

05

DESIGN DISCOURSE

Taking into consideration, all aspects and principals investigated in the previous chapters, a design approach and concept will be formulated as a response. Other design aspects, and the influence they have on the final outcome/design, will be investigated and discussed, as part of the design development.

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5.1 CONTEXT [a new urban context]

As part of the larger urban vision (discussed in Chapter 2) and in light of furthering, or bettering the Tshwane Vision 2055, the old *Staatmuseum* has been identified as a place that can mediate the integration between the formal and the forgotten parts of the urban fabric (see Figure 5.1).

As identified and discussed in the chapters leading up to the design investigation, the *Staatmuseum* has been identified as a building that needs new relevance and meaning in its context. If the building is to relate better, the direct (micro) context needs to have a better relationship with the larger urban context.

In order to re-appropriate the *Staatmuseum* in its context, as a building that bares relevance and significance, its context has to first be altered to form a better relationship with the city. New opportunities for relationship with the building, need to be created, in order to establish the building anew.

As part of the design process of the urban context (see Figure 5.2), this investigation challenges the barred nature of the zoo, the relationship thereof with the city and the threshold between city and recreation, and even nature.

As an urban design concept, various open spaces have been identified (see Figure 5.3). These spaces include; the parking area in front of the zoo; the open green space to the north east of the entrance to the zoo; and the courtyard space of the old *Staatmuseum*. These spaces form the premise of a new urban context, and the correct integration of these spaces with one another can result in a much



Figure 5.1 Existing larger urban context



Figure 5.2 Existing micro context

more successful and vibrant urban context for the entire area.

Various changes to the urban framework would be identified and explained, in order to gain a better understanding of the new collective, which will form the new context of the zoo and the museum.

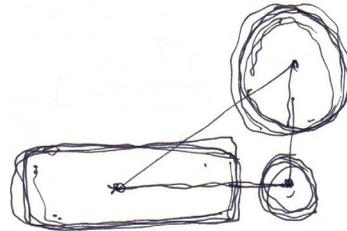


Figure 5.5 Identification of a possible relationship between three major open spaces

5.1.1 Concept Proposal: Context

i) The first proposition is to relocate the main parking area to the site across the road, in Boom Street, with the possibility of a multi-storey parking, incorporated as part of the National Research Foundation (NRF) Office Park. It is proposed that this parking be re-designed as a boulevard connecting the new parking with the zoo (see Figure 5.4). As part of this boulevard, it is proposed that the curio trader stalls be better integrated by incorporating them as integral part of the route. The nature of this new route or boulevard, will be a slow moving pedestrian route that cuts diagonally across the current site. Covered with the existing trees and new trees, and defined and embanked with shrubs and other foliage, this will become an urban park forming the outside reception area of the zoo.

ii) The next proposition is to move the fence around the entrance of the zoo. This proposition is to (during the day time), allow the fence to be opened to allow the city dweller to partake in some of the activities of the zoo without committing to entering the zoo. The new fence of the zoo will allow

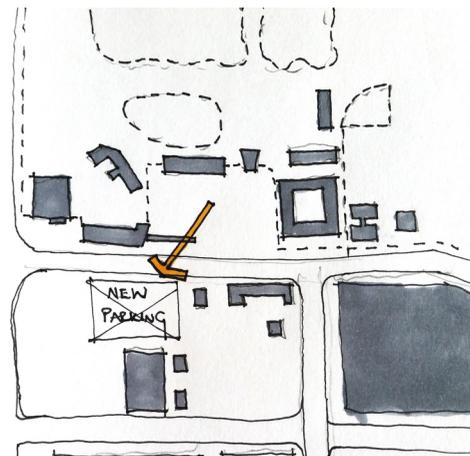


Figure 5.6 New position of parking, opening existing parking as public open space

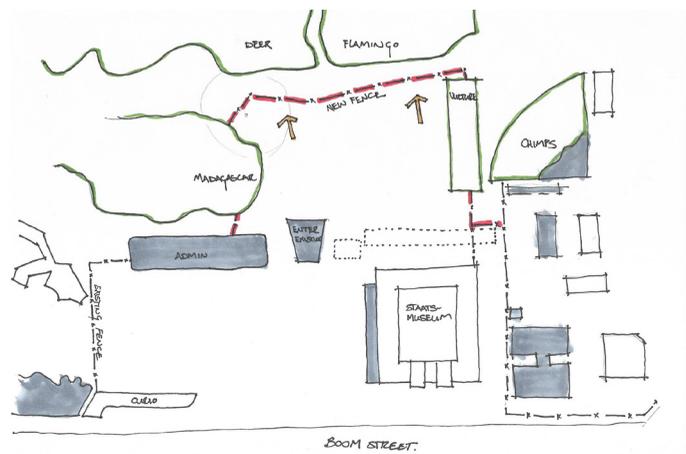


Figure 5.7 New position of fence, opening the zoo to the public

the public to view the flamingos, the vultures and the little Madagascar island. By moving the fence a new public green space is created. This green space will be unique in the fact that it forms part of a forgotten space of the city (refer to Chapter 2).

iii) This new green space, as reception area to the zoo, is the third intervention as part of the new micro urban framework. This green space is easily accessible and is designed, not only as open public space, but as a space that orientates the user in terms of the zoo and the *Staatmuseum* building anew.

The focus of this investigation and design project is too limited to resolve the new urban framework in detail, therefore only a rough conceptual design will be presented. This conceptual suggestion, will form the urban context basis of the new design intervention of the *Staatmuseum* building.

5.1.2 Concept Proposal: Museum

Through the investigation, towards this document, the museum building was identified as a building with significance, regarding its shared architectural heritage with the Dutch, and also its history as one of the first large civic buildings of the city (refer to Chapter 3 and 4). The building also bares significance as part of the history of the city due to the exhibitions and artefacts that were displayed there. The building has formed part of the urban fabric and of the street edge of Boom Street for more than 100 years, and is also significant as one of the defining elements on that street edge.

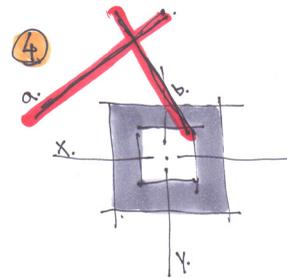


Figure 5.8 Diagrammatic exploration of the existing axis vs a possible new juxtaposing axis created for the precinct

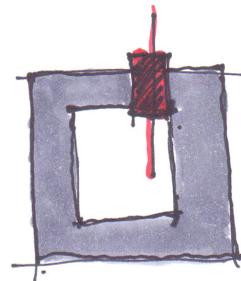


Figure 5.9 Illustration of the juxtaposing of the symmetrical nature of the Staatmuseum

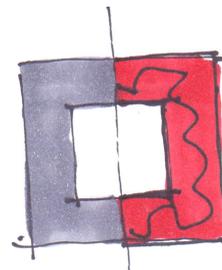


Figure 5.10 Conceptual illustration of the juxtaposing nature of interior intervention in the building

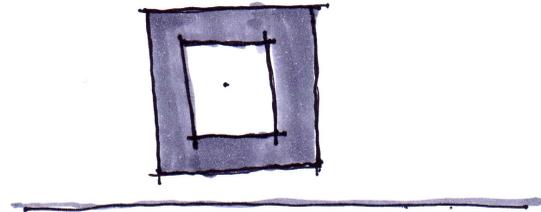
5.2 CONCEPT DEVELOPMENT

Taking into consideration, all aspects and principals investigated in the previous chapters, a **design approach and concept** will be formulated as a response to all aspects pertaining to this investigation, while other design aspects and the influence they have on the final outcome/design, will be investigated and discussed as part of the **design development**.

