

City Hall

Russell Alexander Karn

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Master of Architecture

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## City Hall

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### Abstract

This thesis grew from a curiosity to understand monumentality, form, and design in a project that is rooted in constructional development. The program is a city hall in Rockville, Maryland, in the spirit of a basilica. A city hall should act as a room for the city. This is a place for public matters to be debated, people to meet others, events to be celebrated, and ideas to be discussed.

## Dedication

I would like to dedicate this thesis to my father, Robert Karn. If it were not for his introducing me to the wonderful profession of architecture, I may have never embarked on the odyssey which has led me to this point on the path of becoming an architect myself. He is an inspiration of mine and the person that I look up to more than anyone else. He has shown me how wonderful life is, what it is to have good character, and the importance of pursuing what you believe in with passion and discipline. I will forever be in his debt.

### Acknowledgements

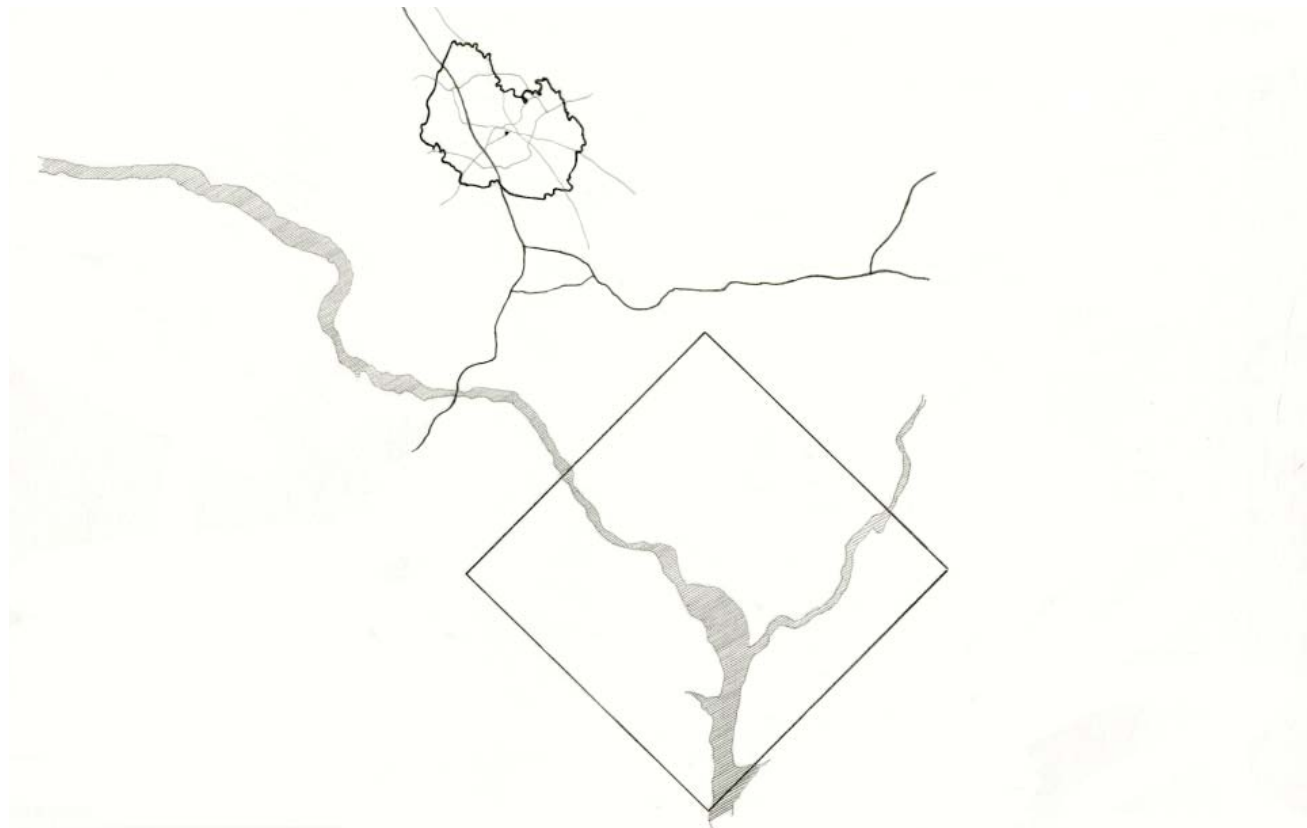
Special thanks to my professors, their inspiration and teachings were invaluable.  
I am grateful for my studiomates who gave their support and encouragement.

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## Chapter 1: A ROOM FOR THE CITY

A city hall is a city room. This city hall is a jewel on the hill, a place that the people are proud of.



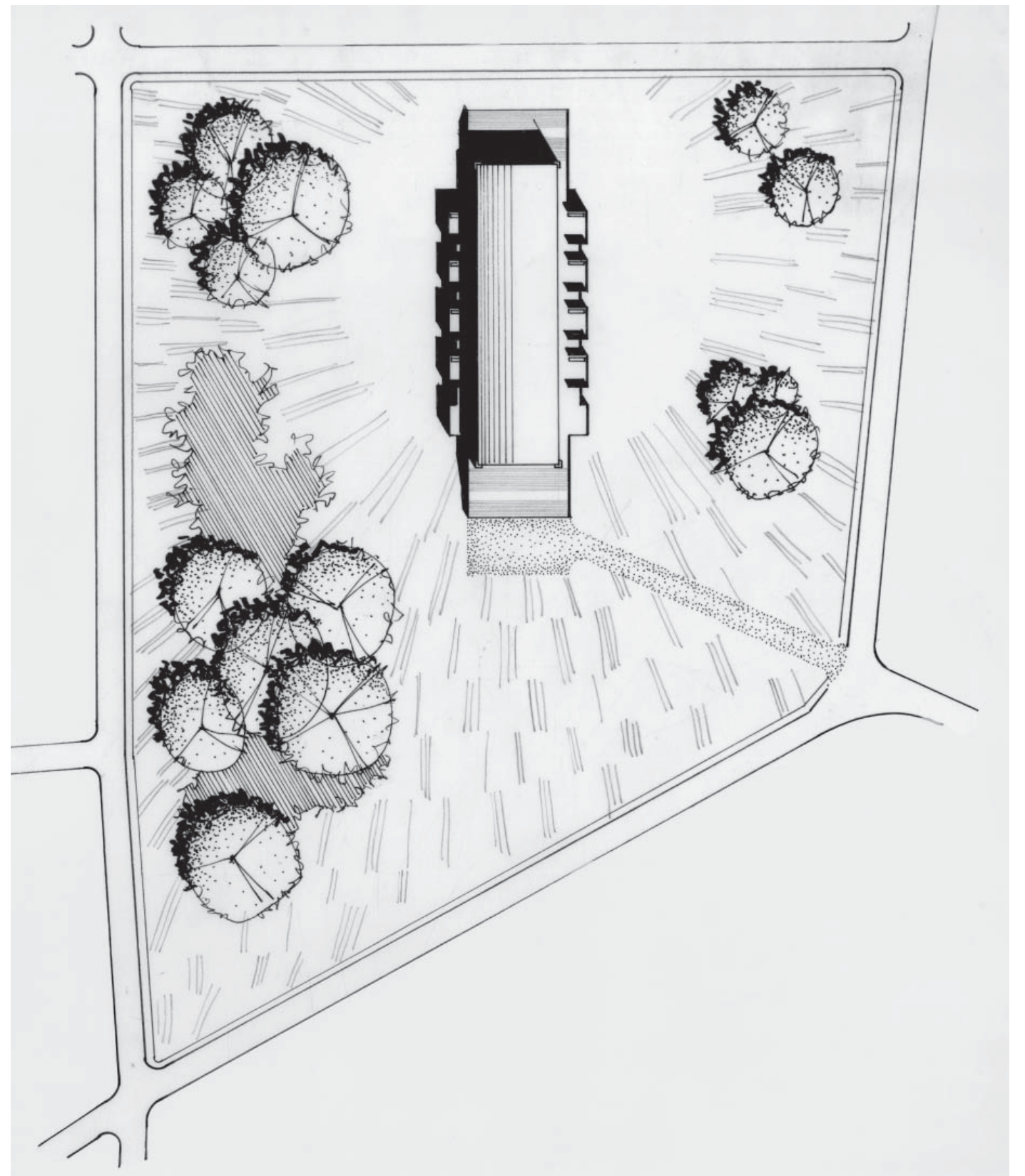
Top Left Map of Rockville and Washington D.C., pencil



Bottom Left Map of Rockville, pencil

The site is placed at the entrance to the city. As one drives into Rockville you pass through the outer suburbs into the city center on Maryland Avenue. As the commercial limits approach the view to the city hall emerges.

Right City Hall on Site, pen and pencil



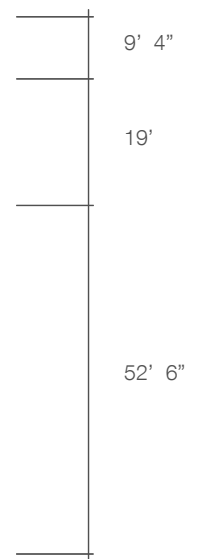
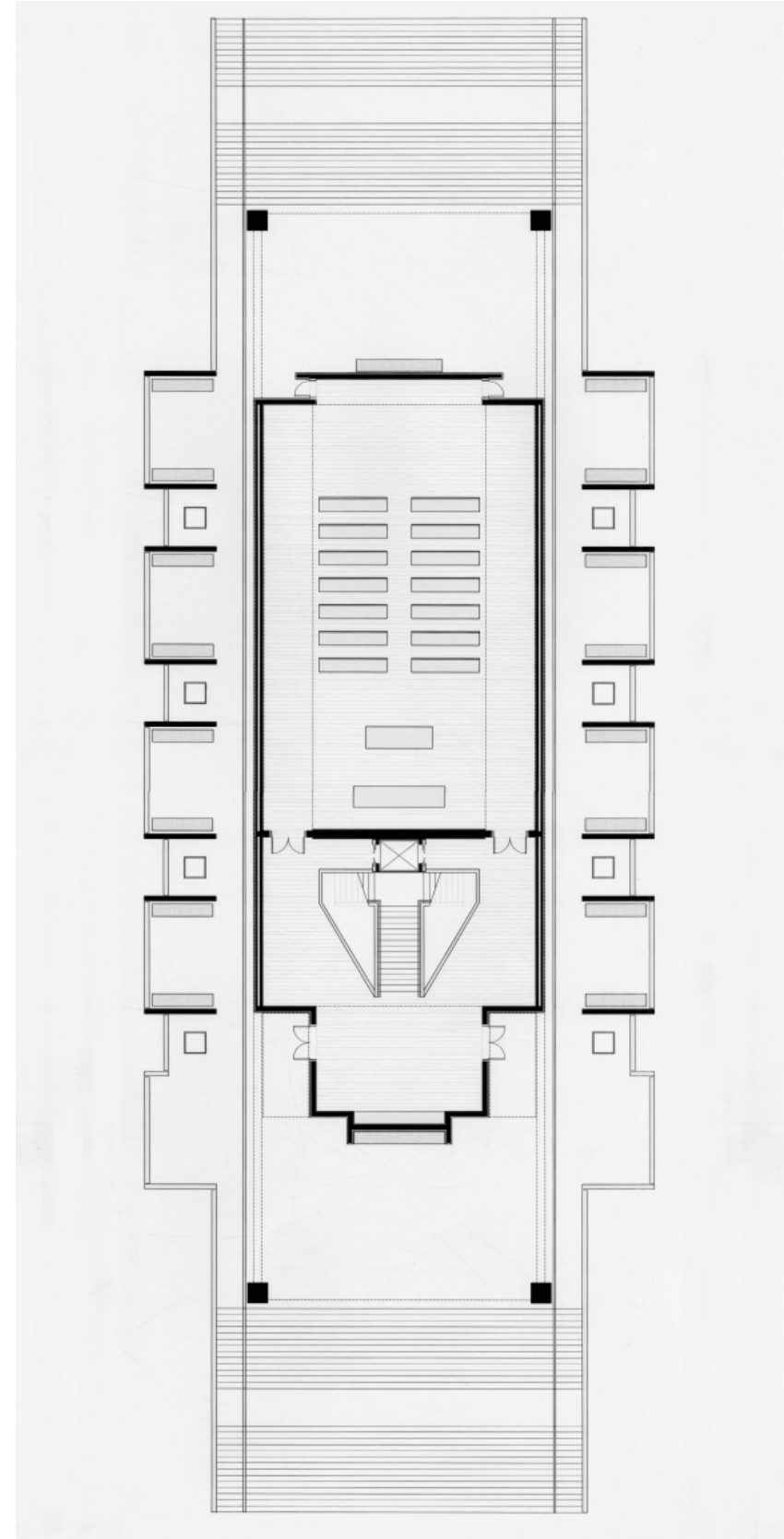
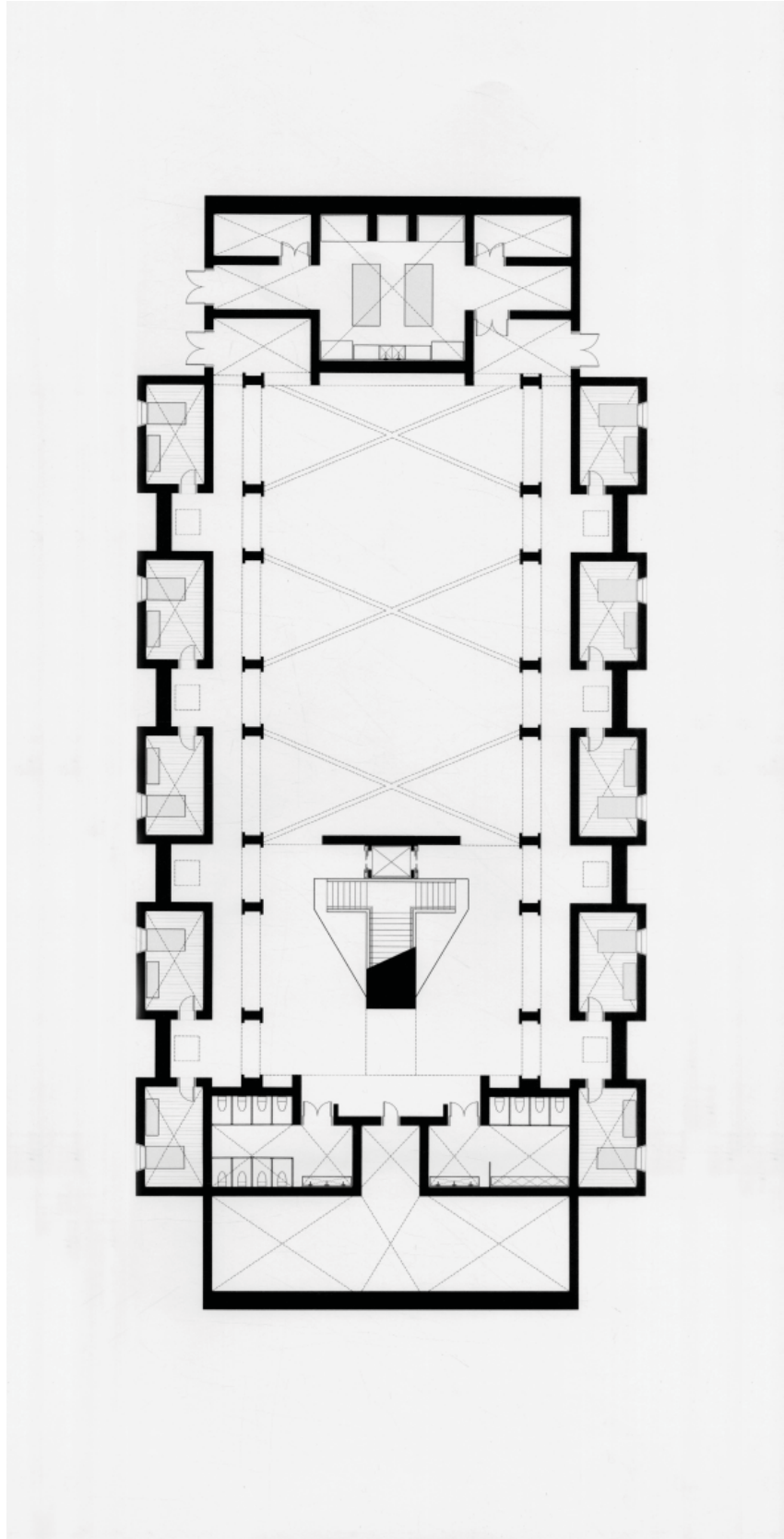


**Left** Scheme 4 Level 0 Plan, computer & pencil

Lower level contains support amenities such as offices, reception space, a kitchen, restrooms, and utility/mechanical space.

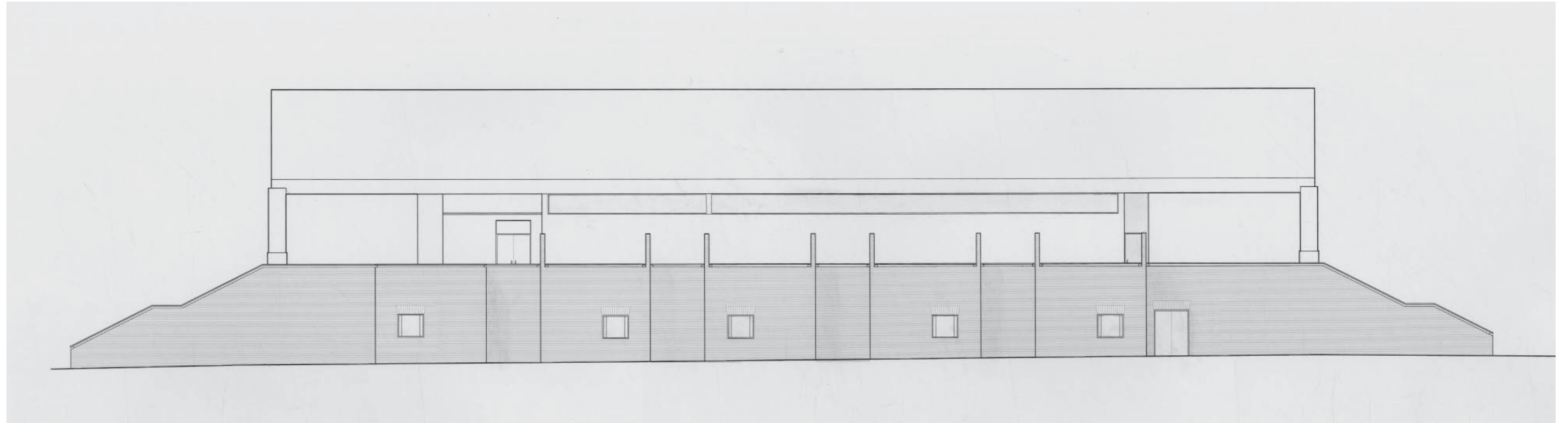
**Right** Scheme 4 Level 1 Plan, computer & pencil

Upper level contains the council chamber and lobby. They are surrounded by a deck that has alcoves, pause spaces.

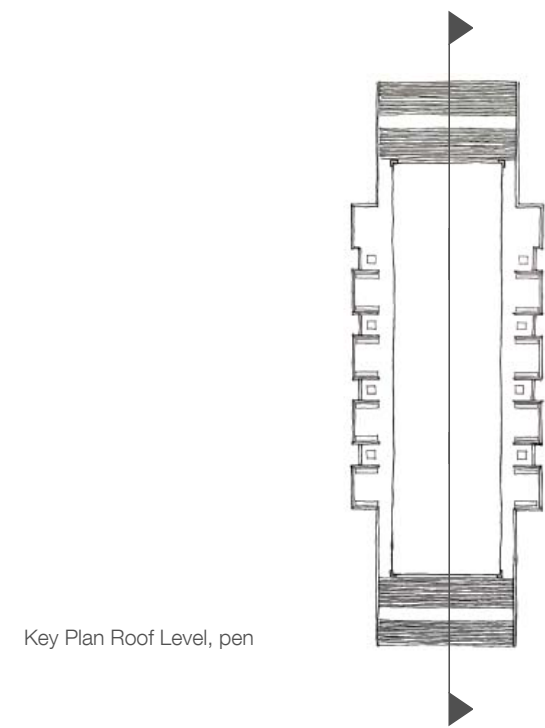
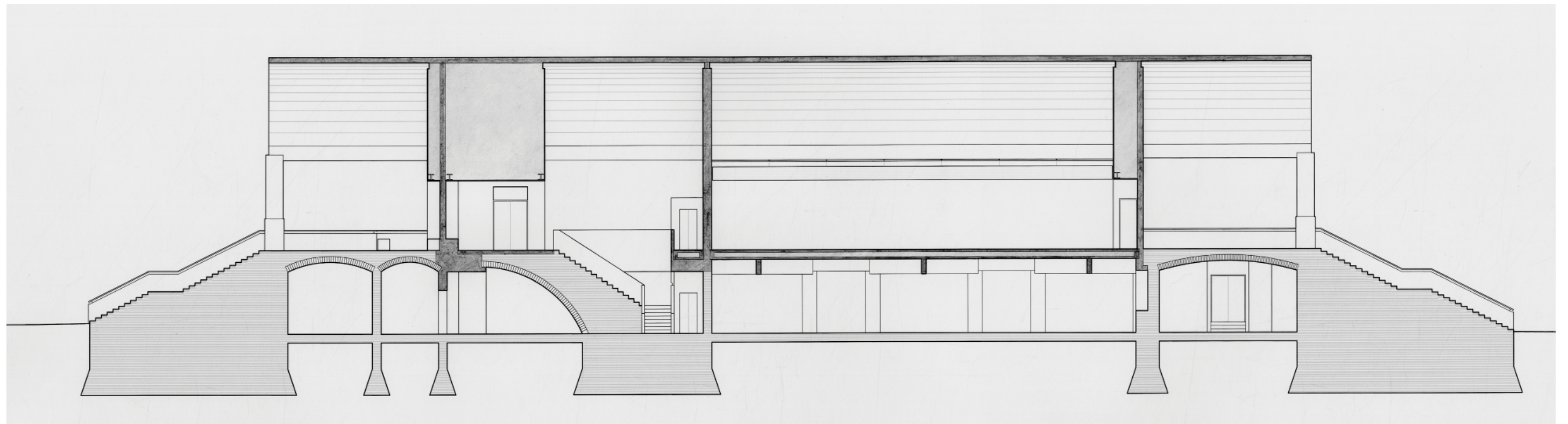




Top Scheme 4 East Elevation, computer & pencil



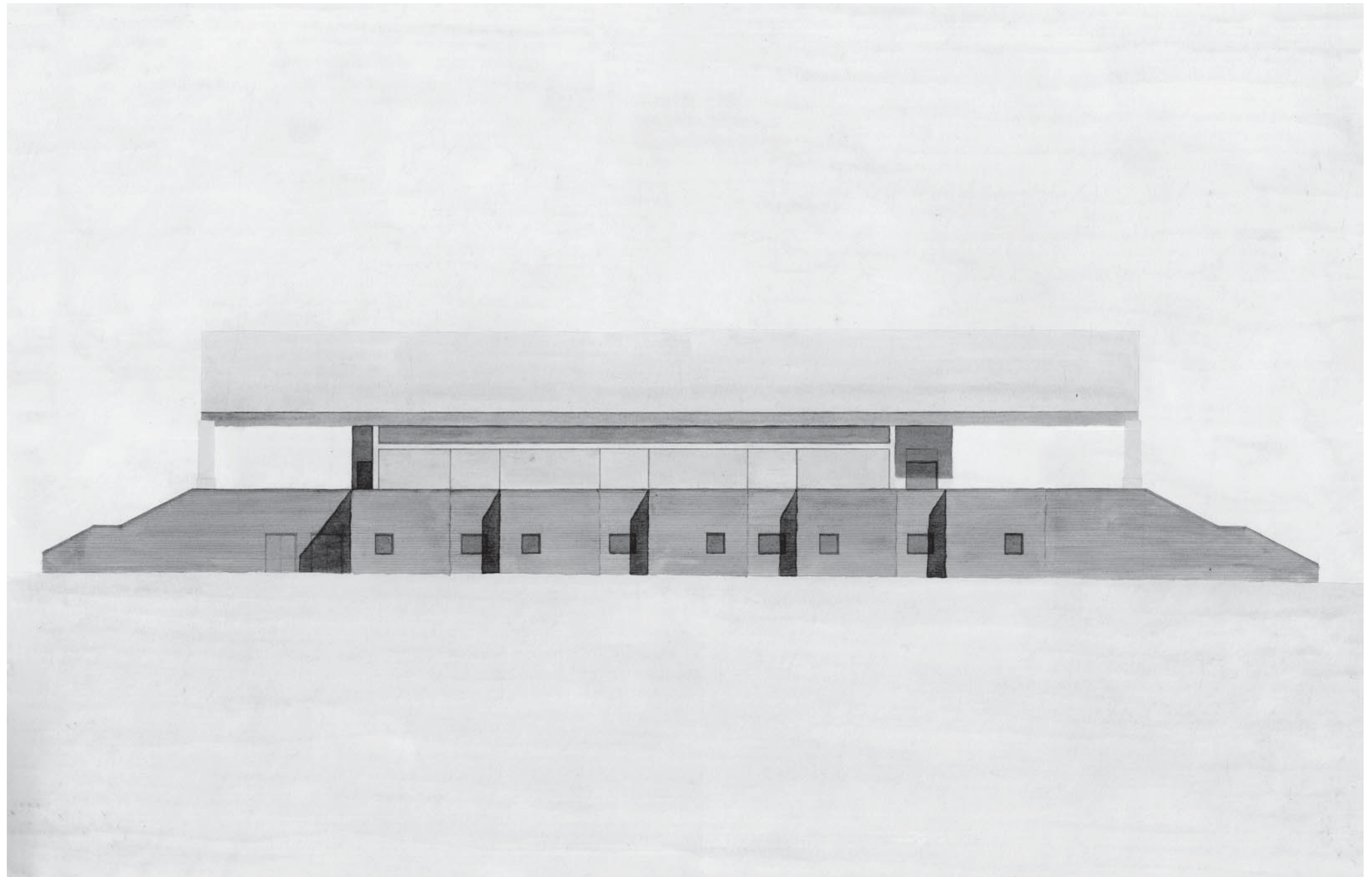
Bottom Scheme 4 Longitudinal Section, computer & pencil



Key Plan Roof Level, pen

The lower level serves as a plinth, the support. Brick is used as the predominant material and designed to support compressively. The upper level rests on the plinth. Concrete is the main material for the upper level enclosing the council chamber under a cycloid vault.

