

CHAPTER 4

DESIGN DISCOURSE

The design generation and development process will be outlined in this chapter. Precedents that had an influence on the design are also investigated in this chapter. The development of the design through the course of the design process will be documented in written and visual explanations. This chapter will conclude with the final design.

The design process was influenced by the site restrictions and opportunities, theories investigated and programmatic requirements.

4.1. PRECEDENTS

The following precedents were chosen to investigate because of their applicability to the project. The Victoria and Albert Museum's (London) FuturePlan project and Seattle Central Library (Seattle) were chosen for their focus on visitor interface with the building's facilities and the focus on enhancing the visitor's experience. The Seattle Central Library's design also relates to the design approach for the D:NMCH. The Rose Centre at the American Museum of Natural History (New York) was chosen due to its applicability as a learning environment within a museum. Sci-Bono Discovery Centre (Johannesburg) was chosen as a case study which was visited to observe how groups interact with the centre facilities and with each other.

4.1.1. VICTORIA AND ALBERT MUSEUM



Figure 4.1.1.1. Exhibition Road courtyard. (Vinnitskaya 2011). London, England

Construction of Exhibition Road Building Project: 2014-2017

Architect:

Original: Captain Francis Fowke

FuturePlan: Various (2004 -)

Exhibition Road Building Project: Amanda Levete Architects

Cromwell Road entrance: PRS Architects

Grand Entrance and Dome: Eva Jiricna Architects

Programme: Gallery for temporary exhibitions, public courtyard and new museum entrance.

Design relevance: The visitor interface with the building's facilities is successfully implemented within this precedent. These aspects can be considered as guidelines when designing the entrance, foyer and open gathering space at the D: NMCH.

The Victoria and Albert Museum's FuturePlan was started in 2004 and will be completed in 2017.

FuturePlan is a programme of development which is transforming the V&A by revitalising visitor facilities. Designers are also creating new galleries, while revealing and restoring the original building. "FuturePlan aims to delight and to inspire visitors, and to continue the museum's tradition of championing new talent" (VAM 2014).

As part of FuturePlan, the Exhibition Road Building Project will provide a new entrance to the museum, a courtyard with a purpose built gallery for temporary exhibitions. The courtyard will act as venue for installations and events and will be served by a glass-fronted café. (Vinnitskaya 2011.) "(The design) unlocks the potential to bring new audiences into the museum by exposing it to passersby" (Vinnitskaya 2011).

Visitors will be drawn in from Exhibition Road by a large, light-filled public courtyard (Figure 4.1.1.1.). This space will serve as a temporary exhibition



Figure 4.1.1.2. View towards courtyard. (Vinnitskaya 2011).



Figure 4.1.1.3. Reception desk at the Grand Entrance and Dome. (EJAL 2003).



Figure 4.1.1.4. Cromwell Road entrance. (EJAL 2003).

'gallery' as well as an event space. The view from the courtyard will look into the museum and appeal to visitors to enter the museum. This aspect is seen on figure 4.1.1.2. from the interior of the museum, viewing out.

The existing Cromwell Road entrance has been transformed in 2003 to create a universally accessible entrance. The design "takes the form of a gentle radius and the steps merge into the slope with a tapering stone detail" (PRS Architects 2003). One of the criteria for the entrance was to create a place where people can meet and congregate. To achieve this, the entrance was enlarged with a more generous approach to the museum and thus creating a gathering place in front of the doors. (Figure 4.1.1.4.)

The "Grand Entrance and Dome" (VAM 2004) on Cromwell Road, was improved by making it a brighter, more welcoming arrival point for visitors. Eva Jiricna Architects resolved the reception area by rationalising the circulation patterns of visitors. (EJAL 2003). A new set of glass revolving doors was installed along with control points for museum attendants. The circular reception desk (Figure 4.1.1.3.) was installed to serve as ticket/ information desk during the day and usable as a bar for evening functions.

In addition to providing new public spaces inside and outside the museum, the project will also uncover the relationship between different London museums and between the visitor and conservators. "Increasingly conservators in museums around the world are spending time working in public gallery spaces in view of visitors" (Frost 2009.) At the V&A, conservators worked on objects for the Medieval & Renaissance Galleries in the Italian Cast Court, whilst it was closed to the public. Visitors were able to view the work in progress from an upstairs gallery. (Frost 2009.)

The V&A designers considered developing touch-screen interactions of the conservation process to stand along objects, but later it was decided that the information on the website will offer a "more immediate, appropriate and effective way of addressing this" (Frost 2009). In each gallery there is one object that visitors can touch. These objects were chosen because they could withstand the rigours of repeated touching whilst offering visitors a rewarding experience. The exhibitions will include a variety of display methods, for example the objects available to touch, short films, information posters, drawers to explore through and audio guides. (Frost 2009.)

Design influence:

The FuturePlan designs as described above all relate to enhancing the visitor's interaction with museum facilities and thus improving their overall experience at the museum. The Exhibition Road Project, entrance at Cromwell Road and the Grand Entrance and Dome all provide a legible first impression of the museum to passersby, new visitors and returning visitors.

The visitor's interaction is also an important aspect in the D:NMCH. The museum should provide a legible first impression to all visitors. The intervention can impact the visitor's first impression by focussing on the foyer and wayfinding opportunities.

4.1.2. SEATTLE CENTRAL LIBRARY



Figure 4.1.2.1. Seattle Central Library façade. (Ruault 2009)

2004

Seattle, WA, USA

Architect:

OMA – Office for Metropolitan Architecture

LMN Architects

Wayfinding:

Wayworks

Client:

The Seattle Public Library

Program: Central library, reading room, book spiral, mixing chamber, meeting platforms, lounge, administration department, children's collection, auditorium and carpark.

Design relevance: The visitor interface with the building's facilities is successfully implemented within this precedent. The faceted design of the building façade relates to the faceted design approach taken for additional internal elements at the D: NMCH. These aspects can be considered as guidelines when designing the entrance, foyer, open gathering space and interior objects at the D: NMCH.

The designers of the Seattle Central Library decided that the library should invite the public to enter and form part of its world (Sánchez Vidiella 2011:144). The concept was to define the library as an institution not solely devoted to books, but as a mine of information where all forms of communication are presented in a legible manner. Concerns of the designers were the public spaces and the relationships that can be established therein by the visitors.

Some critics argued that an “urban library's architecture should announce that this is the city's prime public building, a place that celebrates knowledge, imagination and self-improvement” (Mattern 2013:6). The above is clear in the Seattle Central Library, the building has become a recognized Seattle landmark and the interior functions and design do celebrate knowledge and imagination.

According to the designers, the faceted form of the building was derived rationally by defining internal functions and by structural soundness and efficiency. The form was also influenced by the surrounding context, the experience of views and daylight. (Mattern 2013). “To the architect, ‘place’ was something appreciated from inside, not enhanced from the outside” (Mattern 2013:15).

The designers divided the project into two areas; stable areas (traditional use), and unstable areas (uncertain use). The stable areas include administrative departments, offices, Book Spiral, staff rooms and parking areas. Unstable areas include the reading room, mixing chamber, lounge, children's area and multilingual sections.



Figure 4.1.2.2. Entrance to the library. (Herrera 2009).



Figure 4.1.2.3. Stacks and workspace. (Prat 2009).

The entrance (Figure 4.1.2.2.) to the library is large to allow for maximum pedestrian traffic and to give the impression of a clear and accessible library. The designers realised that the library should function efficiently for both the patrons and its librarians. The mixing chamber is centrally located on the third floor, this is an area of maximum librarian-visitor interaction. The designers described this as “a trading floor for information orchestrated to fulfil an essential need for expert interdisciplinary help” (OMA 2004).

The library's main collection will be organized into a continuous spiral that loops through four levels of the building. Other functions such as workspaces are interspersed throughout the stacks (Figure 4.1.2.3.) to create a break in the monotonous run of books. The book spiral has a capacity for 1.45 million books. (Jodidio 2006:334).

The wayfinding system designed by Wayworks is used to improve the overall experience of the building. The free standing directional signs (Figure 4.1.2.4.) were designed to create a bold presence with their size and colour. This is important to alert visitors to navigational decision points. The graphics on the information desk and book spiral (Figure 4.1.2.5.) were enlarged to be visible from multiple locations on the floor. The colour (chartreuse) of the general directories (Figure 4.1.2.6.) match the colour of the vertical navigation elements, such as the escalators. (Wayworks 2014).

The glass walls surrounding the book spiral were seen as a navigational hurdle for many visitors. To bring attention to the doorways, a dot pattern was applied around them as seen in figure 4.1.2.8.



Figure 4.1.2.4. Free standing directional signs. (Wayworks 2014).



Figure 4.1.2.5. Information desk graphics. (Wayworks 2014).



Figure 4.1.2.6. General directory. (Wayworks 2014).



Figure 4.1.2.7. Dot pattern around doorway. (Wayworks 2014).

Design influence:

The Seattle Central Library design focused on various interactions between visitors, librarians and different areas. These interactions are facilitated through spatial design and wayfinding.

The D: NMCH design should also allow for various interactions between visitors, museum staff, exhibitions and other museum facilities. Separate spaces or regions within larger spaces should be designated for these types of interactions.

The wayfinding system in the Seattle Central Library is successful in the manner in which visitors' experiences are improved by understanding how to navigate through the interior. This aspect of wayfinding is important within museum design, as it is also a public building where information is viewed and this should be understandable.

Design consideration in the D: NMCH will be given to spatial design and zoning as well as other wayfinding principles to optimise ease of navigability and understanding of the museum spaces.

4.1.3. ROSE CENTRE FOR EARTH AND SPACE, AMERICAN MUSEUM OF NATURAL HISTORY



Figure 4.1.3.1. Rose Centre for Earth and Space. (Ennead 2014).

2000

New York, NY, USA

Architect:

Polshek Partnership (now Ennead Architects)

Exhibition designer:

Ralph Appelbaum Associates

Jeff Kennedy Associates

Programme: Planetarium, additional exhibits, educational programmes and other visitor amenities.

Design relevance: The museum as a learning environment is successfully implemented within this precedent. The manner in which these learning environments are applied can be used as design inspiration for the design of the D: NMCH as an educational resource.

The expansion of the American Natural History Museum came at a time when the museum was “struggling to remain attractive to both children and adults” (Goldberger 1995). The Rose Centre is a 29 metre high glass cube that contains a theatre, exhibition space, other visitor amenities and a large sphere that houses the Hayden Planetarium. (Figure 4.1.3.2.) The lowest level of the Rose Centre contains the Cullman Hall of the Universe (Figure 4.1.3.3) where a physically and thematically linked sequence of exhibitions connect the new building with the old. (Arcspace 2012.) This linked sequence of exhibitions was approached from the perspective of creating a new journey for visitors through the natural world and human culture to the earth and space. (Goldberger 1995.)

The exhibitions use various display methods such as video screens, interactive displays, lighting and audio effects. The different display methods allow visitors to interact with the exhibit to learn on different levels. As stated in Chapter 3, learning is driven by curiosity, discovery, free exploration and the sharing of experiences with companions. Figure 4.1.3.4. shows flat display units that is low enough to sit on as well.

The sphere is “intended both as a powerful architectural abstraction and as a symbol of technology” (Goldberger 1995). The sphere is clad in white aluminium panels (these panels can be used as a screen) and is supported by three pairs of tapered steel legs. The legs also anchor a spiralling ramp that connects theatres inside the sphere with the lower level. The approach is that visitors experience the Rose Centre from the top down. (Arcspace 2012.) The ramp's balustrade accommodates information panels with the history of the universe that is laid out in a linear manner. (Figure 4.1.3.5. and 4.1.3.6.)



Figure 4.1.3.4. Display and seating unit. (Ennead 2014).



Figure 4.1.3.5. Balustrade with information panels visible at bottom of figure. (Ennead 2014).



Figure 4.1.3.6. Walkways around the sphere. (Ennead 2014).

Design influence:

The Rose Centre is a successful example of a museum space where visitors' experiences of the exhibits and museum facilities are prioritised. The journey the visitor embarks on in the museum is well thought out, and incorporated in the manner in which information is displayed. Various types of visitors can enjoy this journey and learning experience. The D: NMCH should encompass these interrelated elements in the same manner.

The balustrade design of the ramp is directly applicable to the balustrade design in the D: NMCH. The balustrade at the Rose Centre is there for safety, but for learning as well. In this example, the balustrade is constructed from glass panels with information panels attached to the top of the balustrade. These panels provide additional information concerning the universe to visitors while they are navigating the space. This provides an interesting design opportunity within the D: NMCH, where the balustrade design can extend its functional purpose beyond that of a safety barrier.

The intervention will be critical in stimulating the visitor's curiosity and should facilitate learning. Social experience of the D:NMCH will influence learning through social constructivism as investigated in Chapter 3.



Figure 4.1.3.2. Rose Centre for Earth and Space. (Ennead 2014).



Figure 4.1.3.3. Cullman Hall of the Universe. (Ennead 2014).

4.1.4. Sci-BONO DISCOVERY CENTRE



Figure 4.1.4.1. Sci-Bono Discovery Centre.

2009

Johannesburg, Gauteng, South Africa.

Architects:

West wing building: MMA Architects, Lbonico & Sack Architects.

Programme: Laboratories, conference rooms, offices and exhibition area.

Design relevance: This precedent is a local example where visitor interaction with the museum facilities and each other are observed. This interaction is important to note as the same types of interaction will occur within the D: NMCH. This can be considered as guidelines when designing the entrance, foyer and open gathering space at the D: NMCH.

Sci-Bono is a discovery centre where the focus lies in mathematics, science and technology. (Steenkamp 2014.) The majority of visitors to this discovery centre are school groups. The exhibition areas are located on different levels in one large volume. These levels are connected by stairs, ramps and an elevator. (Figure 4.1.4.2.) Various groups can visit Sci-Bono at the same time without hindering one another. An important space when dealing with school groups, is a secure place where scholars can leave their schoolbags unattended for the duration of their visit. This facility is located near the information desk at the entrance.

There are various types of display of which the majority is interactive. There are smaller display units where small groups of visitors interact with the display. Figure 4.1.4.3. shows many small groups and individuals at different activity stations. There are activity areas where only groups can participate such as the Building Africa area by Murray & Roberts. (Figure 4.1.4.4.) In this area, children are divided into smaller groups to execute certain objectives to build a house with foam bricks. Every group activity takes place under adult supervision.



