

# CHAPTER SEVEN

## CONCEPT, DESIGN AND TECHNICAL RESOLUTION



## 7.1 A STRATEGY FOR THE DESIGN

The design contribution takes the form of a temporary opera performance running for three to five weeks, which will act as an initial event to draw the public to the site. The William Kentridge re-imagined performance of the well-known opera Magic Flute will awaken the beauty of the site encouraging the audience and public to revisit the site once the performance is over. Figure 7.1 and Figure 7.2, explore the initial conceptual development

of the design intention, and shows a creative combination of site, scenography, atmosphere, and performance.

The main concept was developed around exposing both the existing beauty of the site and the thematic developments and emotions of the opera. Through this, the design was brought to life. A temporary intervention will contribute to the current preservation of the site. A designated walkway will facilitate the human circulation on the site, firstly to take them

on a constructed journey of site and opera, and secondly to minimise the physical contact with the heritage fabric. This will ensure the preservation of the site whilst adding a value to the site in the form of a possibly semi-permanent layer. This non-invasive, temporary intervention will act as an initial catalyst to the awareness and preservation of the site, encouraging the public to revisit the site once the performance has passed.

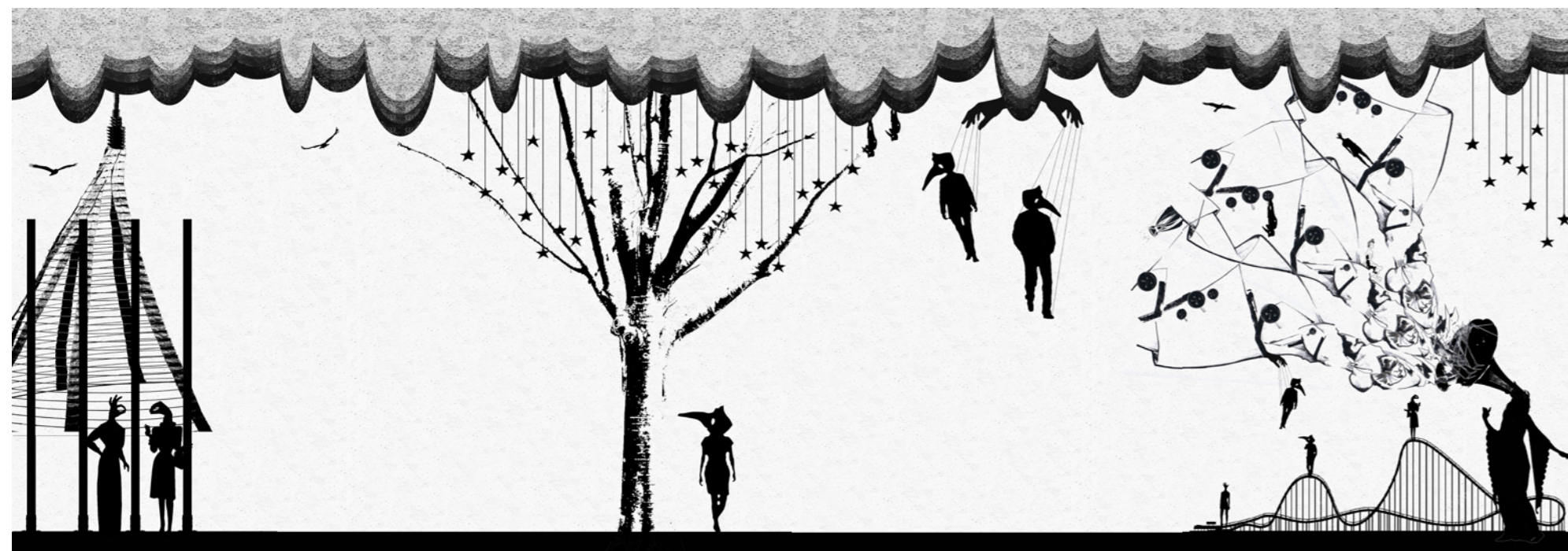


Figure 7.1 Initial moodboard development

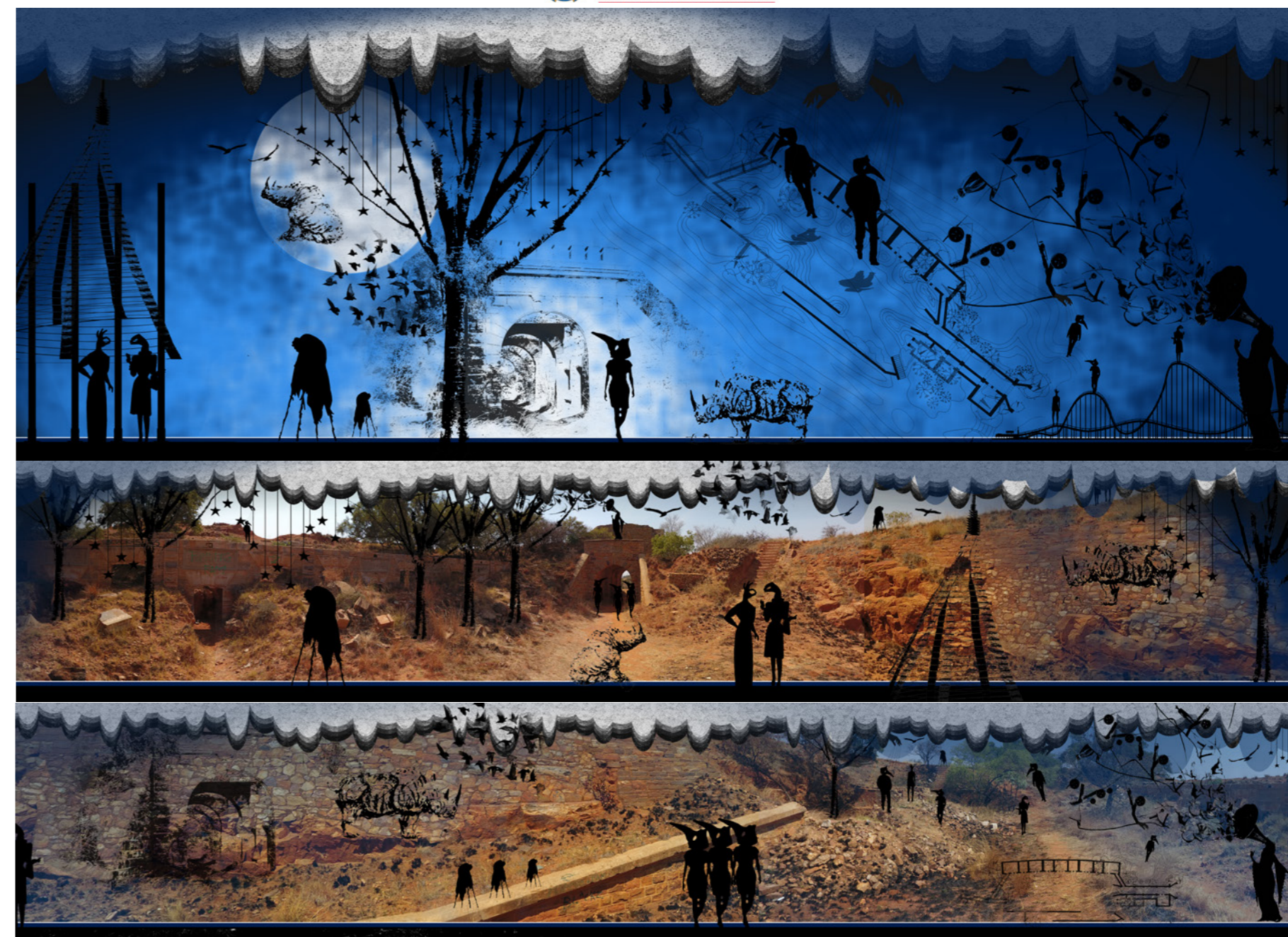


Figure 7.2 Translation of moodboard to to photograph of site



## 7.2 DESIGN INFORMANTS

The design approach for this dissertation, visually explored in the final concept board Figure 7.3, uses a combination of the theoretical data studies (explained in Chapter 4). This includes Heritage, Site-specific Theatre, cultural diversity of theatre, elements of interior architecture and Scenography design - precedent studies (see Chapter 5) and Williams Kentridge's adaptation of the Magic Flute Opera (expanded on in Chapter 6). The mentioned data has been collected and organised throughout this document to inform the design decisions of the project. The design informants act as a means of consideration which form an important part of the design development. The following selected informants have been considered in the design approach for each scene, as see in chapters: – 7.2.5 Elements of interior architecture, 7.2.6 William Kentridge's Magic Flute, 7.2.4 The SANS10400 regulations, 7.2.1 Cultural diversity in the Theatre, 7.2.2 Site-specific Theatre, and 7.2.3 Heritage.



Figure 7.3 Final concept and mood board

### 7.2.1 SITE-SPECIFIC THEATRE

Site-specific theatre is a theatrical form which utilises a found location and character of the given site, as the backdrop and set for a production - refer to Chapter 4.2 for an in-depth explanation. The exploration of the site-specific location and the benefits for effective audience response of the existing site is the main informant of this design. Site-specific theatre aims to enhance the natural potential of the existing site, bringing to light its unique qualities, character and structural nuances. In the site-specific theatre, the site acts as the stage on which the performance will take place. Therefore, the selection of the Fort Daspoortrand ruin is a vital consideration for the further design of the site.

The use of the existing site offers a valuable layer of information which in conventional theatre would have to be fabricated. The site-specific location and its natural drama, texture and volumetric spatial qualities can be enhanced and further developed in each scene. The selection of the location for each scene is carefully identified in order to relate to the thematic development of the Magic Flute. The scenes and their locations need to be carefully considered to enhance both the production and the qualities of the site. These selections are further discussed under the unpacking of each scene in the following section, Chapter 7.5. They have also been identified in Chapter 3.16: Site Analysis. The emphasis of the site is achieved by layering information, projection, set and Opera onto the site. The combination of opera and site opens the opportunity to give both relevance in the 21st century.

### 7.2.2 CULTURAL DIVERSITY

The intention at the onset of studying the cultural diversity of various theatres was to broaden an understanding of the forms and technologies used in theatres around the world. Throughout the research into these variations, the biased western approach to theatre design is challenged, and the richness of cultural diversity is further explored. The approach of the study was not to act as an exact method or replica of the cultural visual forms, but rather to explore the use of different technologies and scenography ideas and take inspiration from these.

The Asian and South African theatres are rich in indigenous cultures, therefore, taking inspiration from these forms will enrich the production in the variety of visual creation methods. The use of back projections and shadow puppets, inspired by the Asian theatre, see Chapter 1.2.5, is used in Act 1 Scene 3 and Act 2 Scene 10. This layering approach adds information and richness to the existing site and heritage fabric. The African inspiration of emotive and energetic performances, as well as strong and powerful voices, is exemplified in the opera performance at the site, linking the cultural relevance of Indigenous South African theatre with the cultural relevance of the opera and site. The Western Theatre is explored through the use of lighting, projection and construction methods in the sets. This combination of cultural richness gives the performance a unique visual approach, reflecting the diversity of South African society.

### 7.2.3 HERITAGE

Since the selected site is older than 60 years, it is classified under the National Heritage Act as a site at which the heritage must be considered. The site also represents a significant aspect of South African history during the Anglo-Boer war period, further adding cultural and historical significance to the site. Of the three heritage design approaches discussed in Chapter 4.6, the selected heritage design approach is preservation of the existing site. This preservation aims to create an awareness of the site and its unique character, revealing the history and drama of its heritage fabric. The idea of preservation comes firmly into the design through a concept of 'touching lightly', where all set and production structures are temporary in an attempt not to damage the existing site. However, there is an exception to this temporary design nature, as the stairs designed for the site have a permanent and fixed approach. This circulation intervention aims to stop further erosion and degradation of the soil around the fort as well as reducing any future damage to the existing stairs, by avoiding direct foot traffic. It was noted in various visits to the site that the erosion damage from the wet season in early 2017 created a vast amount of damage at the site. The permanent stair intervention aims to minimise the movement of humans over the site and encourage them to rather have minimal contact with the existing fabric, thus promoting less contribution to this erosion. Figure 7.4 and Figure 7.5 show a comparison of the erosion over one year.

Temporary installations are used to enhance the quality of the site and reinforce the performance, by creating a connection between the two. The structures aim to grow from what the site naturally offers. For example, in Act 2 Scene 3, the abstracted tree forms follow the natural contours of the site. Through this design intervention, an emphasis is placed on the sloped quality that the site has to offer. The trees also take inspiration from the existing trees at the site and aim to build the drama of the human-made forest. The existing levels and trees on the site are seen in Chapter 3.5: Site Analysis. In each scene, consideration of how the structures touch the site is a focus - these will be further discussed in each scene's design exploration. The holistic approach of preservation at the site is to add as much as necessary to support the performance and remove as little as possible from the existing site but expose the existing structure – see Chapter 7.3: Design intentions.



Figure 7.4 Photograph of slope August 2016



Figure 7.5 Photograph of slope July 2017



## 7.2.4 SANS 10400

Since the regulations of conventional theatre do not strictly apply to this open-air performance space, the regulations for a construction site and excavation site have been studied. These regulations address issues such as unstable land, barrier-free drop-offs, and safety at a non-structured location. The safety of the audience and actors poses a unique opportunity to incorporate the safety measures with the design of the temporary interventions. These practical elements have been translated into design solutions which can enhance the performance, becoming one with the scene and transitional spaces between performances. The safety precautions and design approach is later explained and graphically represented on a plan – Chapter 7.4.6. The areas of danger were first identified, and then a general design approach was considered for the safety and security of the audience members. The safest approach is to restrict the audience movements around the dangerous zones using a navigated pathway. The audience will be requested not to move beyond this path to avoid danger areas. Lighting will also be used to expose structural areas of danger, showing the beauty in their damage, whilst also warning the audience to be cautious.

## 7.2.5 ELEMENTS OF INTERIOR DESIGN

The identification of interior architectural elements, as explored in Chapter 4.3.1, ensures that the design adheres to principles of interior architecture, since the site has an open-air nature. This aspect is vital in the project to ensure that the focus is kept within the field of interior architecture, (and therefore validate such a project under the research of the degree Professional Masters in Interior Architecture.)

A design focus at each scene will be placed on the created spatial qualities, lighting to enhance the space, and the way in which the audience members interact with the site. A typical interior architecture focus of wayfinding and site navigation has been translated at the site to control the movements of the audience and take them on the progressing narrative of the site and production simultaneously. The Wayfinding is achieved by reflective illumination of the pathways and directions and instructions from the ushers and guides. Furthermore, the scenes will focus on the creation of spatial quality and audience experience to align and channel the design correctly within the field of interior architecture. The identification of the selected elements will form an important part of the development of each scene – seen in the unpacking of each scene throughout this Chapter – as well as bringing the performance, audience experience and site together as a unit.

## 7.2.6 WILLIAM KENTRIDGE

The intention behind the selection of William Kentridge's version of the Magic Flute, was so that the project is not focused on the redesigning of the set, but rather the application of the production into the site-specific location. Therefore, the visual quality and imagery created by Kentridge will form part of the scene development, where the three-dimensional spatial quality - based on the abstraction of the themes and narrative of the production - will be developed as the main design focus. The inspirational work of William Kentridge has stimulated the design development of this project, as the consideration of his model making and rough sketching forms an intricate part of the design approach used in this process. Aspects that have been directly used from Kentridge's performance include his use of light, projection and layering to enhance the audience experience, as well as his adaptation and consideration of the South African relevance of this production.

## 7.3 DESIGN INTENTIONS

The three main design intentions for the project are: a consideration of the environmental effects of the structure and materials used, respect for the heritage fabric, and the use of the Magic Flute as a catalyst to the awareness of the site. Through the use of temporary structures which have little impact on the site, sustainable design methods and renewable materials, a respect of the environmental impact of this project can be achieved. In the 21st century, the conscious understanding of the sustainability of materials and the construction of design is important. For that reason, it is vital to understand the reusability, recyclability and renewability of materials and the environmental impact that the design of this production will have on the site and the environment. The balance and respect of the heritage fabric of the site poses many challenges in the design. Since the production will not add to the future deterioration of the heritage fabric, careful consideration is placed on how the set and structure at the site will be erected. To turn William Kentridge's version of the Magic Flute into a three-dimensional experience, the approach of abstraction of the thematic forms and narrative has been considered. The themes of each scene have been unpacked and explored with regards to a spatial and volumetric design solution. The use of scenography and theatre design will emphasise the beauty of the site to create an awareness of its cultural and historical value.

## 7.3.1 TEMPORARY STRUCTURES AND SUSTAINABILITY

To keep with the 'touch lightly' concept of preservation, temporary, recyclable and reusable structures will be used as the main method of construction. This will inform the design approach and essential aesthetic appeal and spatial quality. Not only will the materials be reusable or recyclable, but the method in which they touch the historic fabric will be temporary and have minimal damage to the structure. The intentions are that whatever created fabric is brought to the site, can be reused and repurposed once the production has finished, thus, ensuring that the maximum consideration for the sustainability of the project is achieved. Preservation extends beyond the physical preservation of the site, but also into the longevity of the environment through the material and future preservation and awareness of the site. A permanent intervention of the stairs and ramp as mentioned in 7.2.3 will further aid in the preservation of the site, minimising human foot traffic over areas of erosion.

## 7.3.2 ABSTRACTION

The visual consideration and three-dimensional development of the intervention are based on the abstraction of the themes and narratives of the Magic Flute. Both the original and Kentridge's version of the production use symbolism and visual imagery to enhance the themes of the performance. However, in translating these ideas, the approach of abstraction allows for a more conceptual approach linking the site closely with the creation of the scenes and their spatial qualities. The visual abstraction will be achieved through the use of illusions – mirrors, reflections, and projection – playing with proportion, colour and movement, and lighting effects. During the unpacking of each scene, these abstractions and thematic developments will be further detailed.

