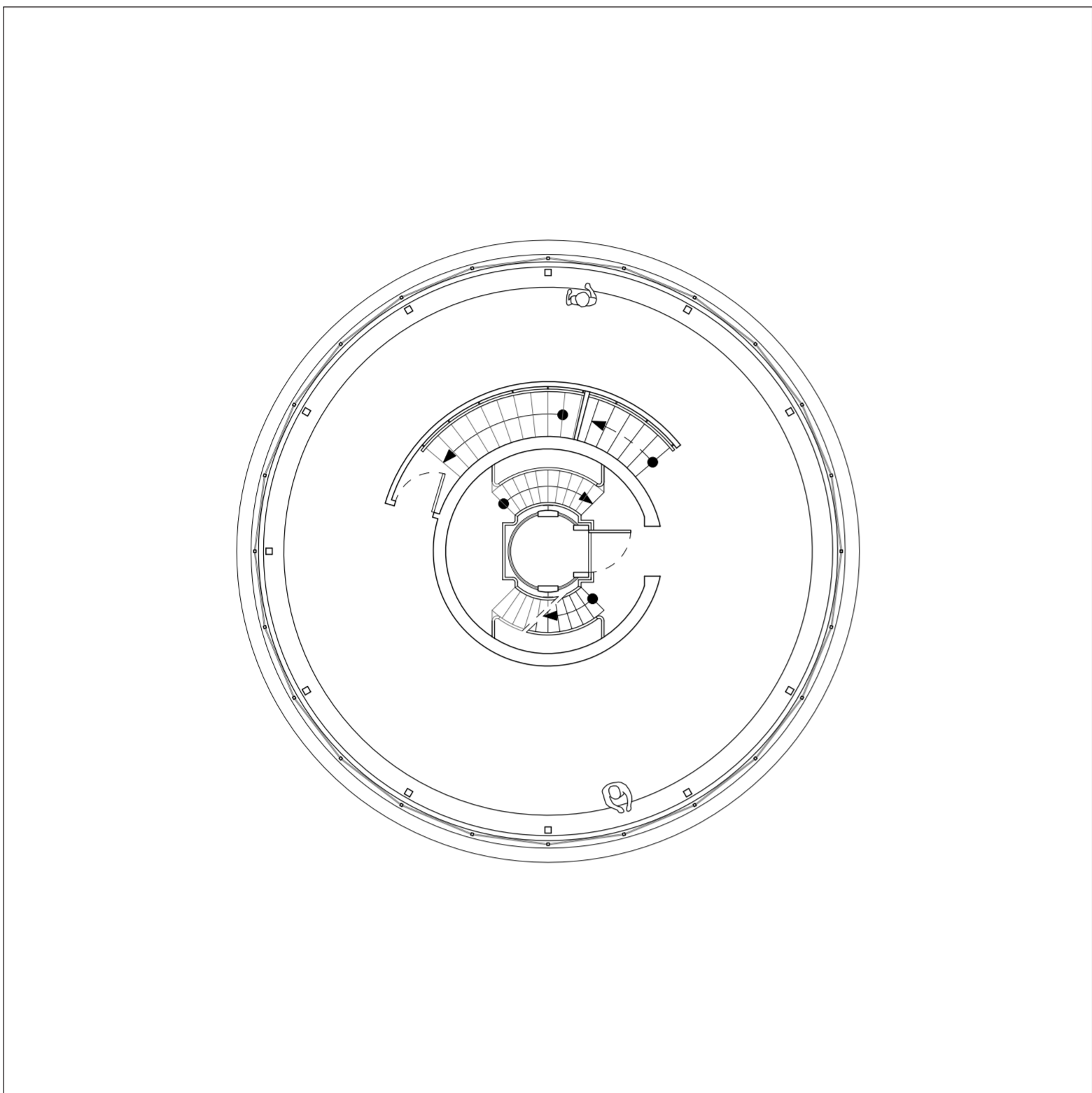
Tryvanstårnet: The Horizontal
 Drawing: Section EE
 Scale: 1:100



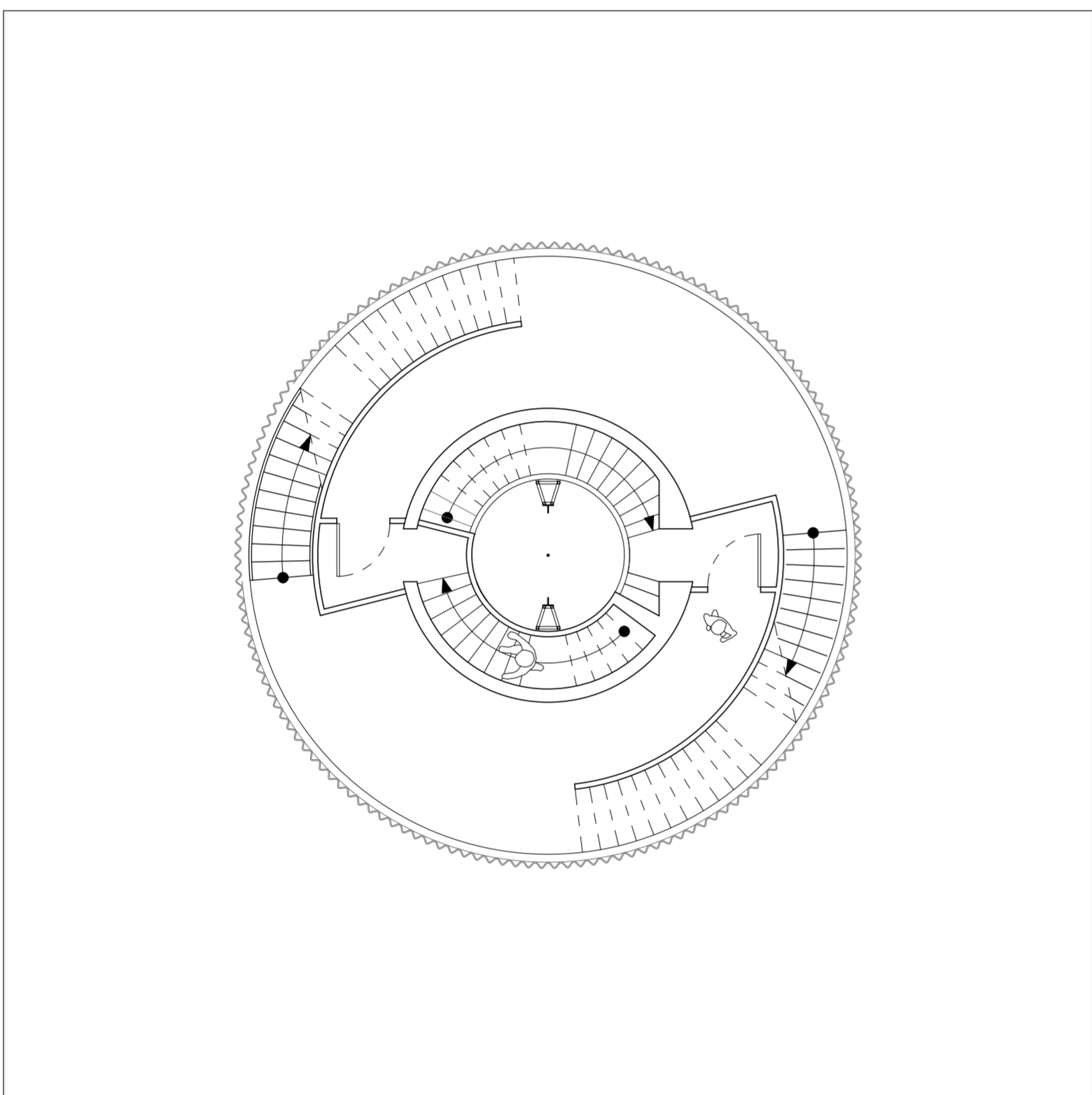
