

A Market for Barcelona
by
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for the degree of

MASTER OF ARCHITECTURE

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Abstract

This thesis confronts the possibility of an architecture which limits and reveals, freedom for a way to live, for the activities of man which are vital to a good life. An architecture which is investigated and projected through making.

Architecture Separates and makes Distinct, while finding meaningful connection.

The work of drawing here attempts to project an architecture which is vital to man, by providing a connection to the activities of Man, in which the spirit of their beginning is recaptured and renewed through a reimagining of the Institutions of Man. Where a sense of Wonder is imperative, and the sense of the eternal in architecture is cultivated. One where a renewal is possible and sense of the cosmos is more evident.

On the threshold of “where the desire to express meets the possible” (Kahn)
using architectural form.

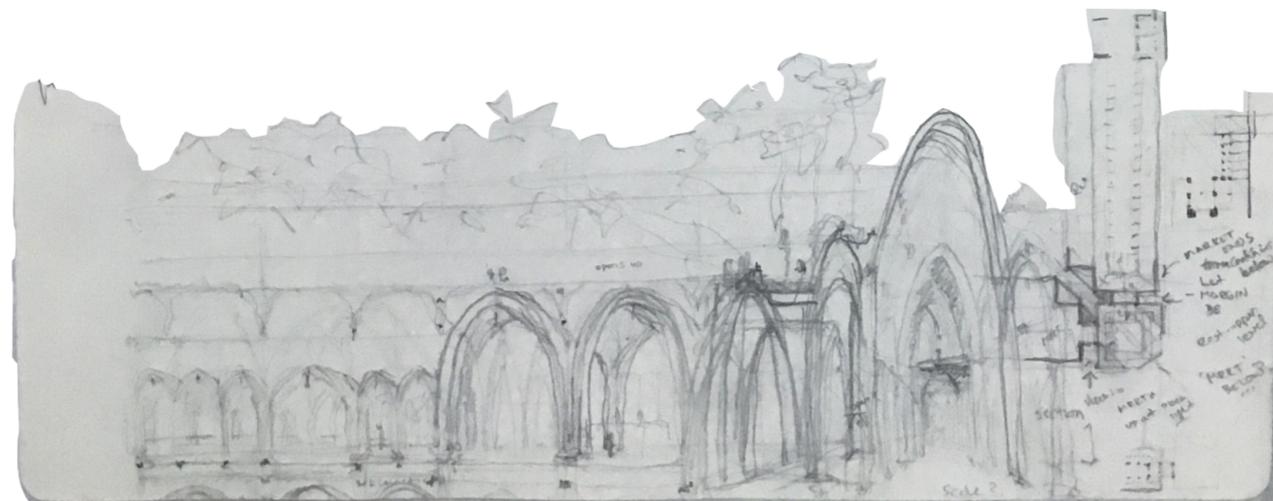
Awareness

What is the form?

Beginning with the room

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The City

What is a monument?

What is monumentality in Architecture?

Where does the intimate reside within the monumental?

What is the nature of a city?

What is Architecture's role in a city? Architecture constitutes the idea of a city.

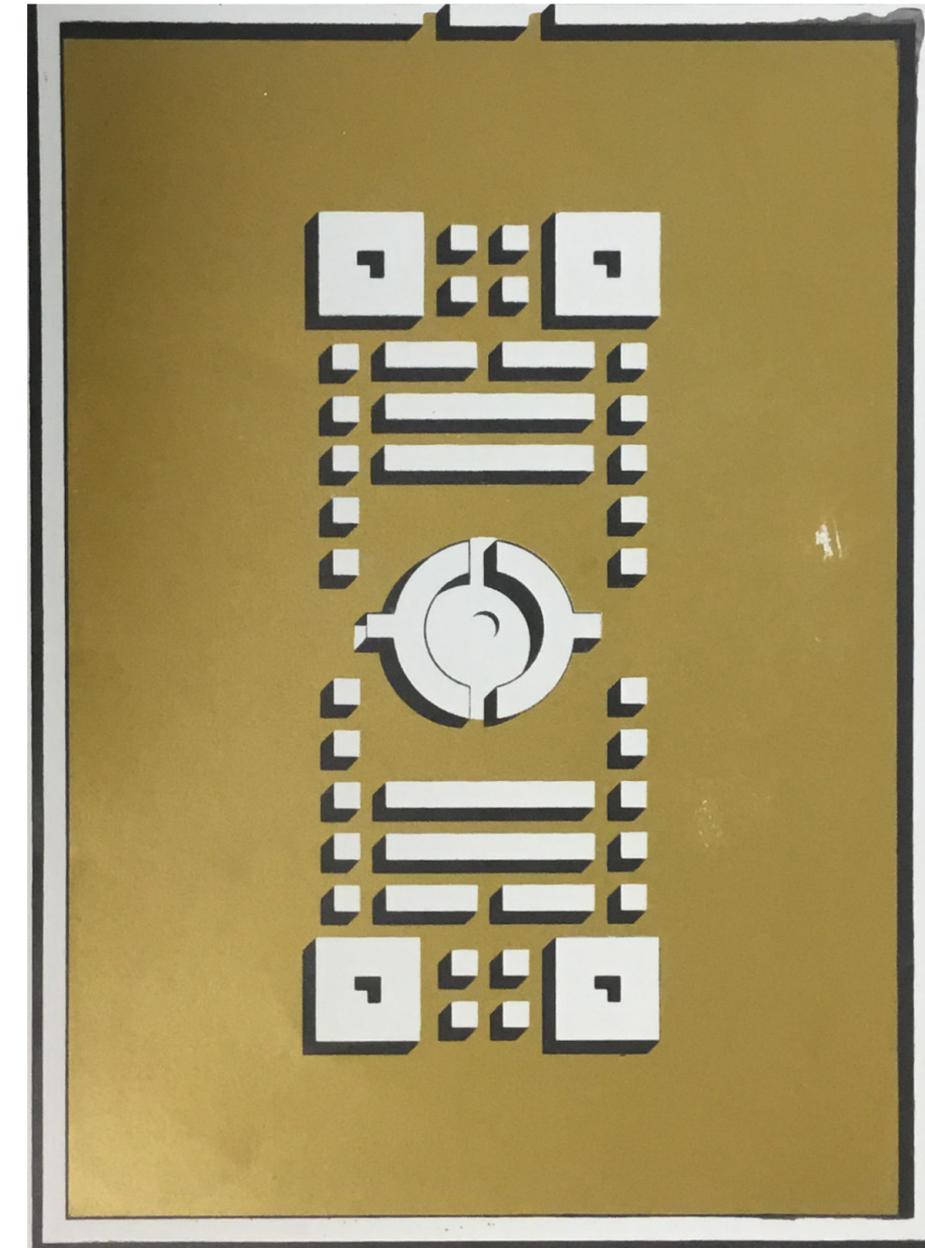
Questions arose after my travel experience in Europe, in recognizing that something was missing from our cities, from our daily lives, a feeling one receives from the interactions they have with the physical environment, both in nature, as on a walk under a forest canopy, and in the city. In the late 19th century, Camillo Sitte, an influential Austrian architect, wrote of a shift in the architecture of the city, an aesthetic critique on the effects 19th-century urbanism was having on the form of the city. Like that of Ildefons Cerdà's adopted, but construed plan of 1815 for the expansion of Barcelona, changing the architectural form of the city. A dissolving relationship of the parts to the whole of the city, moving away from a cultivated, urban spatial quality, away from the Room. He recognized "the strong influence of physical setting on the human soul", and that "city planning must make people 'secure and happy' (Aristotle)", thus, "not merely a technical matter, but should in the truest and most elevated sense be an artistic enterprise."

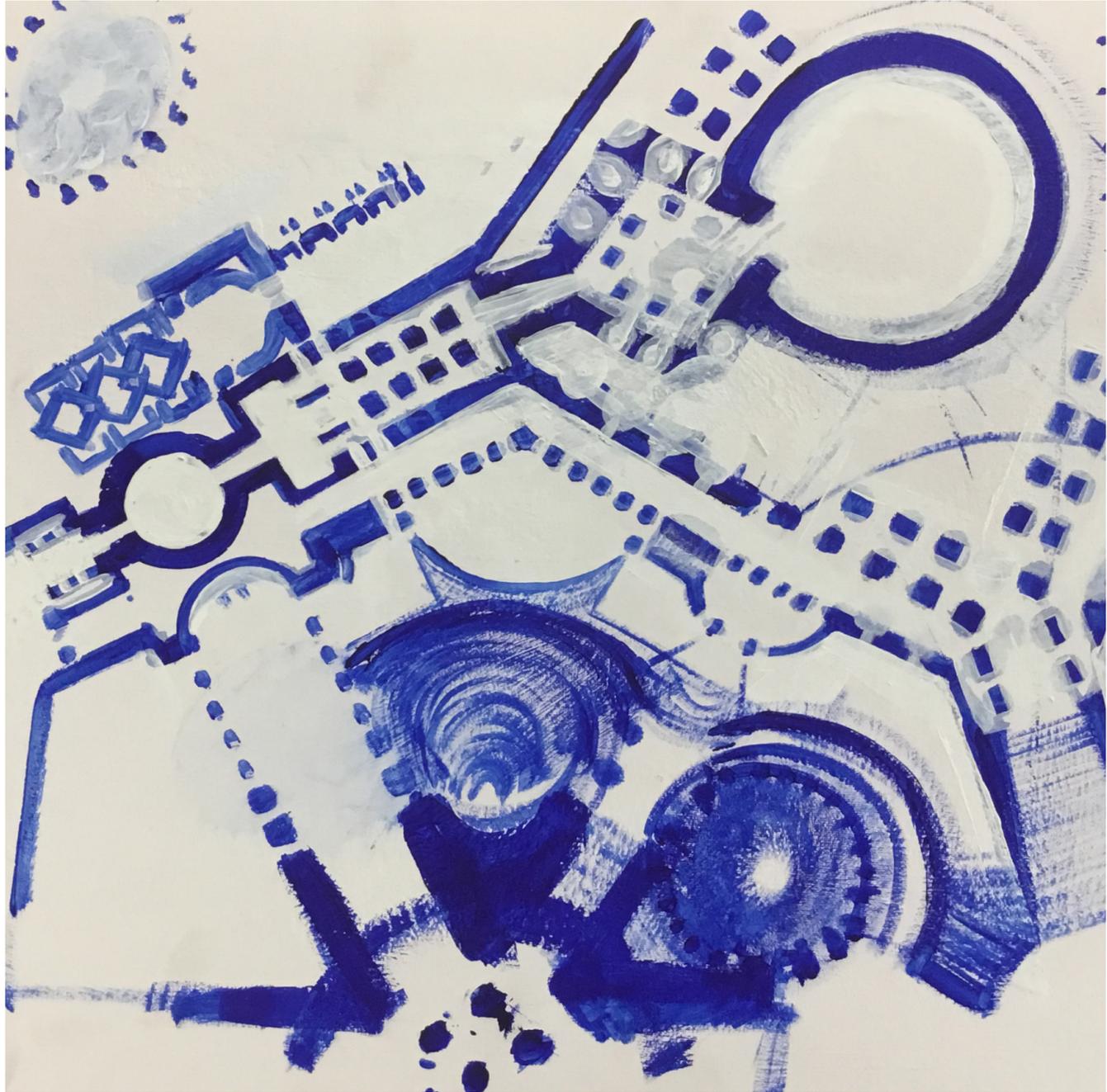
I wanted to investigate what is was about these spatial conditions that impacts us, when we do feel (positive, negative...) and, also, when we feel nothing at all. This lack of feeling, a sterility in architecture, a lack of thought, can be dangerous. Not knowing how to feel about something is okay, having no feeling at all, a lack of emotion, is most frightening. To push back against this, and to replace it with something vital. Just as food is necessary for the body and knowledge for the mind, the soul must be satiated as well, as in the form of art and social interactions, impressions of goodness on the soul, which Nature and the City can provide through their variety of spatial conditions, cultivating the events of human life which give Form, inciting awareness of ourselves and the world.

This is an architecture of relationships cultivated and sharpened as something framed and limited, that is potentially situated as things among other things, as to the understanding of the city as parts that make up a whole.

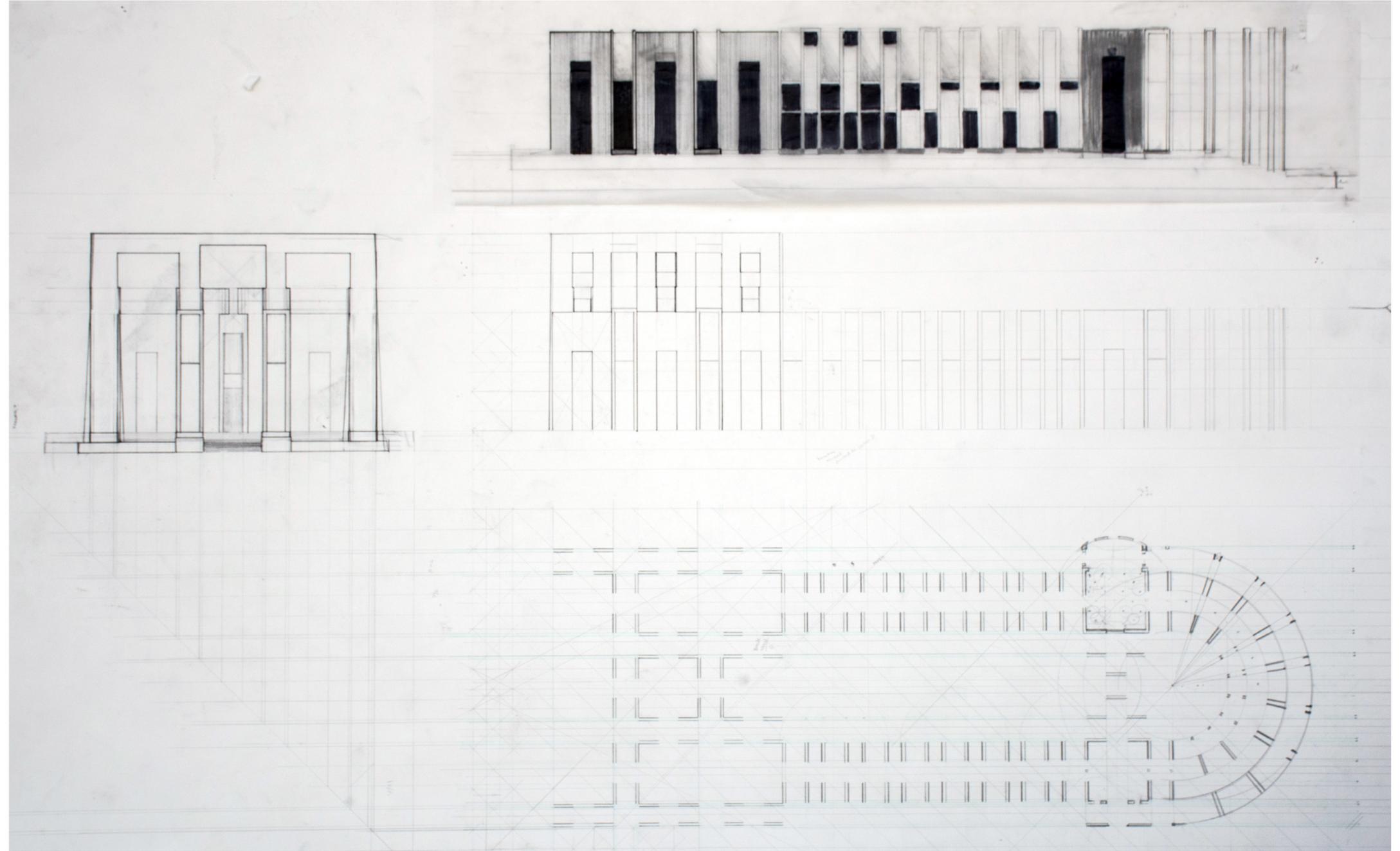
If architecture is an "act of separation and being separated" (Aureli), then I propose it also offers meaningful connection, having an innate capacity and inherent desire to make distinct the relationships, spatial and physical, between its parts, architecture, to the whole, the city.

