

a self portrait

“The embassy of Chile”

By

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MASTER OF ARCHITECTURE

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A self portrait the embassy of chile

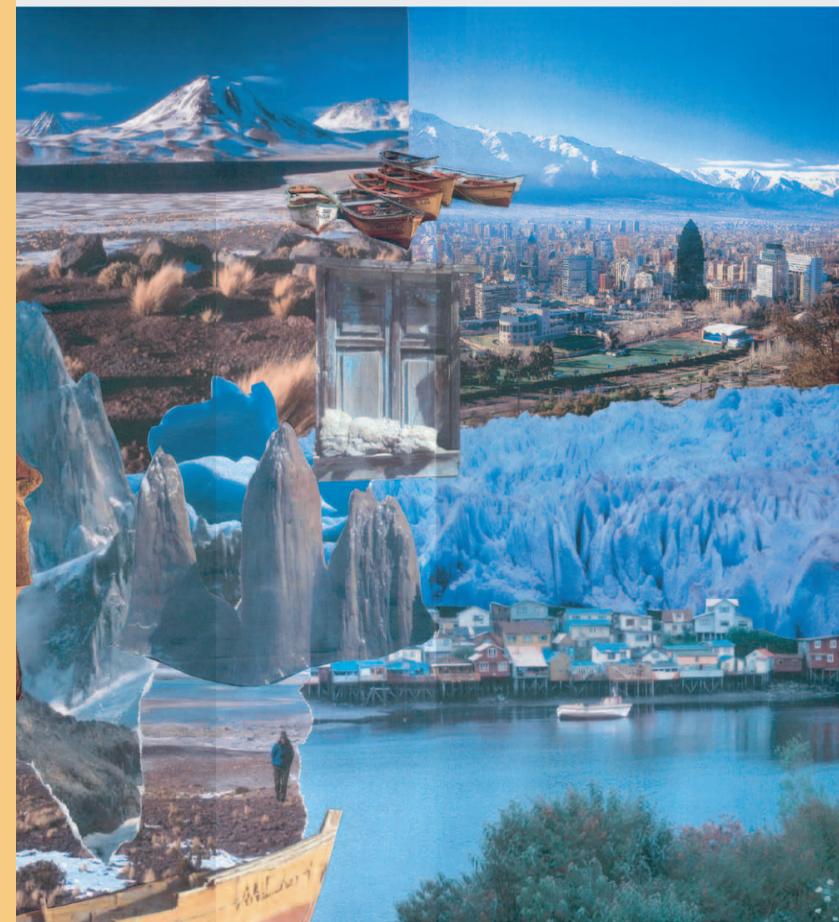
Washington D.C. is a city of multicultural richness difficult to surpass. The huge diversity of languages, cultures, and people found in the city are the bases of its identity. A large number of diplomatic missions, international organizations and agencies are a dramatic proof that Washington D.C. is currently the center of the world, the Rome of modern times. To this extent, each country holding diplomatic missions strive to make its representation, its presence in the city, as notable as possible. Because of this, architecture has been provided with a great opportunity. An opportunity to showcase the spirit of each country; their culture, and their uniqueness through their embassies.

The desire that sparked the idea of making a thesis about the Embassy of Chile may be traced to the experience of being a foreigner, a Chilean, living in Washington D.C. In the same manner that a person may represent its country, an embassy building gives the opportunity to express and show a lot of what that country is about, it has the potential of becoming a symbol for it.

Although this may seem a very straightforward topic, it's actually very broad, and may be regarded in a number of ways. How do we represent Chile? What do we show? What don't we want to show? How do we express it? And even how can we define Chile. These were questions that had to be addressed before even thinking about designing the embassy.

In order to this, the concept that had to be adopted had to be capable of handling this selective process. It's a procedure in which the person doing the representation also takes part in it. In other words, it's a process by which you are presenting yourself. Through research done at the early stages of the thesis, it was found tha the best way to describe the process was by making a Self Portrait. By adopting this concept we were given the possibility to create our own image of what Chile was, and to reveal and conceal whatever we thought was appropriate.

Abstract



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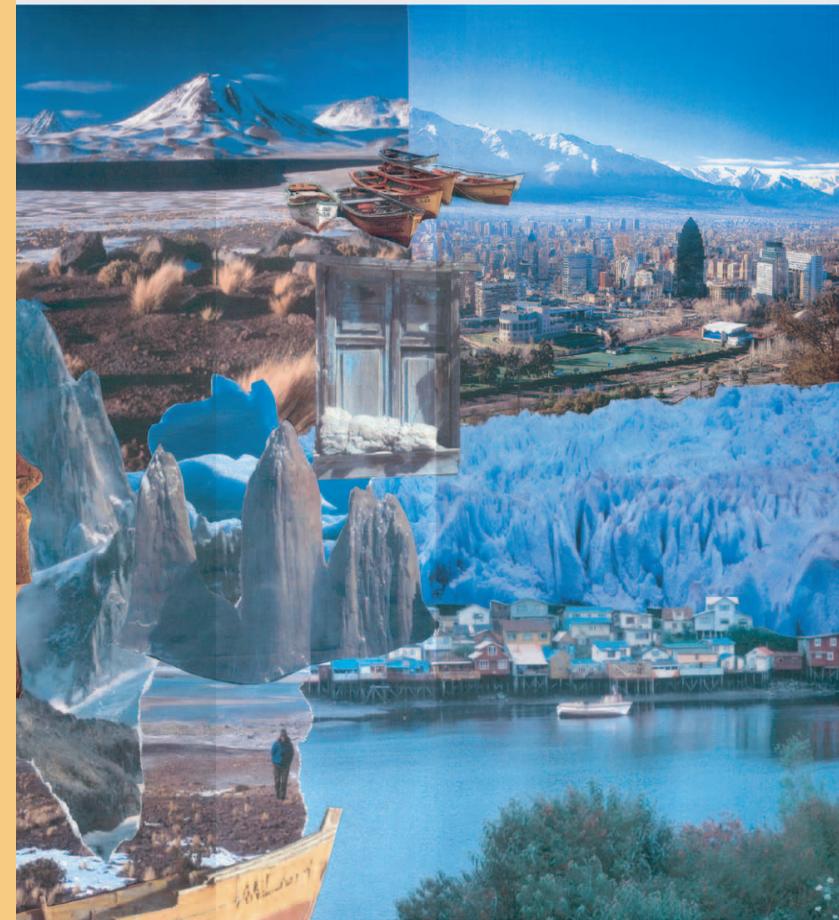
The opportunity to fulfill the dream of studying in the United States could have not been accomplished if it weren't for the support of my family. I would also like to thank my committee, Susan Piedmont-Palladino, Dr. Paul Emmons, and Dr. Marco Frascari, for their insight, knowledge, and patience.

Introduction

The concept of Self Portrait is made up of 3 points that translate it into an architectural concept. The first part of the concept is the Spatial Idea. It develops on the idea of revealing and concealing that the concept Self Portrait holds, and attempts to create a space that carries the qualities that are defined in the concept of Phenomenal Transparency. Which is something that was researched during the beginning of the process in order to clarify which type of transparency would be appropriate with the project. What's interesting about phenomenal transparency, and the reason why it is pursued in the spatial arrangement is that it regards space as being a series of events in which space is differentiated through the definition of different qualities to it, but at the same time the different events that are created overlap each other, creating an ambiguous sense of space. This way, the comprehension of the embassy is not as straightforward, calls on the participation of the people inhabiting it, offers more richness, and creates a more particular sense of place.

Chile is a very slender country bounded by the Andes Mountains to the east and the Pacific Ocean to the west. This unique geographical and topographical characteristic makes this a place that's very easy to comprehend, and simple to get oriented, since you always have a point of reference.

Introduction



Adopting this ease of orientation the formal idea of the concept adopts a strong axis running from north to south. Structuring the different spaces along it, and aiding in the arrangement of events that follow the Spatial part of the concept.

The third part of the concept is in regards to how light is treated. Chile, regardless of the differences one might find from one end of the country to the other, is located in the lower part of the southern hemisphere and thus possess a very different light than the one found in Washington D.C. Light in the southern hemisphere comes predominantly from the north, rather than the south as it is in the northern hemisphere. In order to get the people visiting the embassy to experience this difference, the building uses certain methods and technological systems that deflect the southern exposure, and create spaces that will be daylighted by a northern exposure instead. Shadows will be inverted; light will appear where it is least expected, and thus the experience of visiting the building will provide a better sense of being in a foreign land, in this case, Chile.



Collage of a Portrait of Chile

Washington D.C.- the modern Rome of the world

When L'Enfant designed Washington D.C.'s plan he envisioned a great capital. A city with magnificent boulevards and great perspectives, a city that was worthy of being the capital of this emergent country. Through the course of time L'Enfant's dream has slowly taken shape. Government buildings, International organizations, cultural institutions, and foreign missions have given the city a cosmopolitan feel, a city vibrant with life. Washington D.C. is no longer just the capital of another country in the Americas; it's has adopted the role of the modern Rome of the world, the capital of the empire.

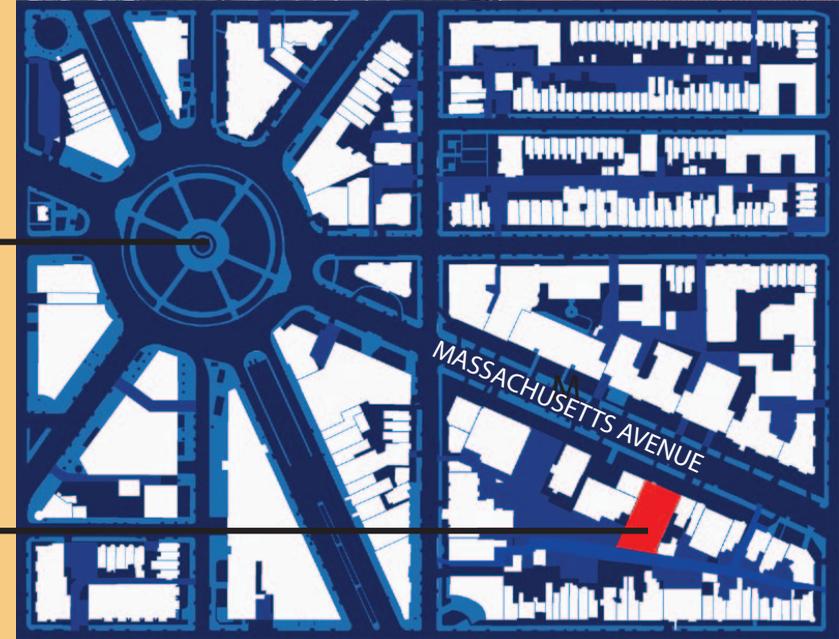
With this background, foreign missions strive to be able to have the best representations possible, every country feels the need to be present and has to show its best possible appearance. To this extent when a foreign nation decides to build a new embassy building, the election of a new site becomes as critical as the design of the building itself. The expression "Location, Location, Location" does not only apply to commercial real estate, when it comes to embassies, the site chosen could dictate the mission's success.

Site



DUPONT CIRCLE-

EMBASSY OF CHILE-



When thinking of a place for an embassy in the District there is one street that first comes to mind, Massachusetts Avenue. The concentration of embassies along the street is so high that it has been regarded as "Embassy Row". It's a very sought after real estate for the purpose of having a diplomatic mission. The Embassy of Chile is currently located on on this avenue, just a block and a half away from Dupont Circle. Since it has such a good location, moving it to another site would not be justifiable. For this reason the projected embassy will remain at its present location.

The streetscape of the area where the Embassy of Chile is located does not have such a strong architectural context. The neoclassical style of the federal buildings or the art deco of the homes found elsewhere in the city do not have such a strong presence here, since most of the buildings have been torn down, and except for a few buildings, most are bad examples of modern architecture. To this extent, the immediate context is not one that's able to dictate the language or type of architecture possible on the site.



Massachusetts Avenue and the Embassy of Chile

Although, and as we have stated before, the location of the current embassy is excellent, the site does have its drawbacks. First of all, the size of the two lots that hold the current embassy is not very large, making it quite difficult to fit the program that a building of these characteristics has. Second, the red brick building, which was designed by Glenn Brown in 1889, is protected under preservation laws, which prevent it from being torn down. And third, the façade towards Massachusetts Avenue is dark and difficult to notice because of its northern orientation.

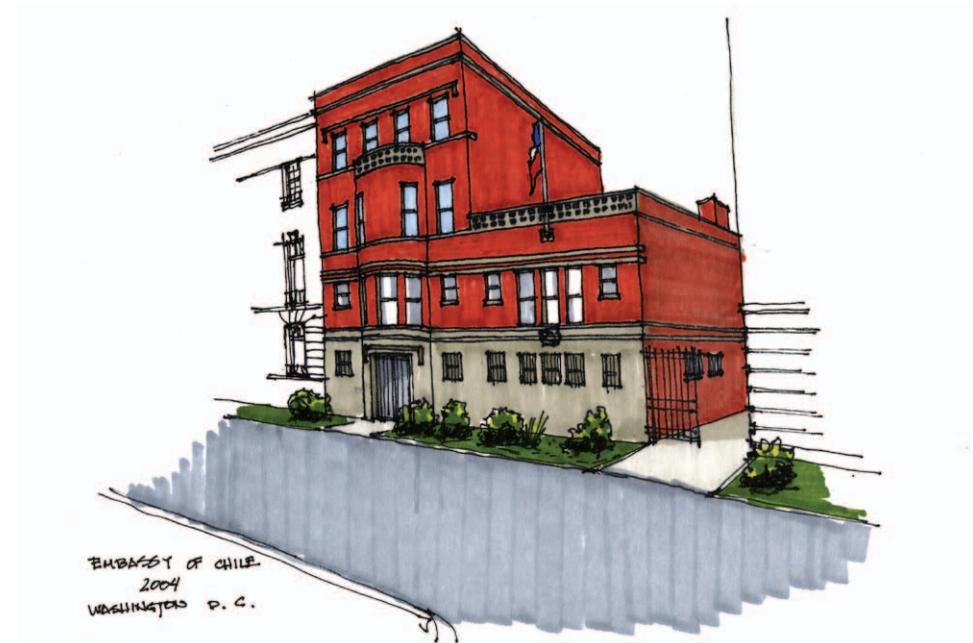
Nevertheless, because of its excellent location, the site is very attractive for building an embassy, being location the main reason why it is chosen.