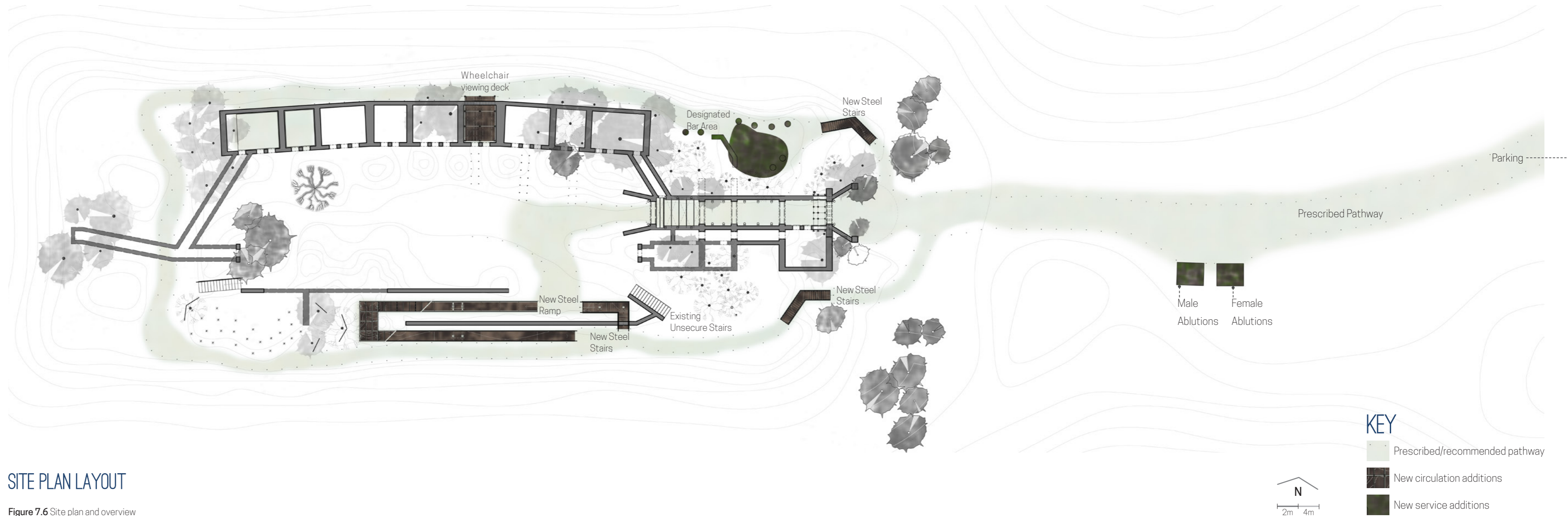


## 7.4 DESIGN EXPLORATIONS

The design approach for this project is twofold. The first aspect of the design focuses on the circulation at the site and the general functioning of the productions. This design focuses on audience safety, navigation, services, ablutions, refreshments and general movements at the site. The second aspect of the design approach focuses on the individual scenes - unpacking and exploring the way in which scenography and The Magic Flute Opera will be viewed by the audience. The design will consider the details of the layering of the design, as well as the methods of construction used in each scene to achieve the experiential outcome.

### 7.4.1 GENERAL PROGRAMMING

A general idea of the site programming gives an overview of the location of services about the architectural structure of the site. Within the general programming graphics, seen in Figure 7.6, ablutions, services, stairs, site approach and designated bar areas have been identified. These design interventions should be temporary. However, they do not form the focus of this project; the design of the scenes is the main development for the design. The stairs form an important part of the audience circulation and therefore in the technical consideration, the design and implementation of the three staircases will be explored in detail.



SITE PLAN LAYOUT

Figure 7.6 Site plan and overview



## 7.4.2 CONCEPT MODEL OF SITE CIRCULATION

For a better understanding of the relationship between the audience, actors and site, concept models have been used to explain the thought process connecting all three visually. These initial concept sketches Figure 7.7 to Figure 7.15, graphically represent the audience's expected movement at the site.

For clarity of the three-dimensional collage the following information is needed: brown card represents the contour at the site, cork represents the other smaller contours around the site, newsprint is a means to communicate the rest of the landscape, light brown paper represents the fort, white pins

represent the audience movements, tracing paper shows the path of cleared movement, and blue string shows the path along which the audience movement will take place.

Figure 7.7 to Figure 7.9 represent a macro view of the fort, with a focus on the road access to the site. Figure 7.10 to Figure 7.12 represent the movement of the audience from the parking bay to the Fort. Figure 7.13 to Figure 7.14 shows the expected and conceptual movement of the audience through

the Fort, taking them on a journey around the site.

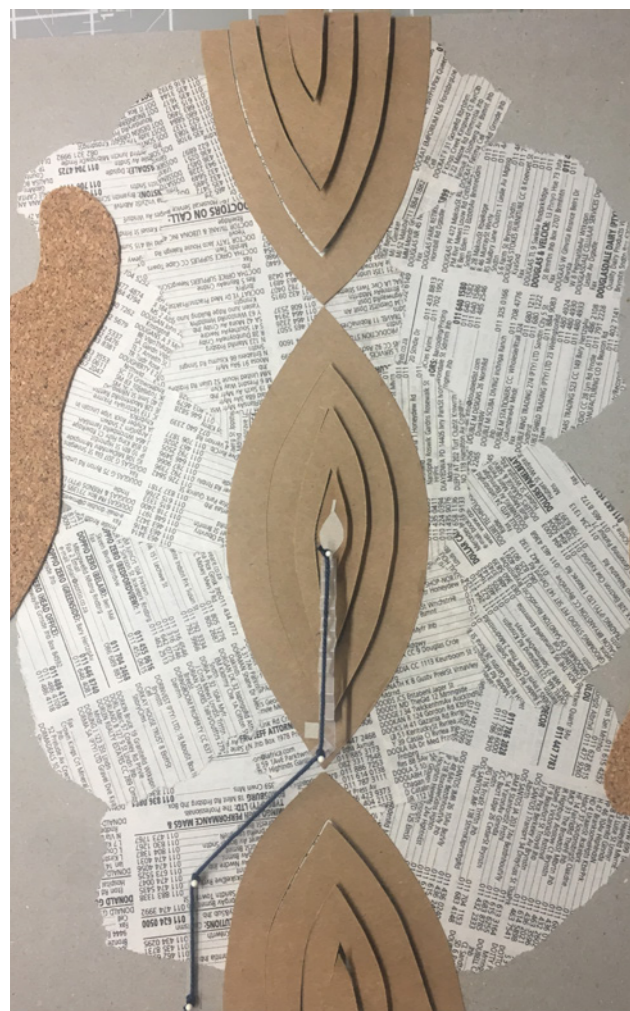


Figure 7.7 Macro illustration of site main access  
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Figure 7.8 View of the audience movement towards the Fort

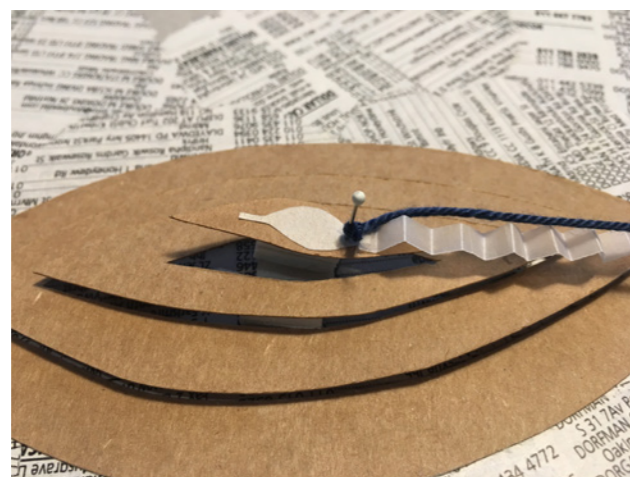


Figure 7.9 Fort location at the top of the contours



Figure 7.10 Pathway leading from parking bay to Fort

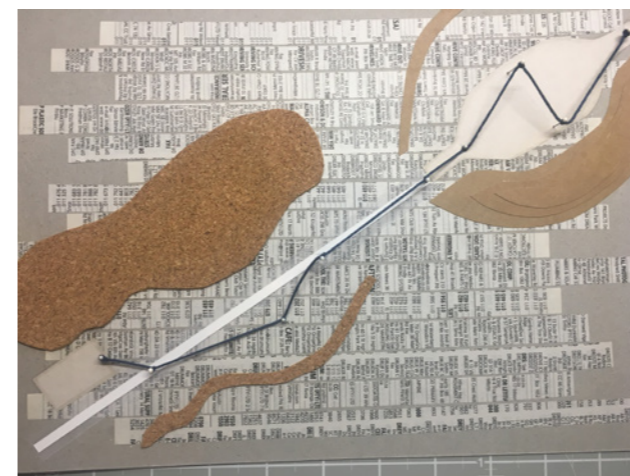


Figure 7.11 Overview of the audience movement on site



Figure 7.12 Blue string shows the height movement of the audience

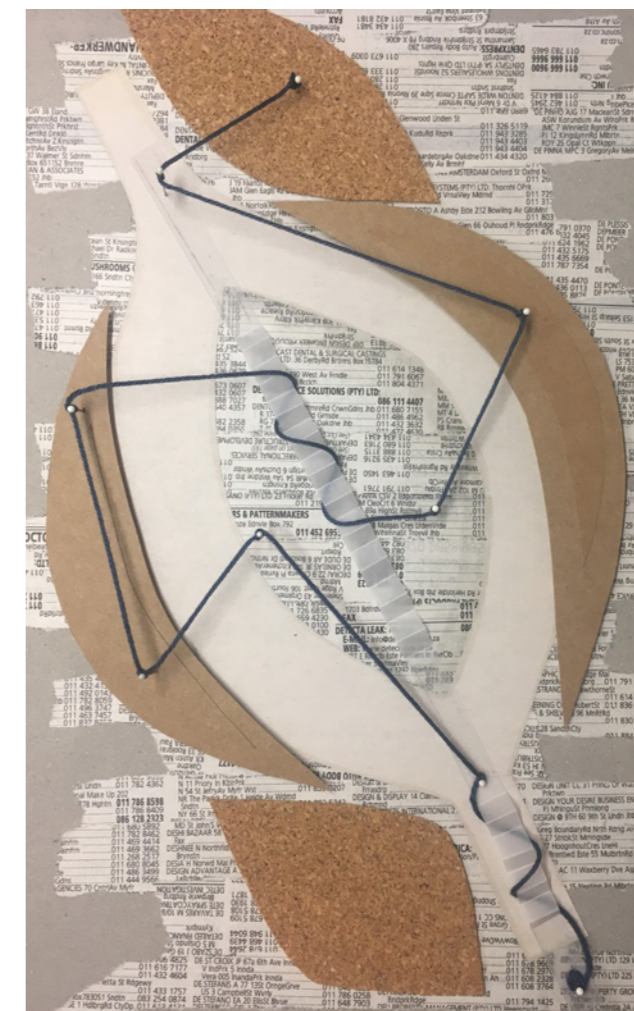


Figure 7.13 Overview of the movement around Fort



Figure 7.14 Conceptual illustration of the audience movement



Figure 7.15 View of expected audience movement







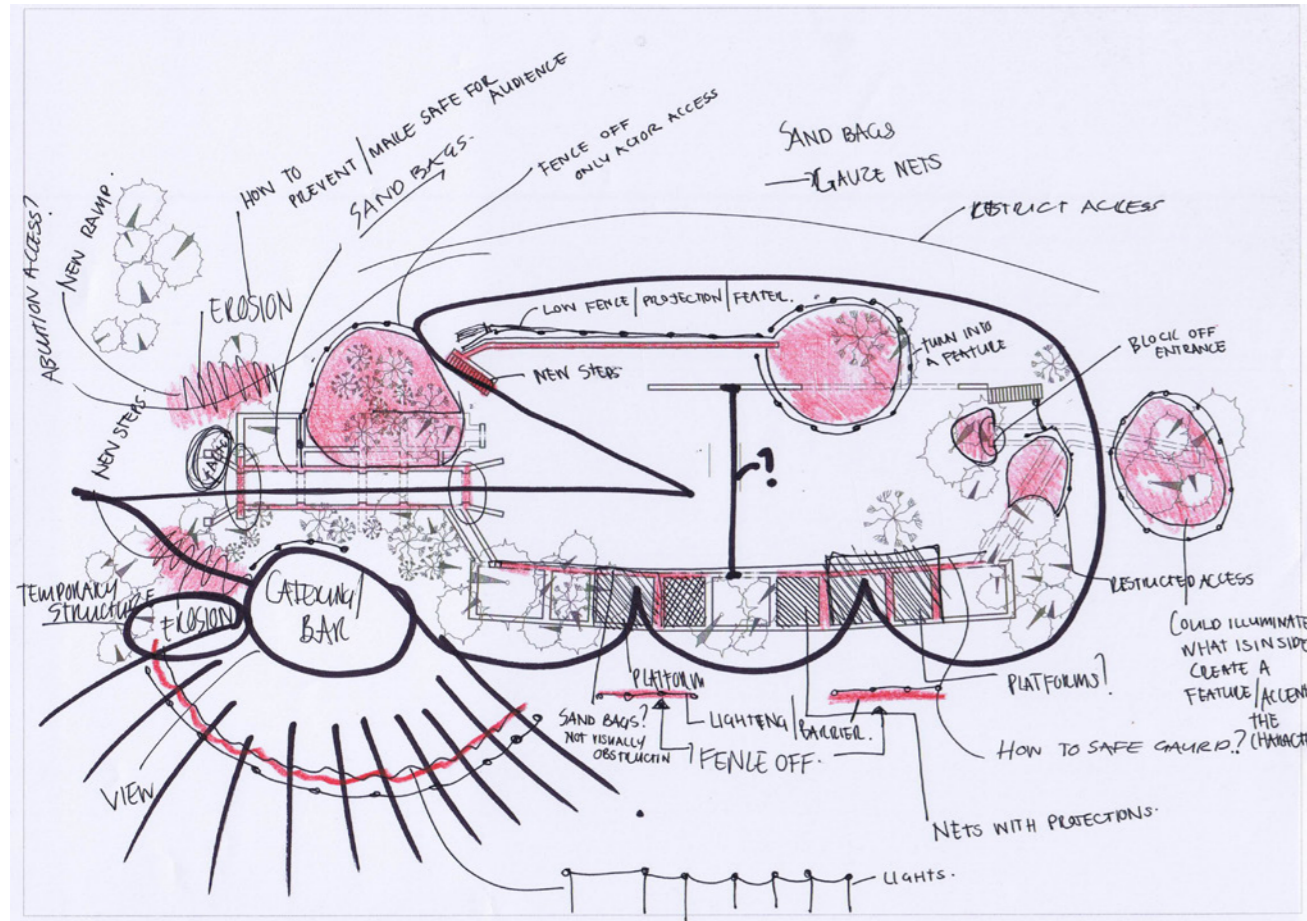


Figure 7.25 Scene location concept sketches

#### 7.4.4 SCENE LOCATION INITIAL CONCEPT

Figure 7.25 and Figure 7.26 explore the initial scene location. The site selection for each scene is linked to the thematic developments of the Magic Flute narrative. The intentions for the scene location is to take the audience on a journey through and around the site, revealing its characters and drama.

