

WITHIN THE FOLD:
A Cultural Center for Fitchburg, MA

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Introduction

Architecture is essentially an art form of reconciliation and mediation and in addition to settling us in space and place, landscapes and buildings articulate our experiences of duration and time between the polarities of past and future... We understand and remember who we are through our constructions, both material and mental. ¹

-Juhani Pallasmaa

In the last half century western society has undergone massive changes linked to the transition from an industrial production society to one dominated by information and service based trade. These shifts have rendered much of the industrial landscape in the U.S. obsolete in both rural and urban contexts extending through the rust belt. Once tied to the economic engines and social fabrics of place, these infrastructures now stand as exterior to city's daily functions yet internal to their physical construct. Rendered useless by regional economies and individual users these industrial artifacts fall out of our current networks and into limitless states.

As described by Spanish architect,

Ignasi de Sola-Morales, this "terrain vague" is composed of the empty, abandoned and unused spaces in the city, which in their lack of definition and order, offer potential for re-envisioning. Under these circumstances there are four potential strategies of change: buildings are demolished, reclaimed (preserved), renovated, or the status quo remains of abandonment and the building slips further into the grasp of nature.

Trends in dealing with abandoned buildings through adaptive reuse or historical preservation can tend to romanticize or sterilize sites, rendering them generic, placeless or otherwise frozen in time. This thesis conversely takes a position that rather than wiping the proverbial slate clean, or



2. abandoned mill in fitchburg

waxing preservation, the role of architecture is to serve not only as a catalyst, but act as a palimpsest for re-contextualizing industrial space and re-connecting it to the public element. Therefore this project proposes a cultural center.

This project intends to not only develop a method of study for this one site in particular, but examine the larger circumstances and factors which helped shape the terrain vague. This method could then be applied to cities and sites with similar issues of unused industrial space.

This proposal seeks to reconnect people and communities by studying an abandoned site through three scales of fabric, object and surface. This range of study is to not

only work within a building at a certain place in time, but be able to connect its history to its potential futures.

Making use of the containers of an abandoned industrial operation, this project seeks to bring not only these sites, but people and communities back into the fold of industrial space in the post industrial age.



3. nockedge mill in fitchburg



4. abandoned mill in fitchburg



Theoretical Framework: Post-Industrialism and the Terrain Vague

How can architecture act in the terrain vague without becoming an aggressive instrument of power and abstract reason? Undoubtedly through attention to continuity: not the continuity of the planned, efficient and legitimized city, but of flows, energies, the rhythms established by the passing of time and the loss of limits.²

-Ignasi de Sola Morales

Beyond their existence as objects in space, abandoned buildings and industrial sites can also be seen as voids in space that denote the absence of an exterior force. In the case of industrial abandonment, those forces being mainly economic factors. A void that is a forgotten space, one dropped from our current networks of economies and use, offers the potential for intervention because of the way its absence of use offers a sense of freedom and expectancy.

In his 1995 essay “Terrain Vague”, Spanish architect Ignasi de Sola Morales argues that these kinds of non-spaces need to be understood for their inherent potential rather than just as voids within the city. Sola-Morales’ essay begins with a discussion of

how photography is basic to our visual experience of the city. He argues that it creates a disconnect between image and reality. “When we look at photographs, we do not see sites, still less with photomontages. We only see images, static framed prints.”³

With a change in the subject matter of photography in the 1970’s came a new way of formulating visual experiences of cities. This change shifted the modern ideal of capturing objects in space, to one purported by the likes of David Plowden, Manolo Laguillo (figure 6) and John Davies who captured a often unpublished and unexplored aspect of cities. This focused on existentialism; the vacant and fluctuating spaces rather than the fixed urban form.



6. abandoned lot, barcelona

Sola-Morales traces the terms *terrain* and *vague* to their origins to give relevance to their meaning in contemporary space as well as to best translate an otherwise impossible term. He describes the French *terrain* to refer more to limited urban ground, the city. *Vague* developed by two roots refers to an oscillation, instability and fluctuation in one origin, as well as vacant, vacuum and unrestricted in another.⁴

“The relationship between the absence of use, of activity, and the sense of freedom, of expectancy, is fundamental to understanding all the evocative potential that the city’s terrains vagues have accrued as part of the very perception of the city in recent years. Void, then, as absence, and yet also as promise, as encounter, as the space of the possible, expectation.”⁵

Using Sola Morales’ description, abandoned buildings and sites can be described as *terrain vague*. When stripped of their original use and function, the structures themselves become vague, uncertain and indeterminate. While they are a part of the physical construct of the city, they lie external to the city’s everyday functions. These abandoned zones become spaces in the city “where the city is no longer. They are the city’s margins, interior islands voided of activity.”⁶

The freedom and aspects of expectancy that the *terrain vague* offer make it valuable to the urban experience; they offer a counterpoint as non-prescribed space to the otherwise heavily planned urban conditions.



7. *splitting the humphrey street house: gordon matta clark*

Sola Morales points out that most architectural acts when working within the terrain vague end up as violent transformations, mainly because attentions to continuity within the sites are not heeded, respected or examined.⁷ He goes on to argue that the role of the architect is inevitably problematic as “Architecture’s destiny has always been colonization, the imposing of limits, order and form...”⁸

He asks how can architecture can work in this territory without becoming an instrument of power and abstract reasoning.⁹ The answer for him is through the attention to continuity, not of the planned and efficient, but of the flows, energies and rhythms established by the passing of time and the

loss of limitations.¹⁰

Architecture is the only art in which the great struggle between the will of the spirit and the necessity of nature issues into real peace, in which the soul in its upward striving and nature in its gravity are held in balance... This unique balance - between mechanical, inert matter which passively resists pressure and informing spirituality which pushes upwards - breaks, however, the instant a building crumbles.¹¹

-Georg Simmel

Abandon, Artifact and Ruin

As many of industrial buildings have been left to abandon, their status as functional places of production shifts to places of memorial. As described by Georg Simmel, the ruin in architecture holds a unique meaning, representing the tension between the physical forces that bear down on a structure and the spiritual beliefs that enable it to build upward. Simmel characterizes nature as the raw substructure for human constructions, which are seen as the crowning achievement on top of this foundation.¹²

History shows a gradual rise of humankind's mastery over nature, specifically in buildings and construction. He notes that humans once built literally with nature's foundation, being stones and raw wood,

honing and shaping them to solve issues of enclosure and to counteract the forces of gravity. Currently western society builds with some of the most unnatural materials such as glass and steel; materials which are so far removed from any sort of influence by nature, that they materially assert our dominance over the natural world.

The ruin, regardless of building type and material, rebukes the notion of human's mastery over nature. In the ruin, "natural forces begin to become master over the work of man: that balance between nature and spirit, manifested in the completed building, shifts in favor of nature."¹³ In this sense ruins become a record of this reclamation process, or shift in balance, that is constantly



8. central steam plant masonry unit, fitchburg

being updated as time passes. In the ruin it is often possible to read the initial sub-structure of nature or foundation juxtaposed against the upward force of mankind evident in the remains of the walls or roof. The shift from an object of man to one of nature are manifested through the revealed materials and layers of the building. The ruin can thus be seen as both a physical record and a sentimental object, a disgraced remnant of the collapse of a society or a romanticized relic. Architectural responses to a ruin can be driven by nostalgia for the past and or optimism about the possibilities of a different future for the structure.

J.B. Jackson describes our nostalgia for these objects of past eras:

“We admire and try to collect things not so much for their beauty or value as for their association with a phase of our past; and that is understandable, every generation has done the same. But with us the association seems to be not with our politically historical past, but with a kind of private vernacular past – what we cherish are mementos of a bygone daily existence without a definite date.”¹⁴

Similar to J.B. Jackson’s view on the necessity for ruin are Tim Edensor’s observations on the industrial ruin as an artifact that should be left intact.

The industrial ruin is defined by forces of capitalist production and past production processes, as opposed to the broader and more abstract reasoning put forth by Simmel. This distinction occurs as a piece of



9. residue on coal silo, fitchburg

infrastructure has been left stranded due to the halting of the systems of industrial capitalism and the shift to information systems and service based trade. These structures are often fragmentary and lack fixed meaning and function as a result of the terminated ebb and flow of the economies that gave rise to the building. This shift happened quickly and as a result the 20th century produced more space to be abandoned than ever before.¹⁵

The immediate stoppage of machines, processes and uses has caused these sites to act in cyclical manner through time.

“Since the original use of ruined buildings has passed, there are limitless possibilities... Which allow a wide scope for

imaginative interpretation, unencumbered by the assumptions which weigh heavily on highly encoded, regulated space.”¹⁶

The ‘limitless possibilities’ offer the opportunity for sites of ruin and abandonment to be conditionally replaced by new functions and program, provided that memory of past use is left intact. He continues, a ruin “creates the present form of a past life, not according to the contents of remnants of that life, but according to its past as such.”¹⁷ This suggests that the built environment acts as a physical recording of daily life; ruins specifically as manifestations of physical memory, similarly to what Simmel describes. This storing of memories is becoming increasingly important because as Edensor



10. disconnected steam pipe, central steam plant in fitchburg

suggests, current culture tends to externalize and create commodities of memories or nostalgic instances. “The commodification of memory is evident in the intensified ‘mediatization’ of popular symbols, myths and icons, whereby the social production of memory becomes externalized, situated and staged...”¹⁸ These spaces offer the opportunity of physical remembering; enabling the occupant to imagine and experience space differently than those spaces that are regulated and planned.

In experiencing sites of unexpected nature, the body is allowed to move in ways that are not confined by regulated space. Edensor continues this thought, “In derelict spaces the body is generally liberated

from the usual self-conscious performative constraints of the city and may move in a non-linear, improvisatory fashion across a variety of textures, comport and weave the body around in expressive ways... and behold sites which disrupt normative urban aesthetic conventions.”¹⁹ Thus these ruined and abandoned sites become places of opportunity, spaces of the possible, just as described by Sola-Morales.

Connections and Conclusion

There are several connections to draw from these different theoretical arguments on abandoned space, the artifact and the ruin. When the artifact is celebrated as such, its potential in engaging with evolving contexts and space becomes limited. Inherently fragmentary, pieces of the artifact should participate in the process of adaptation, while others can remain as relics. Incorporation of the whole through the evolution can be considered a method of implementation.

Edensor suggests that these ruins being left intact is necessary to experiencing the fluctuating nature of unplanned space. While certainly poetic, this assertion becomes problematic when considering how cities can move beyond existing situations,

especially when these spaces dominate or characterize the urban fabric. Perhaps rather than maintaining the status quo as single use, exhibition-like places, it is possible for them to evolve within their context to begin to speak to future and multiple potentials.

Therefore this design proposal should act in continuity with the sites past processes and energies as suggested by Sola Morales. This enables the program to be integrated into contexts which are continually evolving. This lends itself to the notion that the architecture of re-use should be examined, processed and implemented as an architecture of palimpsest. Each continual phase change should rise and recede from the same soil that it was first built upon.



11. steam lines in fitchburg



City History, Context and Analysis

"In these apparent and forgotten places, the memory of the past seems to predominate over the present. These are obsolete places in which only a few residual values seem to manage to survive, despite their total disaffection from the activity of the city. From the economic point of view, industrial areas, railway stations... have become the areas where it can be said that the city is no longer."²¹

-Ignasi de Sola-Morales

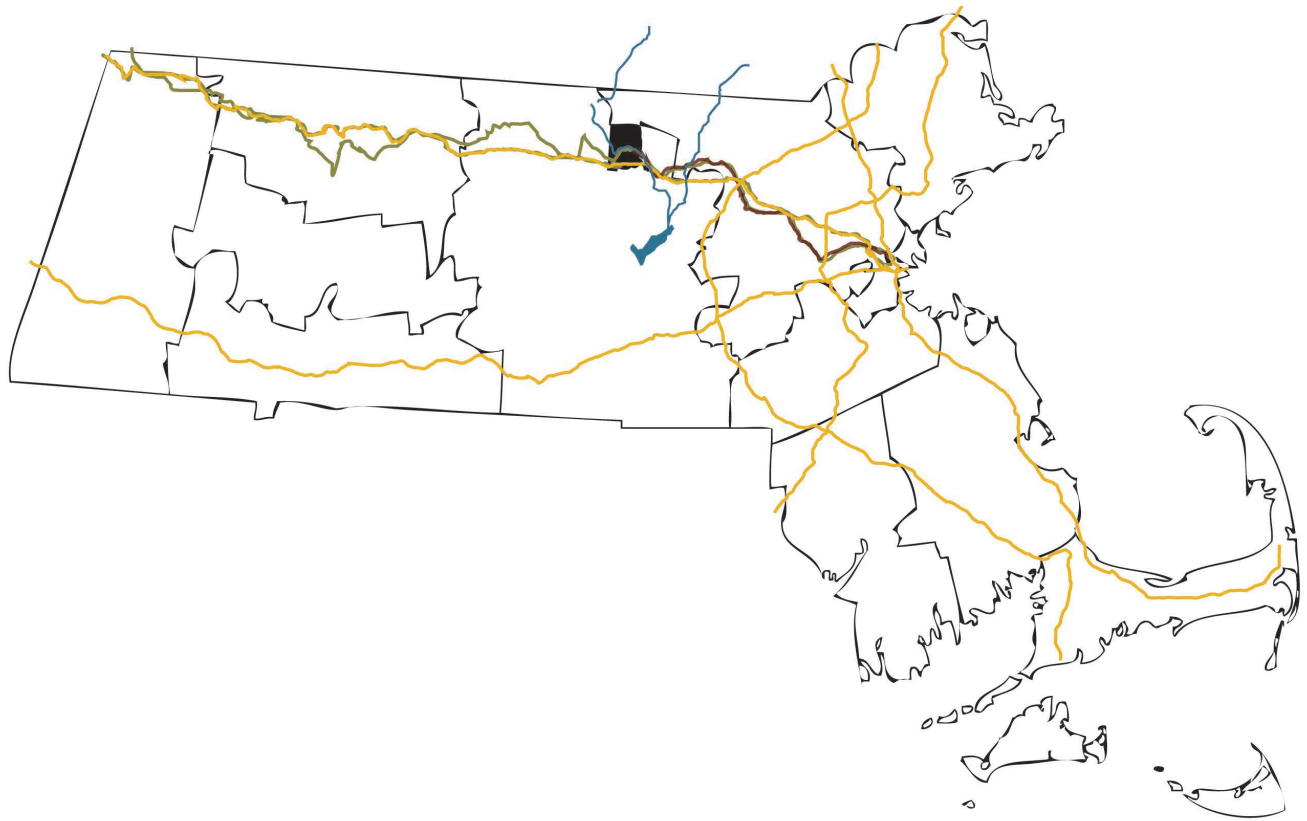
The city of Fitchburg, Massachusetts is located 50 miles west of Boston and 20 miles north of Worcester, the two most populated cities in New England. Classified as a small city, Fitchburg has a population of 40,000 people within the town proper and over 350,000 in the larger metro region.²²

The Nashua River is the most dominant physical feature in the region; the city has developed along the river which snakes its way from west to east through the landscape. The river was the original source of growth for the community as it continues to serve as an industrial linkage through the city. Many of the city's mills and plants occur along the banks. The pattern of growth in the city stemmed from this feature. This

resource as well as nearby forests, were able to foster the development of numerous industries at a given time. These included but were not limited to: paper mills, textile manufacturing, production of furniture, guns, saws, chains and shoes.

While the city was focused on industrial production, it should be noted that this was mainly light industry as opposed to heavy industry, which is witnessed in the larger cities of the Midwest.

The city's quick rise during the early 20th century also stemmed from the development of the Albany-Boston Railroad which runs east/west along the river through the city. No longer heavily used as a means for transportation of raw material



13. map of massachusetts with beltways, east / west corridors, commuter and freight lines, north nashua river and fitchburg

for production, the railroad is now used as a commuter line for those traveling into Boston, which is less than an hour to the east.

Fitchburg was settled in the mid 1700's as a farming community for people who were moving west out of Boston in search of larger plots of land. At the time the area was abundant in natural resources including densely forested hillsides and a river with sufficient current and vertical drop to power mills. The city center was founded along the Nashua River which flows south from New Hampshire. Gristmills and sawmills were the first major production agencies and employment opportunities in the area. This was common along most of the Nashua River. The industries located in

Fitchburg fueled massive growth; population of Fitchburg grew from 5,120 in 1850 to over 31,000 in 1900.²³ This growth was also linked to the development of the Boston Albany Railroad and accompanying boom of the industrial revolution. Due to these developments the city boasts a rich history of manufacturing and industry which nearly 60 different industries by 1910 used to call home.²⁴ The philanthropy of the wealthy and powerful that owned and ran these industries is apparent throughout the city in the existence of many Victorian style houses and civic buildings.

The structures that have subsequently been abandoned have many similarities in typology. The larger mill buildings are mainly



14. *abandoned mill in fitchburg*

constructed of brick. If they sit along the river they are sited parallel to the banks and span long lengths while remaining relatively narrow. They typically reach four storeys at maximum height. Large windows and thin form allow for an evenly daylight space on the interior; ideal for working conditions without a lot of electric lighting. This typology is reflected in the mills that lie adjacent to railroad as well.

Away from the river and railroad are complexes that break from the narrow form. These are square in plan and offer a more warehouse and storage oriented functions rather than production. There are no heavy industrial forms here, as production was mostly focused on small scale and light

industry.

With economic shifts in the 1960's, an erosion of the manufacturing base took place. A general trend of these businesses leaving New England was occurring, leaving the area as having one the highest unemployment rates in the country. Empty lots, abandoned mills and deserted industrial sites are now scattered throughout the city; extending from the urban center to its more rural fringes. The even furthering disconnect that Fitchburg has developed can largely be attributed to the same reasoning as to why it was successful in developing in the first place; its connection to the larger metropolitan region of Boston.

Eastern Massachusetts is defined by



15. *johnson mills in fitchburg*

the two concentric beltways which circumnavigate Boston. Route I-95 runs closest to the city which is about 10 miles outside the city proper. The 495 beltway runs about 30 miles outside the city. Each of these beltways is connected to Boston through a series of spokes. These spokes extend to the west, connecting the central and western portions of Massachusetts and tend to serve the larger city of Boston rather than those it bypasses. Route 2 is the spoke that connects Fitchburg to Boston to the east, and extends through the Berkshires to the west. As route 2 developed into a major transportation link, so too developed the disconnection of Fitchburg from wider communities.

Most growth within Massachusetts

occurs within the larger beltway of 495. These cities are more populated and have larger tax bases, making it easier for them to adapt to change. Being within the beltway also makes these cities closer to Boston, as well as not having to deal with passing through another major layer of transportation infrastructure. These alone make these beltway towns more desirable to live in.

Today Fitchburg has an economic basis of pharmaceuticals, tool and die making, machine production and plastic molding.²⁵ It once was an industrial hub yet remains an important transportation link as the industry has left.

