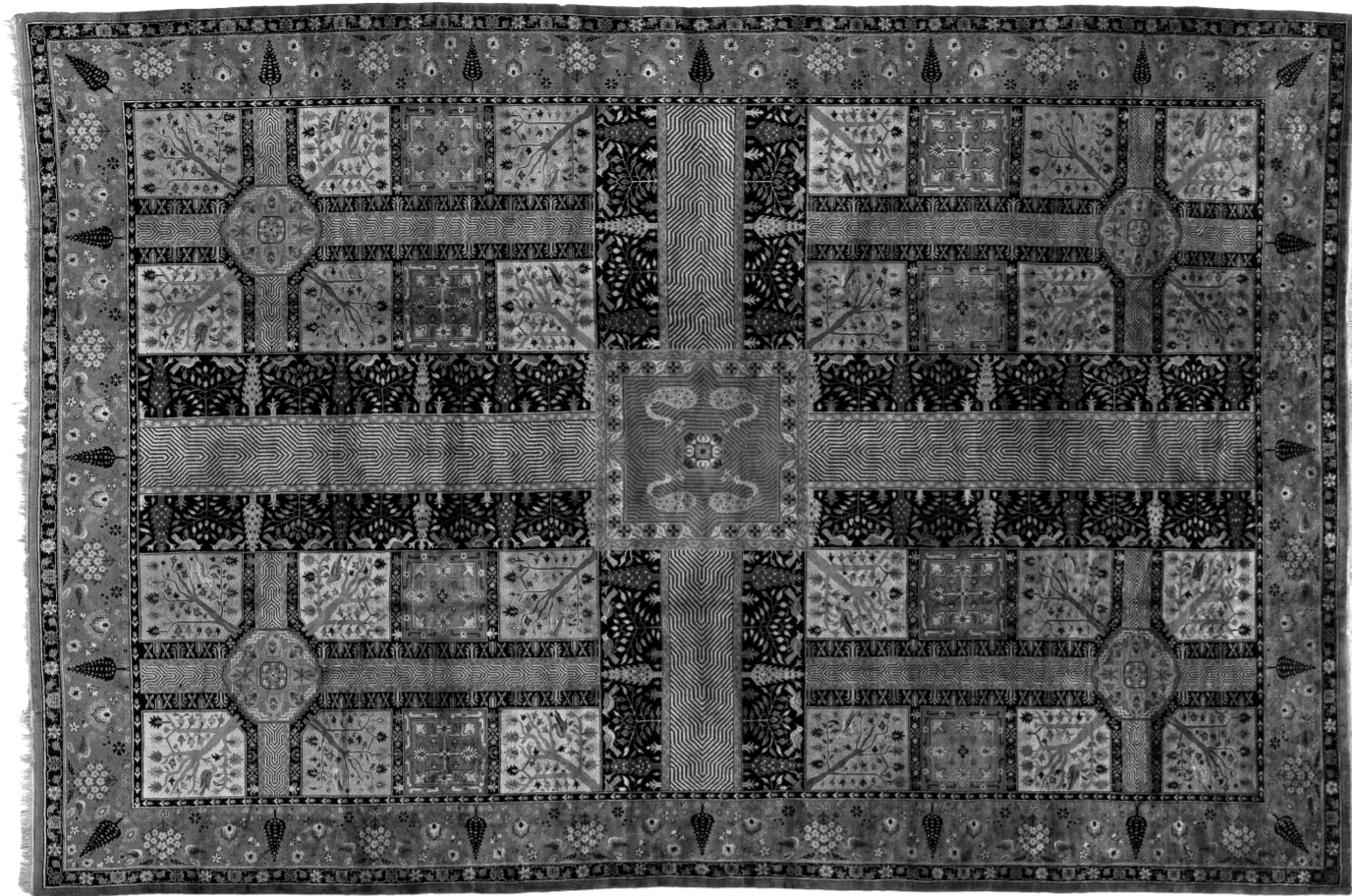


CHAPTER  
**06**

# ORDER FROM CHAOS

Applying the principles advocated by the triad to giving form to the library and documenting the design process.





# 6.1

## CONTEXTUAL RESPONSE

The first considerations of designing a library as place, related to its site. The central placement of the building within the park was an urban response informed by the condition of the surrounding blocks where all of the civic buildings that neighbored the park terminated an end of one of the axes extending out of the park. The library was placed at the crossing point of the axes in response to this existing relationship between the civic buildings and the park and it allowed the library to be separated from its surrounding context by a buffer of open space so as to enhance a sense of enclosure and threshold when one enters the building.

A pavilion within a landscape was also deemed an appropriate architectural manifestation for an investigation concerned with the design for human experience. The crossing point of the axes within a landscape is also significant historically due to the fact that the four paths emanating from it were originally conceived as representations of the four rivers of life in the landscape tradition of ancient Persian gardens (a tradition that established the norm of crossing two axes to divide a garden into four quadrants) - this central point was considered an appropriate site for a pavilion or a pond (Jellicoe and Jellicoe 1995). In response to this tradition, the library was designed as a celebration of water through the articulation of its storm water system, the treatment of the four 'rivers' and how they are experienced within the building and the inclusion of a series of perimeter ponds around the building and within the landscape. These perimeter ponds were placed around the

edges of the building as a further layer of separation from its surroundings which ensured that upon approaching the edge building, one is always kept at 'arm's length'. The ponds also contain lilies in response to the historic lily ponds in the sunken gardens at the western end of the site. Along with the formal layout and lily ponds, the rose bushes and the slate walls on the site also contribute significantly to the park's character of place, in response to these the library was designed with a long rectangular plan to fit between the two rows of rose bushes along the east-west axis of the site and makes use of various forms of dark slate as the building material for the exterior carapace of the building.

Figure 6.1 - Carpet depicting an ideal garden according to the Persian landscaping tradition

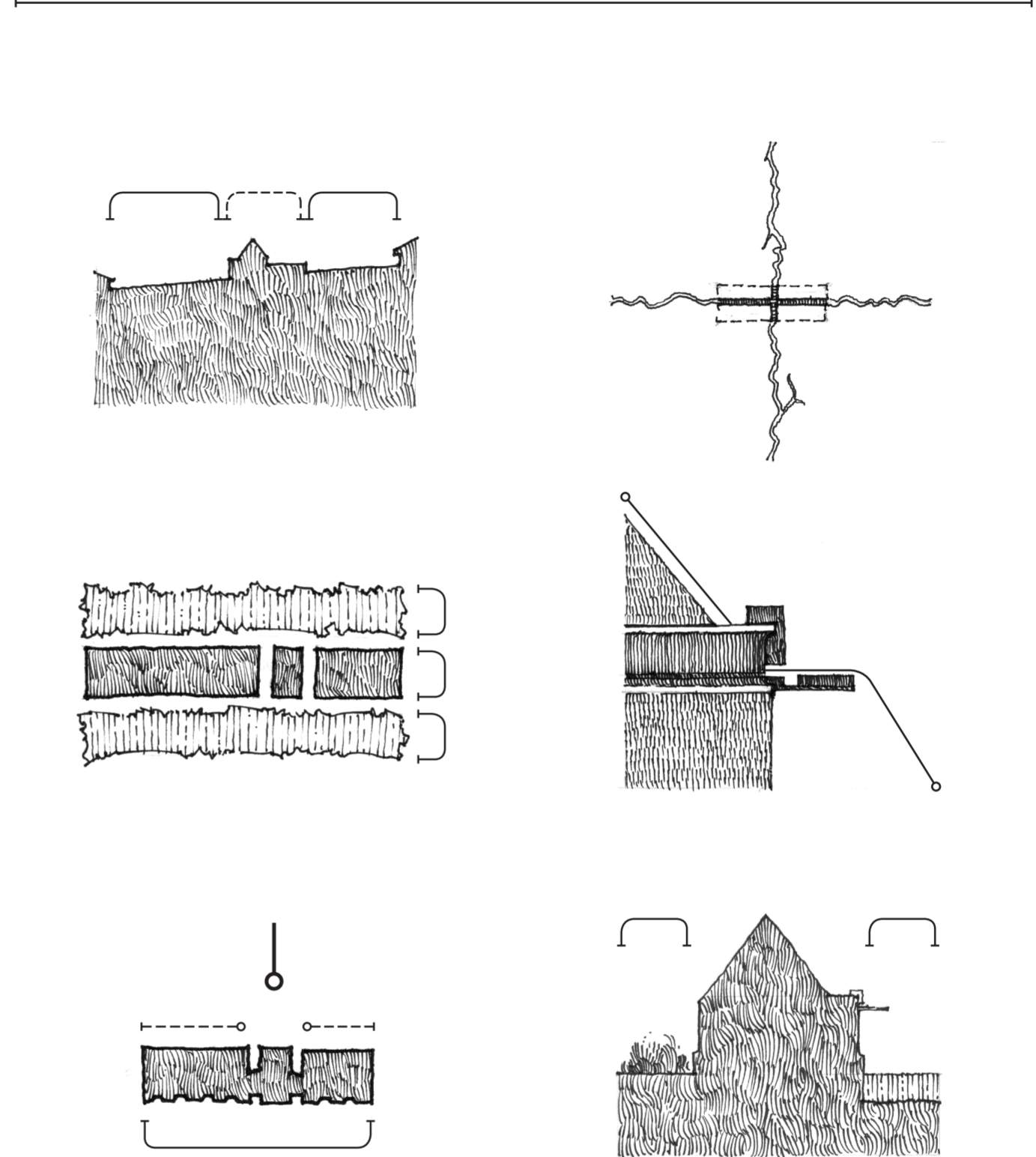


Figure 6.2 - Landscape acts as buffer between the library and its context

Figure 6.3 - New buildings do not interrupt existing rose bushes

Figure 6.4 - Building maximises south facing area for lighting purposes

Figure 6.5 - Recognition of axes representing four rivers of life

Figure 6.6 - Building acts as a celebration of water

Figure 6.7 - Water is celebrated in summer, roses are celebrated in winter





# 6.2

## USING THE TRIAD

As a conceptual framework rather than a recipe, Jordaan's triad lays out the lived dimension, the mental dimension and the material dimension as factors to be considered in the creation of place, but offers little regarding the application of these considerations. In order to inform how the triad should be applied to a design, theoretical and programmatic concerns need to act as lenses through which to guide its application. This investigation into the design of a public library made use of the role and nature of the contemporary public library to inform the treatment of the lived dimension. Zumthor's notion of the typical informed the treatment of the mental dimension and finally the notion of constructing order from chaos acted as the lens through which the material dimension was designed. Due to the fact that this is an architectural investigation, the material dimension has been considered the most important dimension for investigation. As the only dimension that the architect is actually able to control or manipulate, it is only through the material dimension that the lived and mental dimensions be addressed architecturally.

