To the Graduate Council:

I am submitting herewith a thesis written by Amy Elizabeth Robertson entitled "Weaving the Haptic and the Liminal in Architecture Production." I have examined the final paper copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Architecture, with a major in Architecture.

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Weaving the Haptic and the Liminal in Architecture Production

A Thesis Presented for the Master of Architecture Degree

University of Tennessee, Knoxville

Amy Elizabeth Robertson

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Dedication

I would like to dedicate this thesis to my mother, Elizabeth Bly, whose enthusiasm inspires me and to Mark, whose optimism and humor sustain my hope for future success.

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I. Thesis Statement

Weaving the Haptic and the Liminal in Architectural Production

> The significance of liminality in architectural production centers on the import of liminous experiences to generate and stimulate the creation of novel ideologies, allowing a culture to renew itself: "Sutton-Smith . . . sees liminal and liminoid situations as the settings in which new models, symbols, paradigms, etc., arise—as the seedbeds of cultural creativity, in fact. These new symbols and constructions then feed back into the "central" economic and politico-legal domains and arenas, supplying them with goals, aspirations, incentives, structural models and *raisons d'etre"*(Turner, *28).*

This thesis explores the roles of the haptic and the liminal in architectural production through the applied metaphor of weaving. Concomitant with the theme of the liminal are the issues of threshold and edge. While related, all three are discrete and fundamental aspects of architectural production. The construction of liminal space, emerging out of a constellation of culturally shared memories and values, is that which helps distinguish the production of architecture from building. Moreover, liminality is a fundamental state of any coherent work of art, of which architecture is a part.

Current architectural trends lack the rich haptic environment and spatial development present in some works of the early modern movement, most notably in the works of Alvar Aalto, Louis Kahn, Arne Jacobsen and Gunner Asplund. I seek to investigate the

potential for the conscious use of materials and interwoven spatial conditions to underscore the liminal through haptic experience.

I examine the works of artists in other modes of production to explore how they help inform the creation of a work of architecture, focusing on how they may enrich the haptic, mnemonic and narrative dimensions of architectural production. Independent of mere building, the construction of an architectural moment requires the awareness of boundary, edge and threshold.[1] As we experience architecture in a "state of distraction" (in the sense implied by Walter Benjamin) we understand our lack of awareness of our bodies in a particular place at a particular moment (McCole, 230-233 &241-250).[2]

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1 Termed instead boundary, threshold and edge, the three stages of separation, margin/limen and aggregation can be seen as parallel levels for both Turner and this thesis. "Van Gennep has shown that all rites of passage or "transition" are marked by three phases: separation, margin (or limen, signifying "threshold" in Latin), and aggregation. The first phase (the separation) comprises symbolic behavior signifying the detachment of the individual or group from an earlier fixed point in the social structure, from a set of cultural conditions (a "state"), or from both. During the intervening "liminal" period, the characteristics of the ritual subject (the "passenger") are ambiguous; he passes through a cultural realm that has few or none of the attributes of the past or coming state. In the third phase (reaggregation or reincorporation), the passage is consummated"(Turner, 94-95). The derivation of the term "limen" and its connection to the term "threshold": "During the intervening phase of transition, called by van Gennep "margin" or "limen", the ritual subjects pass through a period and area of ambiguity, a sort of social limbo which has few (though sometimes these are most crucial) of the attributes of either the preceding or subsequent profane social statuses or cultural states".

2. McCole's observations of Benjamin's research reflect the similarities between unconscious experience of architecture (taken from Benjamin's studies of the sensory thresholds present in the spaces of Parisian arcades, with their ambiguous qualities of light and use), the aesthetic aims of the Surrealists, and mythic relationships in the modern city. As noted in Benjamin's works, the issues of boundary, threshold and meanings related through memory (as alternately revealed and obscured by the Surrealists-see references to these associated meanings in the Case Studies on Paul Klee and Joseph Cornell) are closely linked to haptic experiences of spatial relationships, hence their importance to architectural production. McCole observes: "The intoxication that comes over one who roams the streets for a long time with no definite goal was an anamnestic rush, an exercise in remembrance . . . "only a man in whom the new, however quietly, so clearly announces itself can throw such an early gaze on what has just become old (Benjamin writing on

C. S. Peirce believed, similar to Benjamin, that we experience life unconsciously, and this basic condition of human existence is equivalent to being in a homogeneous haze. According to Peirce, it is only through discontinuity that we become truly conscious not only of our surroundings, but also of ourselves and of possible deeper connections and meanings.[3] For Peirce, discontinuity is a breakthrough to consciousness, and into the

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conscious awareness in his review of Hessel's surrealist flaneur). . . The arcades were also particularly ambiguous spaces, a fact to which Benjamin attached special importance. They were at once interior and exterior, 'street and house". . . Benjamin's image moves through three layers. The first is literally topographic: the ancients believed the landscape they inhabited to rest on a mythic underworld (see Footnote #5 for Artaud's description of the "double" existence of theater and life, examples of metaphorical relationships that relate to liminous conditions) where chthonic forces held sway. The two realms communicated, however, via conduits that led from the light of day into darkness and presumably back up again. Benjamin likened this chthonic topography to the landscape of consciousness. Waking consciousness is marked by sites that provide access to the underworld, but these sites are inconspicuous by daylight. What he stresses, however, is the reverse: though we swiftly grasp our way back to them in sleep, we fail to notice how dreams flow out into waking consciousness. He then liken the landscape of consciousness to the labyrinthine topography of the city . . . *the point of communication between the worlds is a hidden place, an inconspicuous site, a dark passageway, a gallery—in short, a passage. Moreover, the very idea of "passage" is laden with mythic significance as a transitional zone* (my italics), hedged by ritual, where the governing powers mark the course of life"(230-244). This research is significant to the basis of this thesis in that it addresses the conscious awareness of threshold conditions, likening the exterior architectural conditions with the interior conscious state of the visitor, tying the experience of traversing a threshold condition to the mythic realm.

3 C.S. Pierce, commenting on the development of patterns of thinking that come near a somnambulistic state and the need for discontinuity to jar the mind into a state of awareness, writes: "Everybody knows that the long continuance of a routine of habit makes us lethargic, while a succession of surprises wonderfully brightens the ideas. Where there is motion, where history is a-making, there is the focus of mental activity, and it has been said that the arts and sciences reside within the temple of Janus, waking when that is open, slumbering when it is closed. Few psychologist have perceived how fundamental this is. *A Portion of the mind, abundantly commissured to other portions, works almost mechanically. It sinks to a condition of a railway junction. But a portion of the mind almost isolated, a spiritual peninsula, or cul-de-sac, is like a railway terminus. Now mental commissures are habits. Where they abound, originality is not needed and is not found; but* ***where they are in defect*** *spontaneity is set free. (italics inserted)*"(Fiebelman,236). Here again we note reference to the existence of the double (in the Janus reference), the presence of a transitional state necessary to move forward, to awaken from

realm of liminality. For Turner, discontinuity takes the form of threshold and passage. Turner's research on liminality and ritual supports the hypothesis that liminous conditions depend upon movement or noticeable change, two factors commonly present in threshold situations.[4]

Stimulated through the creation of spaces differing in spatial composition from adjacent areas or bounded or marked by a noticeable change in materials, texture, color or lighting, passages through transition zones fulfill the role of discontinuity in this proposal (See Figures 21-23, 81-103, and the Case Study on the liminal zone present in the Gothic Cathedrals, Figure 57)[5].

Alberto Perez-Gomez, Antonin Artaud and Joseph Cambell remark on the cultural desire for the mythic dimension lacking in today's society, reflected in our architecture.[6&7]

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mental stagnation. The liminal condition, using the vehicle of discontinuity, or threshold, temporarily upsets the balance of mental attention, focusing awareness on the present state.

4 "The passage from one social status to another is often accompanied by a parallel passage in space, a geographical movement from one place to another. This may take the form of a mere opening of doors or the literal crossing of a threshold which separates two distinct areas, one associated with the subject's pre-ritual or preliminal status, and the other with his post-ritual or postliminal status . . ."(Turner, 25).

5 All Figures are located in the Appendix.

6 The desire for liminal works disturbs our unconscious intellectual and sensual slumber, returns us to awareness of the creative and the haptic realms for: "How hard it is, when everything encourages us to sleep, though we may look about us with conscious, clinging eyes, to wake and look about us as in a dream, with eyes that no longer know their function and whose gaze is turned inward . . . Every real effigy has a shadow which is its double . . . For the theater as for culture, it remains a question of naming and directing shadows. . . We must believe in a sense of life renewed . . ., a sense of life in which man fearlessly makes himself master of what does not yet exist, and brings it into being (Artaud, 13). Mircea Eliade also refers to the aspect of the "double" existence, relating all physical manifestations to a copy in another realm: "In Iranian cosmology of the Zarvanitic tradition, "every terrestrial phenomenon, whether abstract or concrete, corresponds to a celestial, transcendent invisible term, to an "idea" in the Platonic sense. Each thing, each notion presents itself under a double aspect. . "(Eliade, 6).

Creating points of interruption or discontinuity, architectural situations that reflect mythic associations, can offer moments of perception of boundary, edge and threshold in the form of liminal space. Interweaving these moments allows for heightened awareness of the juncture of the dissimilar conditions (See Figures 81-103 for examples of the weaving of the liminal and the haptic).

Reinventing the methodologies applied to initiate liminal experiences, we may reawaken an interest in architecture as signifier. Dependent on the perception of the passage of time, memory and unique qualities for means of comparison, liminal space requires that the participant be alert to change. This thesis proposal seeks to explore the potential for heightening the sensual experience of architectural moments of discontinuity through the weaving of disparate conditions, focusing the attention of the visitor on their experience in that moment.

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7 "Campbell applies to myths what Van Gennep applies to rituals . . . where the function of the rituals for Van Gennep is social, the function for the myths for Campbell is psychological and metaphysical: the hero gets initiated not into a new social state but into a new psychological and metaphysical one... "(Segal, 16). While both Van Gennep's rituals and Campbell's extend throughout the lifespan and " . . . involve relations with oneself and the cosmos as much as with society. Moreover myth exist to help the individual and only secondarily to socialize him"(Segal, 16). Here, Campbell's applications of Van Gennep's stages can be seen to align with the goal of this thesis, to create architecture that provides a space for liminality, to bring awareness of one's surroundings, and therefore, one's self and one's own perception of one's state to the individual, to create a "communitas" as referred to by Turner.

II. Goals of Thesis

Architectural issues

Issues of threshold may occur both at the level of corporeal experience of edge as well as at the echelon of narrative sequence and mnemonic perception of context. Landscape can play a significant role in atomizing the distinction between interior and exterior, and between disparate architectural elements, helping to obscure the boundary and discernable edge or threshold, characteristic of liminal conditions (Figures 21-23 and 90, 94, 96-103).[8] Engaging in a dialogue with its physical and historical context, a proposal may then contribute to the creation of a meaningful architectural narrative by bridging gaps in the existing urban fabric, weaving old and new. These areas of investigation constitute the primary architectural issues explored by this thesis.

Proposal

The vehicle for this thesis is an architectural and landscape project in which the key question is what can architectural production learn from applying the metaphor of weaving to liminal and haptic conditions. The building program is a silk museum and urban garden. A museum representing a point of local interest and strength provides

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8 Victor Turner states: "blurring and merging of distinctions may characterize liminality"(Turner, 26).

cultural grounding and an edifying monument to the city. Seeking to link this proposal with an existing promenade and a ring of park spaces along the Lago di Como (Figure 5), I provide a proposal for the museum and urban gardens as well as an urban plan for an educational complex for the study of silk production. This thesis considers the potential of the area's current landscape and its interaction with the original Roman plan and the later aberrations of its grid (Figures 24-25), providing material for architectural weaving of disparate architectural conditions (The weaving of these dissimilar conditions is addressed at the level of plan, section, mass and material usage- See Figures 81-103).[9] Exploration into the haptic dimensions of the liminality of the site (present not only in its boundaries, thresholds, and edges, but also its interior transition spaces), my investigations into case studies relating landscape and architecture, and the city's rich architectural and industrial history, will be the primary focus of the proposal's research (See Figures 58-62-silk industry history and 66-71, 83-84 -architectural context). Including the woven qualities of silk cloth into the production of a museum, this thesis addresses the distinction between a meaning-laden architectural work containing

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9 Absolute space *always gives rise to diverse forms* (italics added), and it is not at all clear that some of these may be attributed to reason and the rest to myth (or unreason). One response to the Greek Logos/Cosmos, for instance, was the labyrinth, whose symbolism restores (at a local level) the priority of the original mystery, of the maternal principle, of a sense of envelopment, and of temporal cycles . . . absolute space is made up of sacred or cursed locations: temples, commemorative or funerary monuments . . . *such cases may be merely indicated, suggested or signified, as for example, by a stone, or by a post whose verticality confers supreme dignity upon a point in space* (Note: The singular forms of the sculpture of Serra or Noguchi), or by a hole, or simply by a hollow (Note: land art of Mary Miss). More commonly, however the site is circumscribed (Note: Roman Plan), circumscribed, demarcated by a perimeter, and characterized by an assigned and meaningful form (square, curve, sphere, triangle, etc.) (Note: Noguchi landscapes)"(Lefebvre, 240).

archetypal references and works allowing freer associations and open interpretation. This tension constitutes the basis for the exhibit designs (Figure 95).

The duality presented by the emblematic and the expressive as seen in art, architecture and landscape reflect this relationship. Informed by these qualities in other realms of art, this thesis seeks to learn from their resulting associations, informing the exhibits of silk goods and production (Figure 95). The means of production in the visual arts (the creation of silk products in this case) is capable of informing the creation of meaningful landscape and architecture or vice-versa. The emblematic nature of the works of Cornell and Klee (Figures 36-40-Cornell and Figures 33-35- Klee), for example, juxtaposed against the expressive qualities of Serra's steel works (Figures 27-32) and The Centro Gallego de Arte Contemporaneo (in Santiago de Compostela, Spain by Alvaro Siza, Figures 45-51) allows for a deeper read into not only these works, but also this new proposal, informing its production to a level beyond mere building.

Site Selection

The city of Como, Italy, acts as a threshold between Northern and Southern Europe, its Lago di Como serving as boundary between Italy and Switzerland. The site, with its footprint delineated by Giuseppe Terragni's unrealized proposal for Como's central urban zone, the "Quartiere Cortesella" ("The Saddle Quarter"-"Progetto Ristrutturazione del quartiere Cortesella", Figures 19-20, 84) straddles primary junctions in the urban fabric, connecting pedestrian traffic routes and key public gathering spaces. In some cases, it

bridges the streets. Terragni's proposal, with its clear interpretation of local site conditions, presents an appealing precedent for the reintegration of the quartiere into its urban setting (Diagrams, Figures 19-20). Using boundary, threshold and edge as routes of exploration, I examine materials, surfaces, contextual references, site thresholds, and narrative routes through and around the site.[10]

Overlapping the Cardo of the original Roman city, the site connects five centrally-located piazzas. The most public faces of the quartiere, those bordering on Piazza Cavour to the North (Figures 15-17, 88), Piazza Duomo to the East (Figure 88) and Piazza Volta to the West (Figures 15, 88), vary greatly in architectural quality and visual interest. Piazza Cavour, a three-sided piazza, occupies a key location for its open end faces the Lago di Como and its popular lakeside promenade (15-17, 88). (Due to this strong visual connection, the proposed site provides an excellent occasion to incorporate a well-integrated urban garden and building complex that may act as a gateway into the city's urban core.)

The façades of the buildings to the West side of Piazza Cavour, perpendicular to the lake's edge, have warm-colored stucco walls featuring Venetian elements and, on one section, an upper floor portico. The façades on the South and East sides of the Piazza are dominated by a stone ground-level portico and upper-level 1950's early modern, glass curtain wall façades with folded concrete-edges (Figure 15-17). The South side of the piazza houses the Hotel Borchella Excelsior on the ground floor and housing above, the

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10 Heidegger observes: "A boundary is not that at which something stops, but as the Greeks recognized, the boundary is that from which something begins its presencing"(Heidegger, 154).

East a government-run tourist office and offices above. Also on the East side and facing both into the piazza and out to the Lago di Como, stands the Hotel Metropole, with an early entrance reconstruction by Terragni (1927) present in its late nineteenth century façade.

Encrusted with a conglomeration of medieval buildings until after a demolition and rebuilding project in the late 1940s and early 1950s, the new Cortesella construction consists of five large buildings. This includes the early modern buildings fronting the West and South sides of Piazza Cavour that provided the area with commercial, hotel and retail spaces, including two governmental offices (Figure 15-17).

Currently the quarter contains an amelioration of architectural styles ranging from the medieval period along the right side of the Via Plinio (en route to the Duomo), behind which the current rebuilding occupies the heart of the quarter (Via Plinio, Figure 17). This medieval section includes an arcade often used by the public as they traverse on foot the distances between the Piazza Cavour and the Piazza Duomo. This immediate area currently supports a transitory population of people whose destination is on either side of its urban block, rather than within it.

Four stories in height, the medieval block is composed of a street facing façade the first floor of which consists of an arched, colonnaded walkway of smooth, large stone. The three upper stories share a smooth stucco surface and regular, rectilinear window openings, decreasing in height and decoration as the building progresses upwards, a small dentil-topped cornice and a terra-cotta tiled hipped roof of low slope.

The site borders on a secondary, but also significant, piazza to the West, Piazza Volta, a lively center of community activity, with numerous active cafes supporting outdoor dining, produce markets, a carousel and significant pedestrian traffic supported by its central location (Figures 1-17).

The medieval sections of Como and their relationship to the proposal for a new building complex and urban garden call for a vehicle for the "framing" and highlighting of the relationships between previously incongruent parts. This thesis explores the capability of architecture to, again, fulfill the "weaving" function necessary to integrate, *at the point of discontinuity*, dissimilar architectural moments, supporting liminal conditions at these points of juncture (Figures 81-111).

The works of Cornell and Klee are key to understanding potential links at these major transition points. Joseph Cornell (Figures 36-40) produces liminal space through his juxtaposition of found objects provoking associations through memory and attention. The use of "signs" in the works of Klee (Figures 33-35) and Cornell retain their liminal qualities, owing to them relations to the varied parts of the assemblage, similar to those of Max Ernst. Grouped in shallow boxes or collage, Cornell's combinations prompt the viewer to supply his or her own associations or meanings, linking the art back to emblematic origins. This thesis seeks to stimulate such associations in architecture via the design of its transition spaces, gallery spaces, street façade relationships, exhibits and landscape, integrating the Cortesella Quartiere back into the rich cultural and historical depth of its urban surrounds (Figures 1-17, 104-111).

The new urban plan allows for the establishment of "headpieces" or sculptural extensions into urban spaces (See Figures 88, 107-111). Derived from the "slub" or rough, sculptural texture that protrudes from theotherwise smooth weave present in raw silk cloth, the design reflects the discontinuities present in the urban setting. Providing for significant entry points into the complex as well as for primary junctures with existing urban fabric, the the complex is woven into its setting, in a manner similar to the way a key fits into a lock's interior mechanisms. This provides a means of differentiation between the existing medieval fabric and the new structures. The new urban plan also provides a foil to the still existing grid from the original Roman plan. Using the module of surrounding structures' façades and ground floor plans for the pilotis structure of the new complex buildings and arcade rhythyms, the new plan contrasts these with abberrations of the grid introduced in urban gardens, the "headpiece" entry points, and occurrences of spatial overlap between interior and exterior spaces.

Site Choice Relative to Thesis and Program

Appropriate relative to the program of a museum and urban garden, a central urban site in a pedestrian-dedicated zone provides ready access for both local residents and visitors. Intended to celebrate a cultural and business mainstay for which the area is famous, the proposed museum explores Como, Italy's production of silk goods (The city gave itself the name "Como, The City of Silk" in 1999. The first trade support organization solely focused on silk was established in 1933. See Figure 58 for silk industry historical

photographs). Given that the current museum dedicated to the subject is out of date and located in an industrial area on the outskirts of the city, the program addresses the need for an innovative museum in a new location. Its current location is inappropriate for an important public building and the distance from central Como prohibitive to visitors. Occupying a total footprint of 11,603 square meters on the ground level, the site provides a significant opportunity to reconnect the fragmentation in the present urban fabric, the desired result being a sense of "communitas" for the area's inhabitants.

Site Fit Relative to Program

Schematic design began with allocation of square meterage of program areas divided by levels of building and general use (See Table I. and Figure 18).

Table I. Square Meter Totals (Figure 18):

Section	Square Meters of Area
Section A= Ground Level:	700 square meters Four floor level total: 2800 square meters
Section B= Ground Level:	4645 square meters
Section C= Ground Level:	2565 square meters
Three floor level total:	13935 square meters
Two floor level total:	5130 square meters
Section D= Ground Level building:	1115 square meters
Two floor levels of building:	2230 square meters
Ground level of garden spaces:	2580 square meters
Total square footage on ground level of Terragni proposal:	26675 square meters
Total square footage of building space, all levels:	24095 square meters

III. Program Description

The program for the silk Museum proposal requires the provision of exhibit space for a variety of artifacts (including silk looms, modern production equipment and art pieces made of silk, artisan studio spaces for active on-site artisans, an educational complex (See Figure 63, 99, 106-107), retail space for artisan goods and housing for visiting artists. Area for a significant urban garden area connecting the above programmatic areas and the complex to the urban fabric exists in the interior core of the major block ("D".on Figure 18, and Parti Figure 26) The current museum on the outskirts of the city addresses only early, non-mechanized production processes and a minor number of exhibits, occupying two floors of 1100 m squared or 2200 m (Figure 64, current silk exhibits).

General Organization[11]

> The program for the new museum is organized into four discrete areas, each with a corresponding set of conditions that defines its program. Each area may include both interior and programmed exterior spaces, with the primary exterior spaces contained within the incorporated arcades and urban garden or fronting on a piazza space.

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11 Organizational and sizing information references include the museum case studies mentioned in the reference section and the professionally developed program by the LORD Cultural Resources and Planning and Management, Inc., for the Frist Fine Arts Museum in Nashville, Tennessee.

Public Non-Exhibit Zone

All areas of the museum open to the public, excluding the exhibit areas. Public areas include the entrance lobby, ticketing/reception areas, coat and personal article room, auditorium spaces, dining area, donor lounge, outdoor dining /activity areas, classrooms, the café, gift, bookshop and silk goods shop, meeting rooms, first aid, public restrooms and the urban garden (See Table II).

Public Exhibit Zone (Zone A)

Includes all gallery/exhibit spaces open to the public; exhibits may occasionally occupy the urban garden and silk garden as well (See Table III.).

Non-Public Exhibit Zone

All exhibit storage/collection areas (for temporary and permanent exhibits), documentation center, exhibit staging ("Clean Workshop"/photo lab), curatorial workshops (2), visiting artisan studios (4), and shipping and receiving areas (art and non-art) (See Table IV.).

Non-Public Non-Exhibit Zone

Museum administration offices (Director's Office, Development Office, Public Relations, etc.) and conference rooms, curatorial and docent offices, gift shop management offices and storeroom, visiting scholar offices, studios, library, mailroom/photocopy/office/computer services, supply storage, staff kitchen, lounge and restrooms, auditorium projection booth, café kitchen and food storage/preparation, exhibit assembly, chair and equipment storage space, mechanical room(s), janitorial supply room and restrooms, non-art shipping and receiving, and garbage zone (See Table V.). For Summaries by zone see Tables VI. and VII.

Table II. Zone A – Public Non-Exhibit

No.	Space Name	Description	Allocation (m2)
A1	Vestibule	Includes disabled entrance	10
A2-A	Main Lobby	Main entrance to museum, both from the Museum and independent of the Museum	300
A2-B	Ticketing/Reception	Included in Main Lobby area. Controls access to museum.	10
A3	Coatroom	Coat check with attendant	14
A4	First aid	Public first aid station - near restrooms	10
A5	Men's Restrooms	ADA accessible with baby-changing station One off Main lobby, a second where needed (30 m squared ea.)	60
A6	Women's Restrooms	ADA accessible with baby-changing station One off Main lobby, a second where needed (50 m squared ea.)	100
A7	Auditorium	Seating for 100 people	140
A8	Multipurpose Meeting Room	Near Café for public and internal events	60
A9	Gift/book shop	Adjacent to office for shop manager	140
A10 A11 A12	Café	Seats 50 people. Adjacent to Multipurpose Meeting Room for functions. Includes outdoor dining/activity space, adjacent to the urban garden	80
A13	Urban Garden	Paved and vegetated areas, with a water feature and a second entrance, adjacent to the museum A courtyard garden enclosed by dense building on three sides, the Fourth (South) side providing public entry from the street.	3716
A14		Zone A Total:	4620

Table III. Zone B – Public Exhibit

No.	Space Name	Description	Allocation (m2)
B1	Temporary Exhibition Gallery	Exhibit space for traveling exhibitions. Climate controlled.	1500
B2	Permanent Exhibition Permanent collections. Climate controlled. Gallery		3000
B3	Public Studios	The studios provide work spaces for traditional and modern garment and art piece making. Space for looms, computer desk areas, testing equipment and generous open space with access to natural light are provided. (4 @ 92 meters sq. ea.)	368
B4		Zone B Total:	4868

Table IV. Zone C – Non-Public Exhibit

No.	Space Name	Description	Allocation (m2)
C1	Isolation Room	Separate room for art requiring fumigation	20
C2	Temporary Exhibit Storage	Storage for traveling exhibits prior to and following exhibitions	500
C3	Documentation Center	Workroom for documentation staff, database entry	25
C4	Curatorial Workrooms	Workrooms (2 at 30 ea) for scholarly research on art	60
C5	Clean workshop/lab	Preservation and conservation work, framing	100
C6	Exhibit Staging Area	Lobby area for exhibit and art movement at Art Freight elevator	90
C7	Art Loading Dock	Required- Separate from Service Loading Dock-security personnel present	100
C8	Crating/Uncrating Area	Adjacent to Exhibit Staging Area	100
C9	Crate Storage	Adjacent to Crating/Uncrating and access to Art Freight elevator	140
		Zone C Total:	1135

Table V.– Zone D Non-Public Non-Exhibit

No.	Space Name	Description	Allocation (m2)
D1	Director's Office	Includes office with conference table, private restroom	30
D2	Director's Admin. Assistant	Also functions as reception area for Director	12
D3	Programs Administrator	Private office	20
D4	Development Office	Private office	20
D5	Volunteer Coordinator	Private office	20
D6	Accounting	Private office	20
D7	Gift Shop Supervisor	Adjacent to Gift Shop	20
D8	Clerical area	Landscape office near Mail/Copy Room, supplies	20
D9	StaffMeeting Room	General administrative area	25
D10	Office Supply room	General administrative area	15
D11	Mail/Photocopy room	In general administrative area	30
D12	File room	In general administrative area	30
D13	Staff Kitchen	Adjacent to Staff Lounge	12
D14	Staff lounge	Adjacent to Staff Kitchen	50
D15	Computer Room	Contains server, telecommunications equipment	30
D16	Computer Staff	Office for Network Admin and Services	20
D17	Curator o f Art Office	Includes office with conference table	25
D18	Curator's Admin Assist	Functions as reception area for Curator	12
D19	Library	Research Library, library storage, archives-access to plentiful natural light	200
D20	Librarian's Office	Private office	20
D21	Offices for Visiting Scholars	Private offices (3 at 22 ea)	66
D22	Staff Restrooms	1 Male at 30, 1 Female at 50	80
D23	Café Kitchen	Adjacent to Café	50
D24	Food Storage	Adjacent to Café Kitchen	20
D25	Non-art delivery and garbage	Completely separate from Art Delivery area	20
D26	Auditorium Projection Booth	Adjacent to and part of Auditorium area. Must accommodate: multimedia (analog & digital projectors, lighting, sound) Also support outdoor concerts; adjacent to garden for this purpose	20
D27	Packing Material Storage	Adjacent to Art Storage, Crating/Uncrating	30
D28	Dirty Workshop	For carpentry (crates, exhibit furniture, etc)	175
D29	Security Officer	Private office	20
D30	Security Monitoring	Located at Loading dock, includes restroom	30

Table V. Continued

No.	Space Name	Description	Allocation (m2)
D31	Entrance Security	Located in Main Lobby	5
D32	Guards' Changing Room	Lockers and changing/restroom areas male/female	40
D33	Lobby Storage	Adjacent to Main Lobby. For wheelchairs, strollers, etc.	5
D34	Mechanical Room	Boilers, chillers, electrical panels, etc.	250
D34	Building Manager Office	Adjacent to Mechanical Room	22
D35	Wall Storage	For display panels not in use in galleries	30
D36	Chair, equipment storage	Chairs, tables for concerts and other events	80
D37	Gift Shop Stockroom	Gift shop storage	50
D38	Publications Storage	Storage for museum publications	30
D39	Janitor's Closets	Adjacent to restrooms (3 at 5 ea)	15
D40	Building Maintenance Storage	Cleaning supplies, building materials and small workbench area	50
D41	Lighting, Electrical Storage	Storage for lift, electrical supplies and fixtures, adjacent to Freight Elevator	30
D42	Forklift Storage	Forklift, hand trucks, dollies, etc.	20
D43	Visiting Scholar/ Artisan Housing	Including private apartments, with direct access to street entrance, overlooking the Gardens, and above their studios. 4 @ 140 m sq. Private Entry.	560
D44	Private Artisan Studios	The studios provide work spaces for traditional and modern garment and art piece making. Space for looms, computer desk areas, testing equipment and generous open space with access to natural light are provided. (4 @ 92 sq. m each)	368
		Zone D Total:	1719

Table VI. Summary by Zone

	Zones	(m2)
A	Zone A: Public Non-Art	4620
B	Zone B: Public Art	4868
C	Zone C: Non-Public Art	1135
D	Zone D: Non-Public Non-Art	1719
	Total Functional Zones:	12342
	Circulation at 30%	3703
	Total Building Space:	28387

Table VII. Master Planning for Urban Site

	Zones	(m2)
Arcades of University Buildings and Museum buildings	Connect existing pedestrian zones, activating site through frequent foot traffic and active destinations 4915 cubic meters (4m height)	1345
Public Streets traversing the site	Via Albertolli, Via Juvara, Via Da Bonta, Via Ballarini-Bridge where possible at the second or third floor level	Variable
Silk Goods Commercial	On First Floor of University Buildings-Figure Section B (7340 cubic meters)	2005
Commercial (Other than silk goods)	On First Floor of University Buildings-Figure Section B (6800 cubic meters) Cafes, neighborhood stores/markets/school bookstore, etc.	1860
University Classroom Spaces/Educational	On Second Floor of University Buildings- (Silk artisan workshops plus Setificio del Politecnico di Milano, Como branch) Figure , Section B (6800 cubic meters)	12080
University Housing	On Third Floor of University Buildings, Zone B (24,900 cubic meters)	6800
	Master Plan Total	24100

Table VIII. Built Volume (Not including gardens/courtyards)

Proposed Spaces	Size of Proposed Spaces in Cubic Meters
Proposed Built Volume for site	88120 cubic meters
Volume finished to Master Plan Level:	78165 cubic meters
Built Volume designed in detail:	113548 cubic meters

Qualitative Aspects of the Program and Relationship to Thesis

Main Points of Entry into the Buildings

Entry points to the museum and educational complex areas designed as "headpieces" penetrating into the surrounding piazzas and layered entry areas between the urban gardens and the existing urban fabric, provide substantial opportunities to address the issues of threshold (Figures 105-110).[12] Consulted for their refined approach to the issues surrounding the meeting of interior and exterior spaces, the writings of Georg Simmel provide ample material for analysis. Simmel explores the boundary of interior and exterior through an inquiry into the significance of the door not only as physical separator but also as metaphysical signifier.[13] The fundamental import of the door as connector lies in the fact that it simultaneously represents a metaphysical state, a place, even, between one state and another, between interior and exterior as well as a difference in direction, depending upon one is entering or exiting. The importance of boundaries and their active function for the production of liminal space reflects their dual nature as both providers of enclosure as well as protection:

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12 Providing a transition point between the garden and the gallery from the core of the Cortessella Quartiere, the garden entry atomizes the distinction between interior and exterior through dissolution of the grid of the building and the introduction of landscape into the design.
13 Parallel to Klee's ambiguity of boundary and his ability to create liminal conditions through the juxtaposition of defined versus undefined space, in figure versus ground relationships, Georg Simmel defines a fluctuation similar to that of a figure ground in the dichotomy of interior and exterior spaces.

"Viewed in terms of the opposing emphases that prevail in their impression, the bridge indicates how humankind unifies the separateness of merely natural being, and the door how it separates the uniform, continuous unity of natural being. The basis for their distinctive value for the visual arts lies in the general aesthetic significance which they gain through this visualization of some thing metaphysical, this stabilization of something merely functional"(Simmel, 10).

Simmel highlights the import of the door, therefore the threshold, revealing ". . . how separating and connecting are only two sides of precisely the same act."(Simmel, 8). Simmel's descriptions remind us that the door is a threshold, but:

> "...the bounded and boundaryless adjoin one another . . . as the possibility of permanent interchange . . . By virtue of the fact that the door forms, as it were, a linkage the space of human beings and everything that remains outside it, it transcends the separation between the inner and the outer. Precisely because it can also be opened, its closure provides the feeling of a stronger isolation against everything outside this space than the mere unstructured wall. The latter is mute, but the door speaks. It is absolutely essential for humanity that it set itself a boundary, but with freedom, that is, in such a way that it can also remove this boundary again, that it can place itself outside it"(Simmel, 10).

The cultural desire for luminous experiences provides the impetus for multiple readings of threshold conditions, however, without conscious awareness, the opportunity is lost. The creation of transition spaces that provide for a moment of awareness through discontinuity and the weaving of materials is paramount to the creation of architecture and to this thesis.

IV. Building Code[14]

See Tables IX. –XIV. for information regarding building codes used in the design of the Museo di Seta.

Table IX. Specification of Occupancy Groups and Applicable Codes

Occupancy Group	Applicable Codes
A. Assembly	Assembly includes social, recreational, and civic gatherings of 50 or more persons. *The applicable sub-groups are:*
	A-2: This group includes food and drink establishments.
	A-3: This group includes recreational, amusement, and worship uses not specifically falling under other Assembly groups, including, for example, galleries, auditoriums, churches, community halls, courtrooms, dance halls, gymnasiums, lecture halls, libraries, museums, passenger station waiting areas and the like.

Table X. Construction Types and Applicable Codes

Construction Type	Applicable Code
I-A: 3-hour Noncombustible	Requires a fire-resistance rating of 2 hours for floor construction and 3 hours for columns and bearing walls Construction types: Structural steel, Reinforced Concrete, Posttensioned Concrete, Precast Concrete, Brick Masonry, or Concrete Masonry (see Allen, p. 308 for minimum requirements)
I-B: 2-hour Noncombustible	Requires a fire-resistance rating of 2 hours for floor construction, columns and bearing walls Construction types: Structural steel, Reinforced Concrete, Posttensioned Concrete, Precast Concrete, Brick Masonry, or Concrete Masonry (see Allen, p. 309 for minimum requirements)

14 The applicable building code for this proposal is the International Building Code. All material below is from Edward Allen's reference book, *The Architect's Studio Companion, Third Edition.* Only the sections applicable to the proposal are included here. The proposed museum is considered a mixed-use building. As the design evolves, additional Building Codes may apply. An example would be the inclusion of an atrium space or mezzanine.

Table XI. Life Safety/Fire Prevention

Fire Safety Issue	Applicable Code
Floor areas will exceed 465 meters squared for A2 or A3 Occupancy	Museum must have an approved sprinkler system
Accessibility of perimeter of museum for firefighting vehicles	At least 25 % of building perimeter must be surrounded by 6 meter wide streets (minimum)

Table XII. Height and Area Limitations

A2 (Assembly, Food and Drink)	I-A: 3-hour fire rating: Unlimited height and area I-B: 2-hour fire rating: 54 m maximum height and unlimited area
A3 (Assembly, Miscellaneous)	I-A: 3-hour fire rating: Unlimited height and area I-B: 2-hour fire rating: 54 m maximum height and unlimited area

Note: There is a presumption here of Type I-A or I-B (Noncombustible) construction with an approved sprinkler system throughout

Table XIII. Egress Codes

Fire Exits	2 per floor, minimum, or 250 persons/fire exit
Door, corridor and ramp widths	1.2 m as either 1 1.2m door, 2 .6m doors (to be verified with actual metric door specifications)
Stairs	1.3m minimum Design to conform to IBC standards, Allen pp. 283-293, for configuration, tread and riser design limits

Note: There is a presumption here of an occupant load of 500 or fewer persons and a floor area occupant ratio of one occupant to every 1.4 meters squared.

Table XIV. Accessibility for the Physically Challenged in Auditorium Spaces

Specified Space	Applicable Codes for 100 Person Seating
Auditorium	3 wheelchair places
Auditorium	Egress at either end of seating rows
Auditorium	No more than 24 seats/row
Auditorium	Clear space between rows: 559 mm maximum, 312 mm minimum
Auditorium	Minimum aisle width: 914 mm
Auditorium	Maximum slope of aisle: 1 meter to every 8 meters of length
Auditorium	Maximum travel to exit (sprinklered): 76 m

Note: All areas of the building, including restrooms, are accessible.