Figure 4.1.4.2. Ramps leading up to other activity areas.

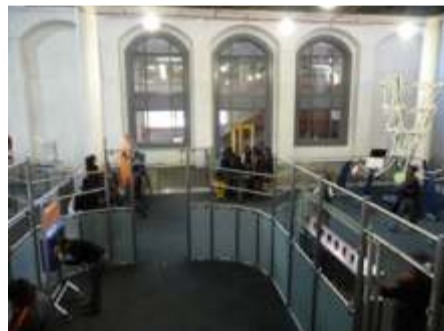


Figure 4.1.4.3. Various activity stations.



Figure 4.1.4.4. Building Africa activity area.



Figure 4.1.4.5. Periodic table of elements.



Figure 4.1.4.6. Element block turned to reveal more information.



Figure 4.1.4.7. Question panel lifts up to reveal answer.

A successful approach to learning can be seen in Sci-Bono display units. A question is asked, and to reach the answer the visitor must interact with the display, by either lifting something up or pushing buttons or even walking to a specific point to view the answer. The periodic table is explained in this manner. First the visitor sees the entire periodic table (Figure 4.1.4.5.), then to learn more, each element block can be turned around to reveal more information and images of the element as it is found in everyday life. (Figure 4.1.4.6.) There is a row of questions at the bottom of the periodic table, to reveal the answer, each question panel must be lift up. (Figure 4.1.4.7.)

A SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of Sci-Bono:

Strengths

- Circulation variety
- Various types of activity areas
- Explanatory text and images throughout exhibitions
- Well lit exhibition areas
- Information desk located in a noticeable position
- Schoolbag storage provided
- Provides various means of learning for individuals and groups

Weaknesses

- Limited seating provided
- Ablution facilities far away
- Limited navigational signage
- Exhibitions focus too much on children, and not the adults with them
- Ticket payment procedure unclear
- Schoolbag storage allows bags to lie on top of each other
- New west wing building does not associate with the main exhibition area

Opportunities

- Seating, especially in groups, can be improved
- Navigational signage should be designed and increased
- Information desk and ticket purchase point can be combined
- Schoolbag storage can be designed to improve storing method

Threats

- Association between west wing building and main exhibition area may be lost
- Children can get lost in the Discovery Centre and find it difficult to navigate

Design influence:

The interaction of groups with Sci-Bono directly relate to the D:NMCH as groups are the leading visitor type to the museum. This interaction range from the manner in which they enter the museum, wait while their supervisor organises their entry, and accessing information once inside. The interaction between school groups become important as well.

In Sci-Bono navigational signage is a problem, while exhibition information signage is successful. Signage is an important aspect in wayfinding in a museum as it enhances the visitor's experience. Signage relates to navigational signage throughout the museum and information signage within the exhibitions. Wayfinding will be considered as an important influence on the design of the D: NMCH.

4.1.5. Conclusion

The precedents and case study will provide guidelines for the design of the entrance, foyer and open gathering space of the D: NMCH. These guidelines include the manner in which visitor interaction with museum facilities is implemented at the Victoria and Albert Museum, Seattle Central Library and Sci-Bono. Visitor learning at the Rose Centre for Earth and Space at the American Museum of Natural History and Sci-Bono can be used as a guideline for learning within the D: NMCH. Wayfinding principles as discussed in Chapter 3, and investigated within the Seattle Central Library and Sci-Bono will function as guidelines for the wayfinding design at the D: NMCH.

4.2. DESIGN DEVELOPMENT ONE (MARCH 2015)

This initial design development stage serves as exploration into which elements of the museum are important to emphasise. At this stage, after investigating museology within the D: NMCH, it was concluded that the most important part of the museum is not the exhibition, but the process behind the exhibition. The intention of this design investigation was to explore and showcase the conservation process for the benefit of the visitor.

The March design investigation included an exhibition that would serve as guideline for the rest of the museum exhibitions, a conservation laboratory visible to the visitor and research areas. These spaces are divided by the use of differing visual barriers. These visual barriers can be seen on figure 4.2.1 to figure 4.2.3.

4.2.1. CRITIQUE AND CONCLUSION

The gathering space becomes too separated by the use of screening elements. The approach however of using a screening element to guide the visitor's movement and sightlines should be further developed.

Even though a research area is designed, learning as a part of visitor experience is not investigated.

Visitor learning and wayfinding as discussed in Chapter 3 should become a design priority.

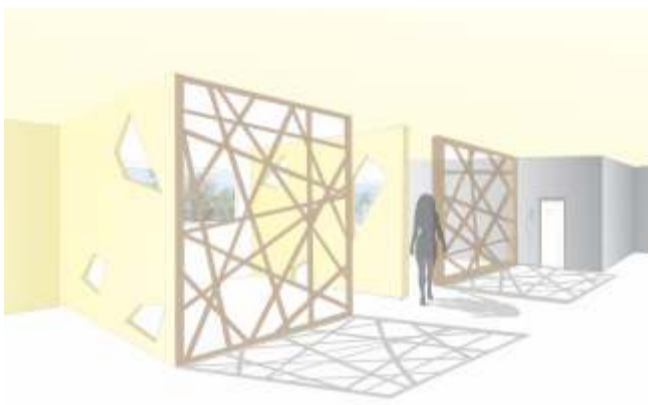


Figure 4.2.1. March design investigation.



Figure 4.2.2. March design investigation.

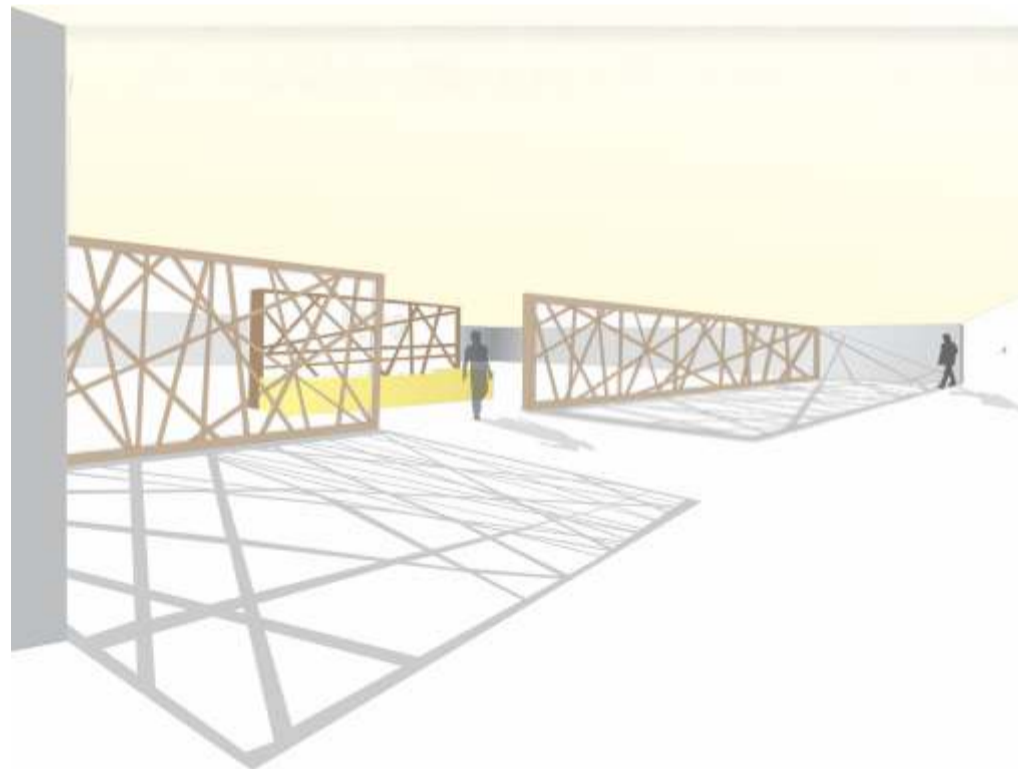


Figure 4.2.3. March design investigation.

4.3. DESIGN DEVELOPMENT TWO (April/May 2015)

The initial development stage with the conservation process as influence is developed during this stage. An important aspect explored during this stage is the linking elements between research, education and exhibition. The design developed to include an atrium intervention to physically and visually link the first floor with the ground floor of the museum. The existing ground floor is intended for use solely for museum staff. At this stage it is proposed that visitors should have selected access to the ground floor facilities.

The existing mood of the museum is visually represented (Figure 4.3.2.) with a contrasting proposed mood. The existing is dark and enclosed in terms of volume, light levels, material and colour choice. The newly designed mood is however light and open.

The atrium with emphasis on the supporting spaces is developed during the April/May design development. Figure 4.3.1 and figure 4.3.3 to 4.3.6 indicate these areas.

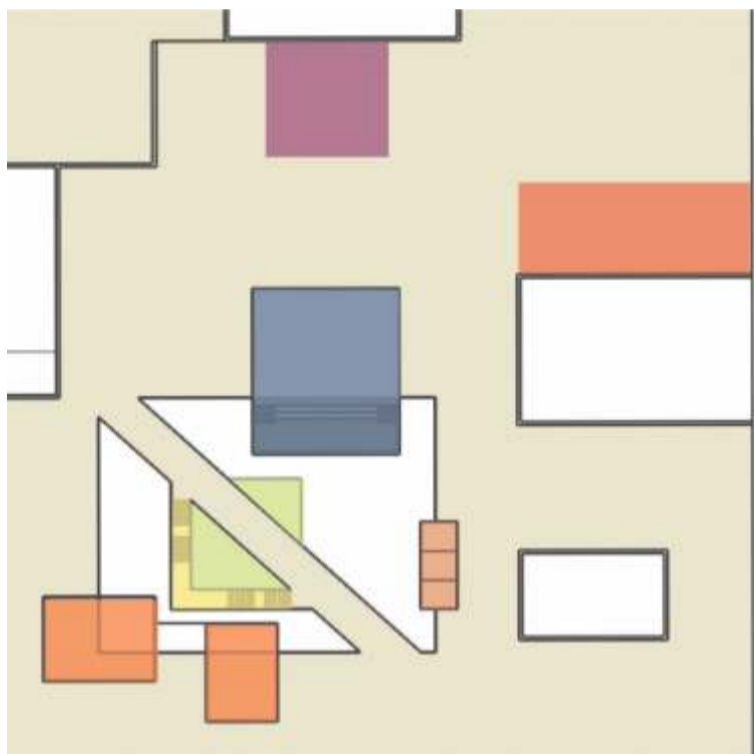


Figure 4.3.1. Atrium and supporting spaces plan diagram.

4.3.1. CRITIQUE AND CONCLUSION

The design of an atrium space is successful and should be developed further. The inclusion of separate rooms and a bridge enclose the volume created by the atrium. The atrium should remain open in any further development. The conservation room in the atrium should be developed in the following design stage.

The contrasting light quality as indicated by the moodboard (Figure 4.3.1.) is an important aspect to keep in mind.

The focus on an activity area is not the appropriate design focus. Learning should influence all parts of the design, not just the children's area.

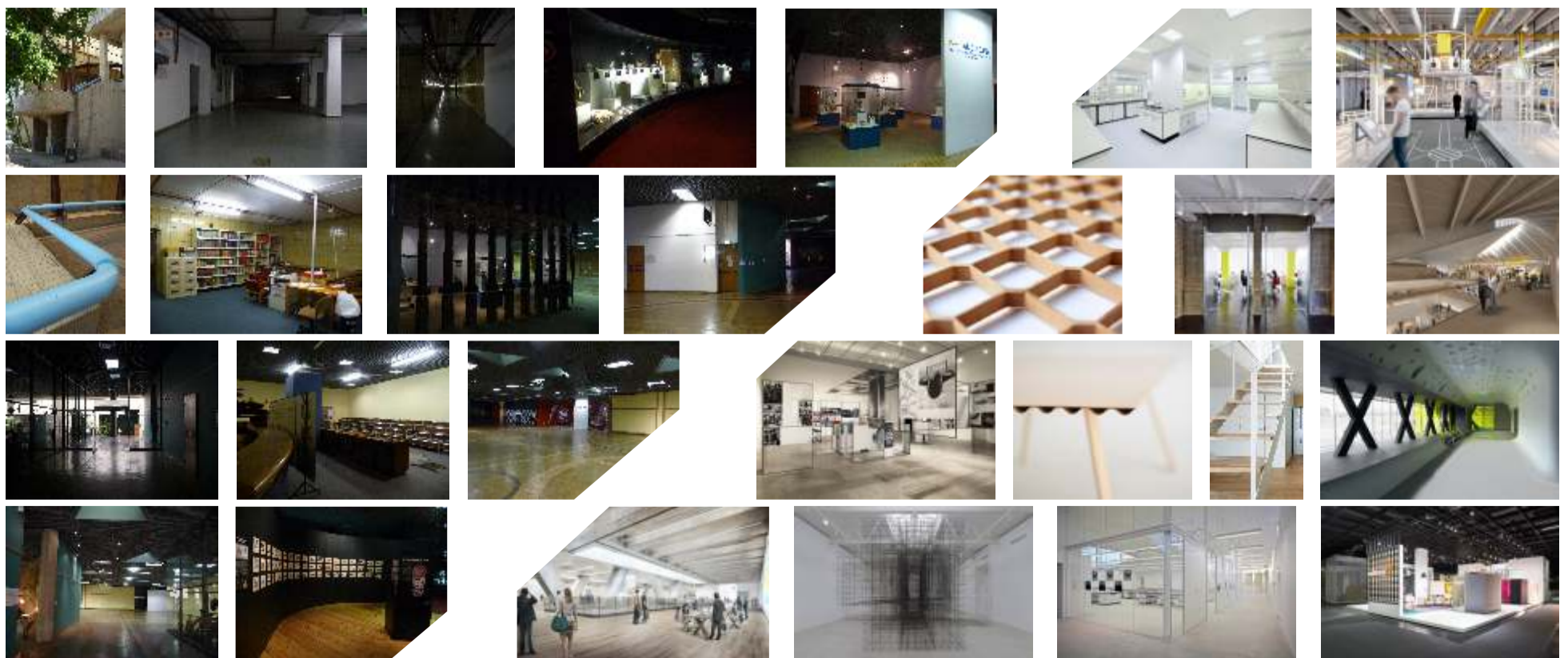


Figure 4.3.2. Existing and proposed mood contrast

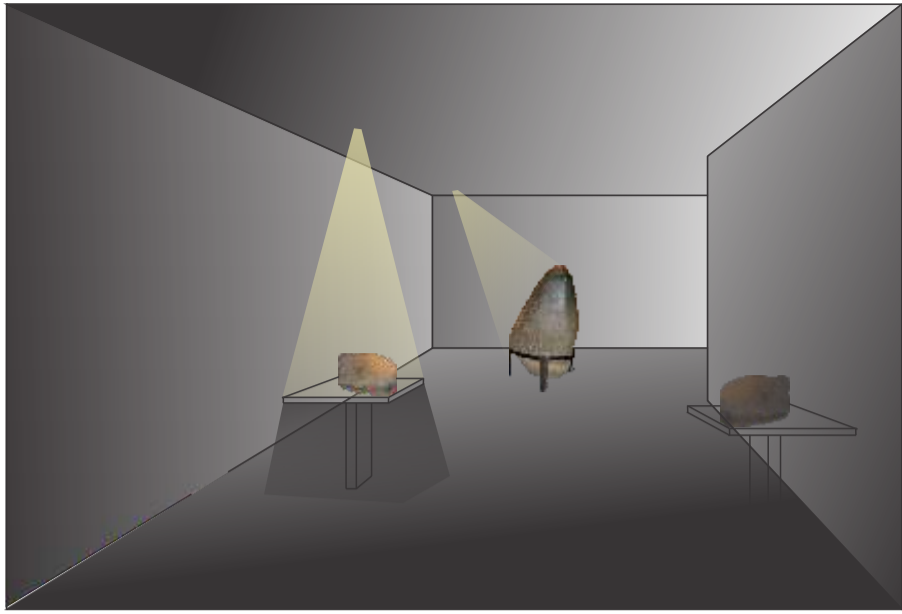


Figure 4.3.3. April/ May design development exhibition.

