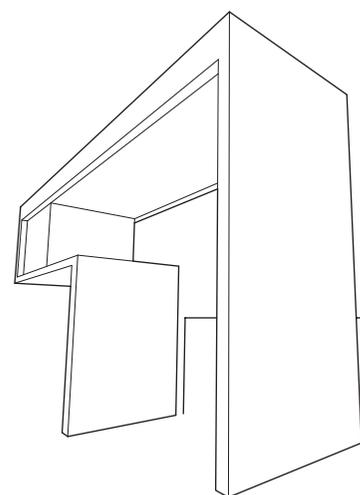


MASTER OF ARCHITECTURE THESIS BOOK LUIS VELEZ ALVAREZ JUNE 06 2005 COLLEGE OF ARCHITECTURE AND URBAN STUDIES VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY



Luis Vélez Alvarez

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

COMMUNITY WORKSHOP [TALLER COMUNITARIO]

MASTER OF ARCHITECTURE

June 06 2005

Heinrich Schnoedt
(Committee Chairman)

Margarita McGrath

Bill Galloway

03

INDEX

04-09

SITE ANALYSIS

- aerial photograph
- san juan urban density map
- walking distances map
- urban spatial sequence
- topography
- context map

10-11

THESIS STATEMENT

- visual noise

12-13

THE PLAZA

14-15

THE FOLLIES

16-17

THE GATE

18-19

LIGHT BOX

- small patterns
- large patterns

20-21

COMMUNITY WORSHOP

22-37

DRAWINGS

- floor plans
- south west elevation
- north east elevation
- south east elevation
- north west elevation
- cross section through plaza
- longitudinal section
- transverse section

38-39

**CONCLUSION / BIBLIOGRAPHY
ILLUSTRATIONS / CITATIONS**

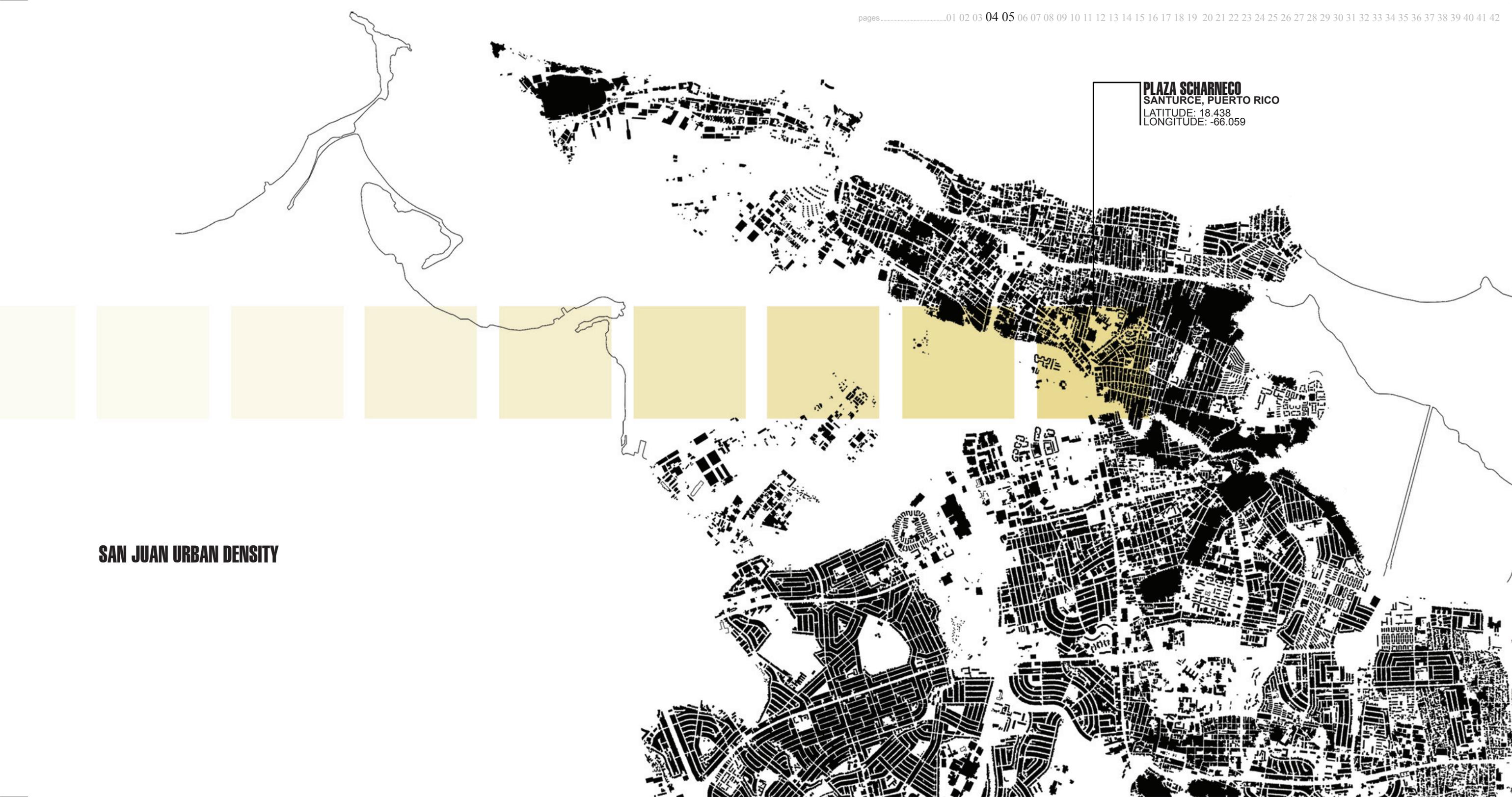
40-41

ACKNOWLEDGEMENTS / VITA



AERIAL PHOTOGRAPH

PLAZA SCHARNECO
SANTURCE, PUERTO RICO
LATITUDE: 18.438
LONGITUDE: -66.059



SAN JUAN URBAN DENSITY

SANTURCE SITE MAP WALKING DISTANCE FROM PLAZA

- Sagrado Corazon Train Station 7 minutes ①
- Sagrado Corazon University 3 minutes ②
- Minillas Government Center 16 minutes ③
- Art Museum of Puerto Rico 16 minutes ③
- Art + Music Center 16 minutes ③
- Central Park 24 minutes ④
- Barbosa Park 21 minutes ⑤
- Port Authorities Offices 55 minutes ⑥
- Capitol Building 1 hour 12 min. ⑦
- El Viejo San Juan 1 hour 20 min. ⑧