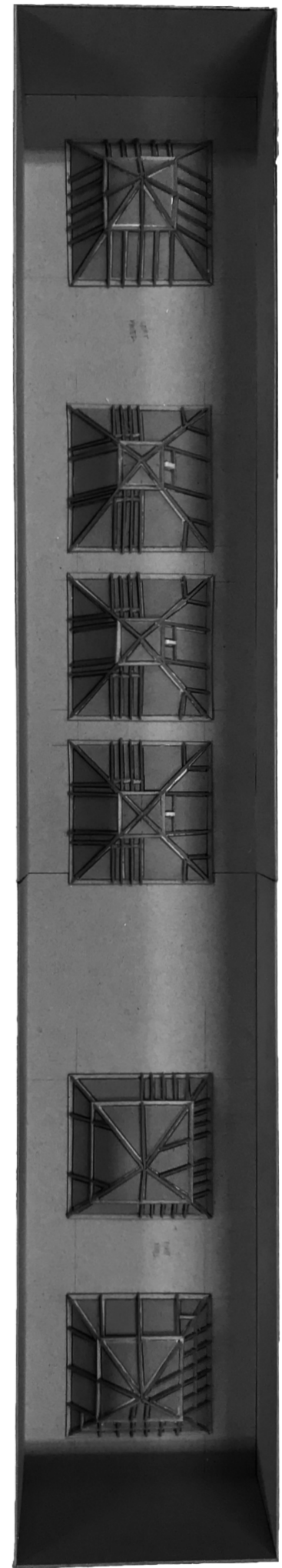
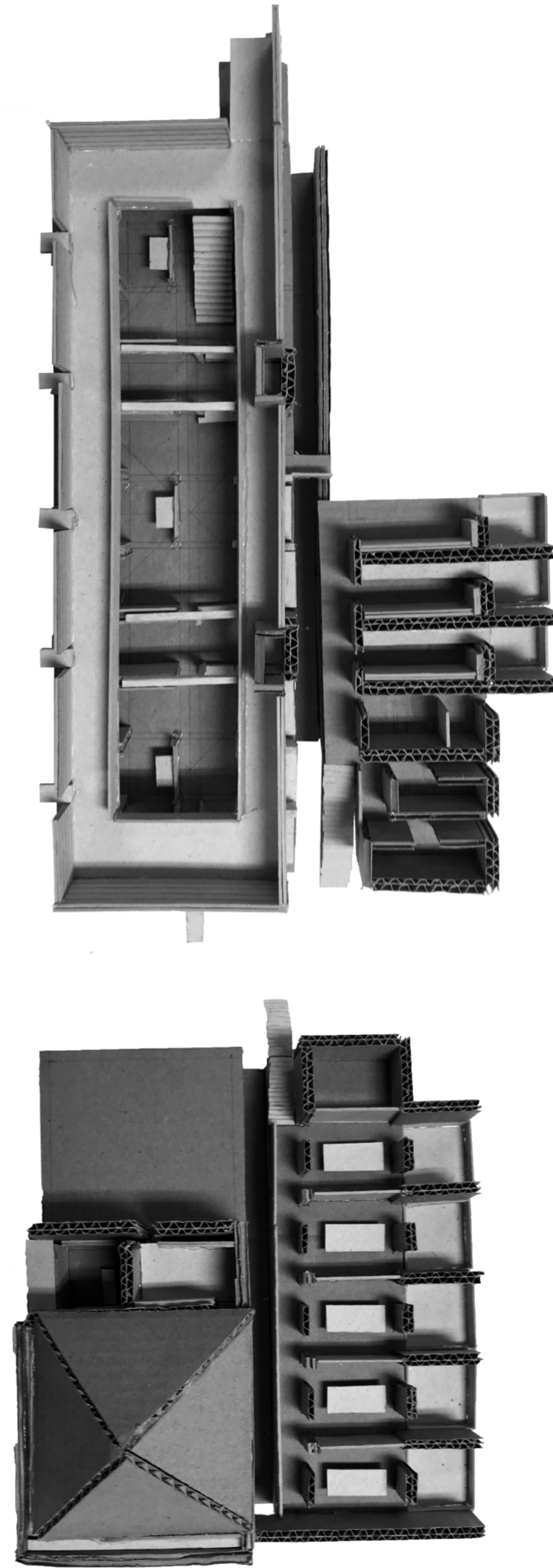
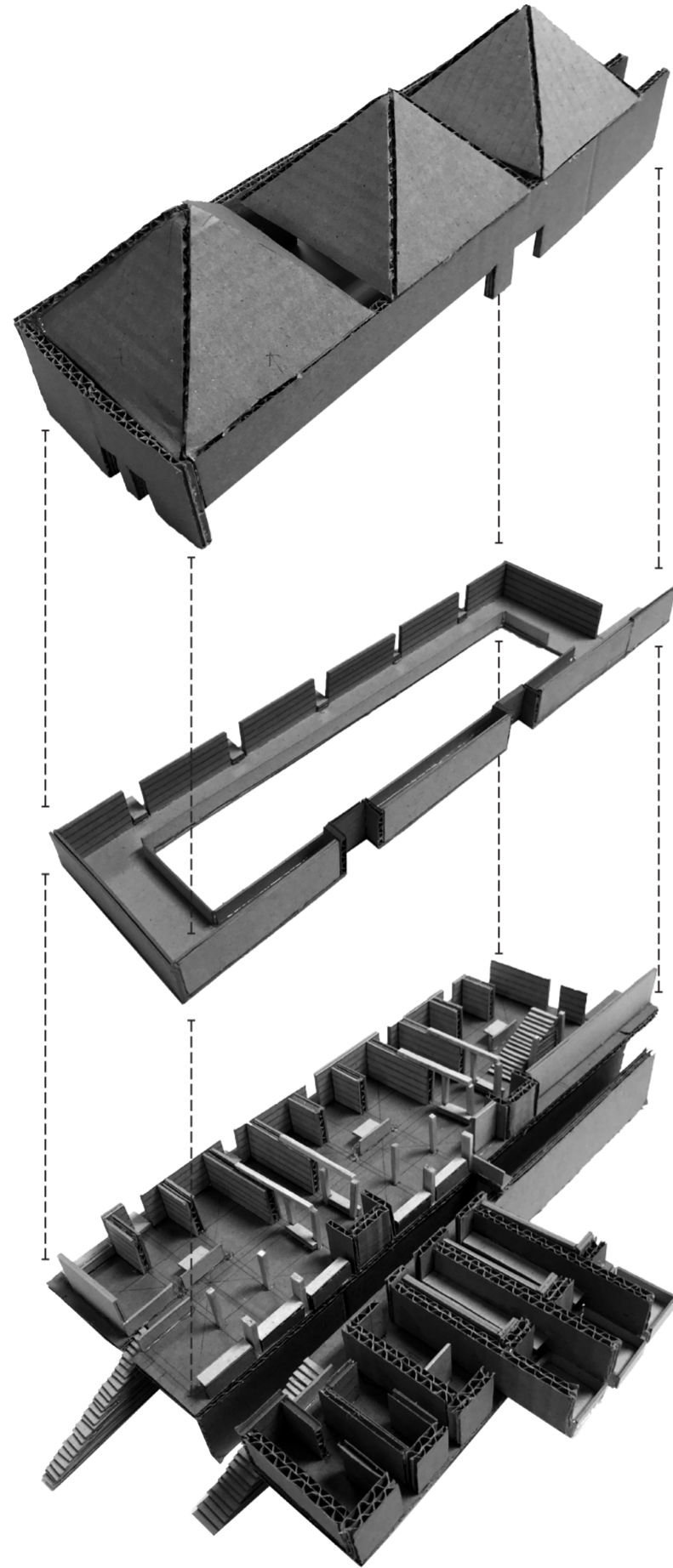
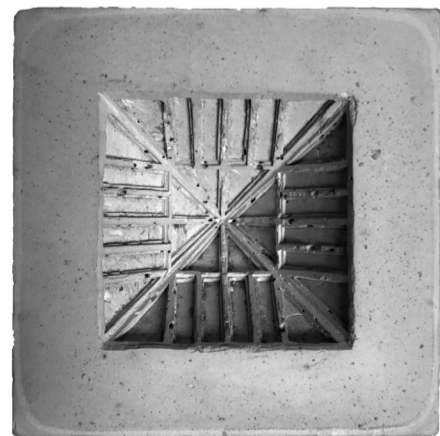


Figure 6.8 - Models exploring the internal manifestation of the library





# 6.3

## THE LIVED DIMENSION

### A LIVING ROOM FOR THE CITY

As previously mentioned, the lived dimension of place has been approached in this investigation through the lens of the civic role and character of the contemporary library. This contemporary character has been used as an informant for the scheme to ensure that this new library holds a contemporary relevance despite its celebration of the typical and the heavy influence of historic library typologies.

Although functionally similar in its operation to historical libraries, its facilitation of appropriation by the public sets the contemporary library apart from its predecessors. Described as a living room for the city instead of a temple for knowledge (Pickard 2002:139), the contemporary public library exists as an indoor public space that is programmatically robust enough to serve a diverse range of users whilst providing a space that encourages social interaction and gathering. Thanks to its accessibility coupled with its regulated nature, the kind of gatherings that occur within a public library are usually small and informal, coming about as the result of chance encounters or organised meetings between individuals or small groups. This public yet intimate character of the contemporary library means that it provides a place of interaction for the socially isolated. The lack of obligation to purchase anything allows it to provide a degree of shelter for the destitute and the vulnerable. The controlled nature of the space provides a productive working environment for a growing population of university students, telecommuters, freelancers and entrepreneurs.

The design of the library facilitates this manifestation of the lived dimension in several ways. Based on a casual observation of public buildings, people tend to spontaneously stop to interact with one another in doorways and circulation spaces (due to their enclosed, intimate quality) rather than in the larger volumes allocated for congregation. The gathering spaces of the library have thus been designed as thresholds between larger, more prominent volumes. Along with using structural members to reduce the scale of these 'thresholds', roof lights and reading lamps ensure that these are some of the best lit spaces within an otherwise darker library, encouraging congregation towards them. The library also contains a diversity of seating or working spaces depending on the needs of the user, ranging from communal lounges and board-rooms for groups to private study cells and inward facing individual seating near the windows to allow for private reading and facilitate people watching. Although people watching is facilitated as an important aspect of a successful public space, designing for surveillance by library staff has been relegated to the foyer of the building. The foyer is dropped below the ground level of the main library in order to block the line of sight of the librarian into the main space whilst still allowing access, allowing the users to develop a sense of appropriation and ownership of the library without the disconcerting feeling of being watched.

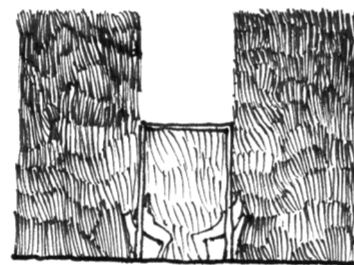


Figure 6.9 - 'Threshold' as gathering space

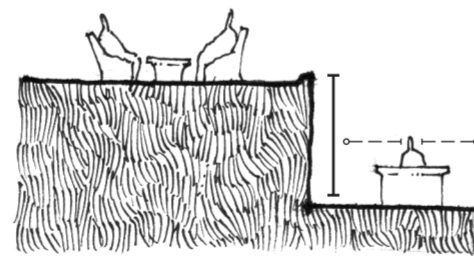


Figure 6.10 - Undermining the visual control of the librarian to encourage appropriation

