

## Precedent Studies

### 4.1 The Menil Collection.

HOUSTON, USA. Piano & Fitzgerald  
1981-1986

The Menil Collection by Renzo Piano was chosen as a precedent for the way in which the building is "crafted", not only during the construction, but also in the conceptual "making" of the building. Another convincing aspect is the multifunctional use of building components.

The Menil is a study centre for an established private art collection, housing different galleries for a rotating selection of these works. One of the client's, Domini que de Menil, foremost requirements were that all art work on display be seen in natural light, and that this light be handled in such a way that visitors are alert to its constant changes with time, season and weather.

The characteristic "piece" which responds to this request is the light diffusing "leaves", integrated with the space frame truss system. It is so arranged that natural light permeates everywhere in the ground floor galleries. The upper part of each ferro-cement leaf also serves structurally as the lower chord of the ductile iron truss that supports the roof of ultra-violet light-excluding glass, and the return air-duct threaded through it. (Buchanan 1993:143)

The rest of the leaf curls down to hide most of this, to block direct sunlight, and to scatter the light reflected off the upper part of the neighbouring leaf. The material and manufacturing of the leaf and truss, both of which are immaculately crafted castings, are updated versions of older technologies. The castings for these units were crafted in Piano's building workshop, and the time and workmanship is evident in the end product.

Besides controlling the amount of light and diffusing it, the leaves are shaped to help achieve stable temperatures within the galleries. Their horizontal tops reflect

heat back through the glass, and also hold a protective layer of hot air under it, while minimizing the downward radiation of heat.

The leaves therefore do not only play a structural role, but also helps in temperature regulation, reducing the redundancy associated with these "pieces".

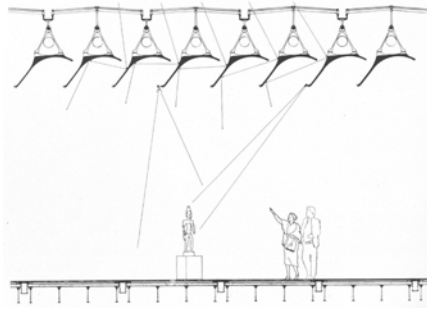
Another aspect to be mentioned is the way in which the building rests within the already established built environment. Piano used the same grey clapboarding in the design of the building as can be found in nearly all the bun galows surrounding the building.

To emphasize entry on an implied rather than an aggressive way, planting flanks the route to the main entrance, set back into the building. Recessing the entrance also reinforces the cross-axis, placed off-center (symmetry denotes monumentality), defined by the entrance and the lobbies to which it leads

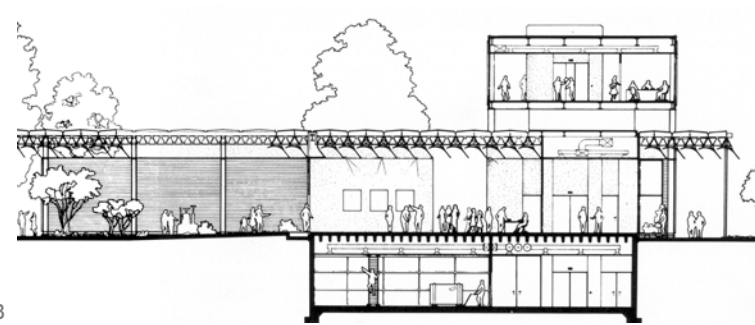
Clean, clear and "neat" planes and lines give an overall quality finish to the building. The building is portrayed as a complete, crafted building, qualities expected from an art gallery.



