

ABSTRACT



The use of architecture as a transformation tool can barely do that job if no intervention is permitted to take place. Sometimes it is right to gently touch or leave unmarked, but sometimes it is necessary to expose in order to preserve.

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INTRODUCTION

The transformation of an existing structure in order to find the balance between old and new is challenging. One wants to respect the old and create a cohesive design that introduces the new. It is also a challenge to balance the respect for a structure with necessary design interventions. The following project is a documentation of an approach at transforming the old into new.



THE PROJECT

The Southern West Virginia Coal Miner's Museum is located in Thurmond, West Virginia. It is a place to preserve the stories of coal miners and their families, and the heritage of West Virginia with photographs, news stories, dairy entries, oral histories, and artifacts. The museum is placed within a coaling tower built by the Chesapeake & Ohio Railroad in 1922, in such a way that the remaining structure is not just a shell for the exhibits, but an exhibit piece itself.



Thurmond is an abandoned Chesapeake& Ohio railroading town located in the heart of the New River Gorge of Southern West Virginia. It is sandwiched on a sliver of level ground between the New River and Beury Mountain (elevation 1840ft) with railroad tracks running through the center, serving as the main street of the town. Thurmond was once the largest revenue center for the C&O railroad and the busiest commercial and social hub in the New River Gorge, over 75,000 people passed annually through its small train depot. Today only a handful of commercial structures and homes remain, including the train depot and the C&O coaling tower and sanding house, which serve as quiet reminders of the life that once filled the valley.