Sketch 2.



Sketch 1.

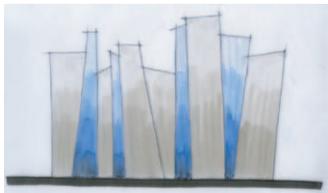
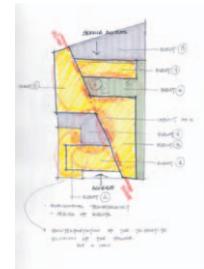
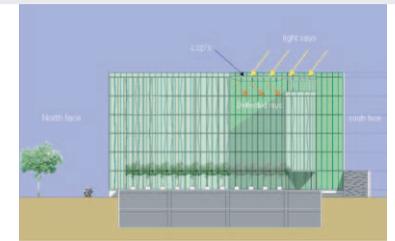


Sketch 3.

An architectural journey the embassy of chile

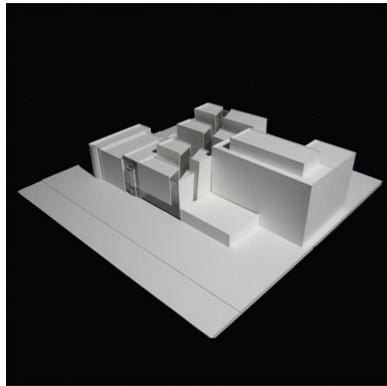
The process through which this architectural design went through cannot be catalogued as a sequential or linear course. Although by having to document the process into a book it might give that impression. The actual process involves a journey into which the design goes back and forth, redefining itself along the way. Through the models and drawings the concept was able to come from the realm of the immaterial into the material world. Ideas became physical, and a natural selection of them took place. What's important to state before presenting the design process is that the concept that was adopted was not regarded as a rigid principle. Its translation was shaped and contoured along the way, providing the design more freedom to explore.

Design Process

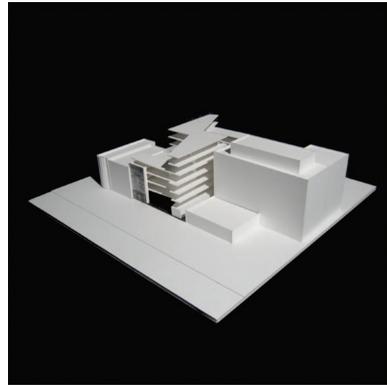


Process: From Concept to Architectural Creation

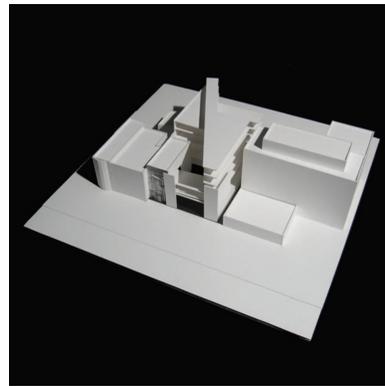
In order to translate the concept of self-portrait into an architectural creation, there are many different means of expression available. However in this thesis, the intention was to separate the design process from that which would be used in a professional practice. The main purpose of this was to free the project from the usual constraints, like programs, functional requirements, and structural efficiency. Nevertheless, these constraints would also be touched upon, but not with the significance that they are usually treated with. Focusing on the search for new design opportunities that could express the concept better and enrich the project would be the number one priority. To this extent, models were used as a fundamental tool, leaving the use of drawings as a secondary source of representation.



march



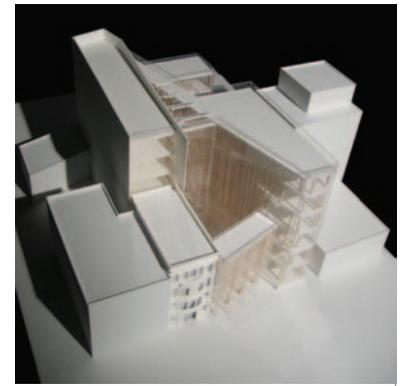
april



late april



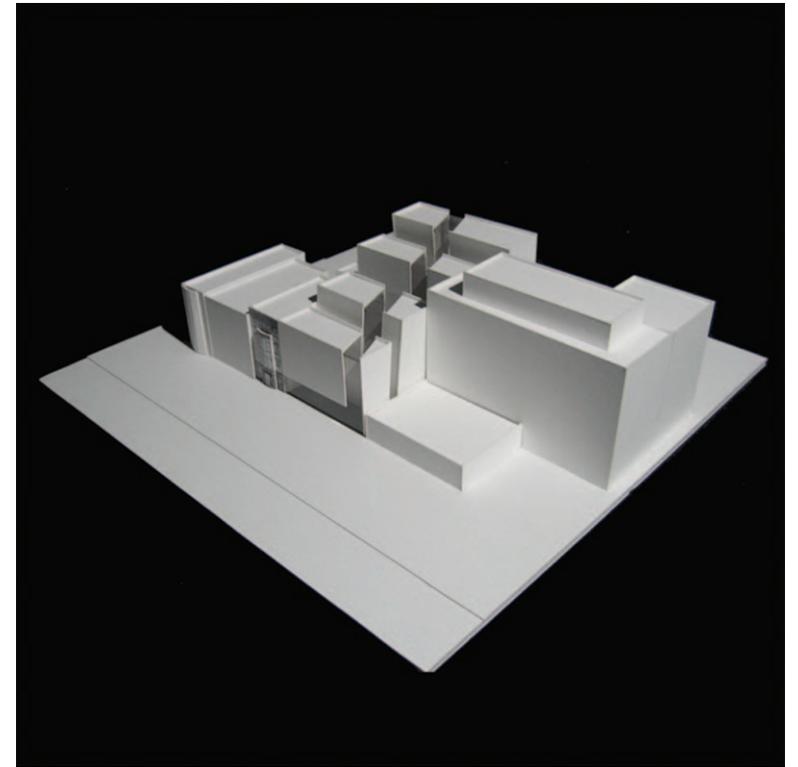
may



july

Model 1

Model 1 intended to create a dramatic north-south axis. An axis that would project itself all the way back to Chile. This axis would structure a formal representation of the elements that were starting to make up the concept of self-portrait. Elements like the colonial patio, glaciers, and light. Although the model fails to project itself further than just a formal and literal translation of the concept, it did succeed in showing that the north-south axis was a potential element that could be further studied in the project.



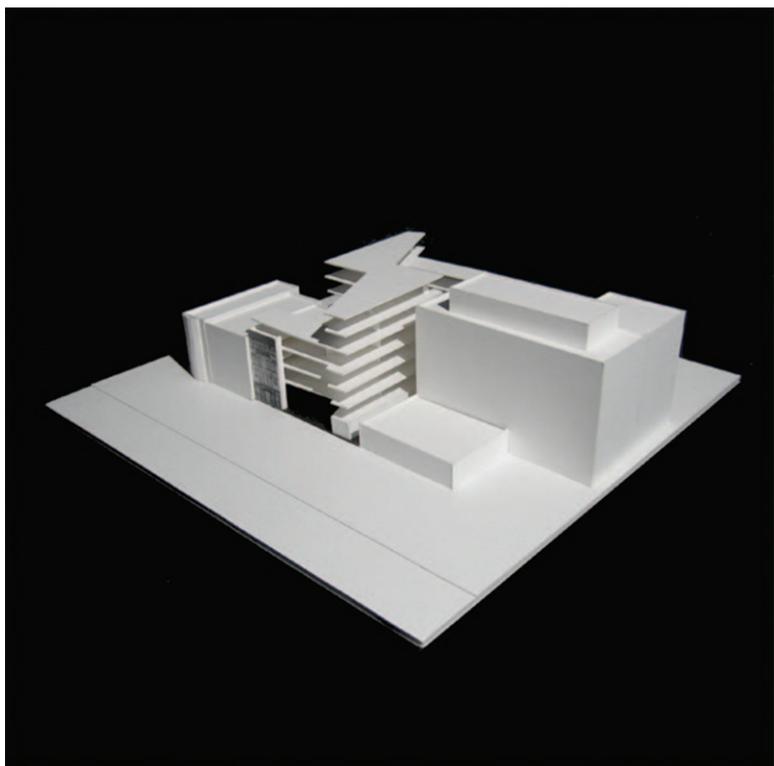
Model 1, Perspective View



Model 1, Plan View



Model 2, Plan View



Model 2, Perspective View

Model 2

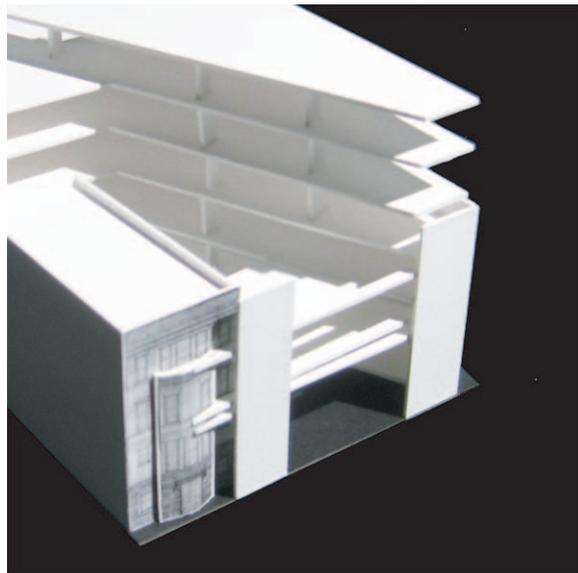
In model 2, a big step was taken to distance the architectural translation of the concept from the more formal and preconceived ideas of the previous model. The importance of model 2 is that it addresses the condition of incorporating an existing building with a new building. With this scheme the new addition becomes a totally different element, using contrast to relate to the old building. The idea originated from trying to create a free element that would surround the existing building. This new approach would also express the idea of the north-south axis, with its formal appearance as well as by using it as a structural spine that would organize the different spaces of the embassy.

Another important element found in this model is that it takes the idea of the patios of the colonial Chilean house and creates a series of spaces from public to private and exterior to interior. In addition to this, which is just recreating the same conditions that these houses had, an element of ambiguity. An ambiguity found in the creation of spaces that are not clearly outdoor or indoor and that are more dynamic in its function. To this regard, model 2 incorporates a patio on the entrance of the embassy that can serve as both public urban space or as a private patio. This patio allows the embassy to have it open during the day and to close it to the public when it deems necessary, like at night when the embassy is closed.

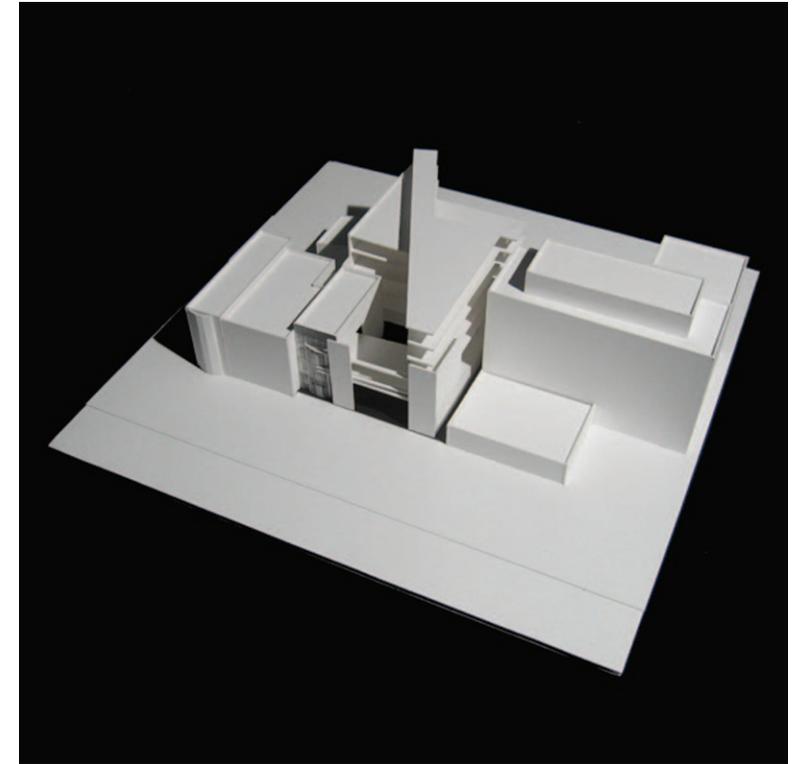
Something that started as just another characteristic that the building could have, but later proved to be a defining element is the use of natural light. In model 2, light was addressed in a totally different way than in model 1. The idea of transforming light from a southern exposure to a northern exposure made its first appearances. Having this in mind the building created a courtyard that was open to the west, permitting natural light to reach even the deepest parts of the building. Providing sufficient natural light in order to change the existing southern exposure to a northern one. Nevertheless, at this point the way in which light would be deflected was not clear, as well as the spaces in the building that would have this quality.