The core concept is that the building was designed to be an object in the landscape. The fact that the building was designed to stand isolated gave the building a certain persona (see Figure 5.11).

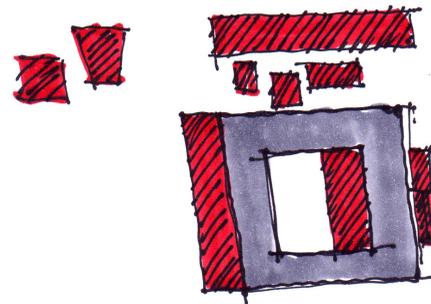
The surrounding context has however changed greatly during the building's lifetime. The context developed to such an extent that it deprived the building of its original object persona (see Figure 5.12).

In order to give the building its original persona back, one will have to demolish any structure that is depriving to the building as an object (see Figure 5.13).



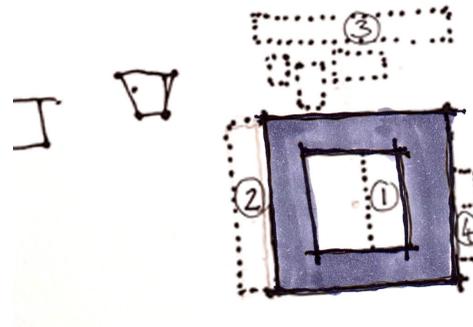
Building as an object

Figure 5.11 Original building as an object in the landscape



Development of context and building additions

Figure 5.12 The development of the context around the building as it is today



Hierarchical demolition plan

Figure 5.13 Diagram indicating the proposed demolition work and hierarchy of buildings that is most important to demolish as the detract the most from the building

5.3 APPLYING THE BURRA CHARTER

5.3.1 Conservation and Management

In accordance with this study, a statement of significance has been compiled for the Staatsmuseum. This statement should be referred to with any changes planned for the building, as forming part of the conservation management plan for the building.

5.3.2 Cautious Approach

With regards to existing fabric and the importance of specific elements the following is evident from this study:

1. The courtyard is the most important and central space of the building. The courtyard should thus be obstructed minimally, and all spaces should be easily accessible from the courtyard (see Figure 5.11).

2. The entrance facade (see Figure 5.14) is important, due to two things. The first is, the fact that it is the most highly detailed and decorated facade of the building, making it clear that it is the most important point on the external envelope. The use of fabric and detailing in the decoration, is also evident of the Wilhelmiens persona of the building (which is very scarce throughout the rest of the building). The other factor adding to the importance of the entrance facade is, the fact that it has formed part of the street edge for more than 100 years, and has been very resilient as part of this street edge.

The entrance can therefore not be destroyed, or altered in any way that will detract from it as an important part of the buildings' 'Wilhelmiens'



Figure 5.14
Entrance facade

history and its being part of the streetscape for many years.

3. The rhythm created by the other elements, such as the plastered blocks and clerestory windows (see Figure 5.15) on the external envelopes has been identified as important. Any changes to the external envelopes may break, but should not destroy this rhythm.

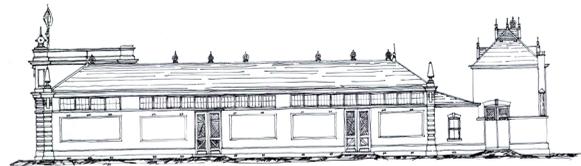


Figure 5.15 West facade

4. Internal exhibition spaces (see Figure 5.16), are important as evidence of the buildings programmatic function, as per the initial design of the building (the building has only been used as a museum as per the original design). Not all the exhibition spaces have to be preserved as is, but a person should, at some point, be able to perceive what the original internal spaces were like. The idea of exhibition can be challenged. Any



Figure 5.16
Exhibition hall

changes to the interior spaces should however be reversible with minimal impact on the existing building fabric.

5.3.3 Knowledge, Skills and Techniques

As part of the investigation of the current building condition (refer to Chapter 3), the following was identified and will be considered when altering the building in any way:

1. The walls will be painted with a gypsum based paint.
2. The voids under the floors will not be closed as they are a key part of the breathing of the building.
3. The bricks used are very soft and porous. Where openings need to be made, it will be done in such a way that water can escape without being trapped in the wall, to avoid the erosion of the bricks.

5.3.4 Burra Charter Process

The cultural significance of the *Staatmuseum* has been negatively influenced by the context of the museum, as identified in this study. The

context therefore will have to be changed, as per the proposal at the start of this chapter, before any changes can be made to the building. This new context, together with other changes to the building, as discussed later in this chapter, is done to ensure an understanding of the building's significance, baring first priority.

5.3.5 Use

The building's original exhibition outgrew the building, making the proposal of the charter, to re-introduce the use back into the building redundant. The new program is however linked to the same concept in that it represents life at a different level, which in turn also links back to the zoo as well.

5.3.6 Composition

The layout, that contributes to the cultural significance of the *Staatmuseum* has been adversely influenced by the additions, firstly to the courtyard of the building, and also as extensions to the exterior of the building. The context has also been developed in an unsympathetic manner, which has not added to, but has rather degraded the building's as importance (see Figure 5.12).

As part of the proposed concept development, any additions to the direct setting of the building are to be demolished.

5.3.7 Location and Contents

The location of the *Staatmuseum*, is in itself very significant. The moving of the exhibition in 1991, had a very big and detrimental effect on the

building, in that it has been unoccupied since then. The design of the building was very specifically aimed at hosting the very large collection of natural and cultural history. When the exhibition was moved out of the building, one can argue that the soul of the building had gone with it. With the implementation of a new exhibition, this study aims at giving new life, and once again a sense of dignity or meaning, to the building. As part of the new exhibition, it is proposed that a part of the initial exhibition, be displayed as part of the new exhibition, to pay tribute to the exhibition that once gave life to the building.

5.3.8 Participation and Co-existence of Cultural Values

The NZG is a place without cultural and social boundaries as it is inviting to all culture- and social groups. The *Staatmuseum* is proposed to form part of the NZG context very directly (see Figure 5.4), allowing the building to participate in, and form part of, the co-existence of cultural values.