V. Resources

Case Studies

Overview of Case Studies from Visual Art, Landscape and Literary Sources

The Art of Paul Klee (Figures 33-35), Joseph Cornell (Figures 36-40), Richard Serra (Figures 27-32), Isamu Noguchi (Figures 41-44) and the landscapes of the Kröller-Müller Gardens (Figures 53-54) are designed to focus our attention on a narrow range of stimuli, framing threshold, or liminal conditions.[15] We may note the tendency of liminal space to take on a narrative sequence, via memory association (evident in the works of Klee and Cornell) or phenomenological experiences (evident in the works of Serra) and architectural narratives as seen in the labyrinthine constructs (themselves examples of

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15 In 1921, Mr. And Mrs. Kröller-Müller established the site for a new museum in the belief that: ". . . the collection, the building in which it was to be housed and the surroundings would inspire visitors to linger in contemplation." Henry Van de Velde designed the museum buildings, housing one of the world's foremost collections of Van Gogh and Cubist works. They commissioned H. P. Berlage to build them a hunting lodge nearby. The extensive wooded estate, now the Hoge Veluwe National Forest, inspired the Kröller-Müllers to place sculpture within a natural environment, with the help of the designer J.T.P. Bijouwer (1954). The landscape includes open lawns, heavily wooded hills, and secluded areas, all providing specific siting for an incredible range of sculptural forms: "The lawns were 'furnished' like museum galleries in a careful search between the sculpture themselves and the spaces defined by walls of vegetation...Signals were being sent out that nature and art could mean even more to each other on a more fundamental level, the level of idea. Nature, a decorative setting for the works of art in the sculpture garden, now acquired another function, becoming the actual subject of artistic activity. Artists now turned their attention to parameters like movement, change, time, or the distinctive character of a particular spot, its structure or meaning (*Kröller-Müller Museum Guidebook to Outdoor Sculpture*,1998).

liminal conditions) present in literature by Umberto Eco (*The Name of the Rose*), Luis Borges ("The Library of Babel" from his collection of stories *Labyrinths*) and Italo Calvino (*Invisible Cities*).

Case Studies from Visual Art and Landscape Sources

The case studies involving art include: Paul Klee (Figures 33-35), Joseph Cornell (Figures 36-40), Richard Serra (Figures 27-32), Isamu Noguchi's sculpture, playscapes and Garden Museum (Figures 41-44) and the landscapes of the Kröller-Müller gardens (Figures 53-54). Each of the artworks and the landscape discussed creates liminal space, addressing the issues of boundary, edge and threshold via media other than architecture.

1. The Paintings of Paul Klee and the Collages and Sculpture of Joseph Cornell

(Figures 33-35 and 27-32)

In the work of Cornell and Klee there is an ambiguity of hierarchy. Donald Kunze describes this phenomenon in terms of rhetoric and place bringing this theory into the realm of both the visual arts and architecture.[16]

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16 Kunze states in the "Liminality of the Middle", " The idea that what is best and most beautiful in the human world lies between, or spans the chasm between subjects and objects comes early in the history of Western thought, but it arises at the time when the subject and object come to stand for two separate realms . . . the middle is logically excluded so that a single-valued logic of being and non-being can accede to the position of a model or ideal of reason. The chasm between the object and the subject acquires a complex geography in the process. It is, first of all the territory cursed by logic, where no theory may build without paradox.. . yet it is also a zone which must be bridged to avoid the greater catastrophe of positing two worlds. Correspondingly, strong philosophers identify what is final or most important in their philosophies with this middle position: e.g. Kant's Judgment or Hegel's Spirit. . *.the philosophical passage between the two forms of order of the subject and the has typically been regarded as liminal, that is, an a-rational*

Paul Klee's works provide an opportunity to explore the ambiguity between figure and ground, where boundary is shown as alternating between finite, enclosed space and the infinite, unbounded space, depending upon how the work is read. These points are significant to architectural production in that they address the liminality of boundary, edge and threshold conditions, and engender the "flow" state in the viewer. These threshold conditions can occur in a multitude of architectural situations including but not limited to: the transition from one type of urban fabric to another, the meeting of interior and exterior spaces, changes in landscape, weaving of the joint between two materials, or the same material exhibiting different textures, the perception of sound, changes in visual acuity (light area to a dark area) and the crossing from one structure or type of space into another (piazza to smaller entry area, for example).

2. *The Sculptural Works of Richard Serra*

   (Figures 27-32)

   Serra involves the spectator to the point that he or she is a participant, involved in the scale and weight of the works and their relation to their context. Chosen to be case studies for their ability to represent exemplary examples of liminal work, and for their relationships to landscape (Figures 31-32), many of his works exist in tension with their context., as in the first Figures where they cohabit with architecture from the 1700s and 1800s.(Figure 30, Philibert et Marguerite, in the Large Cloister of the sixteenth-century Royal Monastery of Brou, Bourg-en-

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crossing that enacts a coincidentia oppositorum. As Kant put it, the middle calls for 'an art hidden in the depths of the human soul.' . . Historically, accounts of this passage have borrowed from the mythic versions of liminal passage between the incommensurable worlds of gods and men (italics added), one tribe and its neighbors, and different levels in social status (Kunze, 26). Kunze connects this ideology to Turner's writings, focusing on Turner's incorporation and transformation of Van Gennep's work where he is "emphasizing the metaphor's role in universal cultural processes that use place both as an idea and as a physically existent entity"(Kunze, 30).

Bresse, France, 1985 and Figure 29 *Threats of Hell*, a Room Installation for an exhibition at the Entrpot Laine, Musee de Arte Contemporaine, Bordeaux, France, 1990).

The boundaries of Serra's works are defined by the participant's perception of their presence, which once recognized, cannot be ignored by the observer, if for no other reasons than their sheer size and starkness in relation to their environment. The threshold of these works and their ability to engage the participant in a liminal experience, comes through the individual's physical relation to the work, at times even physically entering into them (See Figures 27-28), experiencing directly their weight.

3. *Isamu Noguchi's Sculpture, Gardens, Playscapes and Theatre Sets*

(Figures 70-80)

Among the case studies are several Noguchi works included for his ability to produce liminal space via abstract works of art developed for particular sites or for the his ability to create surrealist associations in his landscapes and stage sets (Figures 41-44). Developing his landscapes for both interior spaces and interior or exterior gardens, as is the case with his self-designed sculpture museum in Queens, New York, (The Isamu Noguchi Garden Museum, Figure 41), Noguchi is able to focus the awareness of the individual on their present experience. He also develops, in his surreal playscapes for children's playgrounds and stage sets for Martha Graham, archetypal relations through the use of large, often occupiable, sculptural forms and spaces of geometric, organic and spiral form similar to the land art created by artists such as Mary Miss. Describing his museum, Noguchi states his perspective on the relationship of sculpture and space: "The record here is of my long involvement with sculpture as space and with a vision that the frontiers of sculpture might open up by relating it to the land and to real walkable space"(Noguchi, 1987).

> Unique to sculpture, is its direct correlation to architecture, a relationship inherent to both the works of Noguchi and Serra: "The Architect finds the sculptor in action within his territory, experimenting with primeval acts of his métier . . . even the interior space, the primeval architectural manifestation, is depicted in prototype form . . . the tine remnant which distinguishes the art of this visionary sculpture from architecture (but the distinction cuts deep): it serves mental pleasure and not practical living"(Meisenheimer, 77).

Case Studies Addressing Boundary, Edge and Threshold in Theoretical Form

Investigating the works of Victor Turner, Alberto Perez-Gomez, Joseph Campbell, Georges Simmel, Antonin Artaud and Henri Lefebvre I examine existing ideologies concerning boundary, edge and threshold and the cultural desire for liminality.[17]

Case Studies from Literature

Using case studies from literature that include: Italo Calvino's *Invisible Cities*, Luis Borges' "The Library of Babel", and Umberto Eco's *The Name of the Rose*, I seek to

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17 Applied to architecture, dualities offered by Victor Turner provide conditions for the development of architecture imbued with potential to instigate luminous experiences. Expressing the differences between the qualities of a luminous state versus that of the "status system" within everyday community life, Turner presents the following list of dualities: transition/state, totality/partiality, homogeneity/heterogeneity, communitas/structure, equality/inequality, sacredness/secularity, silence/speech, simplicity/complexity and heteronomy/degrees of autonomy (Turner, 1969, 106-107). Anthony Vidler notes the direct connotations for architecture in his descriptions of spatial and compositional dualities present in past Masonic architectural constructions, examples of ritualistic architecture using liminality as theoretical basis (Vidler, 87-92).

explicate how the construction of images leading to an imagined path or sequence can be shaped via the vehicle of a architectural narrative, thus supporting the creation of liminal space.[18&19&20]

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18 An example of architectural narrative, Eco writing about a maze, termed in the text, a labyrinth, states: "The system of words was eccentric. At times it proceeded in a single direction, at other times it went backward, at still others in a circle; often as I said before, the same letter served to compose two different words (and in these instances the room had one case devoted to one subject and one to another). But obviously there was no point looking for a golden rule in this arrangement. It was purely a mnemonic device to allow the librarian to find a given work. To say of a book that it was found in the "Quarta Acaiae" meant that it was in the fourth room counting from the one in which the initial A appeared, and then to identify it, presumably the librarian knew by heart the route, circular or straight, that he should follow, as Acaiae was distributed over four rooms arranged in a square.. . . "(Eco, 320).

19 In Borges' "The library of Babel he describes the labyrinthine structure of the universe in an excellent literary example of architectural narrative: "The universe (which others call the library) is composed of an indefinite and perhaps infinite number of hexagonal galleries, with vast air shafts between, surrounded by very low railings. From any of the hexagons one can see, interminably, the upper and lower floors. The distribution of the galleries is invariable. . . One of the free sides (of the gallery) leads to a narrow hallway which opens onto another gallery, identical to the first and to all the rest. . . Also through here passes a spiral stairway, which sinks abysmally and soars upwards to remote distances. . . "(Borges, 51).

20 In Cities and Signs, Chapter Three of Italo Calvino's Invisible Cities, one reads of an engaging city reproduced in textual form, its substance made palpable through words as well as deduce the importance of boundary and the ability to recognize the difference between different parts: "The man who is traveling and does not yet know the city awaiting him along his route wonders what the palace will be like, the barracks, the mill, the theater, the bazaar. In every city of the empire every building is different and set in a different order: but as soon as the stranger arrives at the unknown city and his eyes penetrates the pine cone of pagodas and garrets and haymows, following the scrawl of canals, gardens, rubbish heaps, he immediately distinguishes which are the prince's palaces, the high priest's temples, the tavern, the prison, the slum. This—some say—confirms the hypothesis that each man bears in his mind a city made only of differences, a city without figures and without form, and the individual cities fill it up.

This is not true of Zoe. In every point of this city you can, in turn, sleep, make tools, cook, accumulate gold, disrobe, reign, sell, question oracles. Any one of its pyramid roofs could cover the leprosarium or the odalisques' baths. The traveler roams all around and has nothing but doubts: he is unable to distinguish the features of the city, the features he keeps distinct in his mind also mingle. He infers this: if existence in all its moments is all of itself, Zoe is the place of indivisible existence. But why, then, does the city exist? What line separates the inside from the outside, the rumble of wheels from the howl of wolves?"(Calvino,34).

Case Studies from Architectural Sources

Architectural precedents to be analyzed include: The Centro Gallego de Arte Contemporaneo, Santiago de Compostela, Spain by Alvaro Siza (Figure 45-51), The Danteum by Terragni, the Kröller-Müller Museum, Otterlo, the Netherlands (Figures 53-54) and the Naoshima Museum by Tadao Ando (Figures 53-56). The distinction between architecture and building in part depends on the ability to discern a place as set off or defined by boundaries, edges and thresholds. Each of these precedents addresses these conditions and serves as a model for the production of liminal spaces.

1. The Centro Gallego de Arte Contemporaneo, Santiago de Compostela, Spain by Alvaro Siza (Figure 45-51)

Selected as a case study for its example as an instauration in an urban area rich in architectural history, not unlike Como, and its siting next to a national monument, the Convent of Santo Domingo de Bonaval, Alvaro Siza's Galician Centre of Contemporary Art in Santiago de Compostela, Spain shares the minimalist aesthetic of Ando's Naoshima Museum. Siza extends his museum into the landscape, incorporating the landscape space into the totality of the design, weaving the architecture to its site while providing for an urban garden.

2. The Danteum by Terragni

Terragni's proposal for The Danteum echoes his intent to create an architectural narrative in Como between Piazza Cavour, the Duomo and Casa del Fascio. Selected as a case study, it is my intent to employ it as a precedent for meaningful sequential development in the interior and exterior spaces of my proposal.

3. Kröller-Müller Museum, Otterlo, the Netherlands (Figures 53-54)

Selected as a case study for its development of liminal space created through the intervention of land art and landscape design, Kröller-Müller Museum also provides excellent examples of integration between interior and exterior spaces.

4. Naoshima Museum by Tadao Ando (Figures 55-56)

Tadao Ando's emphasis on material texture, minimalist aesthetic, definition of edge conditions and space-making in relationship to the natural landscape (interior to exterior space relationship) and the threshold or perceived boundary between his primary spaces have precluded his inclusion as a case study.

5. *The Design Gestalt of a Gothic Cathedral(Figure 57):*

The form, layout and details (at different scales) of the Gothic cathedral provide precedents for the production of architecture raddressing the issues of boundary, threshold and edge (especially related to discontinuity, liminality, and awareness). If we proceed from the piazza or public space typically in front of a cathedral, and cross the threshold into the narthex, we experience changes in the levels of the noise and light. More importantly, we have entered a space of discontinuity. The abrupt break in spatial conditions results in a response of hyperconsciousness on the part of the visitor. At the meeting of the apse and the nave, another space of discontinuity and decision is present, again halting the somnambulistic state of the visitor, bringing his or her attention and awareness into the present. This break or discontinuity occurs not only at the micro scale of the iconographic ornamentation present in the column capitals of the East Arcade, but also at the level of building organization and the macro scale of the city's organization. The result of considering such factors in architectural, landscape and urban design can be the healing of fragmentation from other unconscious interventions into the

Site-Related Resources

Sources directly relating to the chosen site include texts concerning Rationalist works, specifically those of Terragni, postcards from earlier epochs, guidebooks, numerous maps, arial photographs as well as slides and sketches personally taken and drawn on my two visits to the area.

VI. Conclusions

Weaving the haptic and interior to exterior spatial dissolution into the design project has proved a challenging task. Applying the metaphor of weaving to architectural production, I created a series of canvases to explore the various characteristics and sensual qualities of silk and silk cloth as well as to discover the patterns inherent in the existing urban fabric (See Figures 72-80). I have sought to prove the importance of sensual experience to the awareness of liminal conditions, and through the final project I achieved this goal. The final plates each demonstrate, at three or more scales each, the haptic, liminal and woven properties of the proposal (See Figures 81-103). The integration of the macro to micro scales, from the urban scale to contruction details, allowed for the project to achieve a continuity in material usage and spatial development (See Figures 72-113).

Further research might include additional documentation of urban conditions, and deeper investigation into the meaning of liminality as a construct.

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Appendix of Figures

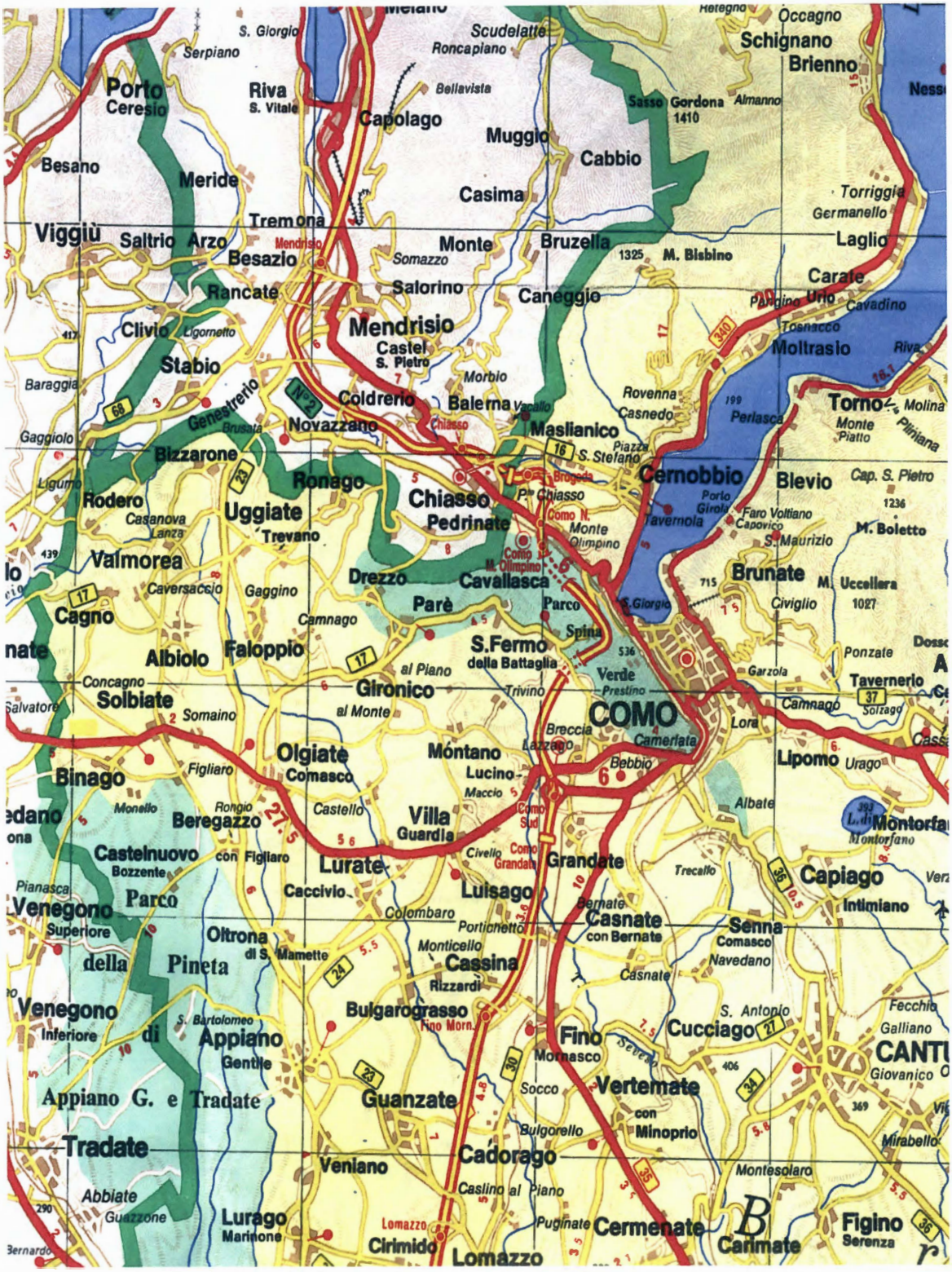


Figure 1. Map of Como, Italy (Northern Region of Italy with Swiss Border indicated in green to the Left.)

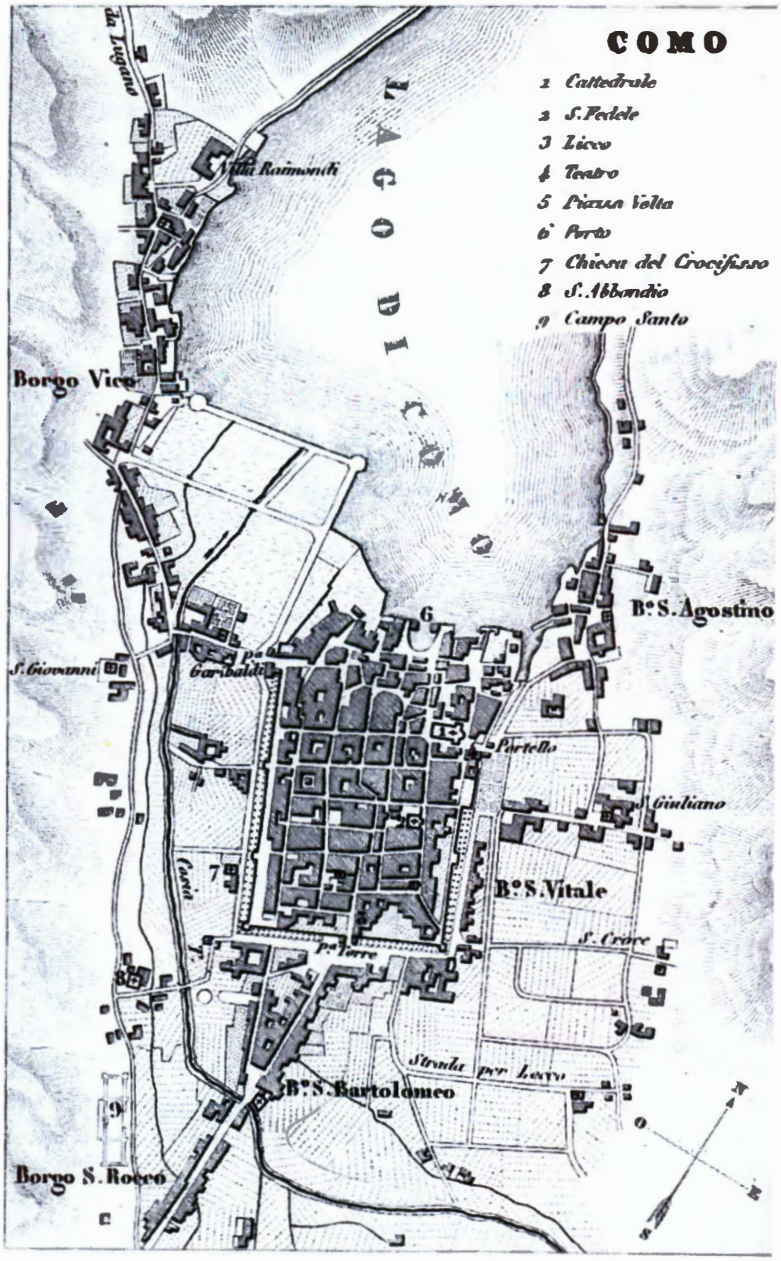


Figure 2. Late 19th Century map of Como.



Figure 3. Current Map of Como.



Figure 4. Current Road Map of Como (Project Site Marked in White).



Figure 5. The Promenade Along Lago di Como (Viale Geno). Piazza Cavour and the Como Duomo in the Distance. (Photo taken in 1920).



Figure 6 (A, B, C). Original Roman walls and Tower surrounding central Como

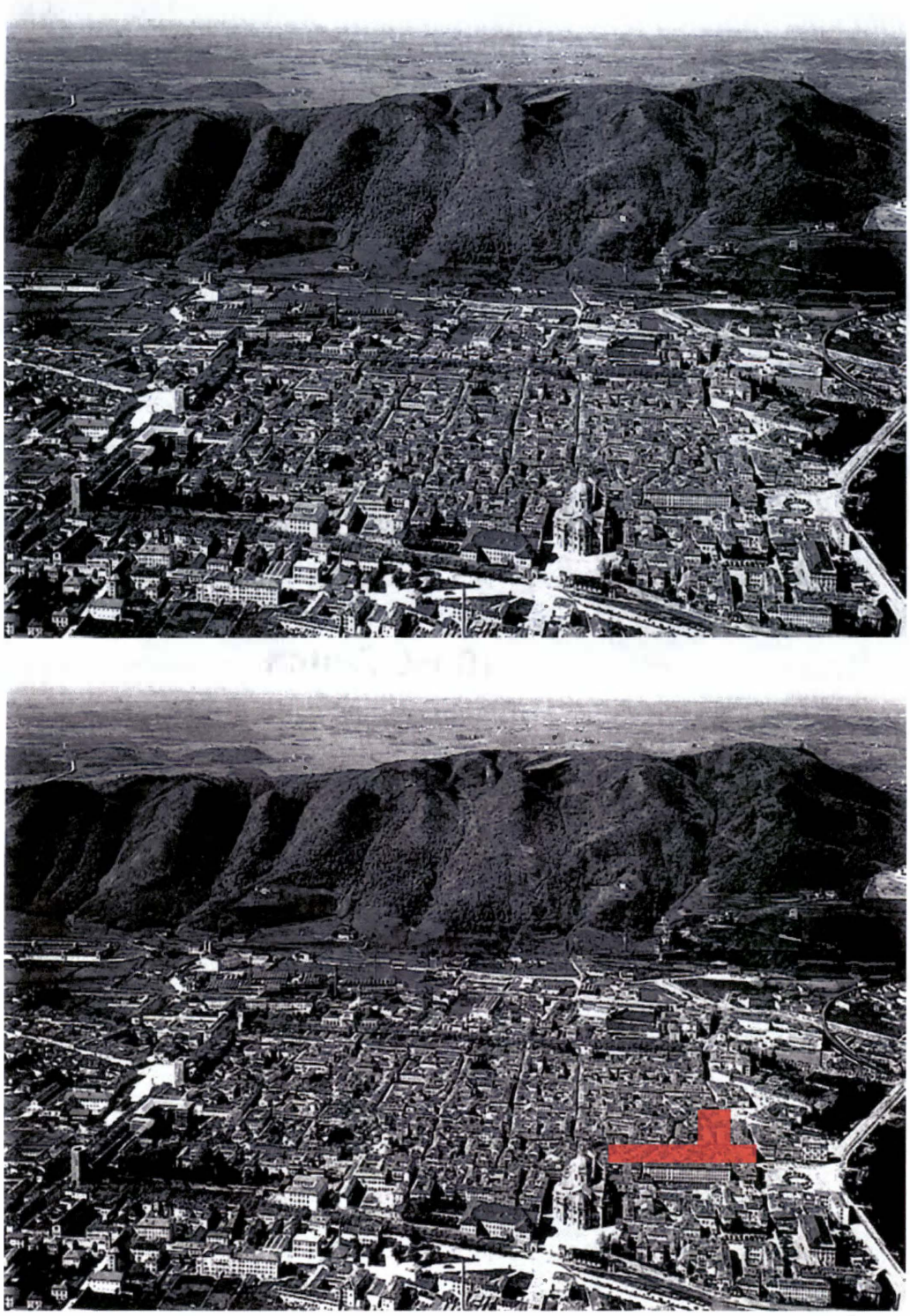


Figure 7 (A & B). Late 19th Century View of Como from Brunate (Proposed site indicated in red).



Figure 8 (A & B). Current View of Como from Brunate (Site indicated in white oval).



Figure 9. Original Roman Walls indicated in yellow, the Cardo and Decumanus indicated in blue and the original Roman Towers and Entry Gates shown in red (1992 Image).



Figure 10. Local Cultural Sites indicated in red and the Proposed Site indicated in yellow.



Figure 11. Major Piazzas surrounding the Proposed Site indicated in yellow and proposed site indicated in red.



Figure 12. The Proposed Site and the Casa di Fascia indicated (bottom left in the photo) in red and a local narrative route from Piazza Cavour to the Casa di Fascia indicated in blue.



Figure 13. Current Silk Industry Sites.

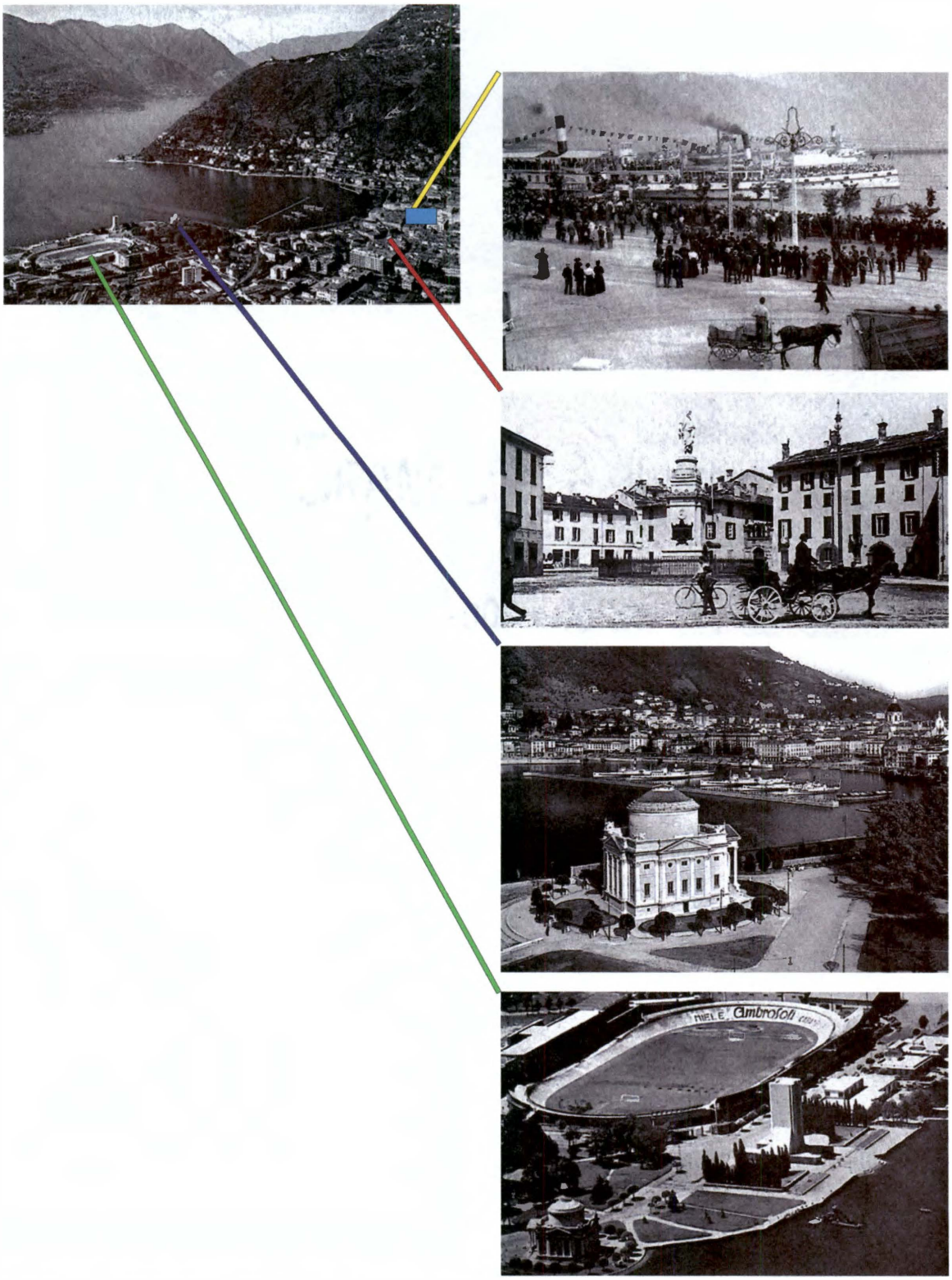


Figure 14 (A, B, C, D). Photos of areas near the Proposed Site (All photos taken in the late 19th and early 20th century.





Figure 15 (A & B). Current photos looking away from the Proposed Site.

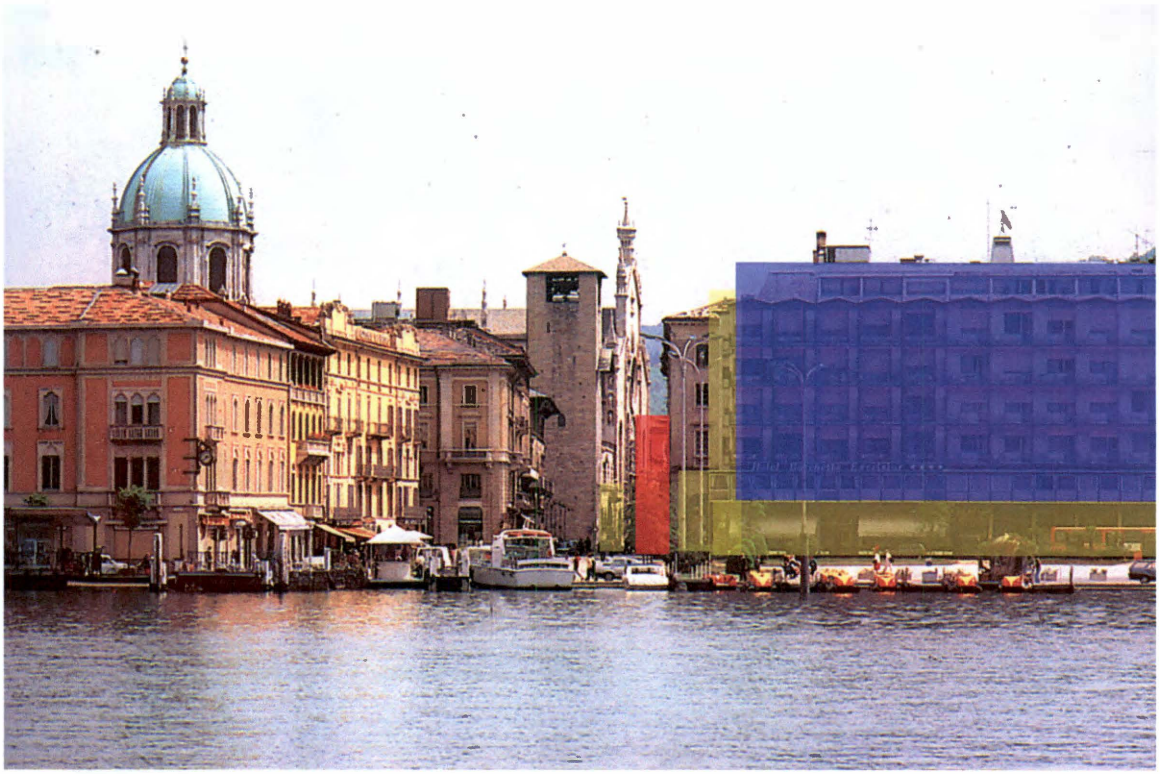


Figure 16. View of Piazza Cavour from the Como di Lago. (Transitional points shown in yellow, Museum Site shown in blue and the beginning of the Casa di Fascia narrative route shown in red.)



Figure 17. Piazza Cavour Façade Study.

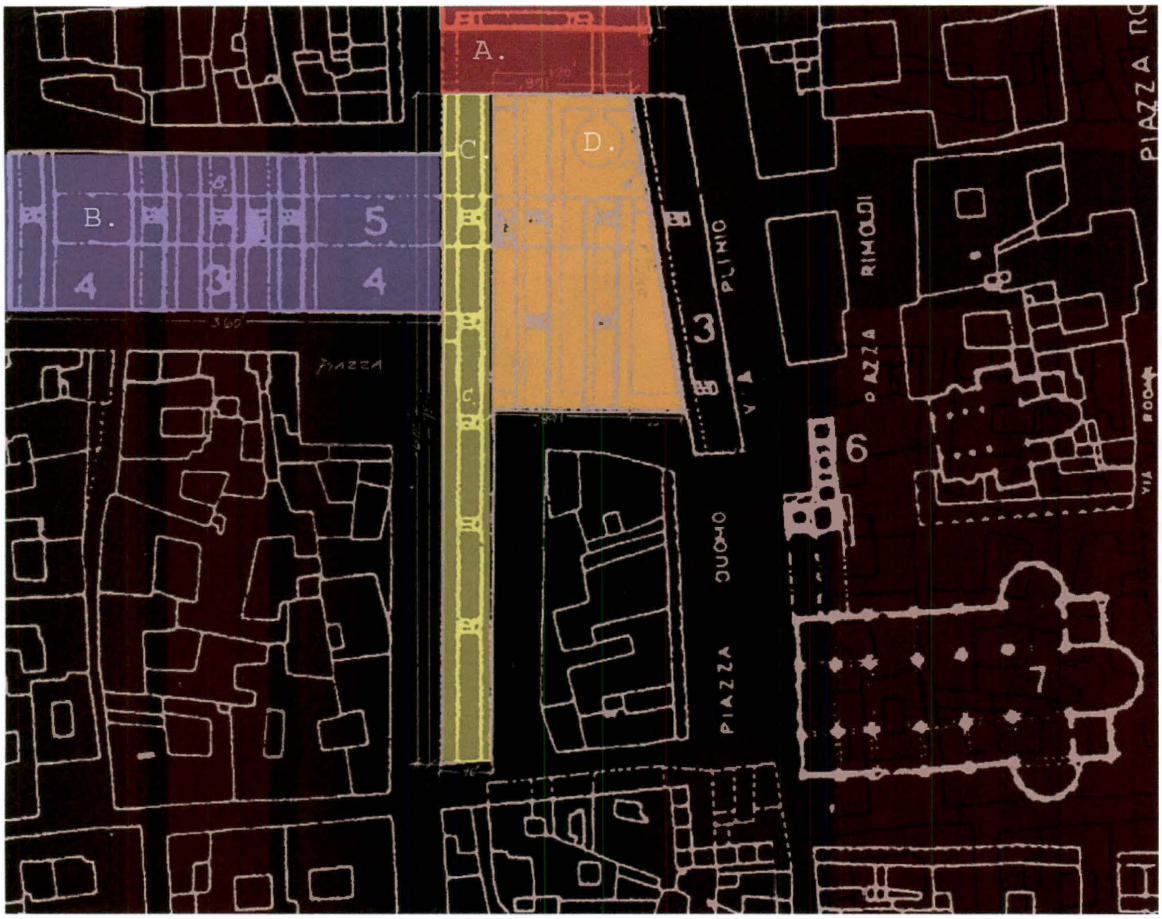


Figure 18. Site Zoning. Piazza Cavour to the North (top of the image) and the Como Duomo to the East (right side of the image).