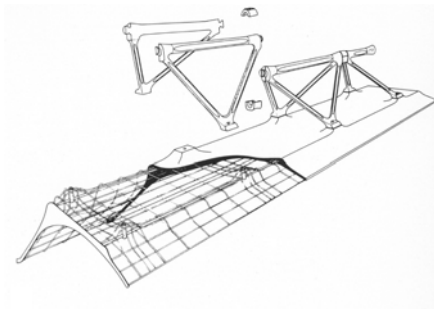
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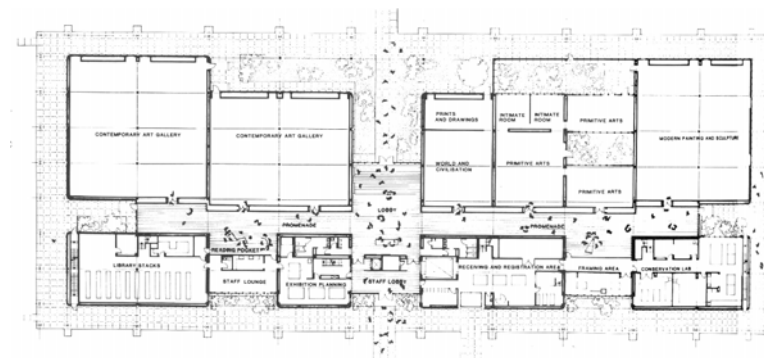
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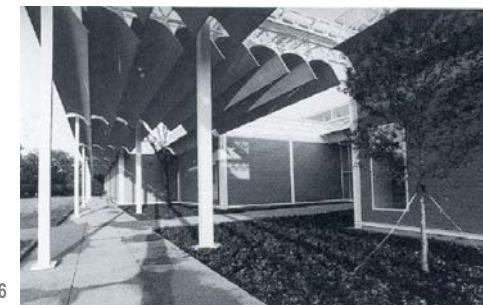
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4.1 South -eastern corner of the museum, looking along the southern colonnade. Note the grey clapboarding also used in adjacent bungalows.  
 4.2 Part section through a gallery showing the design of the leaves, which block out direct sun, and reflect and diffuse the light they admit. The leaves also trap an insulating layer of warm air above them. Their lower edge also supports the artificial lighting.

4.3 Exploded and cutaway perspective of the piece shows how the ductile elements of the truss and the ferro-cement leaf come together.  
 4.4 Cross section through entrance lobby.  
 4.5 Ground-floor plan: note recessed entrance and cross-axis.  
 4.6 Recess of the entrance.



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4.2 **Altemira School.** SANTIAGO, CHILE. **Mathias Klotz.** 1999-2000.

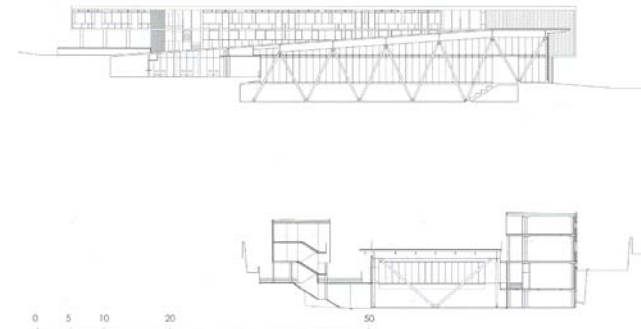
Since the programme of the project discussed in this thesis is extremely complex, consisting of a multitude of different spaces of varied volume, a school building were chosen to best exemplify how such spaces can be organized.

The Altemira School by Mathias Klotz was chosen as a precedent for both the multi-functional use of space; and the elements that define these spaces. The choice of structure, and the way in which it is integrated in the project, also played a deciding role.

The project is a response to a competition scheme of 10 000m<sup>2</sup> for 1 400 students in Santiago, and is located on a rectangular site of 60 meters by 200 meters with a 20% slope on its long side. The layout comprises four buildings, located around a central playground with an open view to the city. The major areas are a gym and a cafeteria. It is situated in the centre of the site looking to the street, used for common public activities. The roof of these spaces is an inclined surface that also functions as the playground area. This volume is constructed of a kneecapped steel structure. The perimeter buildings are projected to define this multi-functional space, and house the classrooms. This structure is made up of concrete columns and floors, without exposed beams, to ensure maximum flexibility.

This project illustrates an exercise in structures and surfaces, subject to a general proposal of clearness and simplicity (Futagawa 2002:96). The spatial approach taken by Klotz is simple: build the borders, liberate the centre.

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4.7 Cross and longitudinal sections through building indicating gym steel structure and the concrete structure of the buildings framing the gym.

4.8 View of main entrance from street.



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4.9 Interior view of gym. The steel structure carries a concrete roof doubling as a playground.

4.10 East façade of gym. Note the clean, clear lines.

4.11 View down concrete roof playground. Note the classrooms framing the space.

4.12 Entrance to a walkway leading to classrooms. Note the quality of off-shutter concrete.

4.13 View towards classrooms and roofscape.



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