

Temporal and Material Layers:

A Library for Pulaski, Virginia

by

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the requirements for the degree of

Master of Architecture

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Abstract:

The focus of my thesis is the examination of the formal layers of a building through their material and temporal natures and the interactions of these layers. The examination of the interplay between the new and the old, the coarse and the refined, the organic and the man-made, form the boundaries of my study. Rooting my study in an existing foundry building in Pulaski, Virginia, a new public library is allowed to unfold through the interaction of concrete, steel, and wood interventions into a masonry shell.

Acknowledgements

I would like to thank Heiner Schnoedt for chairing my thesis committee. His itinerary for travel in Europe led me to discover many of the projects that influenced the thesis. Through his pointed criticism I was able to better examine the concepts that I wanted to explore with this work.

I would like to thank Bill Galloway for his input and criticism during the development of my thesis. I also want to thank him for taking on some of the responsibilities of the chair while Heiner was teaching in Europe.

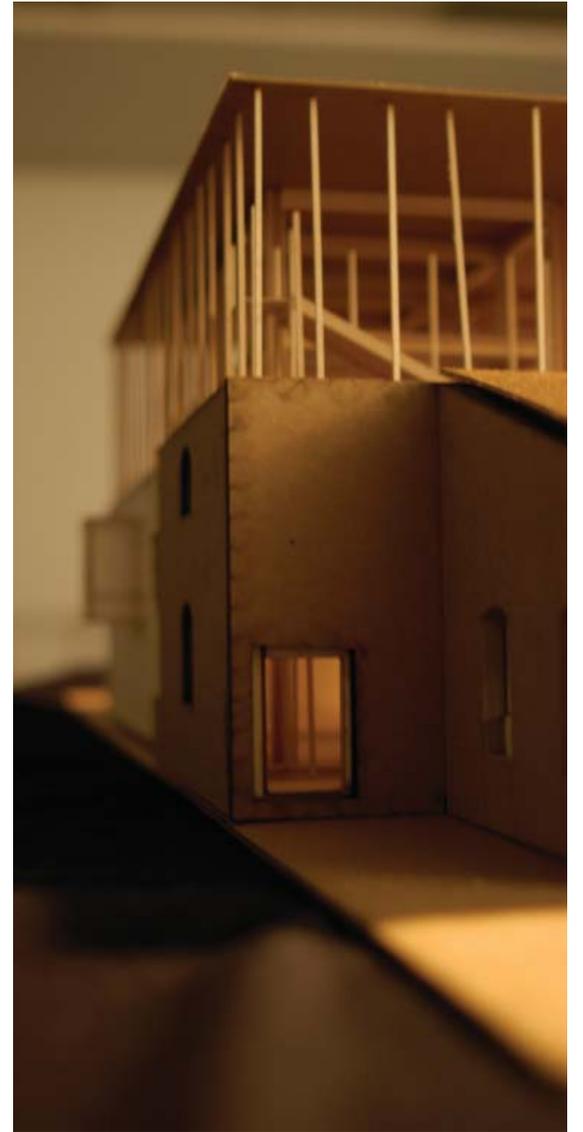
I would like to thank Matt Lutz for encouraging me to look beyond the boundaries of the existing foundry site to engage the town of Pulaski and explore the possible impact such a project might engender.

I would like to thank the librarians at the Pulaski County Library for their aid in researching the history of Pulaski, Virginia and the foundry building that formed the basis for my thesis.

I would like to thank Mr. Lee Rice for allowing me to skulk around the foundry building over the course of the year.

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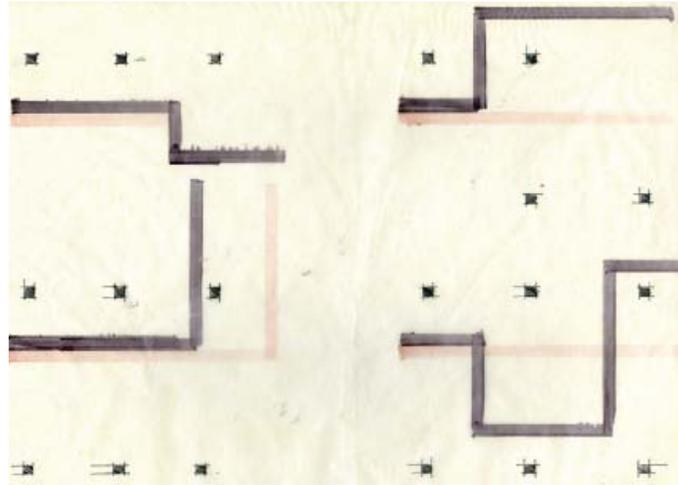
North-west View of Library

Introduction

Growing up in the American Midwest my experience of the built environment was one of similitude. Cities were divided by era with buildings from the same period and style being grouped together. Rarely would you stumble across something visually unexpected or exciting. The modern suburb has taken this idea of homogeneity to an even further extreme. Many communities now have Homeowner's Associations that mandate what can and can not be built within their boundaries. Some even have the power to tell you what color you can paint your door or what cars can be parked in the street. Creativity and individuality have been outlawed. In New Urbanist developments like Seaside, Florida even history has been reined in. New buildings are designed to appear as if they are from some half-remembered past that may not have ever existed.

My experience of the built environment in Europe was very different. It seemed that history was not white-washed or forgotten, but embraced. In little towns across the continent, it was not uncommon to see a new Modern home next door to one that was originally constructed in the Middle Ages. The dialogue established between the divergent natures of these structures was not feared.

With this project I wanted to take hold of this way of dealing with the built history. Starting with an existing structure, I strove to explore the formal layers of building through their material and temporal nature. More important than the inherent characteristics of each layer though was the interaction of these layers. By examining the interplay between the old and new, the coarse and refined, and the organic and man-made, I tried to make a space whose whole was greater than the sum of its individual parts.



I choose an abandoned foundry, a building significant to the development of Pulaski, Virginia near to other historical landmarks of the town, namely the canal and the railroad. The factual history muddled, the tale of the building became an important basis for the development of its new life.

A program of a library was chosen for the project. It seemed appropriate for a building that contained a record of the built past to house the records of the community's past in written form.

As an artifact constructed with both relics of the past and modern layers, the transformation of the foundry and its reintegration into the life of the town could possibly inspire the people of Pulaski to take advantage of their building assets left by an industrial age to bring new vitality to a small town.



Downtown Pulaski, ca. 1930
(David C. Kent, Photo)





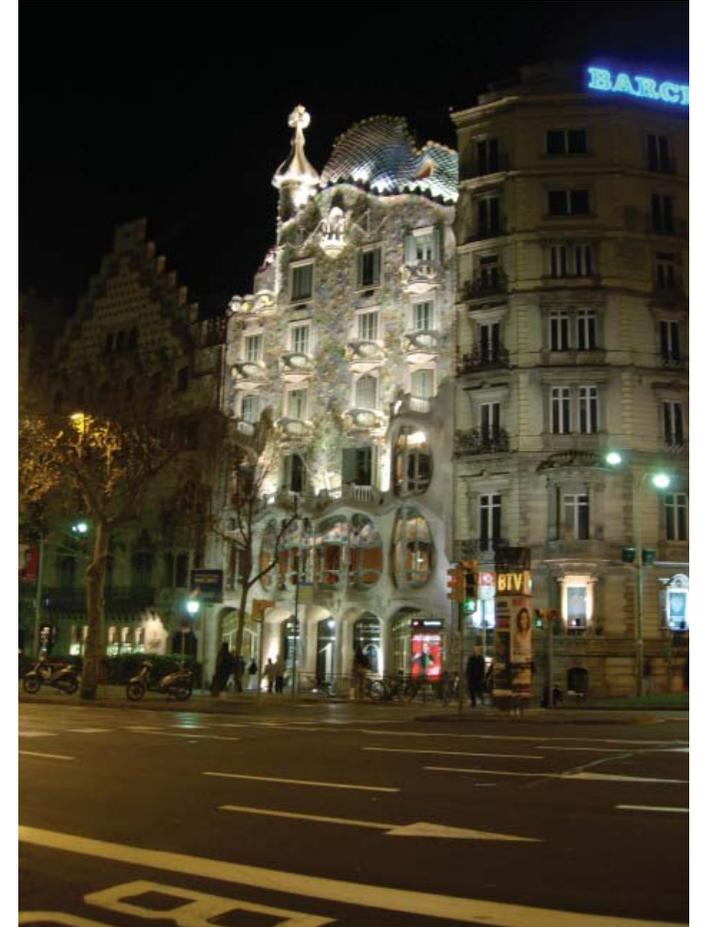
Courtyard in Barcelona, Spain

Temporal Layers

Las Ramblas

The pedestrian street known as “Las Ramblas” in Barcelona, Spain is a prime example of how I believe time and the built environment should be handled. Here a new modern apartment building juxtaposes easily with an 19th century construction or a work by Gaudi.

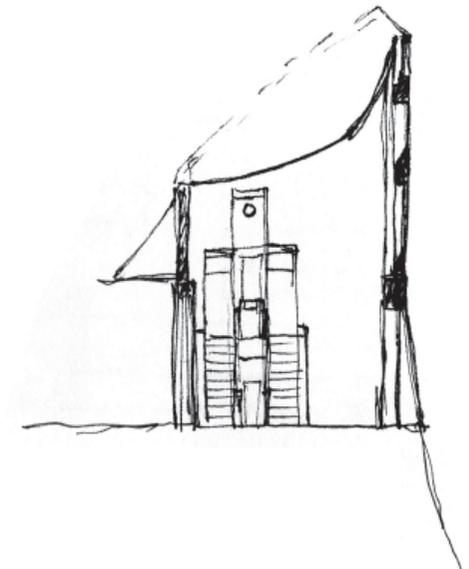
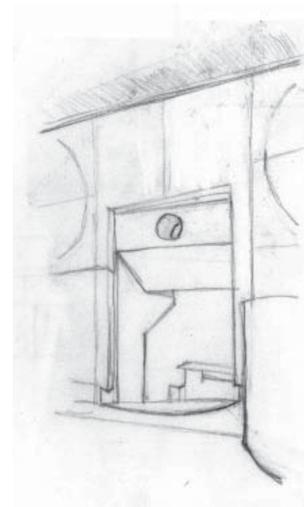
At first I thought that perhaps the patrons of Barcelona were simply more open-minded to new ideas in architecture simply because of the presence of the work of Antonio Gaudi. While this may be true in part, the same treatment of the built past can be seen throughout Europe.



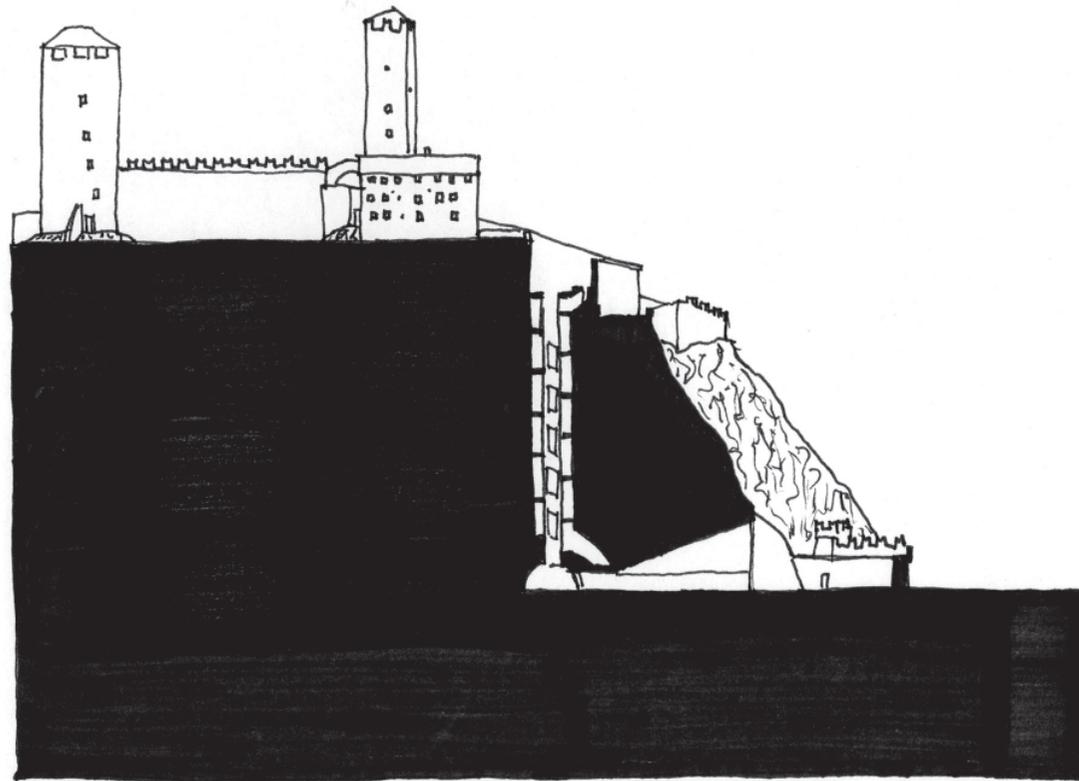
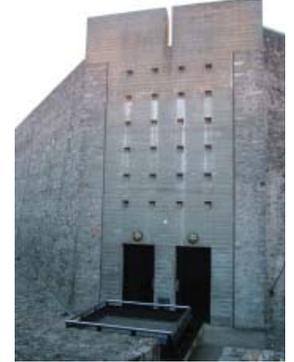
Castelgrande

Castelgrande in Bellinzona, Switzerland was a seminal project for me in the development of the ideas for this thesis. Situated in a strategically important valley in the Alps, the original fortress was built during the Roman era. Re-built and expanded for centuries, the castle eventually fell out of use in the nineteenth century when the mechanisms of war and politics out-stripped its capabilities.

In 1981 Swiss architect Aurelio Galfetti was commissioned to renovate the castle once more. The new program for the structure was to include meeting rooms, an exhibition space, a museum, and a restaurant. The existing arsenal, built in 1803, was transformed to create an entrance for the castle's visitors. A massive sail-like ceiling structure was installed to reflect more light through the space. New openings were cut into the existing stone wall and marked with concrete and steel. Throughout the project, what was existing and what was new was delineated through material differentiation and careful detailing.



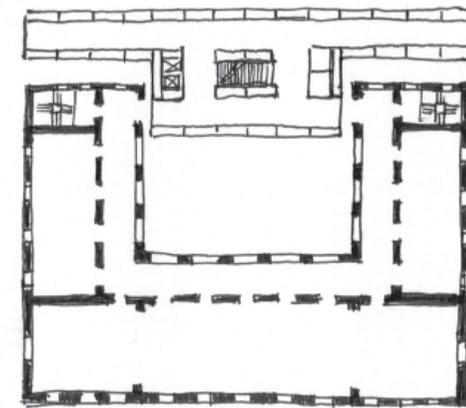
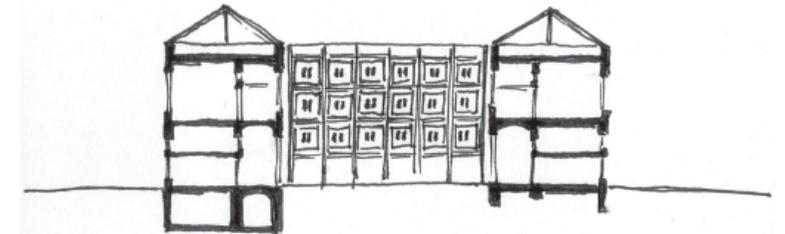
The other major transformation of the Castelgrande was its connection to the downtown of Bellinzona. Even though the castle sits on a rock outcropping in the center of town, the relatively long, uphill winding path isolated it from direct urban interaction. While the separation was beneficial for strategic reasons when it was a fully functional military installation, the path hindered the use of the castle courtyards for more pastoral activities. Galfetti's proposed a modern direct connection through a vertical incision into the bare rock. This cut was lined in concrete to become a modern stair and elevator from the Piazza del Sole in the heart of the city to the castle above.



Lugano USI Library

The university library in Lugano, Switzerland was created as a part of a new campus for the Ticino university system. The existing masonry building, the Rezzonico House, was rectangular in plan; its spaces revolving around a central courtyard. The courtyard, which was open to the space behind the building, was opposed by the front entrance of the house which faced away from campus.

The architects, Giorgio and Michele Tognola, skillfully used a new addition to create a new front facing the interior of the city block. The new reinforced concrete layer develops intimate reading spaces over four floors contrasting the two-story masonry volume. In plan, the new addition completes the square. The concrete, steel, and glass present a new, modern face for the library and university. The ground floor of the addition serves as a protected walkway leading into the library, while the upper floors are used as reading and study space.

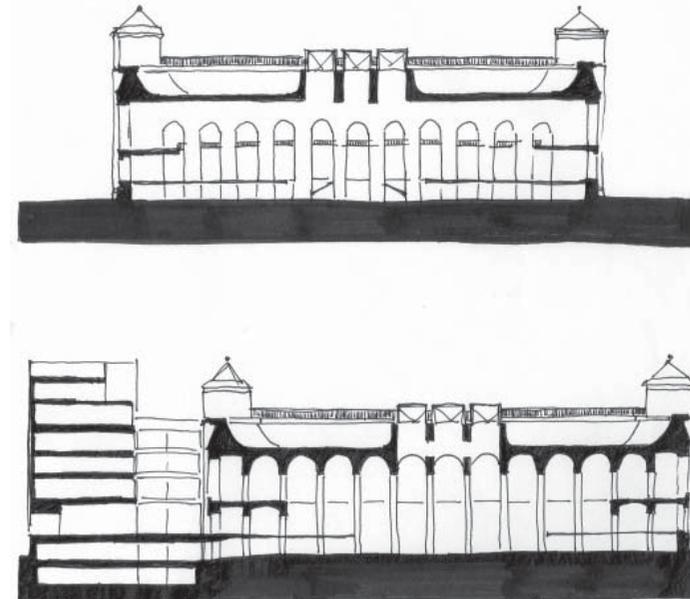


Biblioteca de la Universitat Pompeu Fabra

The Biblioteca de la Universitat Pompeu Fabra in Barcelona, Spain similarly was developed out of a need for a new university campus. The existing building in this case was of no ordinary type. Constructed as a water reservoir, the masonry piers throughout the space swell to approximately one meter by two meters in plan. New floors were inserted into the space between the massive piers to meet the new programmatic constraints of a library.

What I garnered most from this project was not the use of space but the use of material. To carry the heavy dead loads created by the book stacks, pre-cast concrete panels were installed against the existing masonry. Lighter live load areas used by patrons for movement or study were constructed using smaller steel sections. The shelving for the books brings in the piece of the material palette through the introduction of blonde wood that lightens the space.

The architects, Ignacio Paricio and Lluís Clotet Ballus, use the floor surfaces to describe the modulation of space above. The major spaces of the library are covered with gray carpet. Whenever you move through the line of the masonry piers though the floor becomes a dark wood that delineates the change in space through texture and color.



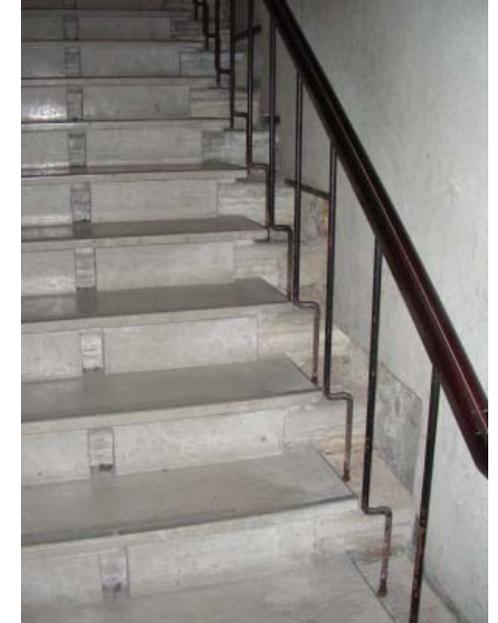
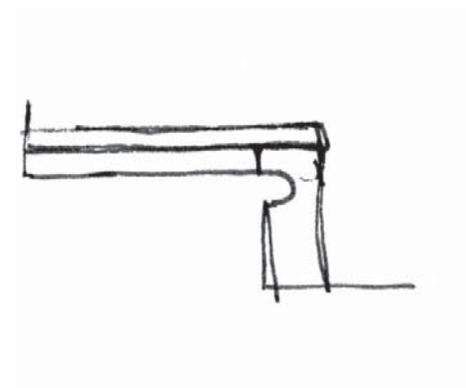
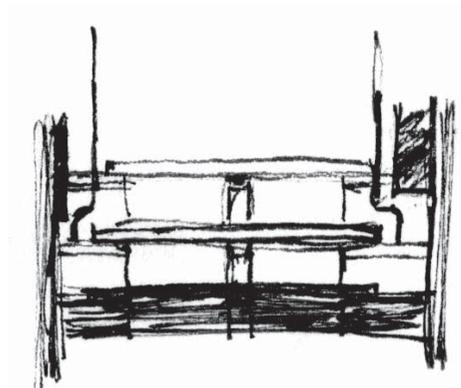
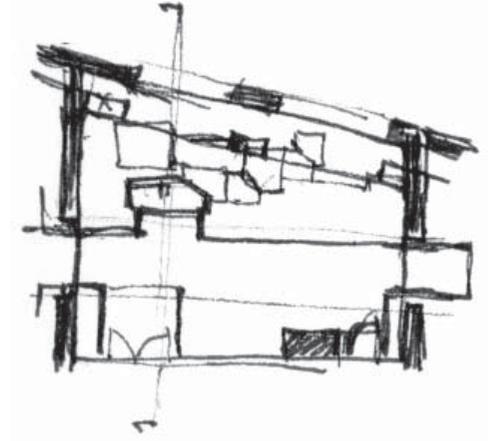
Fondazione Querini Stampalia

Regarding the re-use of existing buildings and the transformation of space through layering, the most important architect to study is Carlo Scarpa. A native of Venice, the work of Scarpa is endowed with some of the richer moments of that city.

One of his projects in Venice is the Querini Stampalia. While the project is best known for the bridge that connects the former palace to the piazza on the other side of a canal, what I found most intriguing about the space was the treatment of the floor.

In the ground floor space adjoining the canal Scarpa's unique handling of the existing fabric of a building is best personified. Formerly an interior dock, the space now acts as the connective tissue that ties that various portions of the buildings together. The floor here is elevated and its edges raised. It wraps the existing wall, protecting it from the ever present water of the canal. In order to mediate the important but troublesome connection, the new floor pulls back from the existing wall, deferring to its earlier presence. This act of the architect causes one to become more aware of both the nature of the new concrete floor and of the existing wall.