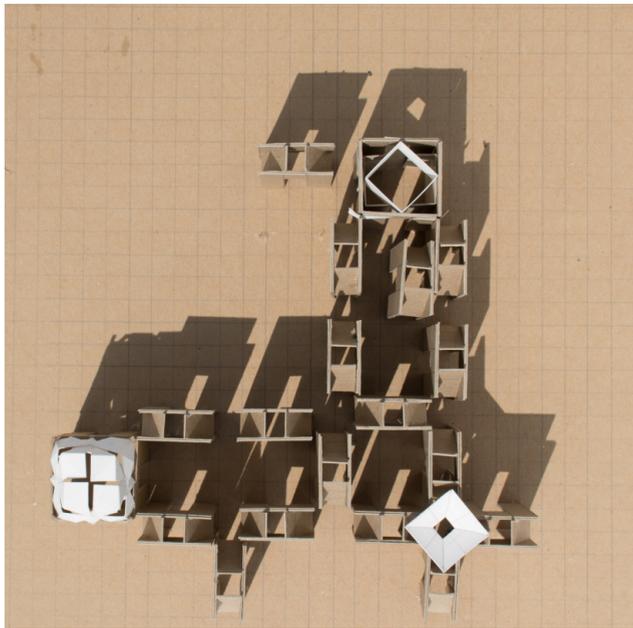
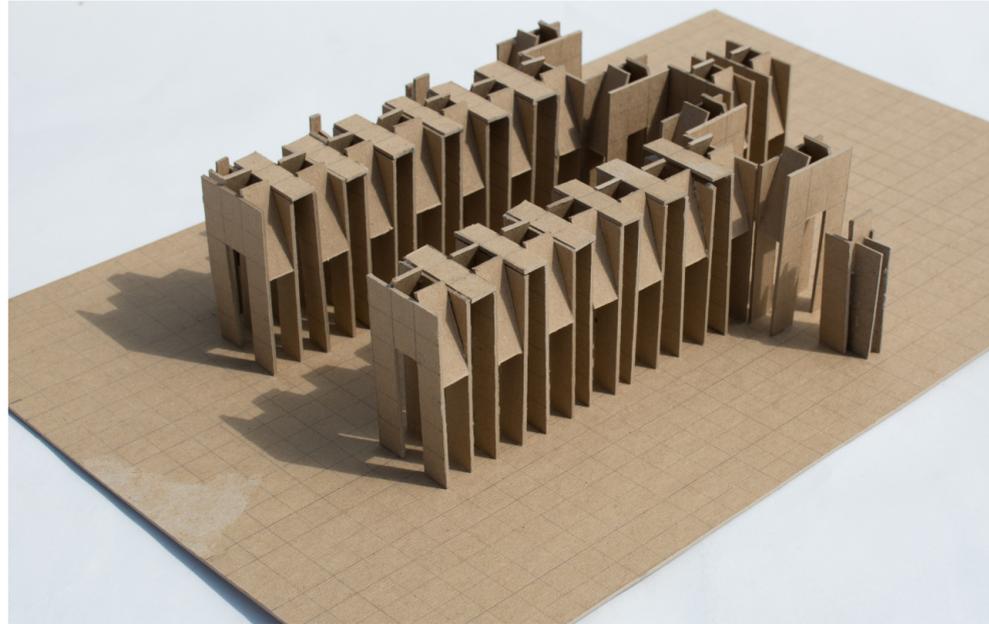
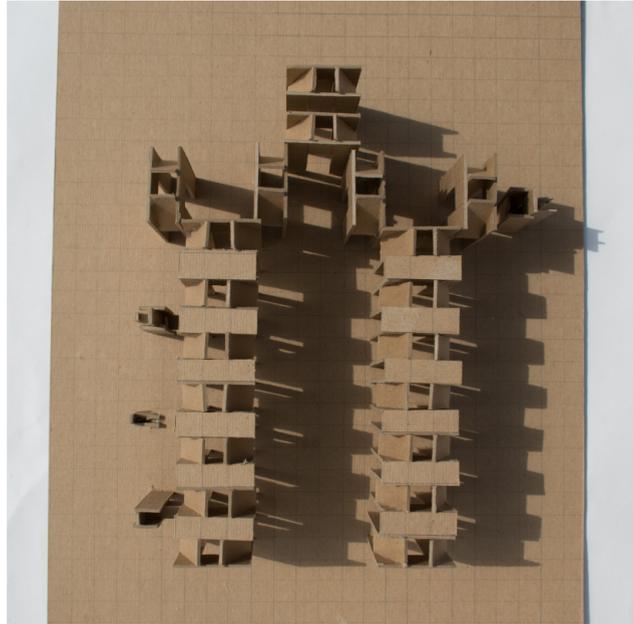
Our awareness to these distinctions, clarifies the intent of the architecture.

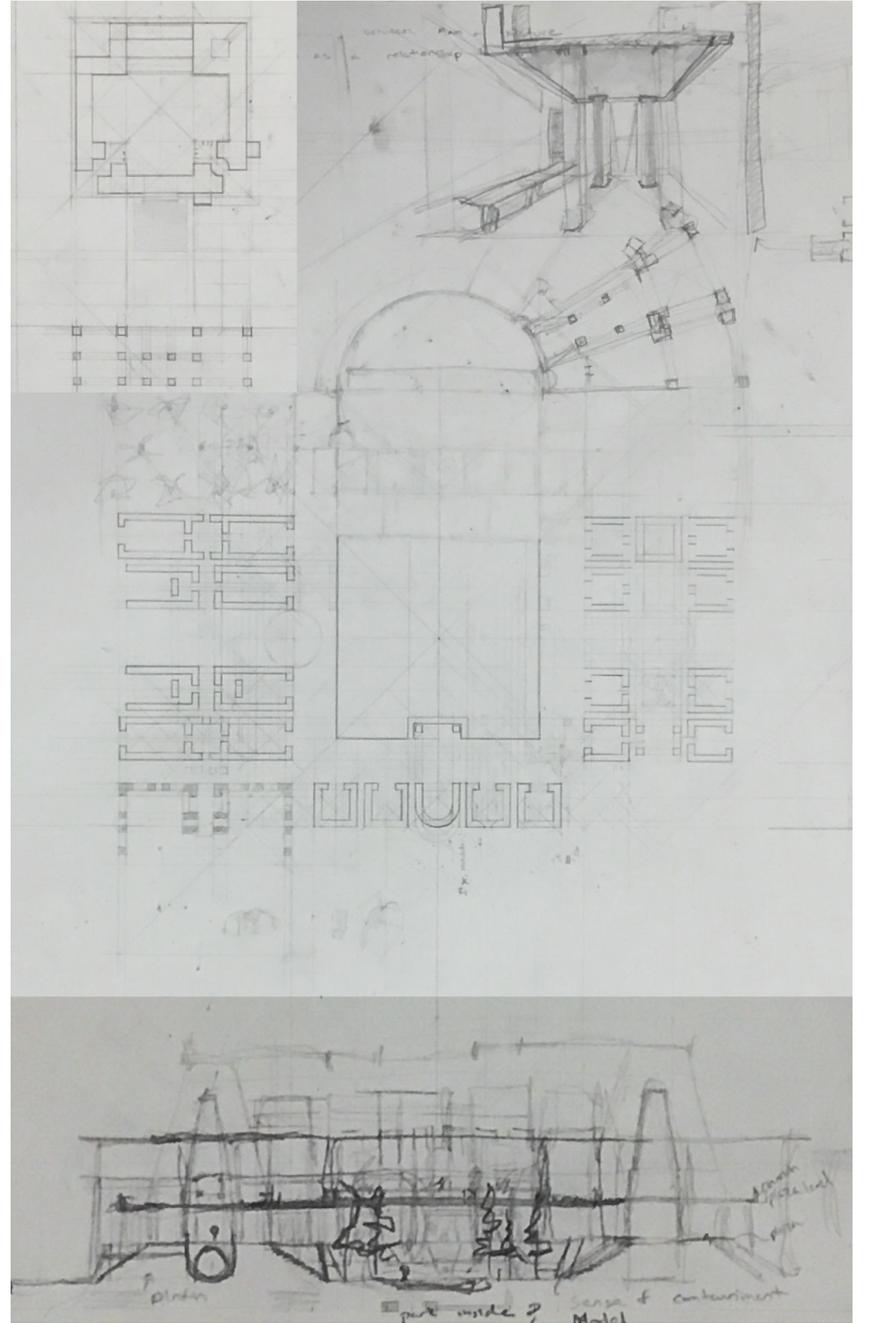
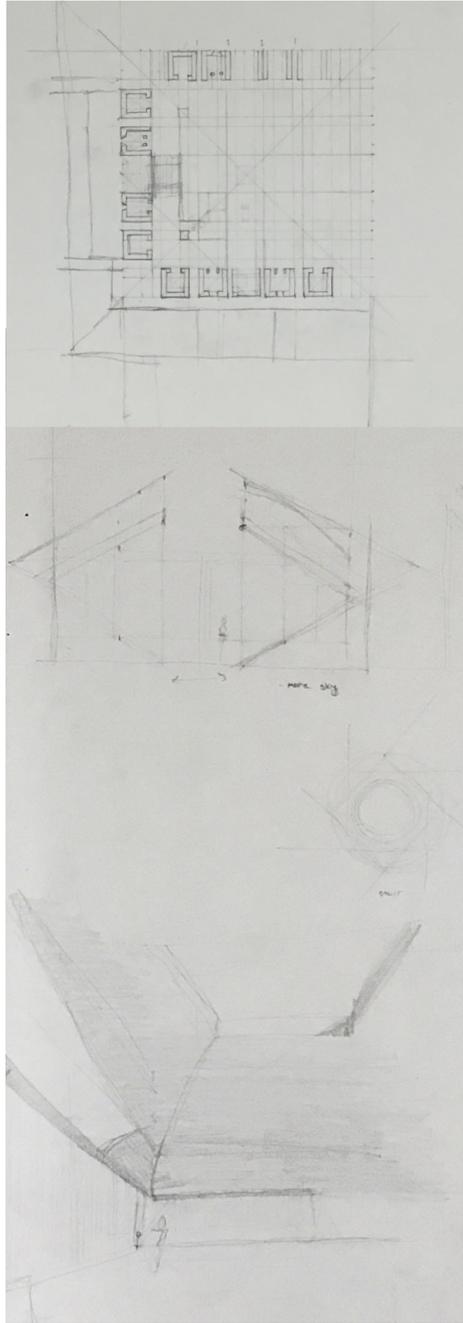
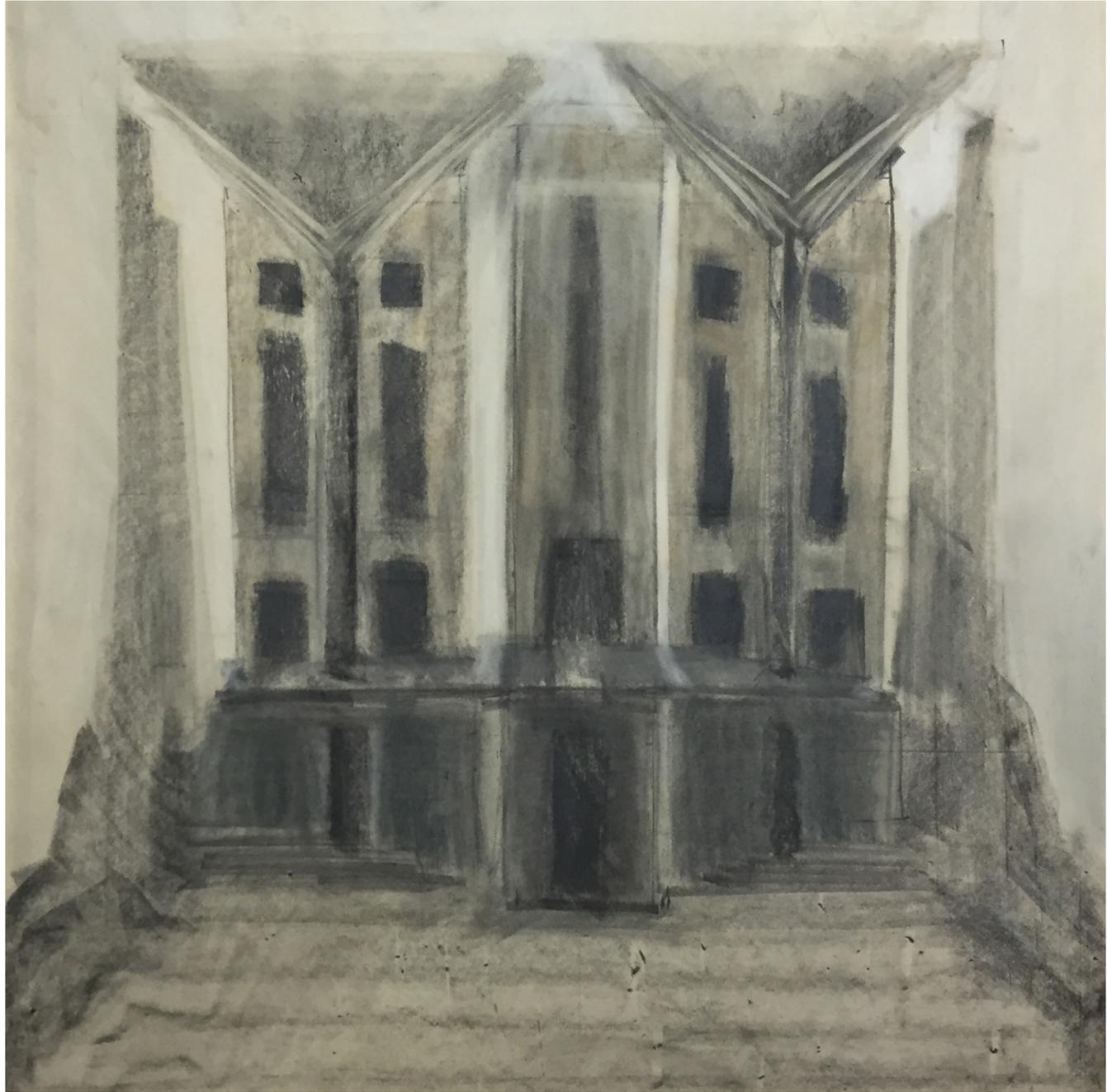


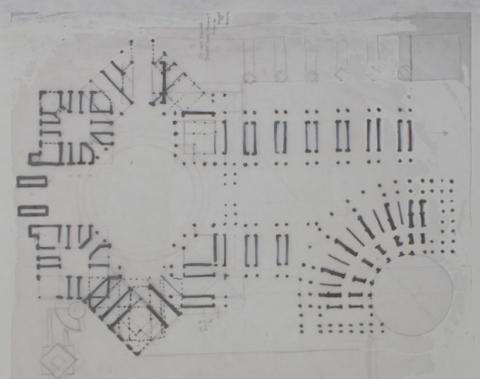
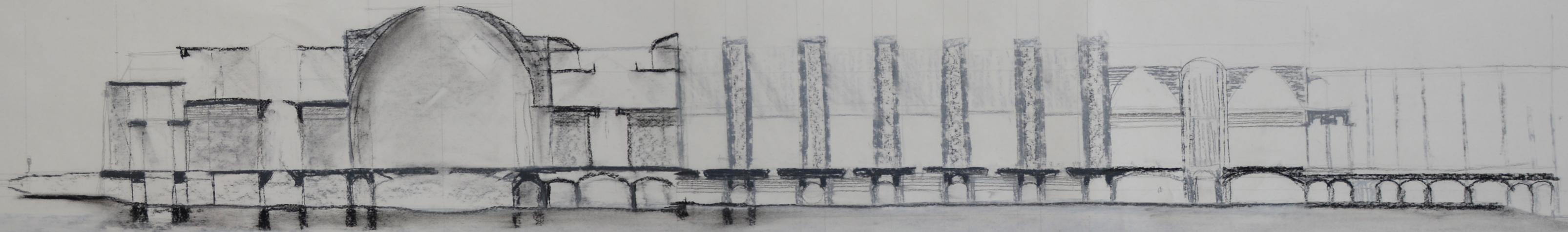


