FIGURE 9.1 Technical drawing, Digital Collage

Barcelona Chair
Mies van der Rohe
THE ROUTE OF THE OBJECT

Ditsong: National Museum of Cultural History

New Museum Ramp Display in Standard Bank Centre

New Museum Storeroom in Standard Bank Centre

New Museum Story Room Exhibition
Introduction

This chapter provides in-depth information regarding the design (as discussed in chapters 07 and 08) and the technical resolution thereof.

The circulation inside the museum is discussed in terms of the way a visitor would move through the spaces. Fire protection and safety is considered according to the general requirements in SANS 0040 Part T. The material selection is expressed by means of detail design of certain elements of the design intervention.

The Route of the Object

The objects that are displayed in the satellite museum are transported from the Ditsong: National Museum of Cultural History to the Standard Bank Centre. There the objects will be stored in basement level storerooms of the building until they are displayed in the satellite museum.
FIGURE 9.3
LOWER GROUND FLOOR MEZZANINE PLAN
Path and Visitor Orientation  
(Circulation)

The form of the ramp influences the shape and space of the museum exhibition rooms on the lower ground floor mezzanine. An orange coloured bulkhead that also serves as lighting element guides visitors through the museum on a defined route. The bulkhead orientates the visitors inside the museum. This route is indicated with a thick orange line on the plan. There are additional spaces and activities that visitors can explore by leaving the defined route and following their own path through the displays. These routes are indicated with a thin orange line on the plan.

The path a visitor will follow through the museum is discussed by numbering certain points on the museum route.

1. A person walks down the ramp from the ground floor to the lower ground floor mezzanine. Where the ramp meets the mezzanine level, the shape of the ramp guides a person to walk through glass doors to the ticket counter. A double volume with a suspended neon light sculpture attracts a person’s attention and creates interest.

2. A person buys a ticket for the museum and collects information at the ticket counter.

3. The orange bulkhead leads a visitor into the first exhibition space, the Story Room. In this room a visitor can sit on the museum chairs in niches on the one side of the room. The path encircles three sound pods where a visitor can sit and listen to recorded stories of Pretoria.

4. The visitor has the option to enter a recording room where a person can record memories and recollections of the city. These recordings will be played in the sound pods.

5. A visitor exits the Story Room at the opposite side of the room entrance.

6. A visitor is guided by an orange bulkhead to enter the Silhouette Room. Chairs are displayed on ‘pedestals’ and lit to be experienced in silhouette.

7. The Objects Room is a contemporary version of the ‘Cabinet of Curiosities’. A visitor has to determine his/ her own path around shelves and display panels. A visitor can open the shelves to find objects related to the making and restoration of chairs inside.

8. The visitor enters the Context Room and circulation is guided by the element in the center of the room around which chairs are displayed and contextualized against. A visitor walks around the display element to the exit.

9. The exit route leads a visitor through the Objects Room to the museum exit.

10. A visitor is guided to the ramp that leads to the lower ground floor.
Fire Protection

General Requirements according to SANS 0400 Part T

According to the SANS 0040 Part T, all buildings must be provided with one or more escape routes that can be used in the case of an emergency or fire. The maximum travel distance to the nearest escape door must be 45m. The escape routes should be positioned in such a manner that in case one of the routes become inaccessible, the other route can still be used. The width of an escape route should be no less than 800mm for a room with a population of more than 25 people. An escape route should have headspace of 2,4m. A staircase that forms part of an escape route must have an exit to a street or approved open space.

Existing Situation

As is indicated on the plan, there are two existing fire escape staircases on the lower ground floor mezzanine. The ramp cannot be viewed as an escape route, as the travelling distance from the lower ground floor mezzanine to the ground floor is 46m and the threshold of the ramp is 16m from the nearest entrance of the building. The two existing fire escapes have sufficient exits on street level onto pedestrian walkways. The existing escape routes are wider than 800mm and have non-slip floor surfaces.

