Contradiction in the Making of a Sacred Monolith
by Evangelos Limpantoudis

Bachelor of Arts in Studio Art and Architectural Studies
Hobart and William Smith Colleges, Geneva, New York, 2001

Submitted to the Department of Architecture in Partial Fulfillment of the Requirements for the Degree of Master of Architecture at the Massachusetts Institute of Technology

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Abstract

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Submitted to the Department of Architecture on May 25 2006, in partial fulfillment of the requirements for the degree of Master of Architecture.

This Thesis deals with the understanding of the essence of sacred object and sacred space as related to the way they are composed and perceived as sequences of intersecting architectural motifs.

The design project is a sacred community for religious living amidst a secular urban context - a home for a group of eight monks from the Monastery of Sainte Marie de La Tourette, representing the Dominican Order in the small town of Croix en Touraine in the Loire Valley of France.
The Project is approached through a continuous dialogue between the architecture of the Convent of Sainte Marie de La Tourette and this new convent.
This process aims at the thorough study, understanding and use of this precedent, not simply as a reference, but as a strategic architectural palette for the development of the new design.
The purpose is a) the discovery and study of architectonic contradictions used in the design of this unique sacred community, and b) their use for the creation of the new design.

Thesis Supervisor: Fernando Domeyko
Title: Senior Lecturer of Architecture

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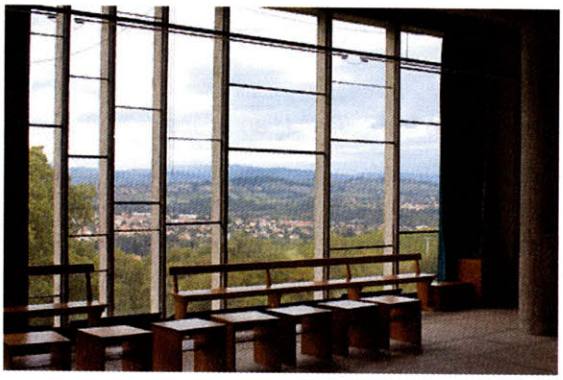
LEARNING FROM THE ORIGINALSACRED MONOLITH: Sainte Marie de La Tourette

Introduction

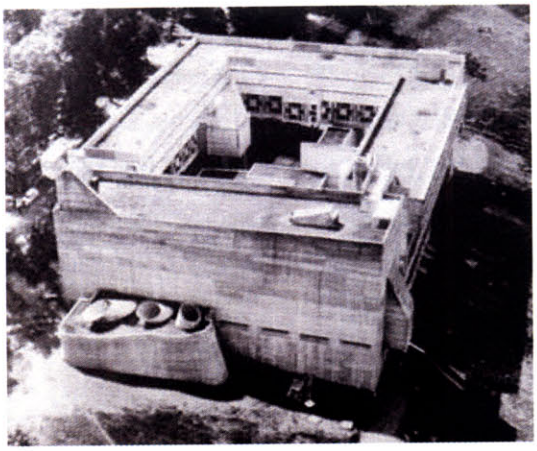
The Monastery of Sainte-Marie de La Tourette in Eveux-sur-l'Arbresle, France, was designed by Le Corbusier in 1953 for the Dominican order. It took four years to complete the project. The Dominican Monastery of La Tourette is Le Corbusier's last major work in Europe. Its program was innotivative - a complete, self-contained world for a community of monks, praying and studying in the silence of nature following the most ascetic way of life. Le Corbusier was trying here "to give the monks what men today need most: silence and peace... This Monastery does not show off; it is on the inside that it lives." The Monastery is organized around 100 individual cells, a communal library, classrooms, a refectory, a rooftop, a cloister and a church, all made out of reinforced concrete.



The spot chosen by Le Corbusier to erect the building is in the middle of nature, next to a little village, lost in the French countryside.

The isolation is close to complete and respects the Dominicans' desire for silence and solitude.

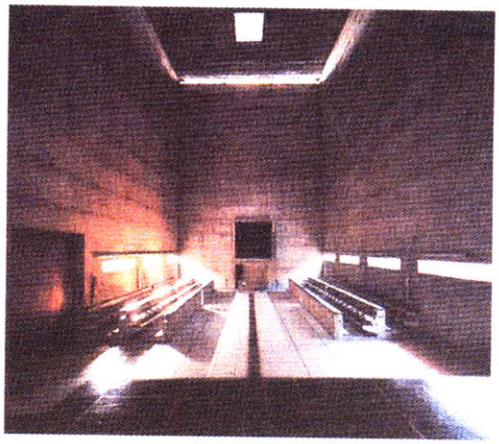
The whole Monastery is set on a steeply slope. The picture to the left clearly shows Le Corbusier's use of pilotis to push the convent upward and also emphasizes his desire to design the building as an ocean liner. Le Corbusier wrote in Sur les quatre routes : « The road of the earth is a thousand-year old, the road of water is a thousand-year old, the road of iron is a hundred-year old, the road of the air just came to life".



The convent presents itself as a massive, concrete box up on the hill. Yet, this mass is carefully balanced by the grassed rooftops, the courtyard designed as an artificial Japanese concrete garden and the carefully planned ramps.

The unevenly-spaced *ondulatoires* (the vertical concrete mullions) and the similarly uneven horizontal divisions between them were designed according to Le Corbusier's Modulor system of proportions by Yannis Xenakis, a musician as well as an architect, applying musical principles of harmony and rhythm.

The most dramatic ramp is the severe, concrete corridor, that leads down to the stern metal wall, which rotates to give access to the church beyond.

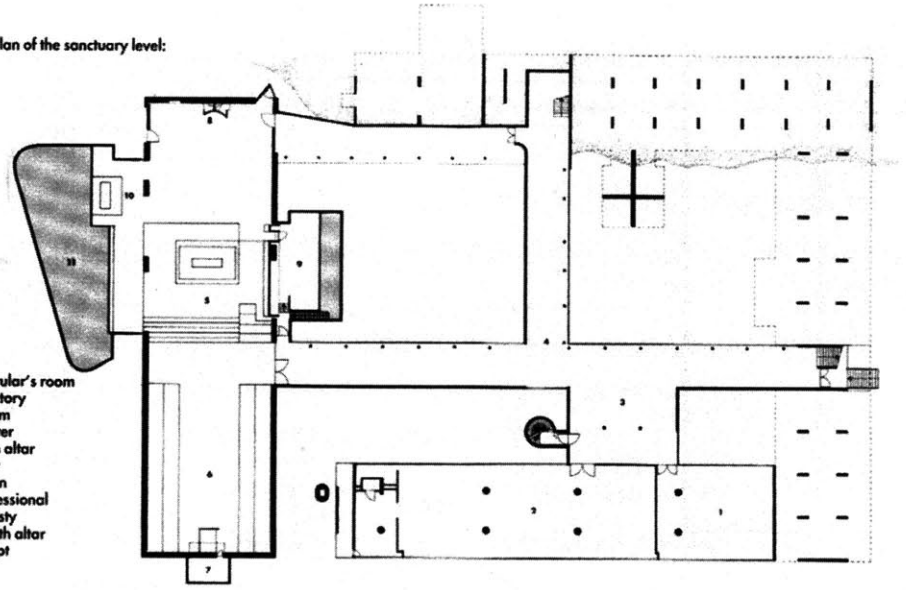


In the church itself, a tall concrete box is given spiritual life through selective and careful use of natural light. Daylight is admitted through five different types of opening creating "light cannons" around the church. Le Corbusier also made use of deep colors giving the church a warm and snug atmosphere.

While some facades seem to be completely closed to the outside world, others are covered with floor-to-ceiling windows allowing light to flow in the public areas. Le Corbusier purposefully played with rays of light and shadows to modify the perception of the inside. The east and the west sides receive light from below, and the south from above in a unique way. The building therefore acts as a sun dial, changing in essence each space.

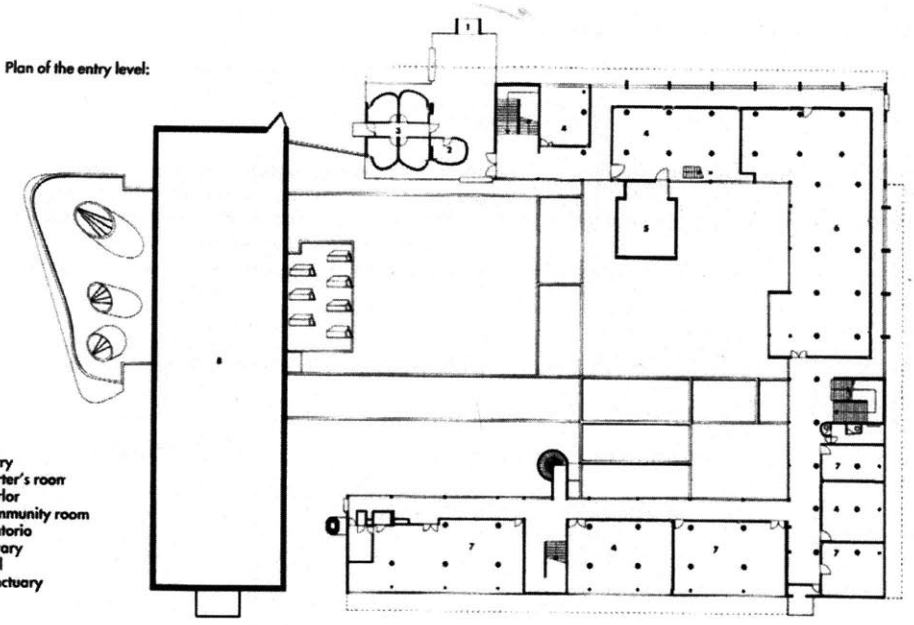
PLANS OF SAINTE MARIE DE LA TOURETTE (From Le Couvent de La Tourette by Sergio Ferro)

244. Plan of the sanctuary level:



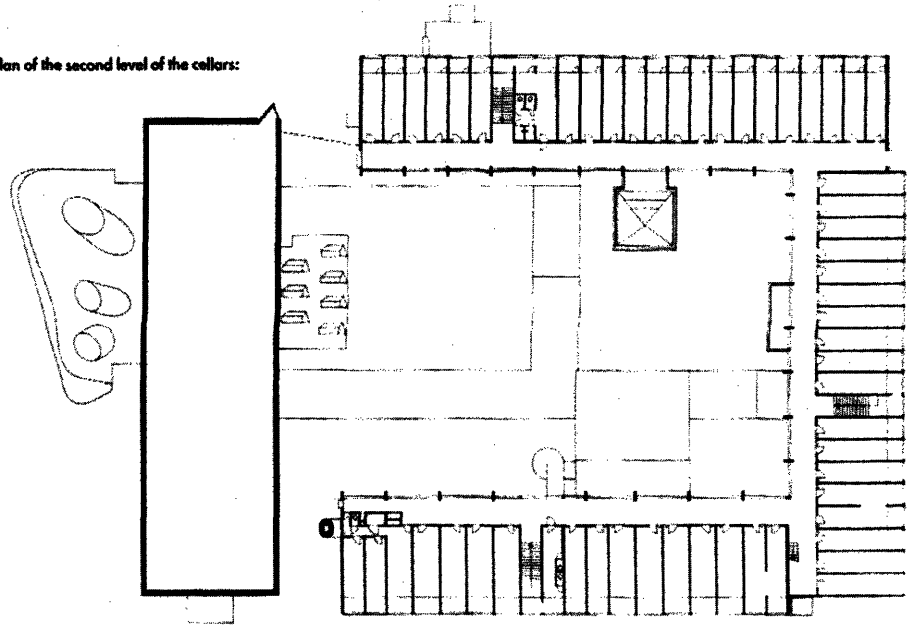
1. capitular's room
2. refectory
3. atrium
4. cloister
5. main altar
6. choir
7. organ
8. confessional
9. sacristy
10. north altar
11. crypt

243. Plan of the entry level:



1. entry
2. porter's room
3. parlor
4. community room
5. oratorio
6. library
7. hall
8. sanctuary

242. Plan of the second level of the cellars:



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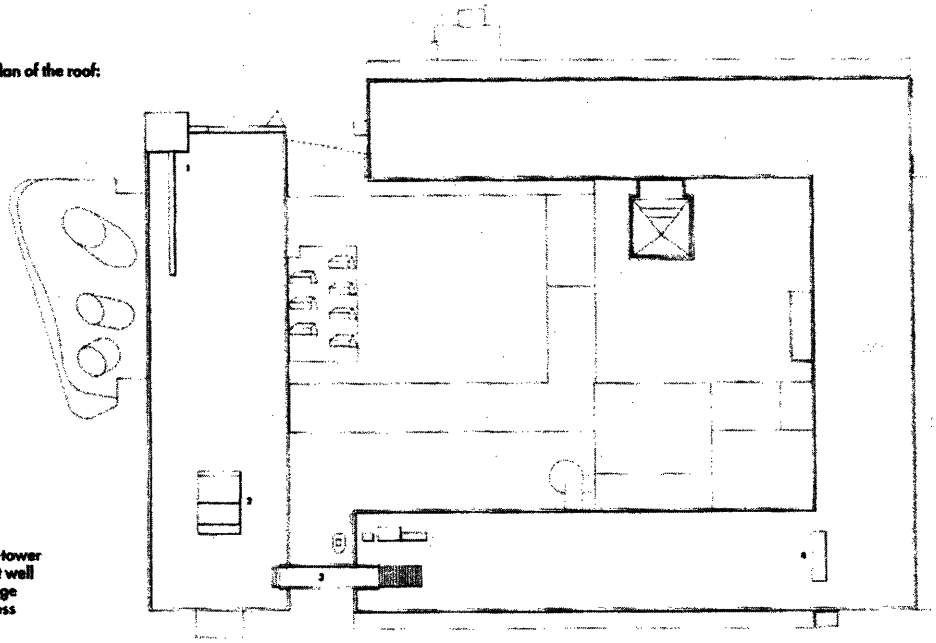
241. Plan of the roof:



1. bell-tower
2. light well
3. bridge
4. access

Programmatic Analysis:

The Three Sacred Dialogues

The building is a vertical gradient of public vs private situations. One enters through either the church or the courtyard, both meant to accept everyone at any time. Then one moves into the lobby/the community-service room, where one meets with the monks. This is an enclosed space less public than the church and the courtyard, still it is open to visitors. From there, the monks can bring the person downwards to the kitchen and eating area, or upwards to the study and library area, both of which are more private that the underground floor.

The Program of the building is organized around four types of Activities (Prayer, Liturgy, Meditative Study, Contemplative Action) and three distinct moments in the life in the convent:

- Individual life (the level of cells)
- The spiritual life (the buildings designed for prayer)
- Collective life (the free level of communal activities)

These moments translate into three individual yet somehow interconnected dialogues:: a) Dialogue with one's own self, b) Dialogue with God (in cell, and in church) and c) Communal Dialogue, (i. Debate among the members of the community, ii. Preaching. The merging of these three events is where the essence of the Dominican Order is based on. All three events are processes, all intertwined carefully within the process of the Dominican Monk's daily life.

But at the same time, these compartments of activity become part of an also carefully orchestrated process of daily life: a progression of Event-Compartments, fragmented and carefully composed into the progression of the Monk's life. It is, in a few words, the ritual of rituals.

The following is the daily schedule of Sainte Marie de La Tourette:

6:00 a.m.	Office of Readings and Morning Prayer
7:15 a.m.	Mass (Sunday: 8:15 a.m.)
	Breakfast (10 minutes after Mass)
9:00-11:00	Work Period
11:10 a.m.	Midday Prayer and Rosary
11:50 a.m.	Dinner
12:45 p.m.	Mid-afternoon Prayer
1:30- 2:30	Silence Hour

2:30- 4:45	Work Period
4:50 p.m.	Evening Prayer
5:30 p.m.	Supper
6:30 p.m.	Optional Recreation
7:00 p.m.	Compline

a. Man with himself

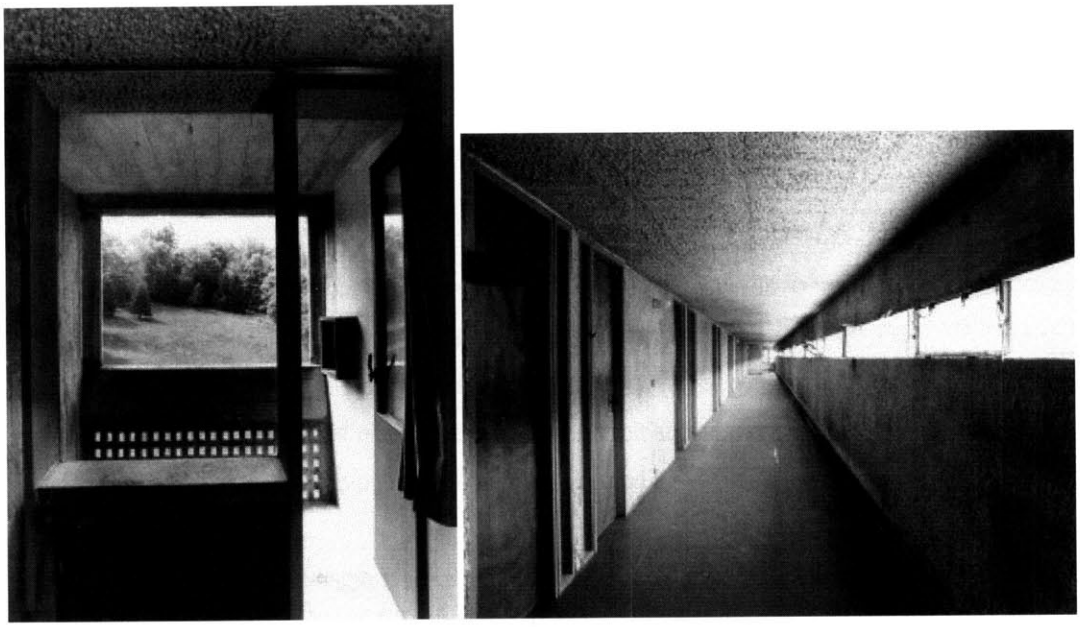
As we saw, the role played by the eyes resting on the building is key. This rests mainly in the fact that the Dominicans abide by St Augustine's rules, written in the 4th century A.D. which present the gaze as an important dual tool. It has the role of the inspecting tool: *"[...one that fixes his gaze] is very much seen, even by those he thinks do not see him. But suppose all this escapes the notice of man- What will he do about God who SEES from on high, and from whom nothing is hidden?"* Seeing, as "inspecting" is an important tool of the monk who must be able to act as both a preacher and an essential part of the safety net of the convent. St Augustin's also considers the gaze as a sinful tool: *"... an abomination to the Lord is he, who fixes his gaze".* In general, fixing your gaze is a sin for it grounds you on a profane existence. Gazing at anything with envy is also a sin: *"Better to suffer than to have too much"* (St. Augustine): The enemy of poverty is envy of one's property, which is caused by the gaze of the eye. The eye becomes the perpetrator of the sin.

By St Augustine's rules, gazing at a woman or accepting (and enjoying) her gaze is also strictly forbidden for it translates lust:

> *...You must not fix your gaze upon any woman. Seeing women when you go out is not forbidden, but it is sinful to desire them or to wish them to desire you... And do not say that your hearts are pure if there is immodesty of the eye... The unchaste eye carries the message of an impure heart... AND whoever fixes his gaze upon a woman and likes to have hers fixed upon him must not suppose that others do not see what he is doing... If you notice in someone of your brothers this wantonness of the eye, of which I am speaking, admonish him at once so that the beginning of evil will not grow more serious but will be promptly corrected (Augustine, V.8)*

Lust is forbidden and lust is caused by gaze therefore the eye is once again the perpetrator. Gazing with lustful intentions is considered a sin... unless one is gazing at the crucifix which is the technique Dominicans use to concentrate during prayer. The fact that the monks are forbidden to look isolates them and forces

them to look within their own self for truth, not in the outside world. The arrangement of the monks' individual cells translates this isolation from the world.



The traditional Augustinian Monastery cells are arranged as dorms and give on the courtyard and the outside. The monks have very limited private space. The Cell, according to Charles Moore, is a domain which sets out to deny its occupants access to the whole of the place which contains the cell. Indeed, the architect creates a game of hide and seek. The interior of the monastery intends to isolate from the pleasure of any type of stimuli generated by the site, except from some visual ones, always controlled through a process of framing every view to the outside. The Rest of the interior is absolutely sterile as far as the site is concerned. And the only texture, smell and sound available are that of concrete, which also captures every possible view in its frame, which is omnipresent, constantly surrounding you, with its homogenous mass, as if its has lent its substance to God, whose force obviously occupies it: *Let us all of you then, live together in oneness of mind and heart, mutually honoring God in yourselves, whose temples you have become. (Augustine, I.7)*

The monks share their time between isolation in their cells where they can pray and study. According to St. Augustine, *"Dominicans should love to study and study to love."* For the Dominican, the discipline of study brings them to a greater knowledge of God and of the truths of the faith. It is both mind and heart-expanding.

b. Man with God

One student monk among those first occupying the Convent compared his entry into the Corbusier building to a second entry into religion. The Dominicans, as they come to settle at Sainte Marie de la Tourette, have the feeling they are coming closer to God. The Cell is therefore designed for isolation, for a dialogue with one's self but also for one's own dialogue with God. On the other hand, the Sanctuary is the place where the whole Dominican Community enters into a dialogue with God

There is a very interesting relationship between these two spaces: the proportional width-length relationship of the floor-plan of an average cell is the same as the width-length relationship of the main space of the sanctuary: approximately 2:5. This is simply an observation, and might even be a coincidence, BUT, could it be a coincidence considering that as types these two are the most primary spaces in a monastery, and also considering that this particular architect would begin his design-investigation by trying to identify what would be the ideal shape of a dorm-room? I think it was no coincidence.

The In-between space is a place greatly composed as a set of organic spaces that arises from the domain struggle between the two absolute places, the Sanctuary and the Cell. This place is where the dialogue among the members of the community takes place.

c. Man with Man

The On-Going Conversion, the Pursuit of Truth and Community Living are the three main ideas captured in the non-absolute space between the cells and the sanctuary. This space is a path from isolation to a community, and from one's relationship with oneself to one's relationship with God, to one's relationship with the members of one's community. This process, according to the Dominicans, lasts a whole life time. The in-between space captures a little bit of this idea, by working as the connecting force - a sequence that leads from the cell to the sanctuary.

The truth is pursued through meditative study, which is a basic part of the Dominican Order's code of prayer. The space in-between is not only academic: a theological college for the monks, but also a place for debate, which is extremely important to the Dominicans as it is considered essential to the successful development of a monk into a preacher. "Listening" (in Greek "akouo"), is a necessary ingredient of "Obedience" (in Greek "ypakoi"), which is what is demonstrated when one is in church.

This is very different from the cell which proposes an isolated contact with one's self and with God, but also from the sanctuary, which proposes a gathering, but also silence, which for the Dominicans is the means of communicating with God. Note:

Community living includes everything from conversing, to eating, to washing, clothes or oneself. A hundred souls concentrated in one big box: *"Create a silent dwelling for one hundred bodies and one hundred hearts".*
Such was the prayer that Father Marie-Alain Couturier offered up to Le Corbusier whom he regarded as "the greatest living architect".

A monument that has been lived in for over forty years, the Priory welcomes visitors, architects, architecture lovers, and students form all over the world. Thousands of people stay there every year. Beyond individual study projects, the community invites lecturers for classes on various subjects of interest to the nuns, particularly theology and Dominican life. The Monastery offers frequent, friendly and informal tours in both English and French. It is also possible to stay in the Monastery, in the austere and studious spirit in which it was designed.

SACRED AMBIGUITY: THE RESTLESS MONOLITH

From Inferno to Paradiso and Back Again

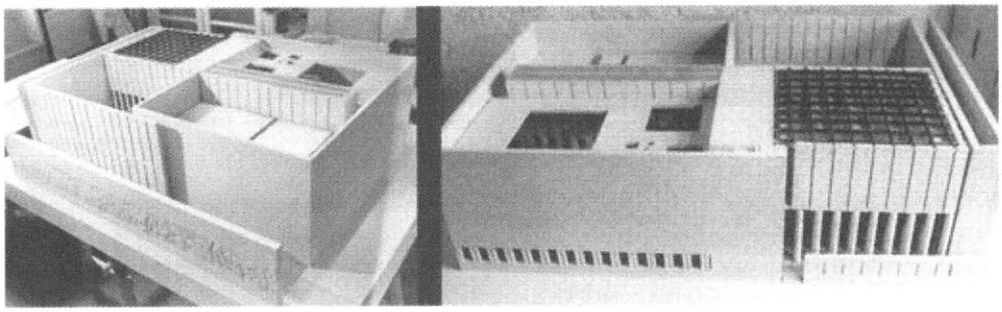
What Le Corbusier creates with the Monastery is a concrete landscape retained by the walls of the Church, that is meant, just like its natural antagonist, to be looked at, but only within the specified framework of the building and its courtyard. First drastic change: Corbu placed his convent in the middle of nature to emphasize the opposition between nature and culture.

