4. Precedent Studies

4.1 Africa Centre for Health & Population Studies, Somkhele, KwaZulu-Natal.

Architects: East Coast Architects (2002)

The Africa Centre for Health & Population Studies is housed in a recently opened complex at Somkhele, northern KwaZulu- Natal. Funded since 1998 by the Wellcome Trust, Londdon, the Centre was instituted to conduct and co-ordinate demographic studies in the surrounding Hlabisa district. It's work focuses on gathering longitudinal information about the 80 000 people who live in this distinctly rural area. The research focuses mainly in the area of health and population problems (Leading Architecture, 2003).

A number of low-tech sustainable design solutions have been incorporated into the centre, it is through these that the building begins to reflect a regional identity.

The design has been well thought-out and accommodating sustainable principles effectively. The design of the building works in harmony with the environment. The materials have been creatively used and are locally produced and cost-effective. The building has also been designed to accommodate people with disabilities (Digest 2003: 62).

The Africa Centre for Health & Population Studies is a colourful building that is in harmony with nature. Extensive consideration has been given to environmental preservation. Medicinal plants are also incorporated into the landscape to emphasise traditional healing methods (*ibid*).

Low-volume flush toilets and low-volume water showers are used to conserve water, along with the 'grey' water being used to irrigate the gardens. Sewage is treated on site and the purified water is used for the community vegetable garden while rainwater is collected and stored in tanks (*ibid*).

Figure 4.1
Perspective of building showing the tower at the back

Figure 4.2
Detail of timber suncreens

Figure 4.3
Timber & steel materials where carefully combined

4.2 Habitat Research & Development Centre, Katutura, Namibia.

Architect: Nina Maritz (2002)

The appointment of this project is a result of a design competition won in 2002. After the outcome of the competition, several changes were made to the brief, and the appearance of the building changed considerably. The Habitat Research & Development Centre's main function will be research and to promote sustainable housing in Namibia. It will also provide office space for related organisations such as the R3E (Renewable Energy & Energy Efficiency) Bureau and the country manager of the UNDP Habitat Programme (Namibian Digest 2004: 88).

The first phase comprising the administrative wing was completed early in April 2004. The second phase, the public wing, was completed in September 2004. The design focused on several sustainability issues, such as passive solar design, conservation and re-use of water, low embodied energy materials, recycling of waste and second hand materials (*ibid*).

Compressed soil-cement were made on site using the Hydraform system, a patent machine rented from a local builder and stockpiled sand from Otjomuise a few kilometres away. The bricks are profiled and dry-stacked, plastered only around window reveals and in corners (*ibid*).

Timber 'droppers' or 'latte' were cut from invader proposis trees in the valley north of the industrial area by local SMEs. They were debarked and treated on site by being soaked in amixture of old motor oil. These 'latte' are used extensively for shade and security screens in front of windows, extensions of overhangs and walkway shading (*ibid*).

Figure 4.4: Elevation detail

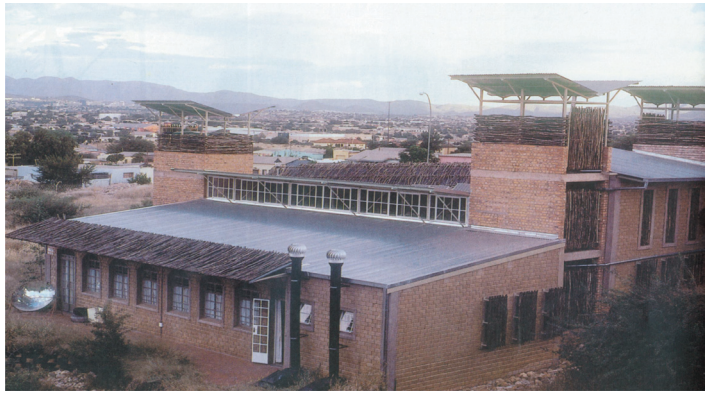

Figure 4.5: Bird's eye view

Figure 4.6: Sun-screen detail

The aim of the project was to integrate architecture and landscape, to relate to the scale of the local housing context, and to device a building that is environmentally appropriate in the context of it's Windhoek location and the role in Namibia. The Centre had to respond to the social, economic and natural context of the Katutura and Okuryangava communities (Namibian Digest 2005: 74).

The green spaces act as connectors between the buildings a nd also as outside rooms that can be used as gathering and teaching spaces of various kinds (*ibid*).

The natural watercourse courtyard between the wings of the main building fulfils the role of a garden lung of and showcase for an entirely indigenous garden. The garden flows out into the landscape and integrates the main building with the site. The shape of this courtyard was adapted to include several existing trees located during the survey (*ibid*).

The internal circulation takes place around an undisturbed natural courtyard by means of gradually descending ramps following the natural gradient. Although roofed, these walkways open to the sides as interface spaces (*ibid*).

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Figure 4.7
Tower detail

Figure 4.8
Sun-screen detail

4.3 Mautemanene Fire Station, Walvis Bay, Namibia

Architects: Mackintosh Lautenbach Architects

The Walvis Bay Municipality commissioned a modern fire station, to be centrally located at the entrance to the Kuisebmond suburb, close to the high-risk areas like the port, industrial and high density residential neighbourhoods (Namibian Digest 2005: 39).

