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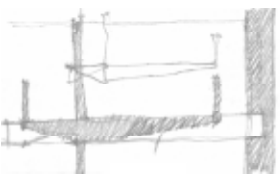

inception

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an architecture of a wall

@1998
Virginia Polytechnic Institute
and State University

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

Master of Architecture

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II. *Inscription*

wall: an upright structure of wood, stone, brick, etc. serving to enclose, divide, support, or protect; specifically, (a) such a structure forming a side or inner partition of a building; (b) such a continuous structure serving to enclose an area, separate fields, etc.

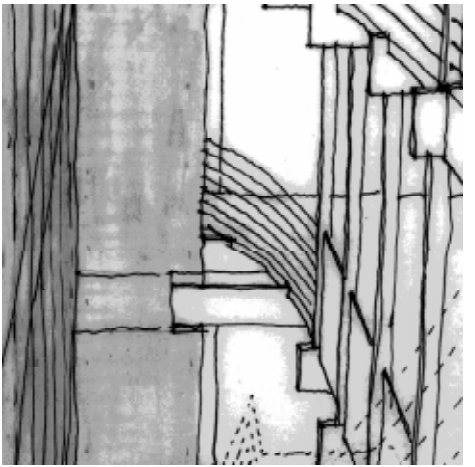
Abstract

A wall is a primordial architectural artifact. The power and potential of a wall lies in its ability to transcend the necessities of construction and become a generator of architecture. A wall can be more than a plane in space, it can sculpt light and provide housing for various activities within its tectonic dimension. These additional functions can create an experience of both solidity of a wall as well as the possibility of inhabiting a wall.

The creation of a 'place'.

A wall also possesses the ability to create a sense of place. This can occur not only through the provision of habitable space, but also through the provision of bearing points for other structural members, illuminable surfaces, or zones of both visual and physical penetration. Within this thesis project, the wall generates a stair, and together, they begin to produce the rest of the architecture.

At first there is a wall. Then there is the apartment.



"It's not an idea unless it works. There is no such thing as an idea that fails" - Louis I. Kahn

Tangibility

Inherent within architecture is the act of making: the production of a tangible artifact. Architecture in this sense is an actuality. From an experiential standpoint, tangible architecture must always be first and foremost tactile. Through firsthand experience, immediate assessments can be made concerning the relationships between related parts and their combined 'whole'. If this immediate, physical experience of architecture exists as an essential aspect within the process of understanding space and form, the theoretical and practical processes which collaborate to create the architectural product can not alone be considered 'architecture'. We experience the physical world through our senses, and our senses define our reality. By extension, we can only truly experience architecture through this sensory and perceptual knowledge. Our senses formulate a kind of knowledge from interaction with what is around us: walls, ceilings, roofs, openings... From these we learn and are made to feel certain things. We experience "… a reality neither potential nor ideal, but actual: to a world of things-in-themselves seen clearly." (1) An illusion, metaphor, or symbol alone do not make architecture. Often, too much emphasis is placed upon what architecture means, or upon symbols which are intended to inform, instead of upon what is most important: the physicality of the object. If, in fact, the physical aspects of the architectural experience are appropriately emphasized, "The world becomes singularly meaningful, yet without being 'symbolical.'" (2) The tangible artifact is all that can be guaranteed. What is inferred becomes relative while the artifact is absolute. The connection of a column and a beam must be clear, and it is this relationship that we control — not how these might be interpreted.

"building is first and foremost tectonic before scenographic - it is built before it is a 'sign'" (3)

(1) For an Architecture of Reality, Benedikt, Michael, (New York: Lumen Books, 1987) p.8

(2) For an Architecture of Reality, Benedikt, Michael, (New York: Lumen Books, 1987) p.4

“the beauty of what you create comes from if you honor the material for what it really is.” - Louis I Kahn

(3) *"The Case for the Tectonic"*, Frampton, Kenneth Architectural Design. 1990 p. 25

(4) The Concept of Dwelling, Christian Norberg-Schulz (New York: Rizzoli, 1985) p.63

Urbanity

(5) Timothy Leary, Hollywood, June 1981. (1993 HR GIGER ARh+)

The built environment is architecture. Architecture is derived from a specific physical need to host particular activities. Any possible 'meaning' must stem from the built form created to fulfill these needs — without this concreteness, architecture can mean nothing. "Buildings do not represent anything but presents it, brings something into being." (4) There is no architecture in thought alone. Architecture can give birth to thought but must not become a slave to it.

The urban environment has, in recent decades, favored suburban living. In suburbia, each person carves out a seamless world of isolation and comfort, where one can exist disconnected and separated from one's neighbors, fellow consumers and commuters, etc. Primary movement becomes the act of getting from one clearly defined zone to another via the automobile, which itself becomes an extension of one's private world. Suburbia becomes a place between extremes. People enjoy the notion of their own space that no one can violate without permission or incarceration; a homogeneity and total control over one's environment. The dense urban environment as a place to live is often seen as something of the past — something that we have moved beyond and have 'grown out of'. The trend in recent years has been to live away from the city — to have your "piece of the earth". To be successful has meant having a house in the suburbs; no longer do we look to the city for housing. The urban environment becomes solely a place to work, while suburbia becomes the place to dwell. We have 'grown out of' the city. "We are post urban ... Here we live in small space like communities and neighborhoods connected with freeways." (5)

There is an innate desire within an urban context to have that feeling of separation - the feeling of being in your own distinct, private place. The lure of suburbia is to

the urban alley - Columbus, Ohio:
Little care is taken to that which belongs to no one. Distinctions are lost: roads inevitably become parking lots which become 'back yards' which become roads again. Everything assumes an undefined homogeneous quality.

have a piece of the earth which is all your own. As the desire for open air and outside private space can be understood as a reasonable request, its appropriation to a suburban condition is not mandatory. Even within a dense urban landscape, it is possible to create an outdoor space which an individual can use as its own. A place where the interior is allowed to spill into the exterior, a private sanctuary away from the noise of urbanity.

Place

One of the most important roles within architecture is the support of a sense of place. The coming together of four walls defines a place; it becomes the role of architecture to make this place a home, an office, a theater. Construction is the erection of four walls; architecture is making those four walls into a 'place'. It is through the informed assembly of materials that 'construction' transcends itself to become 'architecture.' The method of construction becomes the vehicle from which architecture stems.

Separation often plays a large role in the sense of belonging and possession. In suburbia, that separation is clearly marked as a *patch of grass.* The challenge in the urban context is to achieve that sense of separation in what amounts to a few inches: the thickness of a parti wall. Privacy stems from the feeling of having your own space, separated from others.

The creation of a meaningful place becomes increasingly more difficult in the urban context due to our need for private outdoor spaces (the suburban "backyard") and the close proximity of adjacent structures. One defining characteristic of a "place" is the relationship between inside and outside; the inner private world and the outer public world.

More often than not however, the relationship between inside and outside only manifests itself through the method of construction. Such practices fail to deal with the

need for a tangible transition between the interior and the exterior. In this sense, architecture can become the joint between opposites, that which separates two different worlds. If the enclosure is determined by nothing more than the current construction methods, it often falls short of being an adequate transition. One is thrust from one world to another in the span of a few inches. No time is given to acclimate ourselves to the new environment. To alleviate this abrupt change would allow for a gradual transition, to experience the joint that separates. This joint between opposites must become clearly expressed in order for 'enclosure' to be experienced. The "distinctive quality of any man-made place is enclosure". (6) It determines how we experience space. It is where we encounter architecture and where architecture shapes our perception of space. Enclosure is what allows specific qualities of light to enter, affords us views out and into other spaces and controls what we experience and perceive. The "character of a man-made place is determined by its degree of openness". (7) This joint or enclosure often exists as a thin line - the thickness of a brick, the width a wood stud. It fails to become an adequate separation, it fails to become an adequate enclosure and fails to define a meaningful place. Most of the built environment, while providing that thin line, fails to deal with our innate need for a discernible transition between opposites - between the inner and the outer realms.

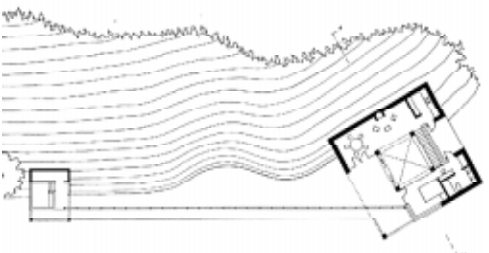
At the most basic level, architecture has to provide a physical shelter from the elements. This shelter can exist as wall, attempting to create pocket of inhabitable space, a sanctuary within an otherwise hostile world.

> *"...he will mark off a portion of his field by means of walls, which set up an enclosed finite space over against amorphous, limitless space..." (8)*

(6) Architecture: Meaning and Place, Christian Norberg-Schulz (New York: Rizzoli, 1988) p. 242

(7) Ibid., p. 236

(8) Jose Ortega Y Gasset



Successful though it might seem, this level of shelter fails to provide adequate transition between opposites. Joint and enclosure collaborate to create a place which has characteristics of both inside and outside, yet belongs to neither. The experience of 'transition' is generated by the simultaneous comprehension of the two distinct entities. From within this place, both worlds can be experienced. An architectural thickening of the exterior wall begins to accentuate the transition between inside and outside as well as allow for habitation between the two worlds. The transition becomes occupiable and is allowed to become a world unto itself.

Occupying a joint is in a way occupying architecture itself. The space that is created by the architectural joint becomes more than a by-product but an experiential descendant. To occupy this joint becomes the act of occupying architecture's initial act, the joining of materials, and through the manipulation of its form, spatial qualities are determined.

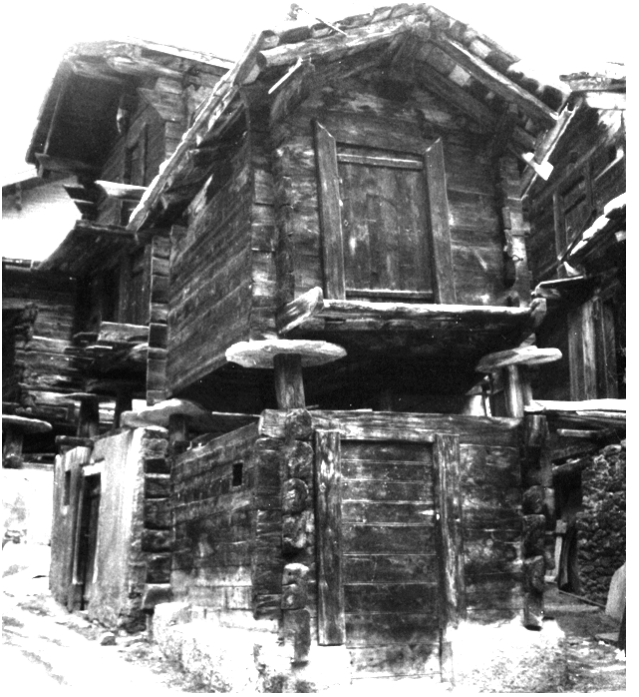
Threshold is the point at which we first encounter architecture. In many ways, architecture can be seen only as joint; the separation between realms - in which the enclosure separates. The "joint is the essence of architecture - primordial tectonic element. (9) How the joint is articulated determines the comprehension of a transition as well as the character of a spatial experience. The joint in turn becomes the sculptor of light. Light gives the joint form, and the joint gives light form. Both would be imperceptible without the other - they are intrinsically interdependent, relying upon each other.