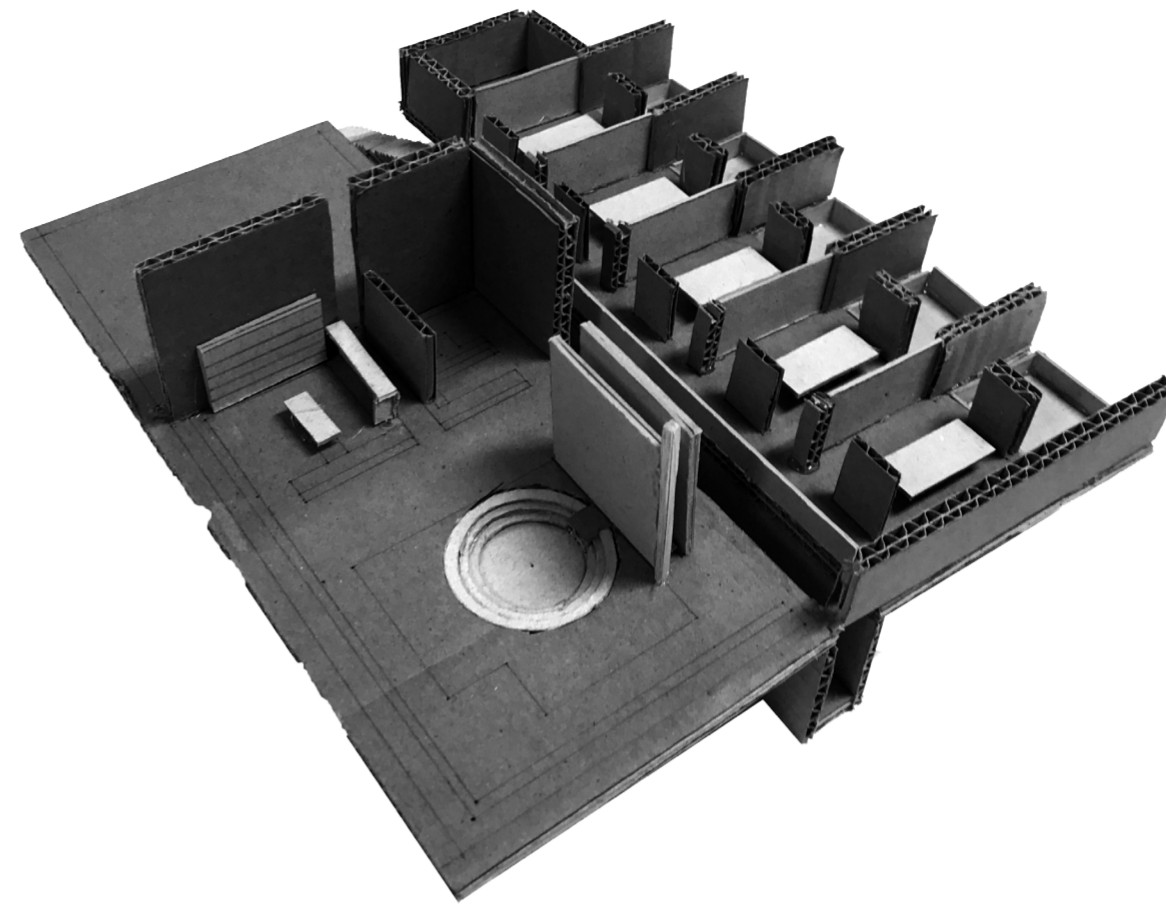


Figure 6.11 - Interior model of children's library

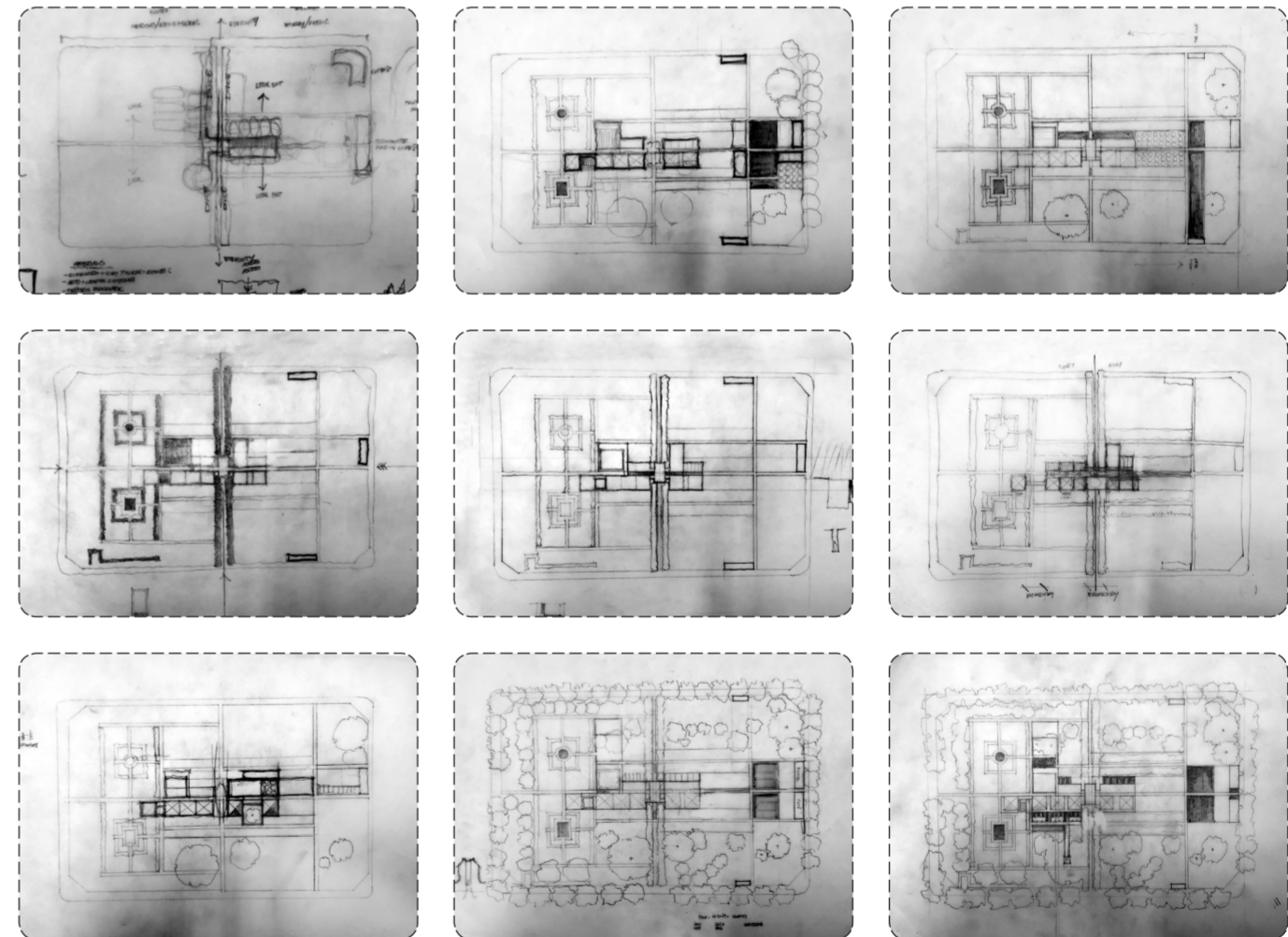


Figure 6.12 - Masterplan iterations





# 6.4

## THE MENTAL DIMENSION

### THE TYPICAL

Zumthor's notion of the typical has been used to inform the treatment of the mental dimension for the purpose of this investigation. Typical here refers to the essential character of the library that distinguishes it as a defined building type, a character that has developed over the course of the library's long history. This treatment of the mental dimension has been designed to form and recall memories, acknowledge the senses and prompt the imagination in order to facilitate an immersive, multisensory experience of place that evokes an unmistakable mental association with one's oniric library. Because of the idiosyncratic nature of memory and imagination coupled with the diversity of users who would make use of the library, the notion of the typical library needs to be evoked through universal or objective spatial experiences instead of subjective or personal ones. The human body, something shared by all members of the public, needs to be considered as the basis for a common experience of place rather than the specificities of culture or social class.

The user's first experience of the typical occurs upon entering the library: The threshold that connects the exterior realm of the park to the interior realm of the library has been stretched and exaggerated so as to enhance a sense of enclosure and separation when moving from one condition to another. In addition to this exaggeration, the main library itself is raised above the level of its vestibule meaning that as per the norm with historical libraries, one needs to step upwards from

a 'profane', lower plane to enter the raised 'sacred' plane of the library. Once within, an aspiration towards the historical notion of the ideal library is made clear; the main library is a single great hall lined with books on all sides where shelving is irremovable from structure and the books themselves are celebrated as decorative elements in themselves. The rituals and equipment unique to the library type have also been celebrated as defining aspects of its character. Furniture, interior fittings and library specific equipment such as shelf mounted ladders have been understood as essential to evoking a memory of the oniric library. In response to this, these elements have been designed to be integral to the spatial fabric of the building through being merged into the building's structure, used to demarcate spaces or used to articulate surfaces. The final way that the treatment of the mental dimension manifests is in relation to the senses of those who use the library. Interiors have been designed to facilitate feelings of comfort and warmth through the materials that enclose the space whilst fireplaces encourage congregation and heat the stone building (as is typical in historical libraries) and the scent of paper establishes an atmosphere that is simultaneously studious and nostalgic.

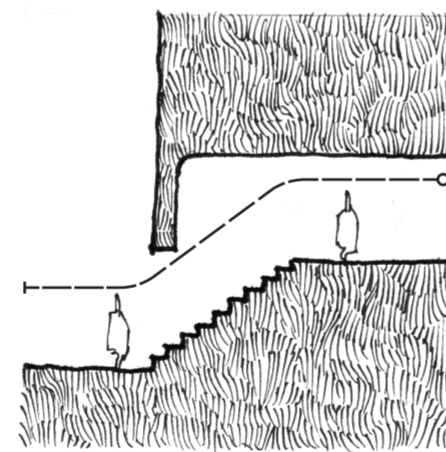
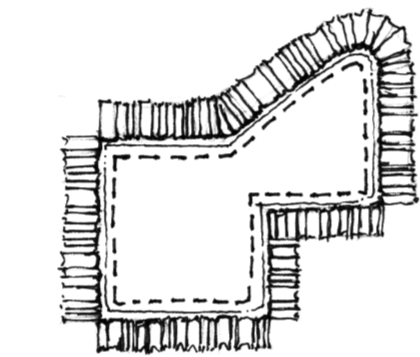
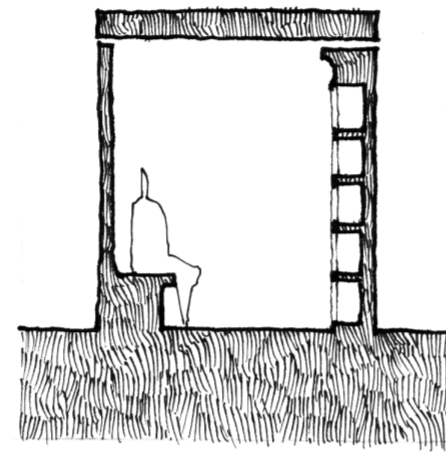


Figure 6.13 - Storage and furnishings are integral to structure

Figure 6.14 - Codices define internal space

Figure 6.15 - Stepping upwards upon entering

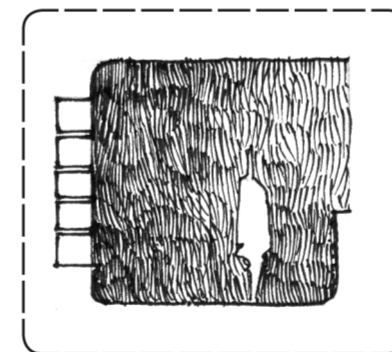
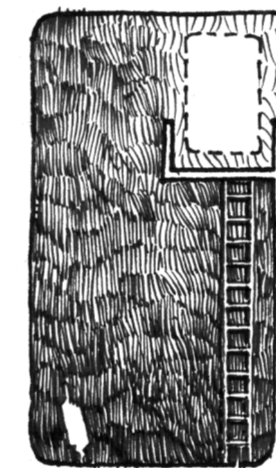
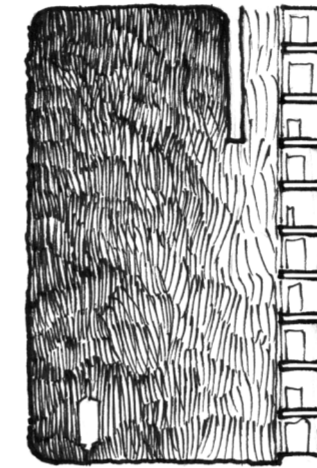


Figure 6.16 - Light washes wall of codices

Figure 6.17 - Light encourages exploration

Figure 6.18 - Darkness enhances interiority

### 6.4.1 - THE USE OF LIGHT

The use of light in the library is informed by both practical and spatial considerations and is intentionally used sparingly, concentrated in only specific areas, with the majority of interior spaces characterised by darkness. The practical function of this darkness serves to protect the library's collections from damage caused by UV rays, primarily emitted by sunlight but also to a lesser extent by artificial lights. The phenomenological function of darkness provides respite from the uniformly and coldly lit environments that are typical of our places of work and leisure. It enhances a sense of interiority and enclosure within the library whilst the deep shadow it creates erodes the grip of reality, distorting ordinary objects into curious 'half-things' that have their mundanity stripped away to become both strange and familiar, establishing an environment that is fertile to our imaginations, musings and inquisitive thought (Plummer 2016). This backdrop of deep shadow means that light can be used effectively to highlight spaces or objects of importance. Volumes of light have been 'scooped' out of the mass of enclosing darkness in appropriate areas, such as the reading lounges and bay windows of the main library facilitating congregation towards them or in the high places of the children's library where beckoning glows are used selectively to draw children upwards and encourage their exploration of

the collections and secret spaces to discover. Light has also been used to establish different atmospheres for the different library functions, the dark, cold and inhumanly scaled volume of the foyer presses down on the user and reminds one that the library is a space subject to rules and authority. The reference collection makes use of soft, diffused curtains of light to wash over the book lined walls and treat the books as objects of value worthy of display. Finally the periodical library utilises a large double height window to flood the space with diffuse light creating a gentle transition between the outer realm of the park and the interior of the library's most causal space.



Figure 6.19 - Single hall made up of sub-spaces



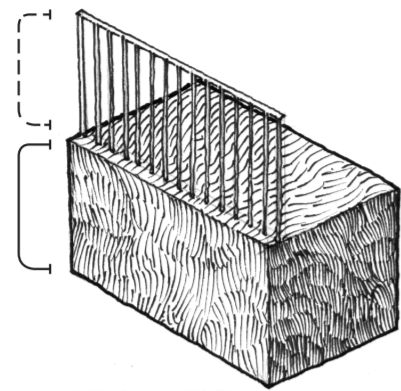


Figure 6.20 - Contrast of light elements enhances sense of mass

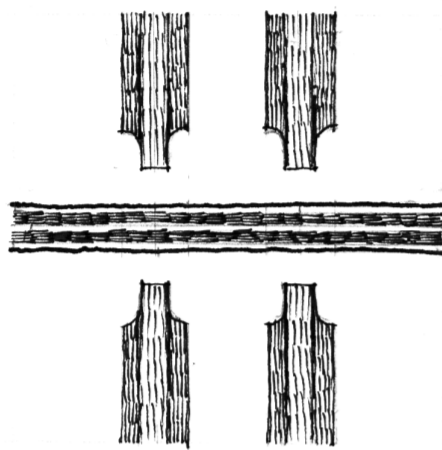


Figure 6.21 - Horizontal articulation breaks vertical articulation

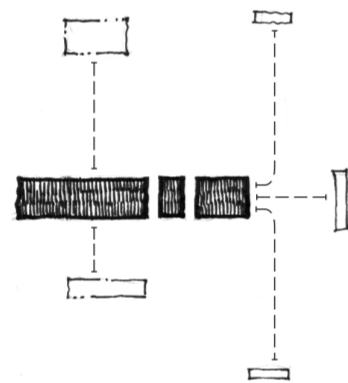


Figure 6.22 - Ancillary functions pulled away from main building

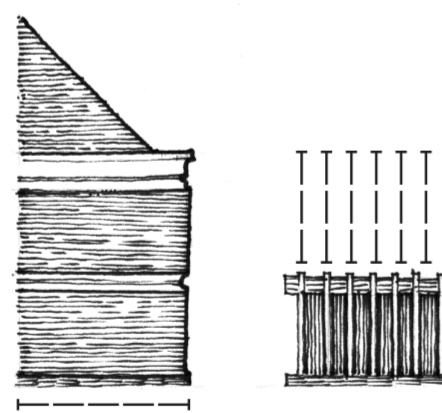


Figure 6.23 - Different architectural expression for different functions

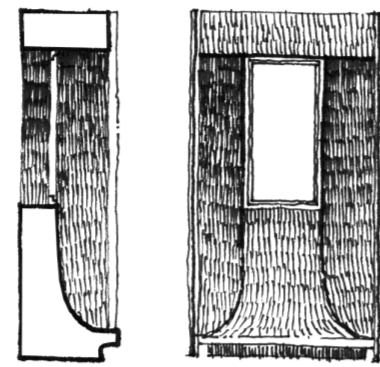


Figure 6.24 - Mass of wall scooped out to reveal thickness at windows

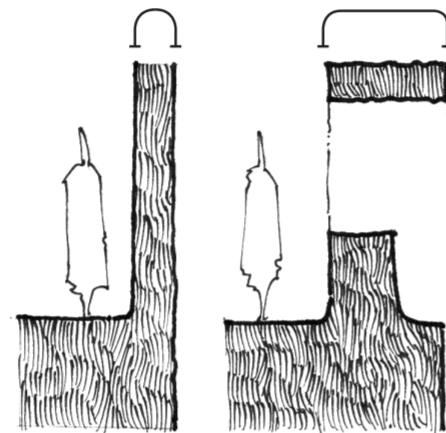


Figure 6.25 - Southern wall made thicker because of presence of openings

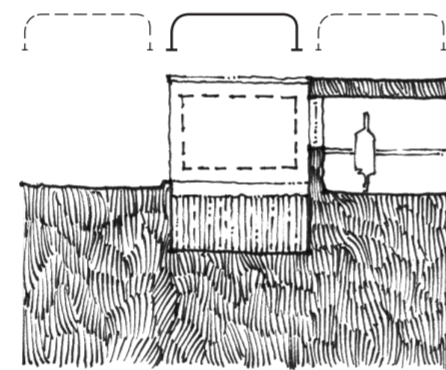


Figure 6.26 - Perimeter ponds act as interstitial 'rooms'