3 MILES
58 MINUTES

2.5 MILES
48 MINUTES

2 MILES
39 MINUTES

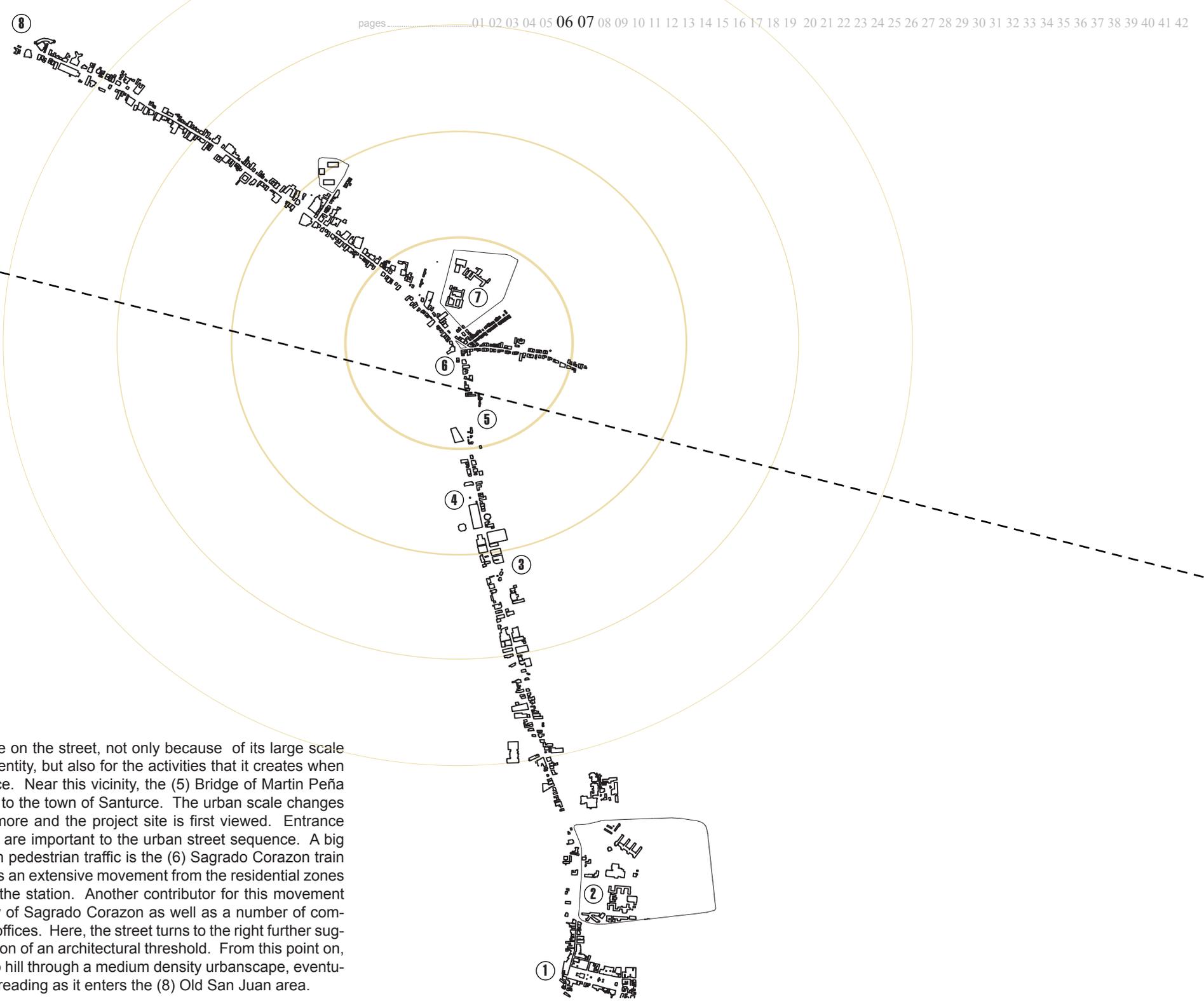
1.5 MILES
29 MINUTES

1 MILE
19 MINUTES

1/2 MILE
10 MINUTES



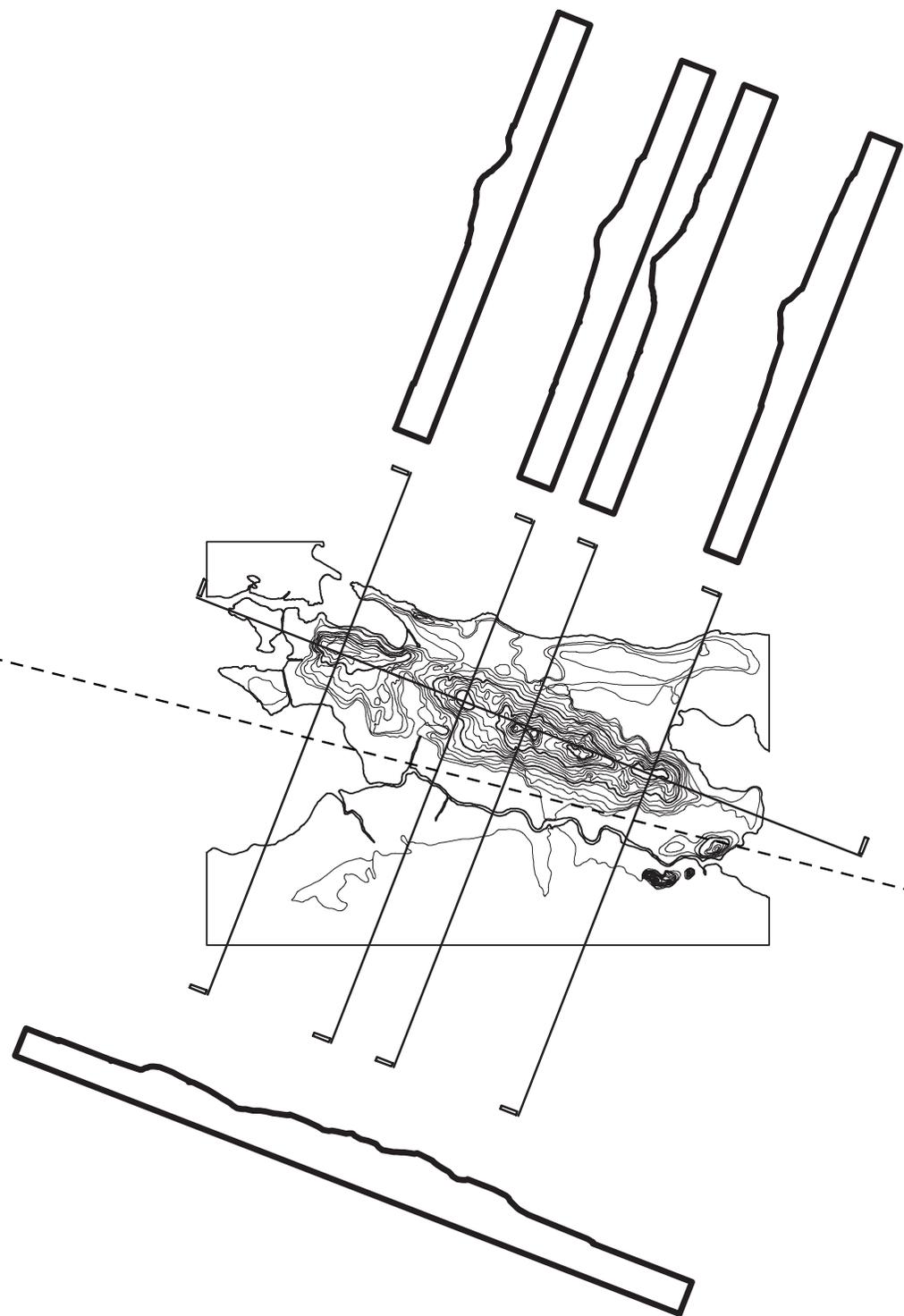
AIRPLANE FLIGHT PATH



URBAN SPATIAL SEQUENCE

The Ponce de León Avenue starts at the heart of Rio Piedras. This small scale urban street is typically filled with pedestrians. (1) One lane expands into a three lane avenue fed by intersections and smaller roads giving more space to the pedestrian and the (2) University grounds. This expansion becomes a point of identity. After the University, the avenue enters a denser commercial corridor with ill-defined traffic patterns, medium scale buildings but without a characteristic architecture. An occasional public bus will move in its lane depositing small groups of people that scatter across the street. The avenue changes in scale dramatically at the (3) “Golden Mile” where high rise buildings cast a desired shadow onto commuters and pedestrians. Because of the larger amount of office workers during day hours, the sidewalks are always full of people. Positioned in a skewed angle to the street geometry, the (4) Coliseum of Puerto Rico

imparts its presence on the street, not only because of its large scale and architectural identity, but also for the activities that it creates when an event takes place. Near this vicinity, the (5) Bridge of Martin Peña acts as a threshold to the town of Santurce. The urban scale changes at this point once more and the project site is first viewed. Entrance and spacial identity are important to the urban street sequence. A big contributor to a high pedestrian traffic is the (6) Sagrado Corazon train station. It generates an extensive movement from the residential zones through the site to the station. Another contributor for this movement is the (7) University of Sagrado Corazon as well as a number of commercial stores and offices. Here, the street turns to the right further suggesting the articulation of an architectural threshold. From this point on, the street moves up hill through a medium density urban landscape, eventually losing a clear reading as it enters the (8) Old San Juan area.



[1]



[2]

TOPOGRAPHY

Santurce belongs to the capital city of Puerto Rico (San Juan). Plaza Scharneco is situated in what used to be a swamp land, so much of its development came early in the 20th century as an extension of the Old San Juan area and Rio Piedras in a sub-urban fashion. Much of its development occurred when large farm owners subdivided and sold lots to private owners. As the city grew its density changed without the guidance of an urban plan. Two important components are proposed: the design of a plaza is delineated by the presence of three roads of different densities and a proposal for a public building and workshop. The building site is located between two commercial buildings. Both are connected through an underpass and a folding ribbon that extends from the entrance of the building to the plaza.

① SAGRADO CORAZON METRO STATION

This station is the last along the line that connects San Juan to Bayamón. There is a strong flow of pedestrians along this path to and from the station in the direction of the residential and commercial areas, as well as other public transportation lines. The plaza provides a space of connection between the street and the building, emphasizing a transition in a horizontal movement as well as in elevation.

② BUS STOP

Public buses pass through the Ponce de Leon Avenue and drop off pedestrians near the plaza. Residents, workers, students and visitors, all coincide at the Plaza Scharneco. In the same way the metro floods the sidewalks with pedestrians, the bus system contributes to the liveliness of the streetscape.

③ FRUITS, VEGETABLES + FLOWERS

Mid-morning a mother walks to the plaza. She approaches the follie located at the largest street level area of the esplanade. In the shade of the trees you can see a couple of boys enjoying a papaya shake. At the follie she buys a pound of rice, some spices, two tomatoes and four plantains. On her way she picks up a bouquet of margaritas because she remembered her friend is coming over this afternoon.

④ LIGHT + SHADE

A patch of trees bleed into the esplanade to mark a space of shade. Along with the grid of 12'-0" apart, a series of lamps create a random juxtaposition of posts. One post has two fluorescent lamps to illuminate the pedestrians. The other post has four lamps to illuminate the overall area. This space works in the plaza, both as a place of gathering of pedestrians and also accentuates the beginning or end of the plaza at street level.