Tryvanstårnet: The Horizontal
 Drawing: Elevation AA
 Scale: 1:100



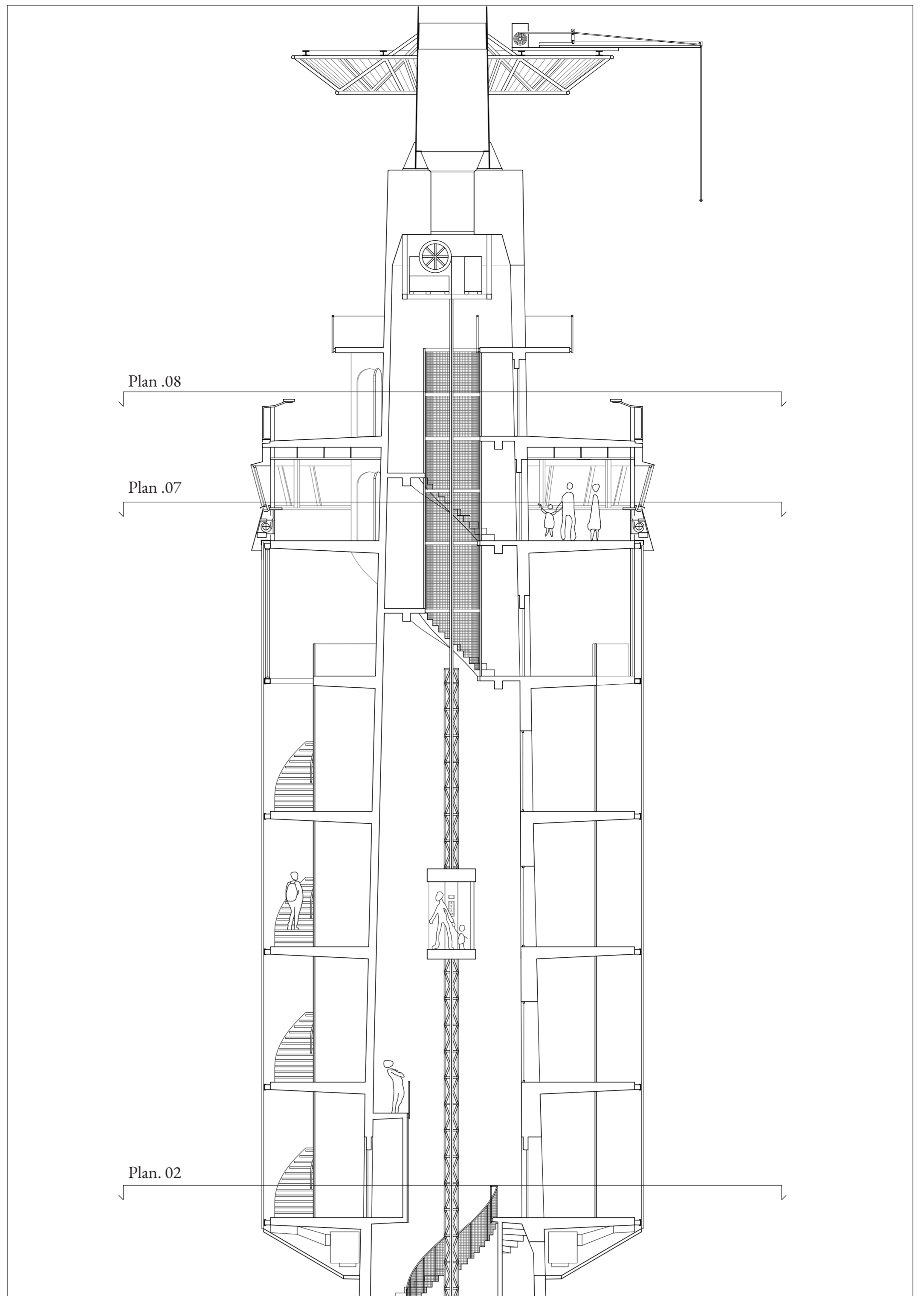
Tryvannstårnet: The Vertical
 Drawing: Plan.08 / Outdoor viewing platform