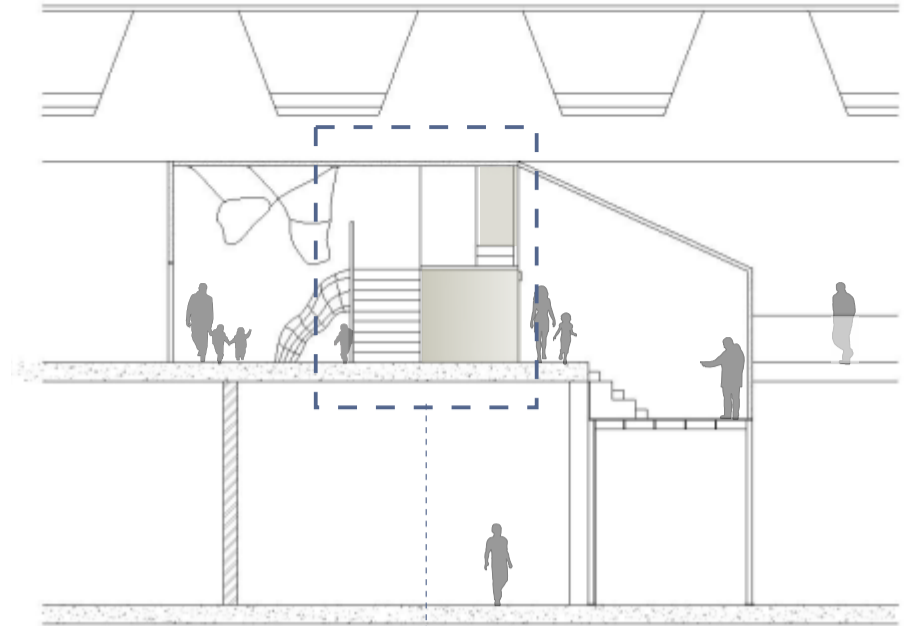


Figure 4.3.4. April/ May design development activity room

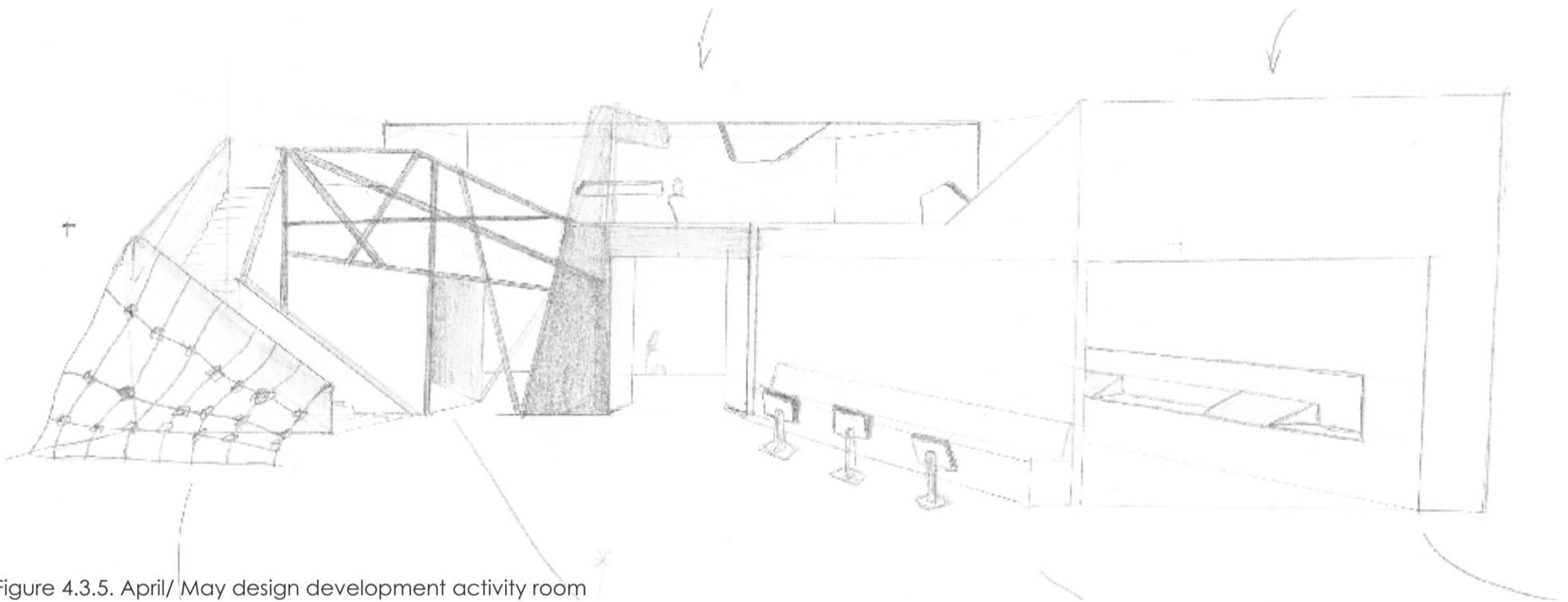


Figure 4.3.5. April/ May design development activity room

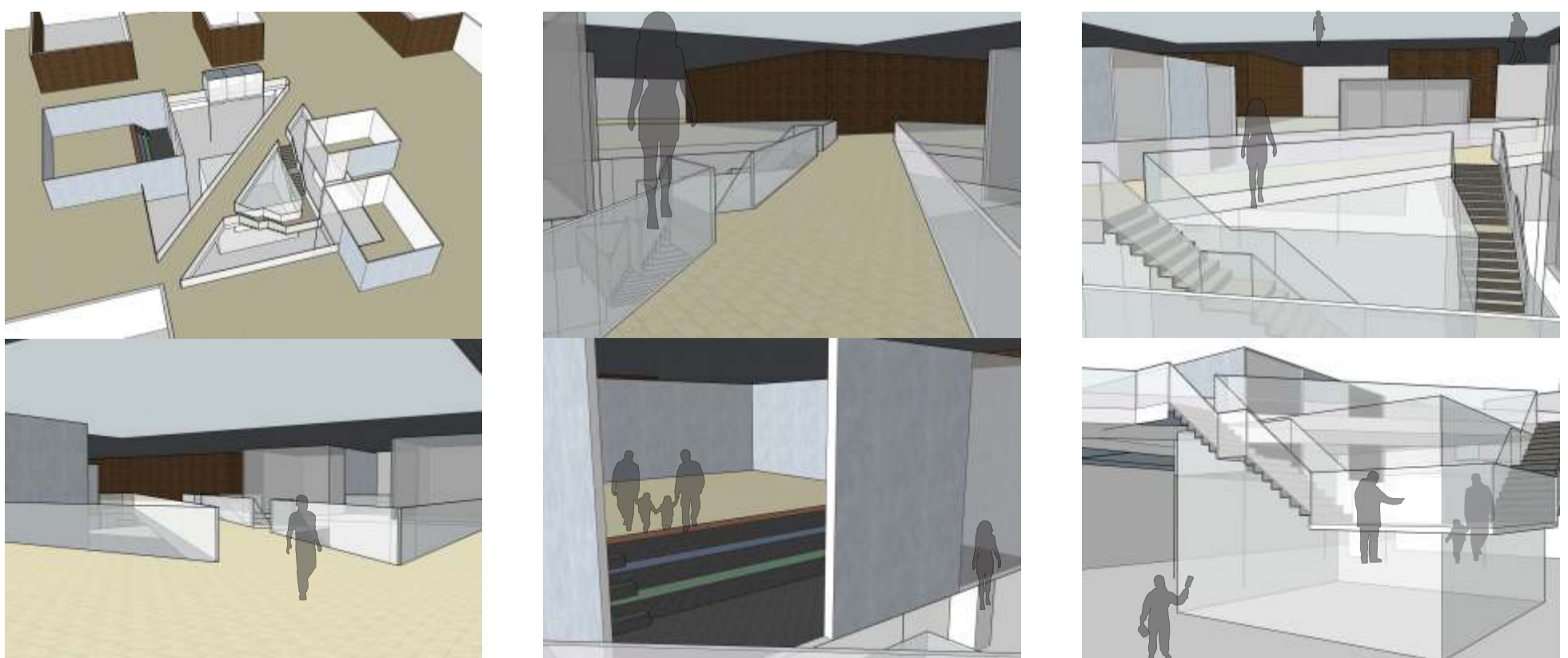


Figure 4.3.6.a-f. Atrium and supporting spaces views

4.4. DESIGN DEVELOPMENT THREE (JUNE 2015)

The June design development phase's focus was to link research, education and exhibition within one central space and not separate spaces as with the previous development phases. The linking element during this stage is concluded to be learning. These spaces should be associated with the end goal of learning.

The zoning (Figure 4.4.2.) of the museum is completed during the June design development stage. The new museum spatial organisation will allow for an unstructured approach. A person may choose their own path without a suggested route that is right or wrong. Temporary exhibitions will be located in close proximity to the new circulation core.

The proposed zoning is compared with the existing zoning of the D: NMCH to ensure no unnecessary space usage is lost. (Figure 4.4.3.)

All aspects of the museum are linked through learning. The main interventionist approach is to provide a museum space where the visitor's interests are piqued and thus where further learning can occur. This space will result in an atrium wherein circulation occurs. The atrium provides the new circulation core that connects the first floor and the ground floor. The atrium is developed in the June development phase with attention to appropriate location and shape. The atrium will be used for staff and visitor access (guided tours) to the storage facilities on the ground floor.

As determined in Chapter 2, the appropriate location for an atrium intervention would be the central area of the museum where an original double volume was located. The atrium shape is explored through a series of drawings and models, figure 4.4.4. to 4.4.10. The atrium shape is developed by investigating different viewing angles within a base model. The curved side of the atrium relates to the usage of curves as landmarks within the D: NMCH. (As discussed in Chapter 3).

P Parking	 Exhibition
 Public circulation	 Event area
 Tickets and information desk	 Activity area
 WC	 Research area/ laboratory
C Cafeteria	 Storage