⑤ NEWSPAPER STAND

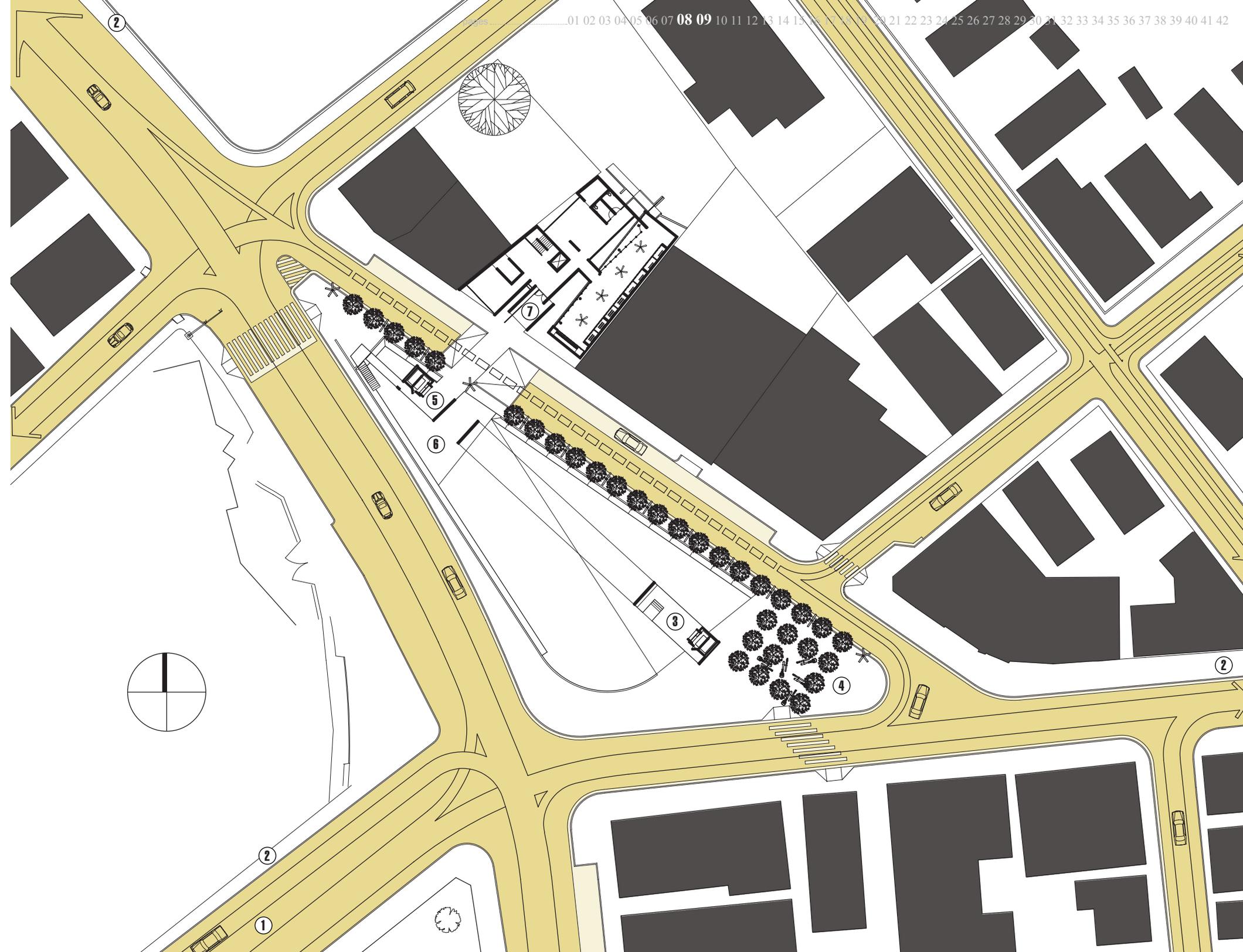
At the junction between the Ponce de Leon Avenue and the Sagrado Corazon de Jesus Street an existing newspaper vendor works every morning. The slow pace traffic is perfect to sell the news to the commuters. With this existing activity in mind, the newspaper follie materializes what already is a natural use of the space.

⑥ RECESSED PLAZA

With the intention of creating a quiet space within an otherwise busy street, the plaza was lowered 12'-0" below street level. The lowered perspective dampens both audible and visual noise, and offers an unusual viewpoint toward the familiar facades, allowing the pedestrian to perhaps rediscover the city.

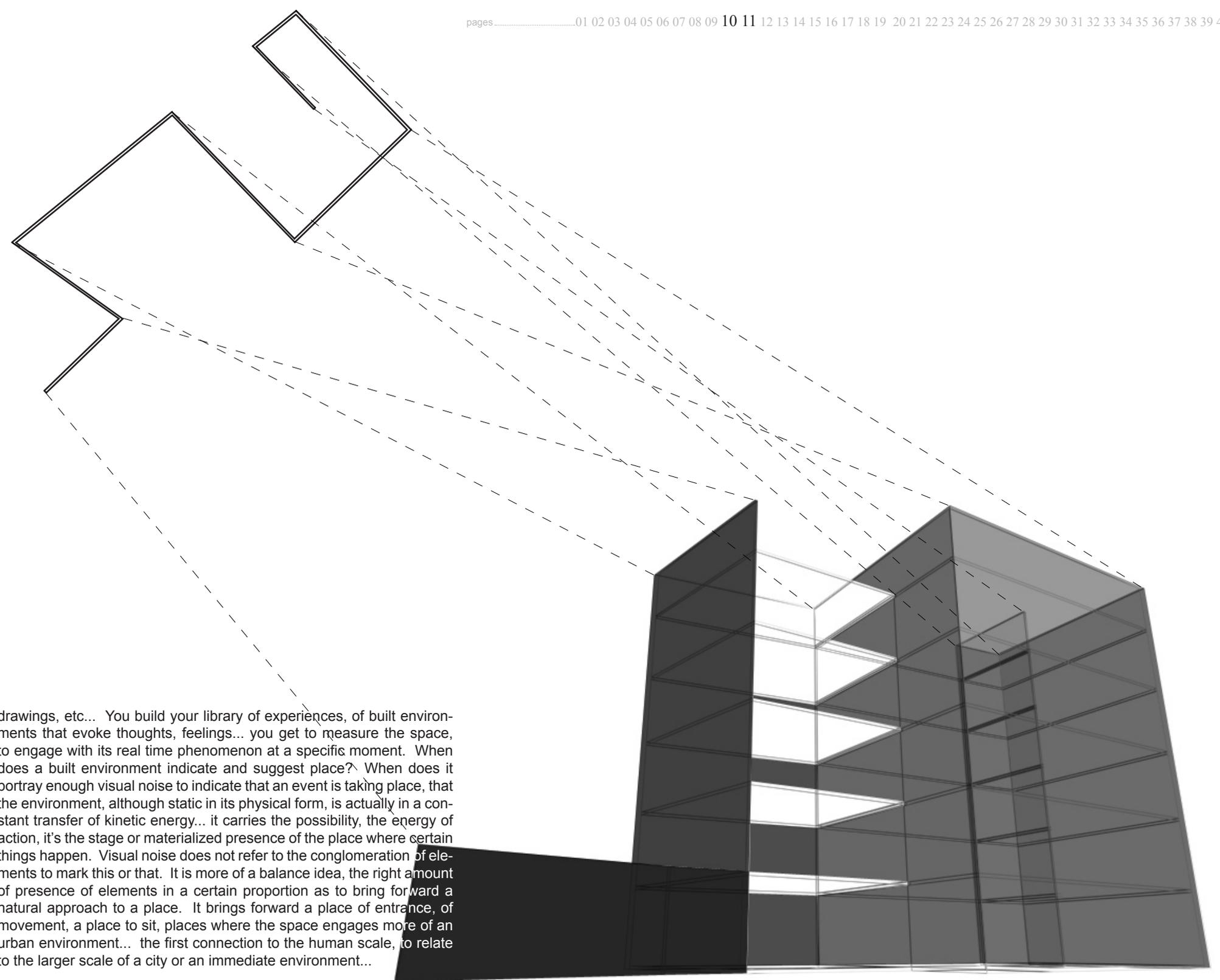
⑦ A ROOM IN THE STREET

Arriving from the sidewalk, it's the first space the pedestrian encounters. Visually it is important to the entrance sequence, engaging in a communication between the semantics of the building, its scale and details. The gate indicates time. It lets the pedestrian know if the workshop is open or closed from a distance. Inside this space you enter the workshop, but also it gives you an opportunity to view the interior courtyard from a skewed angle.





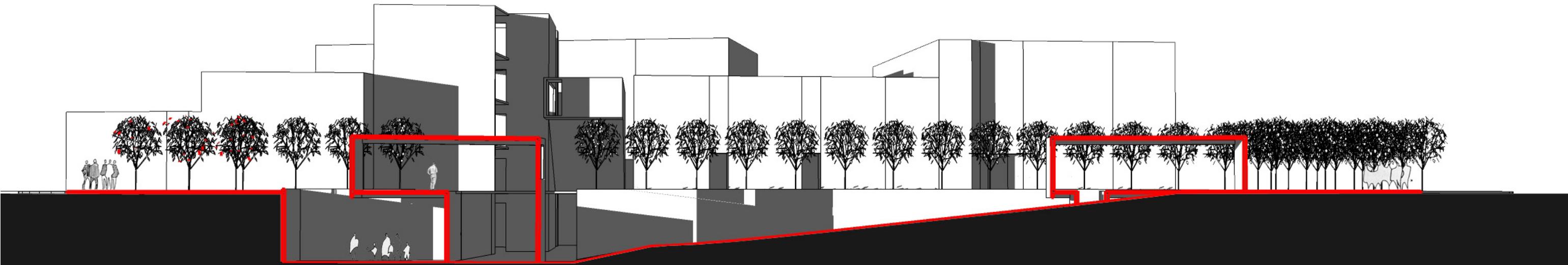
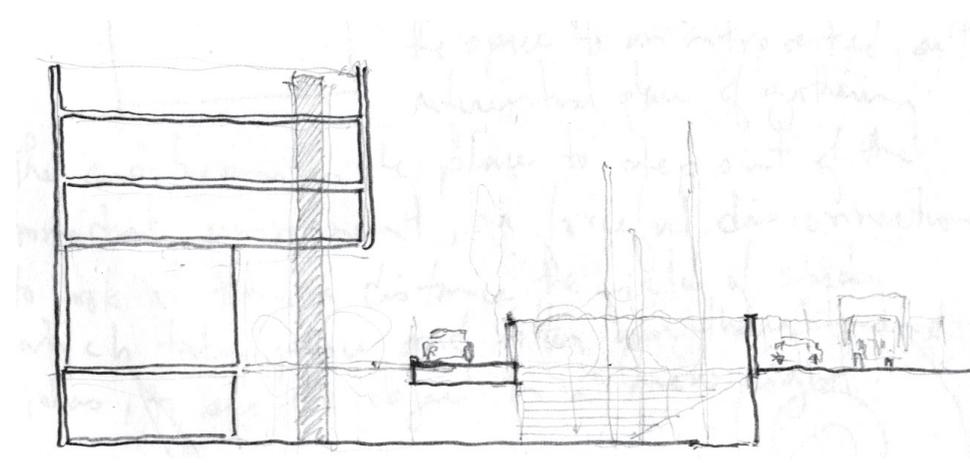
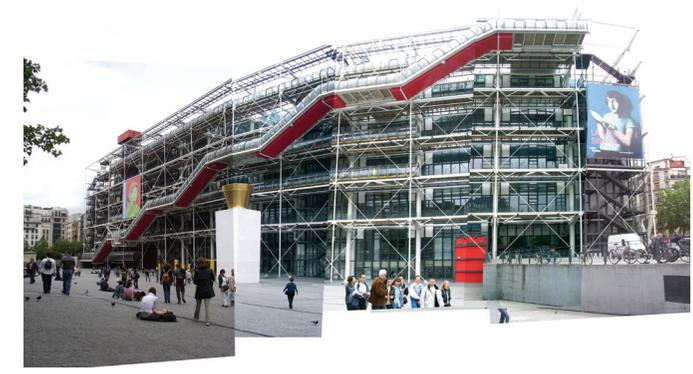
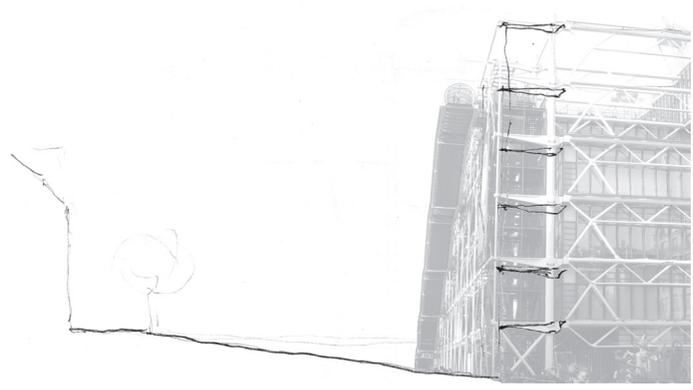
OPERATING WITHIN A DENSE URBAN CONTEXT, A PUBLIC BUILDING **RECOGNIZES THE ACTIVITIES THAT ARE CONTAINED** WITHIN ITS BOUNDARIES... FURTHER TYING THE PLACE TO A LARGER URBAN SPATIAL SEQUENCE