Model 3

Model 3 is a continuation of the ideas presented on model 2. It keeps the same intention of the previous model when it comes to relating itself to the existing building. But, what proved to be the most challenging part of the project, the connection of the old and the new had a different approach. While on model 2 the connection was overpowering the new over the old, making a floor over the existing building, on model 3 the connection becomes smaller, and uses an overlapping plane right where the buildings touch each other. Although this overlapping plane did not really help to join both buildings, it did succeed in presenting a possible solution to the old and new joint. This consists in pulling the facade of the new building in front of the line of the old buildings facade. This way, the old buildings facade would be present in the inside of the new buildings entrance.



Model 3, Detail View



Model 3, Perspective View



Model 3, Plan View



Model 4, View of North Facade

Model 4

The turning point of this thesis project is definitely in model 4. In model 4 the addition of a totally new element was incorporated to the scheme, The Veil. An element that would support the visual connection between the old and the new building, and at the same time serve as an instrument that controls the transparency that reigns over the new building. The need for controlling the transparent characteristic comes mainly from research that had been previously done regarding transparency. Through this research and mainly following Colin Rowe's work, the definition of transparency was further developed. The identification of two types of transparency; literal and phenomenal was better understood. Thinking on what the idea of the project was, and the concept of self-portrait the phenomenal transparency seemed appropriate for it. This way, the Veil would become through the control of transparency, an element that gives ambiguity to spaces and makes their connections less evident. In other words, the project would no longer be just a transparent glass box that does not really need much exploration in order to understand, but would need the interaction of the people in order to be recognized. As well as these spatial qualities, the veil would be done in Chilean Alerce wood, which would accentuate its Chilean heritage. In other words, the Veil becomes, in various levels, the connecting element of the project. Connecting the old and the new, interior and exterior, and the various spaces in the building.



Model 4, View of North Facade



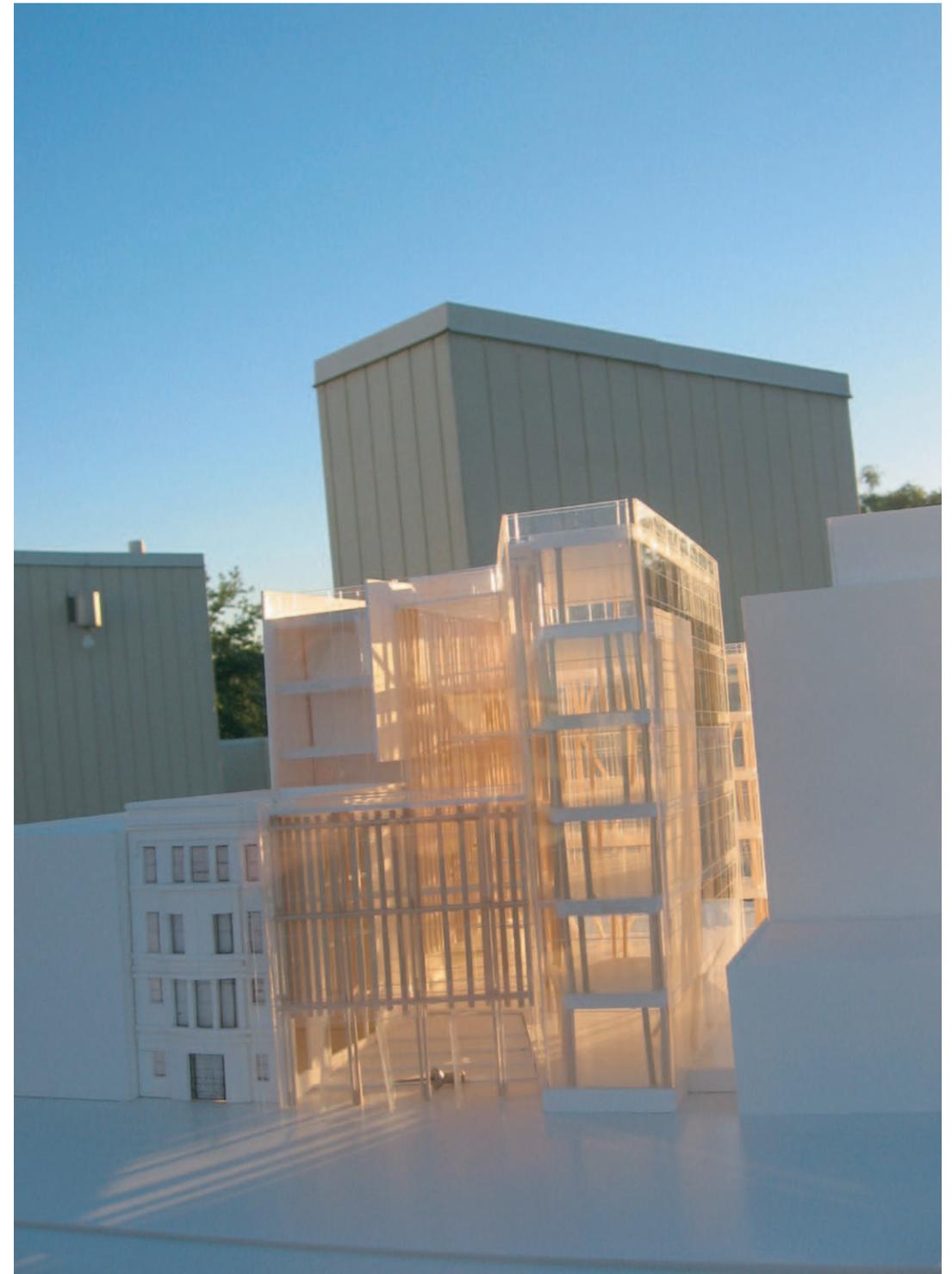
Model 4, Plan View

Model 5

If Model 4 was the turning point of the thesis, Model 5 is the consecration of it. In model 5 the different ideas been handled where further developed, and order was given to it. A synthesis of the ideas was created, and through this, the project became more organized, with a clearer understanding of what wanted to be done.



Model 5, Plan View

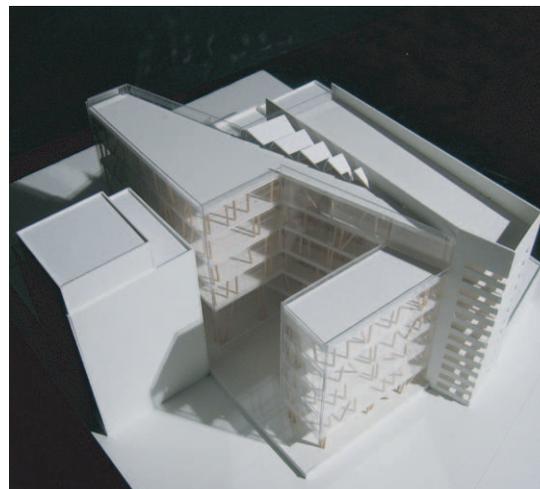


Model 5, View of North Facade

The relationship by contrast that the old and the new building possessed, although clearly stated in the opposition of transparent and opaque surfaces, still needed to be addressed into the building as a whole. And not just as a mere finish of it. In model 5, and mainly influenced by an exhibition on architecture with concrete at the National Building Museum, a new structural concept was incorporated. The structural concept adopted utilized Ductal concrete, which uses fibers and no reinforcing steel in order to create very slender structures. This new structural concept had a direct relationship with the physical properties of the material. Ductal could provide the opportunity to express a totally different structural language. This way structural elements were no longer foreign to the architectural expression of the building, but were actually an integral part of the whole scheme. While the old building has a structural concept based on compression, utilizing thick walls, and small openings, the new one is rooted on the concept of a mesh. This way, structural elements are more slender, and can express themselves differently. Permitting the structure to have columns and beams that demonstrate the freedom that the material permits angling themselves in various directions. Another very important aspect of this structural idea is the fact that the structure becomes an independent element to the rest of the parts of the building. The skin and the floor slabs are independent of the structure, and this independence is accentuated by having the floors end short of the curtain wall. By having this, the slabs seem as if they were just resting on the beams, and the whole structural scheme; columns and beams, become one body.



Model 5, View Of North Facade



*Model 5,
View Of South Facade
and View of North
Facade (far right)*

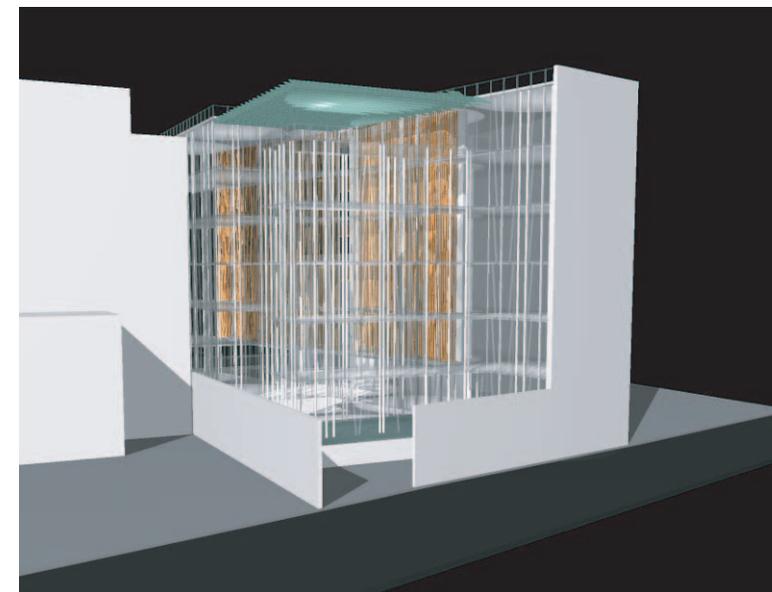


Southern Exposure

The way daylight is treated in the building deserves to be treated as a separate entity altogether. As we stated before, the use of daylight came upon almost as an accident, since it was not part of the original concept as it finally turned out to be. It first made its appearance in Model 2 and began taking shape throughout the project. The idea consisted in changing the southern exposure found at the site into a northern one, which is the one found in Chile. Although it sounded very simple, the idea proved to be quite a challenge, since the technology needed was not known and the architectural ideas for the project prevented it from being transformed into a machine, which is something that the so called "Green Architecture" sometimes falls prey to.

In order to accomplish this idea it was established that the area that would have this daylighting condition would be limited to the more public areas: the main atrium and the interior patio.

To be able to change the natural light's orientation many systems and methods were researched, the most appropriate one found was by using LCP's, which stands for Laser Cut Panels. With the use of these panels it was possible to deflect light without having to create very complex and contaminating structures. The LCP's would only need a similar structure that a small roof needs. This way the project incorporates this flat roof that hovers over the 5th floor terrace, and the interior patio, and a similar roof structure over the skylights that are present over the main atrium.



Early computer model showing the LCP roof



Light Diagram

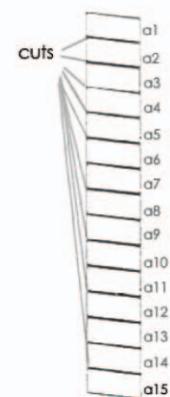
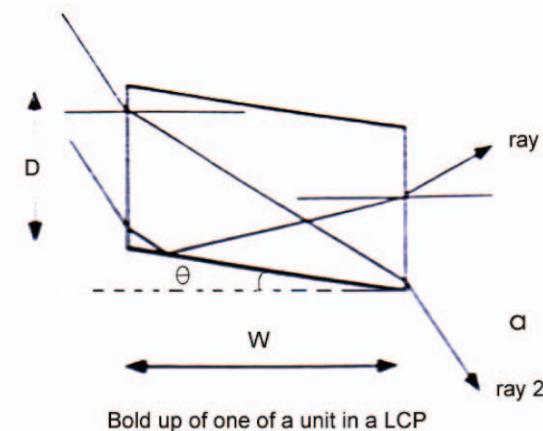


Diagram of Laser Cut Panels
 Source: Performance of laser cut light deflecting panels in daylighting applications. I R Edmonds. Solar Energy Materials and Solar Cells, 29, 1 - 26, (1993)

rectangular parallelepiped elements are produced by laser cutting an acrylic plastic



A self portrait

the embassy of chile

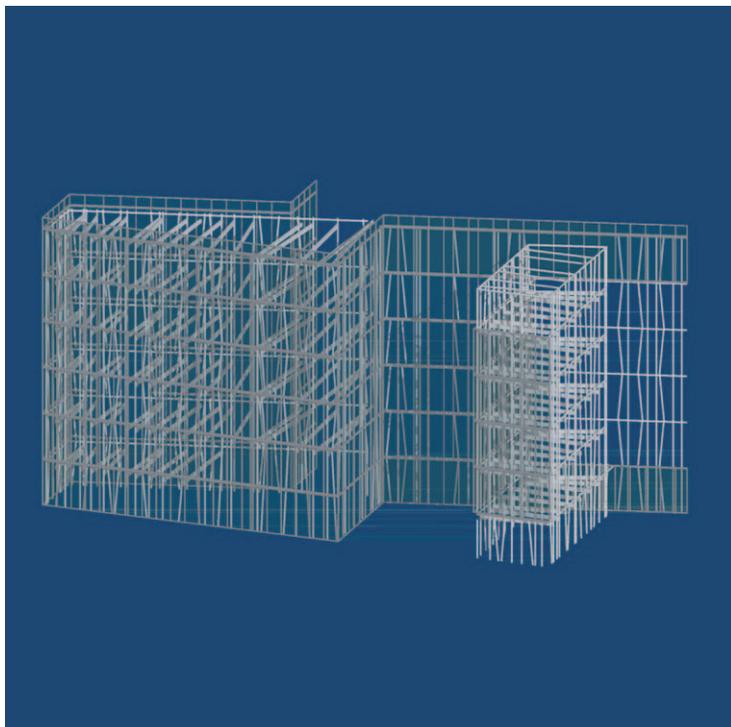
Although the architectural design process utilized during this thesis may have had many differences to one used in the professional world it did have one very important similarity, it also reaches a point in which the design and research stage is over, and the building has to come together. Decisions are taken, and compromises are made.