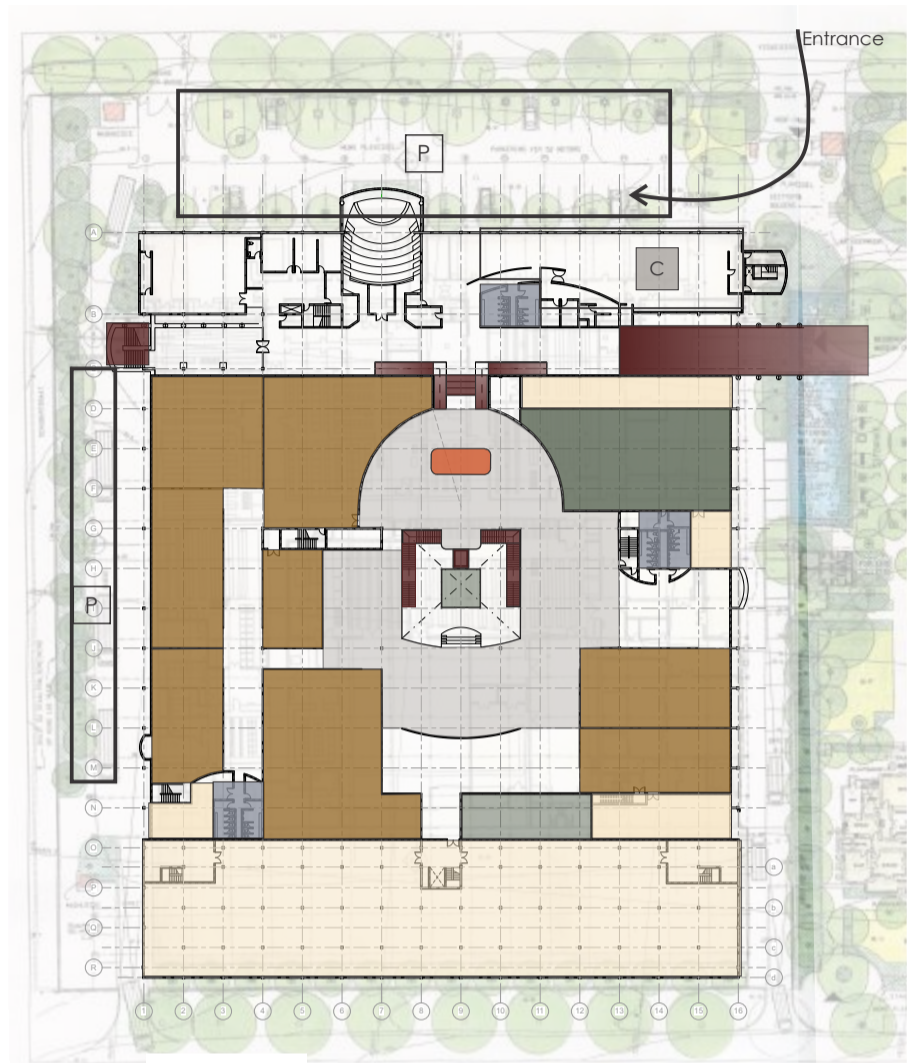


Figure 4.4.2. Zoning of museum

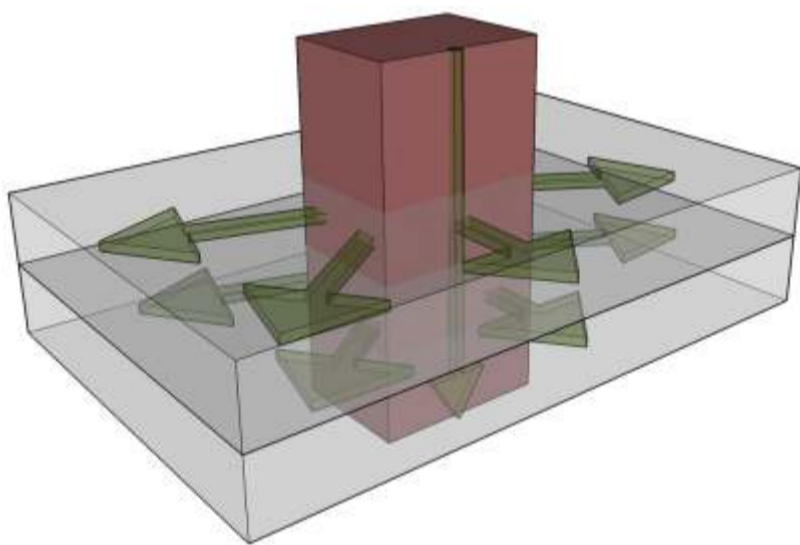


Figure 4.4.1. Connecting approach diagram.

1. Sculptured in Clay
2. San Rock Art
3. Marabastad
4. Recent additions
5. Objects with stories
6. Unused - to be temporary exhibition
7. Unused - to be temporary exhibition
8. Mixed exhibition (Tshwane exhibition and temporary exhibition)
9. Temporary exhibition
10. Temporary exhibition
11. Multi-functional area (Event area)
12. Children focussed exhibition

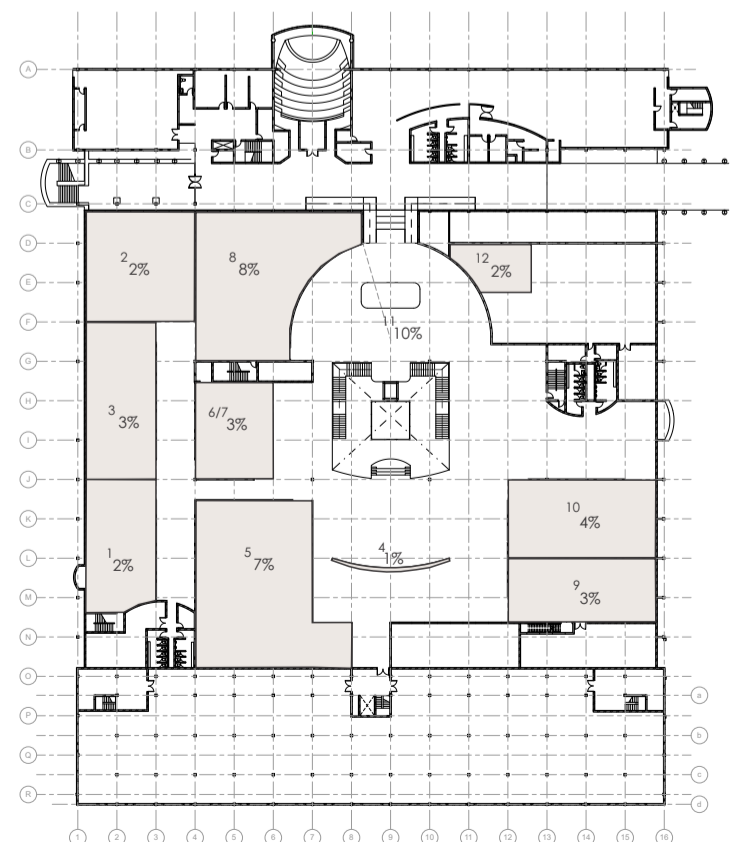
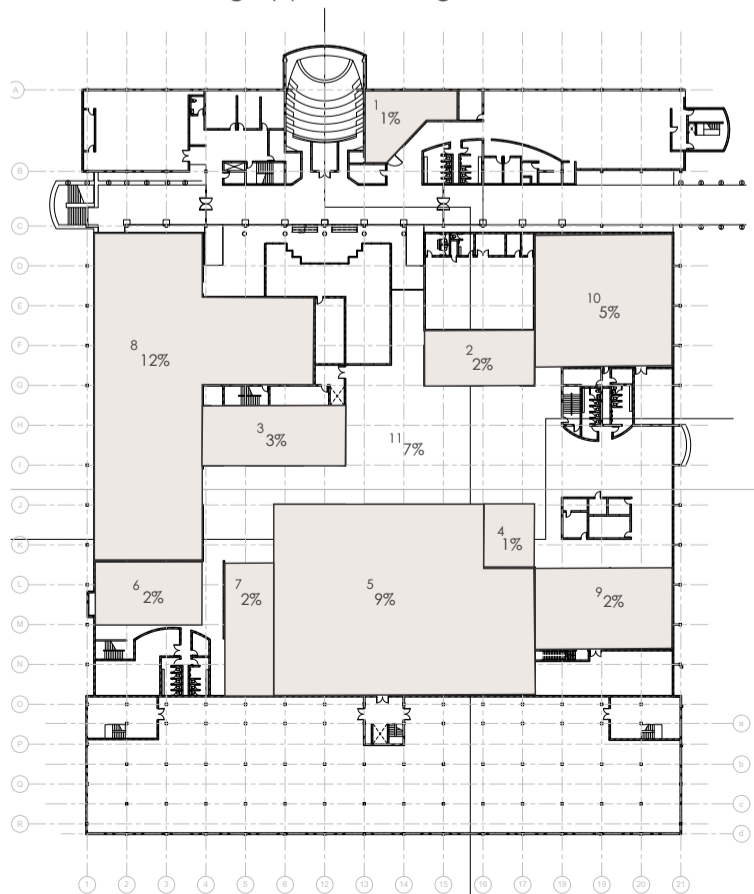


Figure 4.4.3. Zoning comparison.



Figure 4.4.4. a-c. Atrium design investigation 1.

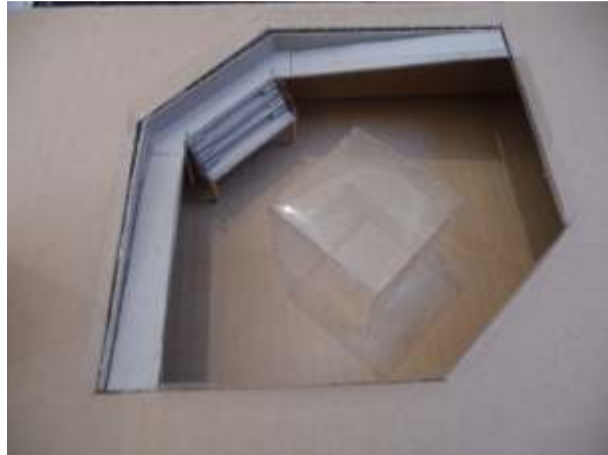


Figure 4.4.5. a-c. Atrium design investigation 2.



Figure 4.4.6. a-c. Atrium design investigation 3.

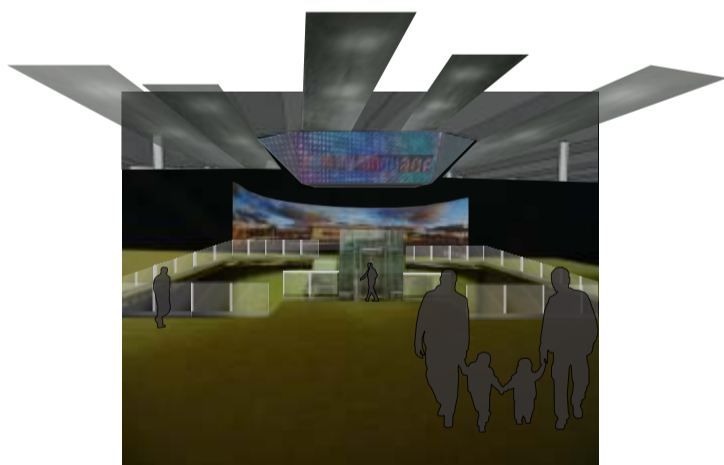


Figure 4.4.7. Collage view towards atrium

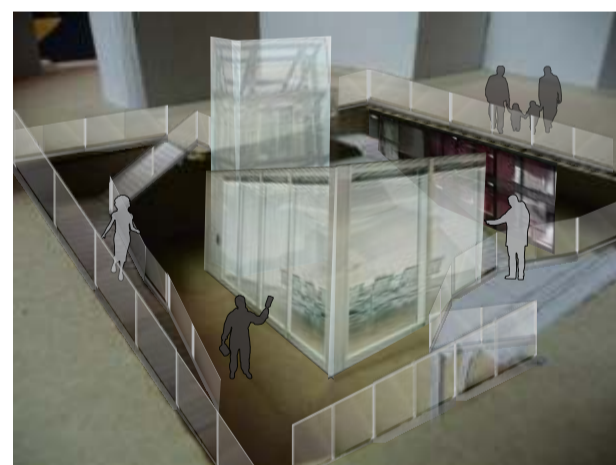


Figure 4.4.8. Collage view into atrium

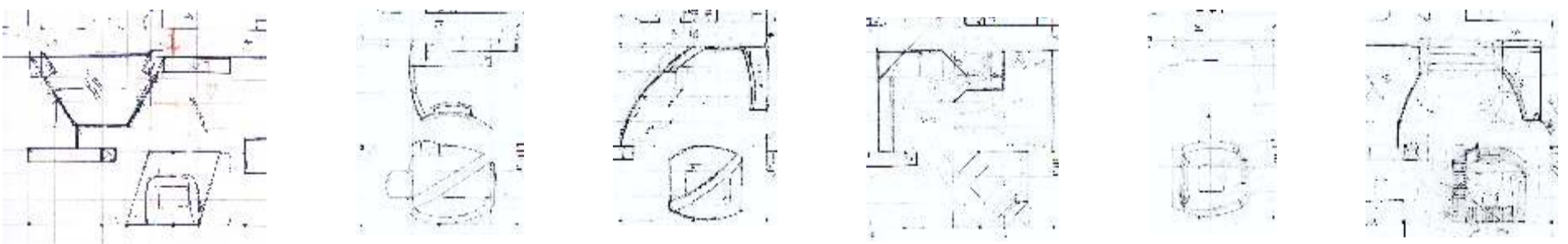


Figure 4.4.9. June atrium development.

4.4.1. CRITIQUE AND CONCLUSION

The proposed zoning of the museum is proved to be successful in the layout as it provides clear navigational routes to aid in wayfinding. The percentage of space usage remains mainly the same and should remain as the finalised museum zoning.

The conservation laboratory in the atrium does not relate to the theory investigated and is not an appropriate space usage within the D: NMCH. A different function should be incorporated on the ground floor.

The raked seating within the atrium should not be developed further. It is clear that this type of seating will not be optimally used in this setting.

The design of a central gathering space should be developed further. The design should incorporate the visitor's impression of the museum from the entrance and not only within the central gathering space.

4.5. DESIGN DEVELOPMENT FOUR (July/August 2015)

The July/August design development phase focusses on refining the atrium design and also the design of smaller interior elements. These aspects will be developed further and thereafter be investigated technically in Chapter 5 – Technical development.

The mood board developed into an overall mood (Figure 4.5.1.) and separate spatial moods (Figure 4.5.3 to figure 4.5.5.). It is clear in the spatial mood images that lighting will play a critical role in the design. The design will contrast the existing light levels of the D: NMCH through the brightness levels and through the design of special lighting conditions.

The image seen in figure 4.5.6 acts as inspiration during the July/ August design development stage. This image shows the relationship between light and dark, as well as the play of light against different facets.

The font and colour choices for materials is investigated by studying the Ditsong logo (Figure 4.5.2.). The logo text is a transitional serif font where there is a contrast between thick and thin strokes. (Carson 2013). The chosen font to be used in the D:NMCH should contrast the existing font (sans serif) and compliment (stroke thickness and overall shape of letters). Colours to be used in further design development is dark grey, red, orange and yellow. The colours used relate to that of flames and embers and thus also the lighting.

Separate interior elements that are focussed on during the July/ August development phase are the reception desk, wall cladding and lighting system. These separate interior elements should contrast the curved interior space making elements.