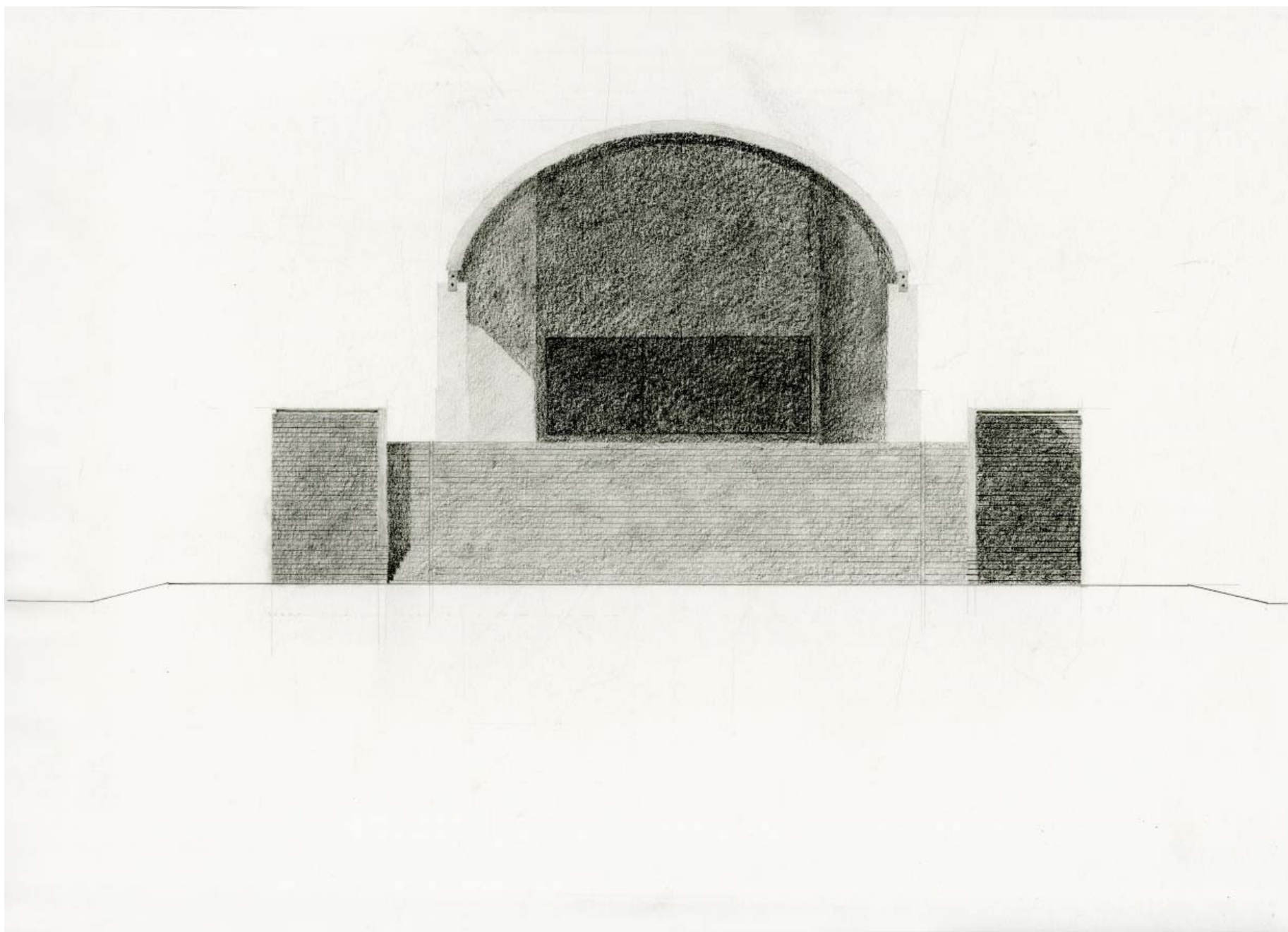
Scheme 4 West Elevation, watercolor



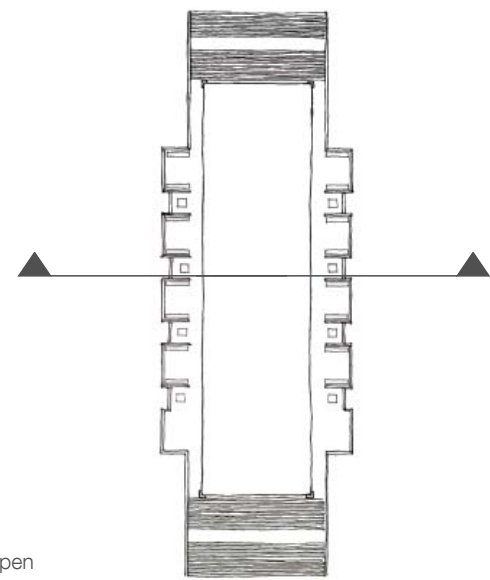


Scheme 4 South Elevation, pencil

There is strong frontality in the elevation of the city hall, although the entrances are tucked into the side of the building. This produces a modern re-interpretation of a classical approach to a building.

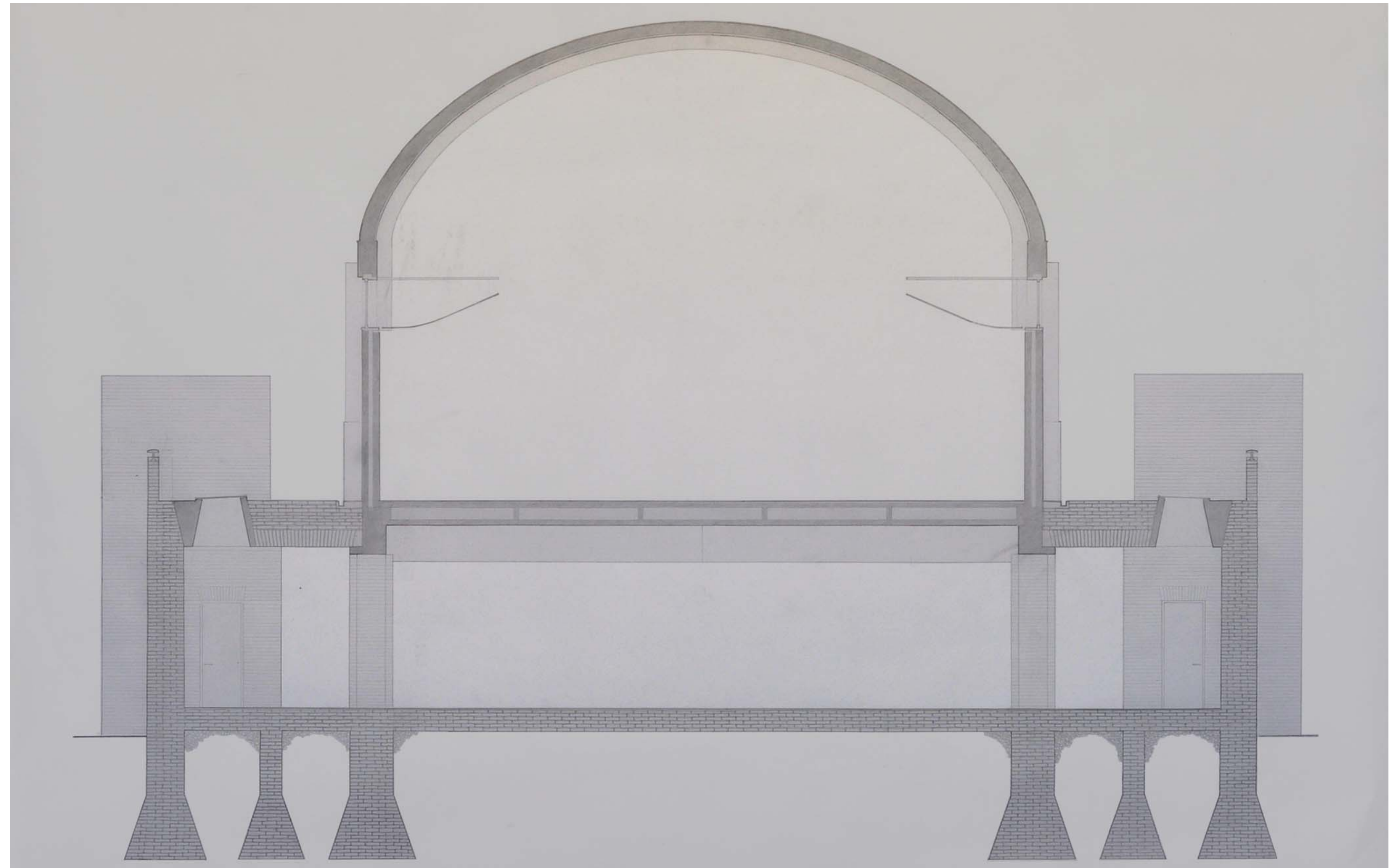


Scheme 4 Section Through Council Chamber & Reception Space, pencil



Key Plan Roof Level, pen

The section was used to design how the materials would intersect and then be brought out formally. Concrete columns and walls grow out of the protection from the masonry plinth.





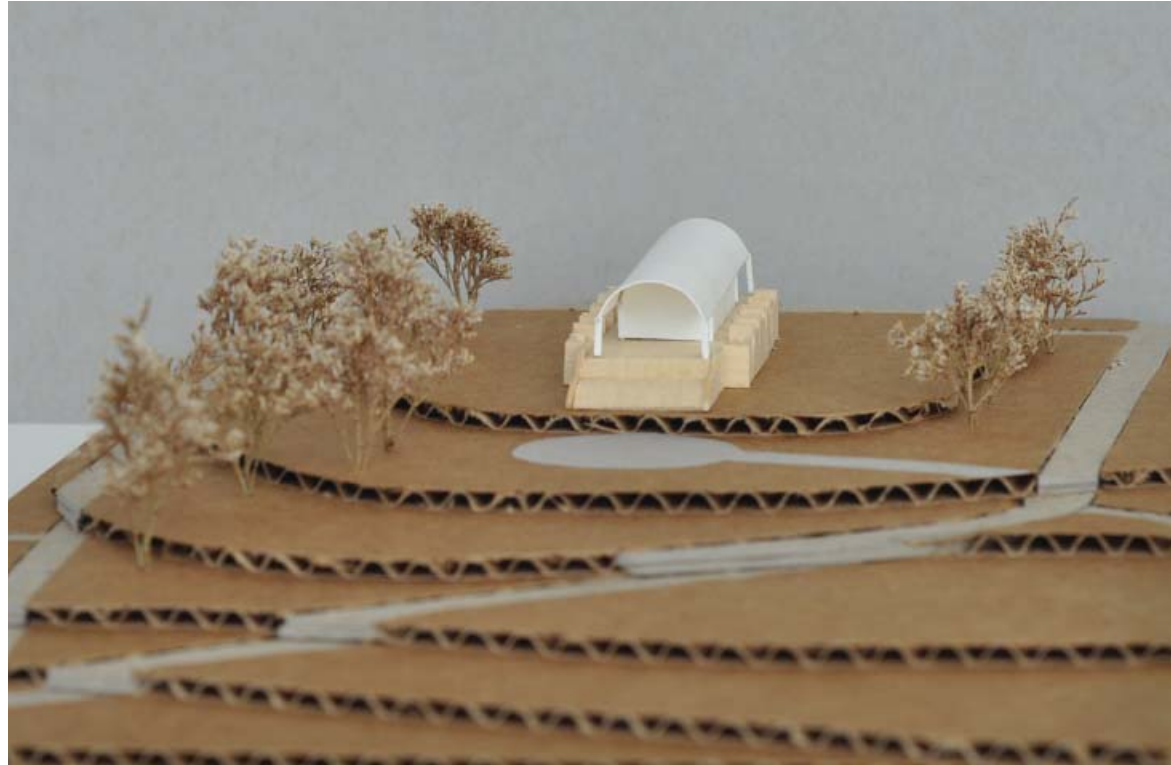
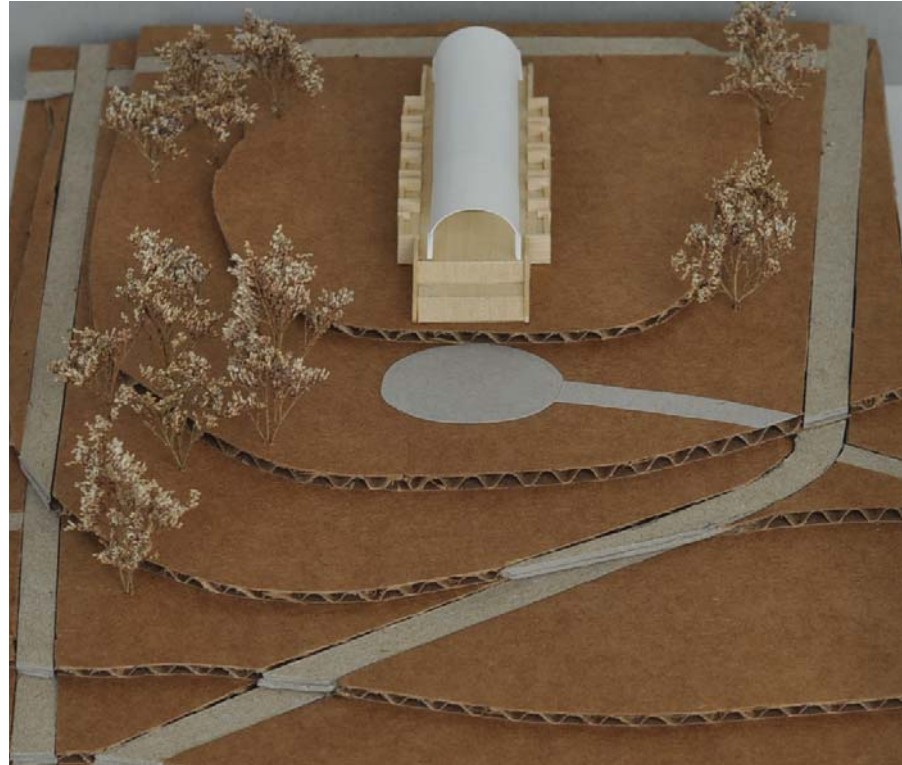