HISTORY OF THURMOND, WEST VIRGINIA

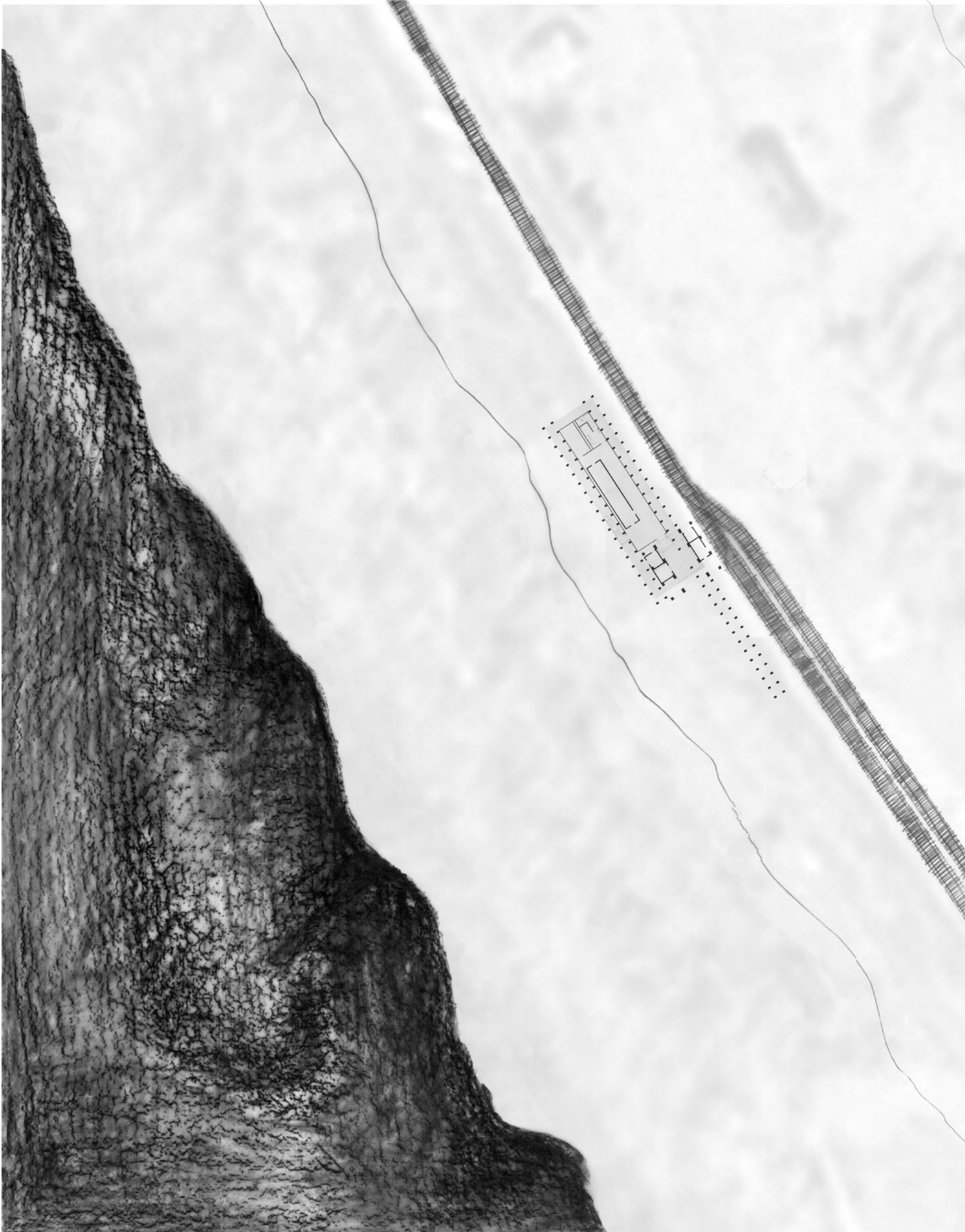


Like most towns of the New River Gorge, Thurmond came into being with the completion of the C&O railroad through the Gorge in 1873. The town remained a mere passage for the C&O until 1889, when the construction of a railroad bridge connected branch rail lines and coal mines across the New River. Shortly after the completion of the bridge, C&O began investing into Thurmond, establishing a train depot and an impressive rail yard consisting of machine houses, maintenance shops, a turnaround, and an automated coaling station and sanding house. Over the next few decades Thurmond grew to be the major coal shipping point on the C&O. By 1910 Thurmond was reaping twice the freight and revenue of Cincinnati, Ohio and Richmond, Virginia combined. That same year the train depot handled over 75,000 people. Most of the passengers stopping in Thurmond were there for business or a good time. Along with the massive boom of railroading success was a swell of commercial businesses and entertainment services. Not only was this town one of the biggest coaling and railroading centers, it was also the largest social city in Southern West Virginia.

However, at the time Thurmond was reaching its economic peak, it would also begin its slow demise. The completion of the Virginia Railway in 1909 into Fayette County was the first evidence of decline, as competition against the C&O increased. Soon after, the Prohibition in 1914 wiped out the town's largest attraction, along with several businesses and employment. Town revenue and population continued to decrease as coal towns north of Thurmond exhausted all of their natural resources and relocated to un-harvested areas along the New River. The most damaging events to Thurmond were the fires that destroyed almost all of the homes and businesses over the years. Each fire left Thurmond with one less economic stronghold and a decreasing population, as businesses were never rebuilt due to dwindling prosperity, and residences relocated to other coal communities or growing towns such as Beckley and Oak Hill, West Virginia. By the 1940s the only industry left in Thurmond was the C&O railroad, which kept the town going for another decade. C&O had so much invested in the town with buildings, equipment, and employees that the C&O continued to make stops for fuel and water. However, the advancement of diesel engines soon made a stop at Thurmond obsolete and the C&O eventually stopped all operations and closed the train depot.

For several decades, Thurmond appeared to be another New River 'ghost town' until the white water rafting industry boomed in Southern West Virginia, bringing thousands of tourists through Thurmond. In 1990 the National Park Service declared the river a National Scenic River and soon after purchased all available land in and surrounding Thurmond. The intent was for Thurmond to be fully restored as an educational project to demonstrate what life in an early 20th century railroading town was like. Slowly, the National Park Service has saved several remaining houses and restored the Thurmond Train Depot, now in use as a visitor's center and small railroad museum. The NPS had plans of continuing renovations north along the train tracks to the large engine house with the idea of it becoming a museum; however the engine house was destroyed by fire in 2000.





SITE

The project site is located on this sliver of land between the C&O railroad tracks and the New River, where the coaling station tower and sanding house remain. You approach the project by crossing over a long one lane bridge to a public parking in front of the train depot 1200' from the coal tower. As you walk to the site you are received by a long ramp reaching out from under the coal tower that brings you into the project.

