



Precedent Studies

Introduction

The following chapter discusses four precedents that will act as a guiding tool throughout the design process, informing decisions on different levels of development. After a brief discussion of each project, a number of design objectives for the Astronomy Centre will be identified.

5.1 *Fabrica Benneton Art School, Vilorba, Traviso, Italy 1992 – 1994, Tadao Ando*

Fabrica shares its site with a 17th century Palladian Villa. To avoid disrupting the inherited scenery of the site and to minimize the environmental condition, the existing villa was renovated and reused and the new building mostly buried underground (Futogawa 1993 : 218). This structure opens into a sequence of sunken courts or plazas. These plazas become stages of varied interchange (Futogawa 1993 : 218).

In this project, in which the new and the old are combined, the old building was restored and functions independently and the new building designed with reference to the historical style. The introduction of new architecture revitalizes the villa and accentuates its charm. The two styles come together strategically and serve to alleviate the conflict between the styles, for example, at the plaza where there are elements such as light and wind, or at the corridors and lobby (Ando et al, 2001: 90).

Tadao Ando explains that the concept of the building was to ‘accentuate the spirit of the new, producing creative energy from dialogue with the past and to realise the concept through an essentially practical programme’ (Futogawa 1993: 218).

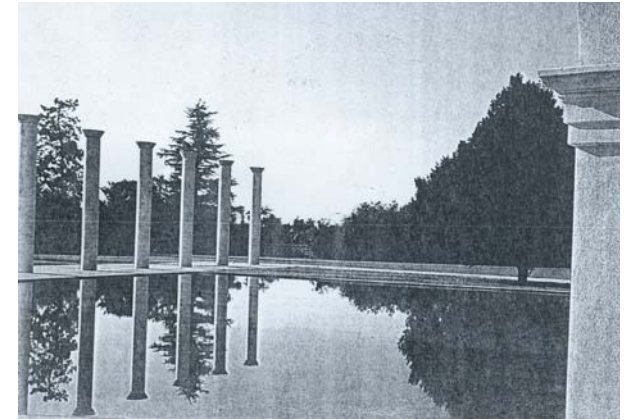


Figure 5.1.2