VISUAL NOISE ^[3]

A place, a good place exist under very particular and personal moments. Cats know of good places, so do children. I believe that places can be created by the experience of learning from spaces that have meaning. What are they made of, what are its dimension, what conditions created them? It's not the built or physical aspect of the place by itself that gives its character. It's more than this. It's your frame of mind. It's your personal experience, your relationship to this space versus your thoughts, your memories. But there are spaces that move you, that completely change your entire world around into a specific feeling, a specific frame of mind. It's the sound in the space, the scale, the view, the texture of the materials, it's to decipher its origin, its none apparent geometrical and philosophical thought process. As a designer, I am interested into resolving ideas, into understanding the way we live and why we create the environments we live in? Being in direct contact with designed spaces is an experience that cannot be substituted by books, pictures,

drawings, etc... You build your library of experiences, of built environments that evoke thoughts, feelings... you get to measure the space, to engage with its real time phenomenon at a specific moment. When does a built environment indicate and suggest place? When does it portray enough visual noise to indicate that an event is taking place, that the environment, although static in its physical form, is actually in a constant transfer of kinetic energy... it carries the possibility, the energy of action, it's the stage or materialized presence of the place where certain things happen. Visual noise does not refer to the conglomeration of elements to mark this or that. It is more of a balance idea, the right amount of presence of elements in a certain proportion as to bring forward a natural approach to a place. It brings forward a place of entrance, of movement, a place to sit, places where the space engages more of an urban environment... the first connection to the human scale, to relate to the larger scale of a city or an immediate environment...





THE PLAZA

The idea of a plaza in this context was always combined with a desire to reduce the sound and visual pollution of the street. Sinking the plaza below street level to form an entirely new space was driven by the assumption that the sound would travel above the plaza and the visual congestion of the street would disappear.

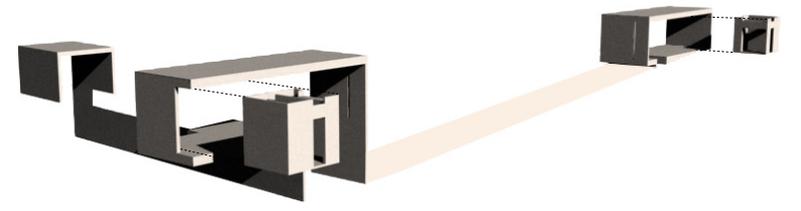
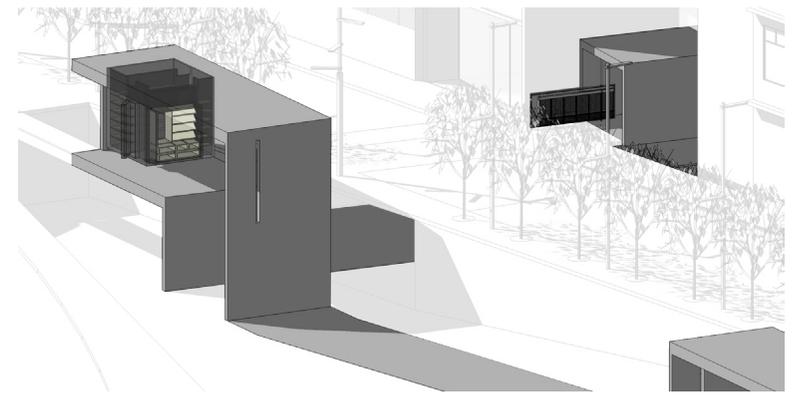
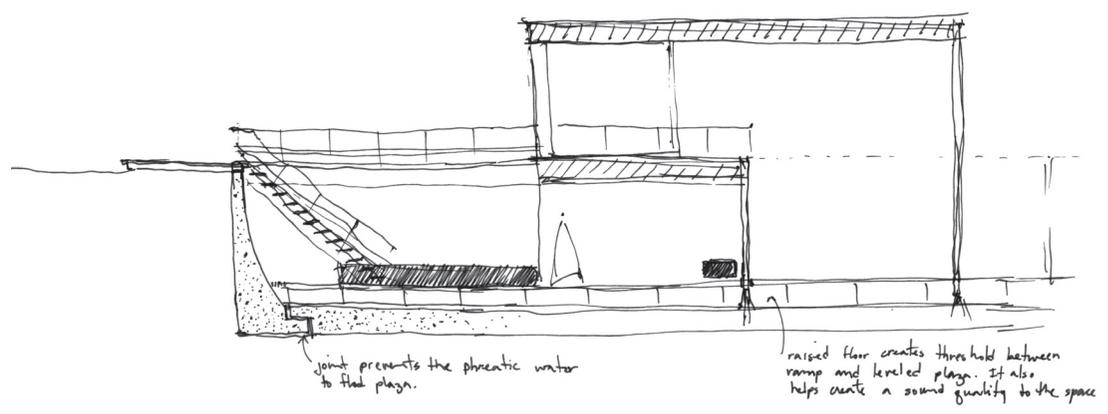
As a further opportunity, the day-to-day focal point of the street, can be altered by the lowered perspective. Above this architectural horizon the city has a different life and gives the opportunity to the pedestrian to re-discover the cityscape. By sinking the plaza at 12'-0" below street level a coherent concrete shell is required to go below the 3'-0" water table. A trough lines the walls to separate the people from direct contact with the walls in an attempt to minimize vandalism.

The concrete tiles of the plaza floor are elevated from the structural slab. The space between the concrete tiles and the slab is used to drain rain water but also generates different sounds during walking.

An area of the floor surface of the plaza is inclined and finished with a flamed granite stone. Similar to the plaza in front of the Pompidou Center in Paris, the inclination should invite people to sit.

At street level, a grid of trees and accent lighting define an area of shade in an otherwise open space. A line of trees and light posts flank the sidewalk to the north. This line is interrupted in axis to the entrance of the proposed community center to further accentuate the connection between both architectural entities.