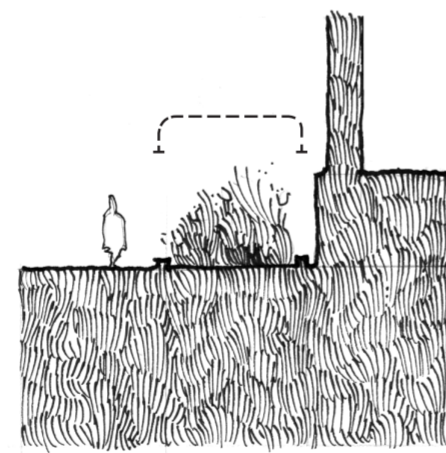


Figure 6.27 - Rose bushes form buffer between inside and outside

# 6.5

## THE MATERIAL DIMENSION

### ORDER FROM CHAOS

The contemporary role of the public library has been argued to be one of creating order from chaos. This role is informed by its unique ability to provide both containment and structure to the information it contains, the interactions of the individuals who use it and the physical space it encloses. The library structures the information contained within its collections through the way its codices are classified, hierarchised and grouped within physical space. This condition of structure stands in stark contrast to the endless, uncontextualised stream of information made available by the internet. In addition to ordering information, the library also conditions its users to interact with each other in a particular way and facilitates their experience of accessing the knowledge contained within its collections. Over the course of the building type's existence, a canon of appropriate library behaviour and spatial experiences has been established which still manifests today, resulting in a simultaneously regulated and experientially rich institutional environment, distinct from the unpredictability of the outer realm of the street. Finally the library also orders the physical space it occupies through a sense of enclosure. Because of its nature as an interior public space, it creates an inside distinct from a larger, undefined outside and separates the two through the use of boundary. This creation of order from chaos is the essence of the contemporary library and has therefore been used as the primary driver for the architecture and the informant for the treatment of the material dimension of this scheme.

A primary architectural expression of order is the subdivision of larger elements or spaces into interrelated, smaller and more understandable ones. This subdivision or articulation allows topics and collections to be grouped and arranged legibly whilst remaining clearly separated from each other. As long as the articulated elements are understandable in relation to the bodies of the users, it ensures that the library retains a human scale regardless of the size of its overall volumes. A clear distinction between inside and outside is also key to establishing a sense of order, the boundary that separates a chaotic and placeless outer realm from an ordered and distinct inner realm is celebrated in various ways throughout the building. The walls that enclose the space are thick and solid, and the walls that contain openings that would allow its thickness to be read have been made even thicker. The materials that finish the exterior of the building are distinct from those that finish the interior in order to emphasise the difference of the two conditions. In addition to this, wherever the interior meets the exterior, such as in the thresholds or where something from inside escapes into the outside such as the smoke from the internal fireplaces, all of these points of connection have been carefully considered and designed so as to enhance the gravity of this change of condition. When articulating a space, the wall can clearly define and separate two conditions whilst the floor and roof can only suggest where one space begins and another ends, the space will still flow between the floor and roof plane without

the clarity offered by the wall. The suggestive spaces created by floor and roof have been utilised within the boundaries established by the walls to allow the interior of the library to be read as both a great hall lined with books and a series of subject specific reading rooms where information is ordered and classified not only on the shelves but also within space. The pyramidal roofs as the most architecturally distinctive element of the scheme have been used to mediate this historical ideal of a singular space and the contemporary need for order through subdivision. There is no typical roof shape associated with the library type, only high-level spatial principles, therefore the pyramid was chosen as a roof form for the library because it best facilitates these spatial principles and ideals. The pyramid as a form has been described by Thiis-Evensen (1987) as the missing link between the dome and the spire: like the dome it encloses a centralised space but unlike the outward and omnidirectional focus of the dome, it announces a singular point or location like the spire. These features make it the ideal form to ensure that articulated spaces of the library remain distinct. The pyramid is also an inherently static form, meaning that from the exterior, it offers the building a sense of mass and permanence whilst the fact that it is repeated and geometrically pure enhances the atmosphere of order and consistency that characterises the library.





6.5.1 - MODULES AND MEASURES

The final architectural manifestation of the library as a place of order is the use of a strict module to define the sizes of the elements and volumes that make up the scheme. The module used was a grid of 305 mm x 305 mm, a square derived from the size of the largest standard codex size, the folio. The use of a physical codex to order the entire scheme ensured that its importance was celebrated and it was architecturally recognised as integral to the character and identity of the library. This module also ensured that shelving was designed to accommodate any codex, regardless of its size. Thanks to its roots in the imperial system, the size of a folio and its derivatives allowed sizes similar to many commonly used architectural dimensions to be generated whilst correlating directly with standard sizes of building materials such as those of timber and steel members (fig. 6.31).

The relatively fine grain of the module accommodates the flexibility required to meaningfully curate the lived experience of the scheme without compromising its ordered character. Along with this, in order to ensure that the library is meaningfully and comfortably experienced, an anthropological measurement, the Hebrew cubit (457mm or 1.5 modules) has been incorporated into the ordering system. Defined as the length from a man's elbow to the tip of his fingers, the cubit is an ancient architectural measurement that will ensure that seating is ergonomically correct and that shelves are not too high to reach. Its incorporation means that the volumes and elements that make up the architecture of the library will correlate with the bodies of those who use it. The folio module and the cubit have ordered all the dimensions of the scheme in order to lend a cohesiveness that unifies the library across all scales, from the height of rooms to the articulation of details.

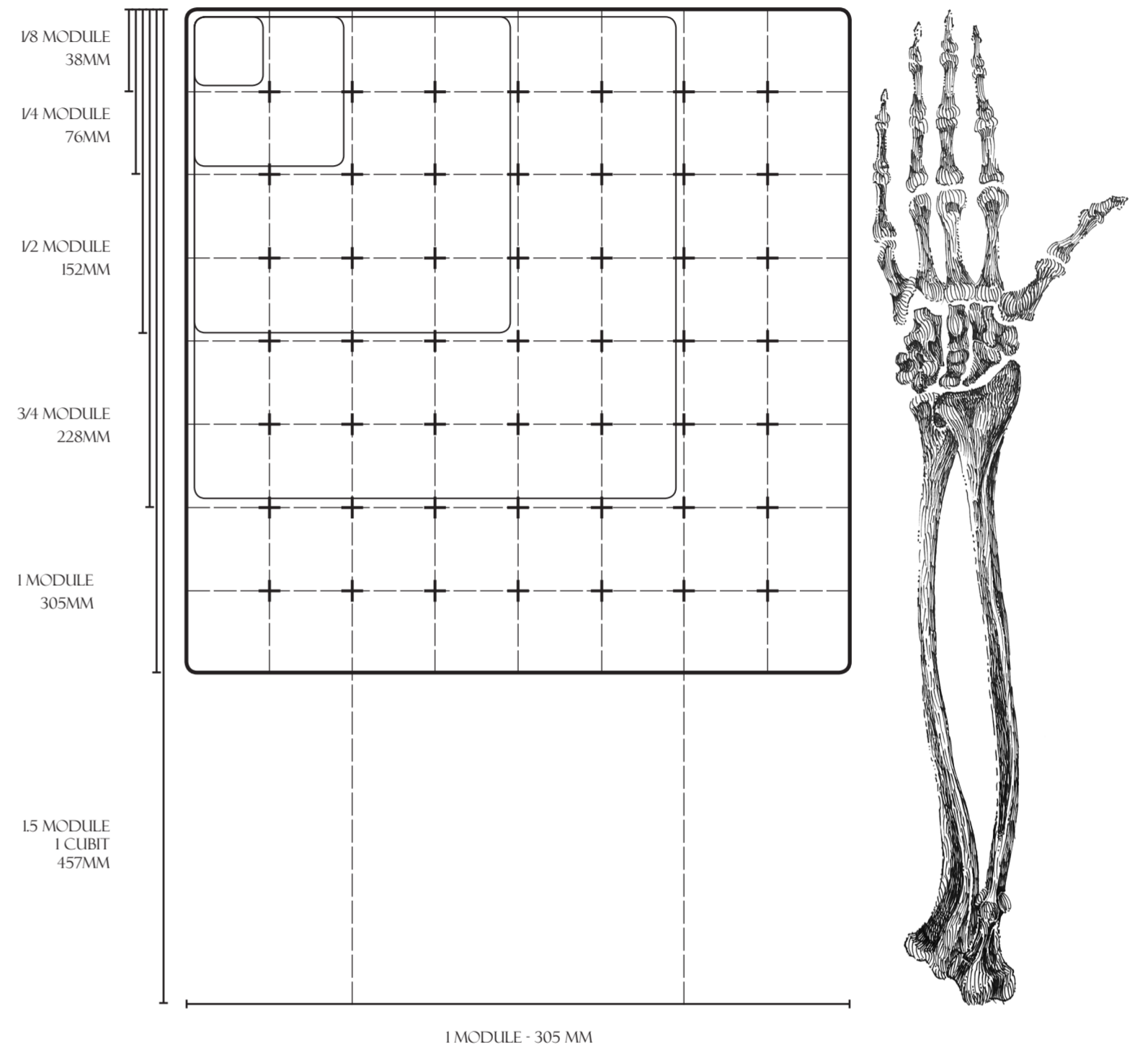
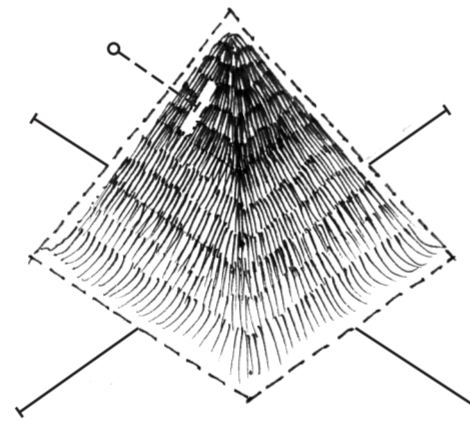
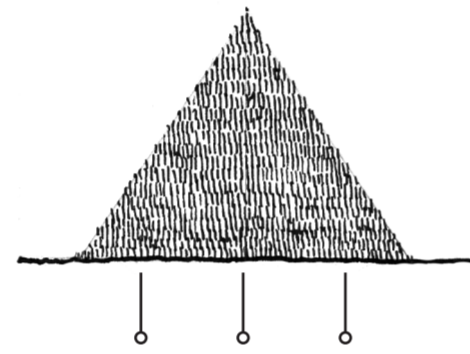
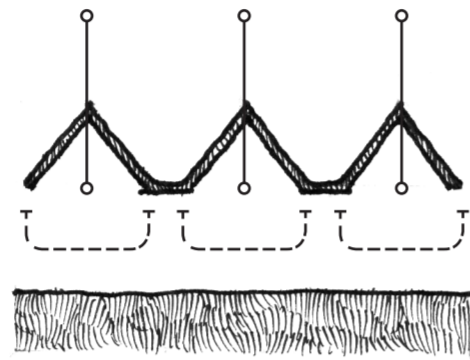


Figure 6.31 - The module and its subdivisions

Figure 6.28 - Pyramids separate single hall into a series of smaller spaces

Figure 6.29 - The pyramid as an inherently static form

Figure 6.30 - Climatic role of the pyramid used to enhance the venturi effect





# 6.6

## THERME VALS

### ARCHITECT :

Peter Zumthor with Marc Loeliger,  
Thomas Durisch and Rainer Weitschies

### CRITICAL ANALYSIS

The Therme Vals illustrates the fact that a strictly ordered scheme still has the potential to facilitate rich lived experiences. Considered to be Zumthor's seminal work, the Therme Vals is a well-known and celebrated building despite being heavily critiqued and labelled as elitist during the design process due to its unconventional approach and celebration of the ritual of bathing (Philippou 2010). And although an experientially powerful building, the Therme Vals is also a highly ordered work of architecture with the sizing and articulation of volumes informed by repeating modules and material dimensions. Regarding its overall form, the building is uncompromisingly rectilinear and built up of fifteen concrete 'table-like' units which are rotated and interlocked to form a radial pattern around a central pool. Between the edges of these units, small gaps have been left to allow light to filter into the circulation spaces below, and because light has been used extensively within the project to facilitate movement, the nature of one's experience within is a direct result of the geometric pattern that defines the building's layout. On plan, the user's experience is ordered by the pattern of interlocking 'tables'; in section the heights are all determined by a module of 150mm, the height of a stair. The stone strips used to clad the walls are of three different sizes but add up to 150mm when three are used together in specific combinations, meaning that

although the cladding appears random, even this was determined by a strict module which was used to ensure that levels line up perfectly for floor, stair and opening heights (Cadwell 2008:16). Beneath the fifteen 'tables' that order the scheme, rectangular hollowed out masses support the roofs and are arranged uniquely. Although a seemingly organic layout, many of these rooms are either symmetrically planned or make use of repeating and regularly spaced cubicles or fittings. In addition to the experiential qualities of the building regulated by an overarching order, Zumthor also makes use of his notion of the typical to inform the user's experience. Exploring two levels of typicality, the first being the essence of bathing, where a primordial atmosphere and ritual of bathing is evoked through the cave-like character of the space where steam, shadows and stone work together to conjure the memory of a natural spring. The next level is the exploration of the archetypal, where historical architectural traditions surrounding the design of bathhouses have been incorporated such as a centralised layout comprising various separate rooms arranged around a central internal pool lit with diffused sunlight from many small roof openings. Primarily an interior architectural experience, light has been used to encourage movement and communicate the nature of spaces without the need for signage, mostly artificially lit to control the con-

sistency and colour of the light, only select spaces make use of natural daylight. In addition to light, the shadows of spaces have also been embraced to enhance a sense of mass, enclosure, security and curiosity. To further emphasise the mass of the building, openings are deep set to express the thickness of walls and any non-structural elements such as hand railings and window frames are made from thin steel in order to contrast and emphasise the solidity and thickness of the stone structure. And in a final celebration of the enclosure and separation of the interior of the building from the worries of the outside, the building was originally designed to contain no clocks and have no entrance that connects it to the outside landscape, the only entrance and exit is an extended threshold in the form of a softly lit tunnel connecting it to the adjacent hotel (Zumthor 2014).