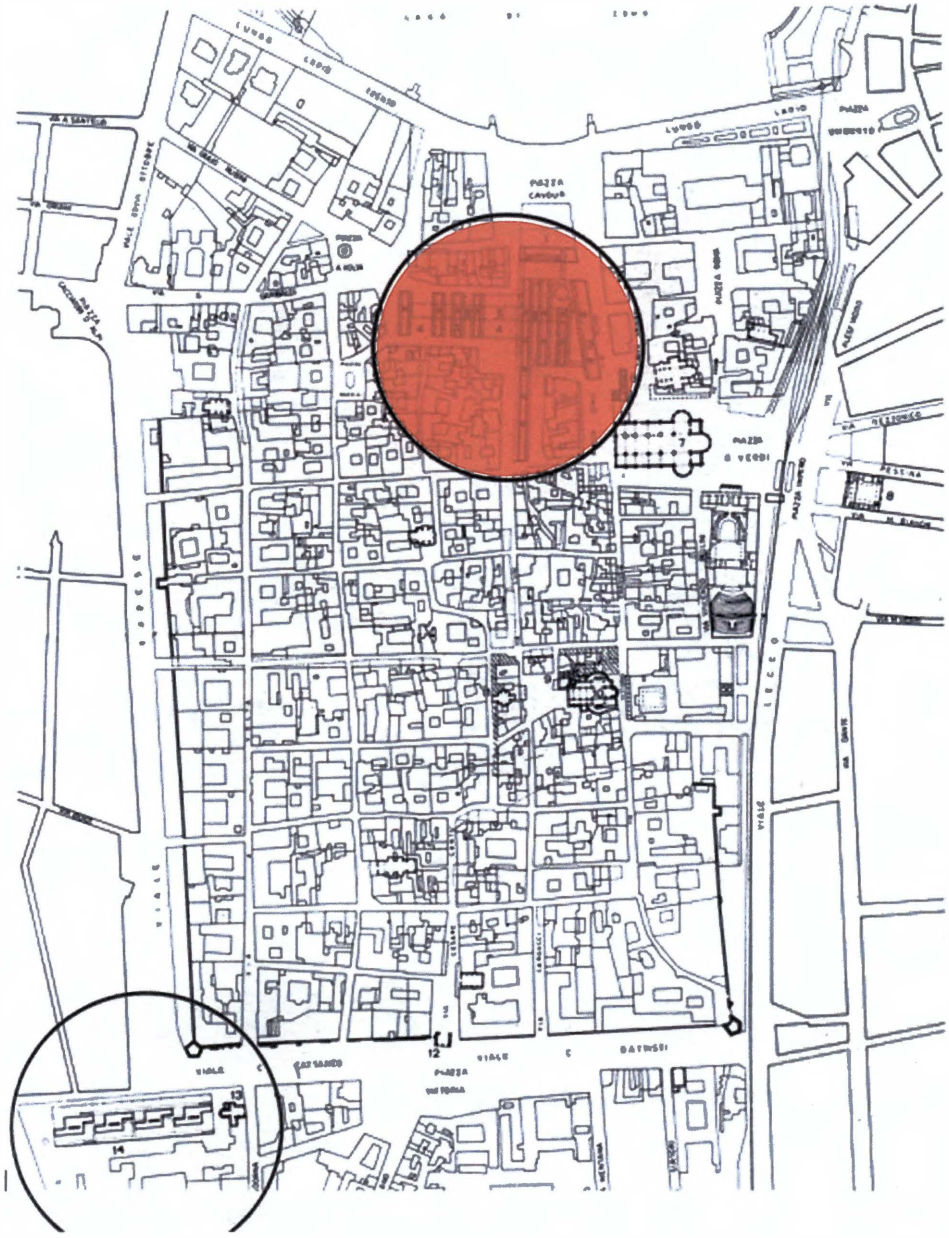


Figure 19. Proposal Site, the location of Giuseppe Terragni's unbuilt proposal for the Cortesella Quartier

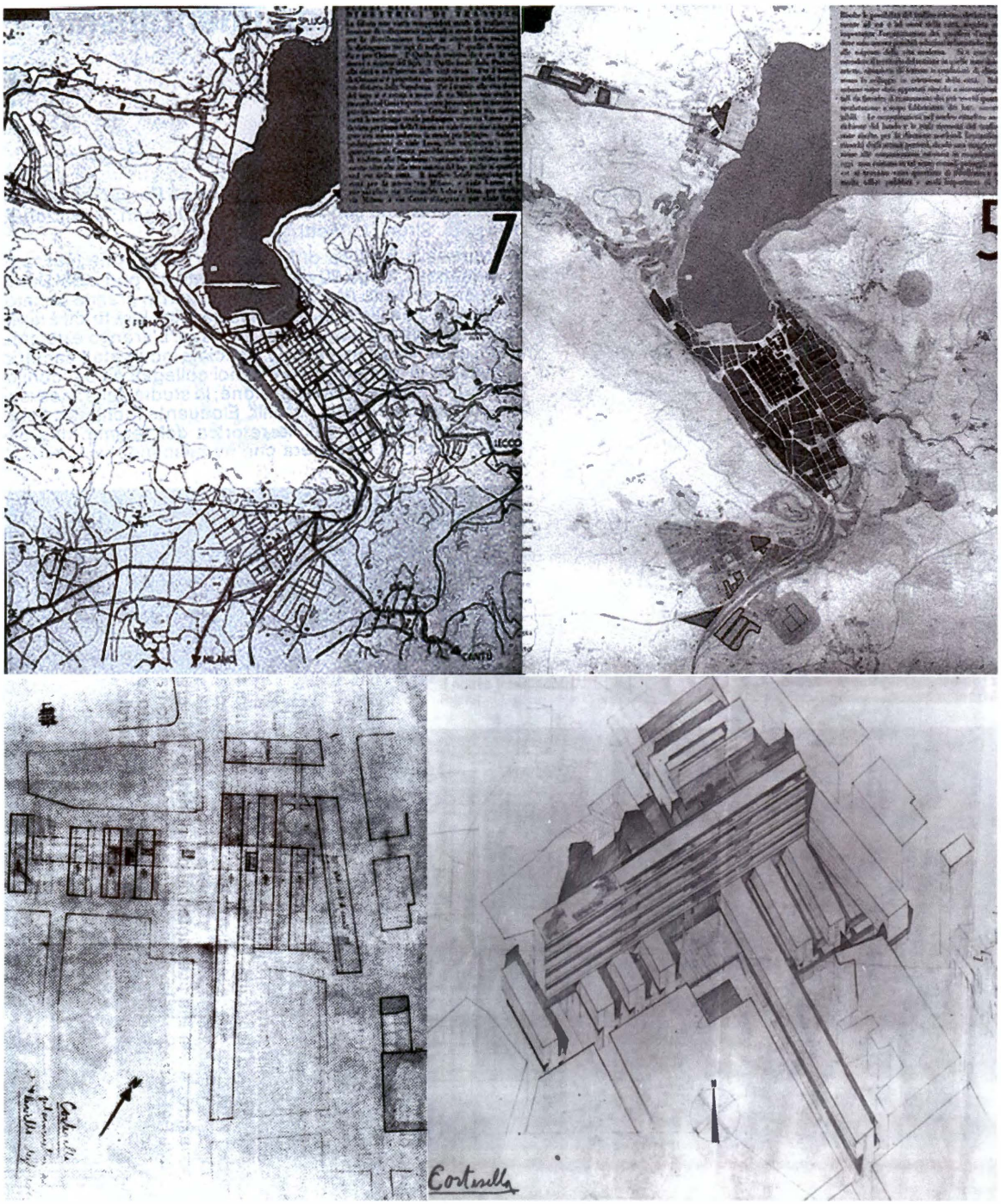


Figure 20 (A, B, C, D). Giuseppe Terragni's unbuilt proposal for the Cortesella Quartier.



Figure 21. Site Boundaries- the point where perception of the site begins.

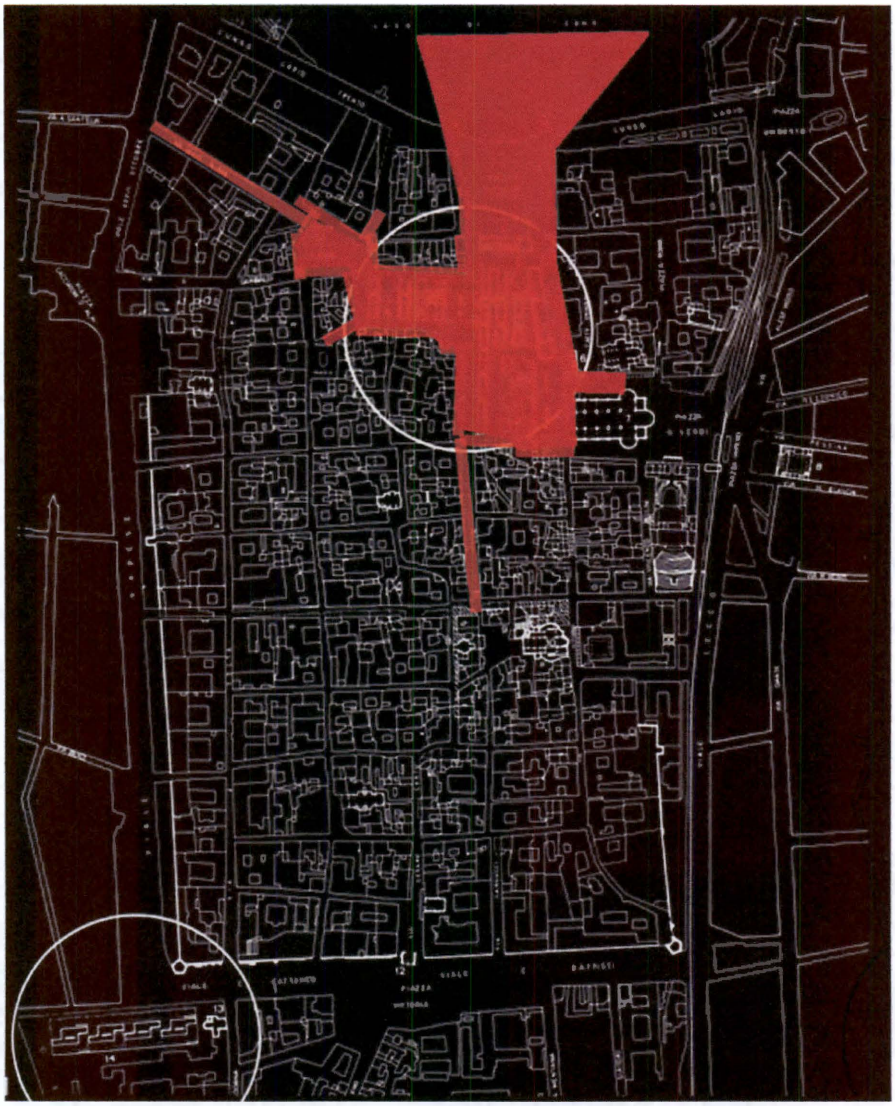


Figure 22. Threshold of the site.



Figure 23. Edges of the Site.

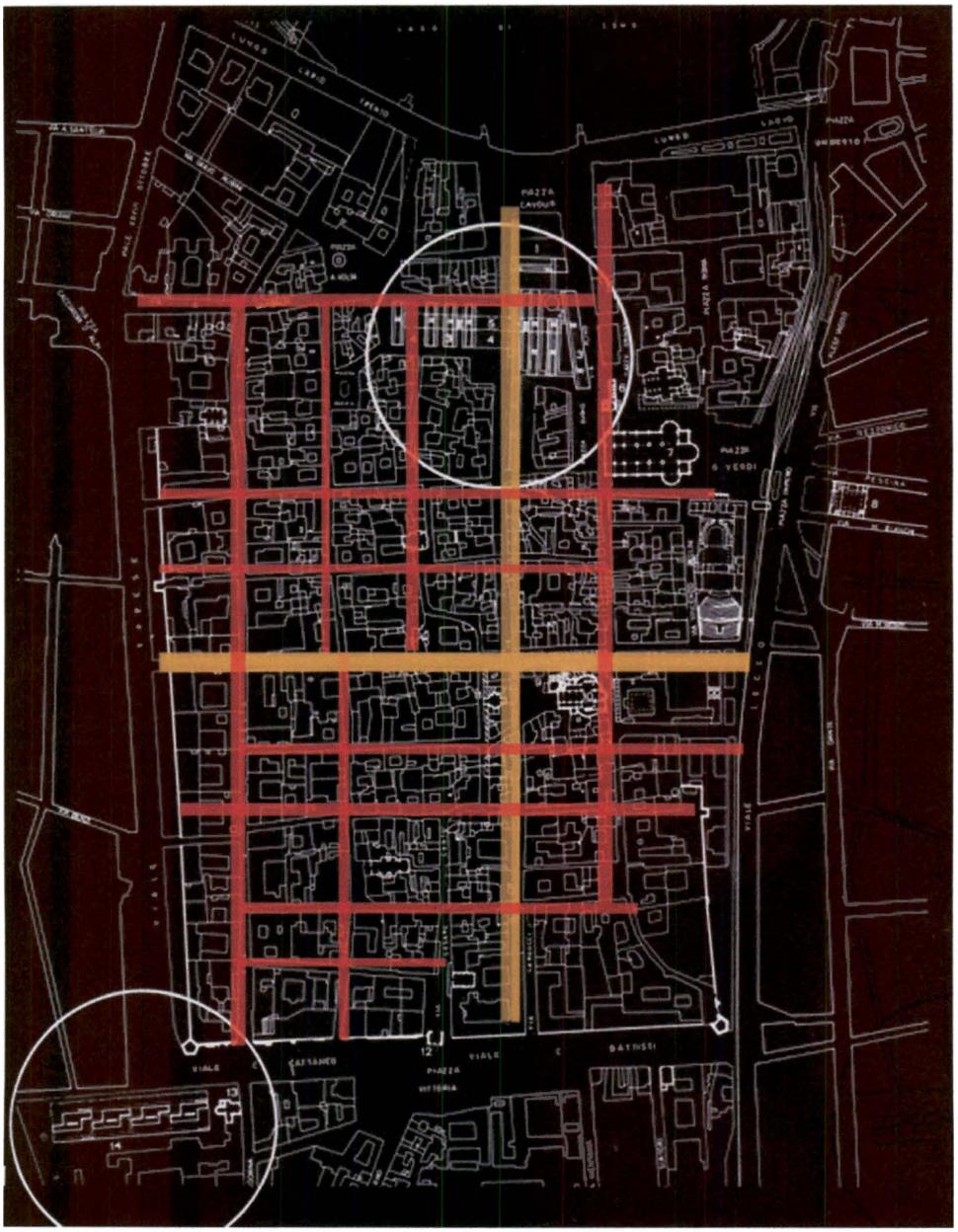


Figure 24. Existing sections of the Roman Grid. The Cardo and Decumanus are indicated in orange and the proposal site, straddling the Cardo, is marked with the top circle.



Figure 25. Original Roman Walls (marked in blue) and Towers (marked in yellow) as they exist today.

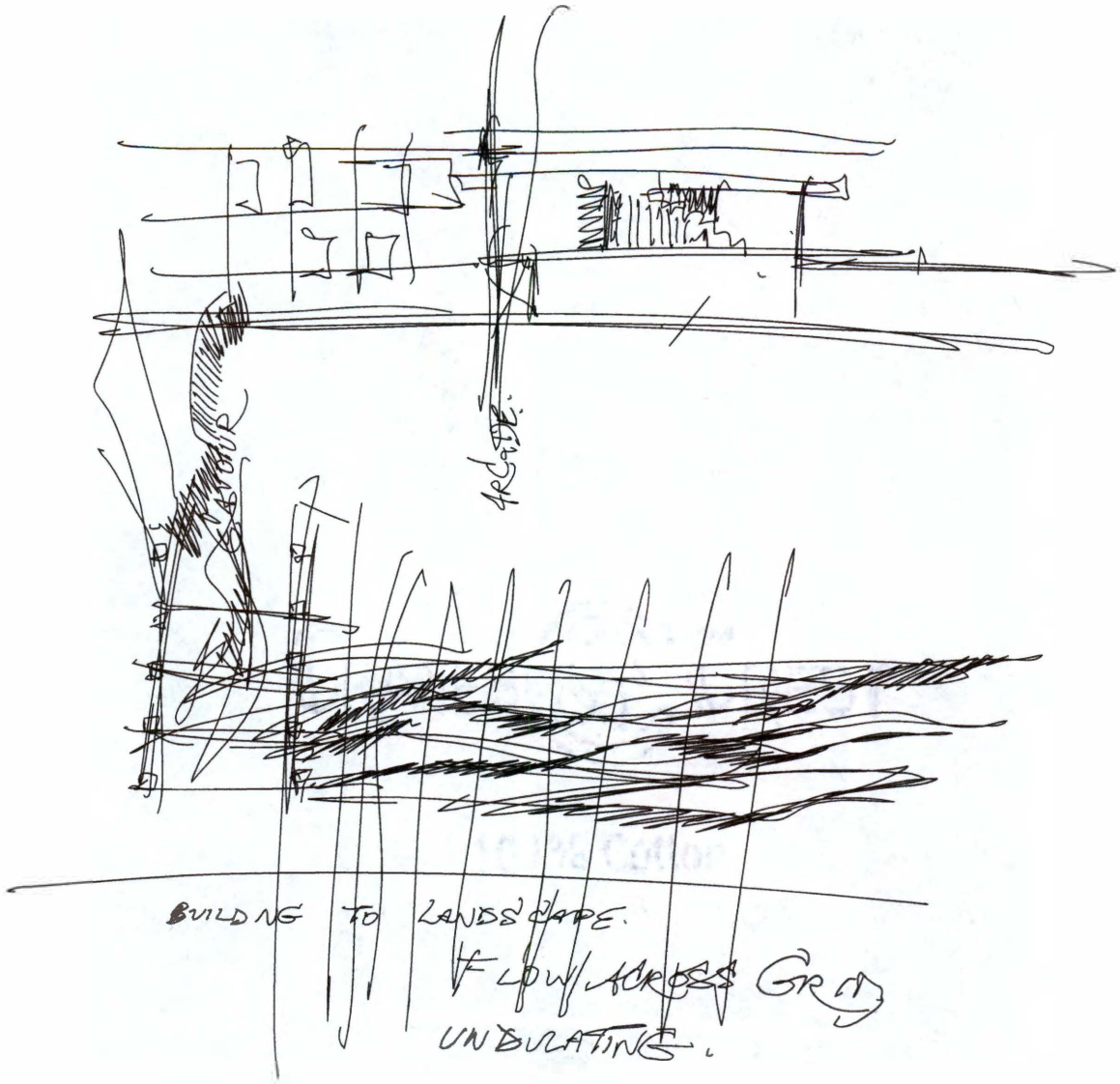


Figure 26. Early Parti Diagrams. The top sectional diagram indicates the horizontal layering of the museum and the bottom plan diagram indicates the flow of the landscape through the museum as it connects the interior and exterior zones of the museum through a dematerialization of the distinction between interior and exterior.

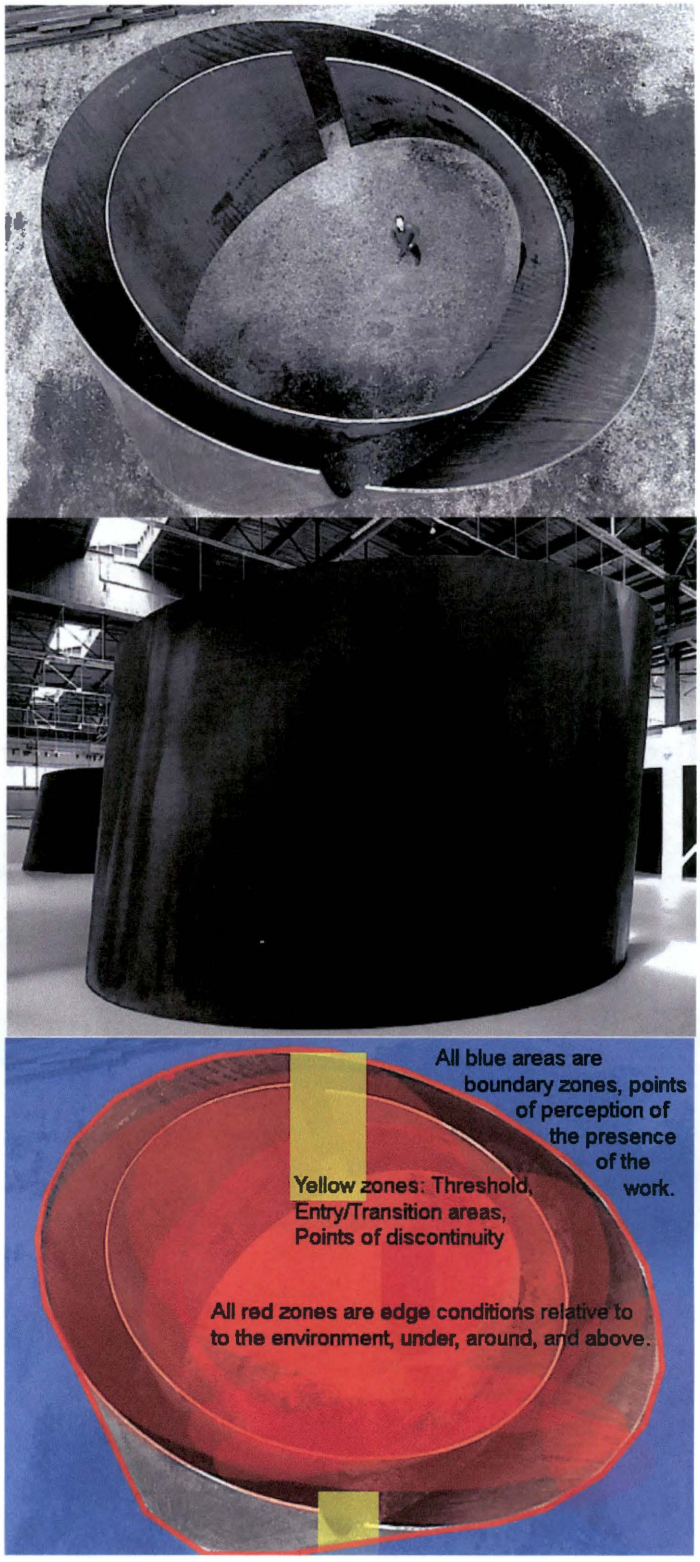
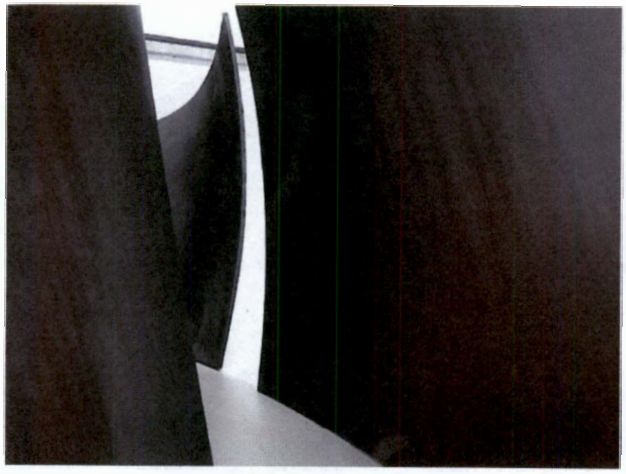


Figure 27 (A, B & C). Richard Serra's Double Torqued Ellipse II, 1998.



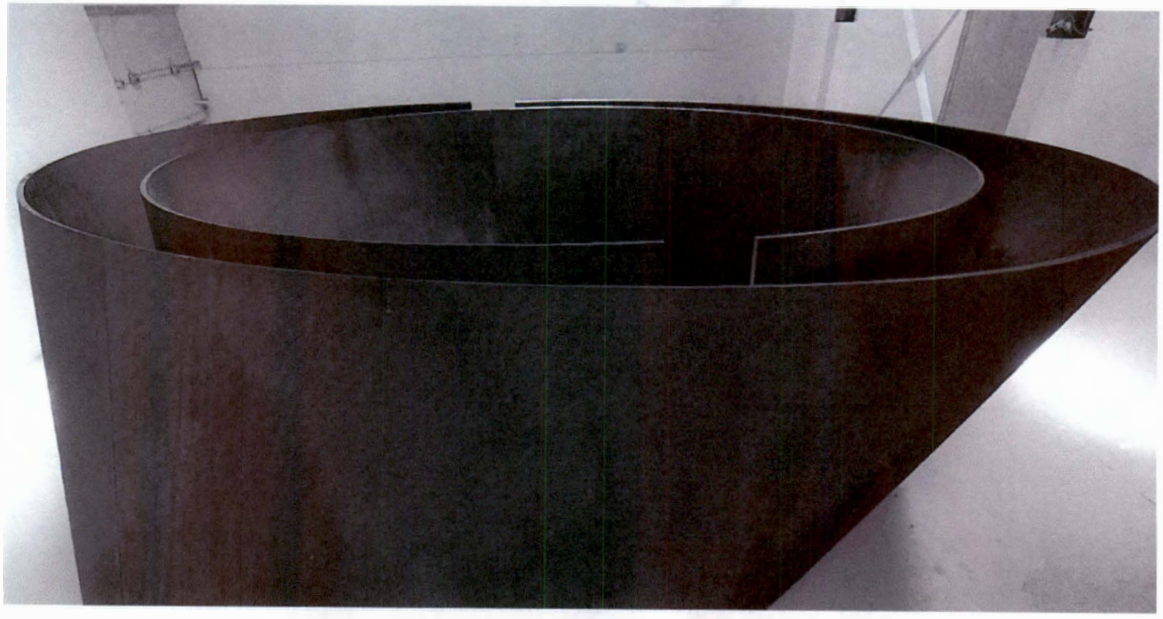


Figure 28 (A & B). Views of Richard Serra's Double Torqued Ellipse II, 1998.

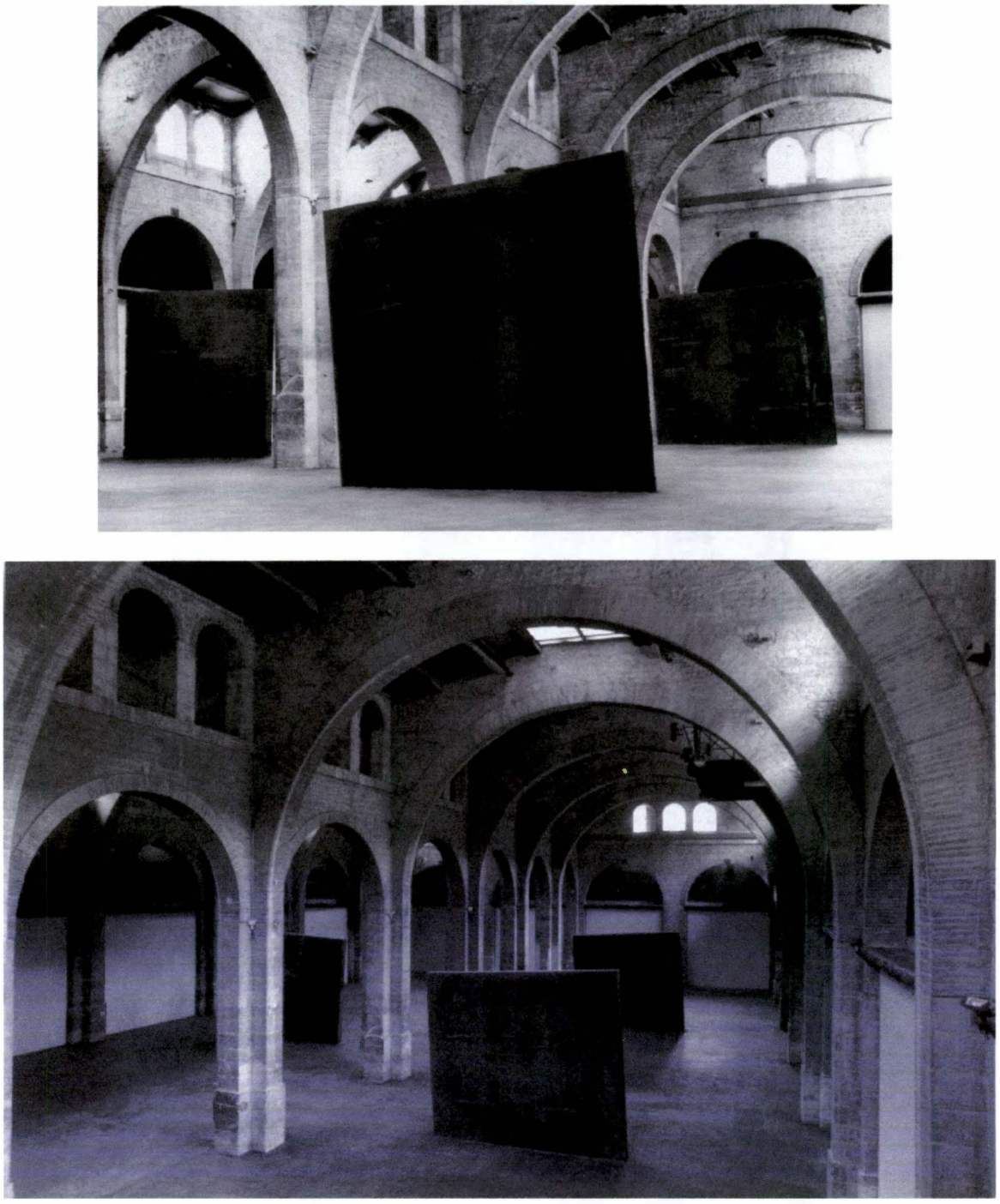
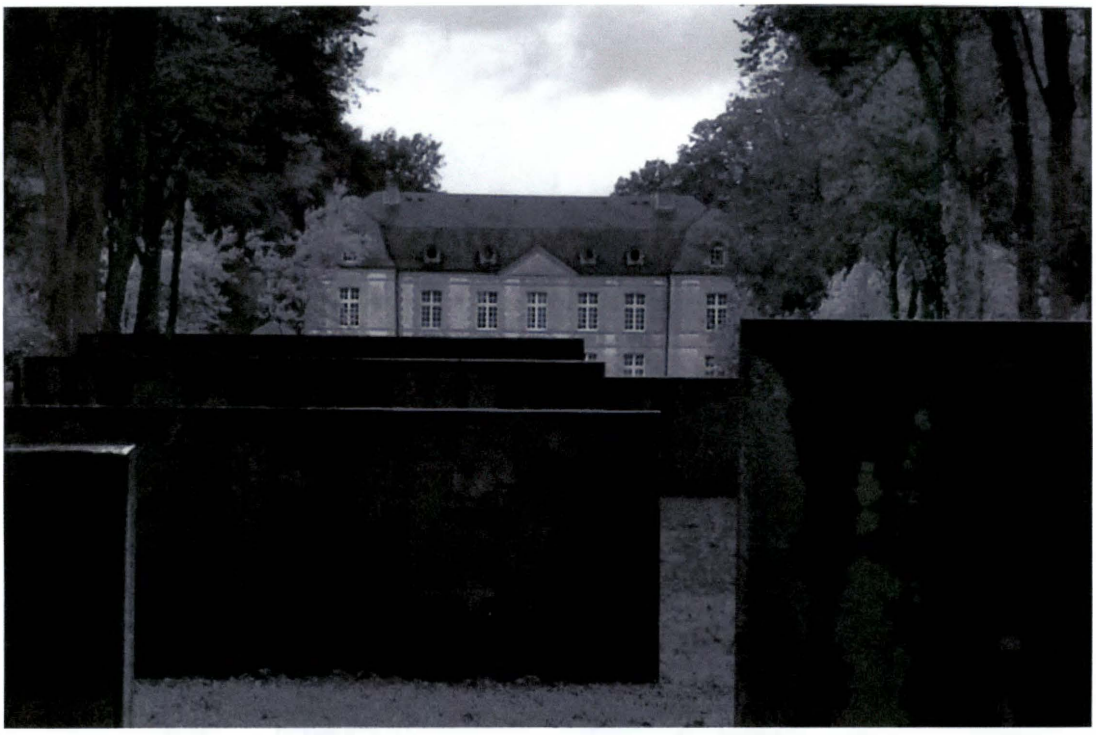


Figure 29 (A & B). Richard Serra's Threats of Hell, 1990. Included as an example of tension with surrounding environment.



Figure 30. Richard Serra's Philibert and Marguerite, 1985 (Two blocks made of forged steel.) Included for their illustration of tension and relationship.



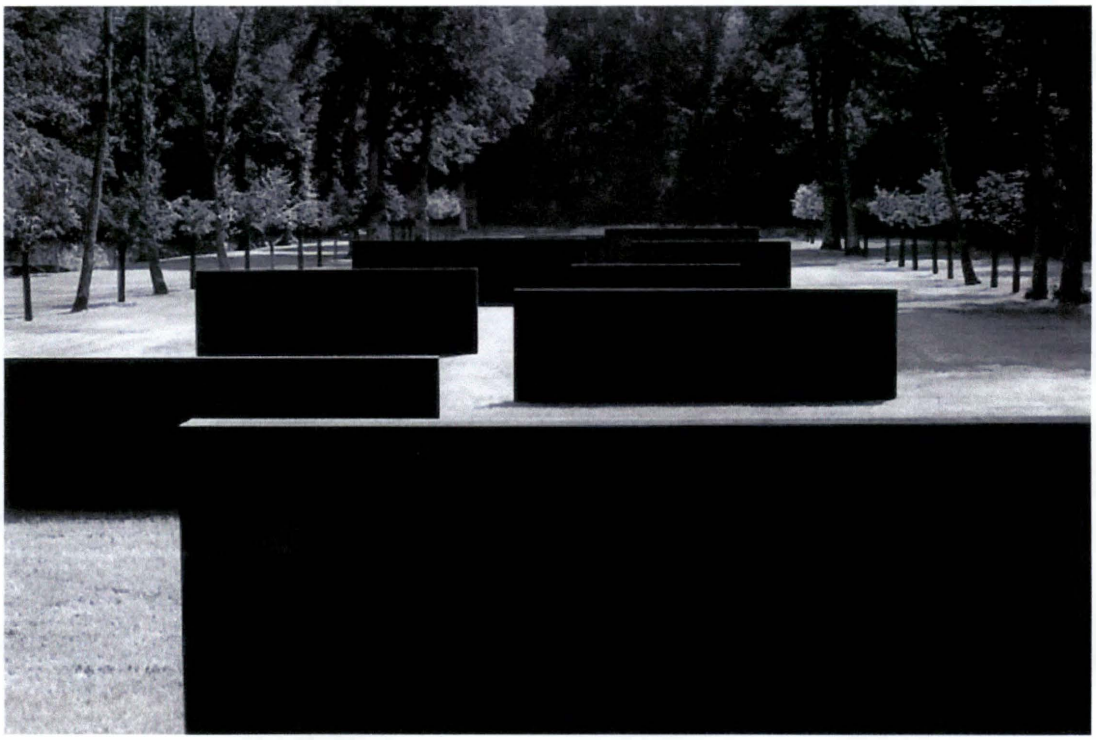


Figure 31 (A & B). Views of Richard Serra's L'Allee de la Mormaire, 1993.

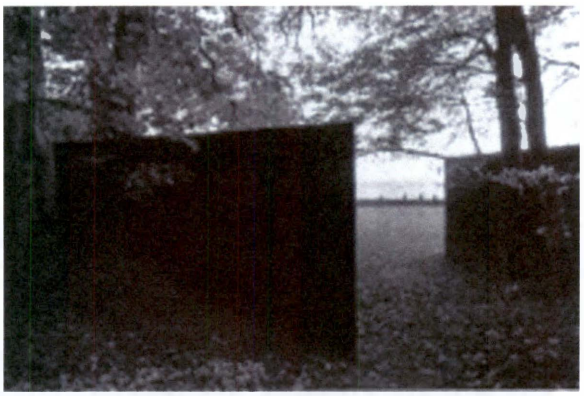




Figure 32 (A & B). Richard Serra's Porten i Slugten, 1938-86. Ravine in the park of the Louisiana Museum of Modern Art, Humlebaek, Denmark.

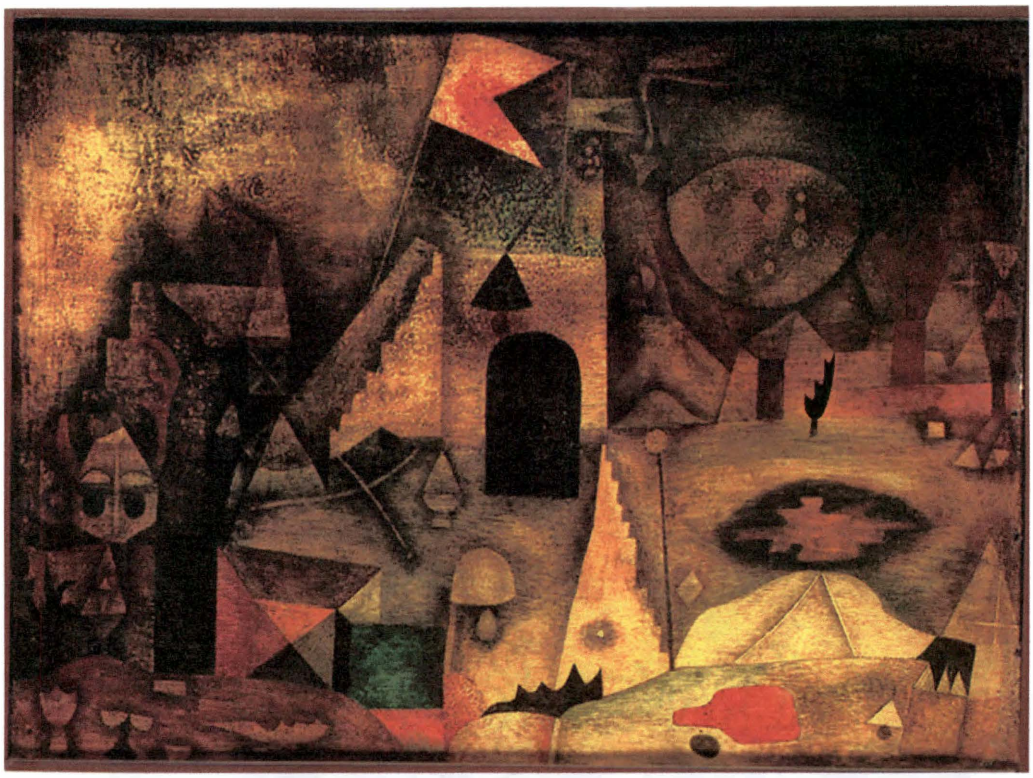


Figure 33. Paul Klee's Romantic Park, 1930.