A

B

C

Scheme 4 Site Model A - E, cardboard, basswood, & paper

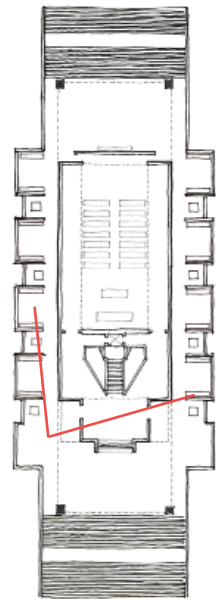


D

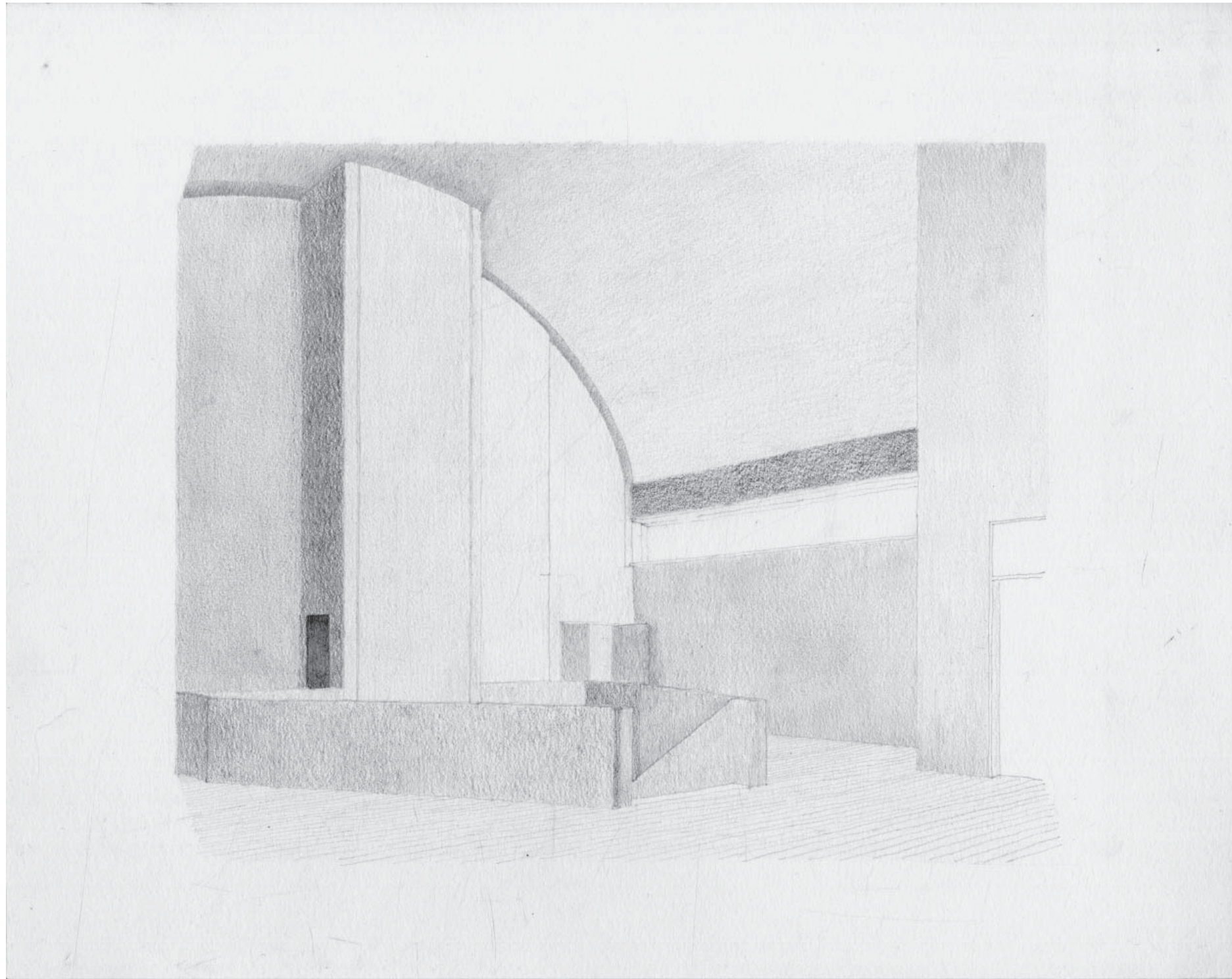
E



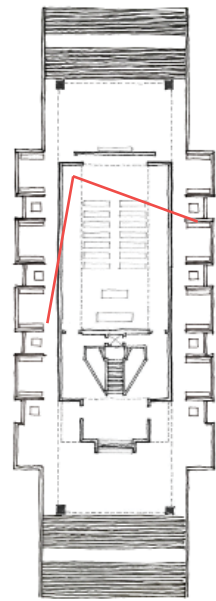
Scheme 4 Perspective in Lobby, pencil



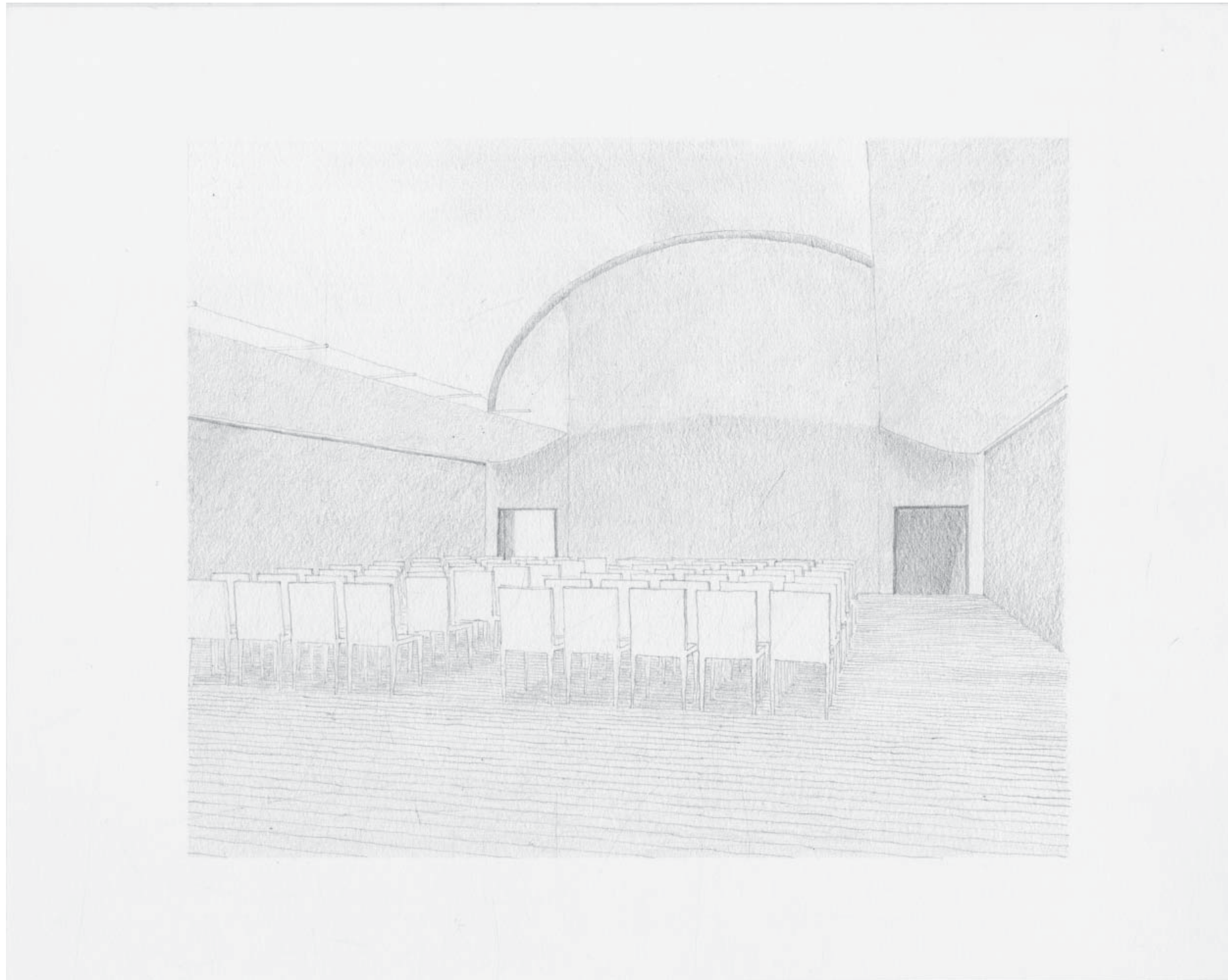
Key Plan Level 1, pen



Scheme 4 Perspective in Council Chamber, pencil

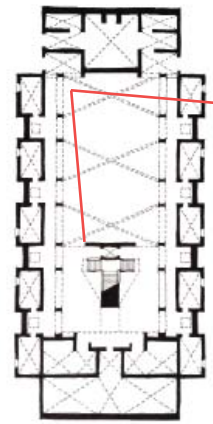


Key Plan Level 1, pen

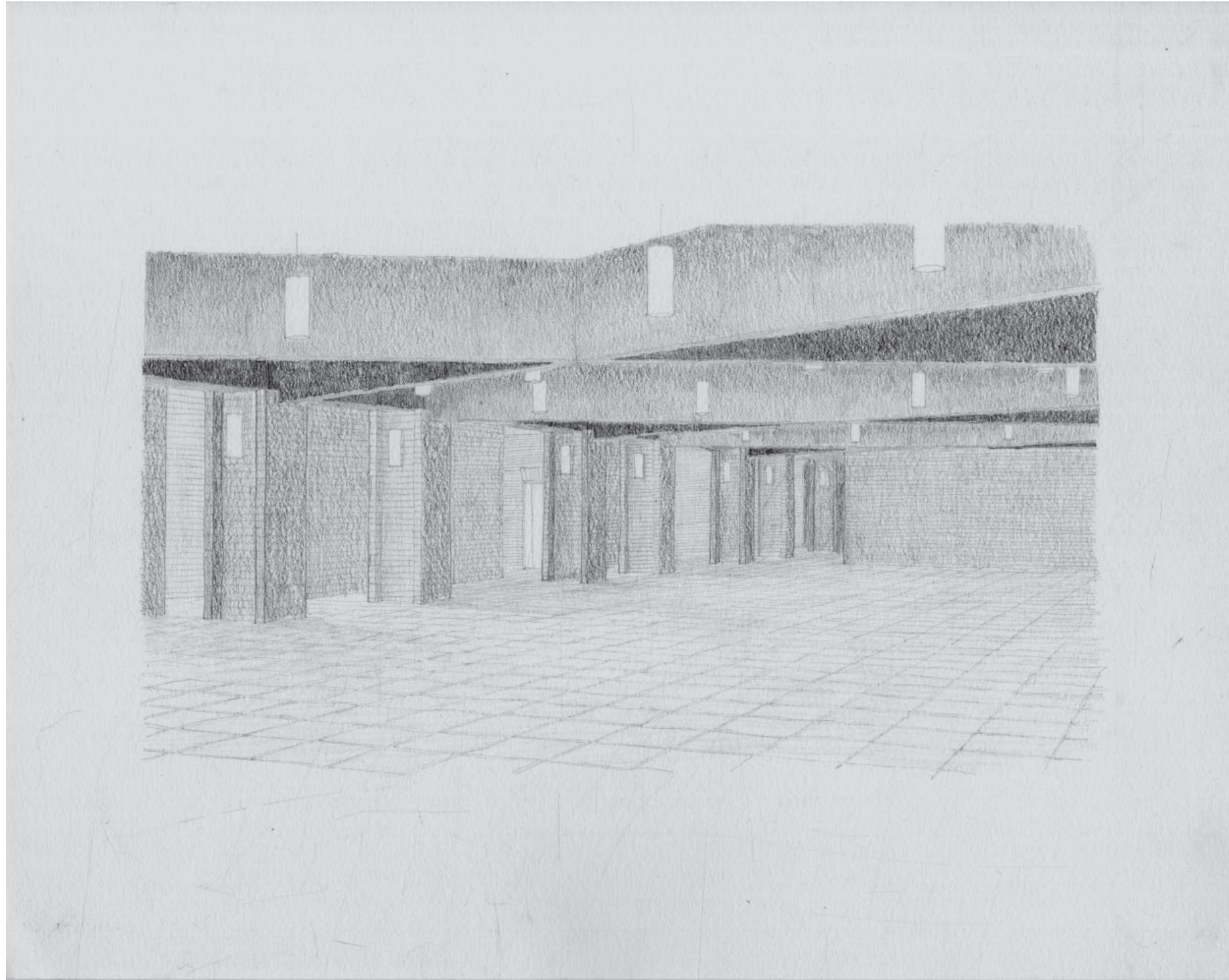




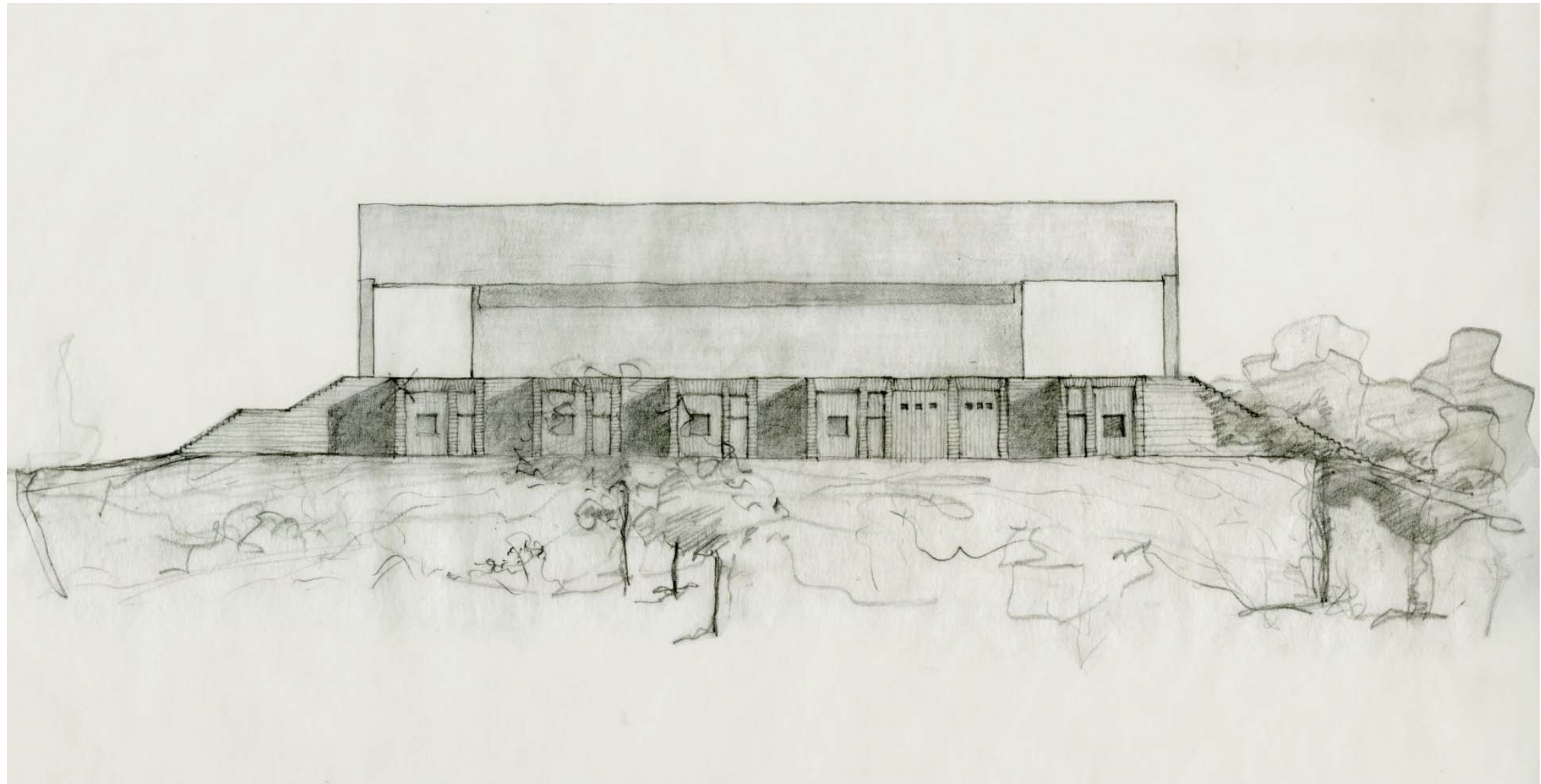
Scheme 4 Perspective in Reception Room, pencil



Key Plan Level 0, pen



Scheme 4 West Elevation Sketch, pencil





Cycloid Model A - D, chipboard & arches paper

This cycloid model demonstrated the strength and the nature of the construction. The simple frame made of chipboard was unstable and fragile, but after the paper was glued on to the top and bottom the vault shell became rigid.



A



B

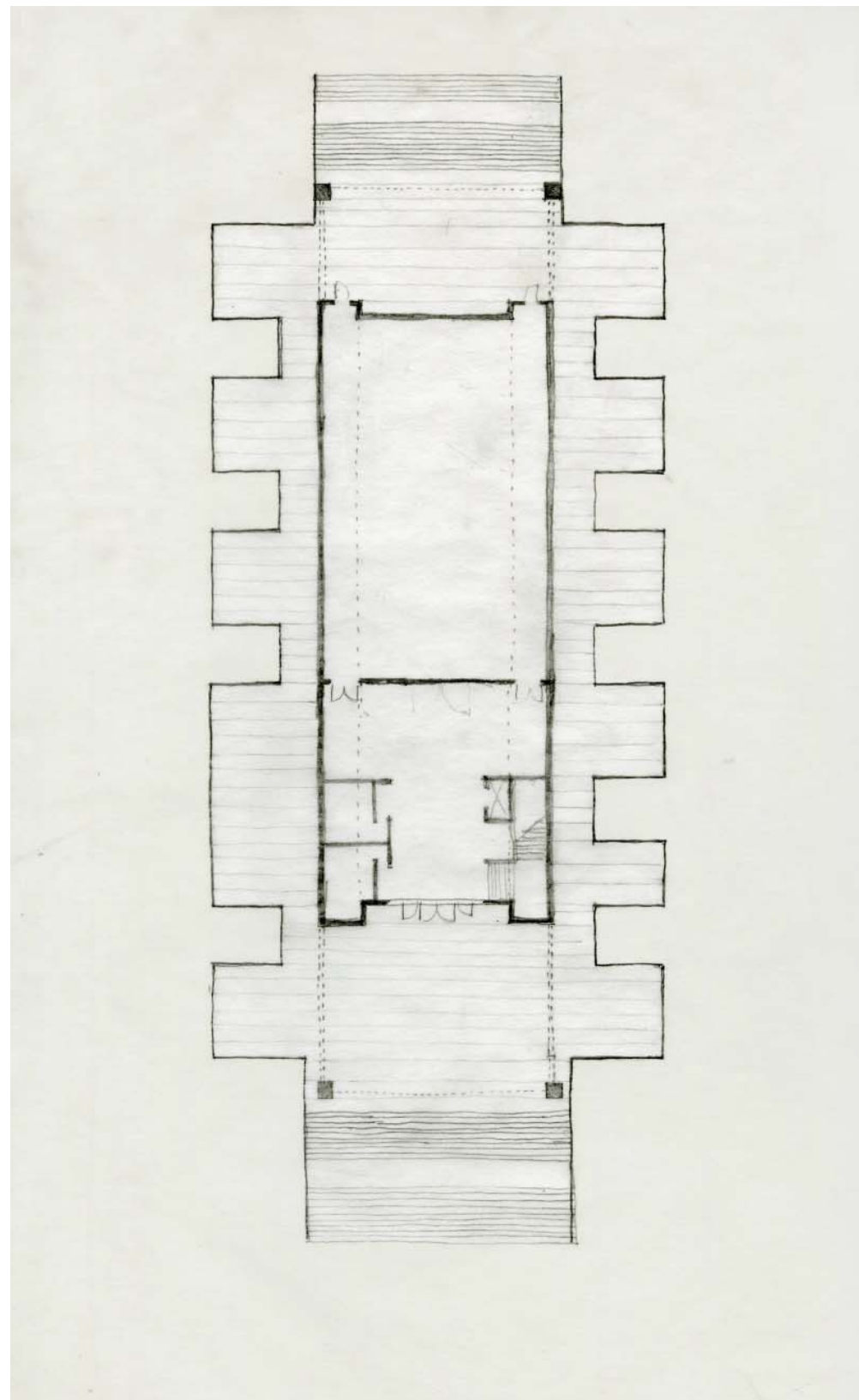


C

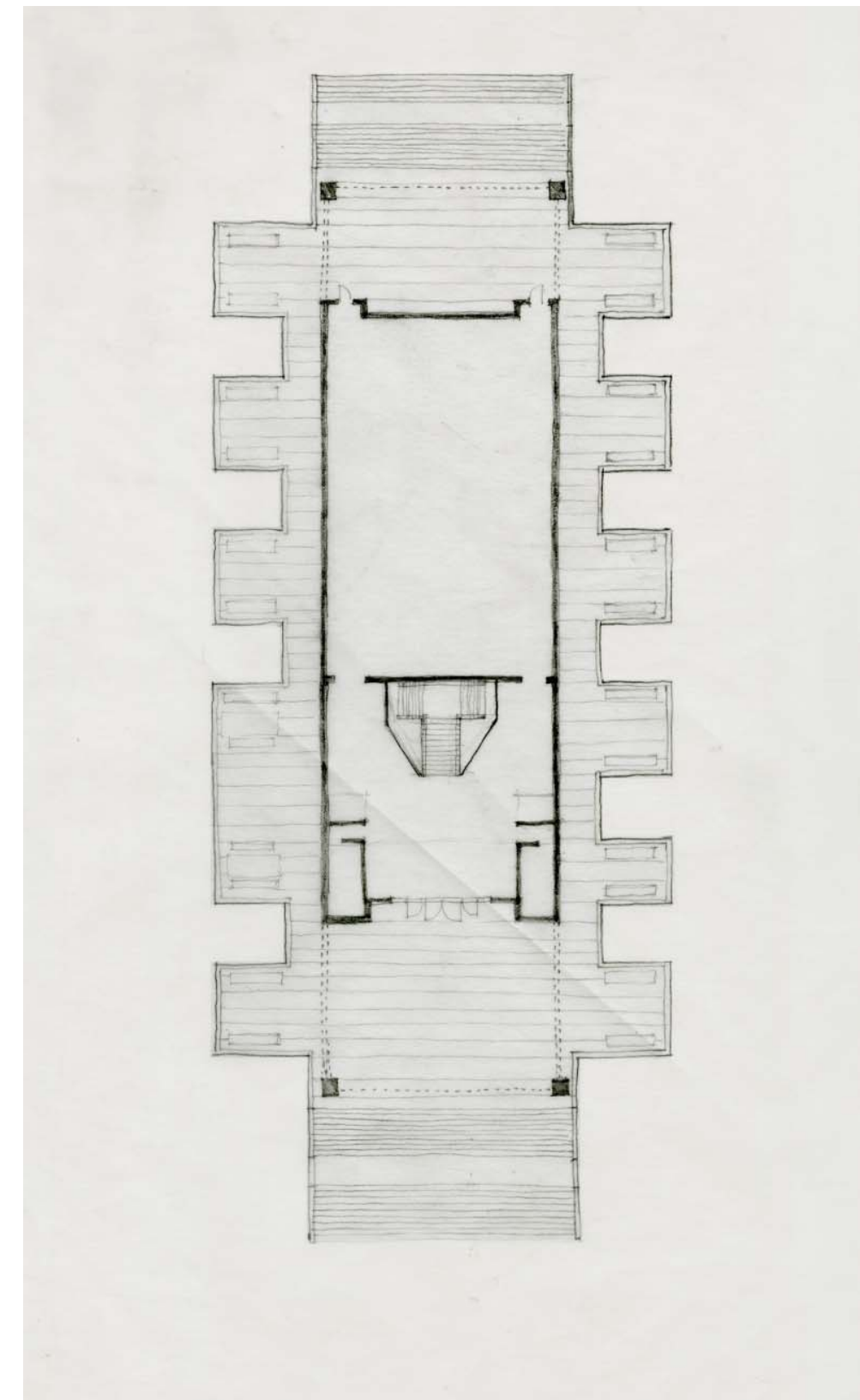


D

Left Scheme 4 Council Chamber Plan Sketch A, pen & pencil



Right Scheme 4 Council Chamber Plan Sketch B, pen & pencil



Scheme 2 Model for Light A, chipboard

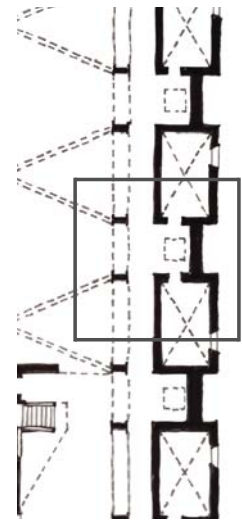


## Chapter 2: CONSTRUCTIONAL THOUGHT

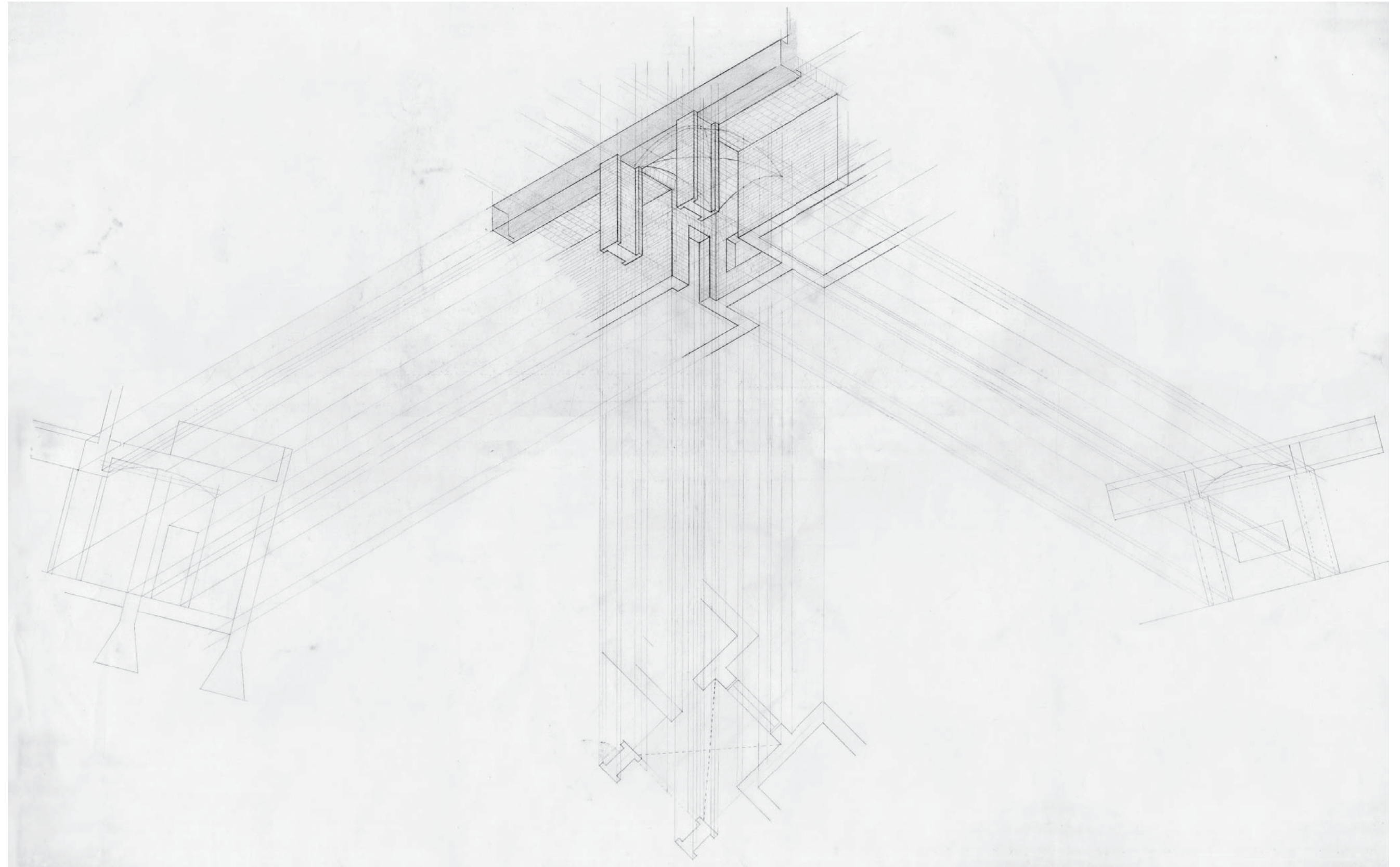
How materials intersect is important. These elements can be brought forth in a formal sense. How these pieces come together could amplify how these parts relate to the whole. Brick to concrete, glass to wood, concrete to metal.