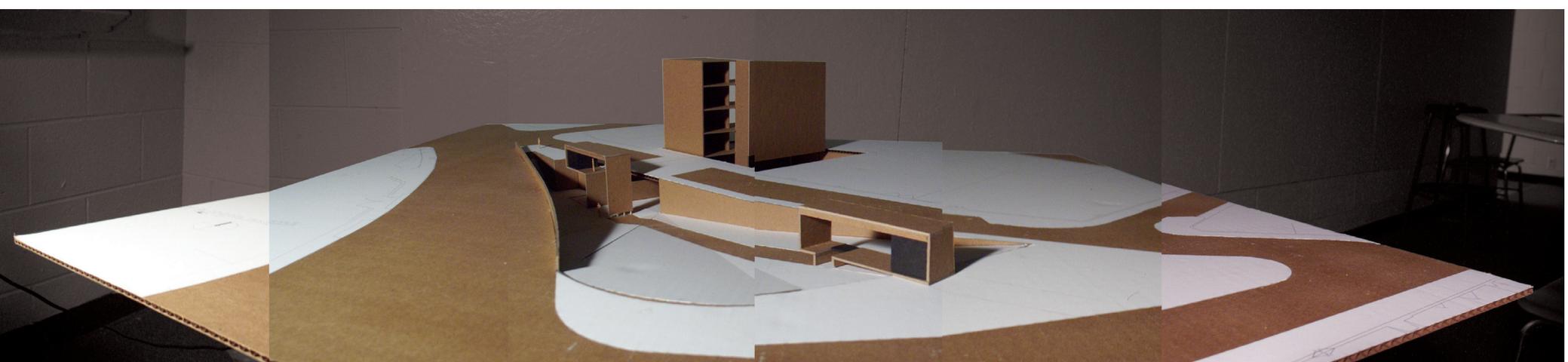


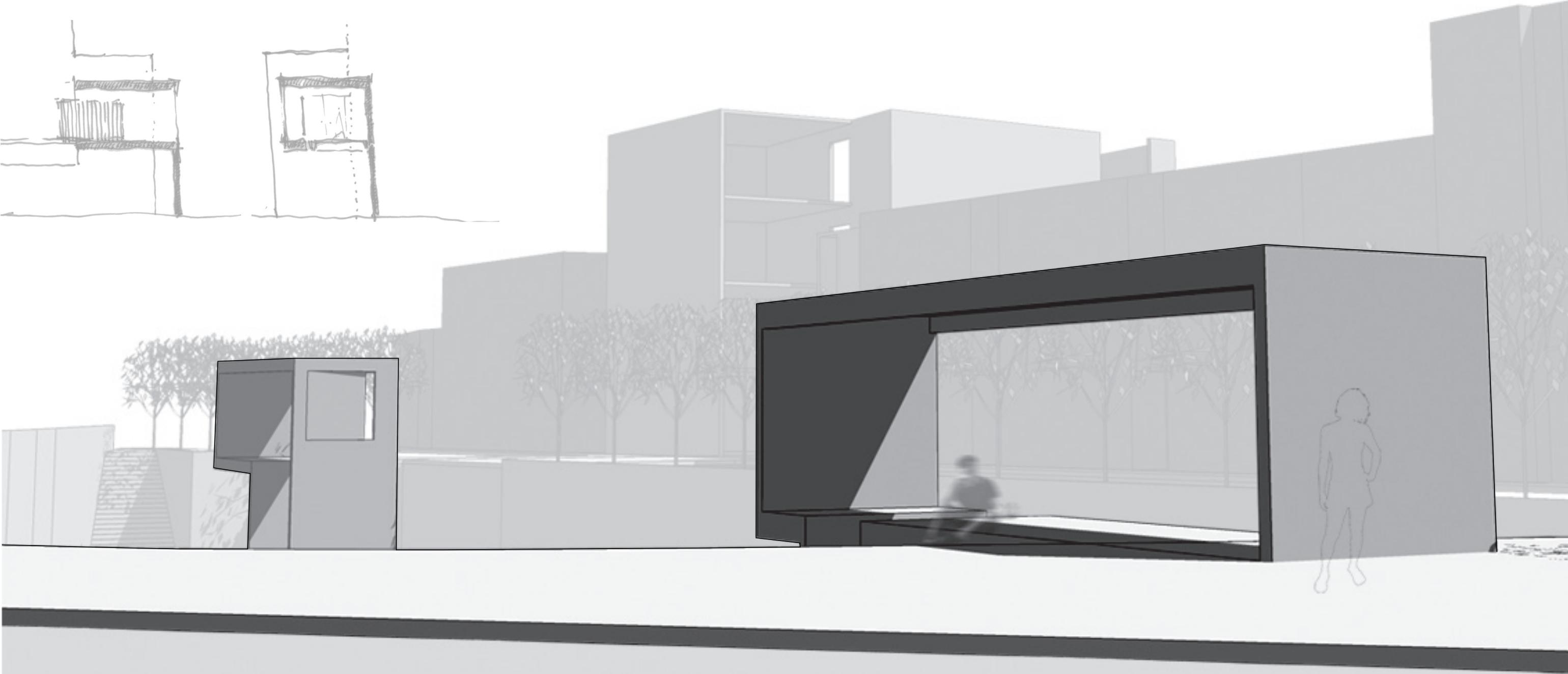


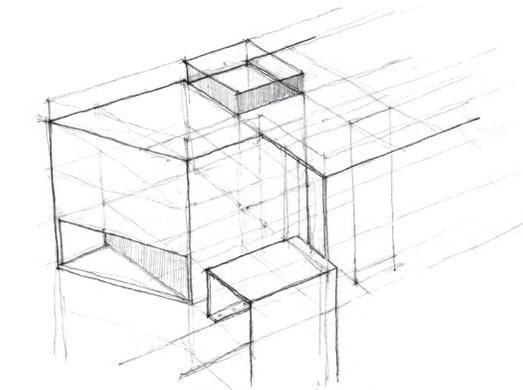
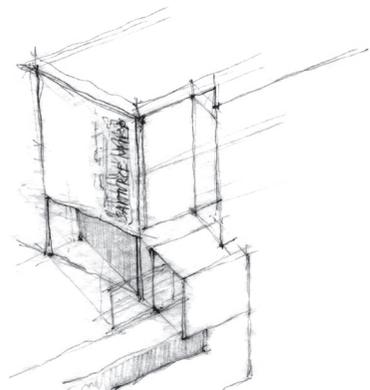
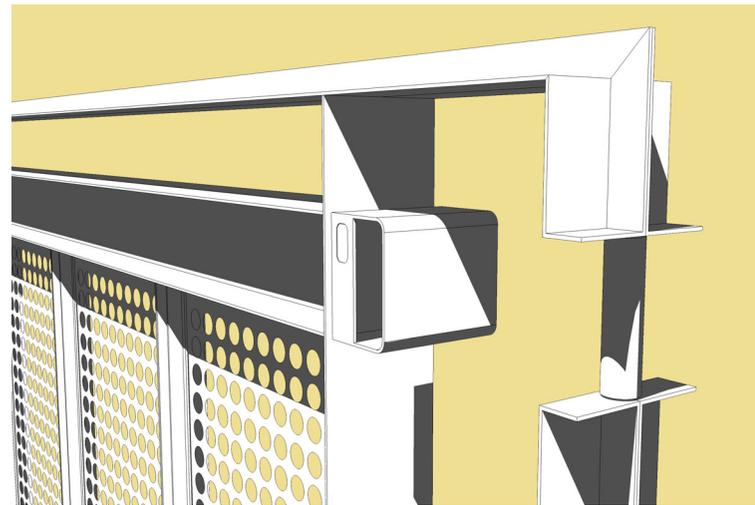
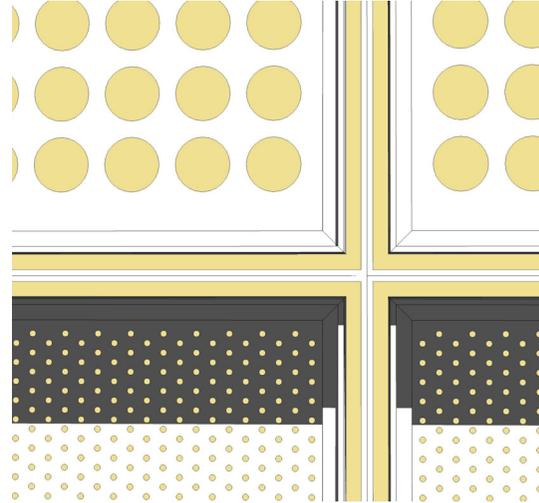
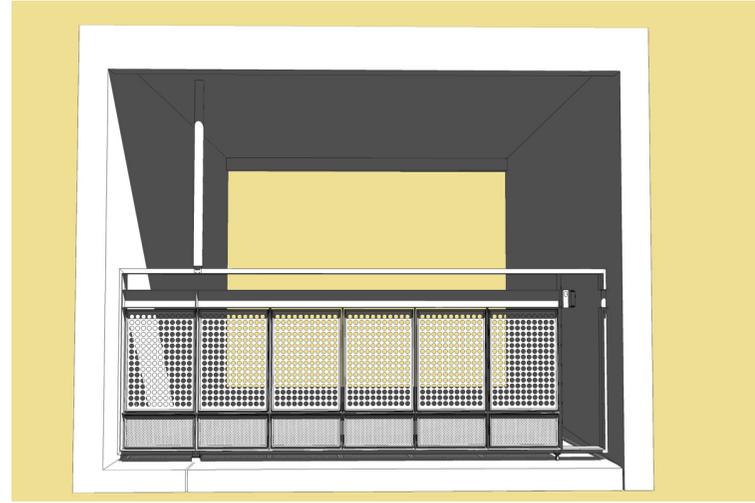
THE FOLLIES

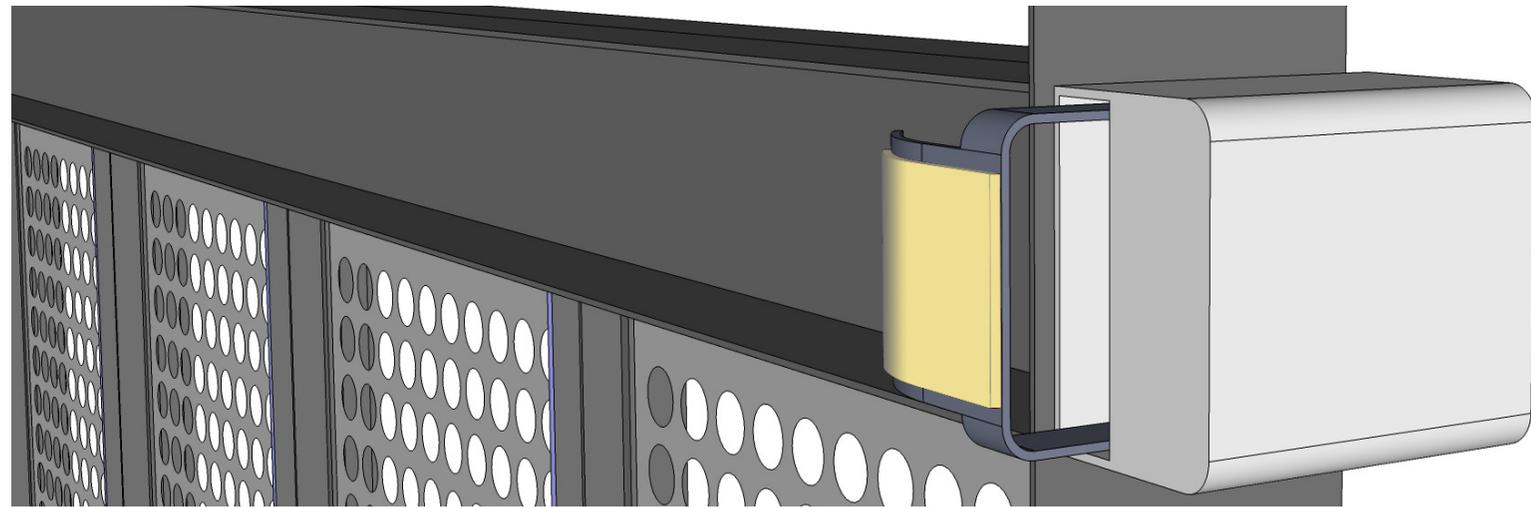
The follies anchor the space for activity. Architecturally they define places within the plaza. Designed as an open ended concrete envelope that moves about the site, they rise from the ground and fold to create a space. Ultimately, the planar construct returns to the floor surface.