When the line between the design stage, and the actual final presentation of the embassy was drawn, a reflection on the different aspects that were touched upon during the whole process was done. This way the presentation of the ideas would have a structure that's easier to understand, and it would help to make sure that nothing was left behind.

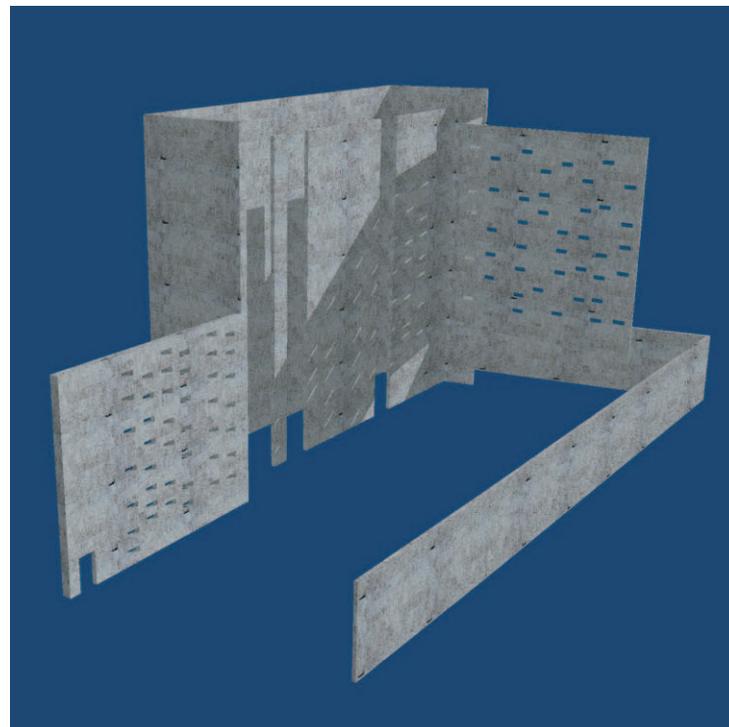
Final Design



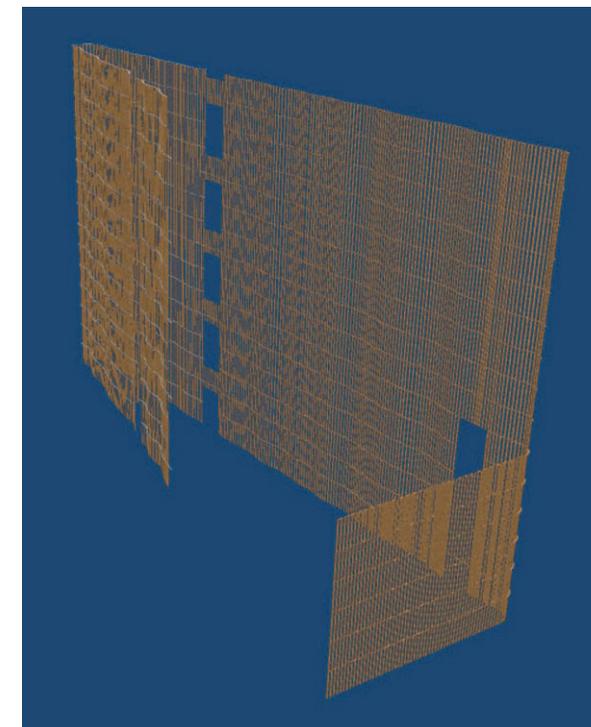
3 elements that define the project



The Structure



The Wall



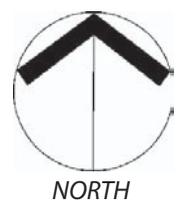
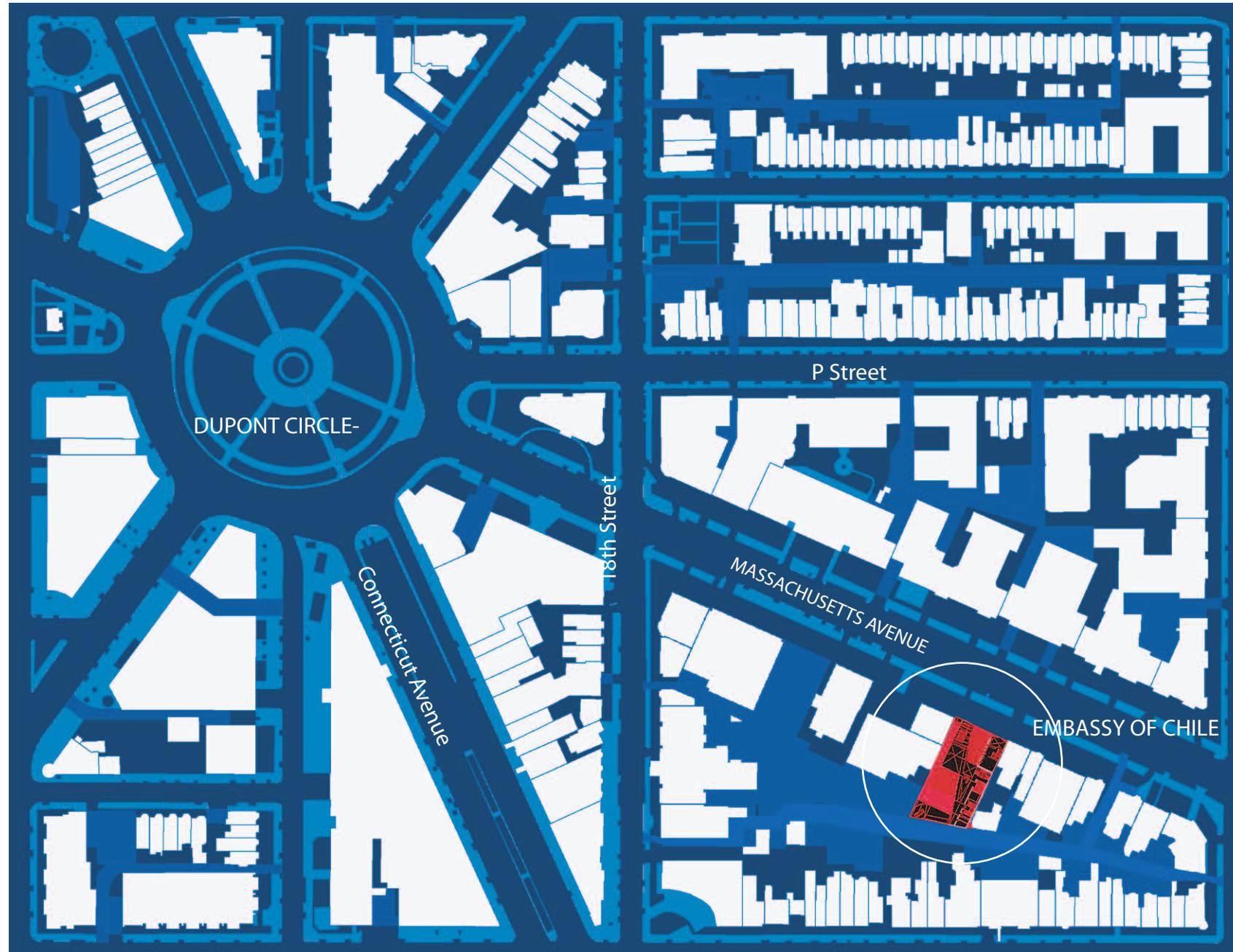
The Veil

Three parts can be identified in the final design. The Structure, The Wall, and The Veil. The Structure is comprised of the Ductal elements that make up the structure of the new building; columns and beams. As it was explained before, the structural concept comes from thinking of the structure as a mesh, in other words, a composition of smaller structural elements that together can act as if they were larger. As well as this, the idea of expressing the new structural concept through its form was also regarded, freeing the columns from the usual regularity, and creating slanted column lines in both the horizontal and the vertical planes.

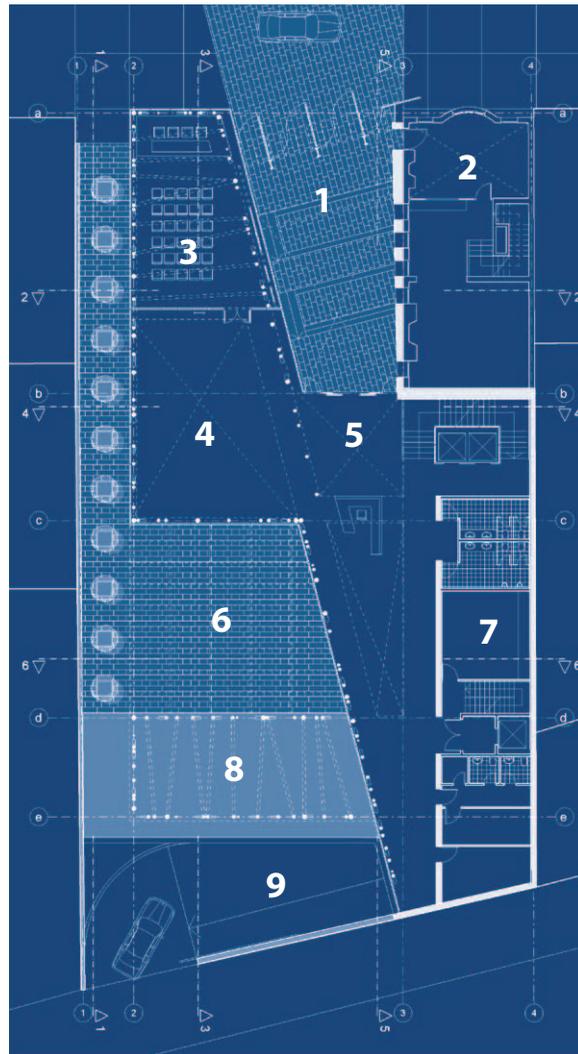
The wall is actually the newest element of the three. It originated from the need to have an element that would serve as a joint or transition between the old and new building. With the addition of the wall the old building as well as the neighboring ones, were given a strong heavy load bearing wall that would articulate both structural orders. The wall is also a border, a border between the old and the new, between Chile and the United States.

As it was previously described, The Veil, made of Alerce wood, is an element that would provide both a visual connection between the old and the new building and a spatial ambiguity to the embassy. With it, the spaces do not have a clear definition between outside and inside, or public and private. As well as this, it controls the transparency that the building has, creating a series of spaces that need the interaction of the people using them in order to understand them.