THE MYTH: Four thousand years ago, there was an unprecedented tectonic earthquake in a swampy Mediterranean region. The surface of the earth rose up and down three times, settling up high the first time, cracking wide open the second time, forming one of the largest craters ever formed, and howling angrily the third time as if in pain, spitting out massive flaming underground elements. Earth, as if in labor, cracked to its bottom and let out flame and melted substance, which flooded the crater and formed a lake of settled lava in a landscape of restlessness and panic. This lasted only a few moments. It is incredible how fast earth can change. And after these few moments, rain, caused by the vaporized water of the swamps, poured furiously and hardened the surface of the burning subterranean substance instantly, leaving only a peaceful lake of hard, solid material that contracted second by second. In the thousand years that followed, rain washed away one side of the crater and pushed it down the hill, uncovering what for a thousand years was hidden behind the settled earth of the risen valley: a solid lake of iron and earth, settled along the contours of the crater that the fury of the earth itself had once given birth to. Later, all sides were gone, and the crater was nowhere to be seen. All that was left was a large extrusion, a bump on the skin of the earth, a rock. And the rock was constantly beaten by the wind until it cracked. Then rain fell again and filled the cracks with water. Snow came and froze the water, and cracked the rock even more, and then more water was concentrated, and froze, and the rock cracked more, over and over again, until light finally entered.

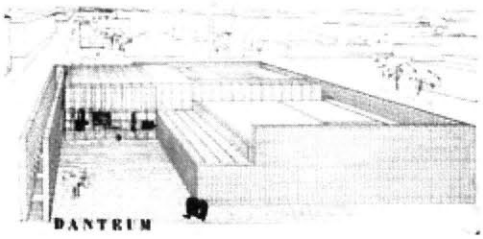
The Myth is realized while inspecting the exteriors: the exterior of the building and the exterior of the landscape as they are retrogressing between a state of clash and a state of dialogue. This process begins with the most grounded of all the parts of the building, the church. The church is the original mass. The rest of the monastery is curved off of that mass. One realizes this fact as one slowly ascends towards it. "It is just a wall", and then moves forward and slowly understands the subtle or dramatic openings on the rest of the Monolith.

The monolith represented by Sainte Marie de la Tourette reminds me of the Danteum – the architectural translation of Dante's *Divine Comedy* commissioned in 1938 by Mussolini's government. This

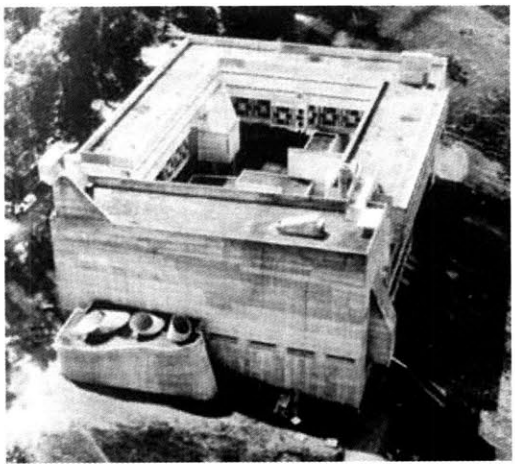
project was designed by two Italian architects, Giuseppe Terragni and Pietro Lingeri. The building was supposed to progress through an allegorical, linear sequence of spaces such as Inferno, Purgatorio and Paradiso, mirroring the poem in structure, theme, and rhythm.



Inferno and Paradiso: Virtual Models by Takehiko Nagakura



Tourette is an inverted Danteum - the breaking up of spaces is the same. The structure of the poem is quite complex, Dante playing with mathematical and numerological patterns just like Le Corbusier with his Modulor.



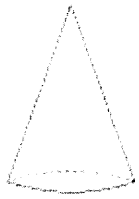
This project was never accomplished in 1938 but somehow emerged and was redefined by Le Corbusier twenty years later. Regulating lines of the buildings are pretty much the same: the rectilinear shape and its proportions, the arrangement of sequences of space and even the sequencing of entry to the building are the same. The courtyard of Sainte Marie de la

In addition, if we analyze a scheme representing the 3 spheres depicted by Dante, we realize that the convent is the exact parallel to his hellish counterpart. The convent was excavated from the womb of Mother-Nature to come out as a Purgatory, aspiring to come closer to Paradise. It is as if the inferno had been born off Mother-Nature and had purified itself in the process. This erosion is like an ascent towards the superior Being. The building experienced redemption through a painful birth.

Paradiso

Purgatorio

Terra



Inferno

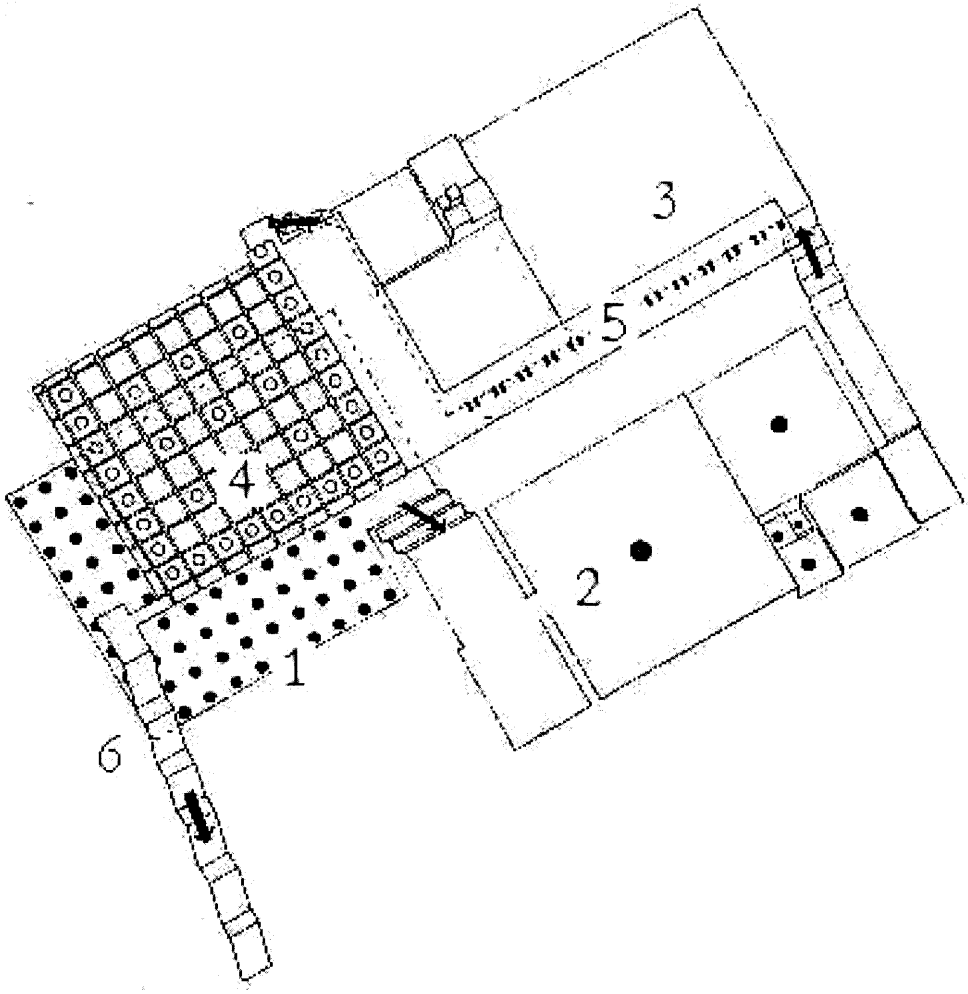
The building itself encompasses *Inferno* and *Paradiso*: It feels as if the monastery is captured between two infernos, two caves and monoliths: the cells and the church. Paradiso is associated with the internal side of the convent, the courtyard.

The inscription on the gates of Hell in *Dante, The Inferno, Canto III,* read:

I am the way into the city of woe.
I am the way to a forsaken people.
I am the way into eternal sorrow.
Sacred justice moved my architect.
I was raised here by divine omnipotence,
Primordial love and ultimate intellect.
Only those elements time cannot wear
Were made before me, and beyond time I stand.
Abandon all hope ye who enter here.

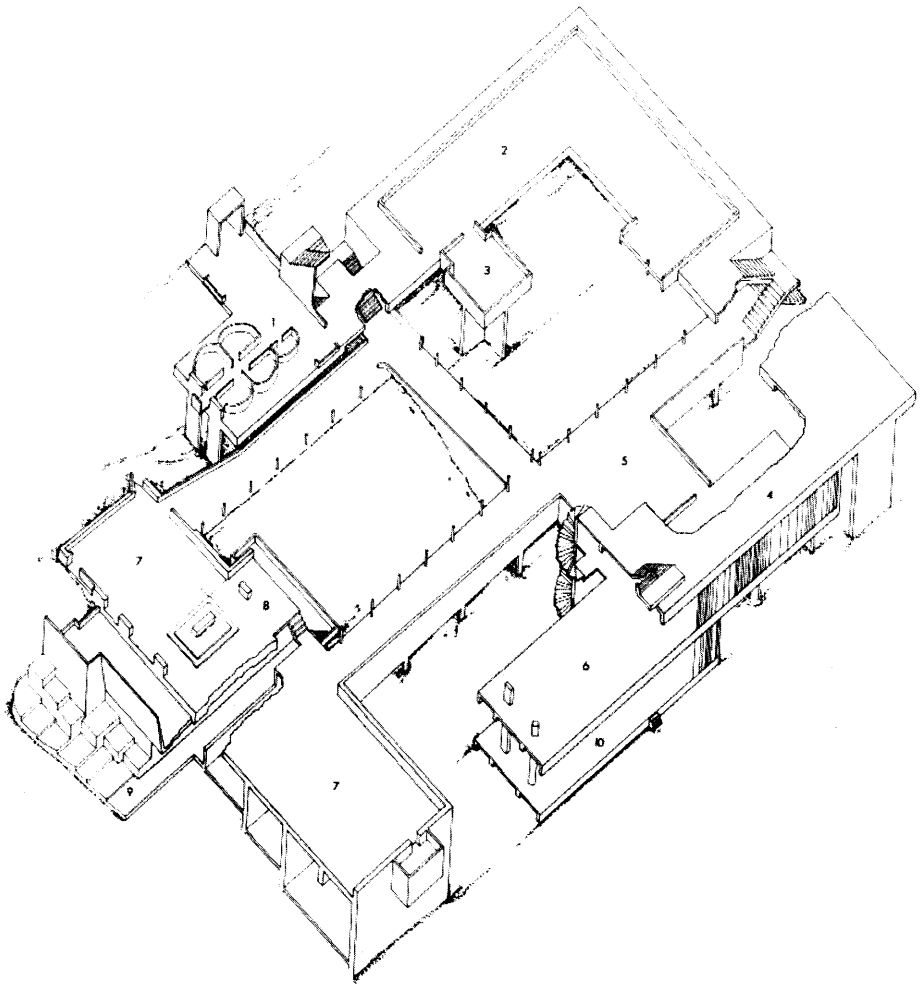
As a transposition, on the gates of Sainte Marie de la Tourette, one might read:

I am the way into the city of love.
I am the way to a forgiven people.
I am the way into eternal bliss.
Sacred justice moved my architect.
I was raised here by divine omnipotence,
Primordial love and ultimate intellect.
Only those elements time cannot wear
Were made before me, and beyond time I stand.



Embrace all hope ye who enter here.

The Convent is an erected rectangular, on top of pilotis, on a background of virgin nature. It creates the dialectic between a cultural foreground and a natural background putting into direct relation two antagonistic powers: nature and culture. Its walls of unmitigated raw concrete rise from a clearing in woods high above the vineyards of Beaujolais. Le Corbusier created a building whose form contrasts beautifully with the organic elements of the interior Japanese garden, the woods and the fields surrounding it.



Refectory Floor – Axonometric (from Le Couvent Sainte Marie de La Tourette)

In Colin Rowe's words (Mathematics of an Ideal Villa), Sainte Marie de la Tourette is captured in a process of spinning. This observation expresses an amazing set of truths in its vagueness about a relationship that completely redefines the meaning of "site-specific". It all starts with the fact that landscape and structure obviously contradict each other at the same time as one complements the other. The foreignness of the building to the landscape does in essence what a perfectly vertical stick stuck in the middle of a flat plateau does: it defines a place's up, down, left right, front and back, simply by being there. The effect of such a simple touch of the human presence within the extreme complexity and irregularity of nature is immeasurable. The phrase "less is more" has its roots right in this characteristic of the foreign and

the contradictory. It is where the most basic of all ideas related to the way we perceive is rooted: difference -- translated into effect -- translated into the notion of bigness, and so on. The power of a scarecrow is so subtle that it is only fully grasped by the crows. Do not be fooled, it is not the stupidity of these birds that drives their fear, nor their fear of the image of man. Most of them have never encountered a human, or at least have not had the chance to associate humans with the concept of "enemy" when they participate in their first corn-raid. Instead, they notice a foreign object in the field they target. And the foreignness of that object is not simply related to the image of whatever the object is supposed to represent, but to the way the elements that compose that object relate to the targeted field. And not simply in terms of color or shape, but also in terms of motion: A scare-crow is meant to be steady/ unaffected by the wind. The torn clothes that strengthen the image of the human, on the other hand, tend to move quickly back and forth. These magnificent crows do notice all this. And it is so effective that they flee.

The Triumphal Arch is a big and elaborately shaped scarecrow. It stands amidst one of the largest public spaces in Paris, simply defining a point. But this point in a human's mind is the advent of something. What that something is, is never clear. The advent of a different part of the Champs Elysee, of a piazza, of a city, of a neighborhood, of an appointment, a date, a walk, a march, an empire. Humans, however, are crude and machine-like. They lack the touch that a crow maintains with its natural instincts, and therefore lose the sense of beauty in their pursuit of understanding, because they have to overcome what might seem to be a God-given gift: the mind, and most importantly its culture, which has penetrated it and programmed it and shaped it to be obedient to the addictive substance of the image and its absoluteness.

Sainte Marie de La Tourette embraces the opposite of absolute and celebrates ambiguity and vagueness while remaining very meticulously composed according to strict rules of order.

On a sloped French hill, one finds no elegant arches about triumphs of humans over humans, but a humble scarecrow about the triumph over one's own self, not for crows, but for people, whose expectations are always contradicted. Who would ever expect after all that Sainte Marie de La Tourette, this immense pile of concrete, is a scarecrow!

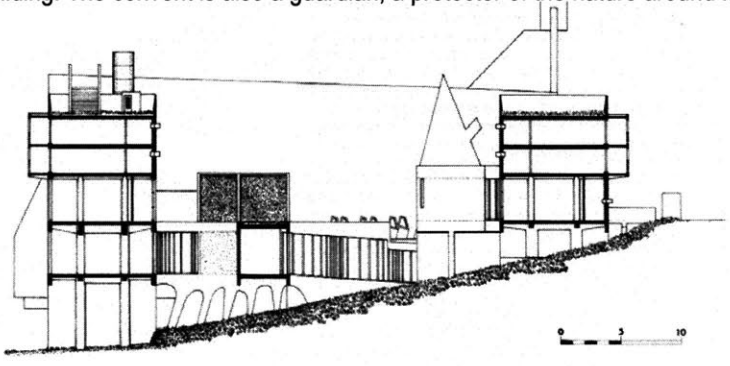
Restless Monolith Part 1: the Ambiguous Relationship of Monolith and Landscape

Le Corbusier located Sainte Marie de la Tourette for a special (spatial) purpose and designed it according to the landscape that he himself chose. Le Corbusier's description of Villa Savoye applies exactly to Sainte Marie de La Tourette. Indeed the convent reinterprets shapes and ideas he had already put into forms twenty years earlier:

> *The house is a box in the air in the middle of the meadows dominating a zone of trees. The plan is pure. It has its appropriate place in the landscape of Poisi, and the inhabitants who came here because the place is beautiful with its country-side life, they will contemplate this country-side, kept immaculate from their garden suspended up in the air or from the four facades, of their long windows. Their domestic life will be inserted in a Virgilian dream.*

However, in this case the relationship between landscape and structure is not quite as absolute. There is an impression of vagueness when one approaches the building, and this might be because, as Colin Rowe put it, *'nothing catches your eye'.* But there is a phenomenon one becomes aware of after a while: that although juxtaposed, the two opponents, the building and the landscape are in fact one thing. It is as if the landscape gave birth to the building while the building was giving birth to the landscape. Right after the first shock of seeing two different objects, there is simply a slow process of forgetting. You forget what you saw, and in the end, you forget altogether that any one of the two objects had ever been different, or that one of the two existed before and without the other. Which brings me to the question, *"Can you mistake a building for a wooden stick? The answer is yes!*

Earth is the matter of the building since concrete is composed of water, iron and sand. Gromort qualifies concrete as "mud" – a mixture of earth and water. Glass is also a mixture of earth and fire.The earth that composes the roof-deck can be seen as a layer of protection, a metaphorical way to protect people inside the building. The convent is also a guardian, a protector of the nature around it.



The spaces specifically designed for prayer like the church, the crypt, the sacristy, and the oratory are closed spaces. The walls around them have a dramatic mineral presence for they seem to be a continuation from the earth. The earth seems to be springing up as walls. The building plays therefore with oppositions as the church and the crypt root it inside the ground for they are touching it, while the pilotis both uproot and act as long concrete roots sinking deep into the ground and tying themselves to the deepest rocks at the same time. The building seems to be struggling between grounding and escaping. The Monastery is being crushed down by the forces of gravitation but at the same time trying to defy them. The foundations of the convent therefore rest on a dialectic of absorption and of expulsion.

South View of the Convent (author)

But, the silent world, which Le Corbusier strove to reveal, is not under the earth, it's underwater, and this is that type of isolation and seclusion Le Corbusier has designed. Indeed, Sainte Marie de la Tourette is a place that is at the same time closed and infinite, where bodies mingle and float in a perpetual movement of procession and meditation. The first sketch Le Corbusier made of the convent represented a sort of tank over pilotis. He actually wanted to design the convent as a transposition of an ocean liner, sailing away on water, into an arch anchored on the solid earth. The building is floating between earth and sky, sailing in immobility. Ironically enough, the "Eveux" from the name of the town where Sainte Marie de la Tourette was built, comes from "ewe" which means swamps.

Restless Monolith Part 2: Ambiguity in the Multiple Readings of the Monolith itself

The trip to wonderland was long and strange, with landscapes unfolding before us and then suddenly disappearing or getting torn by some human intervention, and colors constantly changing: from sky-blue to grass-green, to red, yellow, orange, purple, grey, pink and back to blue and green. It might be still one of the most memorable single sequences of landscape in existence. And all that, framed as it was by the windshield of our car, seemed disconnected from our reality, or at least disconnected from the domain of our reach.

One does not really know what to expect from the wonderland itself. By association with traditional monasteries of the Middle Ages or the Renaissance, one might imagine something great: some wonderful composition of gargoyles and minarets and golden domes and statues of the Virgin welcoming the hungry visitor, but all one finds is a hill and a big block of concrete that has landed on it ungracefully. What is most important in most cases is that what comes into play is the intellectual character of any human being that is experiencing the building. By this I mean all the knowledge and previous experience as distilled into a set of expectations for what is to come. These expectations are the intellectual context of each person, within which the new experience of walking towards or through a building takes shape.


North View (author)


South-West View (author)

The building makes itself the point of reference. It announces itself. As you approach it it becomes the point of reference and sets rules for what is to come (i.e: church and rest of the facades). Then, the

building is experienced and creates its own context. Then the building contradicts it own self. And finally, the individual constantly reconstructs the reading of the elements and of the place as a whole. The building offers multiple readings to its visitor. The building first presents itself as purely visual. The factors are i. Individual Figure Ground Compositions, ii. Relationships between Figure Ground compositions, iii.Light vs Heavy, iv. Solid vs. Void. Indeed, the eye cannot settle. The place feels as if it is constantly in flux. There is an incredible contradiction between this restlessness and the monumental character of the place. On the one hand it is restless and moving, and on the other the reinforced concrete seems to ground it into this beautiful French landscape.

This triangular relationship between Man, the building and nature, was created by the architect who played with the interaction between the three in order to create a holistic place.

The Monolith of Sainte Marie de La Tourette makes itself understood in the ways displayed above both on its exterior envelope and on the interior. In the following chapters I will examine the more specific ways in which architectural motifs intersect in order to give rise to make the above possible.

Architectural Motifs of the Sacred Monolith

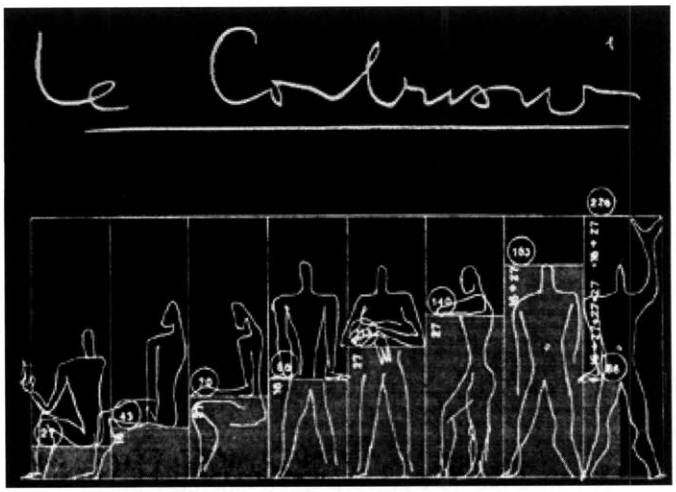
The following paragraphs aim at the study and discovery of the motifs that create the ambiguity of a sacred object.

Motifs of Static Transformation

There are two aspects of analysis. The first type is quantitative and it has to do with objectively identifiable motifs based on proportion and geometry that are present in the tectonic composition of the building. It is the tectonic reality of the project- the tool of the architect. The second is purely qualitative. It has to do with the subjective identification of ideas that the project encapsulates and communicates. It is itself the poetic substance of the building. It is the concept of the building which often encapsulates countless smaller ideas, motifs, some obvious, other invisible, all intersecting to give rise to an overarching meaning open to the subjective interpretation of the individual visitor and user.

Below : Le Corbusier: *Modulor* (1950) a: *Encyclopaedia Universalis*, 13, 654.

Sainte Marie de la Tourette was designed by Le Corbusier according to his Modulor. The Modulor is a scale of mathematical proportions in the human body used to improve both the appearance and function of architectural designs. The system is based upon human dimensions, and the golden section. Le Corbusier described it as a "range of harmonious measurements to suit the human scale, universally applicable to architecture and to mechanical things."



Basing on the module of one meter (except from some exceptions, where half was used), the architect manages to create a very clear relationship among spaces, allowing therefore the long-term user of the place to understand the relationship of any compartment to any other compartment of the building. Indeed, in response to the requirement for specificity and clarity of intention, the Architect organizes the Convent with strict definition of zones: Profane vs. Sacred, Prayer vs. other Communal, and finally, Residential vs. academic/ social vs. Ritual. In the latest zone-arrangement, the lowest of all spaces - and probably the darkest of all - is a religious space. The following are some more sequences of relationships that one could define in the Convent:

- *Regular – Irregular:* The vertical sequence of a) super regular (with square cross-section) residential floor, b) relatively regular with proportional variation and steady height (yet flexible) academic floor, c) irregular floor, with topological variations yet still proportionally

arranged compartments, and d) the landscape, which is absolutely irregular, very topological (as divided and used by the Architect), and without any apparent proportional variation.

- *Grounded – Disconnected, Interpenetrated vs. Juxtaposed:* There is a very interesting relationship: All the spaces that consist of interpenetrated spaces are stepping on the ground. These spaces are the sanctuary and the courtyard. This makes an interesting connection between the courtyard and the sanctuary, which although divided by an enormous wall and are seemingly separate, are very similar spaces.
- *Top- Low, Bottom- High:* The residential floors are the shortest of all spaces throughout the convent. The height there is approximately 226 cm. The middle floor of the academy, has a steady 4 m height, approximately 1.5m taller than the floors above. The bottom floor, maintains a minimum of 4m, but jumps up from 5 to six meters to even eight meters (at the area of the atrium). Then, outside, the open spaces underneath the middle floor vary extremely, but go up to as much as 10 meters. Finally, the tallest part of the building, measuring approximately 22.5 meters, is the lowest part of the building; the south side of the sanctuary.
- *Transparency-Opacity:* What is most interesting, however, is that simultaneously with the height, the opacity of the walls changes from floor to floor, crystallizing the character of each floor. The relationships that arise are very interesting, as they defy what Gaston Bachellard would define as the relationship between the garret and the cellar, but also the laws of nature, which want the objects of heavier substance at the bottom.
- *Inversion of balance:* In this arrangement, the attic, which is already very tight in its dimensions, becomes the darkest of all floors, as the opacity of the wall is at its minimum. The attic therefore paradoxically becomes a cave, despite that this is a character we usually reserve for a basement. The heaviness of the cave makes the visitor understand the space as a heavy space, despite its smallest dimensions, Also, its monolithic look on the outside, makes it clear that this is the heaviest of all parts of the building. The relationship of it to the rest is intriguing. Being that this place concentrates most of the population at nights, it becomes loads with actual load as well as psychological. The rest of the convent, therefore, reads as being even lighter than it is, the balances are inverted. It feels as if the world has been inverted, and the monastery holds up the landscape, the world. On the other hand, the lower parts of the building, at the courtyard, are where feelings of "Upwardness" arise. It is as if the basement and the attic were inverted.