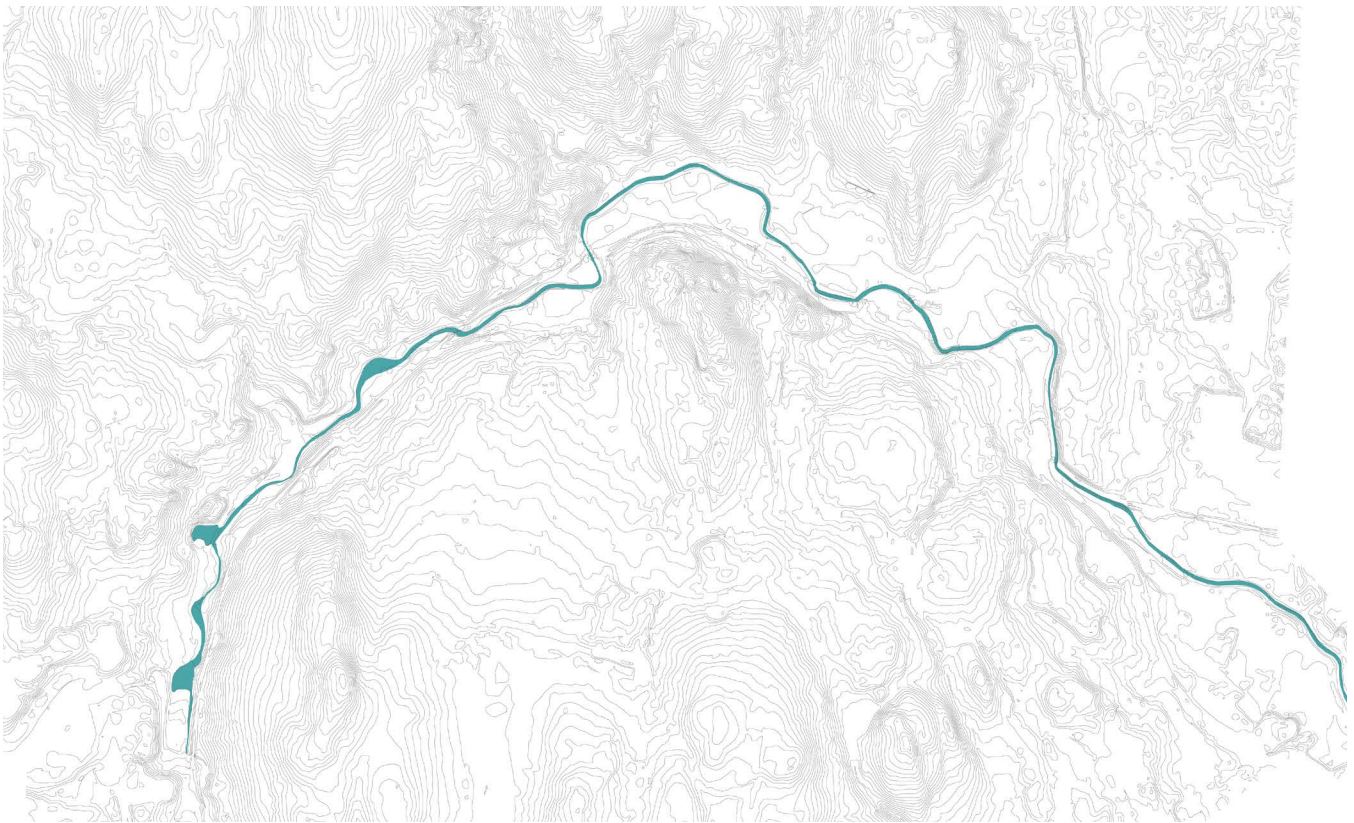
Context and Site Analysis

As mentioned previously, the North Nashua River was the founding feature for the city and neighboring regions. The path of the river creates the shape of the urban fabric as the city developed alongside the industrial boom in the late 19th century. This is seen in figures 16 and 17. This growth period was supplemented by the incorporation of the Fitchburg Railroad, which was pioneered by Alvah Crocker, owner of multiple paper mills in the city. This railroad established a physical connection with Boston to the east, New Hampshire to the north and Albany, New York to the west.

With this development of the railroad Fitchburg became a link between manufacturing cities and towns, making it a prime

location for industrial production. As the city grew outward from the banks of the river, so too did the disconnect of the larger public populace to the river. Figure 20 shows the current state of the urban fabric of Fitchburg.

The fabric of the city is dominated by the industrial corridor. Not only in terms of scale of buildings does the corridor set itself apart from the city, but also through how it creates a barrier against the river to the larger city. Figure 18 shows how the zoning of the city has also contributed to this barrier. As industries have left, abandoned mills and factories now make up a great deal of the corridor that blocks public access to the river. Currently there are only three parks



16. north nashua river, fitchburg

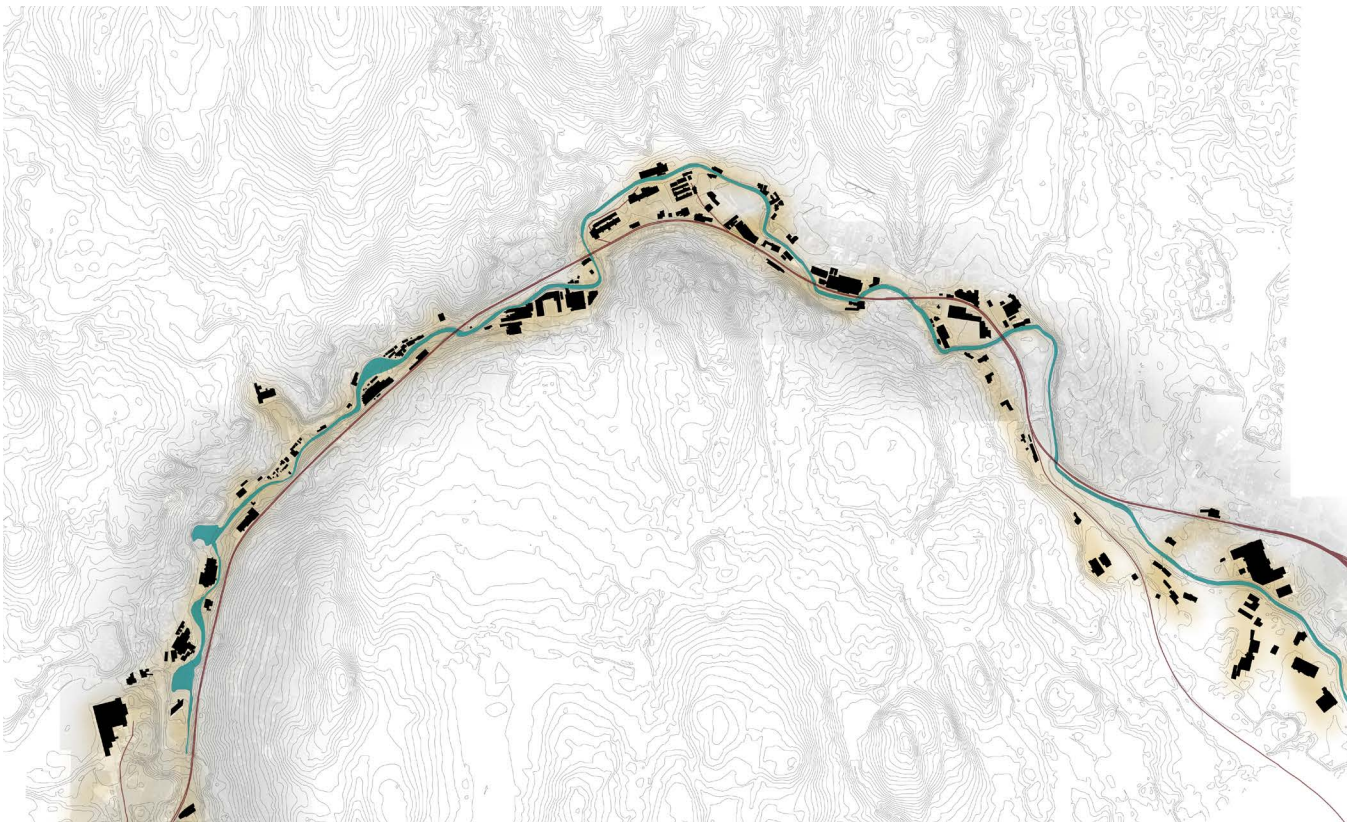
along the river; one in the downtown district at the north bend, a conservation area at the eastern point of the city, and a small ball field just west of the downtown.

In an attempt to reconnect the city with its industrial heritage Fitchburg has developed a pedestrian trail along the corridor in the west end (figure 19). The path, which is called the 'steamline trail', runs just shy of a mile in length from the abandoned Central Steam Plant to an operating mill complex to the south. Currently in development is the trail extension, which runs along the river through the corridor to the north. This extension connects the steamline trail to the downtown commercial district, all the way east to the conservation area east of the city.

This analysis sets up a series of conditions that would be desired in justifying a site for redevelopment when considering the impetus of this project. In order to complete the goal of re-contextualizing industrial space for the public, these conditions within a site are necessary:

existing industrial space
easily accessed by public
can provide civic/public amenity
located along river and within corridor

The site that this project proposes to intervene within is located at the Central Steam Plant. Not only is the site abandoned industrial operation, but it is easily accessed by the public, it already provides a public



17. development of industrial corridor along river

amenity as being the trailhead for both the steamline trail and the industrial trail, and it is located along the river. Given its siting along the river and a heavily forested hillside, the plant and its newfound purpose has an opportunity to explore the relationship of industry, man and nature (figure 22).

The plant was built in 1928 by the Crocker Burbank Paper Company. Its purpose was to provide steam and electricity to thirteen paper mills which were located within a two mile stretch along the corridor. As time passed and as the mills were updated, foreclosed upon or found cheaper regional power suppliers, the Steam Plant was forced to shut down in 1990.

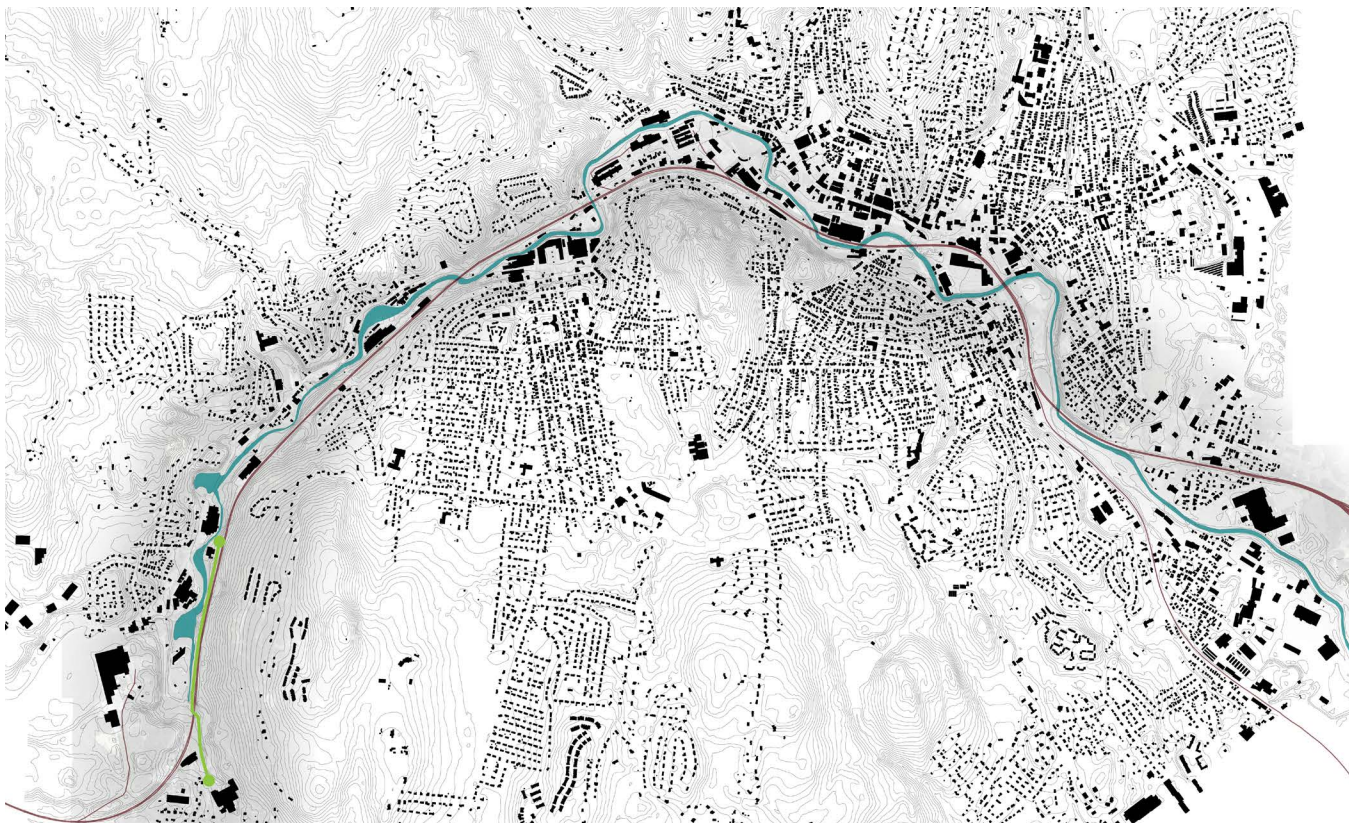
The plant is built with two

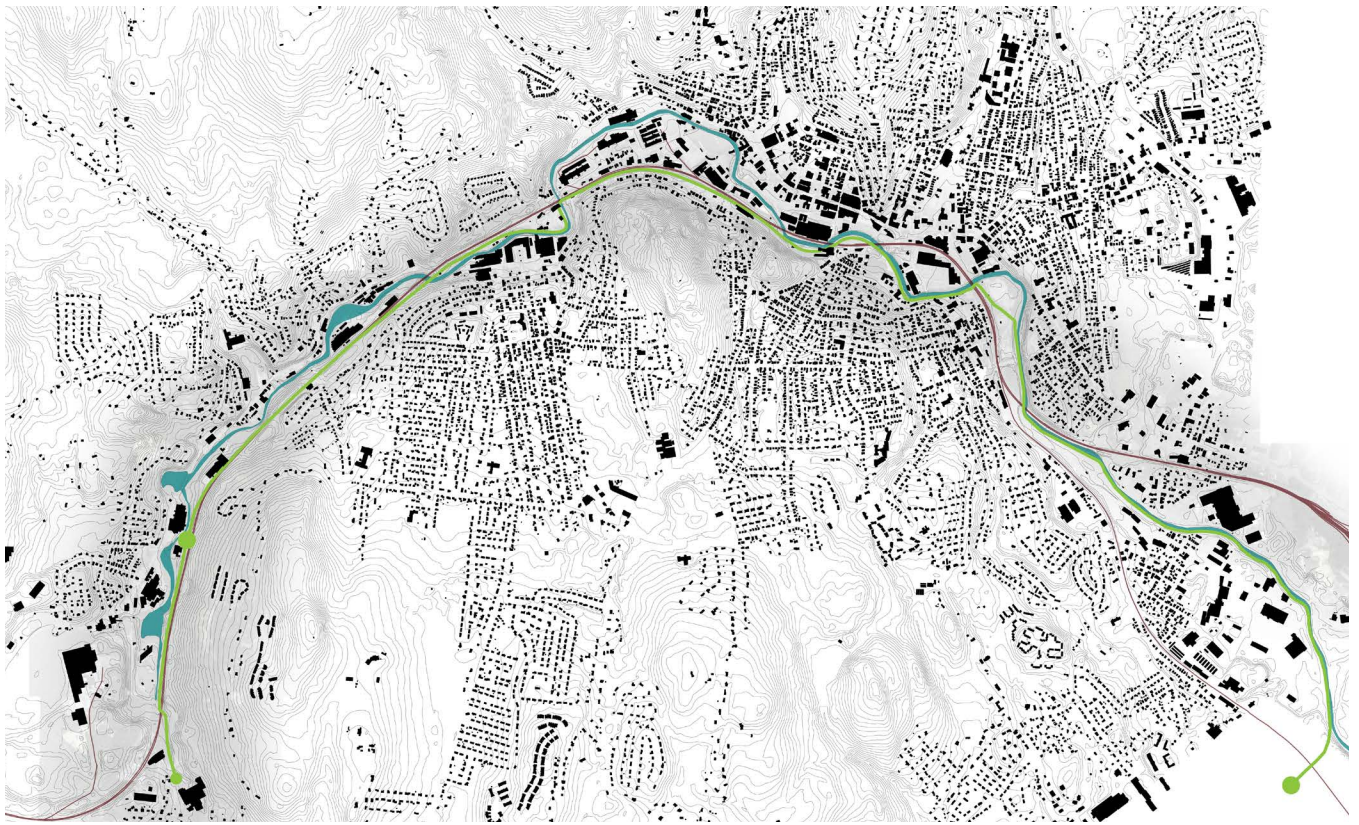
construction methods. The first being brick and mortar on a concrete foundation. This is found on the main block of the building. The eastern portion is built out of CMU's and clad with a metal skin. The brick portion of the building is classical in architectural style, exhibiting alternating bays of tall arched windows and concrete lintels. The eastern portion is rather simple in comparison having only rectangular windows and minimal detailing. A 60 meter tall smokestack stands on the north end of the building, roughly two and half meters from the face of the northern wall.

The building sits on the east side of the river and is accessed by a pedestrian bridge (figure 22).

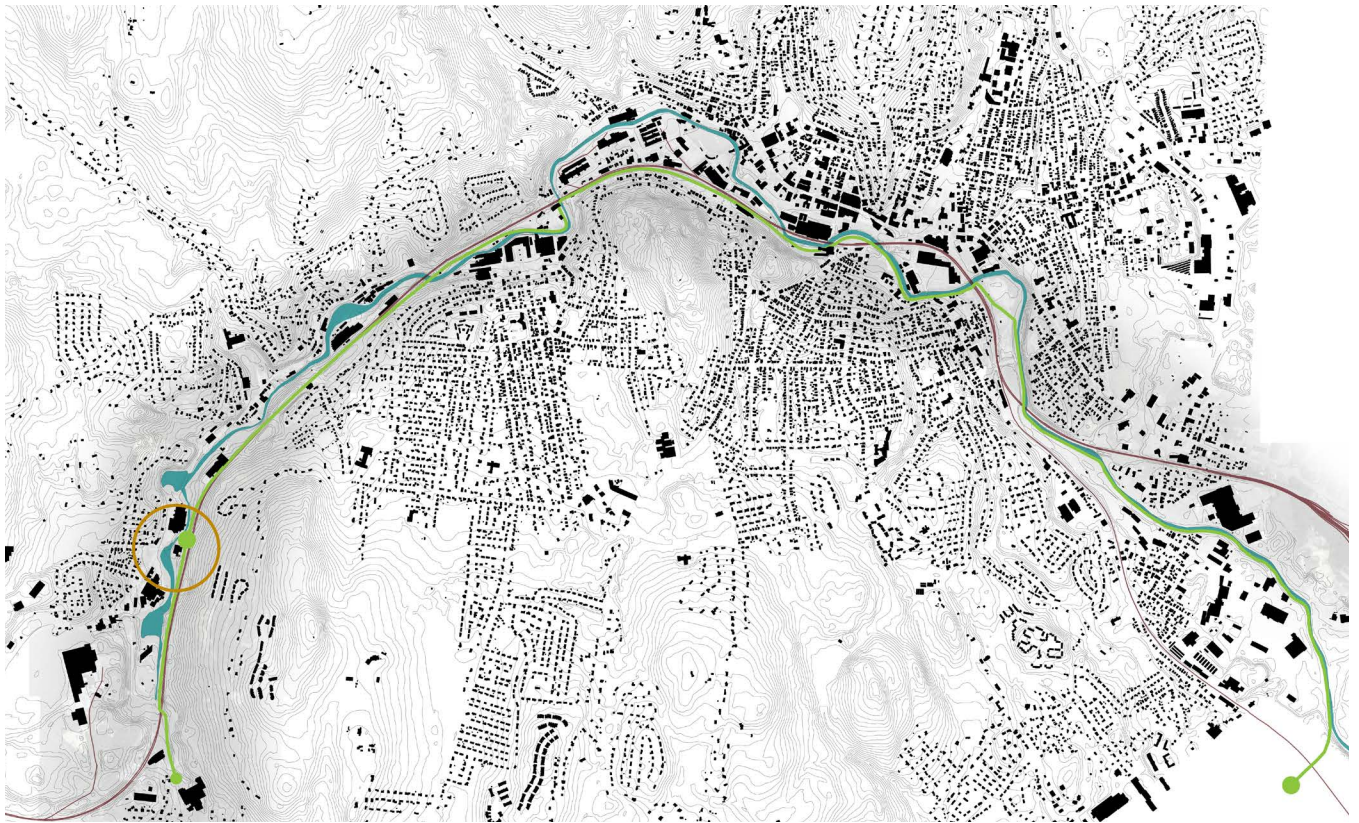


18. city zoning





20. trail extension



21. site selection at trailhead



30 22. site plan of existing steam plant showing bridge, trestles, building, smokestack, trailhead and coal silos



23. between the silos and steam plant along pedestrian trail



Program

In examining the context, particularly the lack of open space along the river and the public foothold of the steamline trail head and extension, this project suggests a cultural center. This program aims to gather core yet disparate user groups from the community, provide a group of resources for the community to use, house educational labs for the state college in Fitchburg and provide an anchor of public space along the trail.