The museum requires more escape routes, as there are museum spaces that are more than 45m travelling distance from an escape door. Two existing staircases shall be transformed into fire escape routes and routes leading to the new escape staircases will be provided. The lighting of the emergency routes shall be a minimum of 0.3 lux.

According to SABS 0040 Part TT31.3 the museum is provided with an alarm system that can be manually operated. The building is a non-smoking building, and will be clearly marked as such with the necessary signage. The building is provided with the necessary fire hydrants, portable extinguishers and hose reels.

Markings and signage

All the emergency routes in the building will be clearly marked with the necessary signage at be lit with an intensity of more than 50 lux. The emergency power supply of the building will ensure that the signs will be illuminated for a minimum of 120 minutes.
MATERIAL AND COLOUR PALETTE

EXISTING MATERIALS
- Commercial Plywood
- 3 Form Varia Chroma
- Saligna Lattice
- Lazercut Sheetmetal

NEW MATERIALS
- Plexiglass
- Shades of Orange and Amber

FIGURE 9.5 Materials of the design intervention.
The materials and colours selected for the computer station were chosen to create a sleek computer station that defines a space for the individual using the computer while not separating the user from the larger space. The lighting and acrylic sheets contribute to the flexibility of signage while not distracting the user from the computer images.
RAMP

FIGURE 9.6 Drawings indicating construction of Computer stations.

FIGURE 9.7 Drawings indicating construction of ramp.
The Context Room displays objects in similar situations as one would encounter them in a real life situation. The display element in the centre of the room generates circulation and creates exhibition possibilities. Chairs are positioned in relation to the element to suggest the context in which the chair would normally be seen. The display element is experienced as a floating element between the floor and the ceiling. The element is connected to the floor and ceiling with cables and rods. Other temporary space-making elements such as display walls and curtains are used to make the room more flexible.
FIGURE 9.8, 9.9 Scenarios of exhibitions in Context Room. FIGURE 9.10 Drawings indicating construction of display element.
FIGURE 9.11 Sketch indicating noise distribution and absorption in and around sound pod. FIGURE 9.12 Section of soundpod, not to scale. FIGURE 9.13 Perspective of soundpod. FIGURE 9.14 Plan of soundpod with material selection, not to scale. FIGURE 9.15 Section of soundpod in Story Room, not to scale.
Commercial Plywood used as seating in sound pod.

Extruded Acrylic used as enclosing element for sound pod. (Translucent)

Extruded Acrylic used as seating in sound pod. (Thermaformed)

Saligna Lattice used as structural vertical elements that connects the sound pod to the floor and ceiling.

RBG LED Colour-changing lights attached to saligna lattices
LIGHTING

Existing Daylight Condition


Michael Bednar (1986:85) identified three considerations around which the analysis of daylighting in atria can be organized around:

1. **Daylight Source**
   *(How is the daylight brought into the atrium?)*
   The aspect of allowing daylight inside a building is an important contribution to energy conservation (Saxon, 1983:77). Daylight is brought into the Standard Bank Centre through the overhead skylight. The spaces that are not illuminated by daylight are lit by means of artificial lighting.

2. **Light Box**
   *(How is the daylight distributed within the atrium?)*
   The atrium acts as a light duct (Saxon, 1983:80). The lighting provided by the skylight is not enough to illuminate the space surrounding the atrium and additional artificial lighting contributes to the overall illumination. The plants in the atrium space absorb light and should be minimized (Saxon, 1983:81).

3. **Illumination**
   *(How is daylight utilized within occupied spaces?)*
   The daylight entering the atrium is not utilized optimally. The spaces bordering on the atrium do not make use of the daylight.
FIGURE 9.19
Conceptual Lighting Plan
(not to scale)
FIGURE 9.20 Lighting detail, not to scale.
FIGURE 9.21 Section of functional lighting, not to scale.
FIGURE 9.22, 23 Lighting details, not to scale. FIGURE 9.24 Section of effect lighting, not to scale.
FIGURE 9.25 Lighting detail, not to scale.

**Functional Lighting**

**Purpose:** To provide a space with the correct amount of light measured in lux levels needed for the activity that will take place in the space.