- *Extreme Regularity of place:* simplicity of space and objects, and continuity in texture and space: obsessive use of concrete and rectangle and simple set of rules for moves (compression and transparency) according to the Modulor.
- *The notion of a Suspended Centre:* As opposed to being absolute the center becomes impossible to define. The notion of clarity is destroyed. Contact with the absolute is maintained, but its strict definition is impossible. Also, defining the center of anything in the convent is almost impossible.

These ways of sequencing become apparent as one experiences the building. As far as this experience is concerned, Le Corbusier's use of the Modulor and the golden section translate into the different compartments of the building (floor, ceiling and wall) through a series of compressions and releases. The floor is the surface which is in direct dialogue with our feet. It pushes up or down. The compression process takes place on a vertical axis. Its materiality appeals mostly to our ears and skin. Its tectonic changes appeal to our muscles. It is the tool of self awareness, the surface always closest to human beings. For the Dominicans it is extremely significant. The floor, "down"[1] in orientation, becomes a device for grounding and humility. It also becomes a literal device for praying, as in the tradition of St. Dominic's ways of prayer, the monks often lay face-down on it to pray. The ceiling is the surface in dialogue with our head. The compression that it causes also takes place on a vertical axis as it moves up or down. The ceiling is a counterpart to the floor for they are both acting along the vertical axis of gravity. Finally, the walls are the surfaces that apply pressure on our shoulders. The compression they cause takes place on a horizontal axis.

If we consider a building (or any work of architecture) as being an independent entity simply located somewhere in space and time, then we realize that there are two types of experiences: the experience of the object and the experience of the space. In the first type (object) the most apparent motifs are only visual, and often kinesthetic. Consequently, figure ground composition of volumes and surface as altered by the viewer's relative orientation, the light of the day, the situation taking place around it and so on, becomes the dominant type of motif that the person understands. In the second type of experience (of the building as space) all motifs come into play, with the visual motifs as the ones that get most attention, and with acoustical and kinesthetic motifs simply helping one's understanding of what one sees.

I am convinced that Architecture is generated through the intersection of tectonic motifs each manifesting different aspects of existence as perceived by humans through the five senses. The planning of a project

[1] Basic Orientation: refers to our postural sense of Up and Down, which, because of its dependence on gravity, establishes our knowledge of the ground plane.

through the understanding and analysis of these motifs determines the character and level of complexity of the project. Upon completion, the geometric choices made (in this case the handling of the three elements above: walls, ceiling, floor) must precisely reflect the architect's reaction to the dialogue of these motifs. Whether successful or not, such a synthesis, which occurs through the grasping and manipulating of the different motifs, allows for the achievement of clearly established intentions regarding the poetic character of the project.

> *Architecture operates by means of properties, like density, weight, mass, finiteness and non-finiteness, stability or dynamics etc. as specific quantities. The architect constructs a form, bringing together elements, which are not technical or utilitarian ones in the normal sense of these words, but which can be looked upon as 'architectural motifs'. In the architectural respect, these motifs must be rational and must serve the higher technical demand of the individual to orientate himself in space.*
> *(From Nikolai Ladovsky's definition of Architetural Rationalism)*

The possible Tectonic motifs are linked to either our visual, acoustical or kinesthetic systems (these sum up the most relevant sequences in the creation of architecture). Each one of these three categories can be broken down into several smaller ones.

a. *Kinesthetic Motifs*

I believe that Kinesthetic Motifs as far as the architect can really control are mostly related to topology. By topology I mean the set of relationships among the spaces of a project in terms of elevation, connection etc. It is the relative location and position in the project that implies a certain hierarchy, while attributing to a space the characteristics that will make it appropriate for a type of use. In these topological sequences, relative elevation of the usable spaces compared to each other and compared to grade-level, but also the slopes of other spaces (most often circulation corridors) are the two aspects of the geometry of a project that must be considered.

The effect of such changes is not unimportant, even when the changes are subtle. The sloping floor of apartment 18 on the 4th floor of 796 Main Street in Cambridge, Massachussets was exaggerated in my mind as I stayed there over the years. The daily contact with the subtle topographic differences within my apartment became with time so immense as to make them seem like valleys and peaks. The fact that water would concentrate at particular parts of the apartment when I would mop the floor made this sense even more intense. The moments that I would feel most intensely the topographic differences in my

apartment were where when I would return from a long night working at the studio. My lack of strength would make the climbing of the smallest slope a burden. Also, my extreme tension from lack of sleep would make my body aware of any subtle change. The slight change of slope became a mountain in those moments. And sometimes I found peace in just resting in the middle of my apartment. What made this sensation even more intense was the fact that the apartment was in the attic of a building with a slightly sloped roof. This slope of the roof was evident in the slope inside as well. Walking into the kitchen from the bedroom, I felt that the apartment had moved. It is interesting that my sister, who visited me twice at this apartment, was unable to stay in it for more that a few minutes at a time, because it made her dizzy. She called my apartment "a boat" jokingly several times. I did not understand the analogy in the beginning, but then I realized that she was referring to her nausea caused in the past probably by an intense experience at sea. What causes this experience of course is nothing but the continuous palindrome-like motion of the ship. Your body tends to stand vertically to the ground. You expect a specific horizon. You expect yourself to be the only one that determines when the horizon will change. However, you constantly move, and there is a retrogression between states of pause, which involves motion that you are unable to bear, and that causes your nausea. It was wonderful to see this phenomenon occur in my own apartment, an environment that seemed completely disconnected from the ground and of course, the sea. This phenomenon involved a type of static motion, a sort of restlessness captured in the walls, floor and ceiling of my apartment. The strain in the beams was not limited to them, but was communicated to me, the inhabitant, in the subtlest of ways, as if there was an organism captured in the seemingly lifeless substances of the building that was in tension, just as I was, and expected me to understand it, through touch, through being inside it, through noticing its irregularities. And all this amidst the overbearing flatness of the asphaltine Main Street.

b. Visual Motifs

The human's perception of the building is key to its understanding of it. The architect's purpose is therefore to work with different shapes, different materials, different colors: *"The designer must take into account that approximation of the image, which is obtained from perceiving real forms in perspective, the image given in the projection,... with whatever accuracy and precision is required in the given situation."(Ladovsky).* The eye plays a crucial role in someone's discovery and experience of a building. For example, the regulating lines of the facade of a building are registered by the eye in the same way that the eye perceives a painting by its format, dimension, length, width and angles. T*he Eye* perceives the opposition between Transparent vs Opaque. The Eye is the perpetrator and the inspector. There is a

constant framing situation: Framing a view vs Framing oneself: Jumping from being the inspector to being the inspected.

There are two types of Visual Motifs: volumetric and planar. *Volumetric* motifs are either spatial or figure-ground. In the relationships between Man and the building, the volumetric motifs are spatial. The experience of the volumetric spatial motif through which the visitor goes is based on a motif of relationships between man and space in terms of width, length, and height.

In a very self-explanatory way, *Planar* Motifs can only be figure-ground. Mass of course has its own surface, so planar compositions are essentially omnipresent. The distinction between figure and background unlike in space happens in two dimensions. The two types of sequences of pattern that can exist among surfaces may be of three types: *form, texture* and *color.* The monolithic quality of the building makes texture more apparent. Material is no more concrete but the texture of concrete. Texture has to do with i) module, ii) module-grain, iii) Module size.

Every moment in the monastery belongs to a particular and unique compartment. Every one of these compartments has a particular arrangement of elements. Generally in architecture, there are two types of compartments: linear and planar. In the case of La Tourette, the cloisters represent the linear compartments while the individual spaces each one of which has a particular function assigned to it represent the planar compartments. Planar spaces often tend to be considered places of stasis (pause), when on the other hand, linear spaces are spaces in motion.

The space is an intersection of a variety of sequences. These sequences are of two types: ones that are perceived when the visitor is in stasis, and ones that are perceived when the visitor is in motion. Indeed, stasis and circulation hold an important place in the building. Stasis rests in the cells, the study area and the church. When the body is in static position, the only movement is enhanced by the movements of the sunrays on the inside walls of the building. Le Corbusier designed a complex arrangement of openings to let the rays of light change and influence the motif of spaces. The building consists of a zone of light which feeds all other areas of the building with light. This zone is not restricted by volumetric or programmatic zones. It is a loosely defined zone of light in a space enclosed by dark zones: the church, the domestic area and the cellar. But most importantly, as we saw before, the building acts as a sun dial, changing completely during the different times of the day, and modifying, changing the essence and the capacity of each space and making them appropriate for different uses each time. The purpose of these openings are for the monk and the visitor to experience a continuous process of space variations between

open and closed, and light oscillations between light and darkness, forcing their eyes to change continuously their focus.

The circulation as it has been designed by Le Corbusier consists of two types, one ceremonial and one utilitarian. Motion is translated in paths as sequences of space: i) Ceremonial path from the church to the roof through only the active spaces (not the domestic) – Cloister type. ii) Ceremonial Utilitarian path, which provides vertical access to the spaces of the building. The building consists of volumetric spaces juxtaposed and in sequences that have meaning a) as sequences, b) as individual spaces meant to serve specific functions.

Looking at the plan of the monastery, I realized that the grounded spaces also tend to be planar, and consisting of interpenetrated smaller spaces, each of which is highly articulated as a space itself. This means that there is a simultaneous reading of a space as both individual and as part of another space. The Grounded spaces are the church and the courtyard. On the other hand, all linear spaces are raised above ground on piles, thence suggesting their absolute disconnection from it, which is a position that once again defies tradition. It so happens that these linear spaces are the life of the monastery. That is true not only because they suggest motion, but because they put the user into an informal hide-and-seek situation, by creating the circumstances for the user's retrogression between a hermetic state and a social state. This happens in two ways. The spaces constantly compress or release, and gradually alter the level of transparency of the architectural moment in which the user is captured. The fact that all the spaces of motion (or all except from a couple of compartments) look into the central courtyards, transforms the courtyard into a crossroad of glances and each moment within the cloisters into a possible position in an on-going silent visual dialogue upon which the design of not only the monastery, but the order itself is based. All sequences (and the building itself) are based on a collision of the above compartments and the merging of experiences through it.

c. Acoustic Motifs

Acoustic Motifs can be extremely complex. The basic ones are the ones related to aspects of sound that the building itself has a very important effect on: *reverberation, volume* and *quality*. Considering that quality and volume depend on the sound-source, the only aspect of sound that can be truly controlled and understood is the reverberation time within a space. What determines this sequence is the material

used and the volume of space. The church's sound reverberation qualities are quite exceptional. A Chinese gong during a concert resonated for 7 minutes.

The poetic substance of a place is composed through the intersecting sequences of motifs and their juxtaposition with the program. This category is mostly related not to the conception of a place, but to its perception when experienced. It is in a few words the reason for the existence of all the above: the experience of the physicality of architecture. The Architect uses a wonderfully mysterious way of sequencing these zones, creating sequences that are unexpected. The space of the Convent consists of intersecting sequences of space, introducing the idea of domains instead of borders. These sequences are very simple. They are sequences of specific rectangular cross-sections, which almost always allow for one of the two sides (left or right) to be transparent to a certain extent. There is a continuous repetition of a rectangular module. This module reappear not according to a grid, but according to a poetic set of rules set by the creator, and loosely based on regulating lines of reference-buildings of the past. This module almost always appears with a slight fault. *Slight Fault*: The rectangular module based on the golden section that repeats itself throughout the building often appears with slight fault. *The Hand of the Creator:* In a similar way, small scale imprecision and Mistake in the making is a welcomed thing. It allows the concrete to take arbitrary forms and features – Arbitrariness governed by rules. There is a constant uncertainty in the design of the building, a rejection of Absolute in parallel with an Embracement of the Relative. In contrast with the specificity in terms of function, there is a certain degree of uncertainty in the visitor's mind regarding the status and nature of things. Voids, solids, mass, volume; the readings create something that they will later contradict.

The following is a list of specific types of motifs available to any architect:

Kinesthetic > Topology > (i) relative elevation,
(ii) slope
(Relative position in space understood through motion and strain)

Visual > Volume > (i) Spatial: W, L, H, (relationship of space to body-Compression)
(ii) figure-ground > volumeA/ volumeB
(iii) Ambient Light (brightness)

> Plane > (i) Form or Texture,
(ii) Color
(iii) Opacity

The following is a study regarding the arrangement of intersecting motifs in the convent of Sainte Marie de La Tourette.

The categories of motifs available to the architect are the following:

- Opacity
- Relative Elevation
- Slope
- Figure-Ground Composition
- Scale (volume and dimension)
- Color
- Hardness
- Texture

However, the monolithic nature of SMDLT makes the following factors constant:

- color,
- hardness,
- texture

Therefore the use of these motifs is muted. Also, hardness affects sound, and therefore the constant hardness simply reflects the volume of each space (basically reinforcing the visual stimuli).
Therefore, the types of motifs that this study was based on were the following:

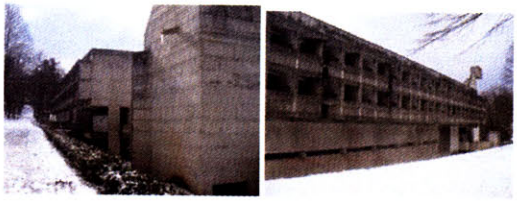
- Opacity,
- Elevation,
- Slope,
- Figure-Ground Composition,
- Scale

THE OUTSIDE- Experience of Approaching and walking around the Building

We could say that the four sides of the convent represent separate measures in the composition of the exterior envelope of the building as experienced through a path that takes one through a process that begins with an introduction of the main elements of the building and continues with a series of contradicting views. The following intersecting motifs of figure-ground composition, scale, Elevation and Opacity, are arranged according to this path. It is very important to realize that the understanding of these motifs offers one the clear understanding of the choices for the organization of poetics that are present in the building.

The Path is the following: North, East, South, West.

North Face



East Face

South Face

West Face

Figure-Ground:

- North> Absoluteness of the monolith: Clear establishment of the monolith. The partie is a understood as a large core with minor independent monolithic attachments to it.
- East> The Cracking of the Monolith: A second type of subtractive intervention is added. The core of the project remains the monolith, but not for long. The path reveals a separation of the building into two parts with independent behavior: one additive, one subtractive. Later, every doubt disappears. All that remains is the sight of two whole independent monoliths.
- South> Monolith Reintroduced: The dialectic of the monoliths has come to an end. There is a new dialectic that has now begun. This dialectic is sectional.
- West> Clear Juxtaposition of Monolithic Entities: The final arrangement of the individual entities is "Acropolic". The Ground that just a few moments ago was involved in an intense dialectic with the building is now participating in a harmonious figure-ground composition.

The Motif is:

Absoluteness of Composition> Transition + Separation > Contradiction in section> Harmony- Acropolis

Scale: for average human height of 1.75m, the following are ratios of this height to the height of the building

- North> 1/12 to 1/7 (slope): The Monolith establishes the two dimensions (in terms of height) of the Convent
- East> approx. 1/7: The building establishes a clear relationship with the user in terms of scale
- South> 1/7 to 1/12: There is a sequence of transitions on this side of the building. At the bottom of the hill, the building despite its large scale, manages to scale-down by allowing for a large void, reestablishing the approx. 1/7 scale of the top.
- West> approx. 1/12 to 1/14: this is the highest point of the convent. The convent establishes at this point a character of power. The church has at this point the tallest elevation in the complex.

The Motif is one of increasing scale. 1/12 > 1/7 > 1/7 > 1/12 > 1/14

Elevation: In this case referring to the impact the relative elevation of the viewer compared to the building has regarding the way the building is understood by the viewer.

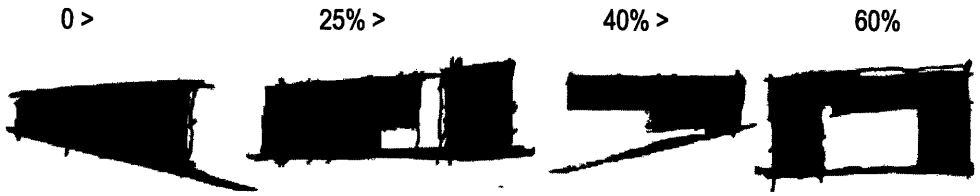
- North> Absolute: Establishment of the absoluteness of the building and its clear relationship (at that stage) with the hill
- East> Street: The narrow path that is understood almost as a street establishes a new ground "0"
- South> Underground: After the establishment of a new ground "0", the descending down the hill feels almost as if one is descending into a crater.
- West> Acropolis: Feeling that you are at the bottom of a high mount, and looking up once again you get the "acropolic" effect.

The Motif is the following: Absolute > Street > Underground > Acropolis

Transparency:

- North> 0
- East > approx. 25%
- South> approx. 40 %
- West > approx. 60%

The Motif is one of increasing transparency:



THE INSIDE- The Interior of the Building

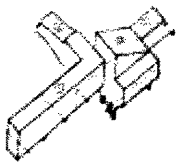
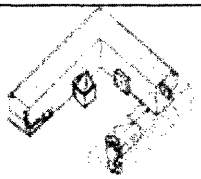
We could now say that the measures of the interior are four as well. The stories of the building, each is handled subtly differently. With the exception of the last two floors, which are pretty much identical, all floors

are different in every aspect of comparison. The following are the same motifs as above, analyzed for each floor:

Figure Ground:

- Bottom Level> object-space: In the cloister level, the circulation space becomes a completely negative space. It becomes a solid within the larger space of the courtyard.
- Ground Level> This circulation space becomes often positive often negative. Often it penetrates the domain of the courtyard and often is penetrated by it. Often it also becomes a framing wall, allowing neither of the two conditions to take place.
- Cell Level> The domestic floor is a solid frame that clearly defines the space of the courtyard. It becomes the absolute/ grounding force, in the motif, similarly to the absoluteness of the figure-ground composition of the church in the composition of the outside envelope.

The Motif is demonstrated in the diagrams below:


Scale:

- Bottom Level> *Height:* Varying (min 4m+, max 10m+), *Width*: Steady (4m+)
- Ground Level> Height: Steady (4m +), Width: varying (max 4m+)
- Cell Level> Height: Steady (2.26m), Width: Steady (2.26m)

The Motifs are the following> for Height it is: Varying – Steady – Steady
for Width it is : Steady – Varying – Steady

Elevation:

- Bottom Level> Varying and Irregular Elevation
- Ground Level> Flat and Regular elevation
- Cell Level> Flat and Regular Elevation

The Motif is demonstrated in the following sketch:

Transparency:

- Bottom Level> Varied: approx. 70% transparency
- Ground Level> Varied: approx. 50% transparency
- Cell Level> Constant: approx. 20% transparency

The Motif is: 70% > 50% > 20%

Through studying Sainte Marie de La Tourette I have realized that there are two types of poetic organization and planning present in the building: one vertical and one horizontal. Vertical Planning is present in the arrangement of the floors. Hoizontal planning on the other hand is done through the development of the composition of the outside envelope of the building AND through the use of particularly chosen regulating lines. These lines and space arrangements, as I showed before, are similar to those of the Danteum. This system of regulating lines is based on 4 rectangles (or squares), or varying sizes, breaking themselves into smaller modules, without any strict definition of these modules, but with vaguely suggested domains of space that end up contradicting each other.

Through following these two types of organization and the specific chosen motifs of the Convent, I will create a new design based on the idea of the sacred restlessness of a monolith. The intention is neither to imitate, nor to design a "Corbusian" building. The intention is to allow intuitive personal ideas related to the design to filter through the loose guidelines that I have managed to observe in this incredible sacred monolith, this architectural masterpiece, the Convent of Sainte Marie de La Tourette.

THE NEW SACRED MONOLITH: Sainte Marie de Touraine

DESIGN PROJECT

SPACE

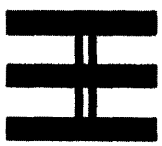
Basic Vertical Organization

The new design (Sainte Marie de Touraine) is a small convent for 8 monks. Apart from the domestic facilities, the design includes a chapel for at least 40 people plus the monks/ residents, a library, study areas, cooking and dining areas, area for conversation and bathrooms/ showers.

Like at Sainte Marie de La Tourette there are three dialogues, and three compartments in the program of the new design: Domestic (related to dialogue with self), Academic (related to dialogue with others- either in the form of preaching or dialogue) and Ecclesiastical/ Ceremonial (related to prayer and dialogue with God).

For each Dialogue there is a sequence of spaces. Unlike the La Tourette design, the design of Touraine does not consist of three sequences that have the same outline. In la Tourette, Corbu uses his free plan as described above. In Touraine the three sequences are almost like independent compartments in space. Seeing them independently one realizes that they could belong somewhere else. However, there are very clear connections among them, which I will describe later.

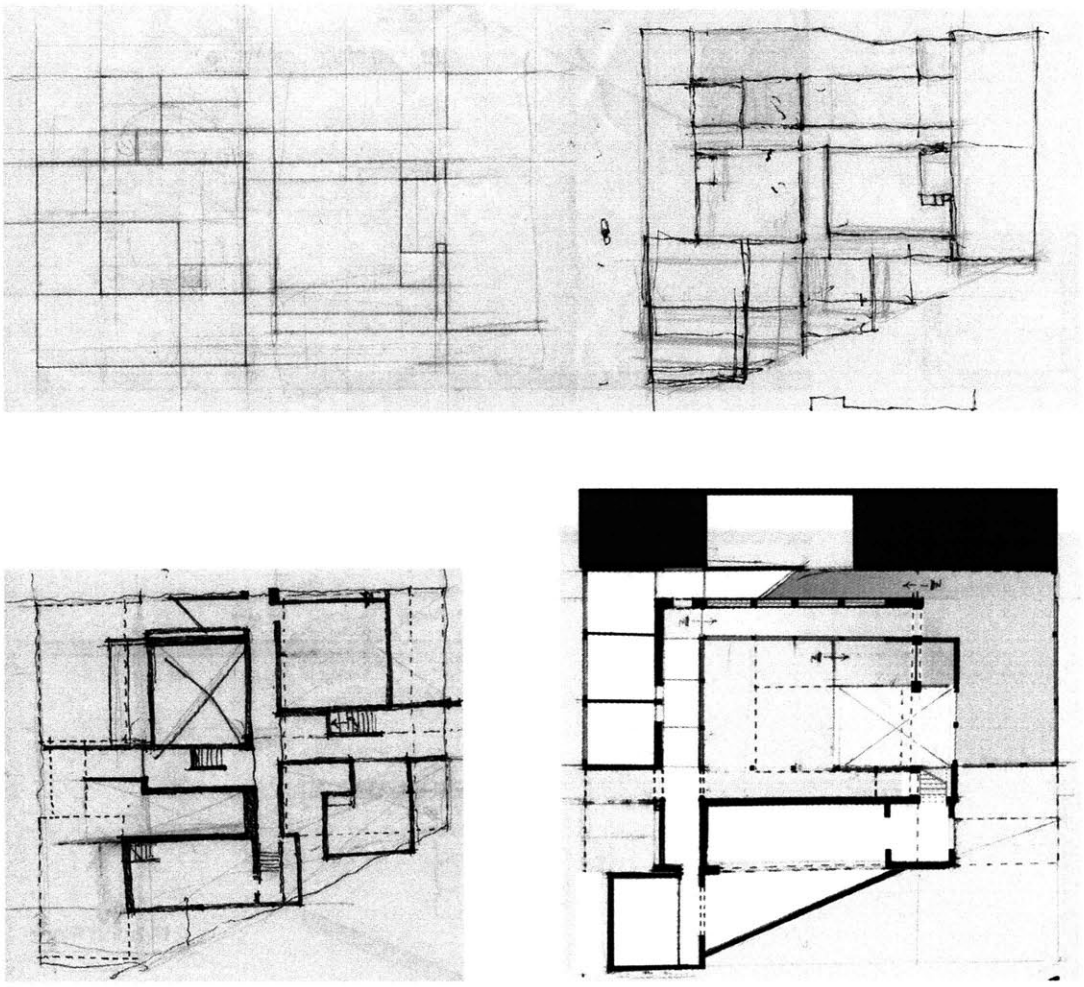
The parties of La Tourette and Touraine are very different, mainly due to the different set of connections. In the design of La Tourette there is a more interconnected set of elevations. In the Touraine design, all three sets of space come together through one and only space: the lobby. In a few words, in La Tourette the main connector is a plane, whereas in Touraine it is a point. Either way, the following diagram describes the two parties, showing that in fact they are not that different.