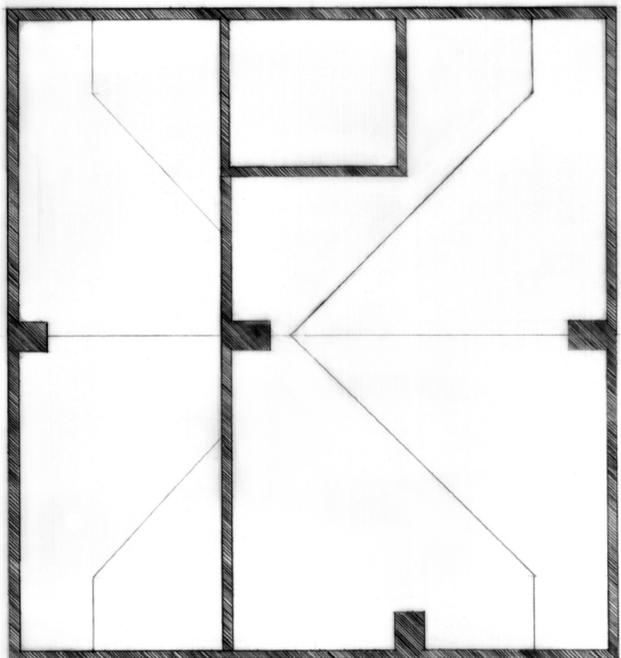
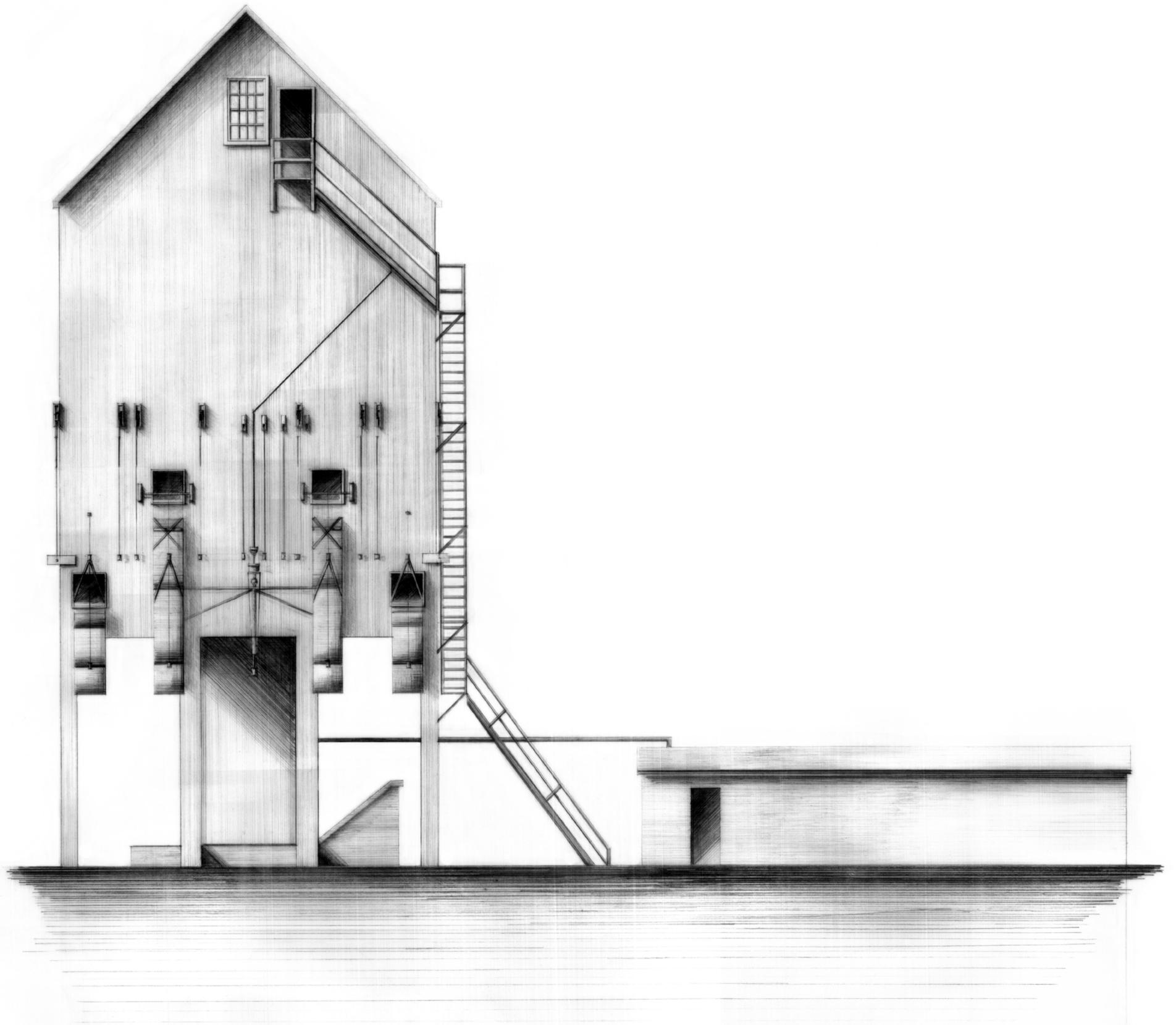
THE COAL TOWER & SANDING HOUSE