Figure 4.5.2. Ditsong logo. (Ditsong 2010)



Figure 4.5.1. Overall mood



Figure 4.5.3. Reception area spatial mood



Figure 4.5.4. Atrium from above spatial mood

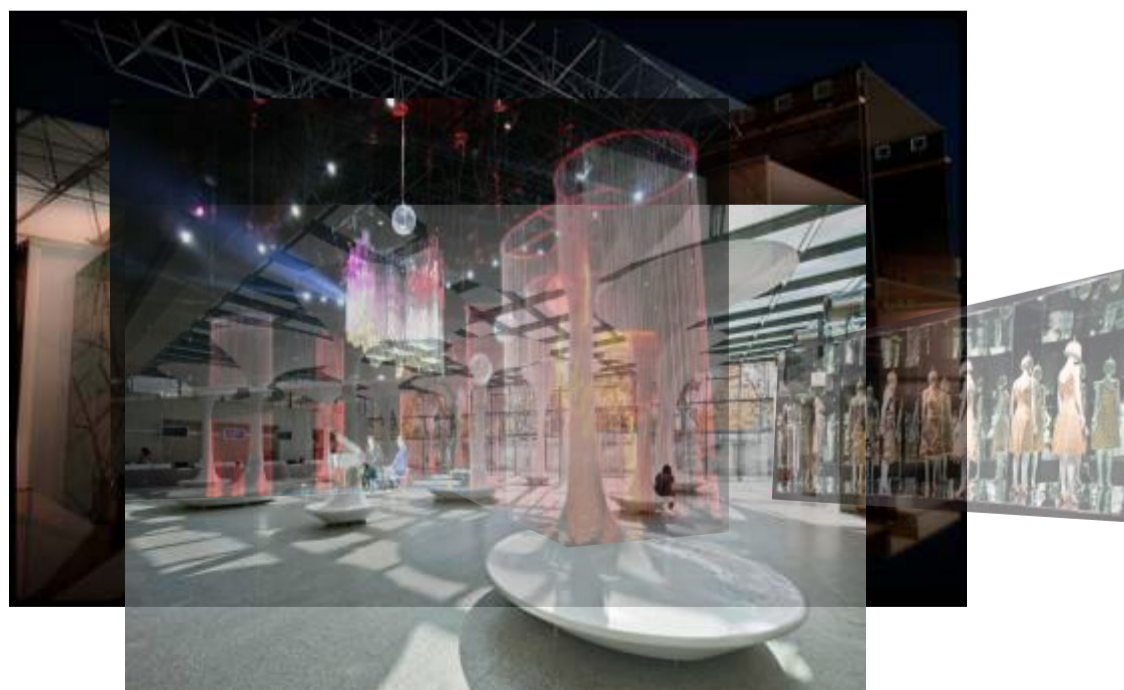


Figure 4.5.5. Atrium from below spatial mood

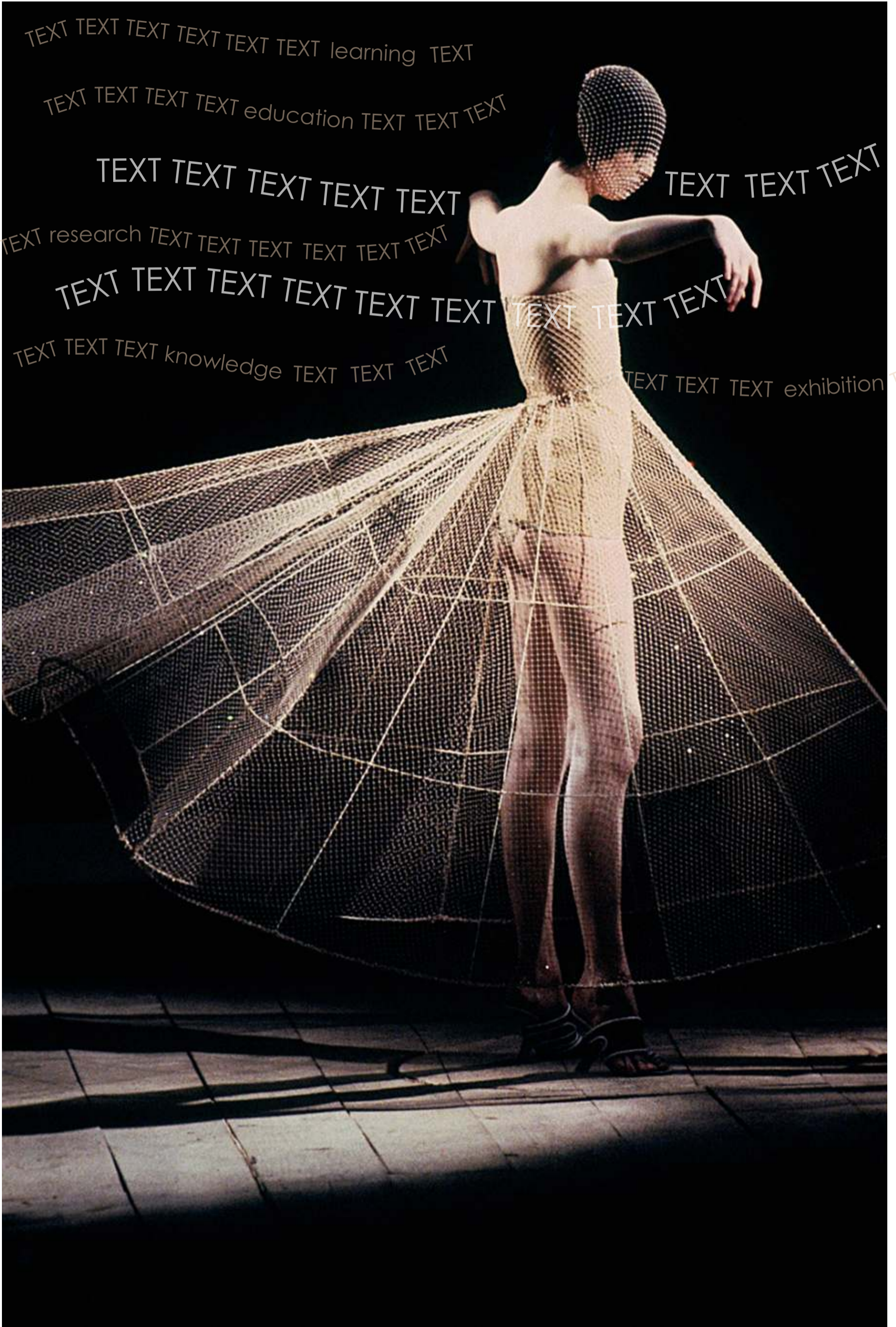


Figure 4.5.6. Inspirational concept image. (Adapted image (Mcqueen 2011))

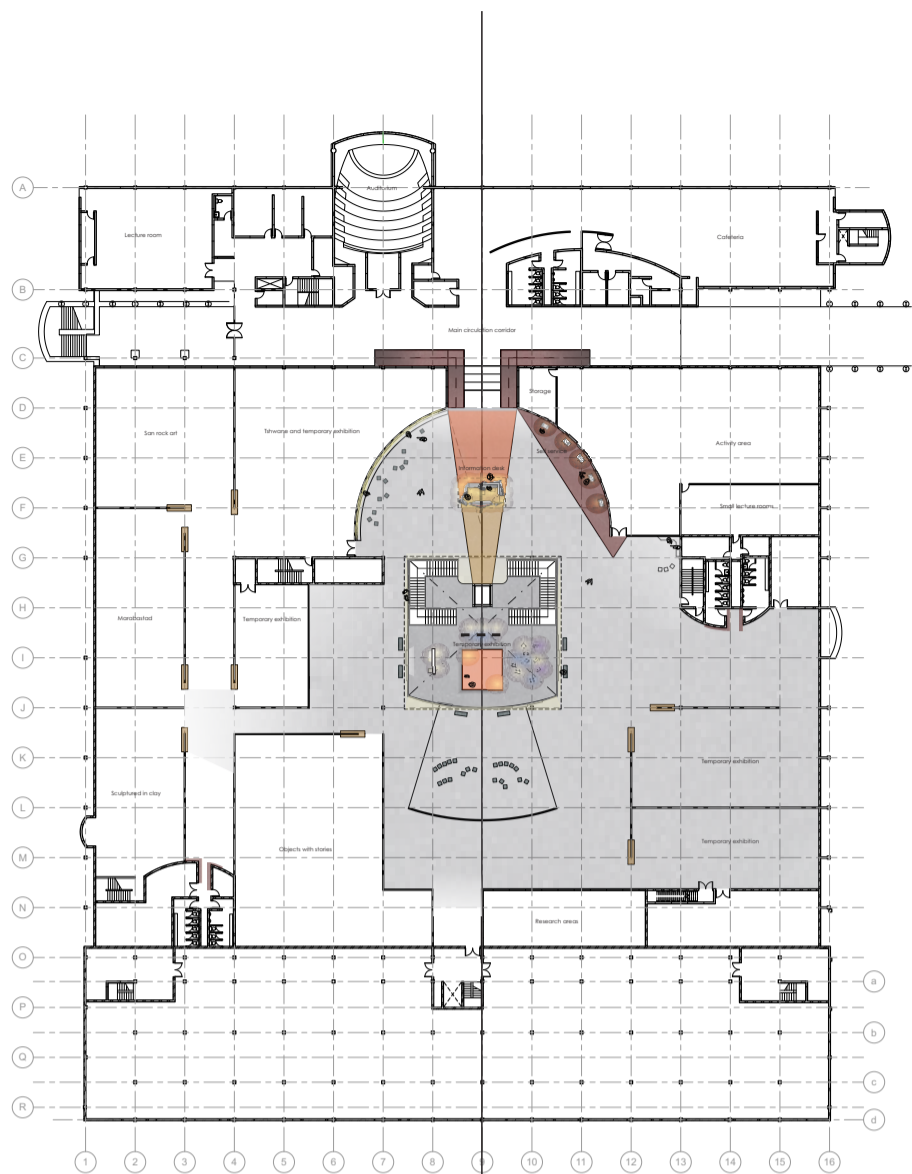


Figure 4.5.7. July/ August design investigation plan.

4.5.1. CRITIQUE AND CONCLUSION

The atrium design is successful in the manner it achieves the aim of connecting the ground and first floor. The temporary exhibition on ground level draws visitors to this space and allows returning visitors to continually enjoy the space.

The design is a successful representation of the moodboards developed during this stage.

Lighting calculations need to take place during the next stage (as part of technical development) to prove the design. Wayfinding should be further investigated, as it is currently not fully implemented.

The design should continuously be measured against the concept.

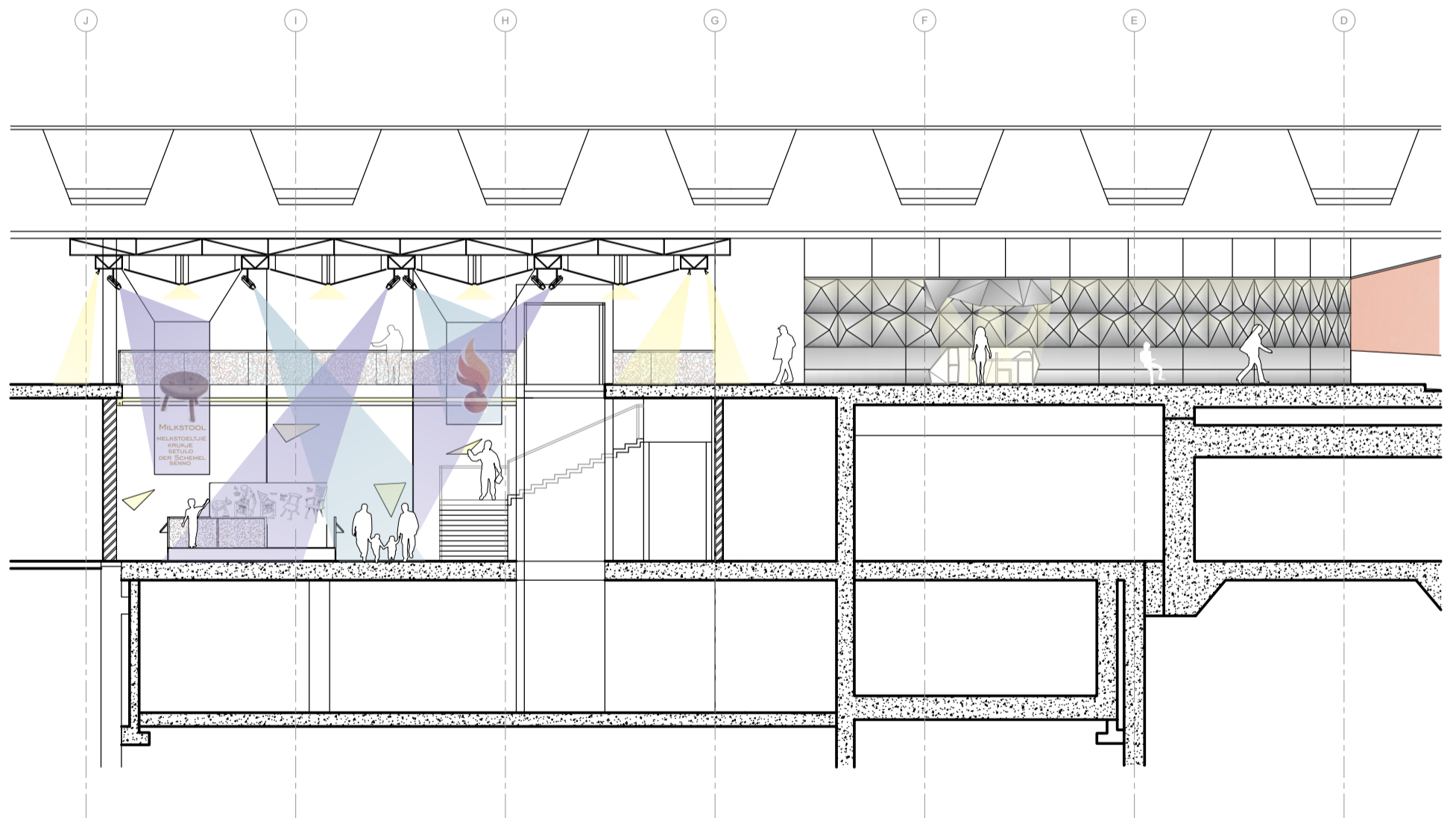


Figure 4.5.8. July/ August design investigation section.

4.6. DESIGN DEVELOPMENT FIVE (SEPTEMBER 2015)

The final design consists of the entrance walkway, foyer and atrium and is a result of the design development stages one through four.

The first design component that the visitor will experience is the ramped entrance and the central walkway. The ramp gradient is corrected by making the gradient more comfortable. The gradient is altered from 1:13 without any landings to 1:15 with two landings every 1,5 meters vertical height. (SANS Part S 2011). The walkway arch is covered with translucent polycarbonate sheets, which allows ample natural light to filter through. The lighting level difference between the walkway and the foyer will be addressed in the following chapter.

Figure 4.6.1 to figure 4.6.4 show the design on plan and section. The final design will be discussed further according to the wayfinding guidelines investigated in Chapter 3.