This project engages the following user groups:

- permanent residents
- interim residents (college students)
- temporary visitors

Programmatic Breakdown:

Public:

- digital media lab
- children's play-space
- children's reading nook
- teen space and media lab

Shared:

- lecture hall (100 users)
- cafe
- test kitchen

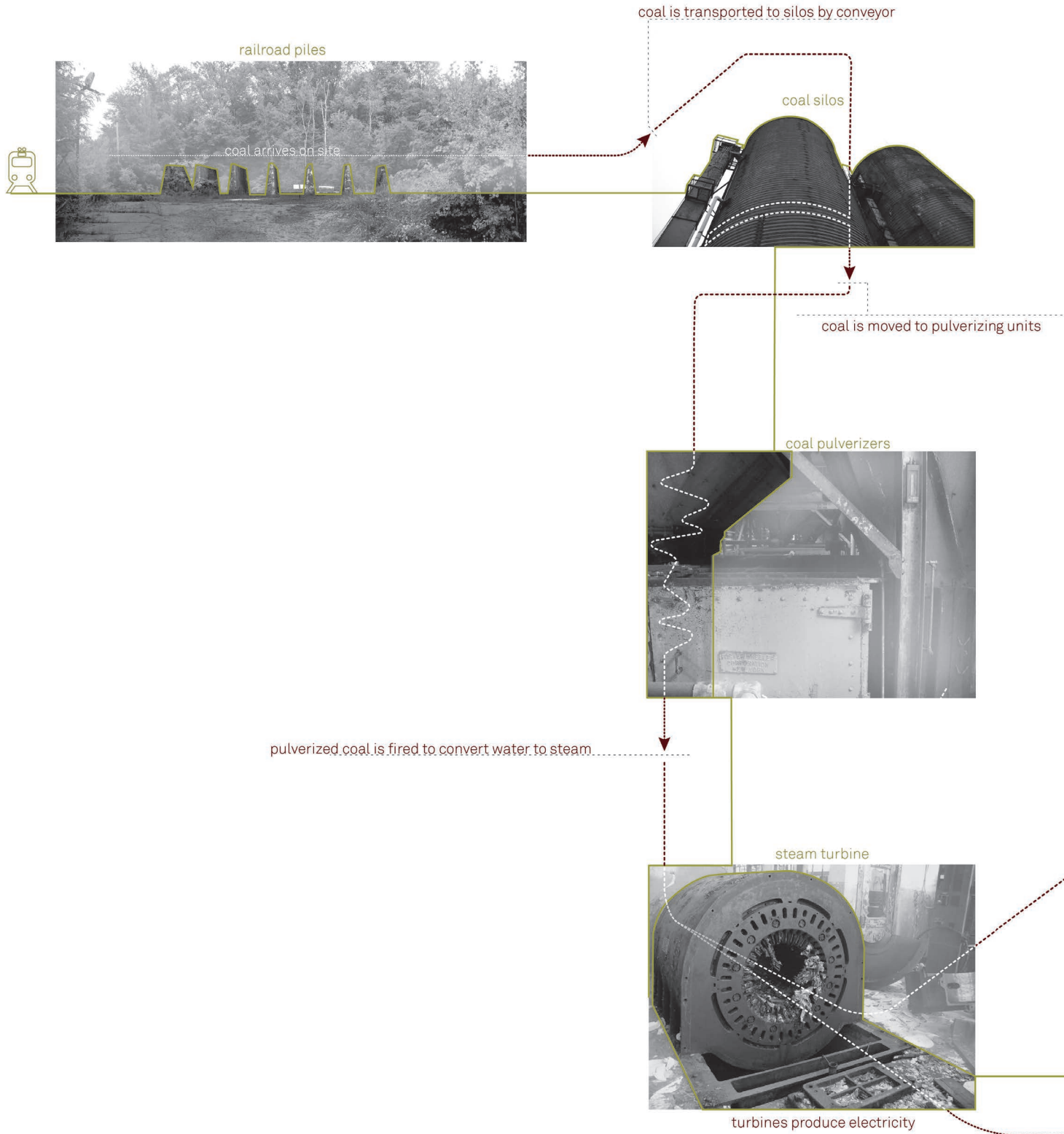
Educational:

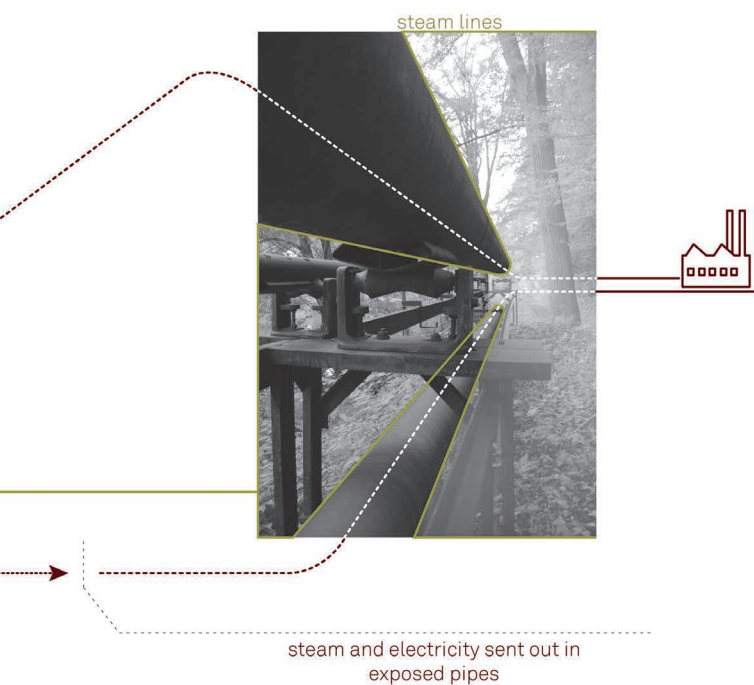
- classrooms for college (5)
- reading rooms (2)
- shared workspace



Design Approach:

The approach taken for this project in order to examine the site, building and programmatic ramifications is broken down into three lenses or scales of study. These scales are referred to as the Fabric, the Object and the Surface. These are used to not only study the immediacy of site, building and program, but to look how each of these elements can connect to the broader city context. These scales do not only look to current content and conditions inherent within the site, but look to past processes and potential futures. These methods were used in conjunction with the existing arrival sequence on site to develop a narrative for the design response.

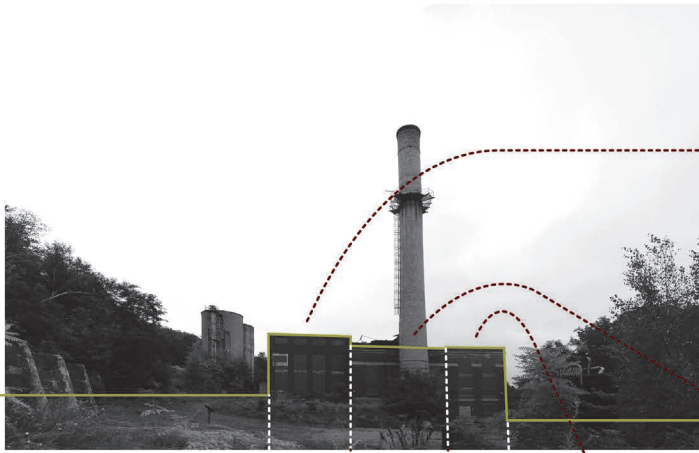




Fabric: Past Processes and Broader Connections

The study of the Fabric is largely defined by the past processes and energy flows on site as well as physical artifacts.

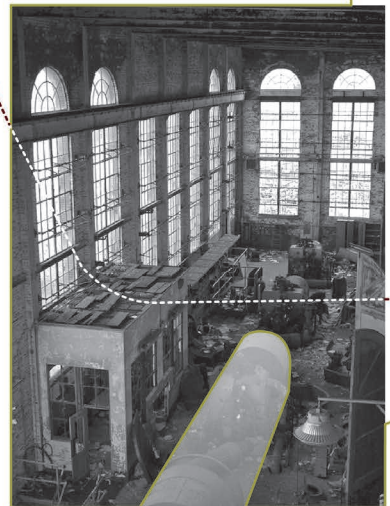
As coal would be brought in from the adjacent railroad, a car would pull off on a spur which was supported by the existing concrete trestles. Coal would be off-loaded from the train and transferred by conveyor to the coal silos. A short conveyor would move the coal from the silos into the eastern-most part of the building. The coal would be pulverized into powder where it would be fired in the boilers. Water from the river was used to create steam from the firing of the coal. The steam would then be run through the turbines to produce electricity. The steam and electricity would be sent out to factories along the trail in the exposed pipes.

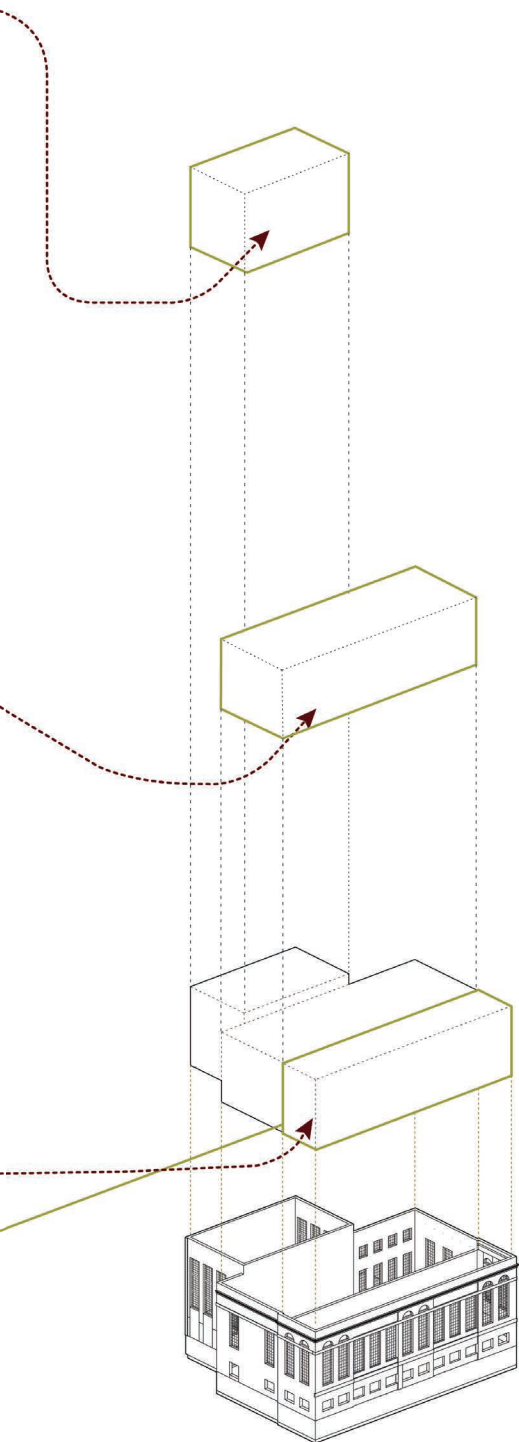


...coal processing...

...metering room...

...turbine room...

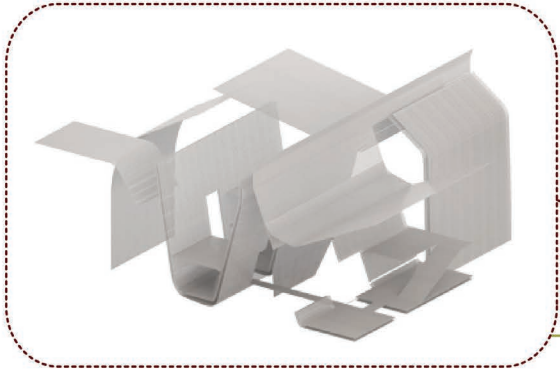




Object: Building Operations and Spatial Qualities

The study of the Object is used to determine a spatial understanding of the steam plant. The building can be understood as three distinct yet functionally intertwined containers on a plinth.

The eastern-most container was used as the coal processing unit. This container is five storeys tall, as the pulverizers stand vertically in the space. The central container was the meter room. Steam pressures, electricity input and output would be measured here. This container is 3 storeys of clear height. The western-most container is the turbine room. This is where steam would be converted to electricity. It should be noted that these 'main' spaces of the metering room and turbine room are all above the ground floor, hence the plinth.



children's reading corner



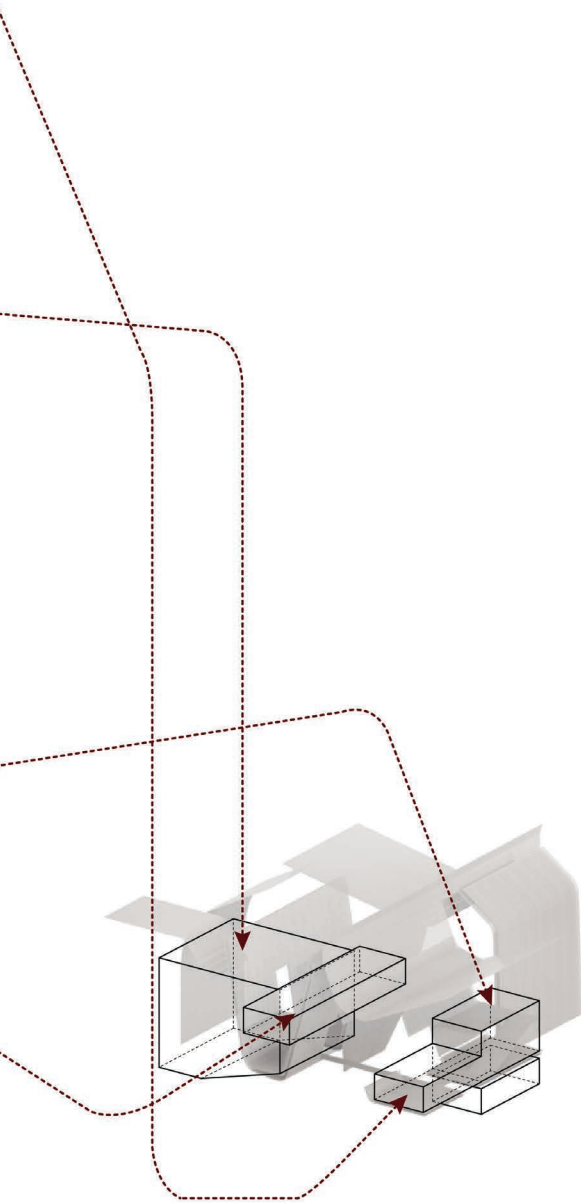
lecture hall



children's playspace



media labs

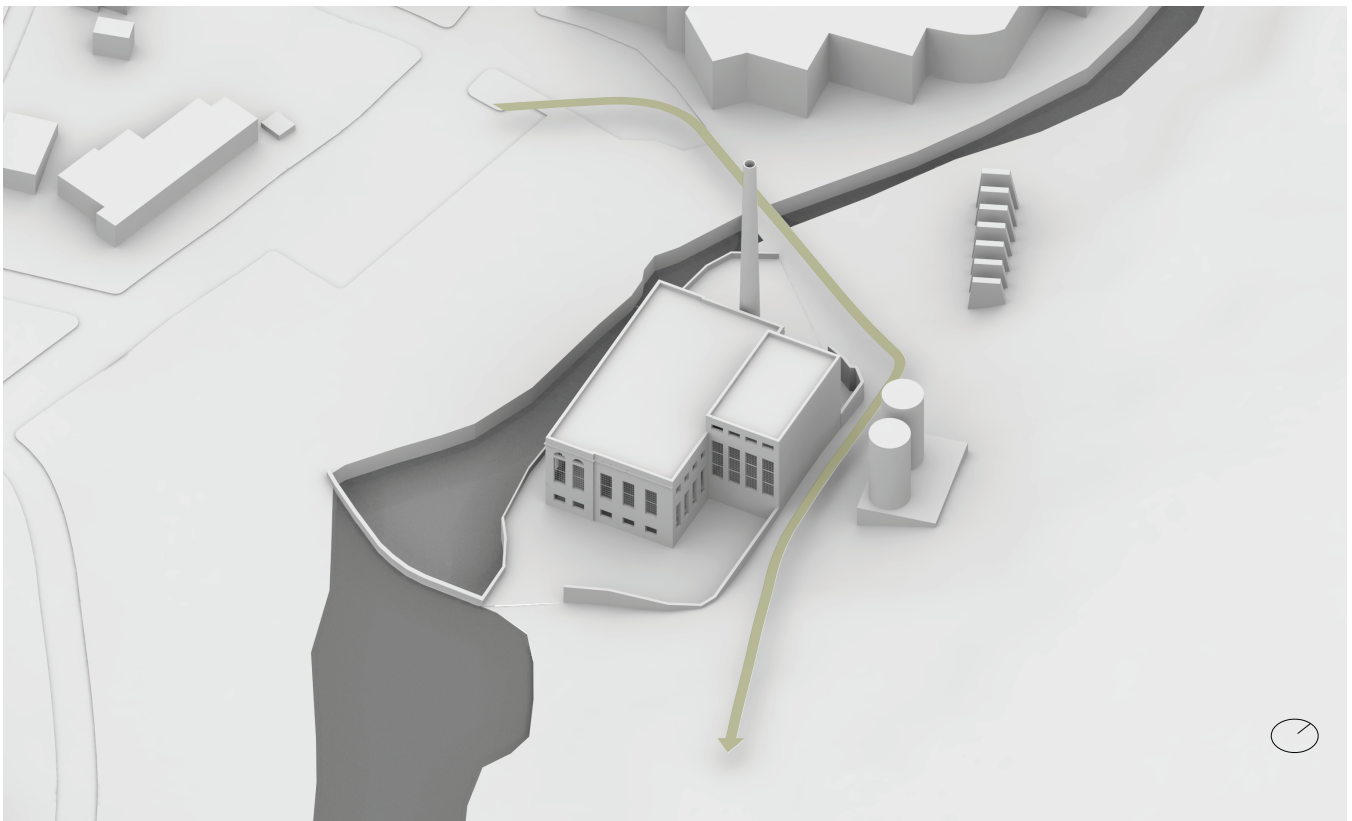


Surface: Programmatic Insertion

The study of the Surface is to be used to develop a language for the new programmatic intervention.