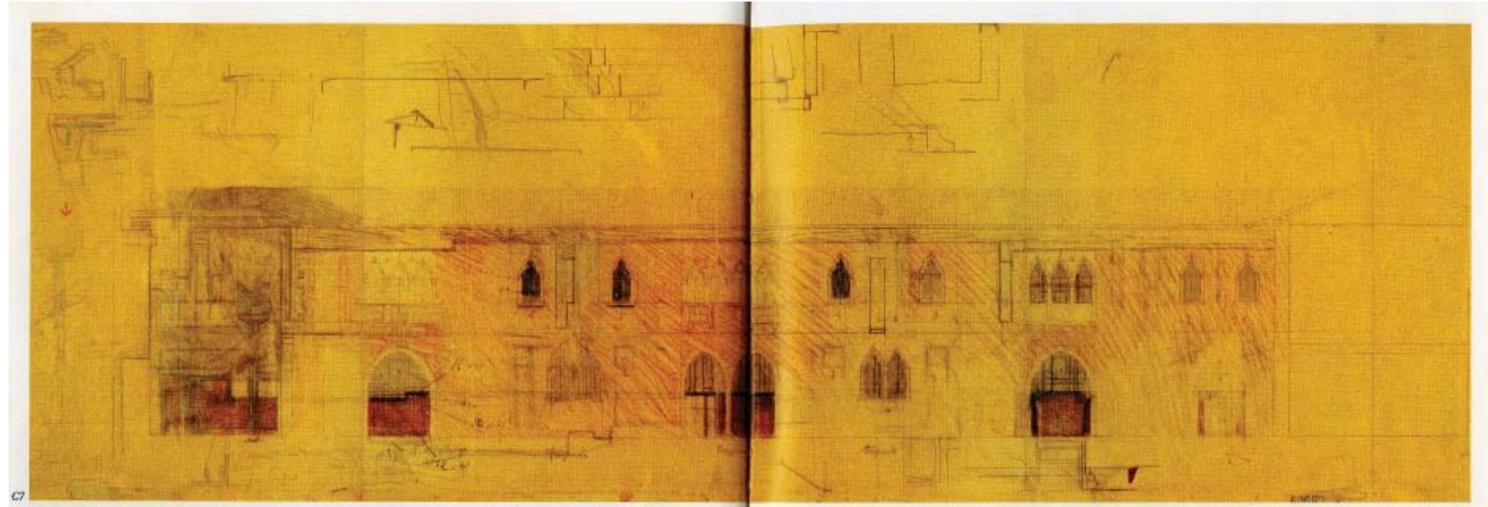
Similarly when climbing the stairs in the interior of the building, the deference to the nature of the existing is maintained. New concrete panels are placed on the treads and risers of the existing stair, protecting the existing stone while still revealing its presence. The new handrail, required by modern building codes, pulls away from the wall and connects instead to the floor.



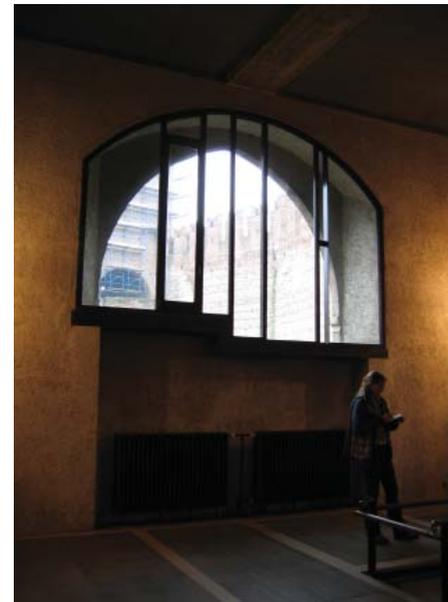
Museo di Castelvecchio

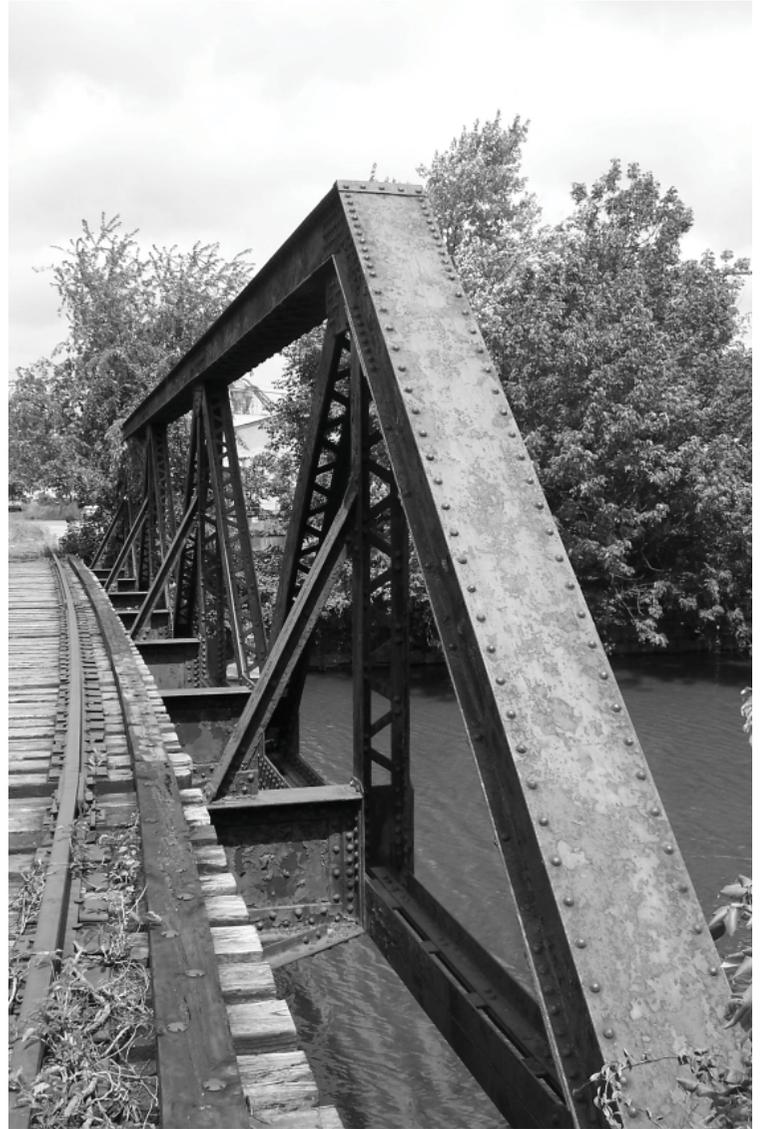
Carlo Scarpa's most famous work is arguably the Museo di Castelvecchio in Verona, Italy. The treatment of the facade demonstrates clearly the intentions of the architect. The existing and new weave together to form a harmonious unit while still announcing their singularity.

In Scarpa's drawing, the juxtaposition of the existing masonry layer with the a new interior facade layer is studied. The rhythm and form of the new window mullions clearly announce their independent presence. Inside the new windows are both larger than the existing masonry openings and set back from the openings into the space. The window divisions are strategically placed to either frame and present an existing condition or through a carefully constructed interference direct the attention to the earlier qualities of a situation.



Drawing by Carlo Scarpa



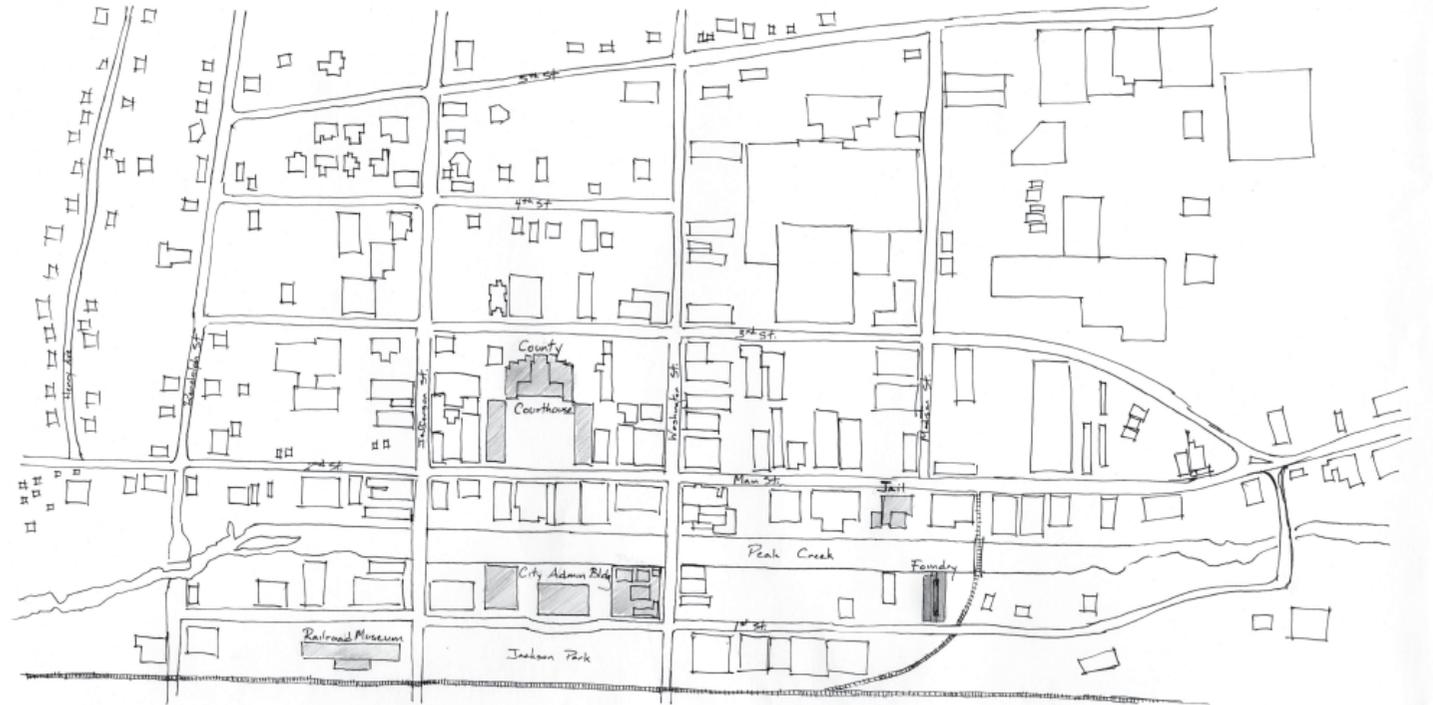


Existing Railroad Bridge

Material Layers

Existing Masonry Layer

The existing building, a foundry in Pulaski, Virginia, was built between 1908 and 1916. Despite being left virtually derelict in recent years, the building has had a rich history. Built as a foundry, the building was later owned by the General Chemical Company and then a furniture manufacturer before coming into private hands. Its proximity to downtown and the major municipal buildings have led, more than any other factor, to its continued usage. The foundry sits on First Street, mere blocks from the city offices. To its rear is a canal and downtown. While physically separated from the historical downtown area by the canal it remains tied to the area by an existing steel railroad bridge. Built around the same time as the foundry, the bridge is part of a no longer functioning railroad spur that served the foundry and some of the other heavier industries formerly located in Pulaski.



The existing masonry building bears the scars of its former lives. On its front façade are the faded names of several of its former occupants. Most of the openings have been closed in using various means over time. Some of these openings show the marks of being enlarged and then subsequently filled. Its once ornate brick corbelling has been damaged in places by both time and man.

The life of the building can also be seen in its existing roof. The majority of the roof structure appears to be original to the building. Constructed of heavy timber, the roof trusses are still in tact and show deterioration due to water infiltration in few places. The roof beams stretching between the trusses however have not fared as well leading to sagging in the roof. The damage that is present can be attributed to the piece-meal corrugated metal roof currently on the building.

In spite of these imperfections in appearance the building still stands and in doing so it wears it past with the resolve of one who has survived.



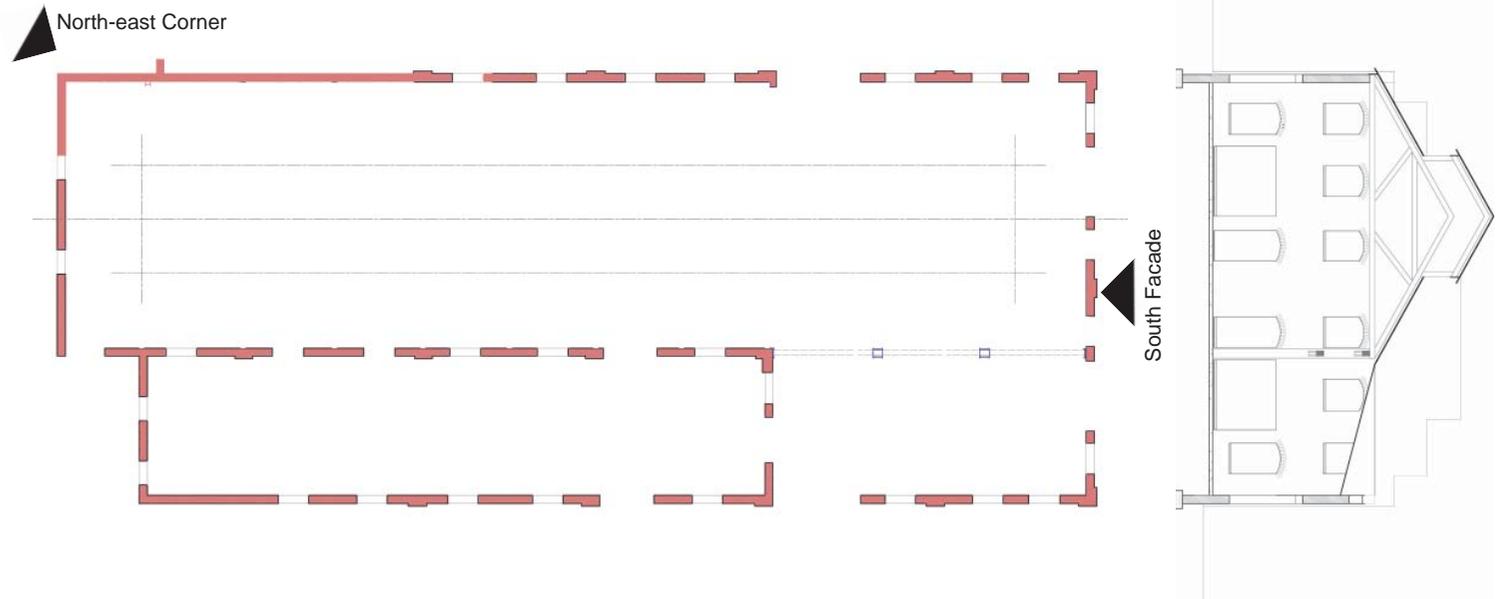
South Facade



North-east Corner



South-east Corner



There are many examples of where the existing masonry layer holds the vestiges of its past.

A) The area west of the foundry once was semi-enclosed for production. The I-beam above the large opening probably was used to move heavy metal castings between the foundry buildings.

B) The form of the south-west corner of the foundry hints at the intentions of its builders. The step of the corbelling resolves the symmetry of the south façade with the asymmetry of the plan. The symmetrical front speaks at an idea of properness of appearance that overrode the programmatic needs of the design.

C) The window opening is quintessential of the current state of the building. The tracing of its original outline tells of the foundry's inception before the advent of conditioned space. Its height, approximately 12 feet 6 inches, was needed for natural light and ventilation. The variance in the masonry in-fill speak of the opening being partially filled and turned into a doorway. Later the door was removed and the opening closed to create a small window. Finally the opening was boarded up, probably when the building was converted from habitable space to material storage.

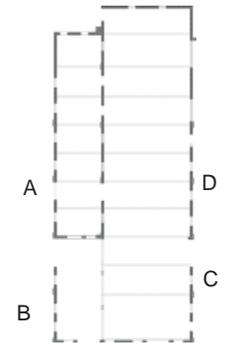
D) Placed sporadically across the east wall are small iron plates. These appear to be connections that tied the brick wall to a steel frame on its interior. The concrete patching around the steel hints that they were retrofit. The true purpose of these plates is undetermined as the frame to which they connected no longer exists.



Masonry Detail A



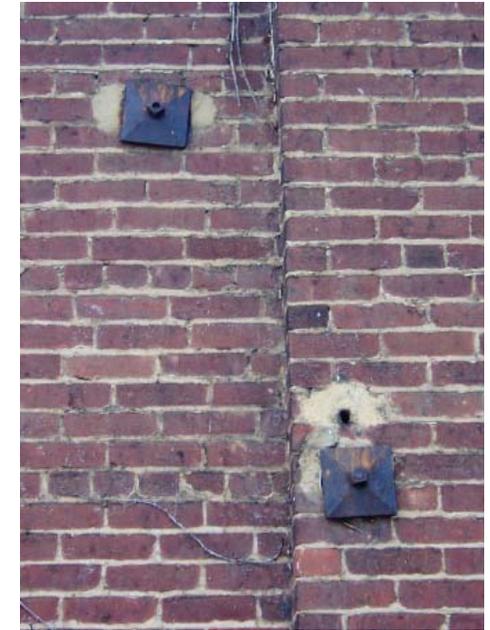
South-west Corner



Masonry Detail B



Masonry Detail C



Masonry Detail D

The north-east corner of the wall has already started to crack and fall away due to natural settlement attributable to the adjacent canal. Consisting of iron beams, embedded into crumbling brick piers, sitting on top of concrete masonry in-fill, the existing openings in this portion of the wall could not be viably reopened. When coupled with the programmatic needs of a new library, this portion of the wall will be removed between the two major settlement cracks.

The existing heavy timber trusses attached to the demolished portion of the masonry wall would also have to be removed. Using the timber from these trusses, the remaining trusses could be repaired as needed.



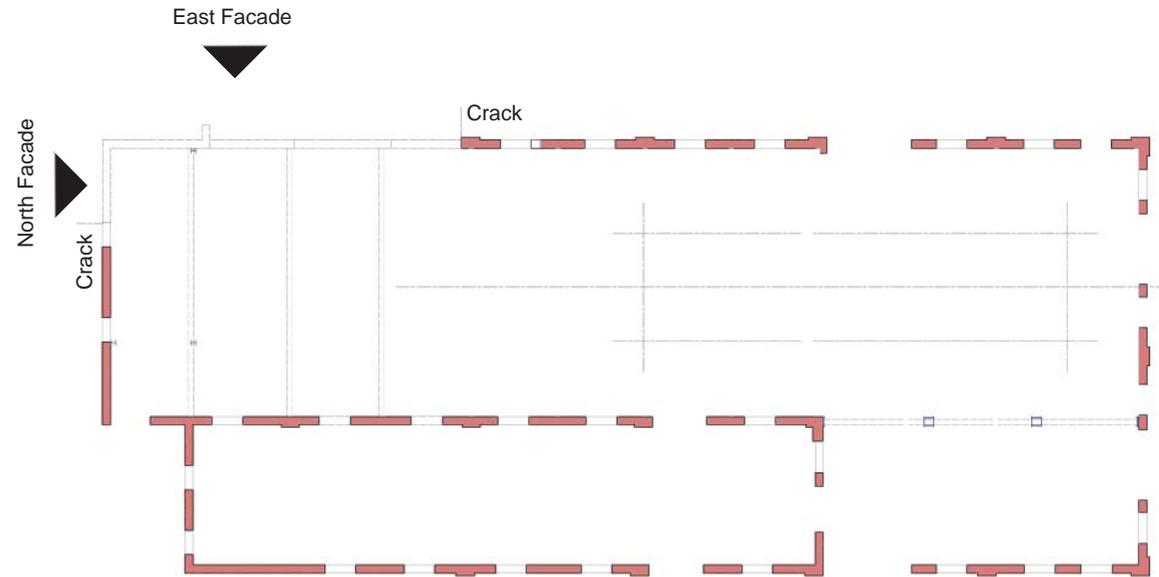
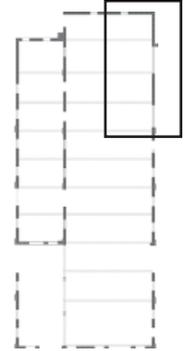
East Facade

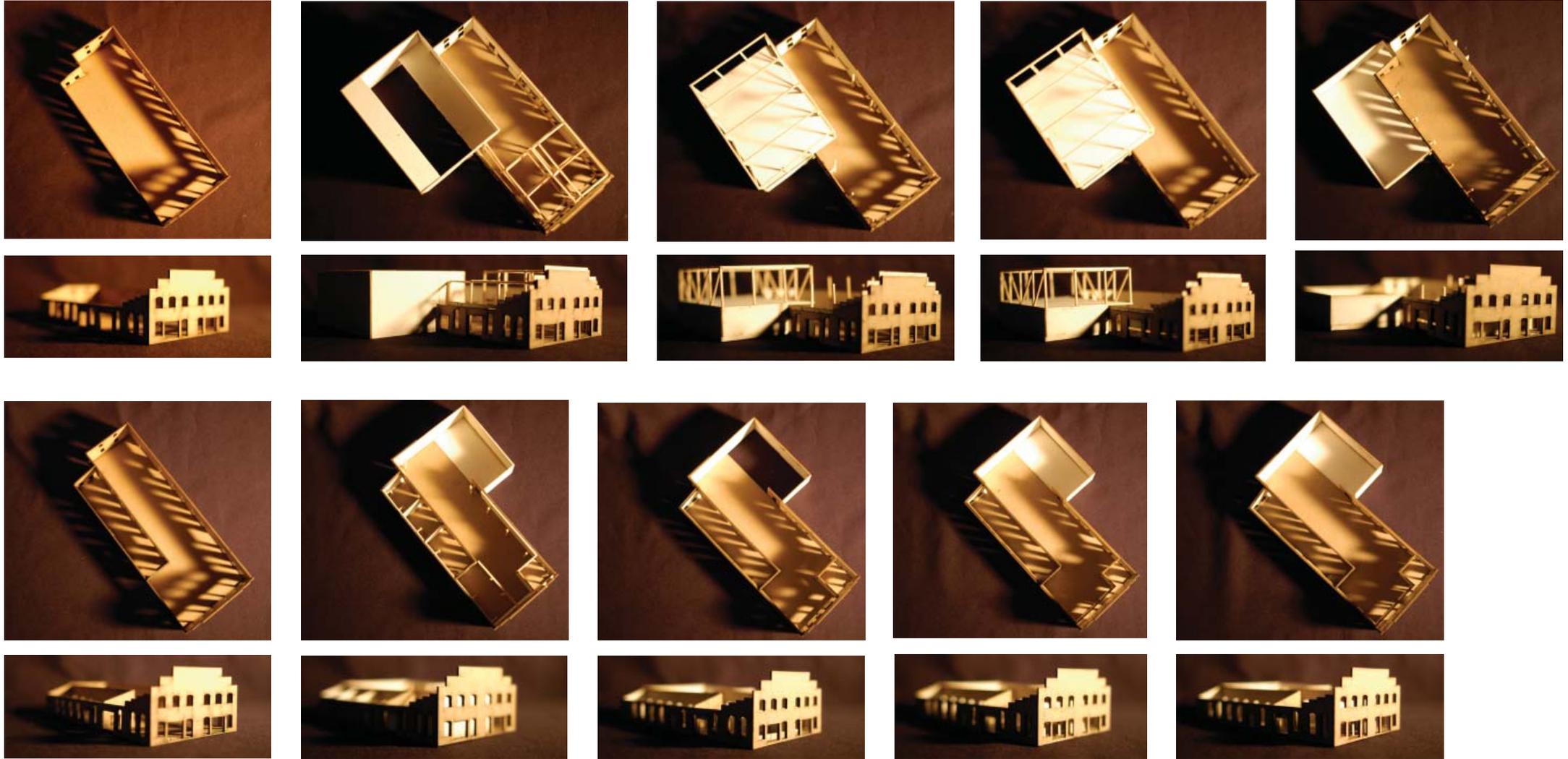


North Facade



North-east Corner

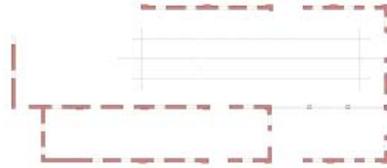




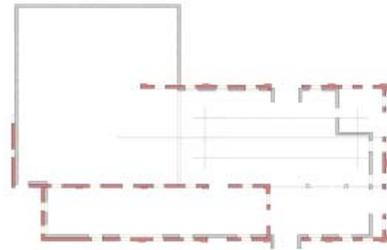
Model progression detailing the development of the relations between the layers of the building.