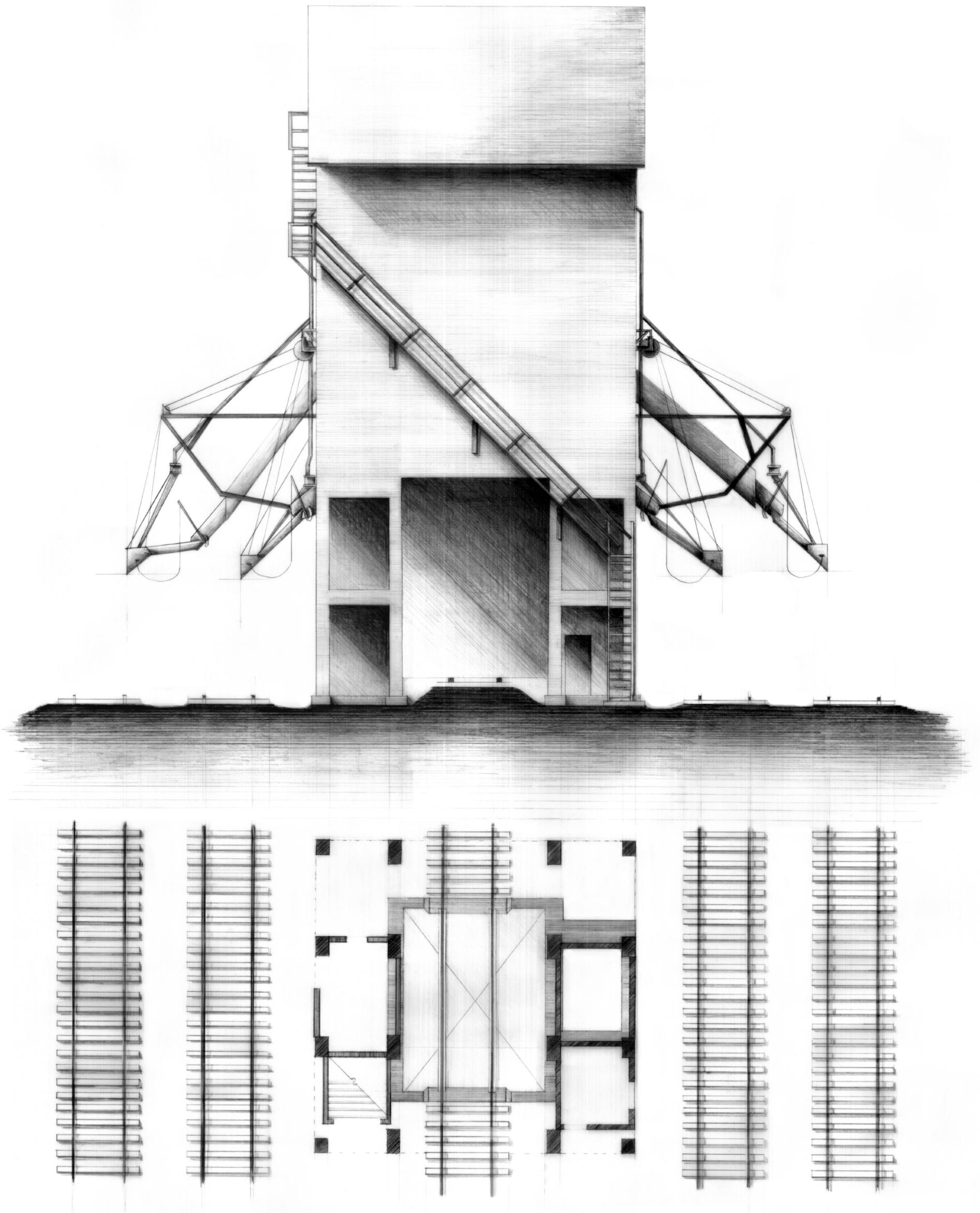
The coaling tower and sanding house were designed by Fairbanks, Morse & Company of Chicago and constructed in 1922. The 500 ton reinforced concrete coaling tower stands 73' high with a relatively small footprint of 33' by 35'. The structure is characterized by sixteen slender columns placed on a grid established by the need for a train car to pass through the two inner rows of columns. These columns reach 21' in height where beams then rest to support the exterior walls, internal storage bins, and internal and external machinery.

Today most all of the machinery has been removed, with the exception of the pulleys used for operating the chutes and the cranes to move coal, which remain on the exterior walls of the tower. The stairs to access the monitoring level contained in the gable of the roof are unusable, and those to the machine pit below are sealed off. With the exception of a few wood plank walls that denote possible office or storage space, all that remains is the massive concrete shell.