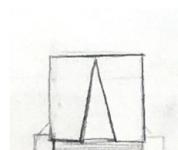
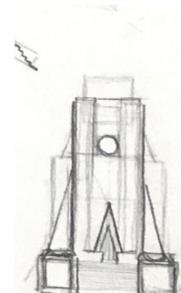
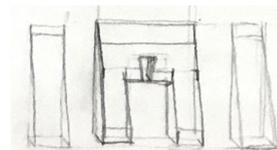
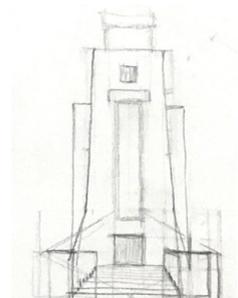




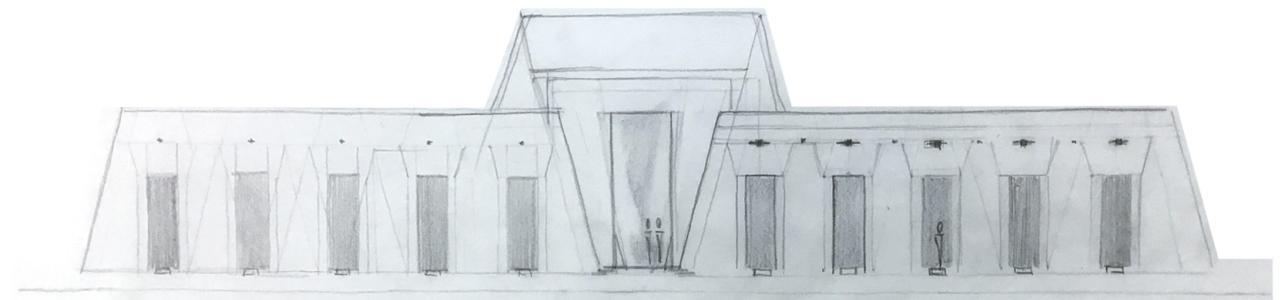


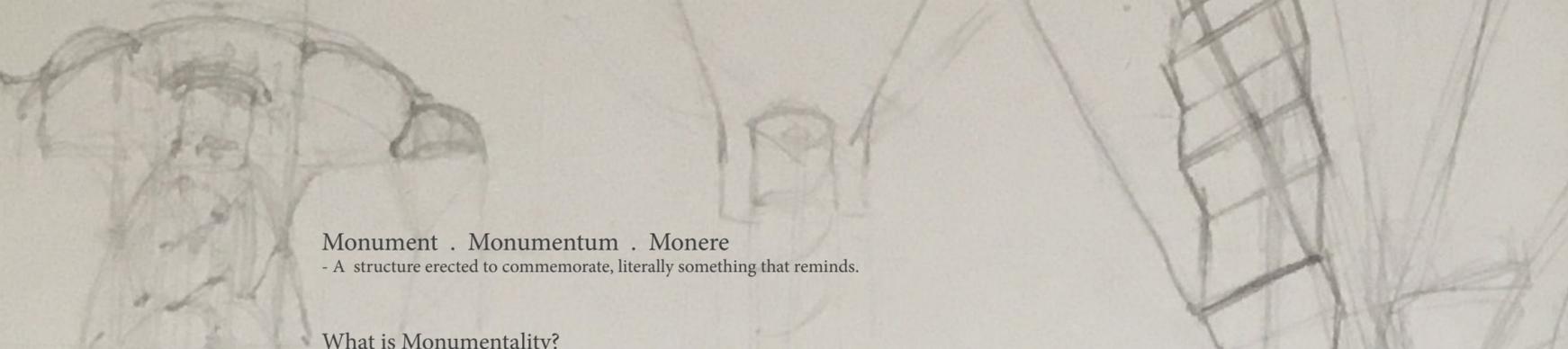






Monumentality





Monument . Monumentum . Monere

- A structure erected to commemorate, literally something that reminds.

What is Monumentality?

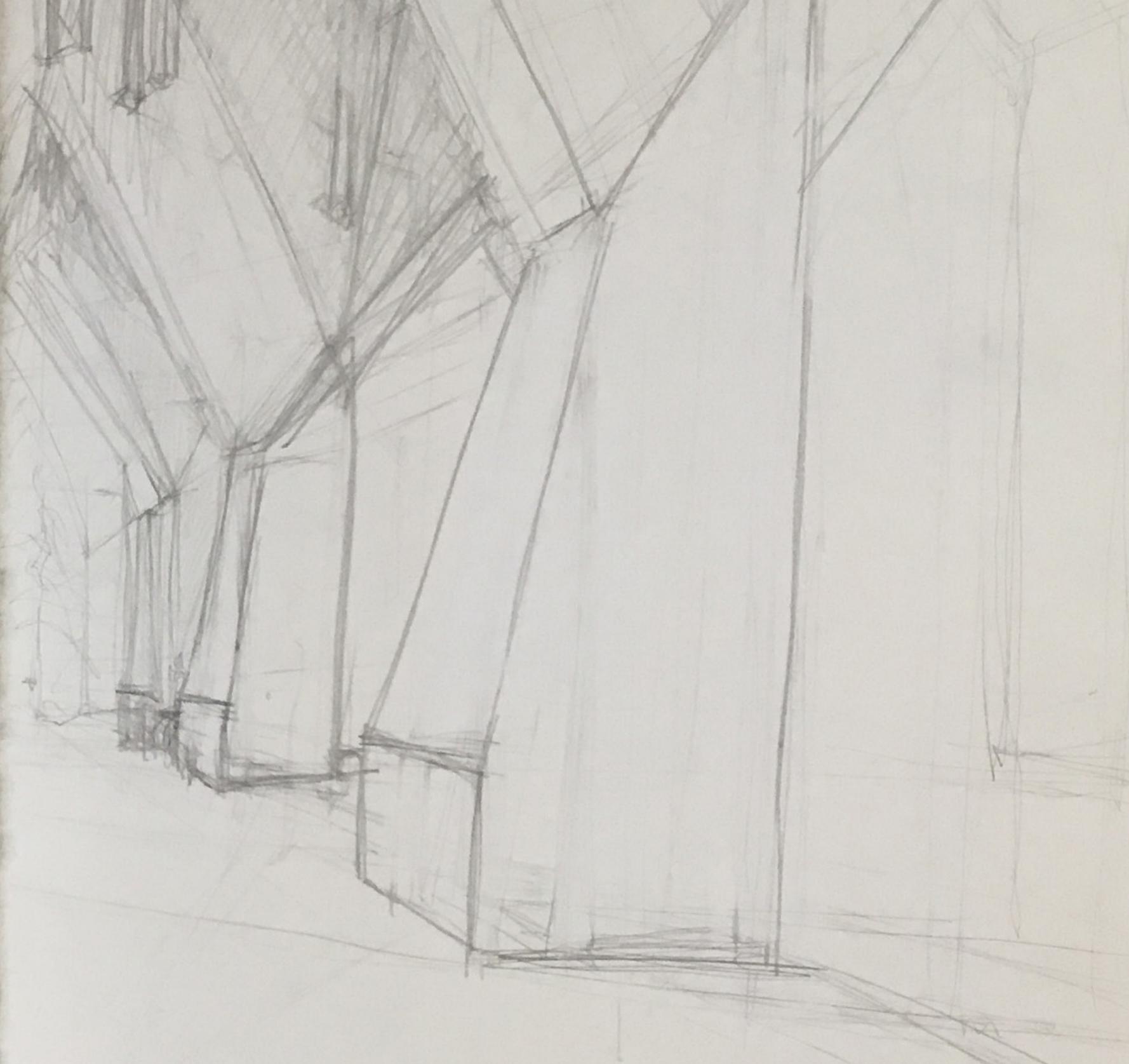
“Monumentality in architecture may be defined as a quality, a spiritual quality inherent in a structure which conveys the feeling of its eternity, that it cannot be added to or changed.

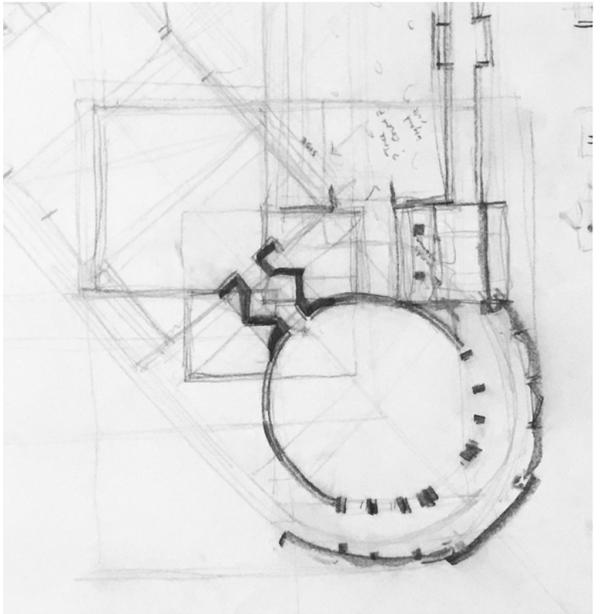
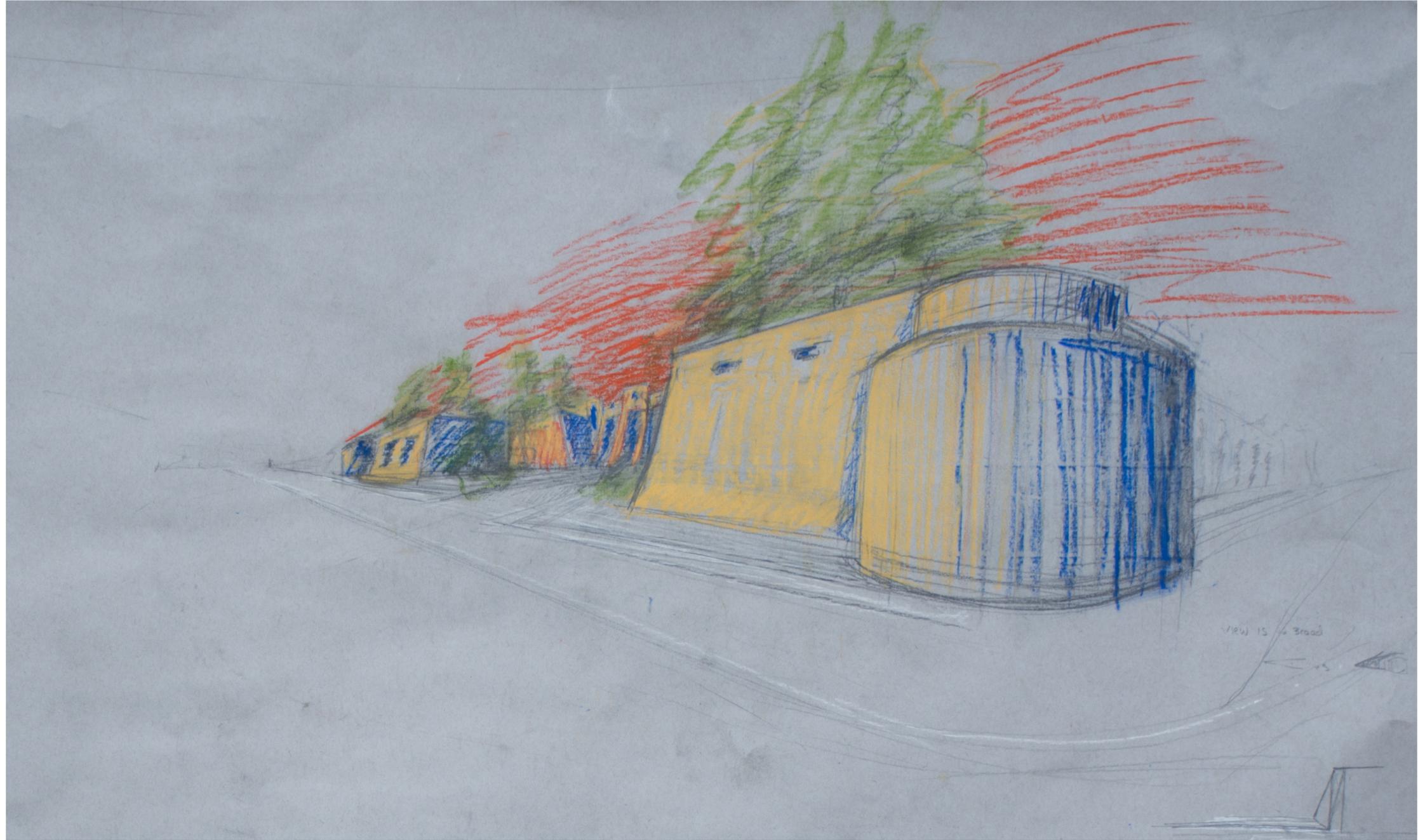
What event or philosophy shall give rise to a will to commemorate its imprint on our civilization? What effect would such forces have on our architecture?