Strategy for Intervention

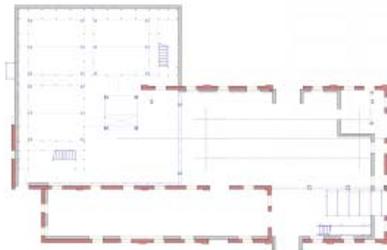
1) Identify the portion of the existing masonry layer



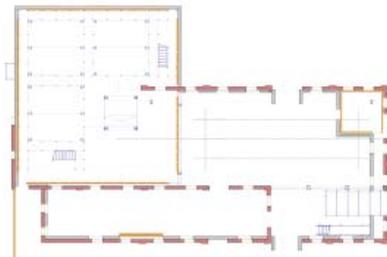
2) A new concrete layer stabilizes the masonry and establishes the new boundaries of enclosure



3) A new steel layer carries the new loads of the books and office



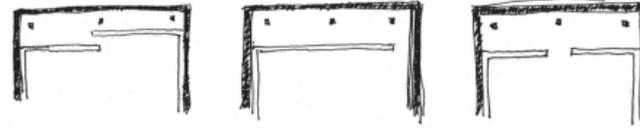
3) A new wood layer controls light and the primary contact surfaces



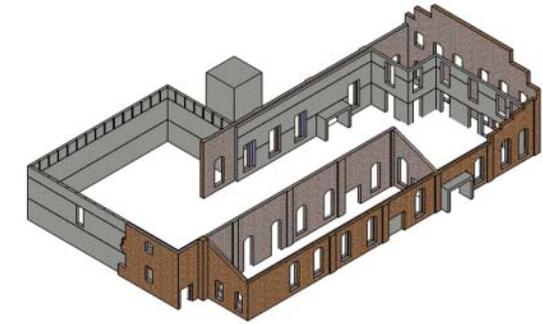
Concrete

The concrete layer primarily rises in the form of a 1 foot thick wall to a maximum height of 20 feet. As the demarcator of enclosure, all windows and doors are embedded in this layer. As the concrete wall undulates in and out of the existing masonry perimeter new spaces are created. At the south end of the building this undulation forms an interstitial space between the layers of divergent natures. At the north-east corner of the building perimeter, the concrete wall moves beyond the established boundaries of the foundry footprint to make room for book stacks.

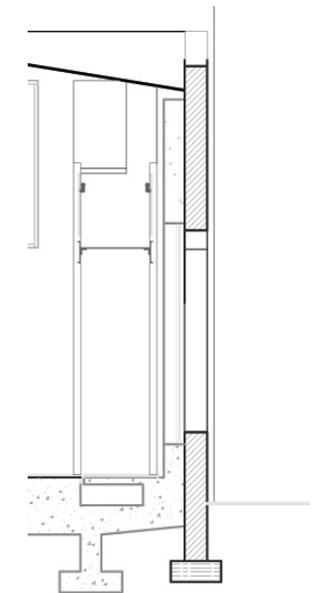
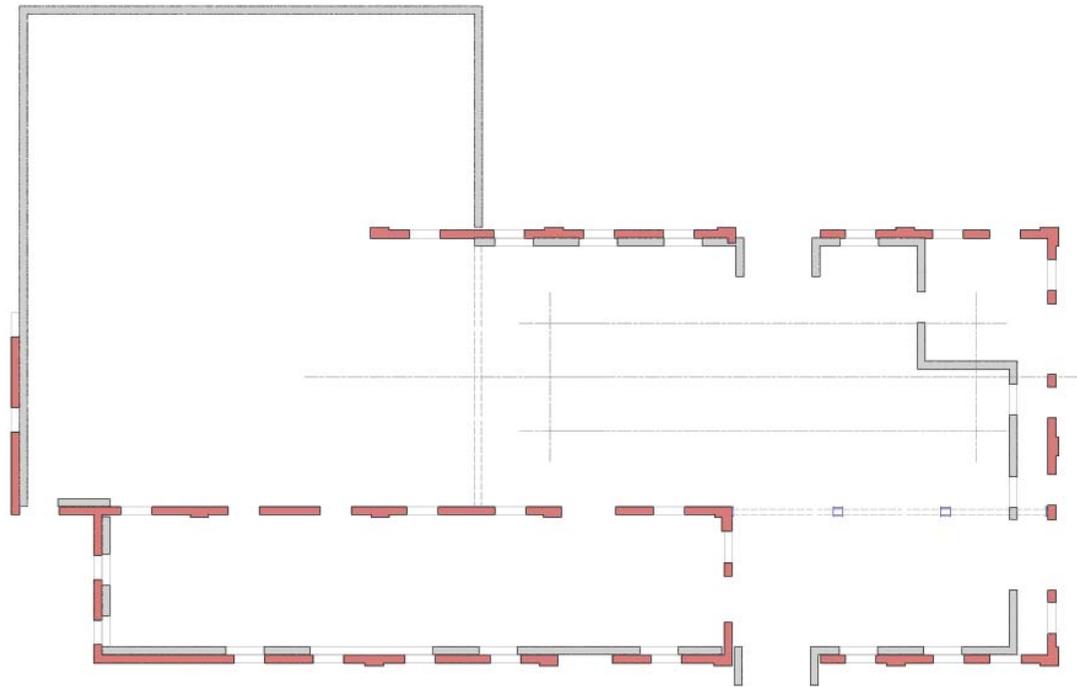
The concrete layer also acts as lateral support for the existing masonry wall, bracing the masonry wall at its weakest points and relieving it from some its load bearing obligations to halt its further deterioration.



Sketch of concrete / masonry interaction possibilities

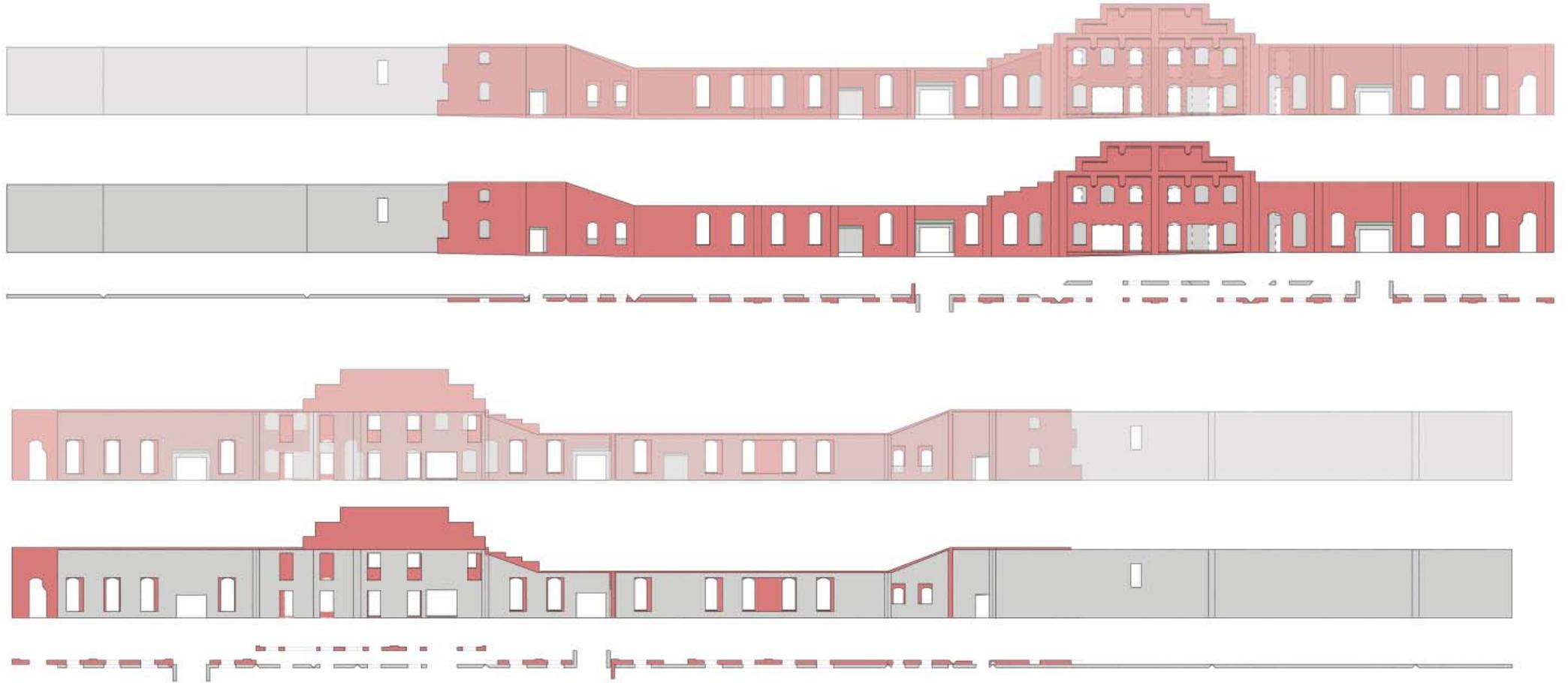


Axometric Drawing of Concrete and Masonry Layers

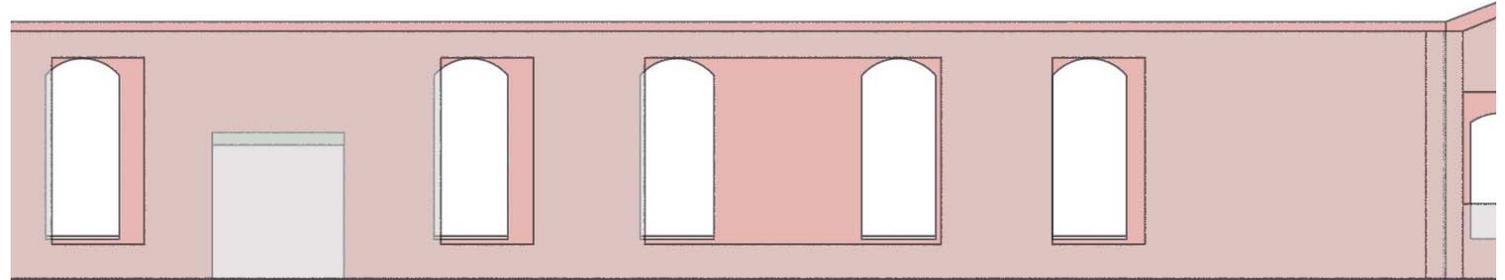


Wall Section

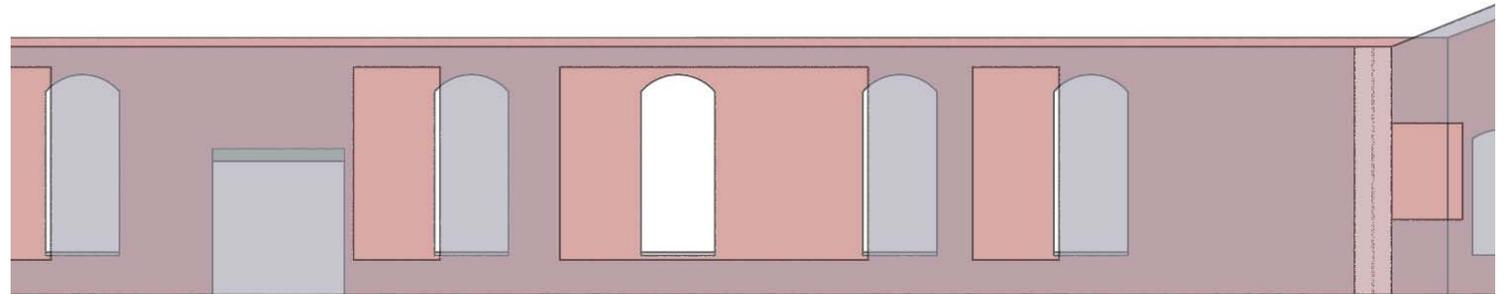
The final iteration of the interaction between the masonry and concrete layers studies the varying levels of transparency as determined by the shape, size, and location of openings in the enclosure.



With a more extreme divergence of the openings, light penetrates through narrow slits and larger portions of the masonry are exposed. While creating an interesting effect, the need for perimeter lighting in the library favored more direct alignment.

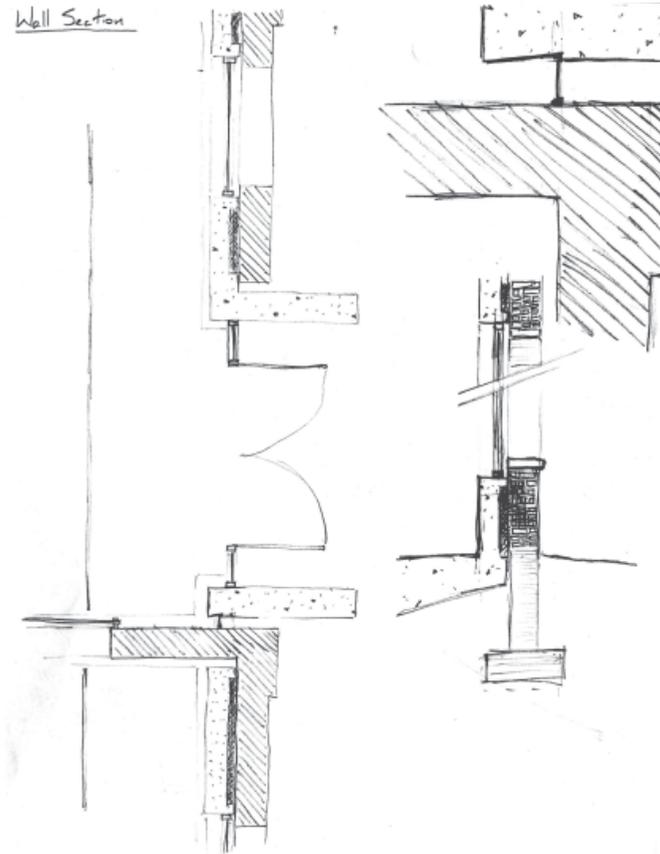


Pursued Solution

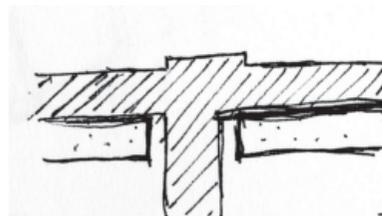


Alternative Solution

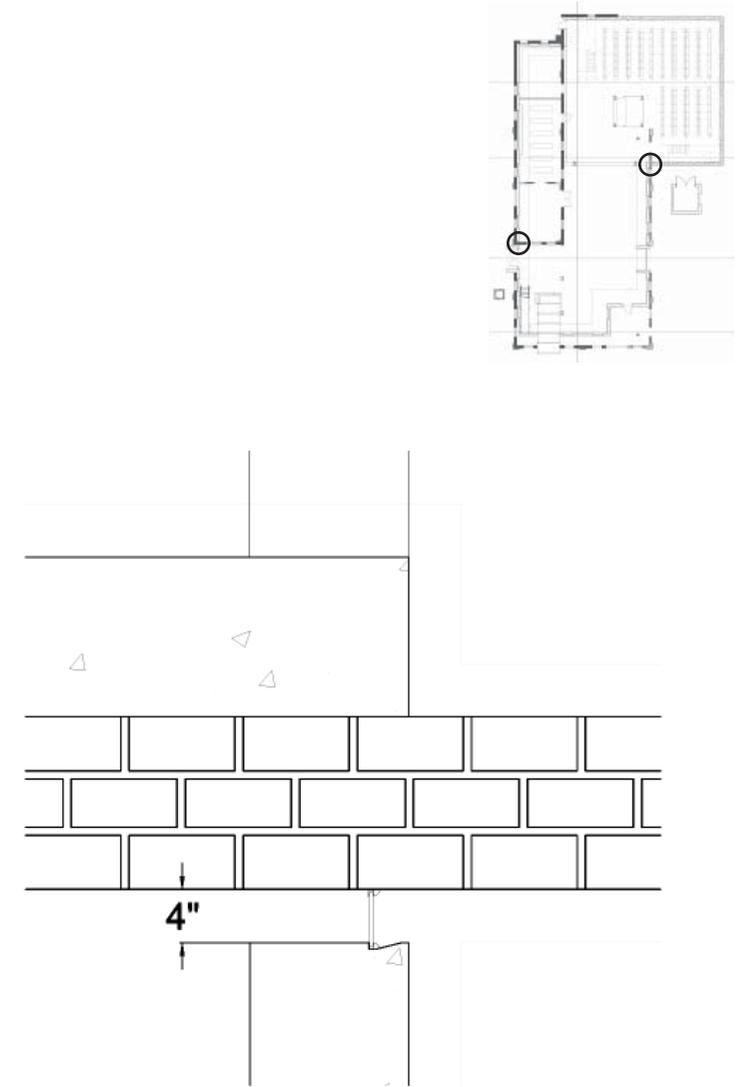
An important moment in the interaction between the concrete and masonry layers is the meeting of two perpendicular walls. The newer concrete layer defers to the older masonry layer by allowing the brick to pass through. A four inch gap was left at this juncture was then filled with glass so that the environmental enclosure could be maintained. The support for this glass was minimized as much as possible and hidden where possible so that the legibility of the separation would remain intact.



Sketch of Concrete and Masonry Wall Interaction



Sketch of Perpendicular Intersection



Plan Detail of Perpendicular Intersection

Steel

Although steel can be found in the nearby railroad bridge and riveted steel columns in the south-west corner of the interior, the new steel layer is fabricated using highly precise welding techniques.

This steel layer takes on the responsibility of utility. Steel columns and beams form a spatial grid which house the books in the library's collection. Steel is used to move people vertically through the spaces as stairs, elevators, and walkways. Steel is employed to construct the office space for the librarians' use.

All of these various steel components stand independent of the surrounding layers. Even when passing through other layers their articulation separates them.



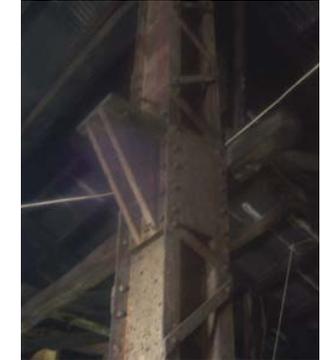
South-west Corner



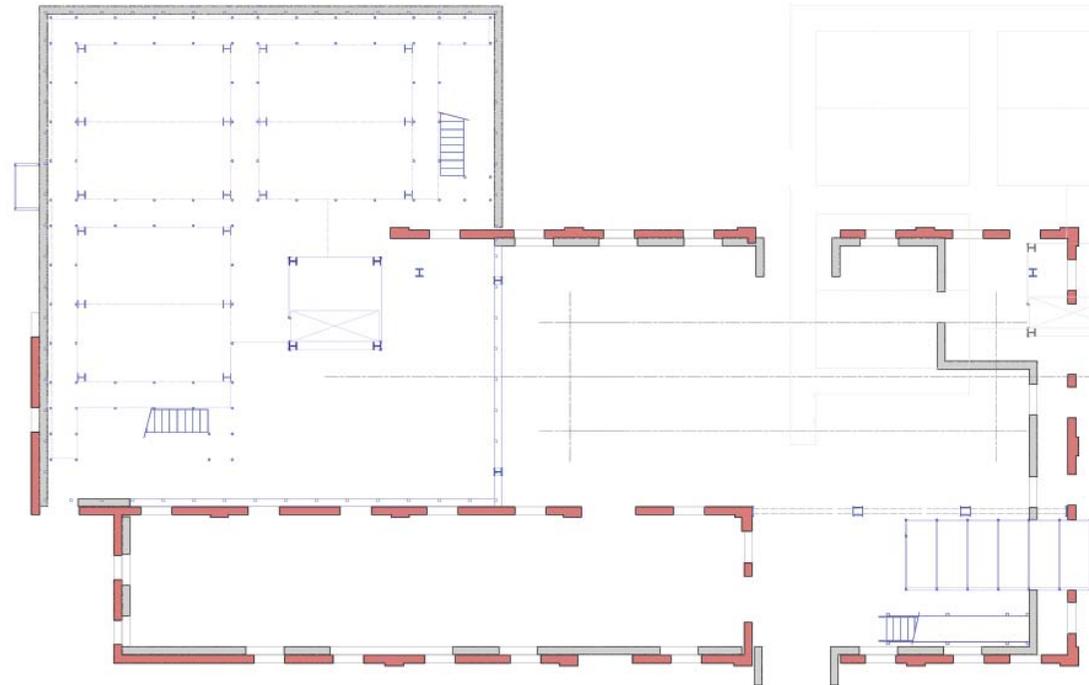
Book Stacks



Railroad Bridge Detail

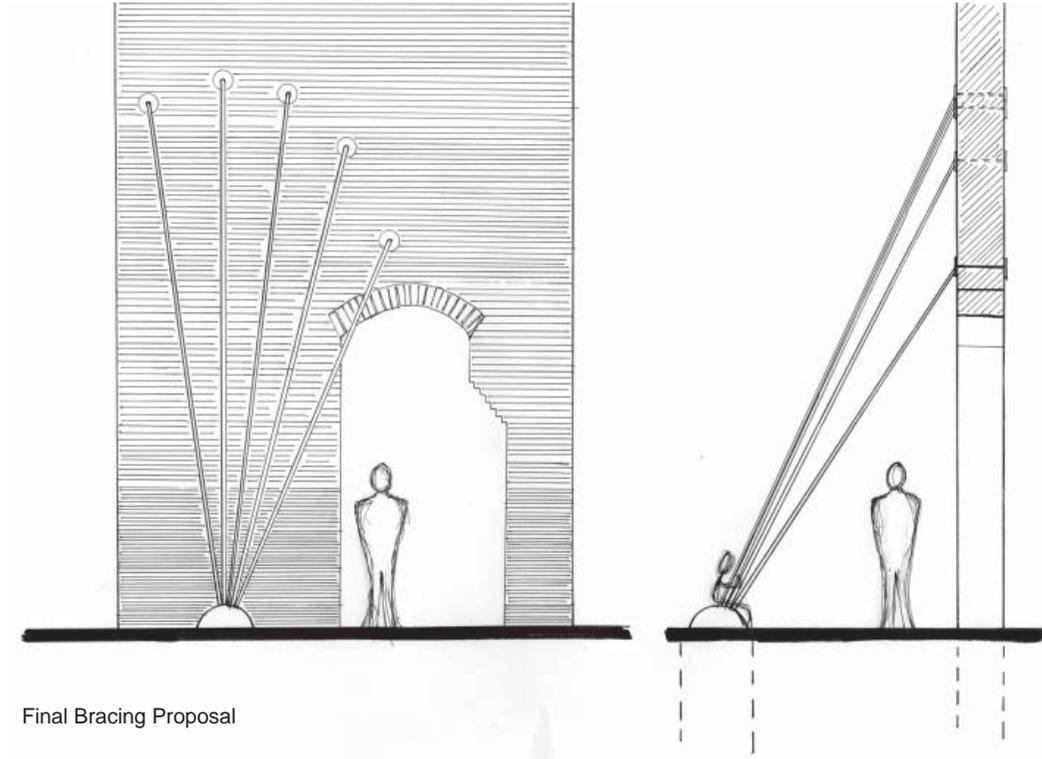


Existing Steel Column

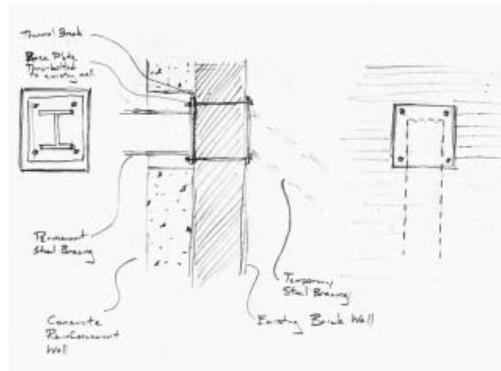


Steel is utilized to support the existing masonry where the concrete layer pulls away leaving an unbraced wall fragment

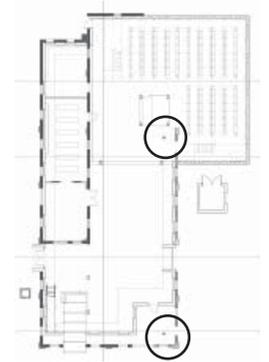
To connect the steel bracing, threaded rods pass through the masonry wall and attach to steel plates on both sides of the wall.