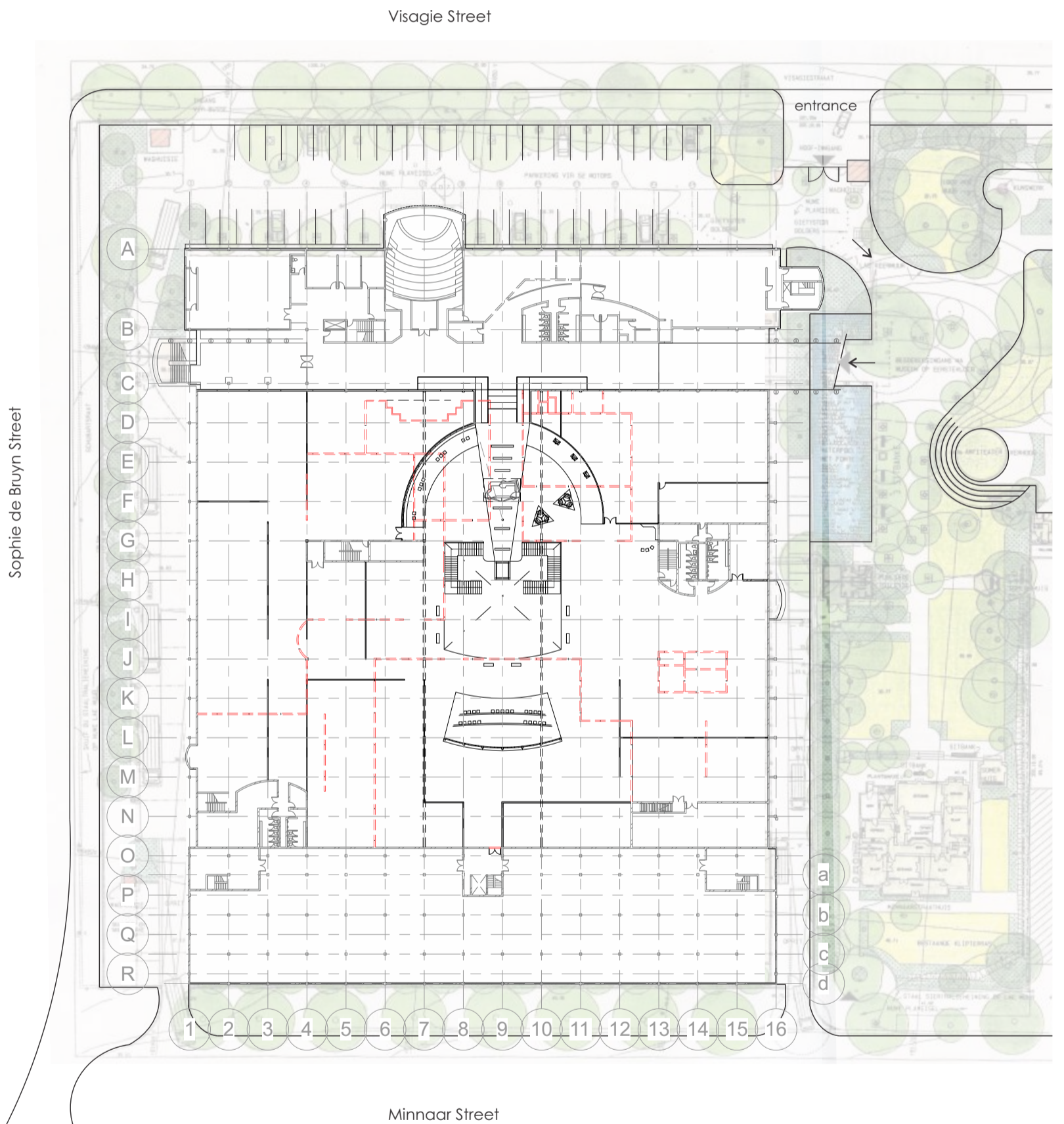


Figure 4.6.1. Final design site plan

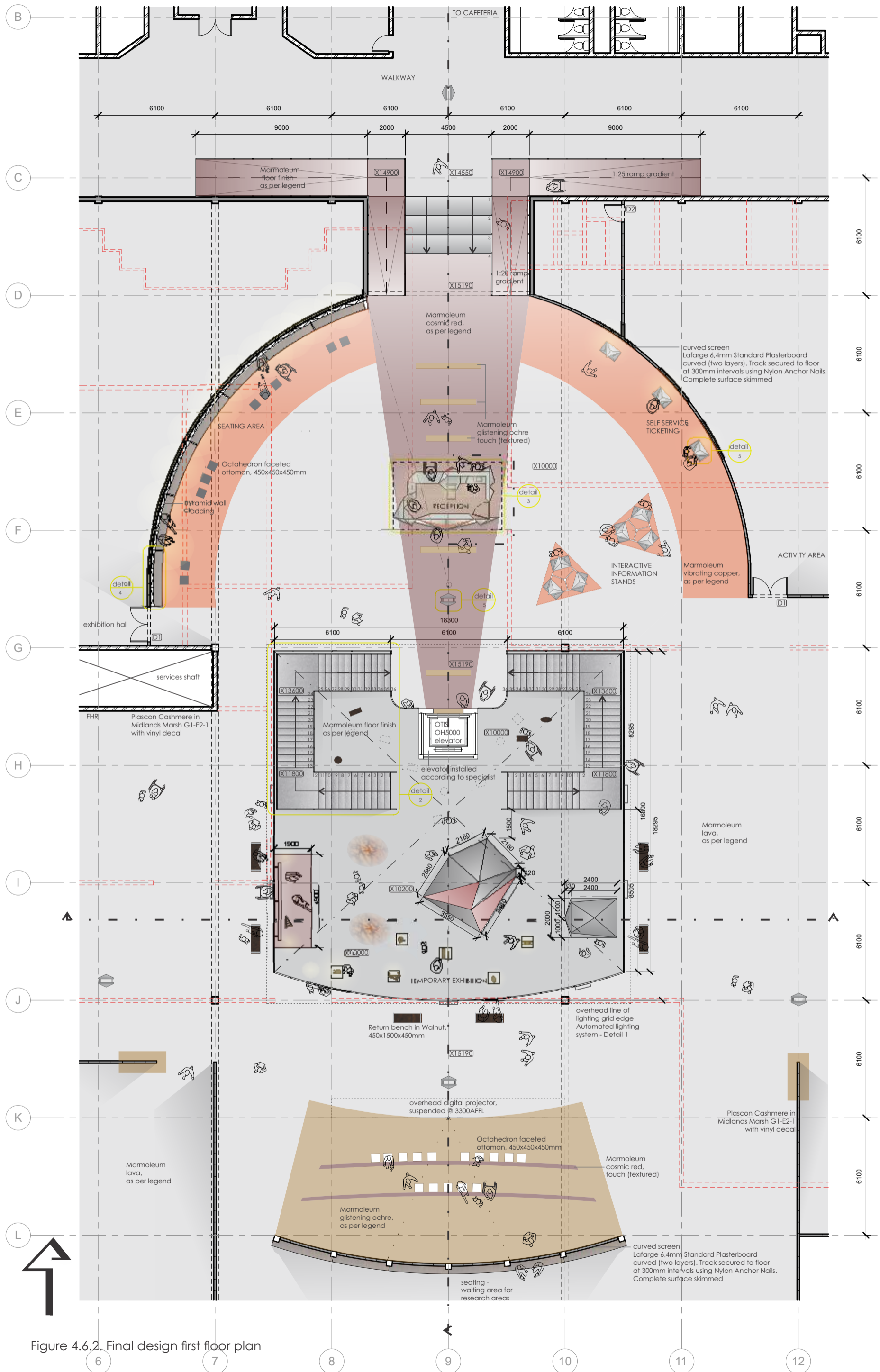


Figure 4.6.2. Final design first floor plan

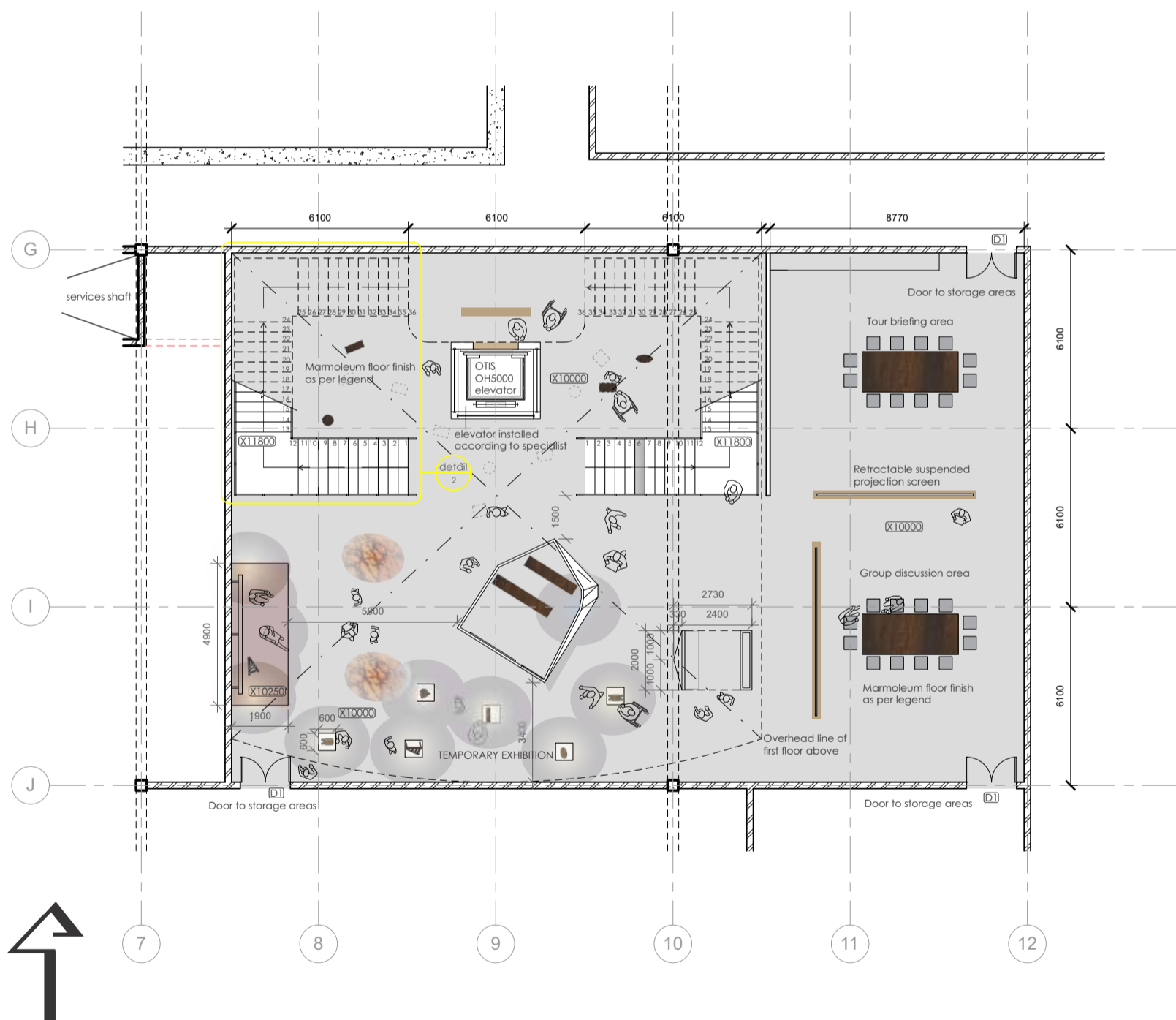


Figure 4.6.3. Final design atrium ground floor plan

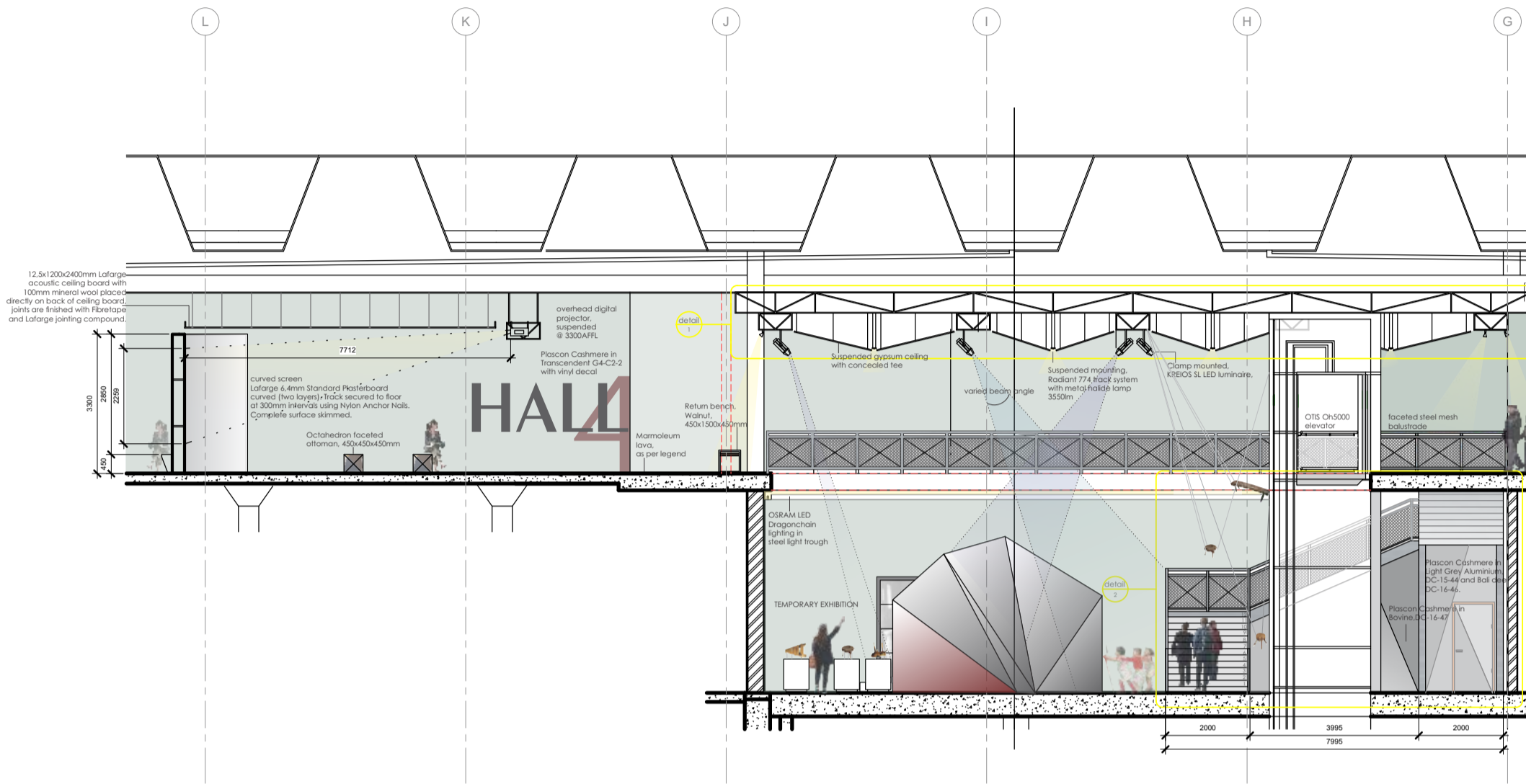


Figure 4.6.4. Final design longitudinal section

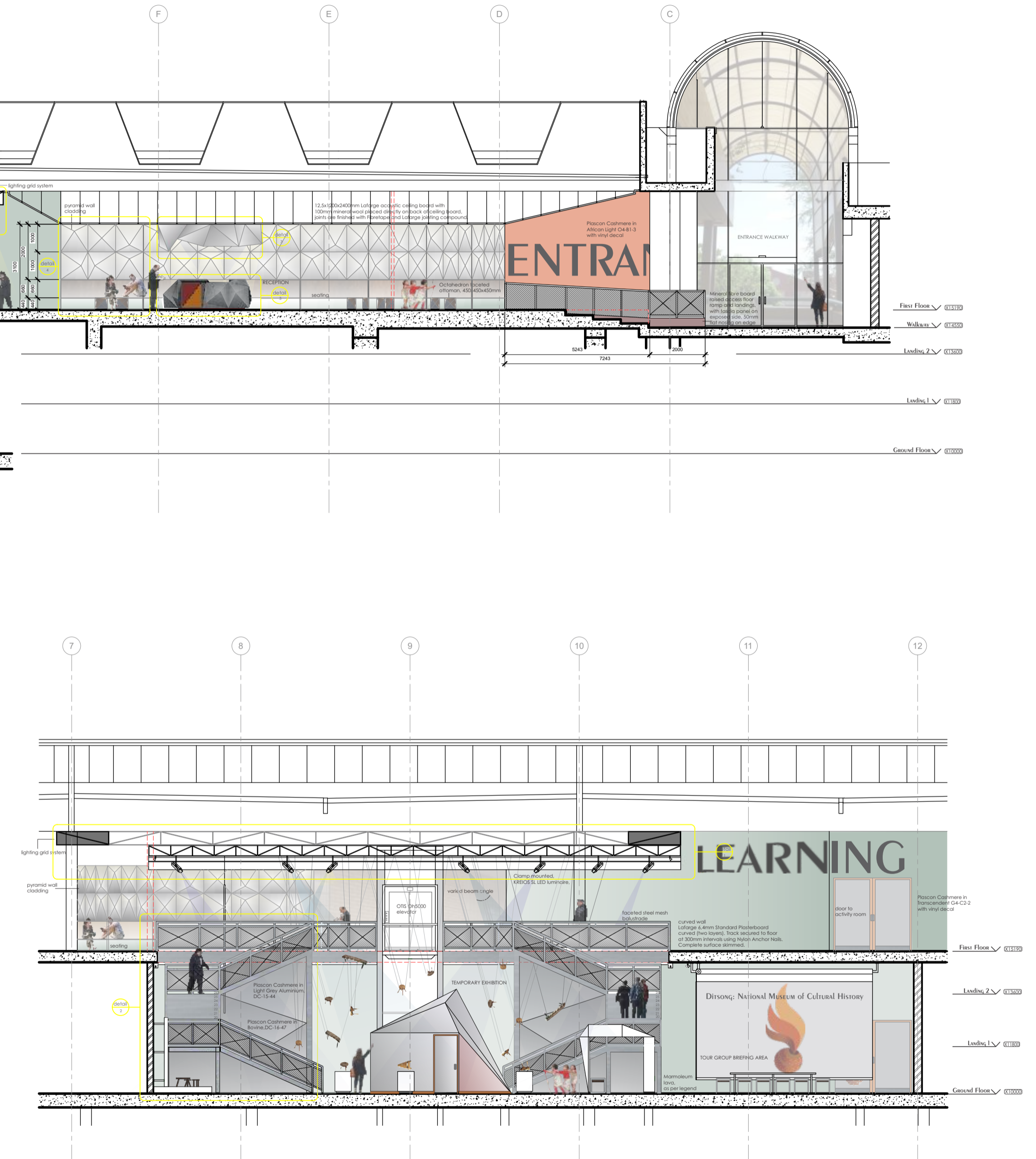


Figure 4.6.5. Final design cross section

4.6.1. IDENTITY AT EACH LOCATION

The identity of the various locations within the final design of the D: NMCH is different to the extent to make them recognizable, but not to be seen as separate elements. The main distinguishable elements of the locations are the differing lighting levels, for example, walkway – bright, foyer – gradient lighting with bright reception desk, atrium – bright with theatrical lighting and exhibitions – mainly spotlights.

A physical aspect that is implemented to create a different identity in the foyer, is the use of faceted elements throughout this space. These elements include the faceted wall cladding and reception desk. (Figure 4.6.6.)

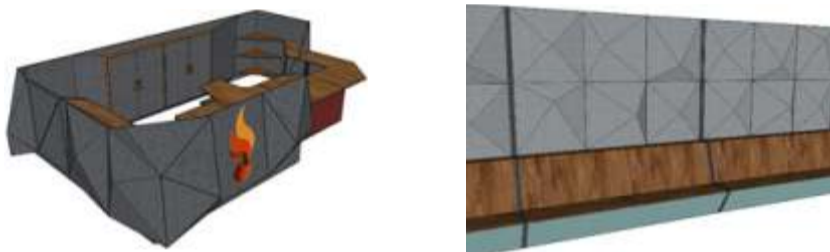


Figure 4.6.6. Faceted design elements.

4.6.2. LANDMARKS TO PROVIDE ORIENTATION CUES

The identifiable locations described above relate to these spaces' usage as landmarks. As discussed in Chapter 3, curved walls are used within the existing building to indicate certain functions and to provide cues for visitors. There are three main uses of the curved walls: 1, it can contain a function, 2, the visitor enters through the curve, and 3, it acts as vantage point.

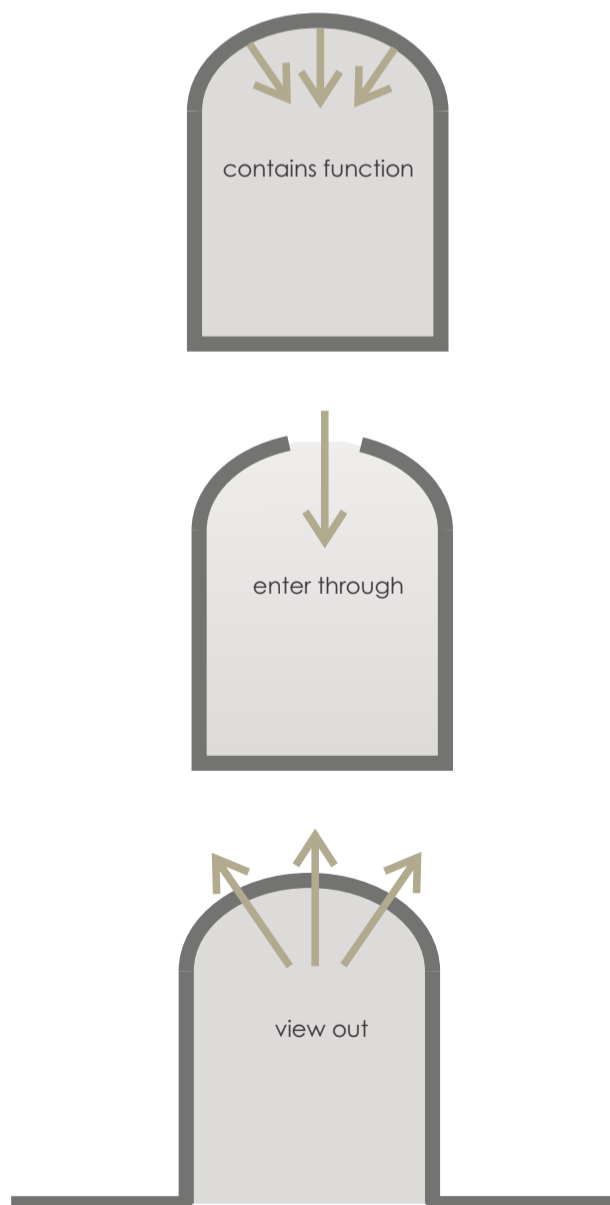


Figure 4.6.7. Curved wall functions.

Curved walls are used in three areas in the final design:

1. The foyer is encapsulated on the northern side with curved walls. The visitor enters through this curve. These curved walls act as guiding elements in this space. To the right, the wall cladding system is located with general seating for visitors. To the left, there are self-service ticket stands and interactive information stands.
2. The southern edge of the atrium is curved to provide interest and the feeling of an enlarged atrium. The curved edge guides visitors around the atrium. This curve is used to contain the function of the atrium and to act as vantage point.
3. The curved wall to the south of the atrium is used as presentation screen and visual barrier between the central space and research areas behind.

4.6.3. CREATE WELL-STRUCTURED PATHS

The walkway is mostly influenced by this guideline. The design will alter the walkway by creating one main decision point along it. (Figure 4.6.8.) This decision point is highlighted through the use of signage and by enlarging the openings adjacent to this point. The visitor's attention is guided to the foyer with the use of the red floor finish along the ramp and steps on the South side of the walkway.

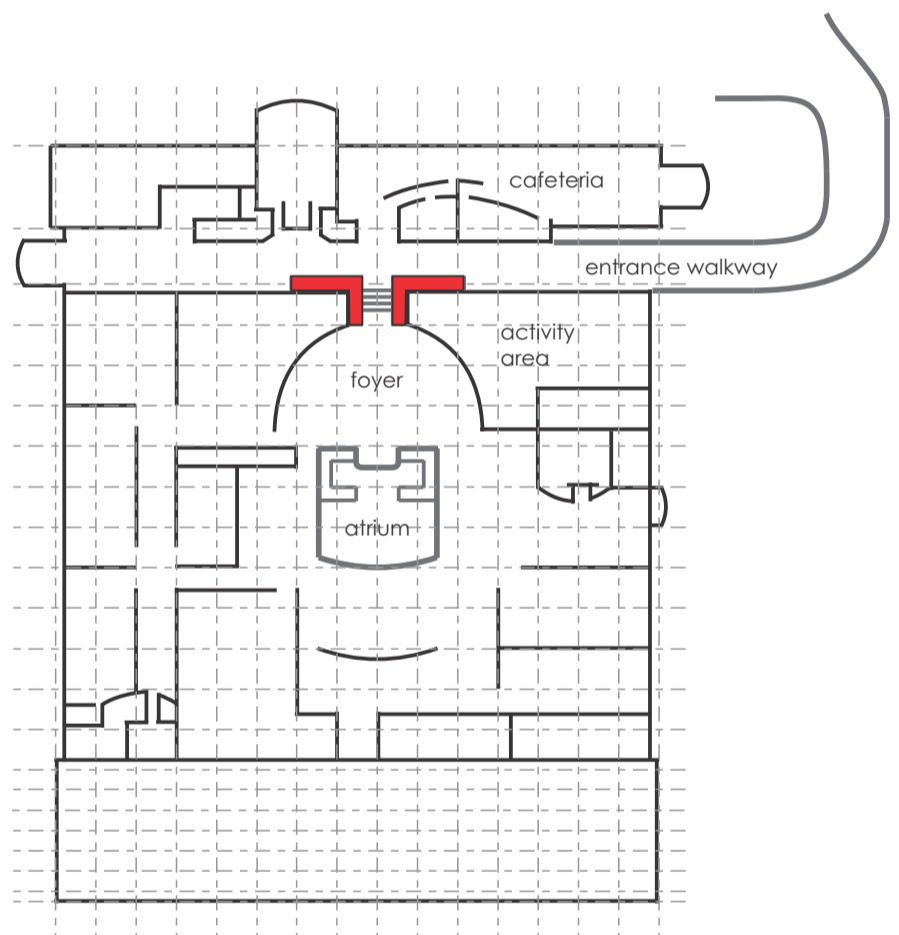


Figure 4.6.8. Decision point along walkway.



Figure 4.6.9. Perspective of walkway

4.6.4. CREATE REGIONS OF DIFFERING VISUAL CHARACTER

This directly relates to the identities described in 4.6.1. The final design will provide regions of differing character.

4.6.5. DON'T GIVE USER TOO MANY CHOICES IN NAVIGATION

Detours are eliminated by establishing a central space along the walkway to be used as orientation point. (See 4.6.3.)

The spatial organisation will allow for an unstructured approach in viewing the exhibitions. This would not be confusing for visitors as this approach is centred on the atrium which will serve as main orientation point. In the Western wing of the museum all spaces lead off a single walkway with no external detours. (Figure 4.6.10.)