Figure 6.32 - References to the typical bathhouse



Figure 6.33 - Interlocking 'table-like' units

LOCATION OF PROJECT	DATE OF COMPLETION	REASON FOR INCLUSION
Vals, Graubünden, Switzerland	1996	Mediating strict order and the design for human experience

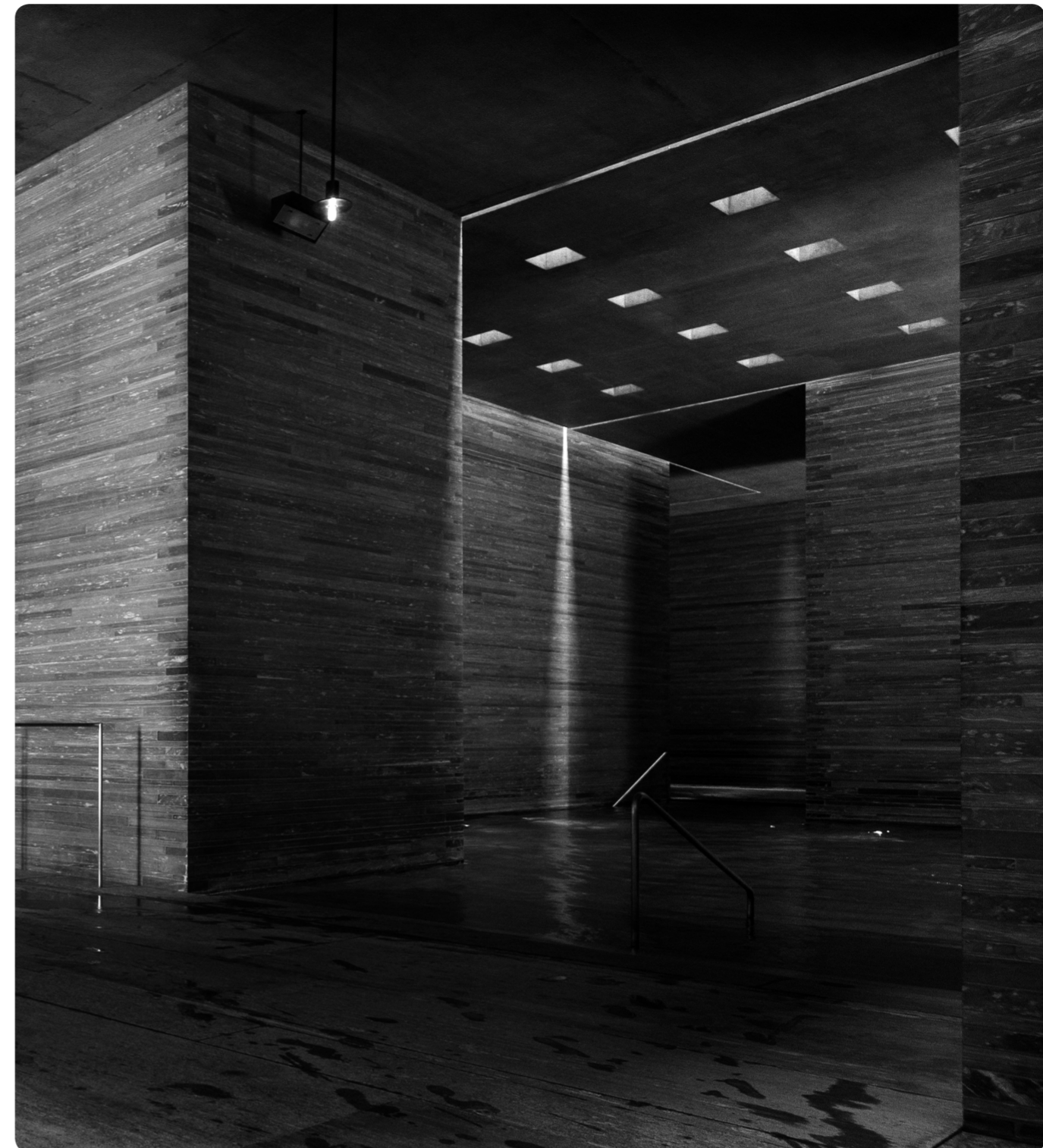


Figure 6.34 - Removed modules form courtyard



Figure 6.35 - The primordial notion of bathing



Figure 6.36 - Strictly ordered stonework





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# 6.7

## DESIGN PROCESS

Beginning at a high-level diagrammatic scale, the design process for this project moved across scales and mediums in an accretive manner as the scheme developed. The first phase of the process was to develop an appropriate urban presence for the library, for this, diagrammatic thumbnail plans were rapidly generated and iterated in order to test as many possible alternatives for the site and surrounding blocks. When the pavilion typology was deemed the most appropriate response for the site, the first iteration of the scheme was developed using a combination of plans and sections to resolve the interior condition and a massing model to mediate this condition with the site. When the first iteration had been developed to sketch plan level, it was iterated again two more times using the same tools. The third and final iteration was chosen to be developed into the final scheme, for this resolution, plans and sections were still used in conjunction with larger models in order to help visualise the proposed interior volumes and light quality. Note that throughout the process, no elevations were produced until the volumes of the third iteration had been finalised, an approach taken to ensure that any decisions regarding the external articulation of the building did not influence its interior, rather the exterior was generated as a result of its interior condition. This method of designing the library from the inside out ensured that the library's essential character as an enclosed, indoor public space was respected and celebrated whilst ensuring that the experience of this interior remained a primary concern throughout the process.

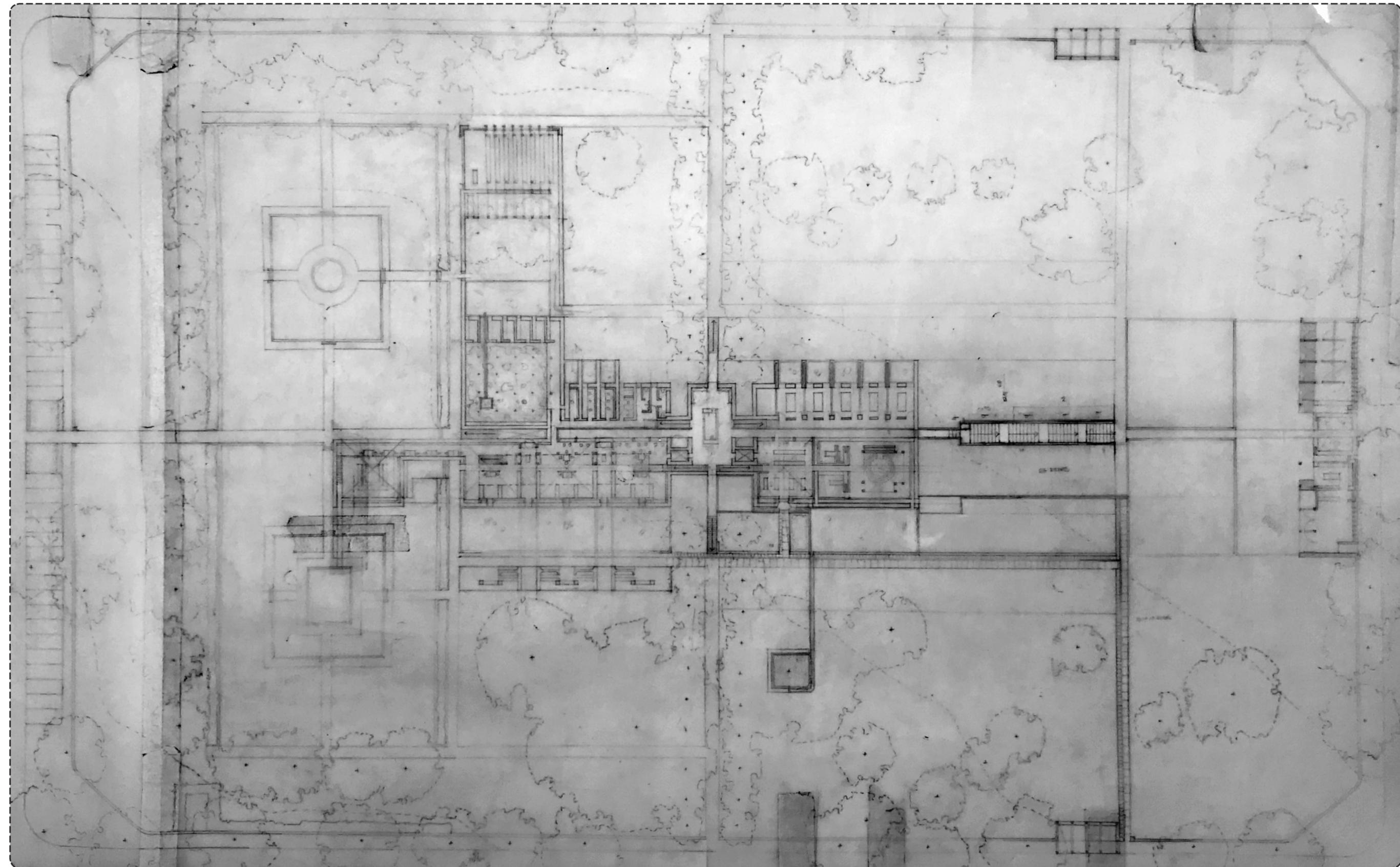


Figure 6.37 - Masterplan development drawing

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# 6.7.1

## FIRST ITERATION

The use of roof volumes to subdivide larger open spaces whilst allowing the space to still read as a single hall was developed early on in the process, the original roof volumes took the form of domes and pyramidal frustums before being finalised as pure pyramids. In the first iteration of the scheme, these pyramids were clustered around the crossing of the axes in the centre of the park and their distinctive form was not used to celebrate a specific function of ritual, meaning that the iteration lacked a legible spatial hierarchy and logic. To contribute to this lack of hierarchy, ancillary functions such as the auditorium were housed in voluminous spaces, attached to the edge of the central spaces which competed with the pyramids in terms of their height. Within the space, the plinth that the pyramids rested on was designed to be very low in order to emphasise the height and volume of the pyramids which would be manipulated through the manipulation of exposed trusses, unfortunately, the fact that the pyramids occupied a greater volume than the plinth meant that the interior space was not read as a single hall that was subtly subdivided by its roof, instead it created a condition where each pyramid defined a clearly demarcated and distinct room beneath and prevented spaces from flowing into one another where appropriate.