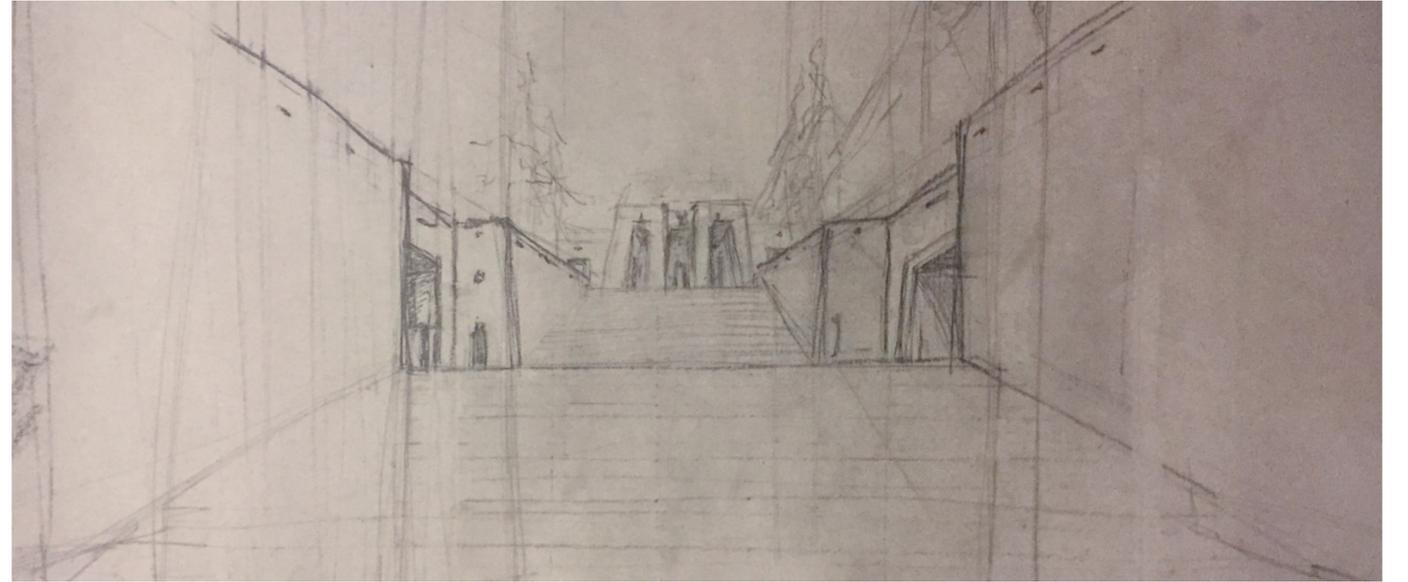
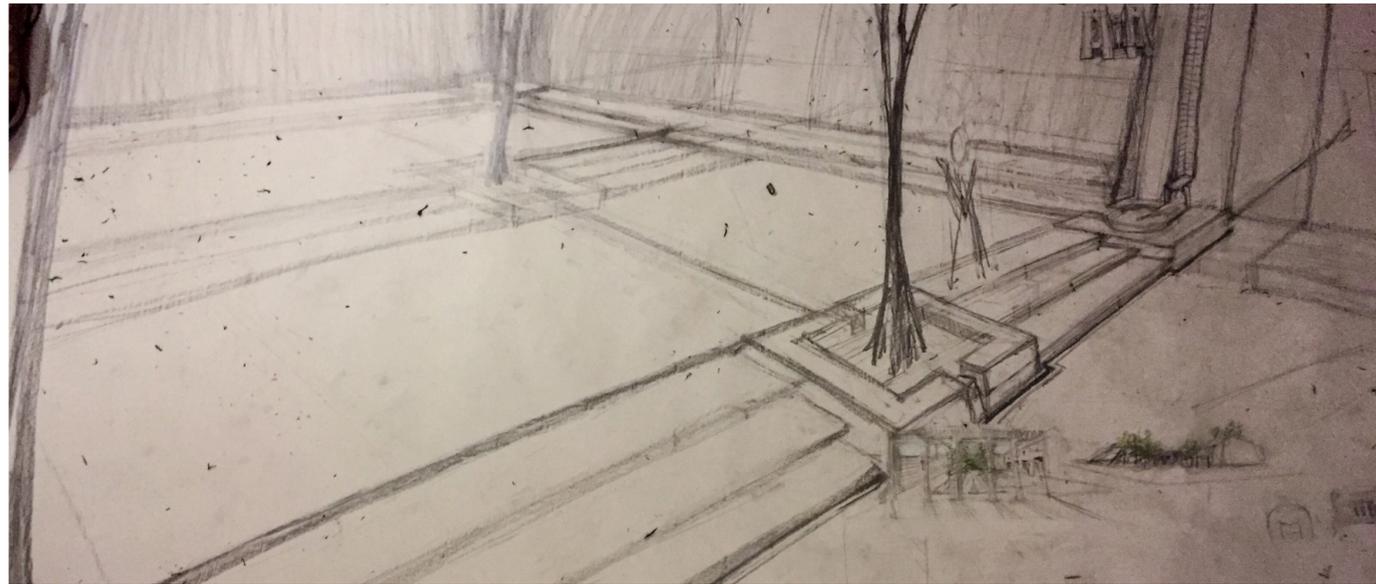
... our architectural monuments indicate a striving for structural perfection which has contributed in great part to their impressiveness, clarity of form and logical scale. This structural concept, derived from earlier and cruder theories, gave birth to magnificent variations in the attempts to attain... to enclose space in a more generous, far simpler way..”

Monumentality is enigmatic.”