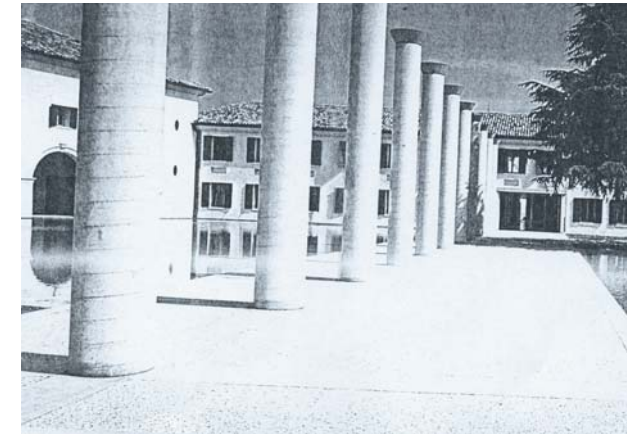


Figure 5.1.3

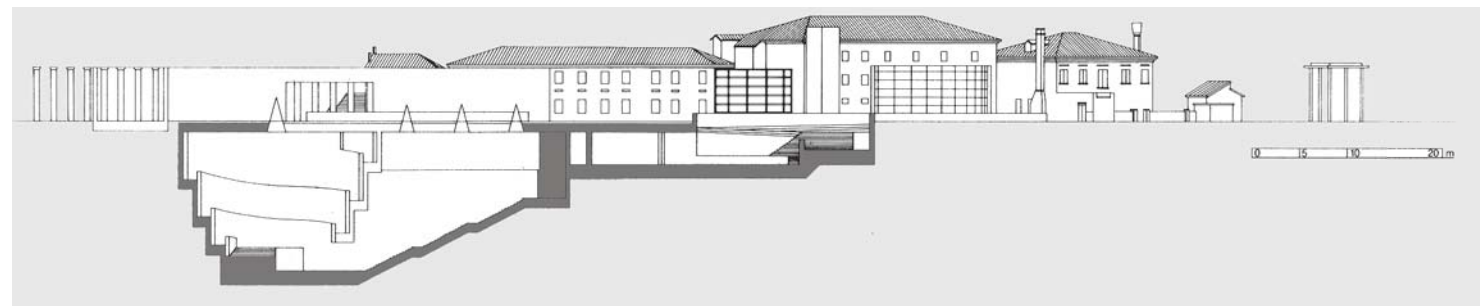
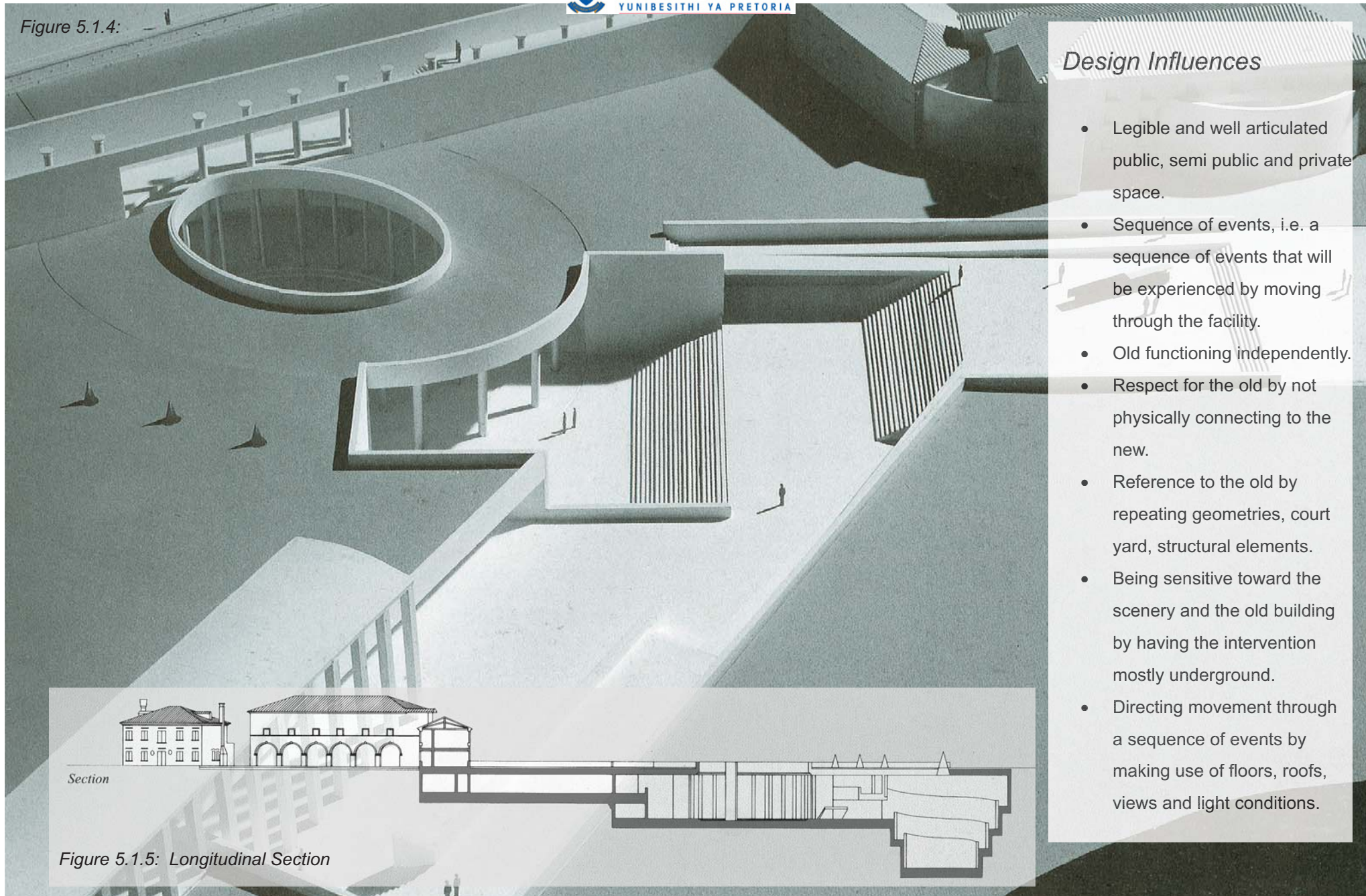


Figure 5.1.1: Section



Figure 5.1.4:



- ### Design Influences
- Legible and well articulated public, semi public and private space.
 - Sequence of events, i.e. a sequence of events that will be experienced by moving through the facility.
 - Old functioning independently.
 - Respect for the old by not physically connecting to the new.
 - Reference to the old by repeating geometries, court yard, structural elements.
 - Being sensitive toward the scenery and the old building by having the intervention mostly underground.
 - Directing movement through a sequence of events by making use of floors, roofs, views and light conditions.

Figure 5.1.5: Longitudinal Section



5.2 Extension of the Reina Sofia National Museum, Madrid, 2001, Jean Nouvel

The Reina Sofia is home to Madrid's contemporary art collection. The building is the old general hospital built in the 1760's. The massive cubic edifice represents the large scale works undertaken by Carlos III in his attempt to give Madrid the splendor worthy of other European capitals of the day. As a result of financial complications, the original design of the hospital had to be reworked. Therefore the building was deprived of the façade, to open onto the prominent Calle de Atocha (Carbonero 2001, 337). The museum does, however remain a marker; its foreign presence signals a significant point in Madrid. The extension, located along calle de Atocha, re-appropriates the functioning and urban identity of the museum (Carbonero 2001, 337).