Final Bracing Proposal



Preliminary Bracing Sketches



Preliminary Bracing Proposal

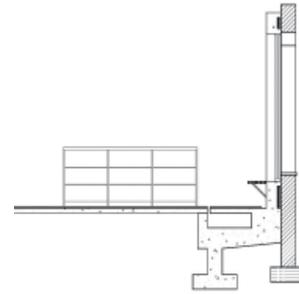
Wood

The wood layer appears as a control device in various discrete locations throughout the library. In the north-east corner of the library the wood layer keeps direct sunlight from penetrating into the book stacks. In the open-air reading area in the south-east corner of the building it is utilized to control light and sound. On the west exterior of the library a wood fence is used to direct views of the canal.

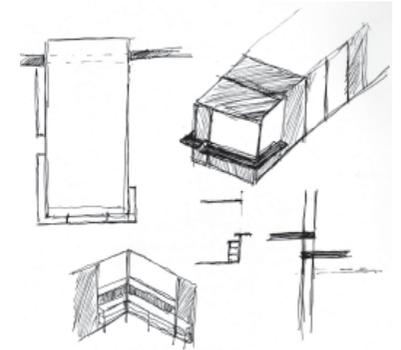
Wood is also used where patrons interact directly with the building. The counters of the office are constructed of wood. A wooden bench in the children's section of the library projects from the bottom sill of an enlarged concrete opening. The floor of the main level of the building is covered in a light wood strip flooring.



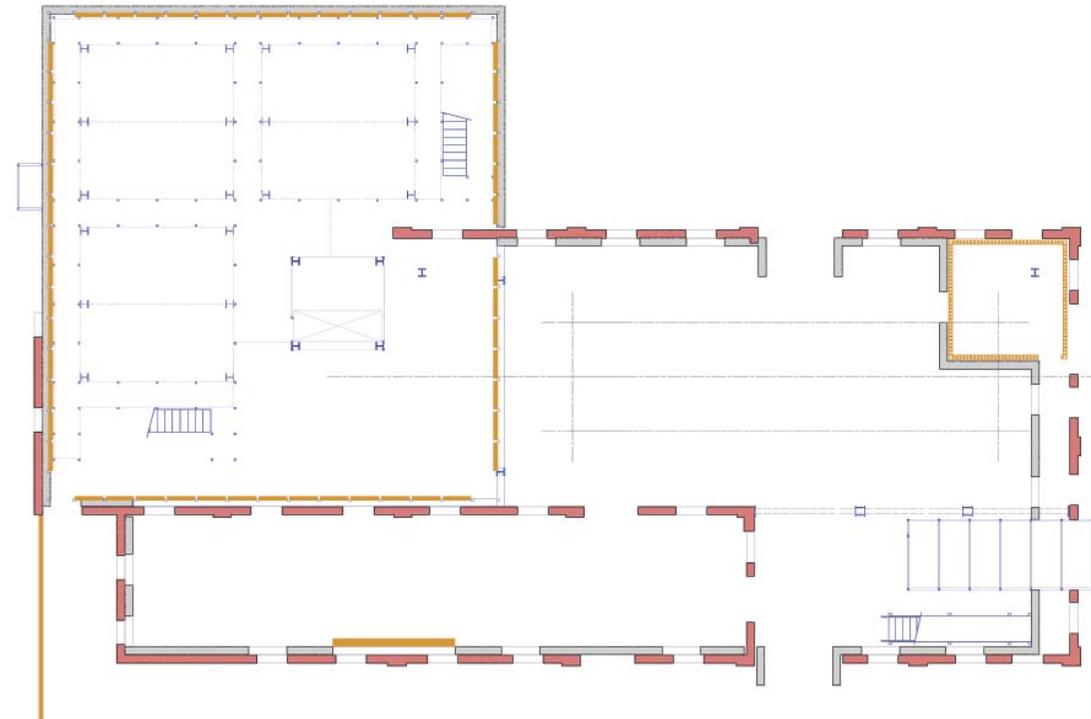
Children's Reading Bench



Section Through Children's Reading Bench

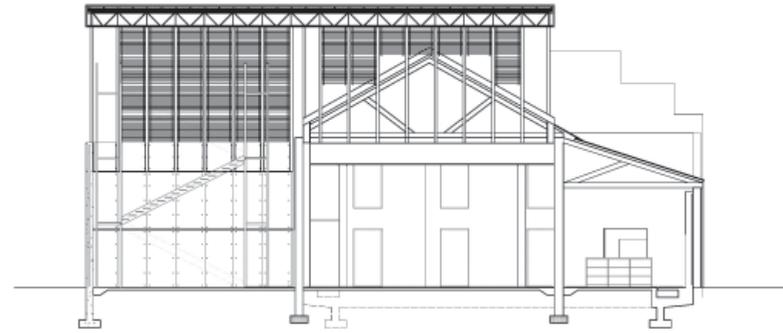


Sketch of Library Office



Around the perimeter of the book towers, wood filters the direct sunlight streaming through the 16 feet of glass that completes the enclosure. Ultraviolet rays cause bleaching and deterioration in paper and thus must be blocked.

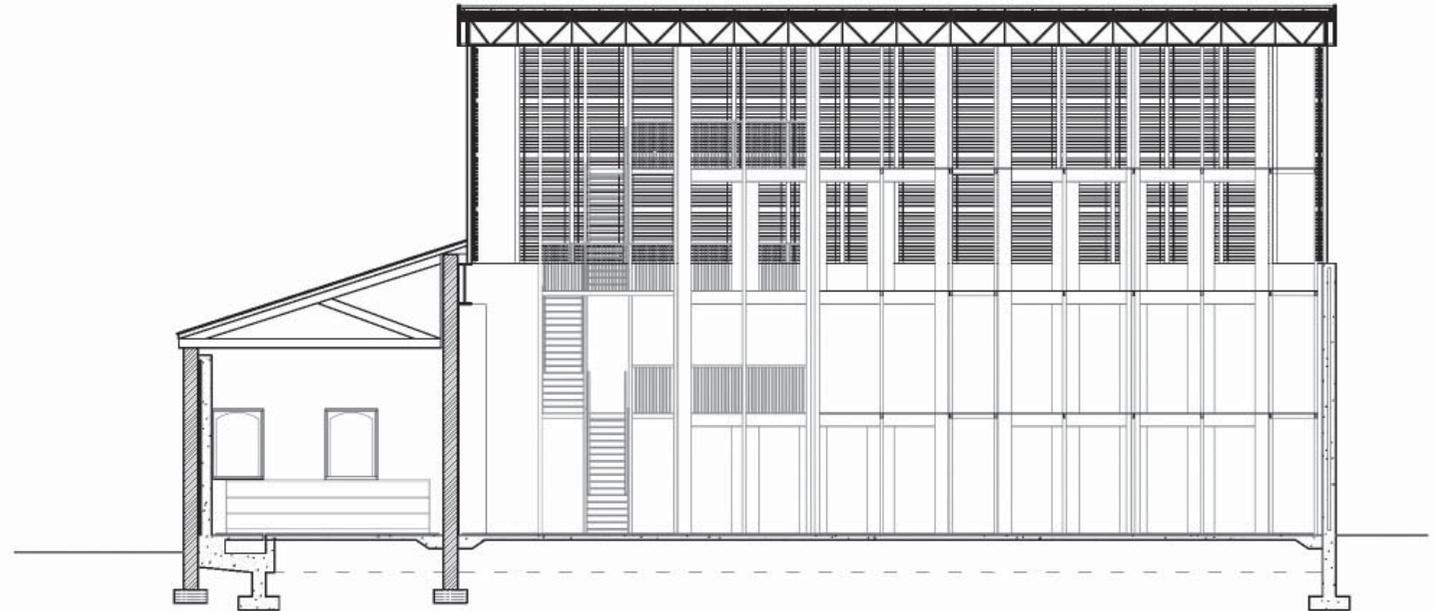
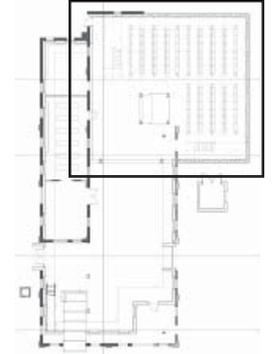
The slats that form the wood layer here are positioned horizontally to keep direct sunlight from penetrating into the space. Each slat is 3/4 inch by 5 1/2 inches. They are vertically spaced at 3 inches on center. The size and spacing was dictated by the low winter sun angle in Pulaski, Virginia.



Section Through Library Stacks



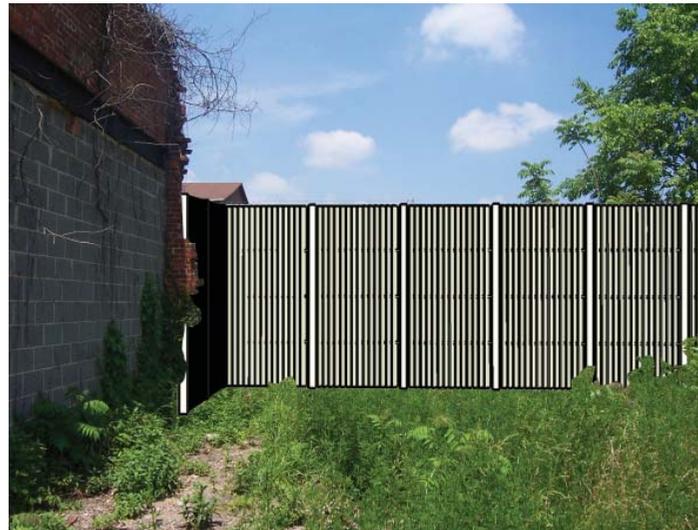
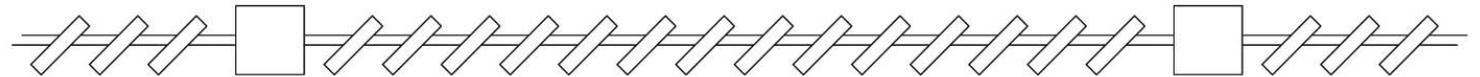
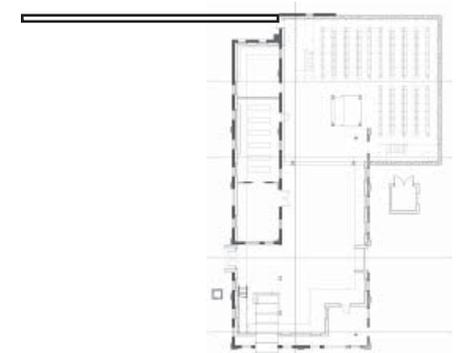
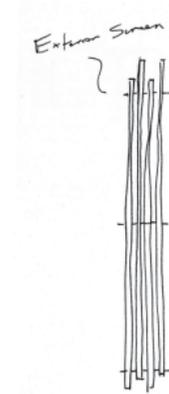
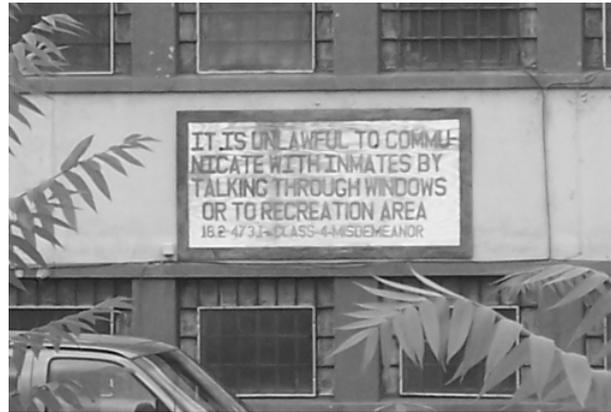
Section Through Wood Screen

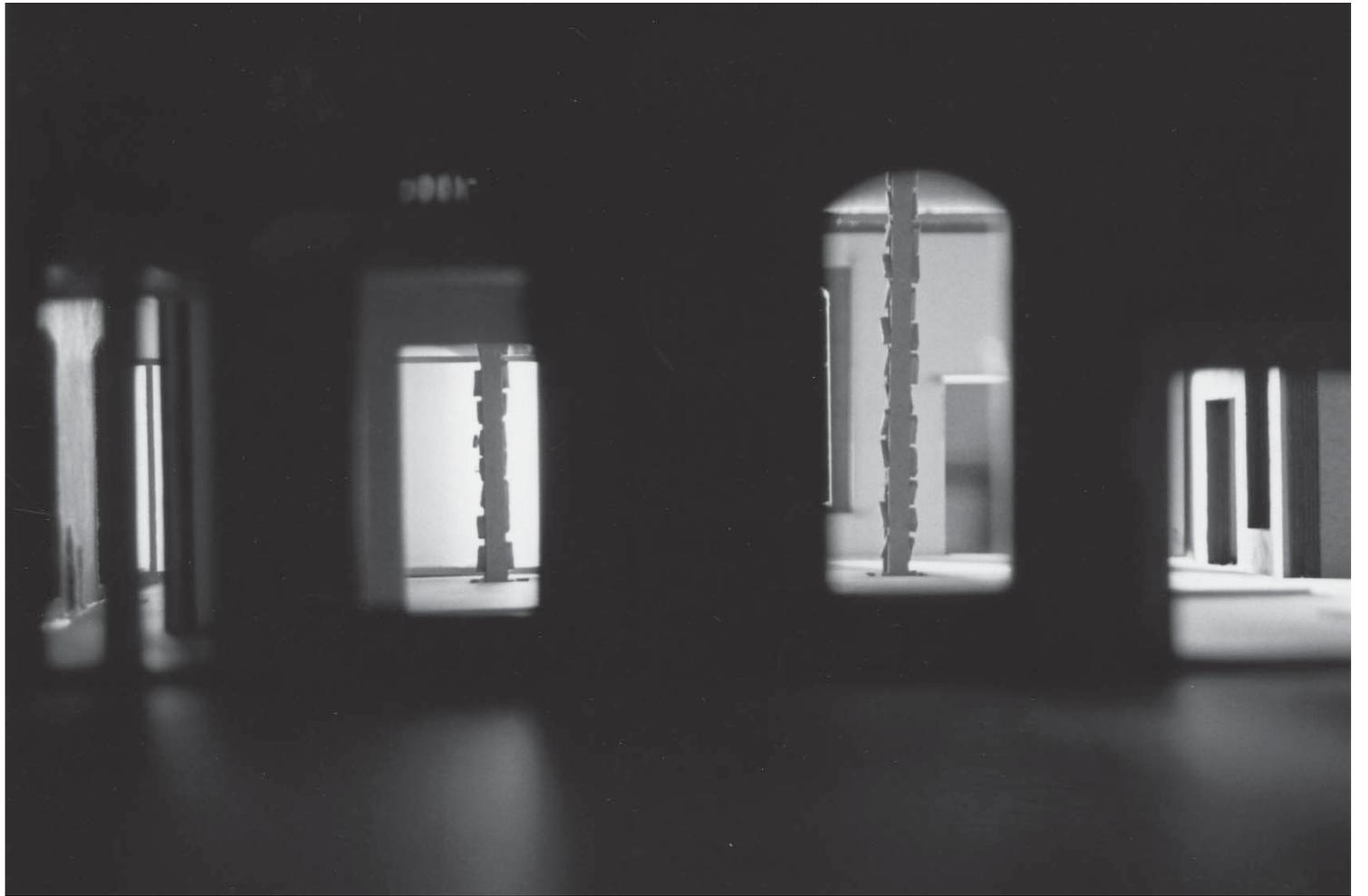


Section Through Library Stacks

On the west side of the library an eight foot tall wooden fence is employed at the edge of the canal.

The vertical slats of the fence are turned at a 45 degree angle to direct the views away from the county jail on the other side of the canal and toward the canal itself.





View of Interior Through East Windows

Five Moments

Main Library Entrance

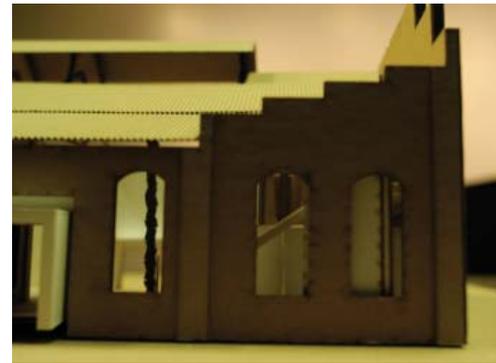
On the south-west corner of the library two large window openings have been altered over time through a series of in-fills. The discoloration at the top of the wall hints at some unknown event of the past like a scar marking an old wound. Metal attachments and penetrations complete this menagerie of time.

The entry sequence begins with the openings in the masonry wall revealing the concrete enclosure behind. Held back from the south masonry wall, the concrete wall turns the corner in view of an opening establishing the wall's role as the demarcator of interior and exterior space for the viewer. The concrete layer is again revealed through the next masonry opening as a window before finally protruding out through the brick to form the main entry.

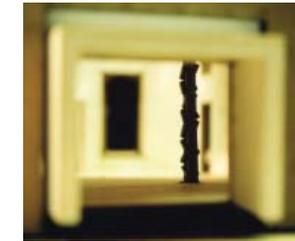
Looking through the glass of the enclosure, steel both old and new can be seen. The new steel stair cuts across the opening as its location is dependent upon its own logic. The existing steel columns stand beyond and complete the interplay with their riveted texture by providing contrast to the newer sleeker components of construction.



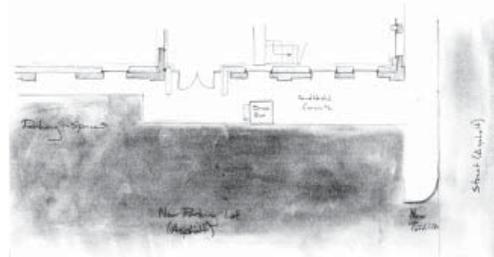
Existing South-west Corner



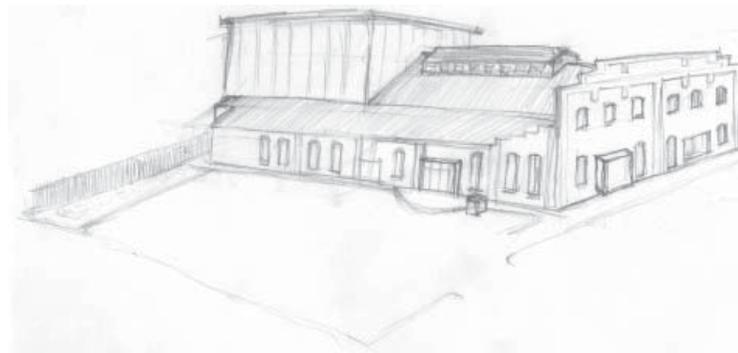
Model Photo of South-west Corner



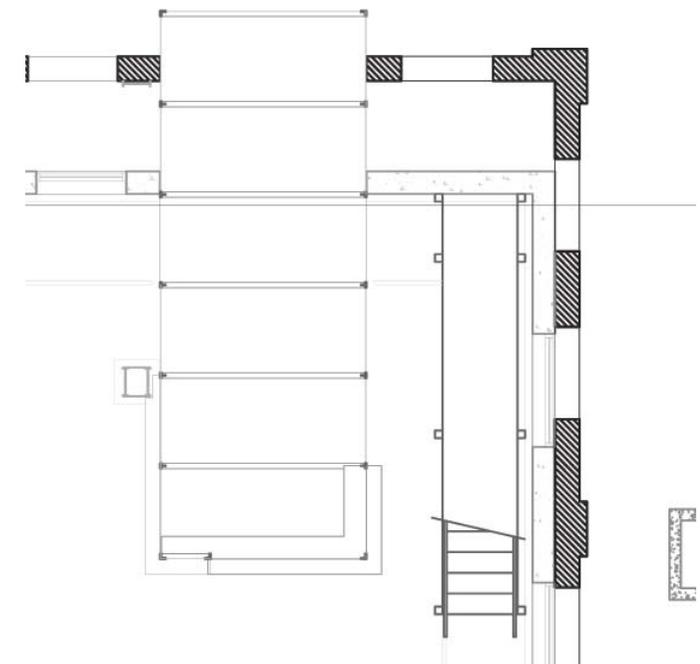
View thru Entrance



Plan Sketch of Entry



Final Sketch of Main Entry



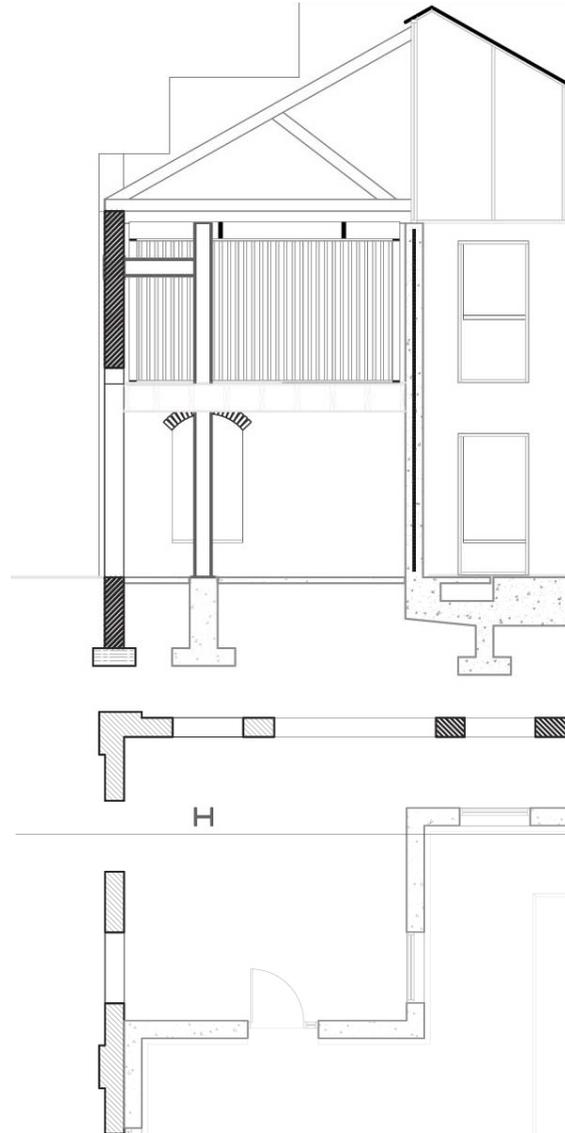
Plan of South-west Corner of Library

Entry from Pedestrian Path

After traveling across the pedestrian pathway, a visitor to the library is greeted by the four primary material layers at the south-east corner of the library. The space between the original brick wall and the new concrete wall functions as the secondary entrance to the library on the first floor and as an open-air reading area on the second.

A new steel beam carrying the floor of the open-air reading area above runs along the inside of the masonry wall and is revealed through both openings. A glimpse of the thin wood slats above the beam suggest the nature of the reading area above.

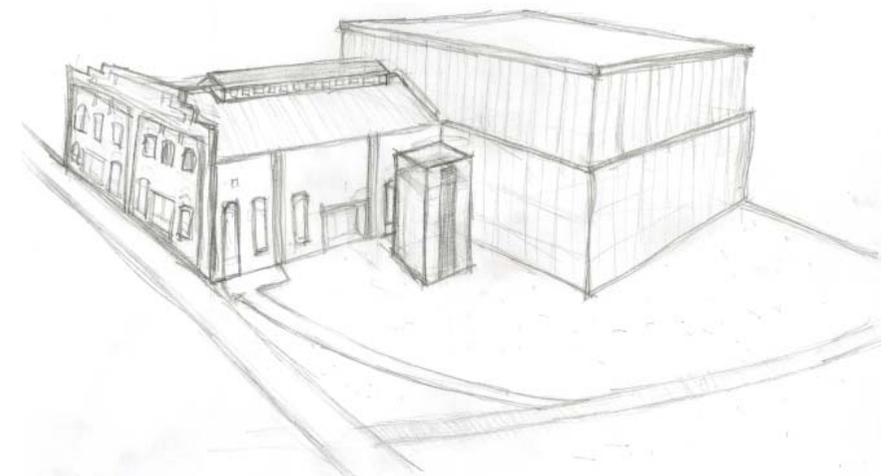
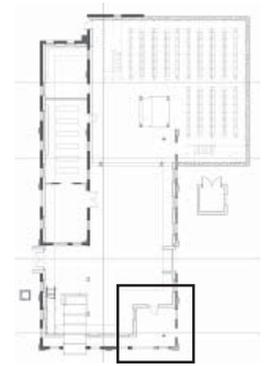
At the threshold of the masonry wall, the concrete wall comes into focus. From here the tactile qualities of the monolithic concrete and their difference to the coursing of the brick becomes apparent. Direct natural light is allowed through the openings in the south masonry wall and washes onto the varying depth of the concrete wall with its alternating solid and void.