Basic Horizontal Organization

The basic horizontal organization used in Touraine is the one dictated by the regulating lines of the Danteum, which I spoke about further up. In this sequence, a similar sequence of transferring from one compartment to another is proposed. This organization separates the horizontal canvas into four quadrangles, in essence making each one of them relatively autonomous, yet still parts of the same whole.

The following are some preliminary schemes that derived from this type of organization based on the four quadrangles:



Parties based on 4-quandrangles

The final organization of the four squares was slightly altered in the chosen scheme. Instead of seeing the four quadrangles as canvases like Terragni did, I decided to see them as cores. Le corbusier used these

four squares as clearly courtyard types of openings around which different things occured. Essentially, these were simply voids defined by a frame; leftovers of the organization of each floor. In Touraine, on the other hand, the four cores are simultaneously objects and spaces and become the generators of life and space around them.

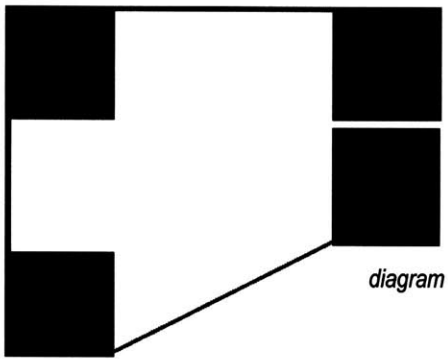
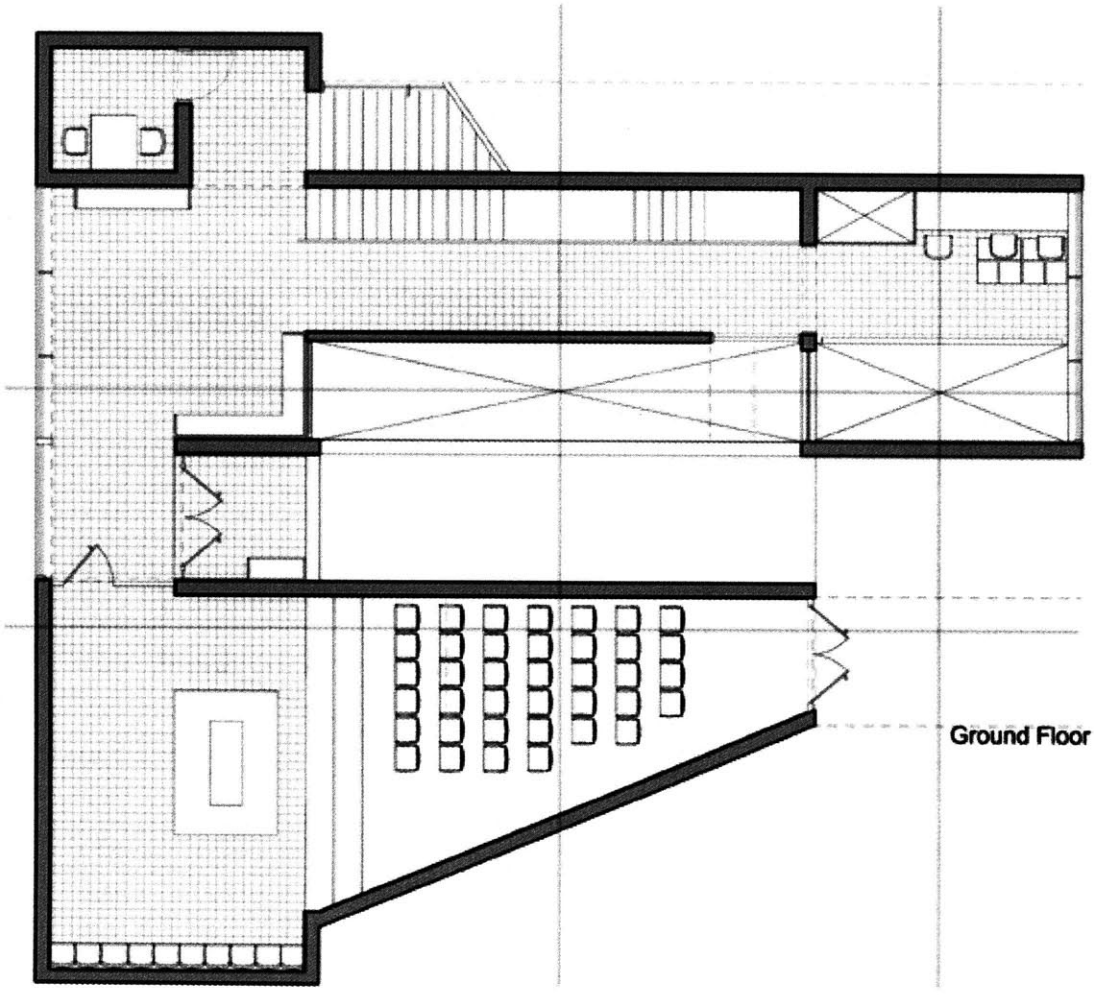


diagram of the organization:



Ground Floor Plan of Sainte Marie de Tourainne

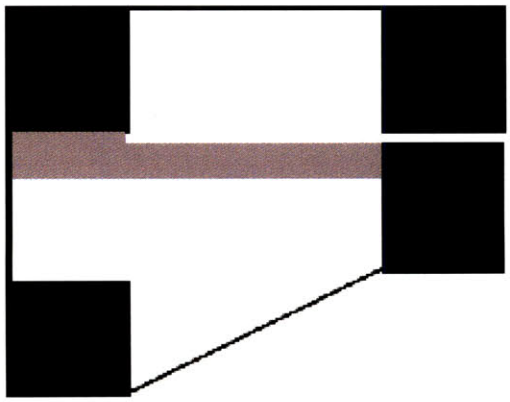
Each square defines a major part of each zone. The bottom-left square belogs to the sequence of the church, and it is the space where the monks sit. The bottom-right square is a small plaza and space of gathering right outside the convent. The upper right square is an underground cubic space of study and contemplation. Finally, the upper-left square is the main core of the whole building: the lobby where monks and common people meet (a place where the monks can offer their services or just speak to the people).

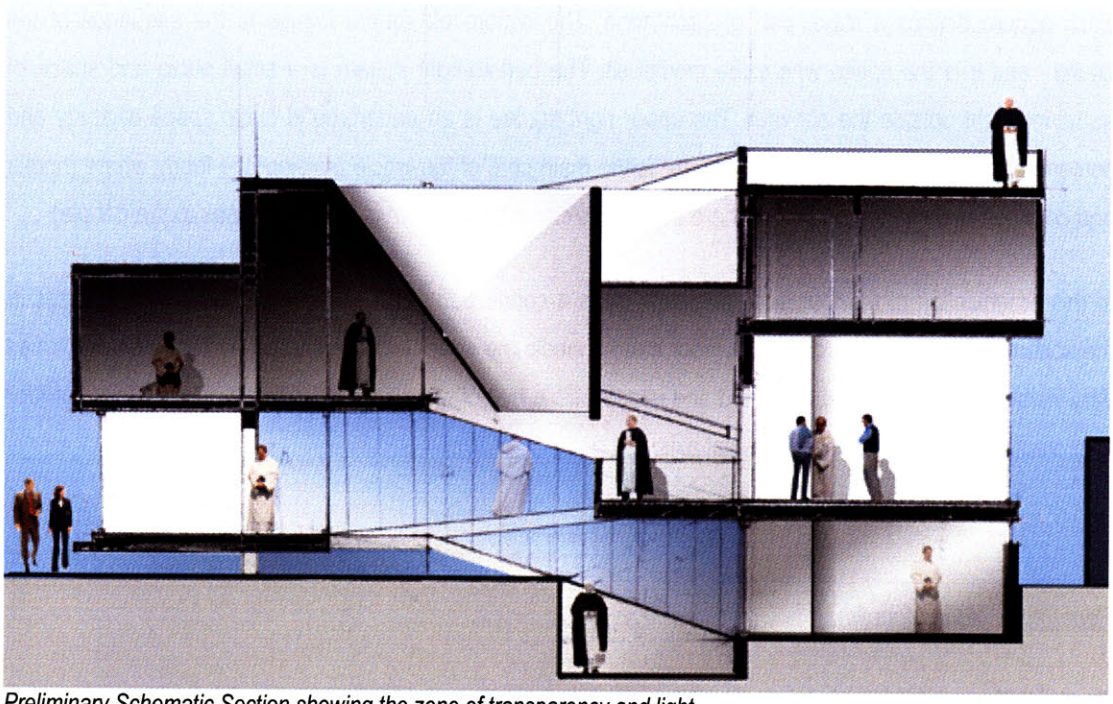
In this organization of the four quadrangles there is a connection between the two most public squares in the scheme. This creates a central corridor that connects the street to the entrance. This corridor becomes very visible as it crosses the courtyard and is accessible by both monks and common people. This corridor also creates an important organizational axis.

Penetration of the Monolith

The transition on this axis happens from the one square to the other and through a third square; the open courtyard in the middle. This transition is exaggerated by a slight change in elevation, and by a change from open air, to semi-enclosed, to enclosed space.

This first transition also orients the visitor, who has already been around the massive solids of the building (as we will see later) and is now penetrating it. This act of penetration also exposes the organization of the building in terms of light. The transparency of the building along the entrance-axis becomes apparent.





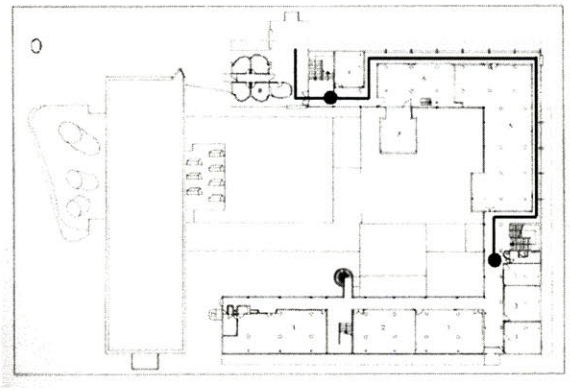
Preliminary Schematic Section showing the zone of transparency and light

Also, the act of penetration is extremely important to the understanding of the whole as a monolith. Similar is the act that takes place in La Tourette's Academic Floor.

When entering Sainte Marie de la Tourette, this act of penetration becomes apparent as the circulation pushes you inside and out and you come across a sequence of solids and voids that confuse you about what exactly the actual partie is.

That sequence (also an entry sequence) is as follows:

Step1: The visitor enters a well defined void (like a chunk clearly missing from a large block), which connects both the courtyard and the outside. (this void is well defined by a free-standing small curvilinear structure).



View of the cavity right before the penetration

Step 2: The visitor actually enters (literally penetrates) the monolith and becomes isolated from the outside world, yet finds himself more in touch with the central courtyard. At that point, the visitor does not feel that he has entered the convent fully. That is actually true and it might be because there has not been a major threshold to cross yet. That is when the visitor enters step 3.

Step 3: The visitor turns and his relationship to the building instantly changes. He now feels as if he is penetrating the building, and especially when passing through the narrowest corridor of the convent, feels as if a threshold has been crossed. Then the visitor reaches the largest void of the floor visible from the initial void he encountered when he entered the enclosure of the convent, and of similar dimensions.

For all these reasons, including the fact that it gathers all spaces around its axis, the entrance sequence is extremely important

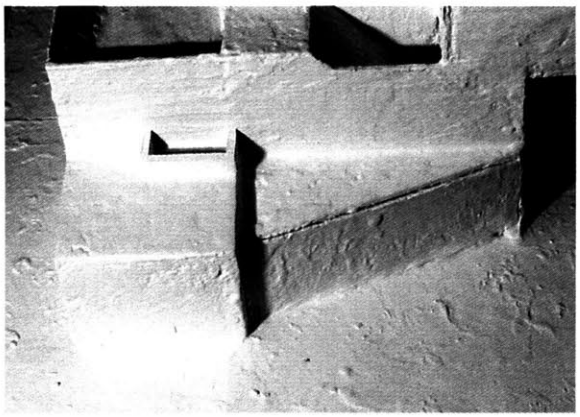
The 3 Sequences

Just like Sainte Marie de la Tourette the building is well defined and divided into three compartments.. As mentioned above the compartments in Touraine are not purely horizontal. Although they are well defined by being located at different heights, they occupy multiple levels each. This is done among other things because space is limited, but also in order to incorporate the factor "elevation" in each sequence as much as possible and allow for each sequence to be understood more dramatically as an individual sequence rather than simply a part of the whole, without losing their strong connection to the whole.

MOTIFS:

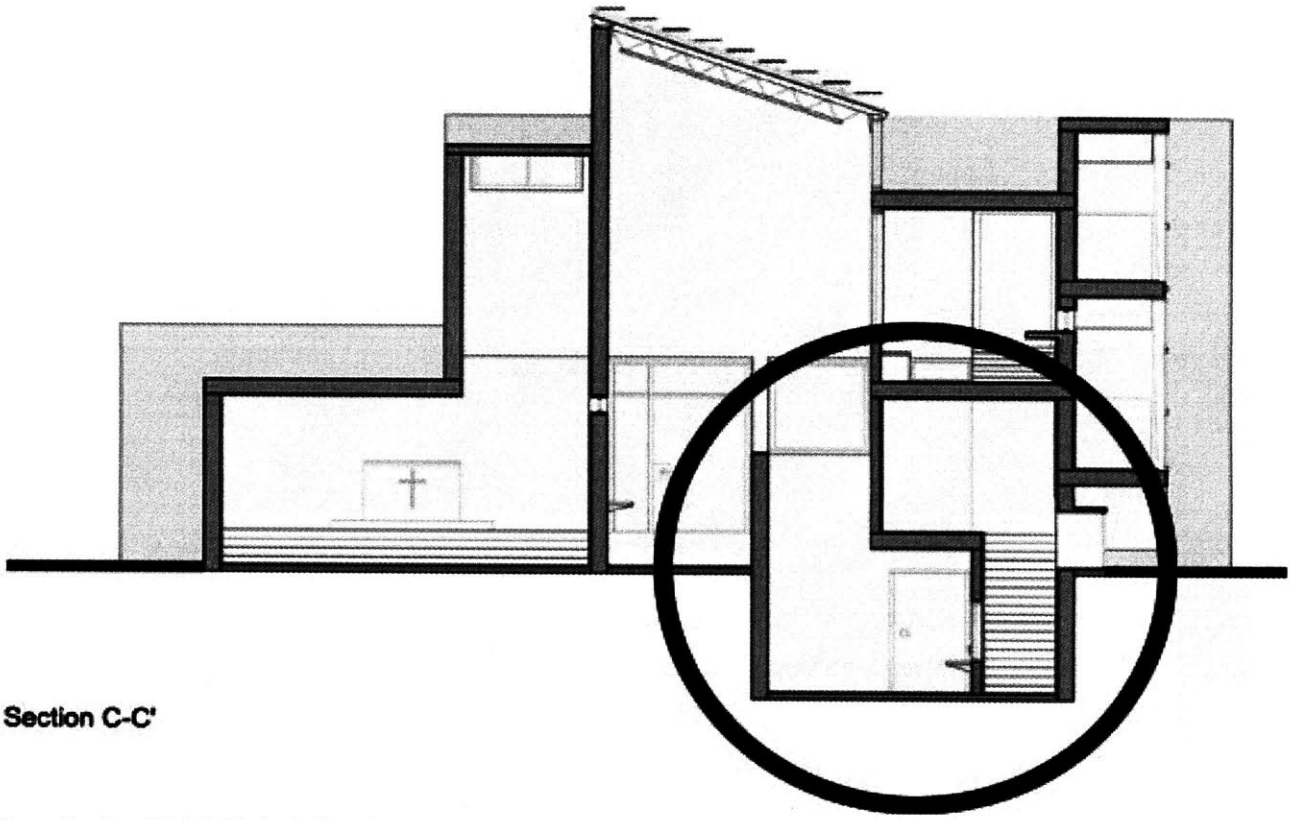
Figure-Ground

- *Chapel>* just like Sainte Marie de la Tourette, the sacred places become objects in space. So does the church. The figure-ground relationships of the church are mostly relevant to volume vs plane as opposed to just surface. The general character is that of added volumes on the original one: the cube. The Church seems to be in the process of trying to escape the strictly rectilinear organization of the place and enter the street, becoming in effect partially an object in space. This volumetric figure-ground arrangement of the church on the side of the street contradicts its relationship to the courtyard, to which the church is simply a flat opaque framing surface, just like the church at Sainte Marie de la Tourette.



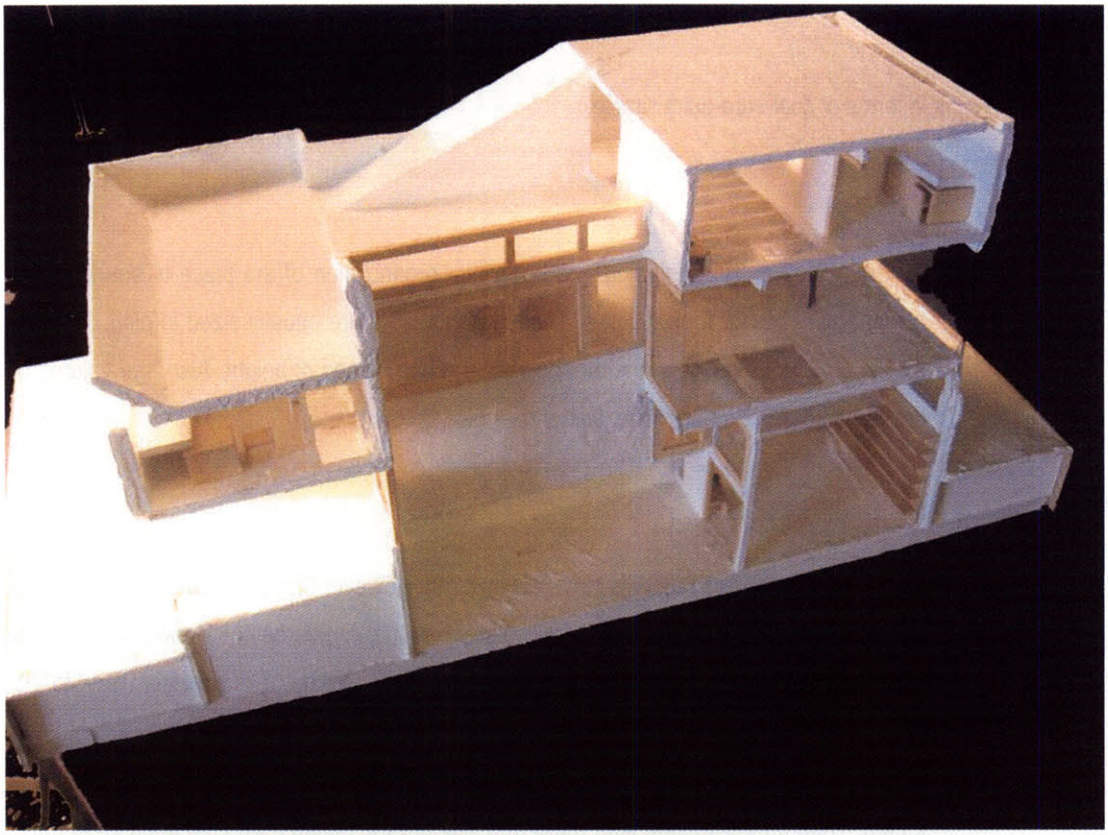
The volumes of the church invading the street

- *Academic*> The academic sequence creates a reverse relationship to the outside and the courtyard from the relationship of the church. Similarly to the academic part of Sainte Marie de la Tourette, this part of the design creates a very simple relationship to the street, in which there is simply the framing of the enclosed volume by an opaque plain surface. This is exaggerated by the overall opacity of the exterior walls. The opacity continues inside until one reaches the enclosed space of the convent. Contrary to this simple framing relationship with the exterior, when it comes to the courtyard this measure creates a relationship similar to Sainte Marie de la Tourette's, where there is a mutual careful invasion of space, with the solid volumes invading the space of the courtyard and the voids of the courtyard invading the solid building. By invading this way (See section below) and at that point (circle), while maintaining full opacity, the compartment partially achieves to mutilate aspects of what a courtyard traditionally is, turning it into a light-shaft.



Cross-Section of Sainte Marie de Touraine

- *Domestic>* At this point the relationships become very clear and specific. The domestic space has to the street the exact same relationship that it has to the courtyard, which is that it simply frames it. At the same time, however, the domestic space'ssolidity and full opacity, contrasted with the relative transparency of the level below, makes it real as an object in space itself.



sectional view of model: notice the opacity and solidity of the cell floors as they are contrasted with the fully transparent floors below (where from btw they receive their light)

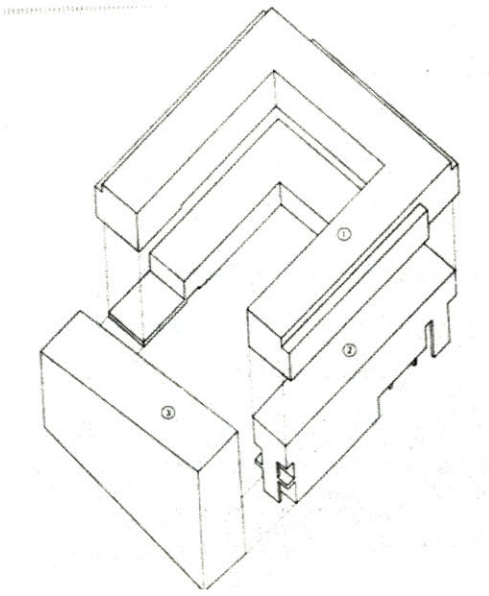


diagram of SMLTCell floors + relationship to courtyard

Scale

The relationships in terms of scale are quite simple.

Width>

- As mentioned in the beginning, the horizontal organization of the place is based on an arrangement of four four squares. These four squares are equally sized in plan. The fact that in plan they are the same emphasizes the importance of height. Also, the volume of space has a greater effect because of the common plan.

Height>

- Overall height Increases as we move downwards. However that only stands for all spaces with the exception of the chapel. The chapel has the largest height among all enclosed spaces. The reason is simply, just like with La Tourette, it is another way to be differentiated from the rest of spaces.
- Height Fluxuation also increases as we move downwards. The top cell-floor is steady at 2.26m. Then on the second floor (cells and kitchen) the height from 2.26 goes up to 3m+. At the ground floor and basement the fluxuation is very dramatic. The person enters the library through a sequence of spaces where heights decrease. Then, on the way out towards the open patio, the person goes through another sequence of increasing heights, until he/she ends up in the tallest space of the convent.

The four Squares>

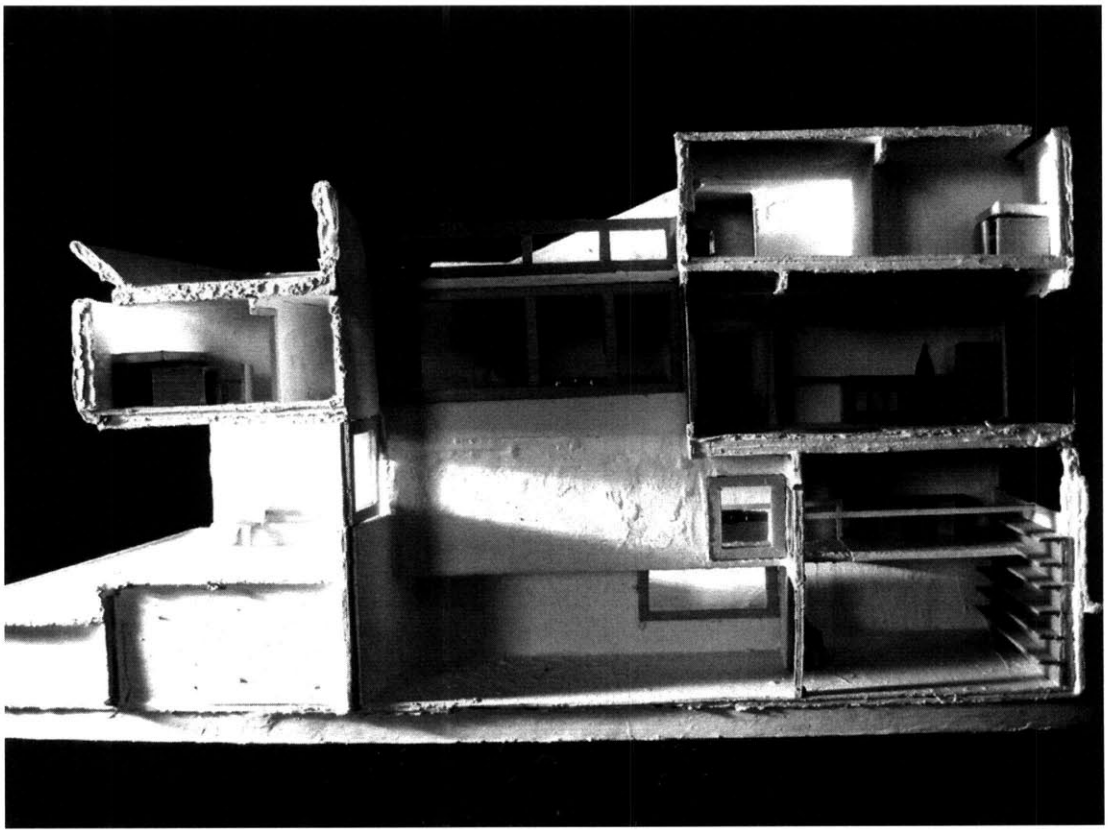
- The four squares on which the arrangement of the place is based, are put in dialogue with each other. What is most interesting is that the adjacent squares define exactly the same volume of space. The outdoor plaza and the basement, and then the lobby and the church-cube: these two couples are placed in an interesting dialogue, as they all stand at different elevations (which makes them independent), yet they maintain a connection with a single pair (volumetrically) and at the same time maintain a connection with the whole set of squares thanks to their equal dimensioning.