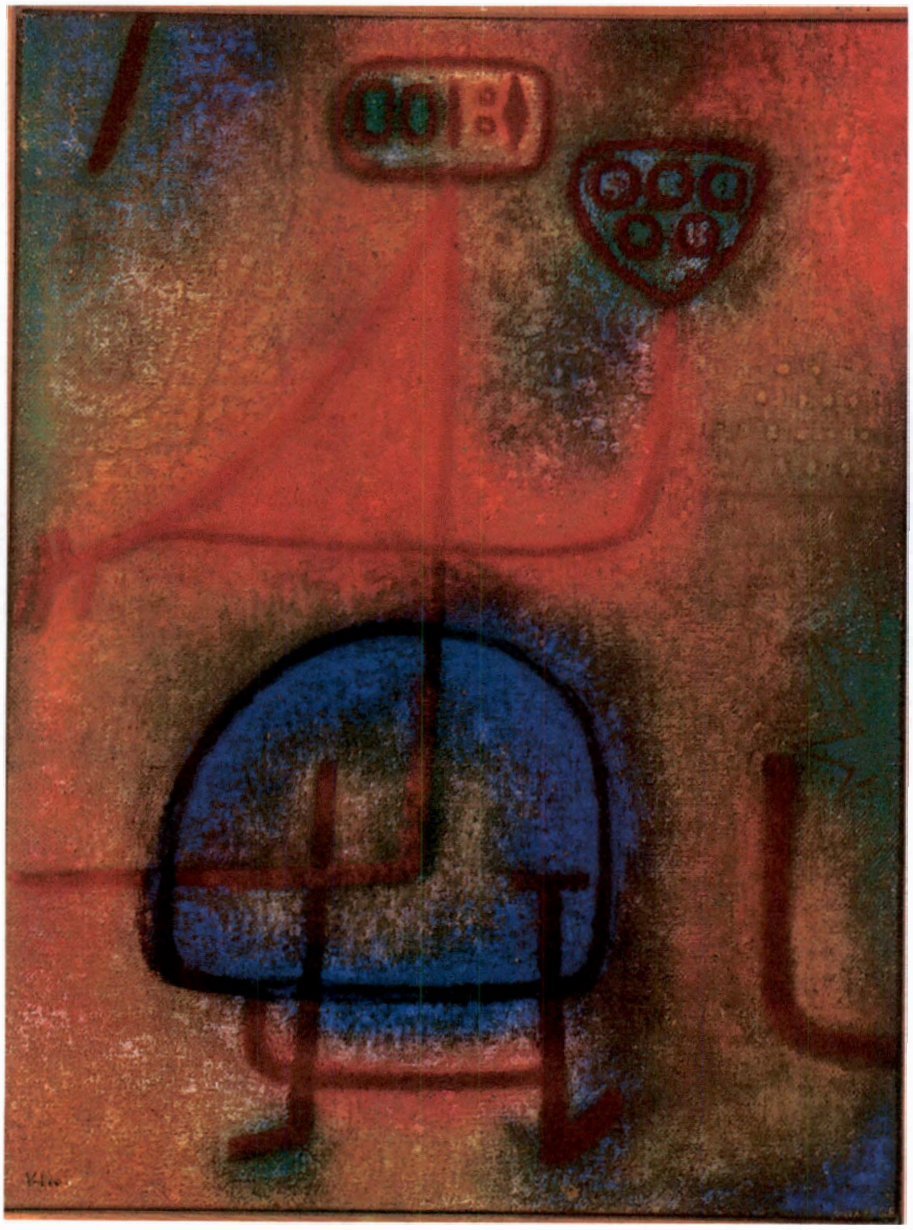


Figure 34. Paul Klee's La Belle Jardiniere (A Biedemeier Ghost), 1939.



Figure 35 (A, B & C, from top to bottom). Paul Klee's With the Eagle (1918), Insula Dulcamara (1938) and Uncomposed in Space (1929).



Figure 36. Joseph Cornell's Portrait, 1955.



Figure 37. Joseph Cornell. Untitled, 1964.

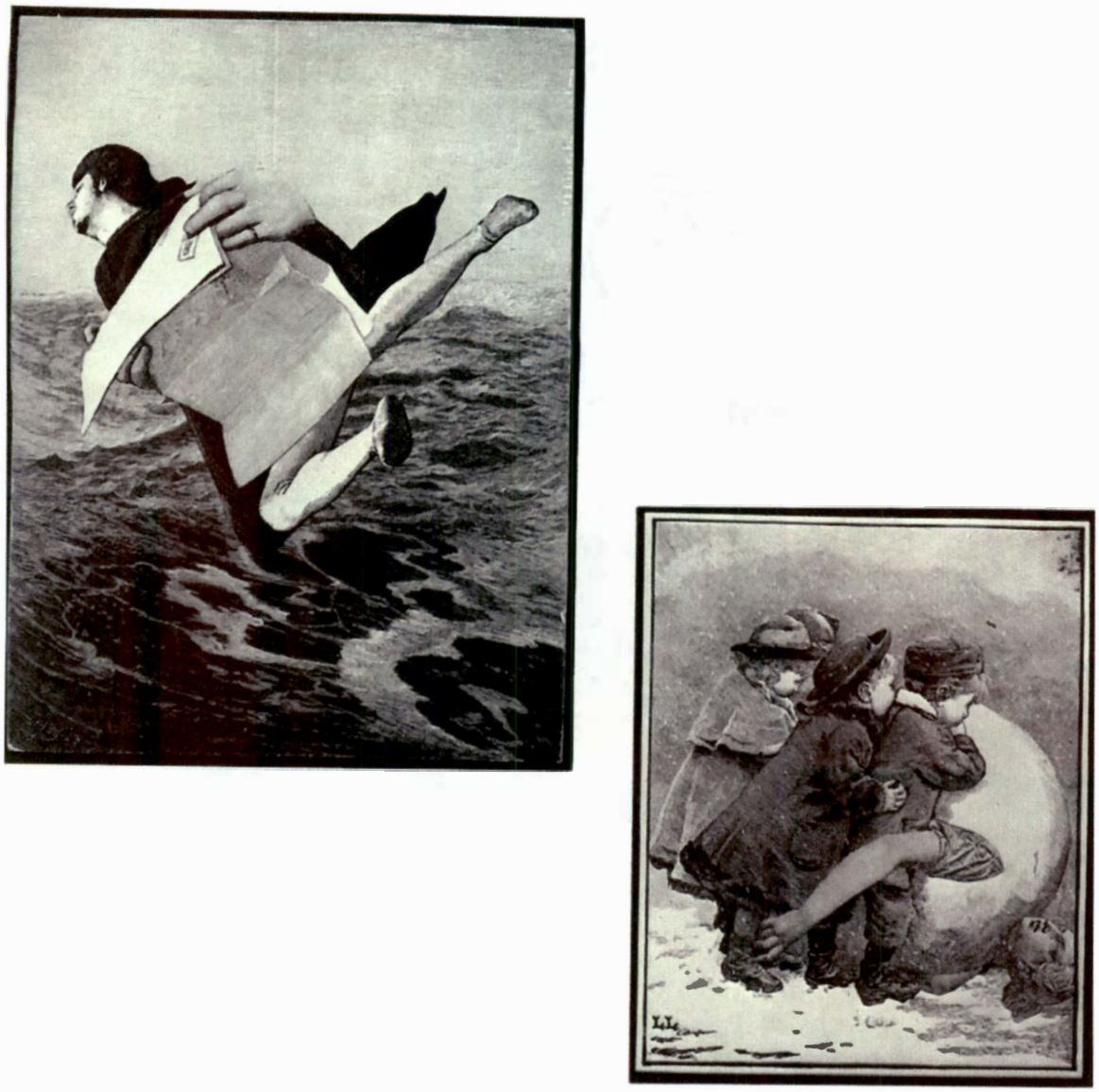


Figure 38 (A & B-left to right). Joseph Cornell. Both untitled, No dates given.

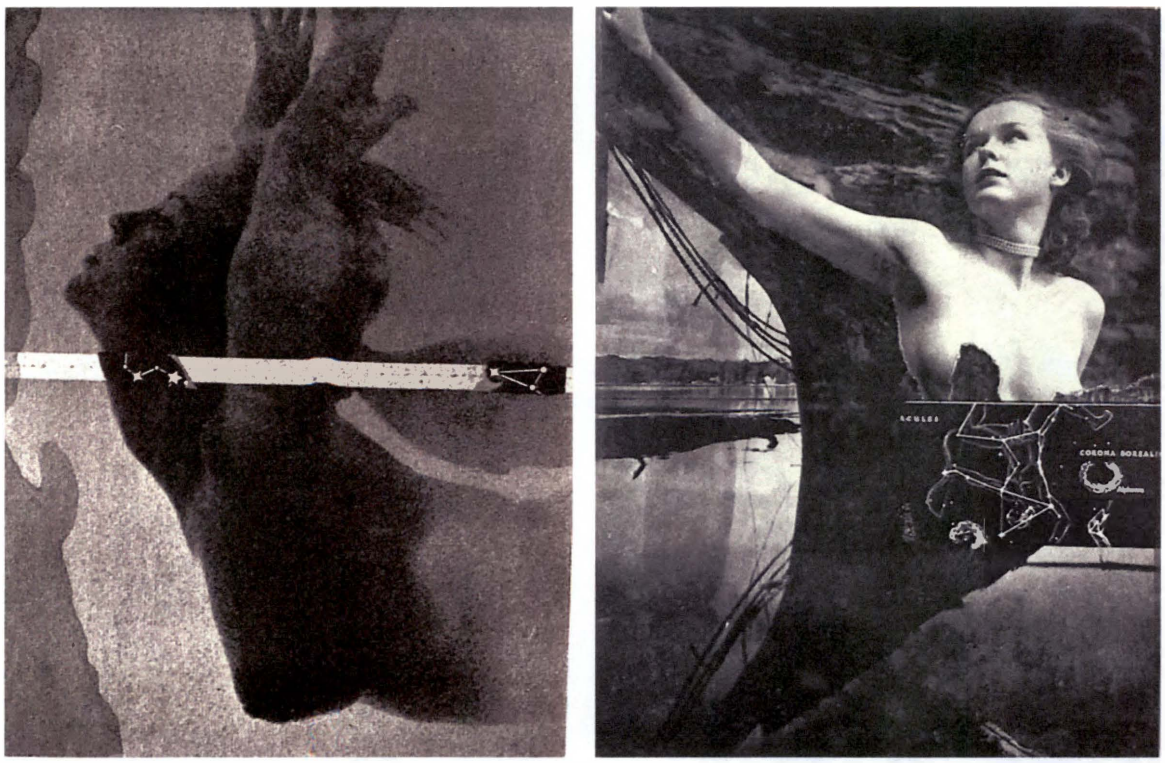


Figure 39. (A & B-left to right). Joseph Cornell. Both untitled, No dates given.





Figure 40 (A & B-left to right). Joseph Cornell. Both untitled, No dates given.



Figure 41 (A & B). Noguchi Garden Museum. Queens, New York. Top image: Sculpted and Natural landscape, Bottom image: Interior and exterior space ambiguity.

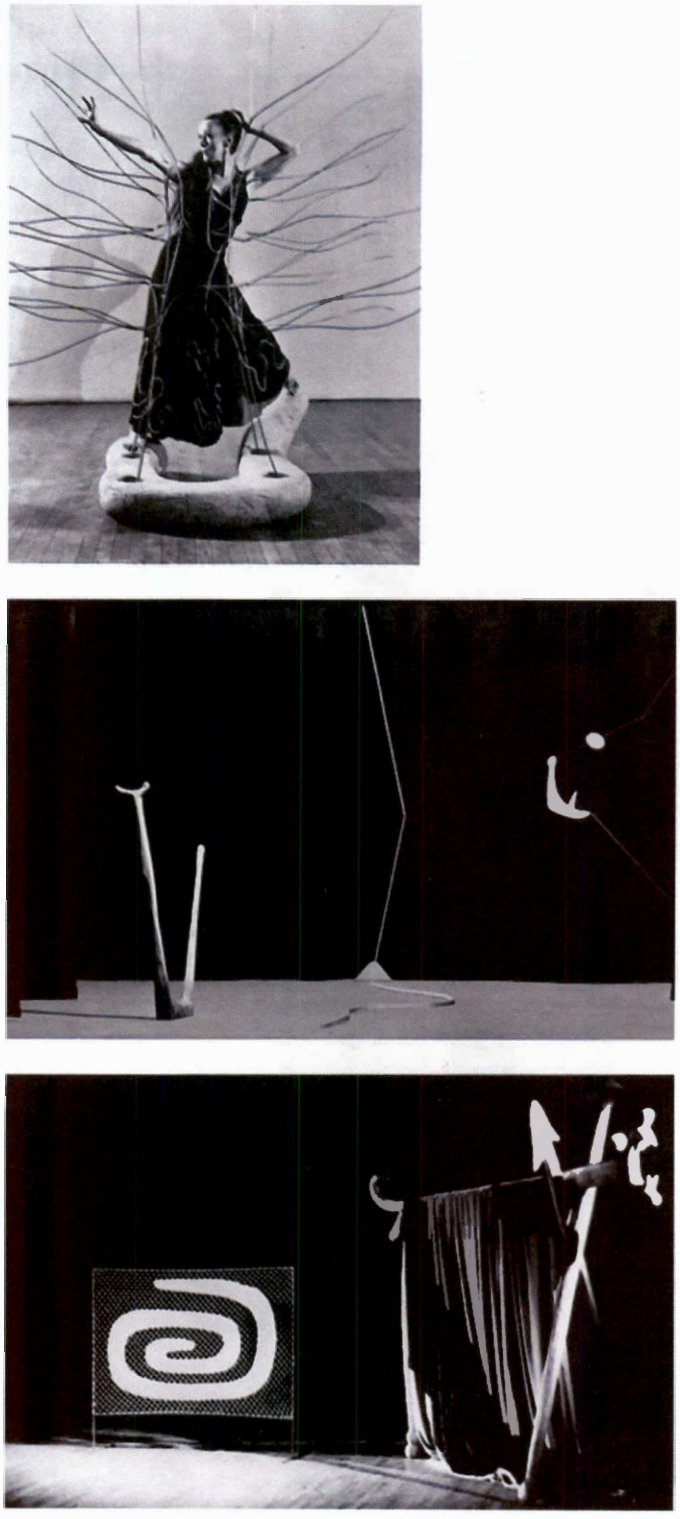


Figure 42 (A, B &C). Isamu Noguichi. Costume and Stage Set Designs for Martha Graham.

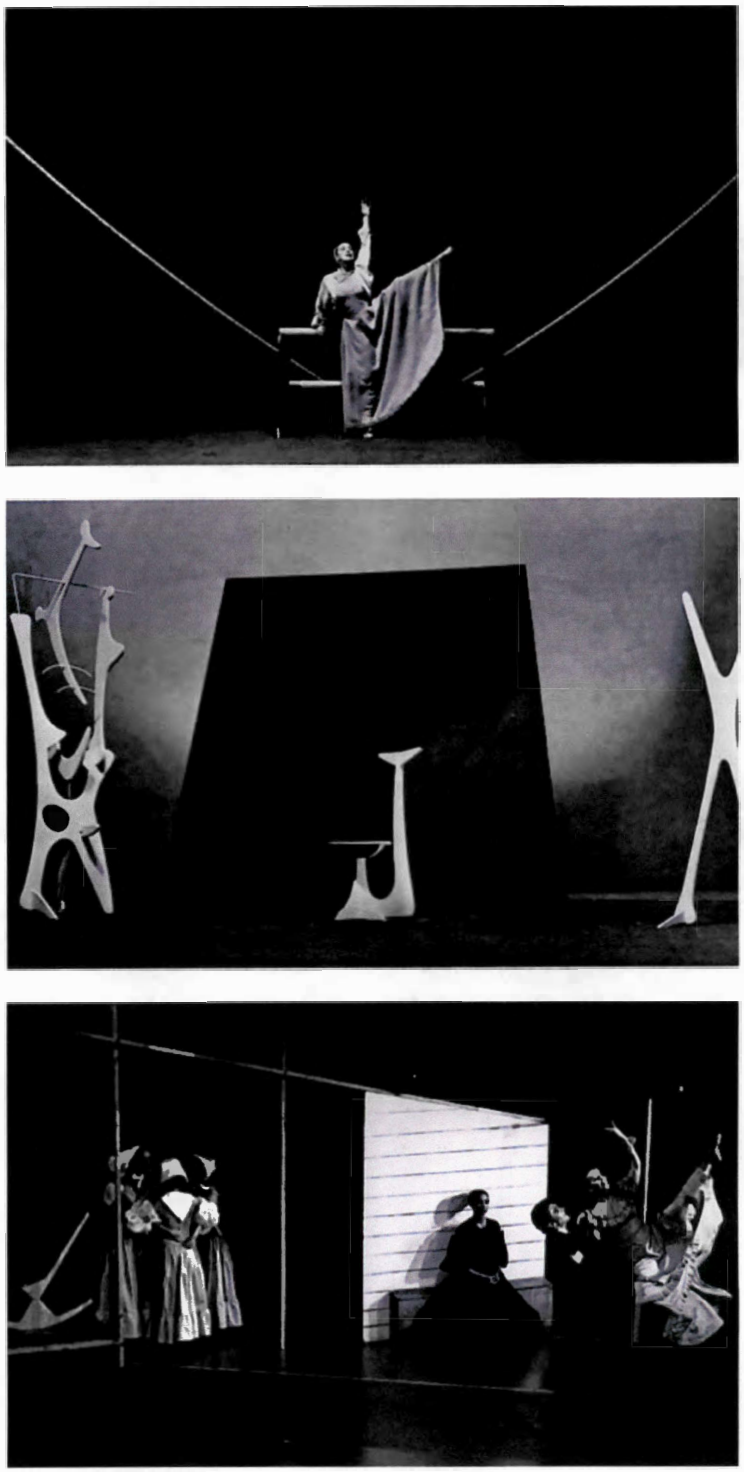


Figure 43. Isamu Noguichi. Stage Set Designs for Martha Graham.

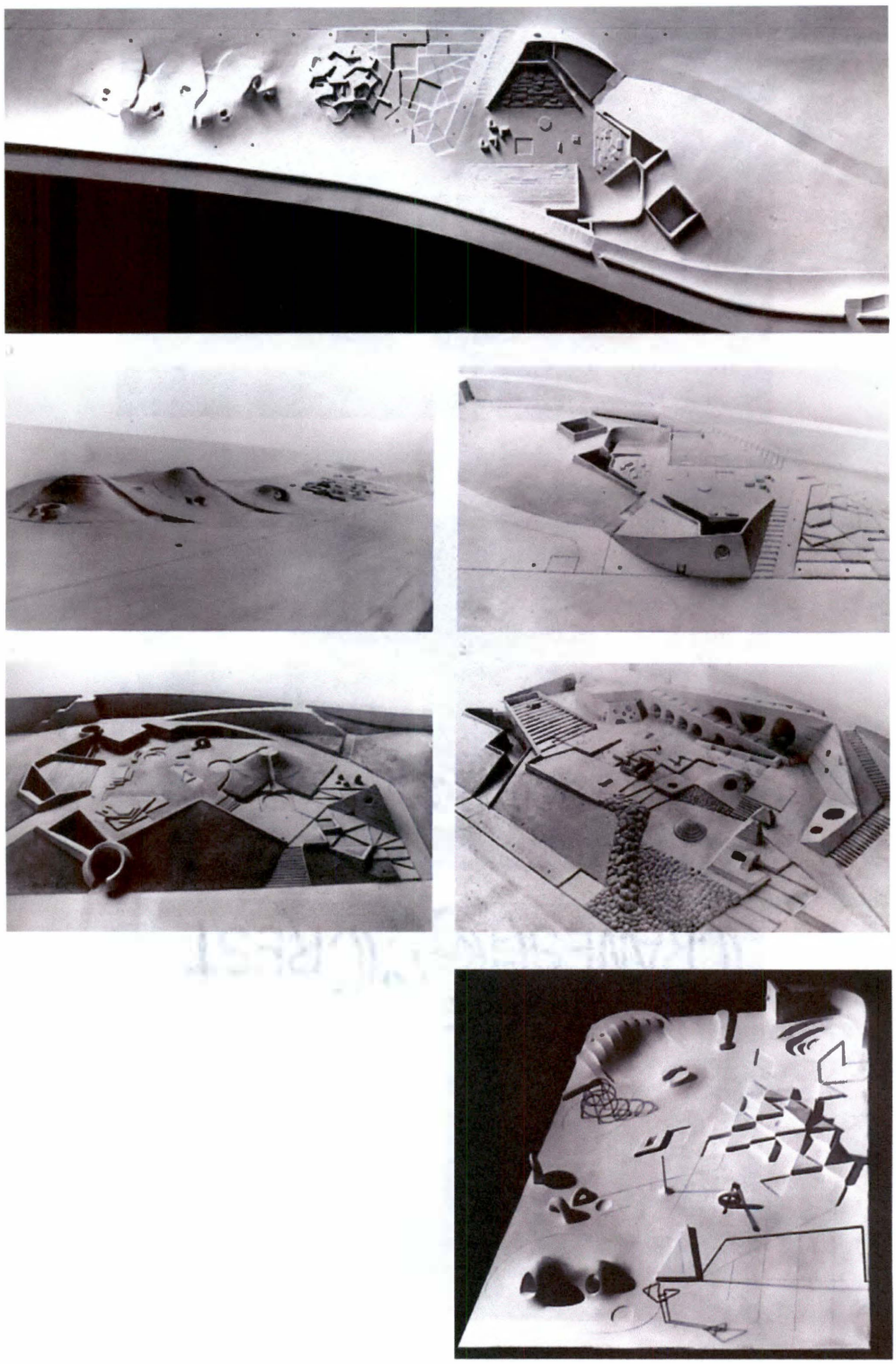


Figure 44 (A-F). Isamu Noguichi. Plaster Models of the Riverside Drive Playground, New York City, 1961-66 (A-E) and the United Nations Playground, 1952 (F).

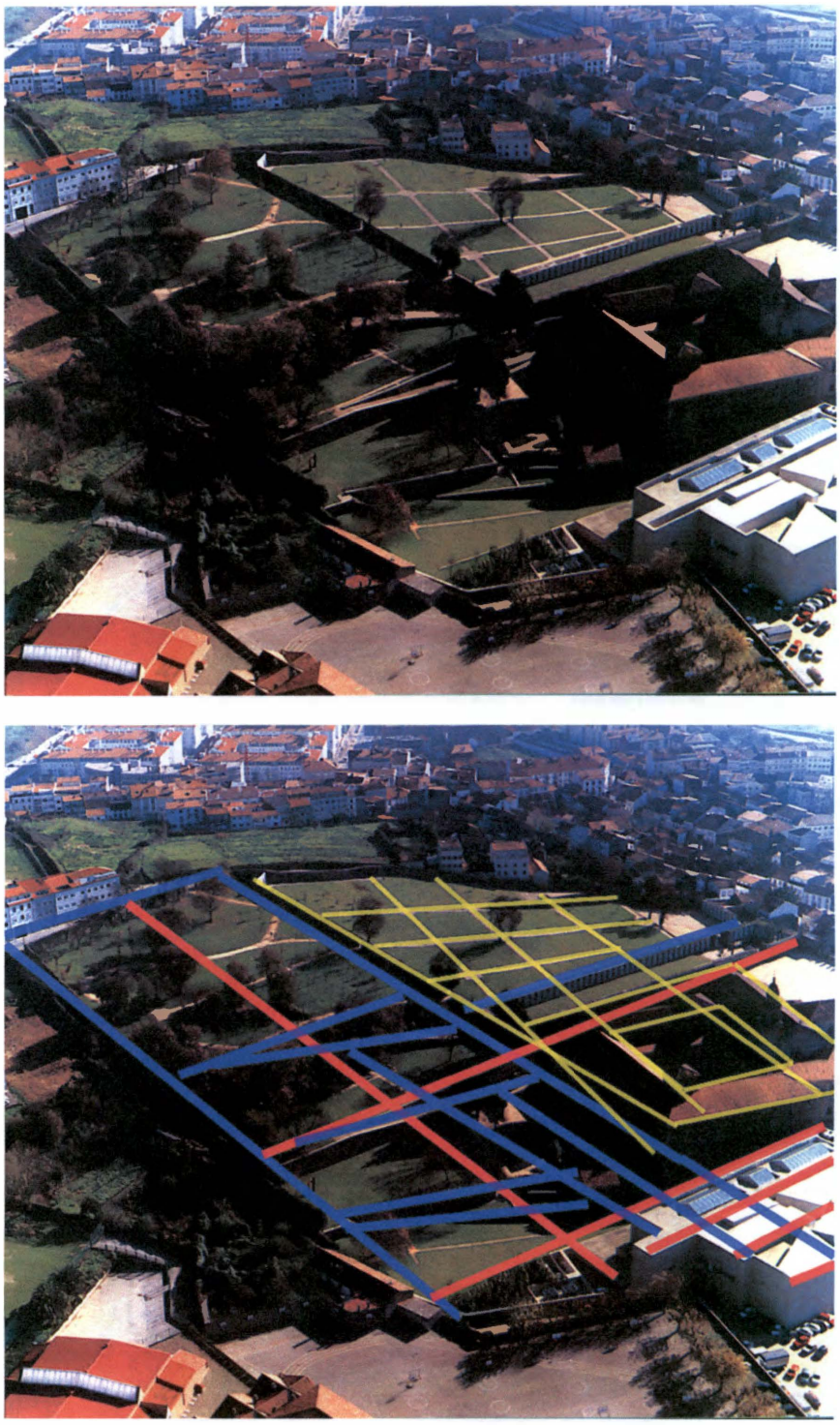


Figure 45 (A &B). The Centro Gallego de Art Contemporaneo, Santiago de Compostela, Spain by Alvaro Siza. Delineations of the Museum and the abbey in relation to one another and to their adjacent gardens.

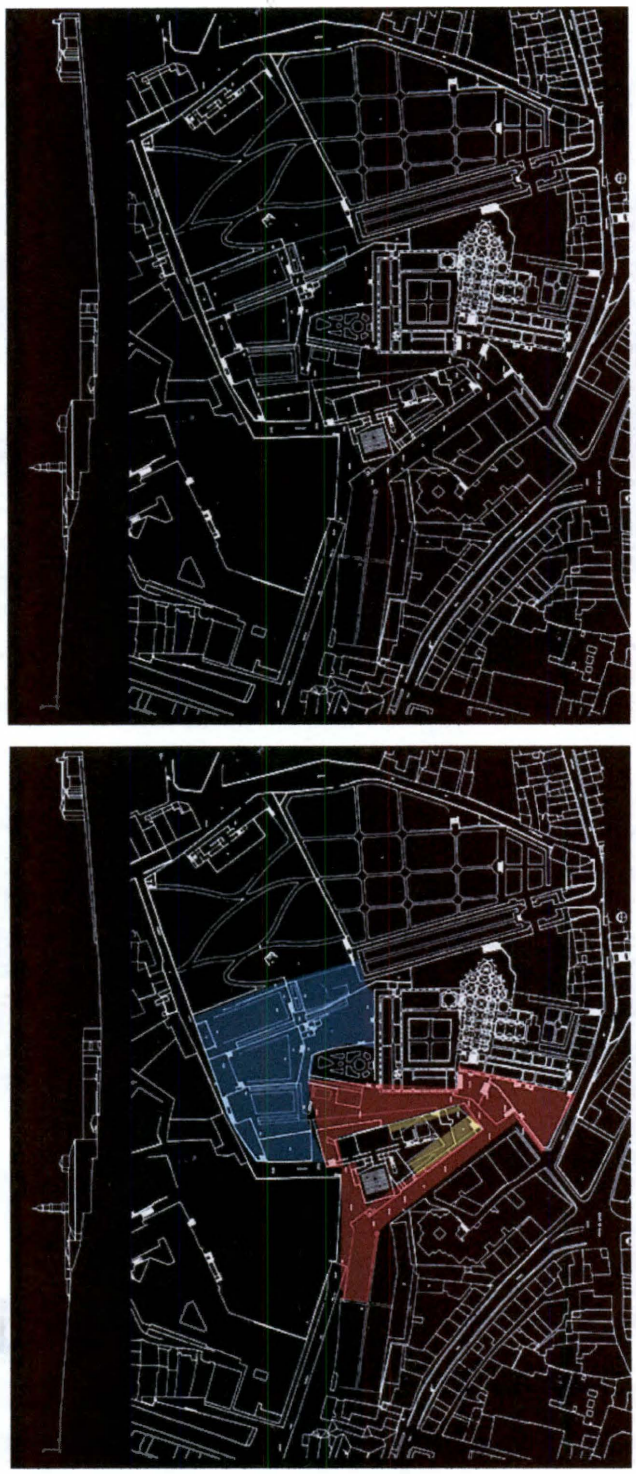


Figure 46 (A &B). The Centro Gallego de Art Contemporaneo, Santiago de Compostela, Spain by Alvaro Siza. The boundaries of the site are indicated in red, the garden in blue and the transition zones in yellow.

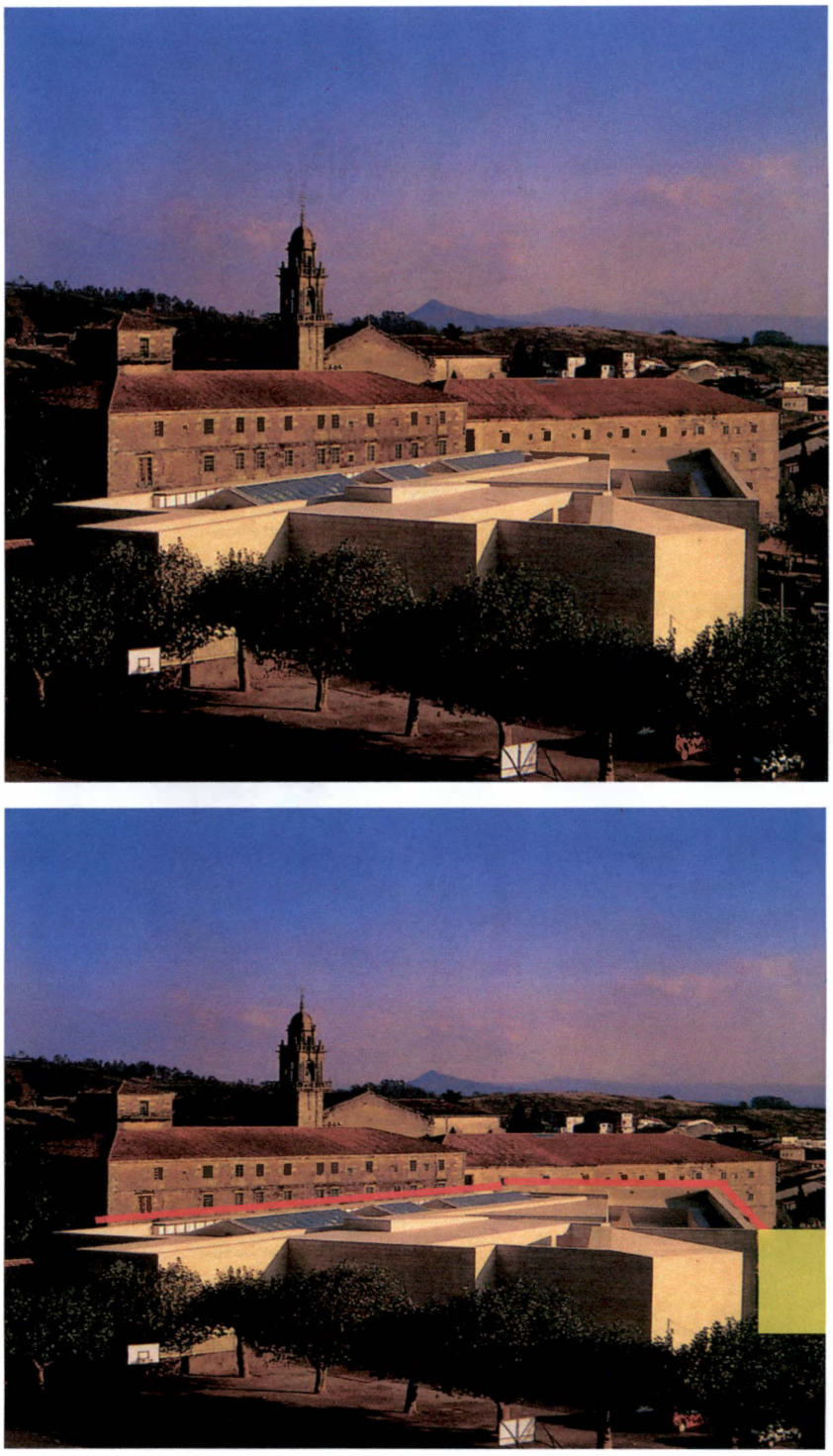


Figure 47 (A &B). The Centro Gallego de Art Contemporaneo, Santiago de Compostela, Spain by Alvaro Siza. The line of tension between the abbey and the museum and the entry transition point of the museum.

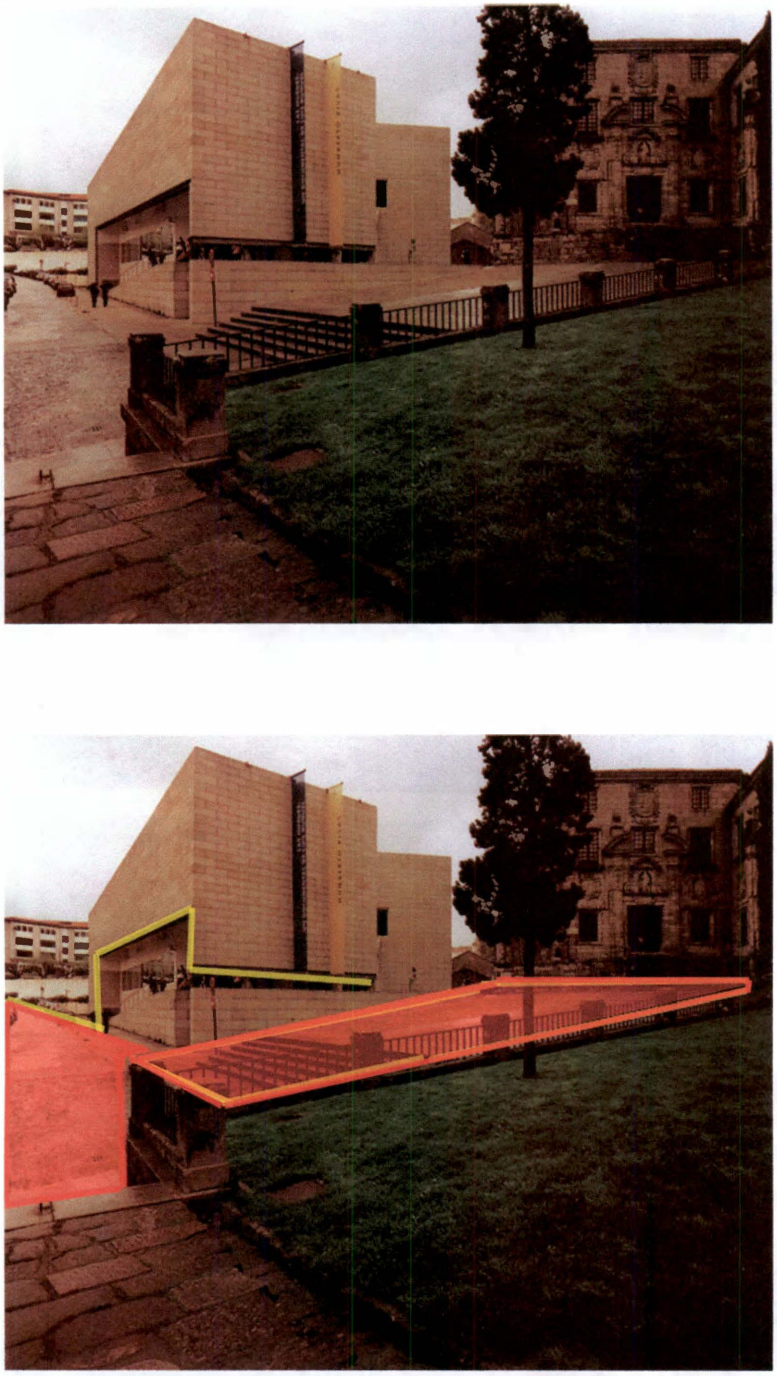


Figure 48 (A &B). The Centro Gallego de Art Contemporaneo, Santiago de Compostela, Spain by Alvaro Siza. Liminal Condition created by the museum entry point and areas of further potential development in the museum's relationship to the abbey.