"The art of detailing is really the joining of materials, elements, components, and building parts in a functional and aesthetic manner" (10)

The real potential of architecture resides in its concreteness and it is through

(9) *"The Case for the Techtonic"*, Frampton, Kenneth, Architectural Design. 1990 p. 25

(10) *"The Tell-the-Tale Detail"* Marco Frascari Via: The Journal of the Graduate School of Fine Arts. (University of Pennsylvania) Via 1984, no.7, p.22-37



making that the concreteness becomes evident. The act of making itself becomes a generator of architecture - a generator of meaning and architectural significance.

> *"meaning and character can not be interpreted in purely formal aesthetic terms, but are intimately connected with making." (11)*

(11) Architecture: Meaning and Place, Christian Norberg-Schulz (New York: Rizzoli, 1988) p. 233

The assembly of two materials — the way a 2x4 is placed on top of a concrete wall, the way a metal handrail attaches to a stair, are physical relationships which describe a real artifact. From such tangible relationships comes deeper understanding of architectural significance. The process begins with the combination of materials in an informed manner. Architectural space can not be 'formed', but merely defined through the intelligent placement of materials. By building, an architect tries to confine space and give it a sense of edge, a sense of perimeter, a sense of enclosure. Two materials meet and demand a joint which becomes a transition or a corner. Corners are connected thereby creating a wall which in turn can define enclosure. Enclosure is made from 'joint' and 'space' is made from 'enclosure'. The "joint [is the] most basic element of architecture" (12)

(12) *"The Case for the Tectonic"*, Frampton, Kenneth *Architectural Design*. 1990

This idea of making a place manifests itself at many scales and levels; not just at the scale of the dwelling but at the scale of the detail. A joist needs a place to rest; a place to bear its load without interference. A place for a wall; a place for a column; a place between the two from which to experience both in their totality and in their unity. These places don't have to result in a series of discrete separate entities but, together, these places come together to form a coherent and cohesive whole.

Structure and Form

Structure as a primary form giver is often unconsidered. Many times, there is no attempt to reveal how buildings are actually assembled. Lost are the clues of what

a simple change in material can indicate both a continuity and a separation. the material change becomes the constant thread that winds throughout the architecture - tieing differentiated elements together. a railing unites spatially different conditions between floors while the hand senses this continuity. a change in flooring indicates the change from vertical to horizontal. the foot senses the subtle differentiation.

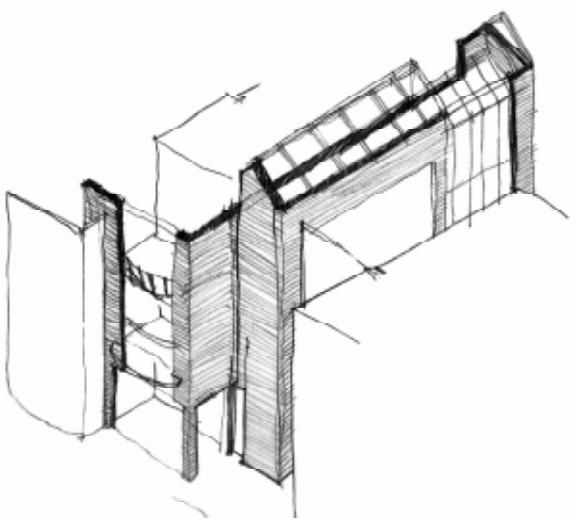
surrounding enclosures really consist, how a roof is supported or how openings are made. What defines spatial enclosure has increasingly been reduced to non-descript expanses of painted gypsum board, thereby indescriminantly concealing the bones of "architecture" and its principal of construction. A space which offers only an uncontemplated skin fails to take advantage of the inherent richness of its underlying structural systems. Such lack of thought curtails the potential of a relationship between the combined materials. Rarely are materials assembled in their own right. Moreover, they are often subservient to a higher order or concept.

> *"material now doesn't lead to anything - the material instead is used to illustrate something" (13)*

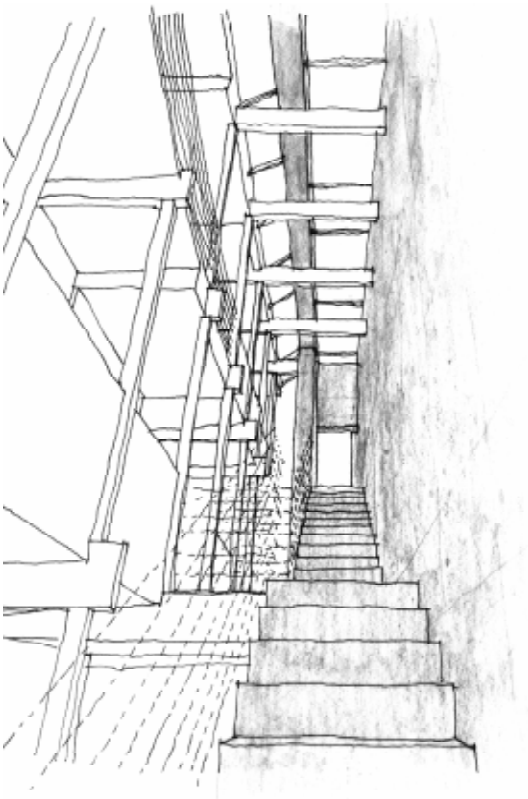
Each material, whether it be brick, wood, concrete, etc.. has its own characteristics and limitations. Each has its own nature which should help to determine where and how that material is used. One of the beauties of a material is to experience it in terms of its intended use and assemblage with other materials. The act of making should become evident in order to fully understand the material and its importance.

(13) Structure and Intuition, Peter McCleary *AIA Journal* October. 1980 p.119

a wall …



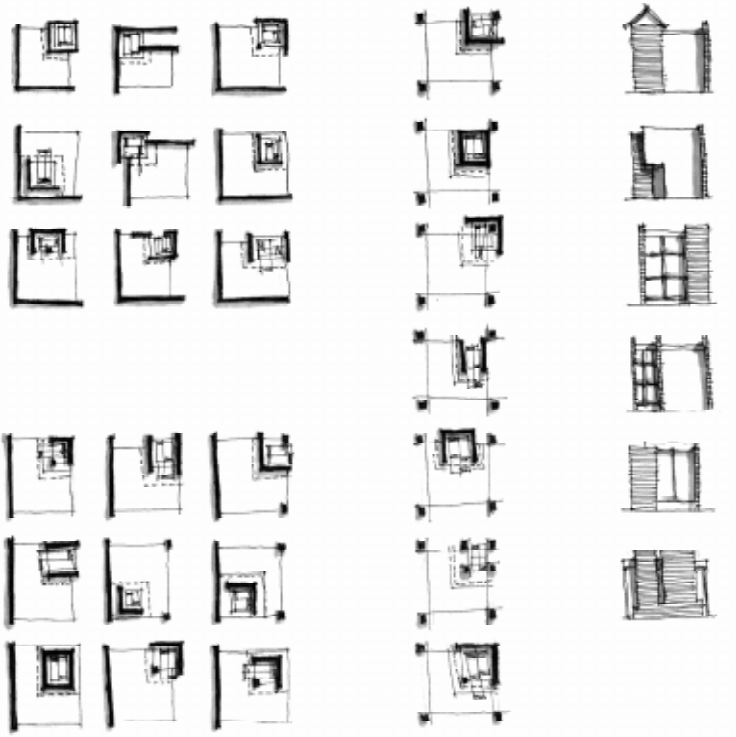
“The character of the wall is often determined by the way of making.” The wall is “...the primary boundary of the urban space.” - Norberg-Schultz



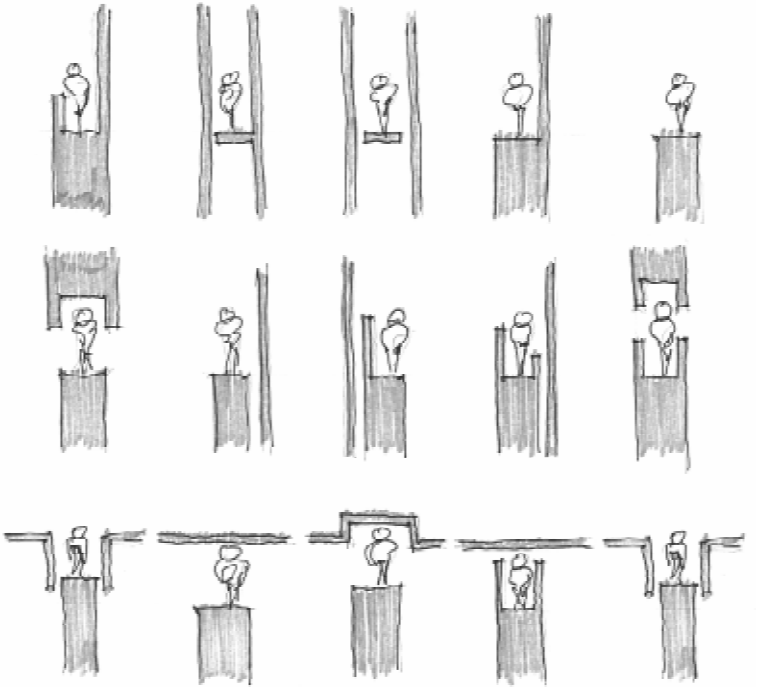
This thesis is in many ways an investigation into the potential of a wall's mass as a habitable place, to be within the enclosing wall itself. Within a simple division between spaces, the wall becomes substantial enough to allow itself to be occupied. Along the length of the wall, special places are defined to which you can pass through and experience it's thickness, massiveness, and solidity. Activities begin to carve a place within the mass of the wall; in this case, vertical circulation grows outward as an extension of the wall. To use this vertical circulation becomes the act of occupying a wall and not simply being adjacent to a wall.

The wall does more than simply provide vertical circulation. It becomes simultaneously floor, railing, ceiling, and container for light: opening to sky above. The very wall which acts structurally is at the same time a receptor for daylight. It's both the source of light and energy for much of the architecture.

next page:
the relationship internal to the core/stair maninfests itself externally between facade [privacy wall] and stair. the residual space between core and wall [joint] becomes apartment. the internal architecture of the apartment derives from the relation between parts - be it beneath, between, or beyond ... the core and wall remain essential while the rest of the architecture becomes adaptive.



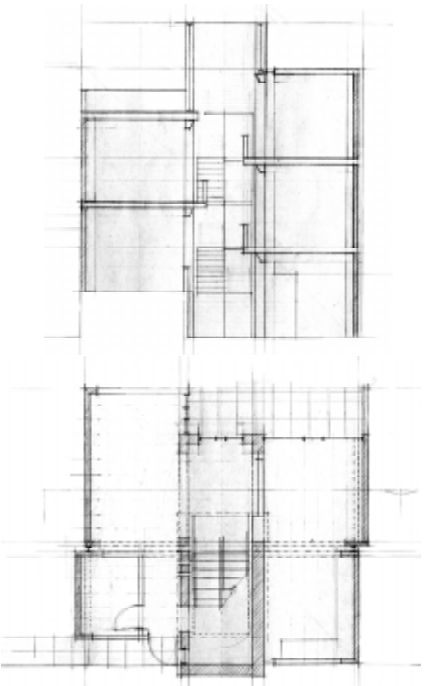
to be within a wall ...