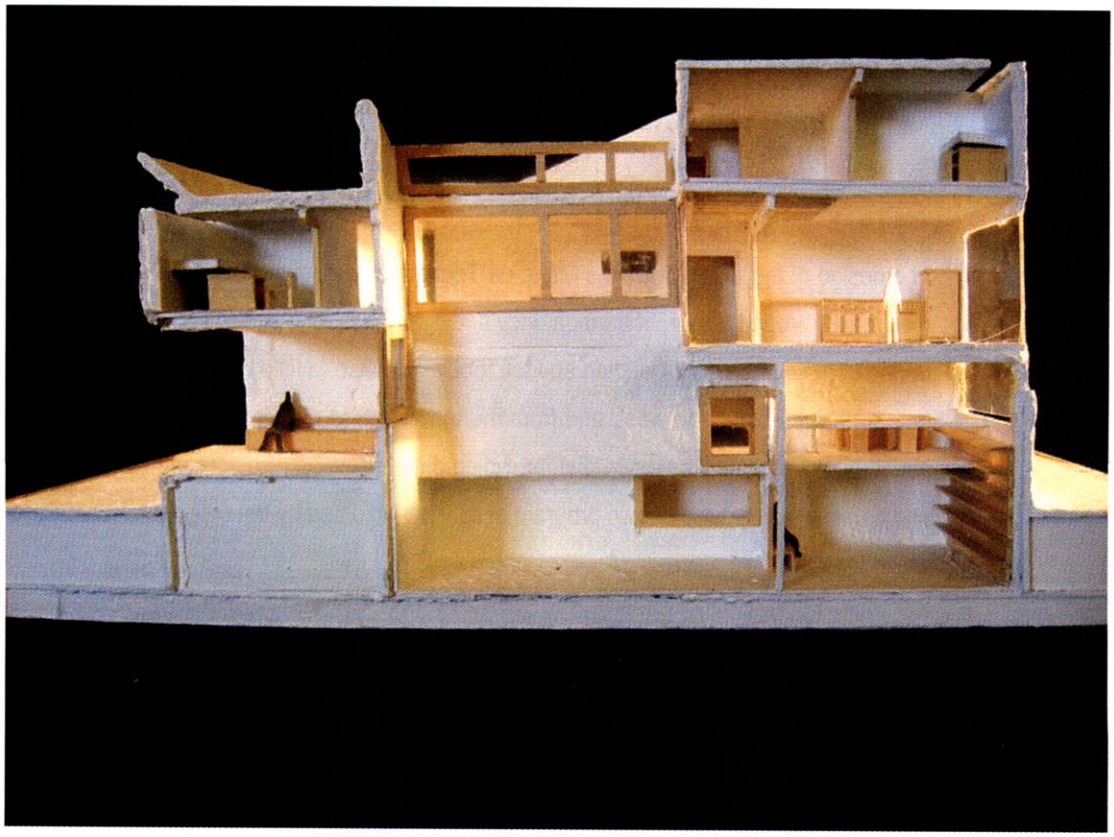
Elevation

- The motif of Elevation fluctuation is the same as the motif of height fluctuation.

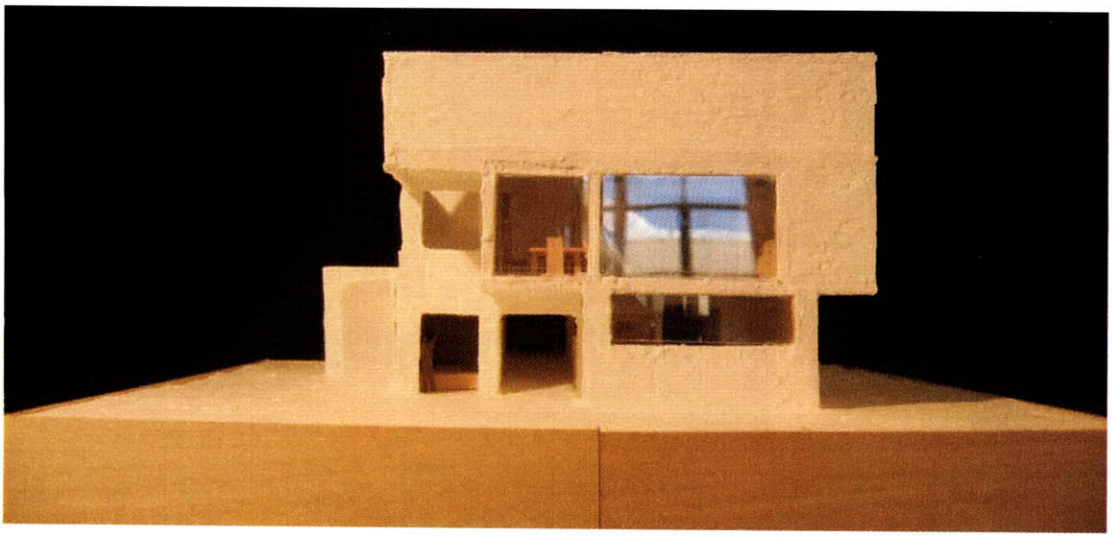
Transparency

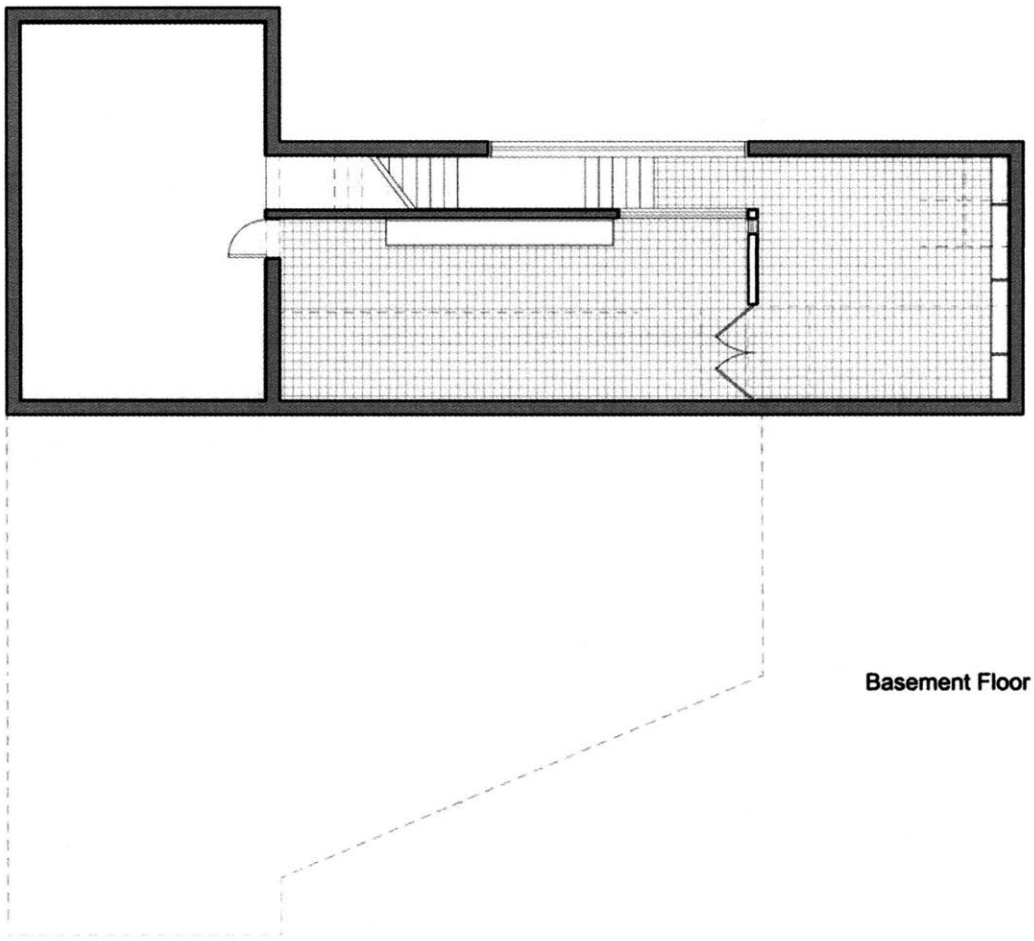
- The design of the Convent Sainte Marie de Touraine is organized (as it has already been mentioned) around a zone of transparency and light. That zone allows light in only into the transparent squares of the kitchen and the lobby, and also (a little bit) the library. The light enters from the east, the west, and from the top, which is directed towards the south. In effect the building acts as a sun-dial, providing different areas with light at different times, and creating within itself its own program of lighting, adjusted by the calendat according to which activities take place.
- According to this lighting organization, cell-floors only get light from below, from the areas of transparency.



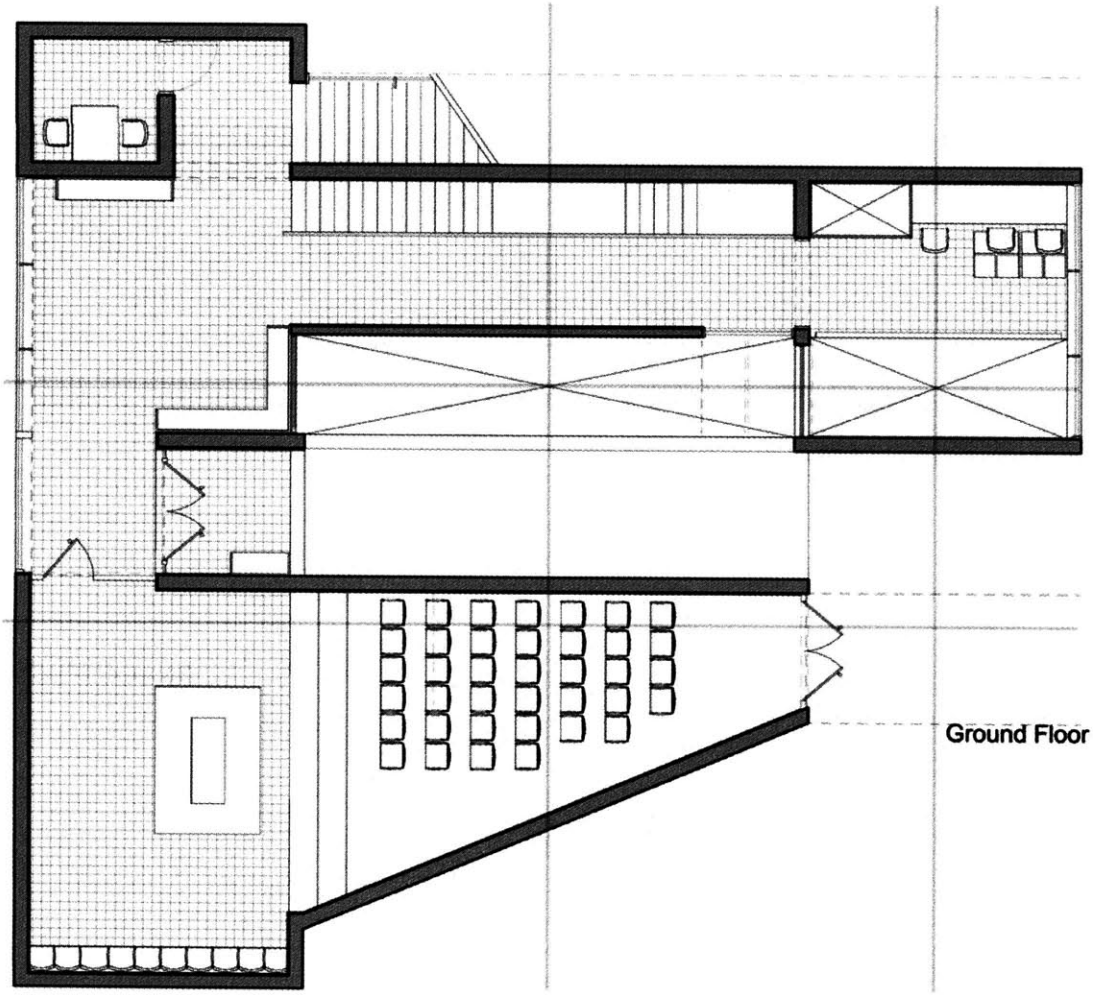


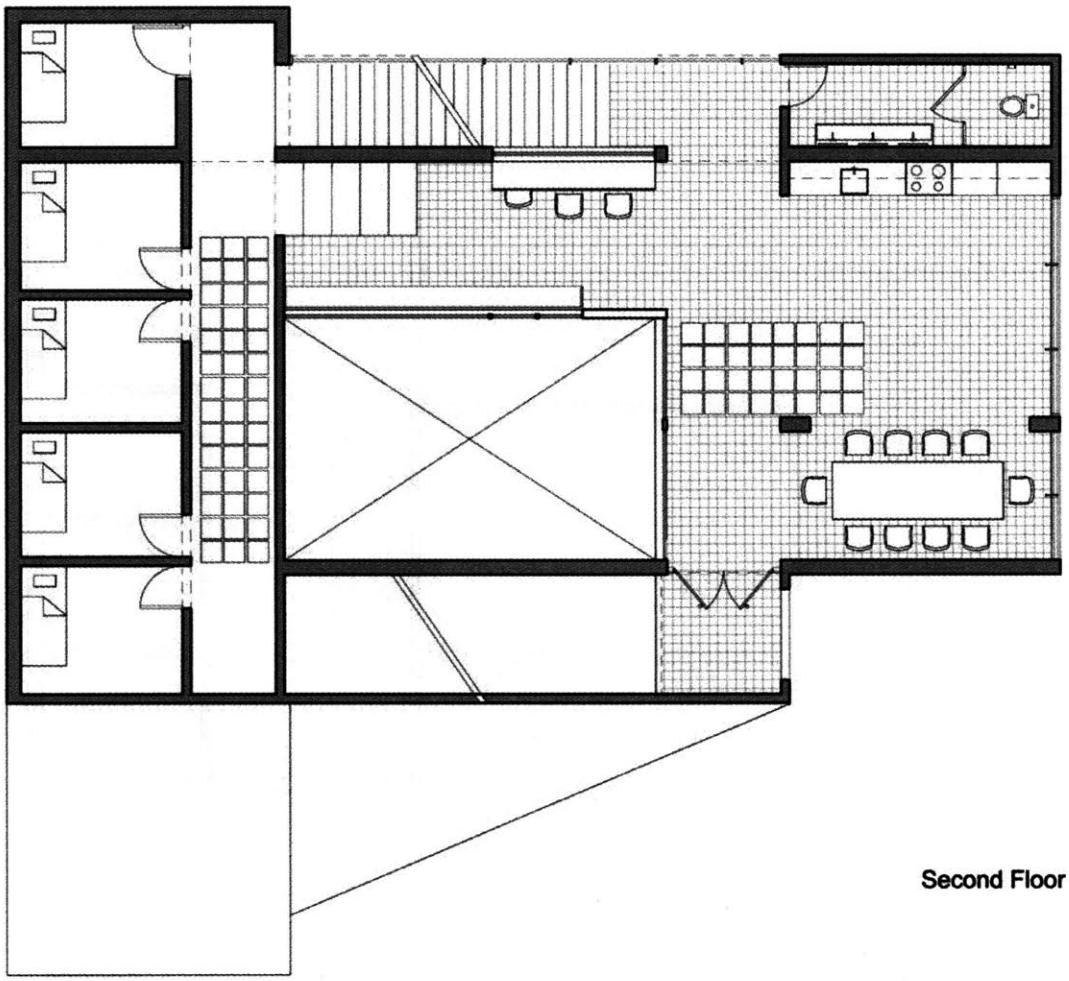
Views of sectional model: notice the transparency at the mid-levels