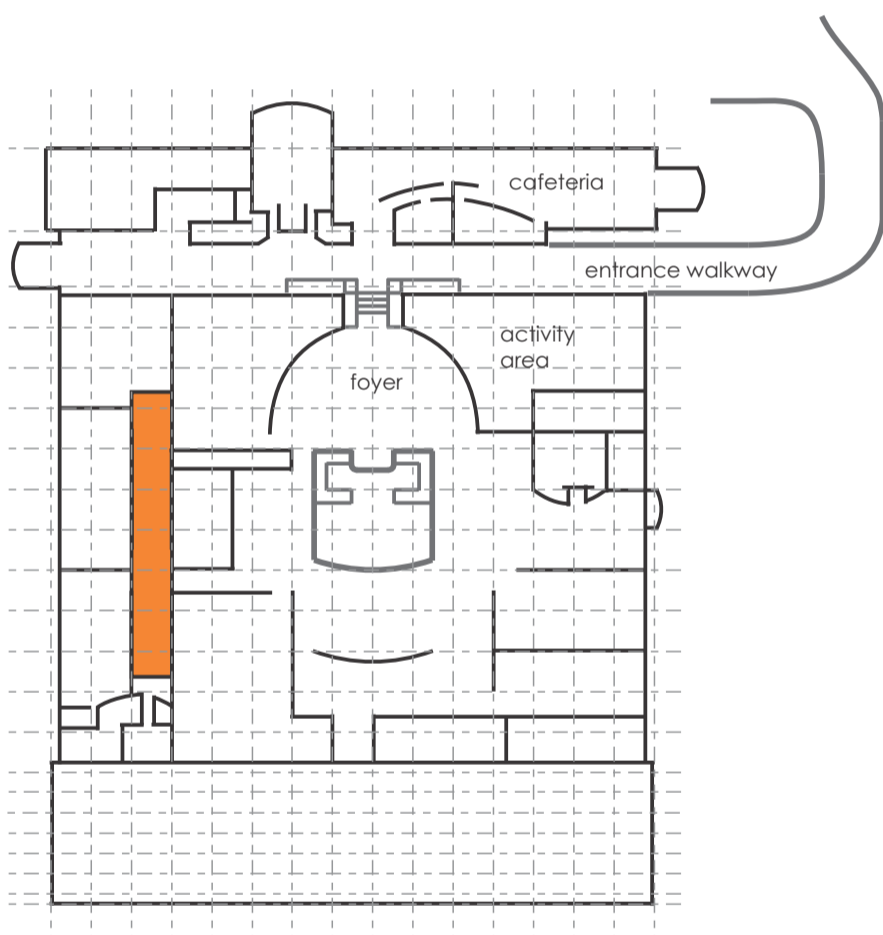


Figure 4.6.10. Plan diagram showing West wing walkway

4.6.6. USE SURVEY VIEWS

Interactive information stands are available in the foyer to virtually explore the D: NMCH. Newly designed brochures and maps will also be available at the back of the reception desk in the foyer.

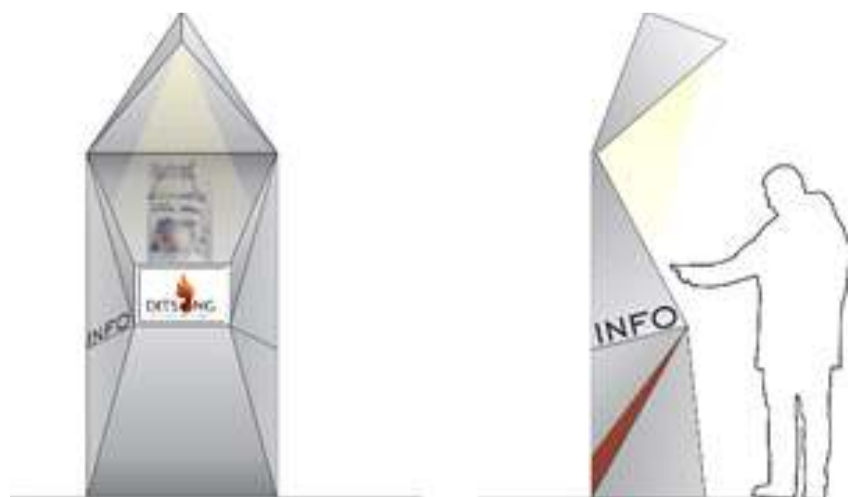


Figure 4.6.11. Information stands

4.6.7. PROVIDE SIGNS AT DECISION POINTS TO HELP WAYFINDING DECISIONS.

Signage will be implemented on various scales within the D: NMCH. Signs are located at all possible navigational decision points. Signs include free-standing directional signs, signs mounted on walls indicating exhibition information, exhibition content signs, large vinyl decals indicating room allocations and emergency signs. These elements are visible in figure 4.6.12 to 4.6.13.



Figure 4.6.12. Room allocation signage.



Figure 4.6.13. Free standing directional signs.

4.6.8. USE SIGHTLINES TO SHOW WHAT'S AHEAD

Sightlines are implemented to reinforce the suggested direction of travel. The visitor's sightline is focused on free standing directional signs as they move up the entrance ramp. Sightlines from East and West within the walkway is focused on the red ramp guiding the visitor to the foyer. (Figure 4.6.9.). As the visitor enters the foyer they immediately visually encounter the reception desk. (Figure 4.6.18.) The desk is emphasised by change in lighting levels surrounding it. Once the visitor moves past the reception desk their sightline opens up to include the atrium, suspended lighting system (Figure 4.6.14.) and curved screen past the atrium.



Figure 4.6.14. View of suspended lighting system

4.6.9. TEMPORARY EXHIBITION

The visitor interaction with the museum extends in this project to the proposed space usage of the atrium. The temporary exhibition is located in the atrium. This provides incentive to the visitors to move down into this space. The milkstool collection of the D: NMCH is the focus of this exhibition. There are eighteen milkstools in the collection, as documented in *Melkstoeltjies in die versamelings van die Nasionale Kultuurhistoriese Museum: 'n ondersoek na tipologie*. (Botes 2009.)

This exhibition has five parts:

- Twelve milkstools suspended at various heights.
- A central (permanent) enclosure. The outside walls of the enclosure are smooth to allow for removable information decals, while the interior of the enclosure is used for short films pertaining to the temporary exhibition.
- Milkstool reproductions on a 'stage' with a digital screen behind.
- Six milkstools are displayed on podiums. Sound spots are implemented in this area as well.
- A faceted 'pod' which seats 2-3 people will present short videos with information on the milkstools.

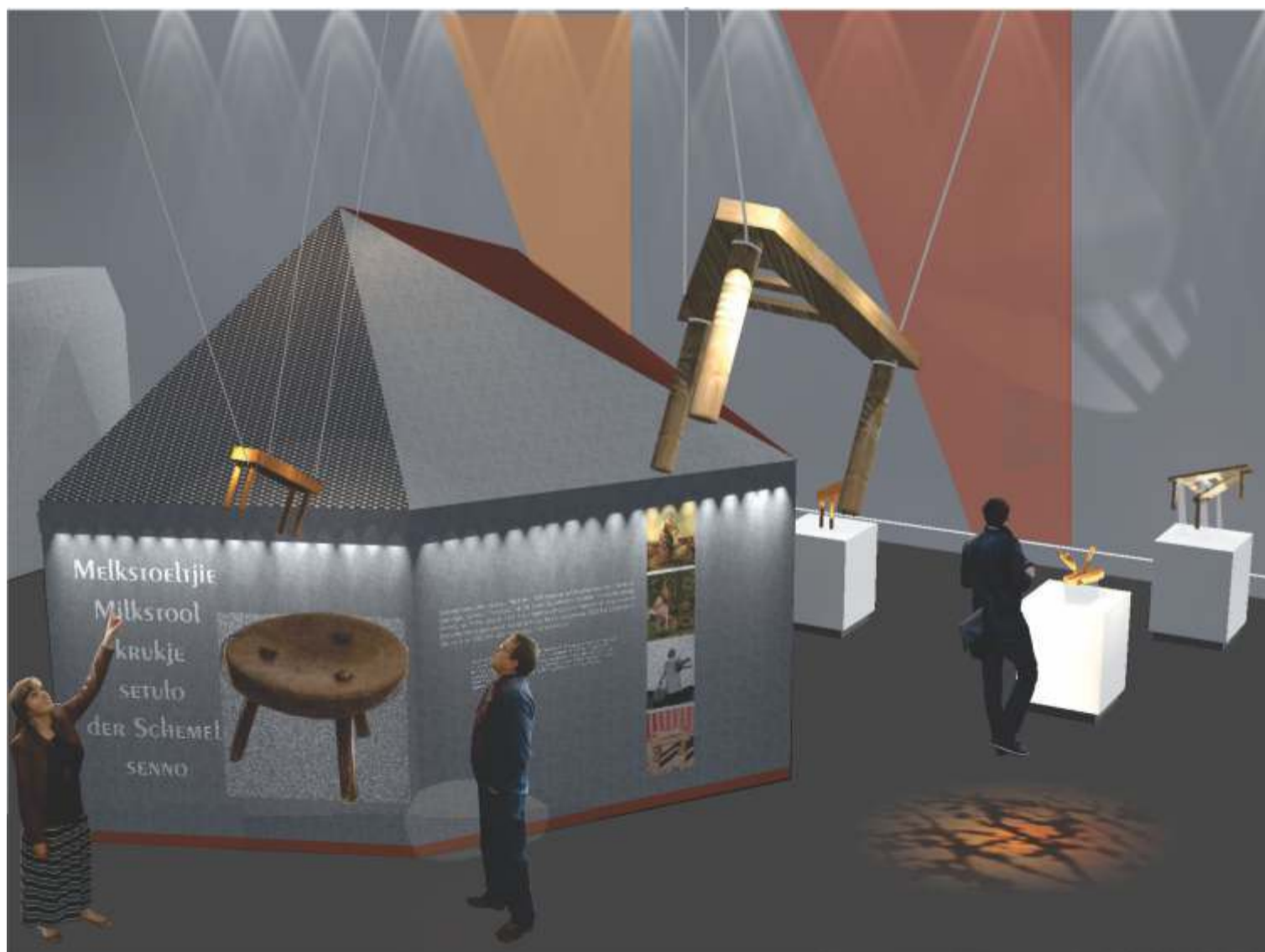


Figure 4.6.15. View of temporary exhibition from staircase



Figure 4.6.16. View of temporary exhibition



Figure 4.6.17. View of selected milkstools on podiums

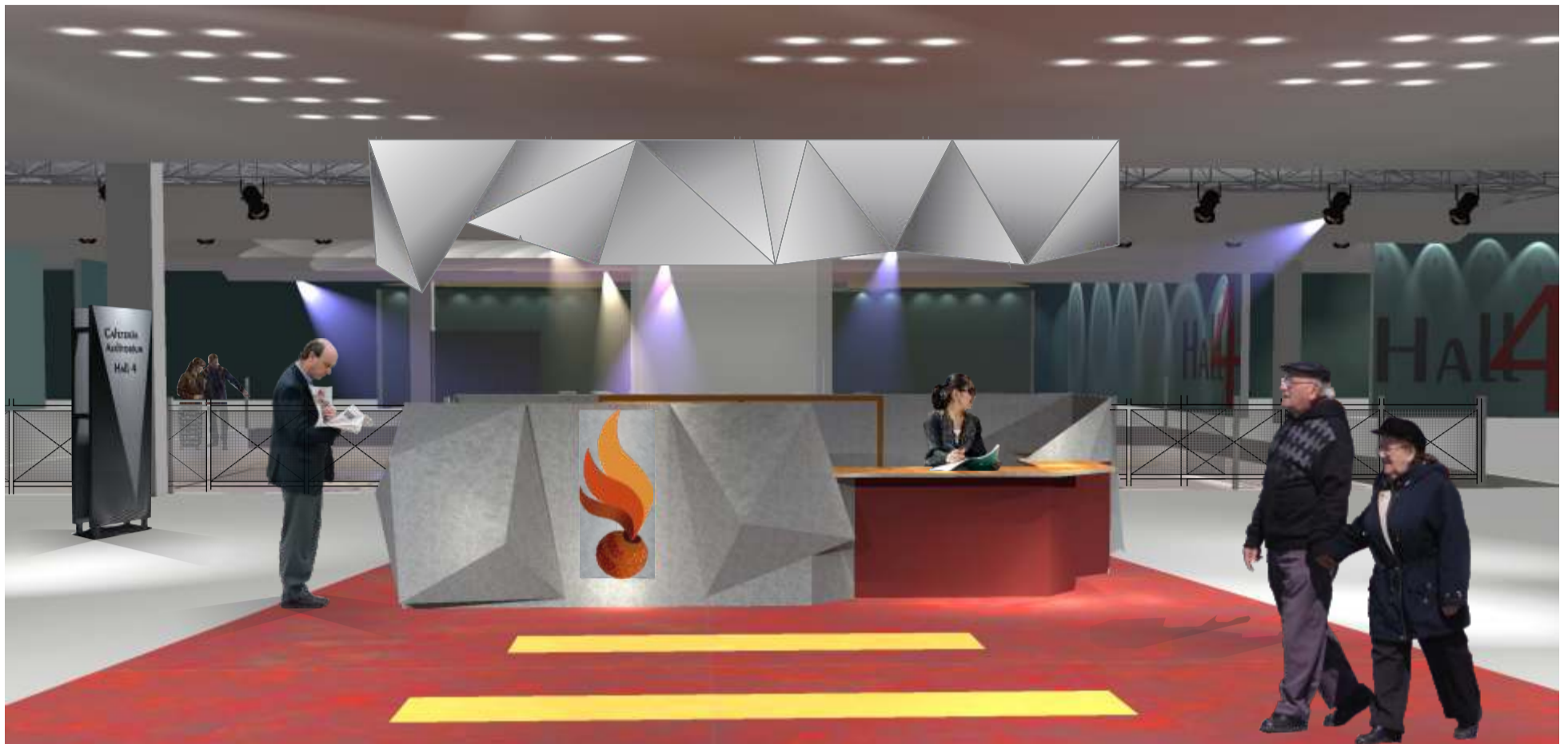


Figure 4.6.18. View towards reception desk

4.7. Conclusion

This chapter is an overview of the design development of the intervention within the D: NMCH. The final design is explained through the manner in which wayfinding was incorporated into the design.

The focus of the initial March design phase, to redesign the outdated D: NMCH, developed through research and an iterative design process into the final design. The final design aims to answer the research question, *How can the visitor's interaction between research, education and exhibition be established in an integrated manner within the Ditsong: National Museum of Cultural History?* User experience is this connecting element and was the underlying guideline in the design process.

The final design successfully creates a legible interior where the visitor's impression of the D: NMCH is positive from the onset. The visitor's interaction with museum facilities such as the entrance walkway, foyer and atrium should stimulate their curiosity and leave a positive lasting memory of the D: NMCH.