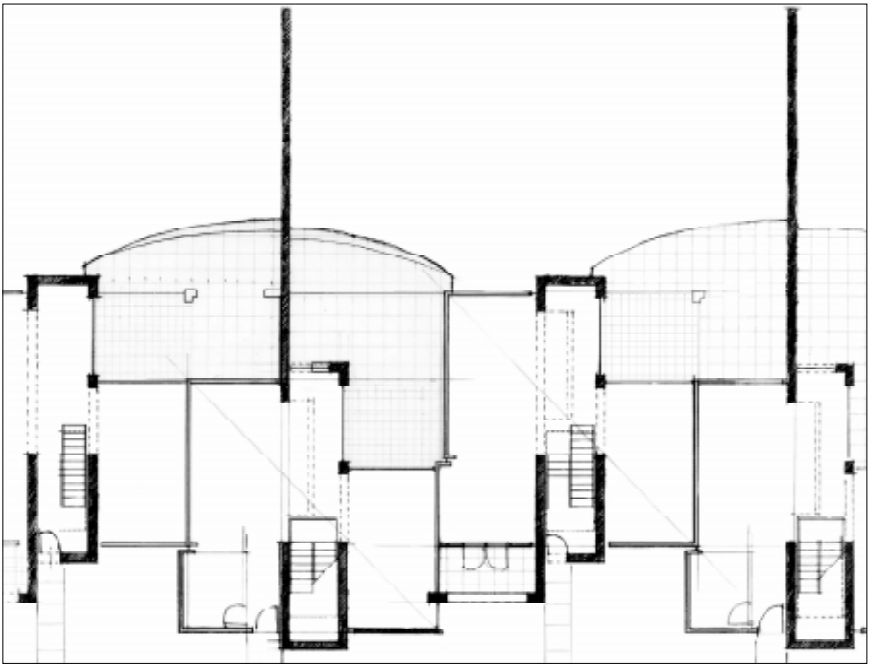
‘within’ has the ability to be experienced in many ways, ranging from being on top of, between, under, against, etc... inherent within each condition are opportunities which range from the framing of views, the ability to open to the sky above, or creating a sense of a sense of enclosure yet remaining open.
next page: an attempt to investigate a specific condition and contextualize it into a tangible experience.

The wall is both separator between opposites and a place unto itself. The wall is penetrated at special places where the mass is experienced through its crossing. The adjacent house gently reaches outward to rest upon the wall; a material change indicates the crossing of paths. The foot perceives the change from concrete to wood.

a wall which separates ...



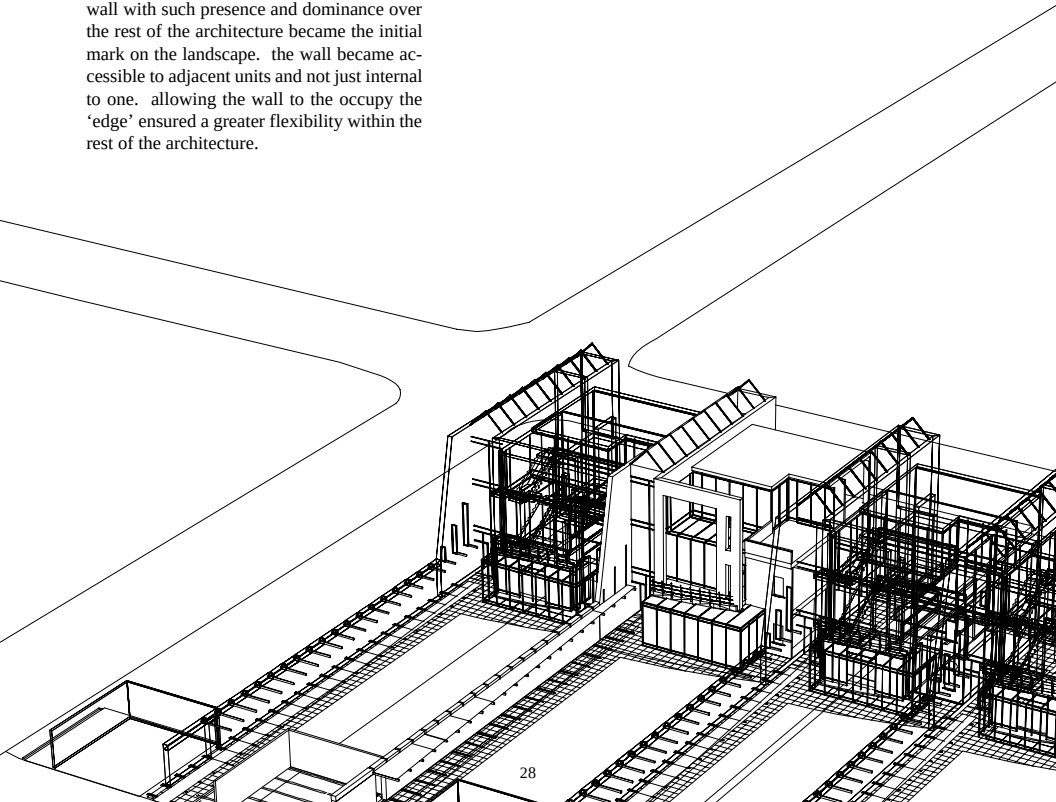
The use of ‘a wall’ began early in the thesis as a division within the apartment. Instead of using the wall as the parti between units, it becomes central to each individual unit. All other spaces within the unit are joined to the wall, relying upon it structurally, spatially, and for light. The wall pushes the public and private to their respective sides, integrating some while allowing a specific level of isolation. The wall stretches outward into the exterior green space, defining distinct, private outdoor spaces. The wall marks a place around which the apartment grows. It defines a private realm for the apartment, a semiprivate realm for the interior to spill out doors, and finally the public outdoor space.

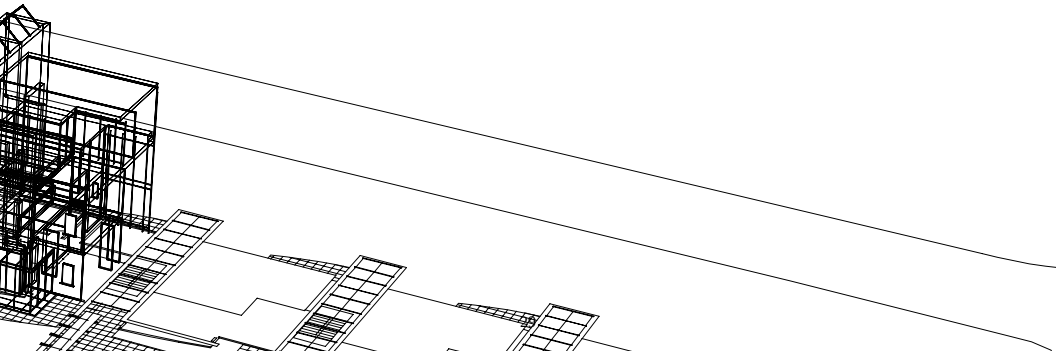


One wall is given internally to each apartment. the way in which the wall is used changes as it becomes more public. Once the wall breaks free from the interior world of the individual apartment, adjacent units begin to use the wall. two units share the wall as it begins to define the semiprivate outdoor space. Once the public realm is reached, many units share the wall which defines the exterior extent of the units.

... divides ...

the wall (as internal divider) shifted to become the separator between adjacent apartments. a wall with such presence and dominance over the rest of the architecture became the initial mark on the landscape. the wall became accessible to adjacent units and not just internal to one. allowing the wall to the occupy the 'edge' ensured a greater flexibility within the rest of the architecture.



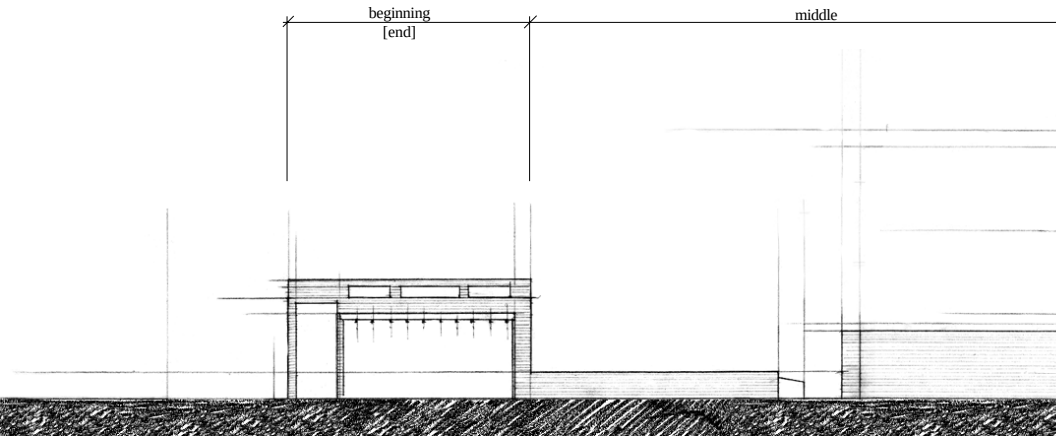


The wall begins to develop two distinct ends - each of which clings a 'house'. At one end, the 'house for the automobile', a place is created for that which is often overlooked in the urban context. At the other end, the 'house for the person', a private place is created isolated from the noise of the city. Between the two, the wall stretches; acting as guide from public to private. The wall is at the same time beginning, middle, and end of the journey.

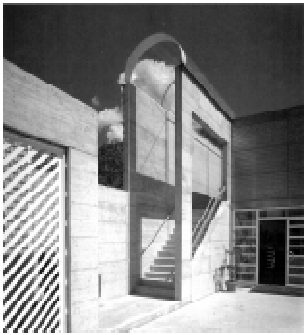
-*Entry* [beginning] initiates contact with the wall. Movement is forced through the wall and is pushed towards the house.

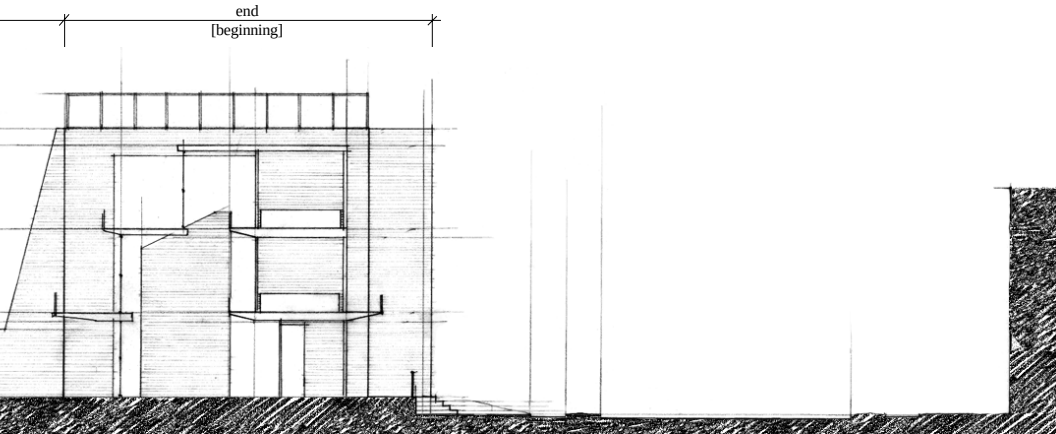
-The *courtyard* [middle] separates yet unites the person and the automobile. It is at the same time outside and yet still within the confines of the wall.