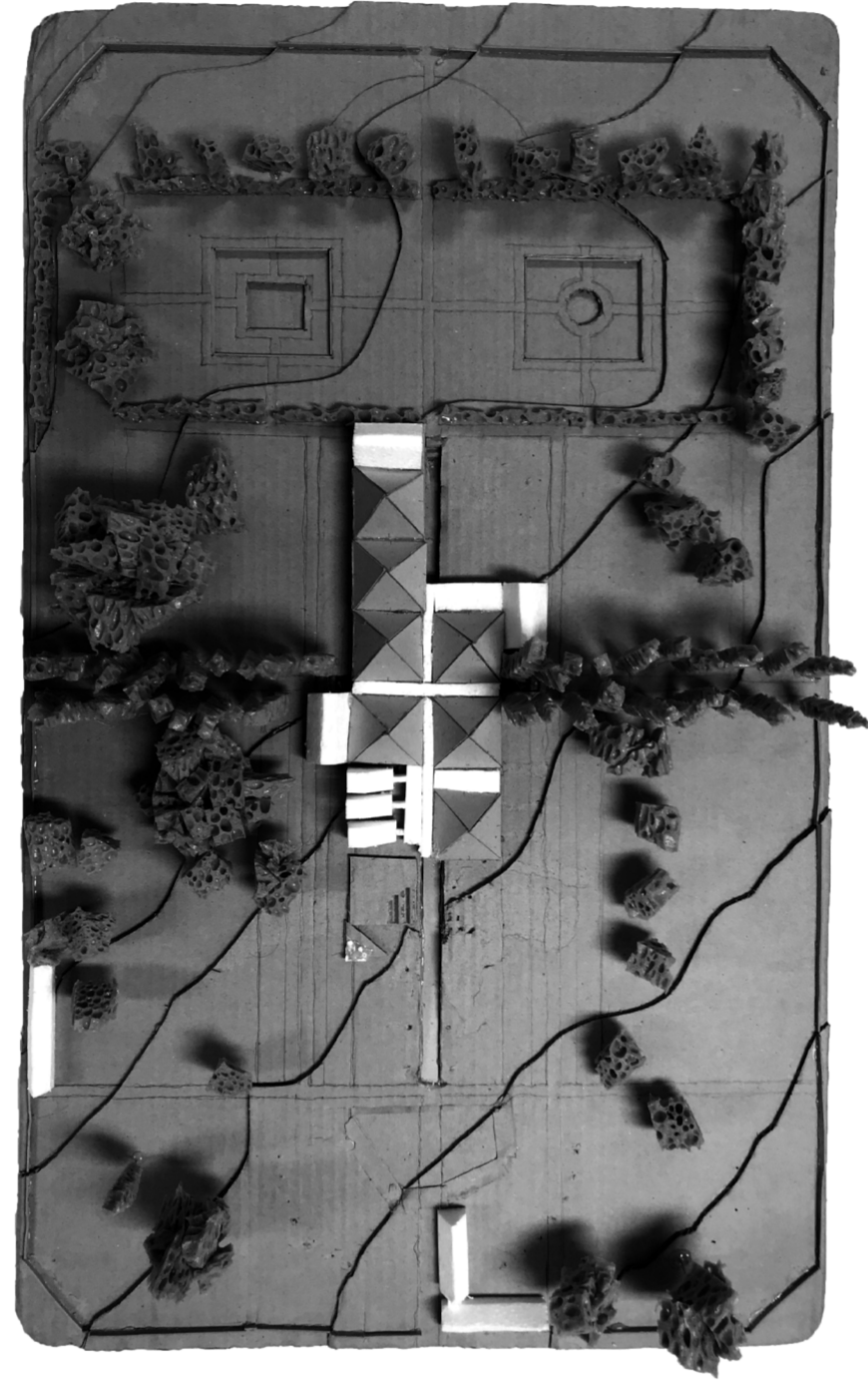


Figure 6.38 - First iteration massing model

Figure 6.39 - Early conceptual section

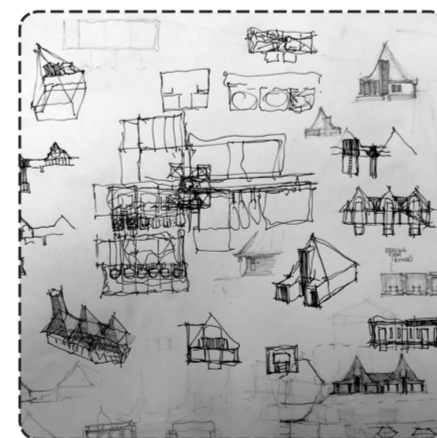
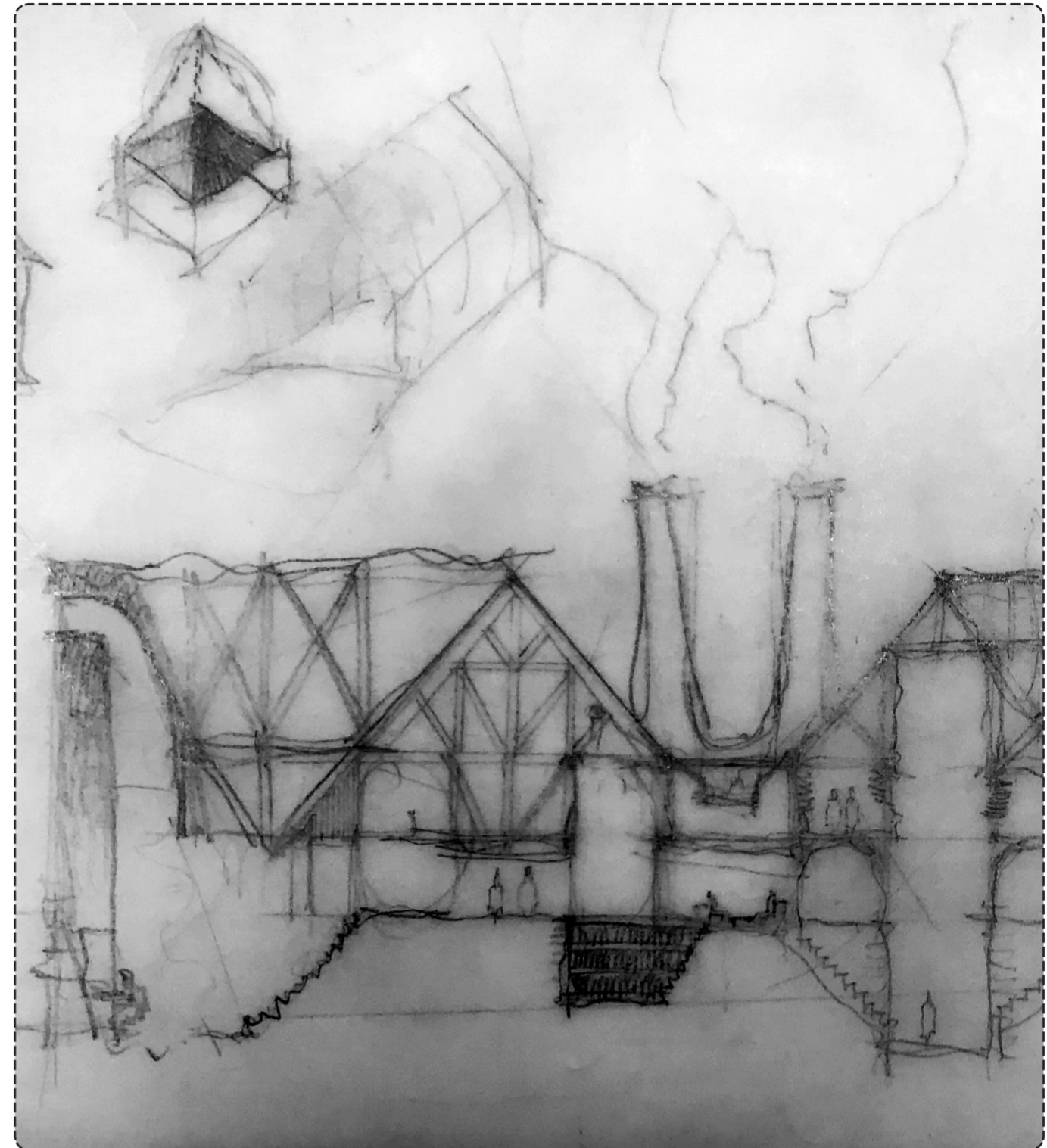


Figure 6.40 - Conceptual spatial exploration

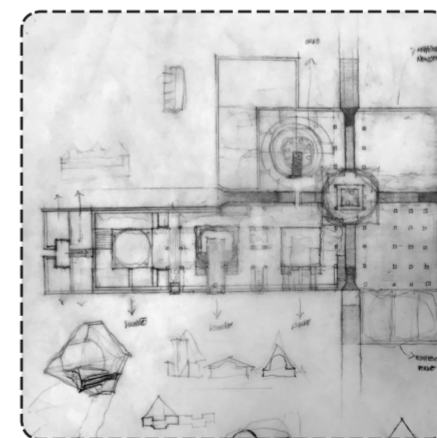


Figure 6.41 - Early sketch plan

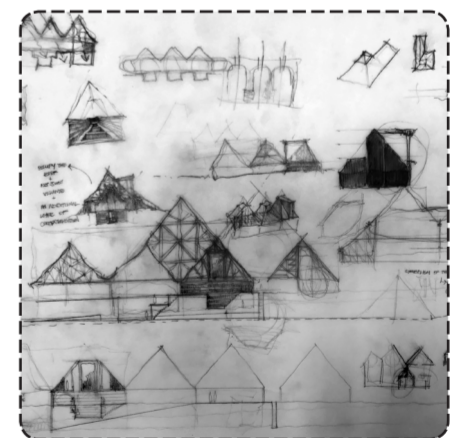


Figure 6.42 - Exploration of the pyramid





# 6.7.2

## SECOND ITERATION

The next iteration of the used the pyramids to house the library spaces of the scheme and aligned them in a single long row to allow them to utilise southern light within. All the pyramids were identical and all floated above the plinth on a clerestory that wrapped their base despite the fact that they housed functionally specific library spaces such as the reference collection and the children's library. The plinth that they rested on was also raised to accommodate a mezzanine in the main library hall whilst services and secondary functions were housed in flat roofed portions of the plinth that extended from beneath the pyramids. This version was still centrally clustered and protruded little into the surrounding landscape but did include a walled garden to begin mediating the interior condition of the library with the exterior condition of the park and began to allow interior walls to extend into the landscape as fins to define interstitial rooms or foyers between the library and park.