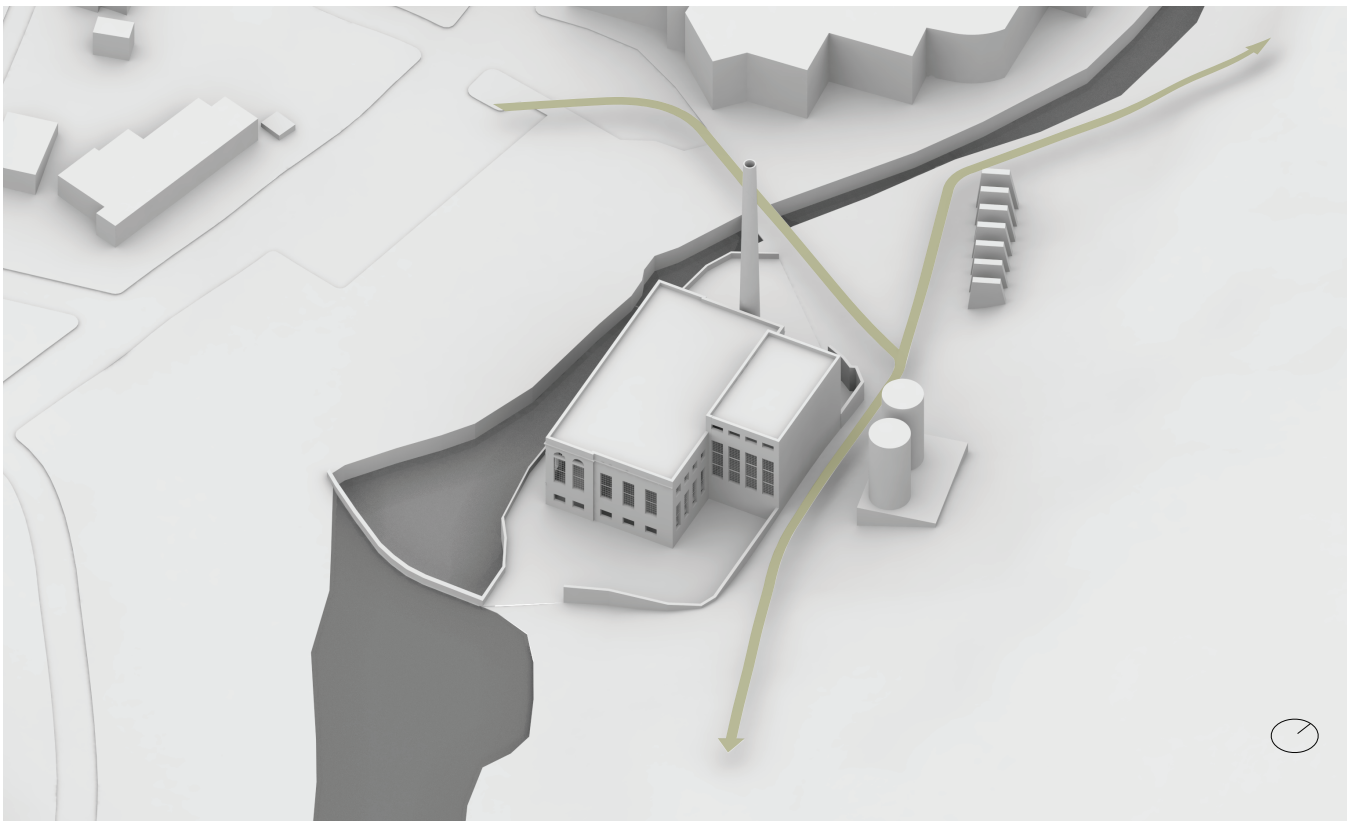
Using the three containers as base, this study looks at how a simple move could be used to break up the larger volumes inherent to the containers, shape new space, introduce a new, simple tectonic order and bring in new forms of daylighting. In addition to these goals, the Surface will house program which will overlap with what is proposed to exist within the plinth of the containers. These elements are a lecture hall, children's reading room and play-space, digital media lab and cafe.

These components are meant to be resources for the community to use at will.



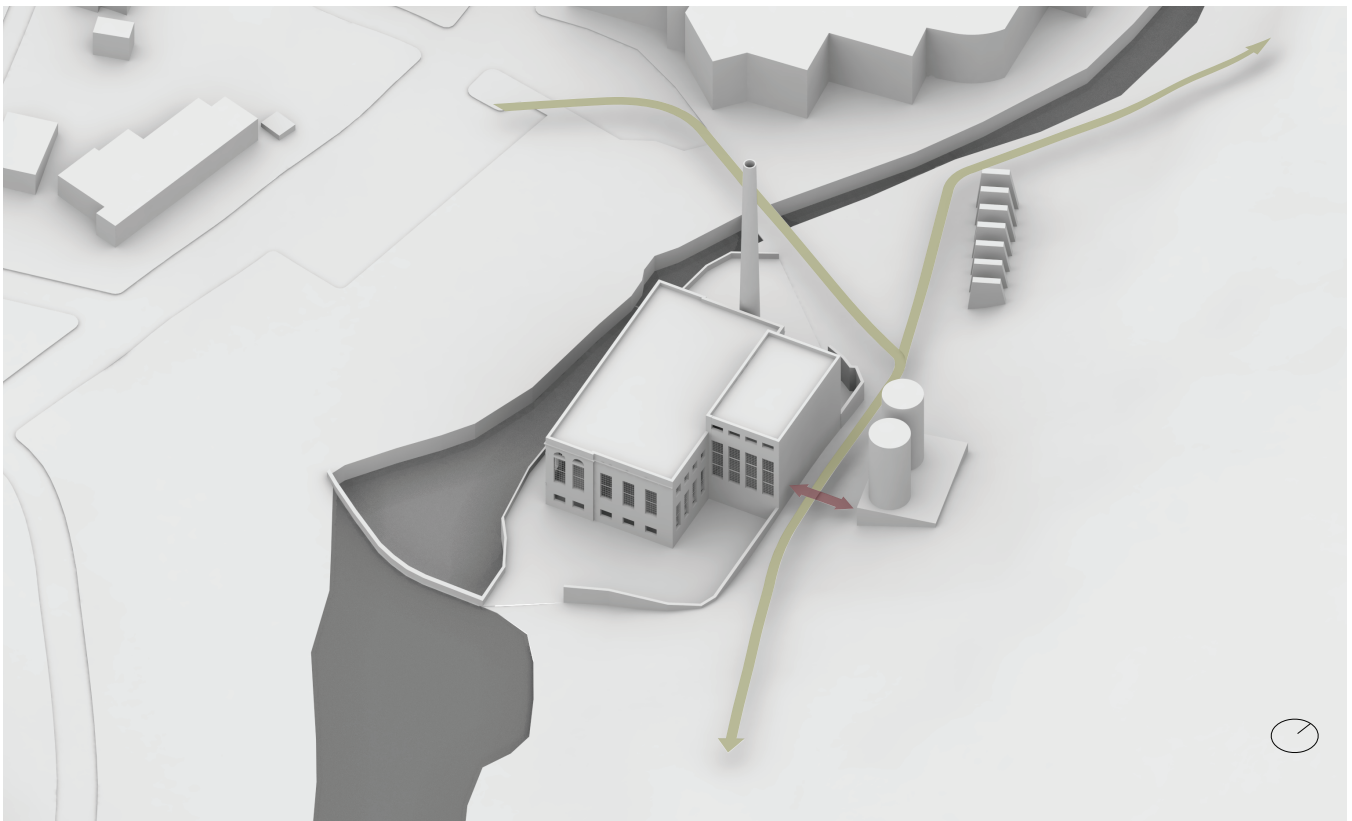
29. *intervention: arrival to trailhead*

When starting the design process, this project looks to the first moment one would arrive on site on the west side of the river, cross the bridge and proceed south on the existing steamline trail. This offers the opportunity for the intervention to act in continuity with existing trends, paths and energies on site. Figure 29 shows the path on which one would move from the west side of the river from the parking lot, across the bridge and south on the trail.



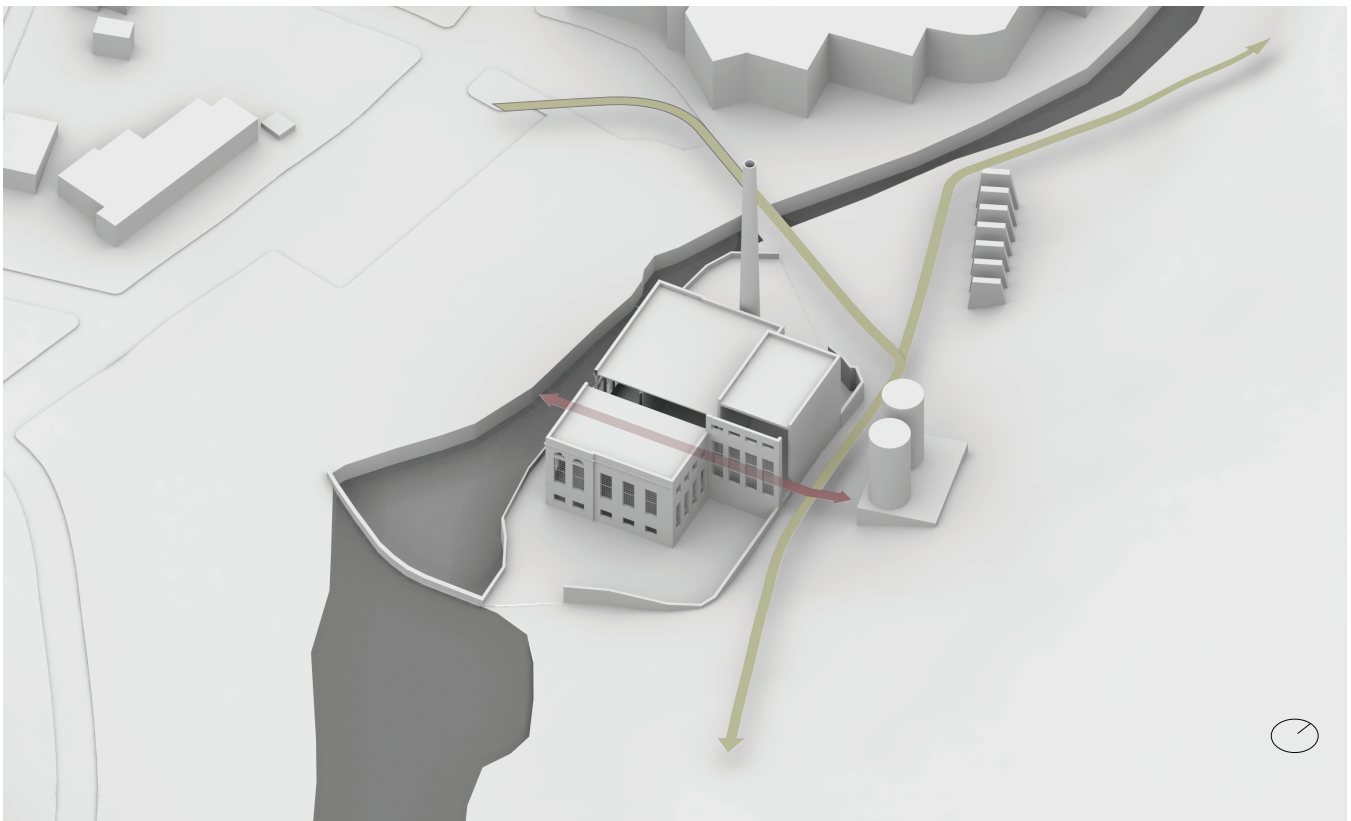
30. *intervention: trail extension*

Figure 30 shows the trail extension which extends to the north from the site, moving around the railroad trestles and along the river. The two trails converge just one would move between the coal silos and eastern portion of the building.



31. *intervention: compression*

Moving south along the trail just after the trails join, there is a rare moment of compression in the otherwise open site (figure 31). This occurs at the point between the coal silos and the eastern container. This is also the start of the previous energy flows on site, as coal would move from the silos and into the processing unit by an overhead conveyor.

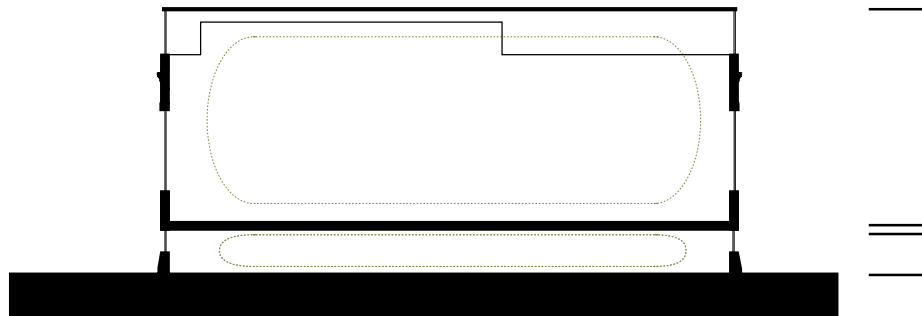


32. *intervention: connection*

Using this point of compression as an opportunity, a slice is created through the building to physically and visually connect the trail, the coal silos, the building and the river. This move provides a main entry for the public spaces on the east. These public parts of the program sit on top of the plinth; one level above the ground floor. The terrain on site naturally rises three meters in elevation from the ground floor level to this height at this point. The move also establishes an entry for the ground floor educational programs on the western facade.



33. container, existing conditions

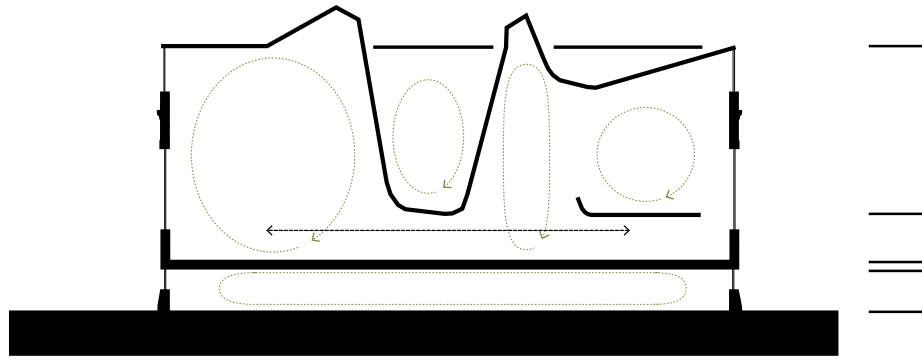


34. container, lift roof

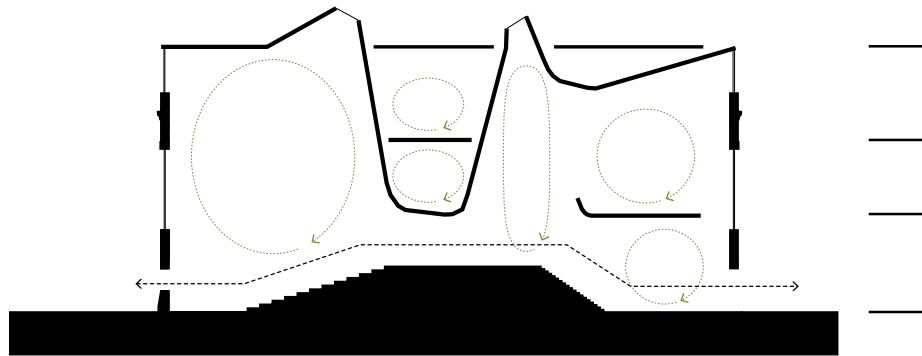
After establishing a view corridor, circulation and physical connection between the containers, the landscape and the silo, the next task looks at the containers and a spatial intervention. With establishing the main entry off the trail, the large volumes (containers) become the main floor rather than the plinth.

Figure 30 shows the existing spatial conditions of the central container. The coal unit container is four meters higher than the others. This leaves the building with three separate spatial conditions: the plinth, the main hall and the coal units. When considering the language of the 'surface', the first move to intervene spatially becomes a broad yet simple and singular one. This is to create a new roof system which hovers above all

three containers to create a sense of consistency (figure 31) and to break down the spatial characteristics to two conditions.



35. container, folding roof

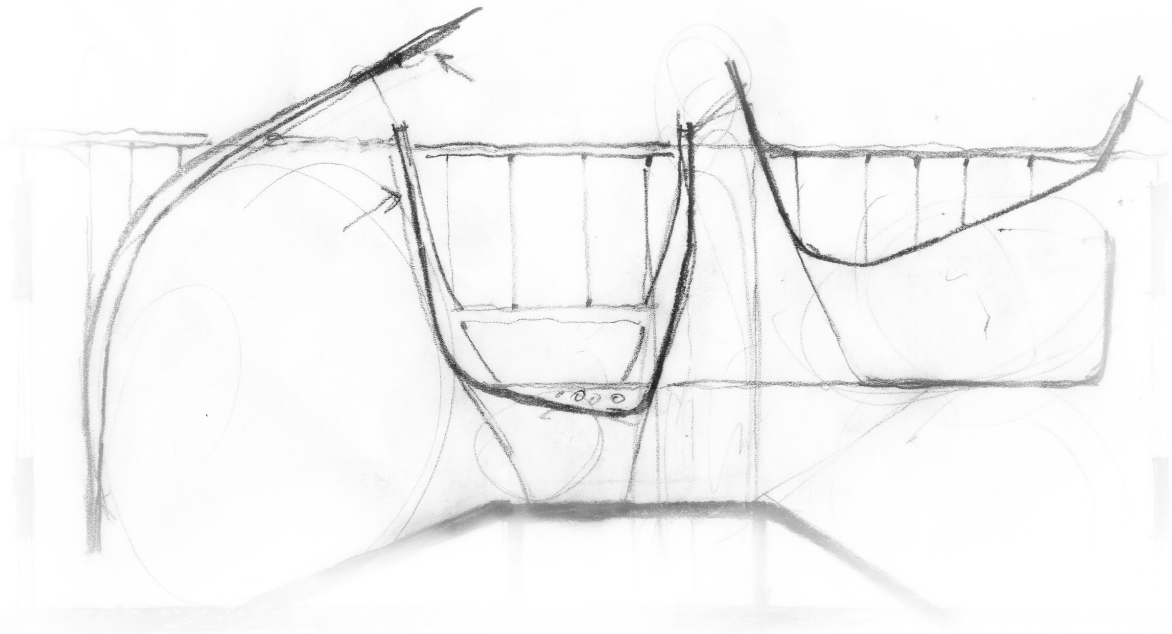


36. container, carving plinth

The second move that is made it to begin folding the roof surface and allowing to shape the interior space (figure 32). This is done in an effort to break up the main volumes which when left intact as singular spaces, offer little programmatically. This fold begins to define space yet not prescribe space. A layer of space is added back into the previous two condition building.

The final move is to carve away the plinth, which further defines activity in these spaces, but also connects the main public levels to the ground floor educational programs (figure 33). This overlap creates spaces in the lecture hall and cafe, which are to be shared amongst the larger public and the more private educational aspect. The fold

and surface are peeled away to create roof monitors over the main circulation spine, the lecture hall and the children's' play-space.