Figure 49 (A &B). The Centro Gallego de Art Contemporaneo, Santiago de Compostela, Spain by Alvaro Siza. Urban Garden.

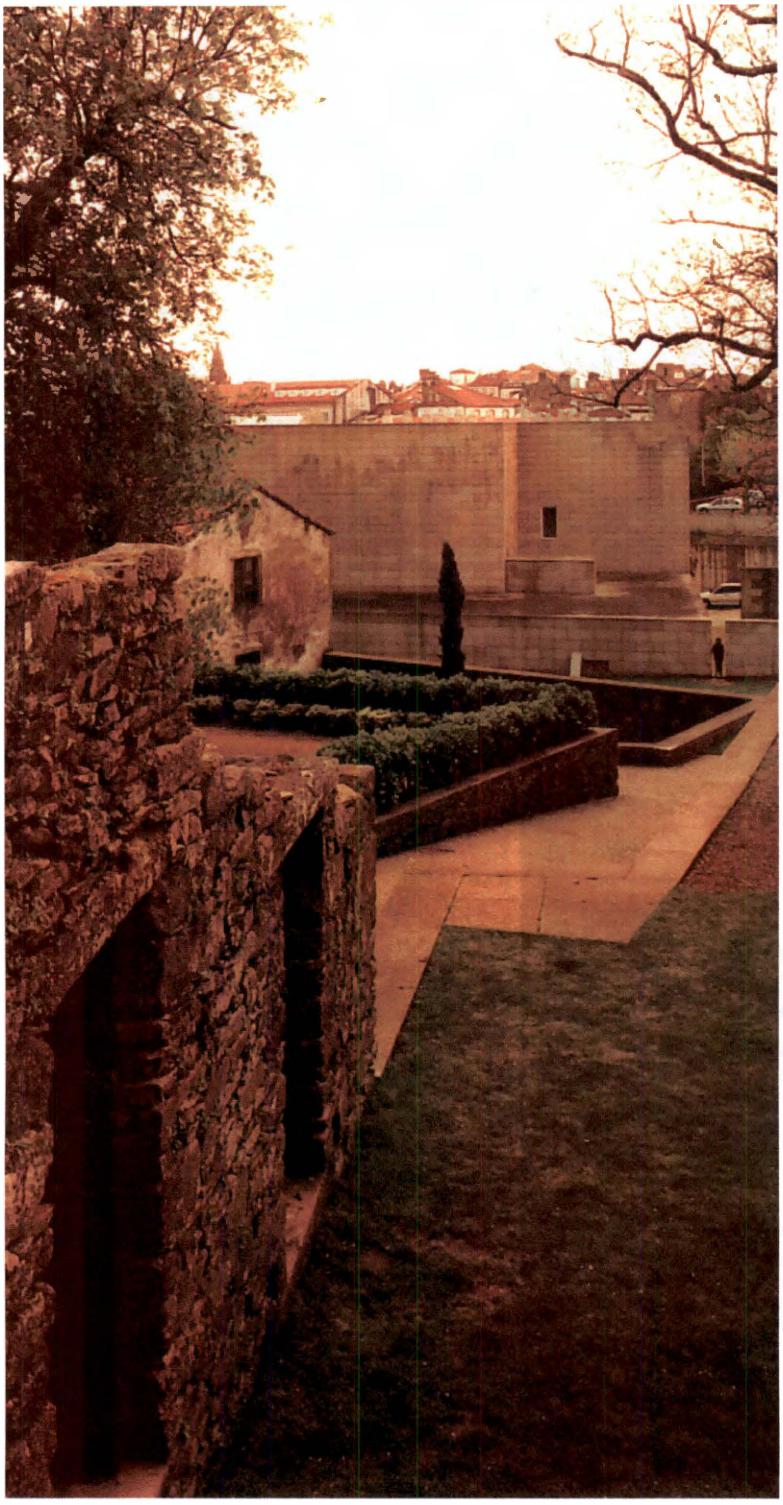


Figure 50 (A &B). The Centro Gallego de Art Contemporaneo, Santiago de Compostela, Spain by Alvaro Siza. Views of Museum from the Urban Garden.



Figure 51 (A-D). The Centro Gallego de Art Contemporaneo, Santiago de Compostela, Spain by Alvaro Siza. The approach street and urban garden boundary to the museum (A & B) and transition points sites from the urban garden (C & D).



Figure 52 (A &B). The Centro Gallego de Art Contemporaneo, Santiago de Compostela, Spain by Alvaro Siza. The Liminal Zone at the entry to the museum.

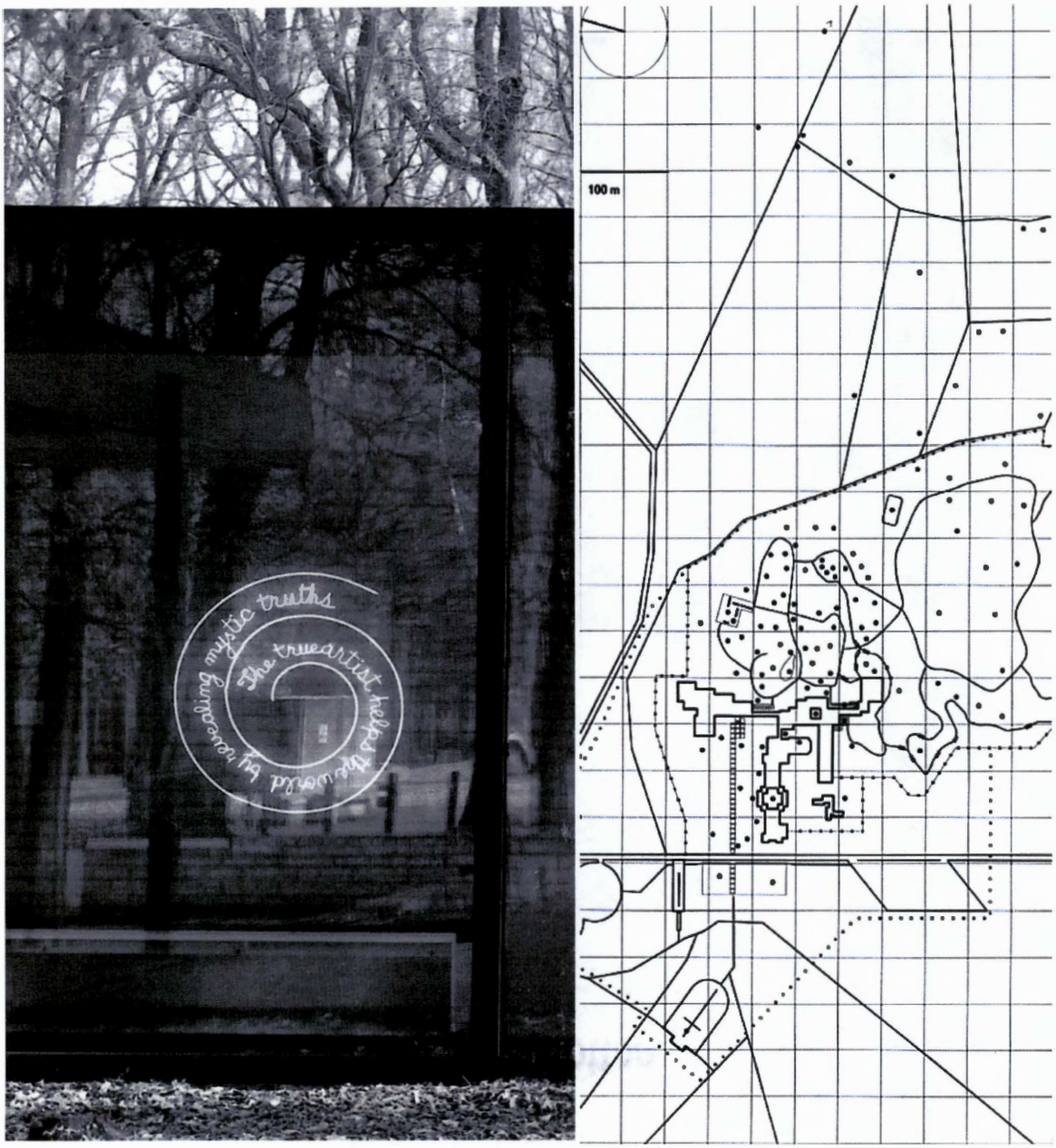


Figure 53 (A & B). The Kroller-Muller main museum by Van de Velde and its 1930 plan.

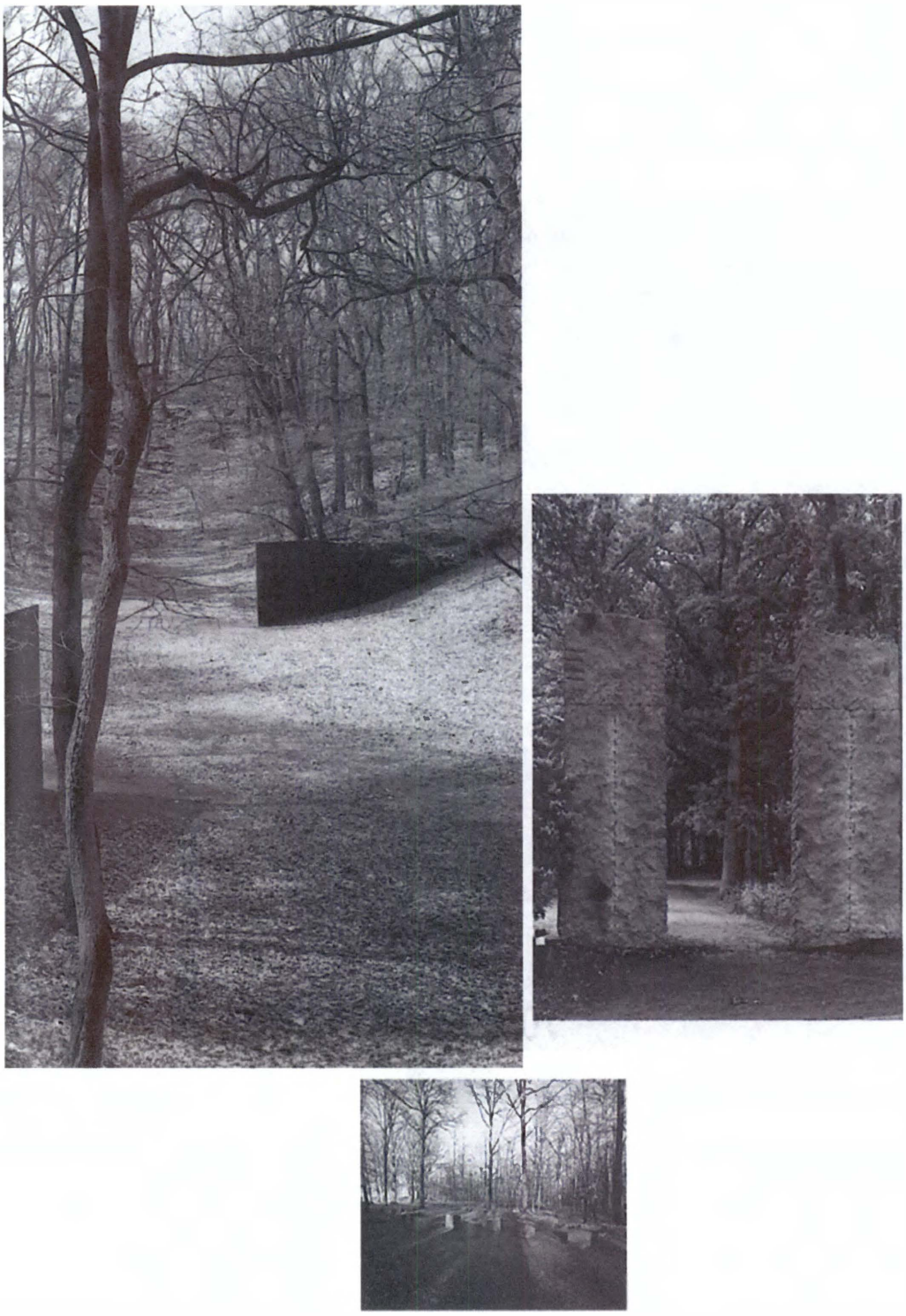


Figure 54 (A-C). Spin Out by Richard Serra (A), Untitled by Ulrich Ruckreim (B) and Composition on a Plane by Shamai Haber, all in the Kroller-Muller sculpture gardens.



Figure 55. Tadao Ando's Naoshima Museum, Naoshima Island, Japan. Integration between interior spaces and exterior gardens.

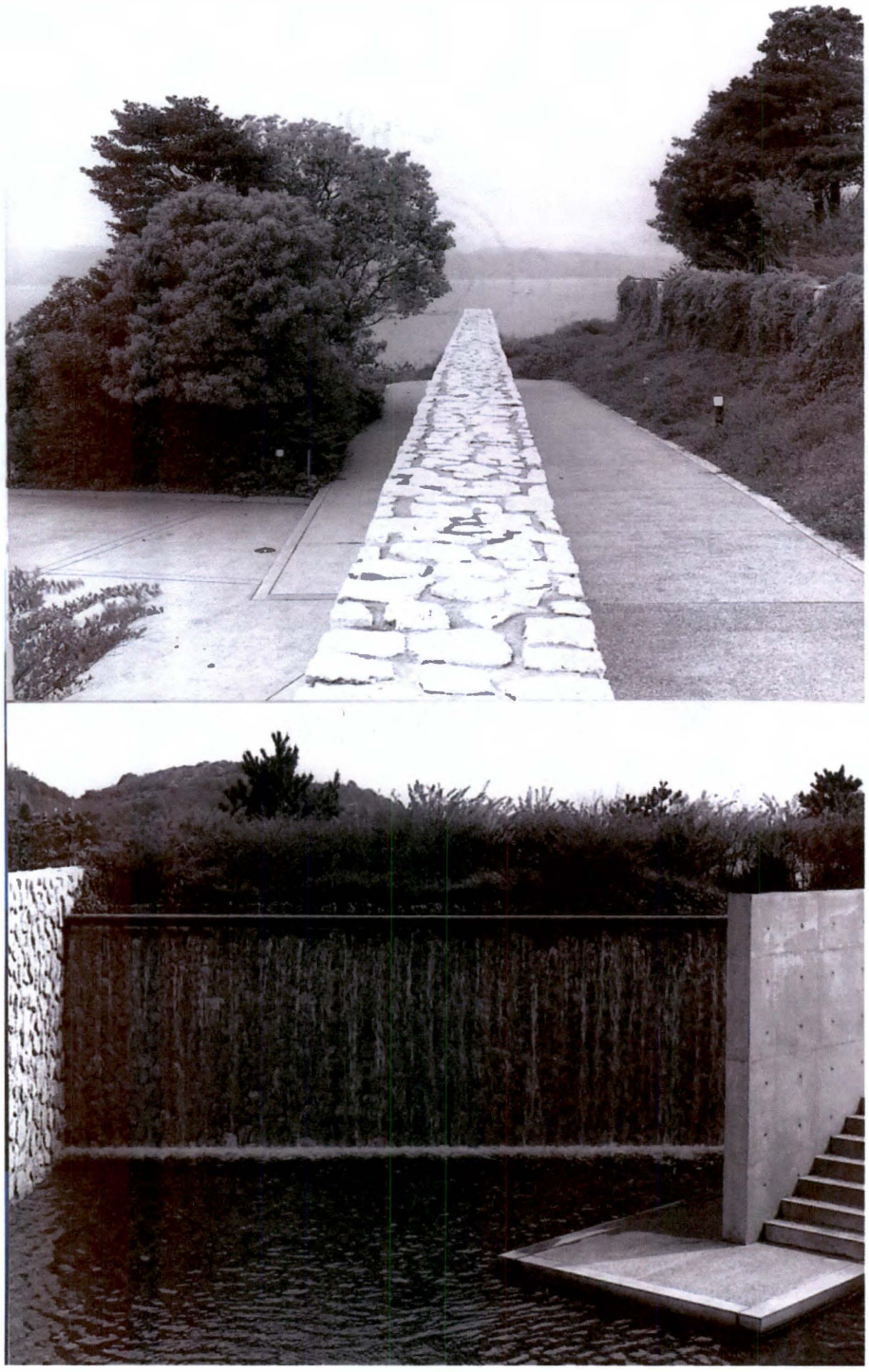


Figure 56 (A & B). Tadao Ando's Naoshima Museum, Naoshima Island, Japan. Relationship between built and natural environments.

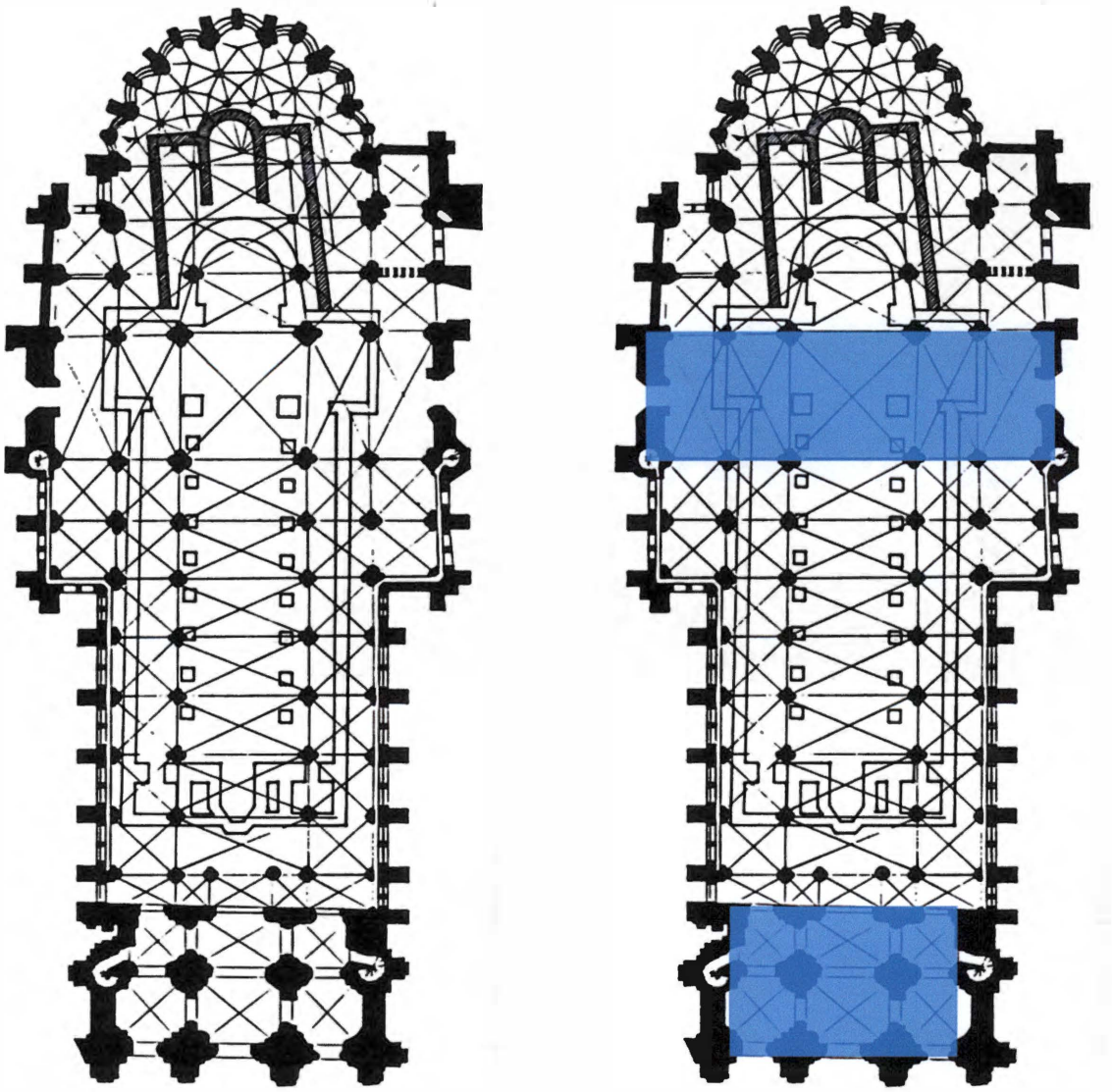


Figure 57. Liminal Spaces in the Abbey of St. Denis.

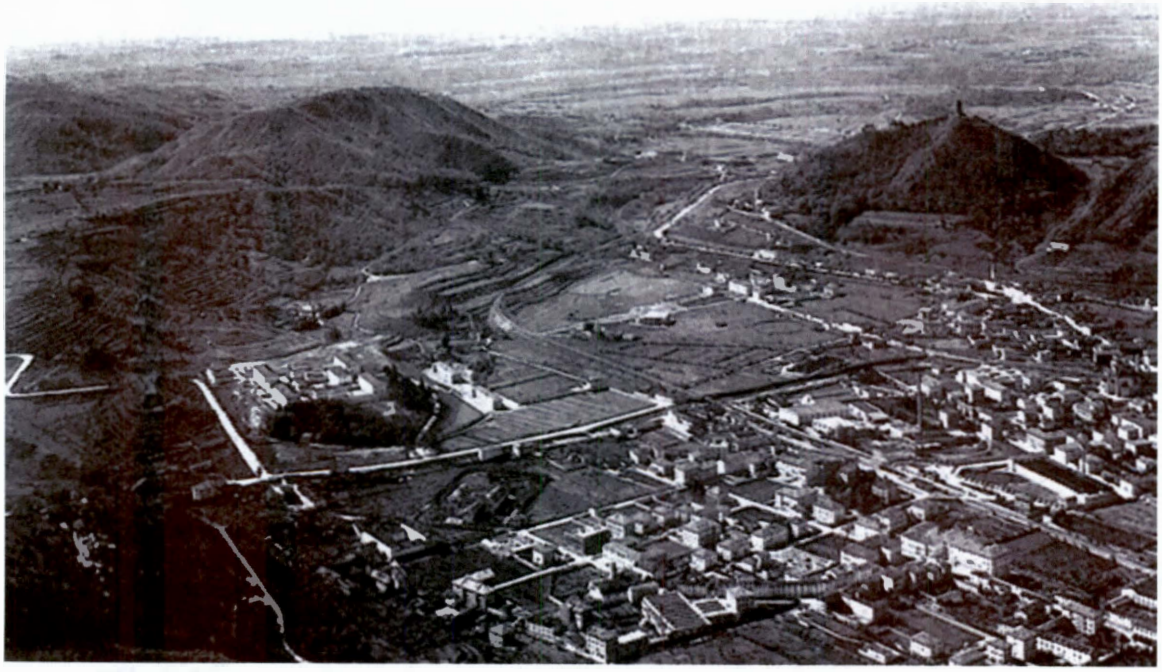


Figure 58. Southern Como (from Brunate), late 19th Century.



Figure 59. Silk Industry Buildings from the West side of Como (Lago di Como in the distance), Late 19th Century.



REGNO D'ITALIA

MUNICIPIO
DELLA CITTA' DI COMO

INSTITUZIONE ED APERTURA
DELLA
SCUOLA COMUNALE DI SETIFICIO

Intento sempre a promuovere ed incoraggiare ogni opera che giovar possa al lustro ed al miglior benessere materiale e morale di questa Città, il Consiglio Comunale, sorretto in questa bisogna anche dal generoso concorso della locale Camera di Commercio, ha con unanime voto deliberato l'istituzione d'una

SCUOLA COMUNALE DI SETIFICIO

L'industria del Setificio tenne sempre fra noi una speciale importanza sia per la copia, sia per la perfezione dei tessuti manifatti, che le nostre fabbriche lasciarono all'estero; e niuno v'ha che non sia in oggi convinto dell'assoluta necessità di adoperare, con ogni mezzo, a tener alta quest'industria ch'è la principalissima fonte della prosperità Comense.

Lieto pertanto che siasi fatta l'opportunità di situare un istituzione la quale, favorendo, coll'educazione morale ed intellettuale il miglior incremento dell'istruzione tecnica dell'operaio, tenda in definitiva all'eminente scopo di ottenere che operaj e fabbricatori possano in breve volgere di tempo fare una prodiera concorrenza ai prodotti degli industriali stranieri, il Municipio porta con piacere a pubblica notizia che l'apertura dell'instituita Scuola Comunale di Setificio sarà effettuata il giorno di Domenica 5 ventura Aprile in apposite sale dell'ex Convento di S. Antonio fuori di porta Portello. E dovendo in oggi al prescritto Manifesto le condizioni ed i requisiti che si richiedono per essere ammessi alla Scuola di Setificio, il Municipio ha bisogno di vedere numeroso il concorso degli aspiranti a quello speciale importantissimo ramo d'istruzione, dal cui progressivo sviluppo noi non possiamo che attenderci i più fecondi risultati.

Como, dal Civico Palazzo il 18 Marzo 1868.

Il Sindaco
G. SILLO

Il Segr. G. Cavalleone.

Gli aspiranti ad essere ammessi alla suddetta Scuola dovranno presentare, prima del giorno 31 corrente marzo istanza in carta bollata all'apposita Commissione di Vigilanza presso suo Civico Palazzo, corredandola dei documenti comprovanti:

1° L'età d'anni 13 compiuti
2° Di avere percorso ordinatamente gli studi elementari.
3° Di essere frequentato effettivamente per un anno almeno una manifattura di seta.
4° Di avere la necessaria attitudine alle manifatture seriche. Un tale certificato potrà essere rilasciato dal proprietario o dal Direttore della Fabbrica frequentata dall'aspirante.



REGNO D'ITALIA

MUNICIPIO DELLA CITTÀ DI COMO

CONCITTADINI!

Dimani, verso le ore 4 pom. arriveranno in questa città, per la via del lago, i Membri Nazionali e Stranieri che prendono parte al Congresso Geologico ora aperto in Milano.

Il vostro Municipio, d'accordo colla Camera di Commercio, ha disposto, al fine di onorare la loro venuta fra noi, una piccola Mostra di stoffe seriche nel locale della Civica Biblioteca: ma in pari tempo confida nella vostra cortesia per quelle dimostrazioni di stima e di cordialità ben dovute a persone che tanto si interessano al progresso delle allevamento dei bachi, che sono il principale fondamento della nostra ricchezza.

Como, 23 Settembre 1875.

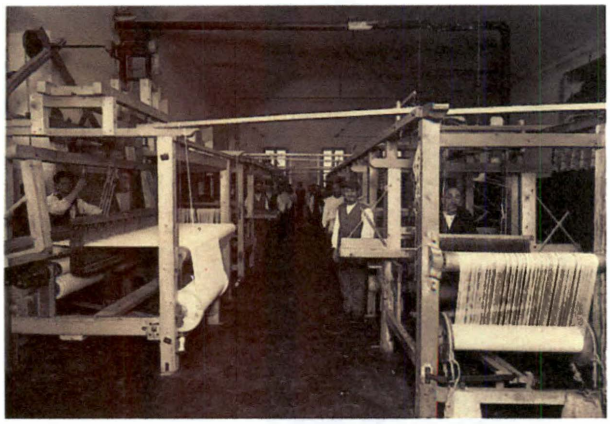
Il Sindaco
Dott. G. BRAMBILLA



Figure 60 (A-D). Silk Industry images and documents from late 19th Century Como.



Figure 61 (A-D). Photos from the late 19th Century of Como's silk industry.







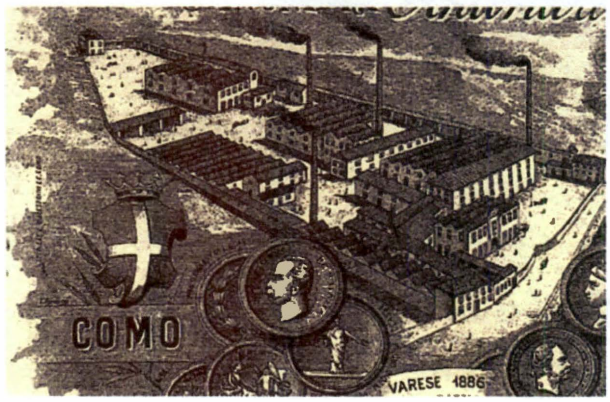


Figure 62 (A-D). Images from the silk industry of Como from the late 19th Century.

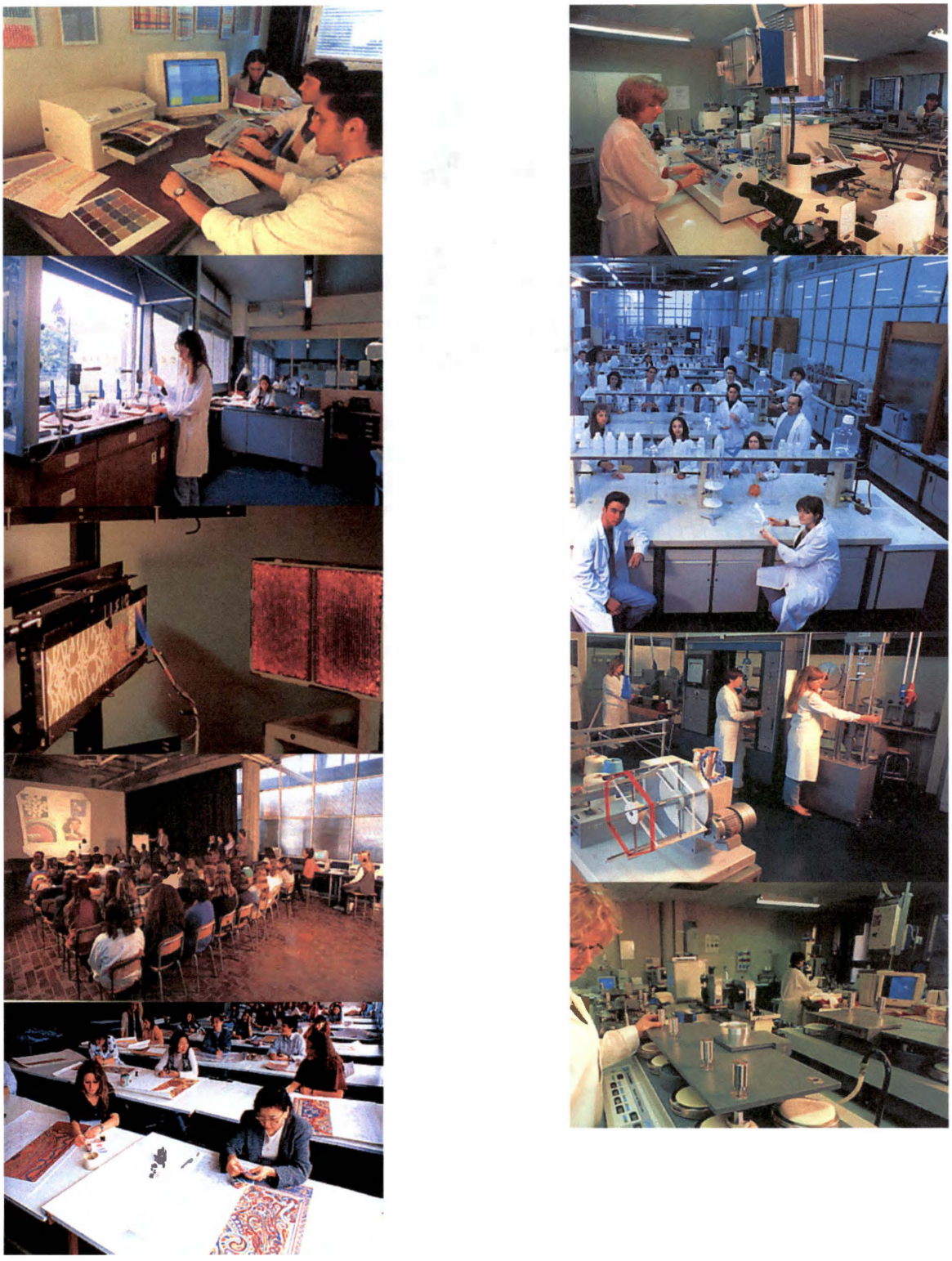
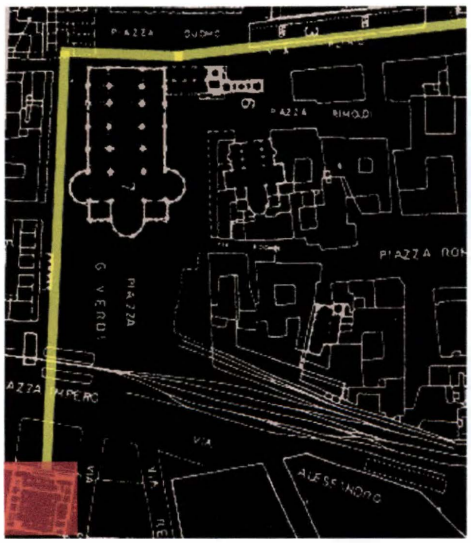


Figure 63 (A-I). Present silk industry and education in Como.



Figure 64 (A-G). Exhibits in the current Como Silk Museum.



Plan of Narrative Route



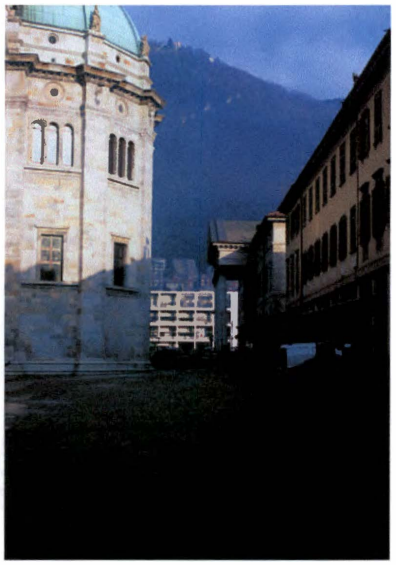
2



3

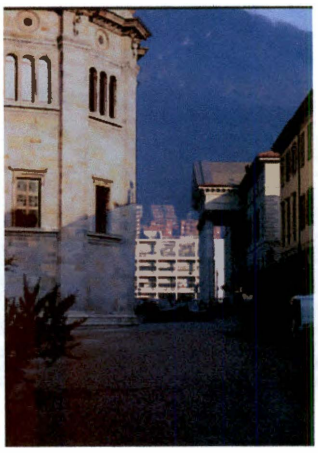


1



4

Figure 65 (Plan Above and 1-9). The architectural narrative created by Terragni between the Piazza Cavour and the Casa di Fascia (Narrative proceeds in order of numbering.).



5



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8



9

Figure 65 Continued.

1. Giuseppe Terragni, Monumento ai Caduti, 1931-33.
2. Giuseppe Terragni, Novocomum, 1927-29.
3. Giuseppe Terragni, casa Giuliani-Frigerio, 1939-40.
4. Federico Frigerio, Tempio Voltiano, 1927.
5. Giardini pubblici.
6. Stadio Giuseppe Sinigaglia, costruito da Giovanni Greppi nel 1925-27 e ampliato da Gianni Mantero nel 1932-33.
7. Gianni Mantero, Casa del Balilla, 1933-36.
8. Ing. Balsamo, sede della Motonautica (M.I.L.A.) e del R.A.C.I., 1930-31.
9. Gianni Mantero, sede della Canottieri Lario, 1930-31
10. Convento di S. Teresa, XIV secolo.
11. Aeroclub Ghislanzoni, 1931-32.

1. Giuseppe Terragni, Monumento ai Caduti, 1931-33.
2. Giuseppe Terragni, Novocomum, 1927-29.
3. Giuseppe Terragni, Giuliani-Frigerio building, 1939-40.
4. Federico Frigerio, Tempio Voltiano, 1927.
5. Public Gardens.
6. Stadio Giuseppe Sinigaglia, built by Giovanni Greppi in 1925-27 and enlarged by Gianni Mantero, 1932-33.
7. Gianni Mantero, Casa del Balilla, 1933-36.
8. Eng. Balsamo, Motonautica (M.I.L.A.) and R.A.C.I. centers, 1930-31.
9. Gianni Mantero, Canottieri Lario, 1930-31.
10. The convent of S. Teresa, XIV century.
11. Aeroclub Ghislanzoni, 1931-32.

Planimetria della zona (da un disegno elaborato nel corso del prof. Enrico Mantero presso la Facoltà di Architettura di Milano).
Area's general plan (from a drawing devoloped during Prof. E. Mantero course at the Faculty of Architecture Milan).

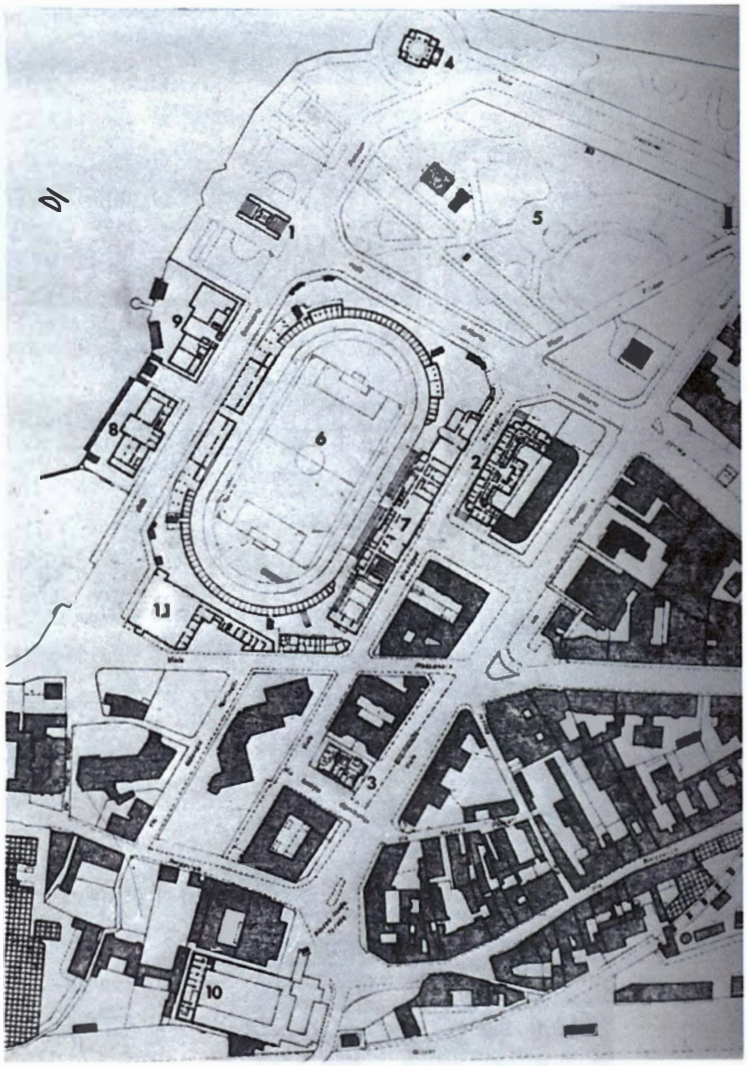


Figure 66. Examples of early Rationalist architecture and Public Garden spaces along the Lago di Como Promenade.