Figure 5.2.2: Section



Figure 5.2.1: Section



Figure 5.2.3: Section

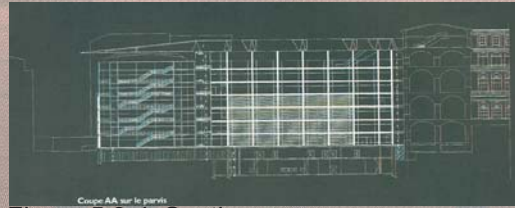


Figure 5.2.4: Section

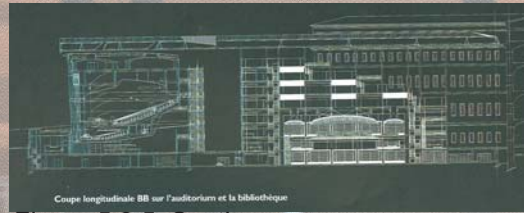


Figure 5.2.5: Section

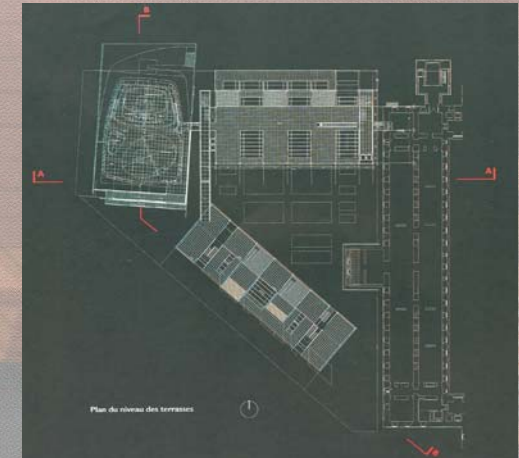


Figure 5.2.6: Section

Design Influences

- Re- appropriate the functioning and the urban identity of the old facility by creating a sequence of spaces that integrate the old and the new.
- The transparency of the extension with its 'light' steel elements contrast to the solidity of the existing structure.
- The extension is sensitive toward the existing structure as it responds to its scale.
- Materials make direct reference to the old, such as the repetition of the red roof finish and repetition of certain horizontal and vertical rhythms.
- The facility accommodates public gathering.

Figure 5.2.7: Section

5.3 Rose Center for Earth and Space, New York, 2000, Polshek Partnership

This typological precedent is probably the most important one to influence the design of the astronomical centre. In the Rose Center for Earth and Space the architects at the Polshek Partnership reduced architecture down to platonic forms – a cube and a sphere. The result is a building immediately recognizable as an icon. Pearson argues that by combining the grand with the ethereal, the Rose Centre achieves a sense of timelessness that hints at the mysteries of the cosmos (Pearson, 2000: 100). The