Design Response: Within the Fold

By chasing the past one will never reach it. Only in acknowledging the present can the past speak.²⁰

-Sverre Fehn

As one arrives on site and parks their car in the lot on the west side of the river, the most recognizable element of the cultural center becomes visible. This is the 60 meter tall smokestack, and the only element on site that remains untouched by this proposal. Stoically alone and disconnected from the structure of the building, the stack acts as a beacon for the site; modifying it in any way becomes unnecessary because it already serves an immense purpose.

Moving north from the parking lot towards the bridge, the building slowly begins to reveal itself through the trees. Pieces of it become visible with others remain hidden (figure 38). The large clerestory window which is created through lifting the roof

off the structure begins to signify that this building has a new purpose. The interior folds are hardly seen from the outside.

Crossing the bridge the building slowly reveals more of itself to the right, coming forth from behind disconnected steam lines and brush. Moving forward the railroad trestles come into view as the trail extension runs parallel. Across the bridge, a light wooden platform brings one up and around the east side of the building, joining the pedestrian trails. The platform cuts through the existing oil tank on site, providing daylight and views down into the exhibition space below. Moving through the tank, the platform aligns with the trail and creates a path leading to the main entry on the east





side of the plant (figure 40). Moving south along the platform the rare moment of compression is felt as one moves between the coal silos and the eastern wing of the building. The connection through the building and silos becomes visible on both sides of the platform as the coal silo plinth is cut away to reveal the reading room below; the building is cut away to reveal a visual connection through the containers to the river.

Moving past the slice, the wooden platform peels up, creating a curved wall opposite the steam plant, which one moves along to enter the building. This move further the sense of compression felt at this point.

The main entry leads into the coal

unit portion of the building, perpendicular to the slice made through the building. The three coal pulverizers still stand in place, yet are re-purposed with a reflection space, a hydraulic platform and stairs. Four levels of mezzanine platforms constructed of steel grating sit above the main entry. These become multiple levels upon which to interact with the pulverizers.

Moving west into the central container the floor becomes solid as the steel grating departs into the original concrete floor. This space is treated as a gathering zone for the theatre, which is to the north. To the south, up a set of stairs is the children's play-space. Down the large set of social stairs is the cafe. Sitting above the reception space



39. arrival in site, next to pedestrian trail

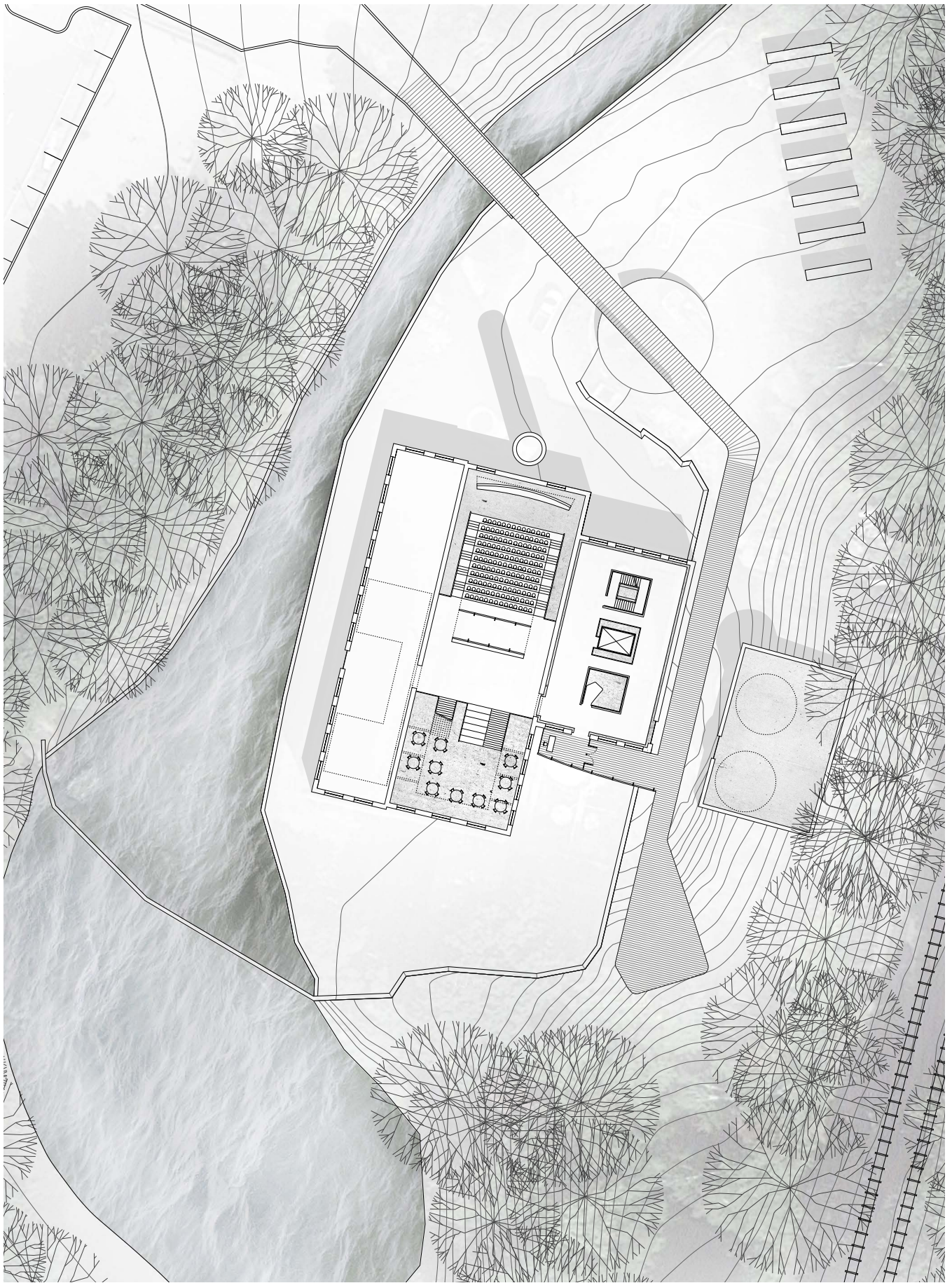
and to the north is the children's viewing platform for the theatre.

The western wing contains the exhibition space. Being on the west and with the multitude of tall windows, the wooden surface acts as a screen in certain areas to not only define zones for exhibition, but also to mitigate western light (figure 44). In the fold above the exhibition space are the children's media-lab and reading nook.

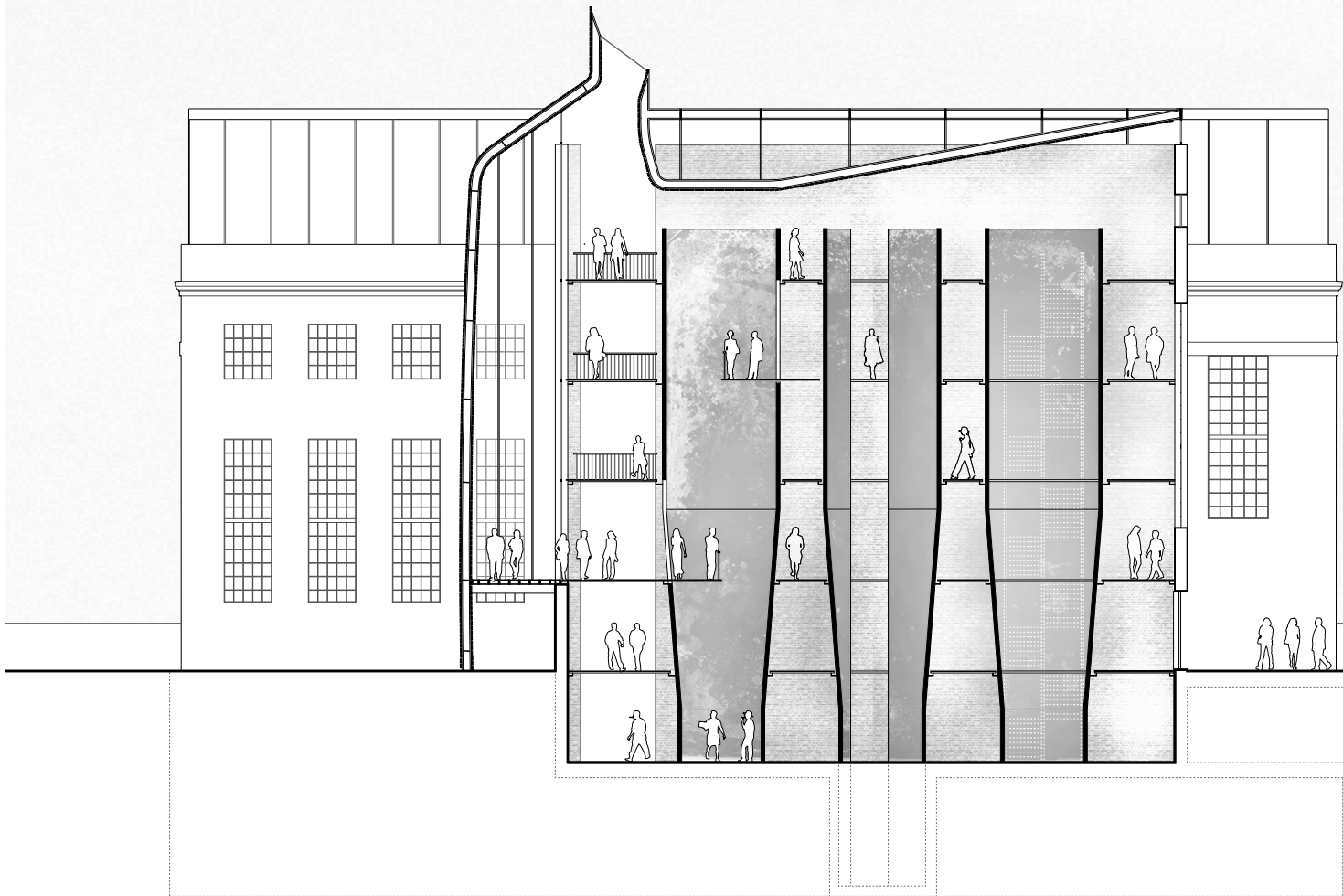
Entering the building from the western facade on the ground floor leads you into the educational programmatic piece of this project (figure 45). Upon entering there is a small social gathering space with couches tables and chairs. To the south is the test kitchen, which is located adjacent to the

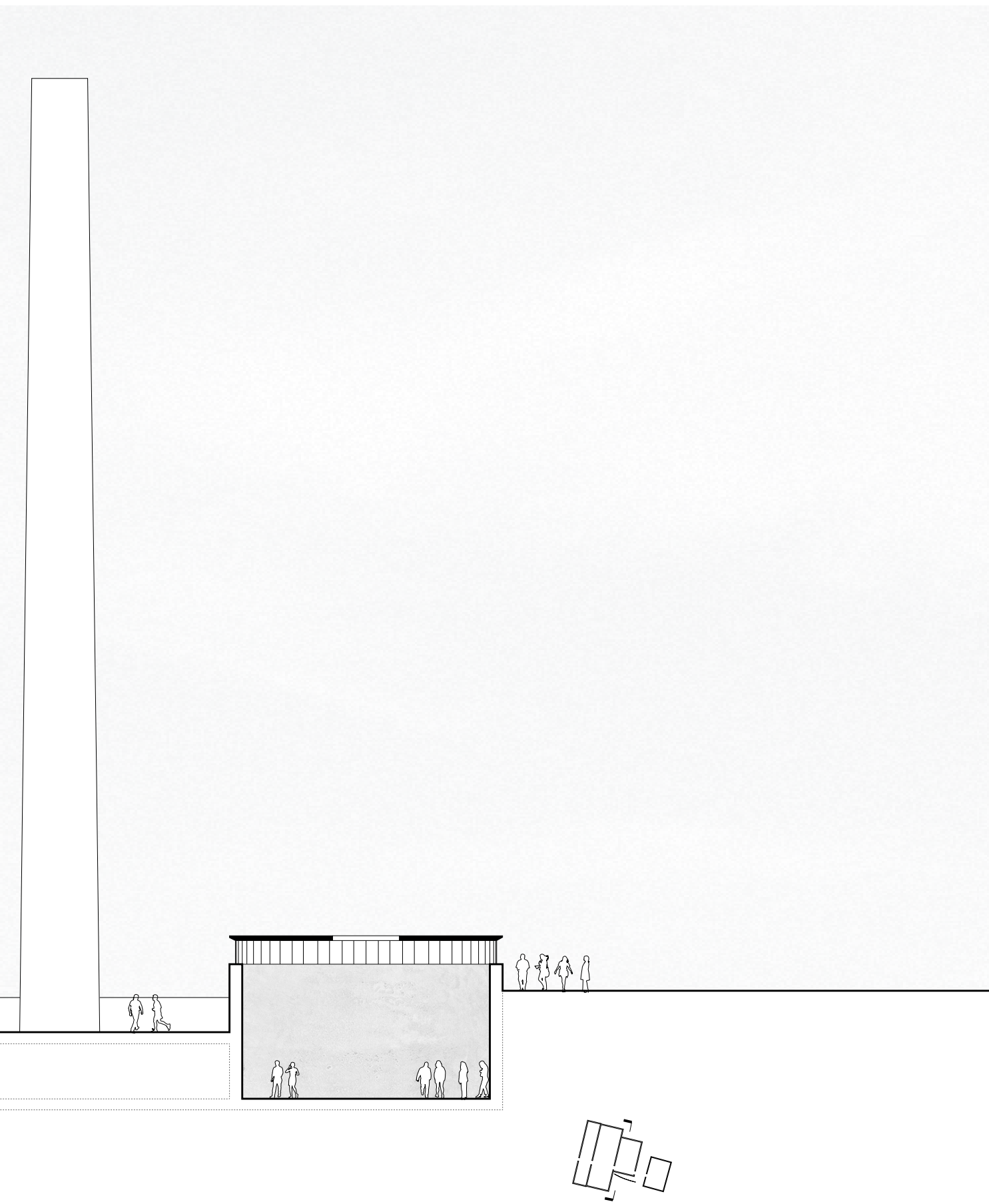
cafe. This is intended to serve as a culinary training program for the college. To the north is a large classroom for the school. The circulation spine moves west which connects these components to the cafe, lecture hall and coal units. Moving past the units is a tunnel underneath the pedestrian path. This connects to a reading room underneath the coal silos.

The basement plan has additional classroom space as well as a exhibition space located in the oil tank, which you pass through on your path up to the main public entry.