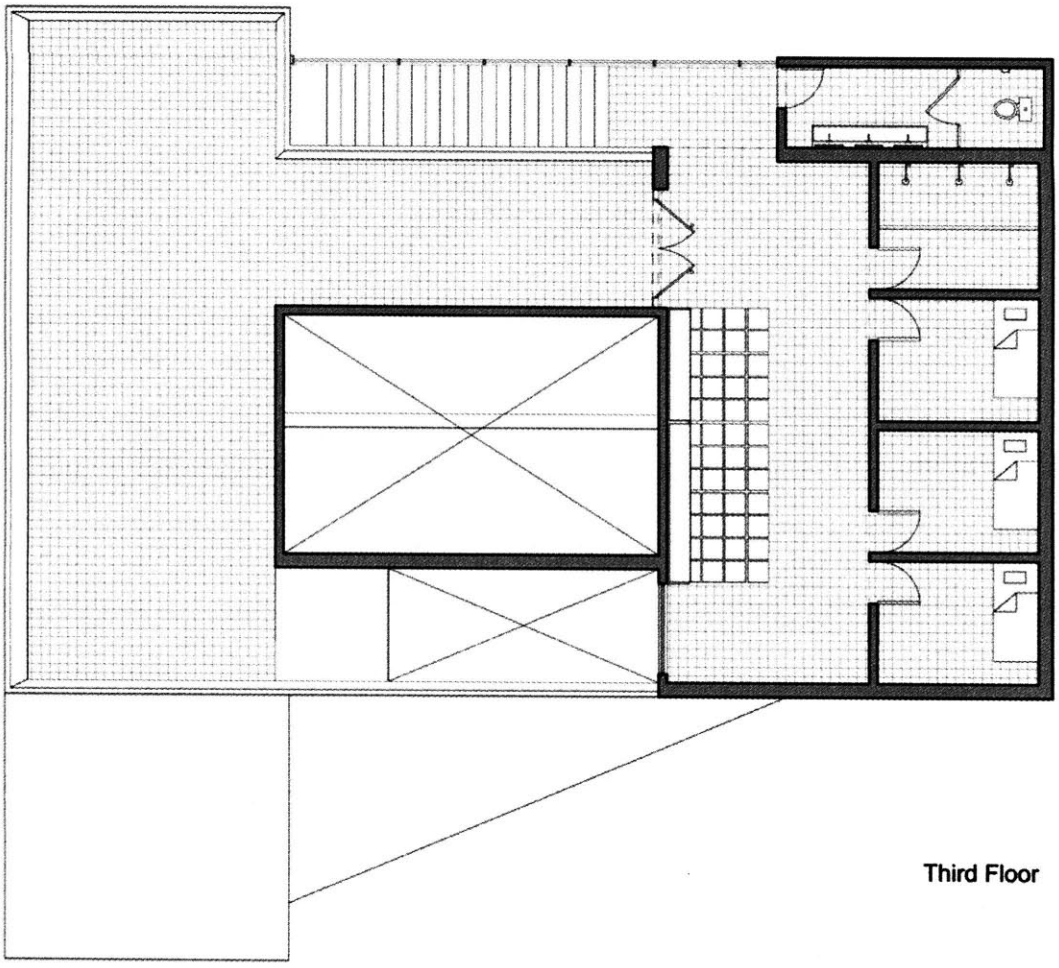


Basement Floor

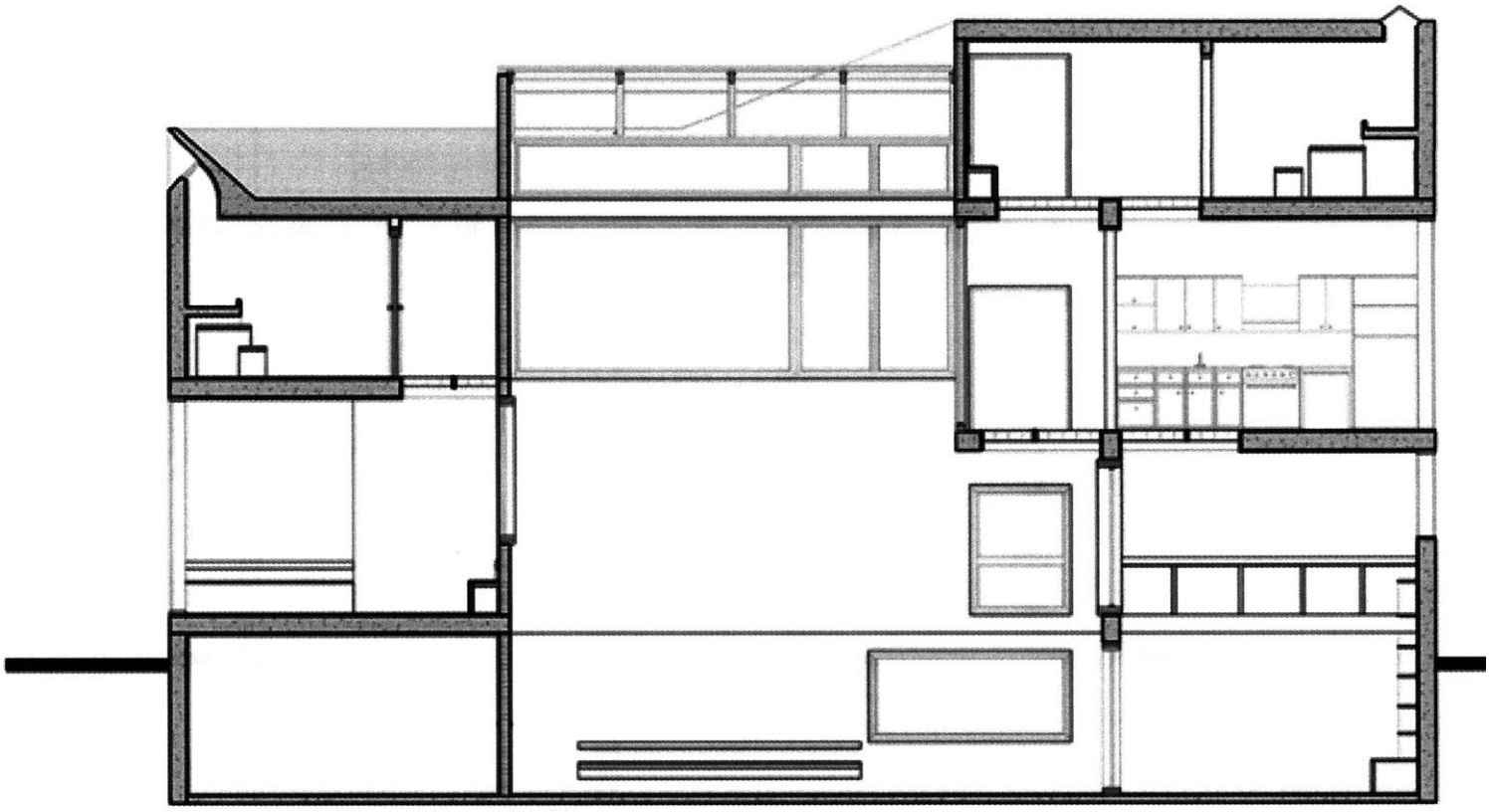

Ground Floor



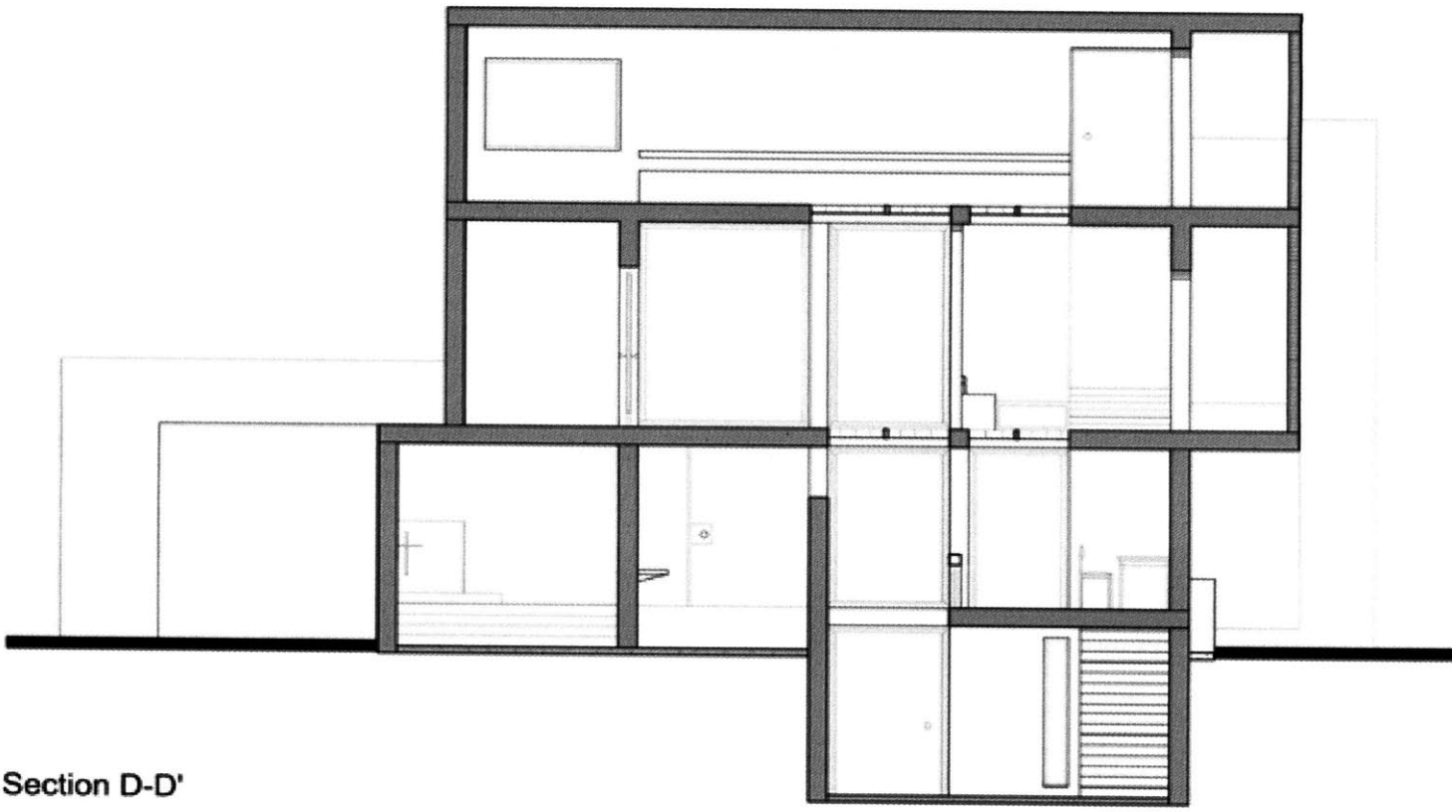
Second Floor



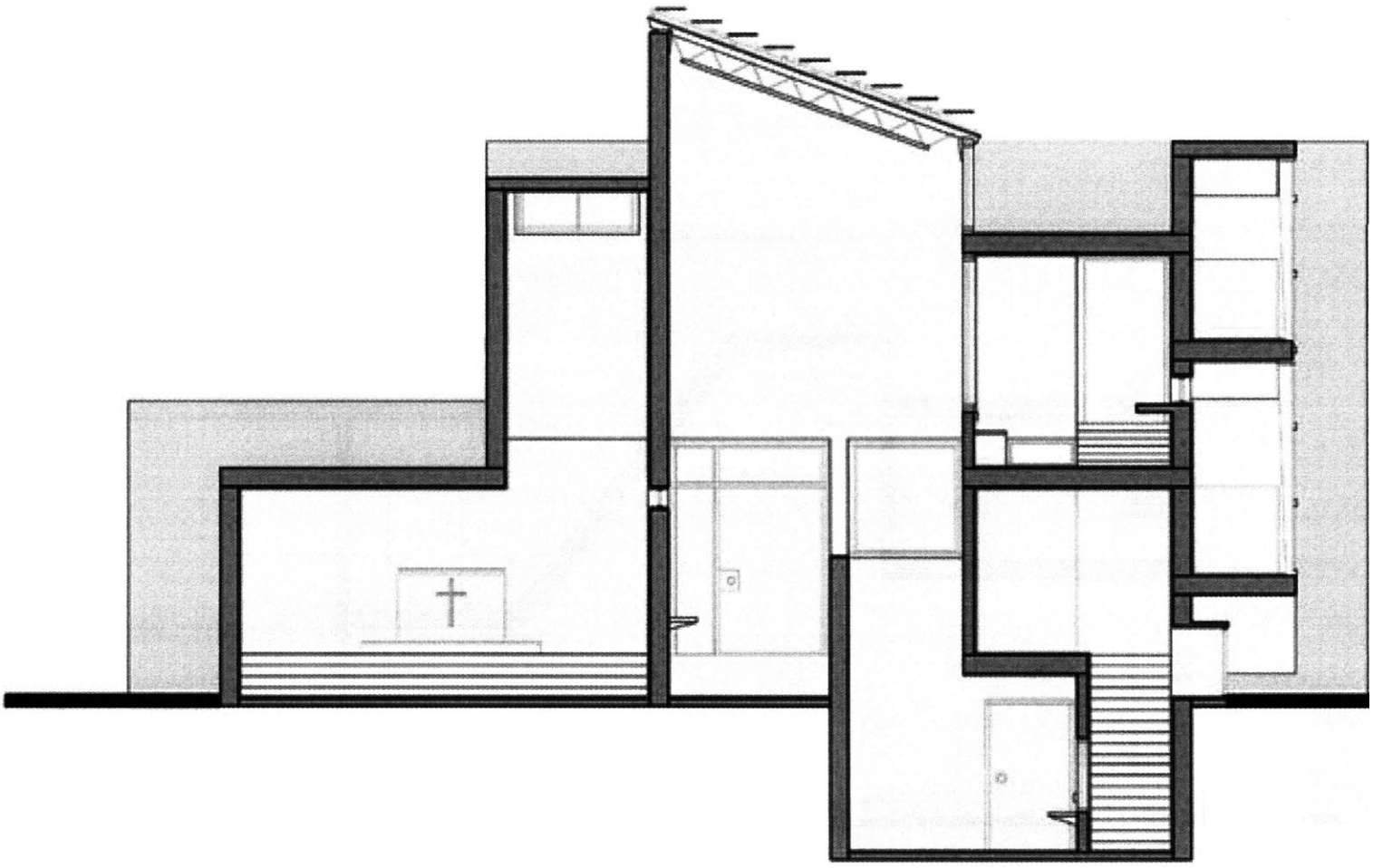
Third Floor



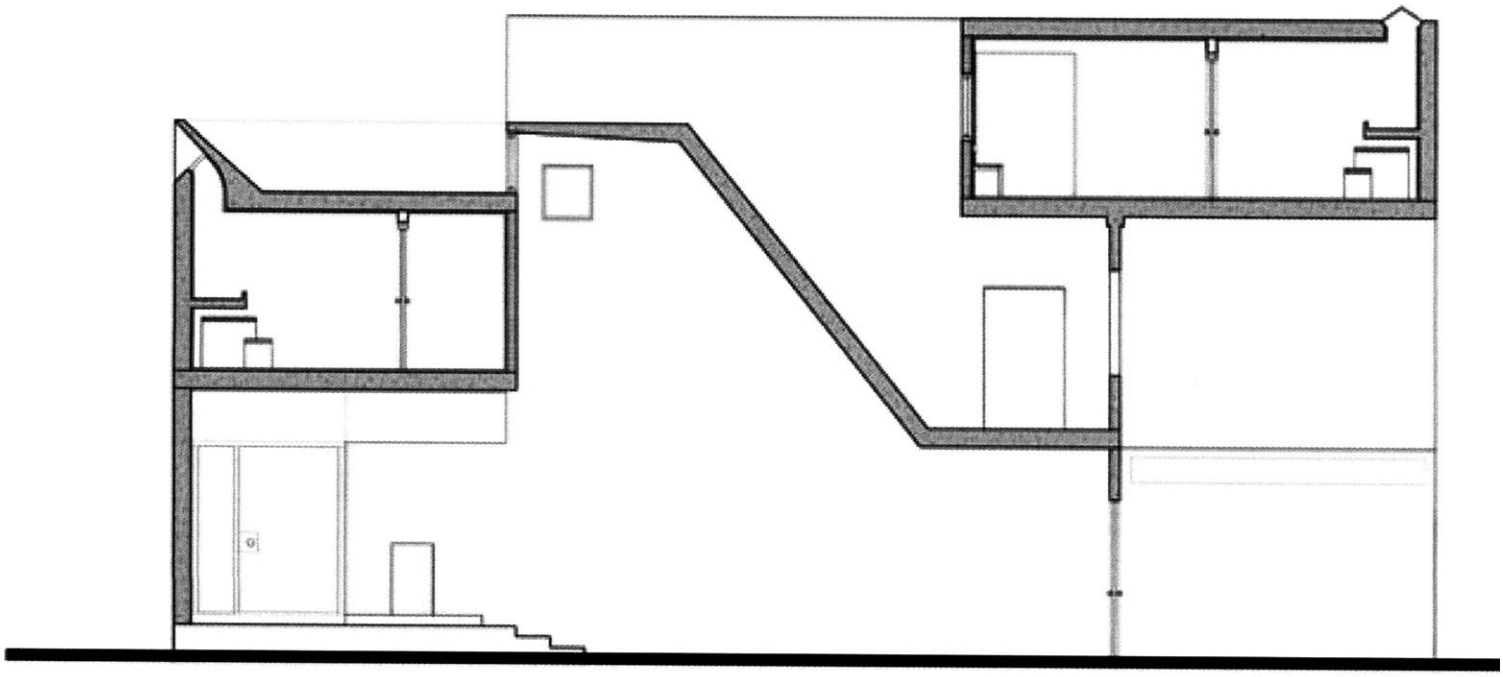
Section A-A'



Section D-D'



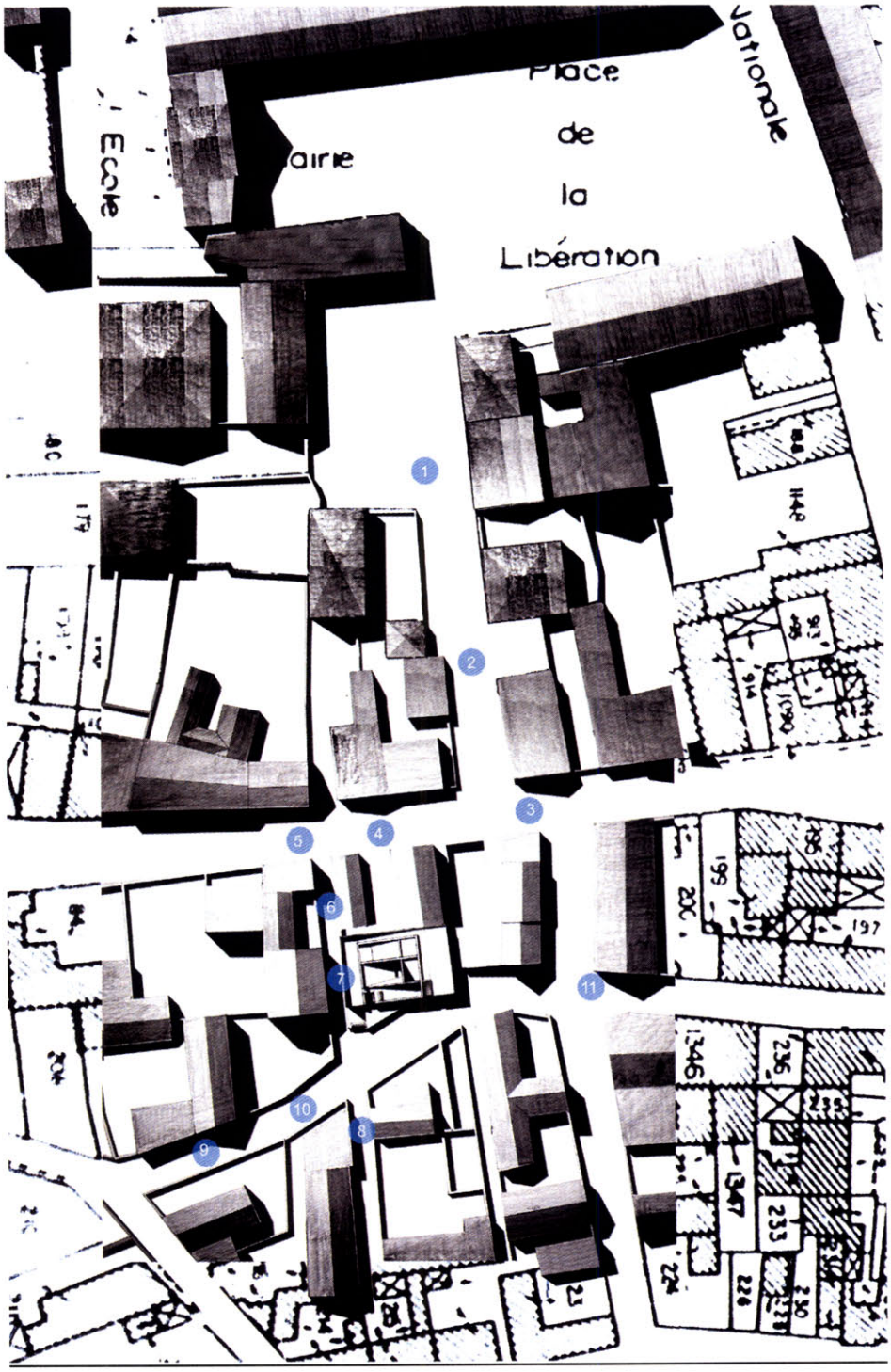
Section C-C'



Section B-B'

OBJECT

The following section describes the path from the central square of Croix en Touraine, where the new convent is located, to the entrance of the convent. This path has been composed with consideration for the motifs observed in the external envelope of Sainte Marie de la Tourette.

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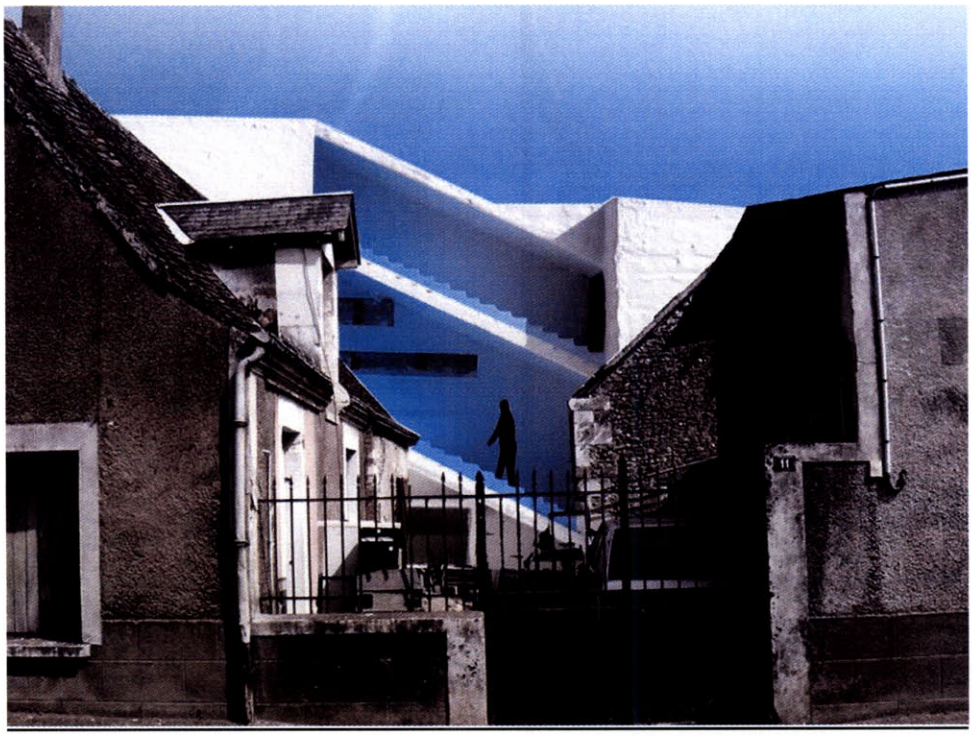

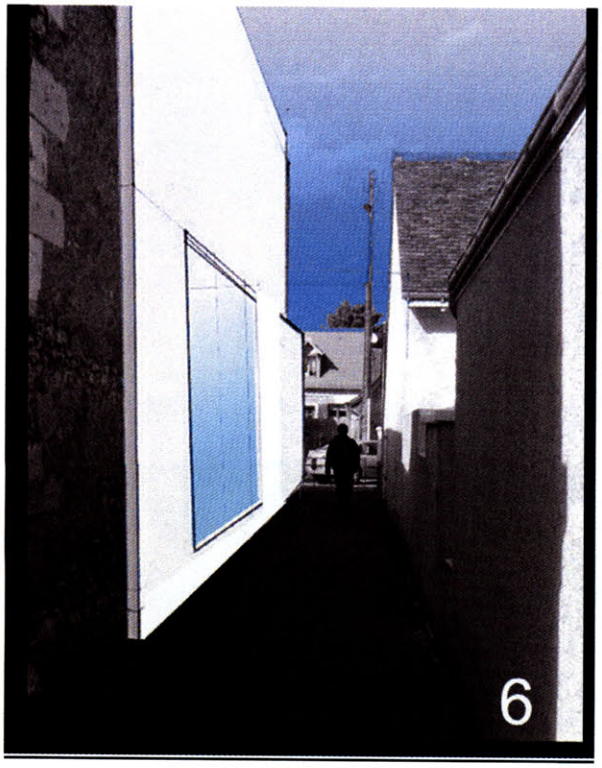
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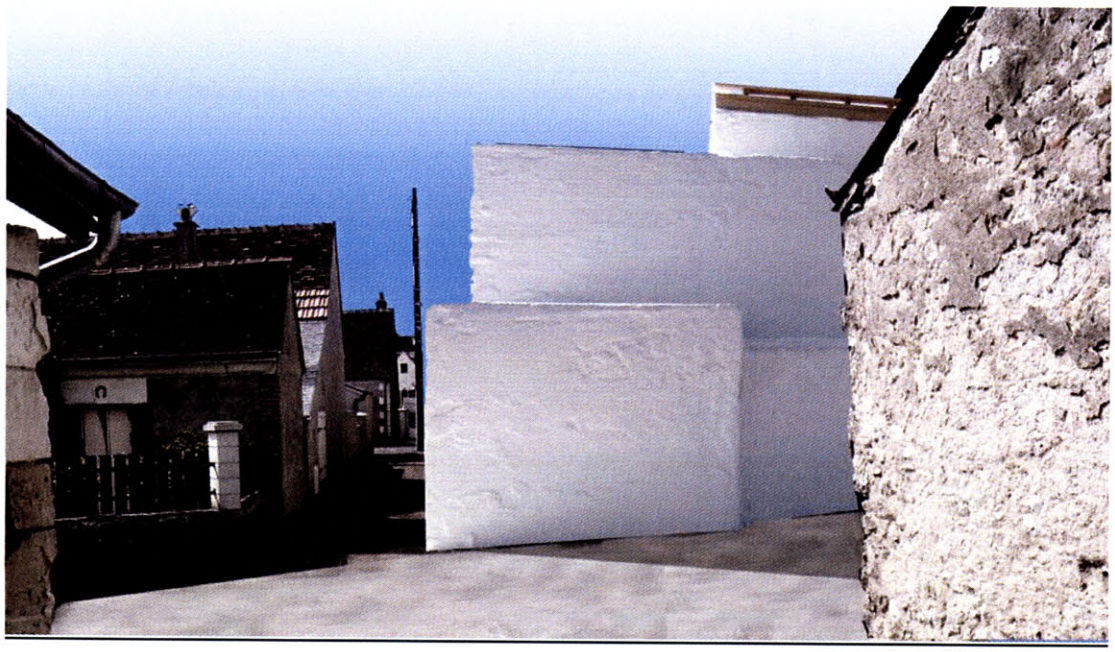

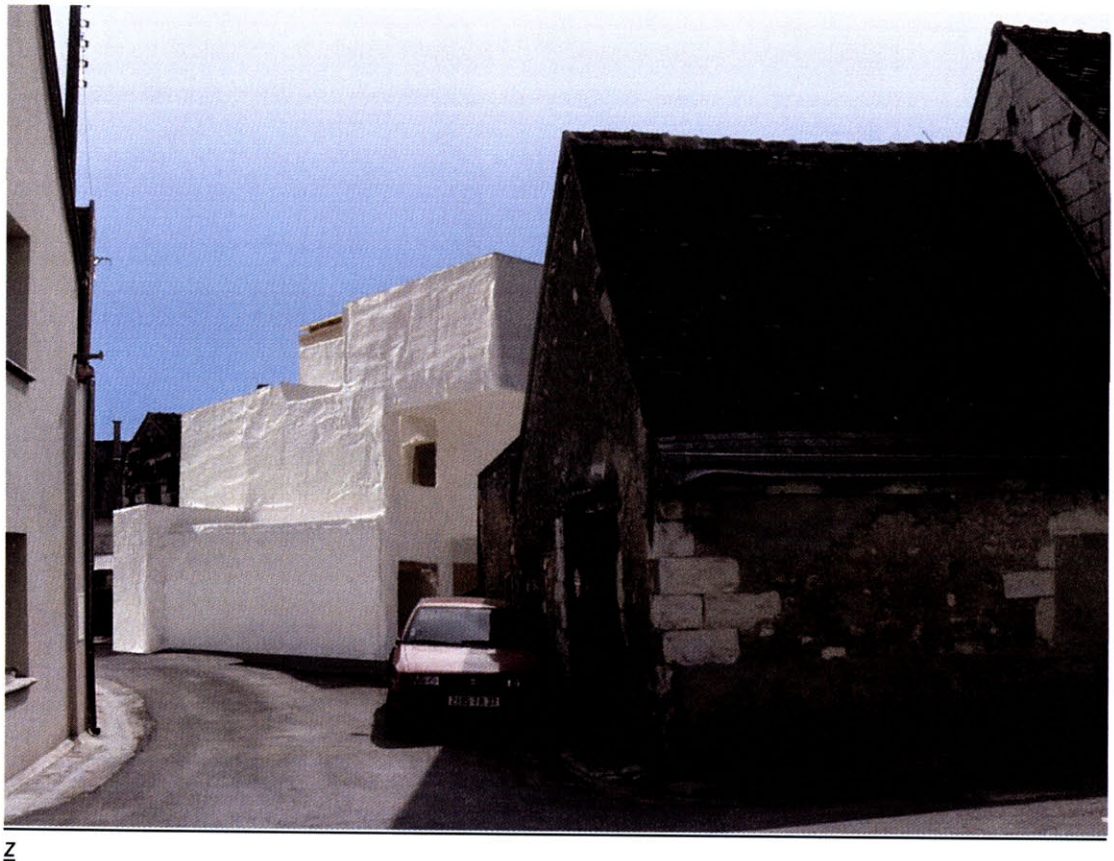

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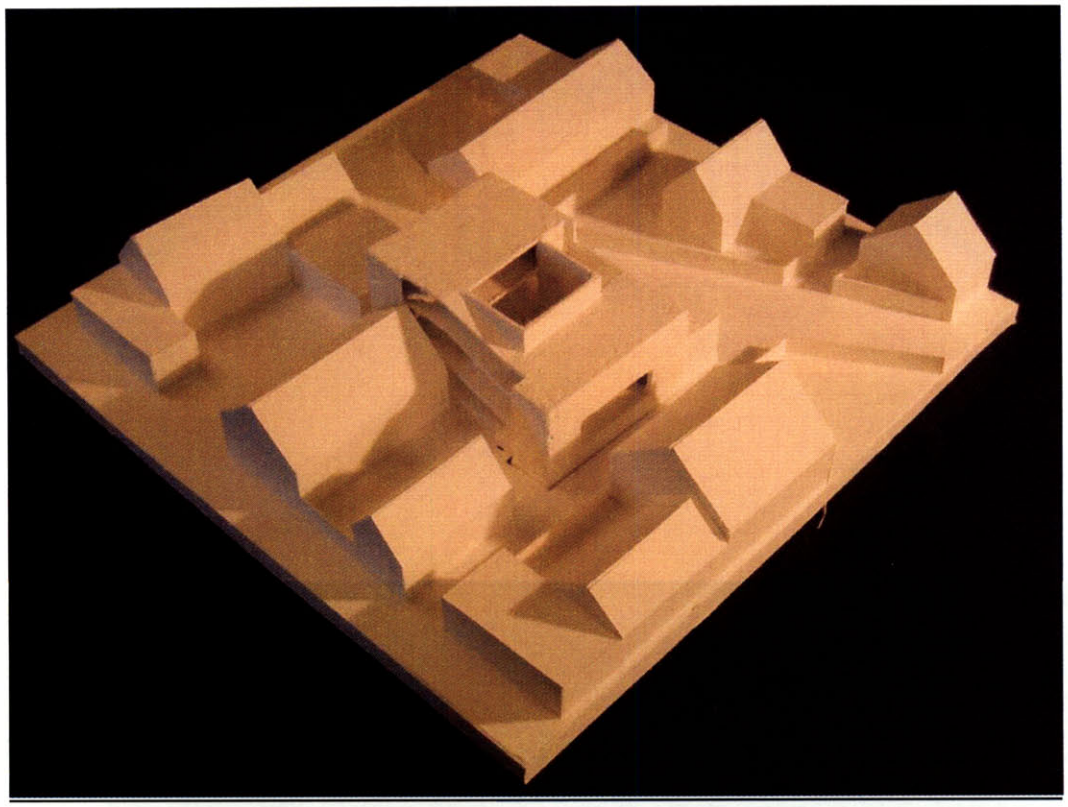