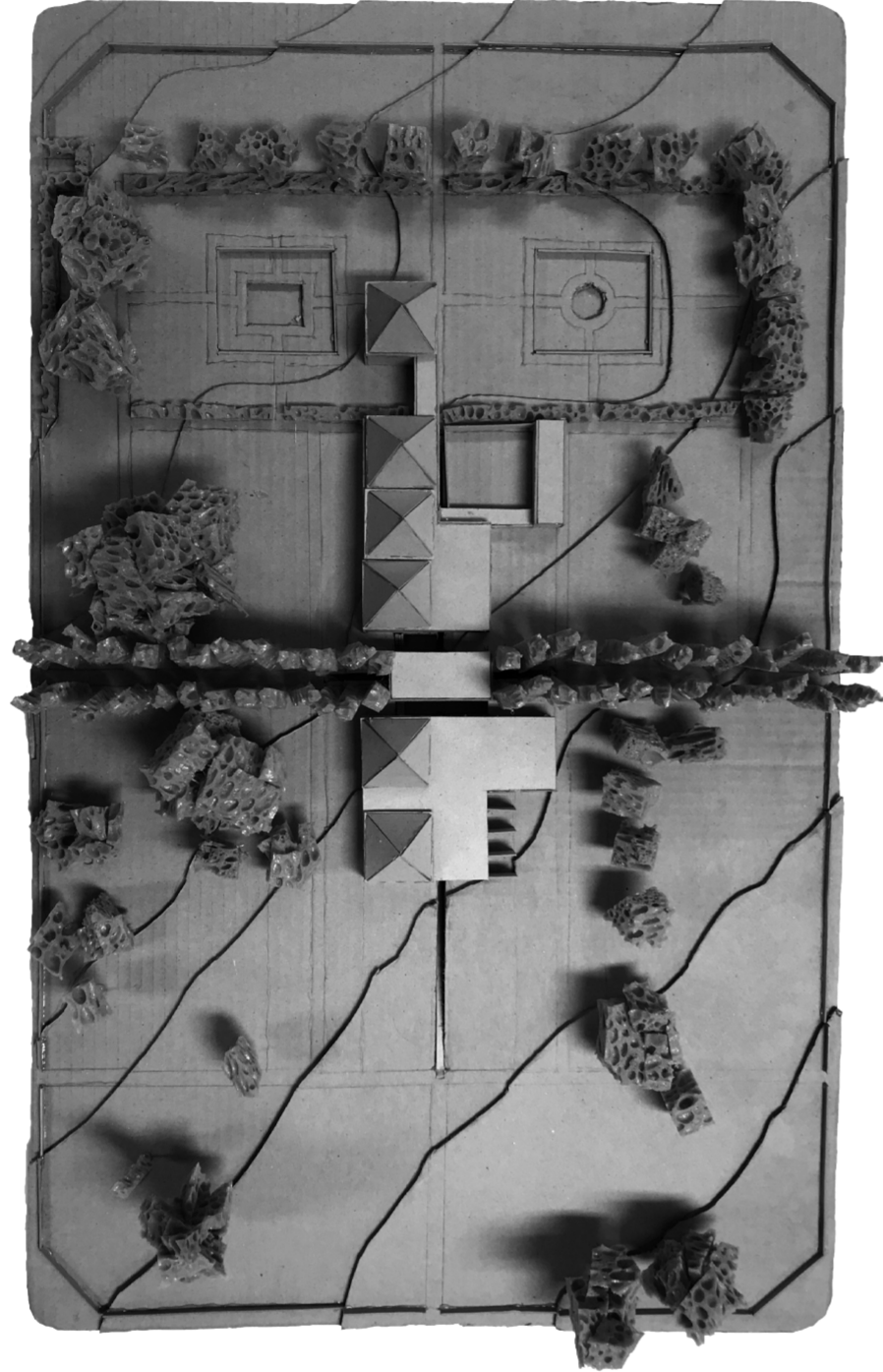


Figure 6.43 - Second iteration massing model

Figure 6.44 - Section through the children's library

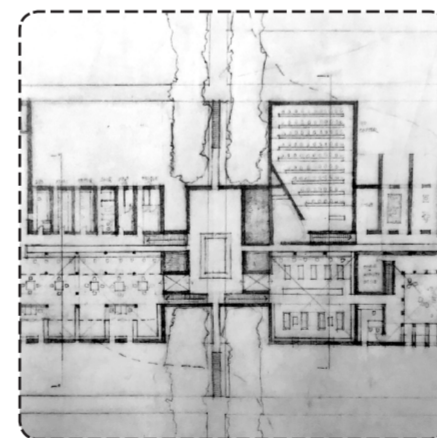
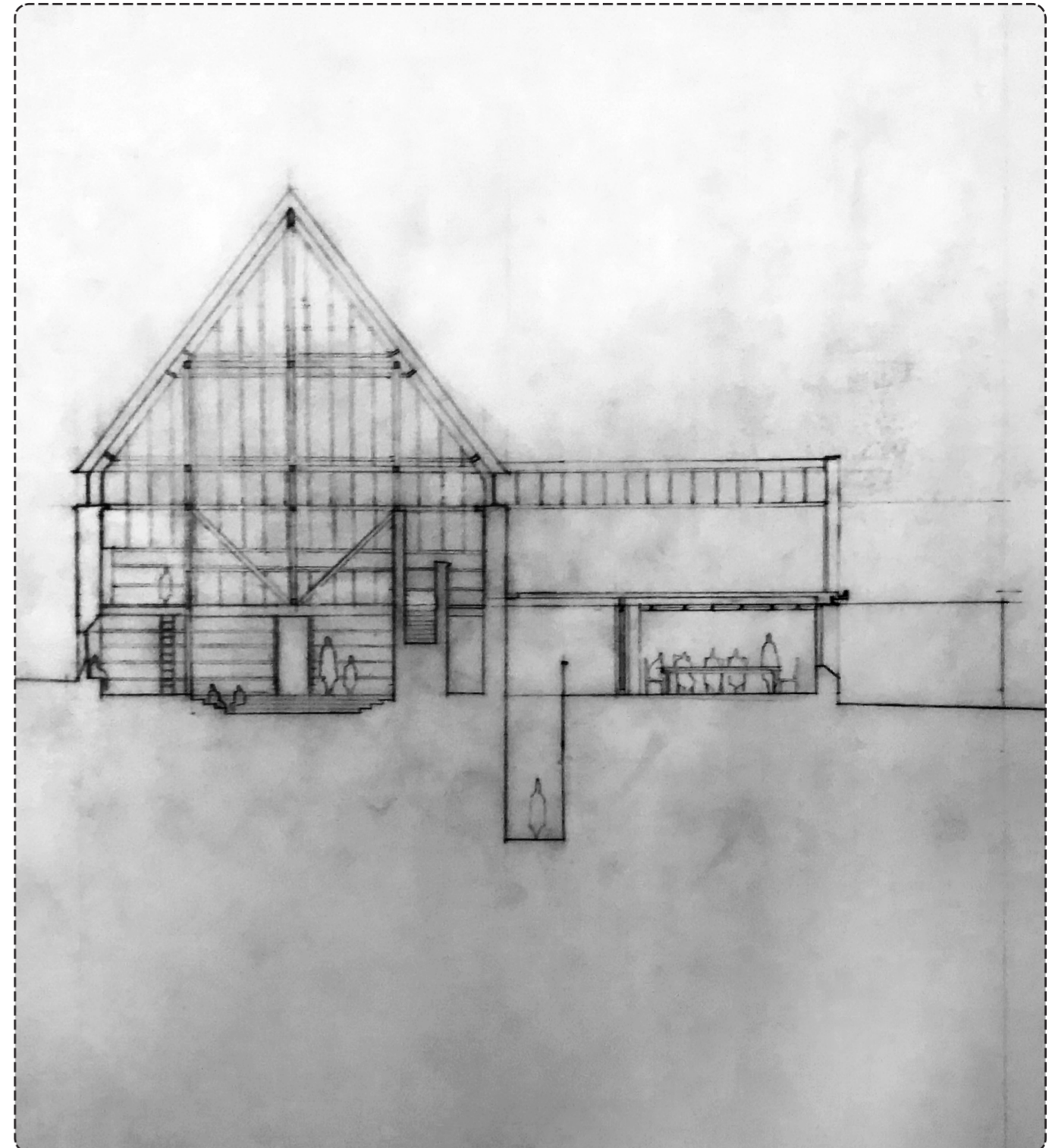


Figure 6.45 - Plan of central auditorium and foyer

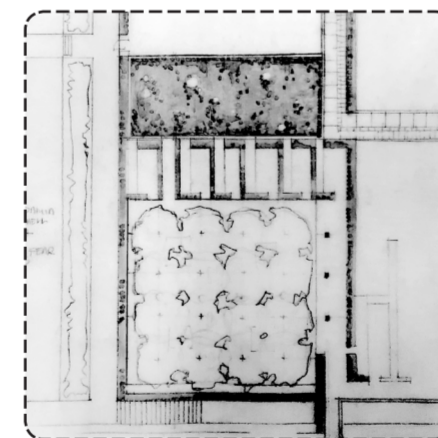


Figure 6.46 - Landscape design for the courtyard

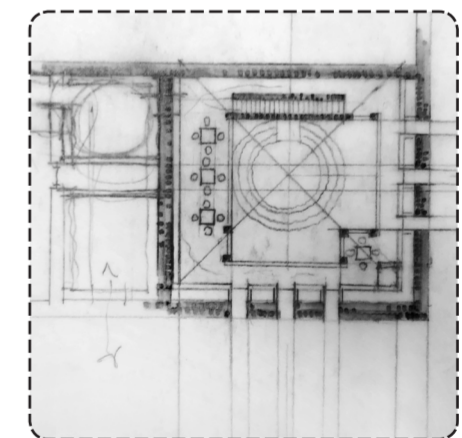


Figure 4.47 - Sketch plan of the children's library





# 6.7.3

## FINAL ITERATION

The third and final version of the scheme appears superficially similar to the second iteration but has incorporated some significant if subtle changes. Due to the fact that the pyramids now housed specific functions, they were each shrunk slightly and offset in a particular direction atop their plinth depending on the space needed within. This shrinking was done to ensure that the form of the pyramid was not undermined but still allowed them to be flexible enough to accommodate the specificities such as light, ventilation and services to serve the functions below. Along with the manipulation of the pyramids and their bases, the portions of the plinth that housed the service spaces were reduced from a double volume to a single volume so as to further celebrate the main function of the library. All ancillary functions not integral to the operation of the library such as the café and auditorium were also reworked, these secondary functions were pulled away from the central library space towards the perimeter of the park and given a distinct architectural language different to that of the main building. This final version also began to spread out and interact with park in a more meaningful way through the inclusion of a series of perimeter ponds, another walled garden space and the integration of a picnic area that extends from the main library building.

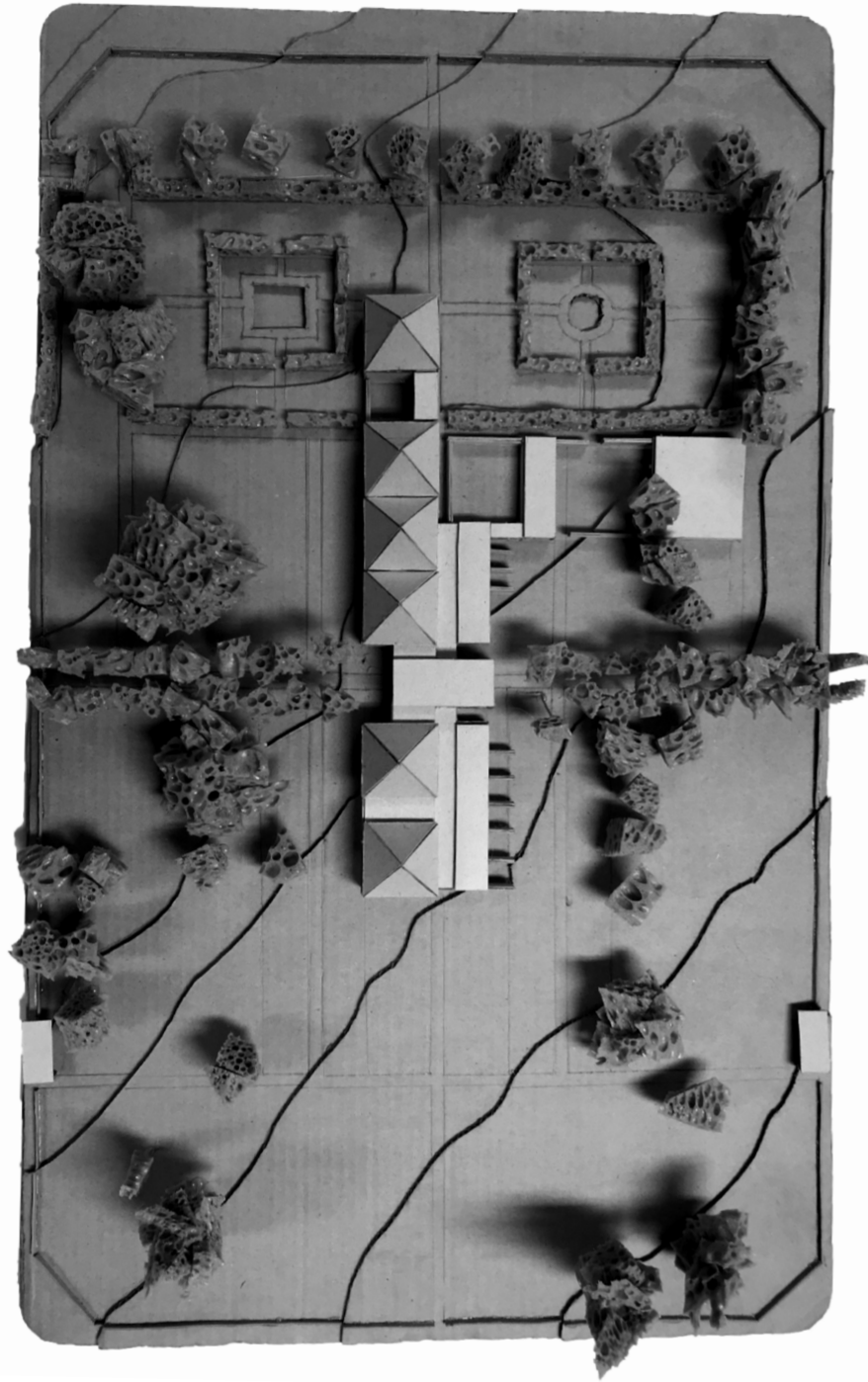


Figure 4.48 - Third iteration massing model

Figure 4.49 - Elevations indicating surface articulation

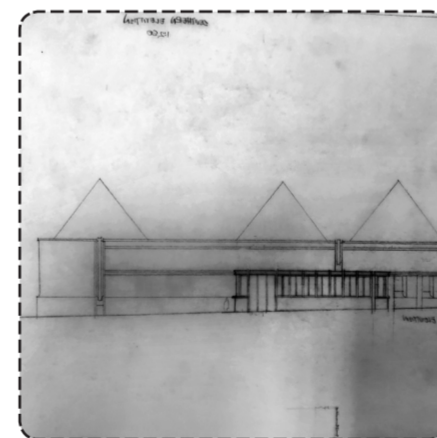
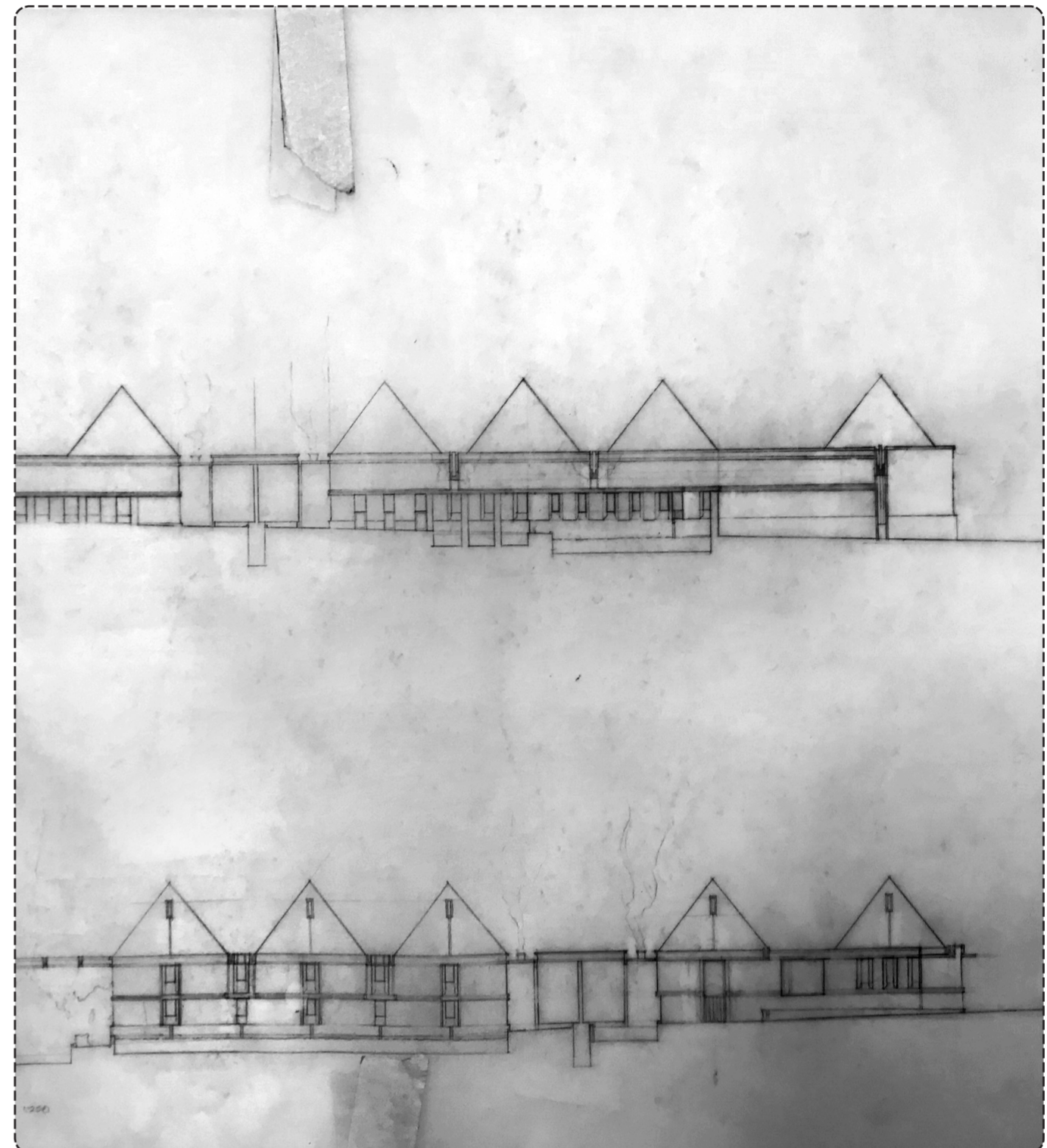