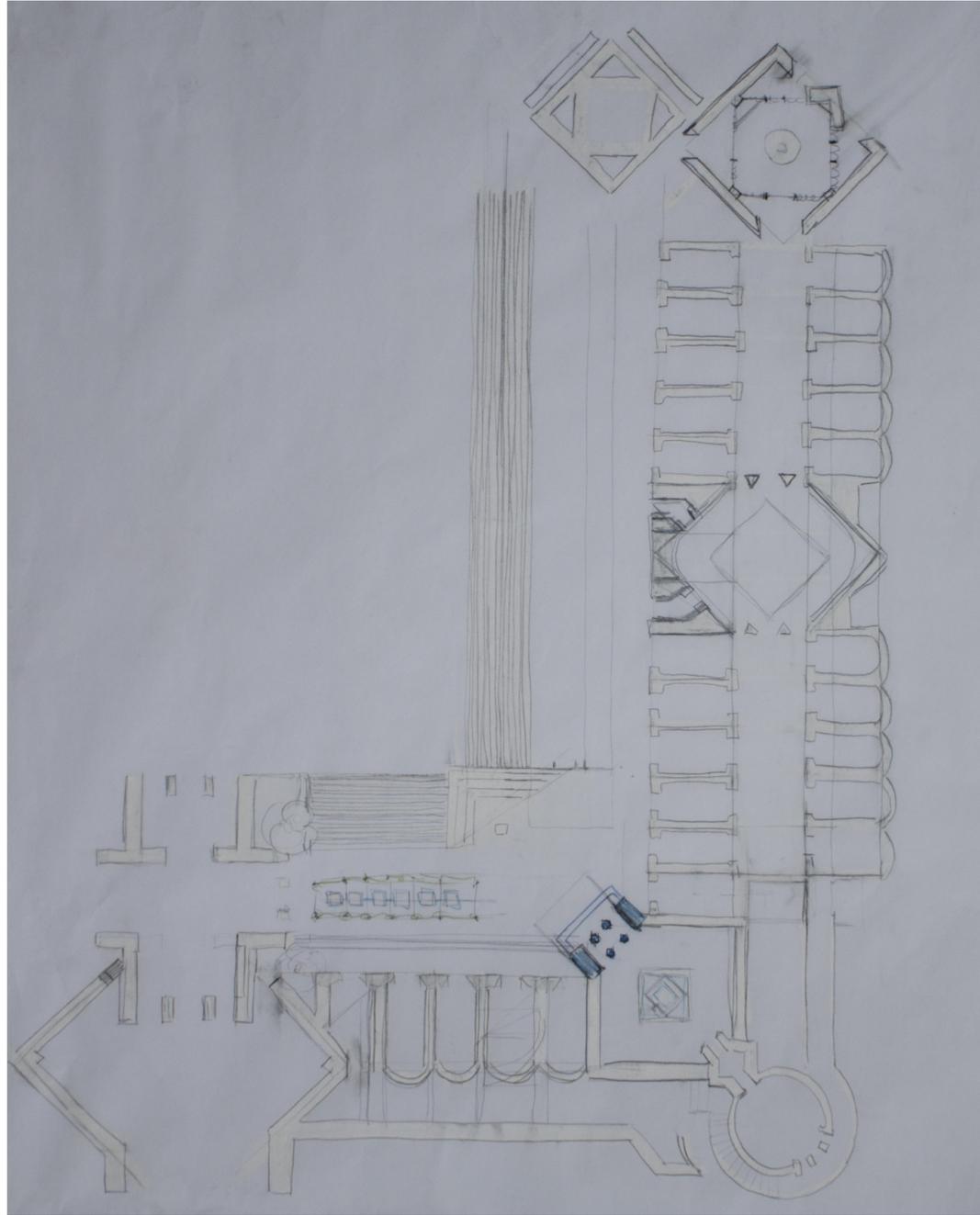
- Louis I. Kahn, Monumentality, 1955

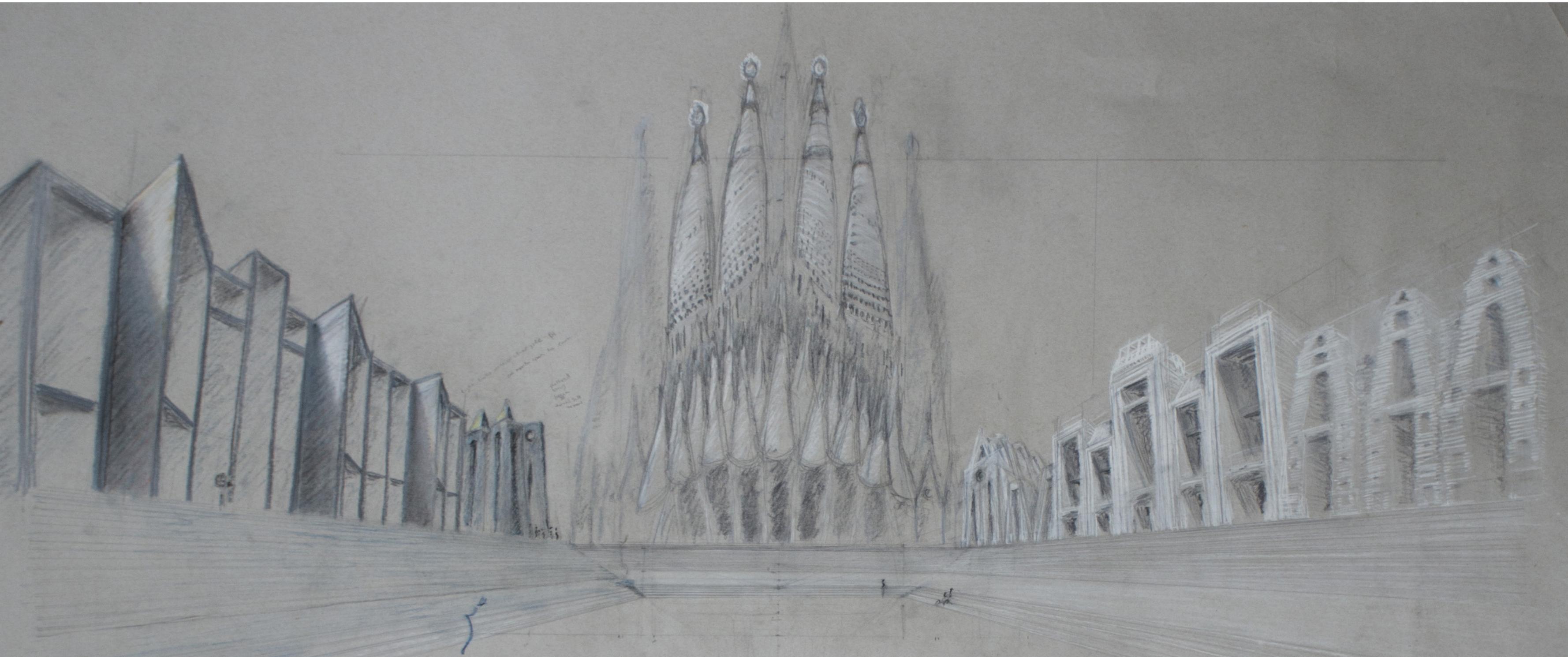


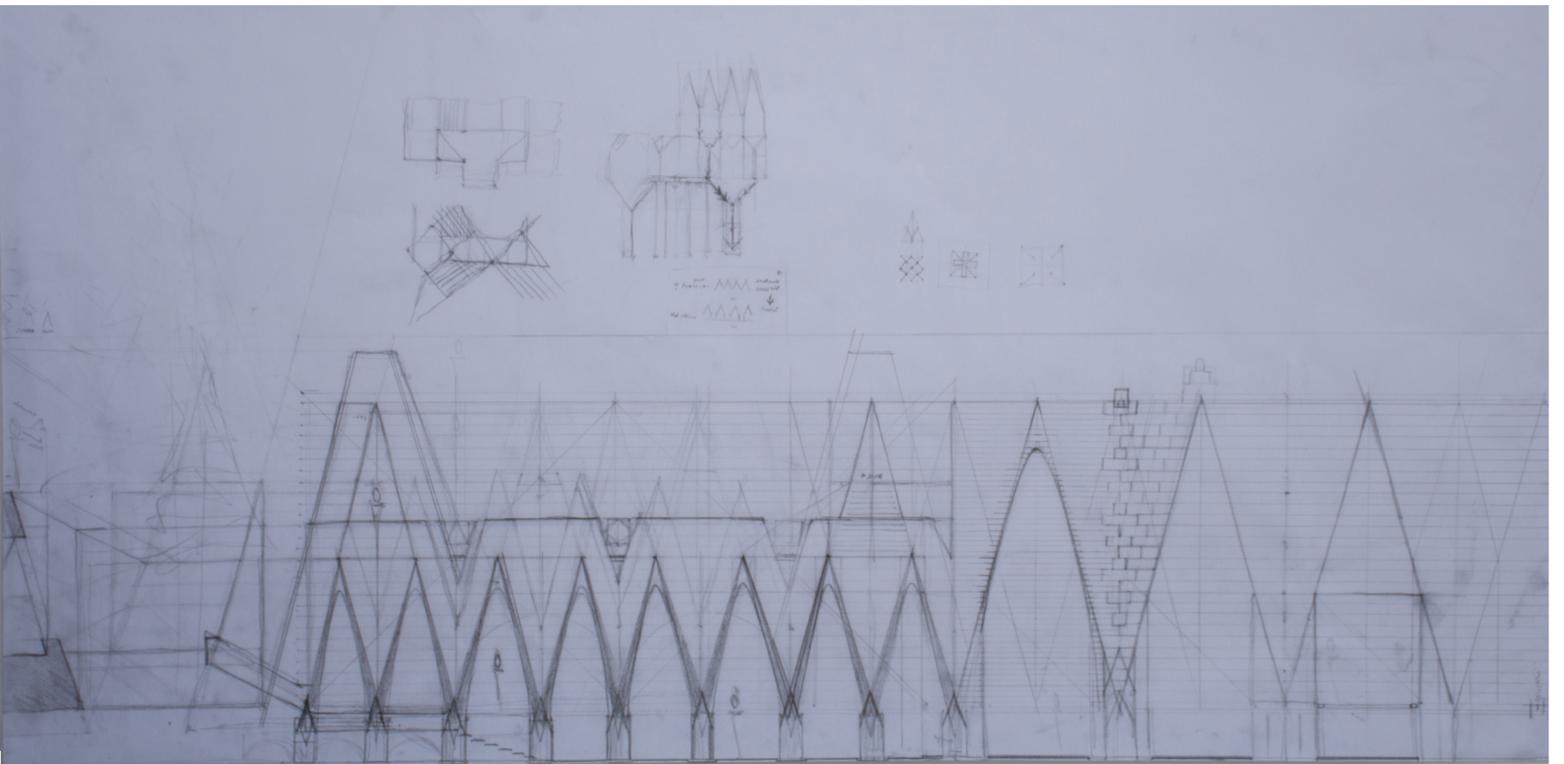
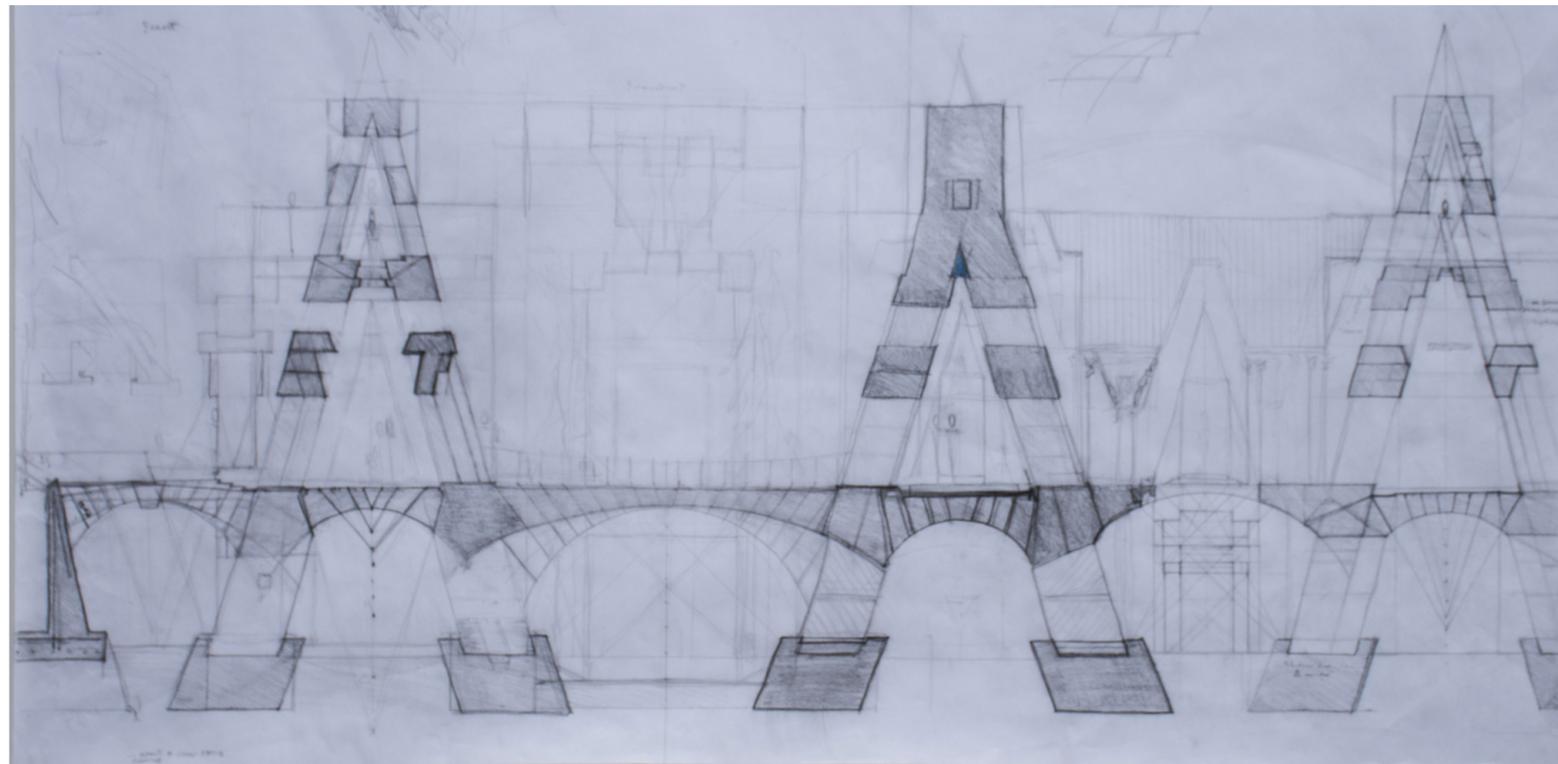
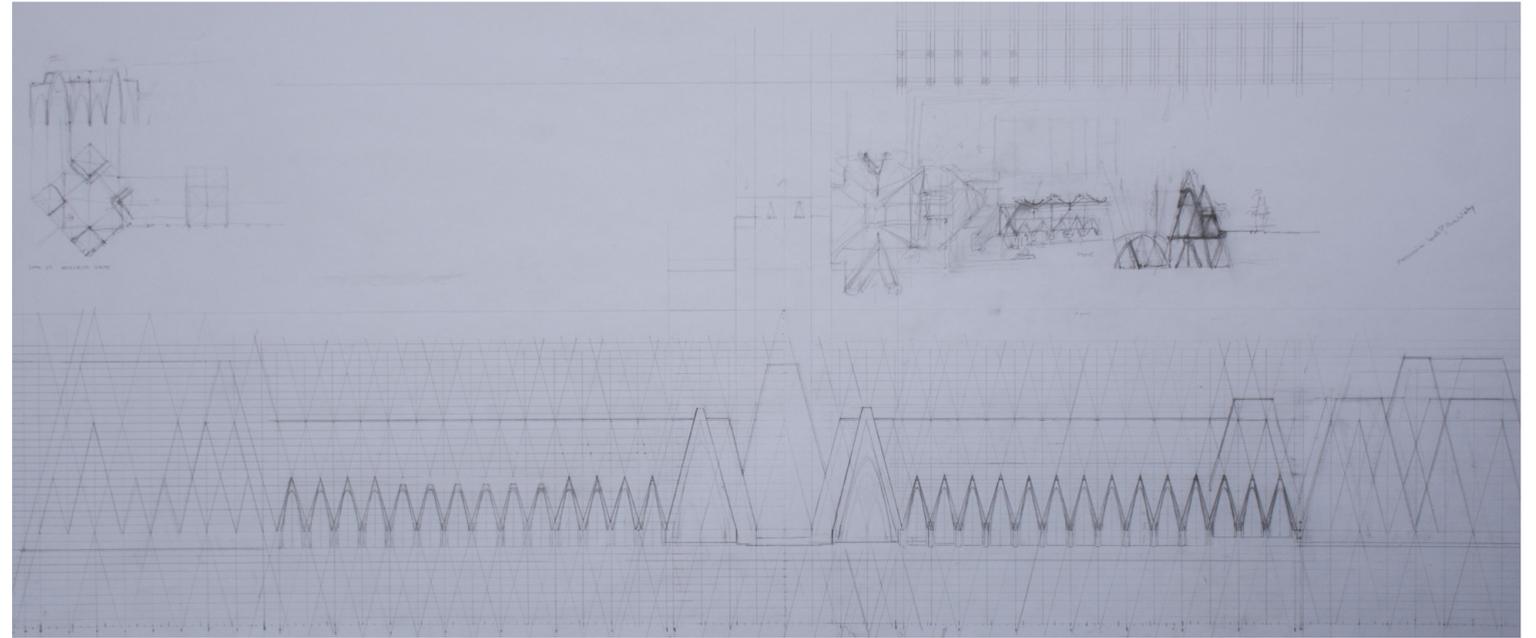
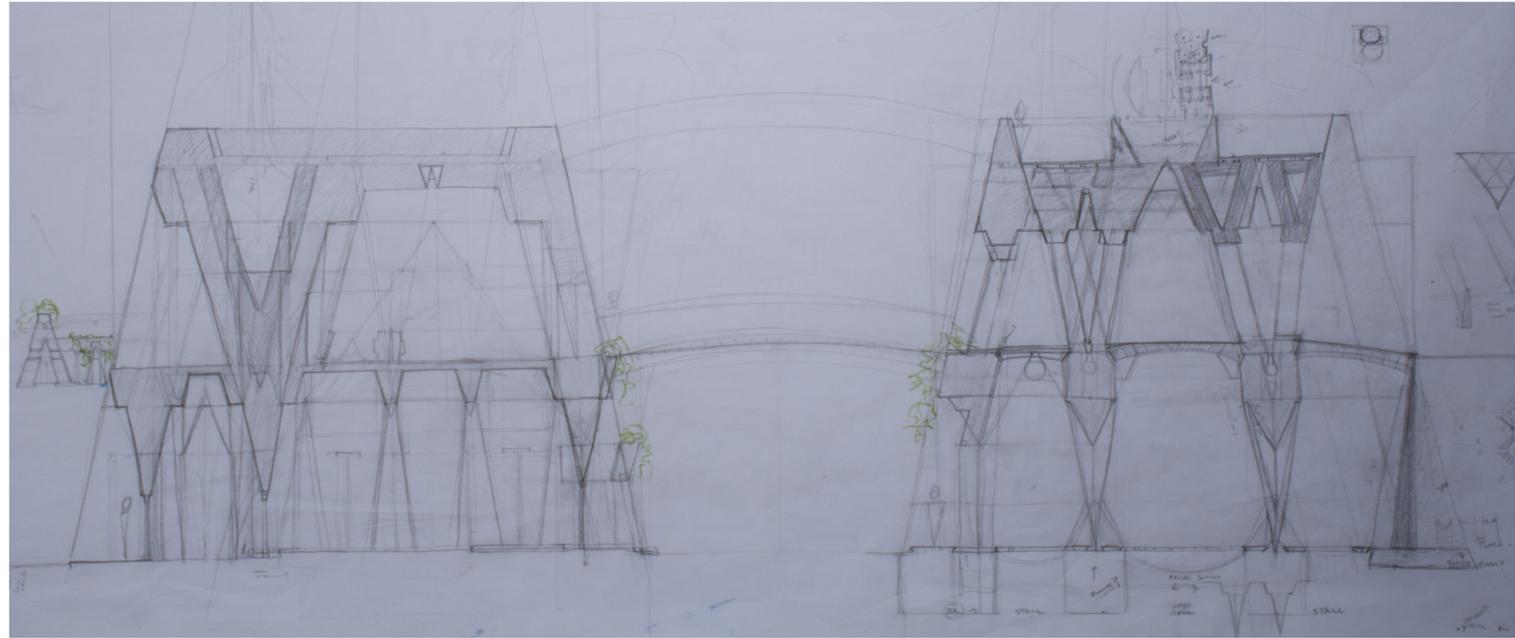












An Offering

As an offering to Architecture,

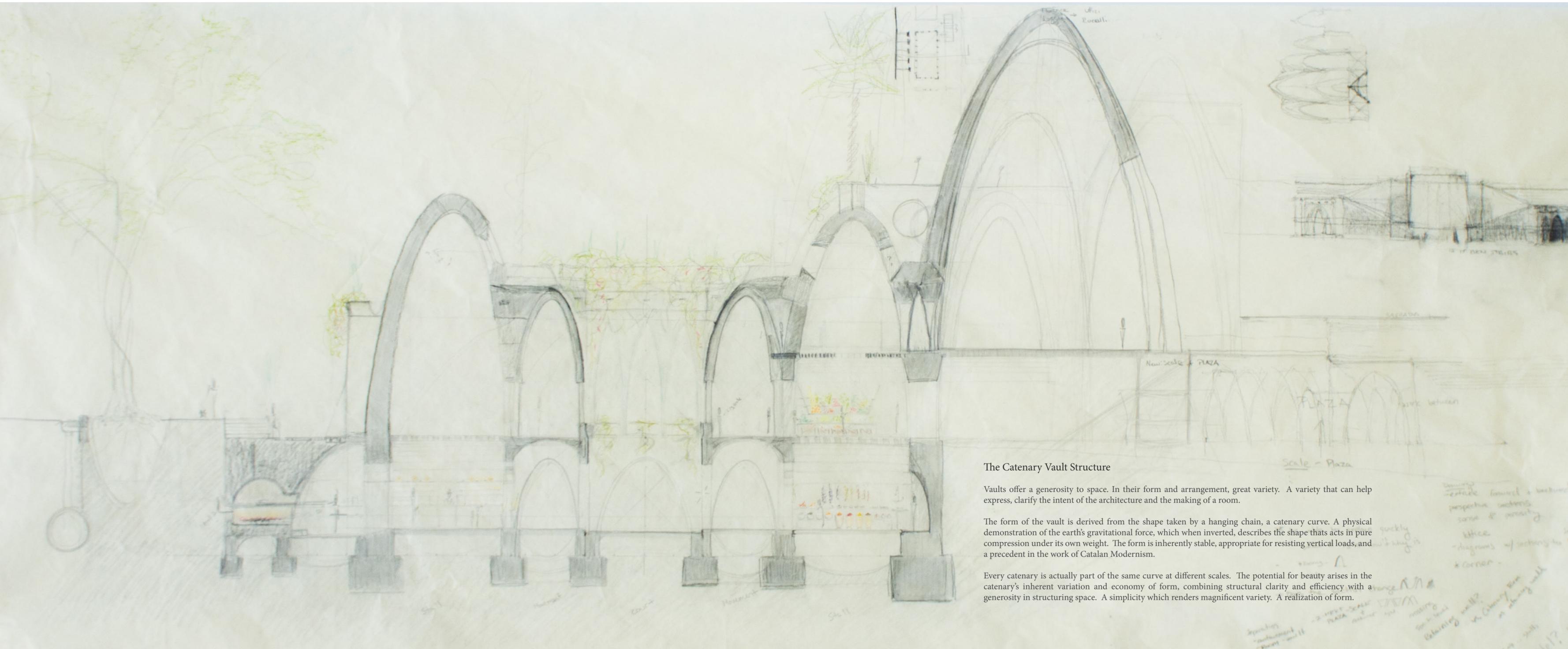
*the Room, a beginning point
Monumentality, the spiritual quality*

*To cultivate a sense of Wonder
to re-imagine and to demonstrate that which is vital
a renewal for the Institutions of Man*

*In search of Structure,
translated through a Material-Order,
finding Correspondence to Form*

An Architecture of meaningful separation and connection.

(a meditation on writings of Louis I. Kahn, Ralph Waldo Emerson, Pier Vittorio Aureli.)