Site Plan

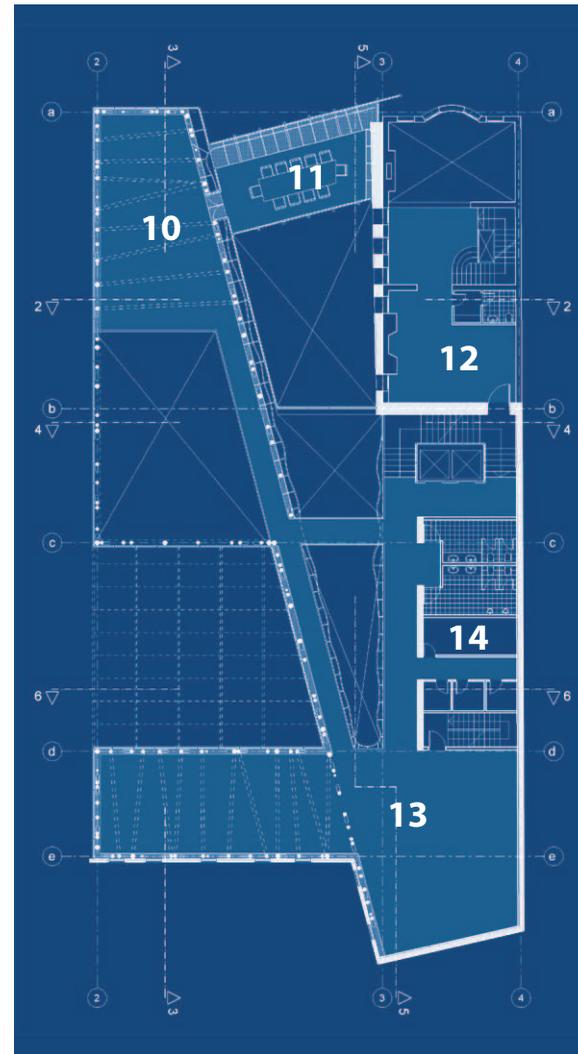


Plans



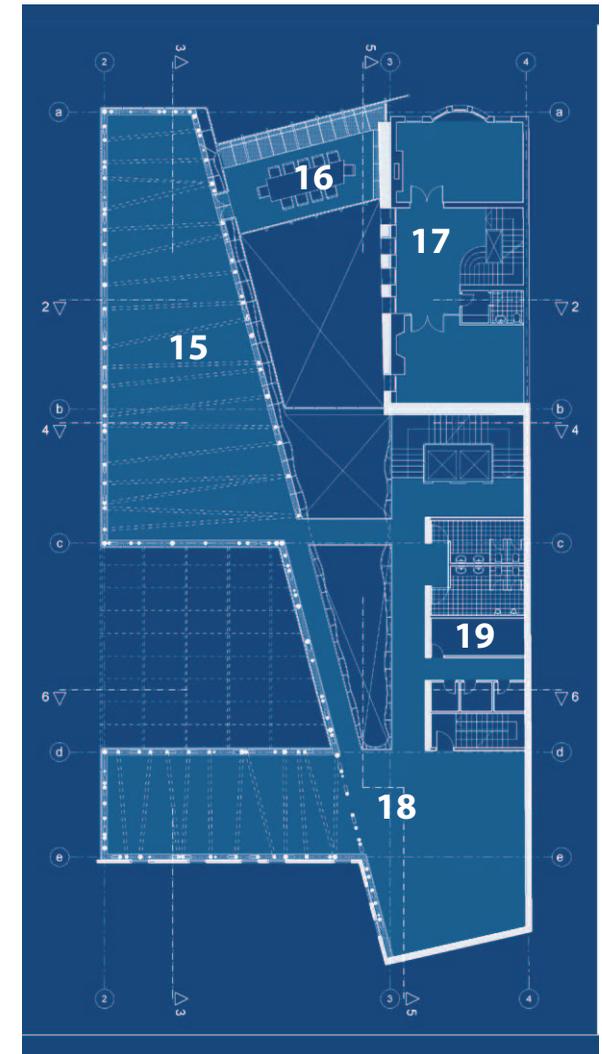
Ground Floor

- 1. Public Entrance
- 2. Consulate Entrance
- 3. Multipurpose Room A
- 4. Multipurpose Room B
- 5. Embassy Reception
- 6. Interior Patio
- 7. Service Core
- 8. Reflecting Pool
- 9. Basement Parking
Access Ramp



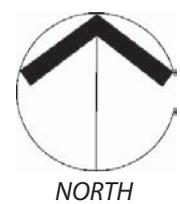
Second Floor

- 10. Library
- 11. Meeting Room
- 12. Consulate Offices
- 13. General Office Space
- 14. Service Core

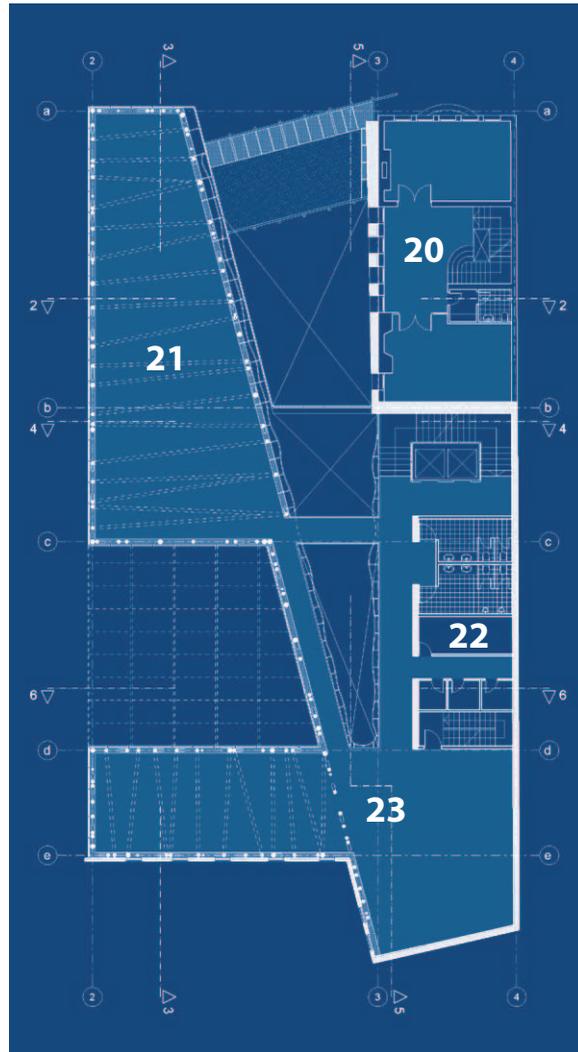


Third Floor

- 15. General Office Space
- 16. Meeting Room
- 17. Consulate Offices
- 18. General Office Space
- 19. Service Core

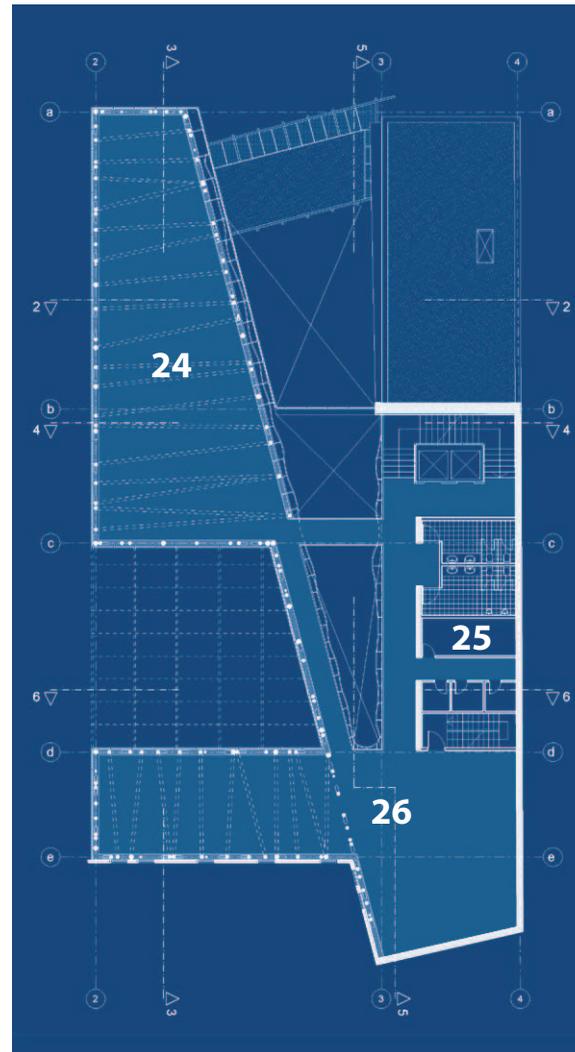


Plans



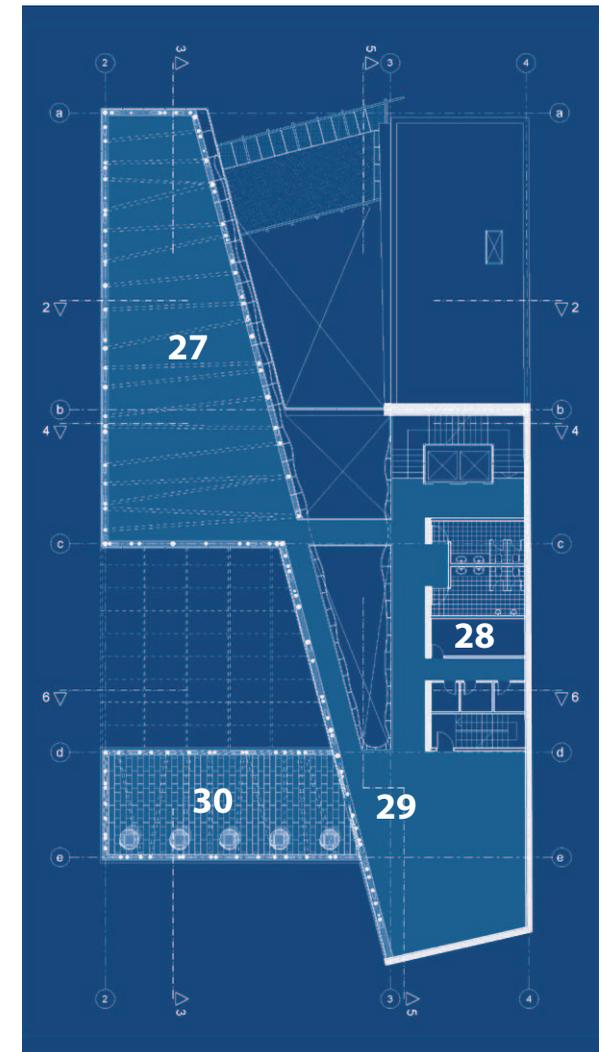
Fourth Floor

- 20. Consulate Offices
- 21. General Office Space
- 22. Service Core
- 23. General Office Space



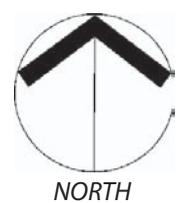
Fifth Floor

- 24. General Office Space
- 25. Service Core
- 26. General Office Space



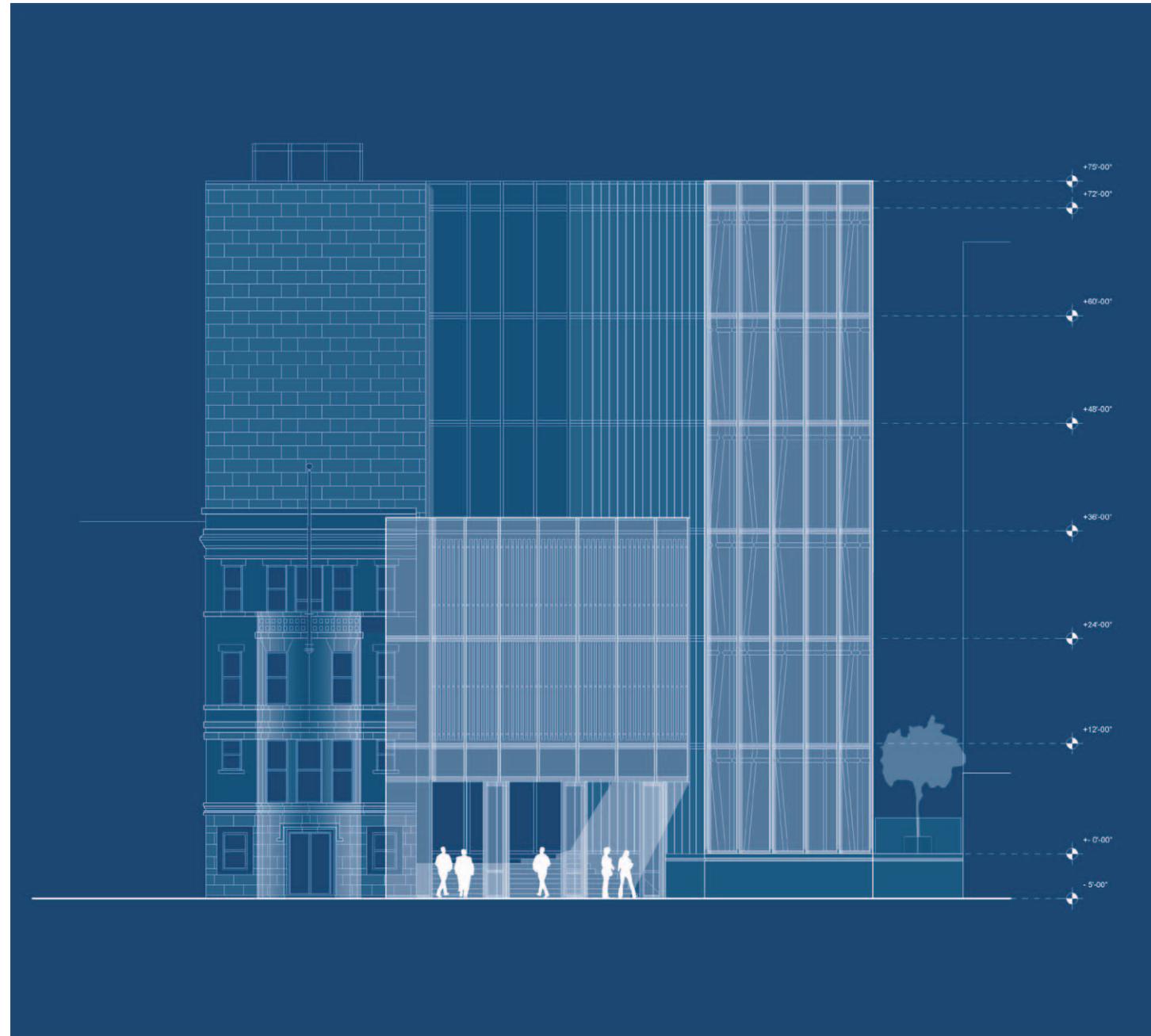
Sixth Floor

- 27. General Office Space
- 28. Service Core
- 29. General Office Space
- 30. Terrace