Figure 6.50 - Comparing architectural expressions



Figure 6.51 - Iterating the treatment of openings

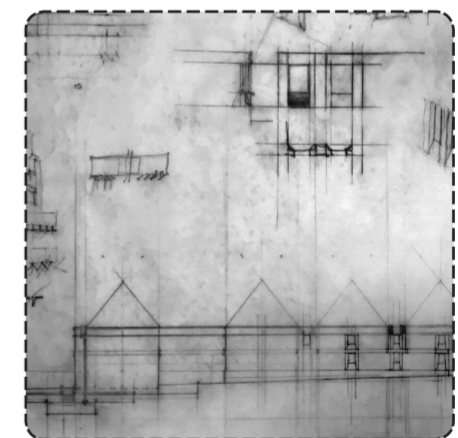


Figure 6.52 - Early elevation explorations





# 6.8

## ST. CYPRIAN'S SCHOOL IT CENTRE

ARCHITECT :

Noero Architects

### CRITICAL ANALYSIS

The new IT centre of the St. Cyprian's School has been interrogated to understand the potential of the contemporary expression of formal geometry in South African architecture. Due to the age of the school, its spatial layout developed in a piecemeal fashion where buildings were added accretively to the urban fabric. As a result, the additions designed by Noero Architects often needed to respond to awkward or interstitial spaces between buildings. In order to respond to both the historical fabric of the school and the awkward sites allocated for new buildings, Noero argues for the value of platonic geometry as a means of mediating these conditions. Inspired by the writing of Aldo Rossi, he argues that when architecture is more geometrically precise it both becomes more useful and has a greater capacity to be adapted to new uses over time (Noero n.d.).

The new IT centre is a cylinder that stands in the middle of the Tortoise Courtyard. Its form was generated as a direct result of its function and its context, the circular plan was used to minimise its impact on the flow of space outside in the courtyard, whilst inside it allows the teacher to see all of the student's monitors from a central desk (Noero n.d.). The cylindrical form was chosen as it best accommodates the IT centre's programme and due to the fact that the form was not undermined through any manipulation of the

geometry - the cylinder is celebrated as a thing of value. A further manifestation of this celebration is the fact that the external staircase is a delicate and lightweight steel construction so as to emphasise the importance and the mass of the cylinder as the primary component of the IT centre. Both the cylinder and the staircase are finished with reflective materials so as to dematerialise their presence in the courtyard, achieved more successfully in the cylinder through the use of mirrored blue mosaic tiles, the staircase was built of polished steel which actually draws more attention through the kaleidoscopic nature of the reflection it picks up rather than appearing light and insubstantial as it would have had the steel been finished with a non-reflective surface which would have allowed one to appreciate its delicate construction. In addition to a well-chosen material and form, the IT centre is also well articulated with the plinth and parapet of the mass sculpted and finished differently from the rest of the form, the circular windows that ring the cylinder are also not just punctures in the façade, rather they have been framed in a different material and have sculpted reveals so as to announce the windows' importance from the exterior and allow in as much natural light as possible. Once inside, the intention of the round windows, combined with the circular rooms was to create a unique learning environment, different from the surrounding classrooms

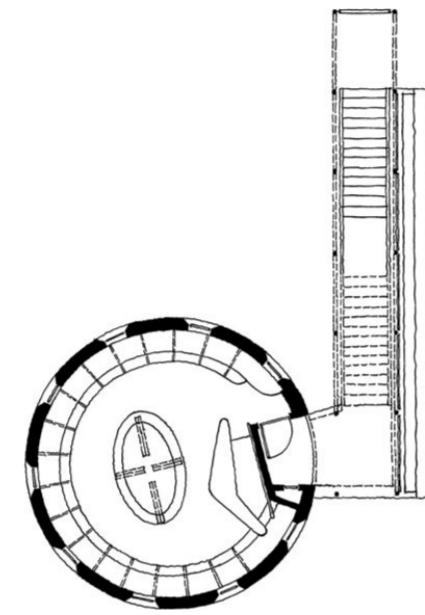


Figure 6.53 - First floor plan of IT centre

Figure 6.54 - Material choice of the IT centre

because of the unique nature of the kind of learning that takes place within. Furniture and fittings were also designed to fit the circular volume and make the most efficient use of the small interior spaces. Despite the constraints of site and size, Noero's appreciation of the value of pure geometry and its functional potential has resulted in a well-considered architectural intervention that is both aesthetically contemporary and timeless.

LOCATION OF PROJECT	DATE OF COMPLETION	REASON FOR INCLUSION
Oranjezicht, Cape Town, South Africa	Part of ongoing masterplan	Well executed contemporary South African formalism

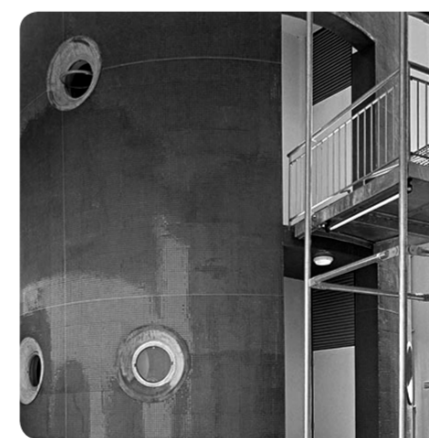


Figure 6.55 - Contrast between cylinder and stairs



Figure 6.56 - Functional role of the cylinder

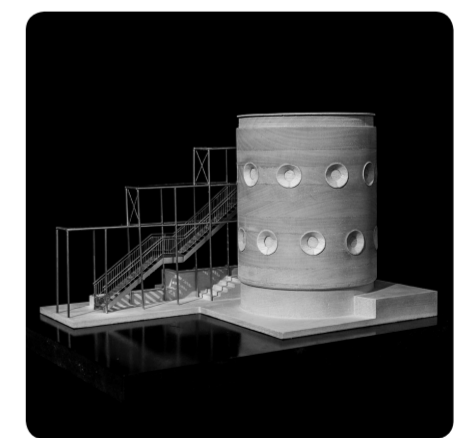


Figure 6.57 - Massing model of intervention



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# 6.9

## TRENTON BATH HOUSE

ARCHITECT :

Louis Kahn and Anne Tyng

LOCATION OF PROJECT	DATE OF COMPLETION	REASON FOR INCLUSION
Community Centre, Ewing, United States of America	1955	Functional potential of the pyramid as a roof form

CRITICAL ANALYSIS

Analysed to illustrate the functional versatility and spatial potential of the pyramid as a roof form, the Trenton Bath House is considered to be the earliest example of Louis Kahn's exploration into notions of served and servant spaces (Scully 1962). The bath house is made up of four timber pyramidal roofs that enclose an open central courtyard, the corners of each pyramid rest atop hollow columns built from concrete blocks. The bath house serves the swimming pool of a community centre, providing cloak rooms, changing rooms and ablution facilities.

Each of the four pyramidal roofs is used as an element to define and announce a specific space beneath, but in order not to undermine the purity of the form, none of the pyramids are manipulated or differentiated from each other in any way in order to respond to any functional or climatic concerns. Rather, in response to these issues, the base was manipulated instead of the roofs, walls are pushed in or out beneath the roofs to let in natural light and facilitate stack ventilation whilst the hollow columns contain the services, such as storage and toilets, that relate to the needs of their adjacent pyramids. Meaning that despite the constraints of multiple informants, the overall form of the scheme is allowed to remain orthogonal and symmetrical without compromising its usefulness. In addition to their role of defining the four main spaces of



Figure 6.58 - Interior experience of the pyramid

the bath house, they also ensured that the building developed an appropriate finish over time. None of the roofs were originally fitted with gutters, meaning that all of the water that they collected was allowed to run down the faces of the concrete base in order to develop a patina on the concrete. Because of the fact that they fulfilled multiple roles which made them



Figure 6.59 - Repeating pyramidal forms

an integral spatial tool for the architecture of the Trenton bath house, the pyramidal roofs were celebrated as independent elements within the scheme and the detailing of their structure and connections was designed to ensure that the four roofs appear to float above the concrete base, only lightly touching it at each of their corners.

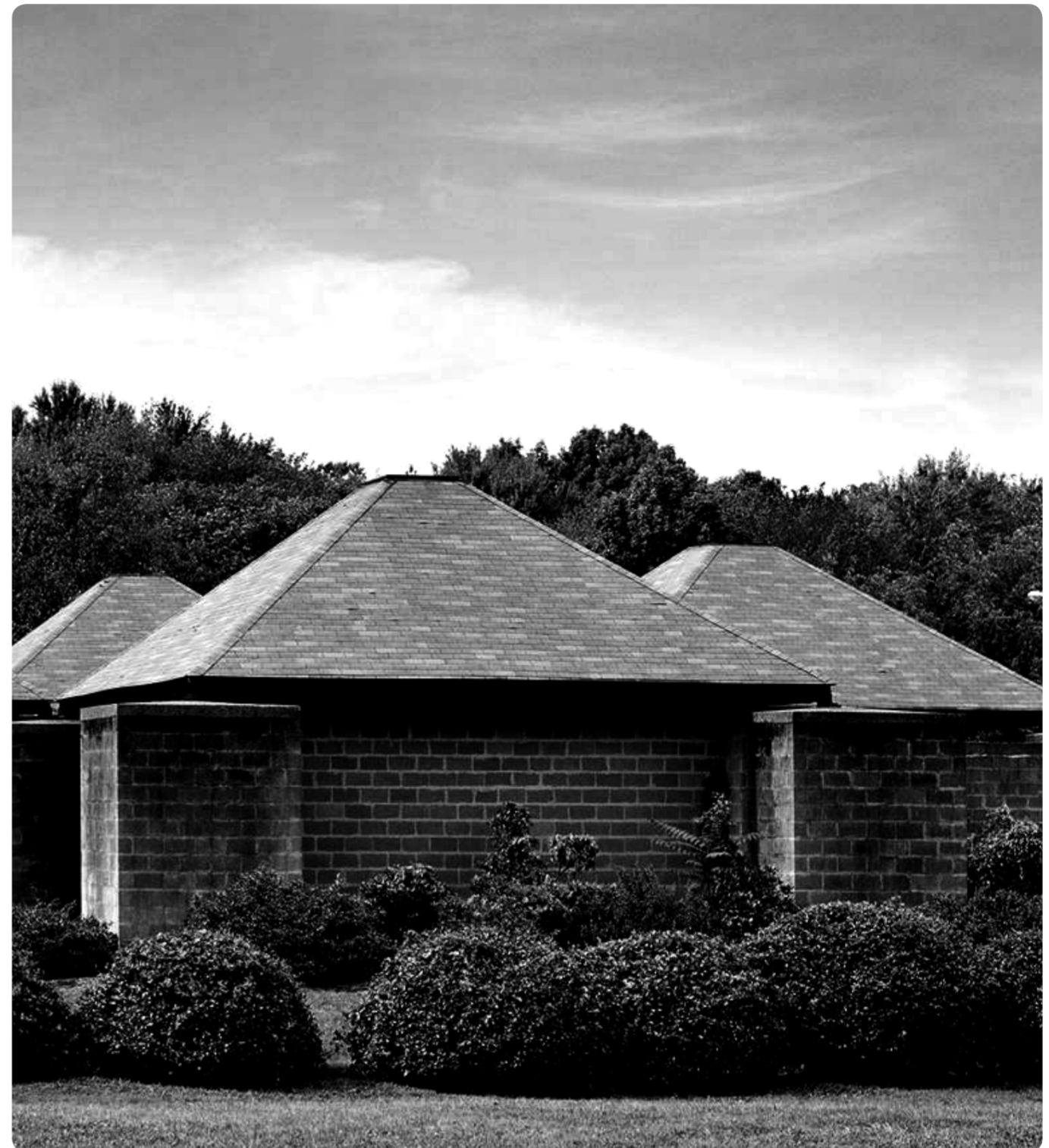


Figure 6.60 - Manipulated base beneath pyramid

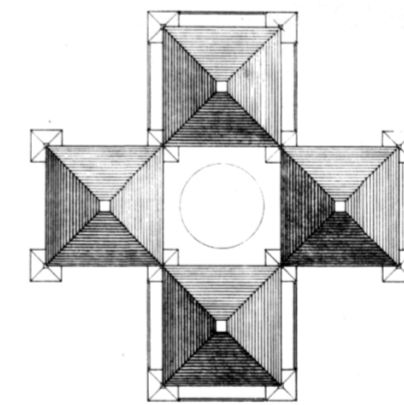


Figure 6.61 - Roof plan of Trenton bathhouse



Figure 6.62 - Connection between roof and base