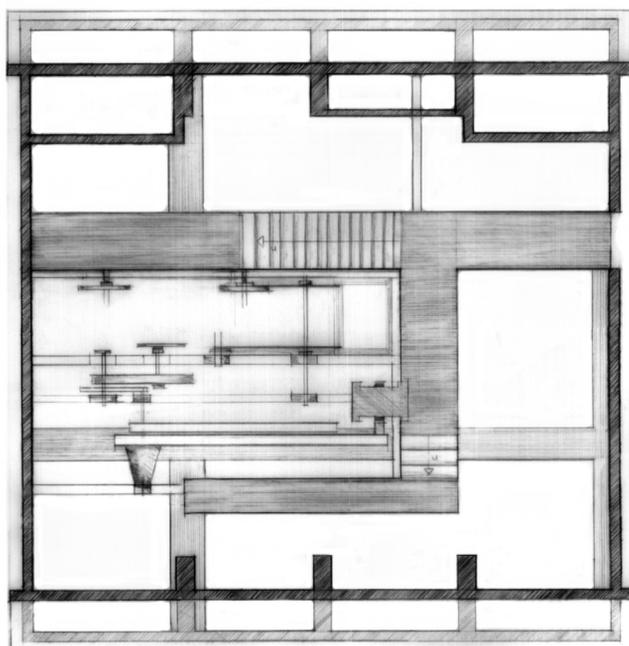
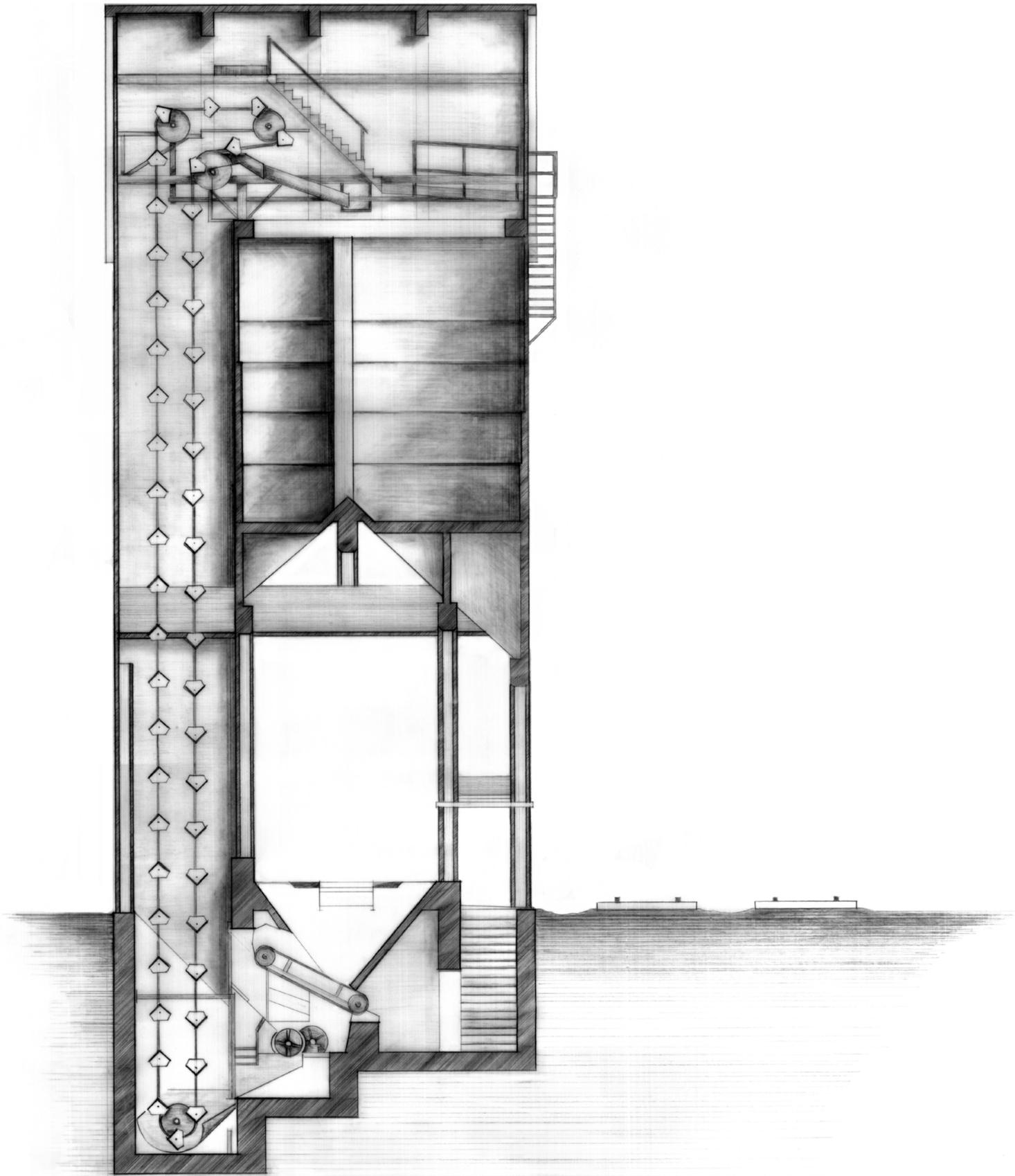
The sanding house, also reinforced concrete, is 44' long and approximately 10' high and 10' wide. The sanding house stored sand which would be sent through pipes and then loaded onto the trains while they were being refueled. The trains were able to spray the sand in front of them onto the tracks to increase traction. Today the pipes and blowers have been removed and the concrete gable roof is almost gone, with only a few truss supports remaining.