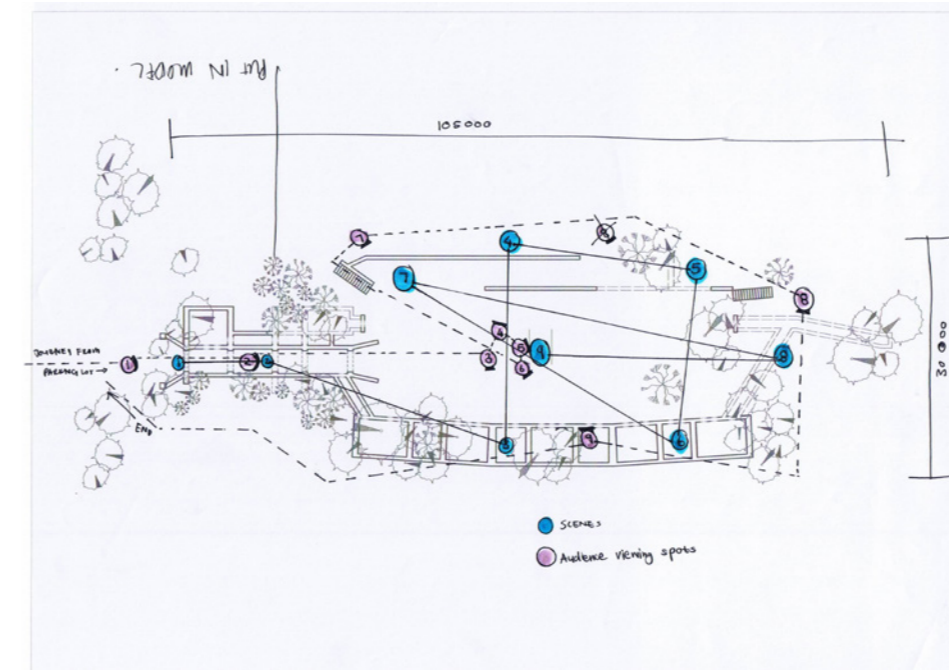
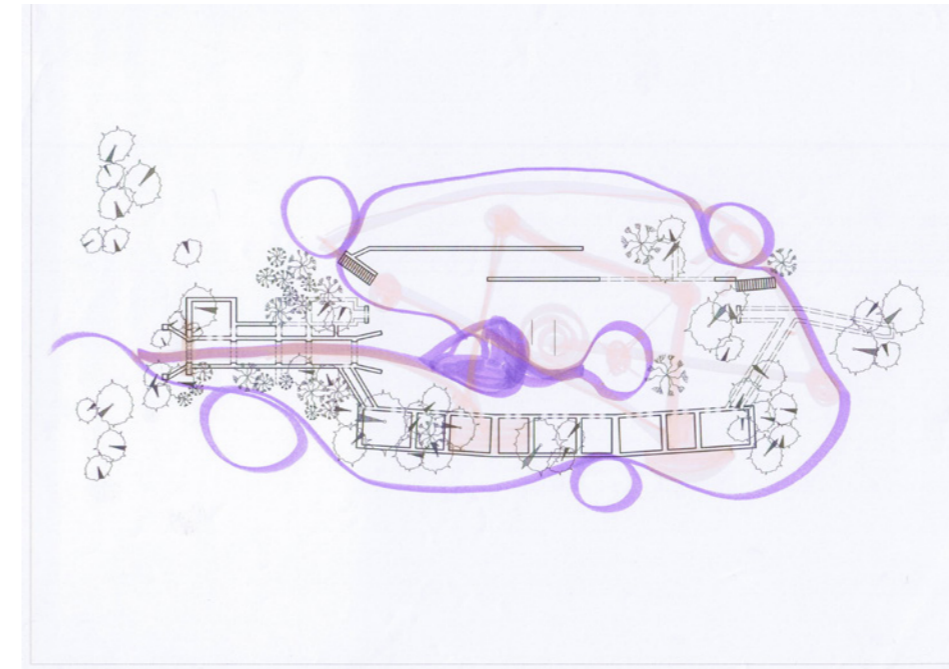
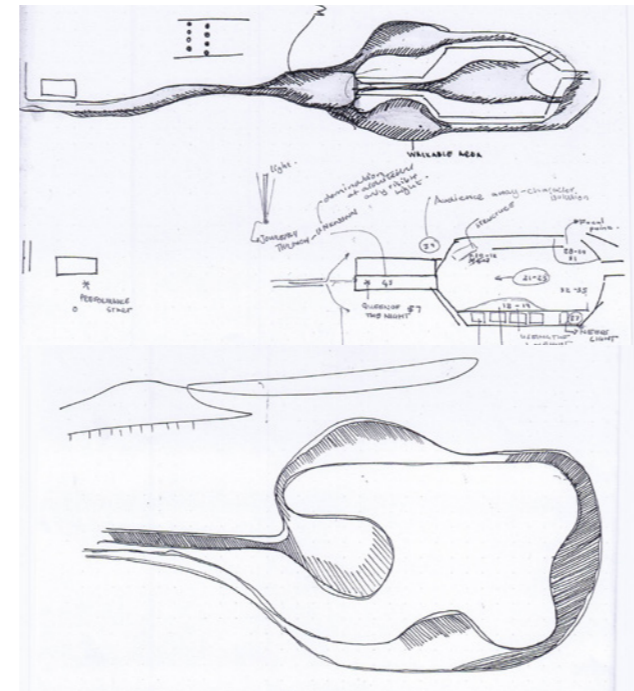
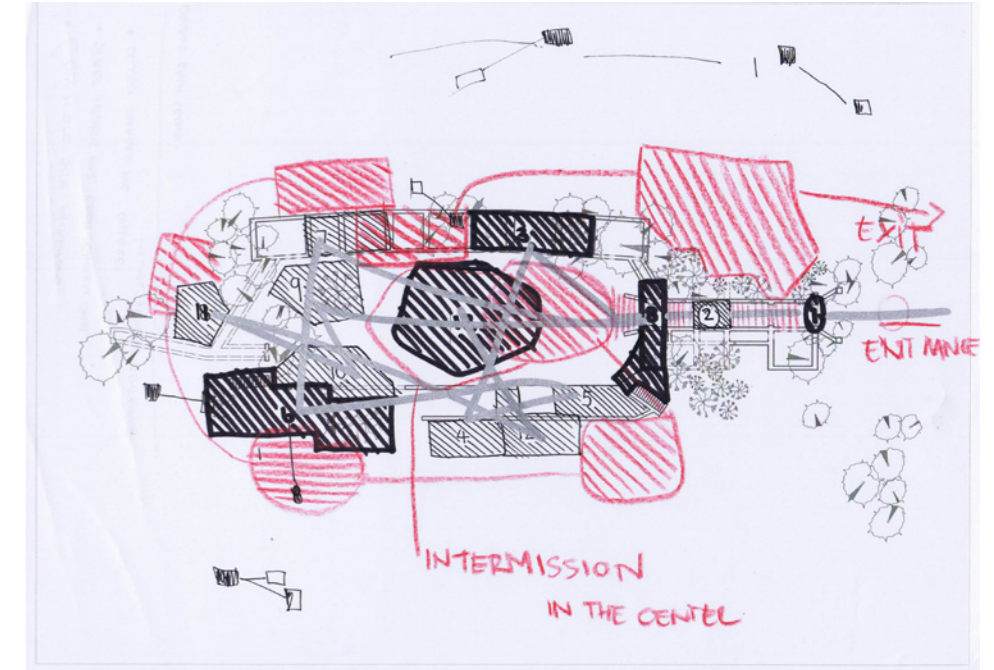
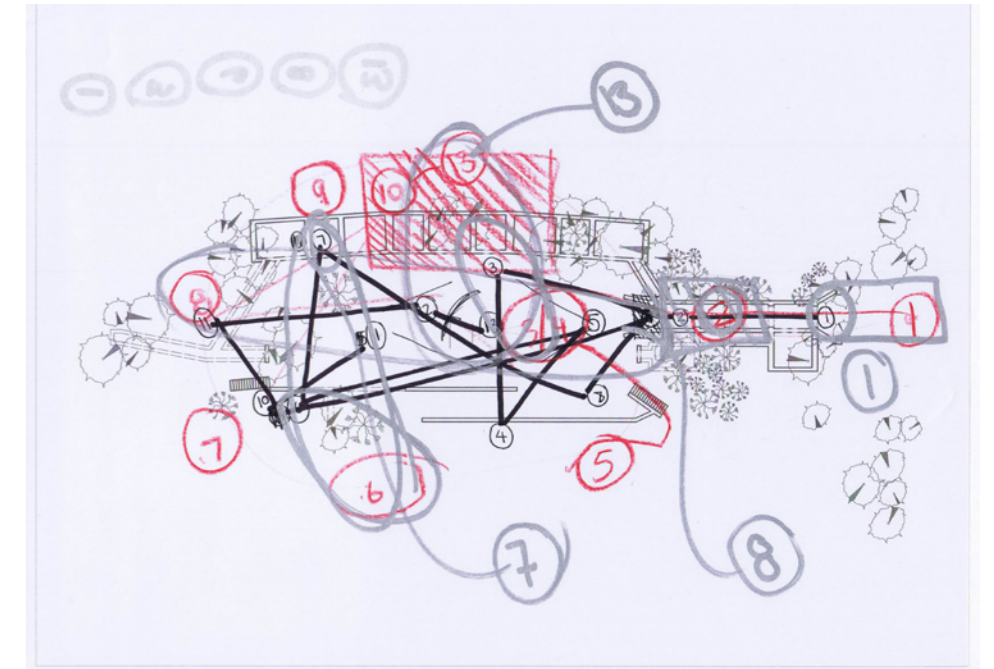


Figure 7.26 Scene location concept ideas





## 7.45 SCENE LOCATION

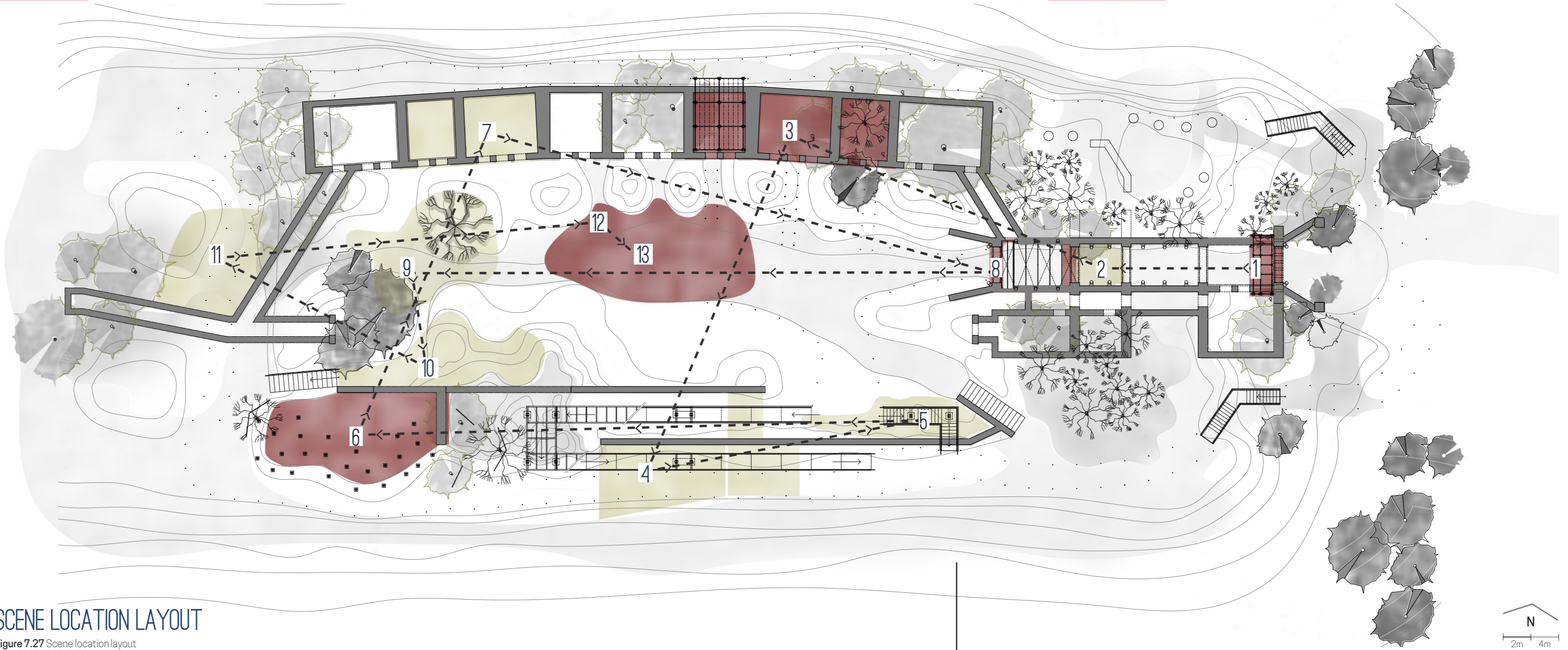
Although not all the scenes of The Magic Flute have been fully designed in this project, their location around the site and the movement of the actors is important. Figure 7.27 shows a graphic representation of the site and the location of the 13 scenes in the entire performance. The four selected scenes have been depicted in red, while the other remaining scenes are shown in yellow.

### KEY

- Selected Scenes
- Other Scenes
- Scene change order

## SCENE LOCATION LAYOUT

Figure 7.27 Scene location layout





## 7.46 AUDIENCE MOVEMENT

Figure 7.28 shows the audience movement – green – around the site. The intention is to take the audience on a journey of the site, allowing them to explore the various levels of the structure. The concept behind the journey is to combine the narrative of The Magic Flute with the narrative of the site, exposing the drama of the production and historical fabric simultaneously. Figure 7.29 shows the level relationships between the audience and the scene view.

### KEY

- Selected Scenes
- Other Scenes
- Audience pathway
- Audience movement
- Scene visual link
- Audience 50-60 members
- Actors

## AUDIENCE MOVEMENT LAYOUT

Figure 7.28 Audience movement layout

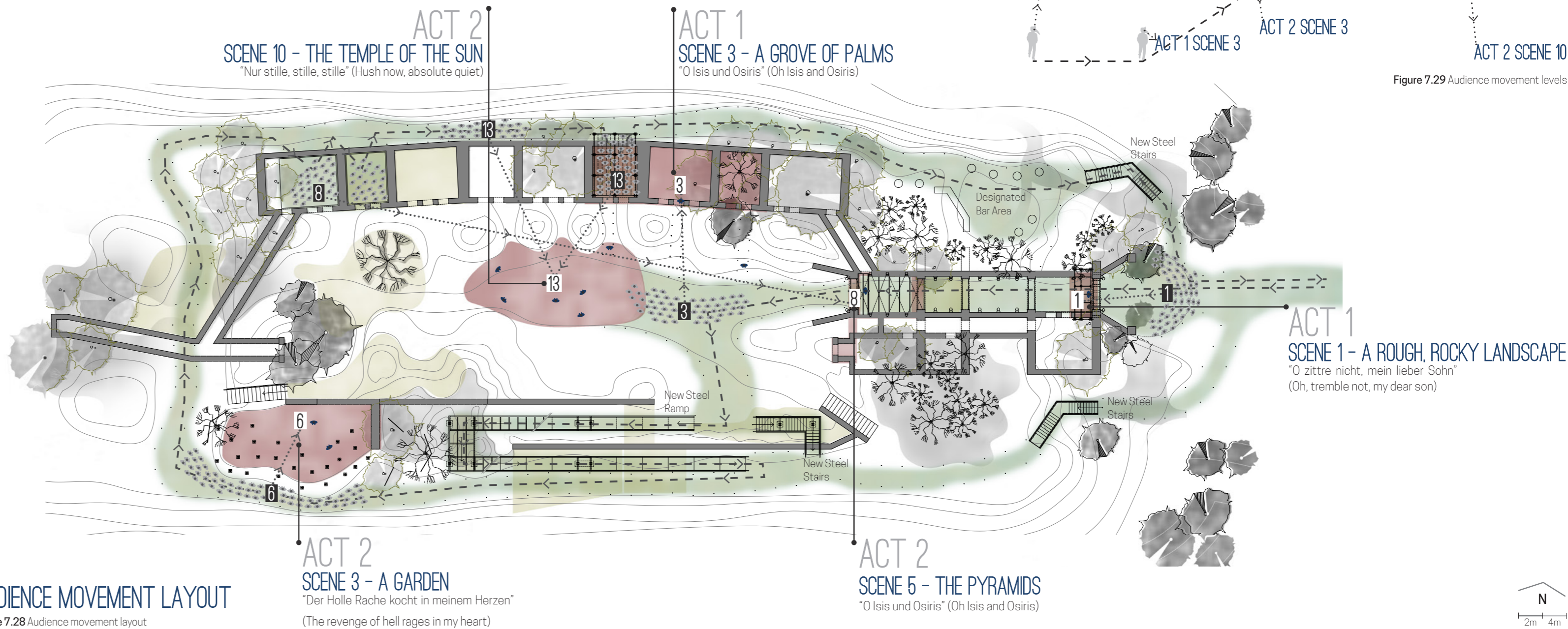


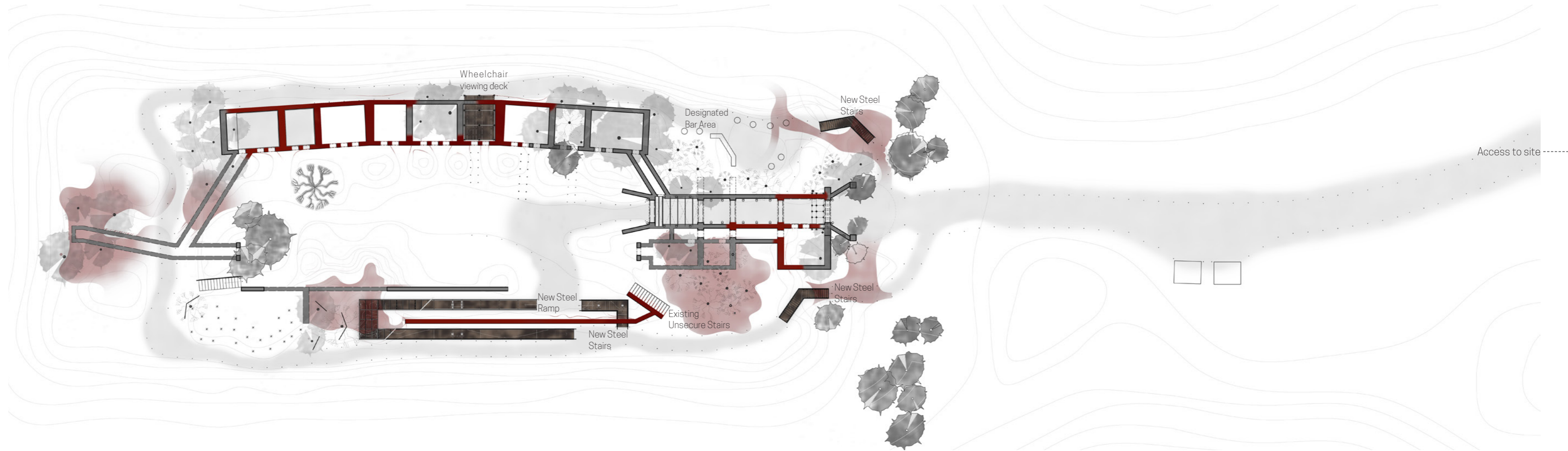
Figure 7.29 Audience movement levels

## 7.4.7 SITE SAFETY HAZARDS

Since the site is a ruin, there are structurally compromised areas, steep un-barricaded high levels, and unstable ground. To ensure the safety of the audience, it is part of the design proposal to incorporate safety measures into the scenes and transitional spaces between scene. Highlighted in Figure 7.30, are the areas of concern identified within site. This graphic shows the dangerously high levels in the existing architectural fabric, unstable ground, boundaries of safe, walkable areas, as well as places deemed safe for the movement of the audience. As a means to restrict the movement of the audience into unsafe areas, reflective illuminated pathways will show the audience which areas are safe. The ushers and guides will also assist the audience in their movement around the site. The audience will be requested not to deviate from the cleared pathways, for their own safety.

### KEY

- Safe walkable area
- Unstable ground
- High, dangerous levels
- New circulation additions



## SAFETY HAZARDS LAYOUT

Figure 7.30 Safety Hazard bird's eye view



## 7.5 GENERAL TECHNICAL CONSIDERATIONS

This section focuses on the general technical development of the project, through a look at circulation, functional services, navigation, disability, energy, lighting, temporary structures, materiality, theatre equipment, set construction, colour in theatre, theatre lighting, theatre equipment, sound, and acoustics

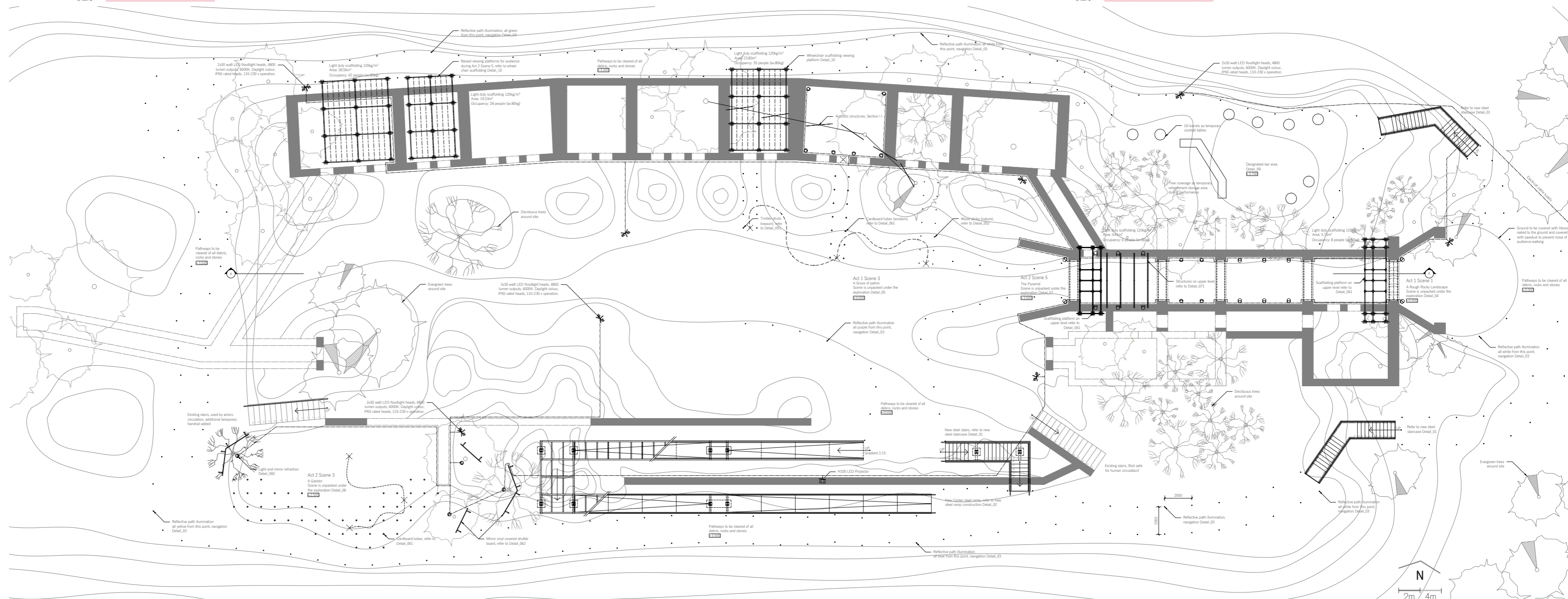


Figure 7.31 Initial proposed plan

## 7.5.1 CIRCULATION

Audience circulation is an important aspect of this design. Since the site is in a state of physical deterioration, a strategy must be put in place to ensure the future preservation of the site. As mentioned in the Heritage Chapter 7.2.3, the erosion over the last year at the site has been significant - this erosion was documented on multiple site visits. Through the photographic evidence recorded, it was found that the cause of the erosion is from grass loss, human foot traffic, and heavy rains. The strategy proposed for the circulation is therefore, to remove the foot traffic over these areas allowing the site to rehabilitate naturally over time. After consideration, it was decided that a permanent intervention for circulation be placed on the site. It was decided that if a temporary intervention is used and then removed after the performance, the returning movement will continue to damage the site further. Three staircases and one ramp are therefore placed on the existing site, as seen in Figure 7.32. The structures touch the site minimally to ensure that the overall design keeps with the concept of heritage fabric preservation. The materiality of the steel stairs and ramp responds to the existing site, ensuring that the structure will weather and change in the same way that the site does. Figure, 7.33 shows the materiality of Corten steel, a structurally intact corroded steel, which will give the new structures a dynamic nature, changing with the progression of time. Ideally the structure will be built one and a half months before the production so that some corrosion and colour change is visible.