5.4 DESIGN DEVELOPMENT



Figure 5.17 Perspective view of the new entrance from the public zoo green space: looking south

DESIGN DISCOURSE

INTERVENTIONS

- PLINTH- as a new platform for the building to stand proud of its context
- NEW ENTRANCE- contesting the existing entrance and contradicting the existing building in all aspects, from form to materiality
- NEW EXHIBITION SPACE- continuing the ideals of the new entrance into the existing building shell
- NEW STAIRCASE- together with a new interpretation of the administrative spaces of the building.
- NEW VERANDA- as an extension of the new entrance into the courtyard to form 'spill-out' space for the permanent exhibition and act as a guiding mechanism as part of the exhibition narrative

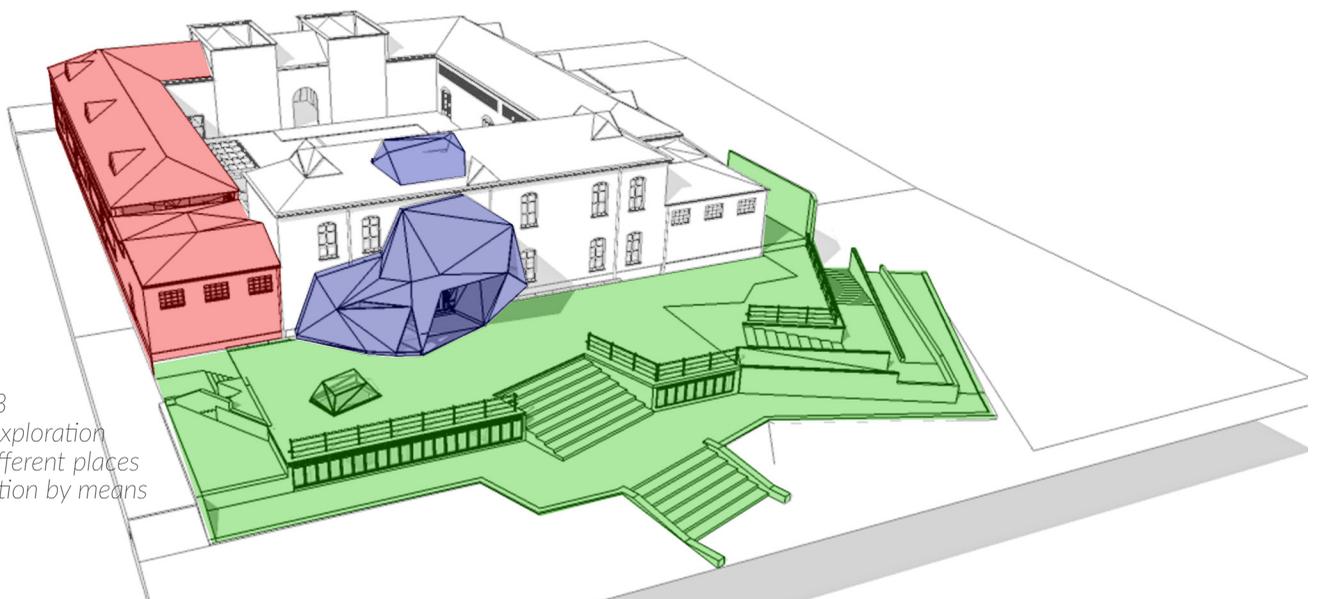
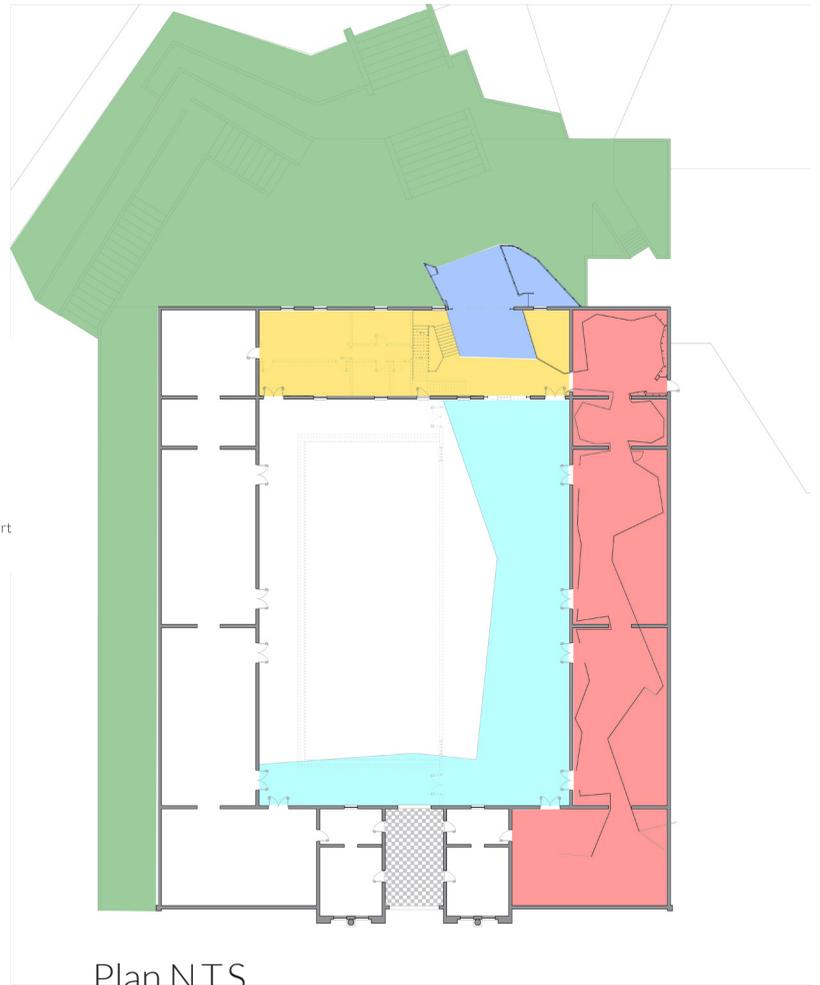


Figure 5.18
 Isometric exploration
 showing different places
 of intervention by means
 of colour

5.4.1 Prominence by Means of Topography

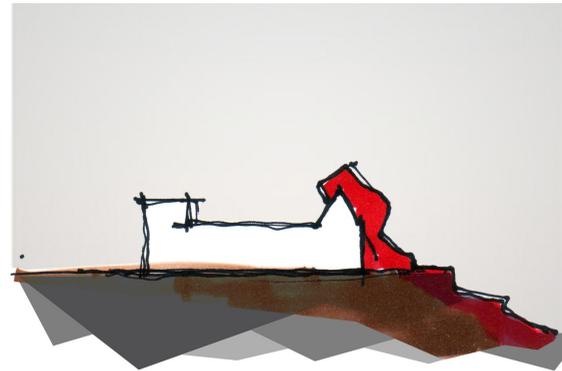


Figure 5.19 Illustration of the landscape becoming the plinth, and then latching onto the building