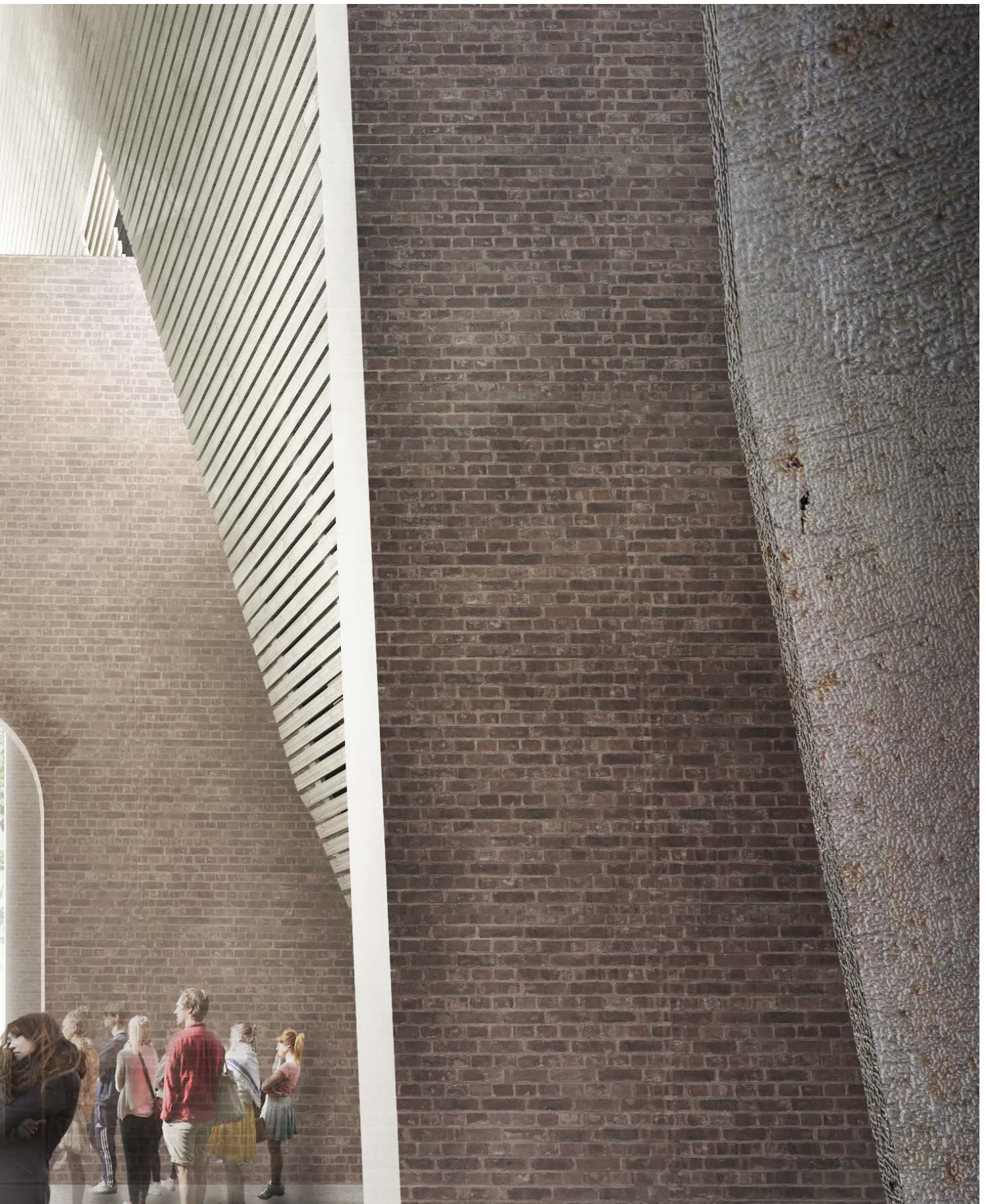


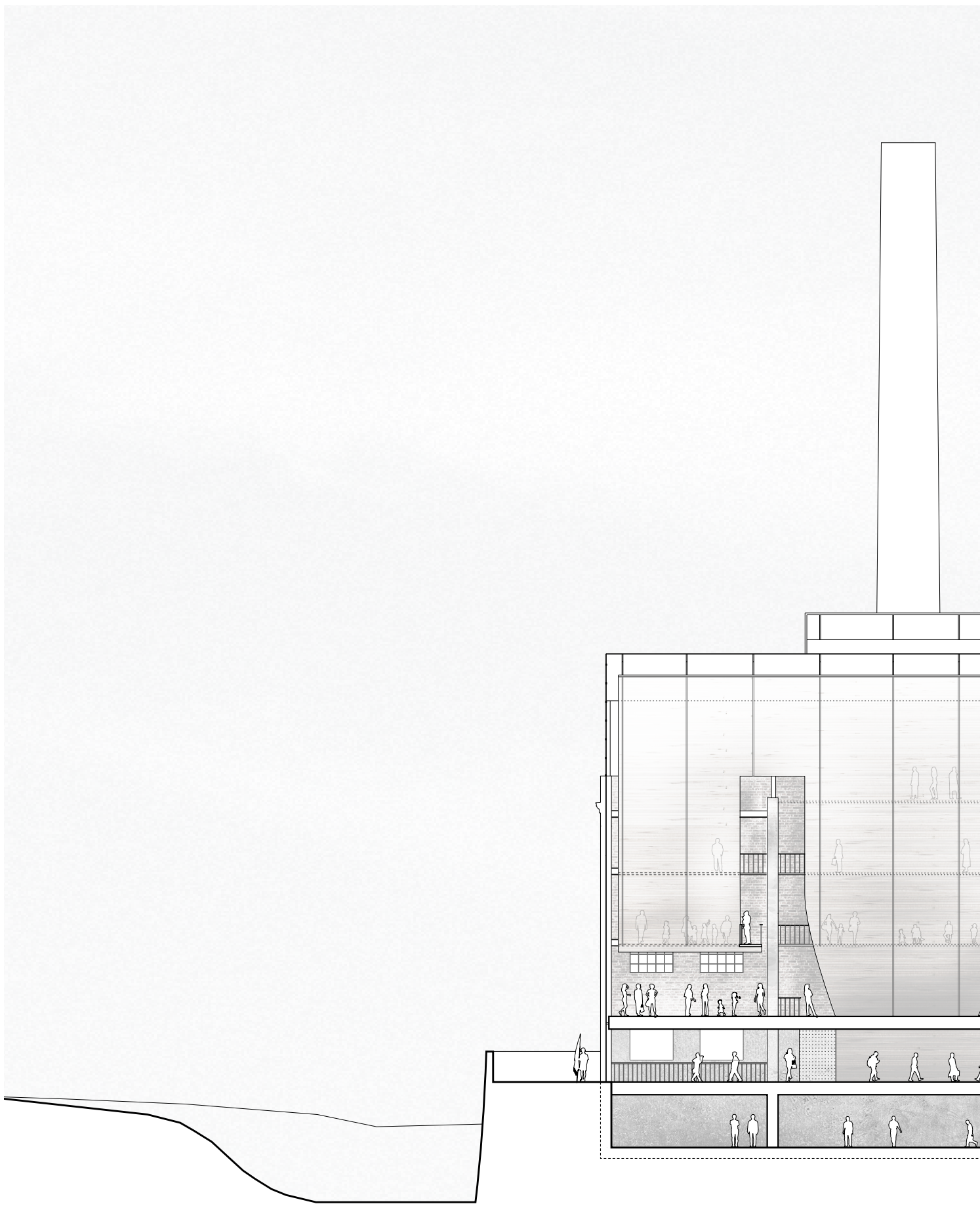
40. site plan and main level

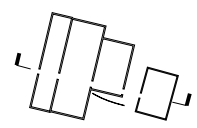
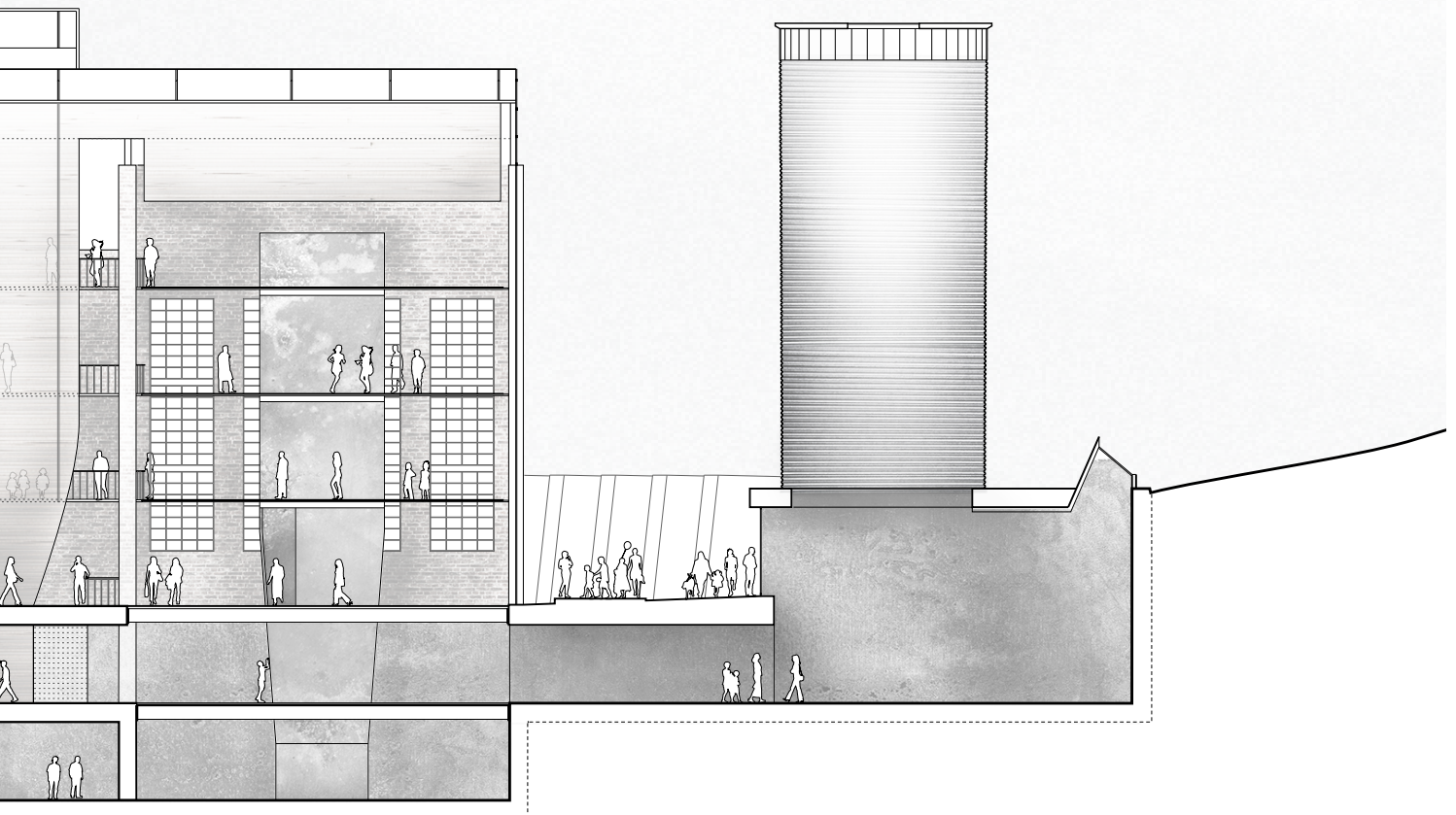