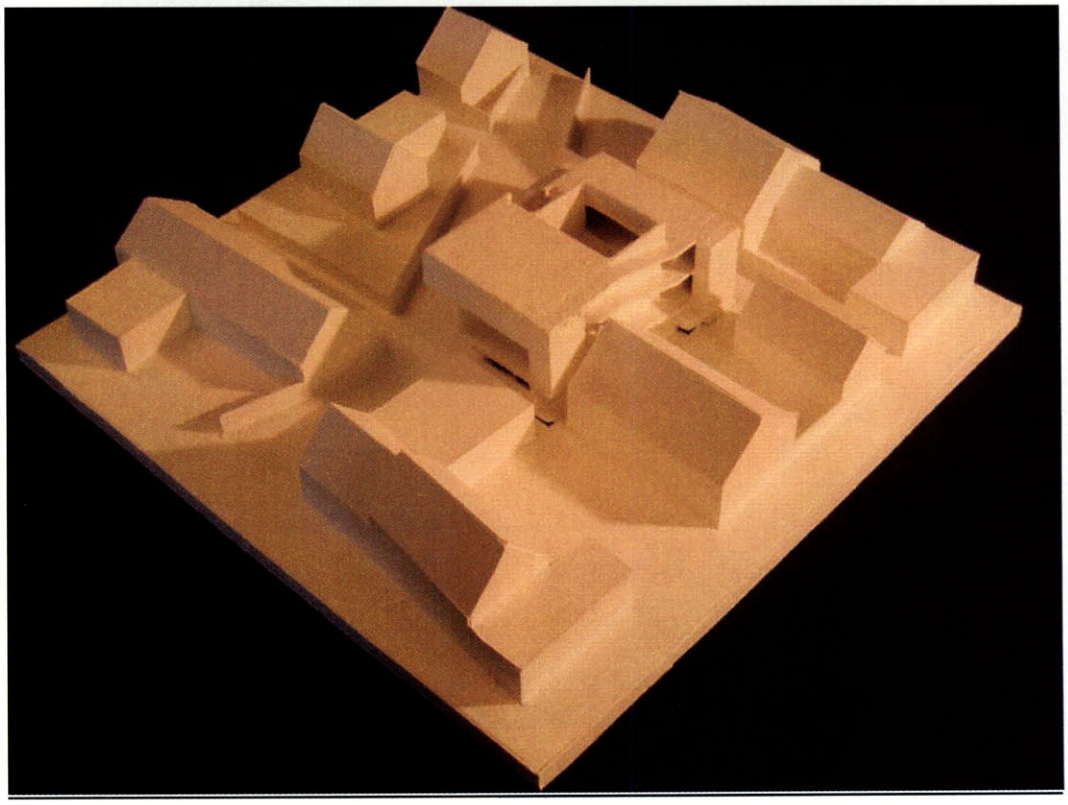

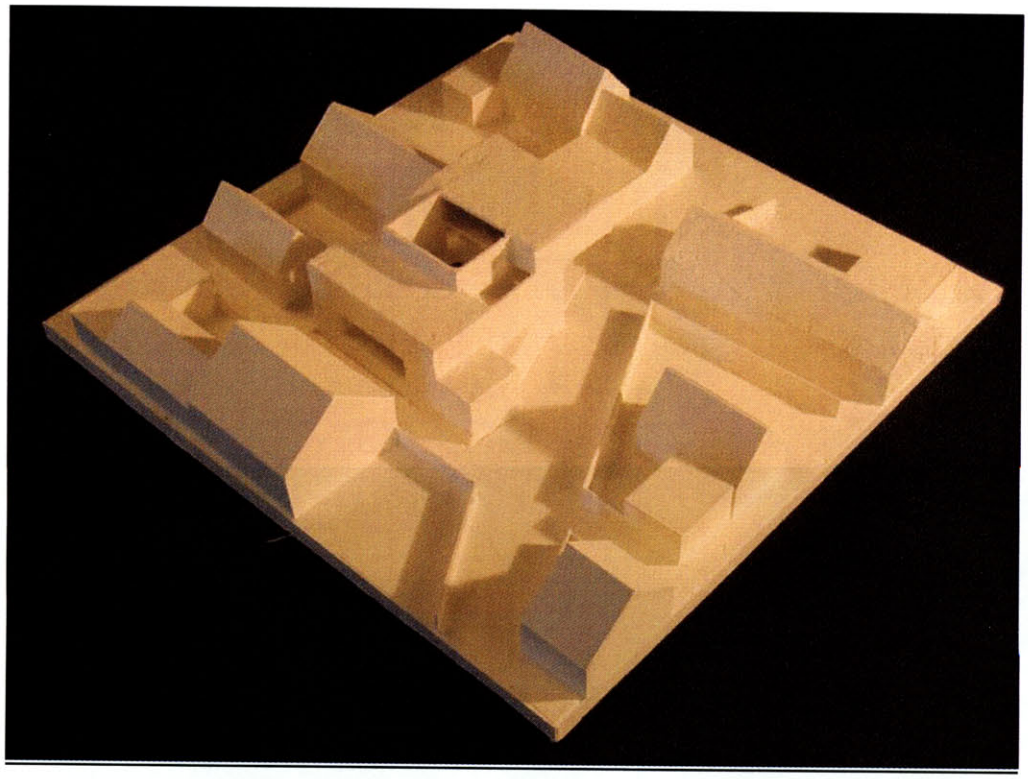

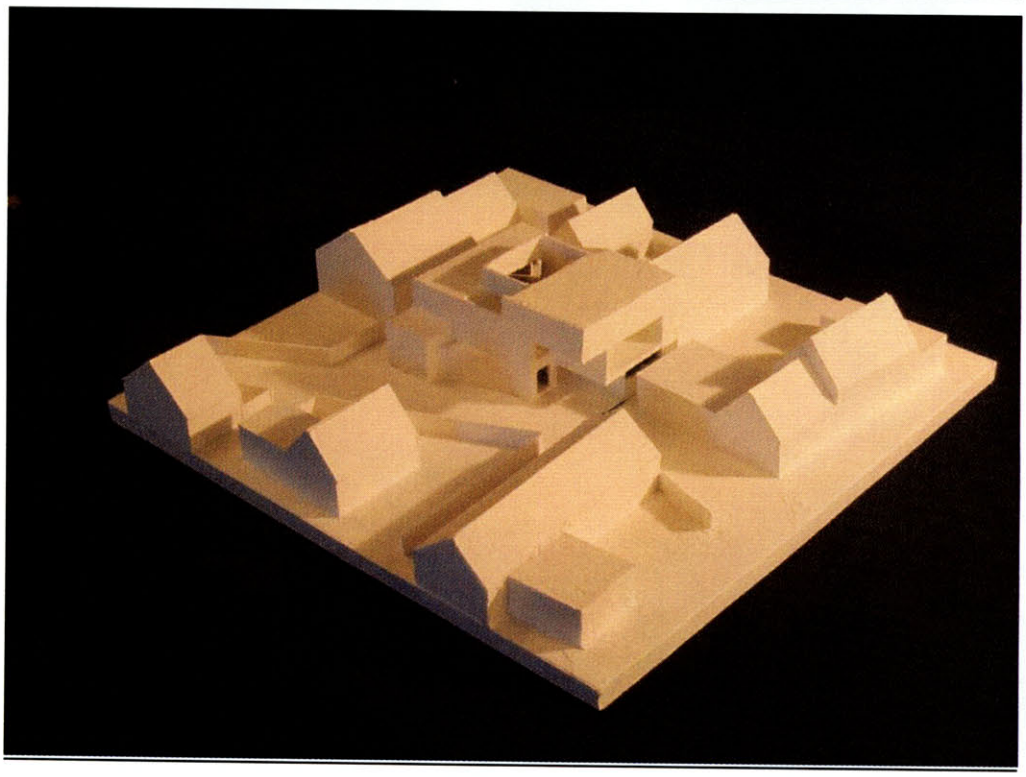

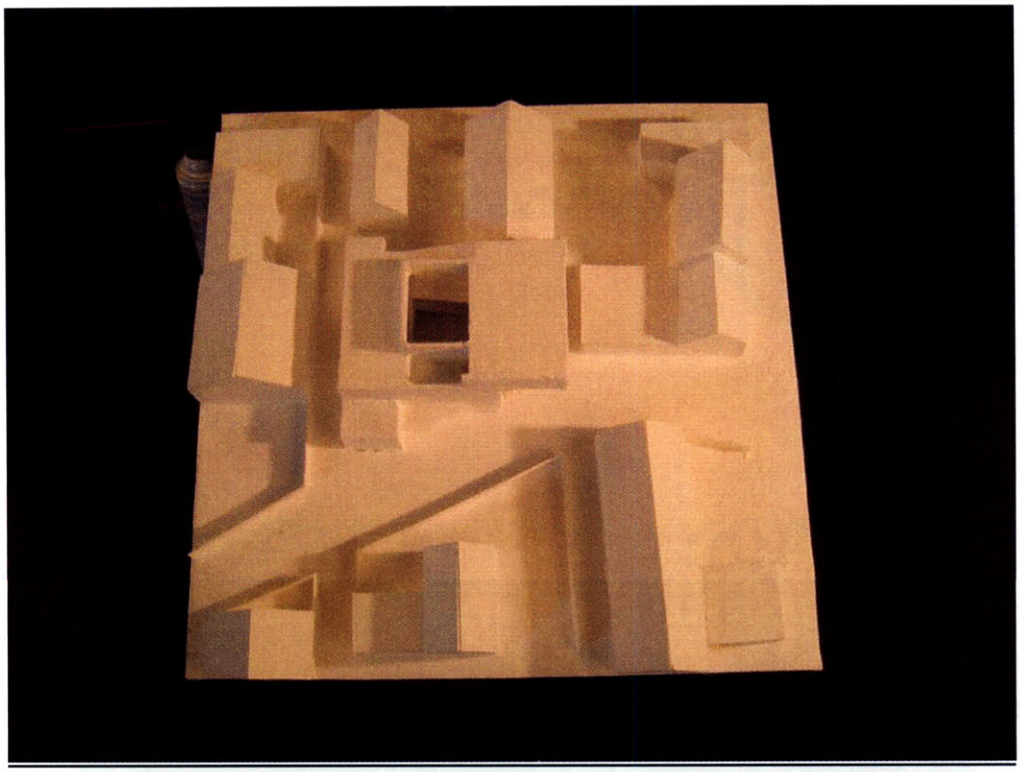

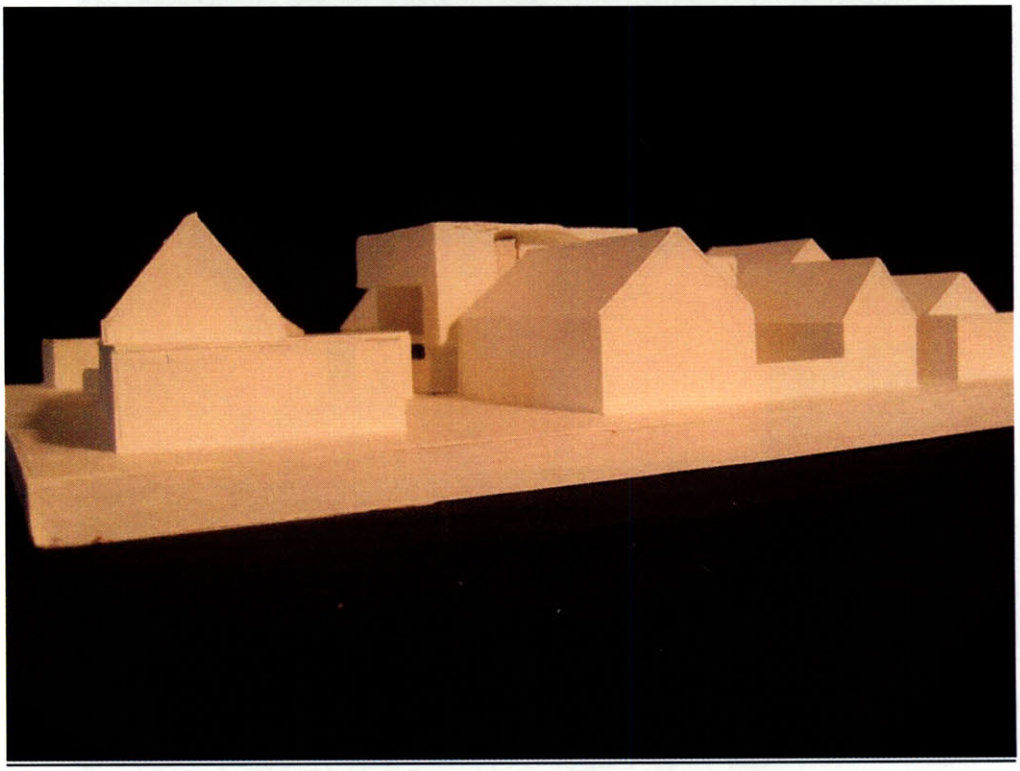

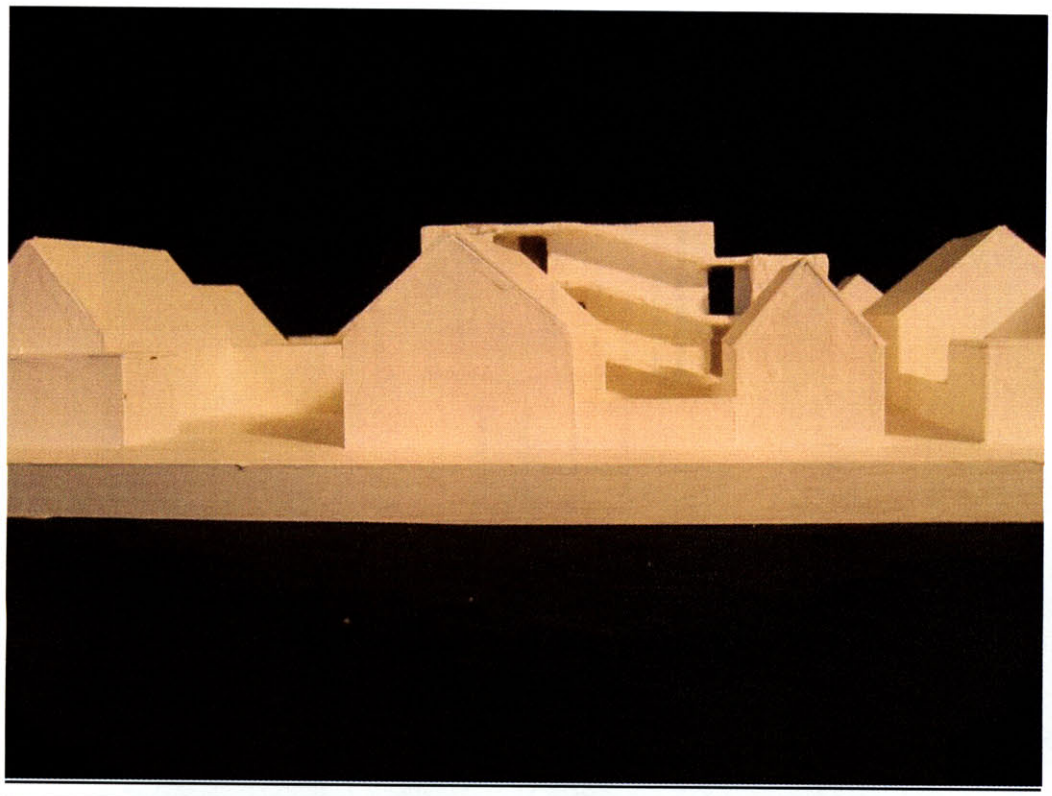

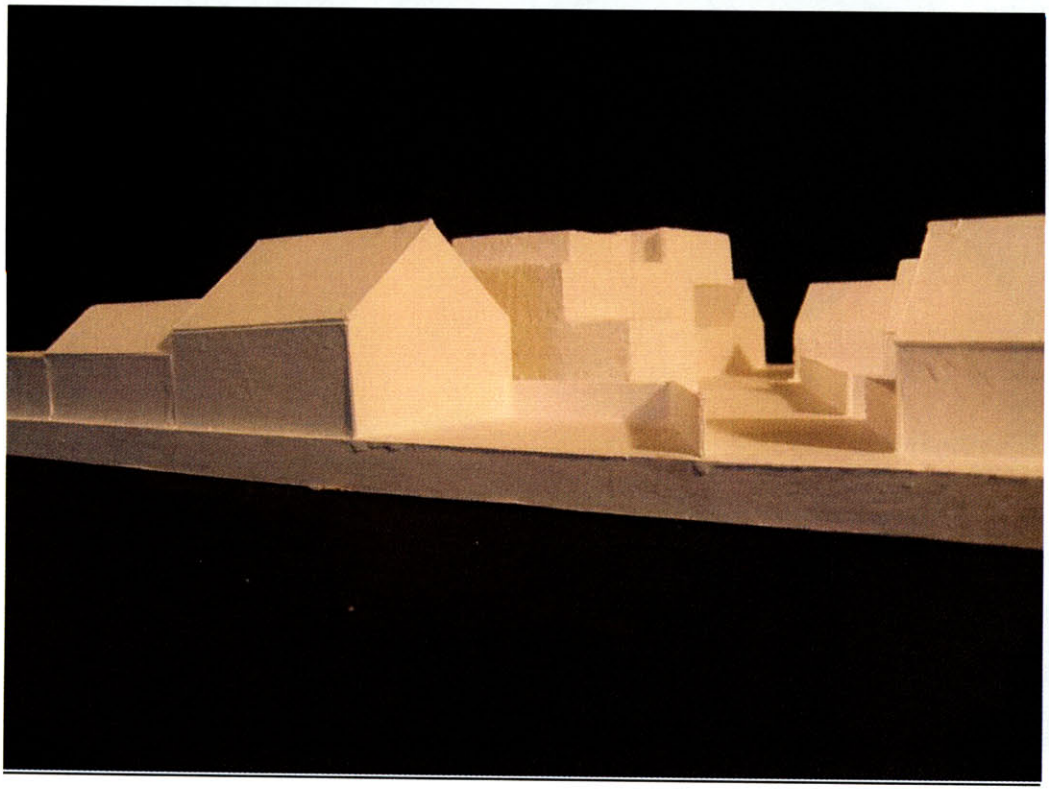

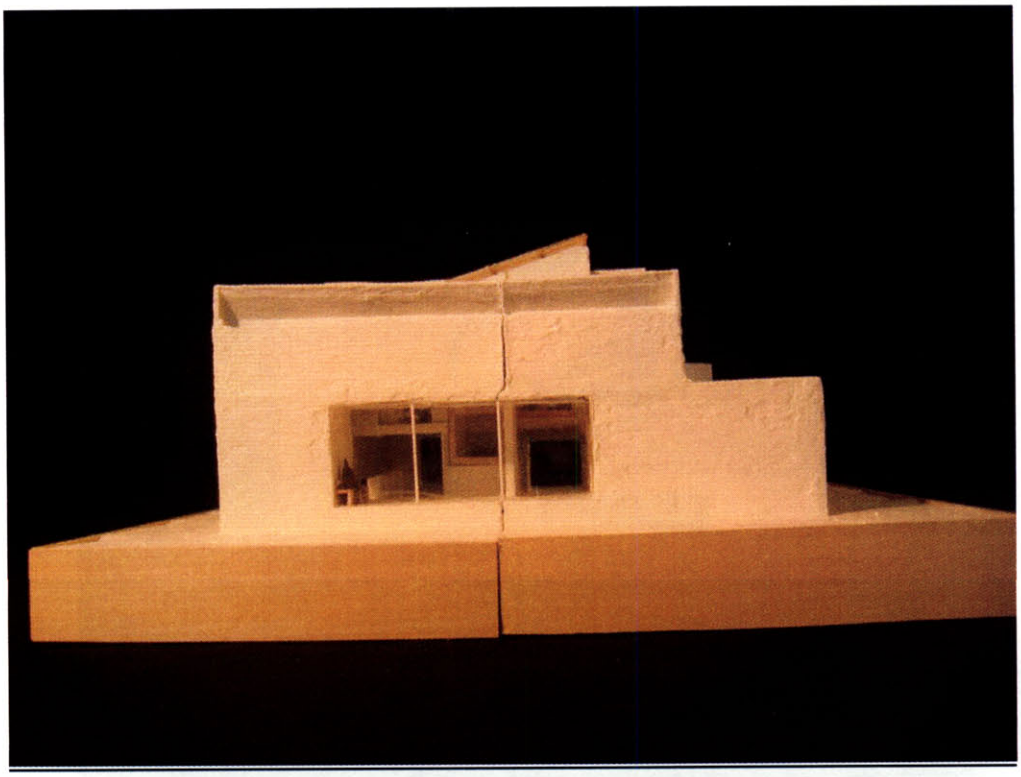

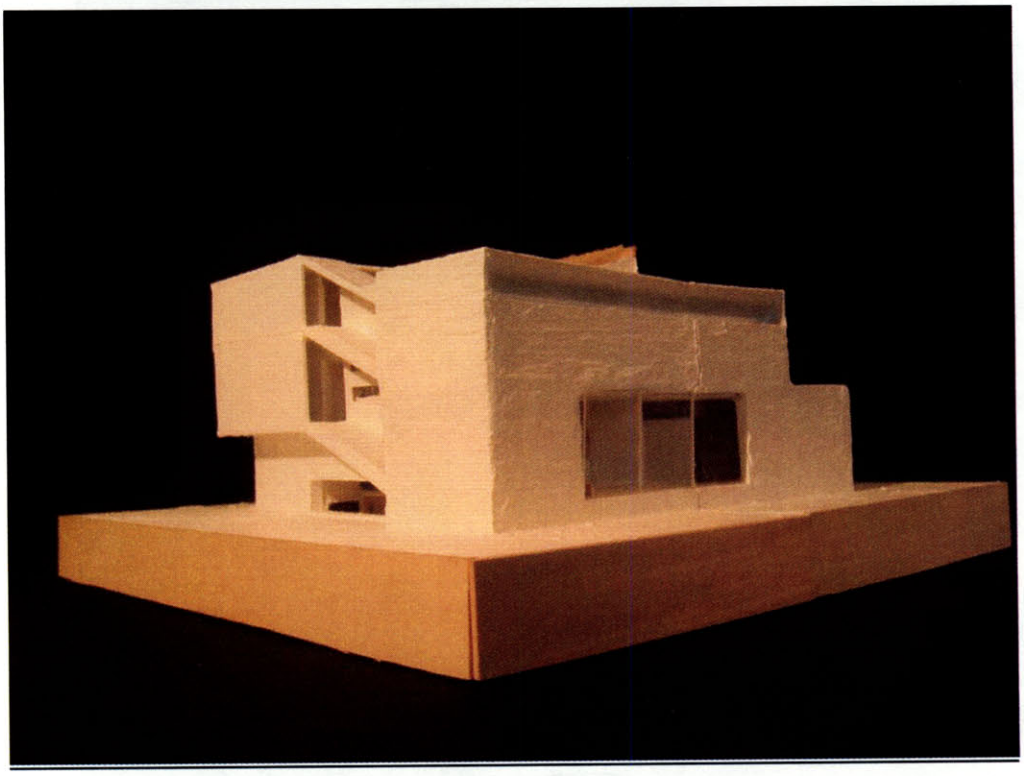

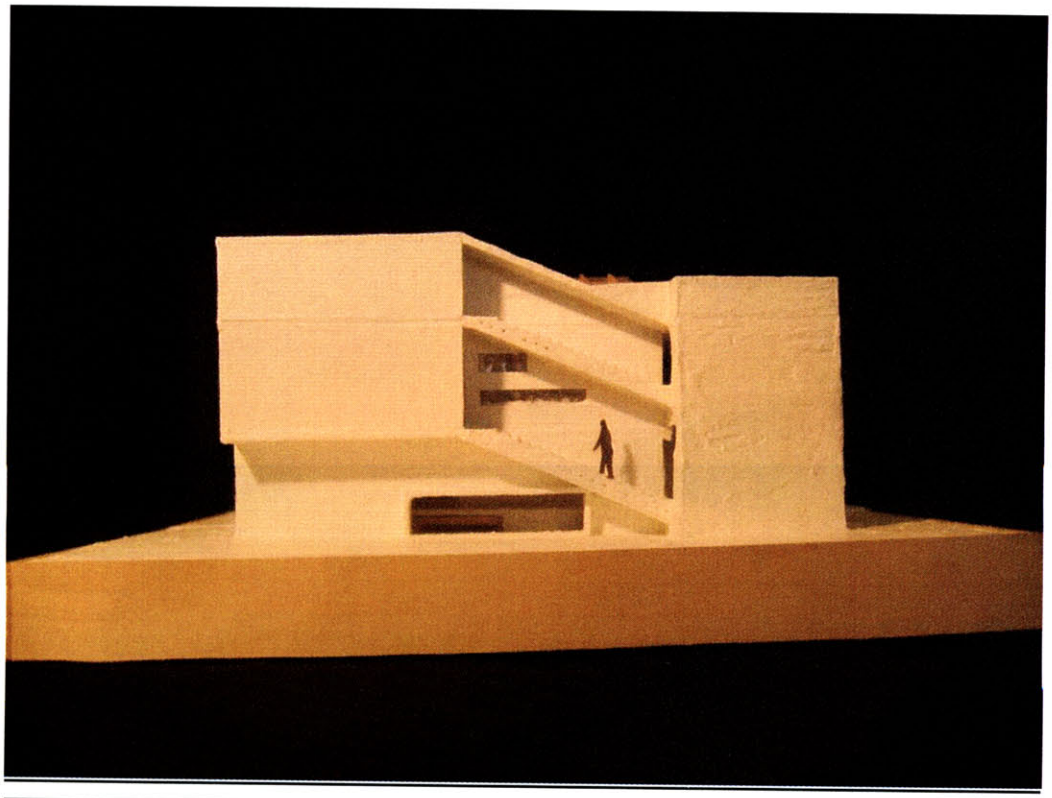