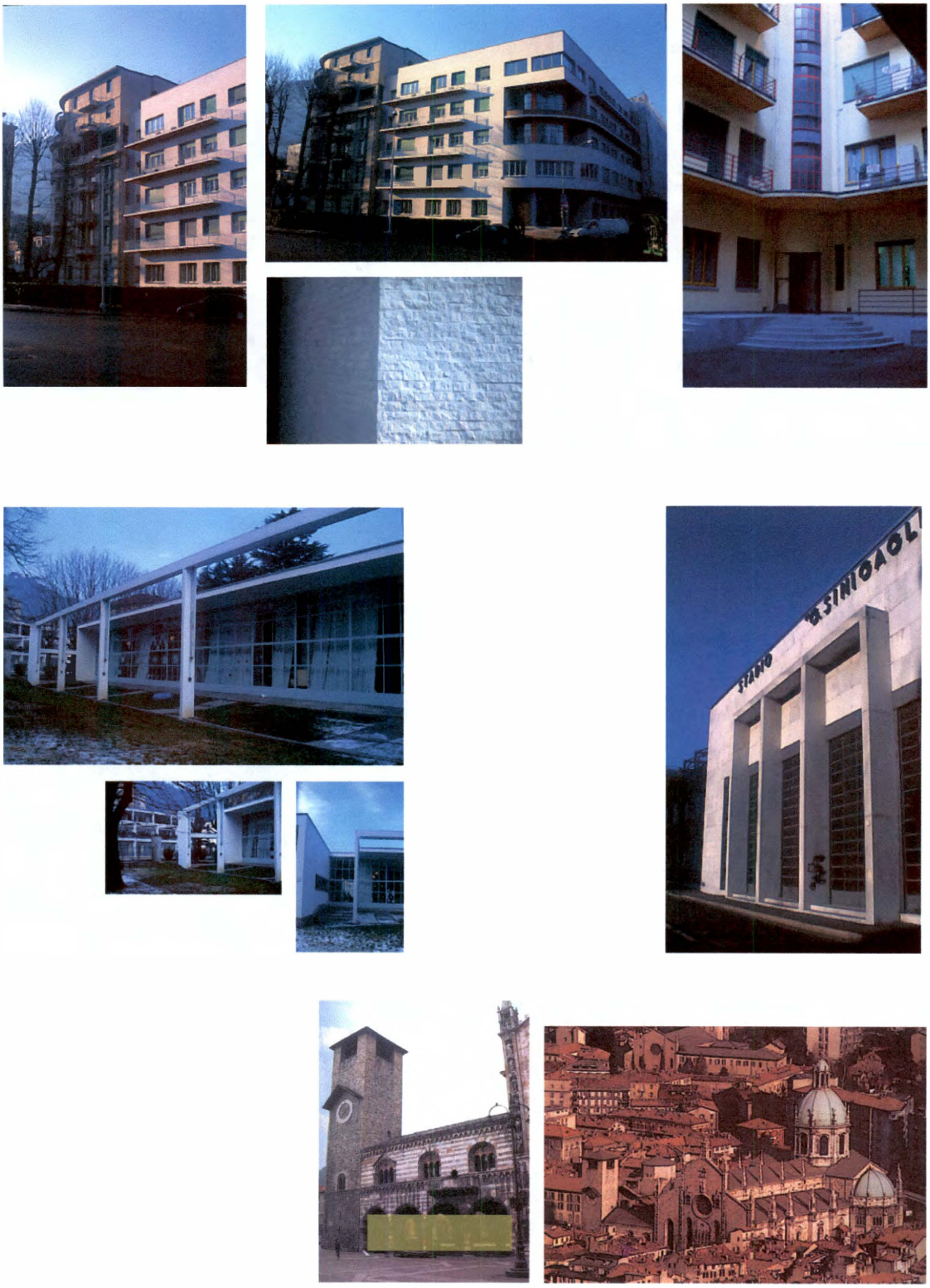
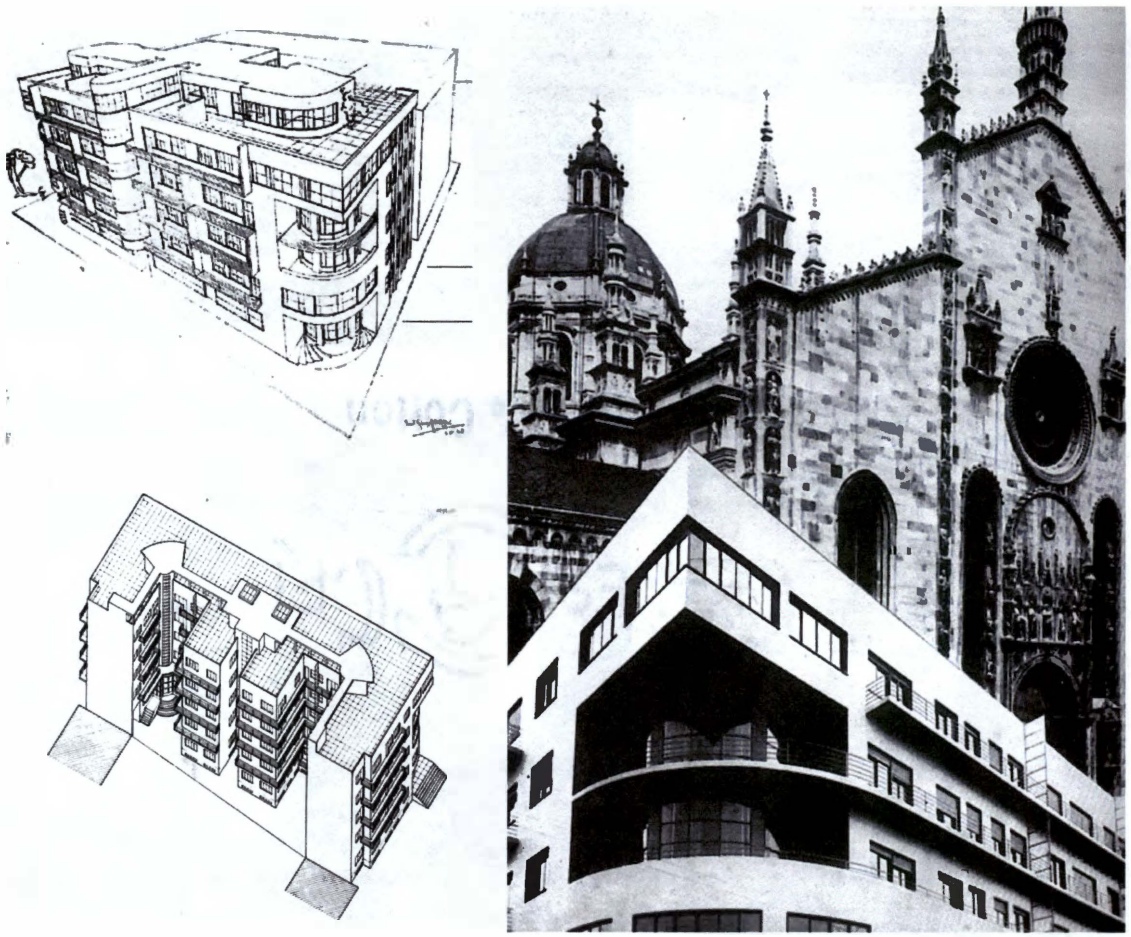


Figure 67 (A-J). Como Architecture.



Figures 68 (A-C). A-B. The Novocomum, Casa d' Habitazione, 1928, Giuseppe Terragni. C. Collage from the period depicting the Como Duomo and Casa d' Habitazione.

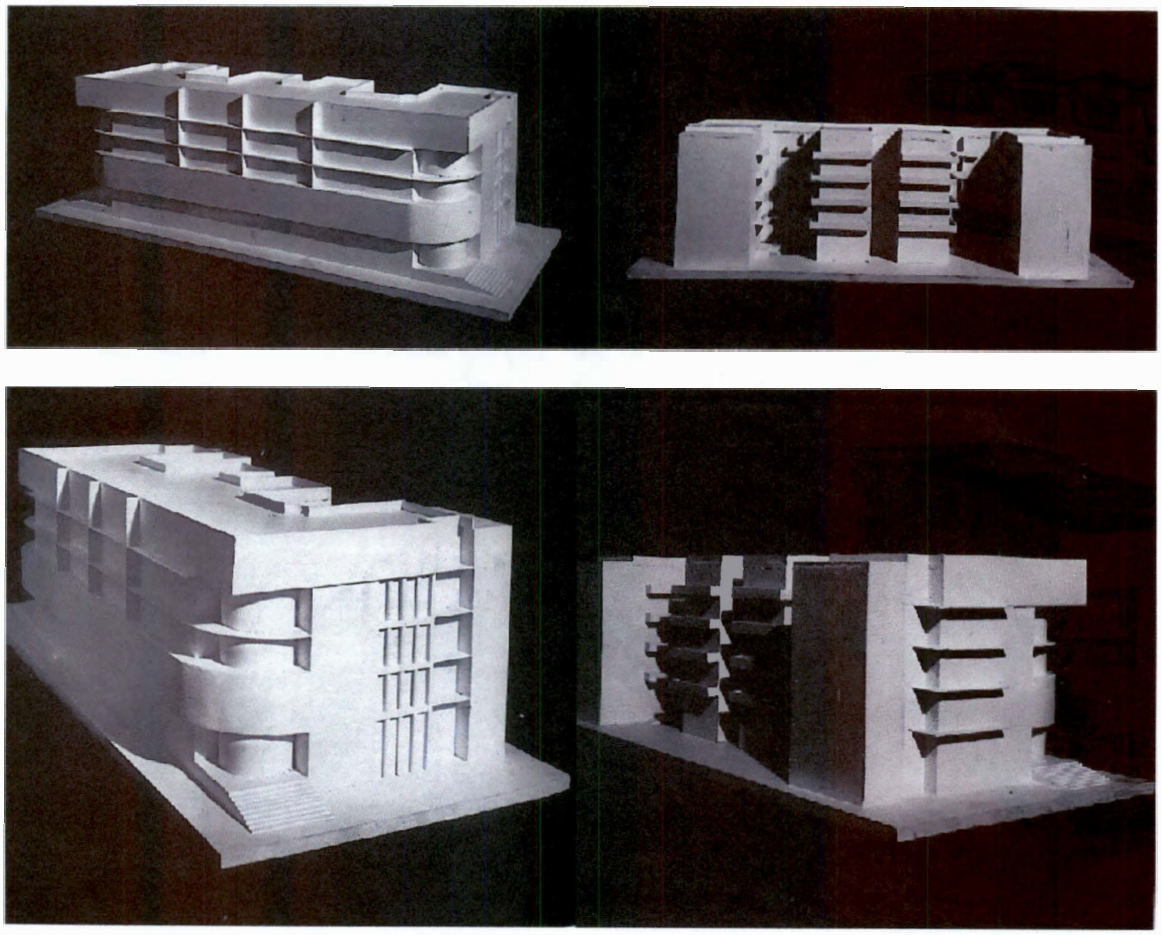


Figure 69. The Novocomum, Casa d' Habitazione, 1928, Giuseppe Terragni, Plaster Models.



Figure 70 (A-L). Interior of the Casa di Fascia by Giuseppe Terragni.

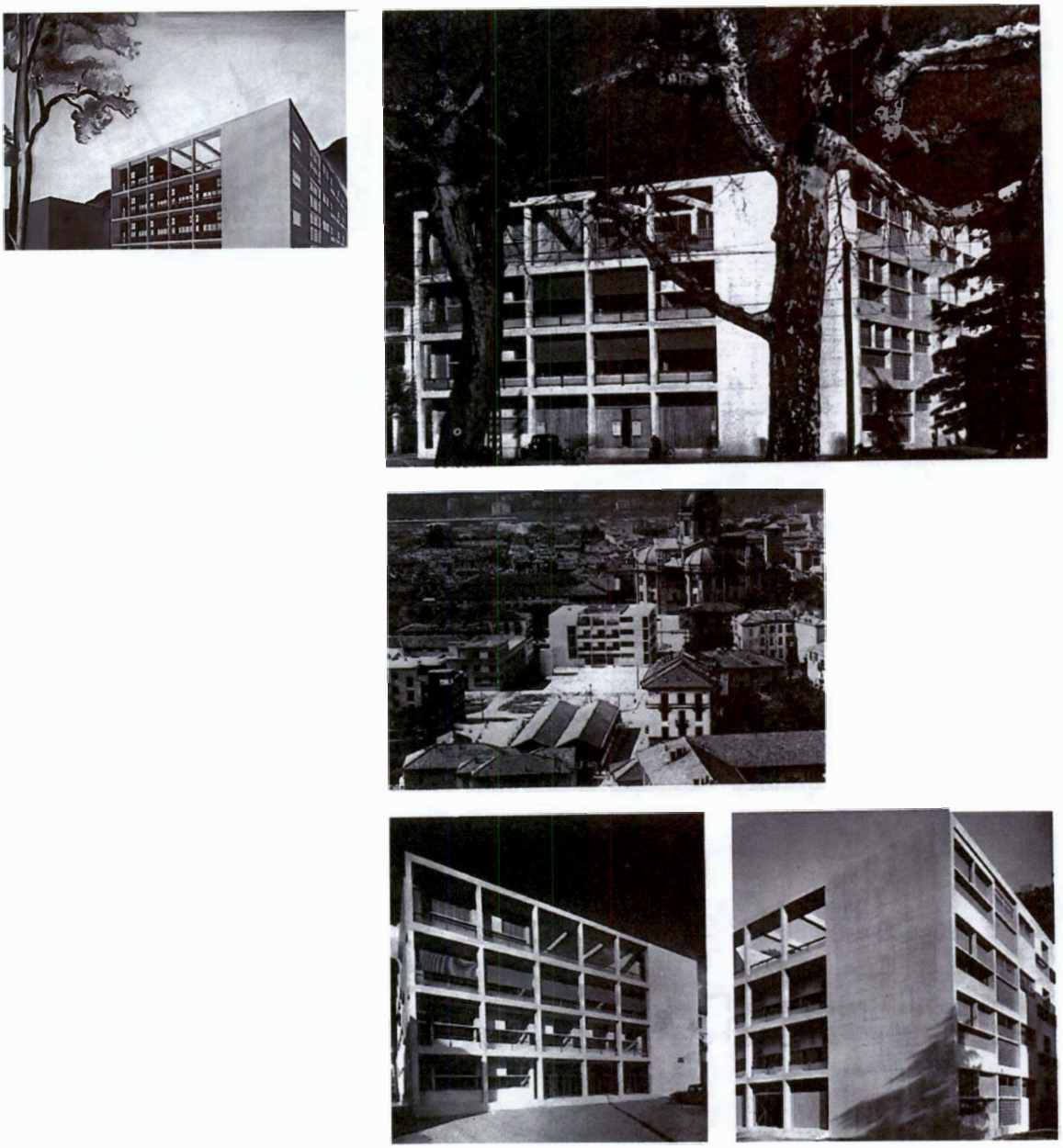


Figure 71 (A-D). Exterior images and diagrams from The Casa di Fascia by Giuseppe Terragni.

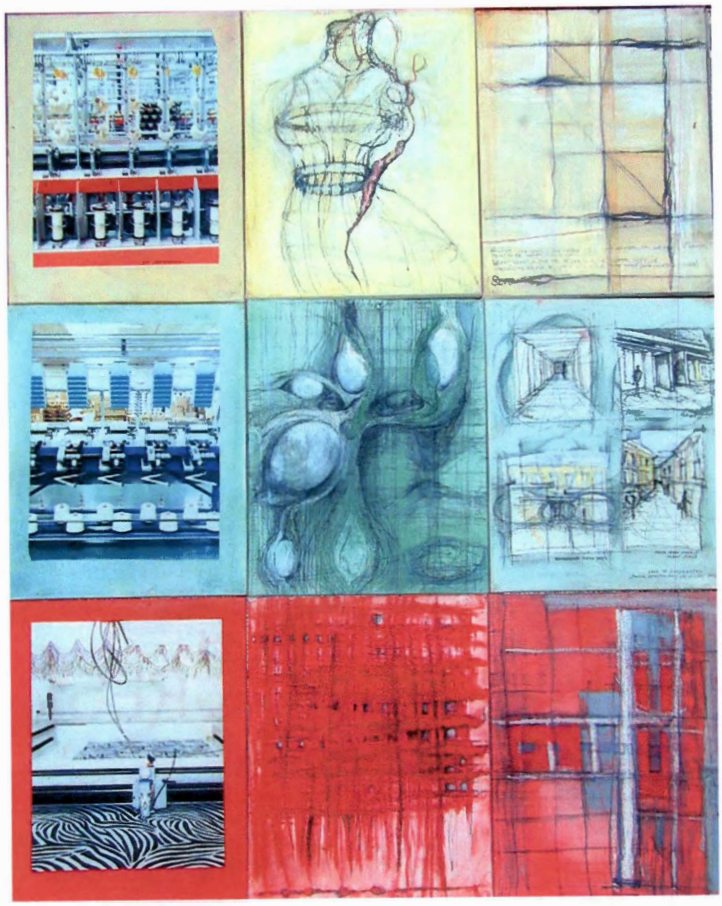


Figure 72. Painting Grid 1 (canvases depicting the process work for the proposal)

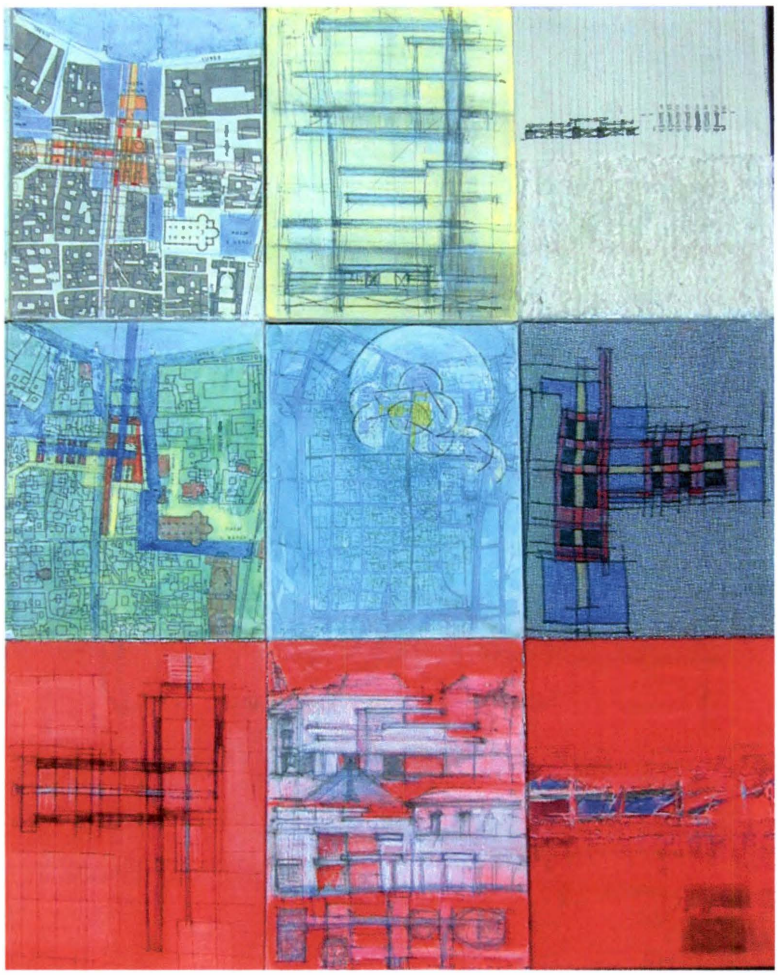


Figure 73. Painting Grid 2 (canvases depicting the process work for the proposal)

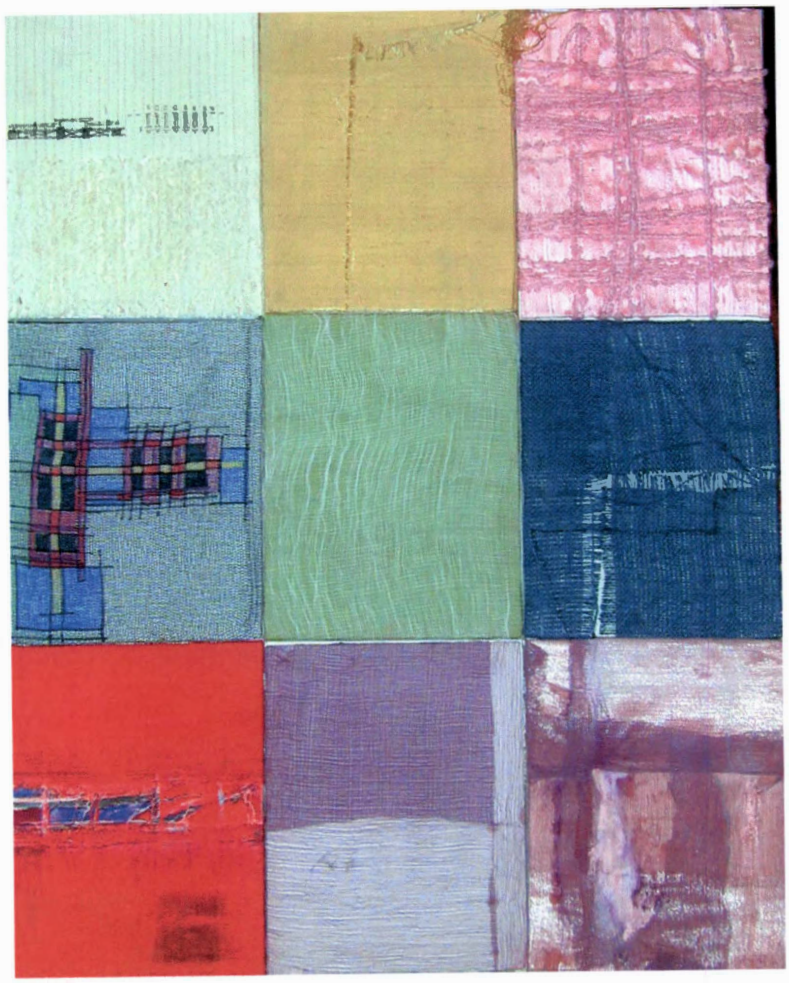


Figure 74. Painting Grid 3 (canvases depicting the process work for the proposal)

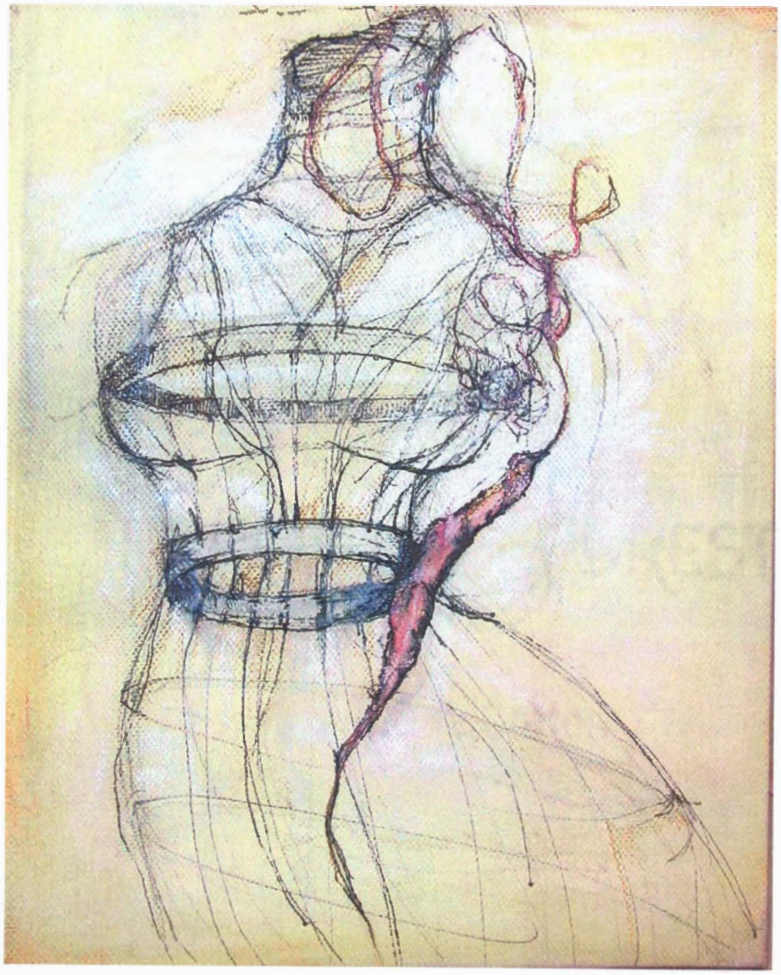


Figure 75. Canvas 1 (depicting the process work for the proposal)

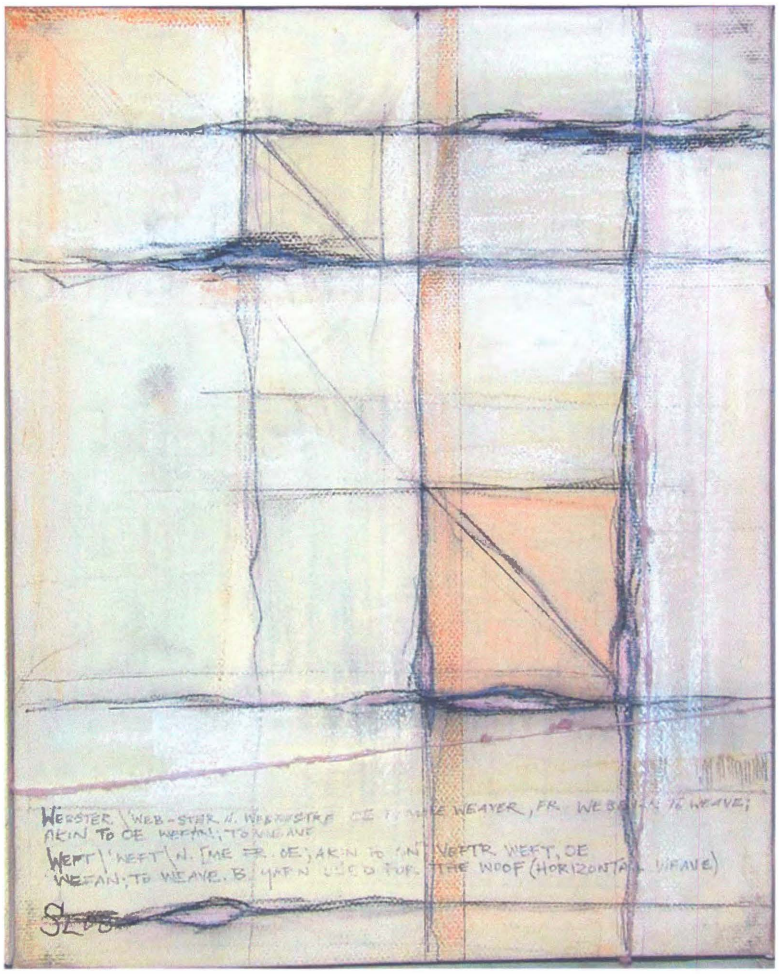


Figure 76. Canvas 2 (depicting the process work for the proposal)

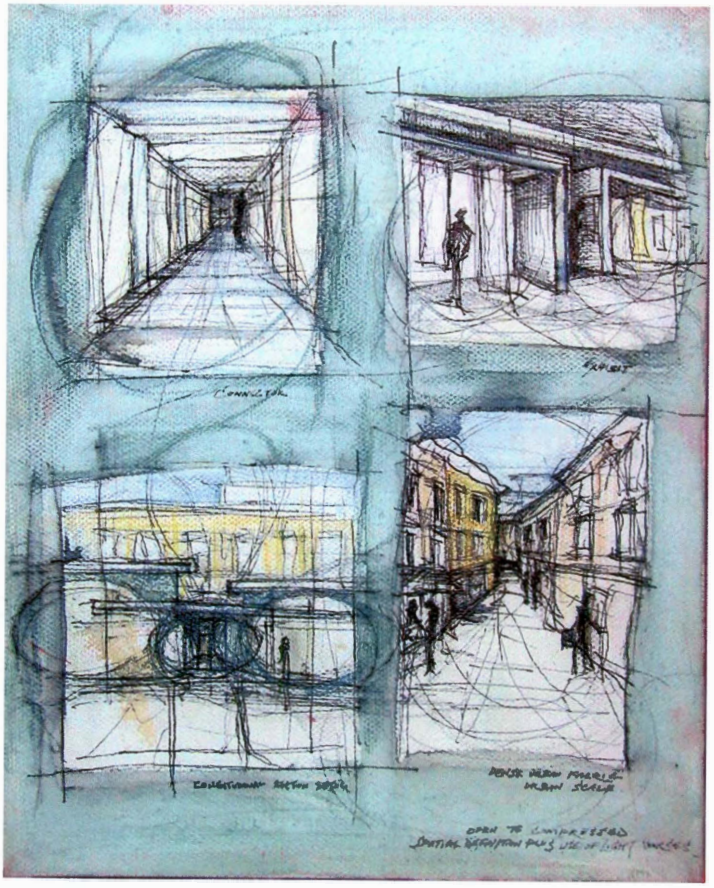


Figure 77. Canvas 3 (depicting the process work for the proposal)

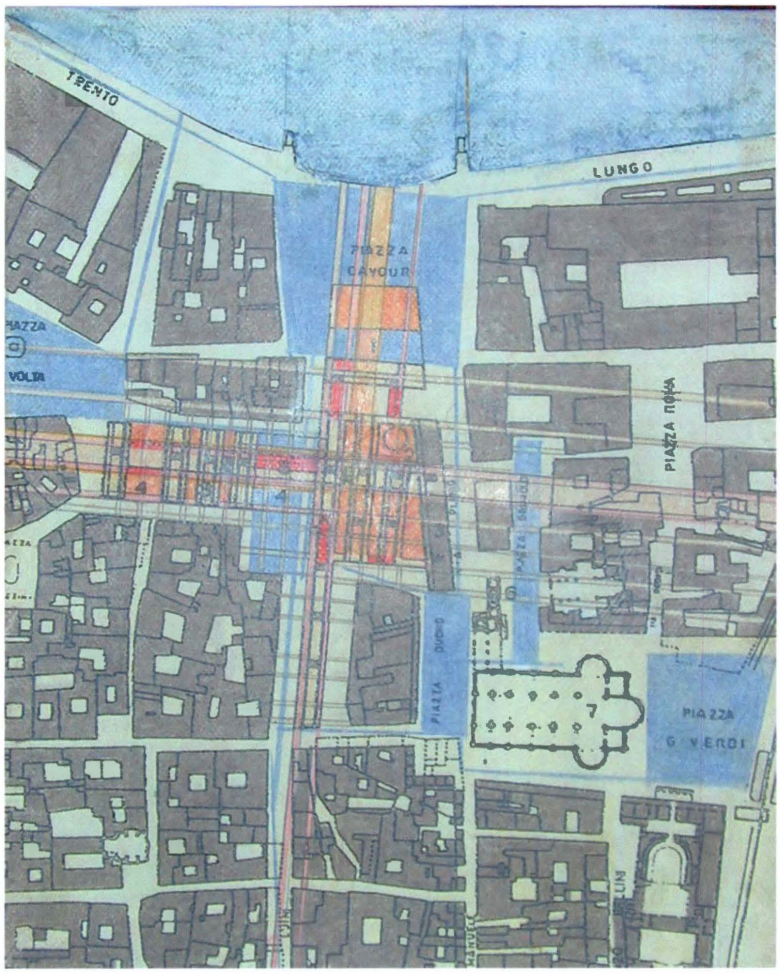


Figure 78. Canvas 4 (depicting the process work for the proposal)



Figure 79. Canvas 5 (depicting the process work for the proposal)

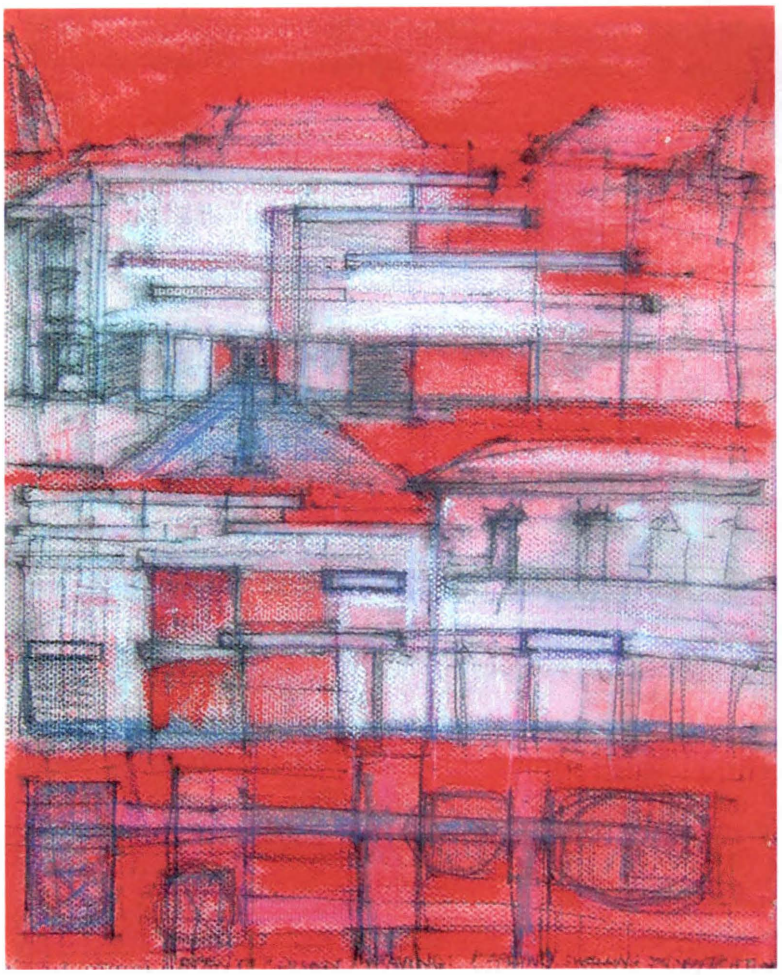


Figure 80. Canvas 6 (depicting the process work for the proposal)

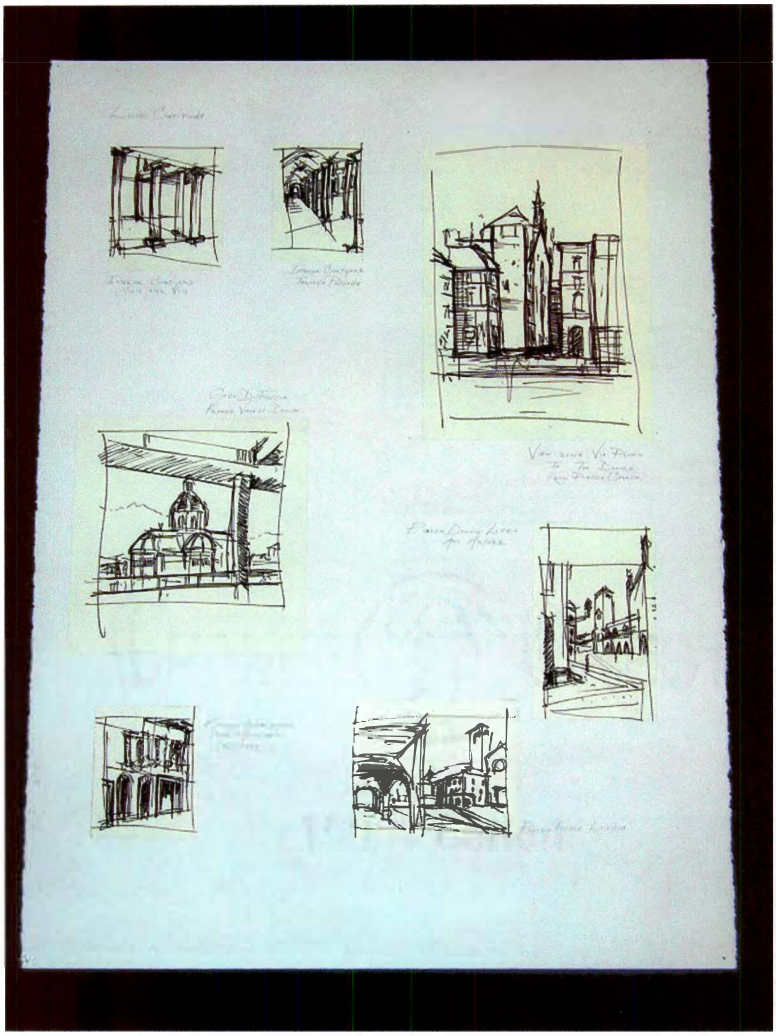


Figure 81. Plate 1 of Final Project.