Examples include:
- Focused Workspace Lighting: offices, ticket counter, computer stations
- Focused Display Lighting: adjustable lights for illuminating objects
- Display Lighting: sufficient lighting to read text and signage

**Design Details**

- **NEON COVE LIGHTING**
  - 20mm tube mounted in cove
  - 60 x 60mm background wash on textured wall
  - Colour amber

- **NICHE**
  - Built from medium density fibre board

**Adjustable Track Lights**

**Figure 9.20**

**Figure 9.21**

**Figure 9.22**

**Figure 9.23**

**Figure 9.24**

**Figure 9.25**
**Effect Lighting**

**PURPOSE:** To enhance the spatial qualities of an exhibition room, to create focal points and to manipulate visitor circulation.

**Examples include:**
- Colour and RGB Colour changing Lighting
- Spotlights
- Cove lighting
- Wall washing/ Up lighting

**FIGURE 9.22**

**FIGURE 9.23**

**FIGURE 9.24**

**DETAIL**

**SUspended Illuminated Bulkhead**
(Circulation Lighting Element)
FIGURE 9.25

Effect Lighting Section 1:100

LED Strip Lighting

Gobo Light Effect

Detail Ticket Counter Lighting (Entrance)

(Not to Scale)
FIGURE 9.26 Ramp details, not to scale (November exam presentation).

**FIGURE 9.26**

**RAMP DETAILS**

**Ramp to Ground Floor slab connection** (start of ramp experience)

- 32 x 600 x 1200 mm Laminated safety glass panels in steel frames (Installed as per specialist approval).
- Frame bolted to IPE = 180 x 160 mm beam.
- Non-slip adhesive strips between glass surface.
- PEE = 180 x 160 mm beam bolted to steel frame with M16 M10 grip bolt.
- 5mm Aluminum bracket containing Sparkle LEDs.
- Silicone sealant between bracket and glass.
- Ceramic tiles, 8 x 225 x 250 mm Steel toot plate bolted to floor slab with 8 mm Ø chemical anchor.
- 8 mm Ø Chemical anchor fixing steel floor plate to floor slab.
- 300 mm Existing concrete floor slab.
- Slope of ramp 1:12 as per SANS 0400.

**Ramp to Lower Ground Floor slab connection** (end of ramp experience)

- 160 x 800 x 1300 mm Laminated safety glass panels in steel frame (Installed as per specialist approval).
- Frame bolted to IPE = 160 x 100 mm beam.
- Non-slip adhesive strips between glass surface.
- PEE = 160 x 100 mm beam bolted to steel frame with M16 M10 grip bolt.
- 5mm Aluminum bracket containing Sparkle LEDs.
- Silicone sealant between bracket and glass.
- 16 mm Curved plate welded to steel plate to create floor slab.
- 16 mm Curved plate welded to floor slab.
- 16 mm Curved plate welded to horizontal glass plate.
- 16 mm Chemical anchor fixing glass plate to concrete floor slab.
- 16 mm Chemical anchor fixing glass plate to concrete floor slab.
- 16 mm Chemical anchor fixing glass plate to concrete floor slab.
- 16 mm Chemical anchor fixing glass plate to concrete floor slab.
- 16 mm Chemical anchor fixing glass plate to concrete floor slab.
RAMP DETAILS

Section through ramp surface with bench and balustrade detail

1:10

FIGURE 9.27 Ramp details, not to scale (November exam presentation).
**FLOATING ELEMENT DETAILS**

**WIRE SYSTEM DETAILS**

1. Connection between wires: 30 dia. adjustable Duplex cross clamp. (Images from Jakob Inox catalogue)
   - Connection between wires: Carabiner with eyelet hooked onto eye nut clamped to cable. (Images from Jakob Inox catalogue)
   - Connection between cable and chair: Wire looped around chair and fastened with light two-part loop clamp. (Images from Jakob Inox catalogue)

**FIGURE 9.28** Details, not to scale (November exam presentation).