Plan and Section through Entry



Model Photo of Entry

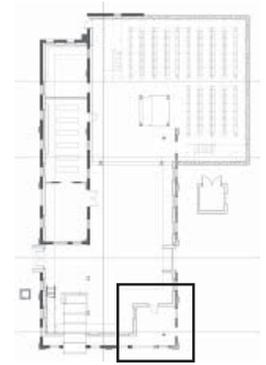


Sketch of Pedestrian Entry

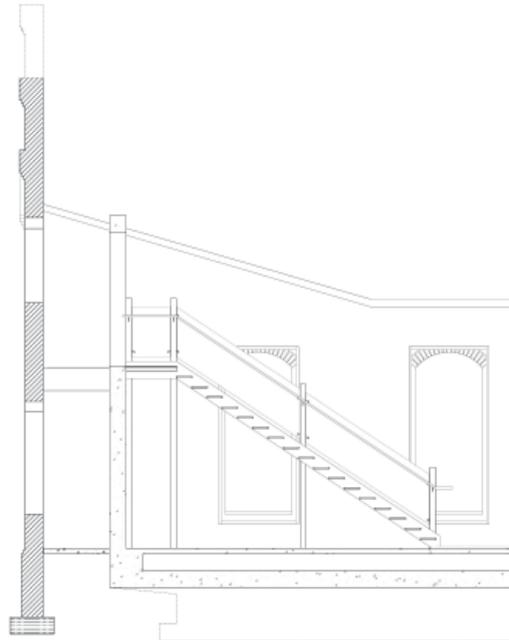
Open-air Reading Room

The open-air reading room along the facade framed by a new concrete wall on one side and the existing brick wall on the other is accessed via a steel stair case and passage through the concrete wall.

After a narrow passage the rhythm of solid and void is modulated to a staccato beat upon entering the reading space. The light penetrating the various layers is sliced and then re-presented to the eye. The vertical wood slats filter the light and separate the library patrons from the bustle and noise of the street.



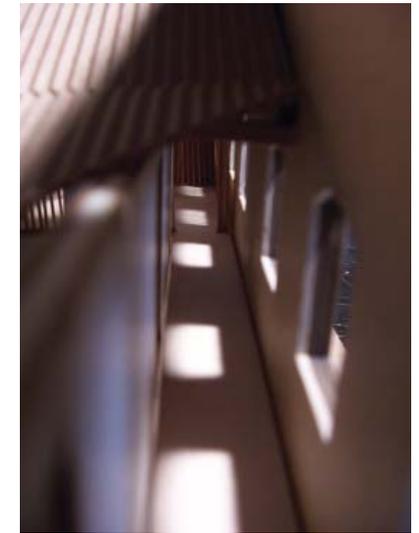
Model Photo of Reading Area



Section Through Steel Stair and Passage

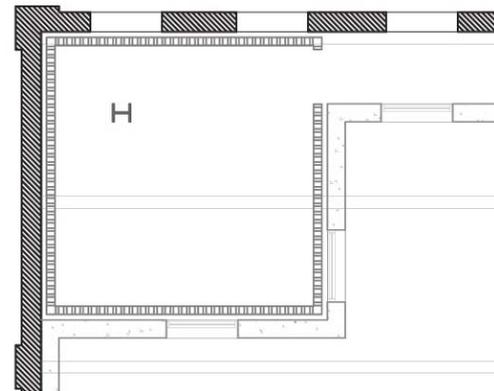
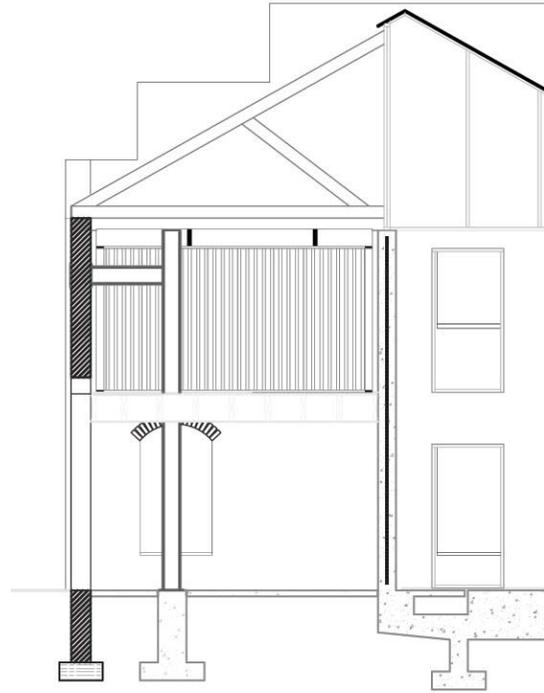


Model Photo of Reading Area



Model Photo of Passage

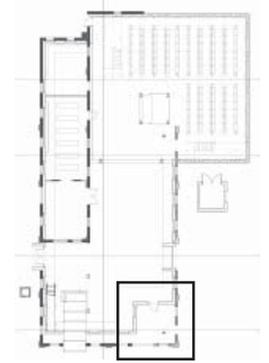
The steel layer braces the masonry in lieu of concrete. The steel becomes a marker around which movement through the space revolves.



Plan and Section through Reading Room



Model Photo of Interior of Reading Area



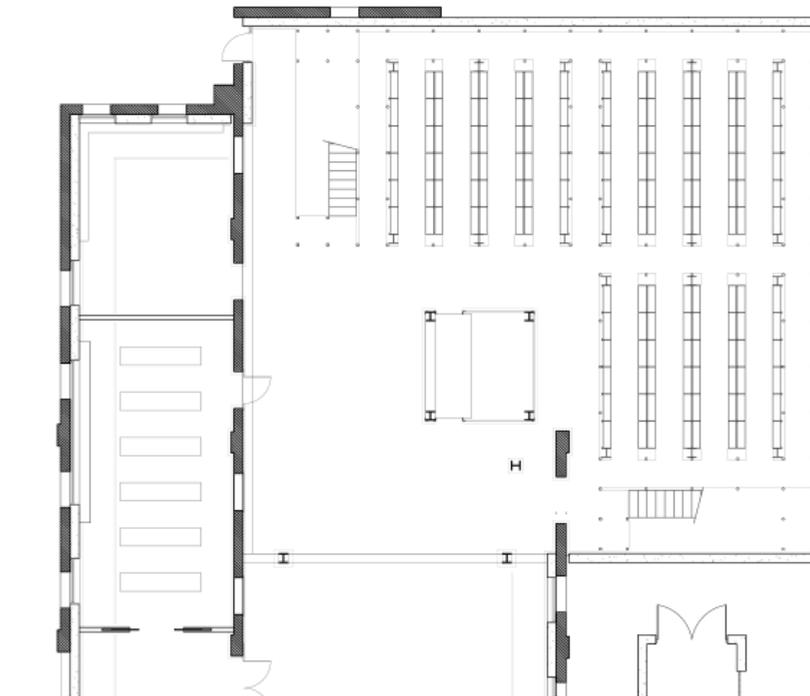
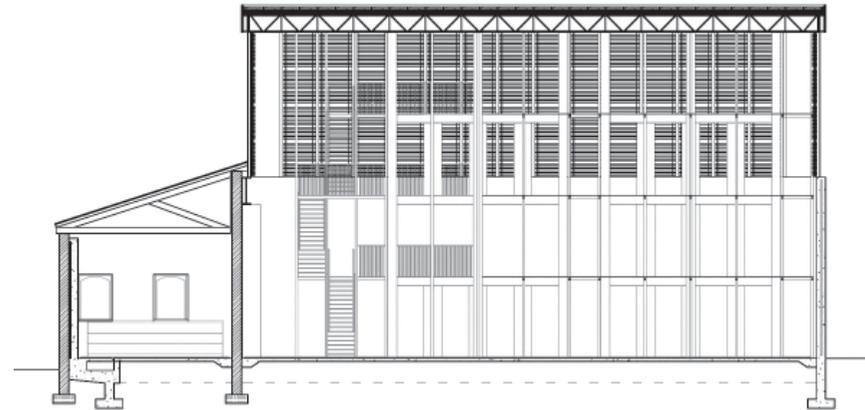
Drawing of Visual Interference Between the Concrete and Masonry Layers

Book Stacks

The books of the library are located within three steel towers in the north-east part of the building. These towers have the ability to hold more books than are currently owned in the library collection. Shelving can be introduced or removed as needed.

The towers are connected through a series of steel walkways. The walkways and stairs are independently supported and do not physically touch the towers but are separated by a 1/4 inch gap.

The translucent glass floors allow natural light to filter to the lower levels of the stacks. The translucency subtly transmits the presence of other patrons in the library as shadows and footprints move overhead.



Plan and Section through the Library Stacks



Interior View of Stacks

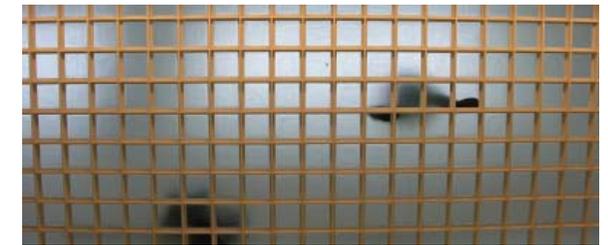
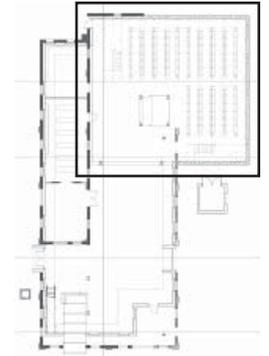
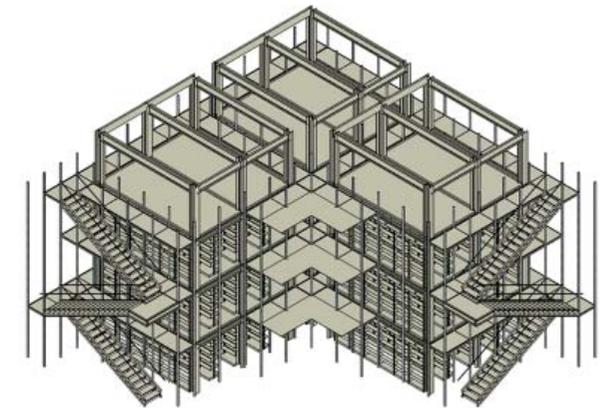


Photo of Similar Glass Floor

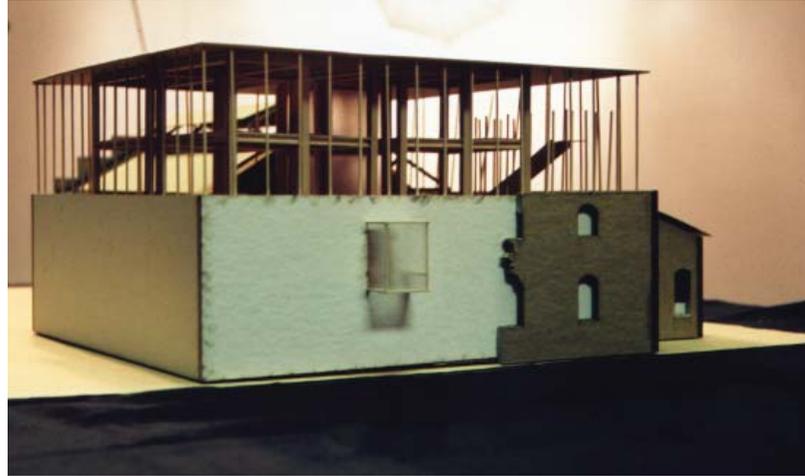


Axometric View of Book Stacks

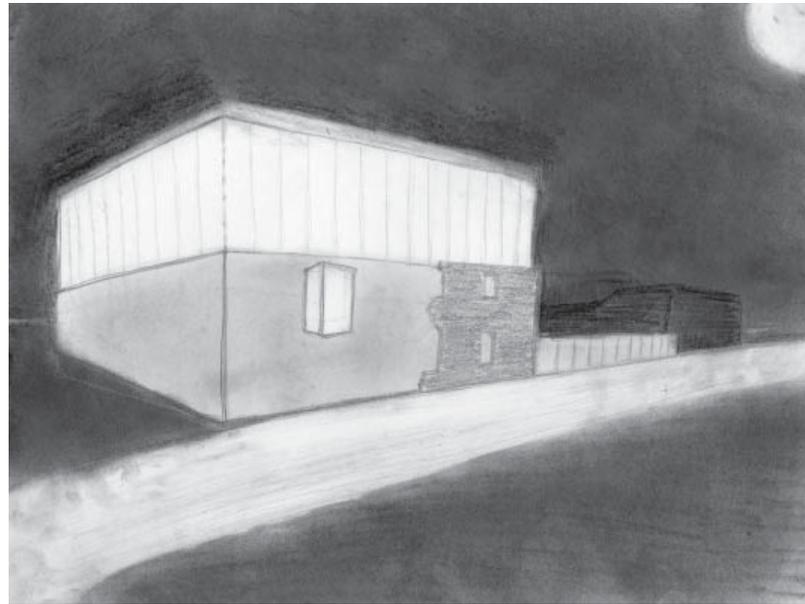
From the exterior the jagged edges of the bricks tell of their departed brethren and stand in clear opposition to the hard lines of the concrete wall. The heaviness of the concrete and masonry walls is reinforced by a translucent steel box for reading that floats above the canal.

Steel and glass rise from the concrete layer to complete the enclosure. Light passing through the box is mediated by the horizontal slats of the protective wood layer.

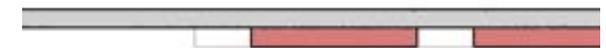
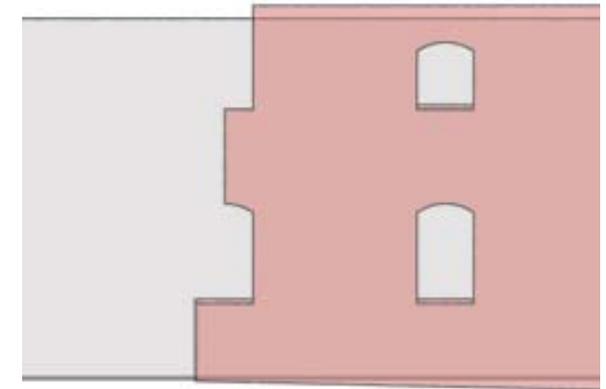
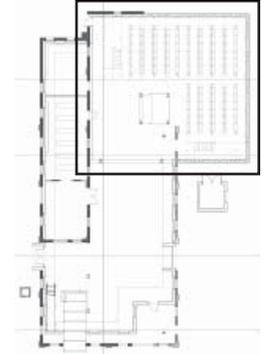
The book towers, the heart of the library, are clearly identifiable and visible from many points in Pulaski.



Model Photo of North Elevation



Drawing of North Elevation at Night



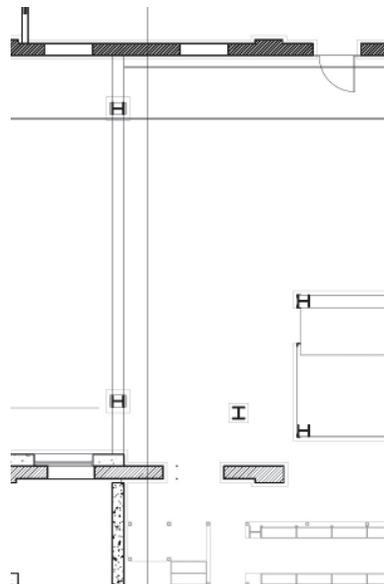
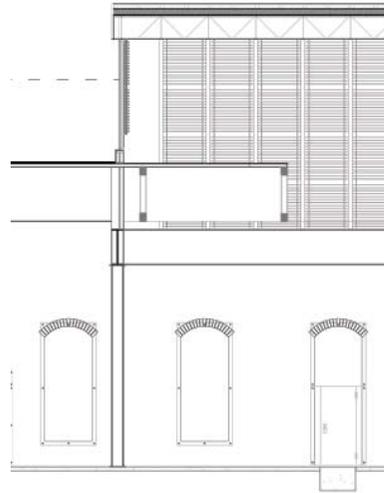
Drawing of Wall Interaction

Roof Overlap

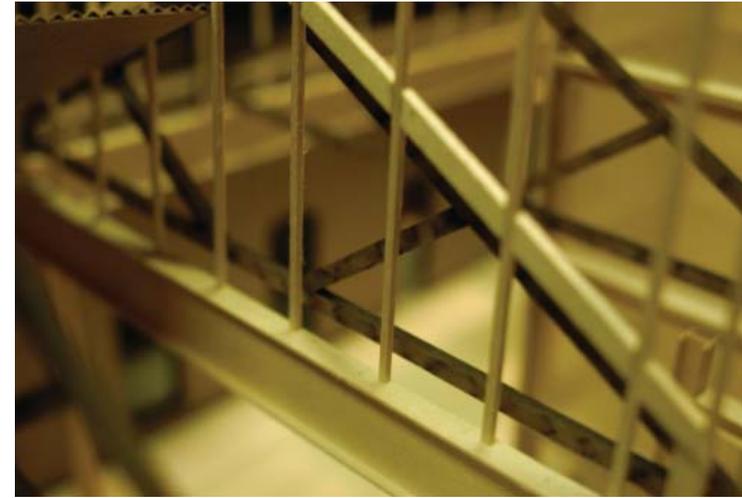
Remnants of the existing roof system penetrate the steel box surrounding the book towers. Freed of structural obligation, the existing fragments display themselves for the enjoyment of library patrons.

Steel follows the line of the existing trusses so that a physical connection can be made to prevent moisture penetration. Wood roof beams pass below the heavy steel beam and through the steel columns to connect to the existing trusses.

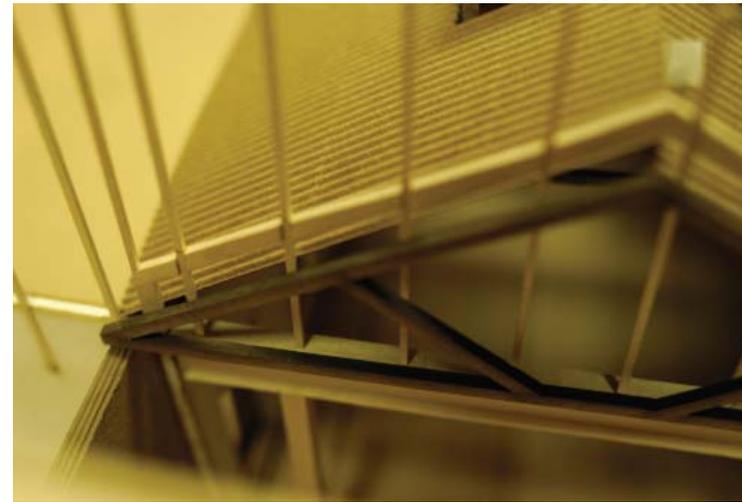
While visually stimulating, this connection is cumbersome and needs further refinement.



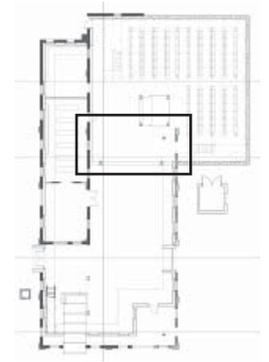
Plan and Section Through Roof Overlap



Model Photo of Roof Overlap

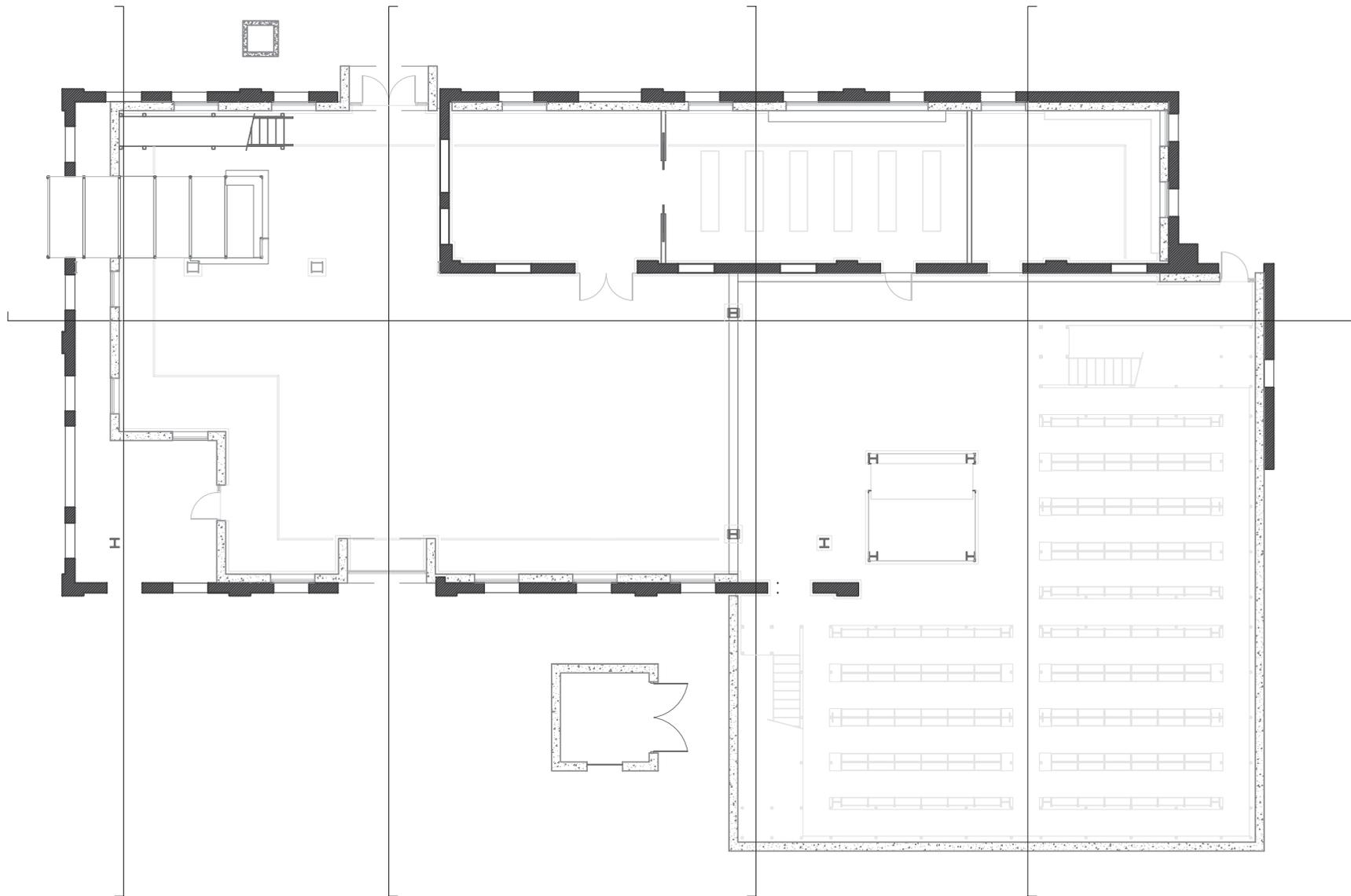


Model Photo of Roof Overlap



Preliminary Sketch of Roof Connection





Plan of First Floor

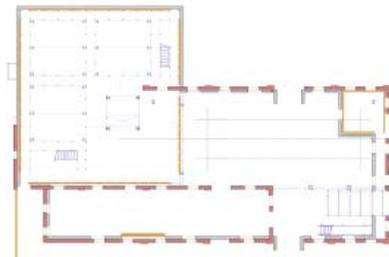
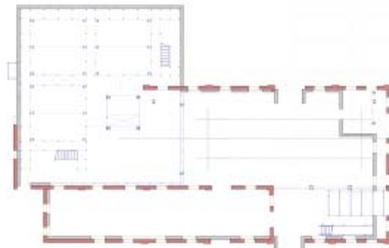
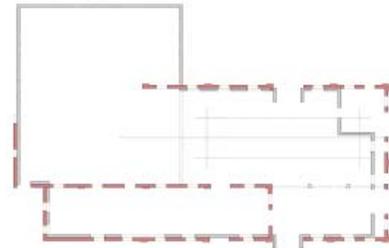
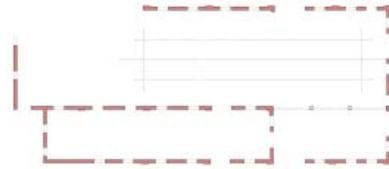
Conclusion

Architectural Layering can offer contrast in age, material and form.