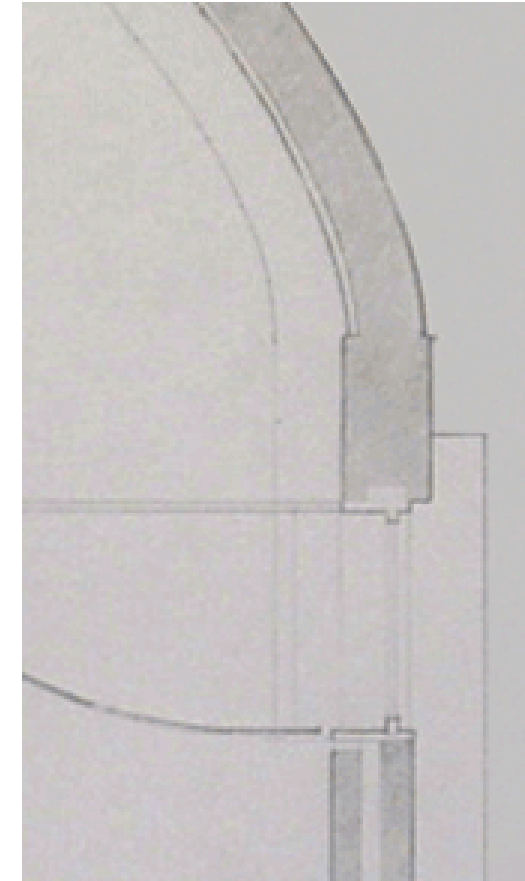
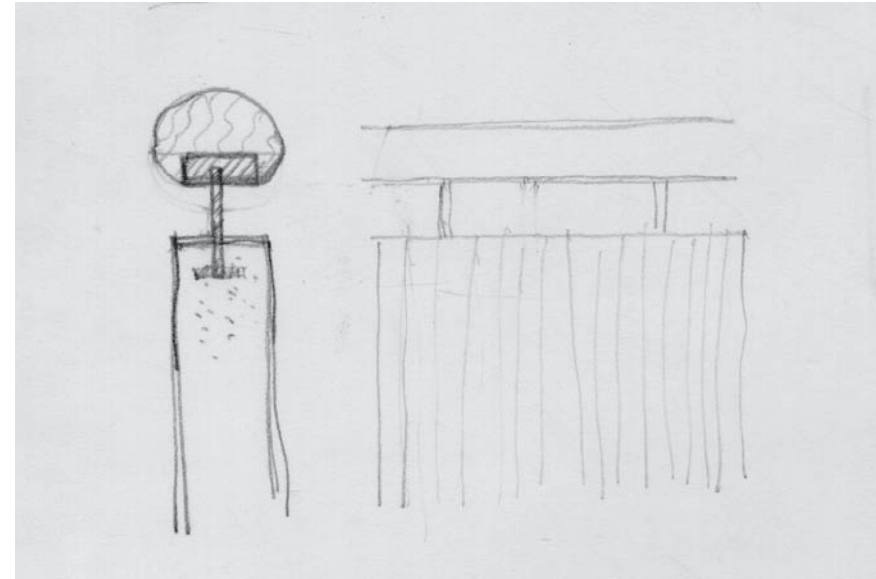
Scheme 4 Worm's Eye Isometric of Arcade & Alcove, pencil



Key Plan Level 0 Arcade, pen







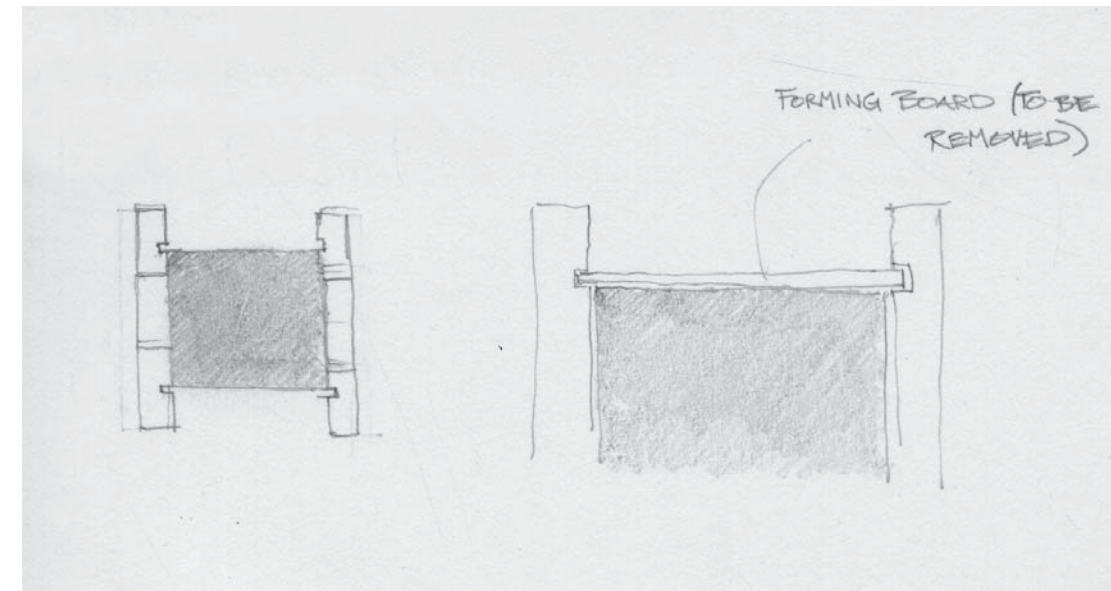
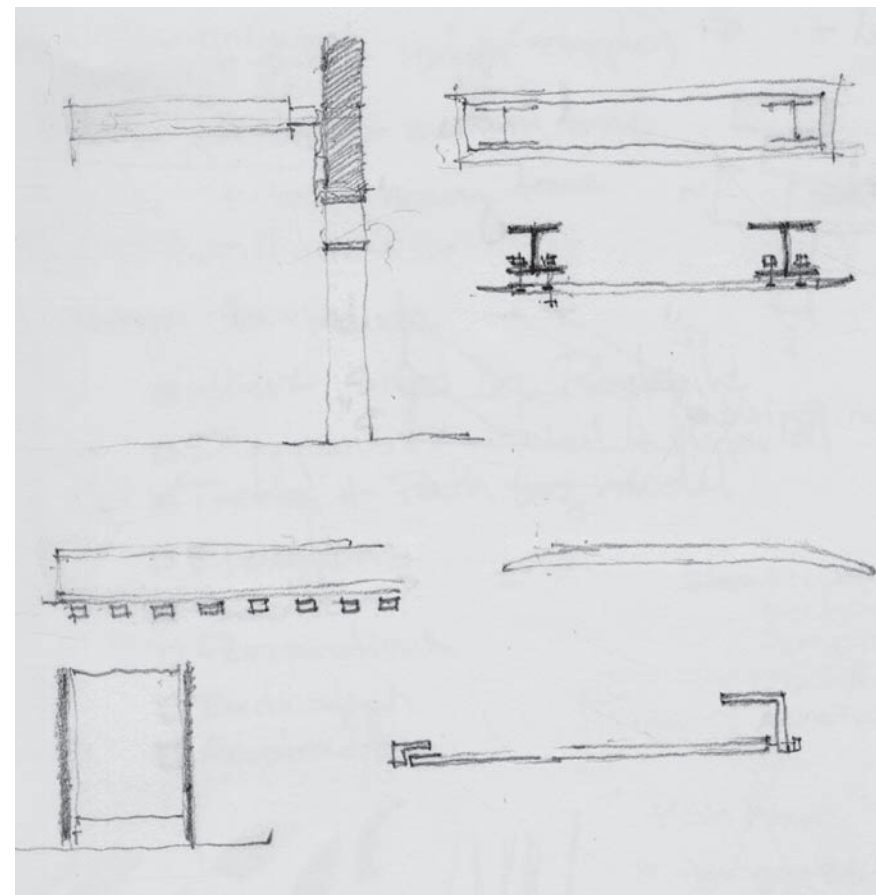
Top Left Scheme 4 Sketch Railing, pencil

Top Center Scheme 4 Sketch Vault Beam & Window A, pencil

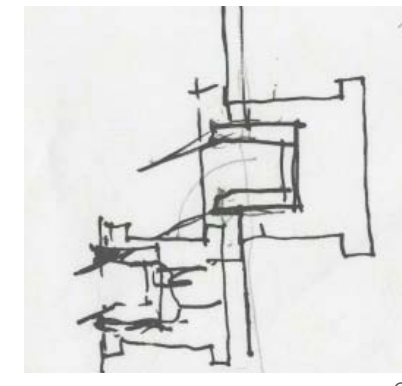
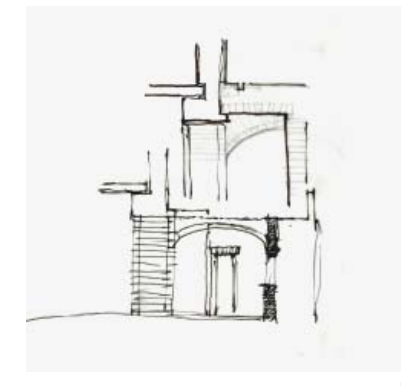
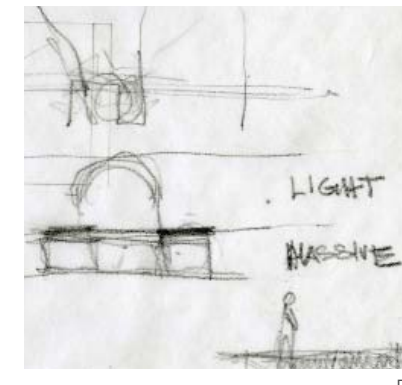
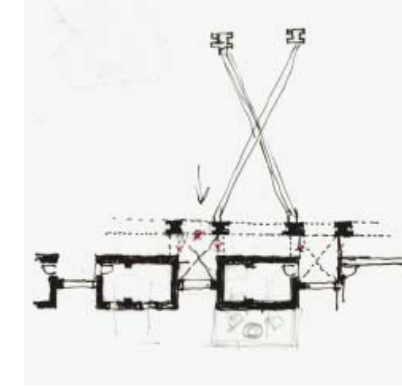
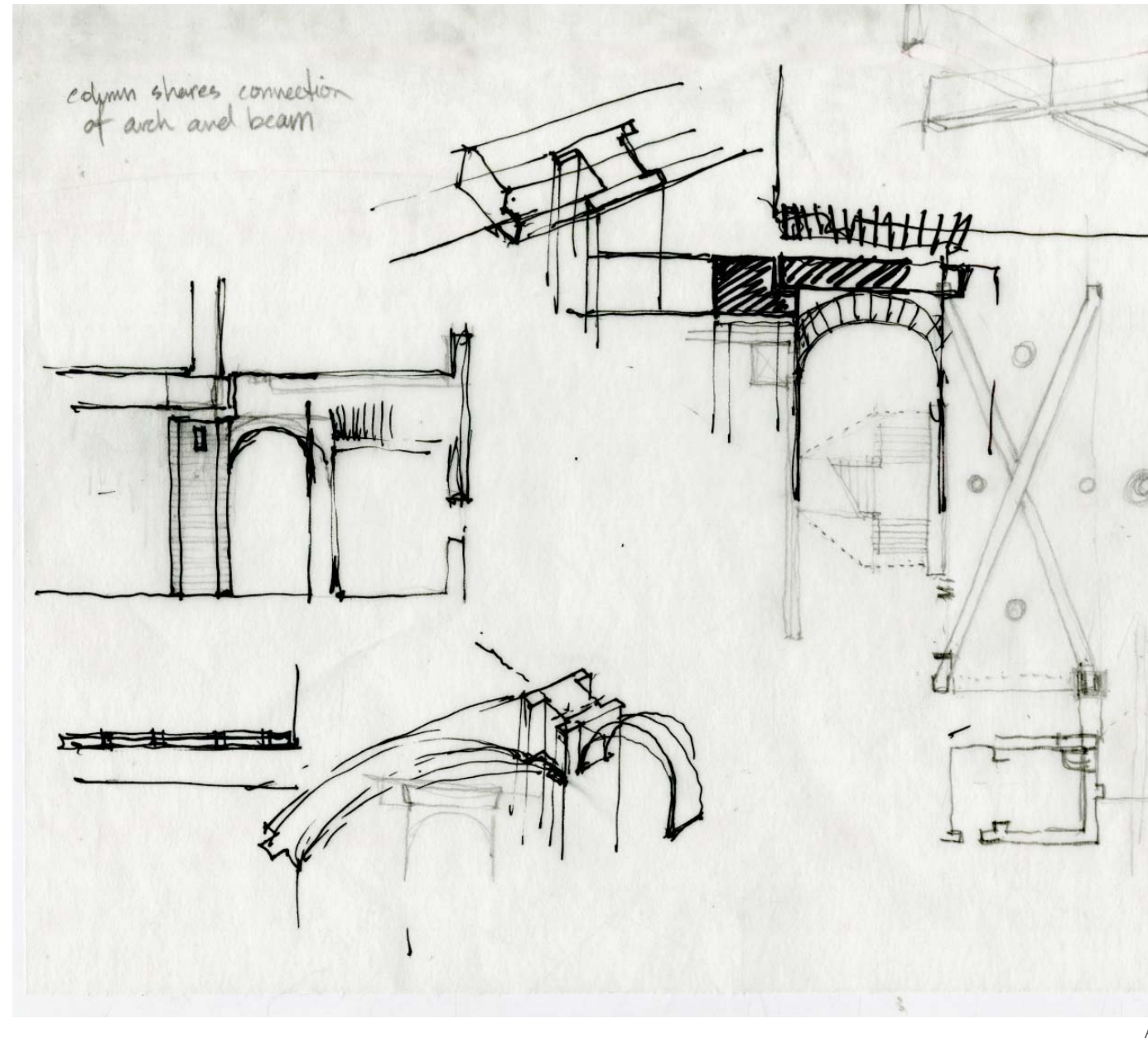
Top Right Scheme 4 Sketch Vault Beam & Window B, pencil

Bottom Left Scheme 4 Sketch Entry Soffit Plane, pencil

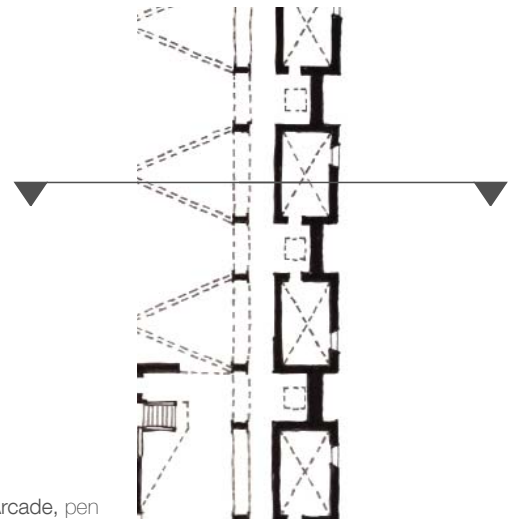
Bottom Right Scheme 4 Sketch Arcade Column, pencil



Scheme 4 Sketches A - G, pen & pencil

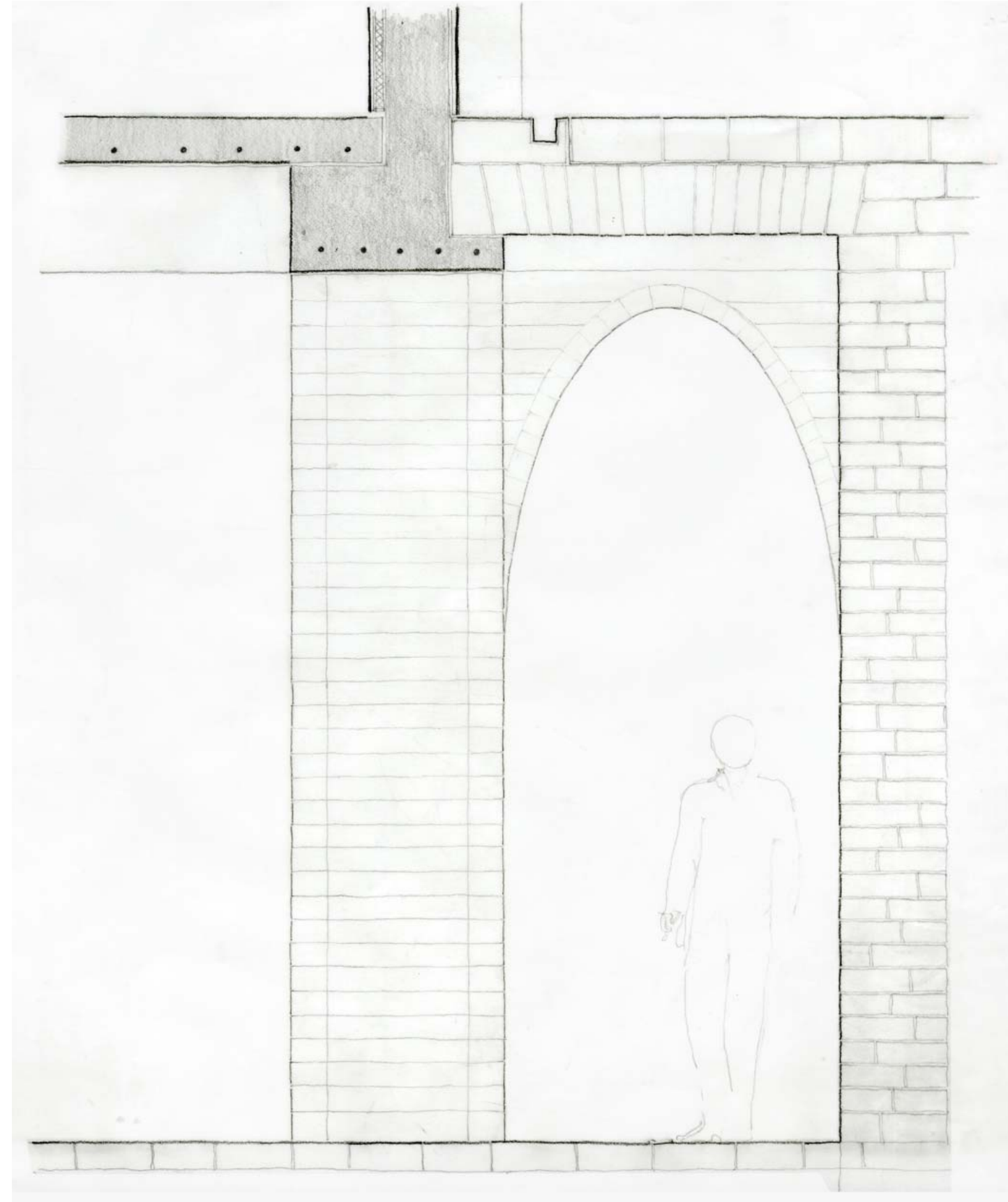


Arcade Beam, Ceiling, & Wall Section A, pencil



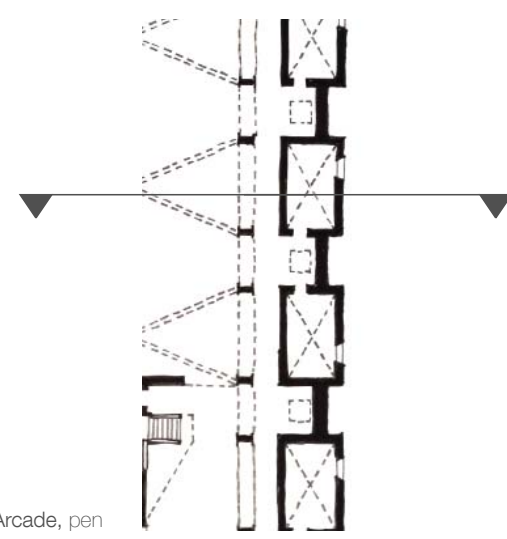
Key Plan Level 0 Arcade, pen

These drawings were used to explore how the wall could accept the floor, a vault, and rest itself on the column below.

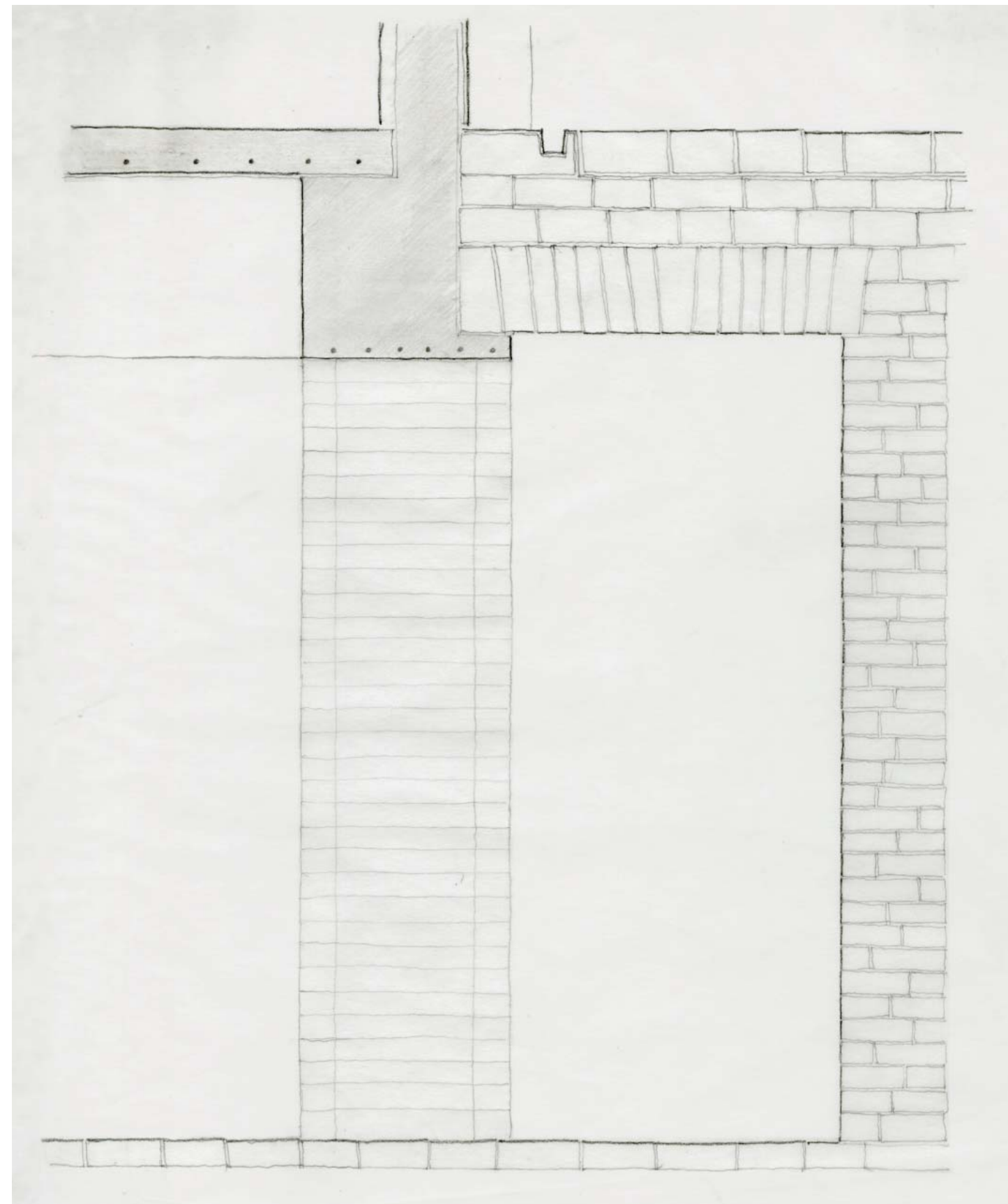




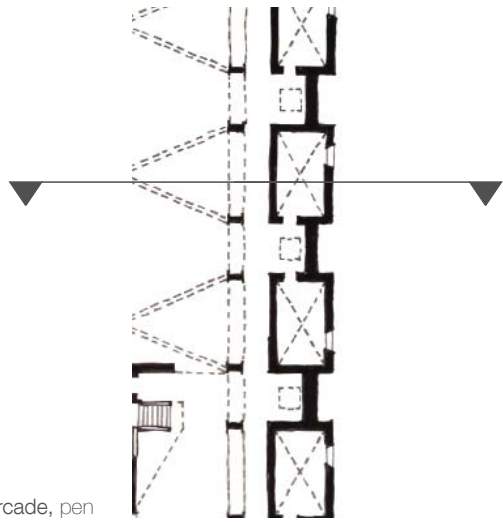
Arcade Beam, Ceiling, & Wall Section B, pencil