 Scale: 1:100



Tryvannstårnet: The Vertical
 Drawing: Plan.07 / Indoor viewing platform
 Scale: 1:100



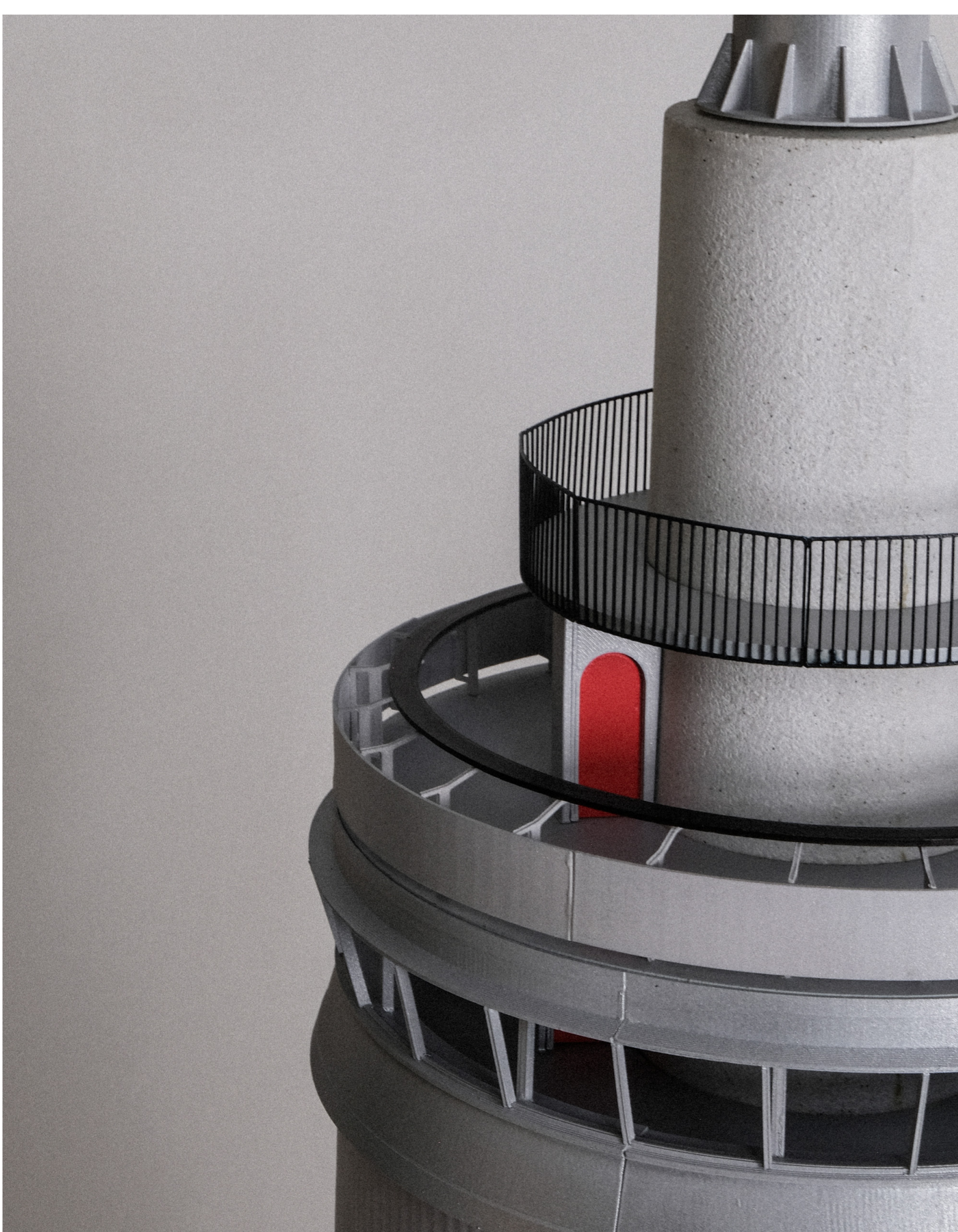