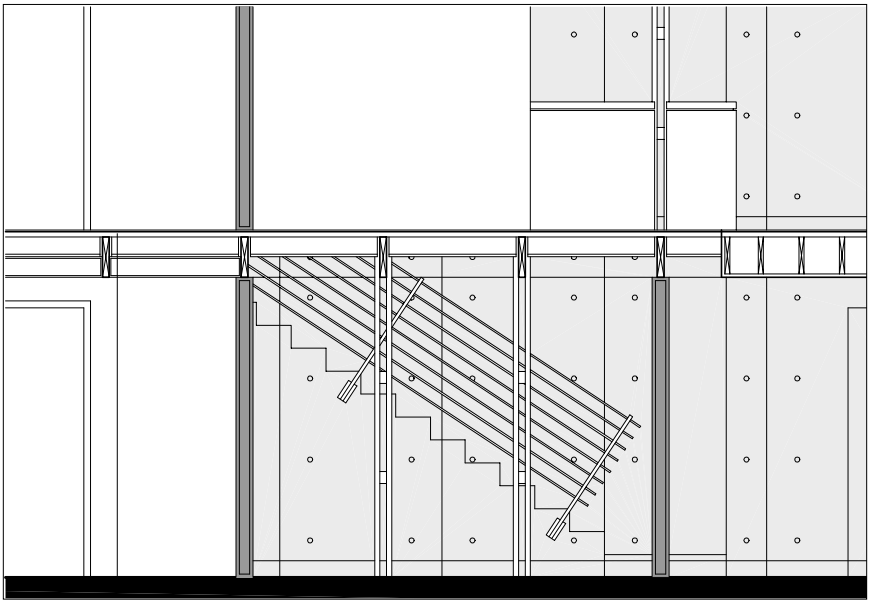
-The *destination* [end] allows entry into the wall for a third time as the house is penetrated. From within the wall, points of access are given into the living spaces. The wall constantly governs how and where entery is allowed.



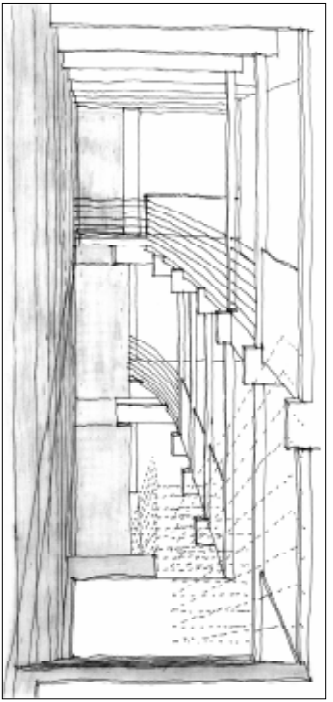
the use of a wall ...

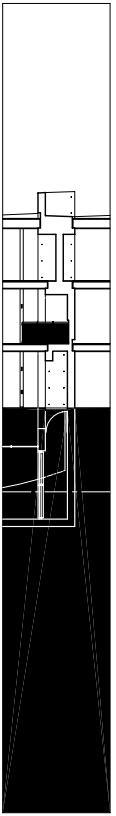






The column was introduced into the project as a second structural system which allowed the wall and its nature to change; each system strengthens the other as their differences become apparent. The rhythm of the column is fundamentally different to that of the concrete wall and an 'interference pattern' is created between the two. The columns frame portions of the wall while concealing others. Privacy occurs within the system of columns while the more public spaces occur outside the columns, relying upon the wall. The placement of the columns frame the vertical circulation which takes place within wall; allowing it to climb upward unobstructed. The joists that rest on the wall are fundamentally different that those that rely upon the column for support. In either case, a place is created where the joist can bare its load without interference. Everything is given the chance to reveal how it becomes.



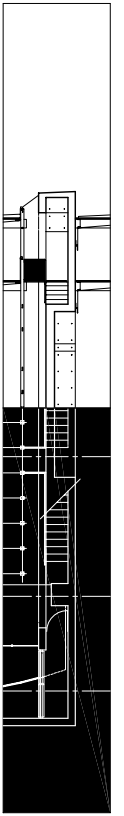


indicator ...

left: the use of a wall as structural member. the wall yields to the apartment. places are created within its thickness which accommodate joists, hand railings, finished floors etc...

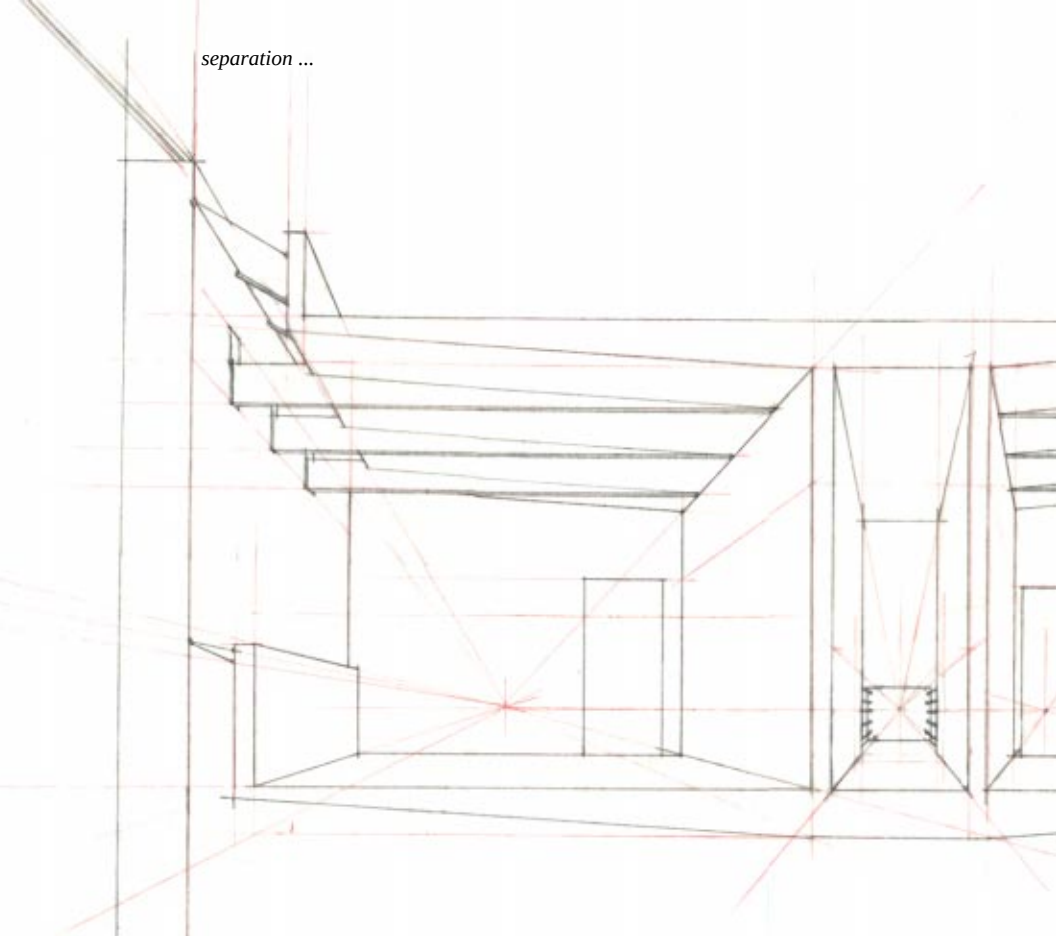
a column is used in conjunction with the wall allowing the wall's nature to change. the column removes much of the responsibility placed upon the wall so that it can respond solely to the individual; it is allowed to become rigid.

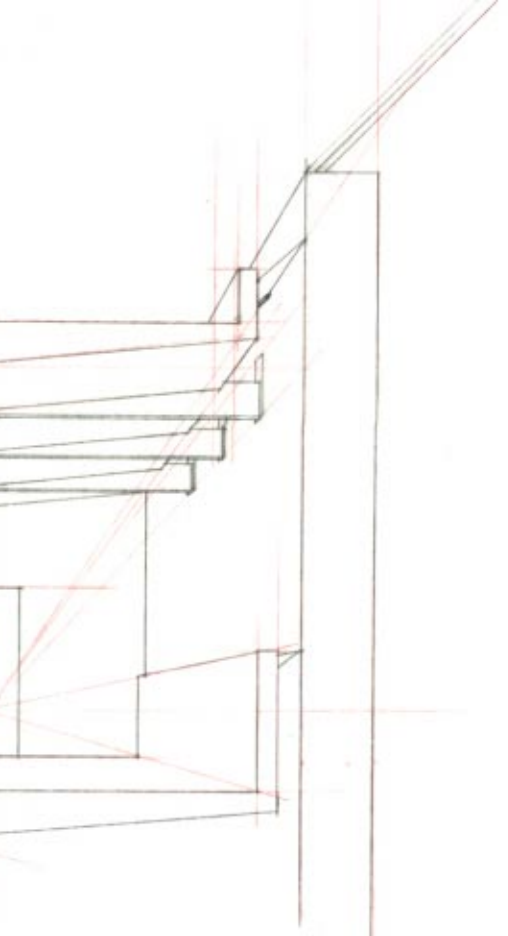
right: the wall becomes container for the individual. the column allows the wall to open upward to the sky, emphasizing its verticality. a piece of the wall is removed revealing the stair. it is an additive and not subtractive relationship. the stair is an integral and permanent part of the wall.

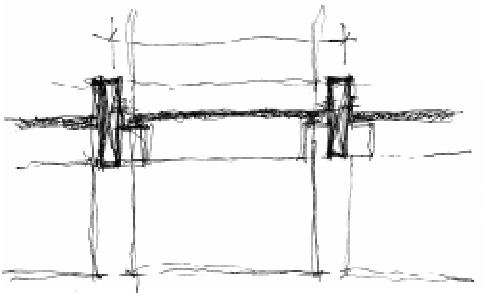


A clarity of material as each has it's place and is allowed to express itself and it's role throughout the rest of the architecture. Each material is used based upon it's own characteristics and needs.

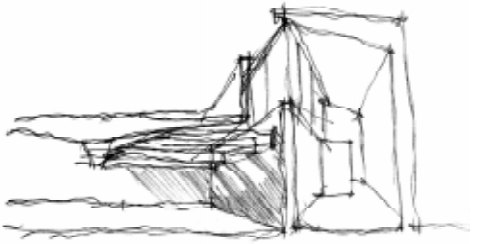
separation ...