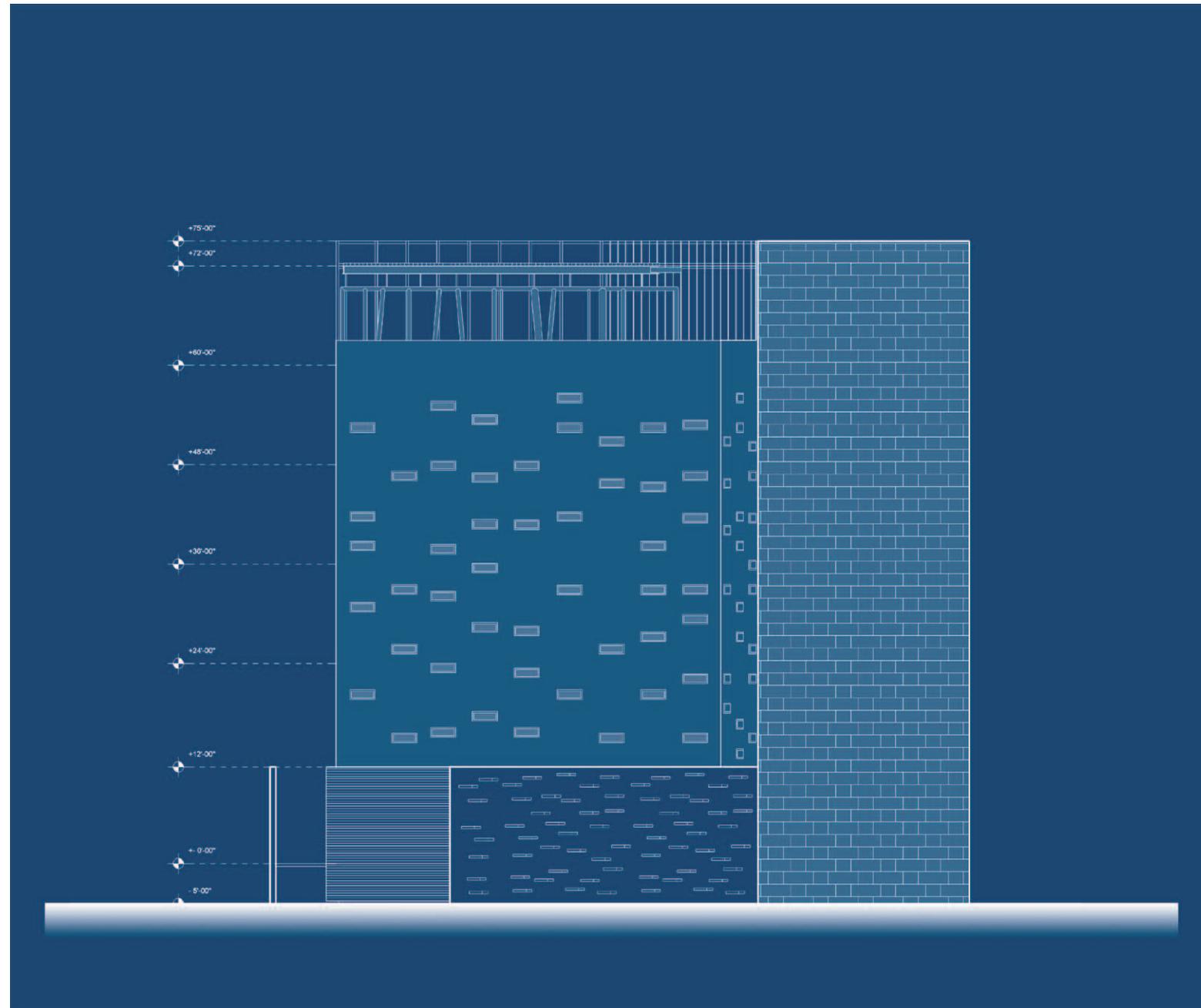
NORTH

Elevations



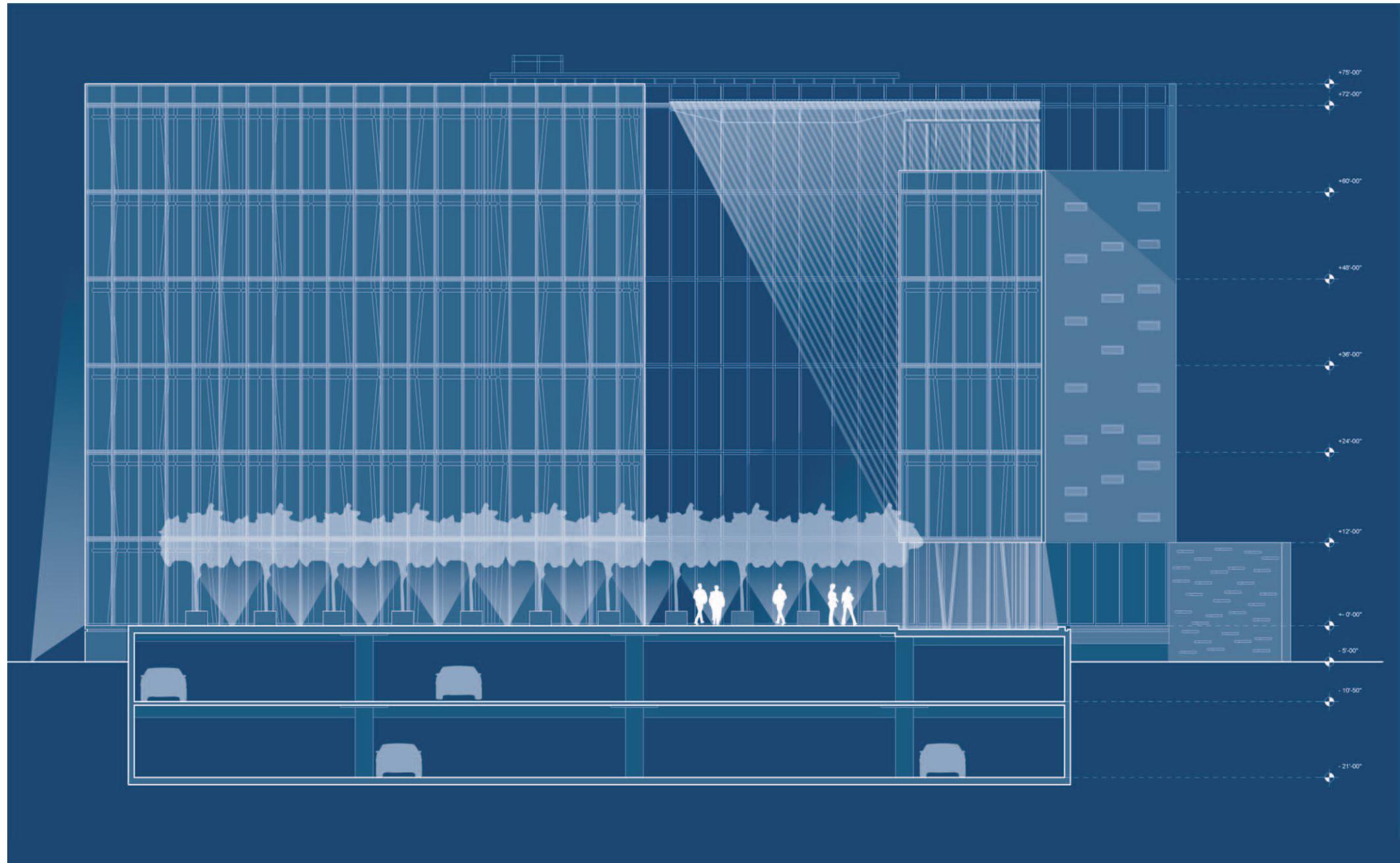
North Elevation

Elevations



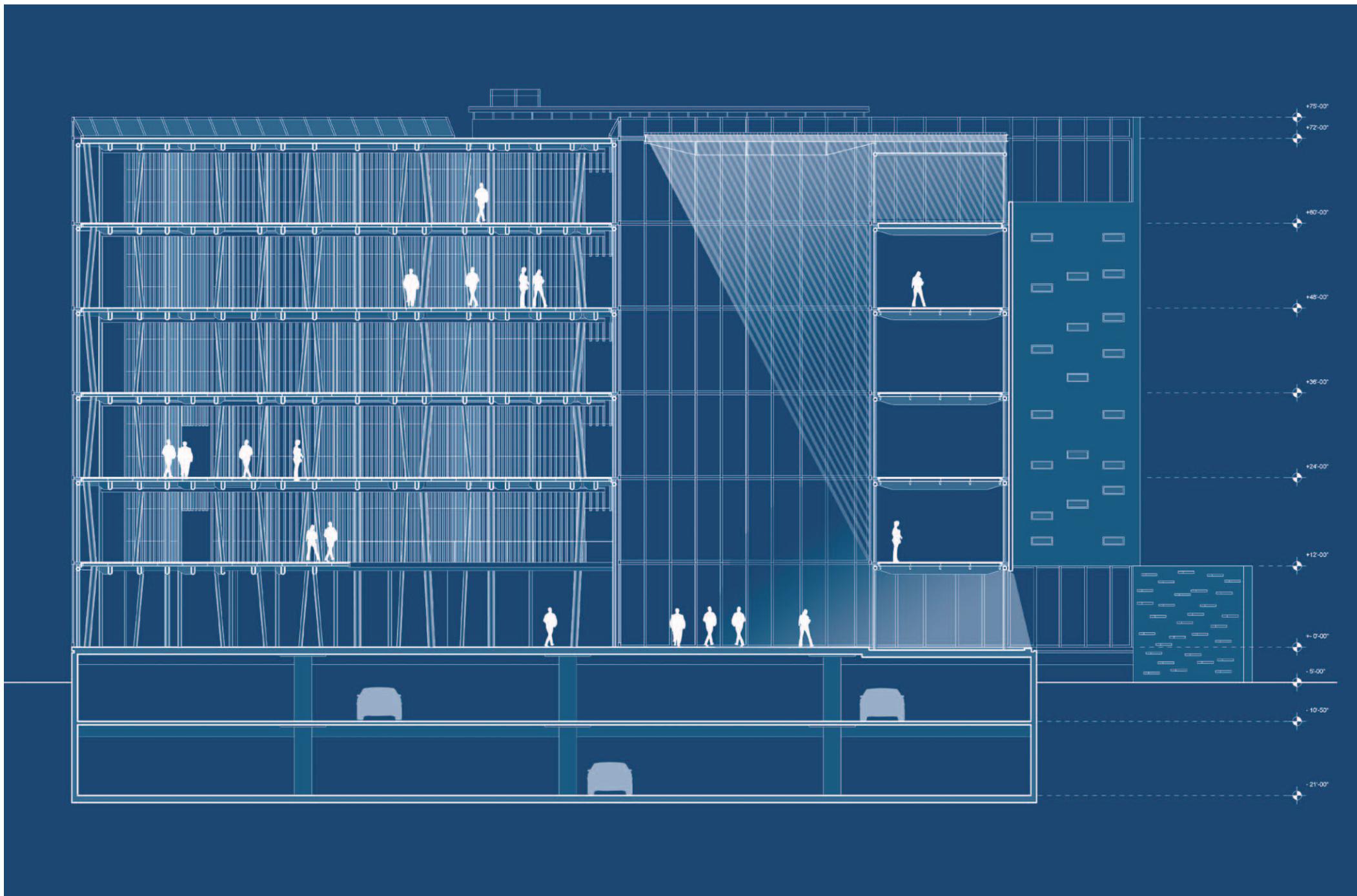
South Elevation

Elevations



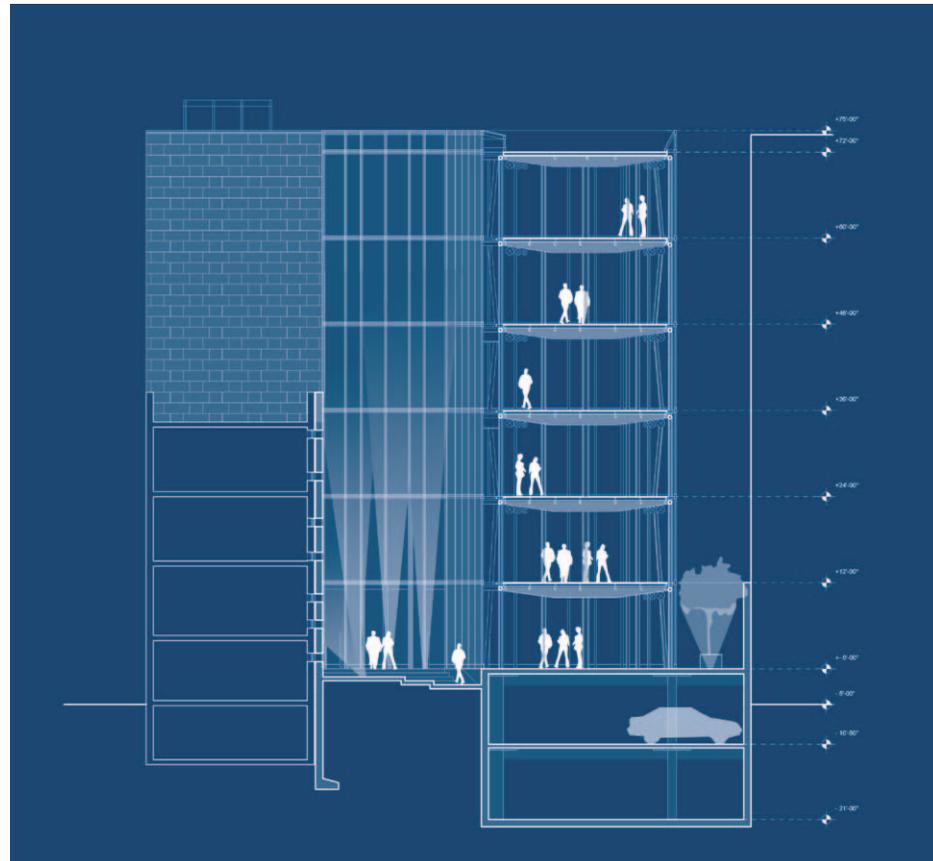