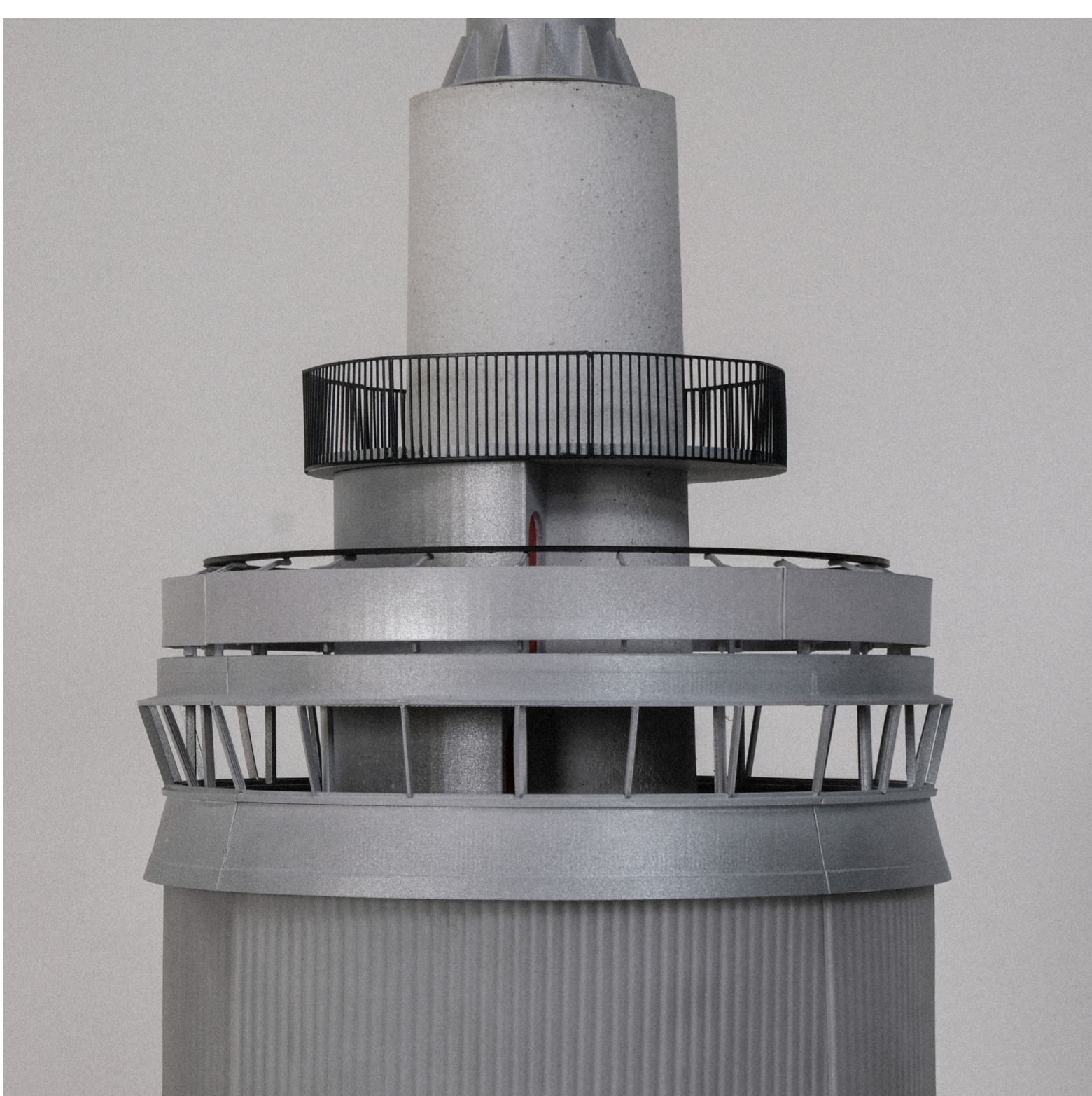
Tryvannstårnet: The Vertical
 Drawing: Plan.02 / Tower house
 Scale: 1:100



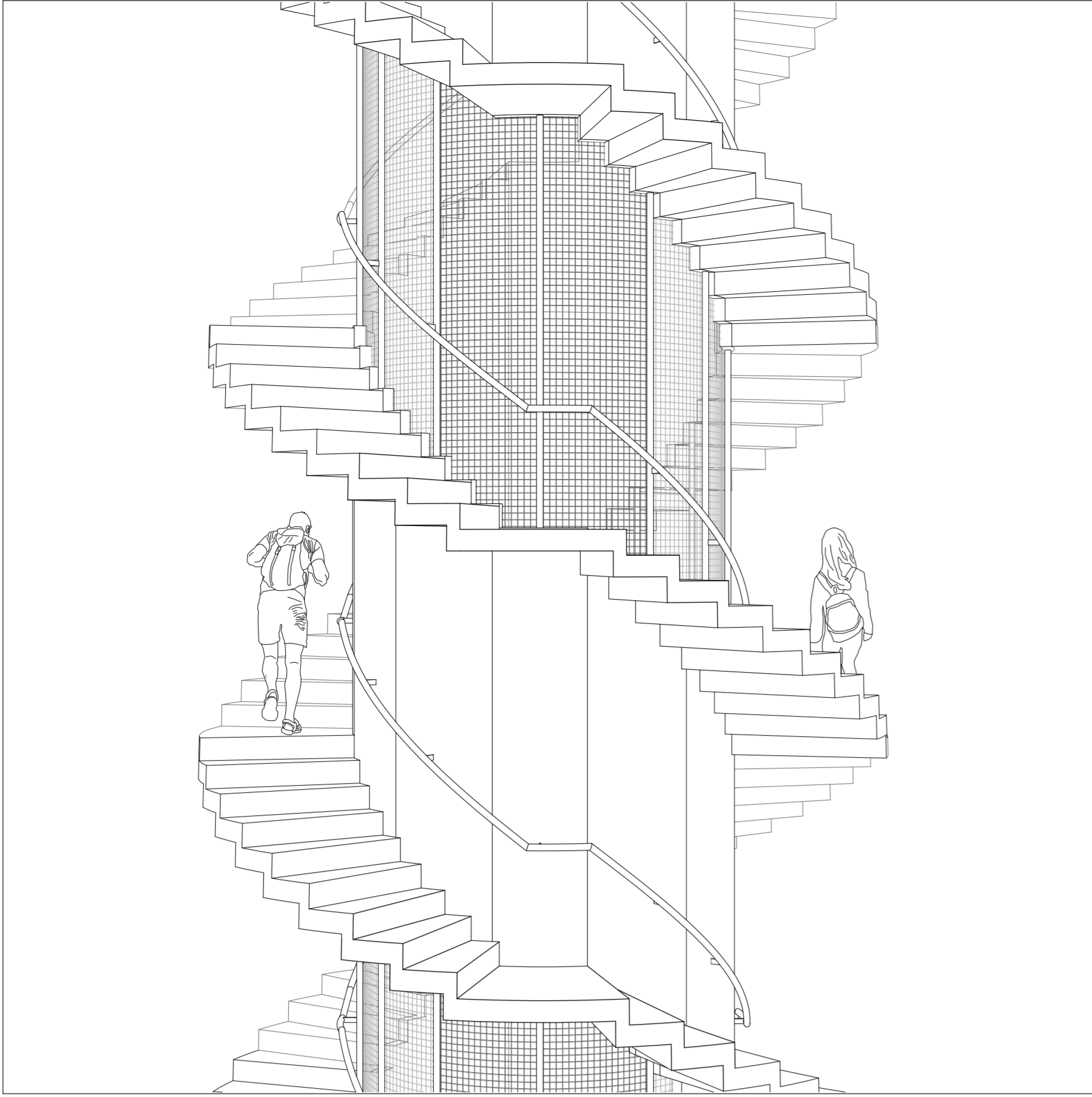