Inside the formed folly space, kiosks for fruit and vegetables, or newspapers are housed. Steel and perforated metal panels are the primary material for the clean continuous light surface in dialog within the heavy concrete shell. The steel denotes the replaceable part, however the shell is a permanent sculptural element. At night, these surfaces are lit from inside to become the main light sources of the plaza.









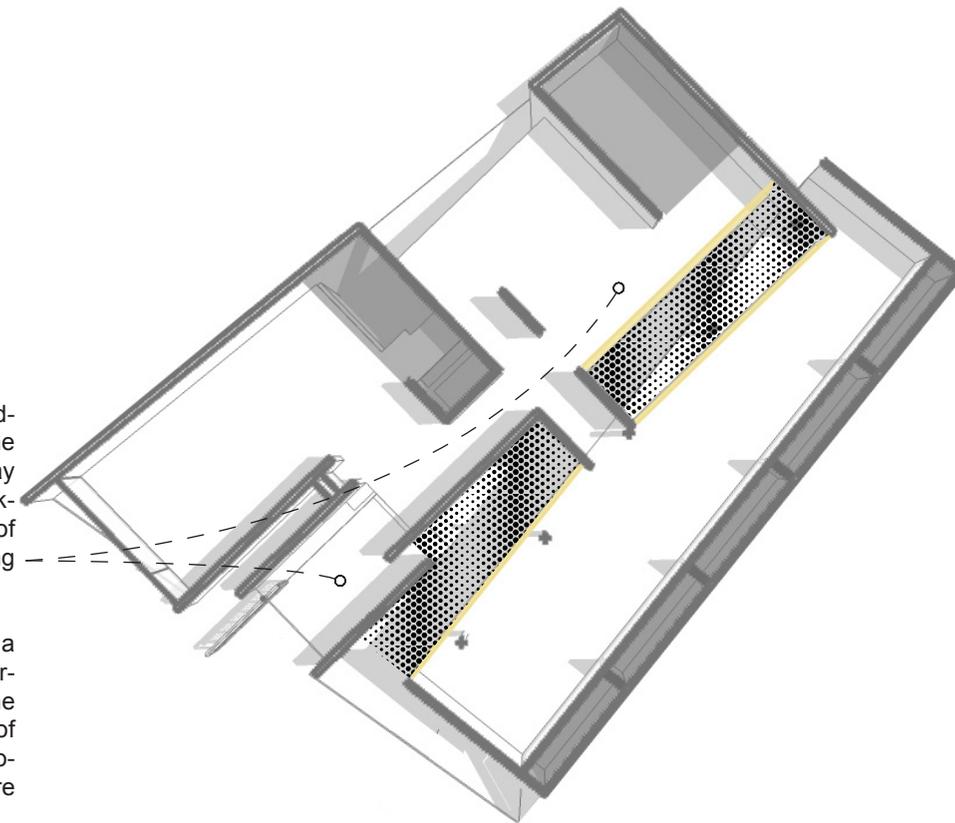
THE GATE

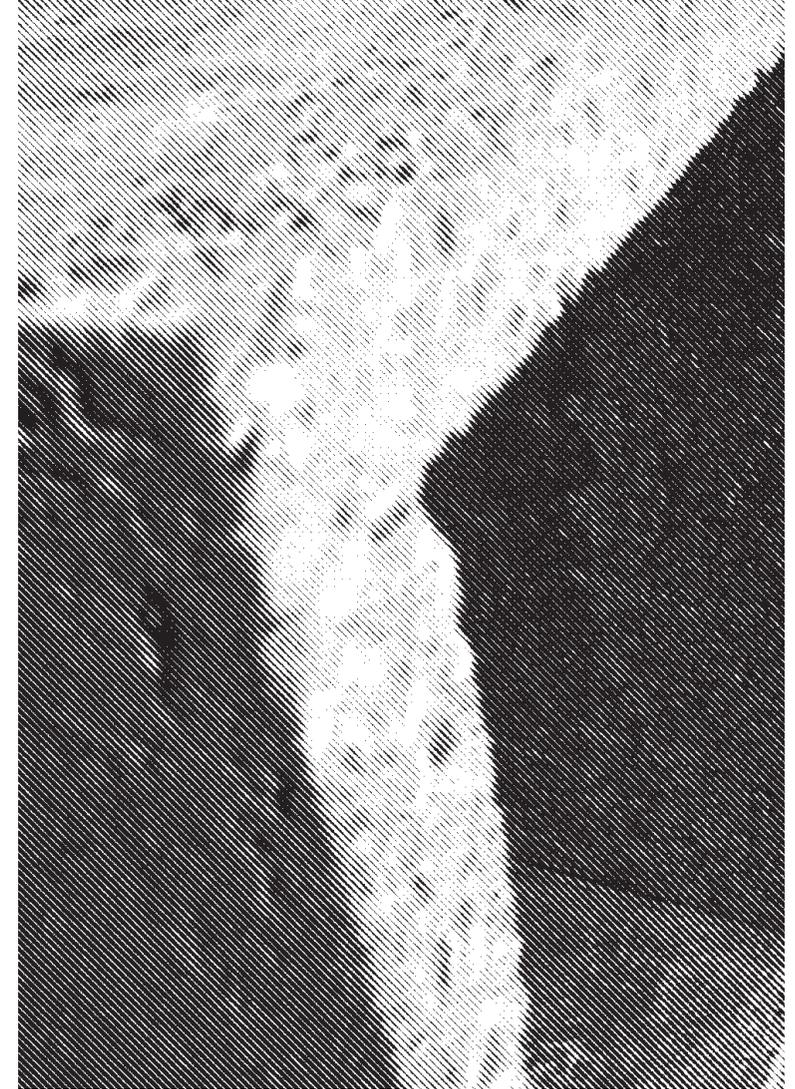
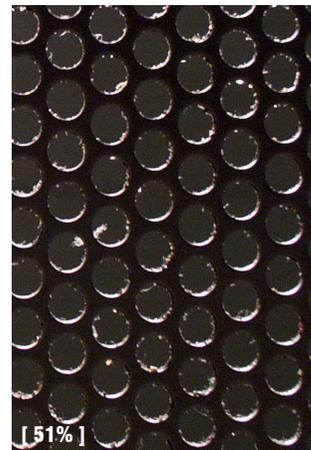
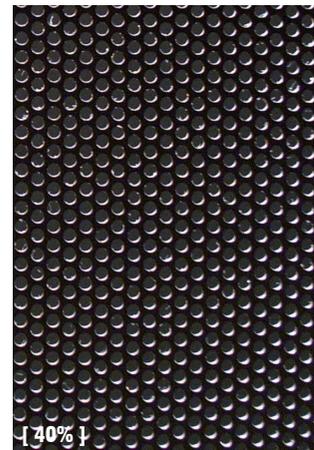
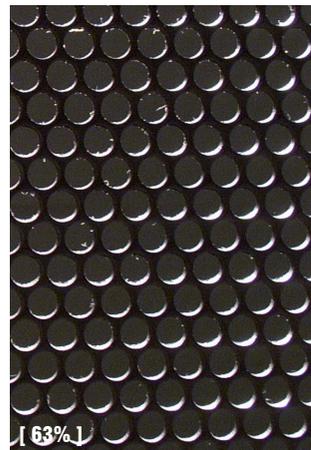
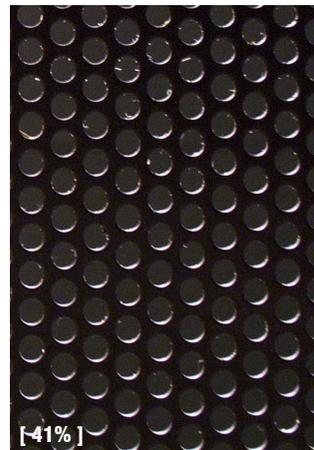
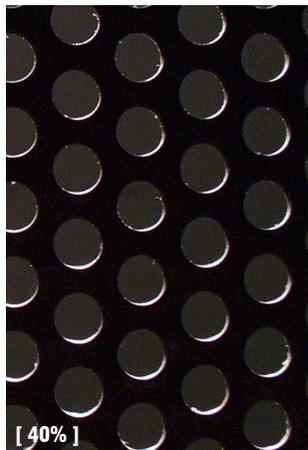
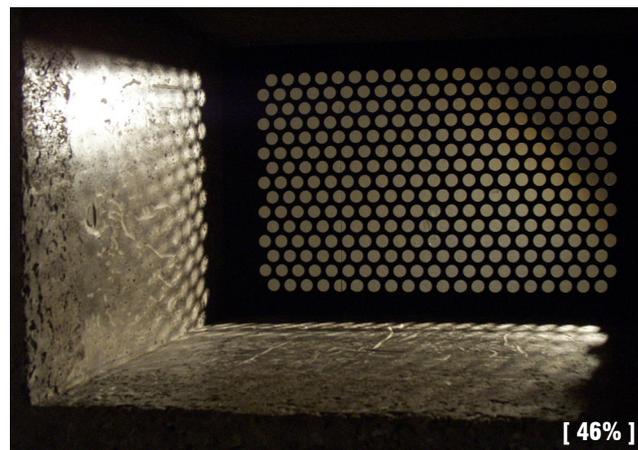
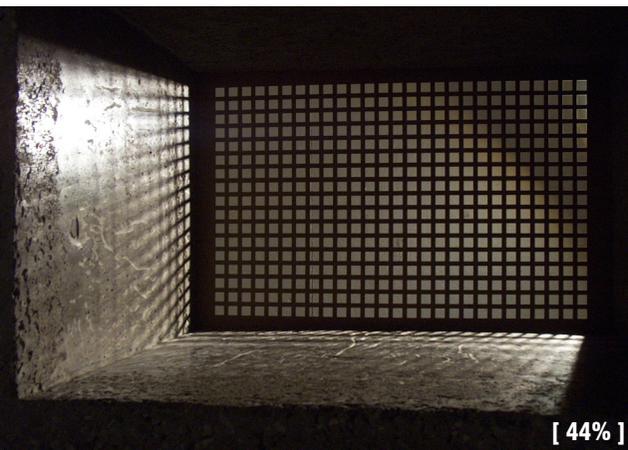
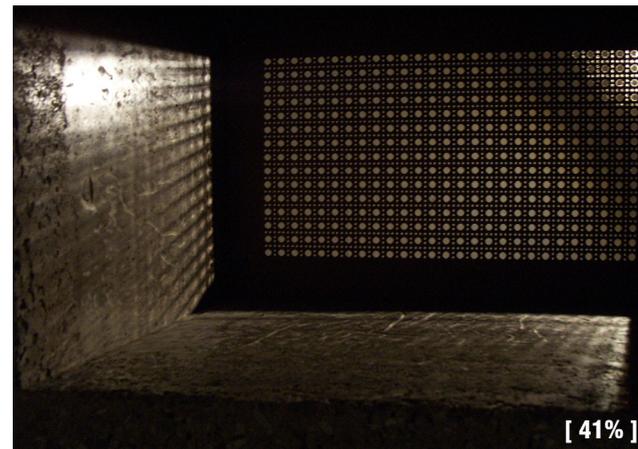
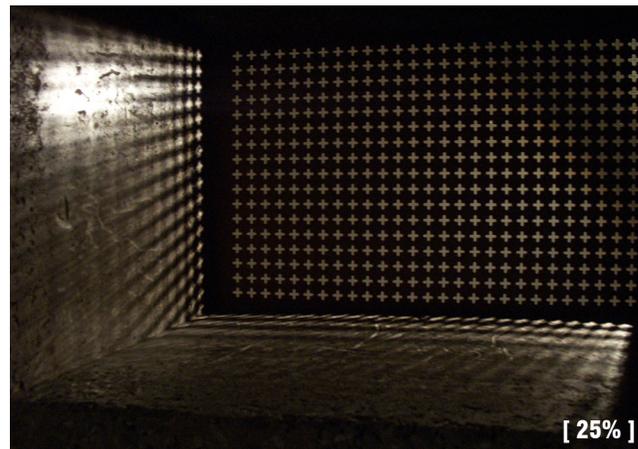
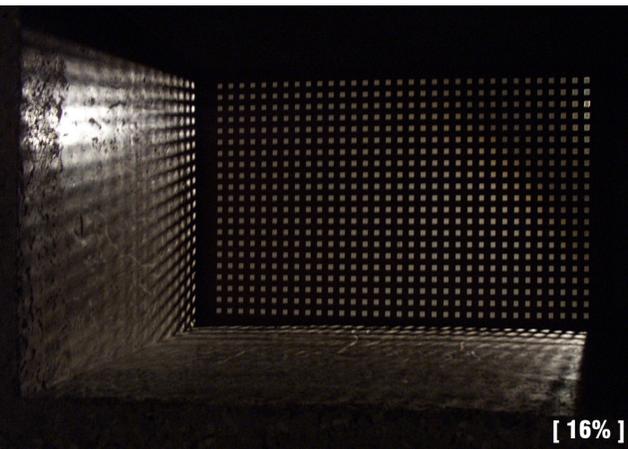
The gate is only 4'-6" high, made out of steel angles, flat bars, c-channels and perforated screens. Arriving from the sidewalk, it is the first object the pedestrian encounters. Visually it is important to the entrance sequence, engaging in a communication between the semantics of the building, its scale and details. The heaviness of the gate is counteracted by the transparency of the metal screen, but also acts as an indicator of time, creating very sharp patterned shadows on the sidewalk. From a distance, it lets the commuter know if the community workshop is opened or closed. Within this space, the pedestrian has access to the lobby. It gives you an opportunity to view the workshop from a skewed angle, essentially projecting the sidewalk through the building.