Key Plan Level 0 Arcade, pen

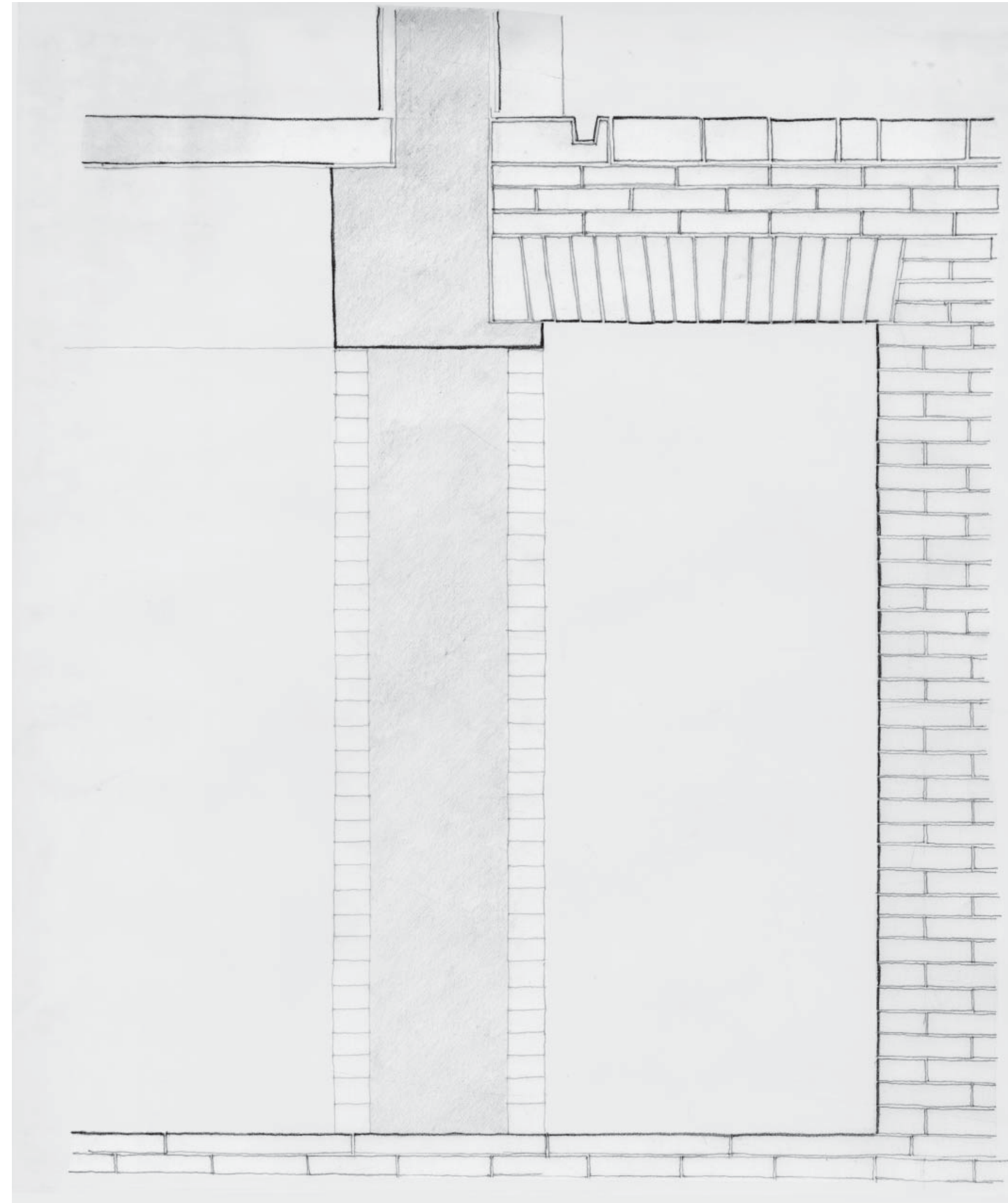


Arcade Beam, Ceiling, & Wall Section C, pencil



Key Plan Level 0 Arcade, pen

This design shows a concrete wall can provide the shelves for a floor and arch to rest on and then rest on a concrete column below. The concrete column would be wrapped on two sides with brick, tying it back into the plinth of the building. The brick would in turn become the formwork for the concrete column.



#### **Appendix: SEARCH FOR FORM & DESIGN**

Architecture defines place. It embodies culture and social value. It establishes a heritage to be passed on to succeeding generations.

Architecture must be embodied in constructive form. Its materials, means of building, and the details of its fabrication are crucial. All these decisions, and the resulting form, contribute to its architectural quality and meaning. Nothing is superfluous.

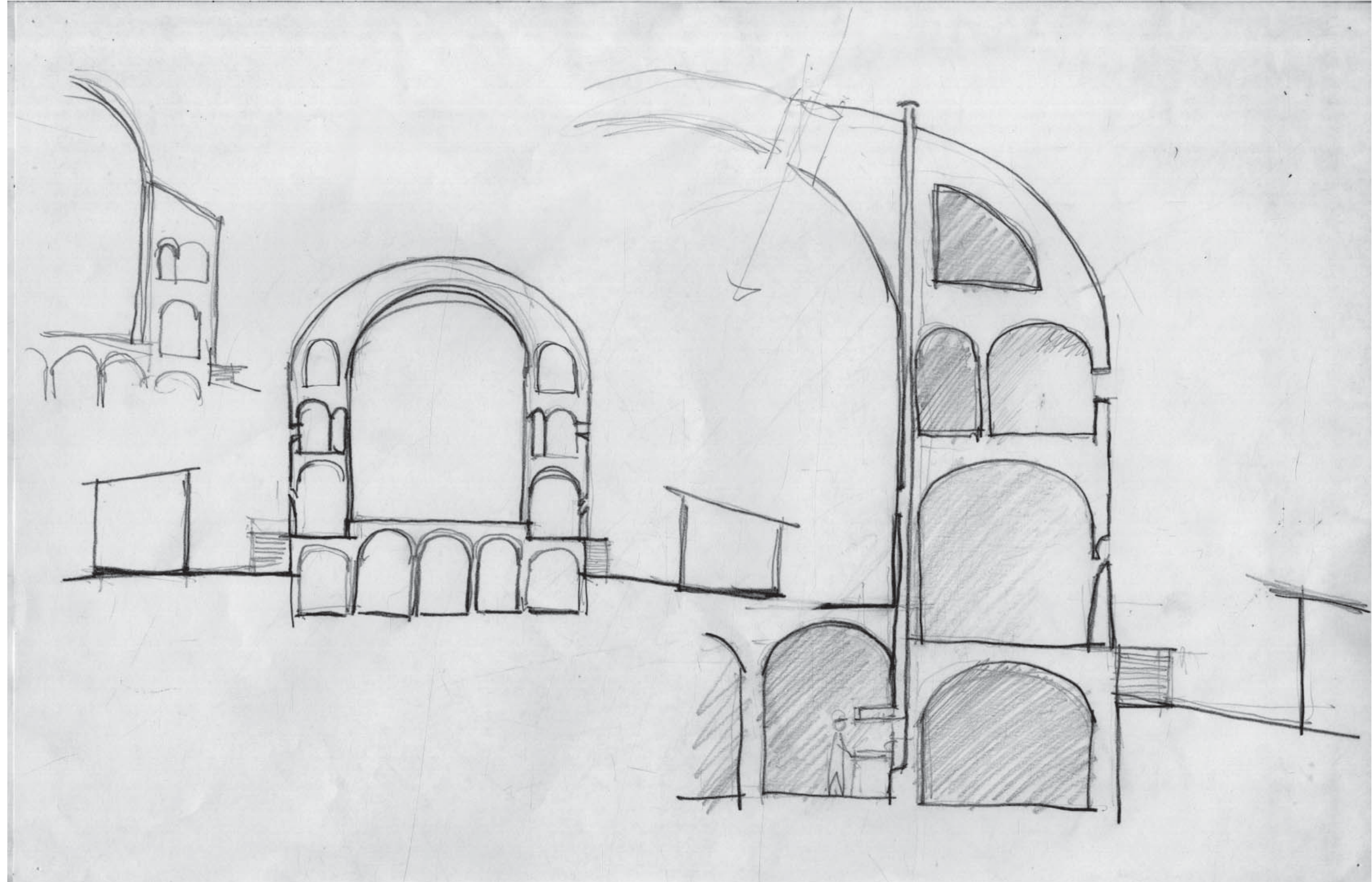
In particular, the cycloidal vault forming the roof of the council chamber is not only a structural solution to spanning the long space, it signifies the role of the room as a communal gathering place.

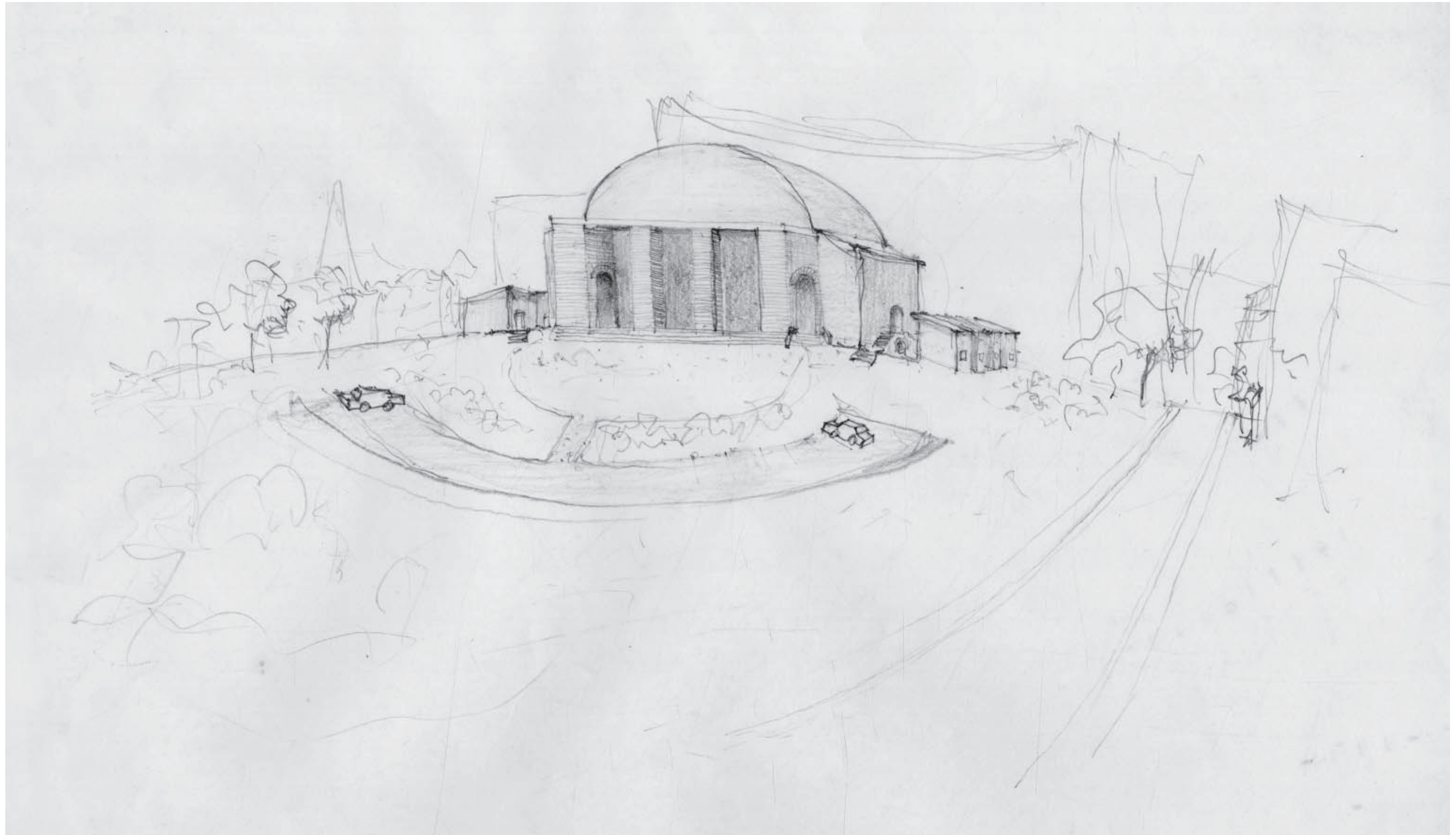
Form Composition, watercolor





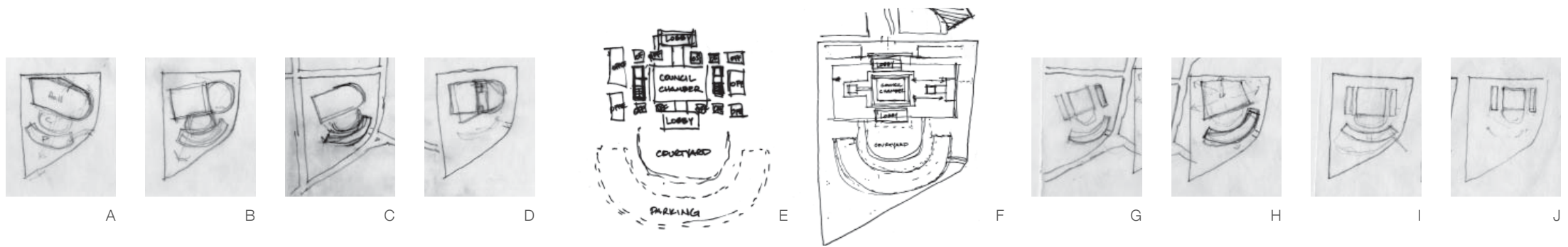
Form Sketches, pencil





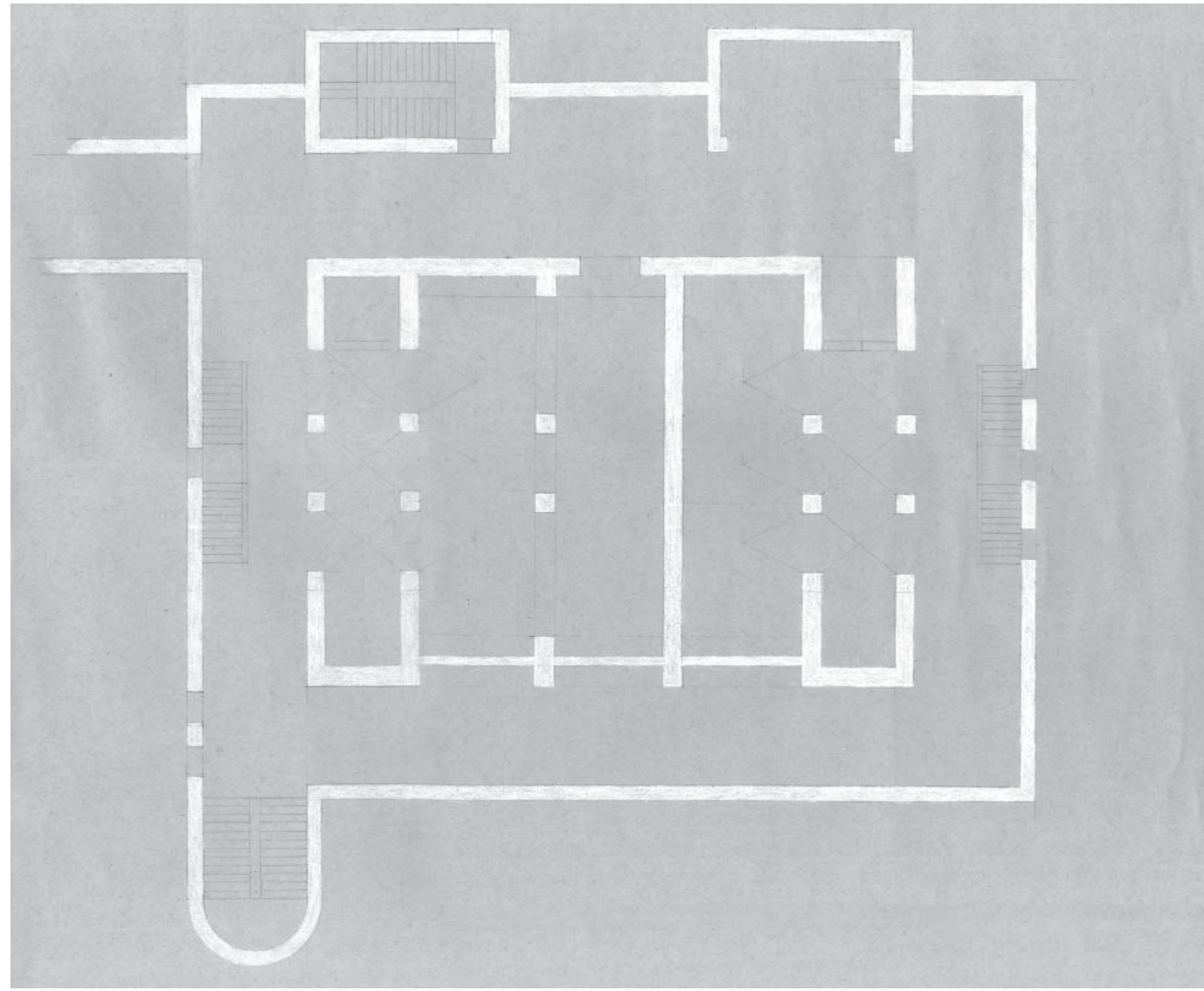
Top Building Presence, pencil

Bottom Row Organization Sketches A-J, pencil

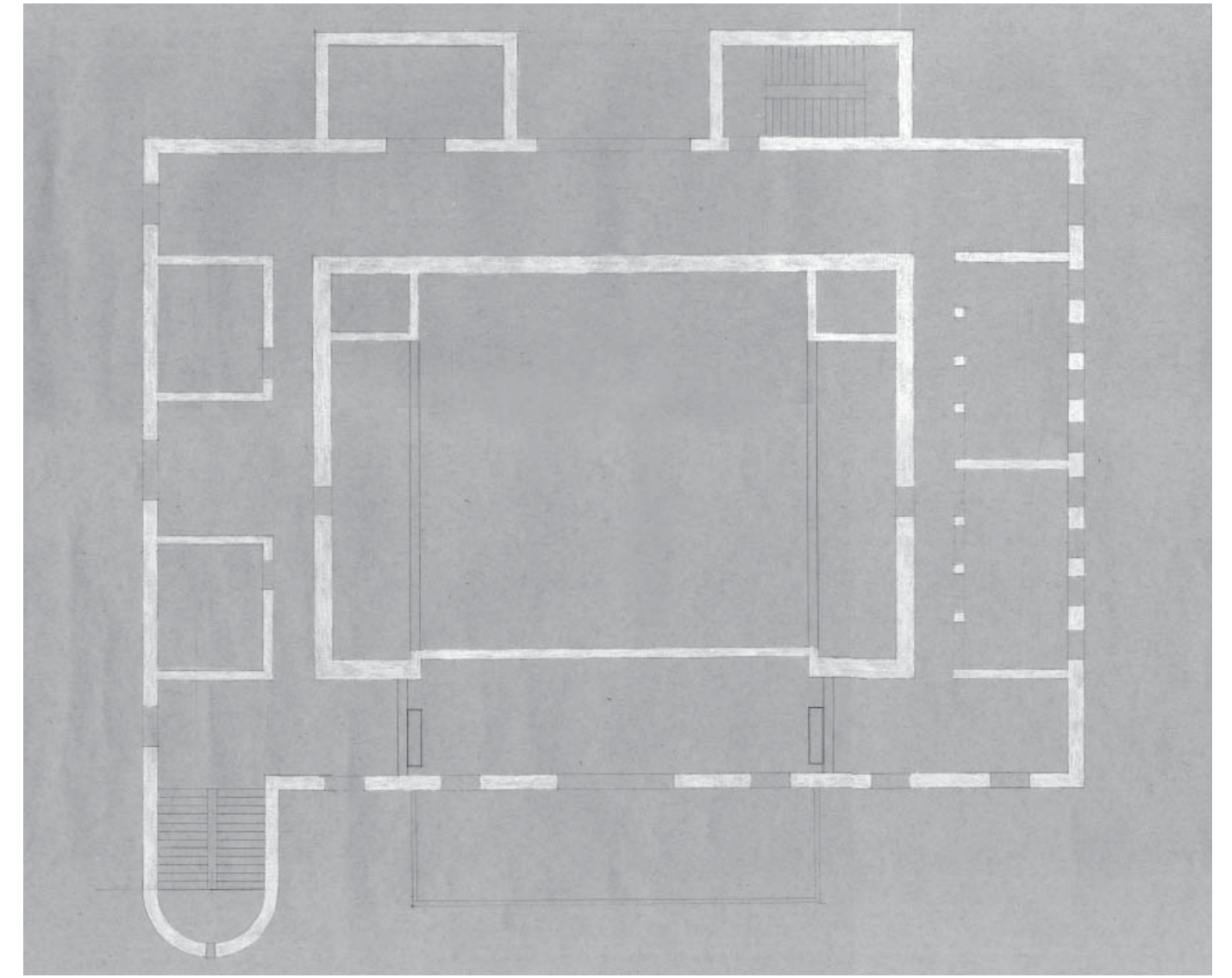




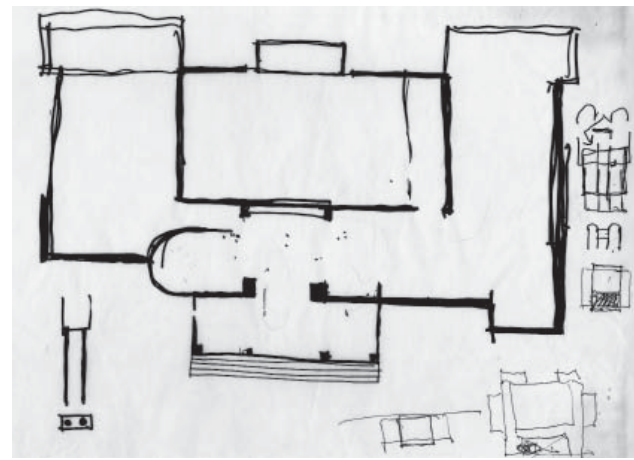
Top Left Scheme 1 Level 0 Plan, white conte



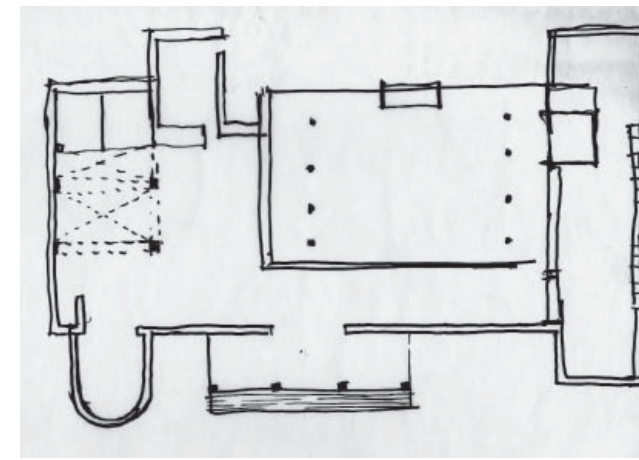
Top Right Scheme 1 Level 1 Plan, white conte