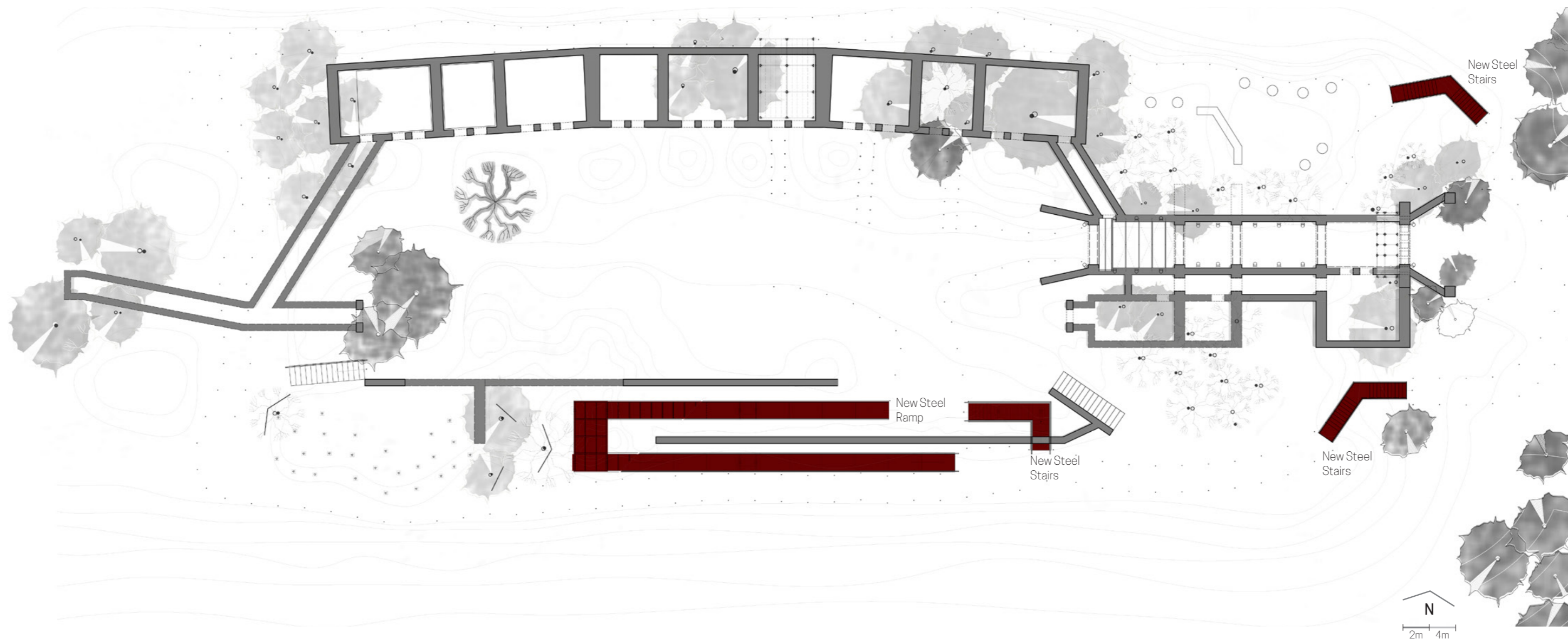


Figure 7.32 Circulation at site

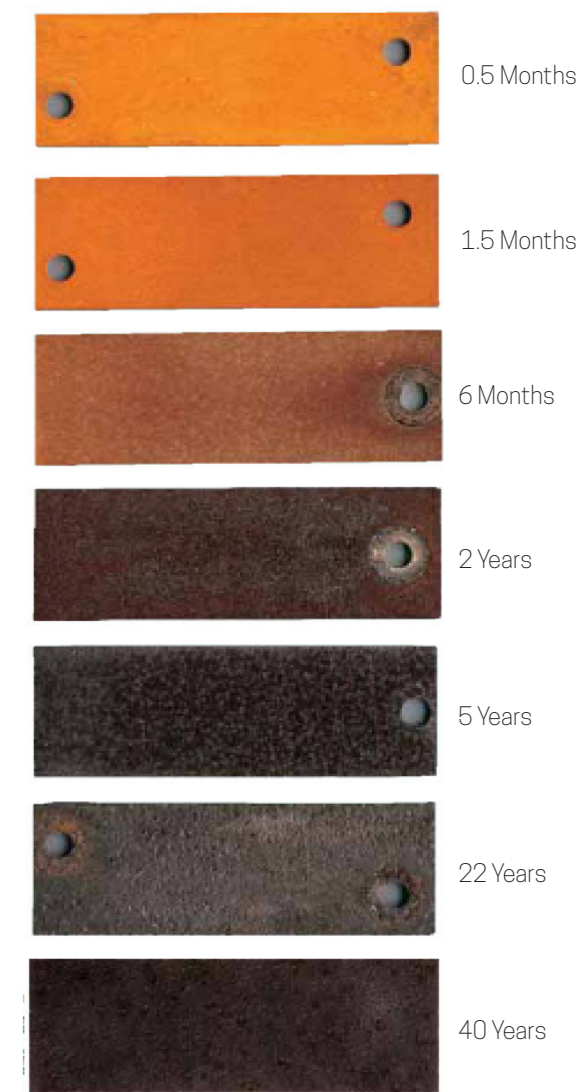
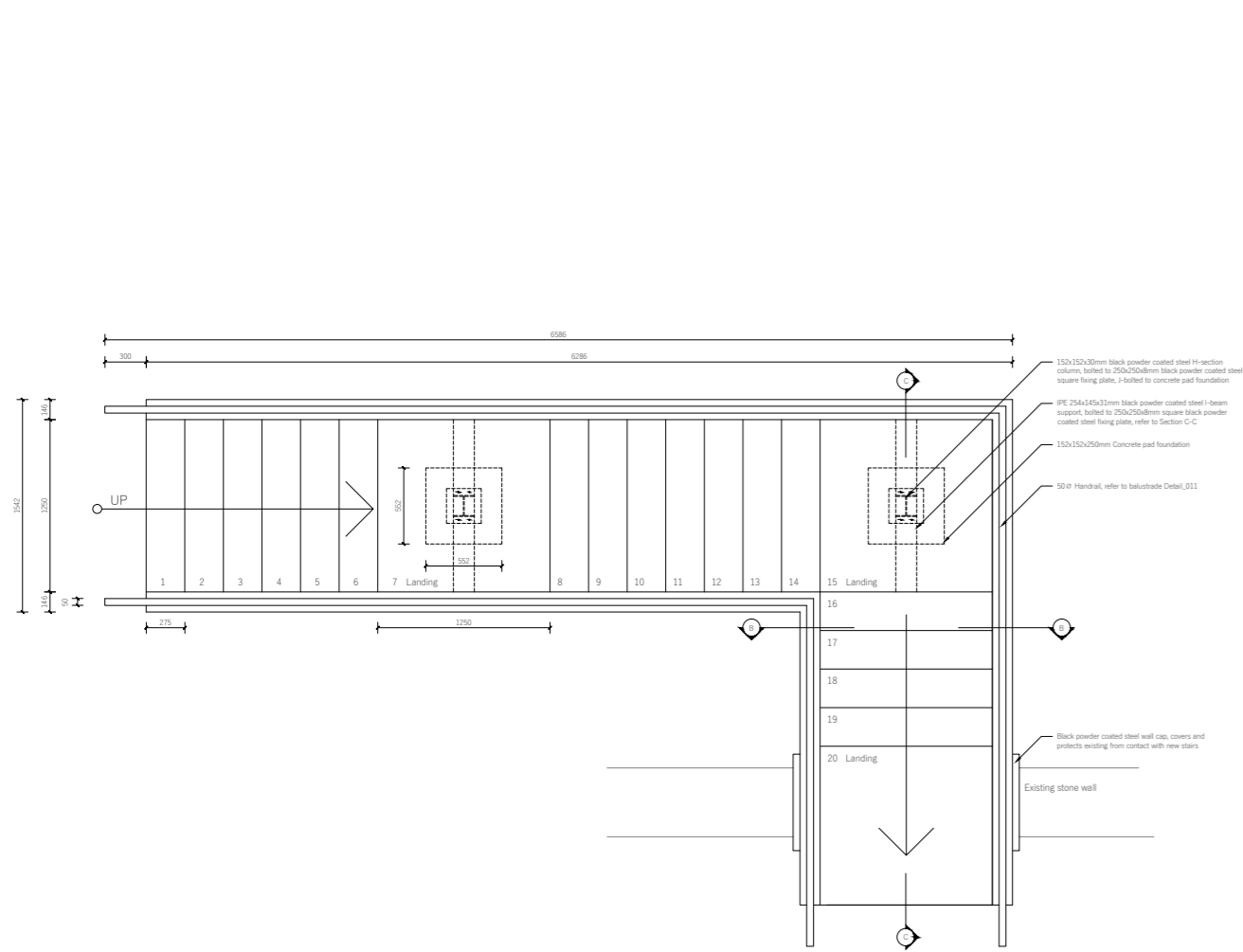


Figure 7.33 Corten steel weathering examples



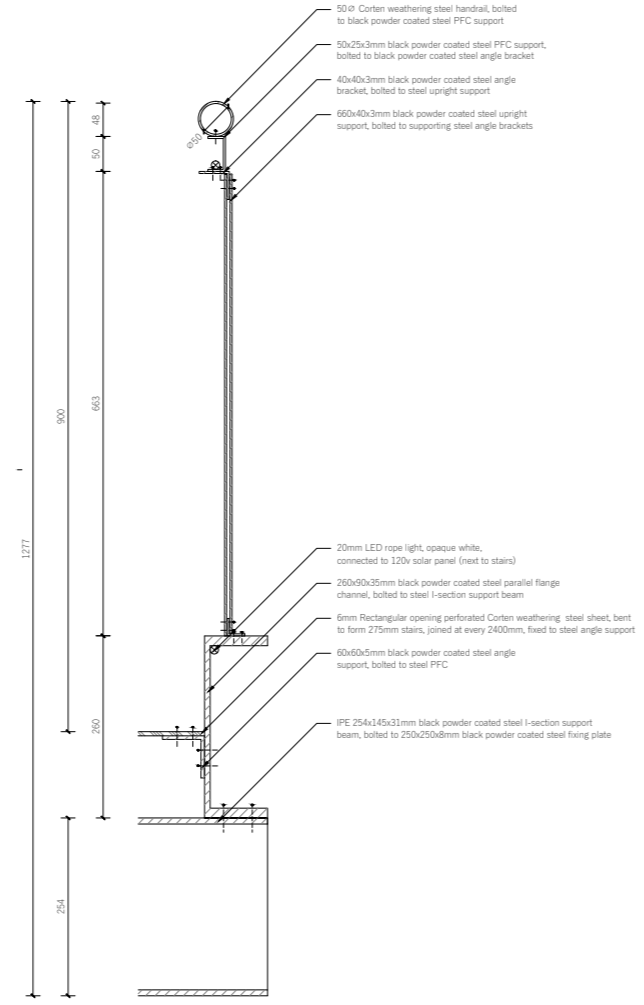






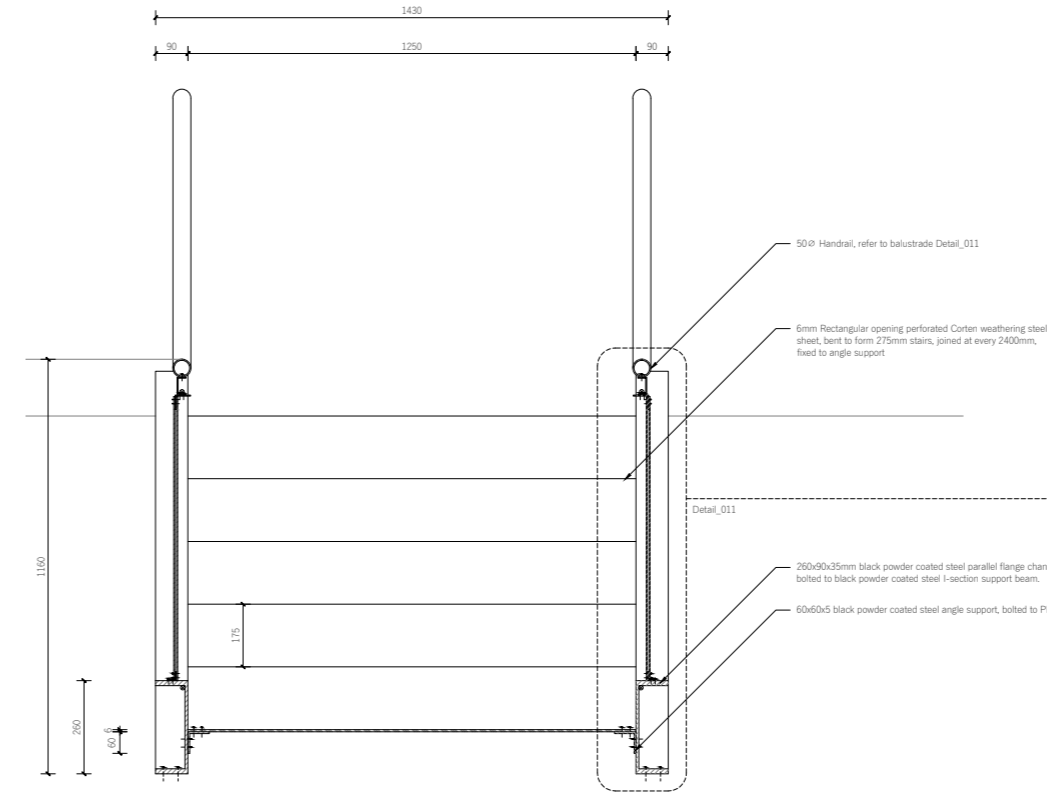
NEW STEEL STAIRCASE PLAN

Figure 7.36 New steel staircase plan



BALUSTRADE DETAIL\_011

Figure 7.37 New steel staircase balustrade



NEW STEEL STAIRCASE SECTION B-B

Figure 7.38 New steel staircase section SB-SB



MATERIAL EXPLORATION STAIRCASE 3D

Figure 7.39 New steel staircase axonometric







## 7.5.2 FUNCTIONAL SERVICES

Services and functional requirements for the project have been addressed with temporary interventions - these details are highlighted in Figure 7.44. Portable ablution blocks will be provided for males and females, including disabled persons. These ablutions will be hired on a temporary basis for the duration of site construction and performance. Figure 7.45 and Figure 7.46 shows the types of ablutions that will be used.

The temporary bar will be constructed from found materials, such as crates, pallets and oil drums. These objects will be repurposed after the performance has commenced. Oil drums will be used as cocktail tables, and plastic drink crates and repurposed timber pallets will be used in the construction of the bar. Figure 7.47 to Figure 7.50 suggest the aesthetic look of the bar. The layout of the bar is defined for this project, however no further design detail will be developed. The bar area will act as a meeting point for the audience members after the production, giving them a view of the city lights from the top of the fort. The bar will be open during the performance and is available for audience members; guides will assist with their navigation. Portable refreshments will be served at an interval-like event during the performance. The location of the bar also allows for storage under the trees to be used. This will keep the mess to a minimum and hidden from the audience's view.

The main storage at the site will be incorporated into the space created under the new ramp. Beneath the large landing in the centre of the ramp there is a void, which can be temporarily closed up to create a secure storage area. Prop storage and backstage areas have been included into the design of each

scene, ensuring that the actors do not have to travel far to retrieve props needed for the scenes. As the actors do not have clothing changes, they will not require a dressing room during the performance. However, an allocated area will be provided for the inactive actors. This area will, however, be a temporary structure which is retrieved from the storage space.