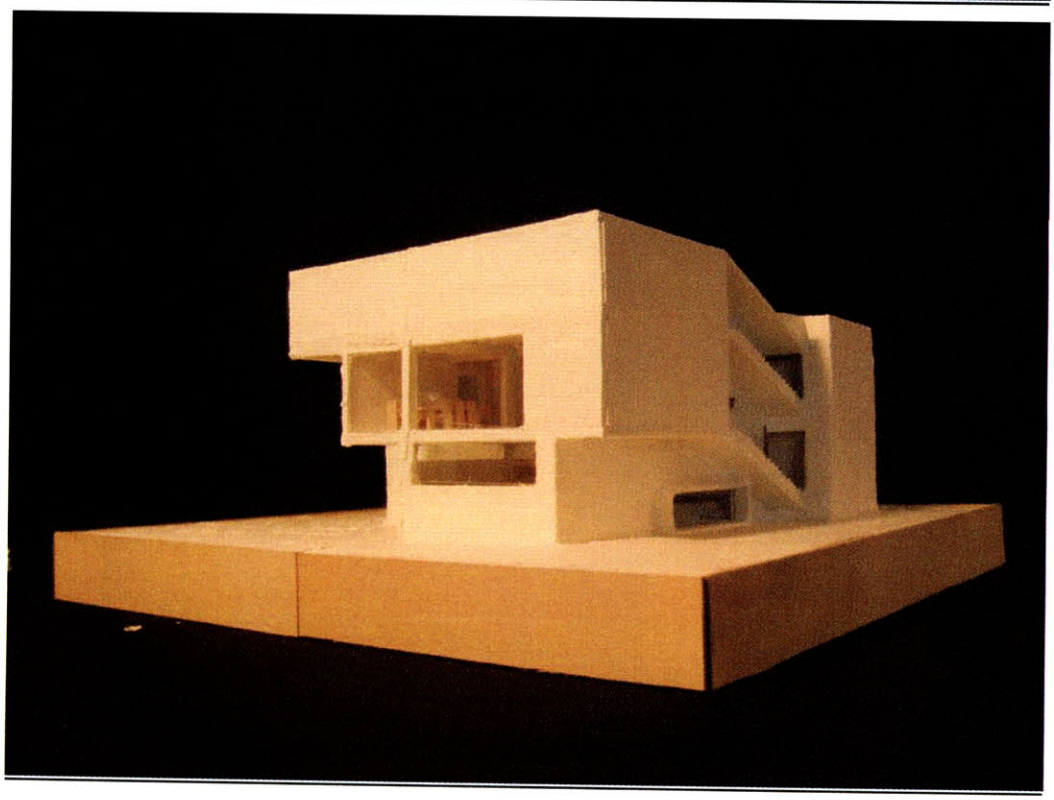

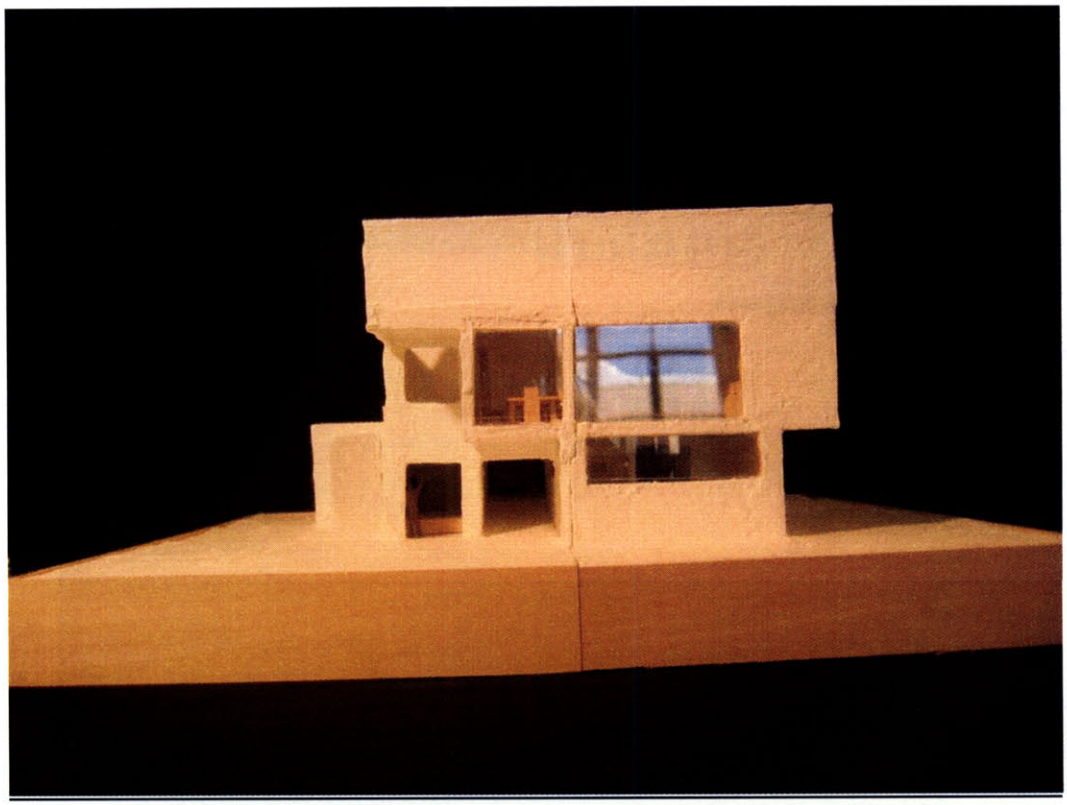

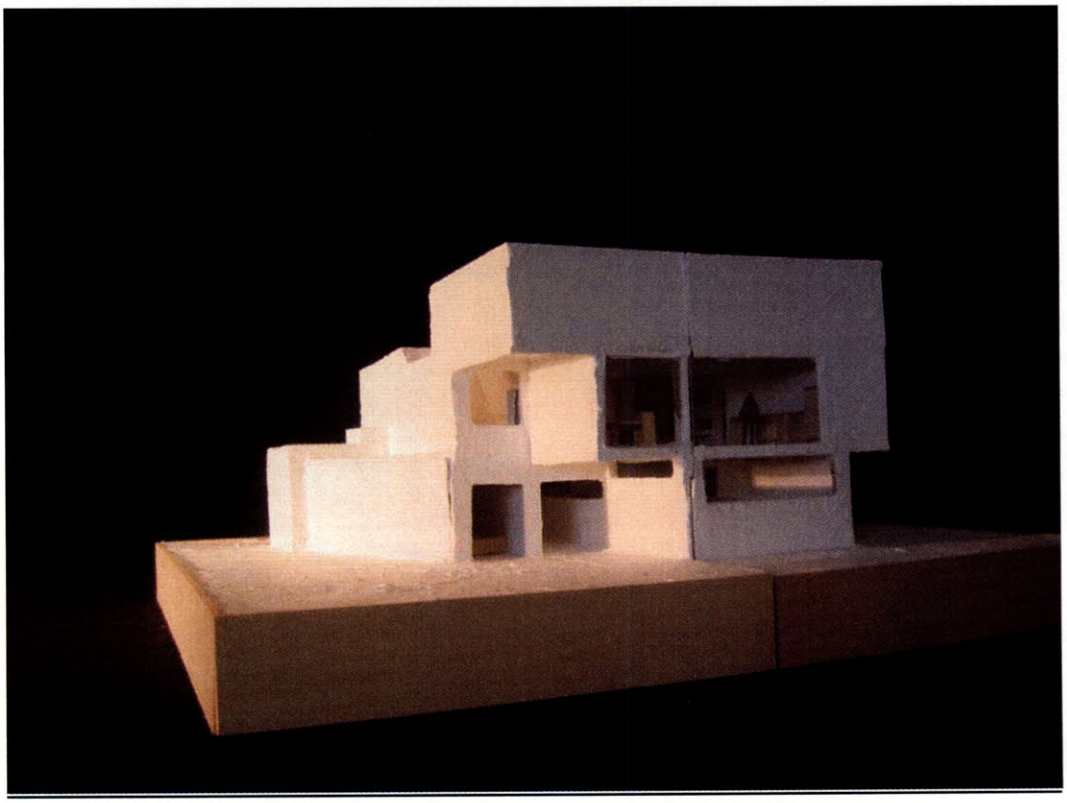

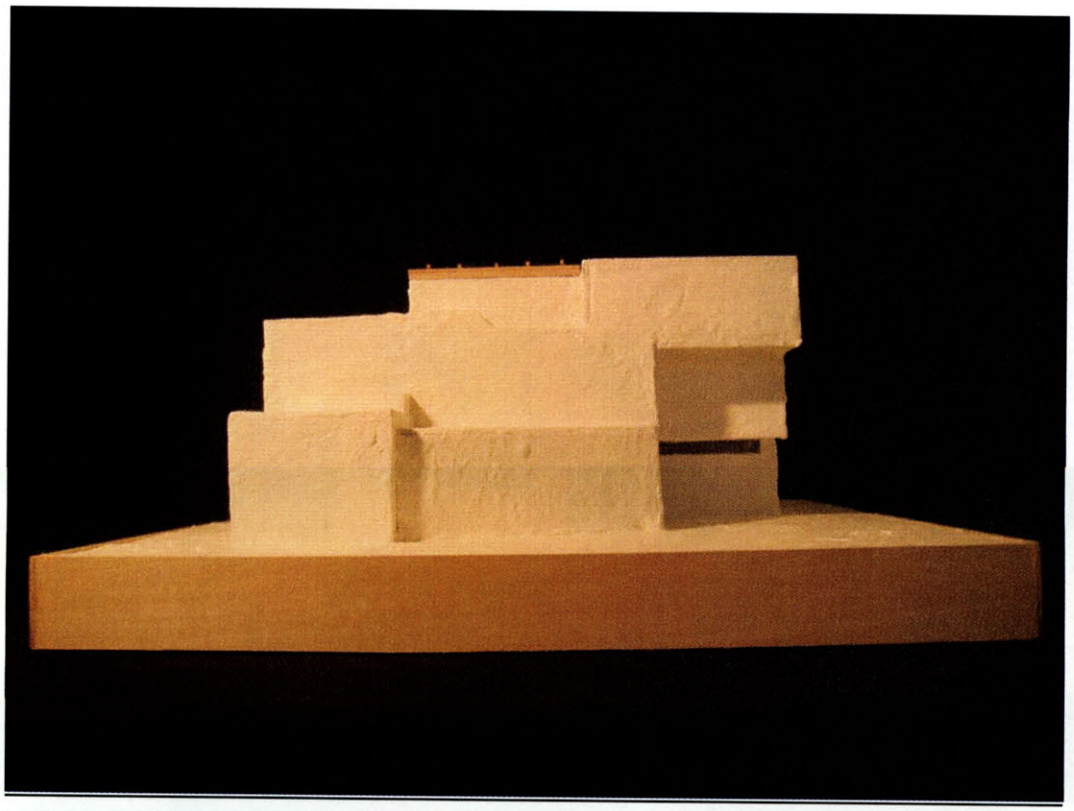

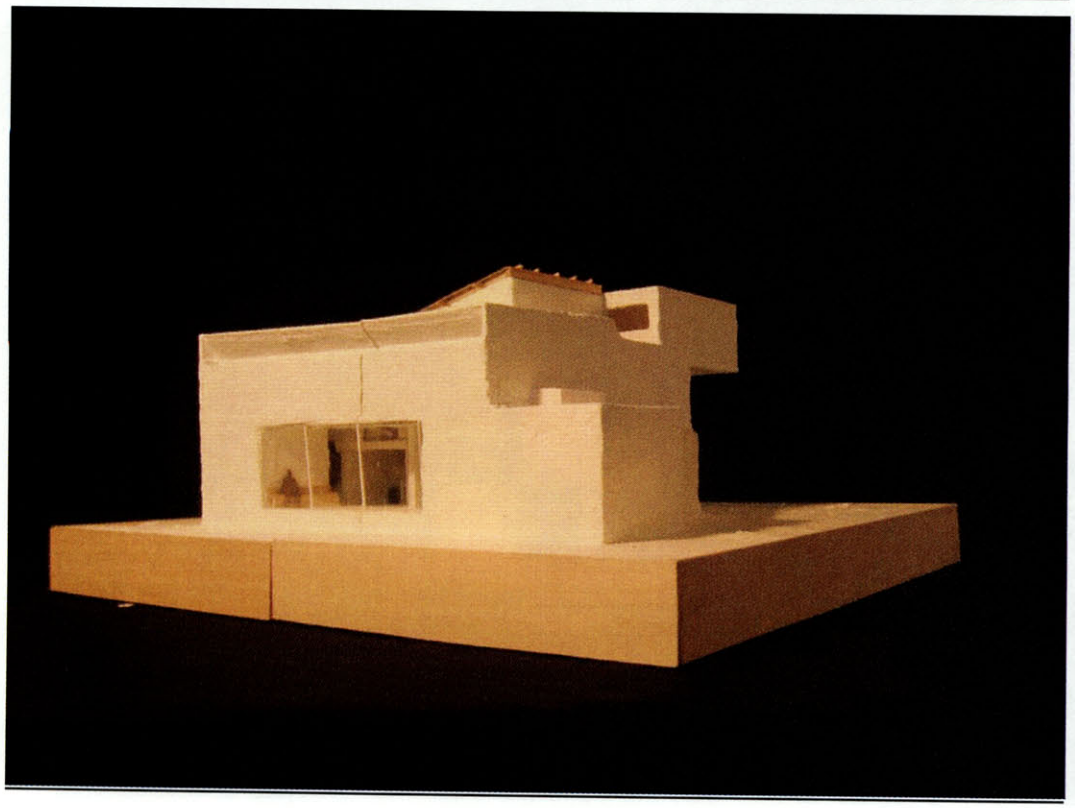

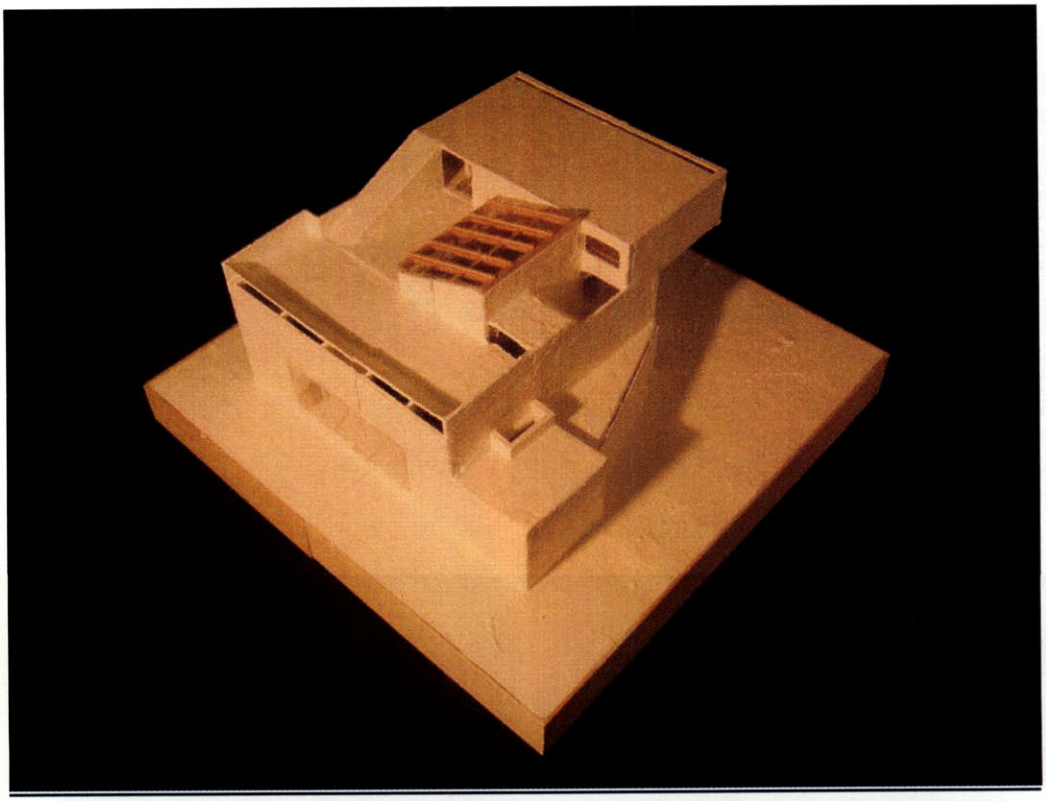

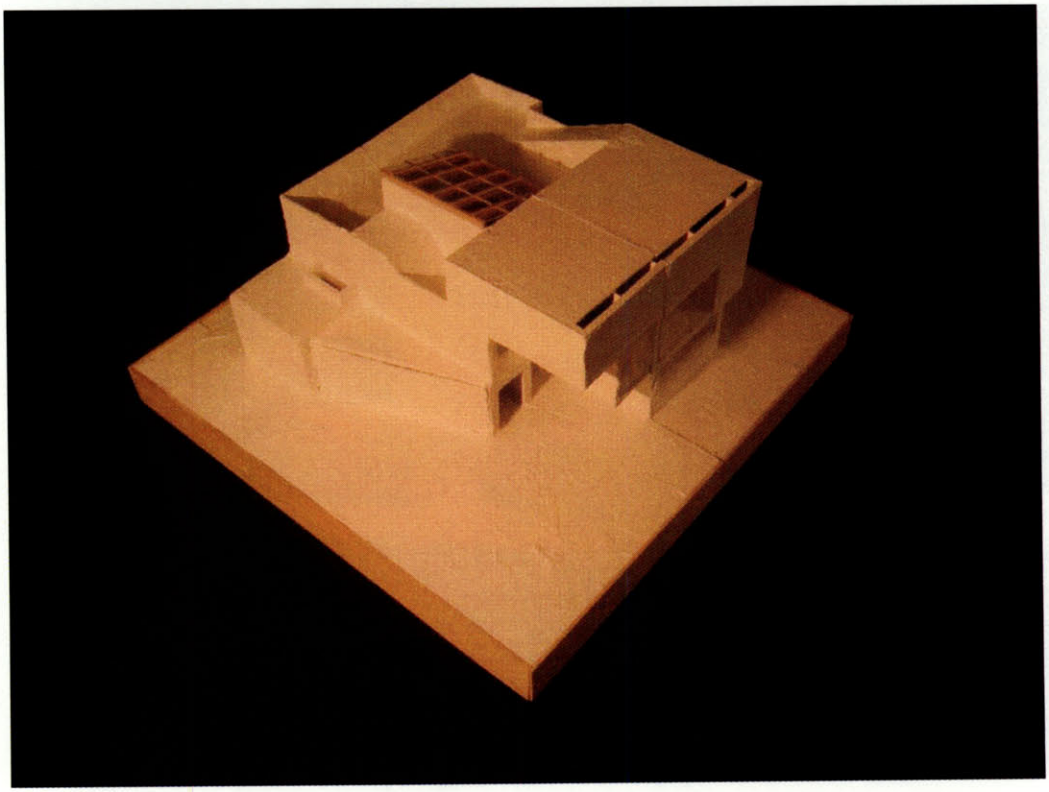

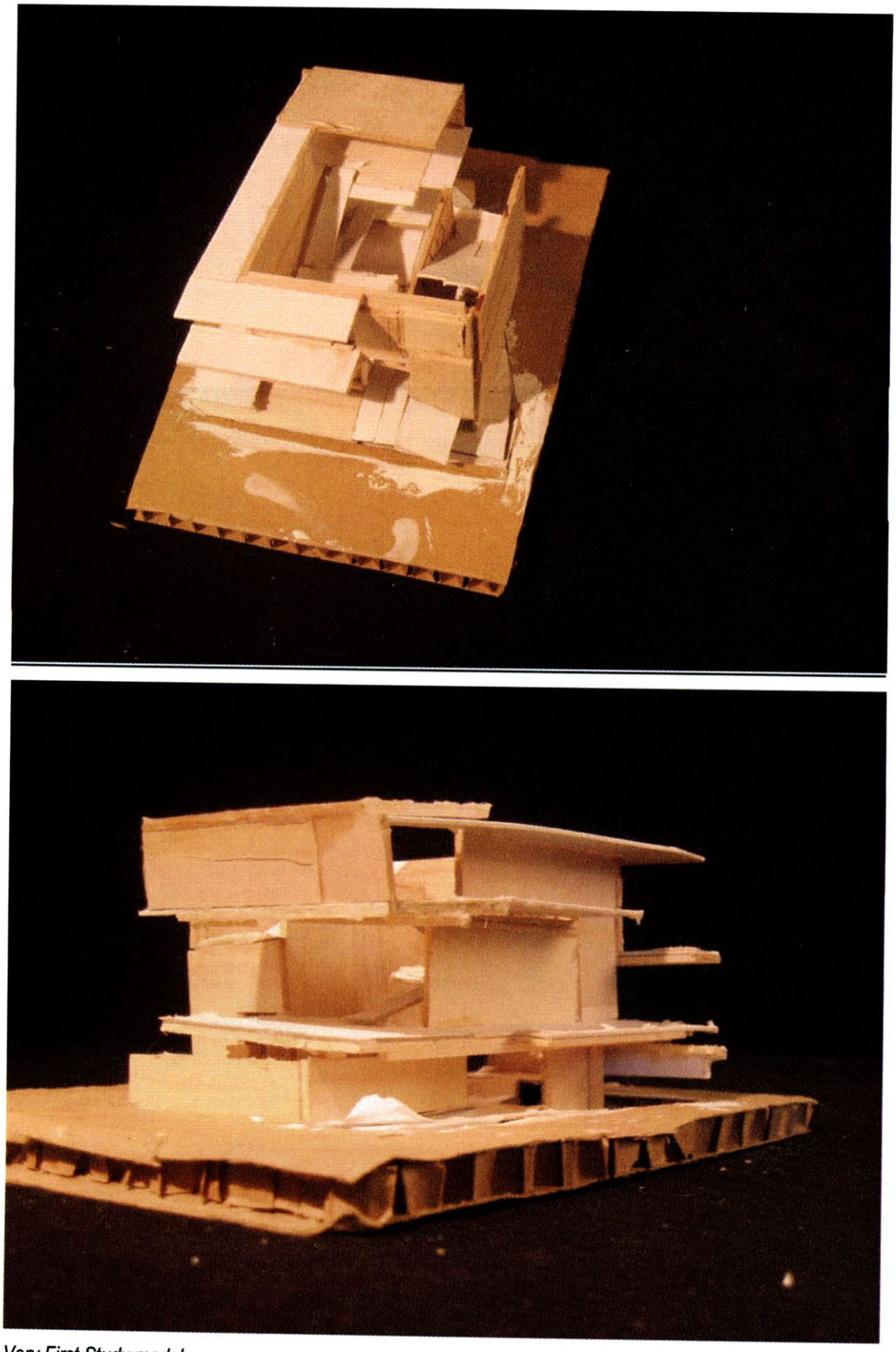

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