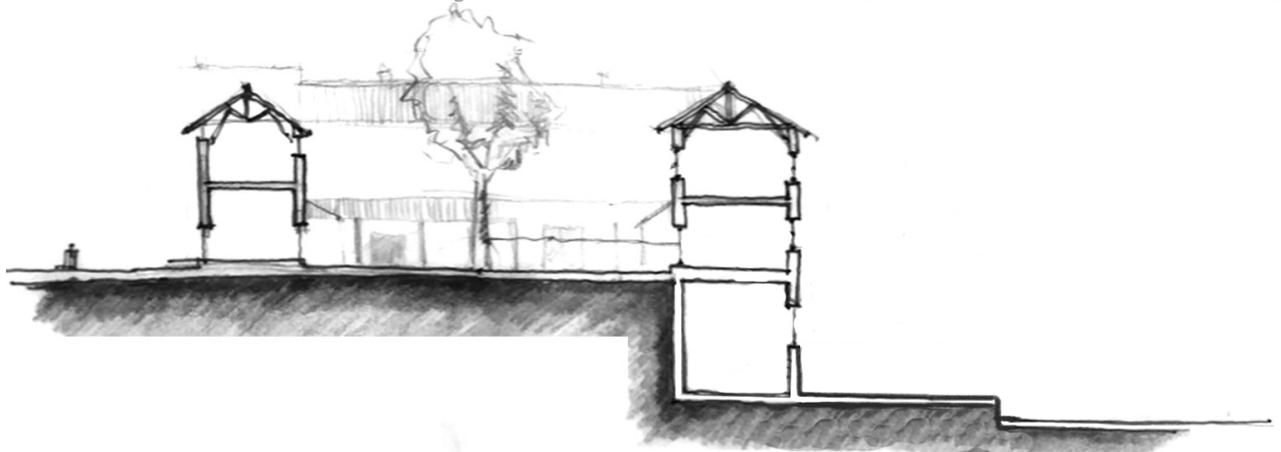


Figure 5.20 Original topography and lack of relationship with the site beyond

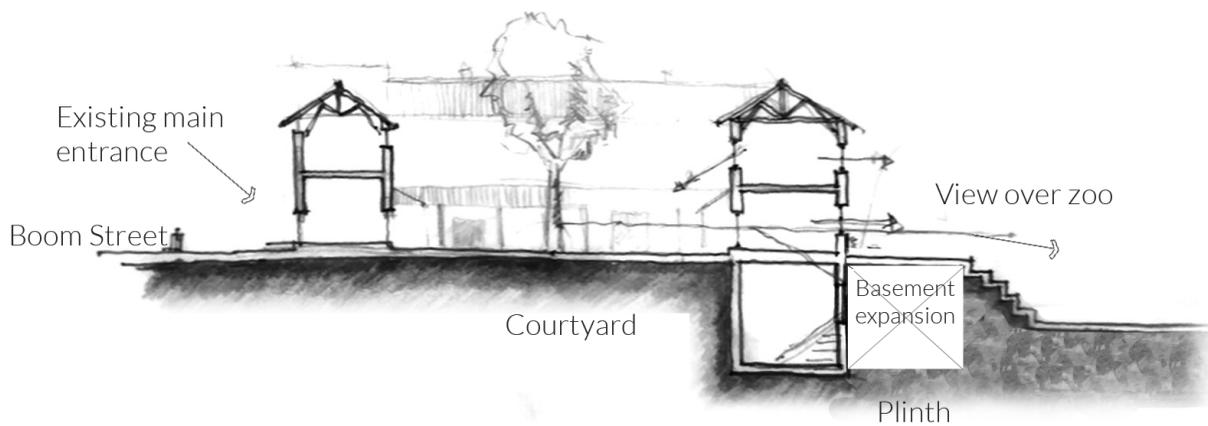


Figure 5.21 Conceptual section indicating the new possibility of raising the building proud of its landscape and the new relationship between the building and the landscape beyond, as a result

- Explorations of the Plinth to get to a Final Resolution

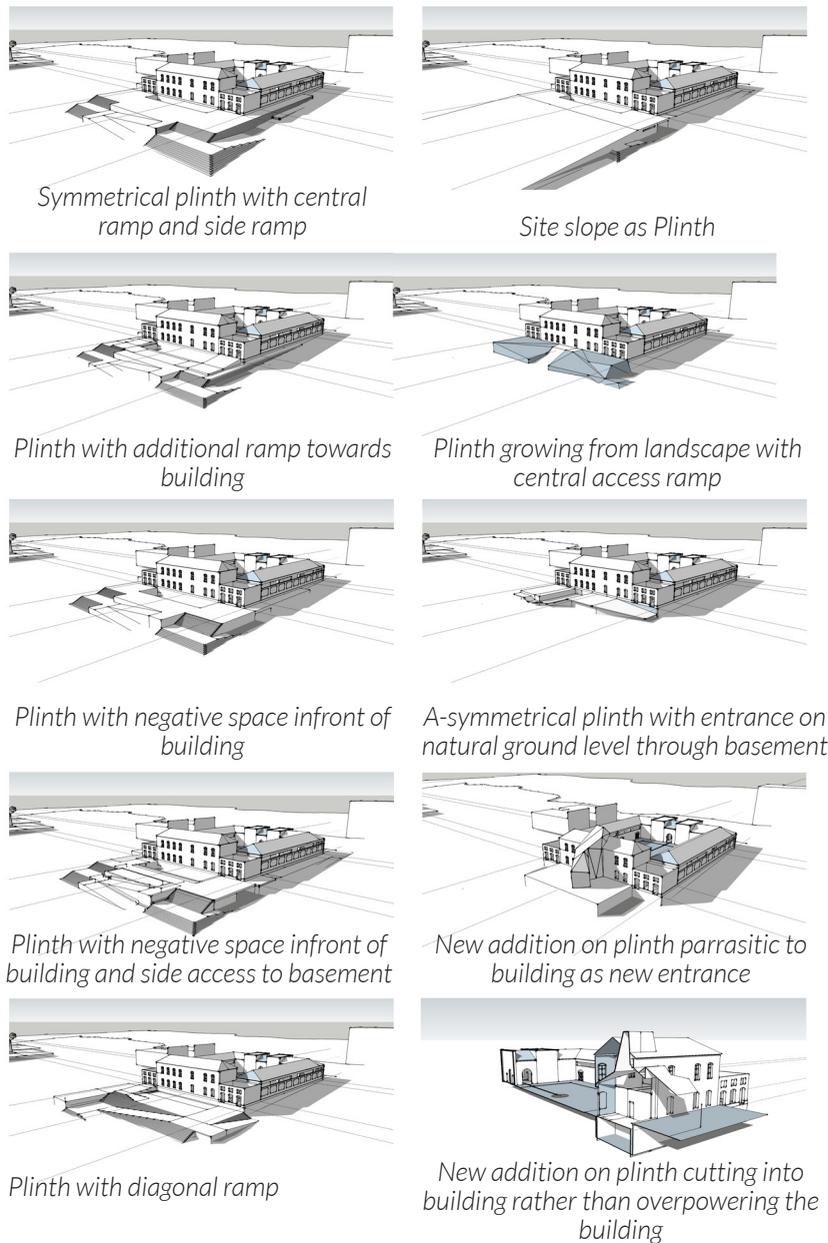


Figure 5.22 Isometric explorations of the plinth to get to a final resolution

The main design approach is to establish the *Staatmuseum* as a prominent building in its context, once again. The first step to achieve this is to make use of the topography of the site.