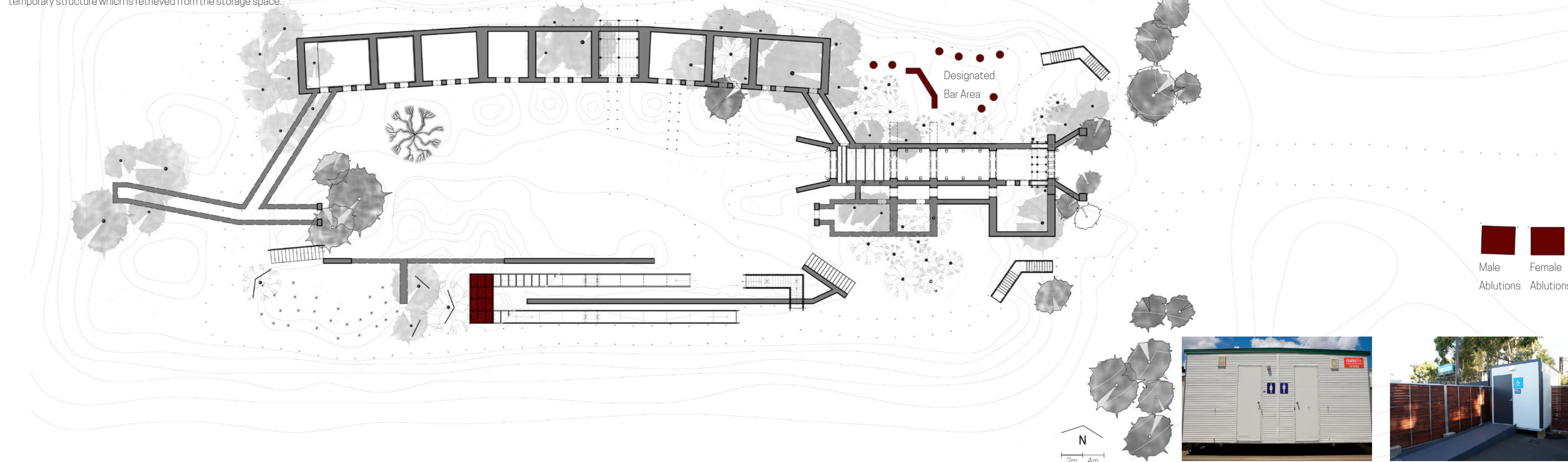


Figure 7.44 Functional services plan



Figure 7.47 Repurposed timber pallet bar



Figure 7.48 Pop up bar installation

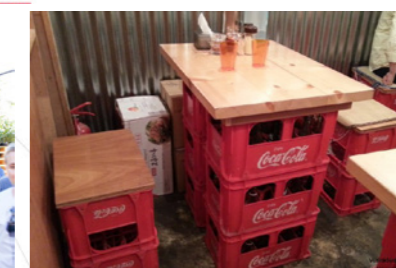


Figure 7.49 Coca-Cola crates table and chairs



Figure 7.50 Oil drum table

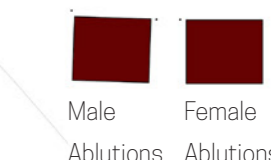


Figure 7.45 Portable ablution block



Figure 7.46 Portable disabled ablution block



## 7.5.3 DISABILITY CONSIDERATIONS

The inclusive design for this immersive experience has been taken into careful consideration. A viewing platform and disabled ablutions have been allocated for audience members who utilise a wheelchair. The disabled audience members who need to use a wheelchair will be requested to meet at the site earlier than the other audience members. The reason for this is that they will have an opportunity to visually explore the scenes of the performance before it begins, and after which take their place on the viewing platform. The location of the ramp in the interior of the fort will allow the disabled audience members to take the same journey that the other audience members will take during the performance. A guide will be allocated to each disabled audience member and assist them in any way needed during the production. Figure 7.51 shows the path which the disabled audience members will take. Audience members with significant visual impairment will be requested to arrive at the site before the production starts, and they will give a verbal guided tour of the scenes. The visually impaired will be assigned a guide who will assist them throughout the production, reminding them of the scenes that were explored earlier in the evening. This ensures that all members of the audience will have a similar experience. Auditory impaired audience members will be welcomed to partake in the visual experience of the performance. They will be requested to bring an interpreter who will assist in the verbal communications, or they can request that an interpreter guide is supplied. The production of the Magic Flute is presented in a three-dimensional exploratory form. The lighting effects and projections enhance the narrative, making this performance easier for the auditory impaired audience members to enjoy.

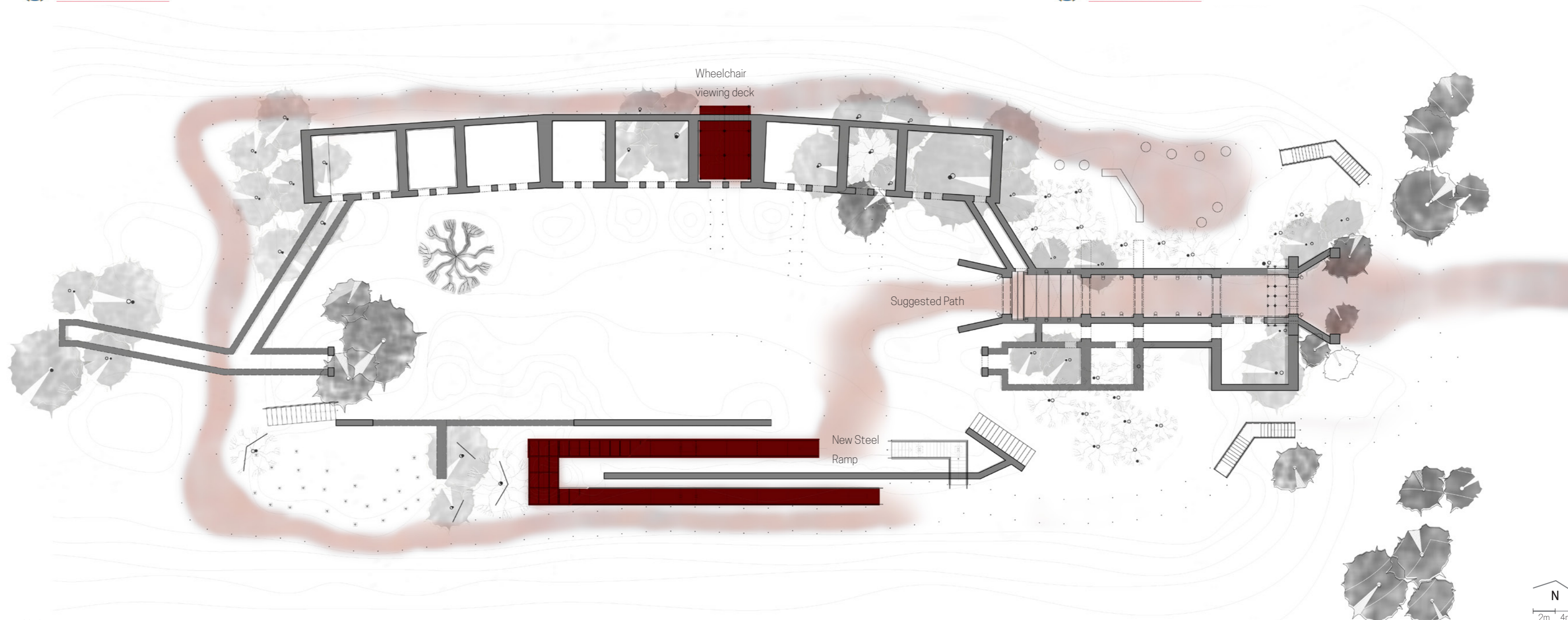


Figure 7.51 Disabled access







## 7.5.4 NAVIGATION OF SITE

The audience movement and navigation at the site is vital to the success of the production. The site-specific production aims to take the audience on a journey of the site, as they follow the narrative from scene to scene, shown in Figure 7.58. Due to the deterioration and dangers at the site – as identified in Chapter 7.4.6 - the audience's movements around the site needs to be designed and controlled. The addition of a navigation system aims to control the movement of the audience, directing them to the site and keeping them away from the danger areas. Initially, the idea was to use solar jars to provide light over the pathway. However, the cost of the jars and the risk of theft defined that all the jars would have to be removed every night and put out every day. It was decided that this would be an uneconomical choice. The second

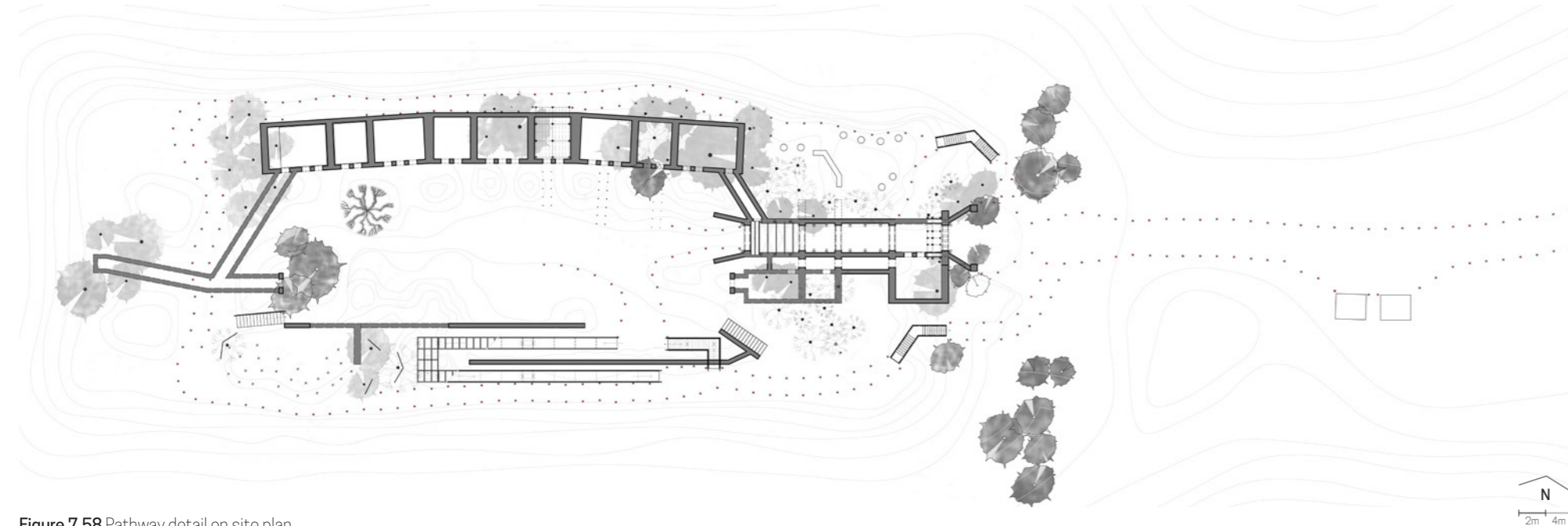
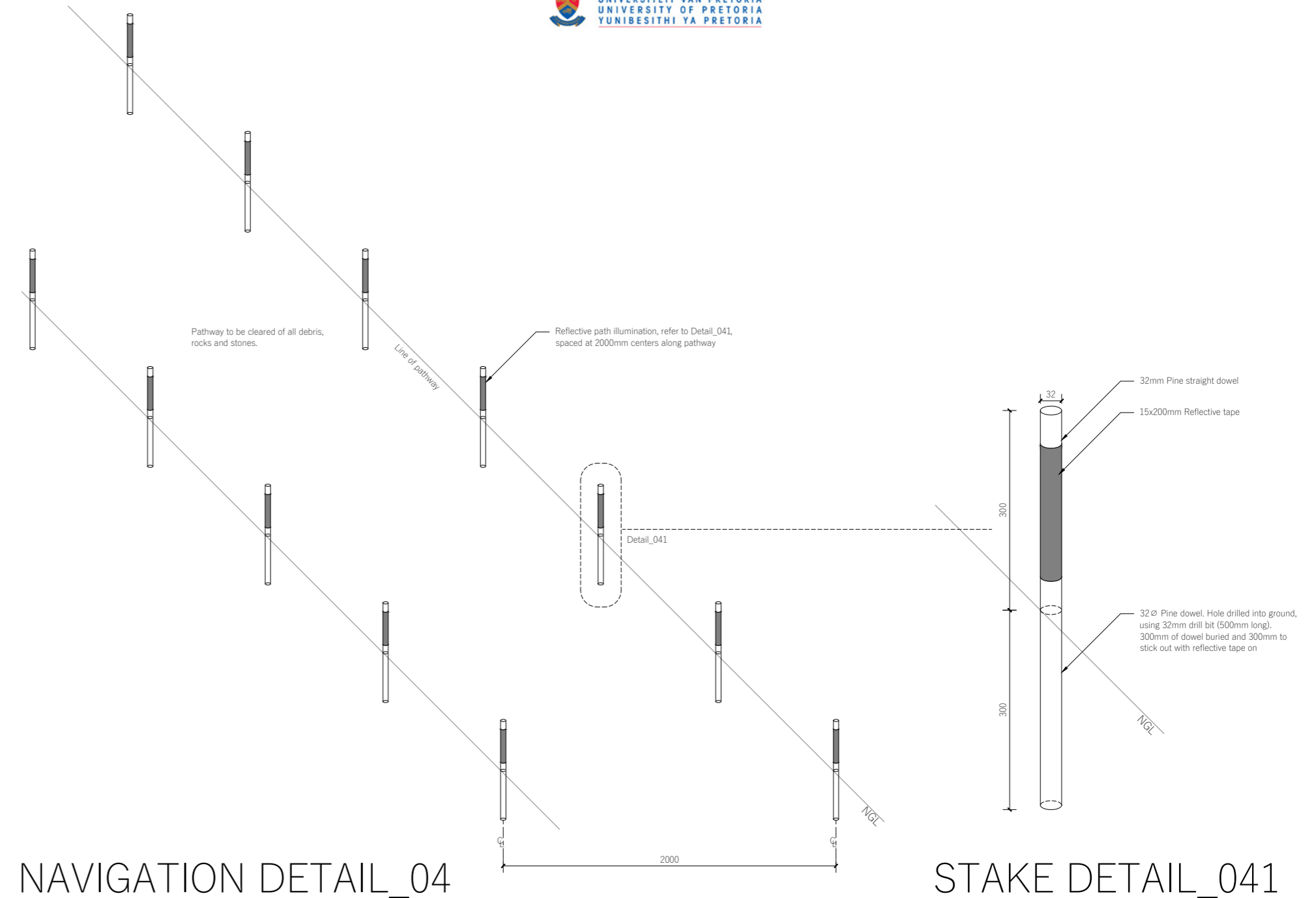


Figure 7.58 Pathway detail on site plan

challenge was that if the path were lit up constantly during the performance, it would detract from the lighting effects of each scene. The solution to this problem was to use timber stakes, Figure 7.59, 38mm x 38mm x 600mm knocked into the ground and covered with different coloured reflective tape. This extra layer of information means that different colours can be used for different directions of navigation. All reflective stakes moving away from the scenes will illuminate in red, showing caution that the audience is moving in the wrong direction. The stakes leading towards the scene along the path will be covered in a reflective colour which reflects the thematic development and transition between the scenes. Since the reflective tape responds to light, two suggestions for their use are proposed. Firstly, the use of ushers or guides who will assist the audience by illuminating the pathway with a torch, and secondly to request that the audience download a phone light

management application. The application will automatically turn on and off the audience's phone lights as they are needed between scenes and during the scene. The control of the light is important, as ambient and uncontrolled light will detract from the light effects in the scenes. The application will allow for all lighting to be controlled and manipulated.

The timber stakes are placed along safe, cleared and walkable areas of the site at 2000mm intervals, the pathway also measures 2000mm wide. The colour changes are identified on the plan, Figure 7.58. The audience will be requested not to move beyond the pathway, as these designated areas will be the only ones deemed safe for their movement. The guides will ensure the audience co-operates with this request and assist any persons who would like to use the ablution facilities during the performance.



## NAVIGATION DETAIL\_04

Figure 7.59 Timber stake detail

## STAKE DETAIL\_041



## 7.5.5 ENERGY SUPPLY

The isolation of the site means that there is no municipal connection to electricity. Various means of power were considered and evaluated to ensure the best choice of electricity supply. Stage lighting, projections, general lighting, and speakers are elements which require an energy source. Initially, the use of batteries was proposed as the means of power. The batteries would be placed at each scene – carefully disguised – and the lights, sound, and projectors would be connected to them. After looking at the logistical side of the batteries, it was discovered that they would need to be removed every evening after the production, taken off-site for charging and then replaced the following afternoon before the start of the production. The movement and management of the batteries would create unnecessary work and effort. The basic calculation of five batteries per scene was proposed, making this exercise very costly. Alternatively, the batteries could be charged on-site, using a generator, this would mean that the generator would also need to be provided at the site. The second idea was to bypass the batteries and supply energy using only the generator. Typically, generators produce a large amount of noise, ranging between 72 and 75 dBA at 7m. The ambient noise of the generator against the natural silence at the site would then interfere with the performance. A study into silent generators was then done. Although these generators are more expensive to purchase, they would be more suited to the performance. A silent generator produces between 62 and 66 dBA. Figure 7.60 gives a comparison by the Occupational Safety and Health Administration (D.P Driscoll, 2016) of typical noises produced. It was also proposed that the generator be hired by the theatre company, for the duration

of the production. However, that would amount to the same price as buying the needed equipment. The generator would be located away from the primary areas of the site, ensuring that the reflected sound travels away from the performance areas, see Figure 7.61. Cabling from the generator to each scene will be further explored in the scene unpacking. Exterior cabling and outdoor plugs will be required for the performance.

The option of solar was considered, however, the cost required for portable solar trailers would be too high. On the following page in Figure 7.62, is a comparative table showing the different energy options for the project. In conclusion, the option of a silent generator is best suited for the functions at the site. The most eco-friendly option is an 8kva LPG natural gas generator.

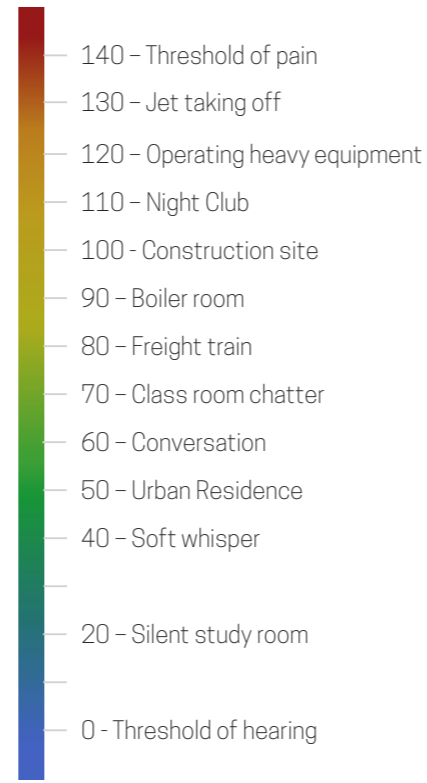


Figure 7.60 Occupational Safety and Health Administration dBA chart

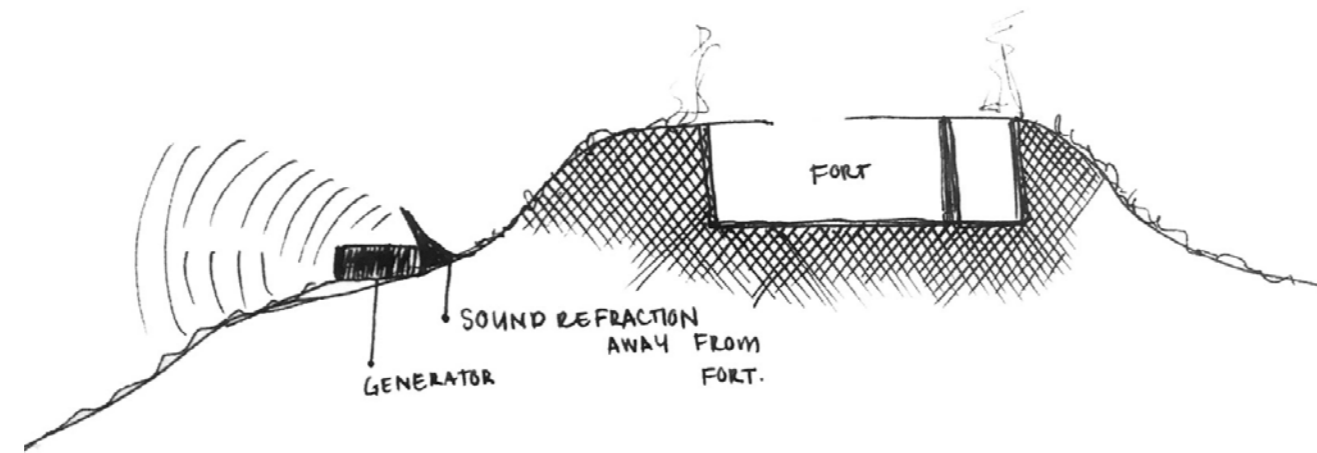


Figure 7.61 Generator sound containment sketch






MODEL	TYPE	KVA	PRICE	DIMENSIONS	WEIGHT	ECO-FRIENDLY	NOISE (DBS)
 Turn1™ 610 Car Battery	Battery	45AH	R19 875 (25)	235mm x 300mm x 220mm	13kg	No – battery	0
 APC Smart-ups Srt (Lead Acid)	Battery	8kva	R13084.00	43.2cm x 68.2cm x 13cm	91kg	No – Lead Acid	0
 BP5000-G Petrol Generator	Generator	5.0 kva	R16 540.00	692mm x 687mm 638mm	81kg	No - Petrol – 27l	75 @ 7m
 BP5S-M Diesel Generator	Generator	5.0 kva	R18 100.00	920mm x 545mm x 650mm	171kg	No - Diesel – 13	72 @ 7m
 BP8S-G Gas Generator	Generator	8.8 kva	R 38 640.00	1218mm x 638mm x 732mm	175.4kg	Yes - LPG natural gas	62 – 66 @ 7m

Figure 7.62 Table comparing energy sources



## 7.5.6 LIGHTING TYPES

There are two main types of lighting used in this project. The first is general lighting for the site, this will be used in the case of an emergency and at the end of the production. The other lighting type is theatre lighting as discussed in 7.5.9.3

### 7.5.6.1 GENERAL LIGHTING

General lighting, Figure 7.63 is needed at the bar, ablutions, entrance and pathway to the parking. The strategy for this lighting will be the use of temporary floodlights, shown in Figure 7.64, to provide enough lighting for general functionality. Since the spaces between each scene do not have a main source of light, a solution for emergencies must be considered. In the event of an emergency, flood lighting placed around the site will be turned on, illuminating the entire fort and allowing the audience to evacuate the space. Towards the end of the performance, these floodlights will be turned on briefly in the final scene. This will be the first time at the audience see the entire site. This brief experience intends to create intrigue, and attract the audience to the site once the production time has passed. The following energy calculations show the required amount of energy needed for the production. The 8kva generator will produce more than enough energy for the requirements.