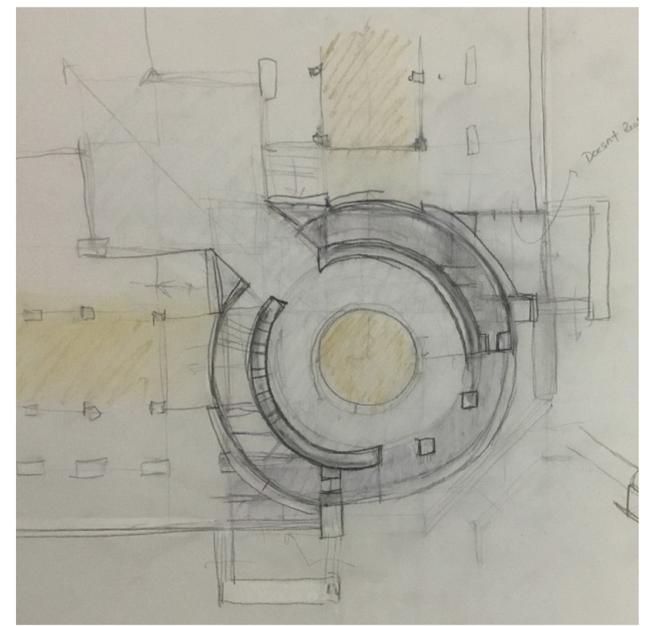
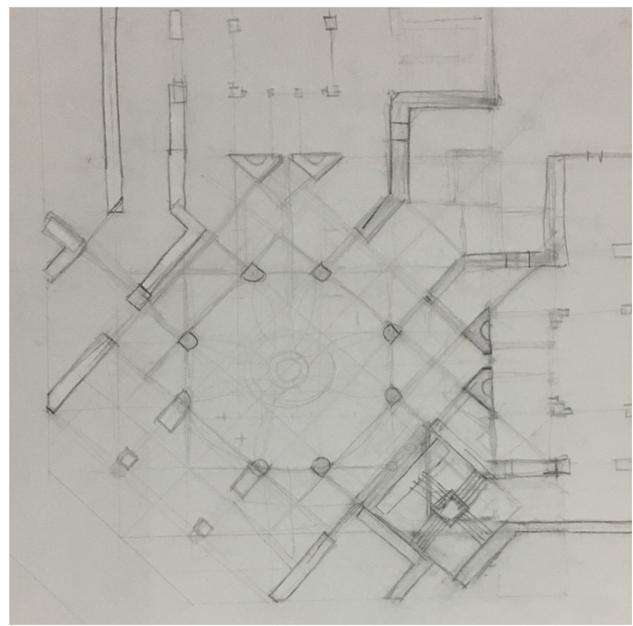
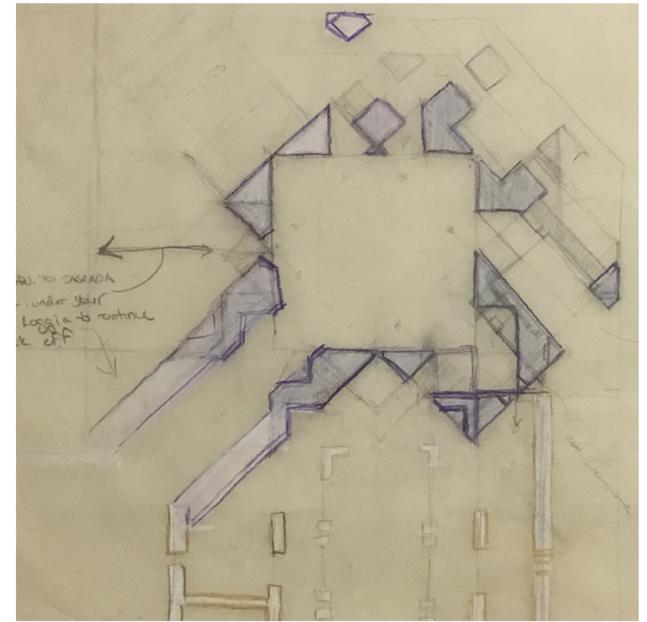
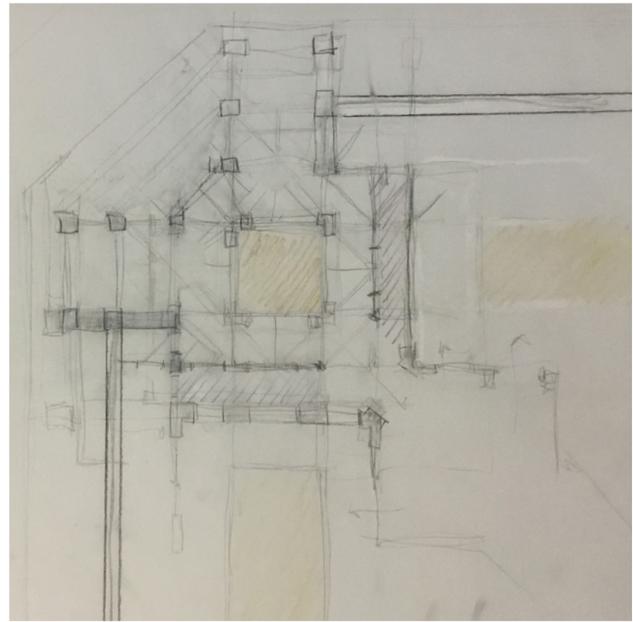
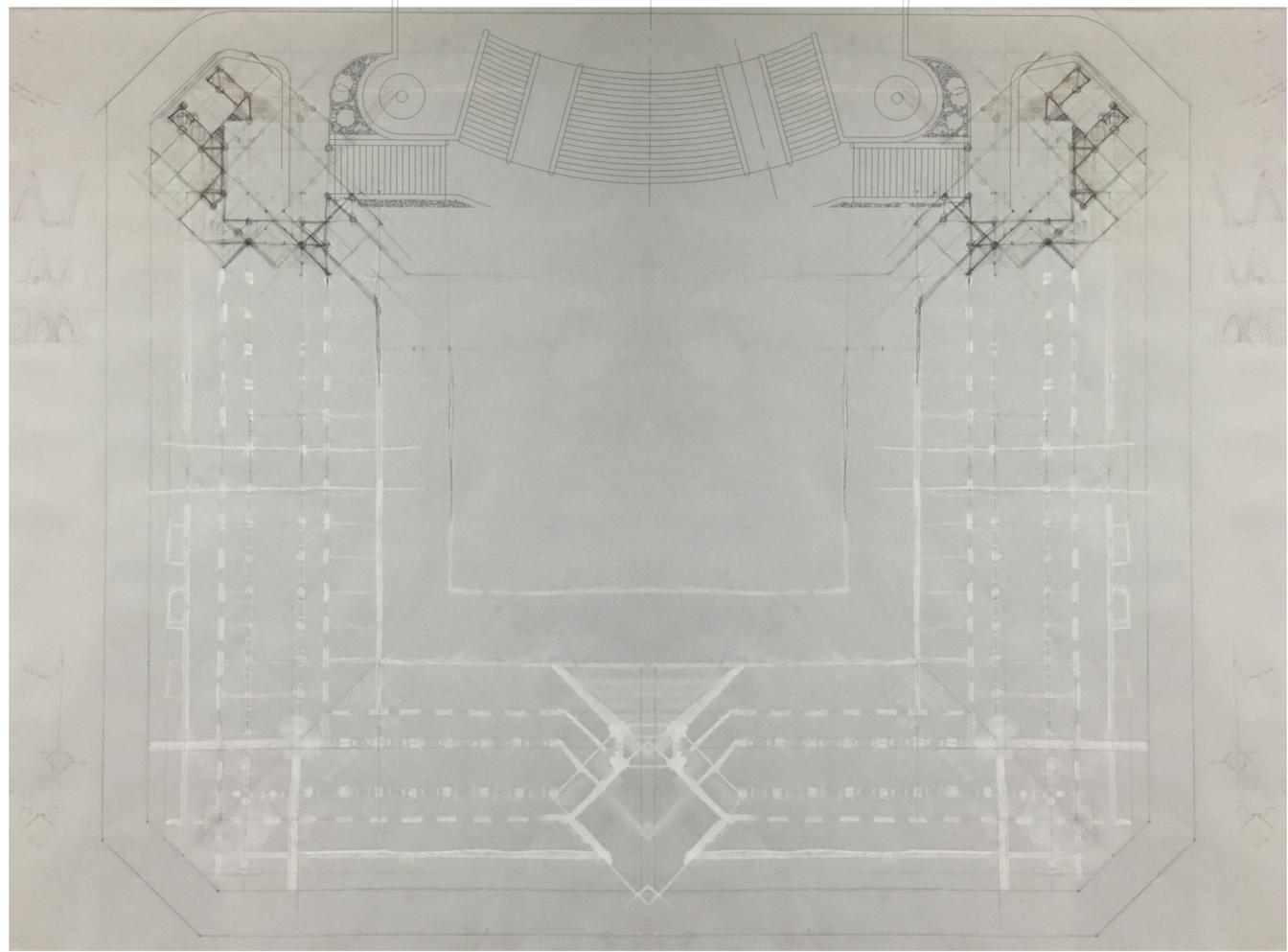
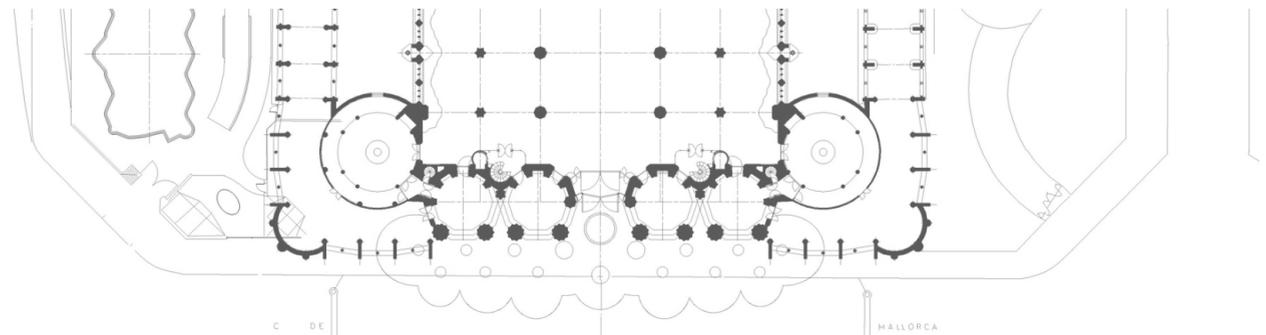


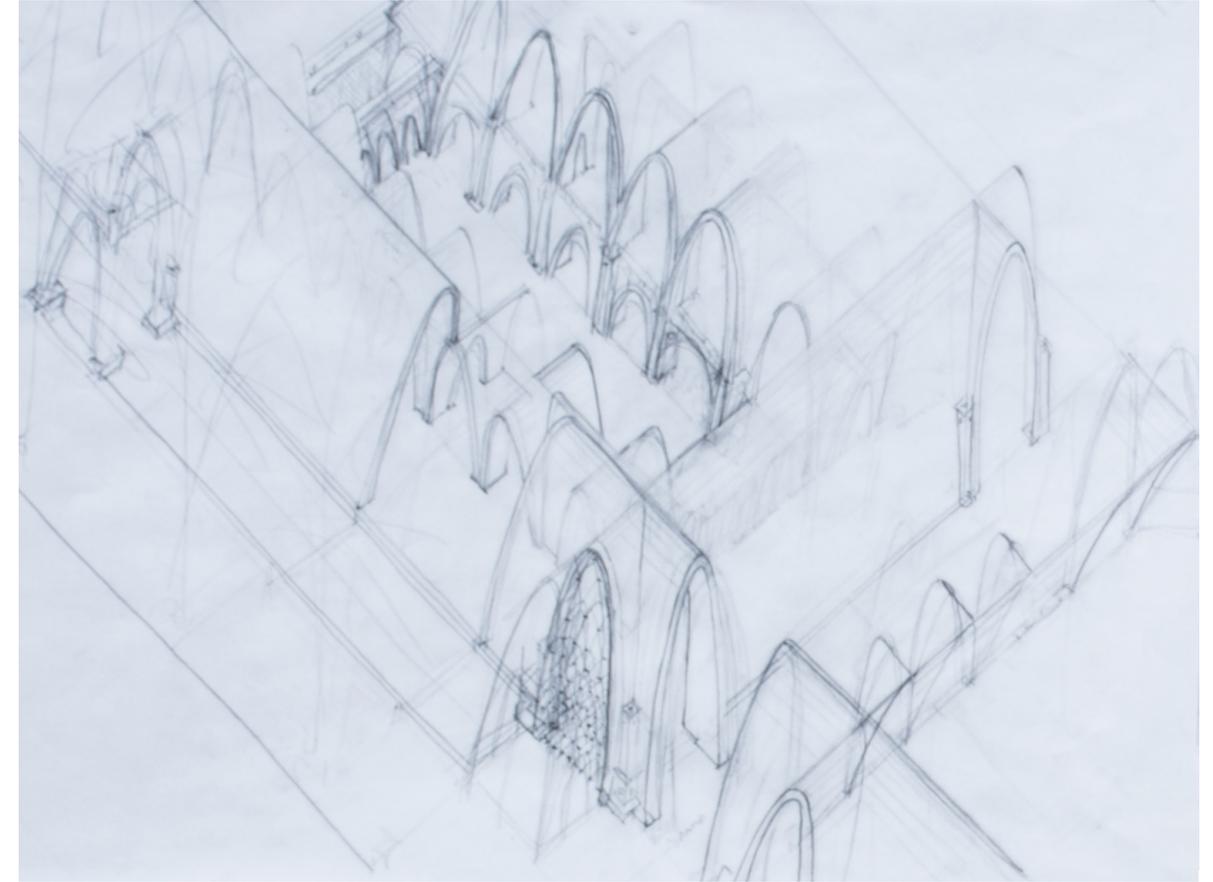
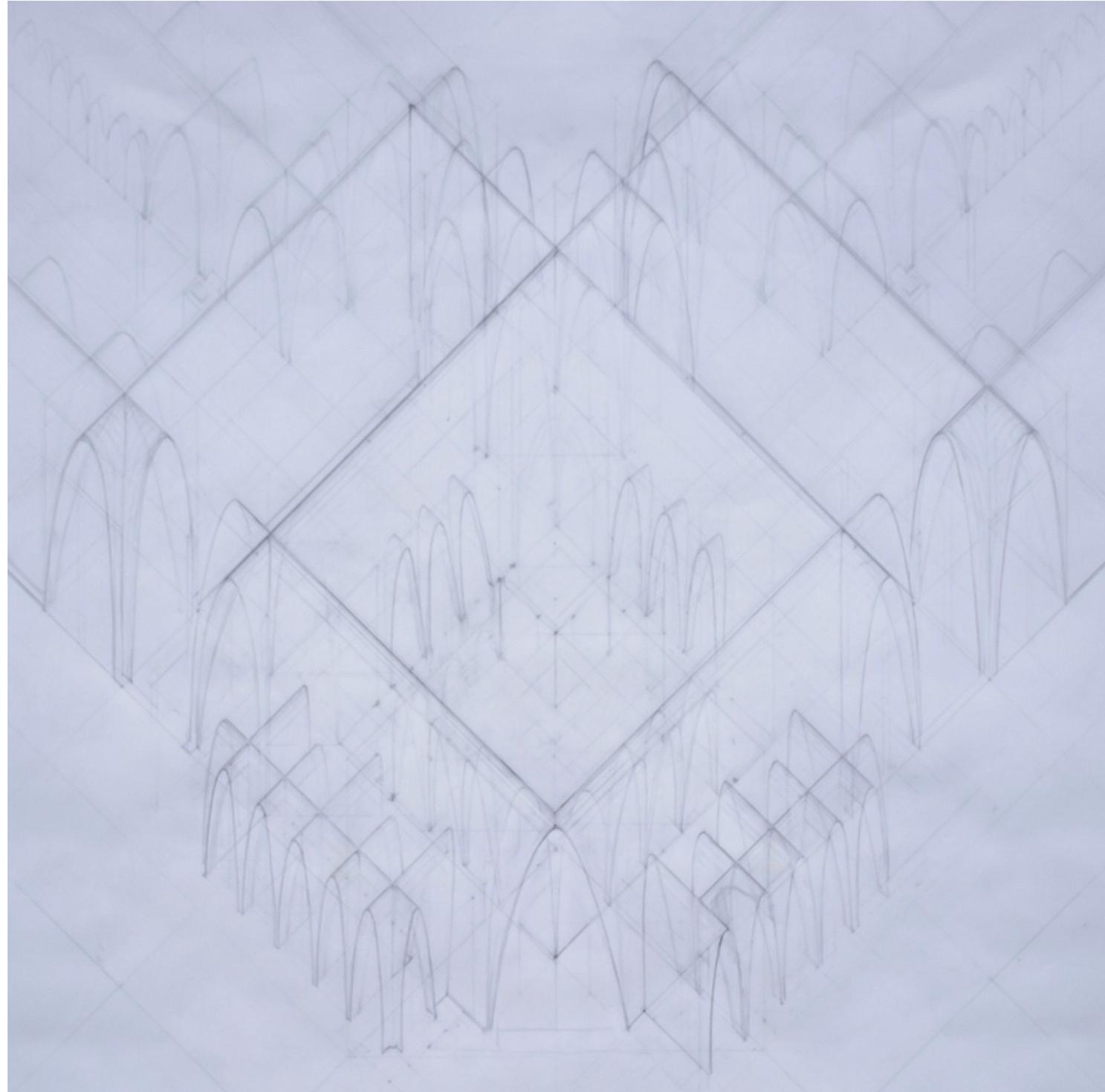
The Catenary Vault Structure

Vaults offer a generosity to space. In their form and arrangement, great variety. A variety that can help express, clarify the intent of the architecture and the making of a room.