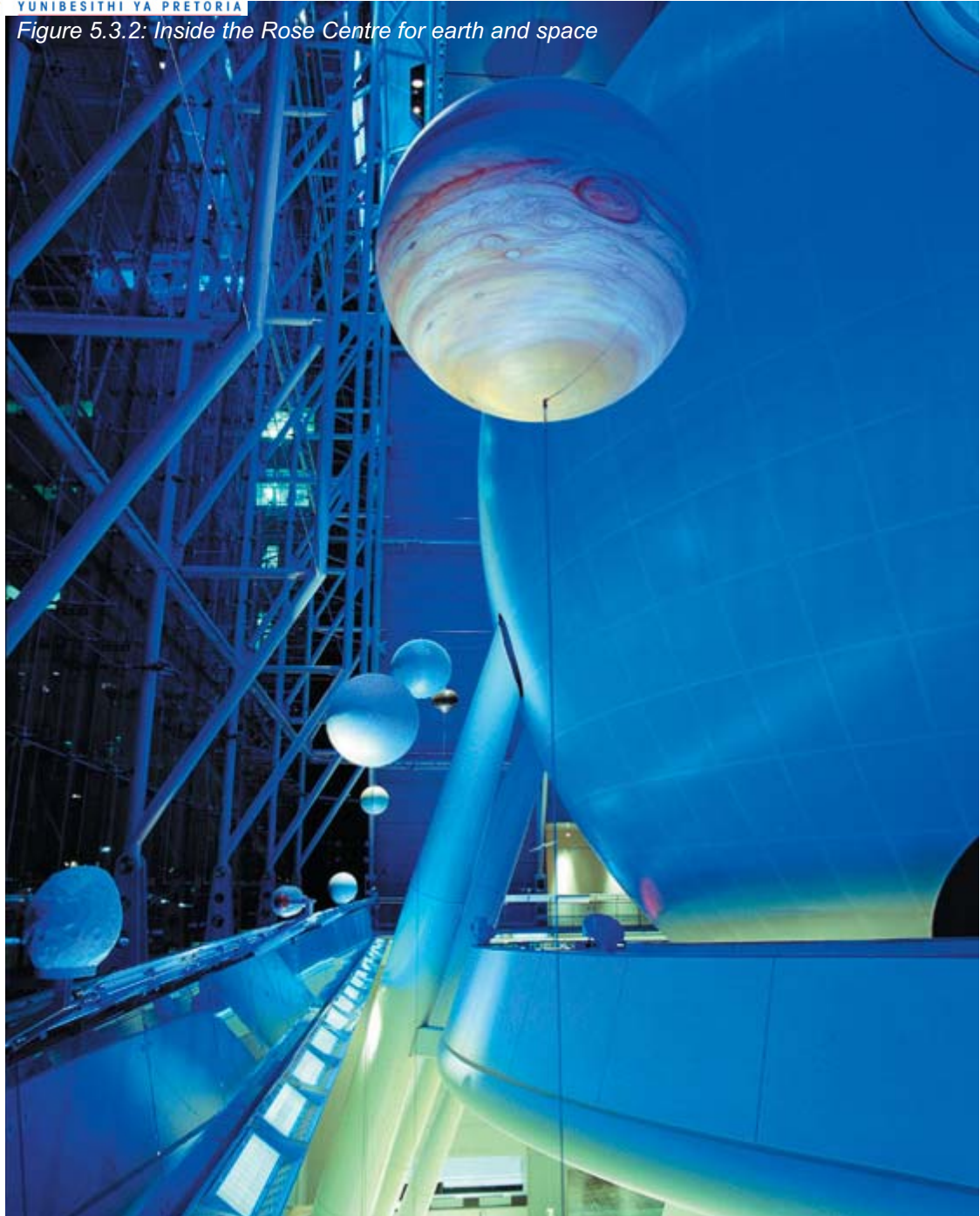


Figure 5.3.2: Inside the Rose Centre for earth and space



Figure 5.3.1: Street elevation of the Rose Centre for earth and space

architect describes this work as an 'architecture of interpretation'(Tyson quoted by Pearson, 2000: 105). This phrase implies a degree of engagement between architect and client and building and users, which invites multiple responses.

The sphere calls to mind the dome of the sky, the old Hayden Planetarium, the earth and heavenly objects (Pearson, 2000: 100). The design makes the science visible from the street as opposed to the traditional half-spherical planetarium that is merely an interior experience. The architects stated that the design does not pretend to be an extension of the 19th century building next to

it. The crisp lines of its cube, the exposed steel trusses and the otherworldly lighting of its interior, would clearly set the Rose Center apart from the rest of the museum. There is no doubt where the old ends and the new begins(Pearson, 2000: 100).

More than just a device to grab attention, a sphere helps bring scientific concepts to life(Pearson, 2000: 100). One of its important functions, for example, is to convey the varying scales of objects in the universe. Visitors walking along a gallery can compare a series of small objects to the giant planetarium sphere and get an idea of the size of the earth in relation to the sun or one star in relation to another. The sphere becomes a tool to

communicate science (Pearson, 2000: 105).

"It's a marriage of architecture and science. It's the universe as the architect's muse"

(Tyson quoted by Pearson, 2000: 105)

The 'cosmic pathway' has exhibits that narrate the 13-billion-year history of the universe from the big bang to the present day. Each step takes the visitor 75 million years down the timeline. By the end of this path mankind's time on earth is represented by the width of a human hair (Pearson, 2000: 105). In this pathway light is used 'to tell the story'. Light in the form of