According to Architective (2013:376), the typical theatre requires 100 Lux of light on stairs, corridors, and audience movement areas. Lux refers to the amount of lumen per square meter. The total area of audience movement is approximately 250m<sup>2</sup>, therefore approximately 25000 lumens are needed

in the general areas of the site. Since the performance requires darkness, these lights will act as a backup for emergencies and the brief illumination at the end of the performance. Six floodlights have been placed in the interior of the fort, and three at the path from the fort to the parking. This provides substantial light for the audience's movement.

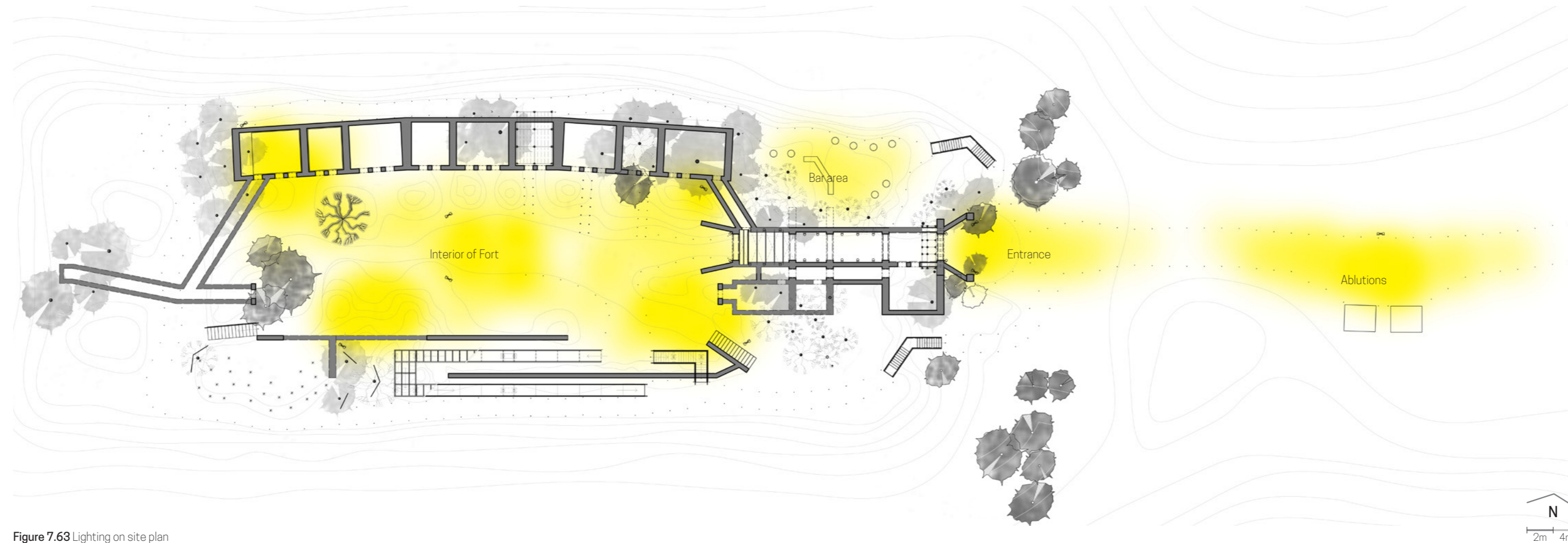


Figure 7.63 Lighting on site plan

### Energy Calculations

Lux = Lumens ÷ Area of the site

Therefore,

Lumens (required) = Lux x Area

Lumens = 100Lux x 250m<sup>2</sup>

Lumens = 25000

Lighting for emergency at site = 25000 lumens ÷ 4800 (floodlight)

= 5.2 floodlights are needed ~ 6 floodlights



2x30 watt LED floodlight heads, 4800 lumen outputs, 6000K daylight colour, IP65 rated heads, 110-230 v operation.

Figure 7.64 Floodlight





Figure 7.65 Shigeru Ban cardboard tube bridge  
0152



Figure 7.66 Stair structure of bridge



Figure 7.67 Context of bridge over water



Figure 7.68 Steel modular joint system

## 7.5.7 TEMPORARY STRUCTURES PRECEDENTS

Temporary structure inspiration was taken from a collection of various precedent imagery which helped inform the material choices for the project. Since the focus of the project is on temporary design; lightweight materials, local resources, and available and regenerative materials were considered. Chapter 7.5.8 takes a further look at the materials and how the choice of materials to use was made. Figure 7.65 to Figure 7.68 looks at a bridge design by Shigeru Ban. The bridge is constructed from cardboard tubes and a modular steel joint system. The boundary of the material's tensile strength is challenged, and the structure defies the expected. Figure 7.69 to Figure 7.75 explores the use of simplistic timber structures, in an attempt to create temporary designs. Figure 7.73 depicts the use of lightweight fabric as a medium of construction. All the above materials and structures are used and built with the intention of being temporary. The set design of the scenes has taken inspiration from these structures and utilises their aesthetic qualities to enhance the production.



Figure 7.69 Steel roof structure over path



Figure 7.70 Repetition of timber structure



Figure 7.71 Lightweight fabric and timber



Figure 7.72 Timber and fabric structure



Figure 7.73 Lightweight Structure



Figure 7.74 Bamboo structure



Figure 7.75 Nature build structure





Figure 7.76 Domestic materials  
0154



Figure 7.77 Domestic materials application  
© University of Pretoria

## 7.5.8 MATERIALITY

The materiality choices reflect the temporary design focus of this project. The intention is to use materials that can either be reused, repurposed or recycled after the production. Initially, a list of domestic, construction, organic material and waste were evaluated. Appendix B, page 258 shows a material audit which takes a look at the qualities, characteristics, costs, availability, recyclability and more. After all the materials were identified, a further in-depth look was placed on the limits of the domestic and organic materials. Figure 7.76, a collage shows domestic materials which can be recycled, re-used and re-purposed. The organic materials, Figure 7.77, most of which are found at the site, would be used in conjunction with the domestic waste. A further exploration of material selection can be found under each scene development, where the materials were critically selected to enhance the themes of the narrative.

This project does not strictly align its self with the GBCSA Greenstar rating, SBAT or LEED, however, efforts have been taken to ensure that the designs and additions to the site are respectful of the environment and the heritage significance of the site. For the brief requirements, a Greenstar report has been produced to evaluate the project. The criteria focus is on the materiality of the design, energy use, and design for disassembly. As mentioned above the materials selected have been chosen for their reusability and their ensured afterlife. Therefore, just as the intention of the project is focused on preservation, the choice of materials consider the ecological preservation impact it will have. The chosen energy generator uses natural gas, a more sustainable and eco-friendly alternative to petrol or diesel. Design for disassembly links closely with the choice of materials, to ensuring that the materials can be fully reused. The design considers how every element will be constructed and deconstructed for reuse purposes. Figure 7.78 shows the report generated from the Greenstar assessment.

Credit	Credit Name	Aim of Credit	Points Available	Points Targeted
<b>Management Category</b>				
Int-Man-1	Green Star SA Accredited Professional	To encourage and recognise the engagement of professionals who can assist the project team with the integration of Green Star SA aims and processes throughout all stages of a floor's design and construction phases.	1	1
Int-Man-2	Commissioning & Tuning	To recognise effective commissioning and tuning processes during a project's design and construction phase that ensure all services and installations can operate to their optimal design potential.	2	2
Int-Man-3	Occupant Users' Guide	To encourage and recognise the provision of information to fitout owners and users that helps them understand a project's systems, environmental attributes, and maintenance requirements.	1	1
Int-Man-4	Environmental Management	To encourage and recognise the adoption of a formal environmental management system in line with established guidelines during construction.	1.5	1.5
Int-Man-5	Construction Waste Management	To encourage and recognise management practices that minimise the amount of demolition and construction waste going to disposal.	2	2
Int-Man-6	Work space efficiency	To recognise the design of workspaces that provide spatial efficiency and improve productivity and occupant performance.	2	n/a
Int-Man-7	Green Lease	To recognise and encourage collaboration between the building owner and tenants in order to manage and operate the building along environmentally sustainable principles whilst realising mutual benefit.	2	n/a
Int-Man-8	Learning Resources	To encourage and recognise sustainability initiatives implemented in the development as learning resources for building users and visitors.	1	1
<b>Management credits</b>			<b>12.5</b>	<b>8.5</b>
<b>Indoor Environmental Quality Category</b>				
Int-IEQ-1	Quality of Internal Air	To encourage and recognise projects that provide high quality air to occupants.	4	n/a
Int-IEQ-2	Thermal Comfort	To encourage and recognise fitouts that achieve a high level of thermal comfort.	2	n/a
Int-IEQ-3	Lighting Comfort	To encourage, recognise and reward well-lit spaces that provide appropriate levels of lighting comfort to occupants.	3	2
Int-IEQ-4	Visual Comfort	To recognise the delivery of well daylight spaces that provide high levels of visual comfort and views to fit-out occupants.	3	n/a
Int-IEQ-5	Acoustic Quality	To encourage and recognise buildings that are designed to provide appropriate acoustic qualities to enable the functionality of the space.	2	2
Int-IEQ-6	Reduced Exposure to Air Pollutants	To recognise projects that safeguard occupant health through the reduction in internal air pollutant levels.	5	3
Int-IEQ-7	Mould Prevention	To encourage and recognise the design of services that eliminates the risk of mould growth and its associated detrimental impact on occupant health.	0.5	n/a
Int-IEQ-8	Ergonomics	To recognise the choice of equipment and design of spaces that promotes wellbeing, efficiency and effectiveness.	2	n/a
Int-IEQ-9	Indoor Plants	To encourage and recognise the installation of indoor plants that improve indoor environment quality and also provides occupants with a connection to nature.	1.5	n/a
<b>Indoor Environmental Quality credits</b>			<b>23</b>	<b>7</b>
<b>Energy Category</b>				
Int-Ene-1	Greenhouse Gas Emissions	To encourage and recognise projects that minimise the greenhouse gas emissions associated with tenant fit-outs.	12	8
Int-Ene-2	Electrical Sub-metering	To encourage and recognise the installation of electrical energy sub-metering to facilitate on-going management of electrical energy consumption.	2	1
<b>Energy credits</b>			<b>14</b>	<b>9</b>
<b>Transport Category</b>				
Int-Tra-1	Commuting Mass Transport	To encourage and recognise developments that select a site near public transport and facilitate the use of mass transport.	1	1
Int-Tra-2	Local connectivity	To encourage and recognise projects that are located within walking distance of high quality amenities such as shops and parks, thus reducing private vehicle use and the associated negative environmental impacts.	1	0
Int-Tra-3	Alternative Transport	To encourage and recognise projects that promote and facilitate the use of alternative modes of transport over the use of private cars.	2	2
<b>Transport credits</b>			<b>4</b>	<b>3</b>

Water Category		Points Available	Points Targeted
Int-Wat-1	Potable Water	6	4
Int-Wat-2	Water Sub-metering	2	0
<b>Water credits</b>		<b>8</b>	<b>4</b>
<b>Materials Category</b>			
Int-Mat-1	Operational Waste Management	2	2
Int-Mat-2	Furniture	8	6
Int-Mat-3	Assemblies	8	6
Int-Mat-4	Flooring	6	0
Int-Mat-5	Wall coverings	3	0
Int-Mat-6	Local Sourcing	2	2
Int-Mat-7	Sundries Materials Sourcing	1	1
<b>Materials credits</b>		<b>30</b>	<b>17</b>
<b>Land Use and Ecology Category</b>			
Int-Eco-1	Site selection	4	4
<b>Land Use and Ecology credits</b>		<b>4</b>	<b>4</b>
<b>Emissions Category</b>			
Int-Emi-1	Impacts from refrigerants and insulants	3	1
Int-Emi-2	Light Pollution	1.5	1
<b>Emissions credits</b>		<b>4.5</b>	<b>2</b>
<b>Innovation Category</b>			
Int-Inn-1	Innovative Strategies & Technologies		
Int-Inn-2	Exceeding Green Star SA Benchmarks		
Int-Inn-3	Environmental Design Initiatives		
<b>Innovation credits</b>		<b>10</b>	<b>0</b>
<b>TOTAL POINTS AVAILABLE</b>		<b>100</b>	<b>54.5</b>

Figure 7.78 Greenstar rating summary



## 7.5.9 THEATRE EQUIPMENT

It is proposed that this performance be produced by a theatre company, which has access to the equipment needed for a theatre production. The existing theatre equipment such as lighting, projectors, cables, scaffolding, platforms, basic set design, and props will be utilised from the theatre. All additional equipment will need to be hired.

### 7.5.9.1 THEATRE SET CONSTRUCTION

Scenery and set design forms an important part of the narrative, however these decorative and functional objects need to be constructed with care and consideration. “First, it must be portable and lightweight in structure so as to move easily on the stage and from theatre to theatre; second, scenery has to be able to assume large-scale proportion for either decorative or masking reasons, therefore large areas of scenery must be furnished with a minimum of structure and maximum of portability; last, because scenery is here today and gone tomorrow, it must be economical.” (W. Oren Parker and Harvey K. Smith 1979:191). The intention of this project is to maximise on the above-mentioned qualities to ensure that the structures are economical, environmentally friendly and sensitive to the site. Scenery is divided into two groups: two-dimensional scenery, and three-dimensional scenery. These categories are then further divided: two-dimensional scenery into framed and soft scenery, and three-dimensional scenery into weight-bearing and non-weight-bearing scenery.

In traditional theatre, soft scenery includes drapery materials, drops, and cyclorama - these typically provide large areas of scenery. In the Site-specific Theatre, the chosen location replaces the soft scenery, as the existing environment provides the background and setting for the performance.

Framed scenery describes the type of scenery which is planned and supports itself. This scenery would comprise loose objects and details which stand out from the soft scenery, giving a three-dimensional effect. The three-dimensionality of the fort, ensures that minimum framed scenery is needed. The specific scene locations are selected to create the right environment for the narrative, meaning the scenery does not need to be constructed, but rather enhanced through the set design.

Weight-bearing structures typically give the actor a standing platform. They take the form of stairs, ramps, rocks and abstract forms. It is important to ensure these structures are sound and safe. The use of raised platforms and suspended stages in the project is an example of weight-bearing structures. Pipe or steel platforming and scaffolding is the generally used methods for construction, the modular systems allows for flexibility in creating the desired shape and size platform.

Non-weight-bearing structures, are three-dimensional forms which the actor does not physically interact with, such as columns and trees. The texture and materiality of these elements is used to further enhance the narrative.

### 7.5.9.2 COLOUR IN THEATRE

Colour and the psychological effects of colour are said to play a role in the experience of the audience. However, “the psychological effect of colour on a theatre audience is difficult to measure as a group. The design depends on measurable individual responses, hoping they will multiply” (W. Oren Parker and Harvey K. Smith 1979:248). Colour plays a role in this production through the reflection of the narrative’s themes in the colour selected per scene - this is discussed in depth in 7.8. In W. Oren Parker and Harvey K. Smith (1979:248) it is stated that “within the framework of traditional training and conventions, the six basic spectrum hues can be described in terms of their emotional response, as follows”:

- **Yellow** – radiant, light giving, golden, saintly; in light values near white - virginal
- **Orange** – Festive, earthly, peasant colours, neutral shades, nature in the fall
- **Red** – Active, passionate, full of inner warmth, fiery, strong, forceful
- **Violet** – royal, piety, deeper shades, shadows, terror, chaos, a reddening colour
- **Blue** – Passive, receding, deep, cool, purity, icy tints
- **Green** – Tranquillity, compassion, nature in the spring and summer

The colours chosen to enhance the narrative of the Magic Flute is further discussed in each scene. Chapter 7

### 7.5.9.3 THEATRE LIGHTING

Theatre design relies heavily on the use of lighting, as it contributes to the drama. Lighting can be used to enhance the themes, narrative and actor’s character. Various forms of lighting are generally used to illuminate the scenery, actors and focal aspects. The quality of light can also affect the performance. Various methods are used, including manipulation of light intensity, distribution of light path, and colour.

The lighting of the actors’ faces can portray and reveal their individual characters. The light can either show their entire face, one side, high areas, or focal points. The lighting directions can enhance the actor’s character, visually explaining this to the audience. The lighting manipulations, angles and effects will be unpacked per scene.

There are various types of stage-lighting instruments. These include: spotlights, beam projectors, floodlights, and strip lights.