The topography of the site is of such nature that it has a downward slope toward the Apies River of almost three meters from the street edge to the back of the building. This drastic slope creates the opportunity to lift the building proud of its context, raising it up on some sort of pedestal or plinth, to be celebrated.

Different approaches to the concept of plinth have been explored. It was envisioned that the plinth is not a plinth directly in the classical term of the word, but is rather an extension of the landscape that creates different planes and view points of the building.

The plinth will be an addition to the existing basement of the building (refer to basement plan), and will house a system that forms the core of the educational exhibition (refer to Interior section of this chapter). This system will be discussed in more detail in the next chapter.

5.4.2 ENTRANCE

The influence of the topography, together with a response to the micro-urban framework, resultantly calls for a reconsidered entrance to the building. The new urban context of the building, will bring a lot of people to the north of the building, where there is ample space for groups to gather as part of formal or informal recreational and social gatherings. The existing entrance of the building, also stands in isolation on the street edge, with limited space and very little relation to the context. The best response to the way the building is approached, is to relocate the entrance of the building to the northern side of the building.

RESPONSE TO ENTRANCE

To design a new entrance to the building, it cannot be done without some sort of response to the existing entrance, in the way it forms a vital part of the building aesthetically, and in terms of the approach and spatial experience of the building.

The design of a new entrance, contests the existing entrance conceptually, in terms of its height, ensuring a statement is made to indicate its importance as the entrance to the building. It will also aesthetically and architecturally challenge and juxtapose the symmetry and formality of the entrance and the entire building (see to Figures 3.8-3.10). This juxtaposition is affirmed by the new axis created, as part of the new urban framework and approach to the site. The new access route toward the new public reception area of the zoo, together with the new entrance route to the *Staatmuseum*

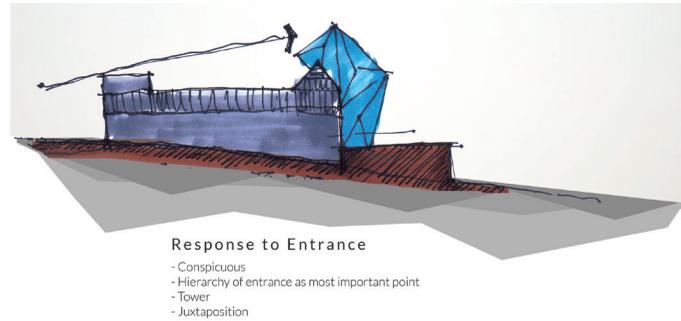


Figure 5.23 Conceptual response to entrance i.t.o height

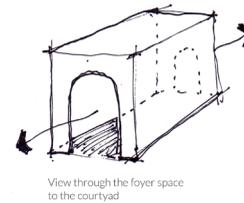


Figure 5.24 Concept of viewing through the entrance



Figure 5.25 Change of height through the entrance foyer

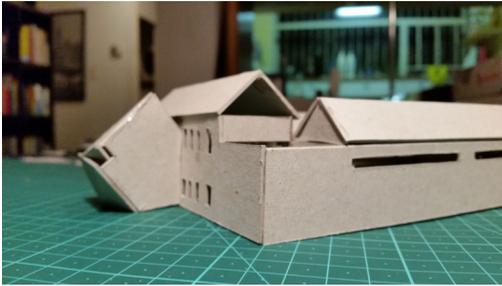


Figure 5.26 First response to the building



Figure 5.27 Furthering the first response over the building



Figure 5.28 Furthering the idea of responding over the building



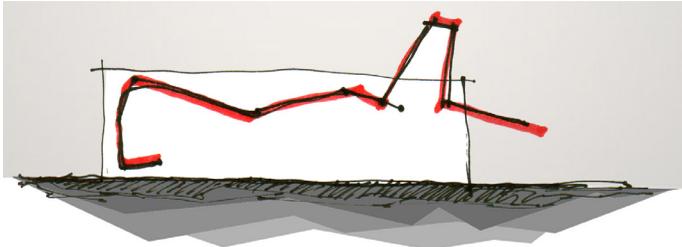
Figure 5.29 Completing the idea of overpowering the building with a new intervention, showing that a new entrance has been created

creates a new set of axes that juxtapose the formal grid and axis system of the city. This contradicting axis, places emphasis on, and clearly indicates the new interventions on a larger scale. The shape of the new entrance will also be a juxtaposition, in terms of the form giving shapes, to emphasise the intervention as new and not originally part of the building. It will make a clear statement, as a new insertion in the existing built fabric. Faceted panels will be assembled in such a way, that it creates a morphing object that not only latches onto, but also penetrates the existing building structure.



Figure 5.30 Perspective view of the new entrance from the ramp toward the east

5.4.3 INSERTION



Insertion response to interior

Figure 5.31 Conceptual illustration of the new entrance intervention penetrating the building to form a new skin inside the building

The idea of entrance is taken further to not only be an entrance, but conceptually to create an element that grows out of the landscape, becoming a plinth for the building, then pops up to become the entrance to the building, contending the building. The entrance subdues to the building, by not overpowering it, but rather penetrating into the building. This plane then penetrates through the roof, in order to make the onlooker aware of the fact that it has entered the building and is creating new spaces inside the building. This plane then forms walls, ceilings, and at some places, the floor parasitically enter the entire east wing of the building. These planes also create new exhibition spaces, but more than that, become the exhibition, until it reaches the old entrance of the building where it exits the building into the courtyard, and guides the user to the western wing of the building, as a new veranda. This element does not enter the building again, and creates a contrast between what is new and what is existing.



DESIGN DISCOURSE



Figure 5.32 Perspective view of the new interior exhibition installation

● EXHIBITION

In exhibition design there are various aspects that need to be taken into consideration in order to design a successful exhibition.