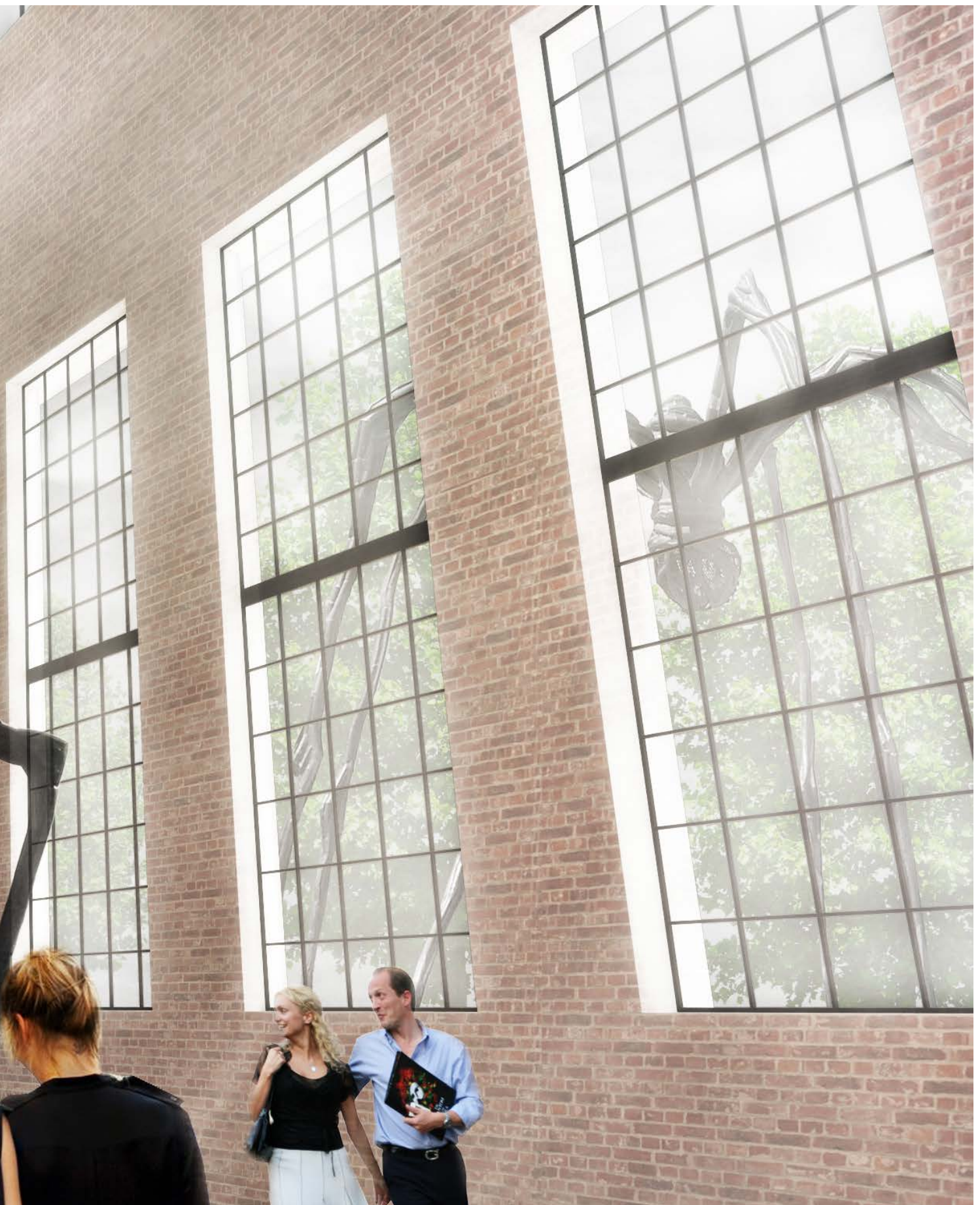


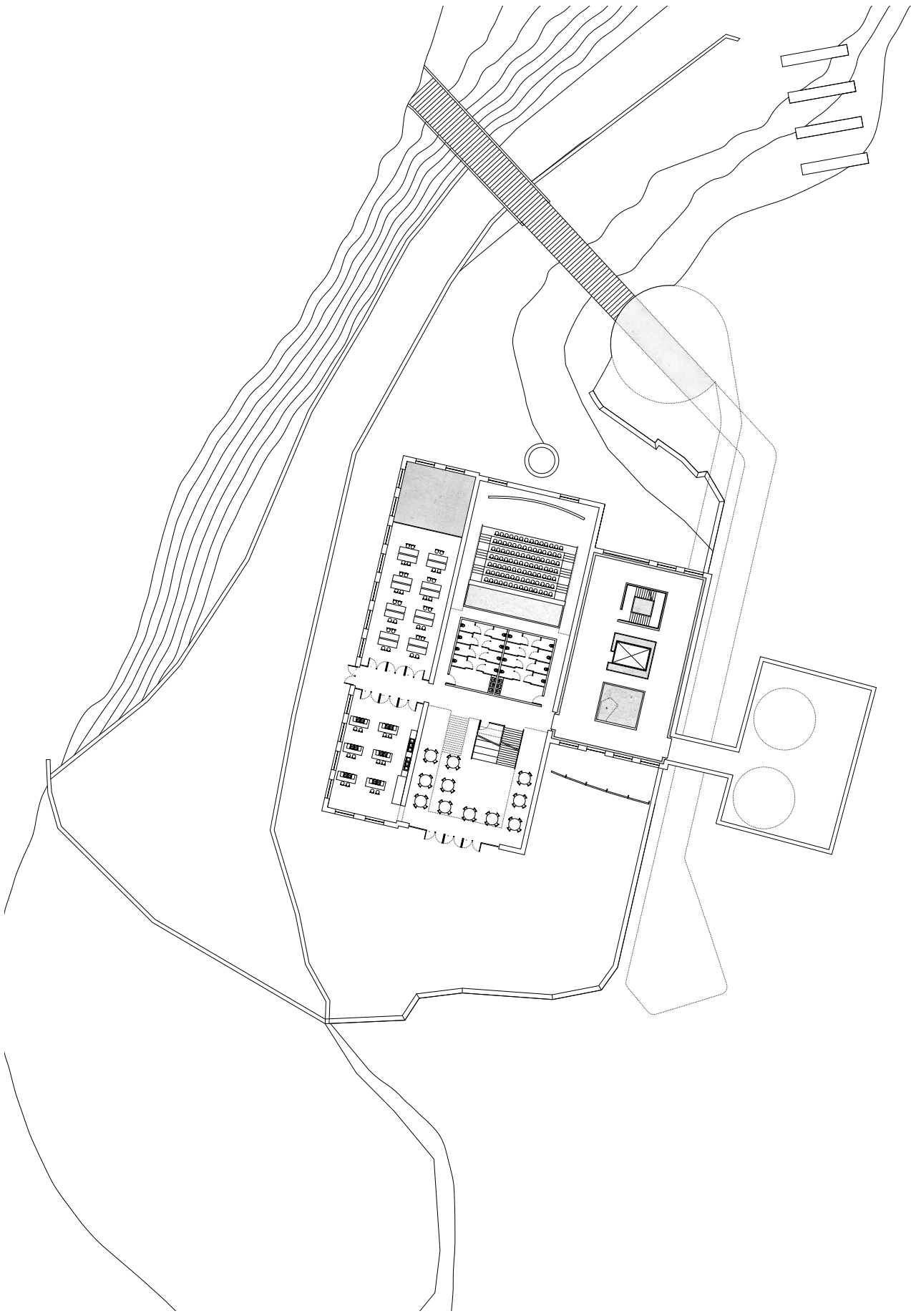






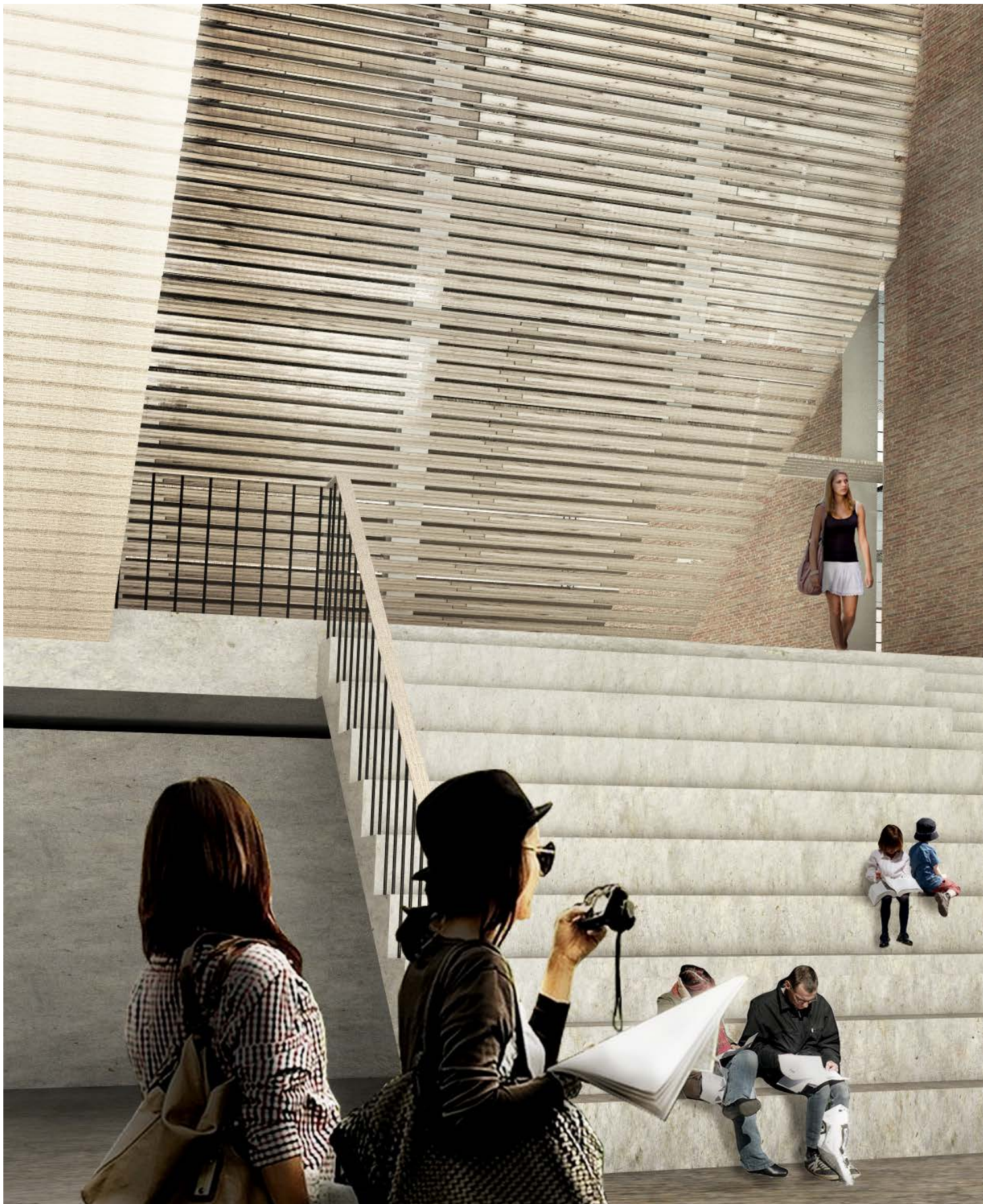




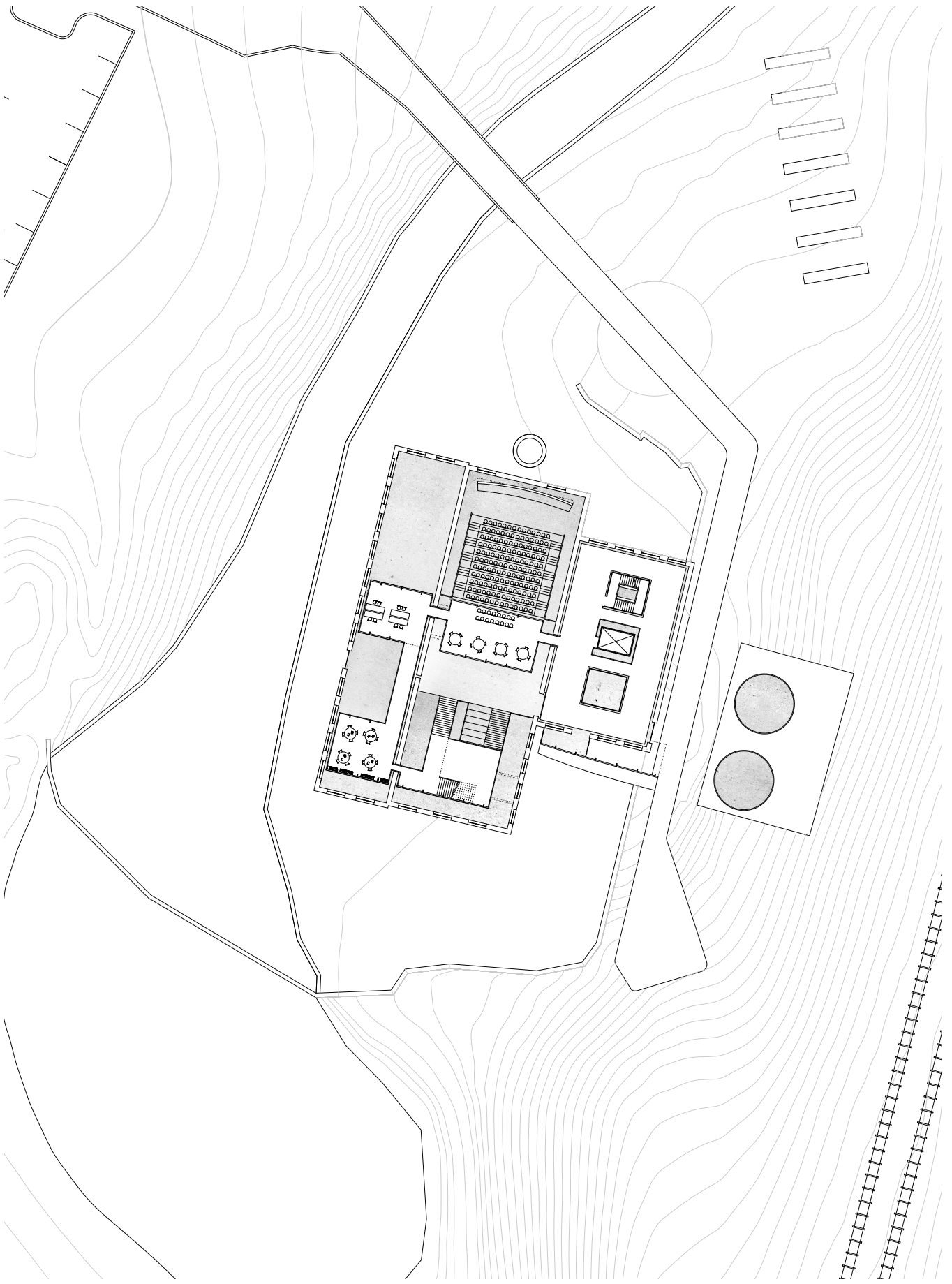


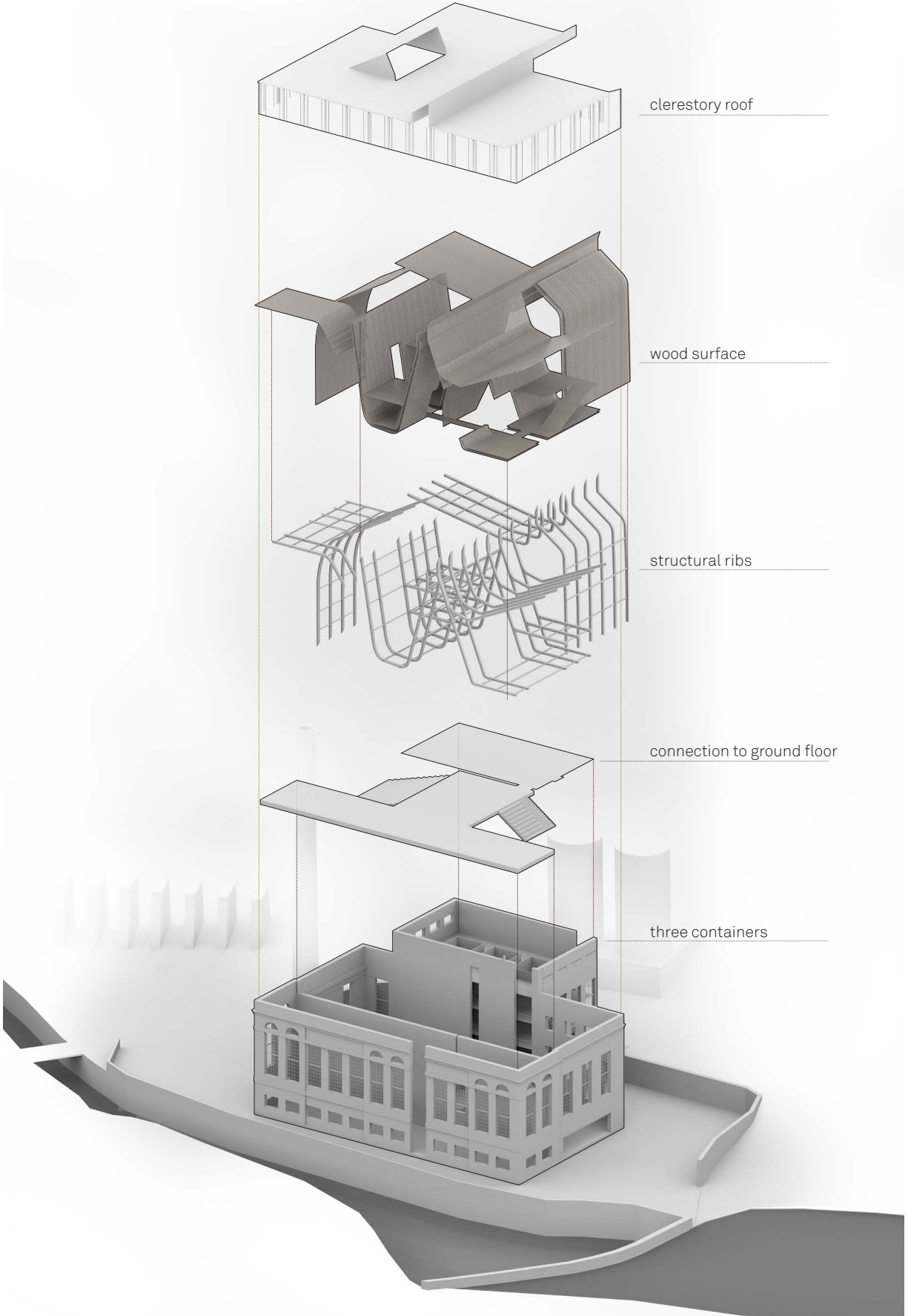


46. looking into lecture hall / theatre









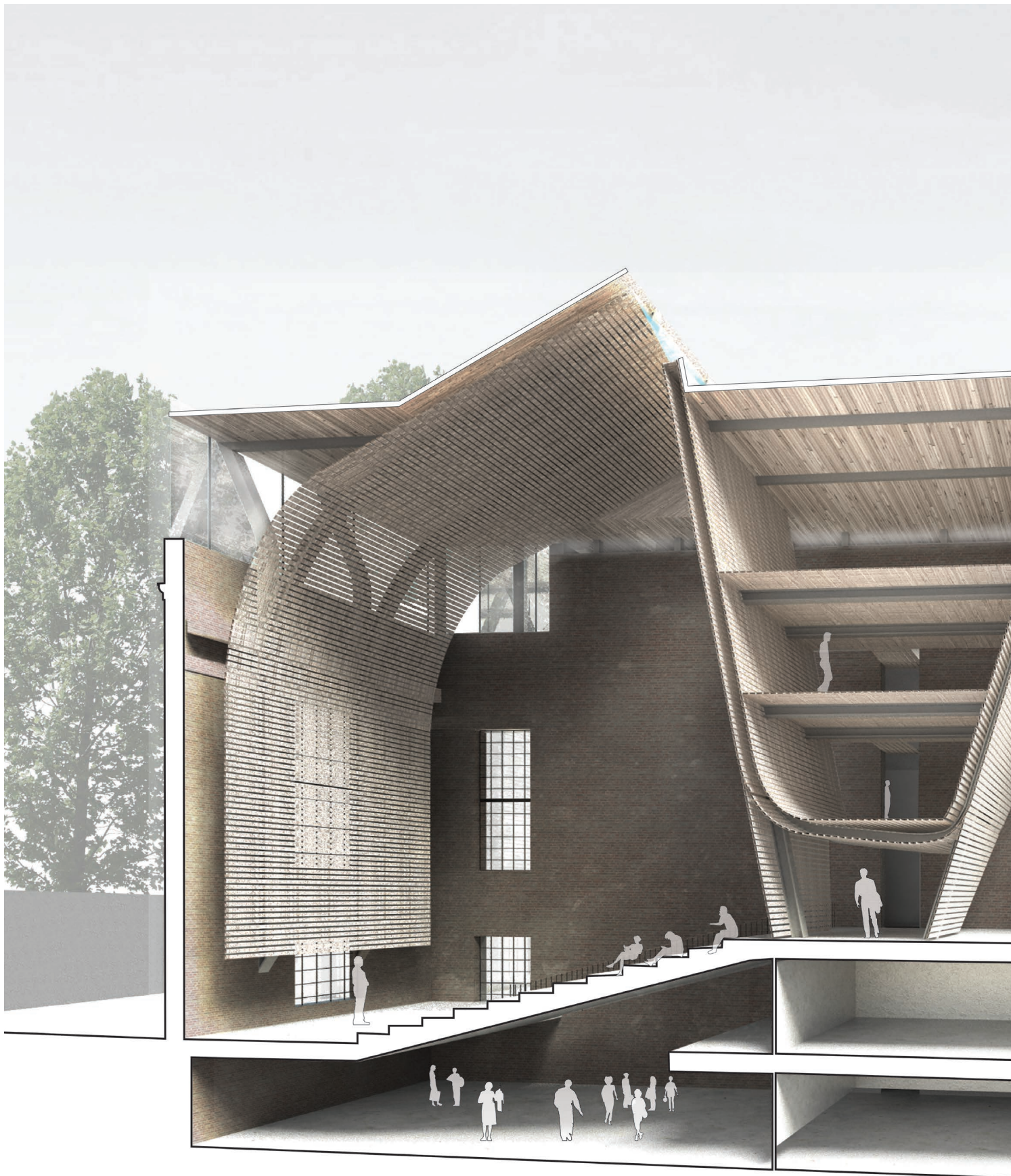
clerestory roof

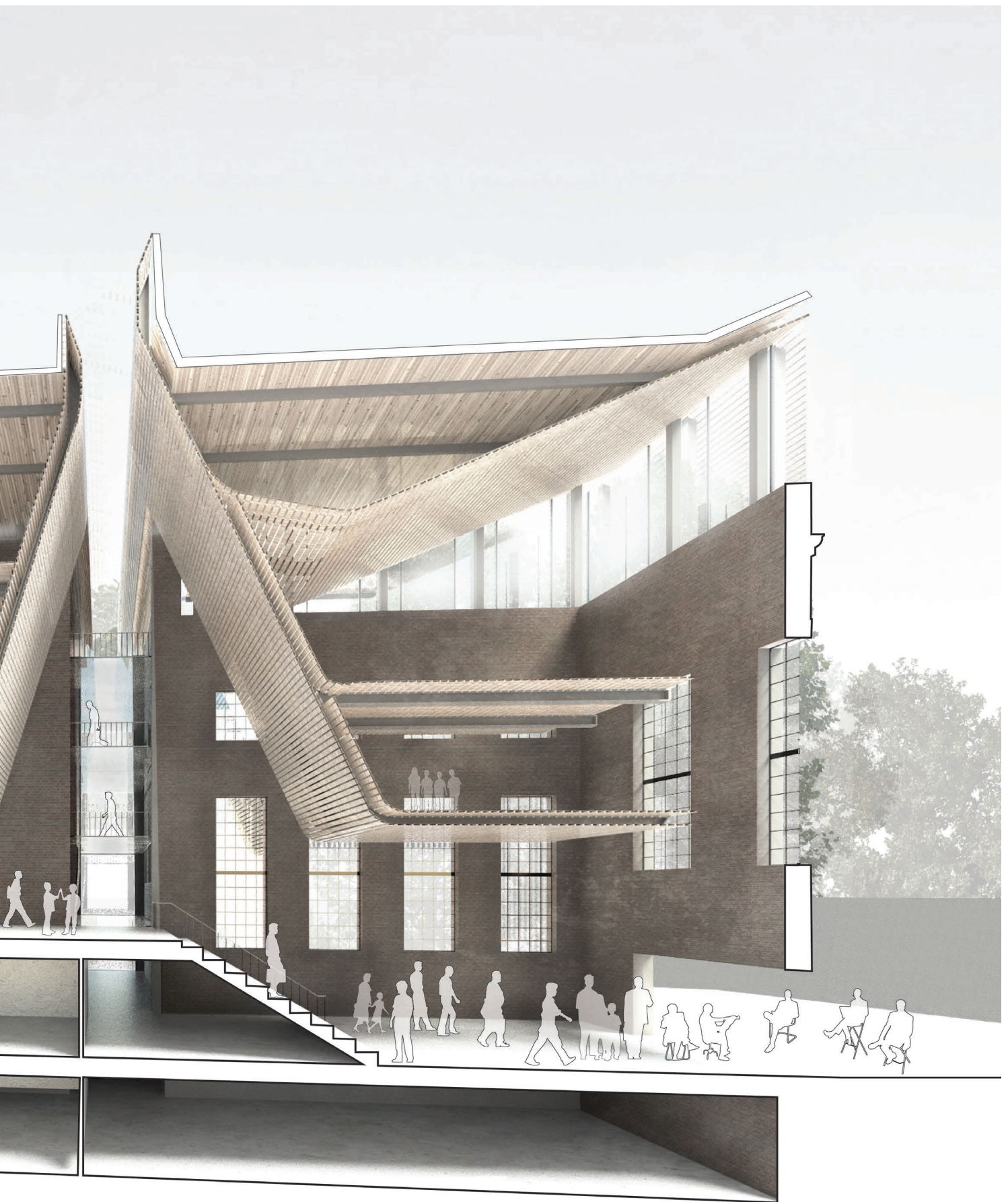
wood surface

structural ribs

connection to ground floor

three containers







Looking Forward

Growing up in the northeast in rural towns where conditions like those found in Fitchburg are fairly common, I had found from a young age an interest in how these industrial relics can adapt along with communities rather than just manifesting bygone eras. The interest mainly came from the general mysterious and indeterminate nature of abandoned space, the scale of these buildings and their location relative to either urban or landscape contexts. I have spent a great deal of time in spaces such as these and constantly found myself underwhelmed considering the latent potential.

A question that came up towards the end of this thesis was how the examination of this building, within its specific context

could be extrapolated into a method that could have wider implications. Specifically what was referred to was the approach of Fabric, Object and Surface.

While these terms and this approach evolved directly out of this specific site, its conditions, history and suggested program, it is very possible that this method of examination could be transferable to many situations. The method is broad enough to be able to examine cities and structures as a result of varying factors, yet specific enough to tie a design project to the roots of its city.

While working on specific architectural tasks within the project, this method forced me to step back and examine the implications of each move on the larger scales.

So not only was the how the fabric influences the object and surface, but how the surface can influence moves upon the object and fabric. This became a dialogue between multiple scales.

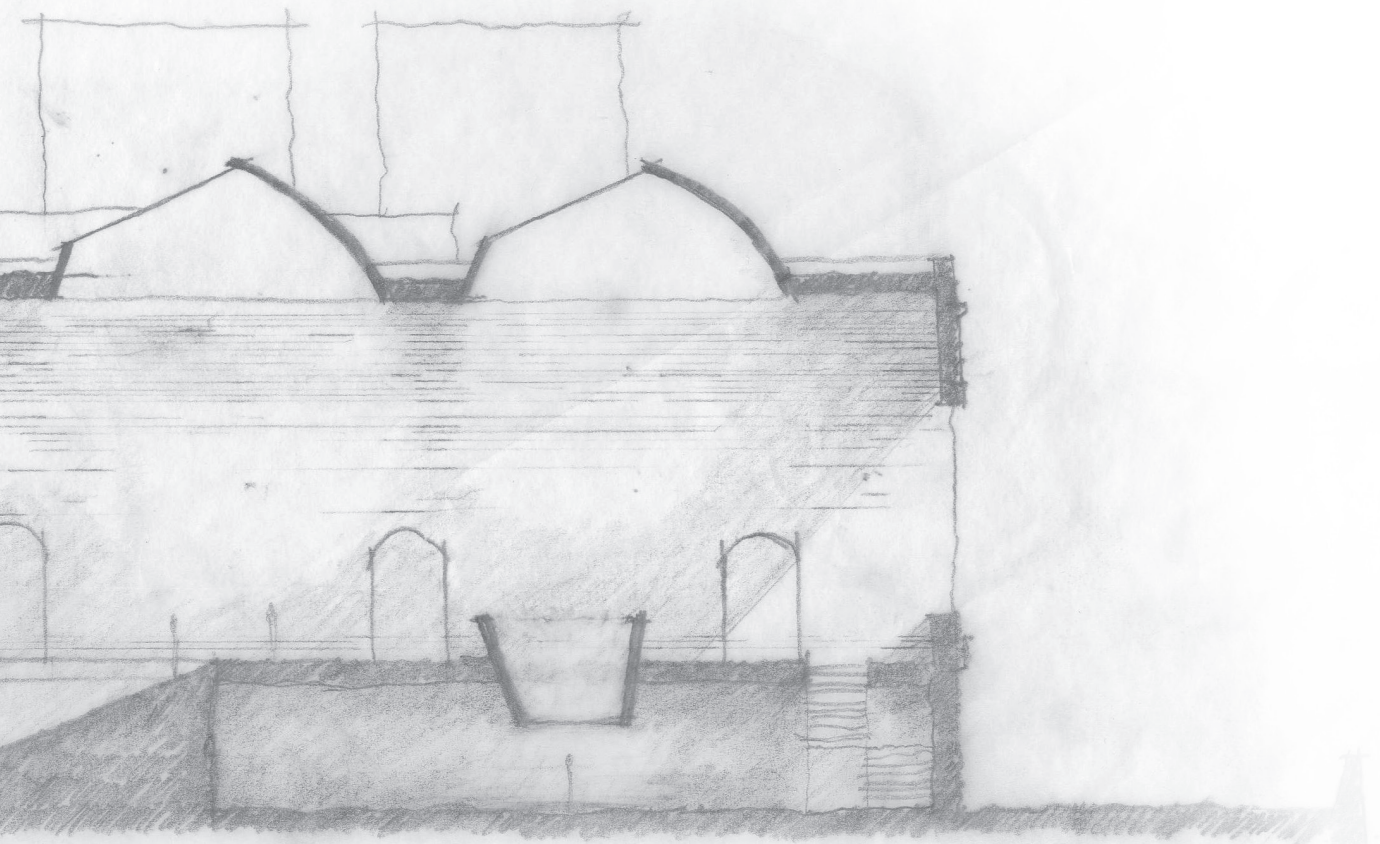
The reading of the building as the three containers allowed me to simplify the an otherwise complex system of parts and processes into a coherent and clear conclusion of space. Through this simplification, justifications of where to cut through the walls and floors became easier to rationalize. These decisions were largely justified by the study of the fabric.