North-East Elevation

Sections

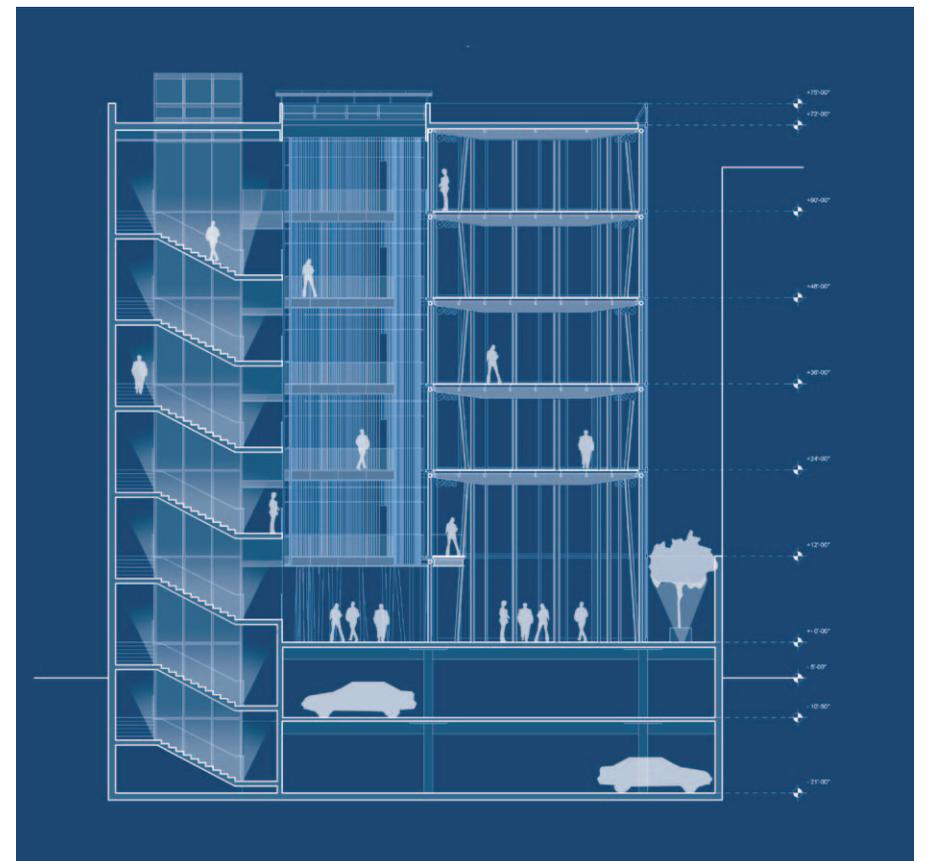


Section 5

Sections

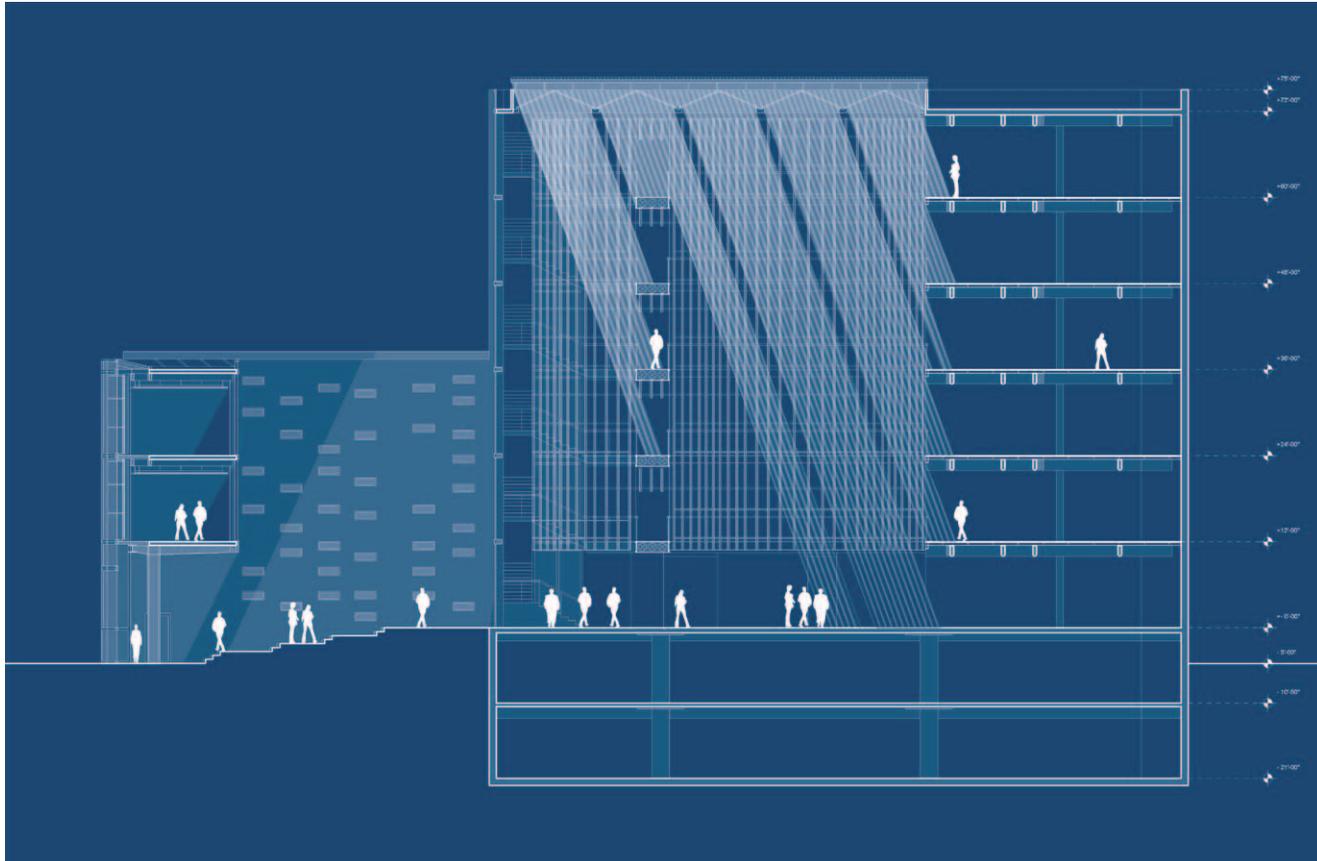


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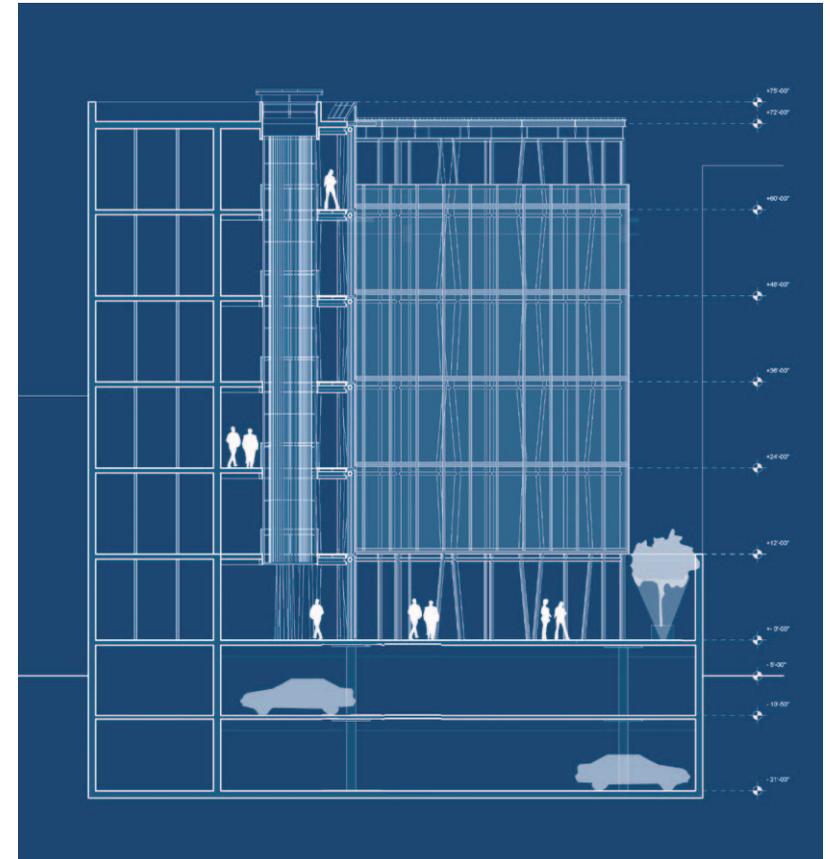