A recent study has shown that people who do not actively read after they have left school, lose the ability to read, to such an extent that their reading skill falls back to that of a grade seven pupil. The major target group for this exhibition will be school children, which in turn, indicates low to medium reading speeds.

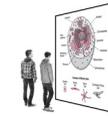
Exhibitions with a lot of reading, as primary exhibition, will therefore not be a very successful exhibition.

Conceptually, exhibitions work best when the primary exhibition, as an artefact, can be viewed and can be easily interpreted, with minimal text as part of that artefact. The secondary exhibition will then consist of a combination of images and text, and tertiary exhibition, will in the main, consist of text.

The speed at which these three levels of exhibition are viewed will be different. The primary exhibition will require the least amount of time to view and understand, while the parts with majority text will take the longest to view and understand.



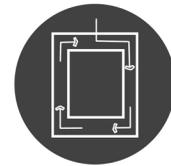
Primary Exhibition
 3-D models
 Fast Movement



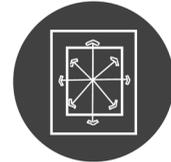
Secondary Exhibition
 Imagery and text
 Medium Movement



Tertiary Exhibition
 Text
 Slow Movement



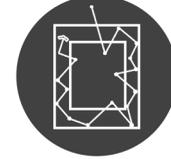
Movement around the central space



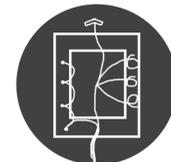
Movement from the central space



Interact Beyond



Move according to a specific narrative. Combined interior and exterior movement



Movement from central space and according to a specific narrative

Figure 5.34 Hierarchy of an exhibit, based on people's ability to grasp a concept fast

Figure 5.33 Diagrammatic exploration of exhibition flow options

• LIGHT

A study has found that people move faster through darker spaces and slower through light spaces. People also tend to move from light spot to light spot (see Figure 5.39).

The museum was designed in a time when electricity was still a new found commodity (refer to Chapter 3), and did not provide the quality of light we know today. It was important as part of any exhibition space to maximise the amount of natural light, in order to maximise the view of the artefacts. In the design of museums however, it is important to minimise or eliminate the amount of sunlight on the artefacts, in order to minimise the deteriorating effects of radiation on the artefacts. This design principle is evident in the *Staatmuseum* with its clerestory windows that allow ample sunlight to enter the spaces, with minimal direct sunlight (see Figure 5.37).

A study has shown that this kind of indirect light is not the most beneficial light for exhibitions. The light places no emphasis on any artefact on display, but rather lights up the entire space. It is important when exhibiting items, to make use of artificial or natural light, to place emphasis on items on display, without causing any radiation damage to them (see Figure 5.38).

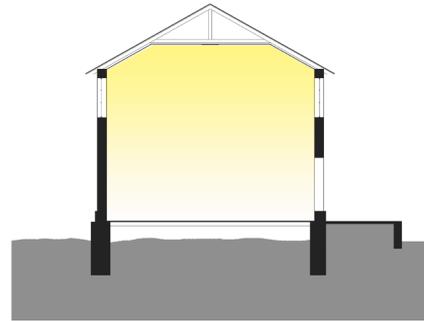


Figure 5.35 Clerestory windows allowing the maximum amount of natural light without any direct radiation beams reaching the floor/exhibition



Figure 5.36 Using artificial light as focus lights on artefacts

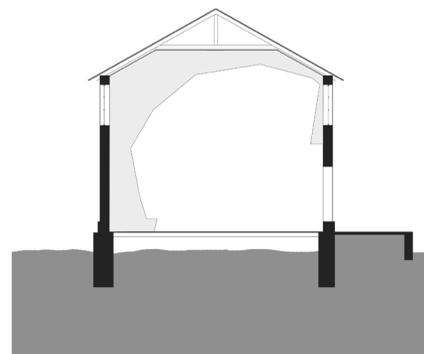


Figure 5.37 Using a combination of artificial and natural light with the introduction of a new interior skin to regulate light

• MOVEMENT

According to (STUDY/CITE), upon entering a space, people tend to move left way round the space. Other than that semi-constant likelihood in people's movement, it is very difficult, if not impossible to predict the way in which people will move through a space. The only way to ensure people follow a specific narrative, is to create definite boundaries. This can be done by means of manipulating light and space sizes in order to guide people, and to a certain degree predict their movement, without forcing them through a crush (see Figure 5.40).

The effective use of larger open spaces for slower relaxed movement, and smaller cramped spaces for faster movement, will be applied throughout the permanent exhibition both on plan and on section (see Figure 5.41).

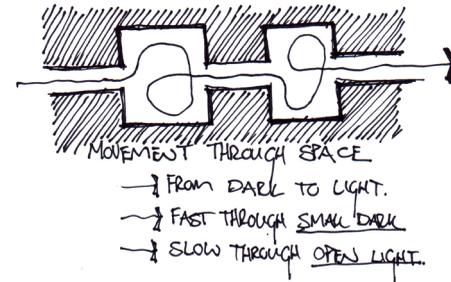


Figure 5.38 Diagram explaining movement through open and cramped spaces on plan



Figure 5.39 Diagram explaining the effect of open and cramped spaces on section

LIFE SCIENCE CENTRE
Public educational exhibition as an extension to
the National Zoological Gardens

• PROGRAM

The programmatic intention is to introduce a program that links with the zoo. A life sciences centre will be introduced with specific focus on how life can be used to harness and generate electricity.

An education exhibition that focuses on the basic structure of life, known as DNA, where it is stored in cells, and how DNA creates proteins that has many different functions. The ability of proteins to digest matter is the next focus point, with specific reference to an organic digester system which generates methane gas. The final focus point of the exhibition is the energy harnessed from burning the gas, and how the CO₂ generated by the electrical generator can be transformed into O₂ through algae bio-reactors, making the entire system a zero waste system as illustrated in Figure 5.42.