The past energy processes and current pathways on site led to the largest organizing feature of the project, which is the

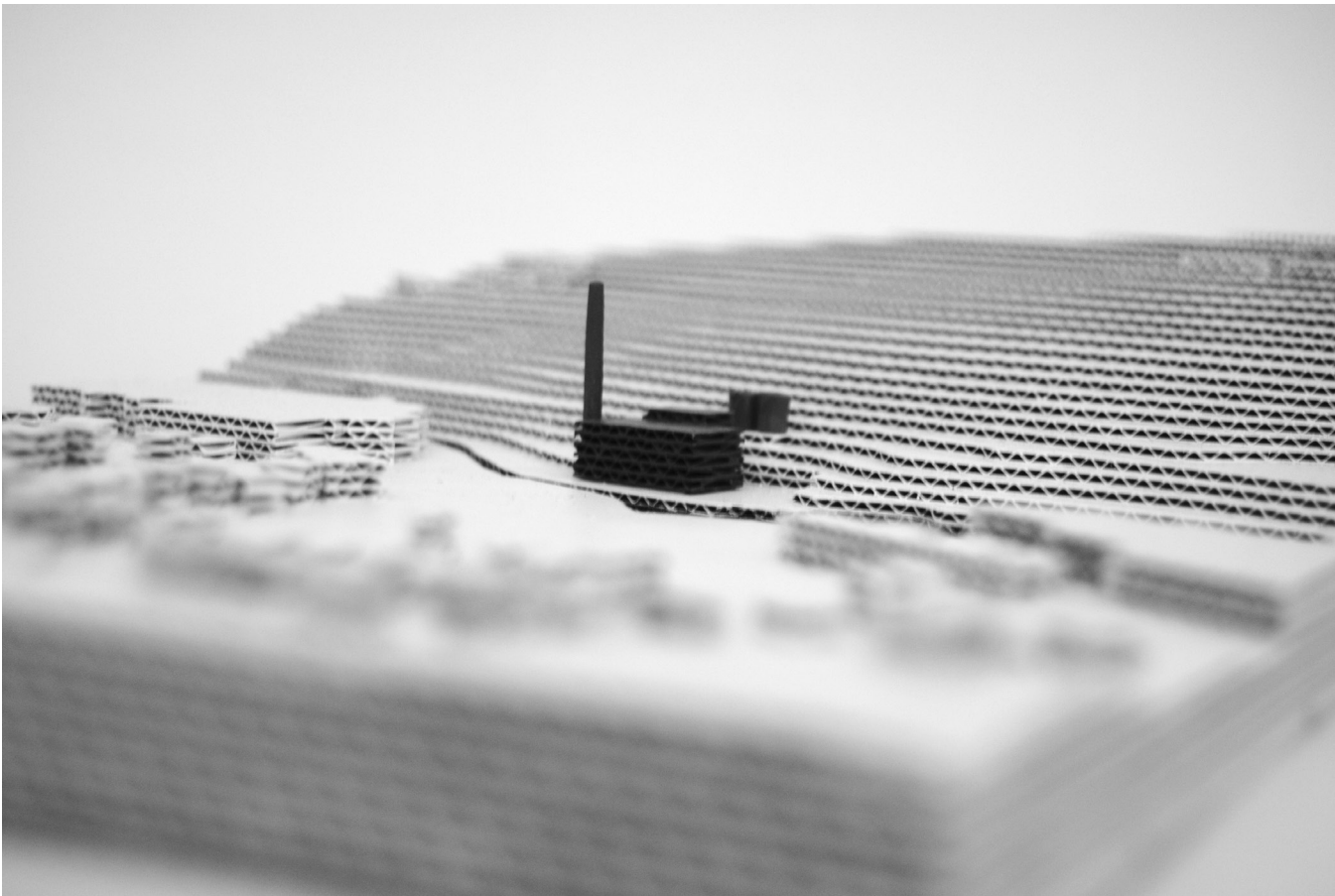
slice through the silo plinth and containers. This was to not only connect the past energy flows of coal through the site and building, but also to incorporate the newer pedestrian energy of the trail. Through this move, every scale of study is used and involved within the dialogue of design.

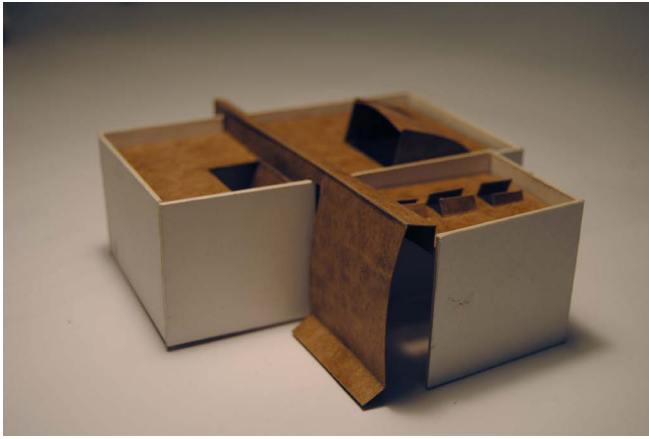
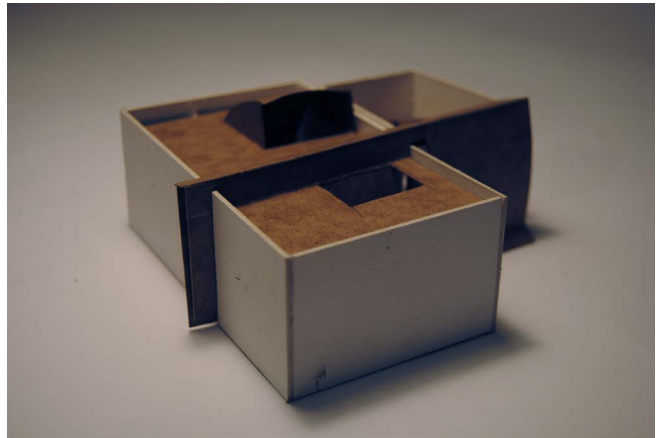
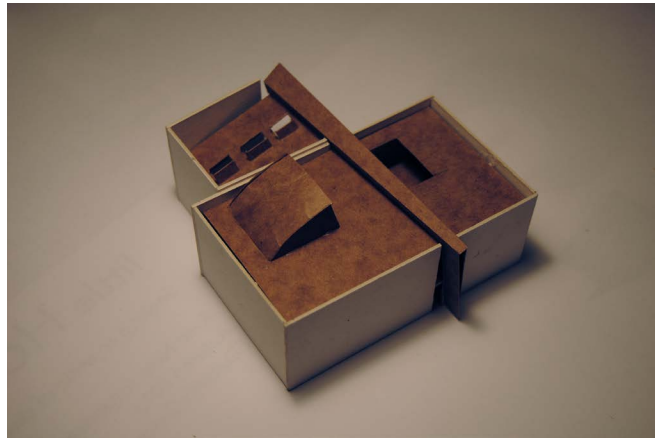
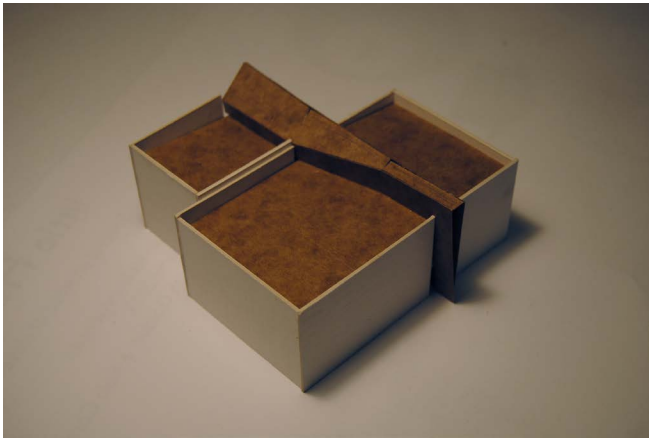


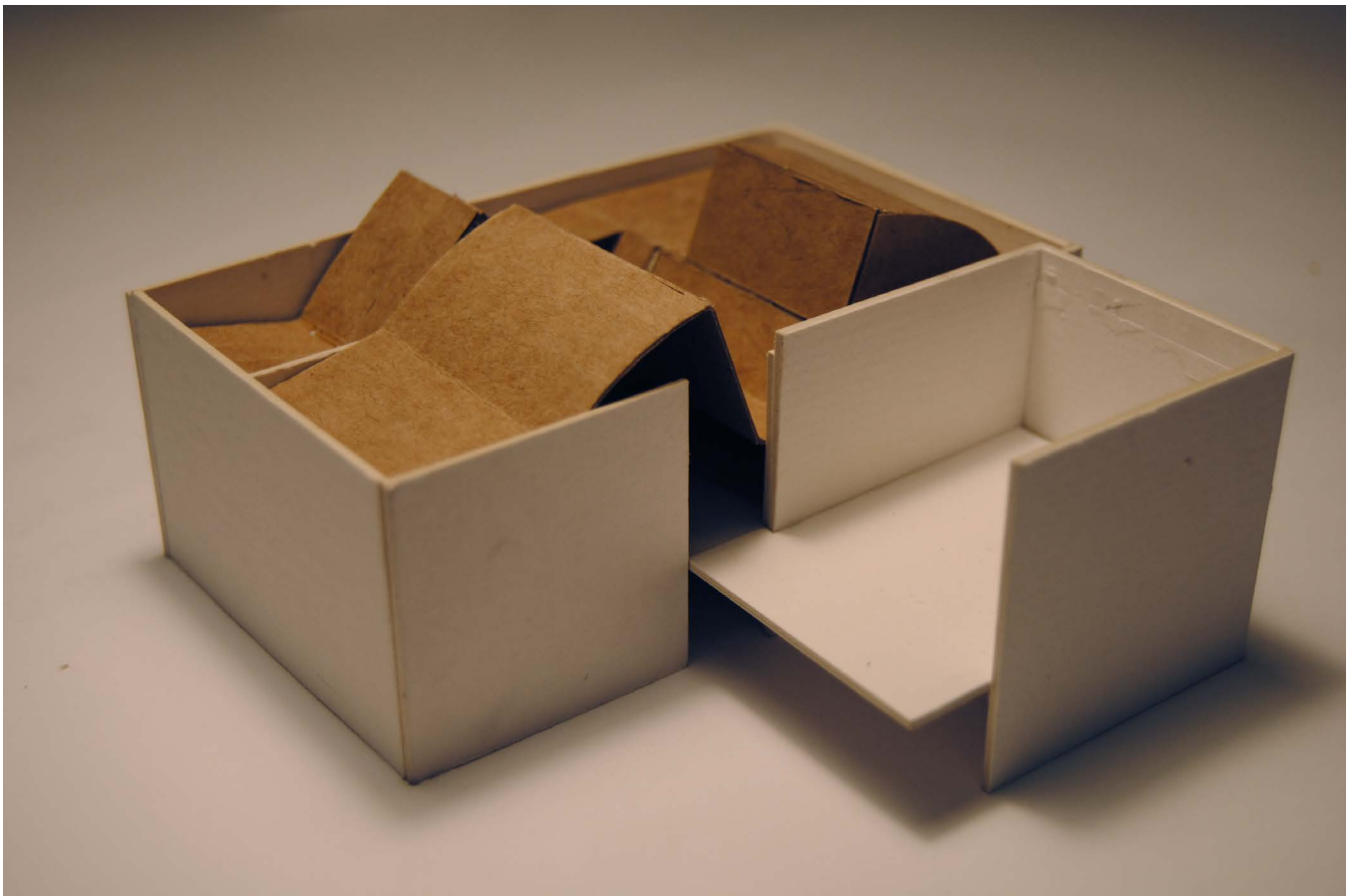
Appendix: Sketches, Models, Etc.

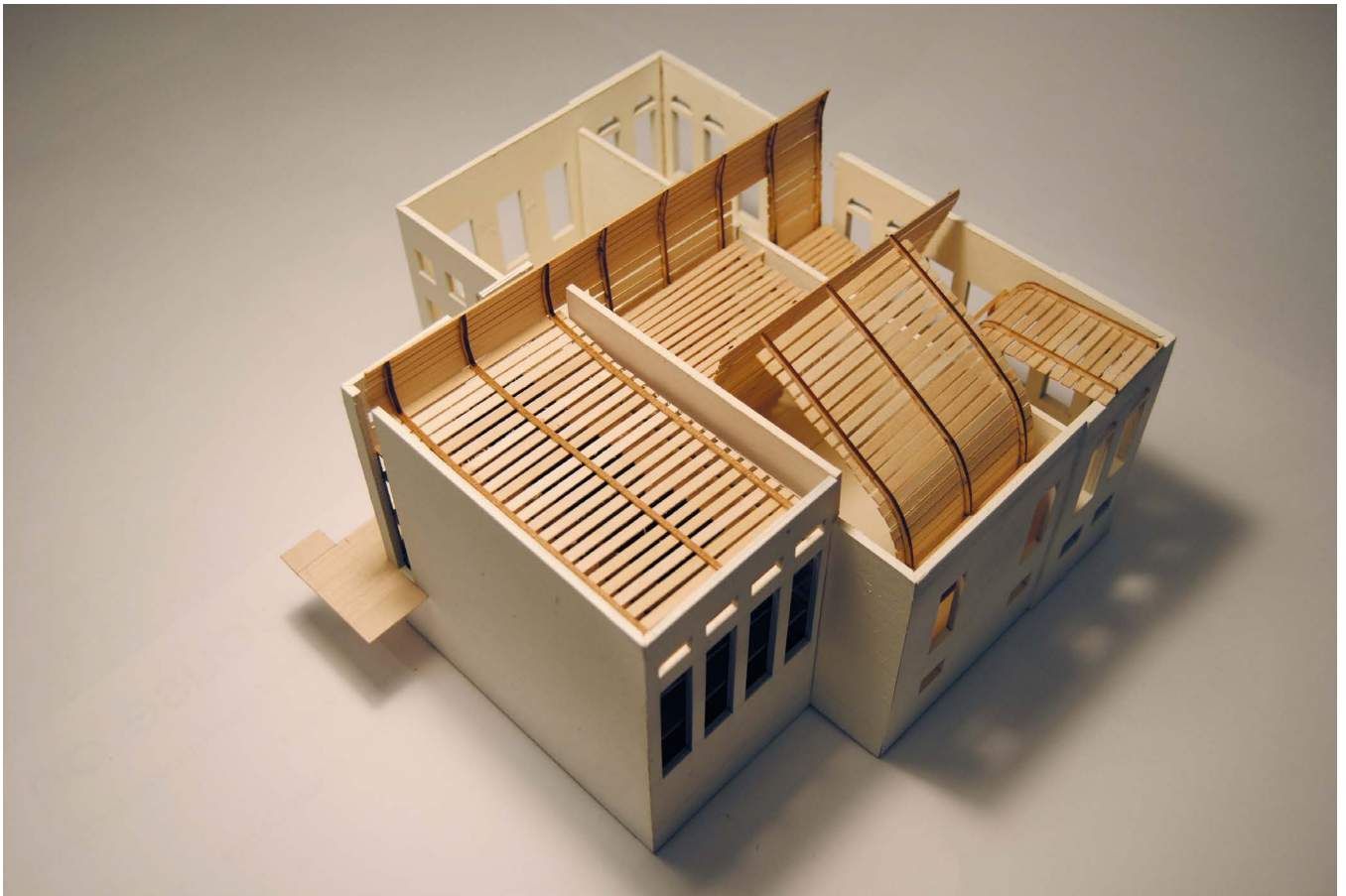














Endnotes

1. Treib, Marc. *Spatial Recall: Memory in Architecture and Landscape*. P. 17
2. Sola-Morales, Ignasi de. *Terrain Vague*. P. 122
3. Ibid. P. 119.
4. Ibid. P. 119-120
5. Ibid. P. 120
6. Ibid. P. 120
7. Ibid. P. 120
8. Ibid. P. 120
9. Ibid. P. 123
10. Ibid. P. 123
11. Simmel, Georg. Pg.262.
12. Ibid. P. 262
13. Ibid. P. 260
14. Jackson, JB. pg.89
15. Edensor, Tim. *British Industrial Ruins*. Introduction.
16. Ibid. P. 4
17. Ibid. P. 265
18. Ibid. P. 125
19. Edensor, Tim. *Sensing the Ruin*. P. 217
20. Fehn, Sverre. *On the Thought of Construction*. P. 47
21. Sola-Morales, Ignasi de. *Terrain Vague*. P. 120
22. census.gov
23. Fitchburg Historical Society. *Images of America: Fitchburg*. Introduction
24. Ibid. Introduction.
25. Ibid. P. 8

References

- Caicco, Gregory.** Architecture, Ethics, and the Personhood of Place. University Press of New England. Lebanon, New Hampshire. 2007
- Chakroff, Evan.** Ruins of an Alternate Future: Jinhua Architecture Park. <http://evanchakroff.com/?p=800>
- Doron, Gil.** The Dead Zone and the Architecture of Transgression. City. Volume 4, No. 2.. 2000.
- Edensor, Tim.** Industrial Ruins: Spaces, Aesthetics and Materiality. Berg Press. New York, New York. 2005
- Edensor, Tim.** Sensing the Ruin. Senses & Society. Volume 2, No. 2. Pg 217-232. Berg Press, 2007.
- Edensor, Tim.** Waste Matter – The Debris of Industrial Ruins and the Disordering of the Material World. Journal of Material Culture. Vol. 10(3) pgs 311-332. 2005.
- Edensor, Tim.** British Industrial Ruins. http://www.sci-eng.mmu.ac.uk/british_industrial_ruins/default.asp
- Fehn, Sverre.** The Thought of Construction, Rizzoli International, New York, 1983.
- Fitchburg Historical Society.** Images of America: Fitchburg. Chicago, IL. Arcadia Publishing. 2005.

Jackson, John Brinckherhoff. The Necessity for Ruins, and Other Topics. The University of Massachusetts Press. Amherst, MA. 1980.

Pallasmaa, Juhani. The Eyes of the Skin: Architecture and the Senses. London: Academy Editions, 1996.

Plowden, David. Industrial Landscape. W.W. Norton and Company, New York, NY. 1985.

Simmel, Georg. “The Ruin” Essays on Sociology, Philosophy and Aesthetics. Edited by Kurt Wolff. Harper and Row, New York. 1959.

Sola-Morales, Ignasi de. Terrain Vague. Anyplace. Ed. Cynthia Davidson. Cambridge: MIT Press, 1995. 118-123

Treib, Marc. Spatial Recall: Memory in Architecture and Landscape. Routledge. 2009.

US Census. 2010 Census Interactive Population Search. <http://www.census.gov/2010census/popmap/ipmtext.php?fl=25>. Accessed November 29th, 2012.

Image References:

all images created by author unless otherwise noted

1. Photo of the Central Steam Plant in Fitchburg.
2. Photo of Abandoned Mill in Fitchburg, Interior. Credit: PreservationMass.org
3. Abandoned Nockedge Mills in Fitchburg.
4. Photo of Abandoned Mill in Fitchburg, Exterior. Credit: PreservationMass.org
5. Photo of Central Steam Plant In Fitchburg
6. Abandoned lot in Barcelona, Spain. Credit: Manolo Laguillo.
<http://www.looc.es/manolo-laguillo-35-anos-de-razon-en-la-ciudad/>
7. Splitting the Humphrey Street House. Credit: Gordon Matta Clark
<http://www.agmamagazine.com>
8. Central Steam Plant Masonry Unit. Credit: Flickr.com; user: timekeeper57
<http://www.flickr.com/photos/20942399@N00/6235980732/>
9. Residue on Coal Silo, Central Steam Plant in Fitchburg
10. Disconnected Steamline, Central Steam Plant in Fitchburg
11. Steam lines in Fitchburg, along Steamline Trail
12. Western Facade of Central Steam Plant
13. Map of Massachusetts
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