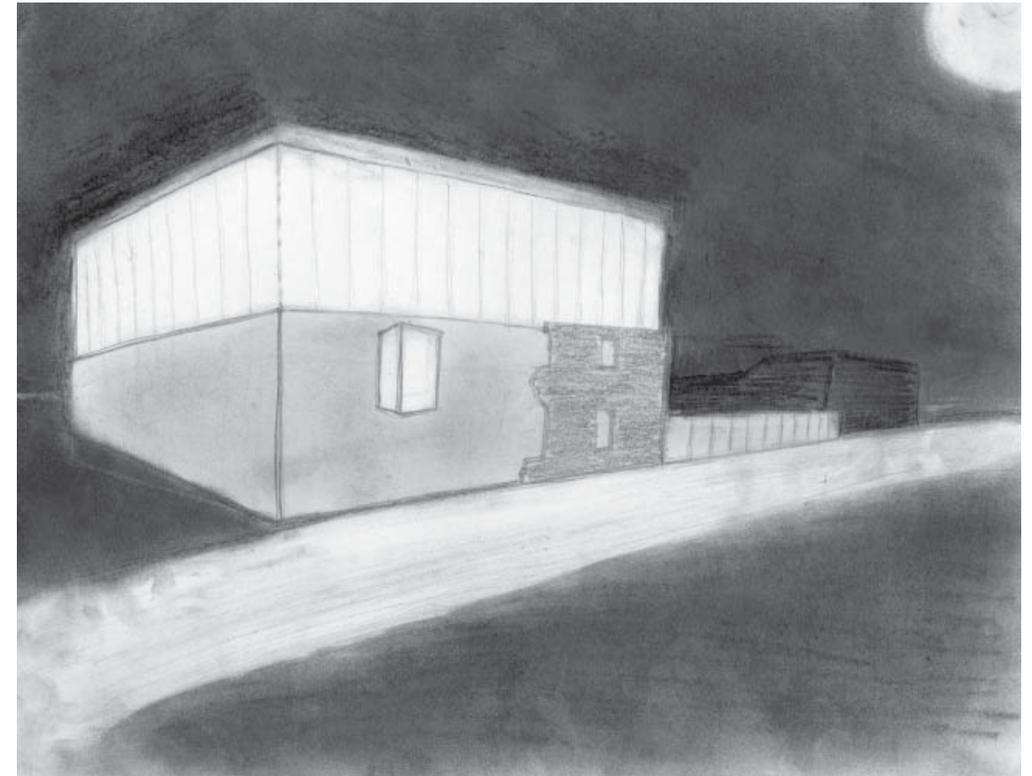
A modern day ruin, in this case the Pulaski Foundry, presented a unique opportunity to reintroduce an important but forgotten history of the town.

The existing masonry layer became a basis for a series of interventions. A concrete layer was employed as a means of establishing a new enclosure. Steel became the layer of utility and carries the loads of the books and people. Wood took on the role of lining the perimeter of the space to control undesirable views and filter light and sound. Inside wood is used to warm surfaces to the human touch.

The interplay between the layers with their unique identities offered opportunities for an architectural spatial composition.



Photos of Model



Drawing of Library at Night

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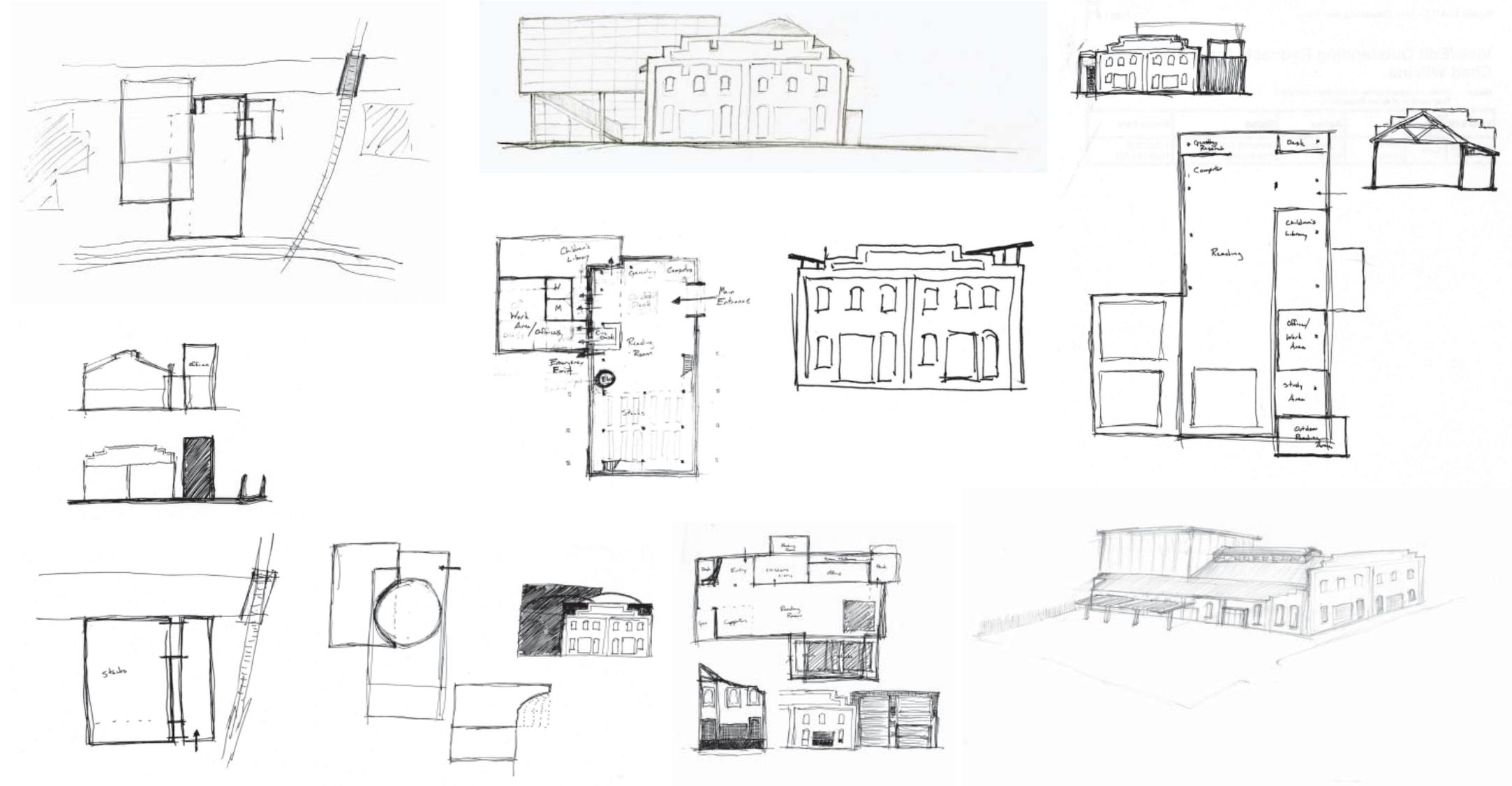
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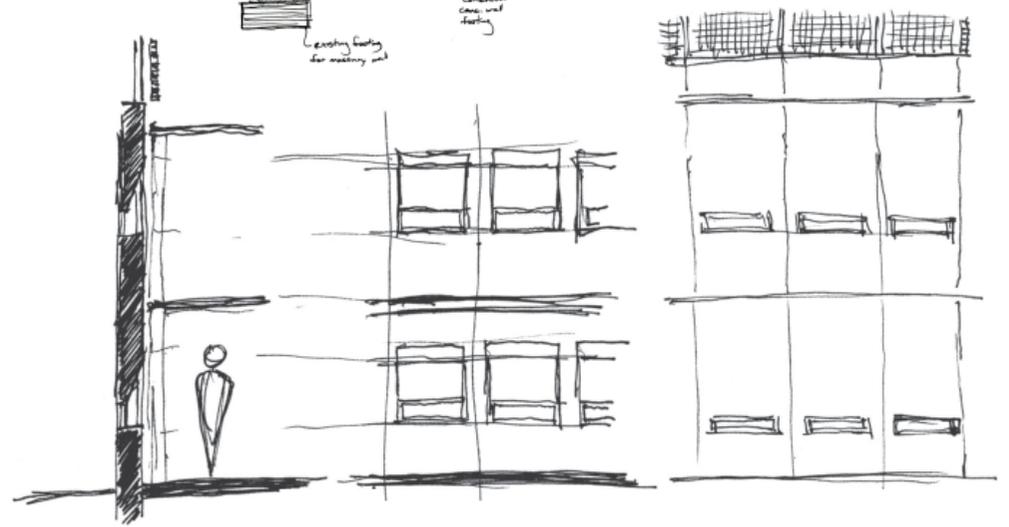
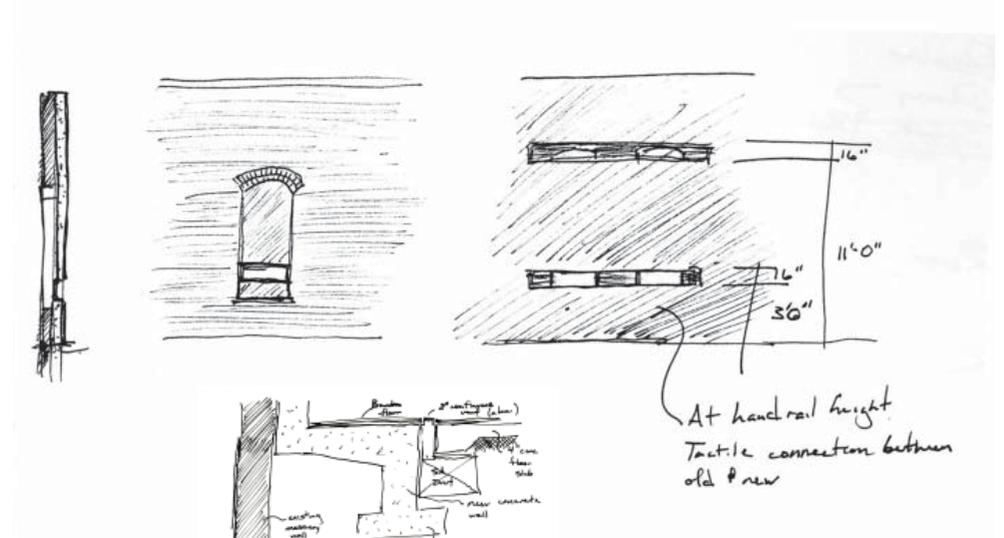
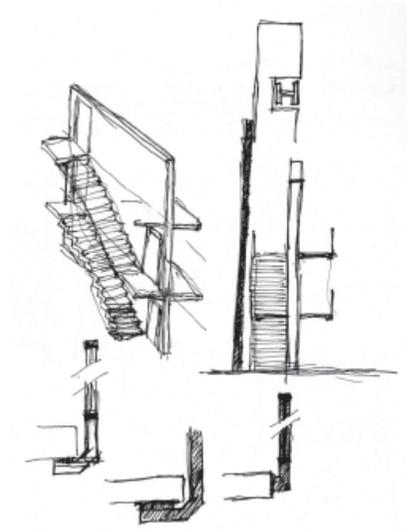
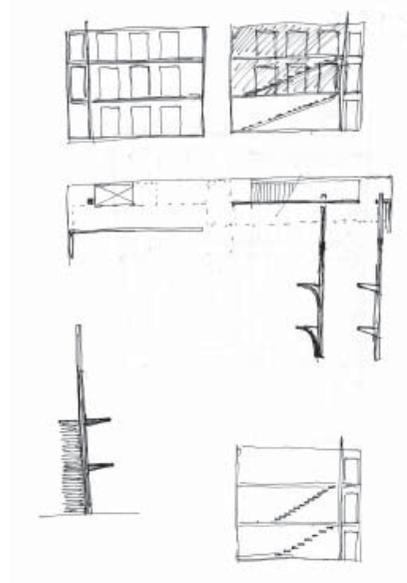
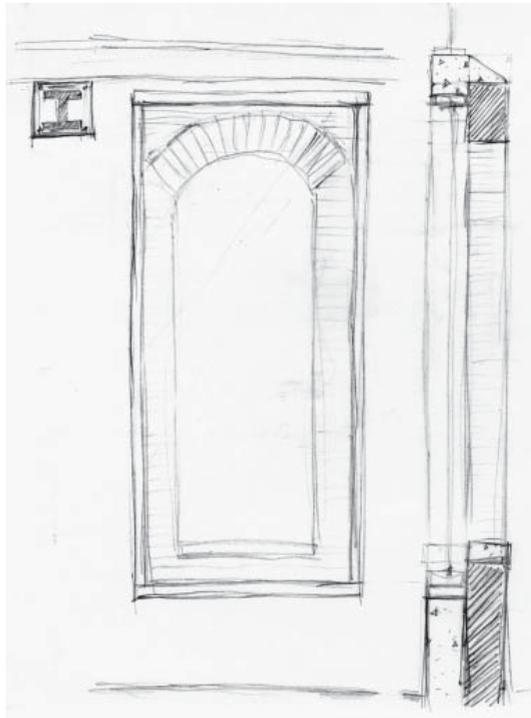
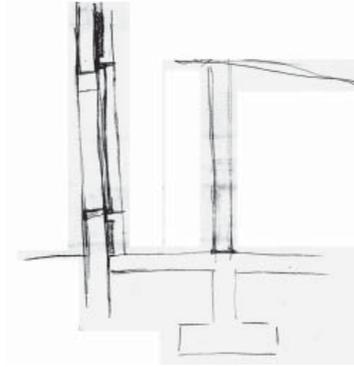
Appendix A

Sketches showing the development of the library form



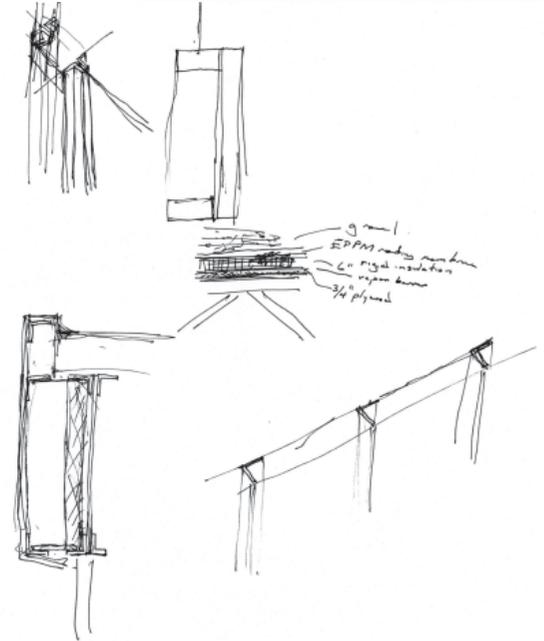
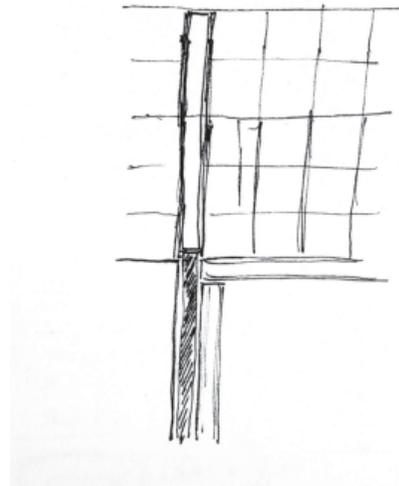
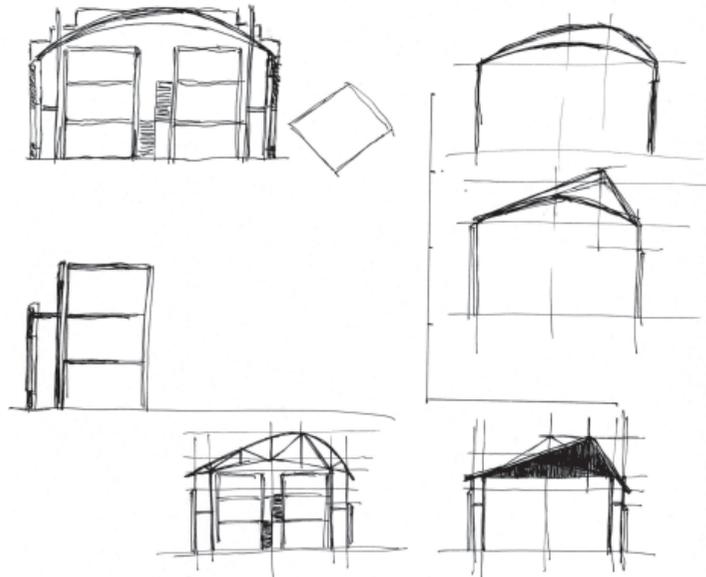
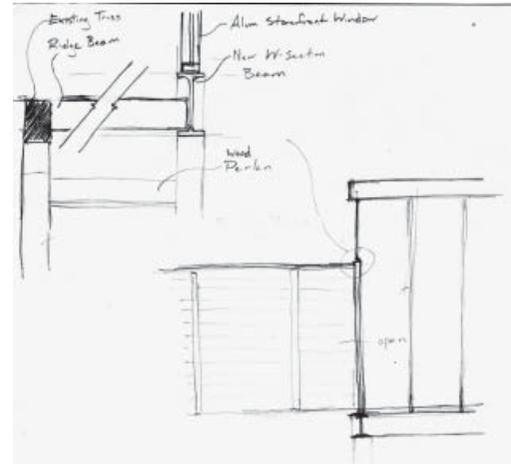
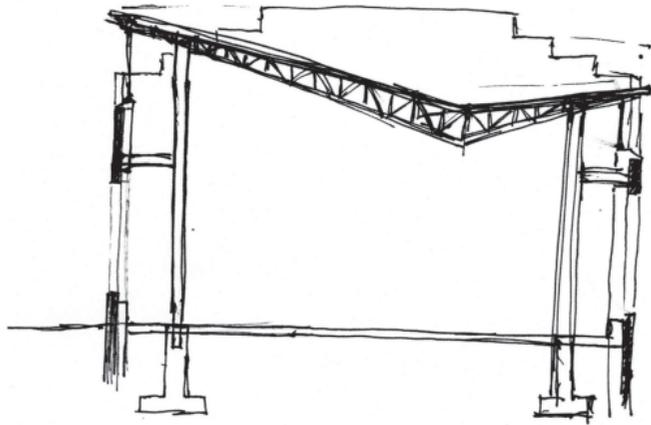
Appendix A