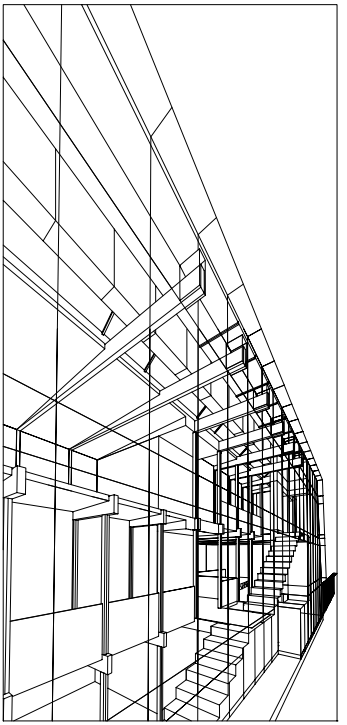




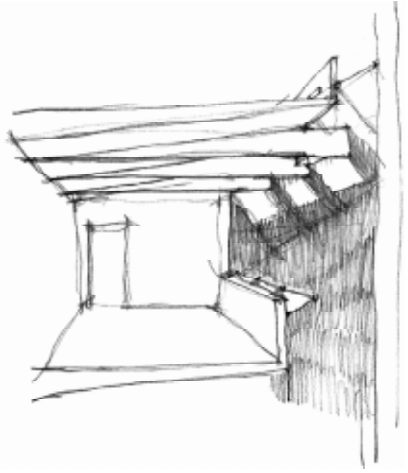


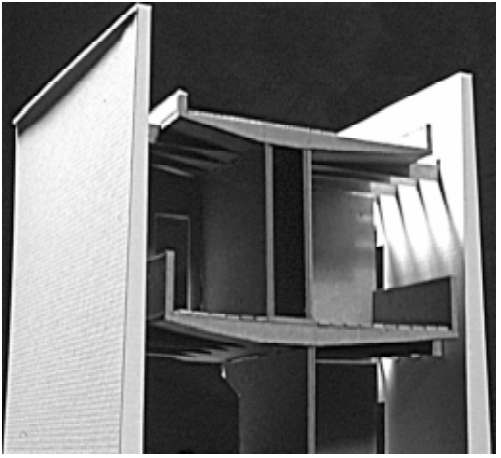
A clear distinction is made between that which supports [structure] and that which is supported [skin]. The two are separated allowing a line to exist between, isolating both. The skin is constructed of prefabricated metal panels which are bent and 'locked' together forming a continuous skin which is fastened to the structure above with.

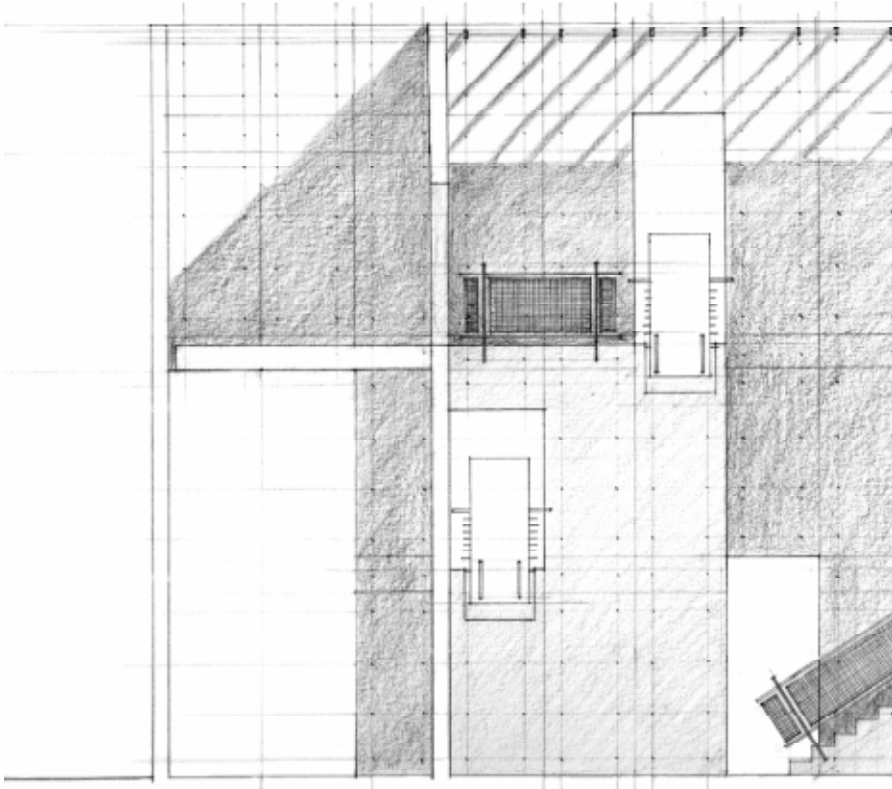


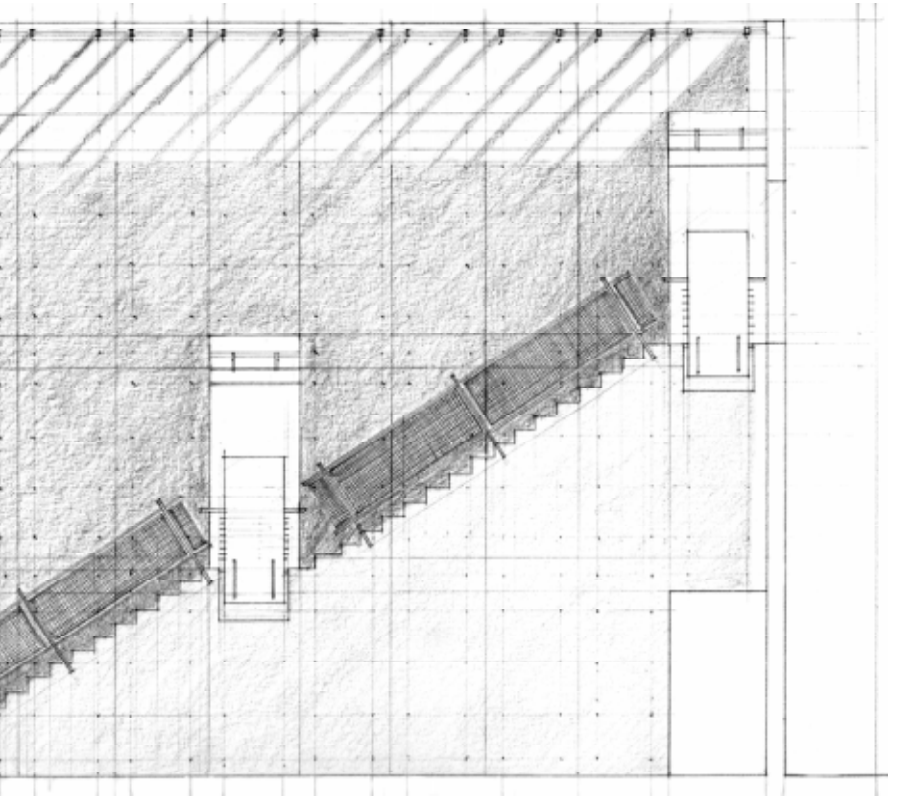


The separation of structure and skin reveals the making.
The structural rhythm becomes apparent as shadows mark the wall. Light is used to separate the structure and skin as the two approach the joint between wall and column. Instead of being concealed, the structure is allowed to expose itself: the connection between joist and wall becomes evident. The very same place where the structural systems meet is where light is allowed to enter; the place that is usually the most covered and hidden becomes that which is most visible. Traditionally the joint or corner becomes the most closed, while the openings happen within the expanse that exists between the joints. An attempt was made to allow the openings to occur in the place which is traditionally closed, to allow light to fill the space from the outside and filter in.

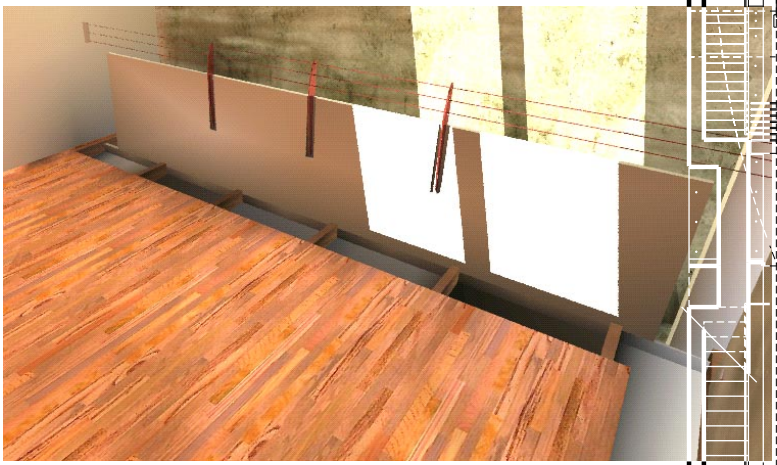




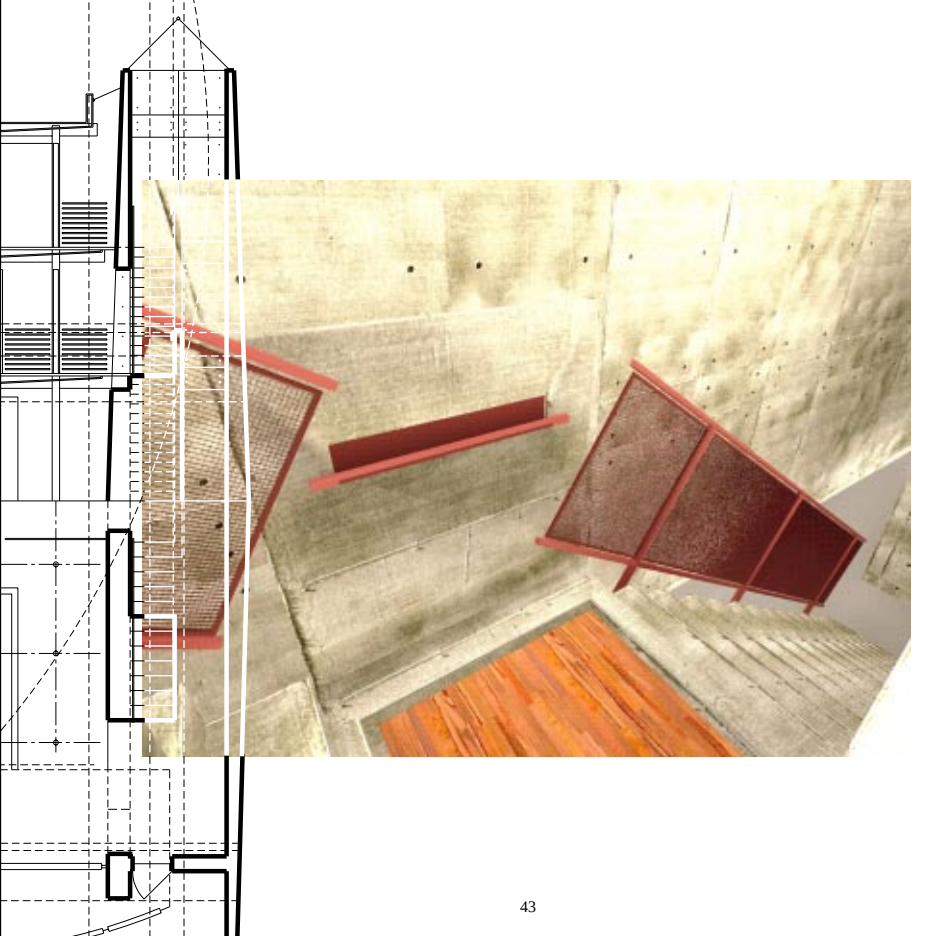


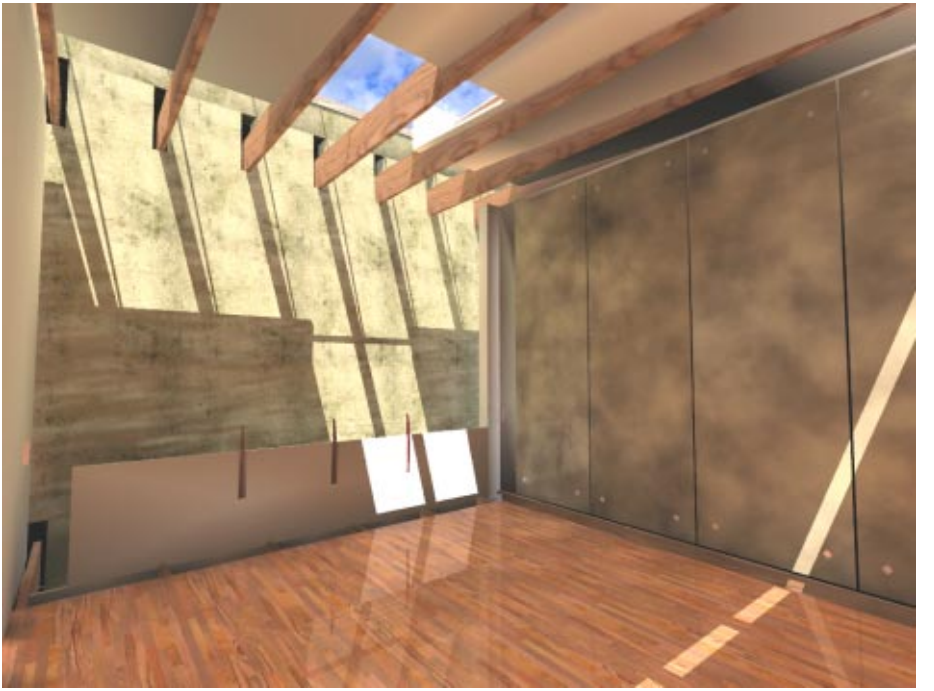


that which is skin is differentiated from that which is structure. the skin which is ceiling for the floor below folds upward to become railing on the floor above.



opposite: a material change at the landings differentiates the vertical movement of the stair and the horizontal movement of the corridor; the overlap of the two systems: horizontal/vertical and concrete/wood





“i think that if i were to redefine architecture, and not put it on such glorious pedestals as one likes to put it, and i do too; i would say fundamentally that architecture is conscious of the room ...