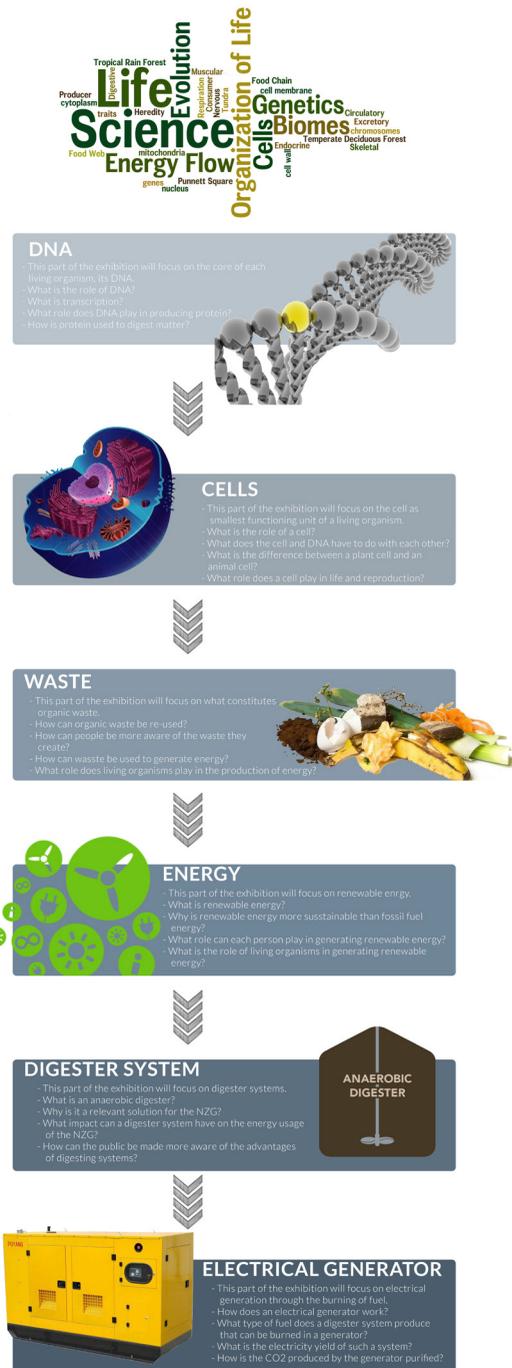


Figure 5.40 Diagram explanation of the programmatic intention in the Staatsmuseum.

● STAIRCASE

The existing staircase and trapdoor will be removed and a new staircase will be installed, that relates better with the spatial layout of the new foyer.

The new staircase, as all other design elements, will showcase the main design driver and response to the building. It is orientated with the new penetrating axis into the building, making one aware of the fact that it is a new installation. The staircase does however, extend to overtake the entire first floor, as a clear orange metal insertion into the building. This insertion is made up of pre-manufactured steel sections in order to create an easy to install seamless insertion (Refer to detailing and assembly in Chapter 6).



Figure 5.41 View through the new entrance into the courtyard



Figure 5.42 View of the reception area



Figure 5.43 Existing staircase to first floor



Figure 5.44 Existing trap-door to basement



Figure 5.45 Existing staircase to first floor

● COURTYARD AND VERANDA

The addition to the courtyard will be demolished as it detracts from the courtyard as being the central space of the building. The veranda roof that was demolished at that time, will be re-interpreted as a combination of the construction line of the demolished addition (where it touched the north and south wings), and the new insertion by means of the new axis formed as part of the new insertion. The new line will make the user of the space aware of the fact that the roof is an addition. The envelopes of the additional roof will be double glazed (see Figure 5.48) in order to create additional exhibition space that relates to the courtyard, visually. The construction of the roof will be done in such a manner that it creates the effect of a flat, lightweight structure that guides the user of the space visually on a horizontal level (refer to ground floor plan and details in Chapter 6).



Figure 5.46 Perspective view of the new veranda roof in the courtyard

5.5 DESIGN RESPONSE AND DIRECTIVE

As a response to the building, a main directive will be formulated and followed. Certain elements will however, be identified as significant elements and a clear directive will be set out for each of these elements.

The main design directive, as a form of response to heritage as categorised by Bollak (2013), is to respond to the building by means of an insertion. This insertion and every part thereof should, where it touches the building be sensitive to the building and be clear that the place where the two meet, reflects this concept. Where the building is penetrated, the same should be reflected in the way the penetration or puncture is detailed.

Different elements that need to be responded to, separately and specifically, include the following:

- The existing entrance (façade): The existing entrance is one of the most significant parts of the building. It is the only fully detailed and decorated façade or part of the entire building. It is also the one part which has relationship with the street edge, through the opening of the front gate, thereby giving the public the ability to gain visual access into the courtyard of the building.

- o Response – The response of this design, as described in more detail in the previous section of this chapter, is to restore the entrance façade, the gate, and the tunnel to the courtyard. The entrance will no longer be the main entrance to the building, but will be replaced by a new contesting entrance on the northern façade (opposite side) of the building. The entrance will however, still be used for evening functions or on prior arrangement to

let larger groups of people into the building.

- Other façades: The other façades of the building are much less significant architecturally, but still bare significance through forming part of the way in which the street edge has been read and understood or experienced by many generations of people throughout the past century. The rhythm created by the plaster blocks of the façades, the rhythm of the clerestory strip windows and the shape of the roof against the skyline all bare significance as part of the street edge of Boom Street.

- o Response – The rhythm created by these elements should not be destroyed. The elements in themselves are however, not as significant, and can be replaced by other elements, but keeping the same rhythm as the existing elements.

- Internal spaces: The main function of the interior spaces is to house exhibitions. The spaces were designed as plain as possible, to allow for different responses in terms of exhibition. Some of the old exhibitions are still visible in the building today (refer to Figure 5.16). The new programmatic intervention, once again allows the interior spaces to be exhibition spaces. The way in which exhibitions are designed and set out however, has changed a lot with our better understanding of the influence of space planning on people's experience.

- o Response – The new exhibition spaces will be a new interpretation of these psychological “rules”, using the existing building only as a shell. The exhibition installation will be an extension of the new entrance intervention and insertion concept,

as main architectural response driver. The new intervention will be designed to be understood as planes inserted into an existing space, altering the persona of that space to house a specific function. It is important though that part of the building's interior spaces should still be understood and viewed as its original design. These spaces will be restored fully, to allow for a more informal function to be introduced.

- Administrative wing: The administrative wing of the building is the northern wing. This part of the building has windows to the courtyard and windows to the zoo. It is the one part of the building with the most interaction between interior and exterior. This is also one of the areas within the building, which has undergone some changes since the conception of the building. This part of the building is the least significant, with regard to the initial programmatic intention of the building.

- o Response – The response to the administrative wing of the building can be less sensitive than to the other parts of the building in terms of building fabric, spatial qualities and intentions of the original design. Although the largest intervention will take place in this part of the building, the main design directive of touching the building lightly, will still influence the design of any intervention in this part of the building and beyond.

- Courtyard space: The courtyard space is the main space of the building, as all other spaces live out onto it.

- o Response – The main design directive for

this space, is to keep it as the central green space of the building. Any additions should be done in a way that is conscience to the courtyard as 'central space'.