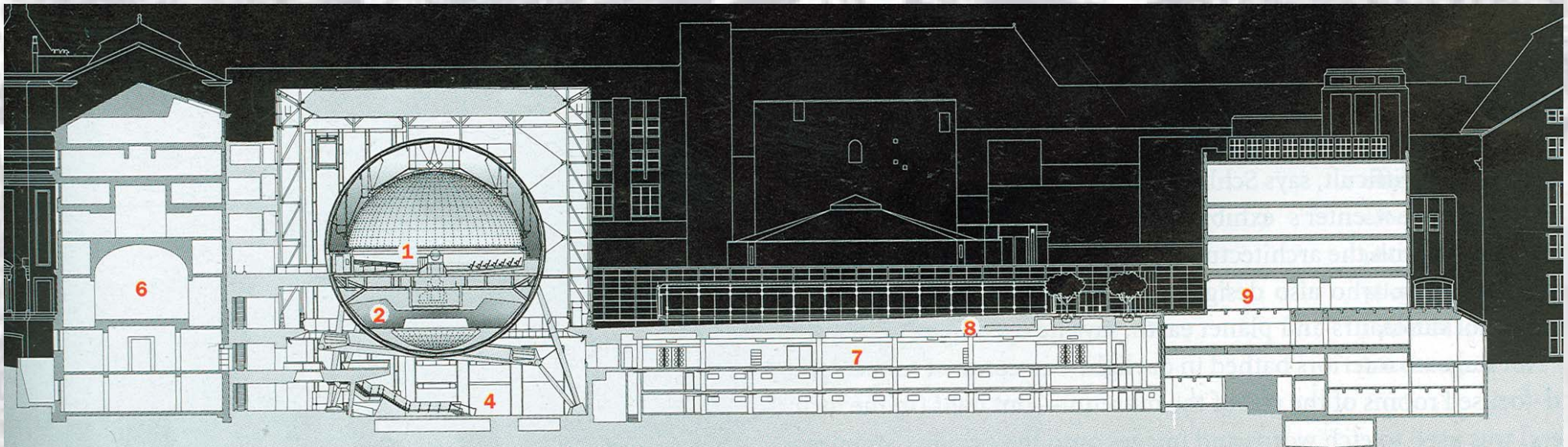
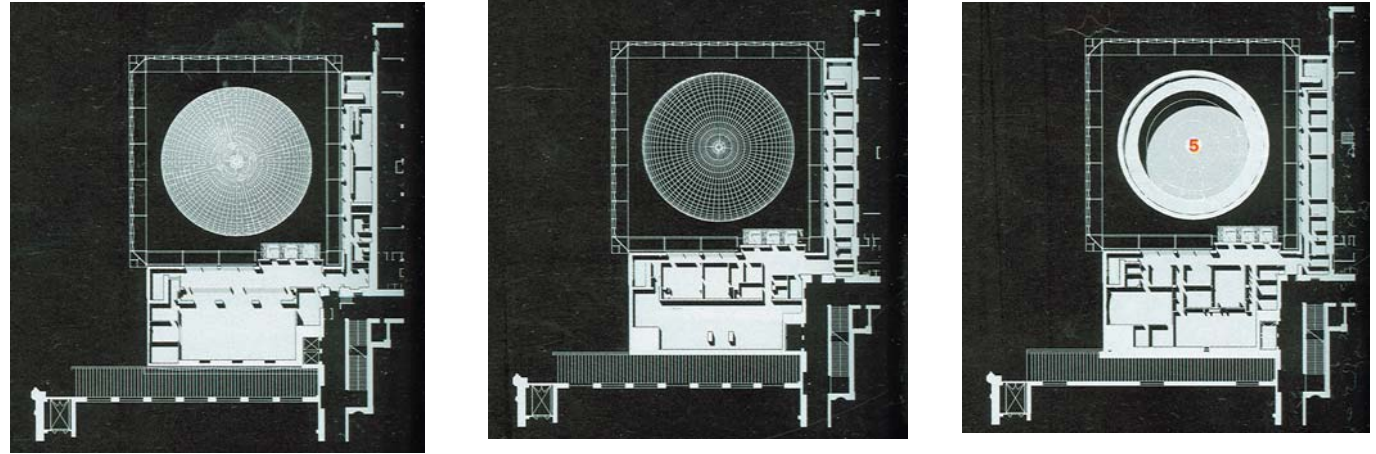


Figure 5.3.3: Longitudinal section



lasers is used to etch words and images onto the exhibits' stainless steel panels. Standing under the sphere, the visitor gets fragmented views of the Beaux-Art apartment building across the street (Pearson, 2000: 110).

The great mass of the planetarium sphere and planets hanging from the ceiling seem to deform the cubic volume and create a sense of animation that makes science come alive.