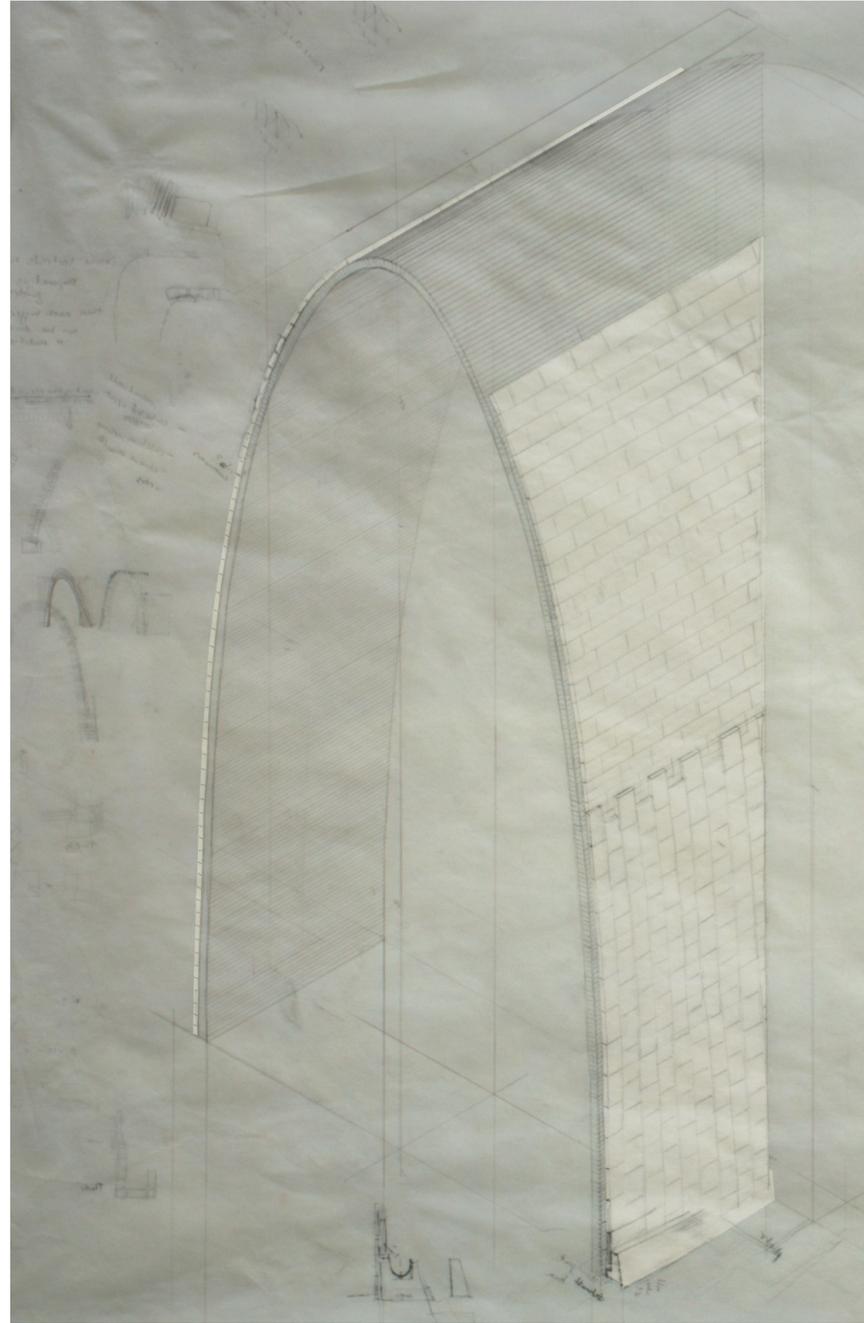
The form of the vault is derived from the shape taken by a hanging chain, a catenary curve. A physical demonstration of the earth's gravitational force, which when inverted, describes the shape that acts in pure compression under its own weight. The form is inherently stable, appropriate for resisting vertical loads, and a precedent in the work of Catalan Modernism.

Every catenary is actually part of the same curve at different scales. The potential for beauty arises in the catenary's inherent variation and economy of form, combining structural clarity and efficiency with a generosity in structuring space. A simplicity which renders magnificent variety. A realization of form.









A System of Construction

Forms develop from structural requirements, where the desires of Form are met by the possibilities of Structure, with economy, propriety, durability and beauty. A material means of constructing the catenary vault structure is envisioned, with an order that maintains a strong relationship between form and structure, a measure of the absolute.

This marriage of Form+Structure to a material-order, creates a higher order, a logic that limits and begins to suggest its own development, a measure of control for what it can and cannot be.

Catalan Vaulting

Catalan vaulting is a local invention, a craft developed for the construction of lightweight masonry vaults. They are built up with multiple layers of masonry tiles, which act in cohesive layers to resist loads within its surface. A great advantage to this system of vaulting is that it requires minimal or no formwork during construction. Surfaces of single curvature (left) become self-supported with additional layers, while surfaces of double curvature (left) are completely self-supported during construction.

The Undulating Vault

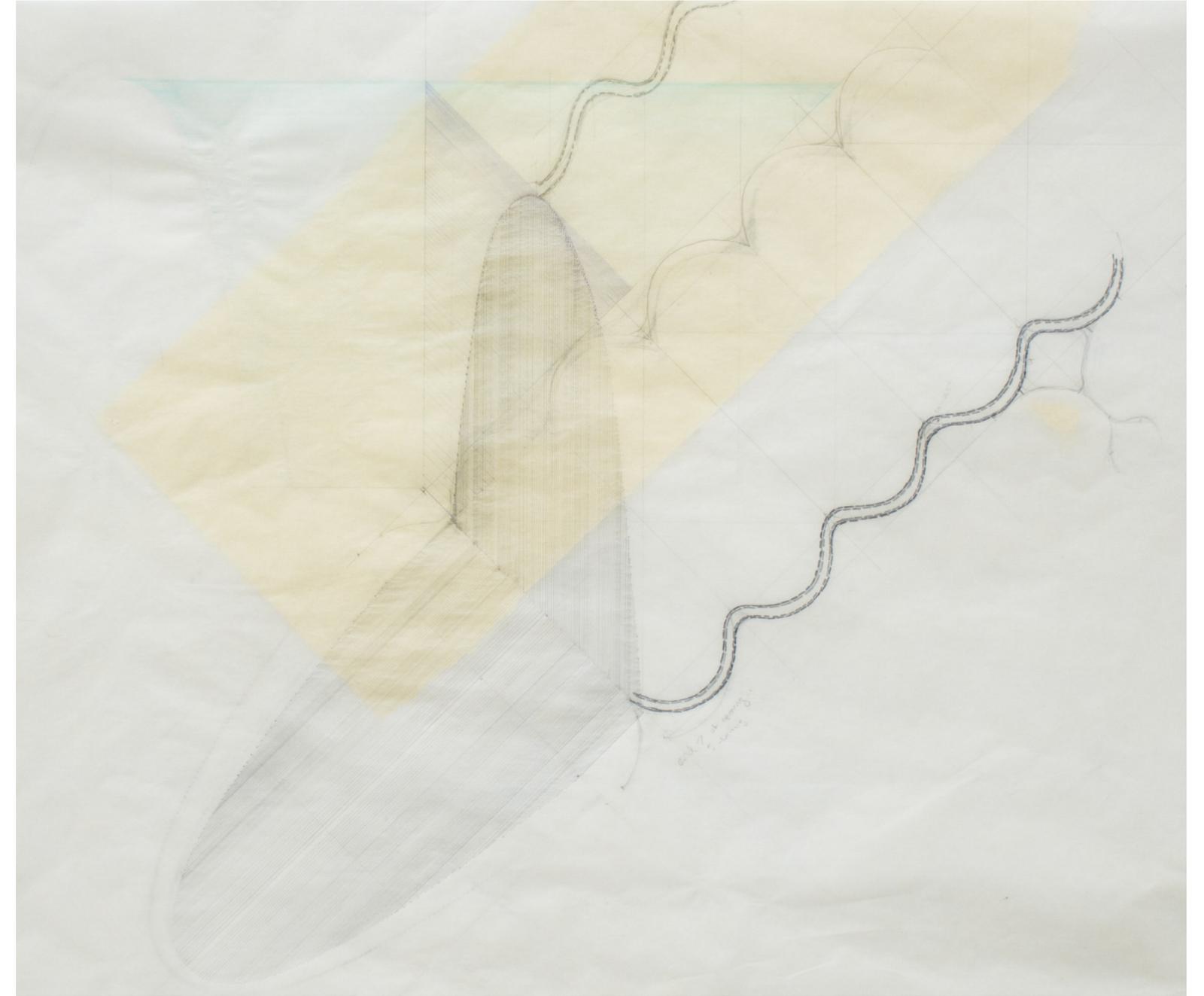
To construct the vault structure and display the catenary form, appropriate stiffness is required to resist wind and seismic loads within the surface of the vault. Undulations in the surface of the vault increase its stiffness, while decreasing the amount of material needed, as in a folded plate.

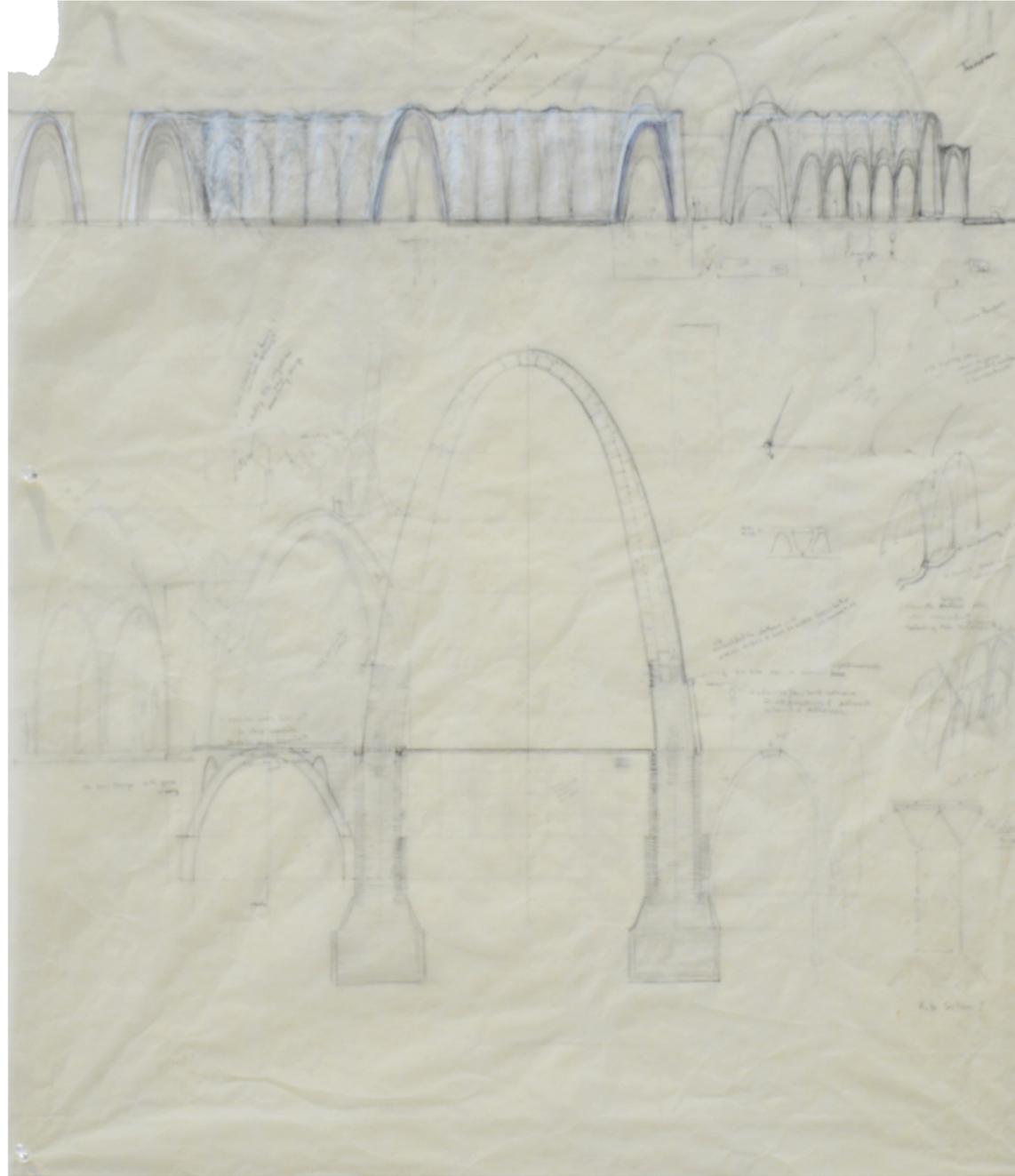
Every cross section of the undulating vault is catenary, an appropriate form for resisting vertical loads, the undulations stiffen the vault to resist lateral loads.

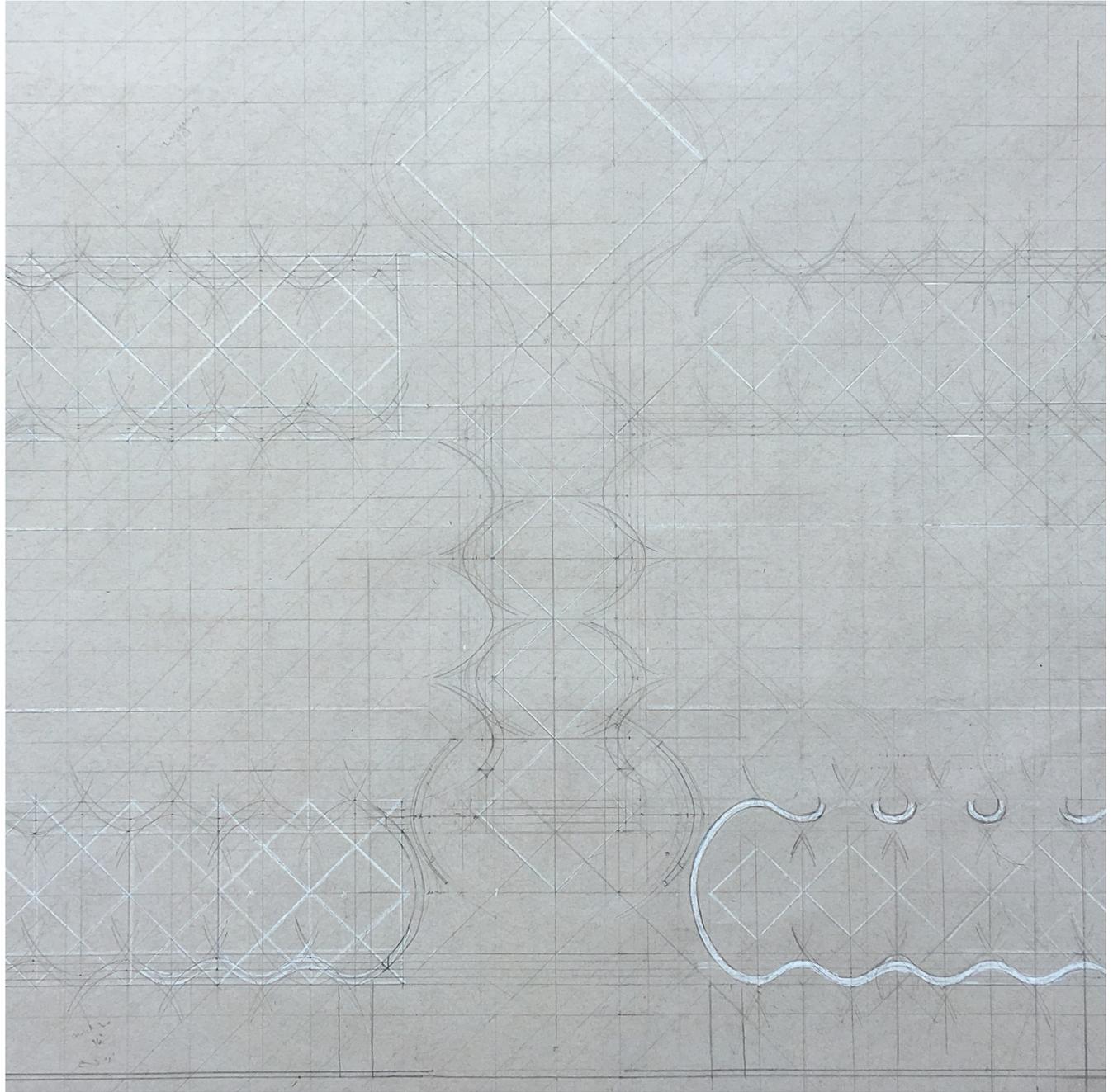
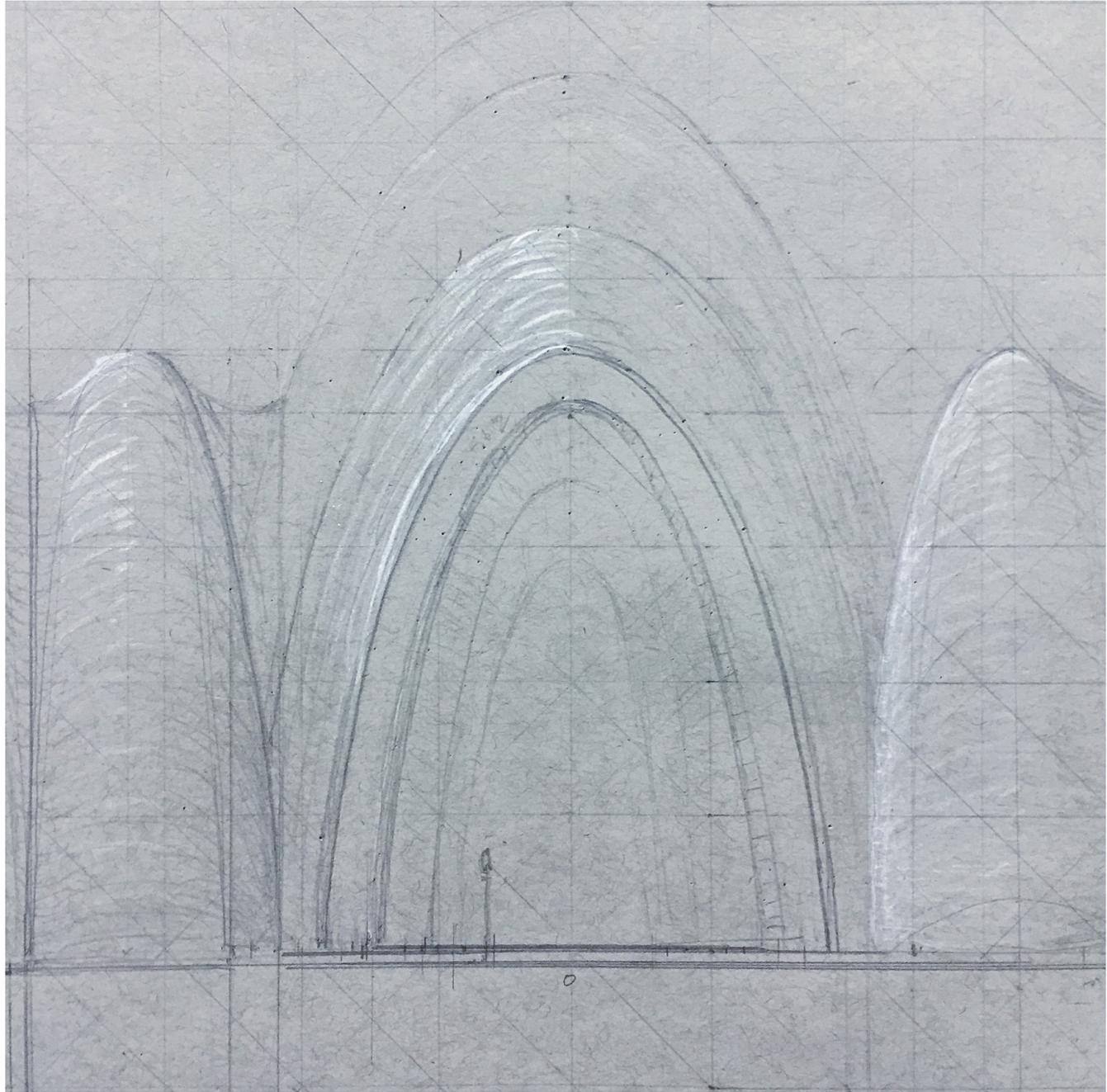
The shape of the undulation is limited by the possibilities of opposing catenary curves intersecting tangentially. While variation in the number and size of the undulations is determined by, while simultaneously being an expression of, the structural requirements and the making of rooms.