“On the modern stage the spotlight is far and away the most important instrument of all” (W. Oren Parker and Harvey K. Smith 1979:445). This high-intensity light beam can be shaped and manipulated into many forms. The spotlight is typically used to highlight specific areas, actors or objects in the performance. The follow spot is a spotlight which can be manipulated and changed, but also used to follow a moving actor. Figure 7.79

### 7.5.10 SOUND

There are two options for sound production at the site. The first option is to hire a baroque orchestra – a small 20-piece orchestra – to accompany the actors. However, the space limit in the site poses a problem and the cost to hire the orchestra would make the performance expensive. The second option is to have a pre-recorded track playing on speakers, providing the chorus singers and music for the actors. Both options are viable. The orchestra would need careful placement to ensure the sound at each scene is in balance, and the speakers would require the use of the theatre’s equipment. Ideally, an orchestra would be preferred as the sound quality produced combined with the natural acoustics of the site would enhance the audience’s experience.

### 7.5.11 ACOUSTICS

An indoor theatre often spends time and money on achieving a natural sound quality. The theatre building is designed to mimic natural reverberation, taking into consideration audience absorption. Fort Daspoortrand supplies the playing area with a natural acoustic already in place. The amphitheatre-type layout ensures that the sound will travel from the lower interior to the upper level. The remote location of the site eliminates ambient noise, and the frosty winter night will provide a harmonious background of natural noises.

To ensure that the audience members can hear the actors at every point across the site, acoustic refraction and

projection has been considered at each scene. The sound is either projected towards the audience from the actor’s side, or the sound is captured on the audience side. The acoustic developments for each scene will be explored.



Figure 7.79 Follow spot



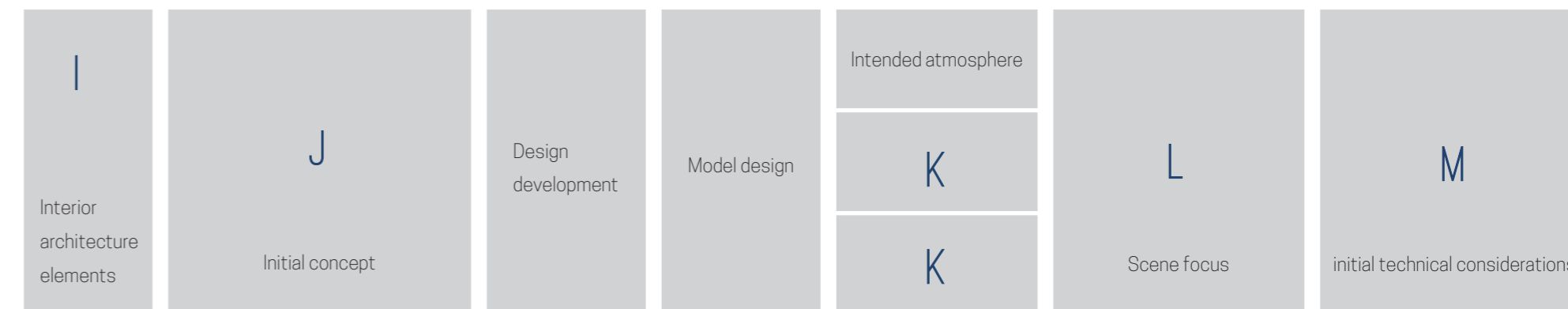


Figure 7.80 shows a graphic representation of the design template used for each scene.

## 7.6 THE TEMPLATE

Each scene has been developed according to a template. This ensures that every scene follows the same process, making it legible and simple to comprehend. The following Figure 7.80 gives a graphic representation of the template used in each scene.

A) The **selected scene** template starts with an exploration of the traditional plot of The Magic Flute. This gives an overview of the narrative of the scene. Themes are identified and isolated - these themes will be further explored in the three-dimensionality of the design.

B) The **main theme** of the scene is illustrated

C) A **comparison** of the visual representation of the traditional version and the William Kentridge version of The Magic Flute is made to show the differences between depictions of the same scenes.

D) An **overview plan** shows the location of the scene on the site

E) A closer view of the **specific scene** shows where the audience and actors are located, as well as the line of sight between the two.

F) The **elevation** represents the differences in the height of the site, showing the audience-actor relationship.

G) The **audience-actor relationship** is represented to show how this manipulation adds to the thematic development of the narrative.

H) Since the selection of the **location of the specific scene** is vital to the site-specificity of the project, the identification of the scene is visually represented. The main graphic focuses on the view of the site during the day from the audience perspective. The smaller graphics highlight important considerations for the scenes.

I) The **interior architecture elements** identify key focuses that each scene will take into consideration, ensuring that the design is aligned with the interior field, and that the spatial development of the scene is thought out.

J) An **initial conceptual** collage explores the site, main themes, Kentridge imagery, and characters in a graphic representation of the intended mood.

K) The images show the **intended atmosphere** of the scenes, which includes graphic projection overlays, characters, and the site, giving visual representation of the expected design outcome. The graphics are represented from the audience's perspective.

L) Smaller graphics show the progression of each scene and the **focus** on lighting, projection, and actor movement.

M) The sketches explore the **initial technical considerations** for the scene. Hand-drawn sketches show basic construction ideas and material considerations.



## 7.7 SCENE TECHNICAL CONSIDERATIONS AFTER DESIGN

Four scenes have been identified for an in-depth technical exploration, each chosen to explain the overall design of the project. Figure 7.81 gives an overview of the site, identifying each scene and design intervention. This plan summarises the positioning of the selected scenes, general programming design, main circulation points, path navigation, and scene interventions.

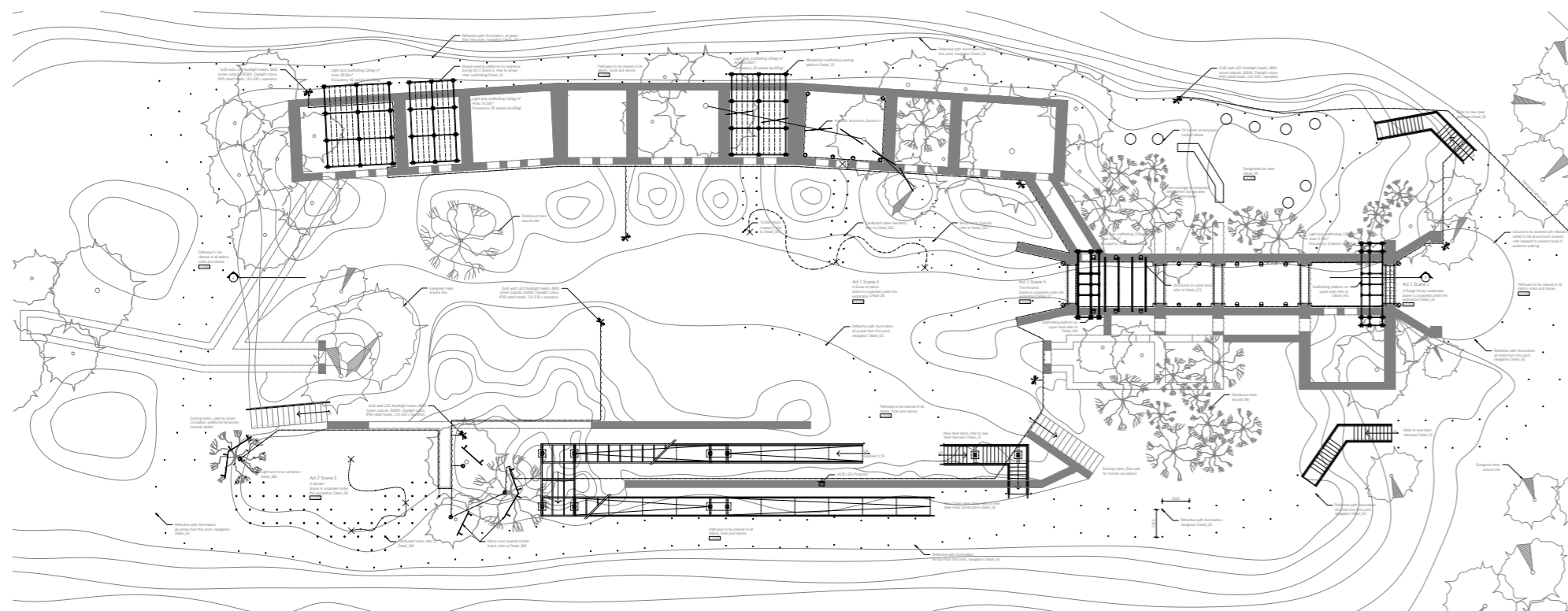


Figure 7.81 Plan overview

## 7.8 ACT 1 SCENE 1 – A ROUGH AND ROCKY LANDSCAPE

The scene begins when the Queen of the Night appears, in a dramatic recitative and aria “O zittre nicht, mein Lieber Sohn” (Oh, tremble not, my dear son), telling Tamino that if he saves Pamina, he can have her as his wife. The plot is further discussed in Chapter 6.2.1. The Queen is portrayed as a weak and distraught character, however she is very cunning and deceptive as she persuades Tamino to rescue her daughter Pamina. At the start of the aria, the Queen aims to come across as a fearful and lonely mother who is pining for her child. However, it is evident by the power in her voice and the greatness in her theme music that she is much more than a worried lady. These strong themes of sadness and worry are portrayed through her facial expressions and the translation of her song. This scene was selected as it is one of the first arias of the opera and forms an important introduction to the characters in the narrative.

### FEAR, WORRY AND LONELINESS



Figure 6.4 “O zittre nicht, mein Lieber Sohn” (Oh, tremble not, my dear son)



Figure 6.1 Act 1 Scene 1 - Traditional version 1991



Figure 6.2 Act 1 Scene 1 - William Kentridge version 2001



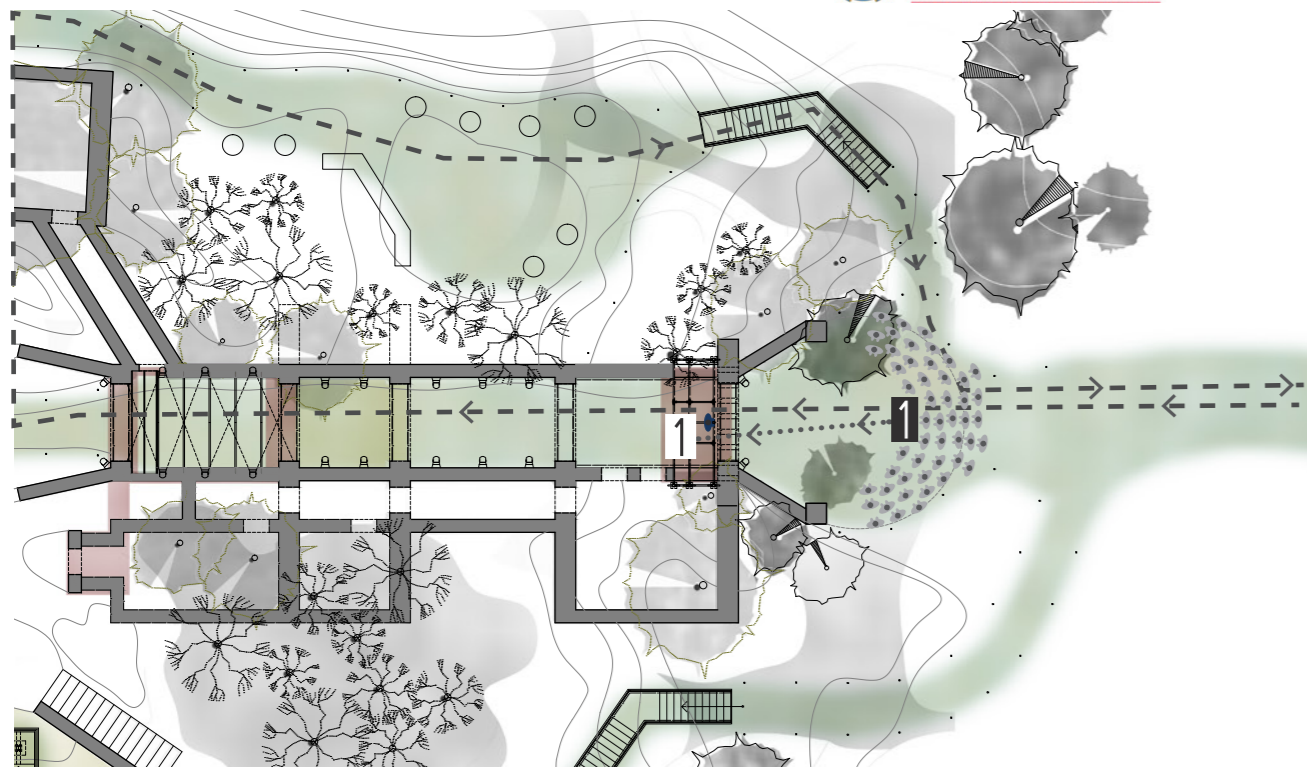


Figure 7.82 Plan of Act 2 Scene 3 location

KEY

- Selected Scenes
- Other Scenes
- Audience pathway
- Audience movement
- Scene visual link
- Audience 50-60 members
- Actors

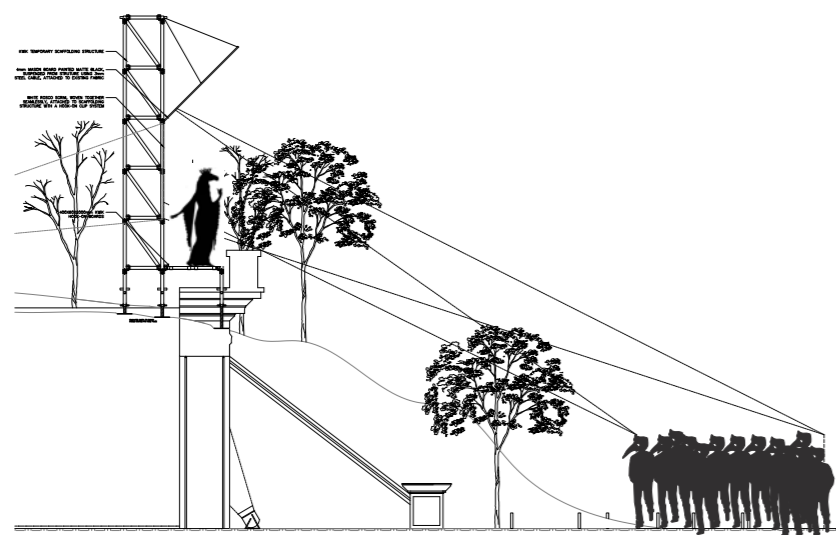


Figure 7.83 Audience-actor relationship section

### 7.8.1 SCENE LOCATION

Act 1 Scene 1 is in a rough and rocky landscape outside of the city. As this scene forms part of the initial performance at the fort, the location for the scene is at the entrance to the fort as seen in Figure 7.82. Selected for its large dominating scale, the architecture becomes a representation of the queen and her underlying power and strength. On the plan, the actress is located at the white [1] and the audience at the black [1]. In the graphic, the symbol for the audience is a grey bird's-eye figure. The queen is placed above the audience, and her face is projected onto a large screen behind her, accentuating her power. Figure 7.83 depicts this section of the scene and the relationship between the audience and the actress. The illustration in Figure 4.5, as discussed in Chapter 4.8, shows the type of audience-actor relationship, emphasising the actor's power in this view.

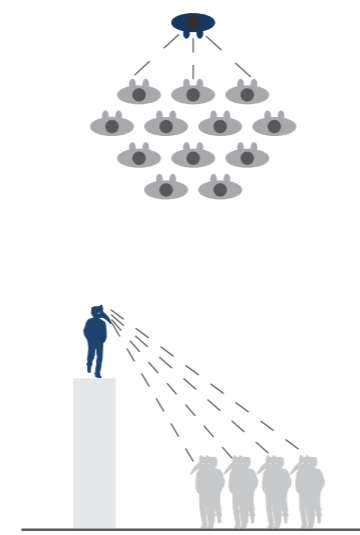


Figure 4.5 Actor above audience

### 7.8.2 LOCATION CHARACTER

Selected for its dominating and striking architecture, the scale of the entrance structure dominates one's view. The decorative archway forms an interesting juxtaposition between the natural landscape and the man-made fort. The boldness and majesty of the entranceway is exemplified in Figure 7.84. The entrance to the fort forms an important part of the performance, as it is the first time that the audience will be exposed to the existing structure. Figure 7.85 shows the sunset at the entrance to the fort. This graphic is a realistic depiction of what the audience will see as they approach the site, as only the lighting for the scene will reveal the structure of the site. Figure 7.86 shows the approach to the site and the pathway which the audience will take to reach the fort. The gravel road poses a challenge to the audience circulation, however this is dealt with in the technical development. The detail at the site forms an intricate part in the reveal of the depth of the narrative. The archway detailing, Figure 7.87, shows the intricacy of the architectural design. The strength of the architecture is used to accentuate the power of the queen, the imperfections in the structure a reflection of her weaknesses and downfalls. The structure and the boldness of its built-up existing areas become a metaphor of power and authority of the queen.