... it is the making of a room which is architecture ...”

- Louis I Kahn

an architecture of a wall

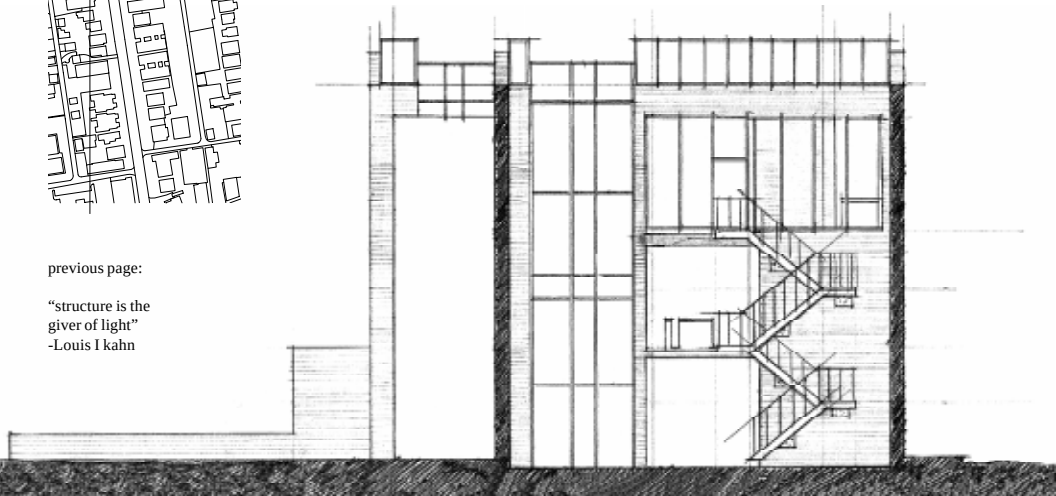
[4 houses in a row]

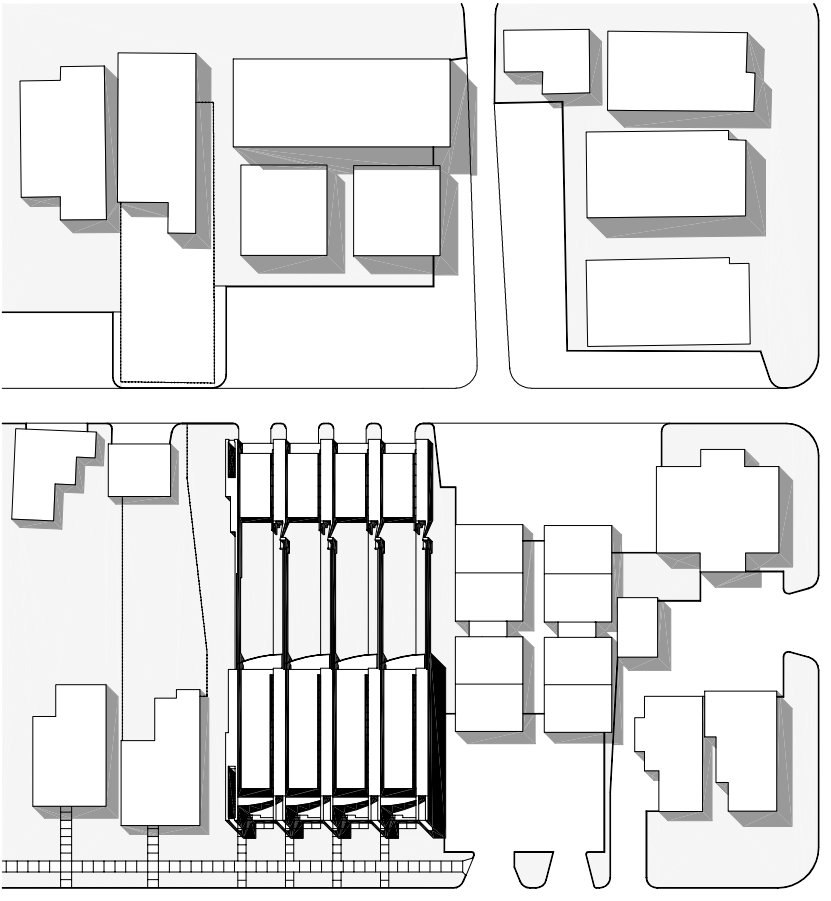
site: Columbus Ohio

previous page:

"structure is the
giver of light"
-Louis I kahn

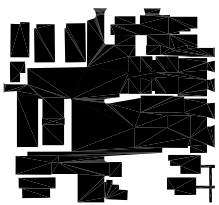
This thesis began as an investigation into a housing unit. Initially the site chosen was in suburban Columbus, Ohio. More important than the specifics of an exact street number was the comparison of the suburban condition against that of the urban condition. The intent was to develop a suburban apartment with a well defined sense of place and sense of privacy in a high density environment. The project eventually shifted to a more urban setting within the fringes of downtown Columbus. This decision was driven by the need for stronger site related constraints which resulted in the project evolving into a series of four rowhouses. Regardless of the many different sites, the intent always remained the same: a sense of belonging and a sense of place within the urban chaos via a clarity of material and structure with a wall as generator and controller of the architecture. A wall and a stair stemmed the initial investigation as vertical circulation and its relation to the rest of the architecture became increasingly more important. An investigation into joint and in turn how a series of spaces can be joined around a central core initiated the discourse within the apartment. An emphasis was placed upon the joining of space as well as the joining a materials at many scales: the scale of the site [joining of adjacent units], the scale of the apartment [joining of individual spaces], and the scale of the person [joining of two materials].

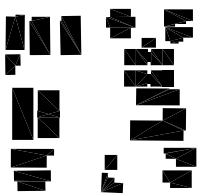


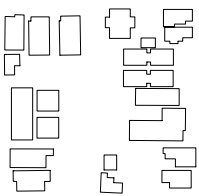


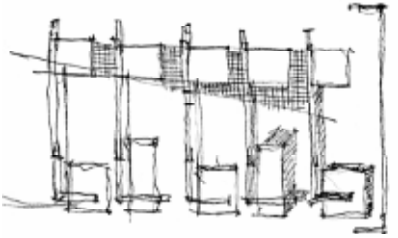
site ...

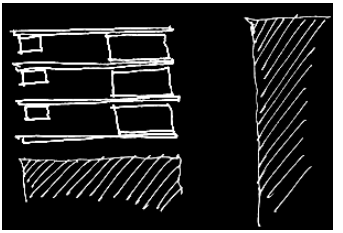
One of the biggest problems with the chosen site is the lack of thought given to the automobile. To accommodate the necessary parking, the majority of the exterior green space has been graveled or paved over. The result has been that the rear of buildings has become an ever expanding sea of paving. Where was once a place to sit has now been transformed into the urban wasteland.





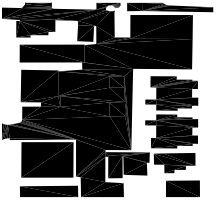


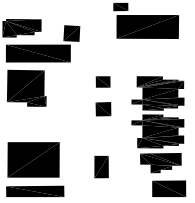


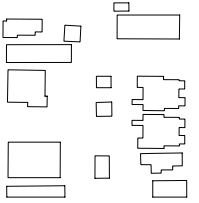


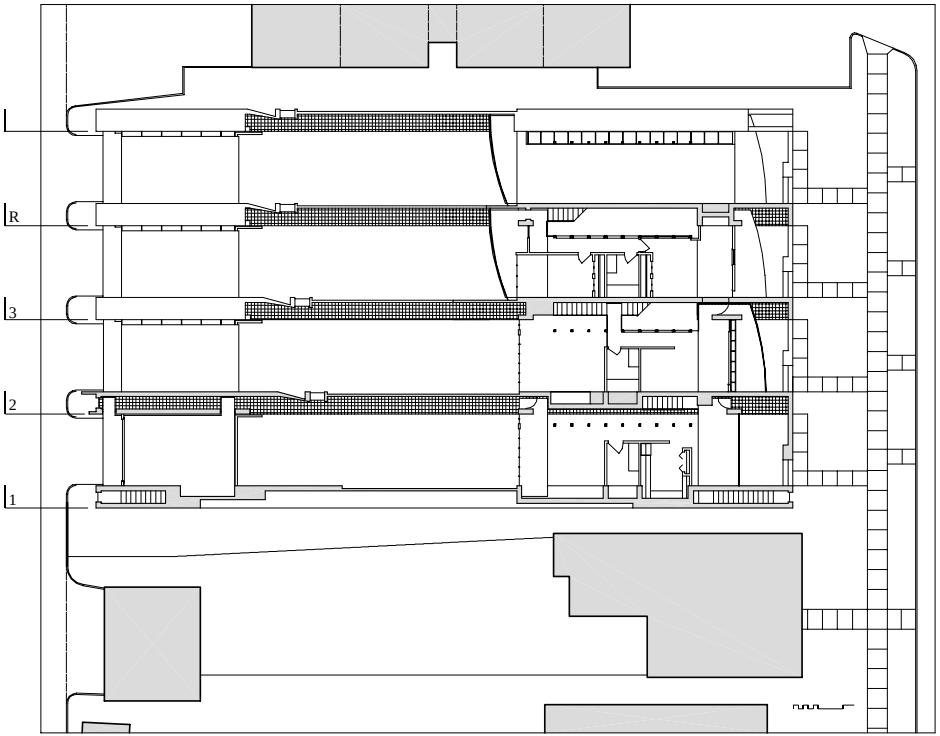
At first there is a wall. Then there is the apartment.

In response to the problem of parking and the lack of 'green space', a defined outdoor space - the 'courtyard' was created for each apartment to call their own. In addition the automobile was given a place to reside. The mark of a wall was used to define the extent of each apartment and create a sense of privacy. The wall became the initial mark in the landscape, creating an edge or boundary which defines a private enclosed space. Between the walls, the apartments reside. The apartments are defined and governed by the walls and become dependant upon them.