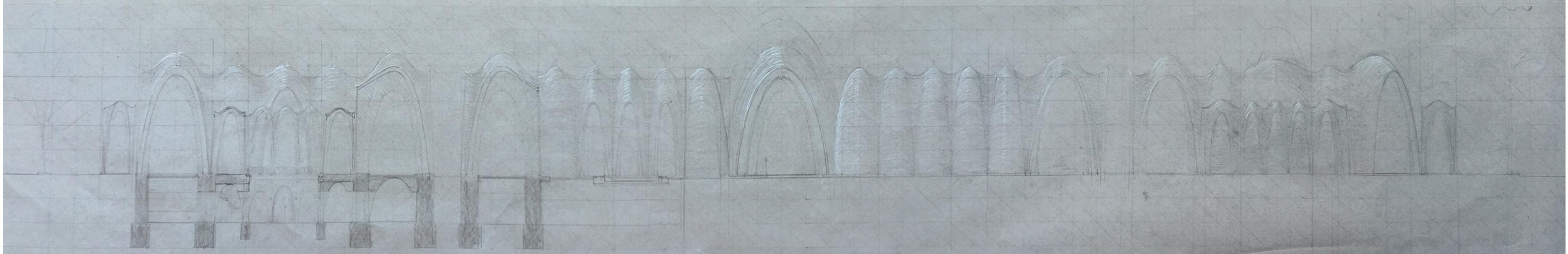
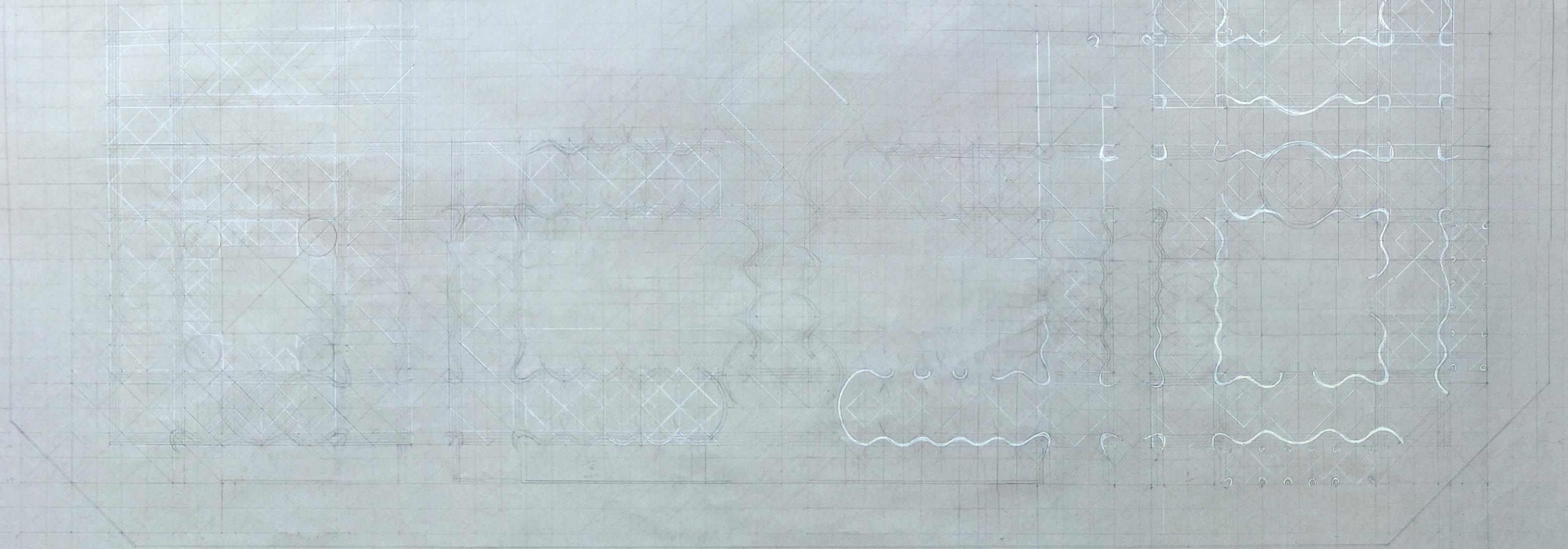
A Double Shell

The addition of a second exterior vault separates and protects the interior structure from the climate, increasing its durability and longevity. Each is structurally separate, together acting as a double-shell, allowing for differences in the inner and out vault curvatures, while aiding in strategies for natural ventilation and providing a space between for services.









Description of Architecture

As an offering to Architecture.

the Room, a beginning point

Monumentality, the spiritual quality

To cultivate a sense of Wonder

to re-imagine and to demonstrate that which is vital

a renewal for the Institutions of Man

In search of Structure,

translated through a Material-Order,

finding Correspondence to Form

An Architecture of meaningful separation and connection.

(a meditation on writings of Louis I. Kahn, Ralph Waldo Emerson, Pier Vittorio Aureli.)

The market surrounds, holds and articulates, creating the enclosure, making clear the space of the plaza. The relationships between the church and market can sense the desire for the plaza to be. The plaza is the dialectic between the church and market, within the context of the city.

The plaza is the sacred space. The way one enters becomes part of the ritual: passing through a gate, and up, within vaults which conceal and then reveal Sagrada Familia, a plaza and market which frame the church, enclosing the space of the plaza, heightening the effect of the architecture, an omnipresence of the church facade within the space of the plaza, and a loggia providing protection from the aura of the church, in recognition of this intensity on our being.

The market vaults act to separate while providing connection. Separation and containment, which give structure to the space of the plaza, providing an enclosure which separates the sacred space of the plaza from the daily life of the city (sacred and profane lives, woven into the fabric of the city).

The way one moves through and up to the plaza, is distinct, but related to the market; views through the market may illicit curiosity to discover layers which reveal.

As an invitation, to explore and discover the relationship between the market, the plaza, the church, and ultimately to the city. The garden seen through and above the vaults, is an invitation to discover, one of curiosity and wonder, suggesting a choreography to ones movements.

Vaults which hide and reveal, through layers of varying containment. Separation and connection....One must choose. It begins with the act of choice, whether to enter or not. The experience of entering, the discovery of the architecture's spatial variety, light with shadow, which separates to give rightful room for housing the actives of man, distinct from the sacred space of the plaza. Architecture which sets up the potential for events, activities vital to man.

An architecture of meaningful separation and connection.

Architecture Claims

What is Architecture?

What is Architecture's role in the City?

What is the Nature of Architecture?

ARCHITECTURAL FORM LIMITS and SEPARATES so that it may give scale to space. By containing and revealing.

Architecture can Inspire Ritual

Architecture is self serving, the existence will to, the desire to house the activities of man in a way which commemorates life. (Monumentality) An architecture which [reclaims] is Vital

Commemorating the events of life, [awareness, memory] Architecture is Autonomous and desires to be Absolute

Architecture suggests an order to life's activities [activities of life]

Architecture orders

Architecture confronts, asks and proposes a new way to live, constituting the idea of a city (Aureli)

Through separation and confrontation, architecture creates agonism, producing a conscious act of choice, to make decisions

++Spatial relationships and material, when or in which the construction has its own life force, produces an order which corresponds to the form of life or activities of man

++Correspondence between the desire to be [Form] and the physical [Design or Structure + Material Order] creates resonance, and this is a measure of the success at obtaining the quality of the immeasurable spirit, the spirit or existence will of the things without too great diminishment, this is where the ABSOLUTE resides

Geometry in drawings describe relationships, spatial, formal, and ideal

That which obtains the absolute, serves itself and becomes autonomous

Architecture is Autonomous

My architecture is an offering to Architecture, Form which is telling of human nature

Order and Form [excerpts]

by Louis I. Kahn, *originally published in Perspecta, Vol. 3 MIT Press, 1955.*

Order is

Form emerges out of a system of construction

Growth is a construction

In order is creative force

Order supports integration

From what the space wants to be the unfamiliar may be revealed to the architect.

From order he will derive creative force and power of self criticism to give form to this unfamiliar.

Beauty will evolve.

Images

cover undulating market section-elevation sketch
ii market-plaza entrance study, section perspective with partial plan, along interior market street and through entrance hall, view looking through catenary vaulted hall toward plaza forecourt, finding connection between margins - pencil on paper

The City

2 *the city as a walled garden*, (rational) form diagram, silkscreen on paper
3 *writing with ruins*, acrylic on board - imagining ruins as a testament to the city
4 *led by light and shadow*, atmospheric perspective, graphite and chalk on paper, 36 x 52 in.
5 *a world worth living for*, vignette of inner arcade with radial plan and section superimposed (upper-right), charcoal and chalk on trace
6 perspective with superimposed sketch plan, view from colonnade into courtyard opening to a plaza, pastel, graphite, marker on paper
7 perspectives of axial market: interior street, gallery and court - pencil and pastel on paper
8 plan, section and elevations of axial market, pencil and marker on paper - market stalls create interior market street
9-10 upper row - study model - axial market
lower row - study model - market of courts
11 section and interior elevation of great-hall market, charcoal and pastel on paper
12 (left) plan study of great-hall market with section and perspective sketch of court
(right) plan of great-hall market with section perspective of stall (above), and section of market hall (below), pencil on paper
13-14 longitudinal section and plan of market-hall-plaza, charcoal, pastel and marker on paper

Monumentality

15-16 gate studies, pencil on paper - sensing the monumental
17-18 perspective sketch, two-level market court, view from the upper gallery through monolithic and corbeled stone arcade, pencil on paper
19 exterior perspective of market, looking west, graphite and pastel on paper
20 perspective, giving a glimpse of the garden court to indicate passage, view of market gateway from city street, pastel on paper
partial plan of market, corner entrance hall, graphite on paper
21 perspective of main entrance gate and tree court, graphite and pastel on paper
vignette of tree court showing hydrology and paving detail, graphite on paper - architecture for the movement of water, an architecture which builds the site, a marriage with the landscape
22 perspective view of grand stair, from main gate leading up to the plaza, graphite on paper
perspective view of market entrance from grand stair, looking through trabeated gallery to open-air market court, pastel on paper
23-24 perspective of market-plaza, placed oblique to city block, view from plaza corner gateway looking west to Sagrada Familia, pencil and pastel on paper
25-26 plan studies for market-plaza, orthogonal to city block, pencil and pastel on paper
27-28 perspective of market-plaza, from plaza side of main entrance gate looking northwest to Sagrada Familia's Gloria façade, pencil and pastel on paper - enclosure defines the space of the plaza
29 section studies of market, pencil on vellum - a search for correspondence between form and material construction
30 southeast elevation study of market with partial plan, pencil on vellum
section study through market-plaza, pencil on vellum - realization of catenary structure

Images *continued*

An Offering

31-32 detail of transverse section, view of market, pencil, pastel, marker on trace
33-34 transverse section through market street and plaza loggia, pencil, pastel, marker and crayon on trace
35 longitudinal section and elevation of market street at pedestrian bridge, pencil and pastel on trace
36 detail of transverse section, view of market street/court, two level gallery and stall vaults, pencil, pastel and marker and crayon on trace
37 site plan of market-plaza with superimposed wall-density diagram, pencil and chalk on vellum
38 sketch plan studies for corner entrance, pencil, graphite and pastel on layered trace
39 axonometric of corner entrance, turning the corner, the groin vault develops by crossing catenary barrel vaults, pencil on vellum
40 axonometric of market street+court, cutaway section through barrel vault of market hall, pencil on vellum - the desire for connection to the plaza is expressed between barrel vaults of the market and corner entrance hall; the margin becomes a 'pylon' court, setting a tone to the act of discovery as the plaza is contained so that it may be, revealed, the act of passage becomes a personal ritual
41 longitudinal section perspective through market hall and 'pylon' entrance court, looking toward street entrance of pylon court, pencil on vellum - connection to the plaza is found in the space between two barrel vaults
42 perspective view of market vaults and glimpse of garden court, looking down market hall from street level groin vault entrance, pencil and pastel on vellum
43 axonometric cutaway, Catalan vault construction for catenary barrel vault, assembly in three superimposed layers - pencil on vellum
44 axonometric section of undulating catenary vault, double-shell structure - pencil and colored pencil on layered trace - construction of undulating vault described by three sections, taken at vault springing, apex of vault and transverse to vault (all describe catenary curves)
45 section study of double-shell catenary vault and street elevation of market with undulating vaults - pencil and pastel on trace
46 perspective view of undulating market vaults, view of open-air market hall and garden court - pencil and pastel on vellum - the undulations of the vault suggest the space of the stall, vault crossings correspond to these undulations, providing structure and light, making (a) room for the event
47 elevation view of southeast entrance gateway to plaza, detail of southeast elevation (48), pencil and white charcoal on paper
48 detail of plan (48), southeast entrance gateway and open-air market vaults
49-50 plan and southeast elevation of market-plaza, with partial section through the south corner market entrance hall and southeast open-air market court, pencil and white charcoal on paper, [80 x 80 in]

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