Tryvannstårnet: The Vertical
 Drawing: Section / Tower house
 Scale: 1:100



Tryvannstårnet: The Vertical
 Illustration: The Towerhouse



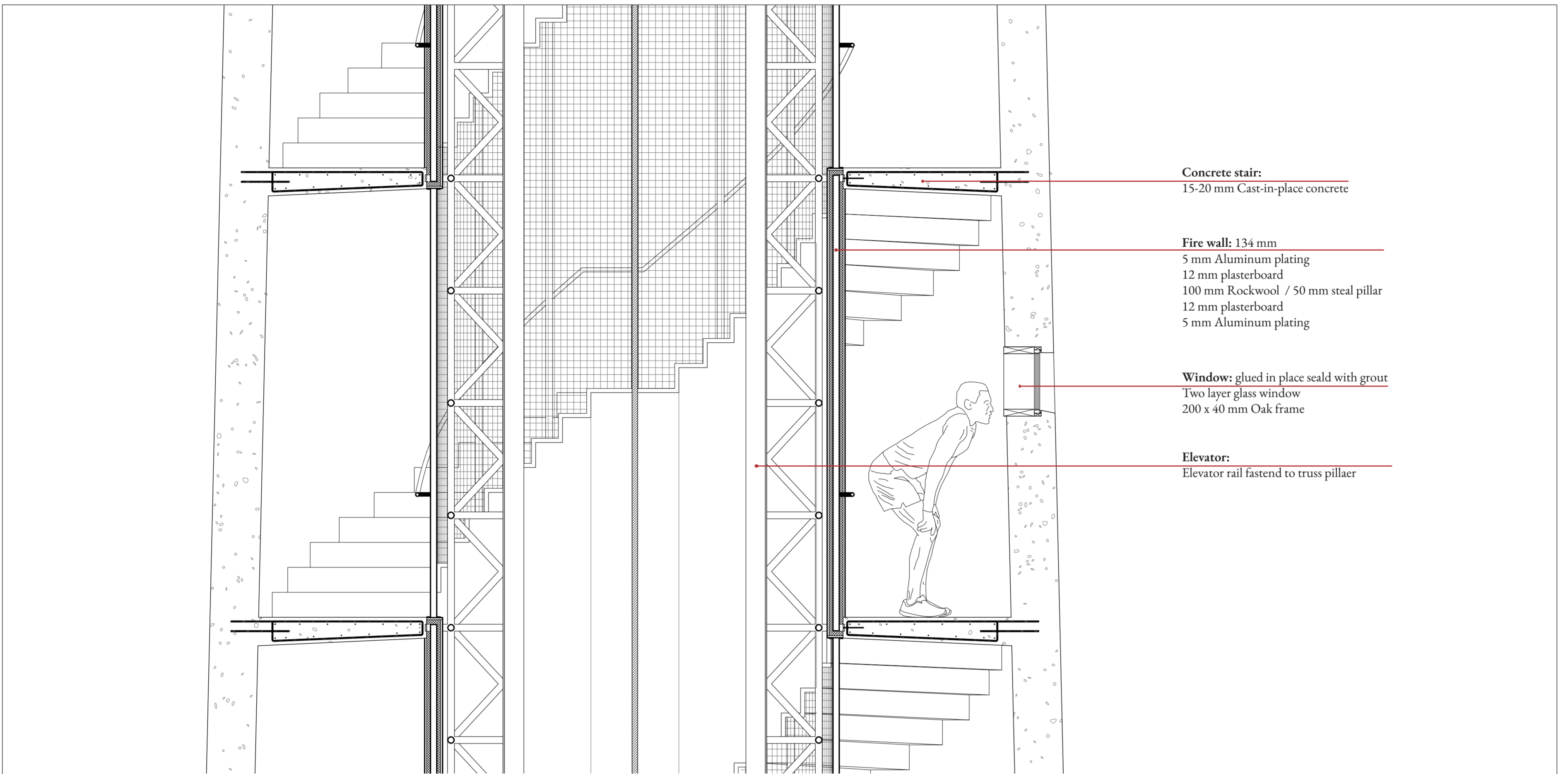
Tryvannstårnet
 Model: The View
 Scale: 1:50



Tryvannstårnet: The Vertical
Drawing: Perspectiv



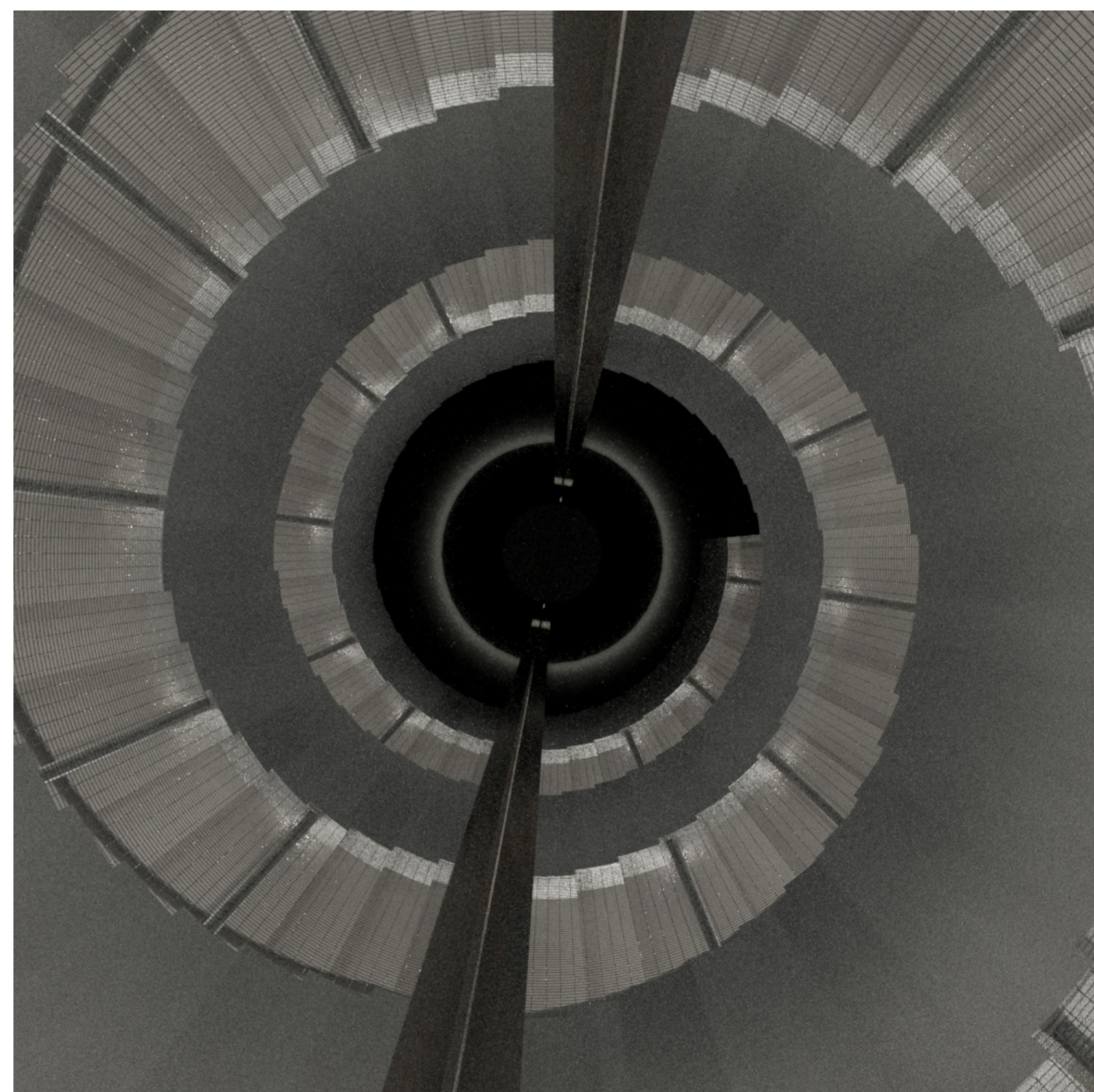
Tryvannstårnet
Model: The Cone meets House
Scale: 1:50



Tryvannstårnet: The vertical
Drawing: Detail section
Scale: 1:20



Tryvannstårnet: The Vertical
Illustration: Ascending



Tryvannstårnet: The Vertical
Illustration: Ascending / Descending



Tryvannstårnet: The Vertical
Illustration: Descending