North Elevation
Coal Tower and Sand House



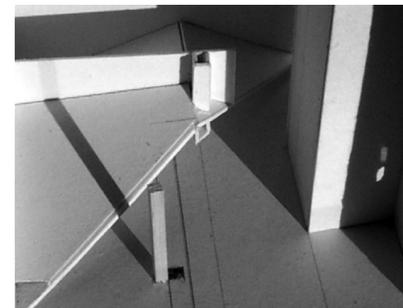
West Elevation and Ground Plan



The coaling tower was used to refuel trains, and could refuel four trains in less than ten minutes. A train car pulled in between the inner rows of columns and then releasing its contents of coal into the machine pit below. From there the coal was moderately crushed and carried up the coal elevator by several buckets. The coal was then dumped into coal storage bins and stored. When trains needed to be refueled they would pull up on either side of the coal tower and the network of pulleys lowered and moved the chutes to load the coal into the appropriate train cars.

Cross Section and Monitoring Level Plan

It is briefly suggested that transforming an existing structure into something new holds a realm of challenges. For this project several months was taken to develop a transformation scheme that, despite the efforts, never achieved a successful solution. Respect for the coal tower was held at such a level, that any severe alteration of it would be immoral (to the designer at least). Because of that respect, a design with a strict separation of old and new was pursued. Eventually, the notion was formed that maybe the two must touch to create a complete thought. Various levels of intervention were tested, and soon it was realized that in order bring this desolate structure to life again, a severe intrusion was needed. With that, the new museum slid into the coal tower, engulfed the sanding house, and made a whole of two parts.



The act of cutting away the façade of the coal tower is to expose it, so that in this museum the 73 foot coal tower would not just serve as a decayed exhibit wall, but as part of the exhibit itself. The decision to remove the entire west wall is to allow the new construction to completely slide into the remaining shell of the coal tower, thus also allowing several surfaces of the coal tower to be used for exhibitions.

Sections of the North façade are also removed in order to expose the new addition, and allow more light into the gallery spaces that occur behind the coal tower walls. An extreme cut is also made through the coal storage bins at a 45° angle from the joint of the north and west walls. This cut is a living section that exposes the pitch and construction of these sloping bins. The sanding house remains intact and is enclosed by the museum, serving as an exhibit piece on the ground floor of the museum.

STRUCTURE



The structure consists of four rows of reinforced concrete columns 1 ½' deep, 1' wide, and 56' tall with reinforced concrete beams that span across to support the floor and ceiling planes and 1' by 1' braces strategically placed to support the walking path, platforms, and to increase stability. The beams and bracing also serve as support for the suspended display panels in the exhibition locations and lighting throughout the building.

The columns are aligned along a strict grid system comprised of two elements. The first is a line formed by an existing row of columns supporting the coal tower. The second is the midpoint of the coal tower which is the origin of the spacing between the columns. The columns are spaced 6 ½' center to center. This spacing allows for the placement of the new columns, yet leaves the original pulleys from the mechanical system on the south façade undisturbed. Each pair of columns is spaced 4 ½' apart to allow the walking path, stairs, and platforms to pass between the columns.