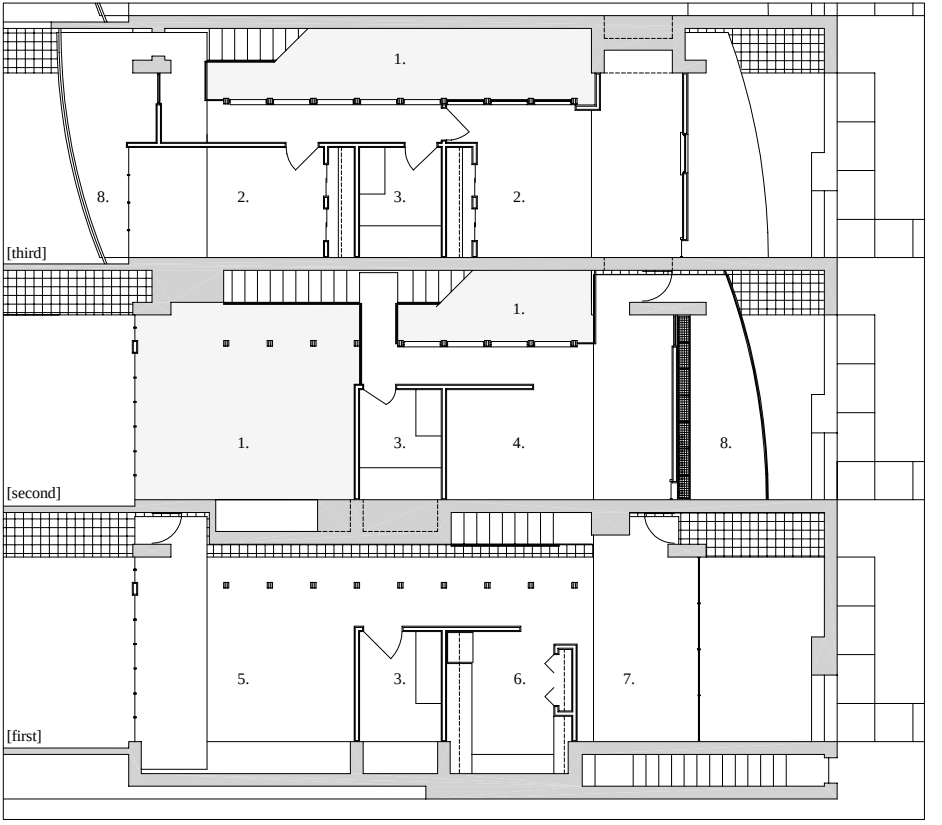




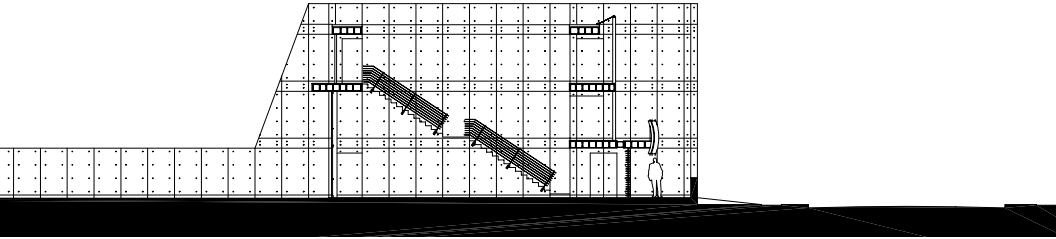


next page:

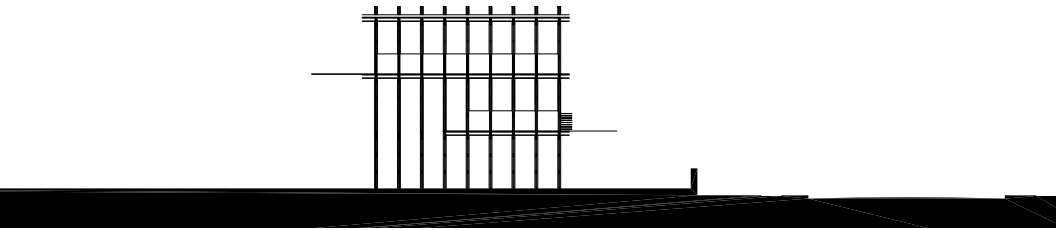
1. [open]
2. bedroom
3. bath
4. study/bedroom
5. living room
6. kitchen
7. dingin room
8. balcony


1.
8.
2.
3.
2.
[third]
1.
1.
3.
4.
8.
[second]
5.
3.
6.
7.
[first]

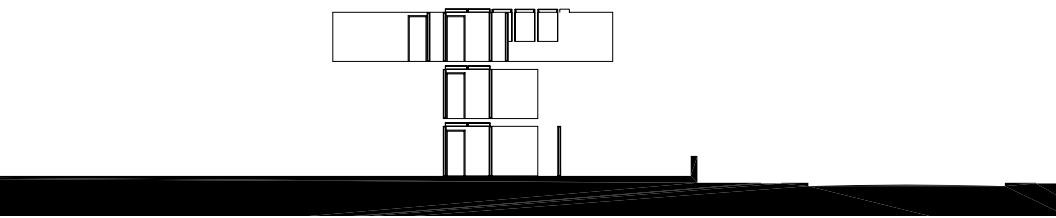
layering ...



wall



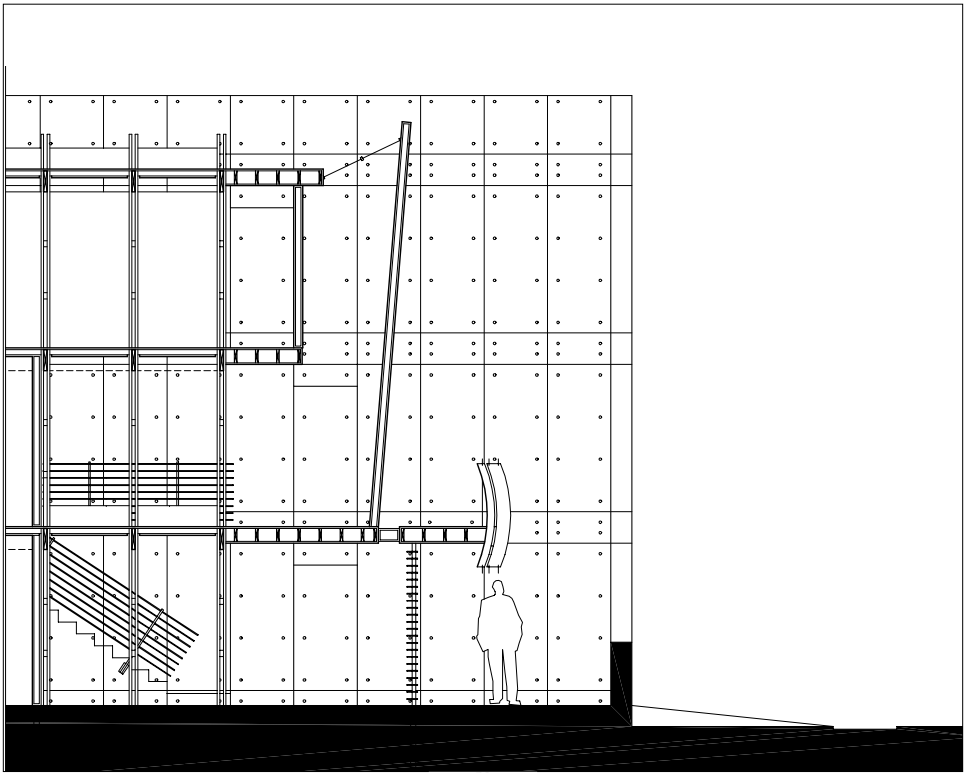
columns

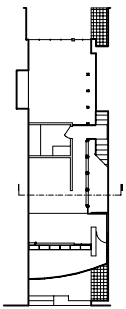


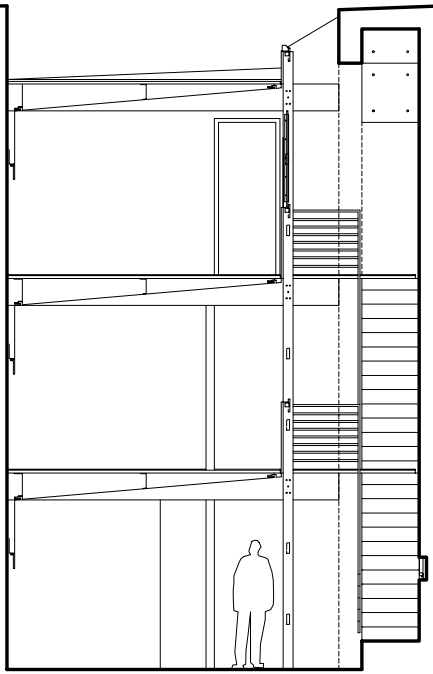
enclosure

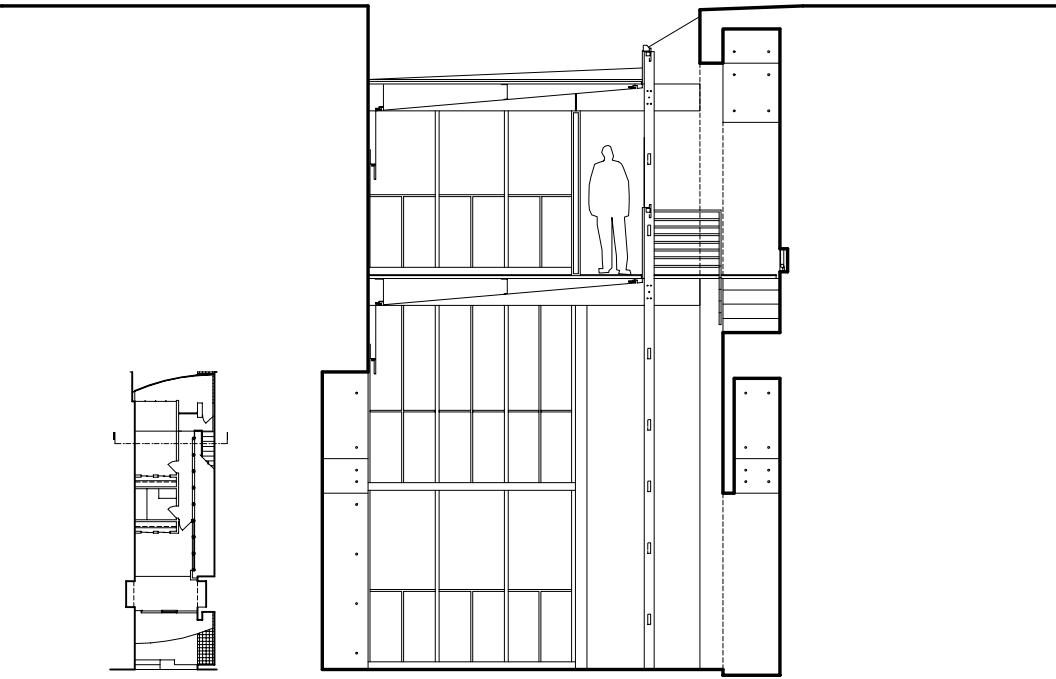
street facade ...