Sketches showing the development of the concrete wall



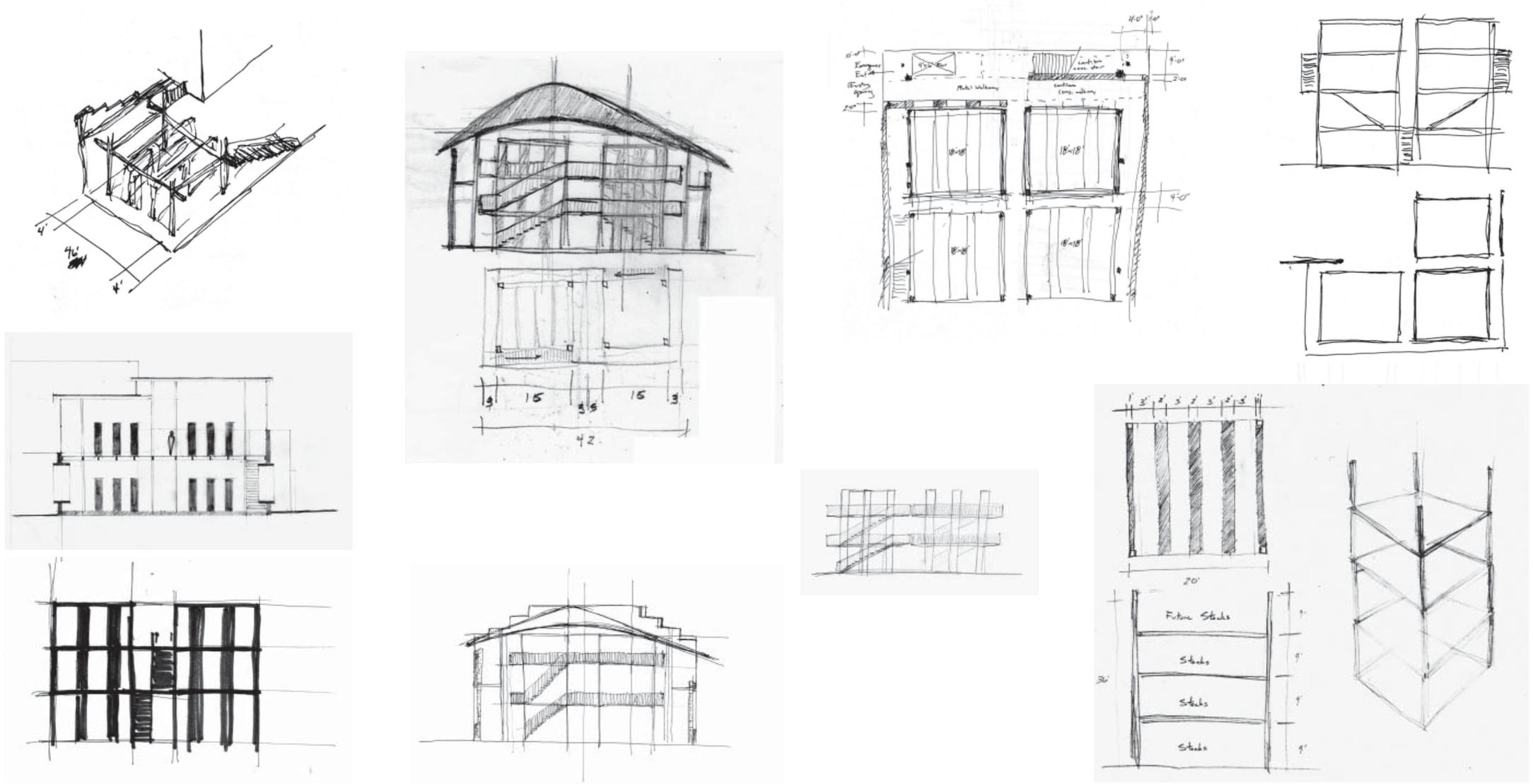
Appendix A

Sketches showing the development of the roof



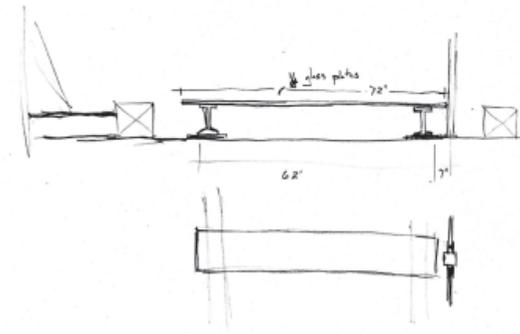
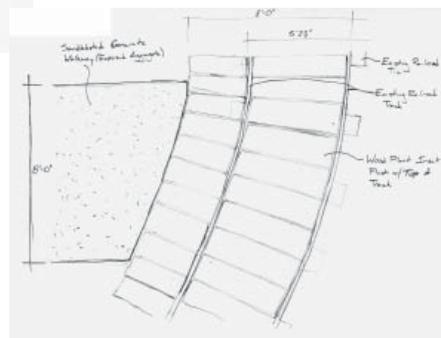
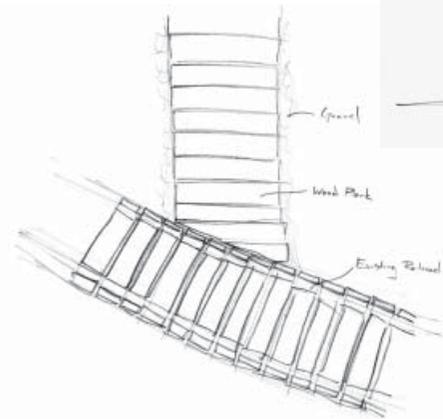
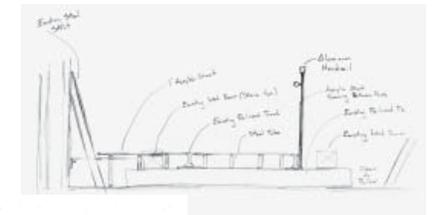
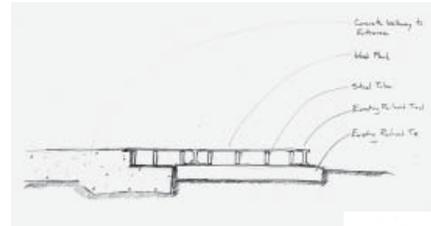
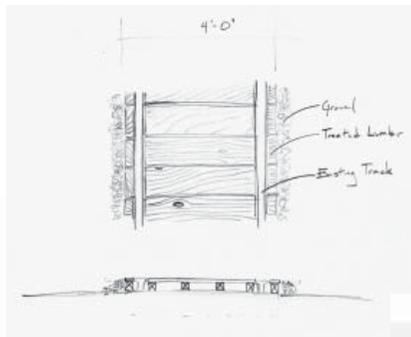
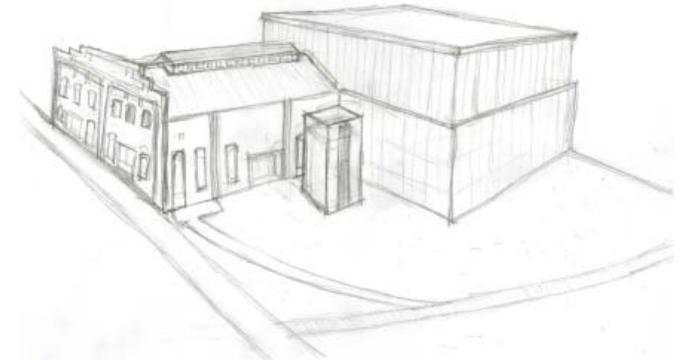
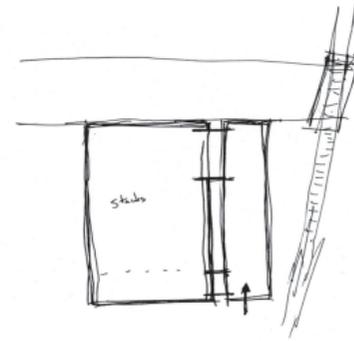
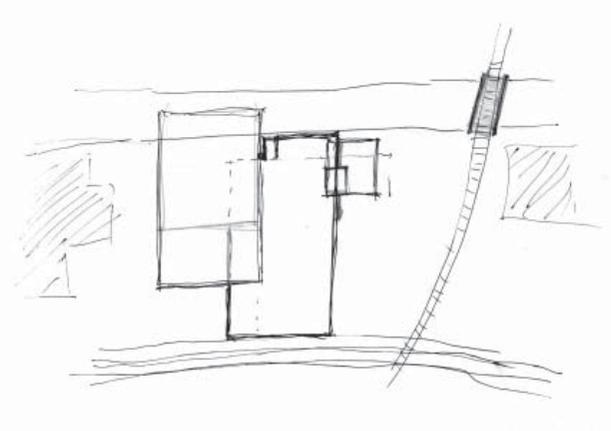
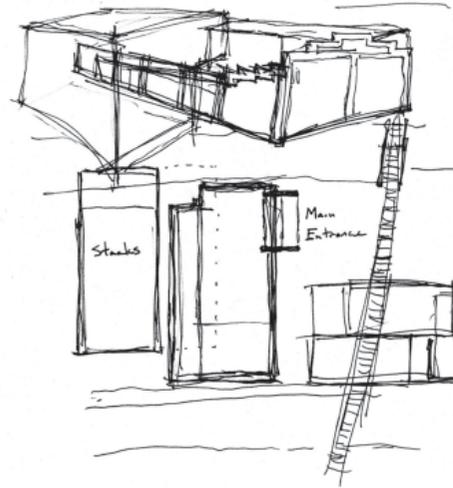
Appendix A

Sketches showing the development of the book stacks



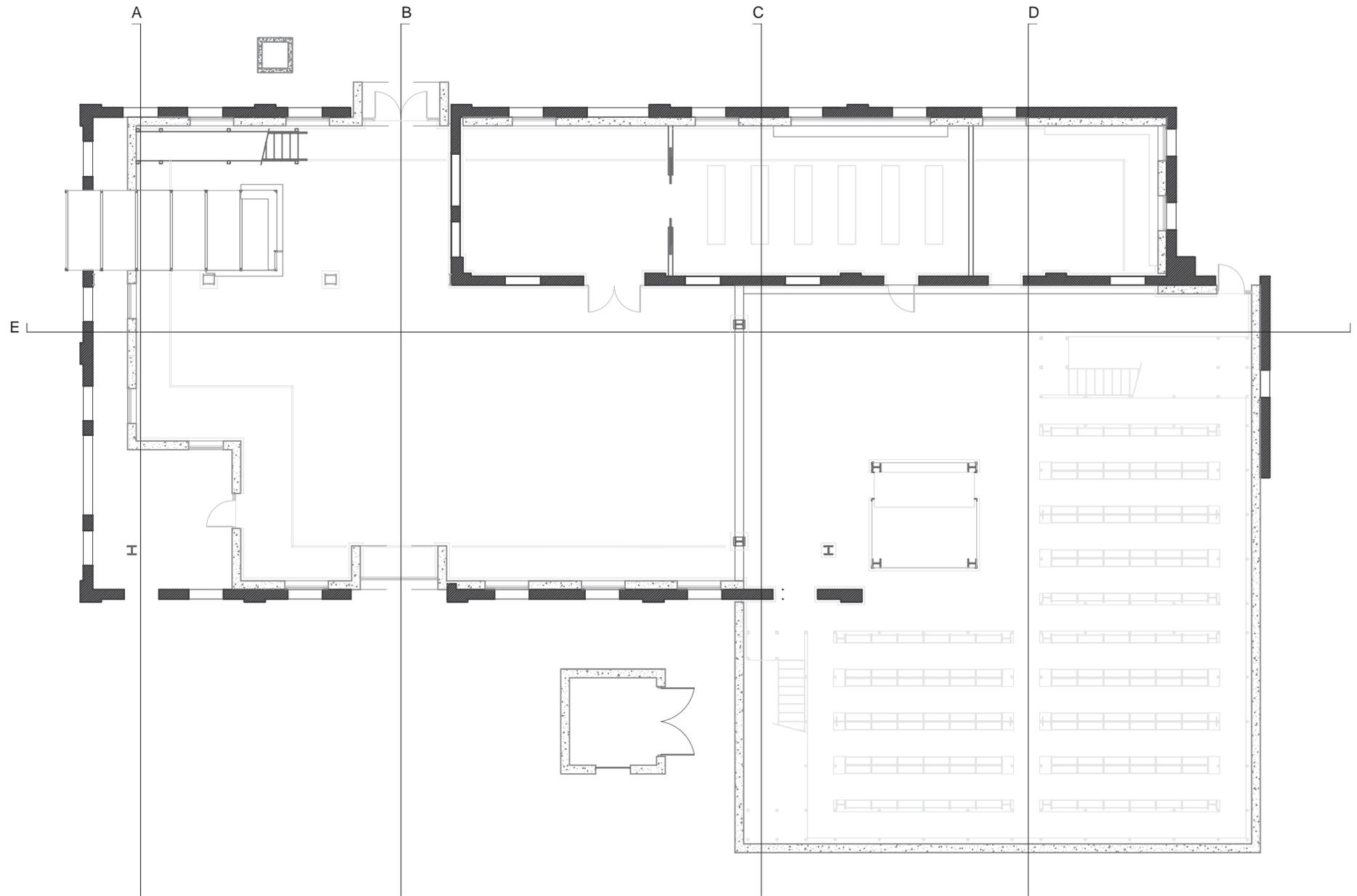
Appendix A

Sketches showing the development of the pedestrian path



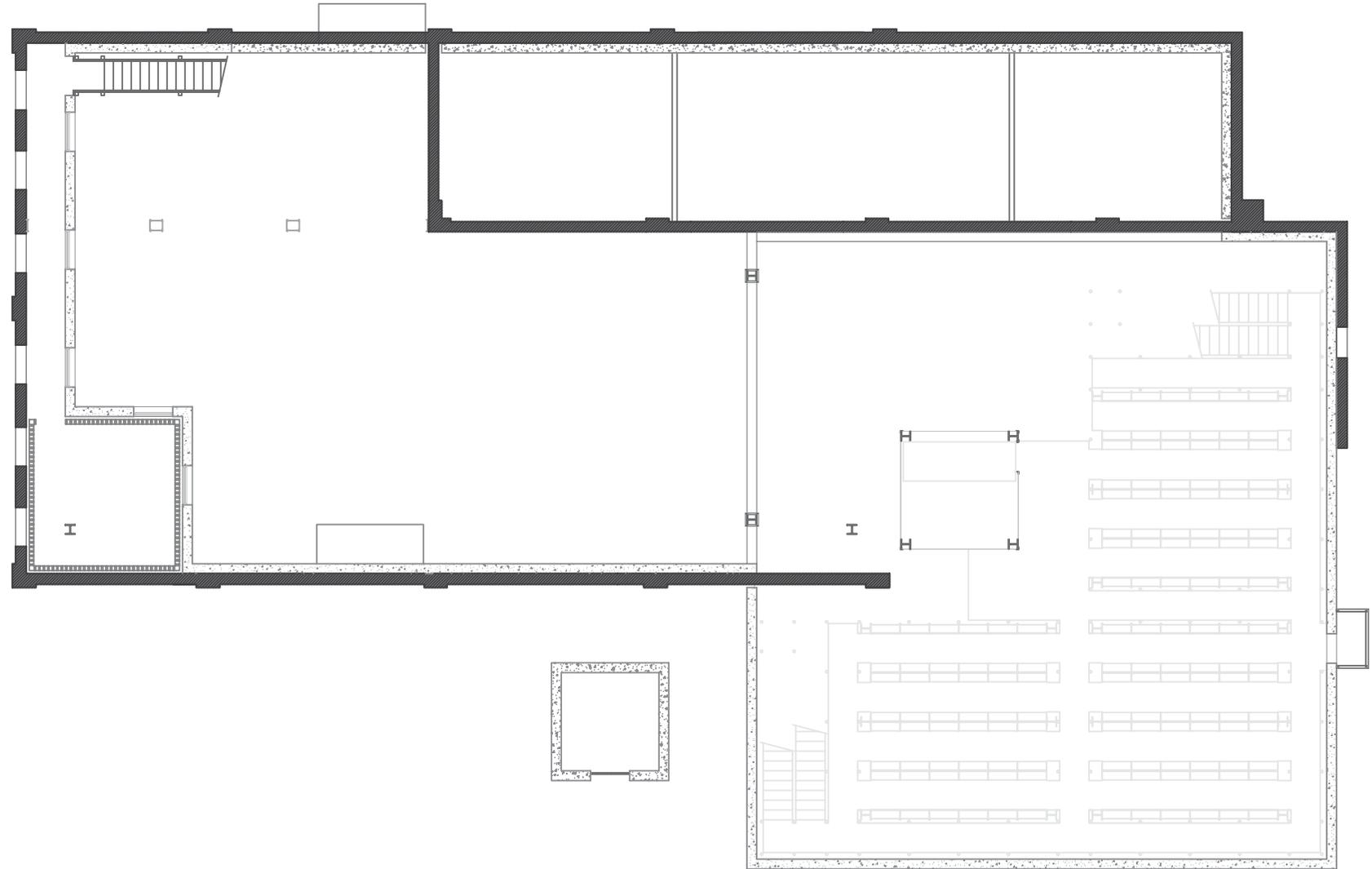
Appendix B

First Floor Plan
Scale: 1/16" = 1'-0"



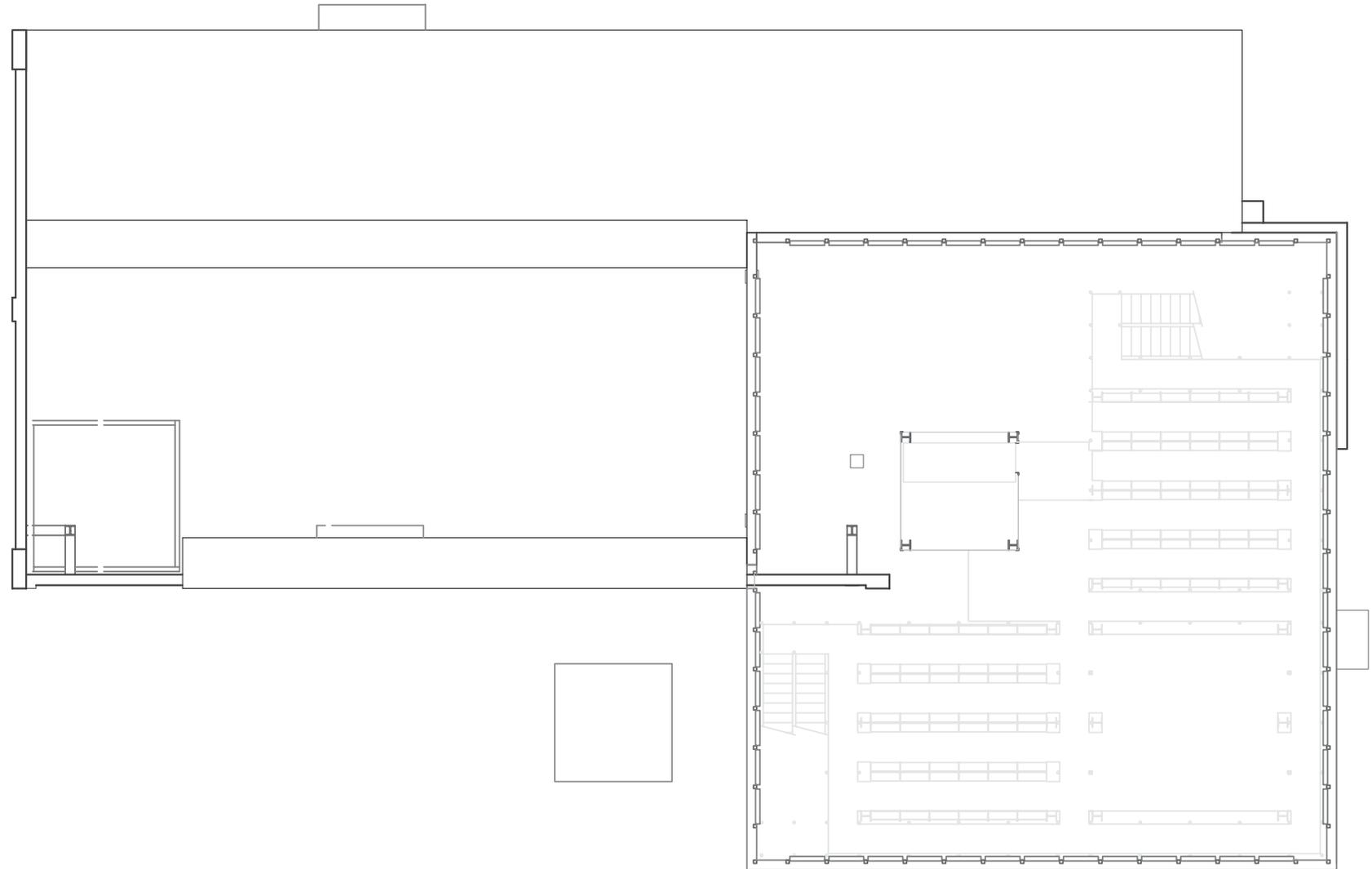
Appendix B

Second Floor Plan
Scale: 1/16" = 1'-0"



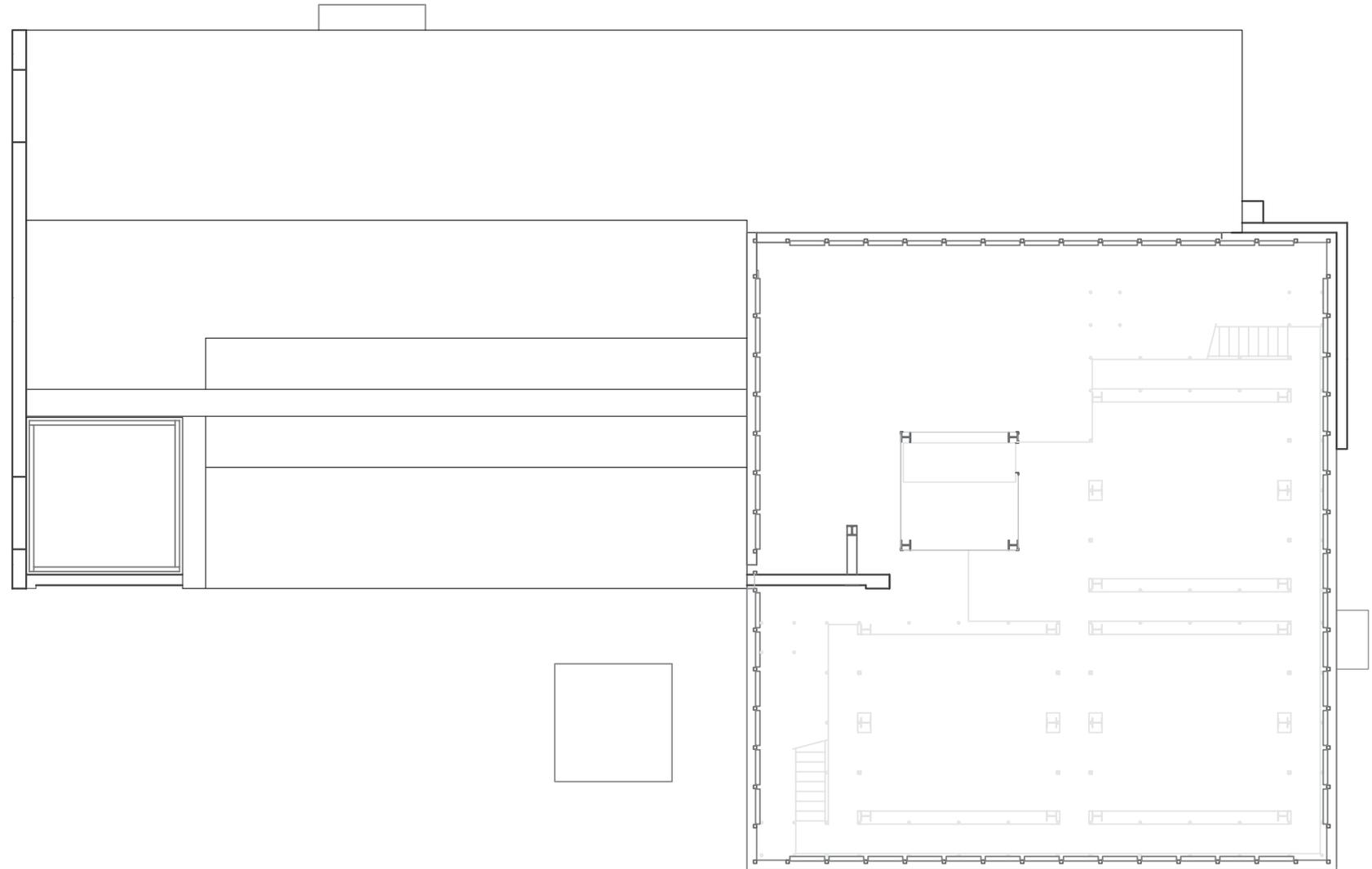
Appendix B

Third Floor Plan
Scale: 1/16" = 1'-0"



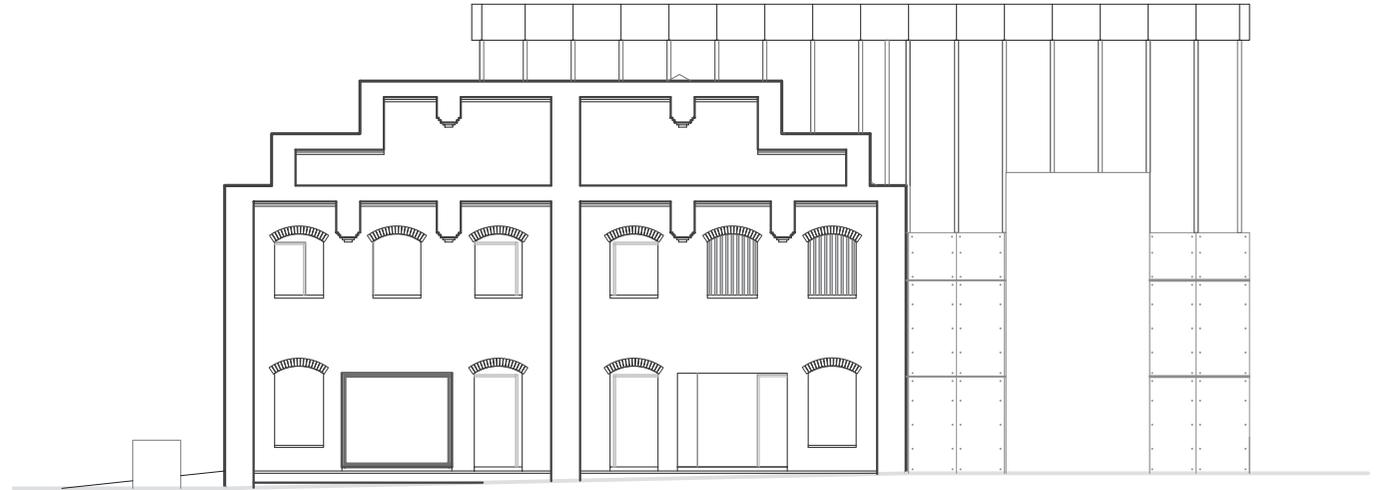
Appendix B

Fourth Floor Plan
Scale: 1/16" = 1'-0"