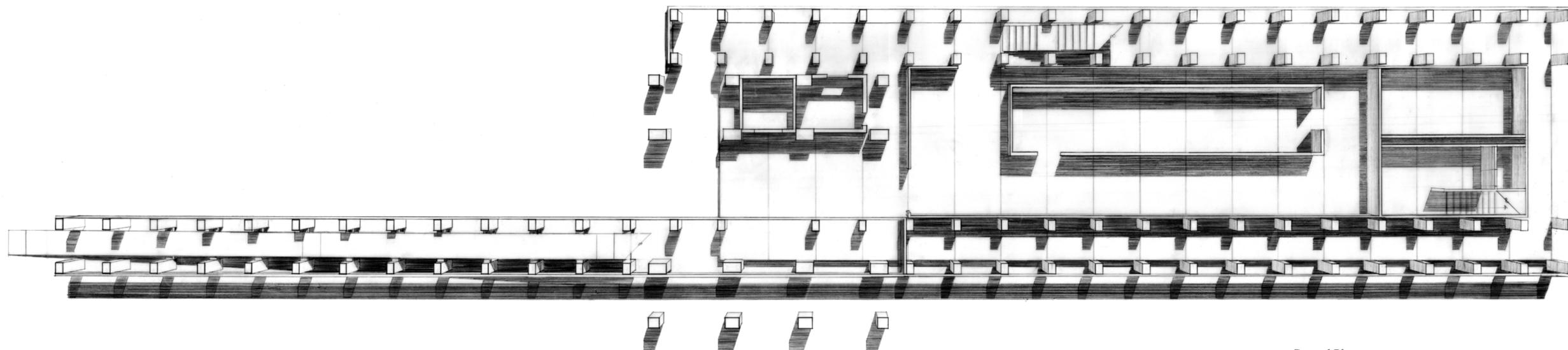
The only break in the grid is when two of the column rows pass through the coal tower. At this point six columns have been removed to give way to a row of four existing columns and a sloped plane of the remaining coal bin. The material of columns and beams changes from concrete to steel inside the coal tower to allow for the new structure to be placed before parts of the coal tower are removed. The majority of the steel is finished in a concrete cladding to mimic the concrete columns and beams in material and dimension. Reveals are left approximately 8" from the floors and ceilings on each column, and the exterior coal tower wall to expose the steel and the passage of each beam through the existing wall.

PATH

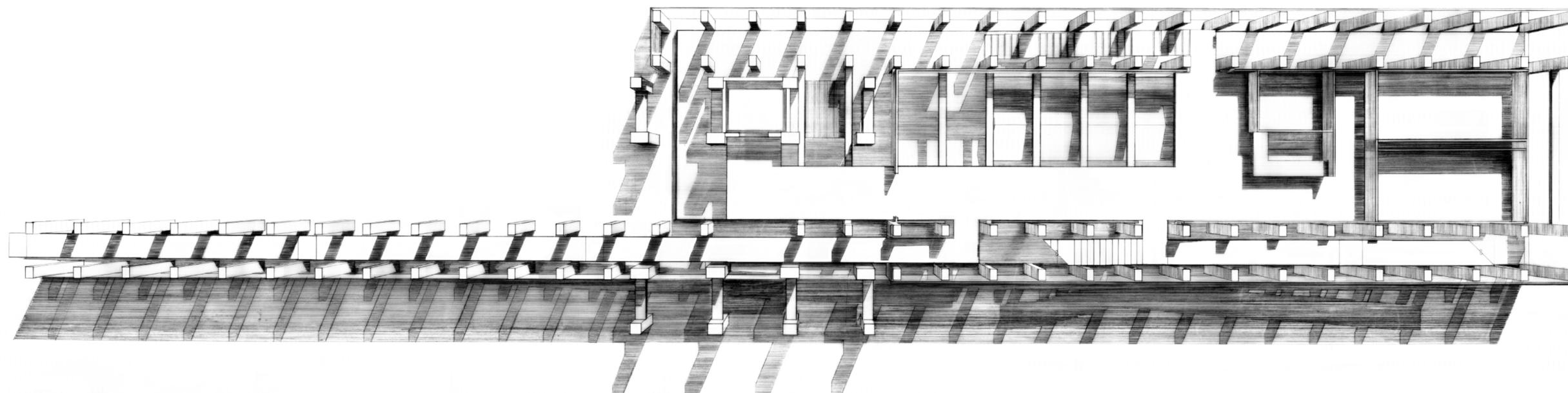


The greatest interaction with the structure occurs on the walking path. The primary path is a ramp housed in between the rows of columns, which winds from the ground around the perimeter of the museum and through all the exhibition spaces. As one approaches the building the ramp reaches out from below the coal tower to bring one in. It passes close to the belly of the tower and brings one to the second floor of the museum where one overlooks the sanding house ruin. From the second floor, the ramp continues and brings you to the third floor, which is the first exhibit level of the museum. At this point one travels through the exhibition space. The ramp continues at the other end of the exhibit spaces through an opening in the exterior coal tower wall, once again passing you through the structural columns and to the fourth floor, and similarly to the fifth floor. At the end of the exhibit space on this level, one may ascend up a stair to the roof overlook to enjoy sites of the town and the river.