The spatial sequence is programmatically organized in a way so that people understand what activities are taking place in the workshop. The closest room to the street is a small utility office to pay utility bills.

This might be the first reason why most people will approach the building, but to reach it you have to enter the building and engage with the programs relating to the community. Inside the space, the hall way guides you into an open exhibition hall flanked on one side by the workshop module. The hall way between these spaces is composed of overlaid perforated panels, which activates a visual pattern by walking through the space.

The community is also able to participate of the work shop area from a distance, looking through the perforated surfaces. Learning by observation. This introspective condition is what I consider important in the making of a public space that wants to foment interaction. Because of the reduced lot area, most views to the street are limited, but the introverted condition lets everybody interact with each other even if they are secondary participants.

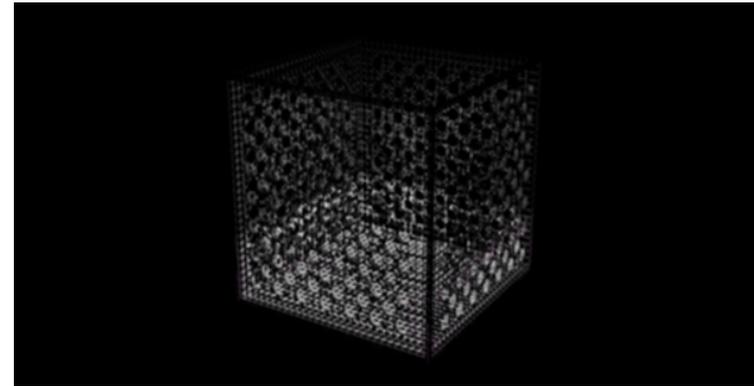
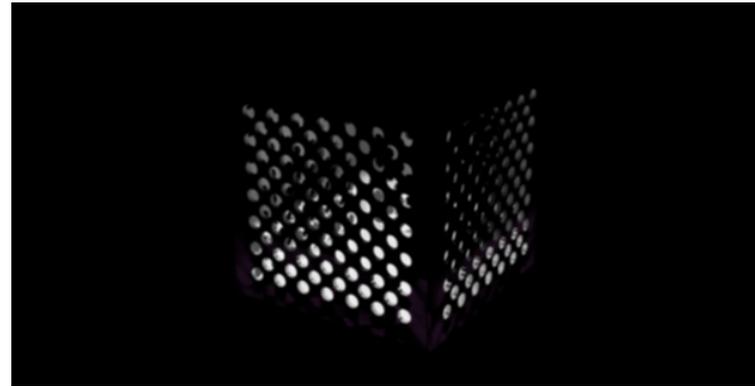




LIGHT BOX

Moving through a space, the overlay of transparent surfaces generate unexpected patterns that can either contribute to the character of the space or create undesired illusions. The light box is a measuring tool. It is a tool to observe at a one to one scale the quality of light filtered through a series of screens reflected on a concrete surface. Although it is not quantitative in nature, it provides the ability to judge through the senses (visual and tactile) the effects of the light patterns. Through the use of photography, drawings, computer modeling and animation conclusions were able to be formulated and decisions took form as part of this thesis.

Patterns are chosen based upon the ratio between open and solid surfaces, its geometry and its contribution to the overall graphic quality. Although most screens were simulated through the use of cardboard materials cut in a laser cutter, smaller scale stainless steel screens were tested for its light reflection properties.