Figures 5.3.5 - 5.3.7: Plans

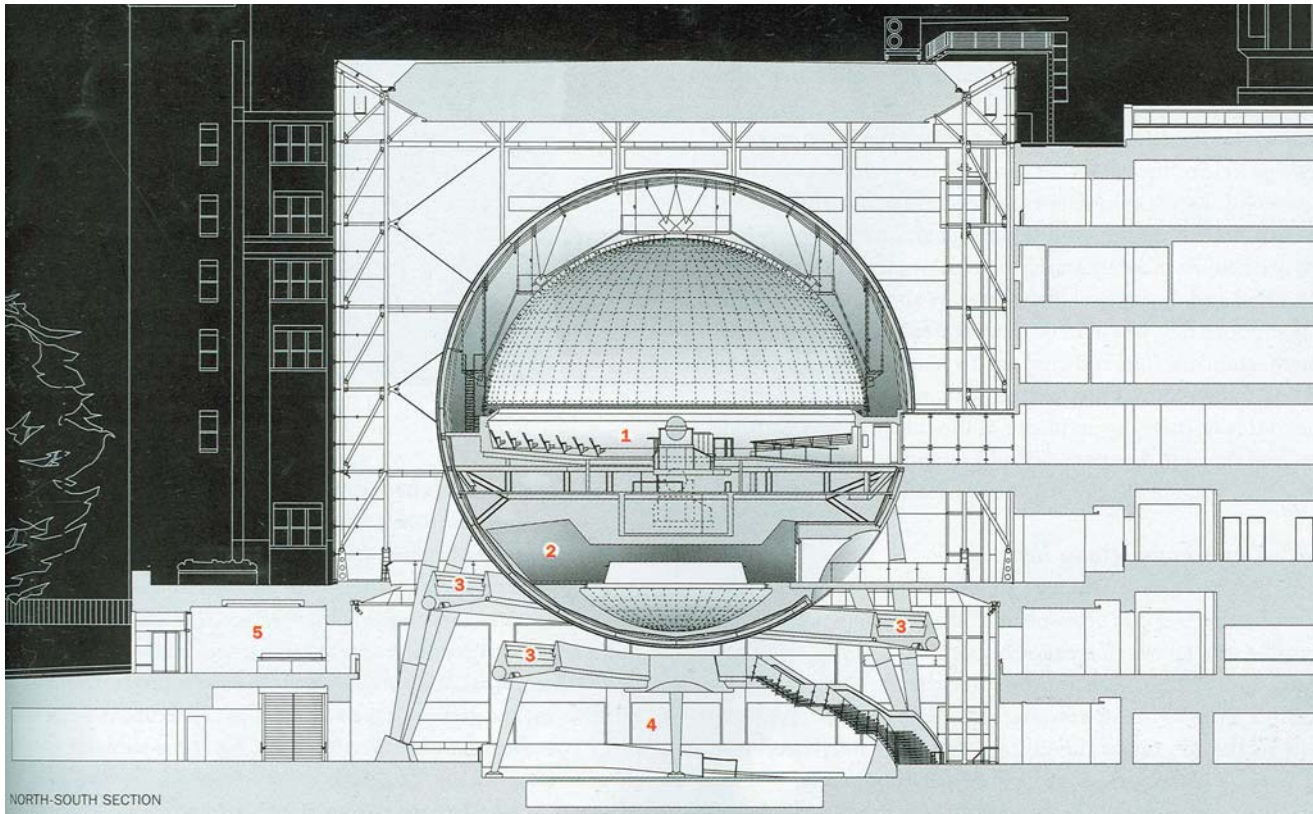


Figure 5.3.4: Section

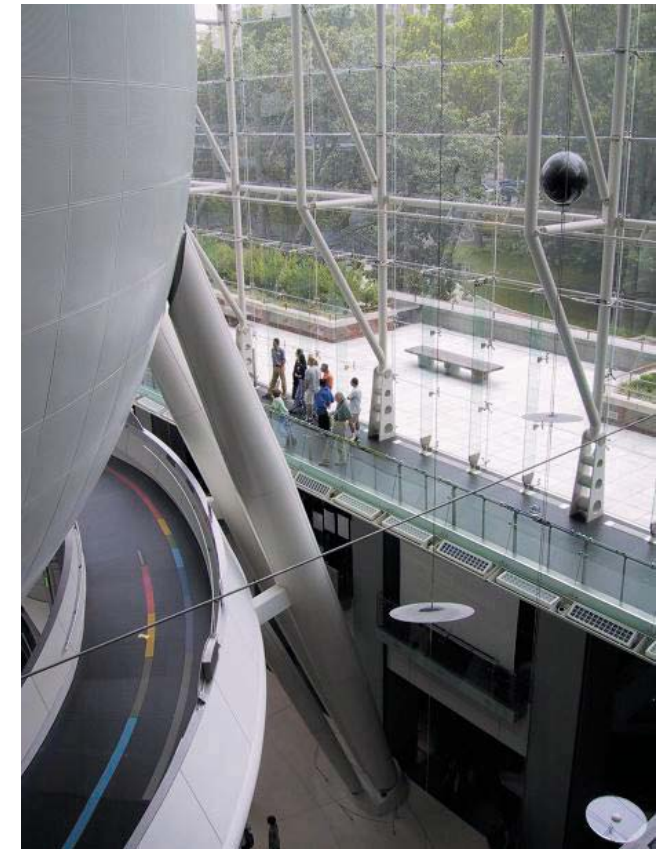
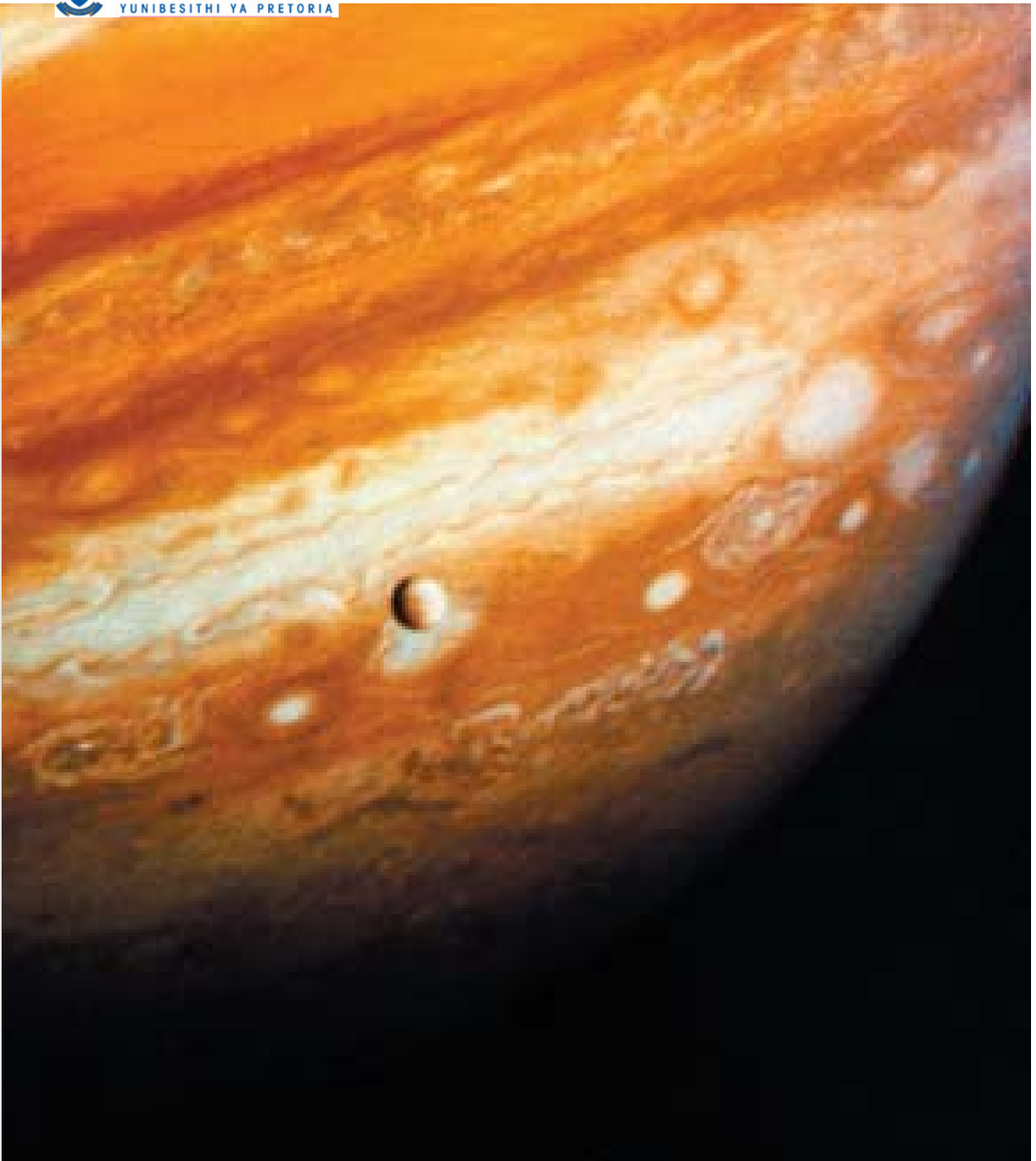