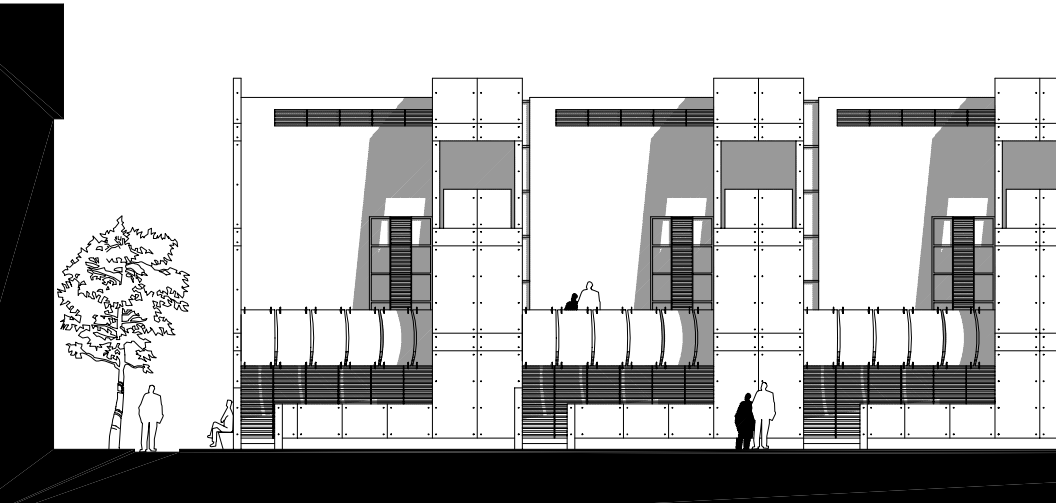
a distinction is made structurally between that which relies upon the wall for structure and that which rests on columns. joists that span from the columns are more substantial than those that span from wall to wall. a different spacing, depth, and visibility differentiate their roles and their structural importance.





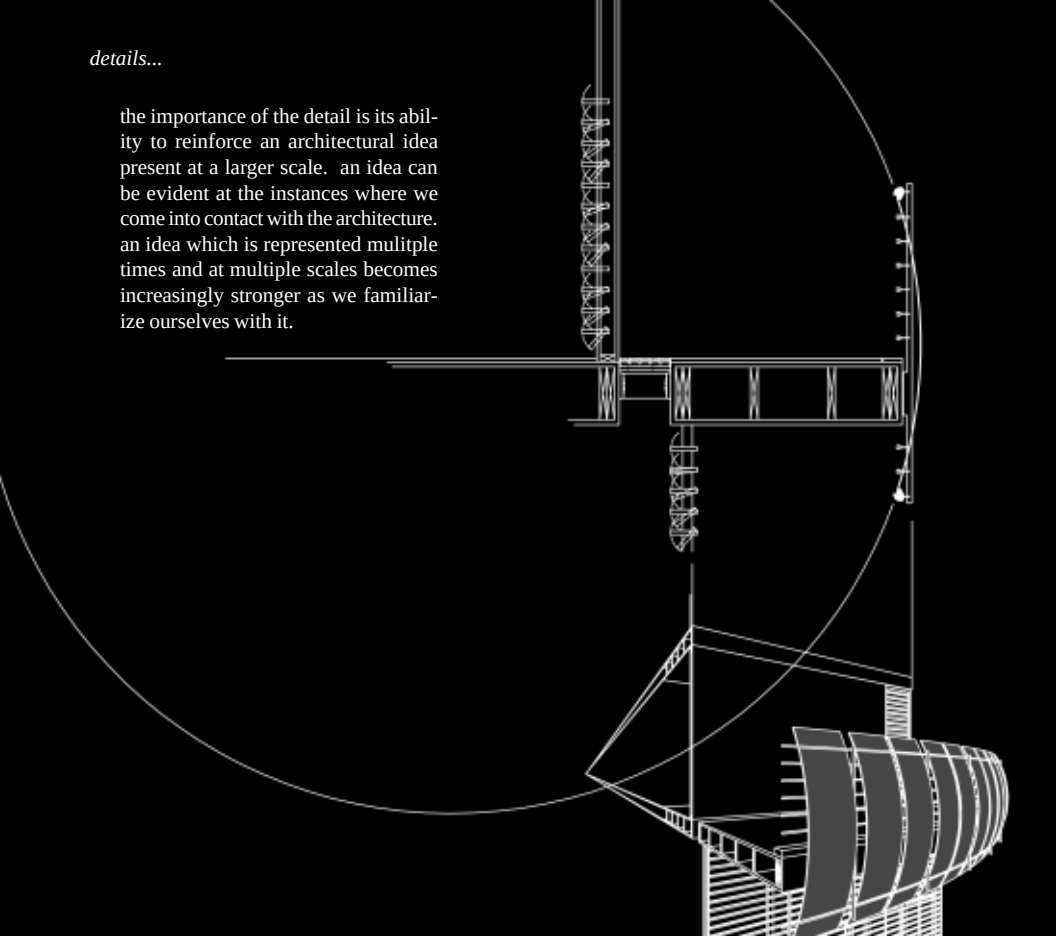


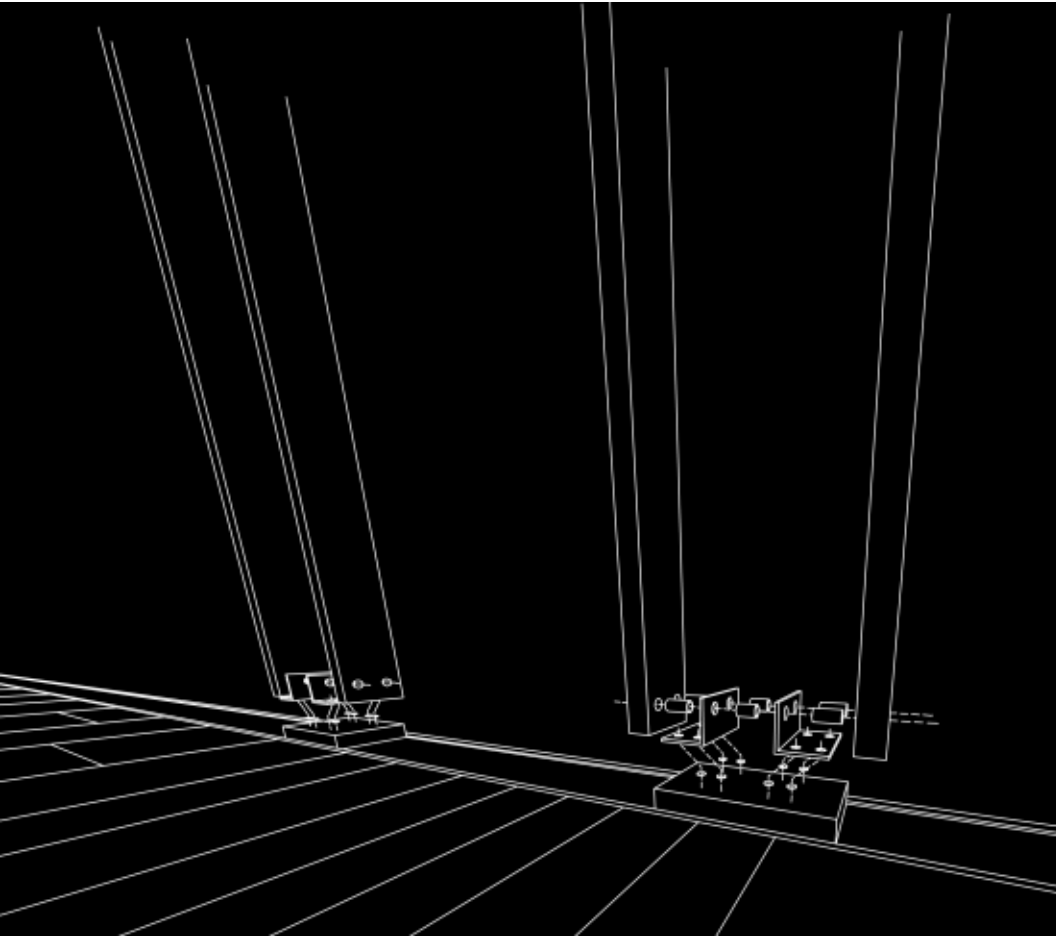




details...

the importance of the detail is its ability to reinforce an architectural idea present at a larger scale. an idea can be evident at the instances where we come into contact with the architecture. an idea which is represented mulitple times and at multiple scales becomes increasingly stronger as we familiarize ourselves with it.





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p. 13 *Apollo Schools* from Lessons for Students in Architecture, Herman Hertzberger. (photo: Herman Hertzberger)
p. 15 Luiggi Snozzi: Construzioni e Progetti, Luigi Snozzi (Lugano: ADV Publishing House, 1995)
p. 19 *Maia House,* Maia Portugal from Ten Houses, Eduardo Souto Moura (photo: Luis Ferreira Alves)
p. 31 *Pistas de tenis en Bellinzona,* from: Aurelio Galfetti, Aurelio Galfetti (Barcelona: G. Gili, 1989)
p. 35 *Shaker meeting room* from Shaker Built - the form and function of Shaker Architecture, Jane Scriggs (New York: Monacelli Press, 1994) (photo: Paul Rocheleau)
p. 45Louis I Kahn, quote from compact disc *Louis I Kahn: The Library at Phillips Exeter Academy* (New York: Van Nostrand Reinhold, 1997)
p. 46 *"What will be has always been"* Louis I. Kahn, edited by R.S. Wurman, Access press Ltd. (New York: Rizzoli, 1977)

selected bibliography:

Frascari, Marco
"The Tell-the-tale Detail"
Via: The Journal of the Graduate School of Fine Arts.
(University of Pennsylvania)
Via 1984, no.7, p.22-37

Frampton, Kenneth
"The Case for the tectonic"
Architectural Design. 1990

Benedikt, Michael
For an Architecture of Reality
(New York: Lumen Books, 1987)

Norberg-Schulz, Christian
Concept of Dwelling
(New York: Rizzoli, 1985)

Norberg-Schulz, Christian
Architecture: Meaning and Place
(New York: Rizzoli, 1988)

"What will be has always been" Louis I. Kahn
edited by R.S. Wurman
Access press Ltd.
(New York: Rizzoli, 1977)

acknowledgments:

My special thanks and sincere gratitude goes out to those who have informed and encouraged me along the journey. Without your support and encouragement, none of this would have been possible.

to my committee members:
Bill Brown, Heinrich Schnödt, Michael O'Brien, Bill Galloway

to the friends:
Joe[y] Lambert, Ryan Mingo, Shannon Goodman, Jenny Minetree, Hidecki Sakimoto, Jochen Ziegler, Jon Fleming, Jorge del Castillo, ...

Finally, to my family for all their patience and support.

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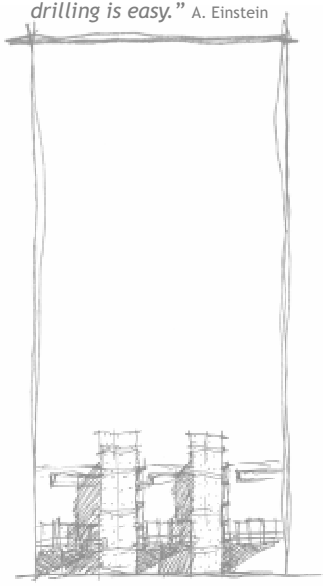
"I have little patience with scientists who take a board of wood, look for its thinnest part, and drill a great number of holes where drilling is easy." A. Einstein