The brief called for a building that represented the modern requirements of a fire station in a dynamic way and continued the rich tradition of the Walvis Bay Minicipality's impressive civic architecture. Thus it was attempted to address the pragmatic issues yet provide a building of dynamic interest (*ibid*).

Due to the harsh Namibian climate, the request for a low-maintenance structure and the nature of the building it was felt it should have a red facebrick structure. The traditional building material is given a contemporary African twist by the use of an angled soldier-course corbel that caps the building all the way around (*ibid*).

The building relies on the juxtaposition of materials and volumes for its visual impact and definition. For example, teak timber sleepers are set in exposed aggregate concrete to define the main entrance (*ibid*).

The main entrance is a sleek timber pivot door, set in a scratch plaster box, in turn set in a curtain wall façade, all framed on either side by the red facebrick walls and overhead the double-storey timber Pergola element. Consideration was also given to the prominence of the building along a major traffic artery, and the visual dynamic of the building from a moving car (*ibid*).

Figure 4.9: Entrance of the building

Figure 4.10: Perspective of the building

2.4 Casa da Musica, Porto, Portugal

Architects: Office for Metropolitan Architecture (OMA)

After Porto was selected as one of the two cultural capitals in Europe in 2001, the Minister of Culture and the City of Porto founded Porto 2001, an organisation which was to initiate and prepare different urban and cultural interventions for the city of Porto. In this context five international architectural firms, amongst which was OMA, were invited to participate in a restricted competition for a new concert hall to be positioned in the historical centre of Porto, the Rotunda da Boavista. The Office for Metropolitan Architecture (OMA) won the competition (GA Document 84).

Figure 4.11: Bird's eye view showing Casa Da Musica next to Rotunda Boavista

Urbanism

Since this part of Porto was still a city "intact", OMA chose not to articulate the new concert hall as a segment of a small scale circular wall around the Rotunda da Boavista but to create a solitary building standing on the new, more intimate square connected to the historical park of the Rotunda da Boavista and enclosed by three urban blocks. With this concept, issues of symbolism, visibility and access were resolved in one gesture (*ibid*).

Through both continuity and contrast, the park on the Rotunda da Boavista, after the intervention, is no longer a mere hinge between the old and the new Porto, but it becomes a positive encounter of two different models of the city.

Acoustics

This century has has seen architecturally frantic attempt to escape from the tyranny of the notorious "shoe-box" shaped concert hall. But the best concert halls in the world have a "shoe-box" shape.

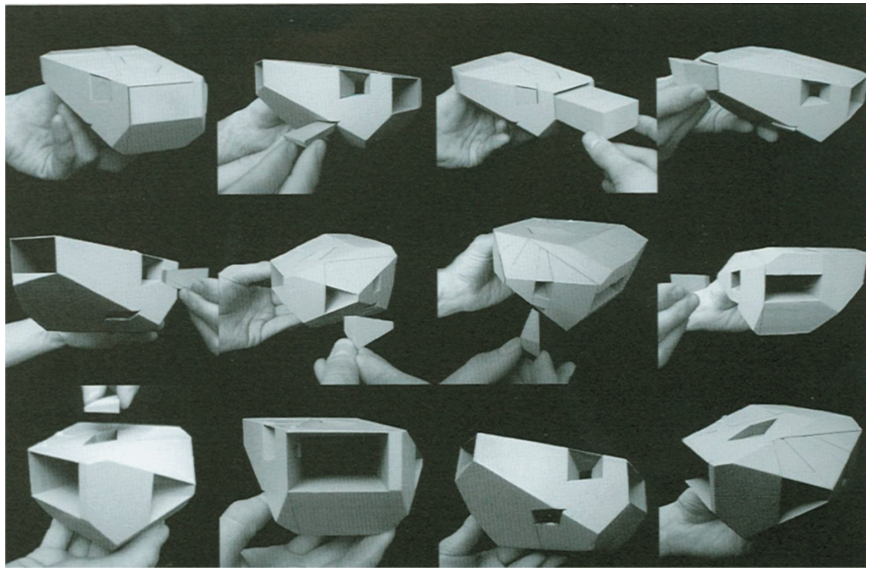

Figure 4.12: Concept models

Architectural concept

OMA addressed the relationship between the Concert Hall and the public inside as well as outside the building by considering the building as a solid mass from which were eliminated the shoe-box shaped concert halls and all other public program creating a hollowed out block. The building reveals it's contents to the city without being didactic; at the same time the city is exposed to the public inside in a way that has never happened before.

A continuous public route connects all public functions and "remaining spaces" located around the Grand Auditorium by means of stairs, platforms and escalators: the building becomes an architectural adventure.

During the design phase OMA researched new materials and new applications of existing and portuguese materials exclusively for Casa da Musica such as; the corrugated glass for the windows of the Auditorium, the used tiles for different rooms (*ibid*).

Figure 4.13: Elevation of Casa Da Musica

Structure

Casa da Musica is visually and spatially defined by it's striking faceted exterior from which it's conventional interior spaces have been extracted. The building's 400mm thick faceted shell and two 1m thick walls of the main auditorium are the building's primary loading bearing and stability system. The auditorium walls act as internal diaphragms tieing the shell together in the longitudinal direction. Arup and OMA researched the concrete mix for external facades. (*ibid*).

Figure 4.14: Perspective of the building