Figure 5.3.8

Design Influences

The main attraction of the facility is the planetarium. The exhibition spaces become part of the narrative of the cosmos. The design accommodates adult visitors but mainly focuses on large groups of children.

- The architecture is reduced to platonic solids.
- The building becomes a civic monument, with an iconic nature.
- The new structure is designed in its own right, not as an extension of the old museum.
- The interior of the new building allows a series of varying views of the old building.
- The architecture becomes a tool to communicate science.
- The main feature of the facility, the planetarium, becomes the nucleus of the design.
- Circulation in and around the facility becomes the key. The movement is directed in and around the nucleus in order to create different levels of spatial experiences.
- Instead of the new building merely becoming a stepchild of the museum, it rather becomes part of a seamless flow of spaces.



5.4 Origins Centre, Johannesburg, 2006, Mashabane Rose Architects

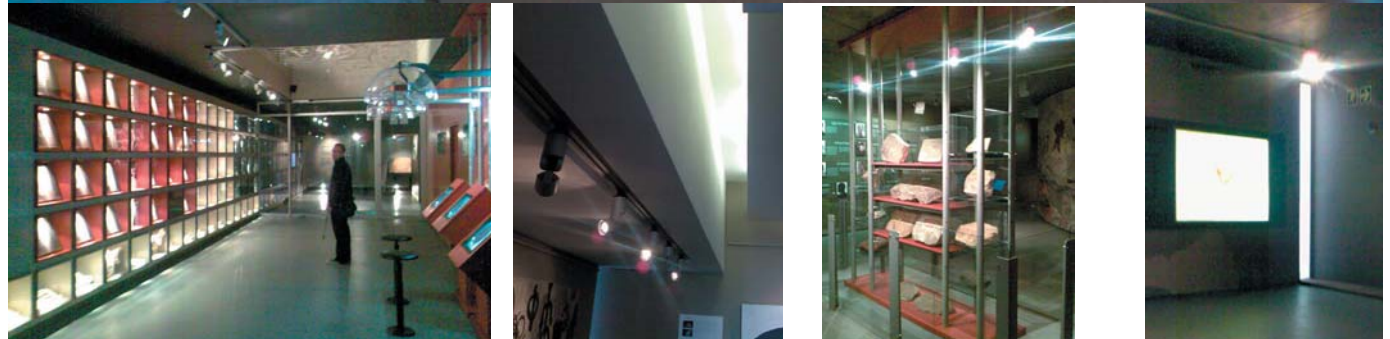
This museum dedicated to the origin of man comprises of two buildings and a central courtyard. Visitors enter the complex from the university side on the North, move through the courtyard and begin the narrative journey in the South building (www.mashabanerose.co.za/team.htm 06/04/07).

The architecture is stark, understated and silent. The heavy walls that create expanding and constricting cave-like interior volumes, allow the exhibition narrative to take centre stage. The building, still recognizable to most ex-WITS students as 'The Wedge', has shed its industrial history and has been redefined as a cultural container for the precious objects that aid the narrative. It sets the mood for its serious academic content (ibid).