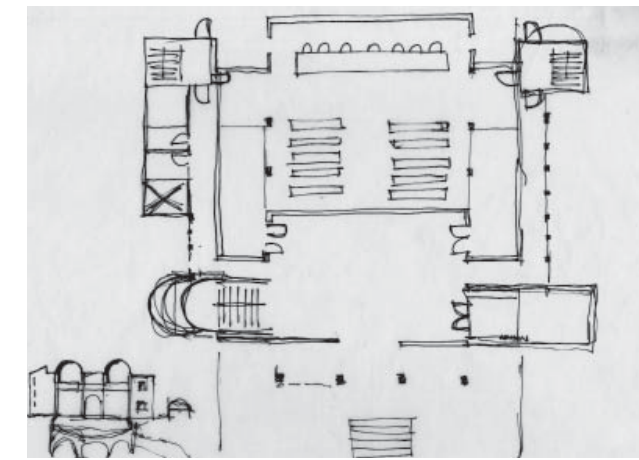
Bottom Row Plan Sketch A - D, pen



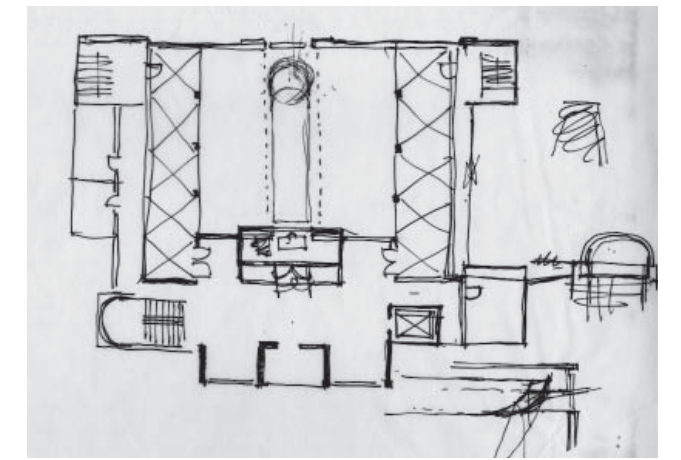
A



B



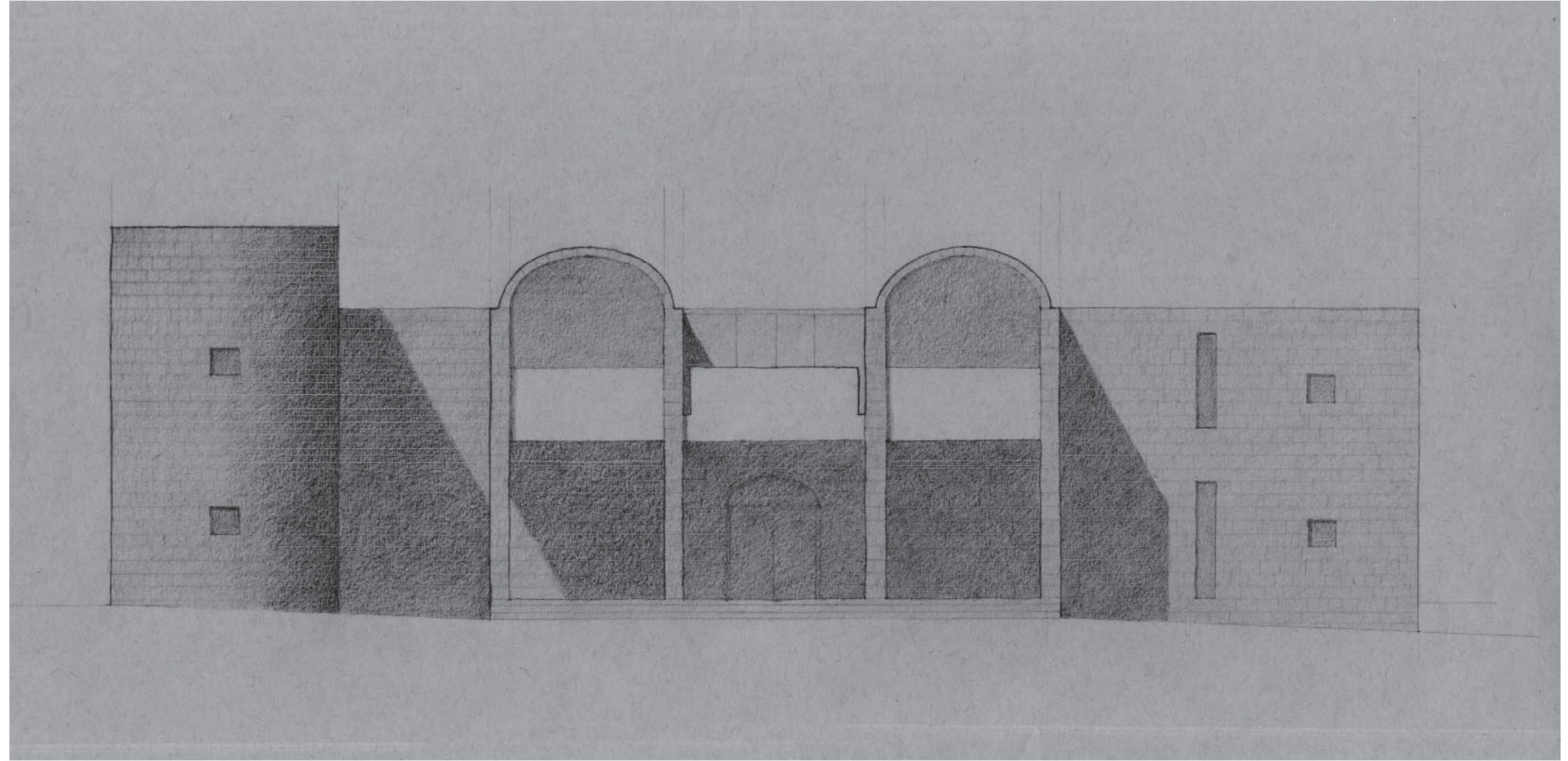
C



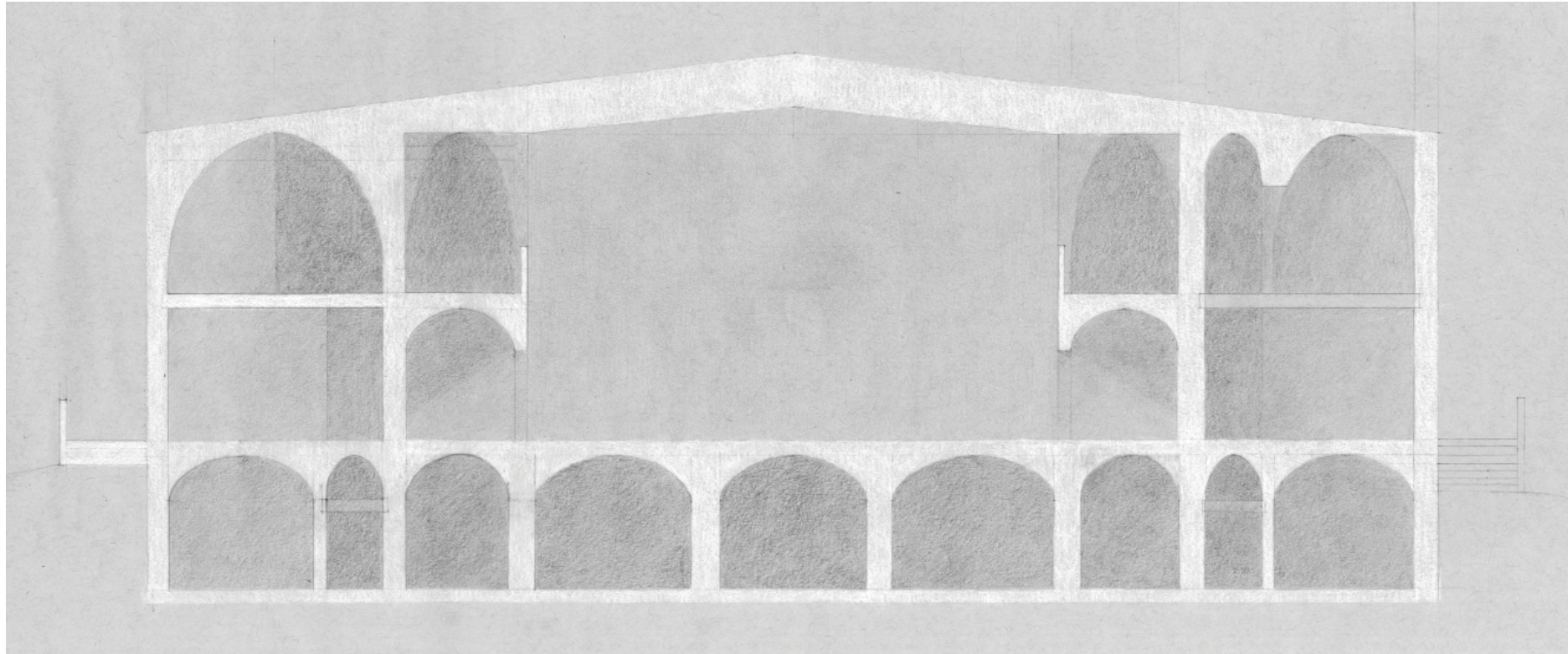
D



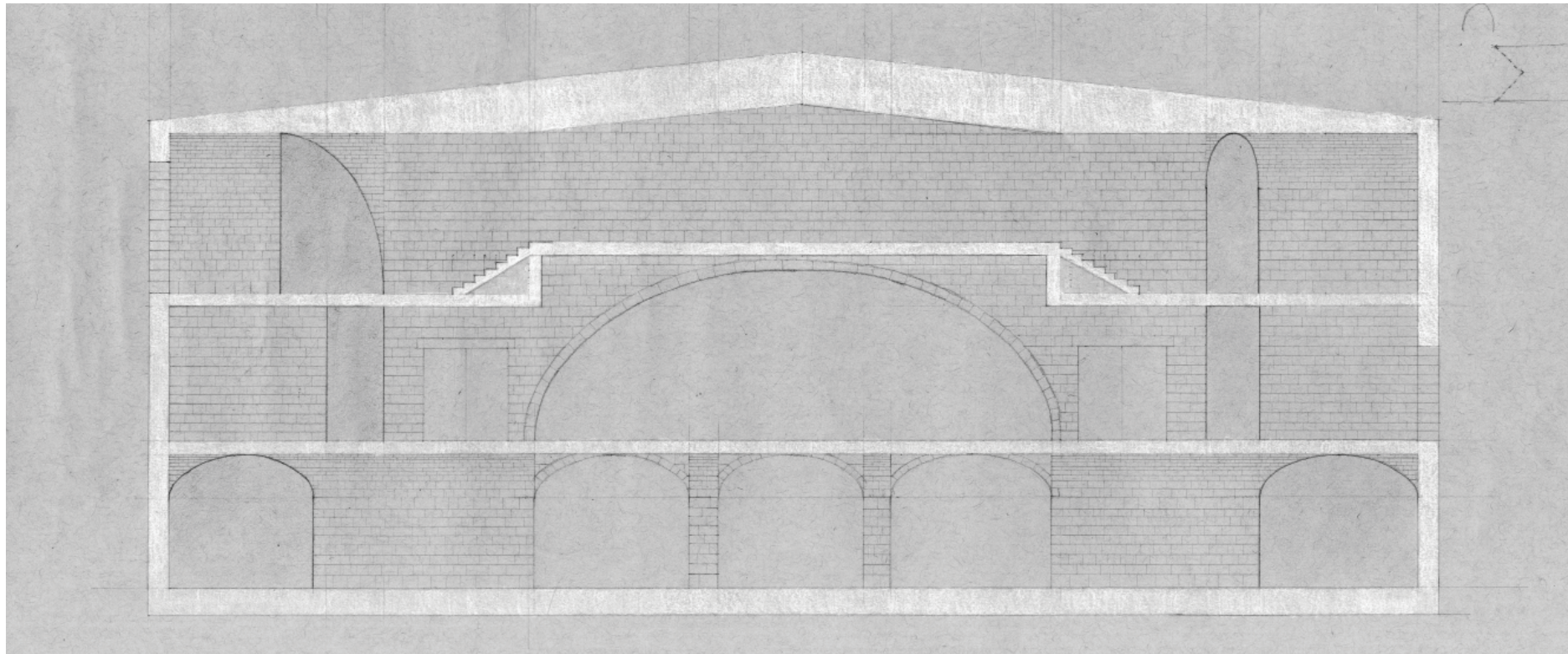
Scheme 1 South Elevation, pencil





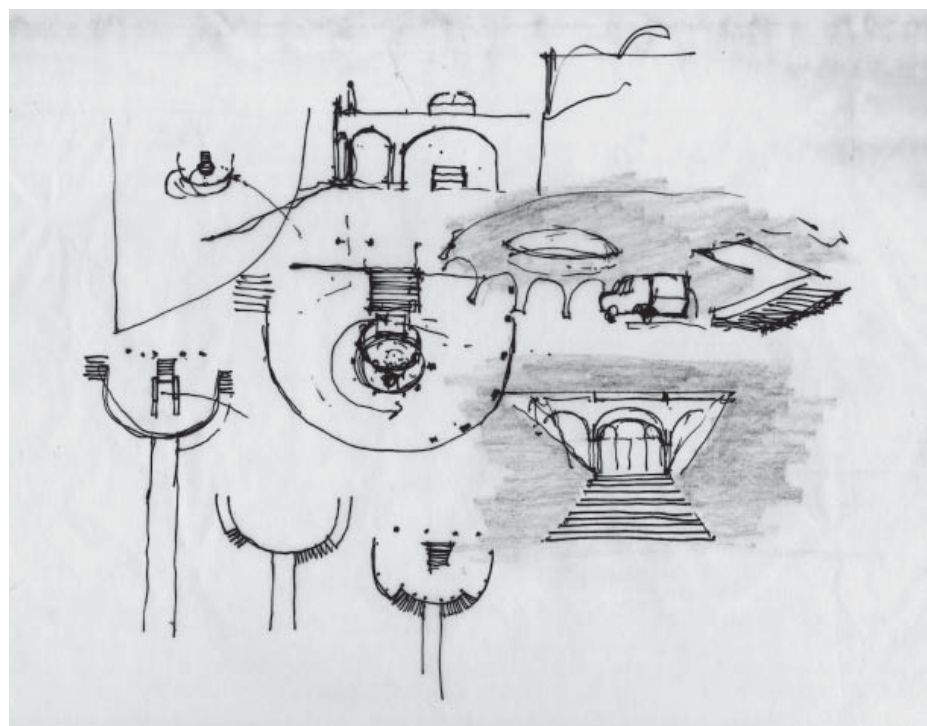


Top Scheme 1 Section A, white conte & pencil

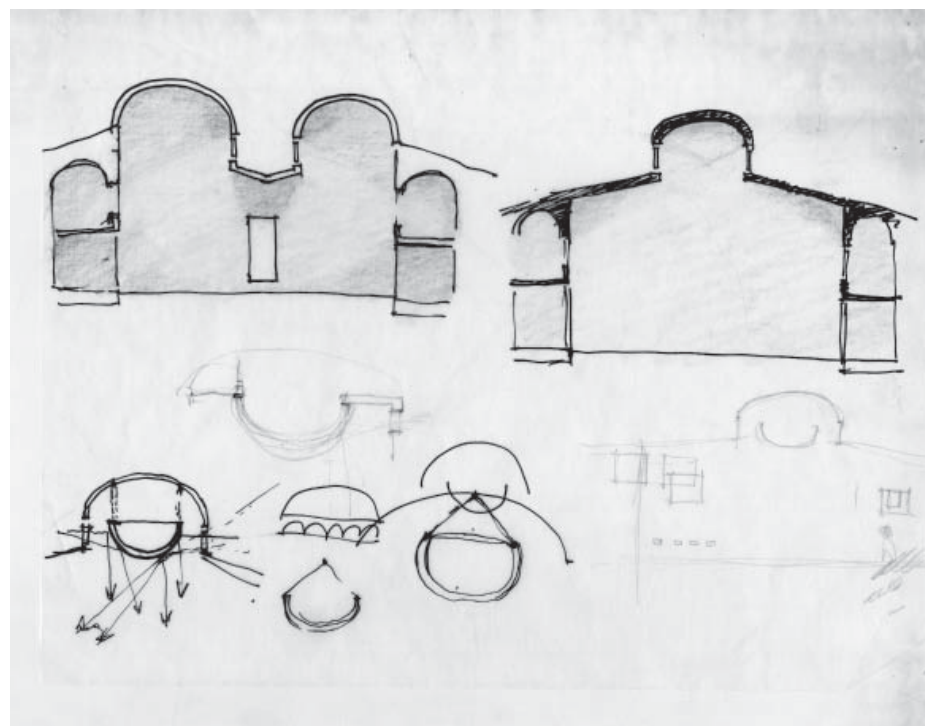


Bottom Scheme 1 Section B, white conte & pencil





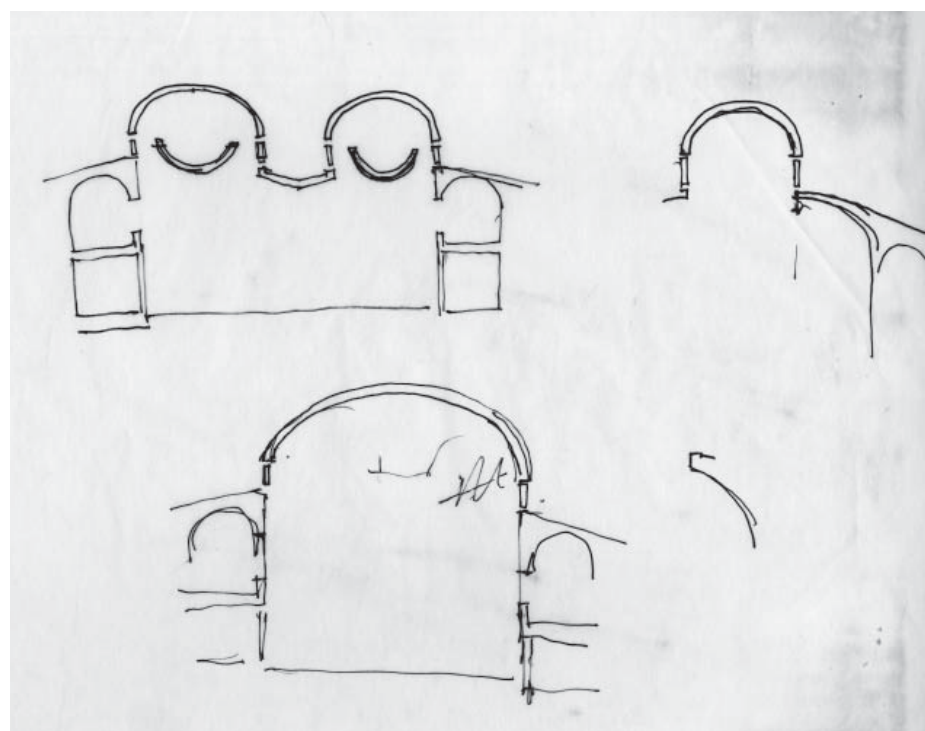
Top Left Scheme 1 Entry Sketch, pen & pencil



A

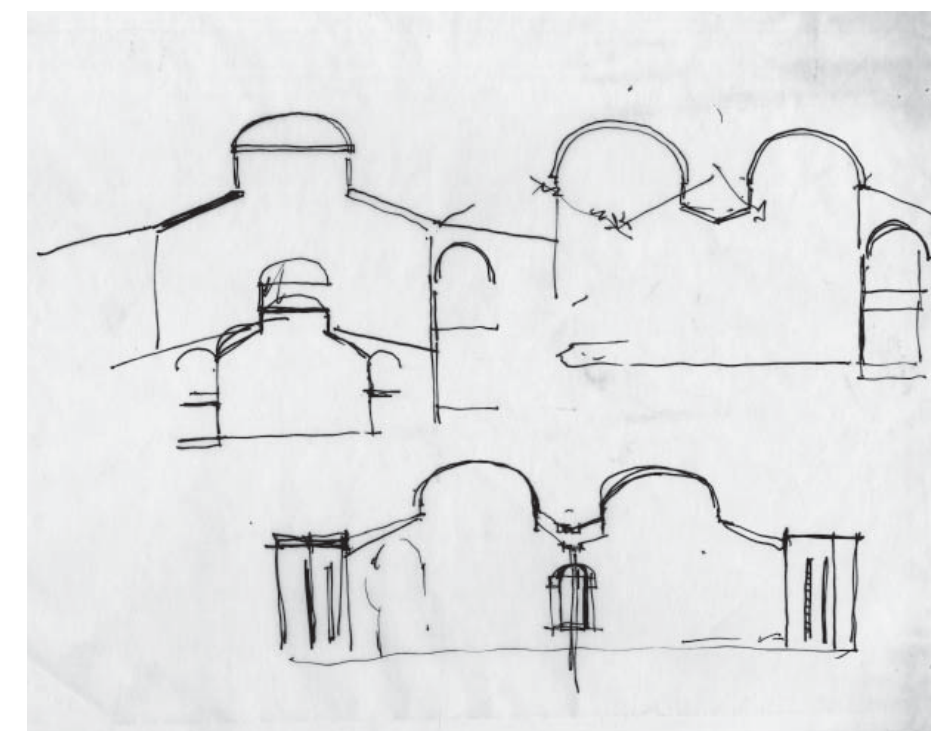
Top Right Scheme 1 Council Chamber Section A, pen & pencil