Figure 82. Plate 2 of the Final Project.

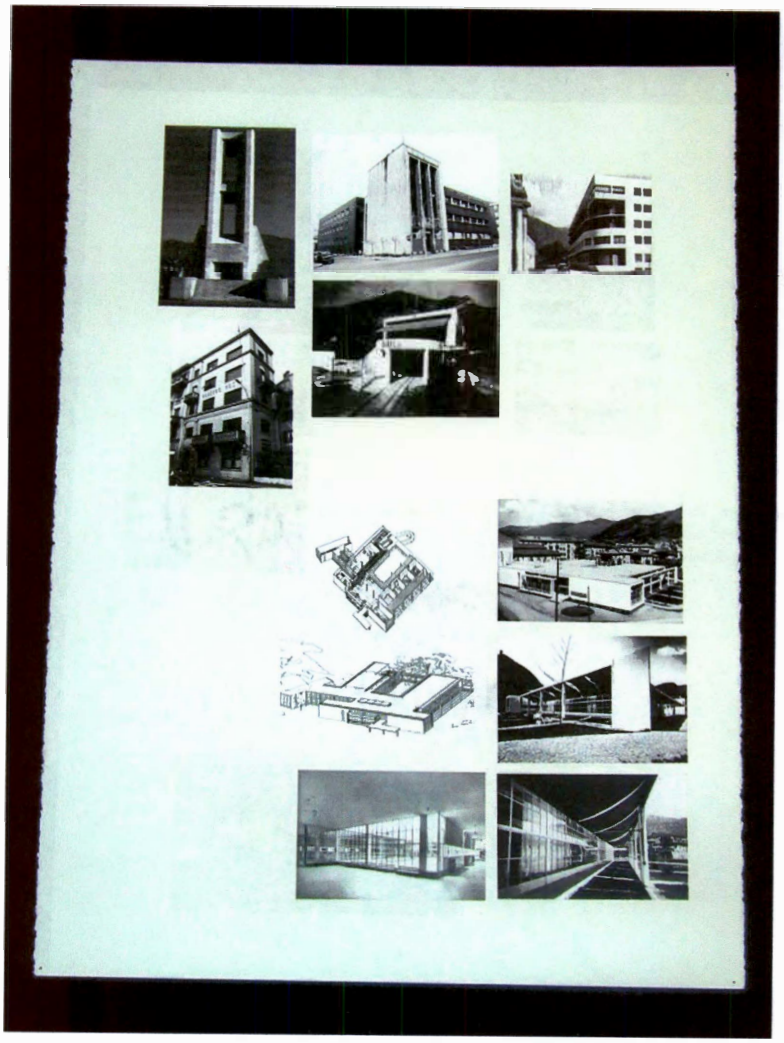


Figure 83. Plate 3 of Final Project.

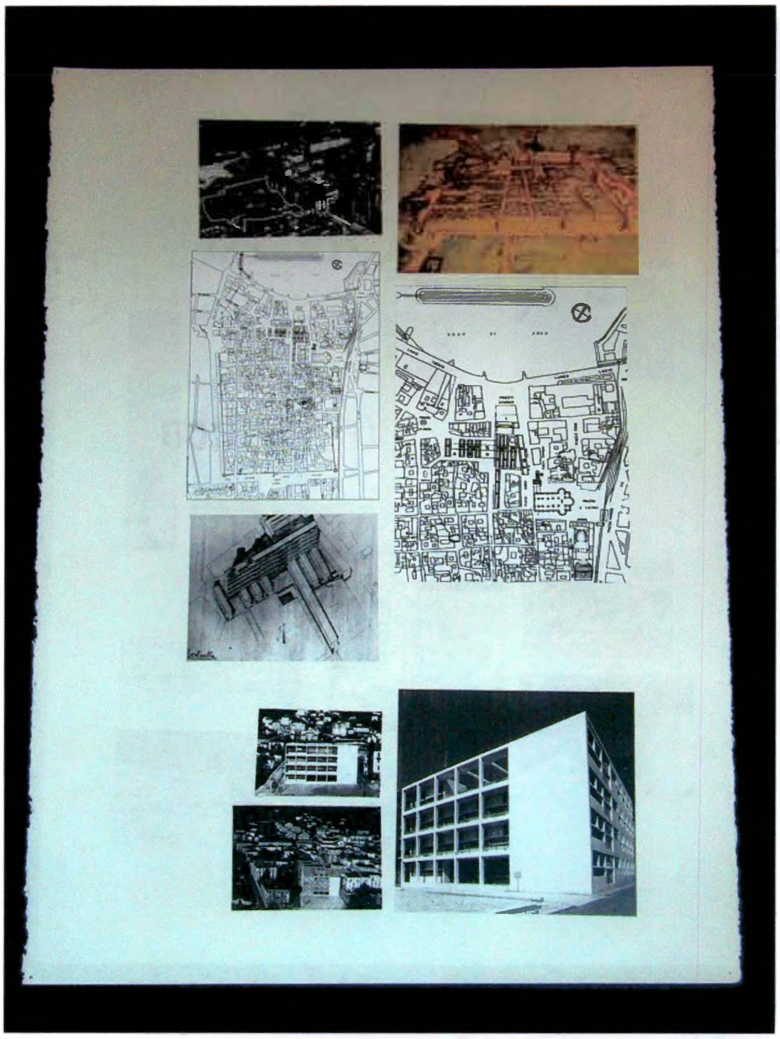


Figure 84. Plate 4 of the Final Project.

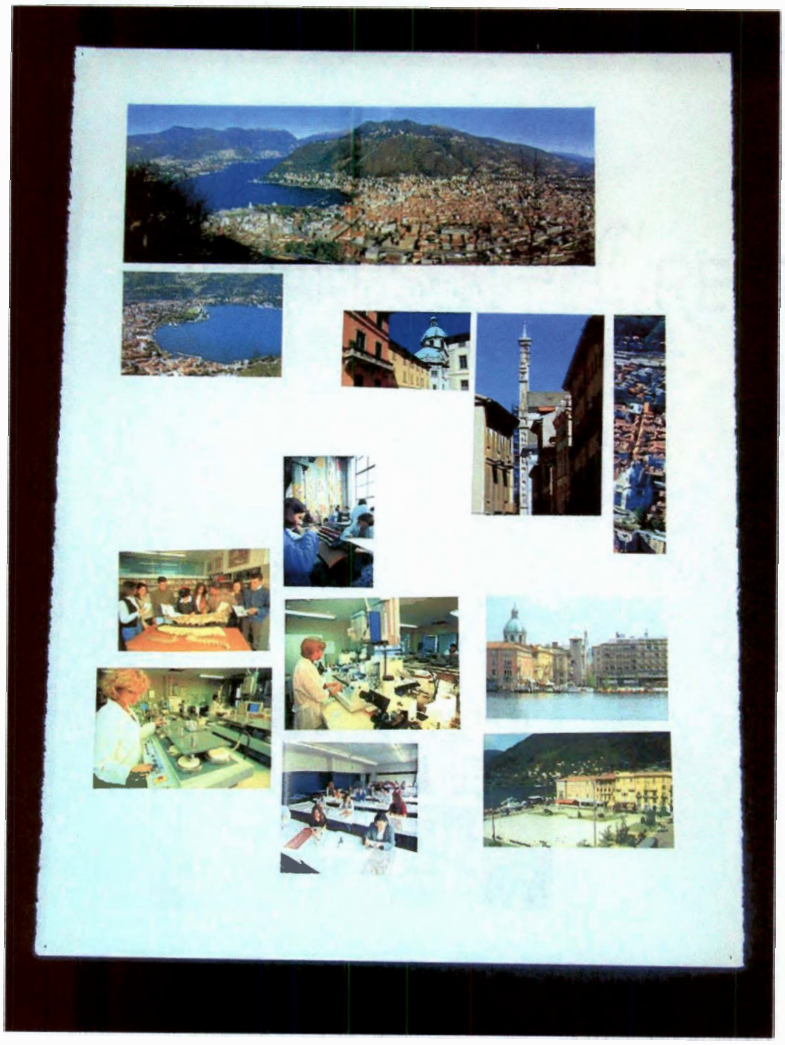


Figure 85. Plate 5 of Final Project.



Figure 86. Plate 6 of the Final Project.

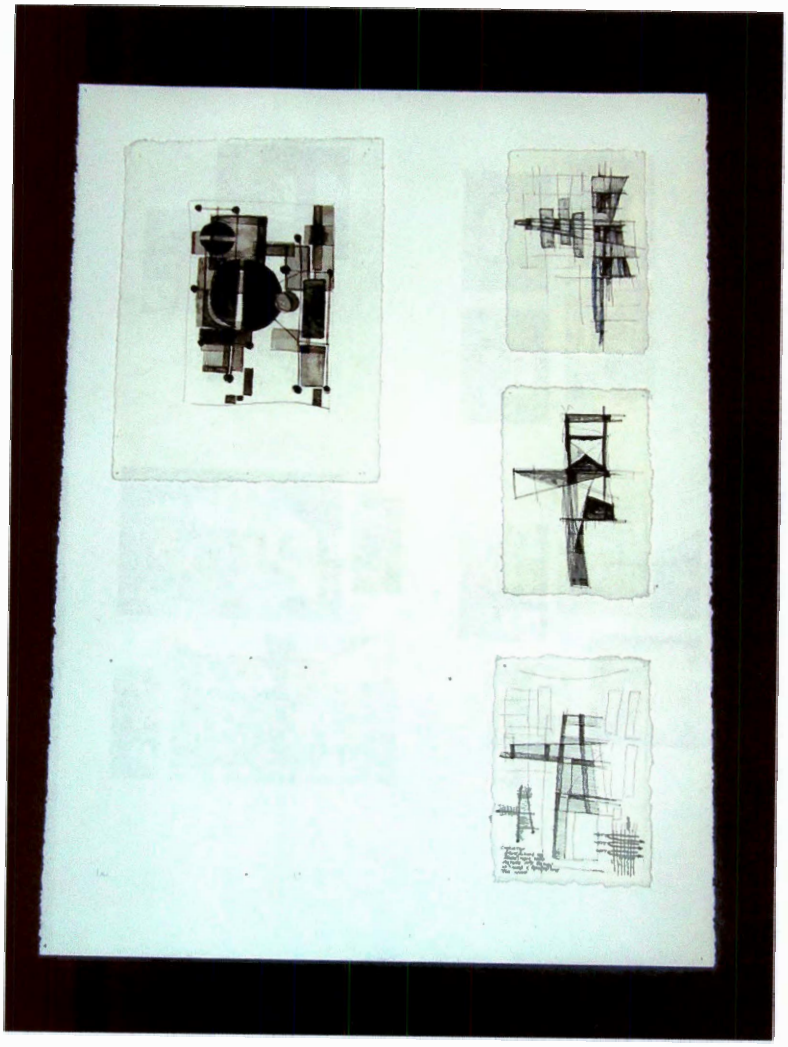


Figure 87. Plate 7 of Final Project.

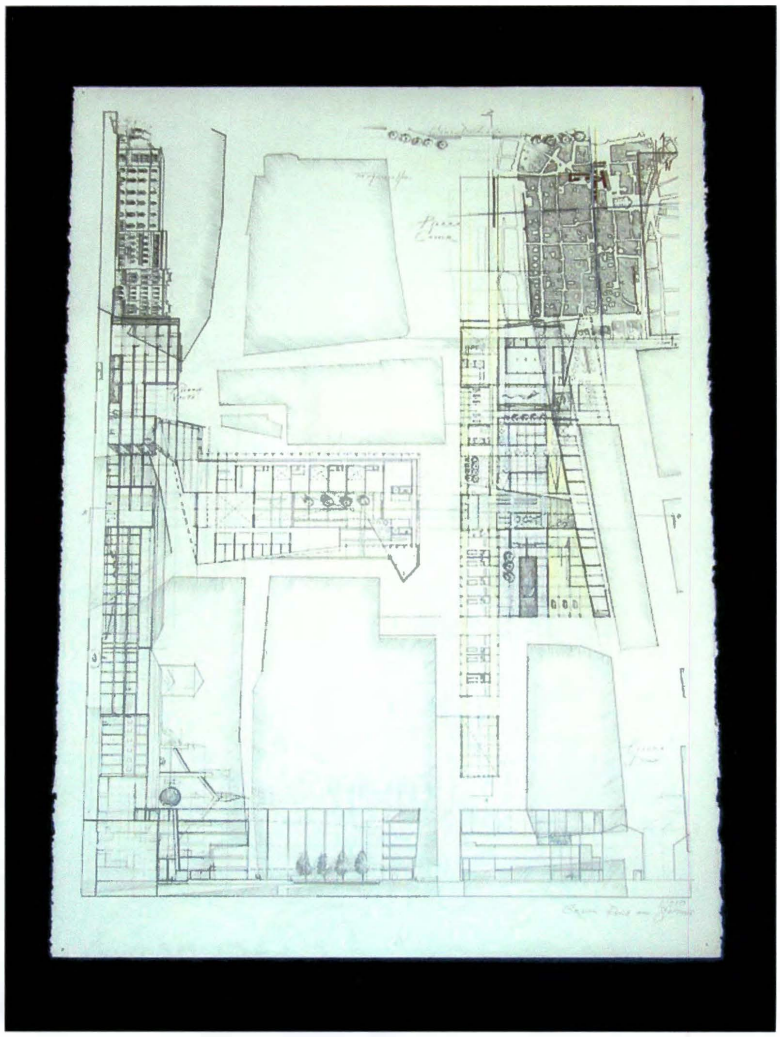


Figure 88. Plate 8 of the Final Project.

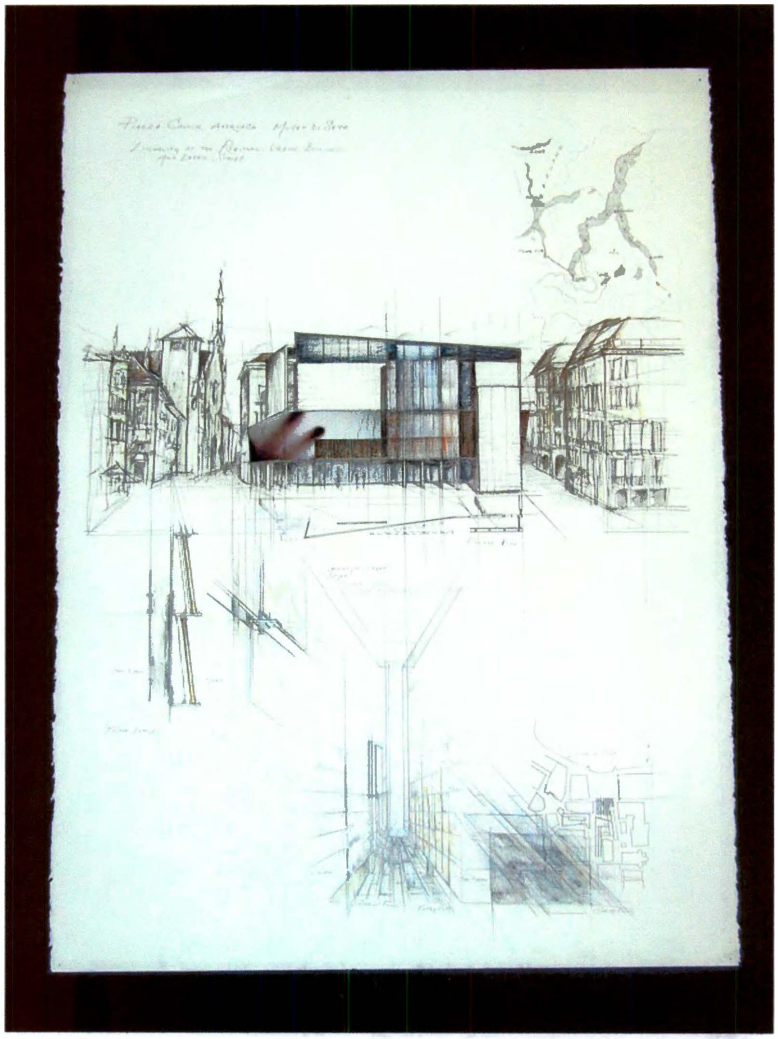


Figure 89. Plate 9 of Final Project.

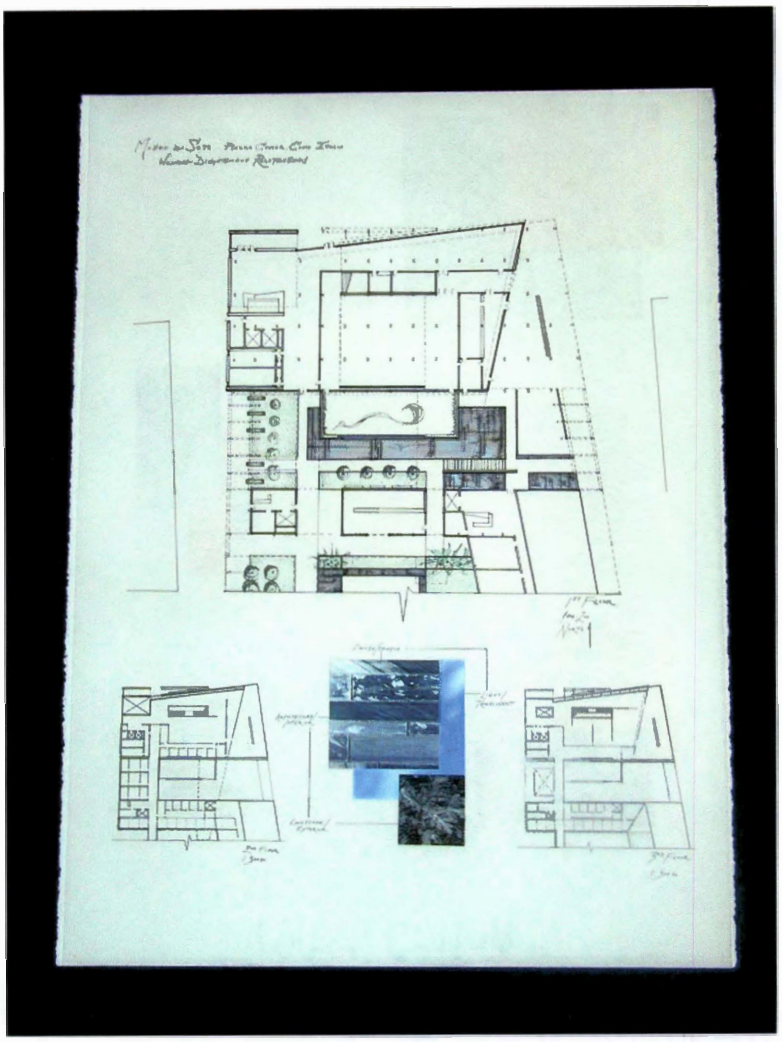


Figure 90. Plate 10 of Final Project.

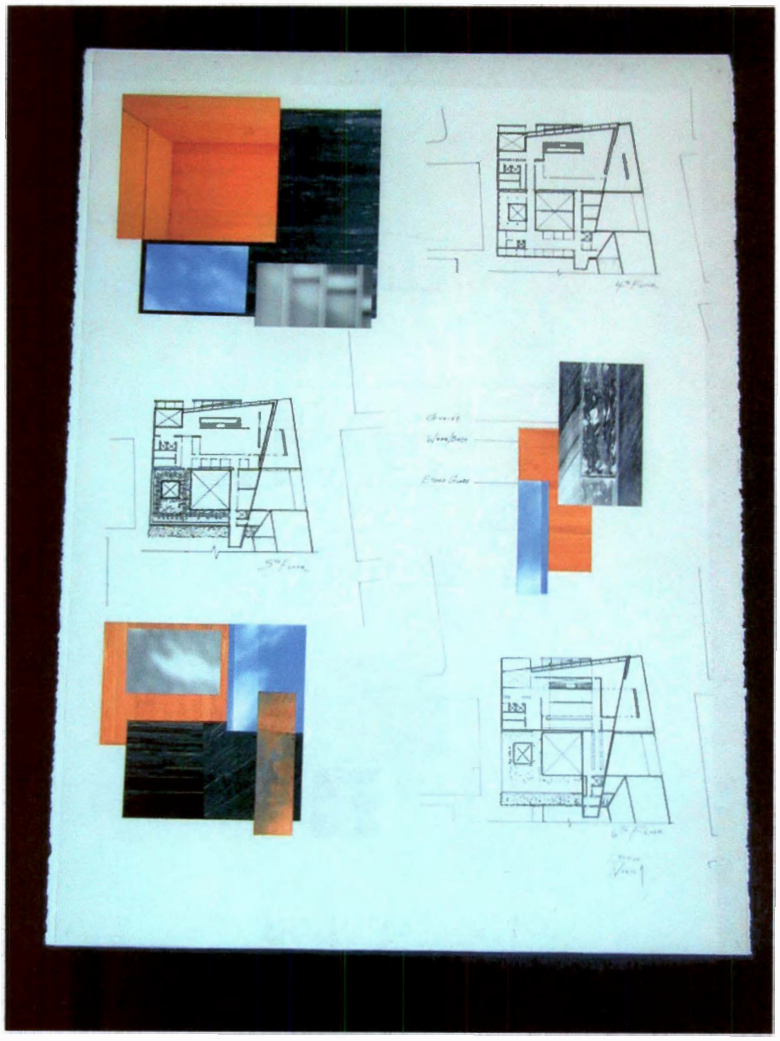


Figure 91. Plate 11 of Final Project.

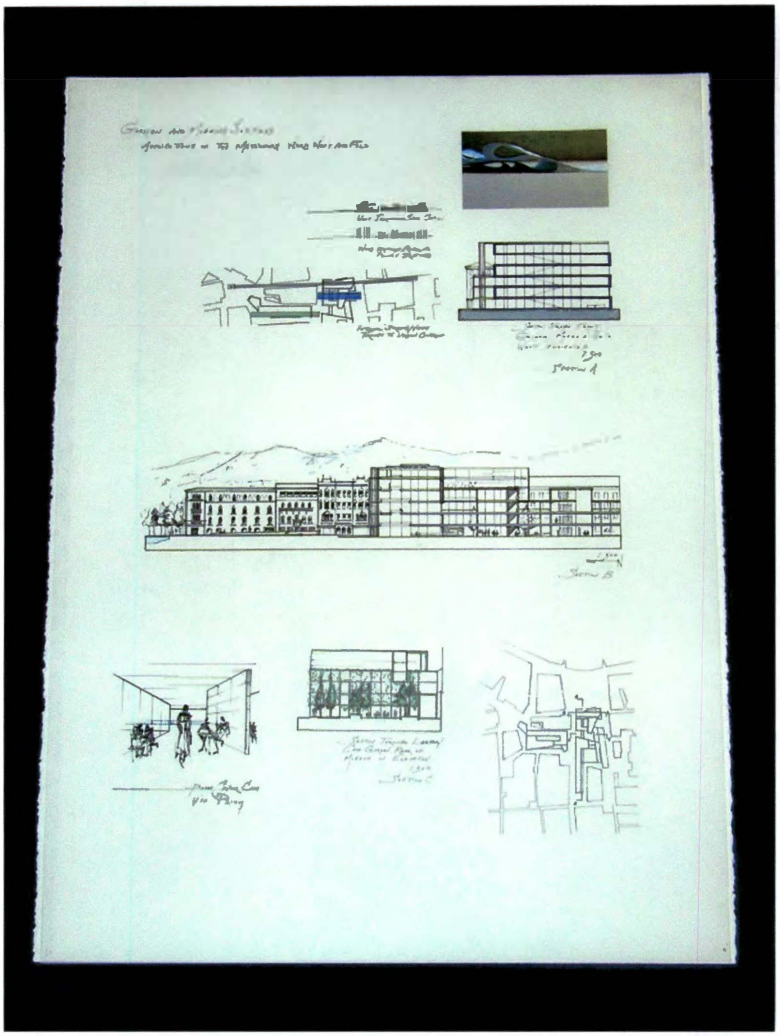


Figure 92. Plate 12 of Final Project.

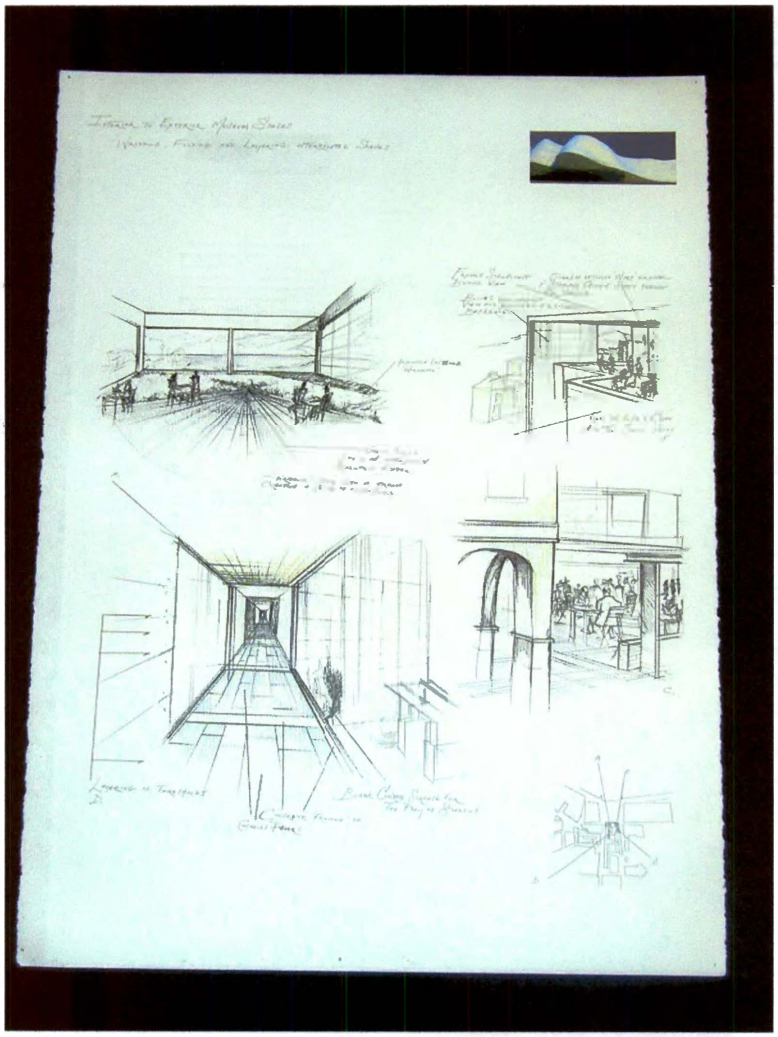


Figure 93. Plate 13 of Final Project.

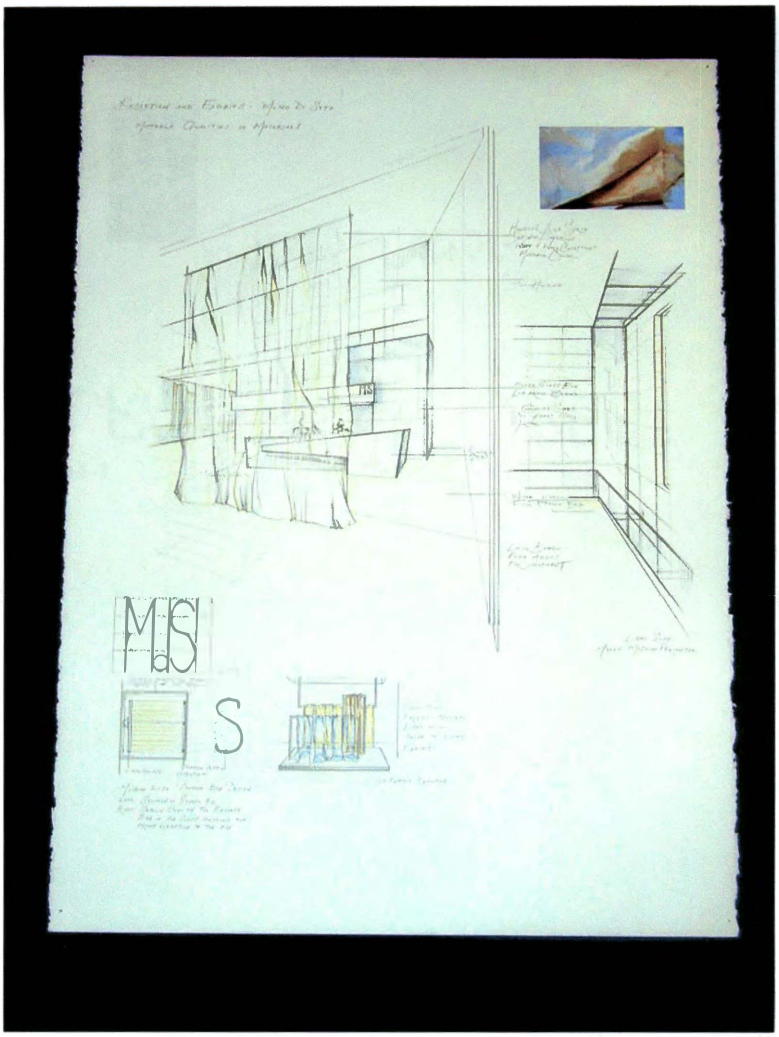


Figure 94. Plate 14 of Final Project.

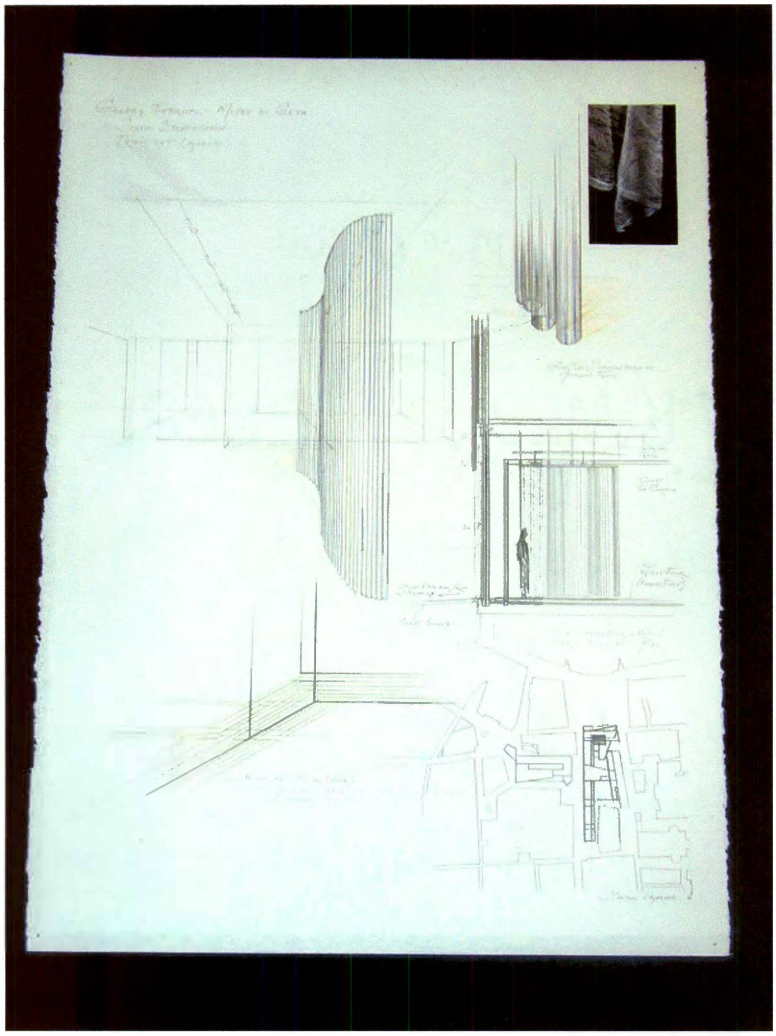


Figure 95. Plate 15 of Final Project.

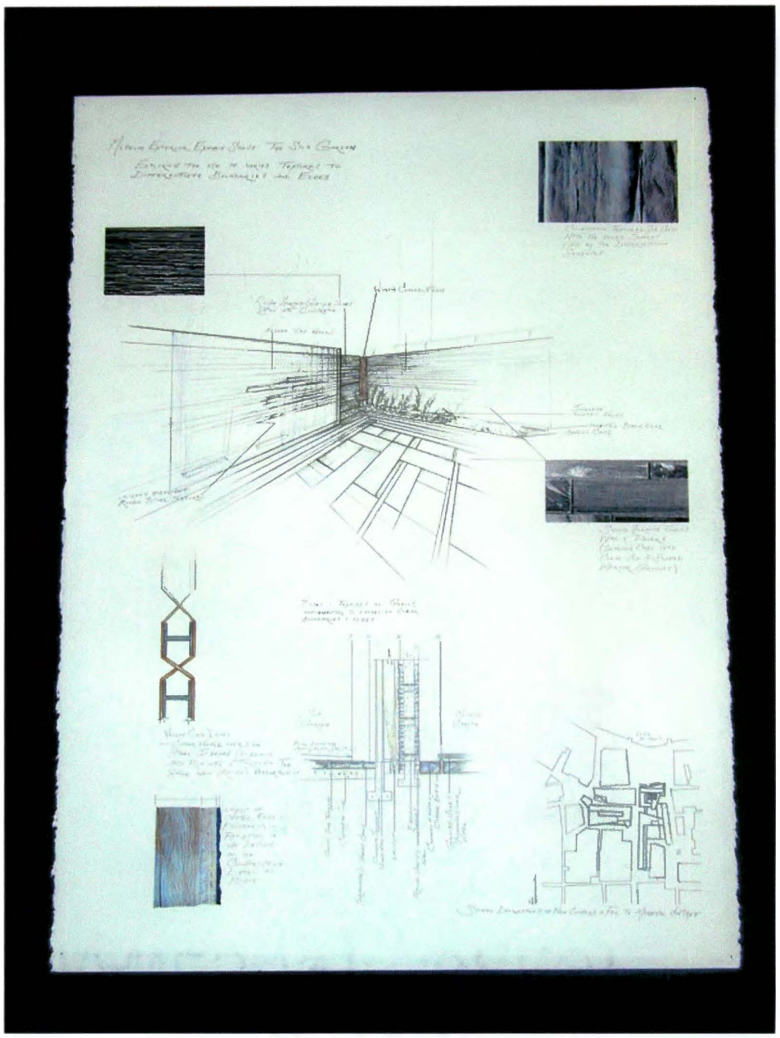


Figure 96. Plate 16 of Final Project.

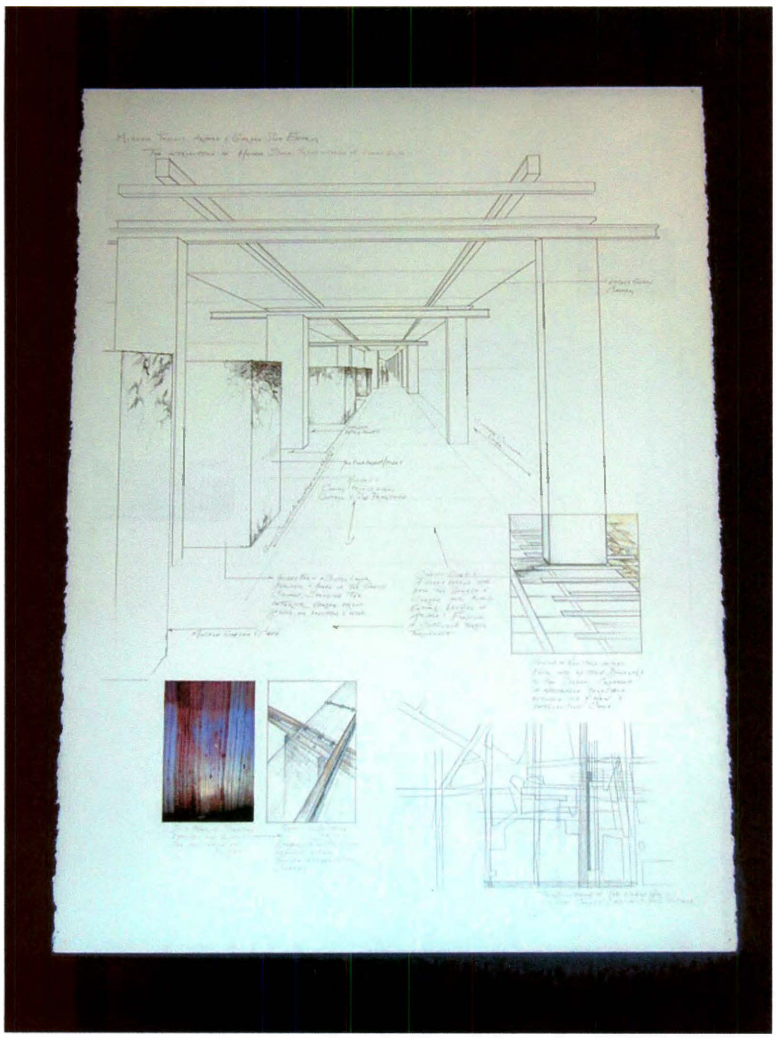


Figure 97. Plate 17 of Final Project.