DESIGN DISCOURSE

5.6 SPATIAL DEVELOPMENT: PLANS

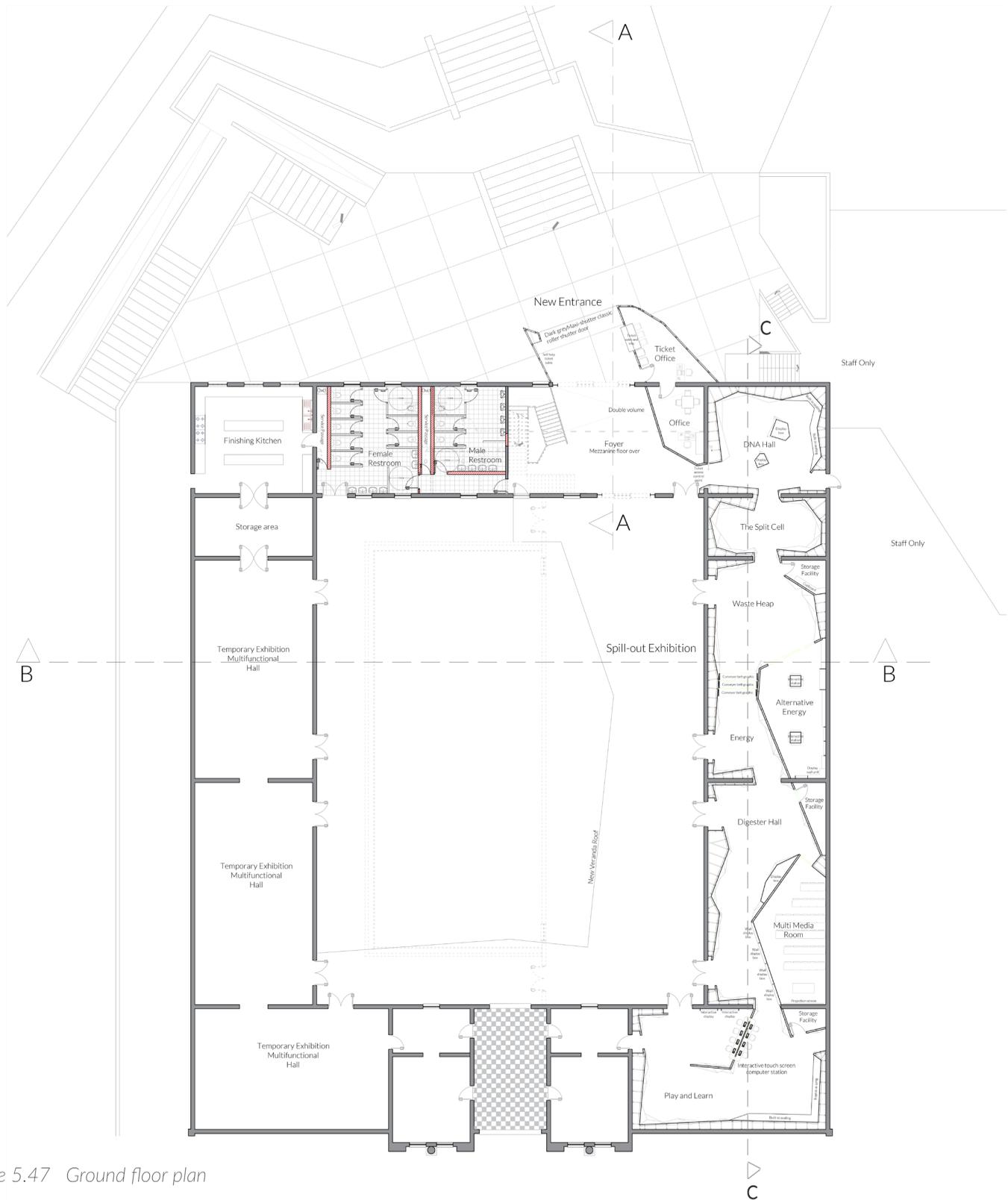
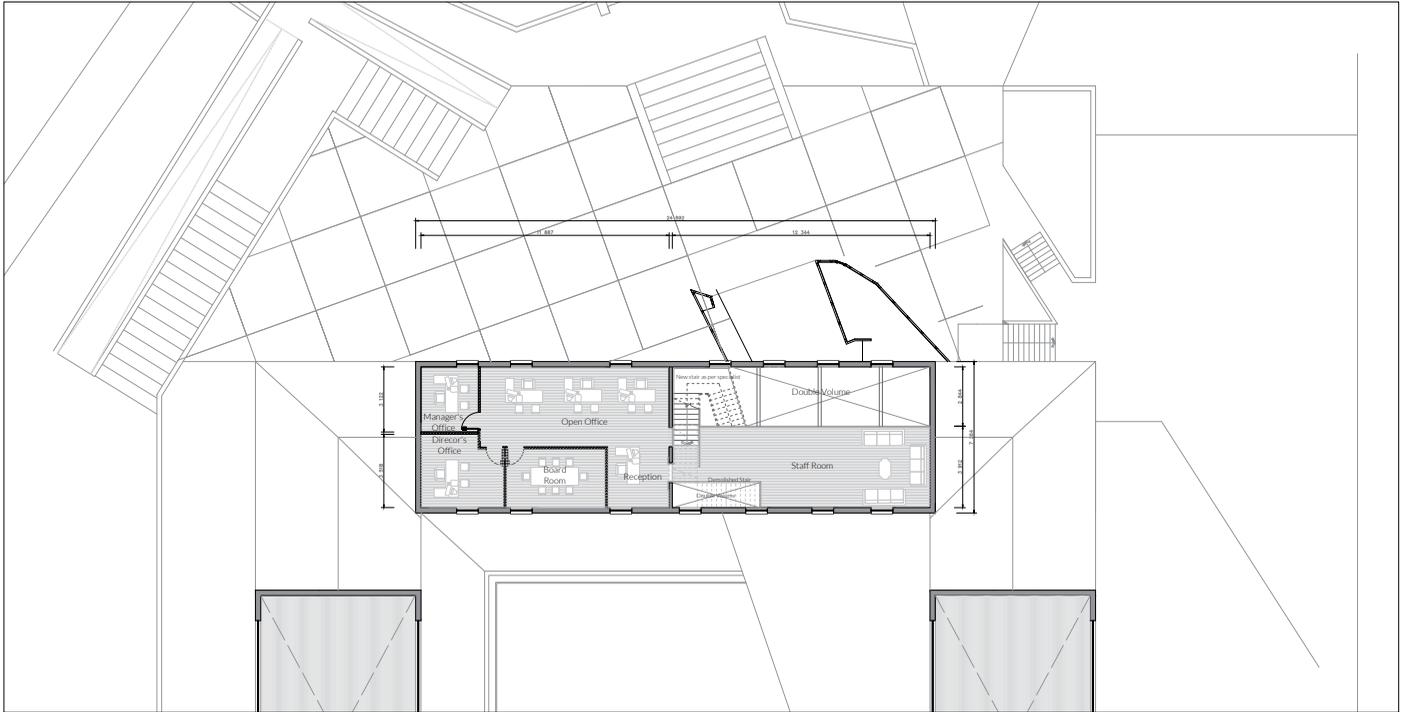


Figure 5.47 Ground floor plan

DESIGN DISCOURSE



FIRST FLOOR PLAN
N.T.S.

Figure 5.48 First floor plan



DESIGN DISCOURSE