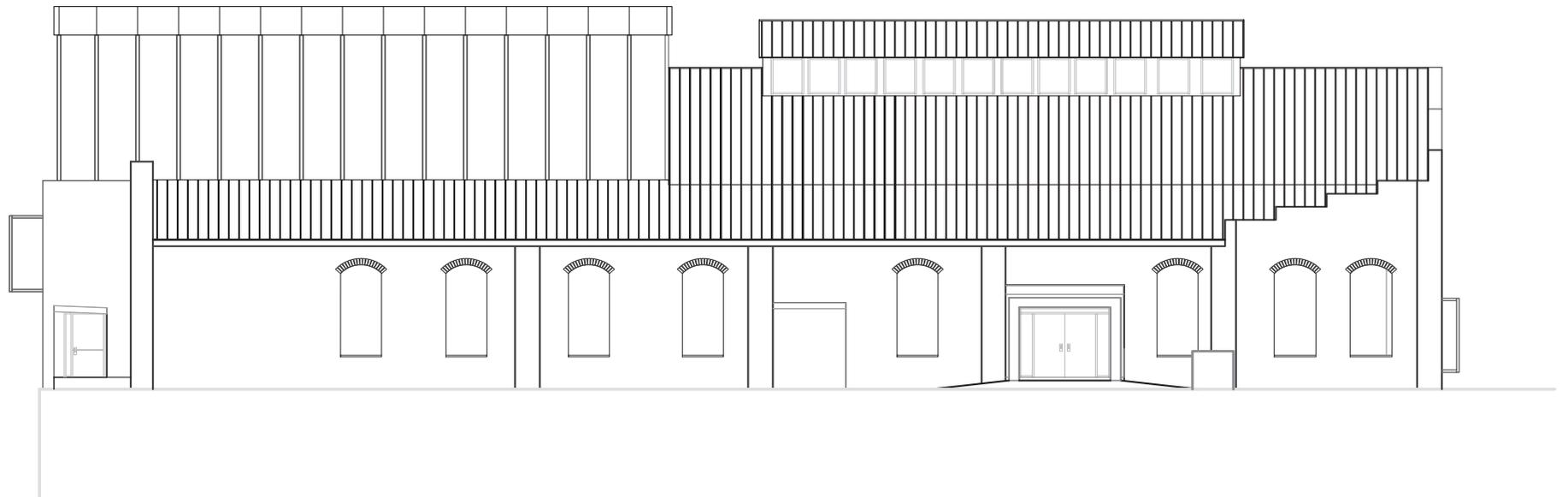


Appendix B

South Elevation
Scale: 1/16" = 1'-0"

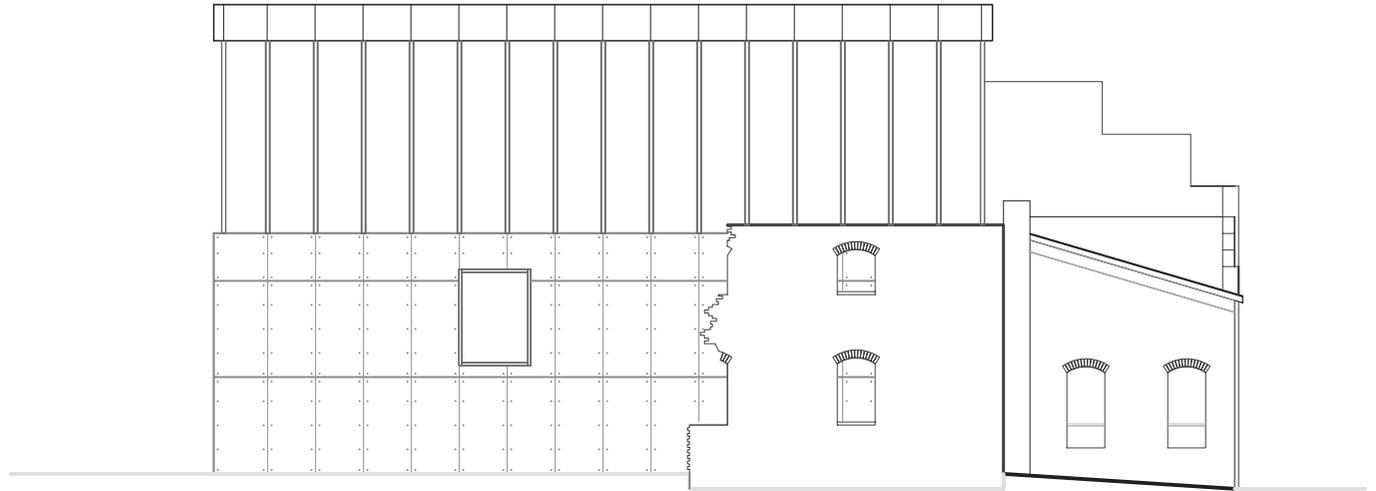


West Elevation
Scale: 1/16" = 1'-0"

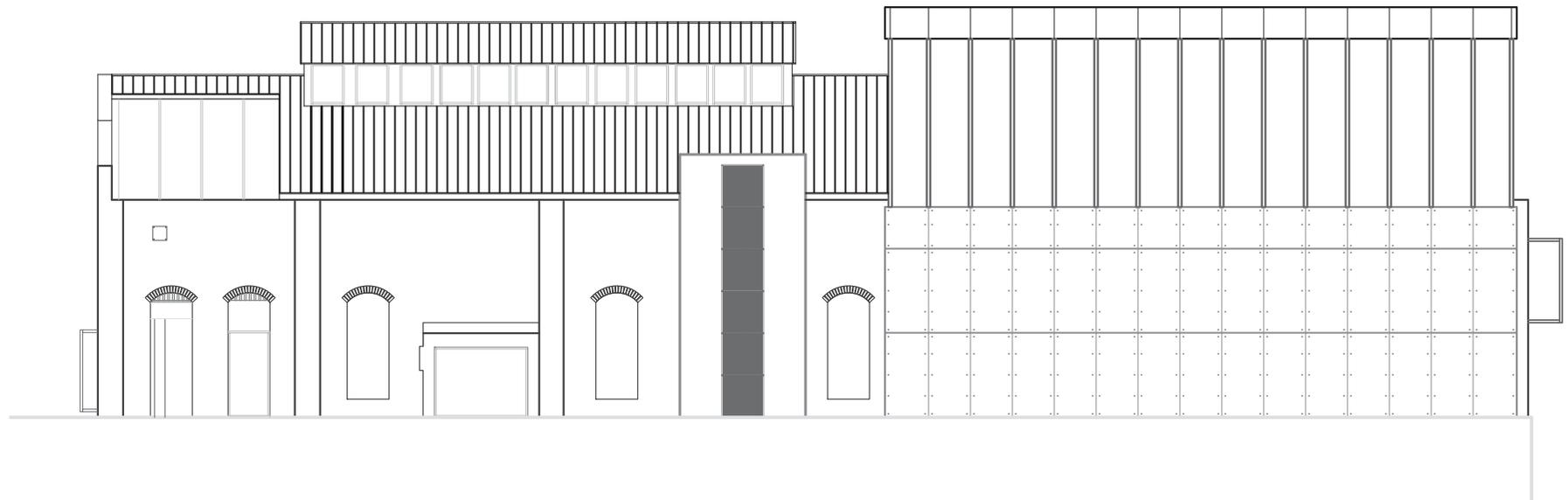


Appendix B

North Elevation
Scale: 1/16" = 1'-0"

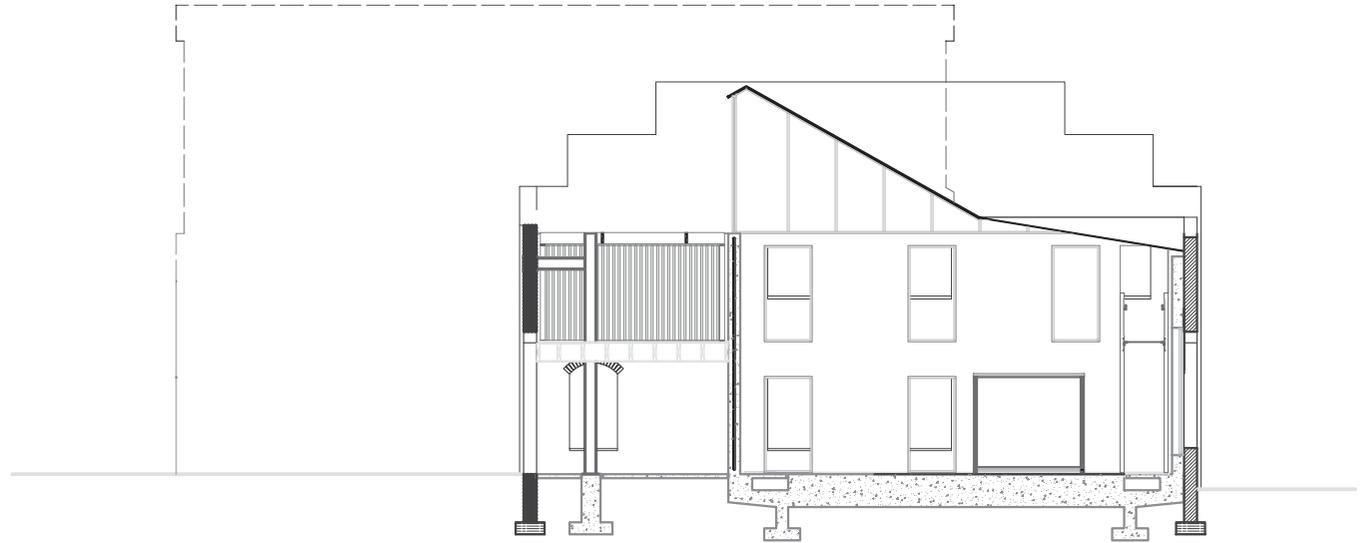


East Elevation
Scale: 1/16" = 1'-0"

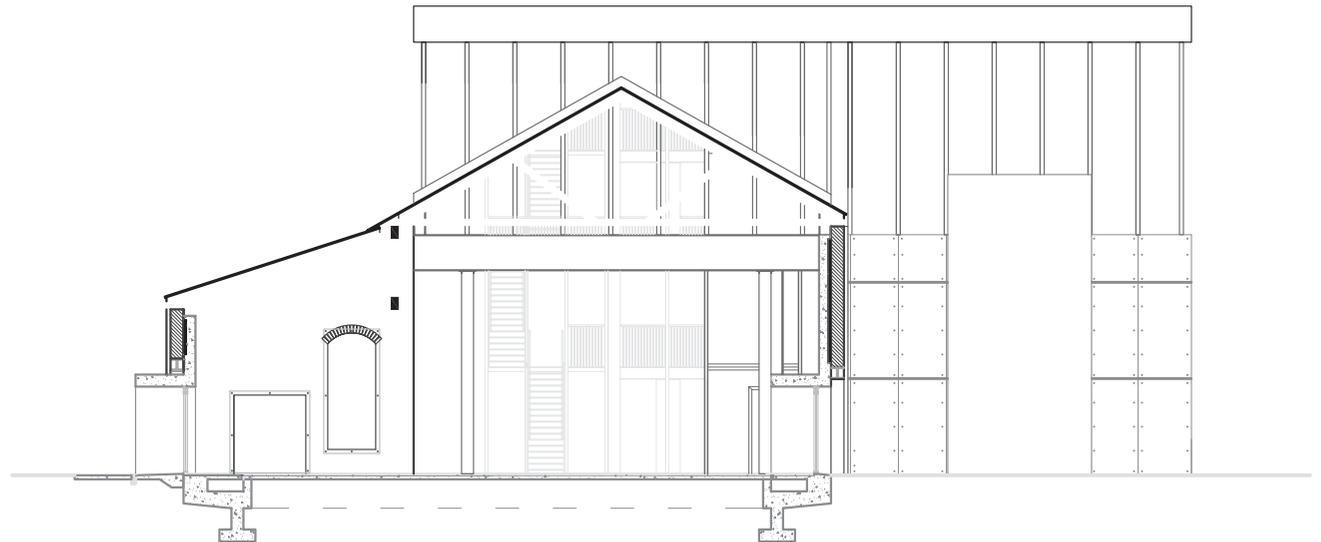


Appendix B

Building Section A
Scale: 1/16" = 1'-0"

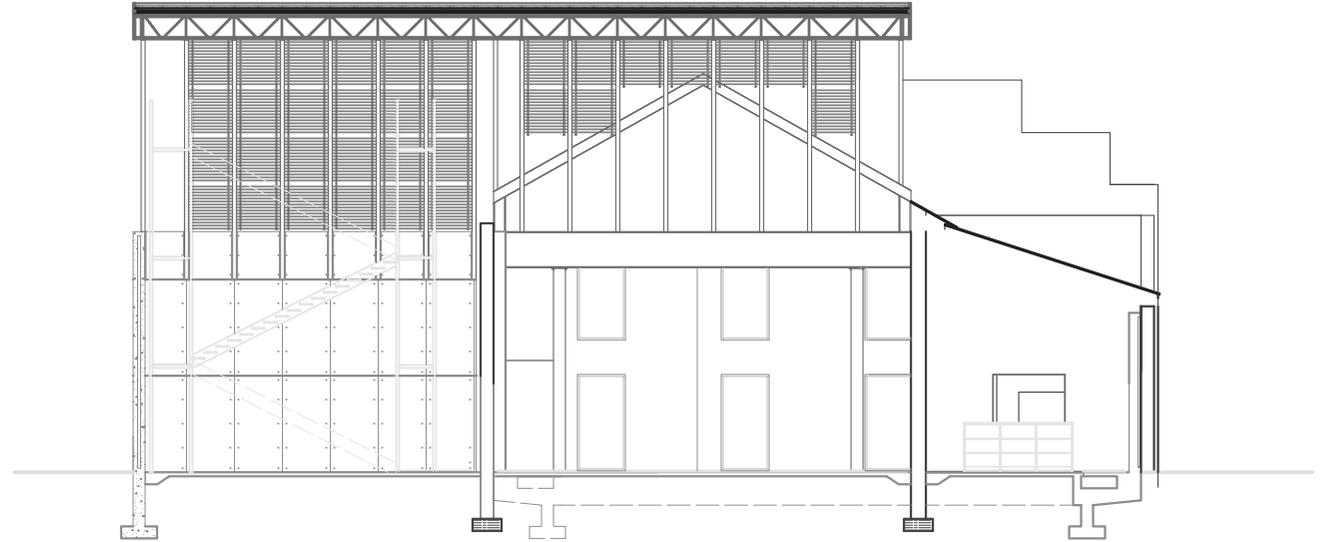


Building Section B
Scale: 1/16" = 1'-0"

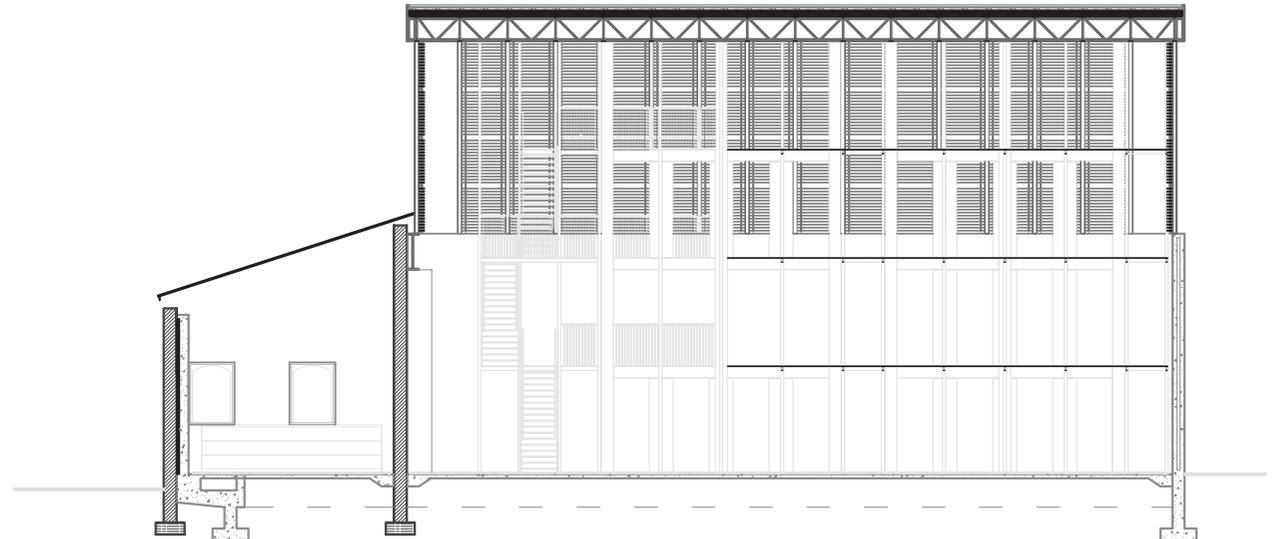


Appendix B

Building Section C
Scale: 1/16" = 1'-0"

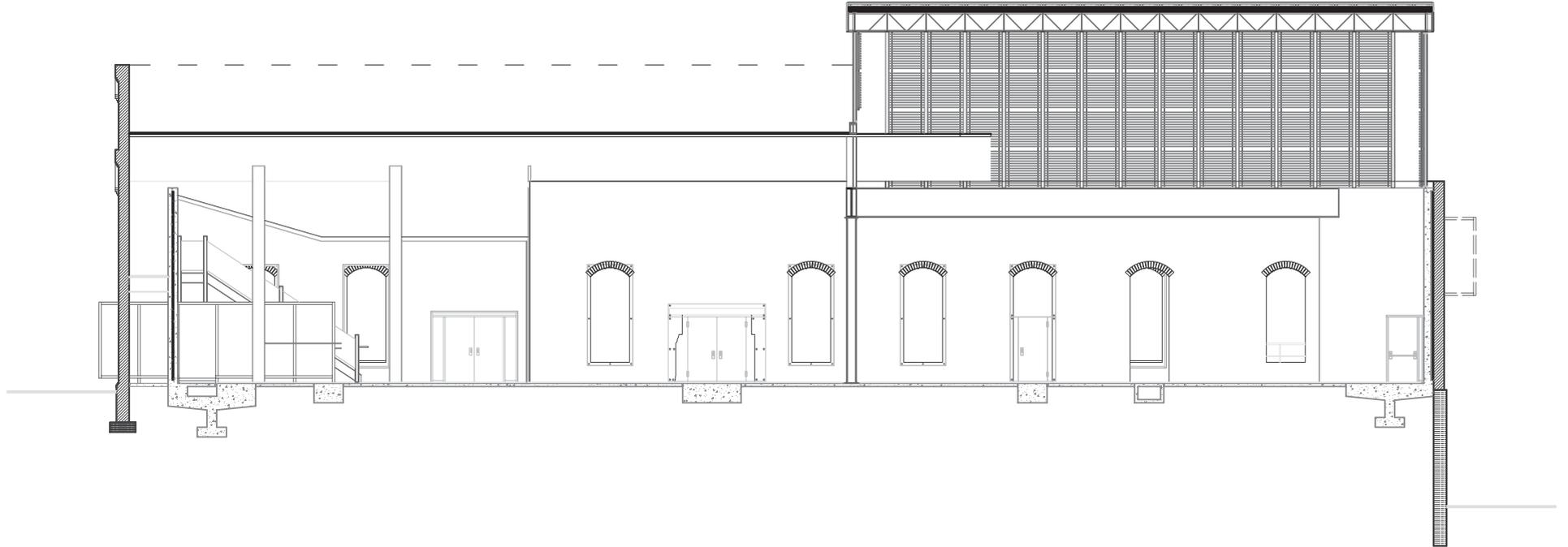


Building Section D
Scale: 1/16" = 1'-0"



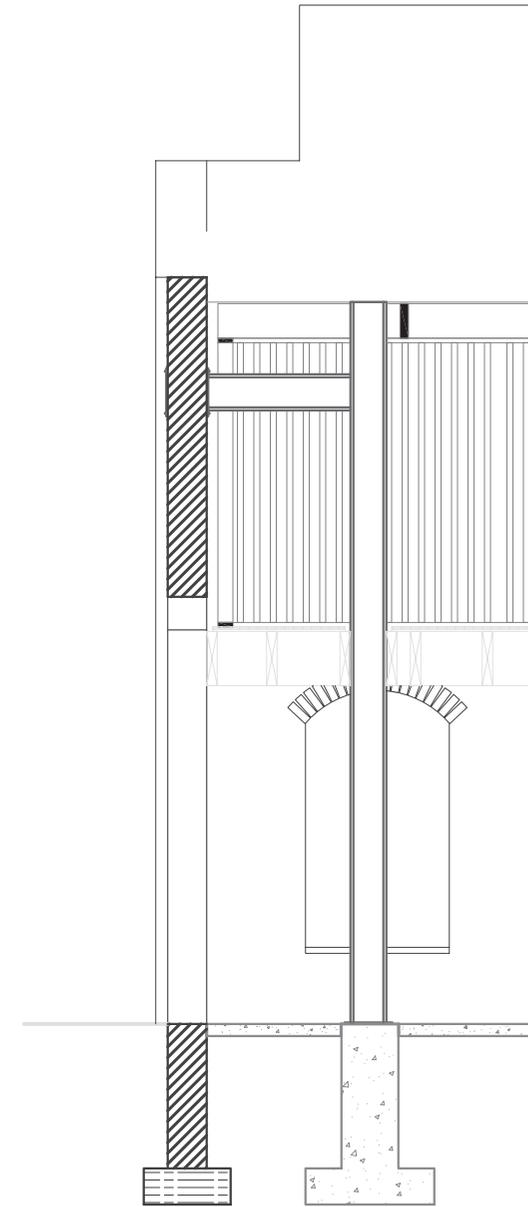
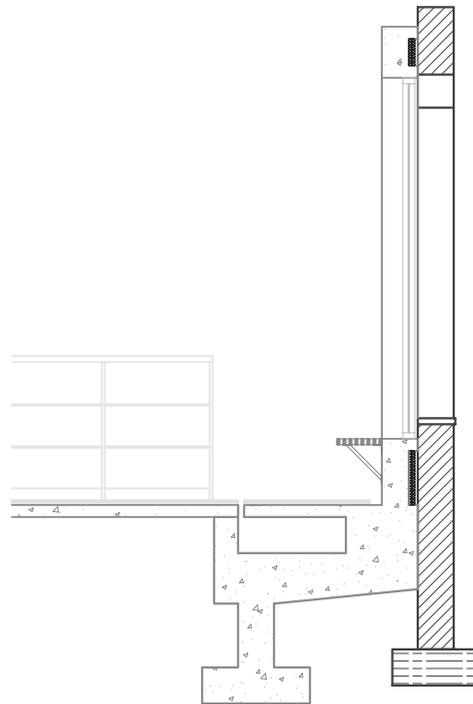
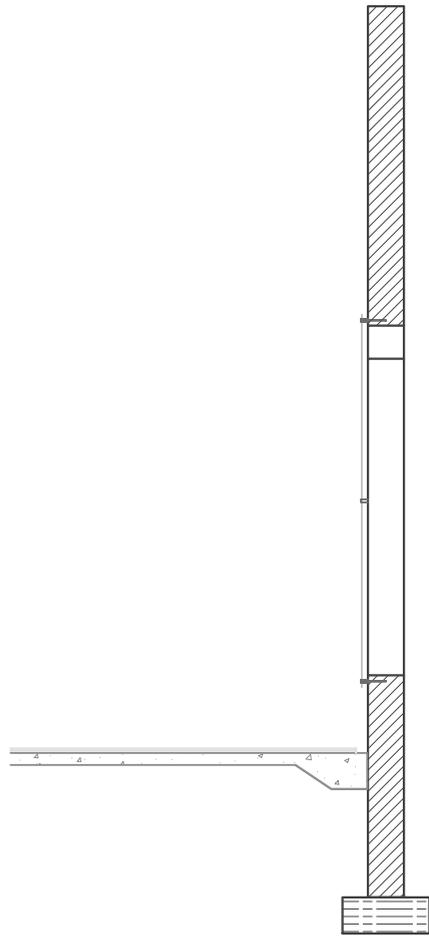
Appendix B

Building Section E
Scale: 1/16" = 1'-0"



Appendix B

Wall Sections
Scale: 3/16" = 1'-0"



Vitae

Aaron E. Gary

Education

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Master of Architecture
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University of Oklahoma
Norman, OK
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Honors & Activities

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University of Oklahoma President's Honor Roll
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Tau Beta Pi Engineering Honor Society
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Relevant Experience

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