Bottom Left Scheme 1 Council Chamber Section B, pen



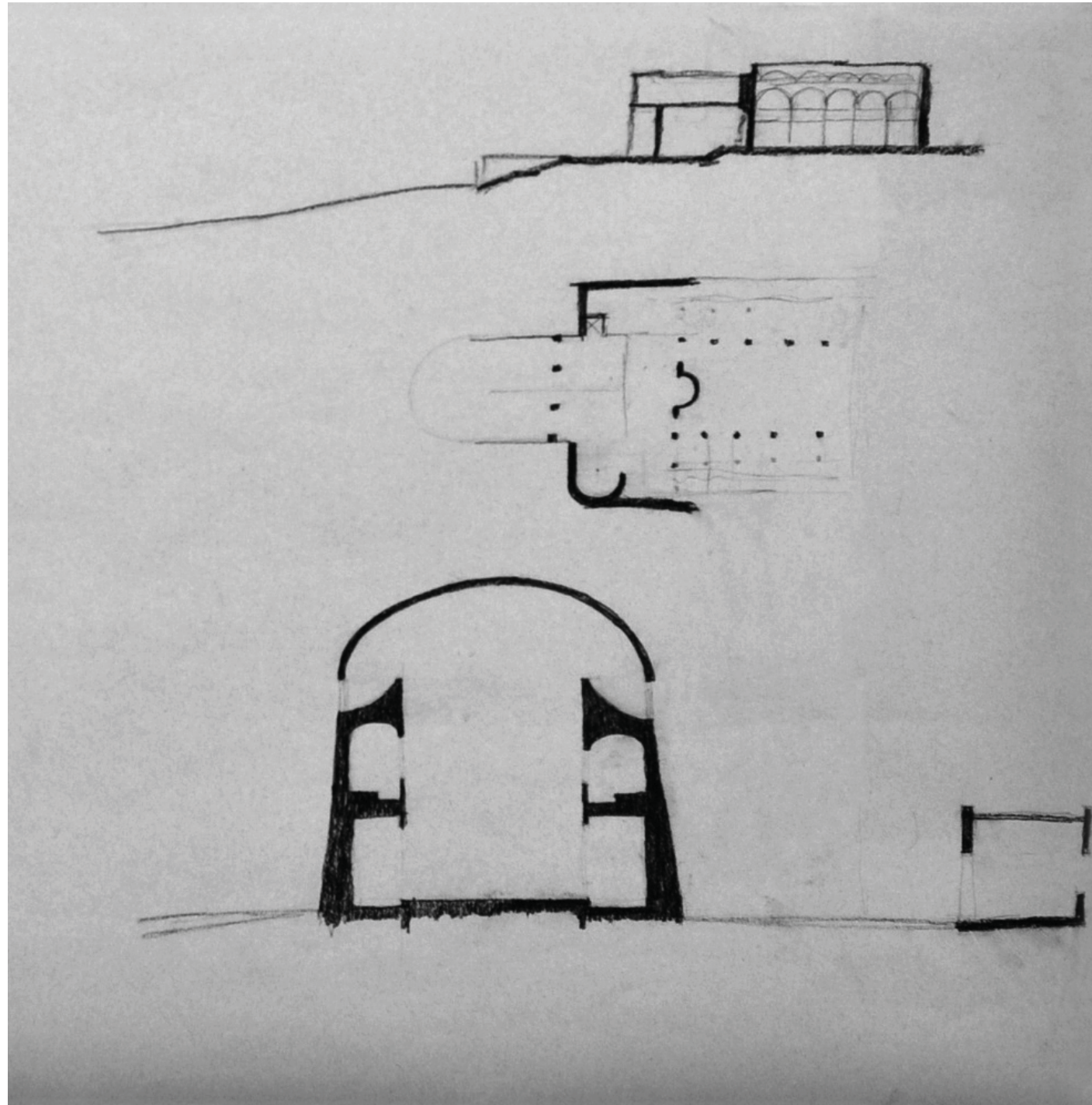
B

Bottom Right Scheme 1 Council Chamber Section C, pen

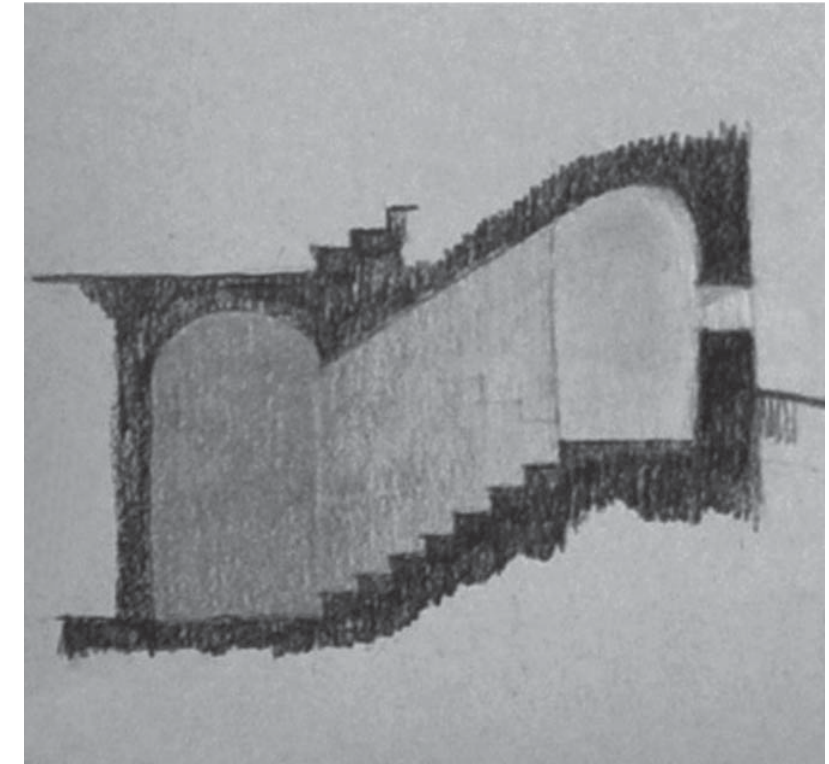


C

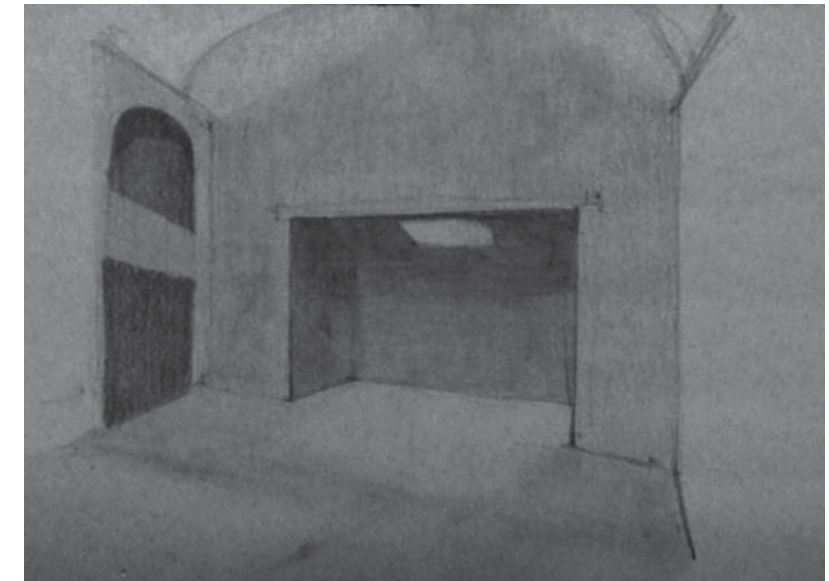




Left Scheme 2 Section and Plan Sketches, charcoal



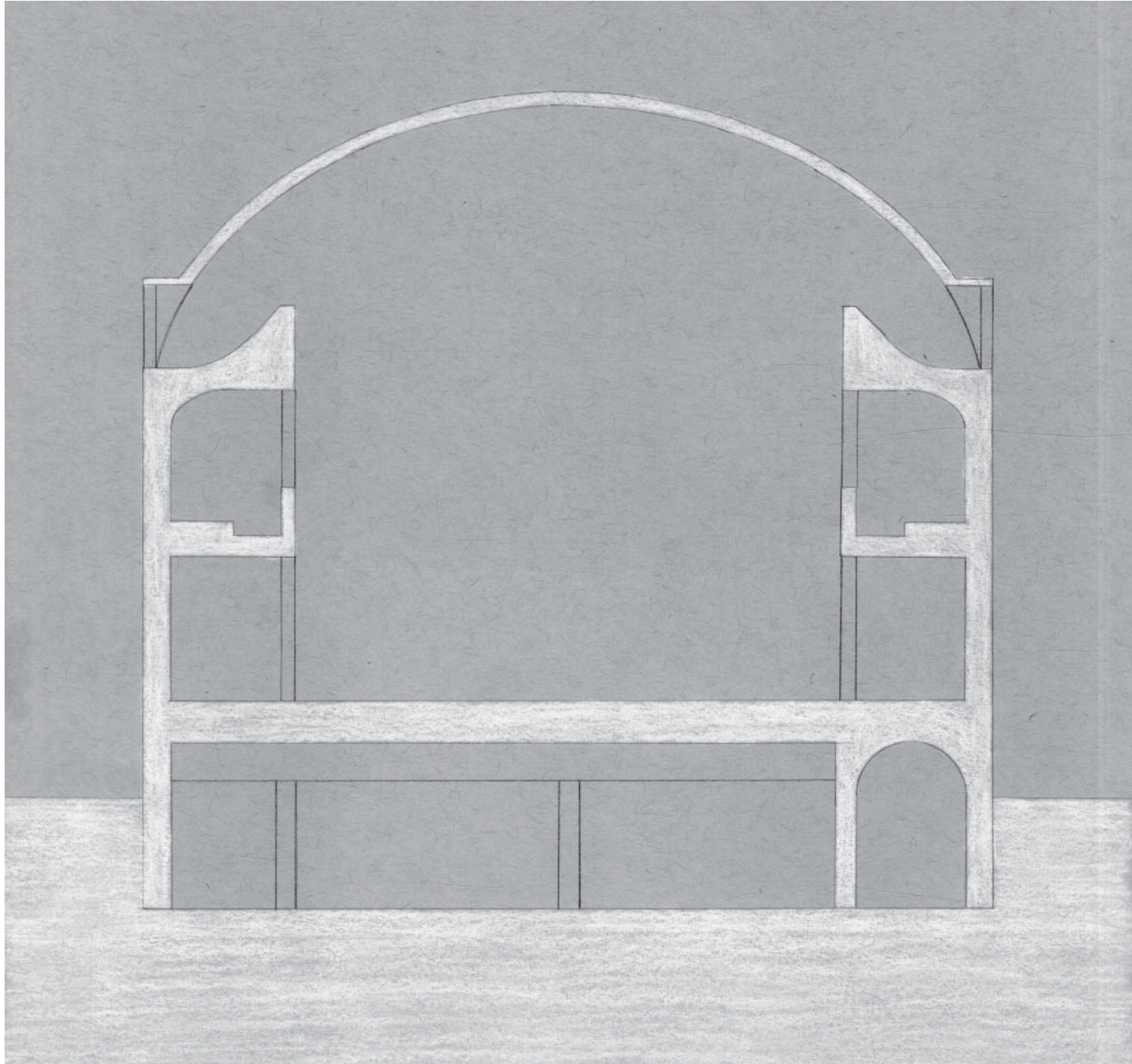
Top Right Scheme 2 Staircase & Hallway Sketch, charcoal & pencil



Bottom Right Scheme 2 Council Chamber Perspective, pencil



Scheme 2 Section Through Council Chamber, white conte & pencil

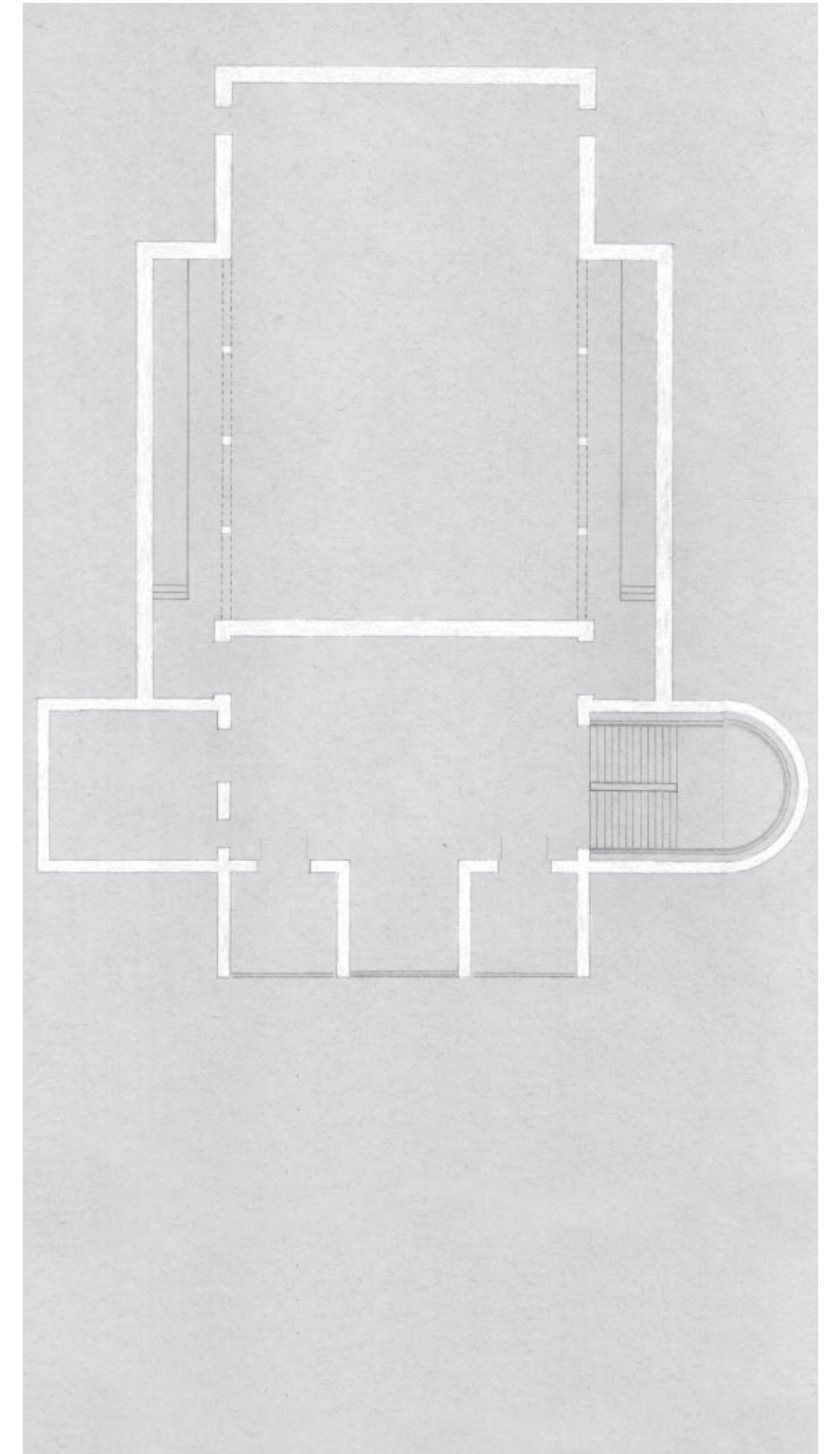
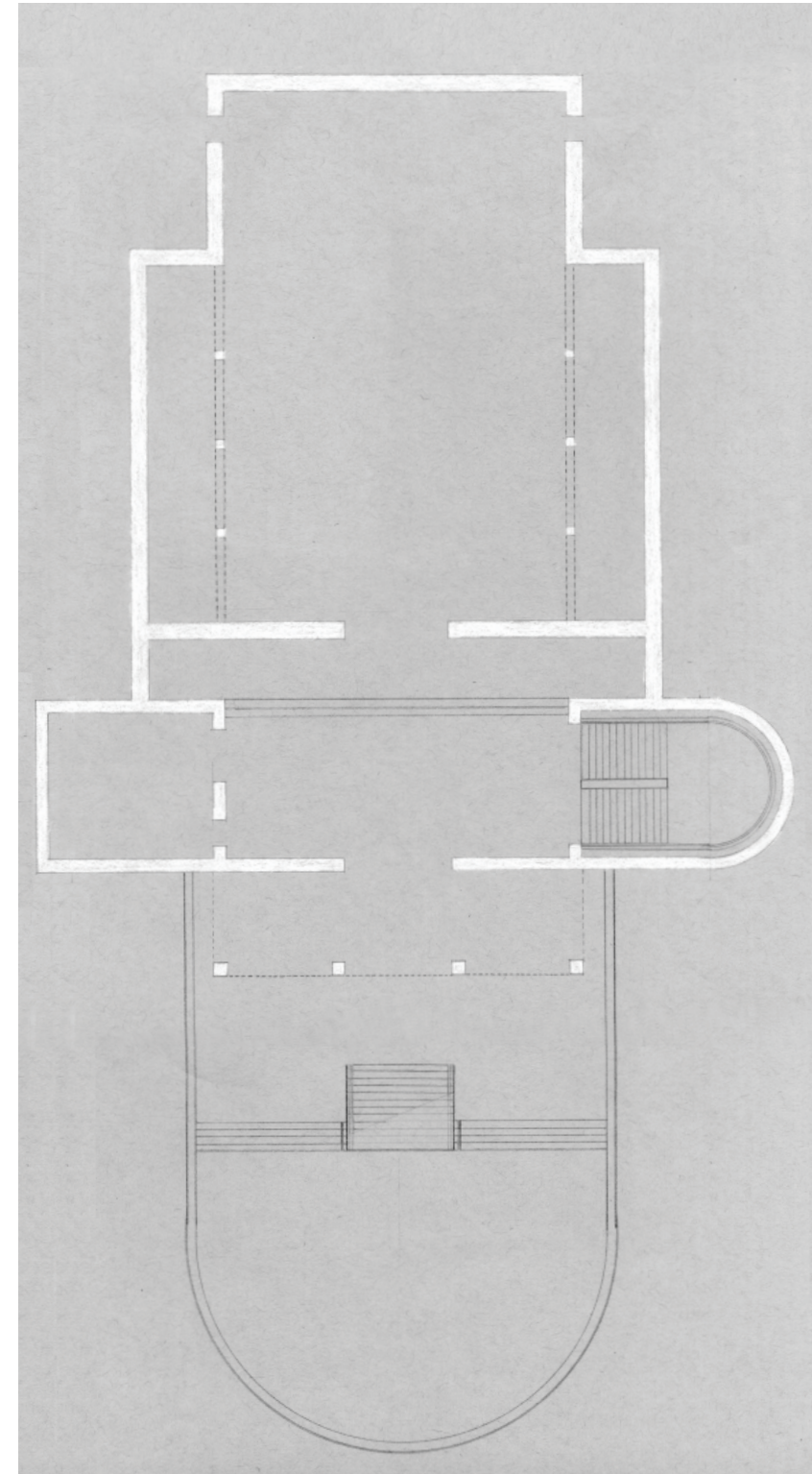
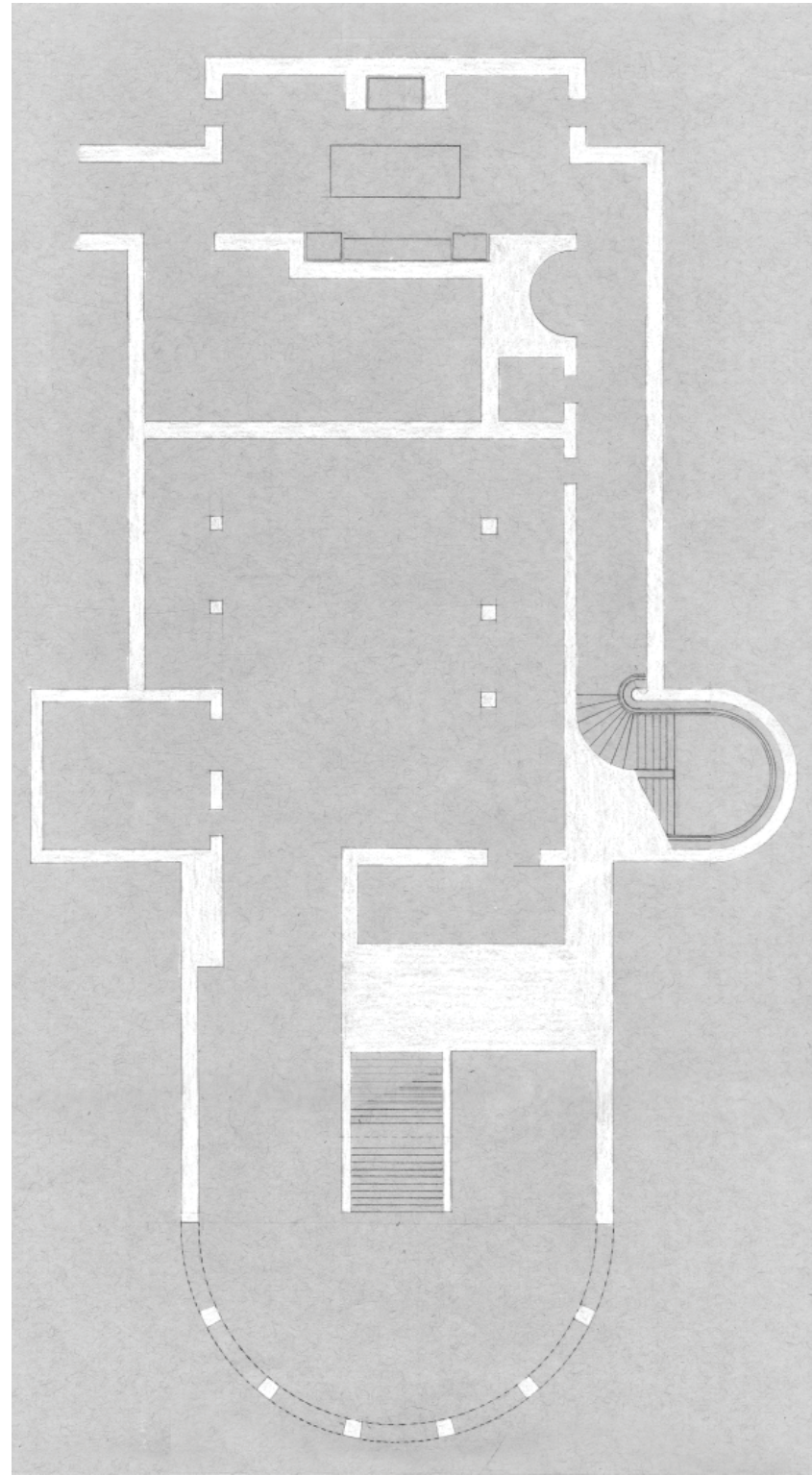