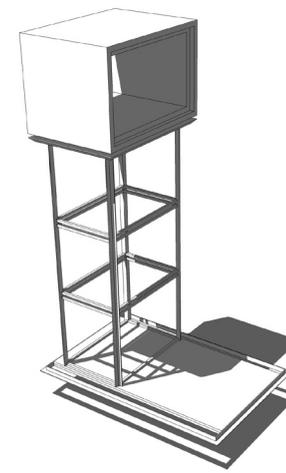


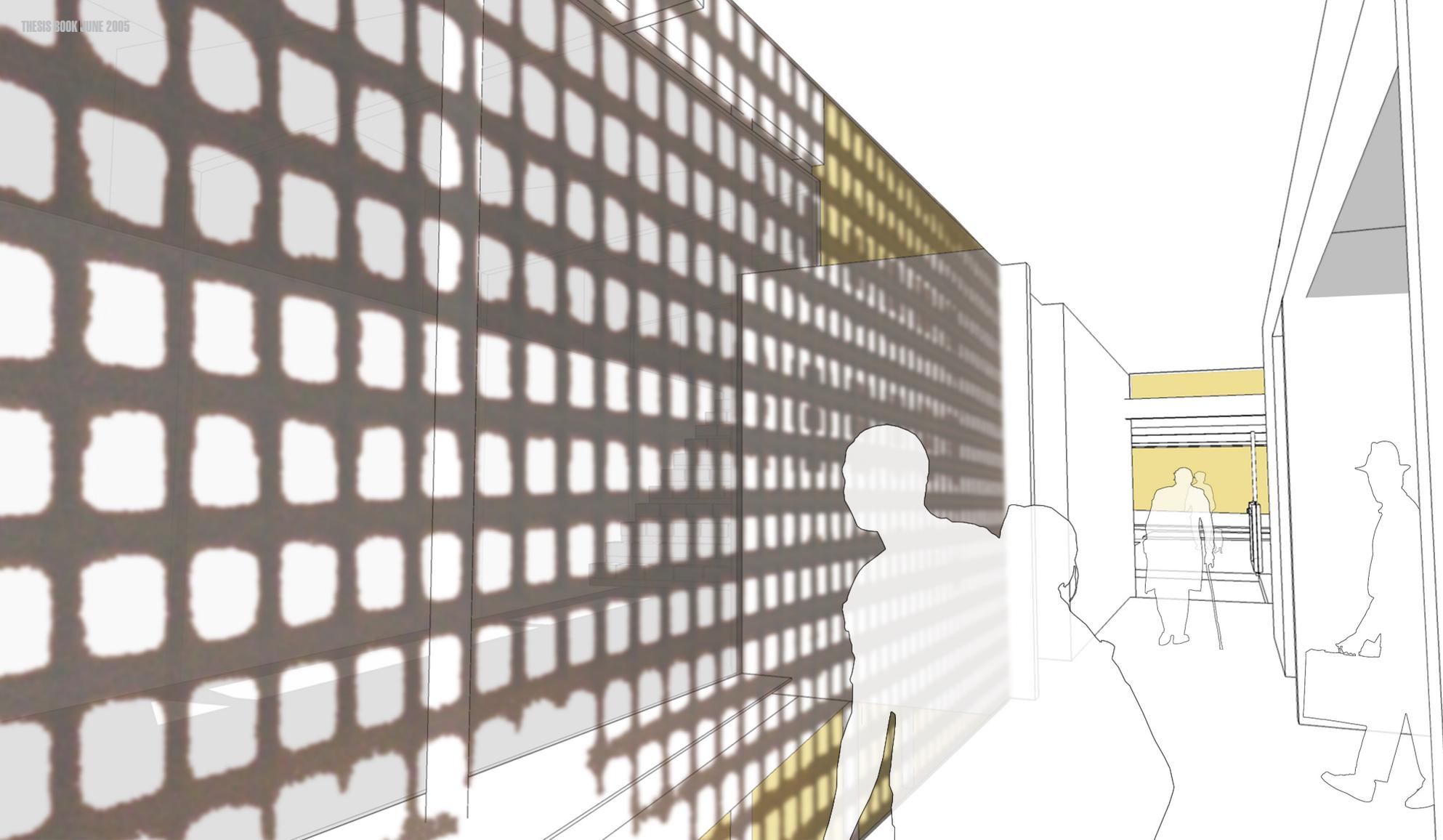
SMALL PATTERNS

Screens with a smaller percentage of open surface create a tighter, more defined projection of the light and shadow patterns. The closer projections are very intense and concentrated in an area, but the extension of the light traveling to this intensity dies quickly blending together closer into the darkness. The screens with the lowest percentage have more surface area, thus they are mostly opaque. To look through the screen, you have to be at a closer distance, which means that for the screen to become a unified merged surface, the eye doesn't have to be far away. In the case that the shape of the pattern becomes important to the design in relationship to the detail, the smaller pattern acts as a forceful approach to the surface to look through it. A smaller pattern could be used on a surface that needs to be defined more like a volume and less dependent on the transparency aspect of it. At night, when lit up from inside, the pattern is more apparent. The light is contained inside as if the glow within is more important than the surface itself.

LARGE PATTERNS

In a large pattern screen the perforation pattern is projected in a more diffused intensity but at longer distance. An interesting observation is that the more open the screen is, the more pronounced the pattern becomes. In other words, the shadow or negative part of the pattern becomes more defined. In spite of this, the image behind the screen is more visible. It's filtered in a subtle way. For the screen to become a unified surface the distance becomes more significant. Hence, in order for a pattern to be visible at a greater distance, it needs to be big enough that it doesn't blend in as much but also that the shape has an opportunity to thicken at points and create places for the eye to follow. If the pattern is completely homogenous, the eye doesn't pick up a hierarchy to read the surface. At night when lit from inside the interior is more visible. The pattern disappears within the high contrast created by the light and the way it diffuses through the surface creating a glowing hue.

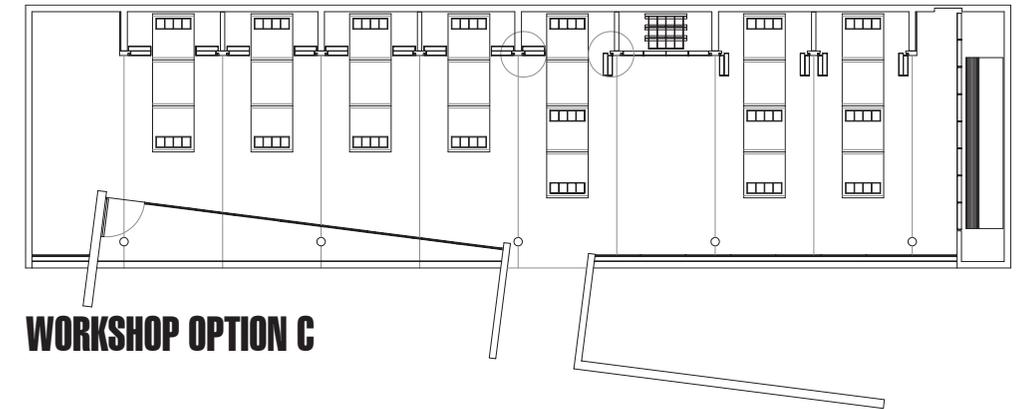




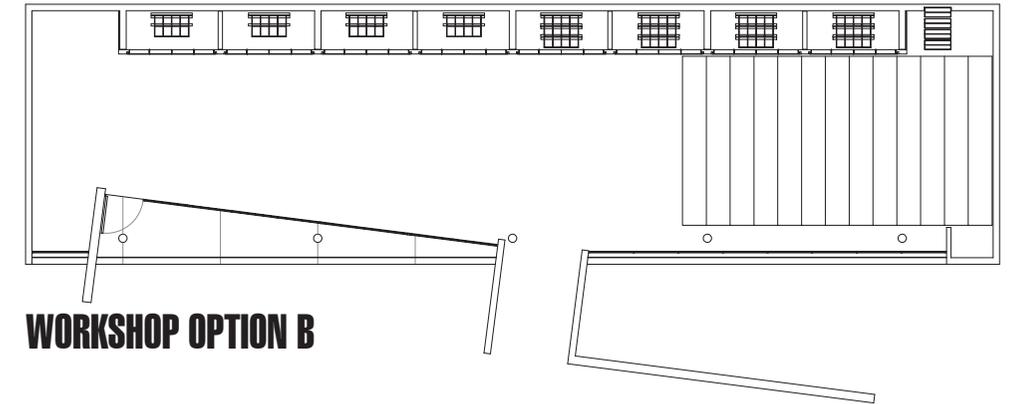
COMMUNITY WORKSHOP

The workshop is ultimately an accommodative space similar to the plaza in its conceptual purpose to provide a place of meeting. The separation of this room to the main body implies a hierarchy. A connection point between the public building and the workshop indicates the last threshold within the spatial sequence from exterior to interior spaces.

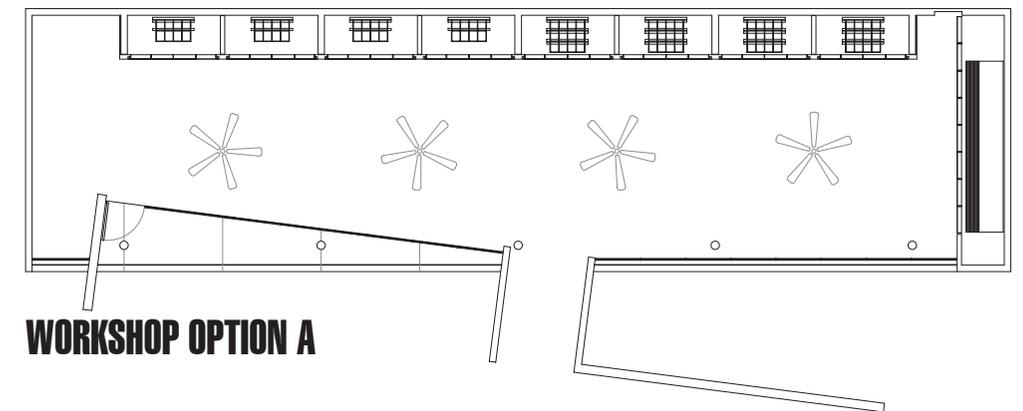
There are three arrangements to the workshop. As a workshop (C), tables are pulled out of the walls along tracks to provide work surface. The tables have temporary storage units within its structure for the use of the students during classes. They can be used on both sides and be replaced without much work. As a seminar room (B), the tables are pushed back into the working wall and bleacher style seating is pulled out of the south wall. The seats determine the place for the spectator and the place for the performer. Additional chairs are added in front. Although the space to be used as stage is of an unusual geometry, I believe that it



WORKSHOP OPTION C



WORKSHOP OPTION B



WORKSHOP OPTION A

is very much useful for activities such as student recitals, small plays, seminars, receptions, etc. The third arrangement is when the space is completely open (A). The walls are cleared and closed.

The workshop lacks direct natural light throughout much of the day. For this reason one entire wall is open to receive indirect light reflected off the main body. The metal panels in this side are coated white to maximize the intensity of light. It is a combination of glass windows and perforated panels where the two buildings interact there is a separation of surfaces, one space pushing back into the other. A small balcony is peeled back to create a place to walk outside, to be able listen to the sounds of the city. From the cafeteria courtyard this wedge goes all the way to the sky. In this manner the activity being held within the workshop becomes a social performance for the rest of the community. Another light source is a light well above the working walls. Light is

diffused into the space and reflected of the ceiling. These windows are operable. With the aid of ceiling fans the workshop can be kept ventilated without the need of an air conditioner. In our search for commodity, we depend on artificial mechanisms to alter our environment. I believe that while there are certainly times when this is inevitable, if there is an opportunity to use natural ventilation and illumination it should be used. The ceiling fans not only respond to this idea of using less energy consuming operations, it also gives a certain character to the space. It scales down the ceiling to a secondary surface and talks about environmental and cultural realities.