PLANS

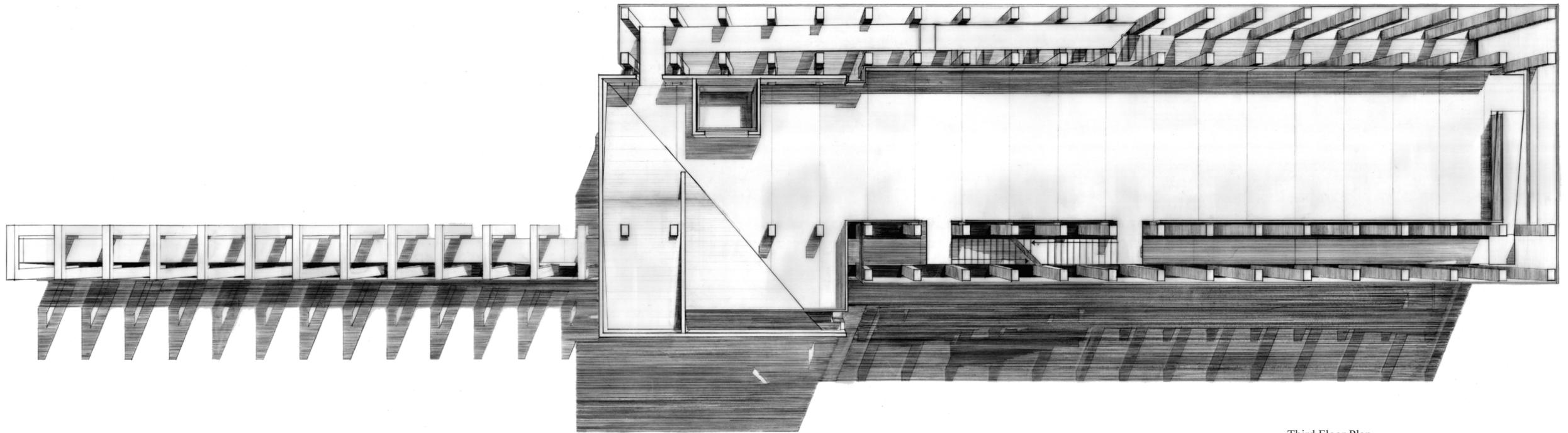


Ground Plan

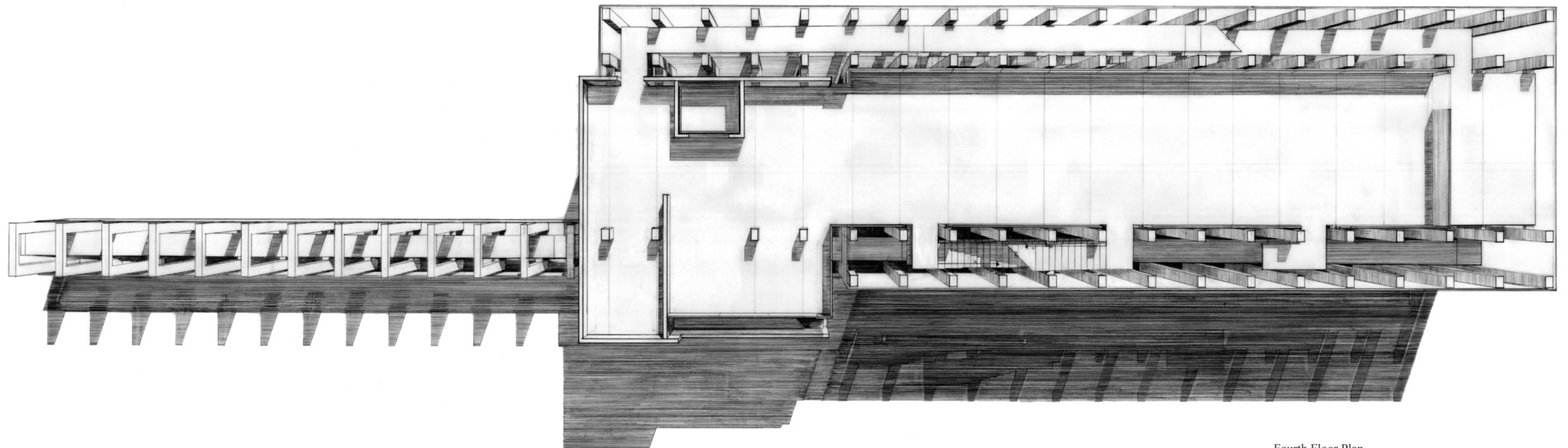


Second Floor Plan

PLANS



Third Floor Plan



Fourth Floor Plan