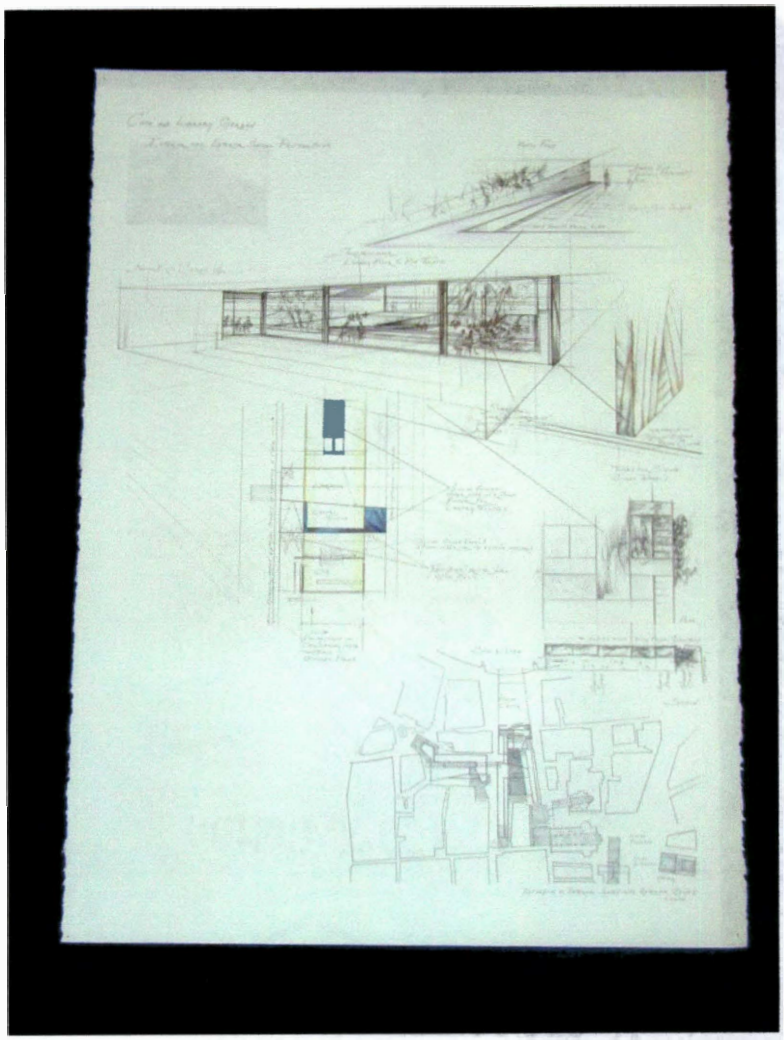


Figure 98. Plate 18 of Final Project.

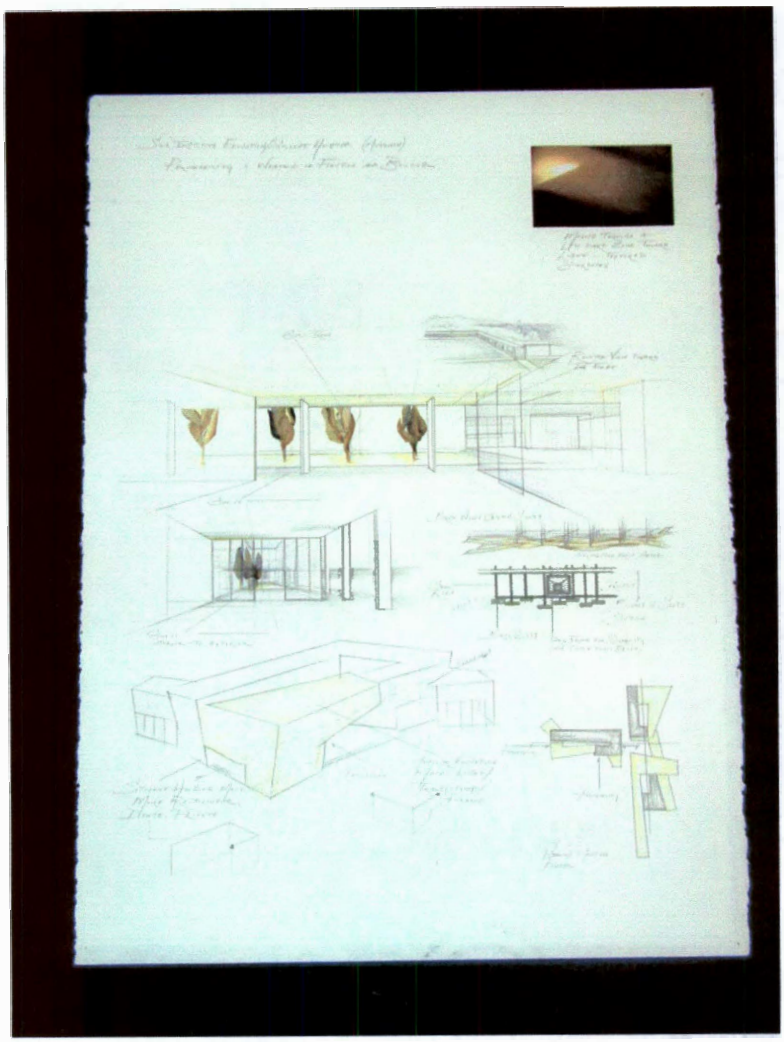


Figure 99. Plate 19 of Final Project.

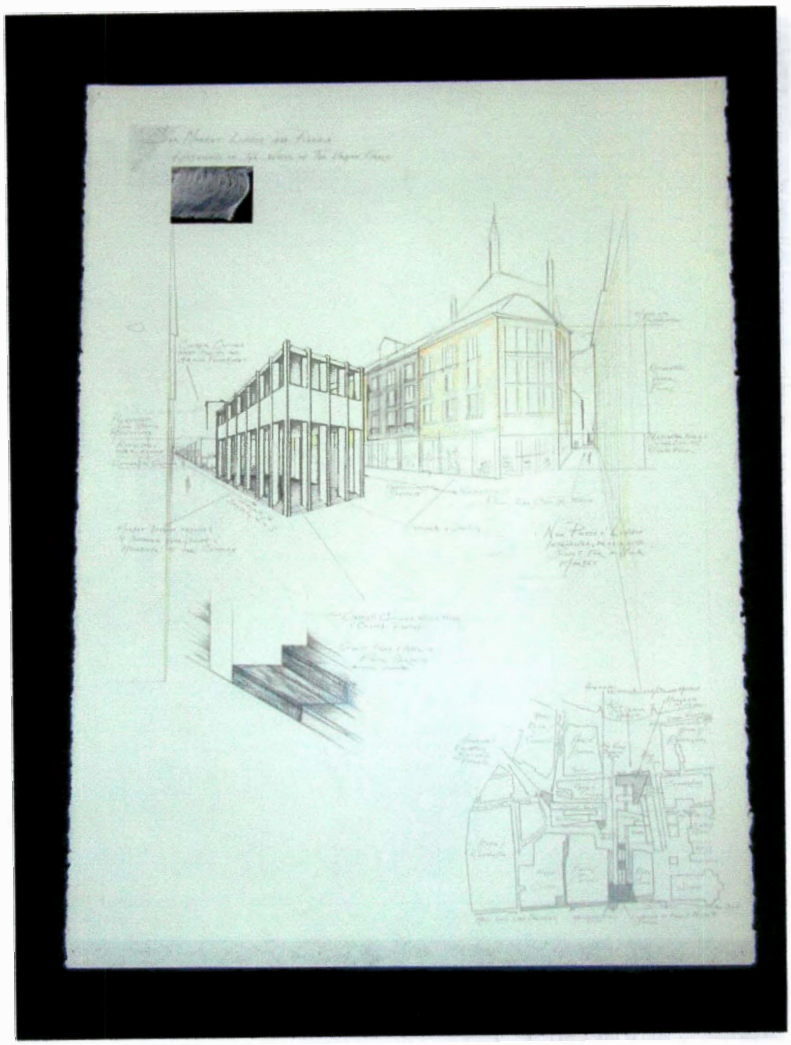


Figure 100. Plate 20 of Final Project.

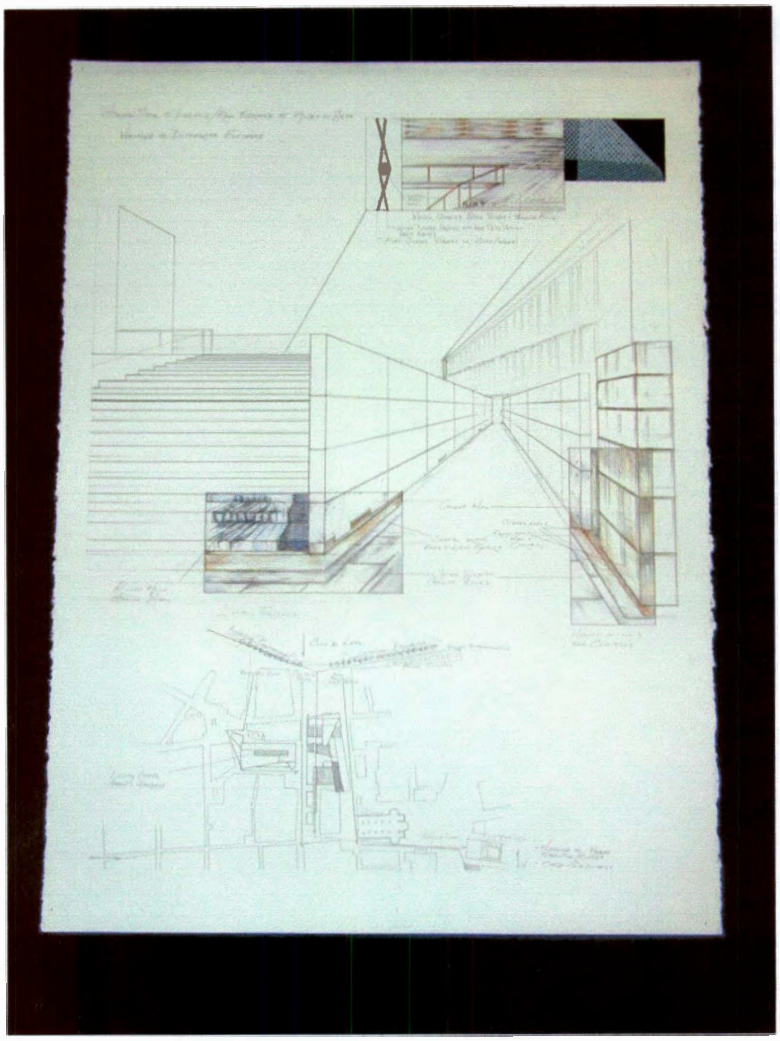


Figure 101. Plate 21 of Final Project.

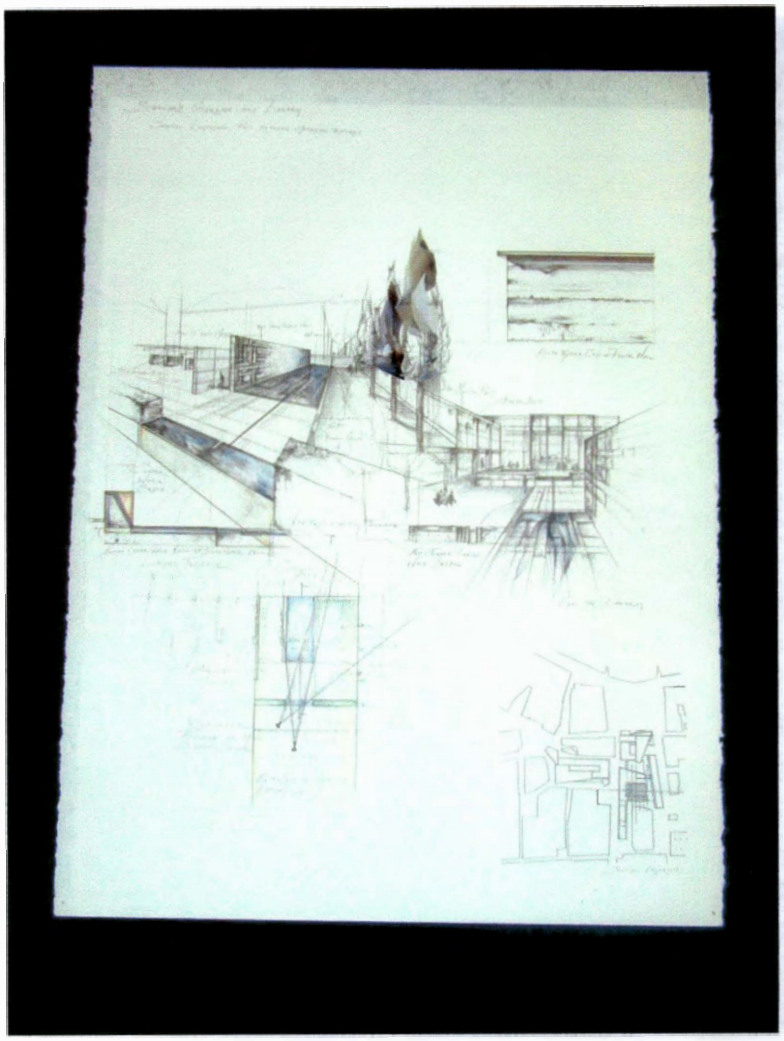


Figure 102. Plate 22 of Final Project.

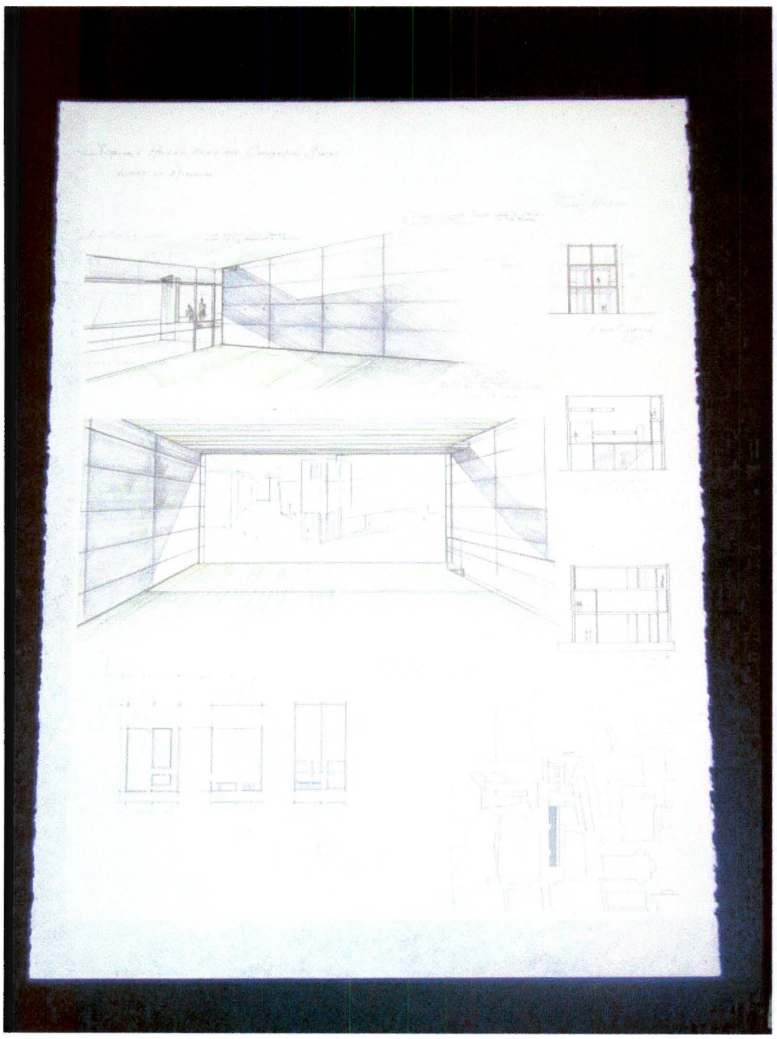


Figure 103. Plate 23 of Final Project.



Figure 104. Urban Model 1:500 (preexisting fabric).

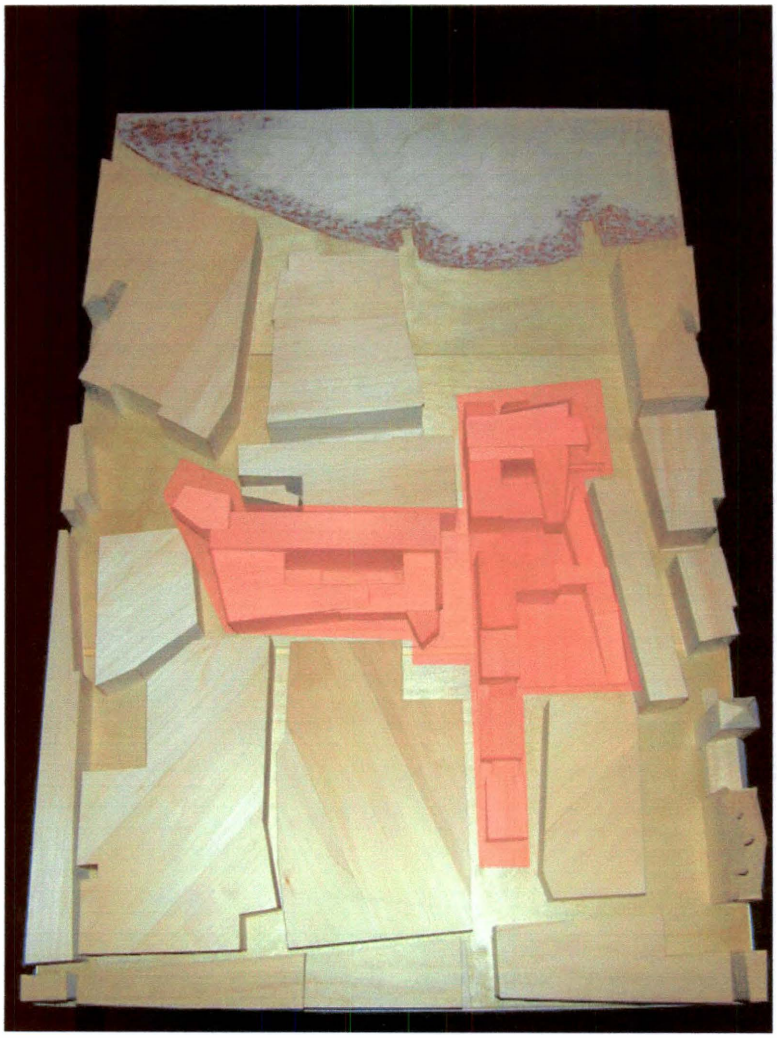


Figure 105. Final Project Model Photo 1 (new conplex indicated).



Figure 106. Final Project Model Photo 2 (Como Duomo top right corner of image)

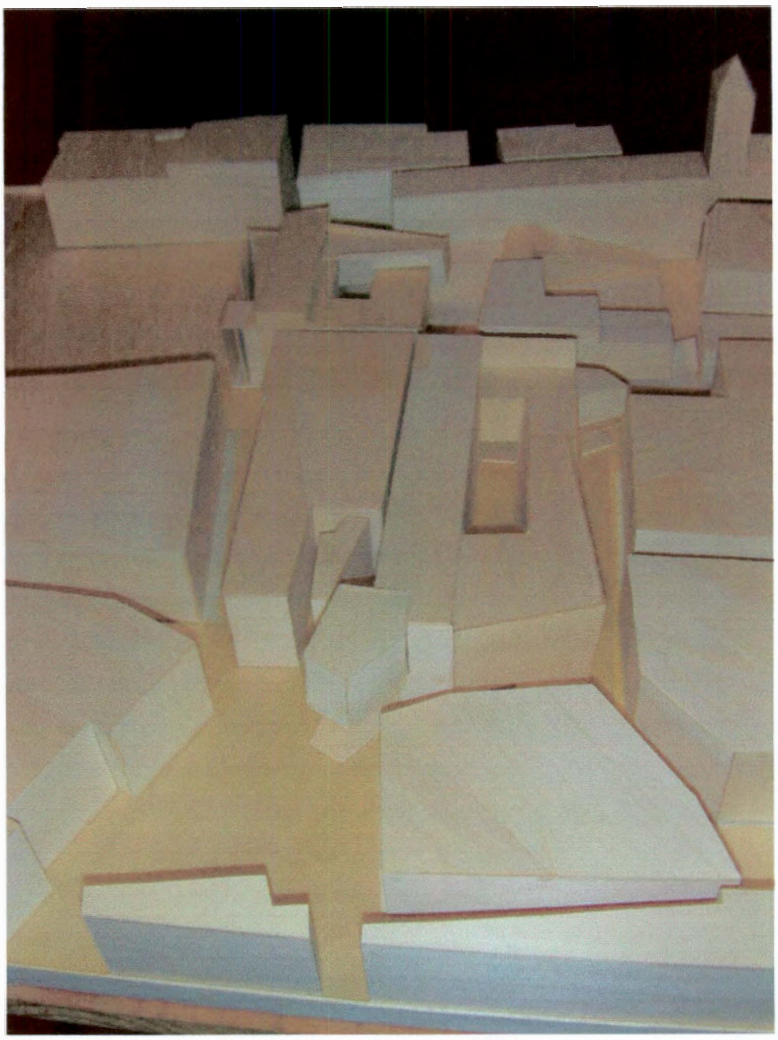


Figure 107. Final Project Model Photo 3.

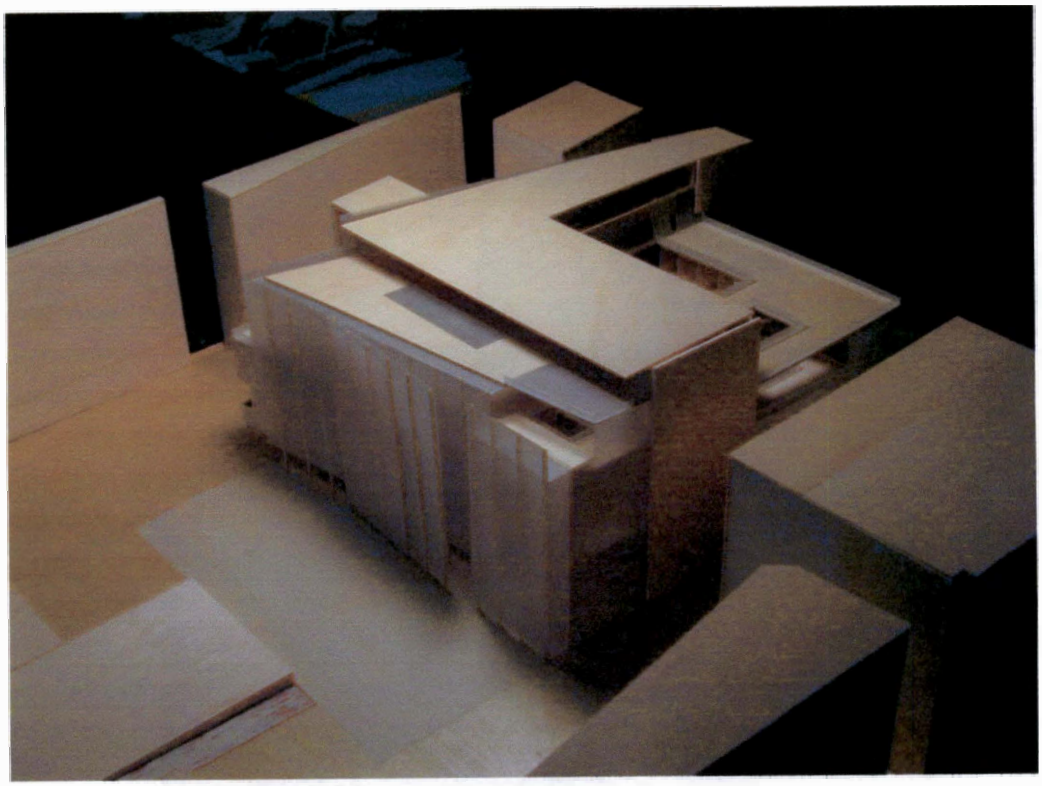


Figure 108. Final Project Model Photo 4 (Museo di Seta).

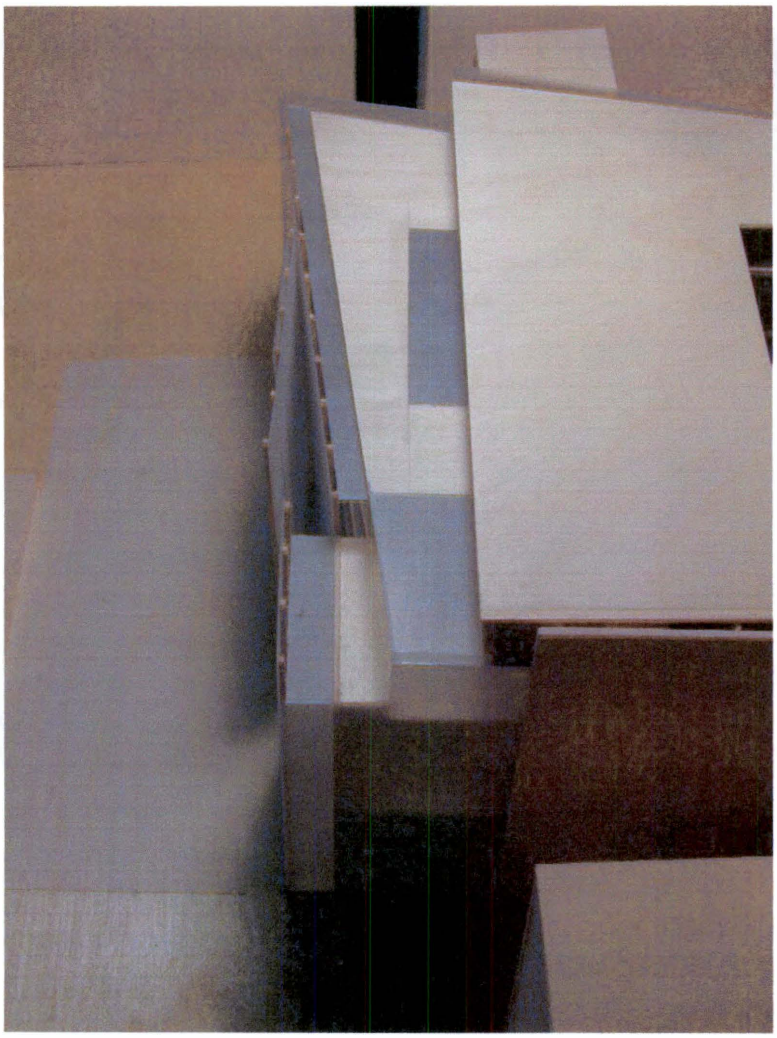


Figure 109. Final Project Model Photo 5 (Layered Museum Facade).

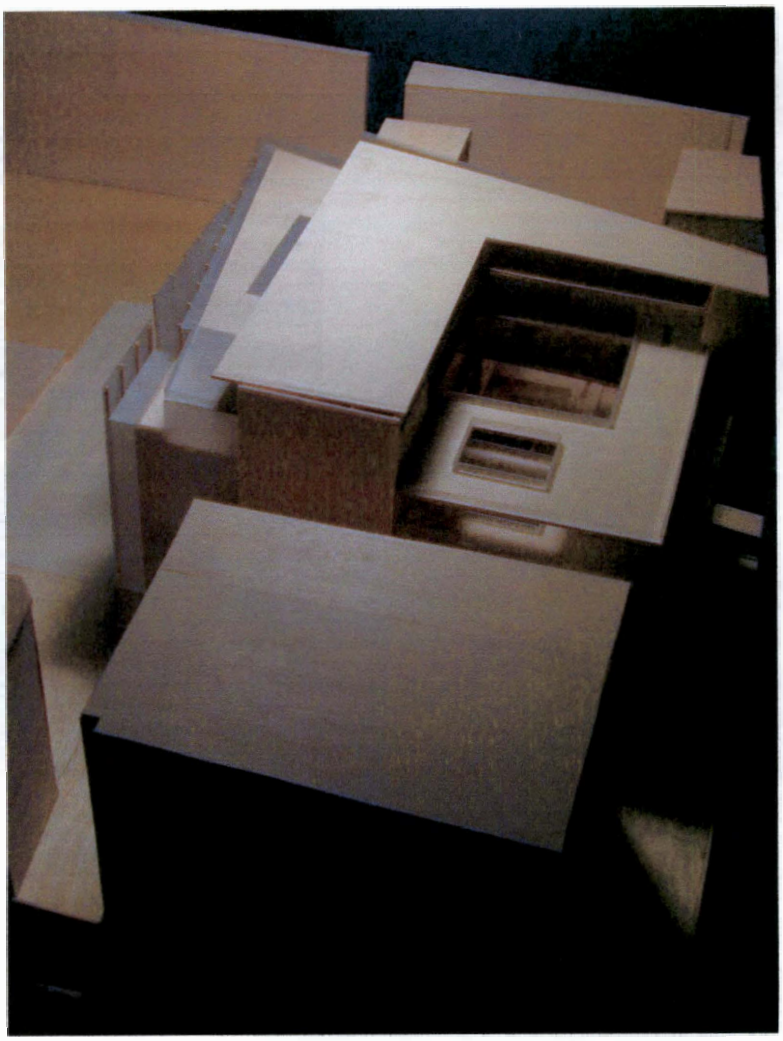


Figure 110. Final Project Model Photo 6.

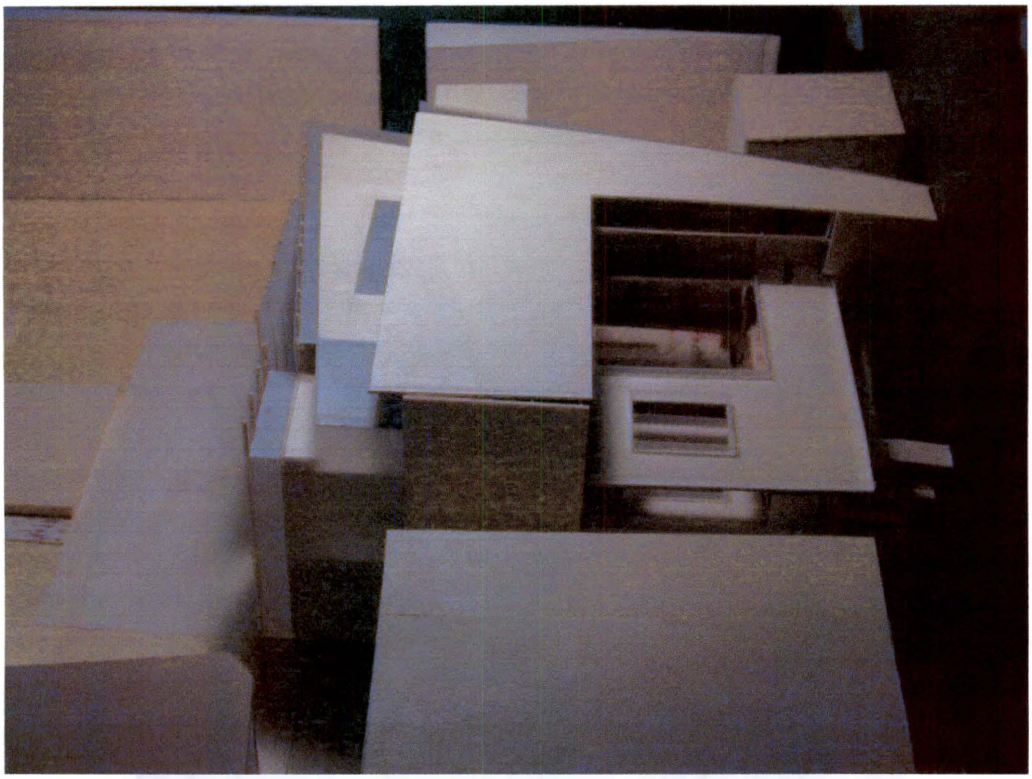


Figure 111. Final Project Model Photo 7.

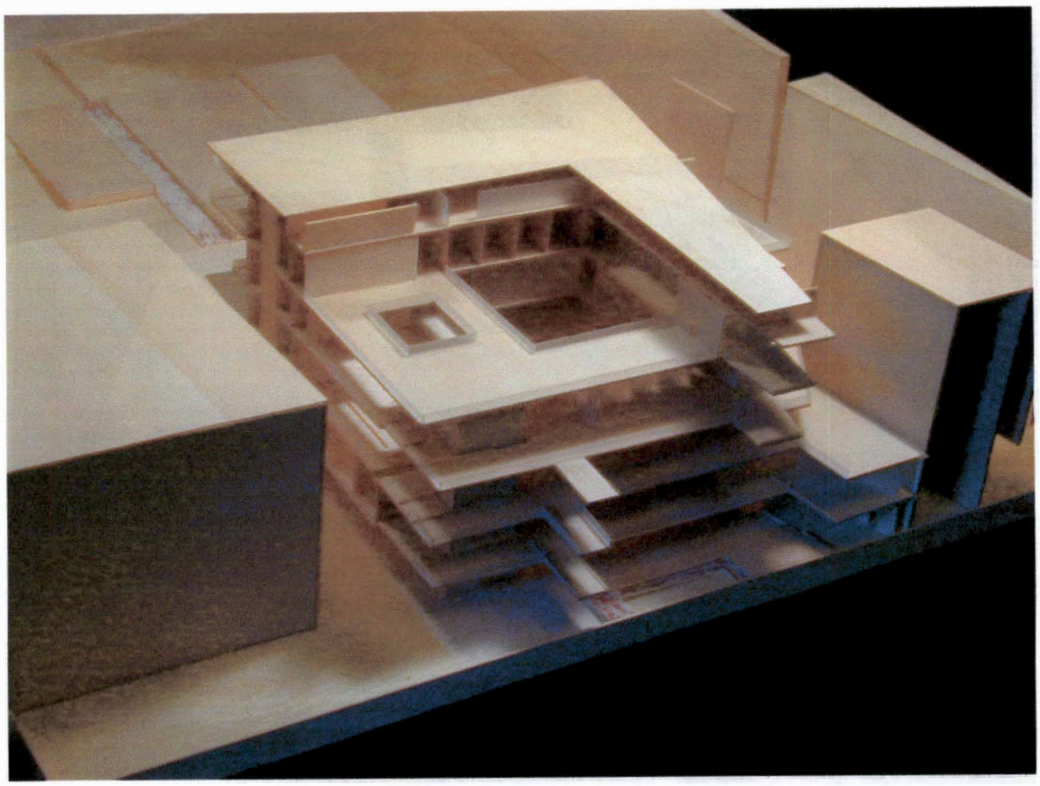


Figure 112. Final Project Model Photo 8

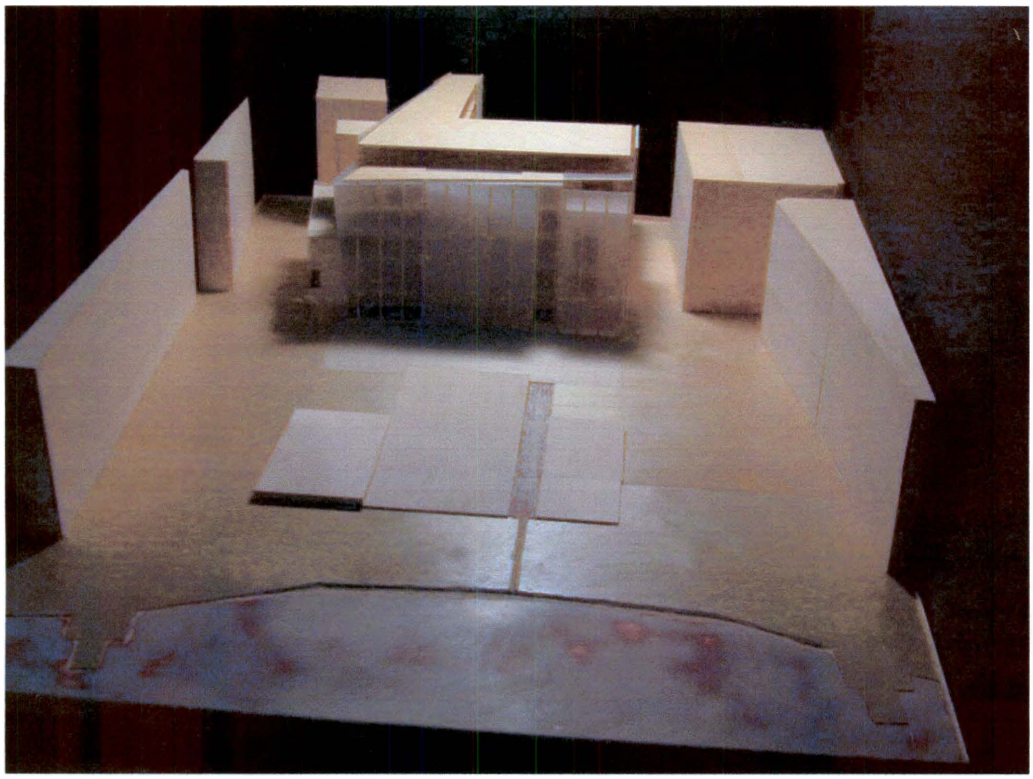


Figure 113. Final Project Model Photo 9.

Vita

Amy Robertson graduated from The Walker School in Atlanta in 1989. She then attended Agnes Scott College, graduating with a Major in Art and a Minor in Psychology in 1993. Following her graduation she became a Regional Manager over a five state region with Publications, Intl., a publishing company based in Chicago. From there she moved to New York City, working as the Public Liason to Alfred Taubman. She completed her Masters degree in Architecture at The University of Tennessee, Knoxville in 2003. Amy is currently pursuing her liscensure in Architecture as an intern in Nashville, Tennessee.