Section 4

Sections

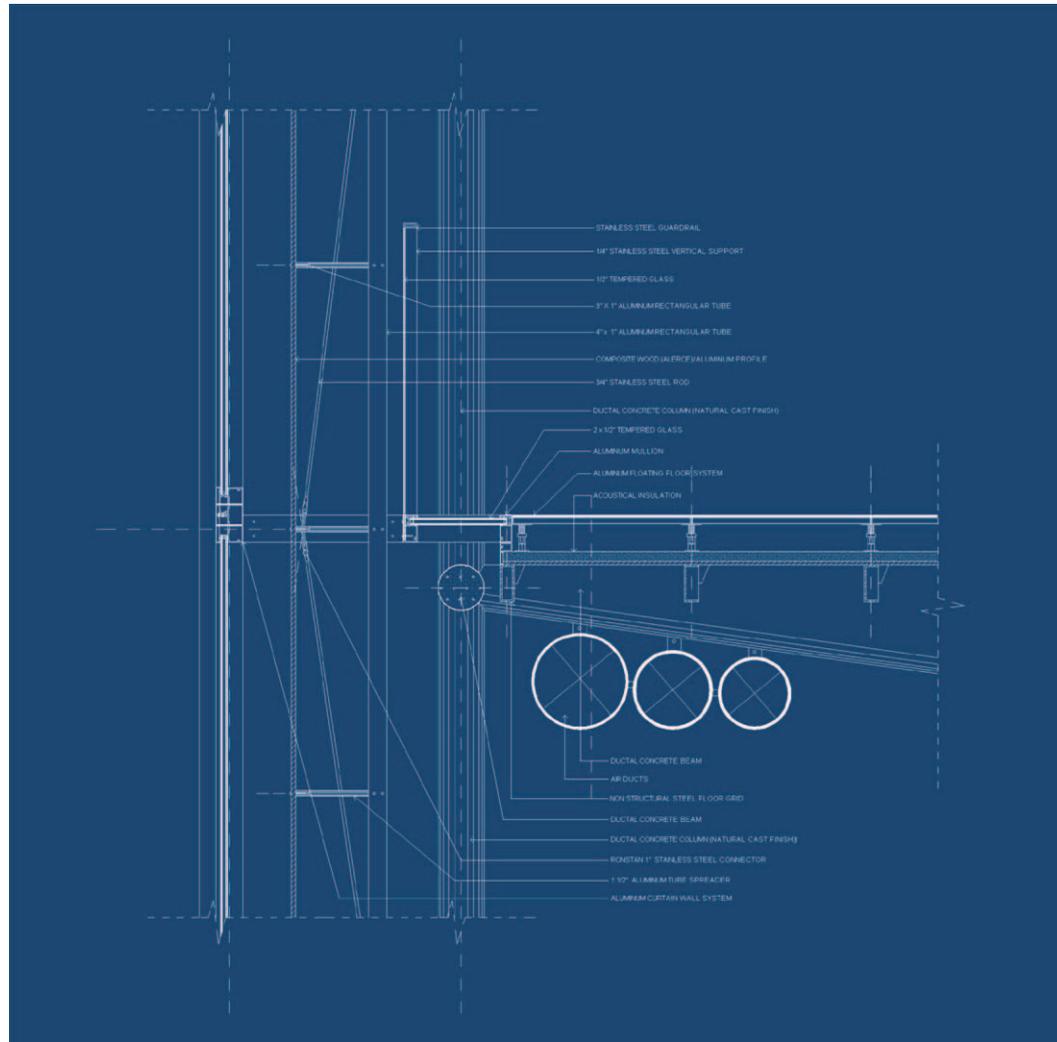


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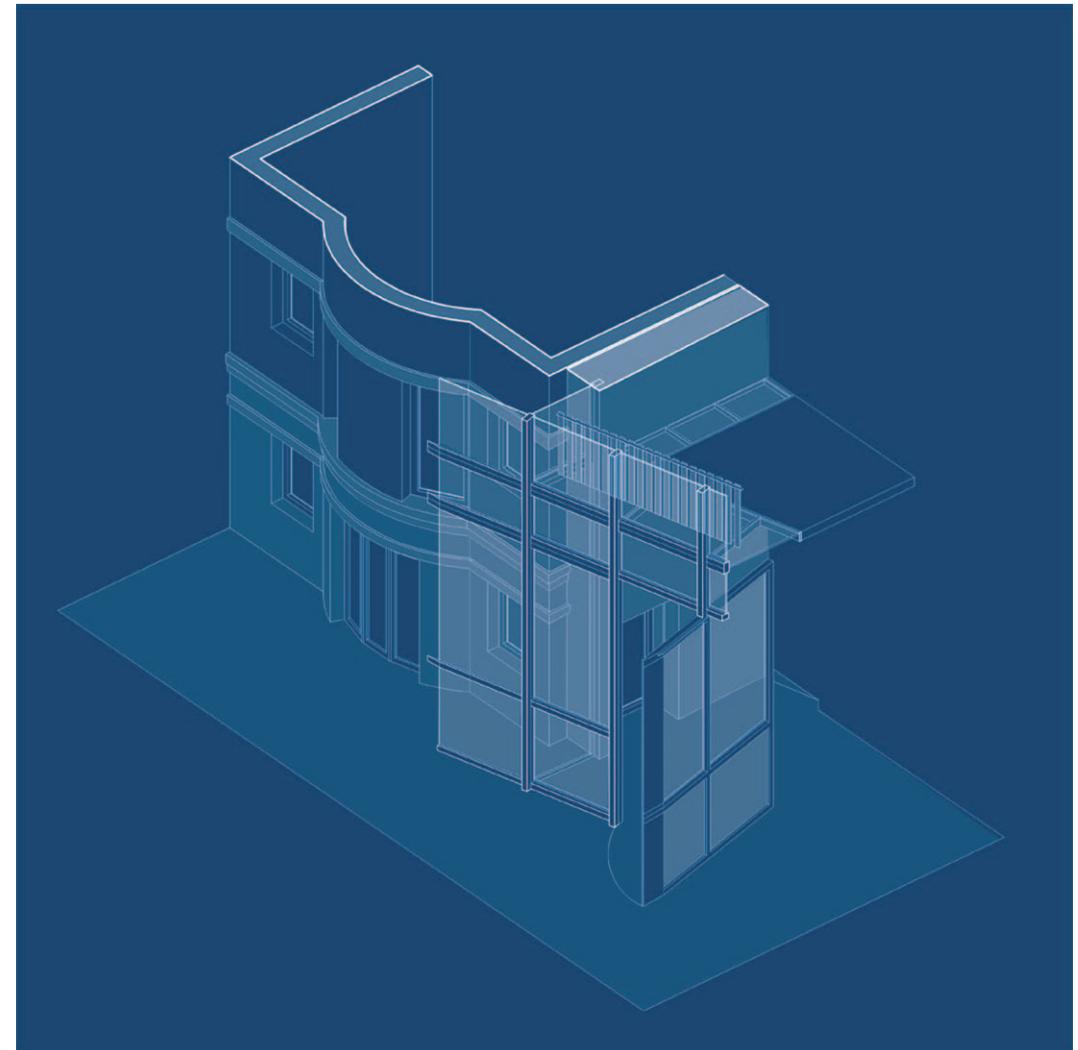


Section 6

Building Parts



Typical Curtain Wall and Ductal Structure Detail



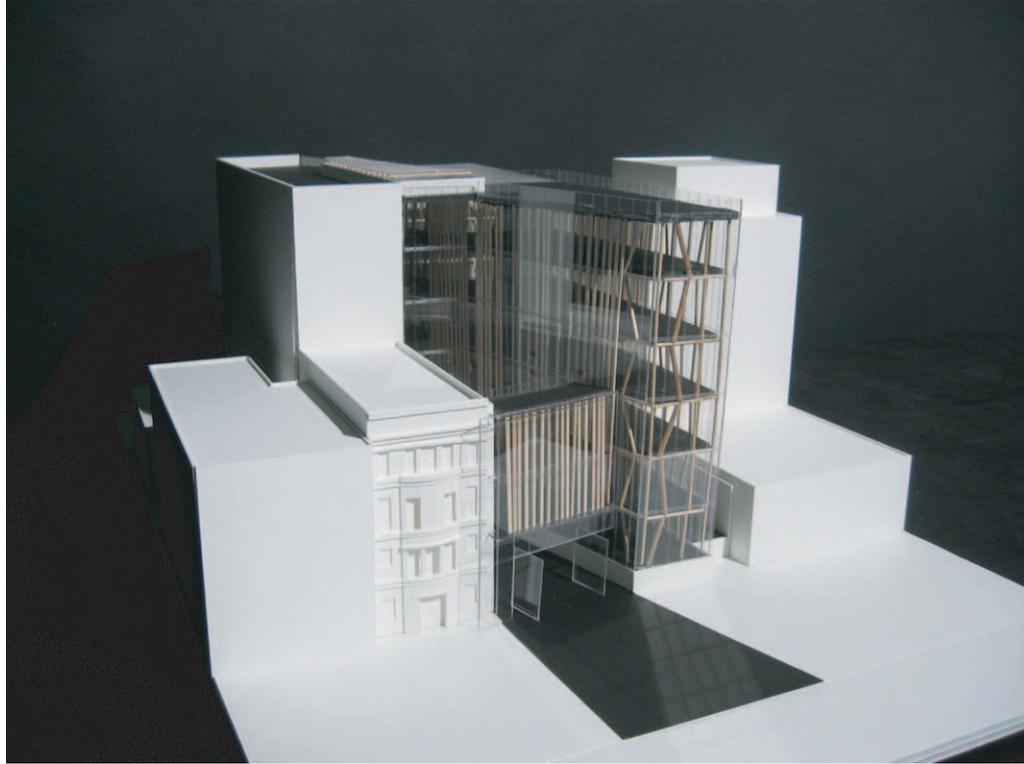
Axonometric View at Main Entrance

Renderings

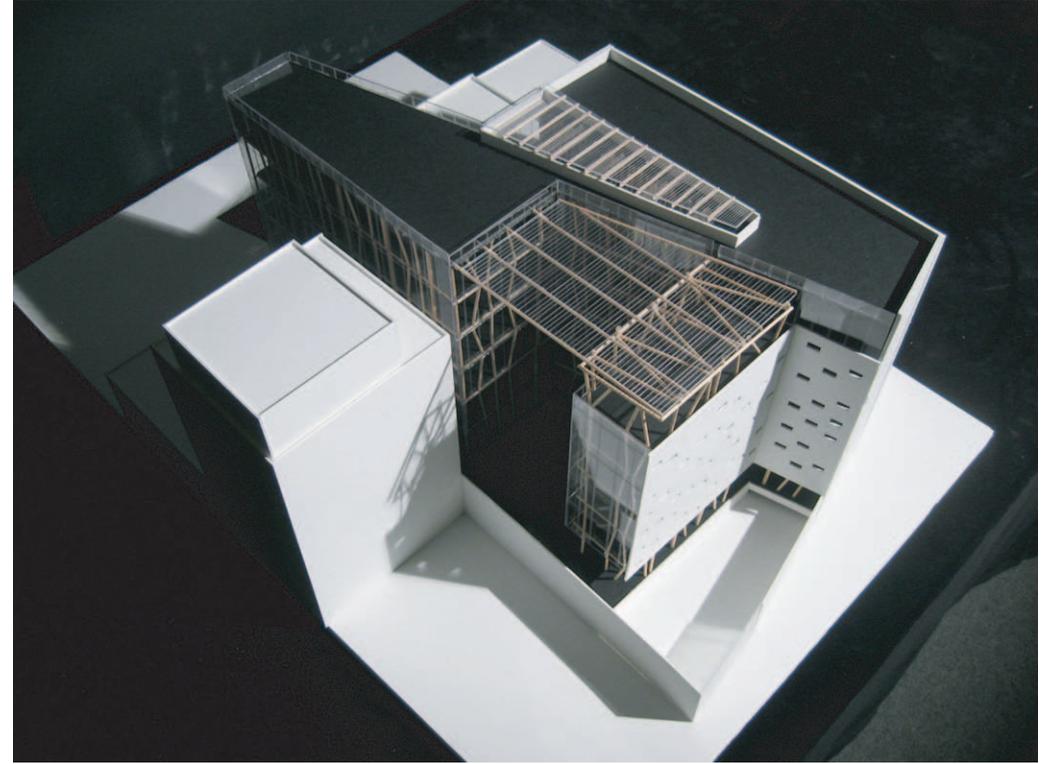


Rendering of Northern View

Model Photographs

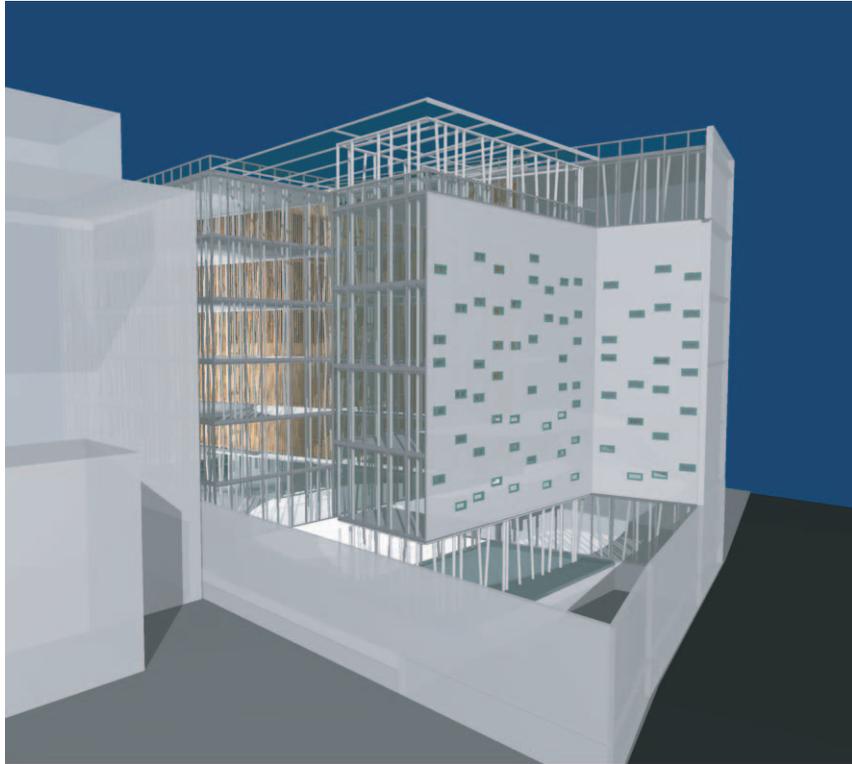


Photograph of the Main Entrance

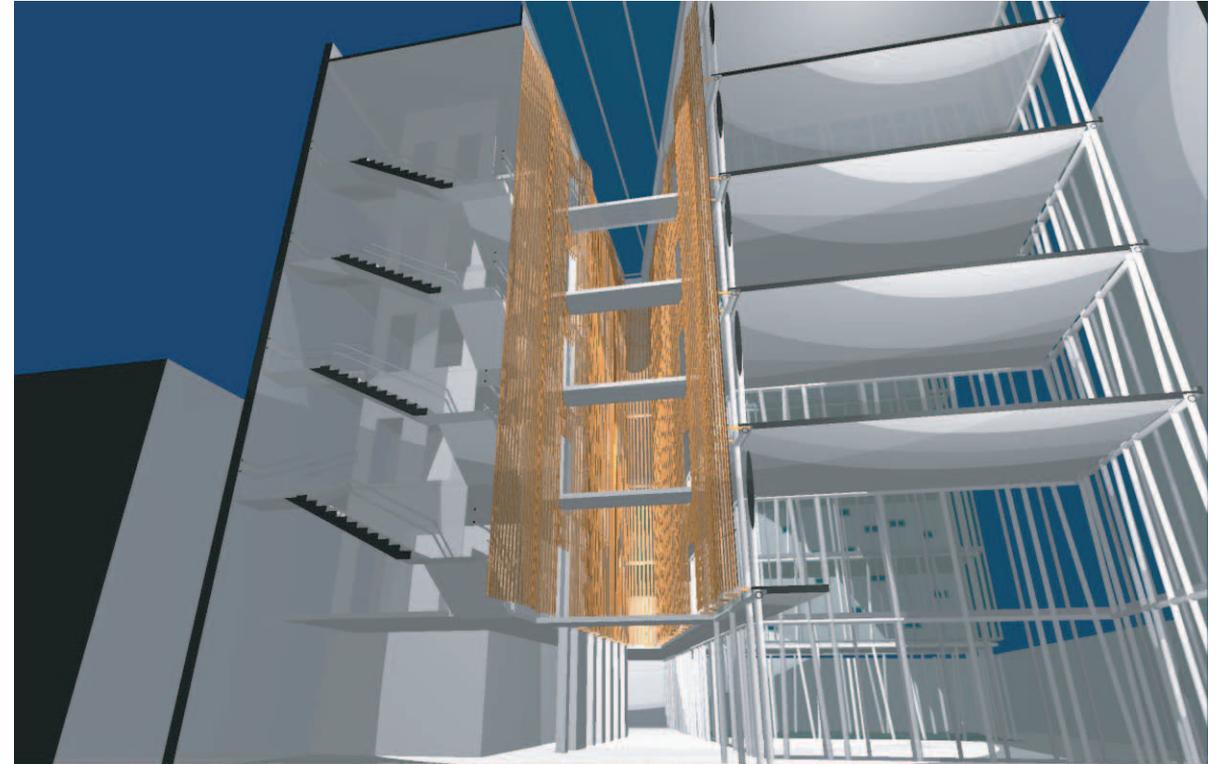


Photograph of South Side

Building Parts



Rendering of Southwestern View



Rendering of Section through Main Atrium

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