Left Scheme 2 Level 0 Plan, white conte & pencil

Center Scheme 2 Level 1 Plan, white conte & pencil

Right Scheme 2 Level 2 Plan, white conte & pencil







B



C



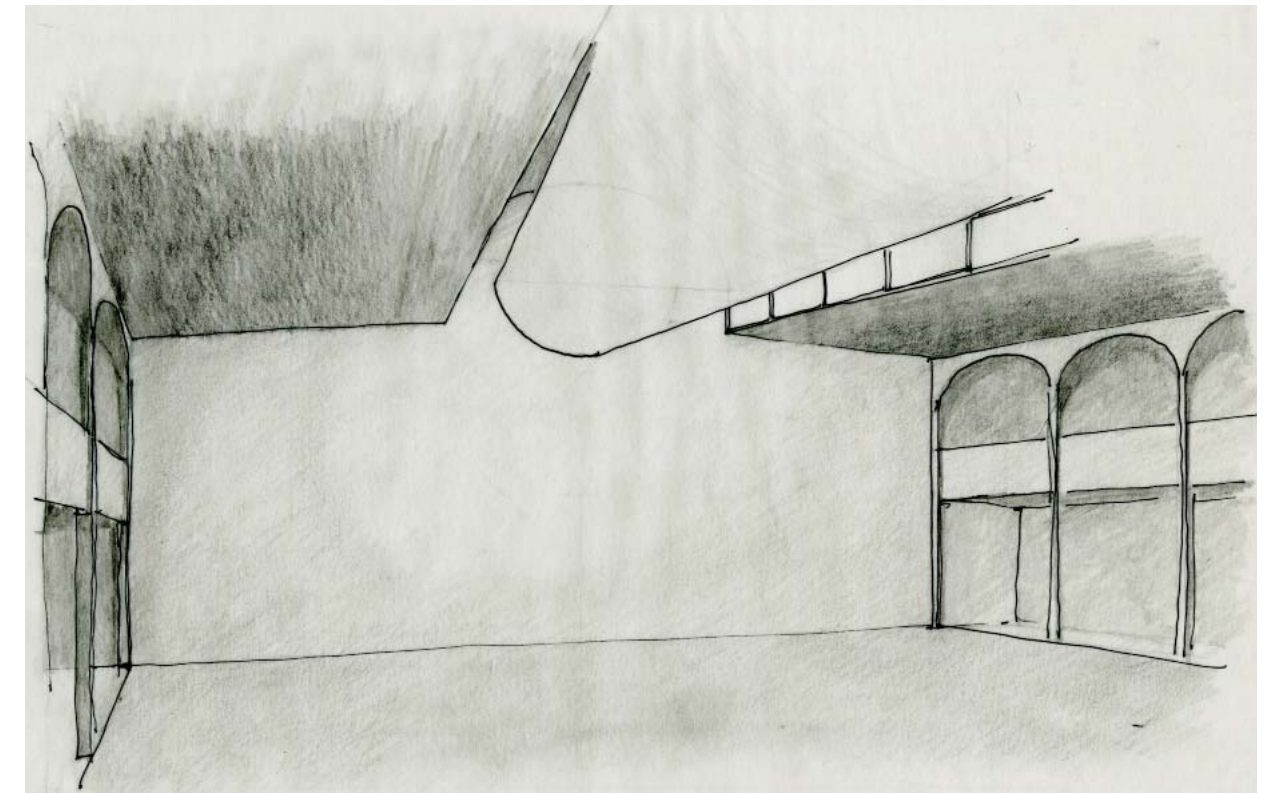
D

Top Model for Light A - D, chipboard

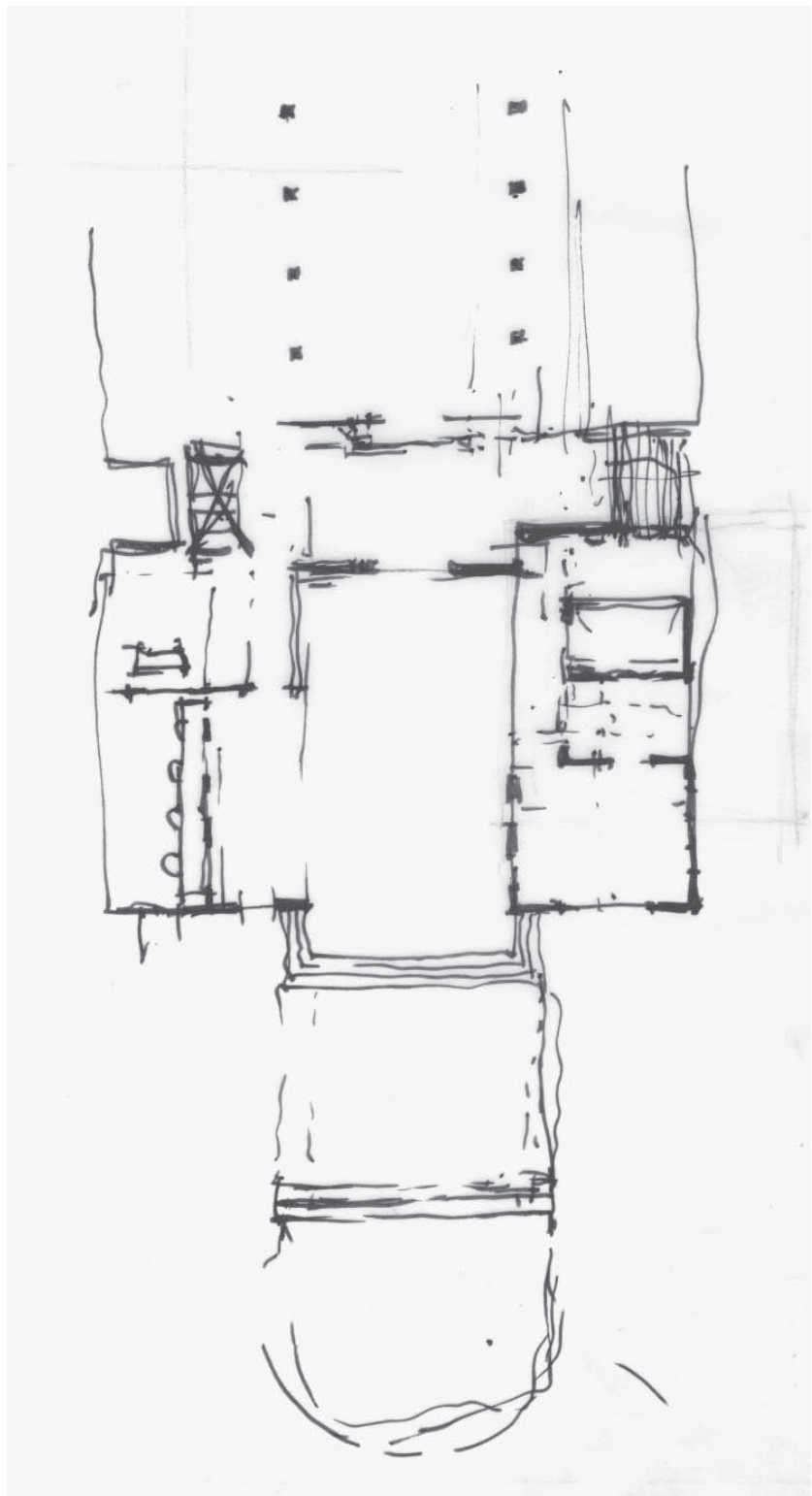
Bottom Sketch for Light, pen & pencil

This model was used to design the light baffles that would bring natural light in through the sides of the building and reflect it up onto the underside of the vault.

The intent is to emphasize the architectural presence of the vault which is tied to the building's function.



A

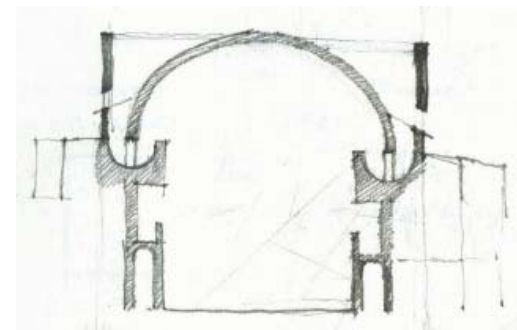
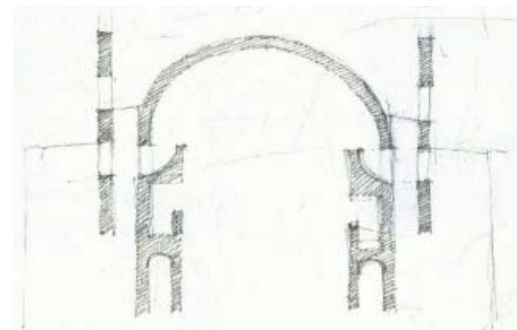
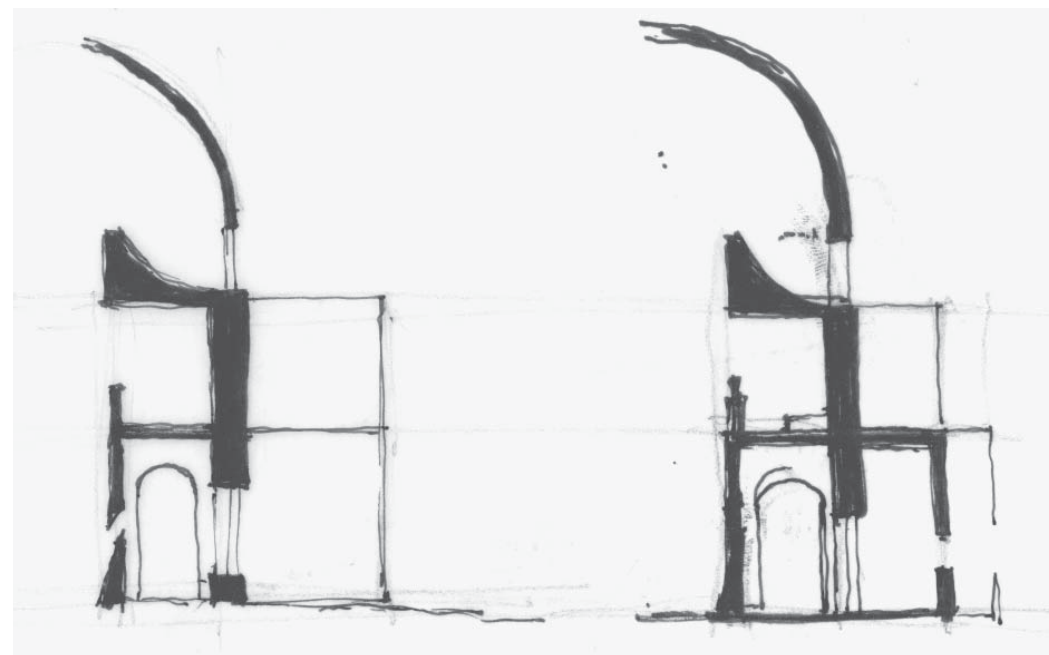


Left Scheme 3 Plan Sketch A, pen

Top Right Scheme 3 Elevation Sketch, charcoal & pencil

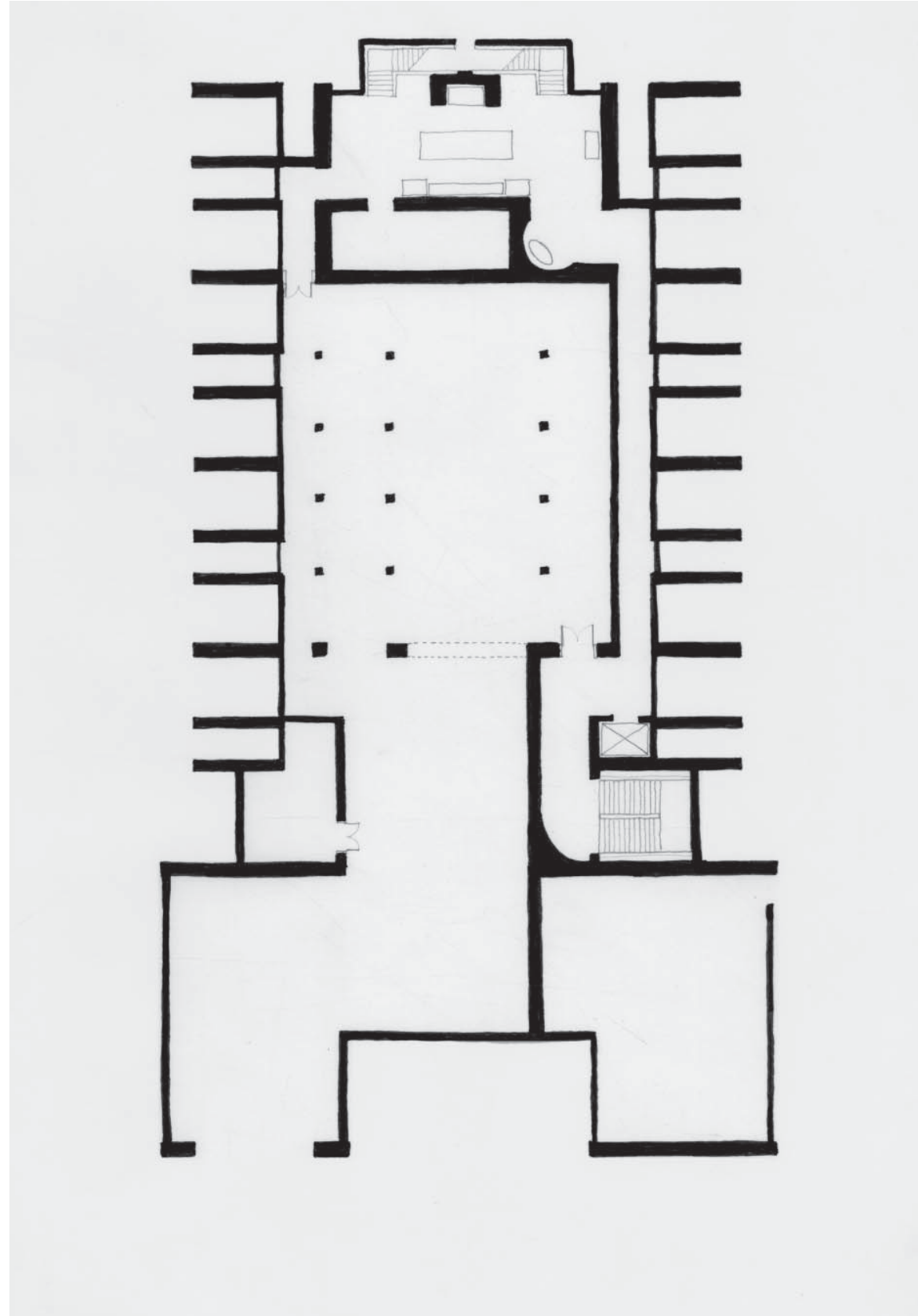
Center Right Scheme 3 Sections Through Side Halls, pen

Bottom Right Scheme 3 Sections Through Council Chamber, pencil

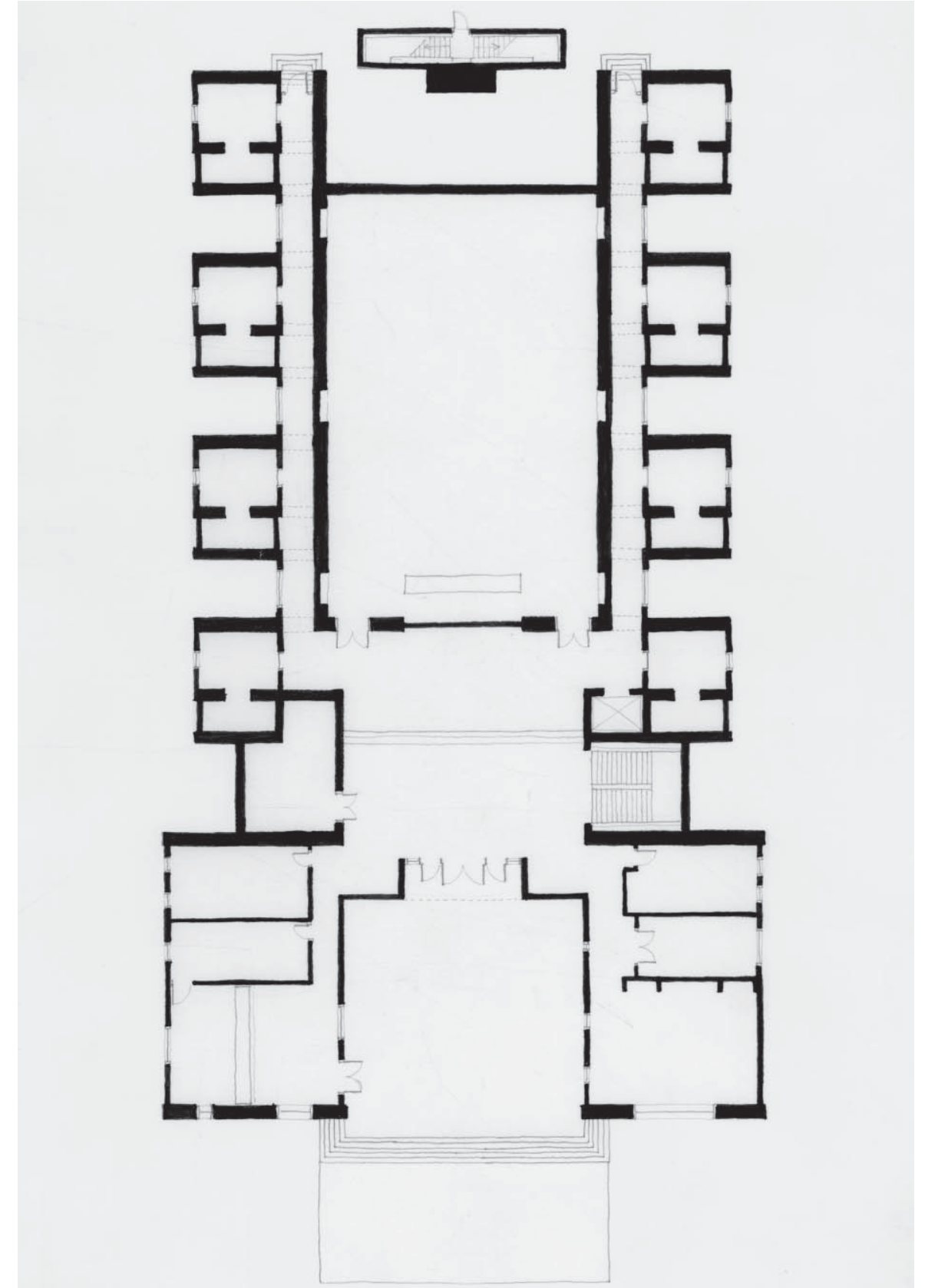




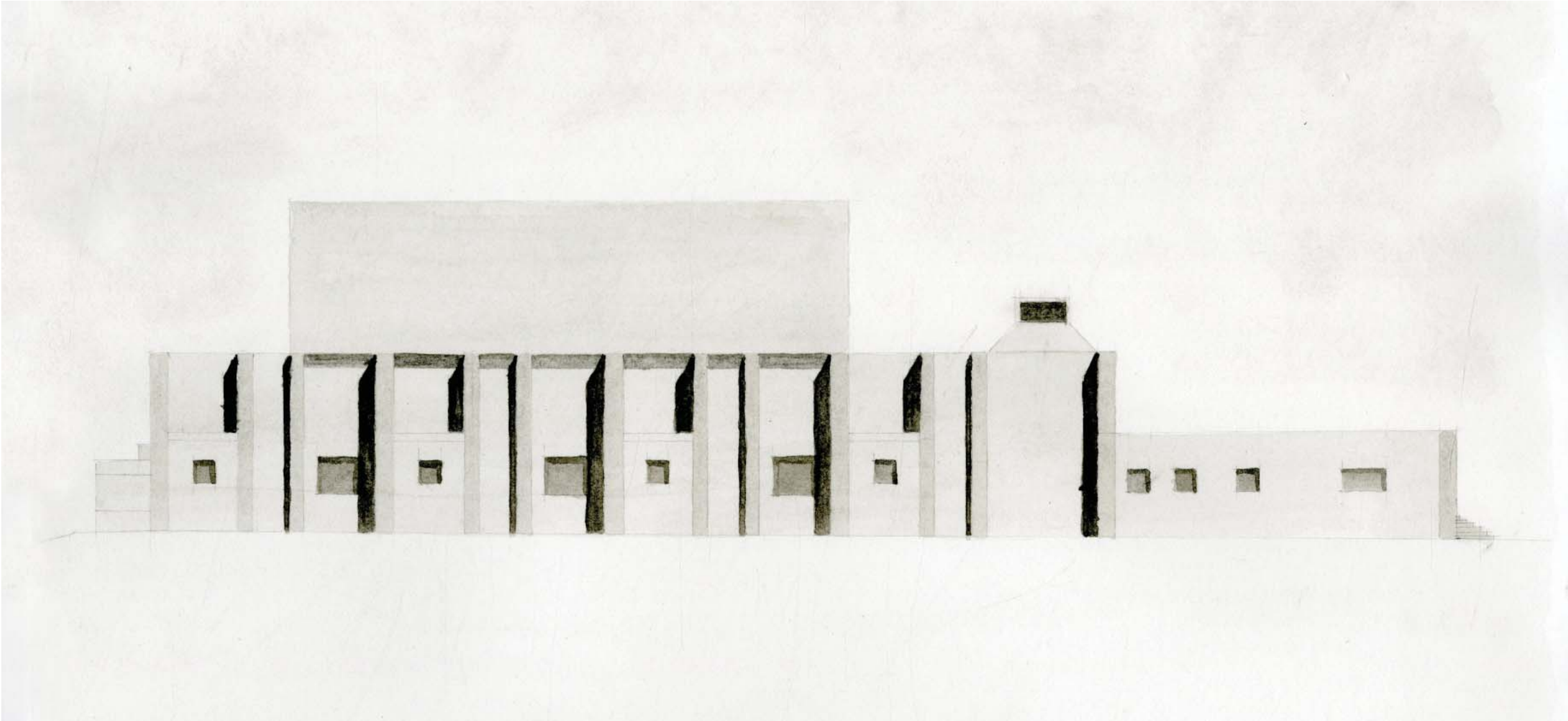
Left Scheme 3 Level 0 Plan, pen & pencil



Right Scheme 3 Level 1 Plan, pen & pencil

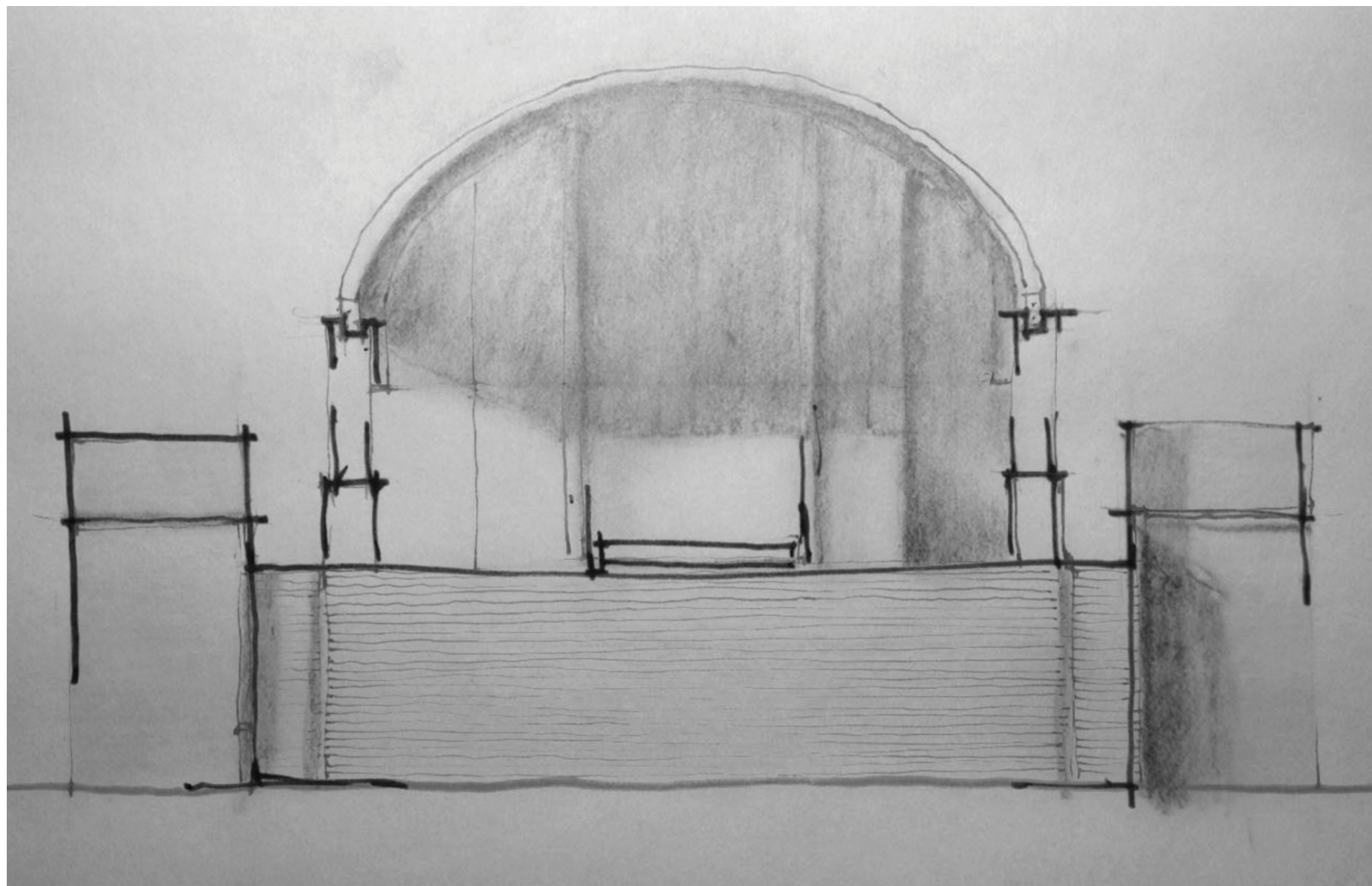


Scheme 3 West Elevation, watercolor





Scheme 4 South Elevation Sketch, pen & pencil



Appendix B:

List of Images

Pages

Pages

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2.	Map of Rockville, pencil	2
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