The narrative experience is a rich feast of audio-visual material, artifacts and beautifully crafted contemporary artworks, with interactive touch screens and audio guides forming the basis upon which the journey is anchored. The text panels, showcases and displayed objects act only as sparks along the route that trigger ideas and introduce concepts to visitors. The stories, which range from ancient myths and legends to questions of identity and cultural influence and evolution make for a fascinating journey (ibid).



Figures 5.4.1 Internal view of the Origins Centre



Figures 5.4.2 - 5.4.9 Exhibition space in the Origins Centre

Design Influences

- Base the exhibition route on a narrative which takes the visitor on a journey of exploration.
- Allow the exhibition narrative to take centre stage by creating architecture that is stark and understated. Make use of heavy walls that expand and create constricting cave-like interior volumes
- Consider the lighting as an integral part of the design narrative
- Use a variation of internal floor, wall and roof finishes, thereby creating a number of miscellaneous spatial experiences that responds accordingly to the narrative.

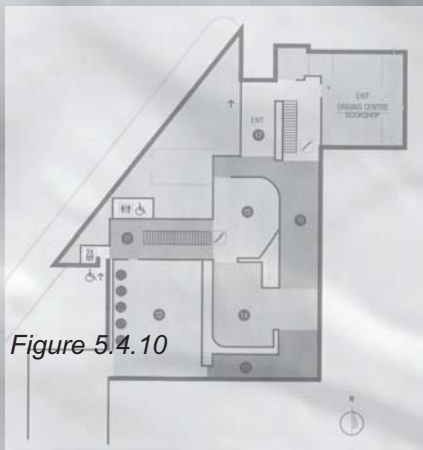


Figure 5.4.10

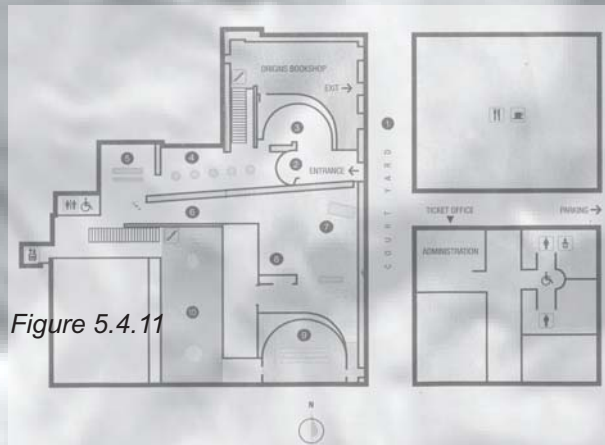


Figure 5.4.11

Conclusion

In this chapter four precedents are discussed that will be used as aids in the design process. Firstly, I explored the way that the design concept in Fabrica Benneton Art School is translated into architectural form. Secondly, I considered the way that the extension to the Reina Sofia responds to its urban context. Thirdly, I considered the Rose Center for Earth and Space as typological precedent in its dealings with the functional requirements of the facility and also in its use of architectural form to create architectural expression. Finally, I discussed the Origins Centre as a local precedent as a result of its use of a narrative in design and for its design of dark interior exhibition space.

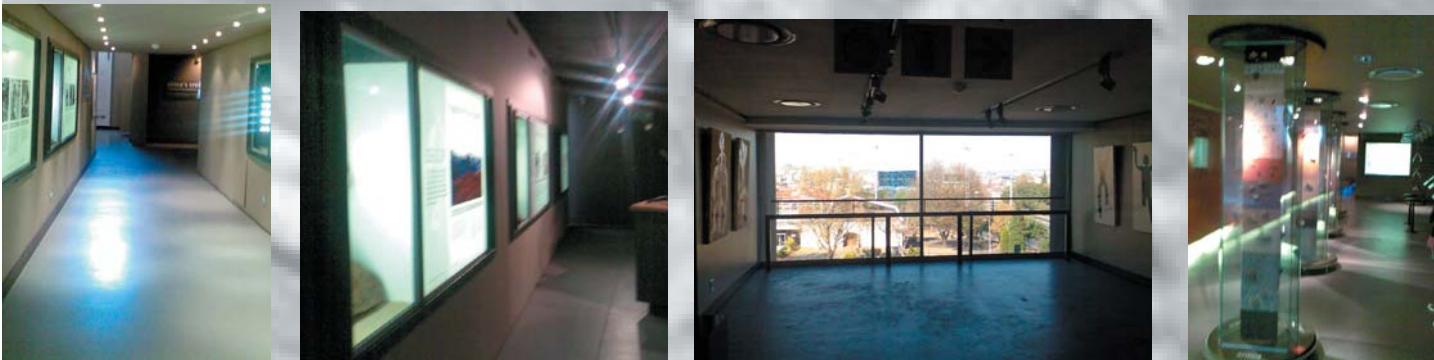


Figure 5.4.12