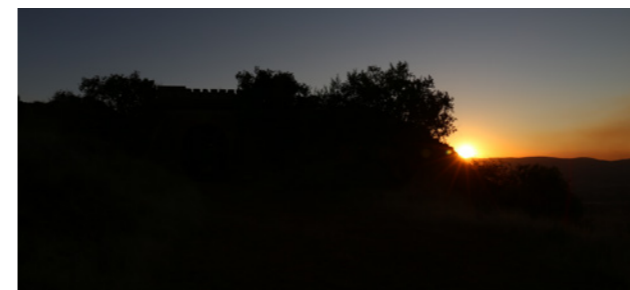


Figure 7.85 Sunset at the Fort



Figure 7.84 Main entrance arch



Figure 7.86 Approach to entrance



Figure 7.87 Detail of arch way



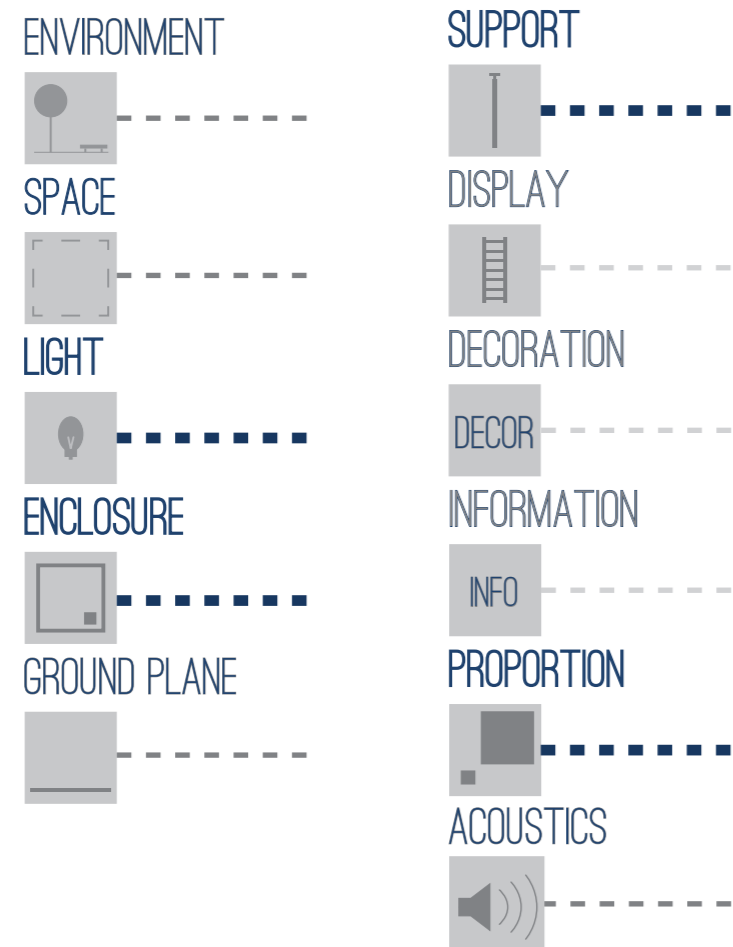


Figure 7.88 Interior Architecture Principles

### 7.8.3 A LINK TO INTERIOR ARCHITECTURE

Act 1 Scene 1 has a focus on the proportion of the architecture and the scale of the actress against the structure. The interior architecture elements, shown in Figure 7.88 and discussed in Chapter 4.8, which are focal points in the creation of this scene include proportion and scale, lighting, support, and enclosure as main elements, and environment, space, and the ground plane as the secondary elements. These design details will be later explored in the design development, Chapter 7.8.5 of this scene. The combination of the proportion of the architecture and the actress will help to manipulate the thematic development of her underlying power and her façade of weakness and loneliness. The lighting in this scene will focus on revealing the architecture to the audience, enticing them into space and exposing the character and drama of the existing ruin. The ground plane plays an important part in the success of the scene and the manipulation of the audience. Noise creation at the location will enhance the drama of the performance. This design consideration will be further developed in the technical development in Part three of this Chapter.

### 7.8.4 INITIAL CONCEPTUAL MOOD BOARD

The initial concept board, Figure 7.89, brings together all the necessary elements for the scene. The black and white graphic of the fort entrance depicts the location of where the actress will stand during her performance, and the view suggests that the audience is below her. The location of the scene is shown in the white plan overlay. The images focus on the scene at the entrance to the fort. A character image of the queen - as developed in Chapter 6.3 - is used to represent the actors positioning in the scene. Careful consideration of her costume is needed, as the lighting for the scene is a challenge. This will be further developed in technical considerations. The imagery of William Kentridge's version of *The Magic Flute* is then placed over the scene graphic, showing the design connection between his graphic development and the concept for the scene. The collage brings the necessary aspects of the scenes together to create an emotive and expressional mood board for the design initiation.



Figure 7.89 Initial mood board collage



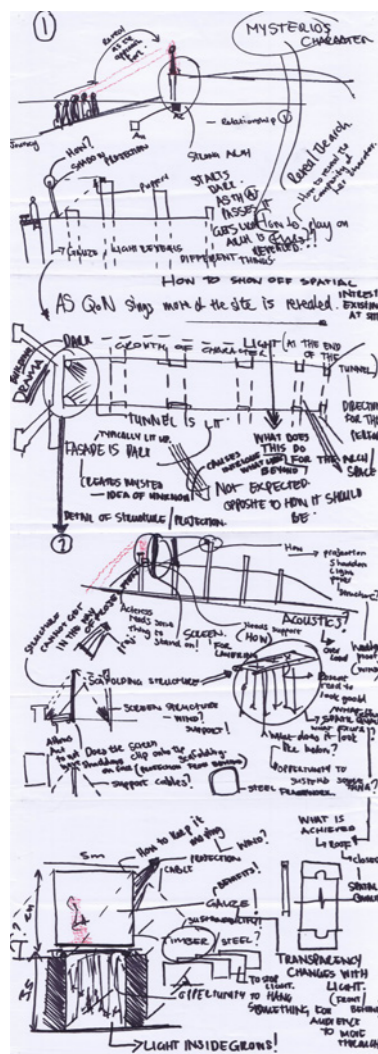


Figure 7.90 Initial exploration of site and scene

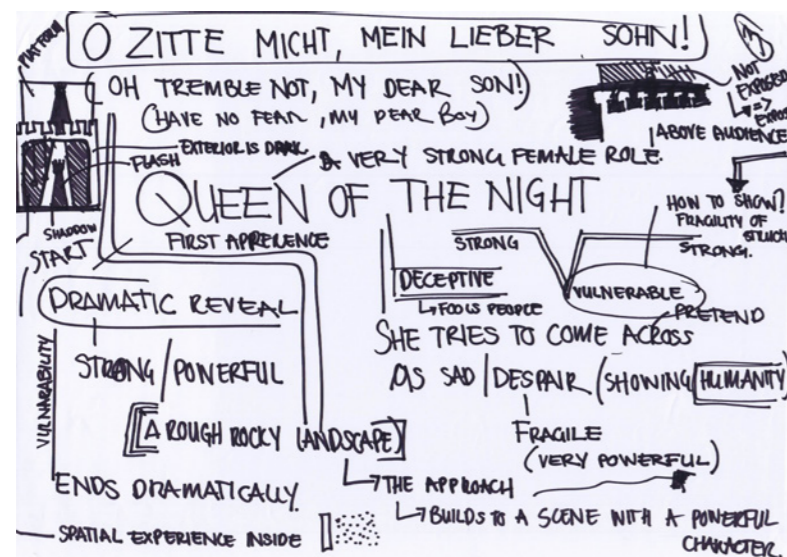


Figure 7.91 Thematic exploration of scene

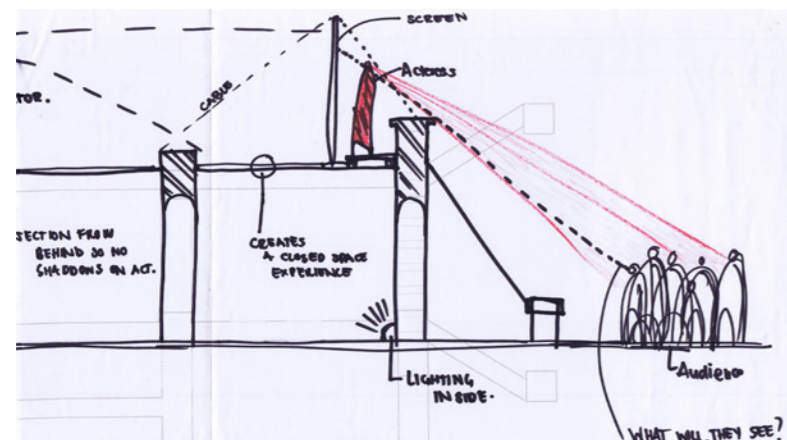


Figure 7.92 Sectional exploration of scene

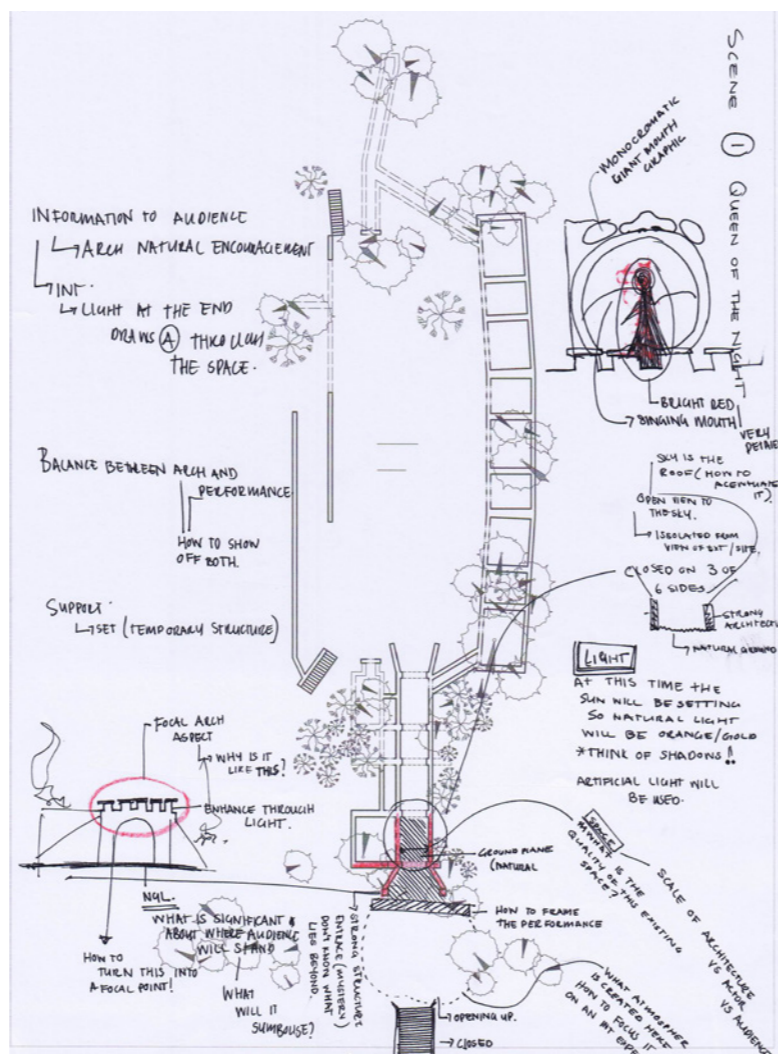


Figure 7.93 Related site, plan exploration

## 7.85 DESIGN DEVELOPMENT

The following page of conceptual drawings Figure 7.90 to Figure 7.94, represent the initial ideas for the development of the scene. The collage-like layering of information shows the progression of thoughts as the scene and initial design is unpacked. The journey starts with the original narrative of The Magic Flute Act 1 Scene 1, and the discovery of the thematic qualities of the performance. These qualities include the concealed power of the queen and her fear, worry, and loneliness. The site is then selected as it acts as a metaphor for the queen - the strength of the queen re-iterated by the scale of the architecture. Focal aspects of the scene location are identified and further considered. The castle-like silhouette of the entrance and the relationship between the queen and her 'castle' - the minimal damage to this portion of the structure a metaphor for the queen's power. Along with the design, considerations, include an understanding of the materiality needed to create the scene. The emphasis on recyclability and reusability as the main design challenge is identified. Together with the thematic development of the scene's plot and the existing site character, a three-dimensional design of the site, narrative and audience experience can be created. The focus of Act 1 Scene 1 is to reveal the structure and use light as a drawing tool to enhance and expose the existing character of the site. The manipulation of the proportion of architecture and the actress also forms an important part of the way the audience perceives the performance.

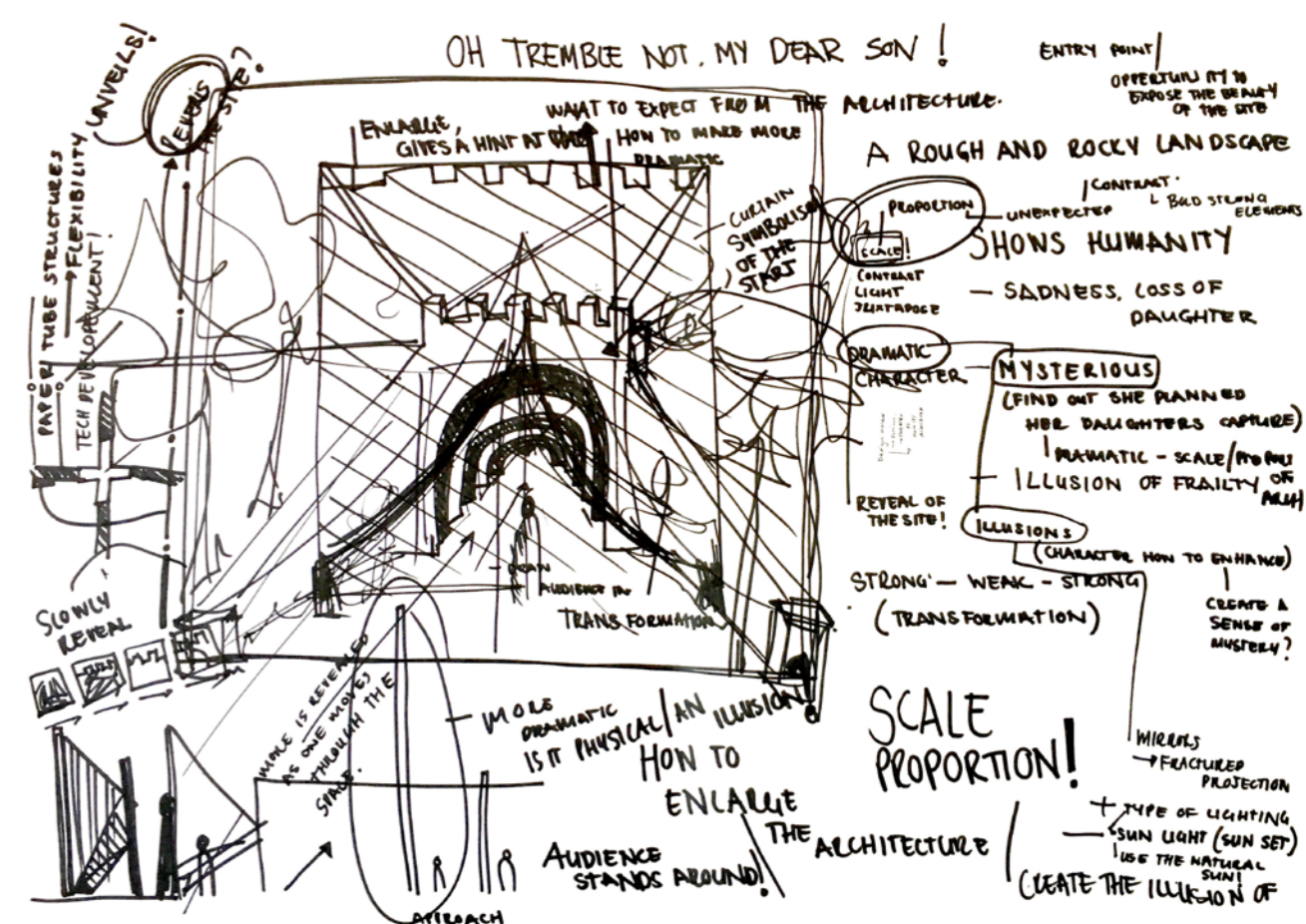


Figure 7.94 Final concept sketch, includes site, themes and audience-actor relationships



## 7.8.6 MODELS AS A TOOL FOR DESIGN EXPLORATION

The following images of the models have been used as a means to explore the design of the scene. The final outcome of the design development has been informed by iterating the models, and assessing the feedback of the scene design. Figure 7.95 shows the initial model before intervention. Figure 7.96 to Figure 7.98 explore the use of light to enhance the scene. Figure 7.99 to Figure 7.104 depicts the audience view and positioning during the scene. Figure 7.105 shows the scene with lighting in the dark.



Figure 7.95 Initial model post additions



Figure 7.96 Light exploration and project of Queen

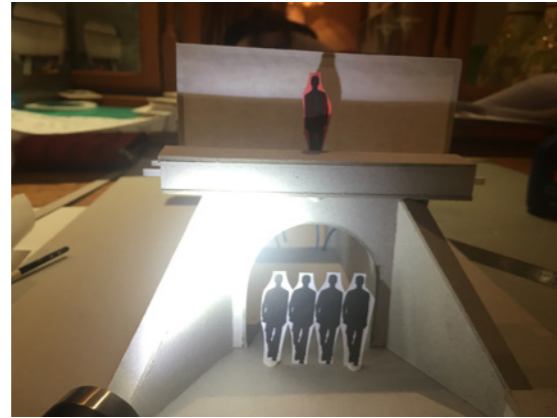


Figure 7.97 Lighting of existing structure



Figure 7.98 Lighting from behind scene



Figure 7.99 Audience view



Figure 7.100 Obstructed audience view

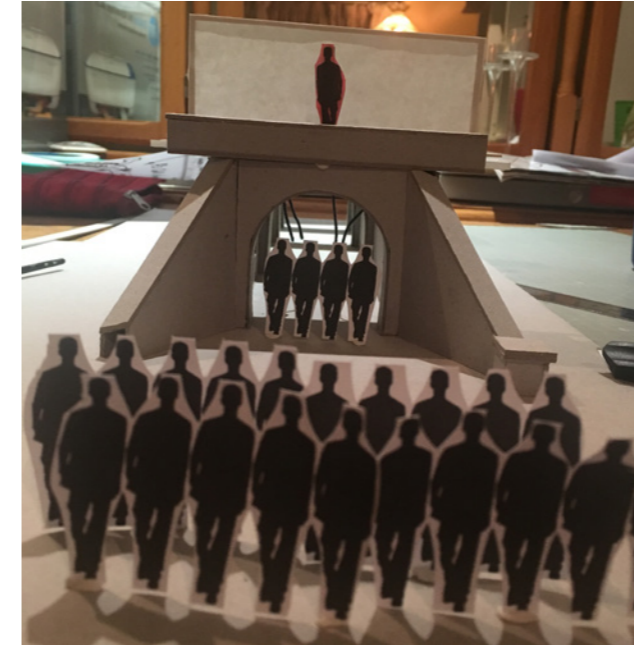


Figure 7.101 Positioning of audience

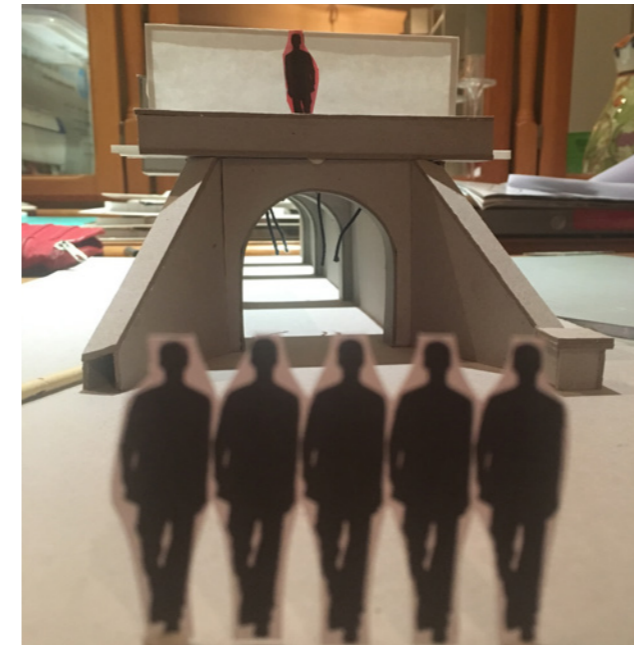


Figure 7.102 Audience view range



Figure 7.103 Finalised audience position

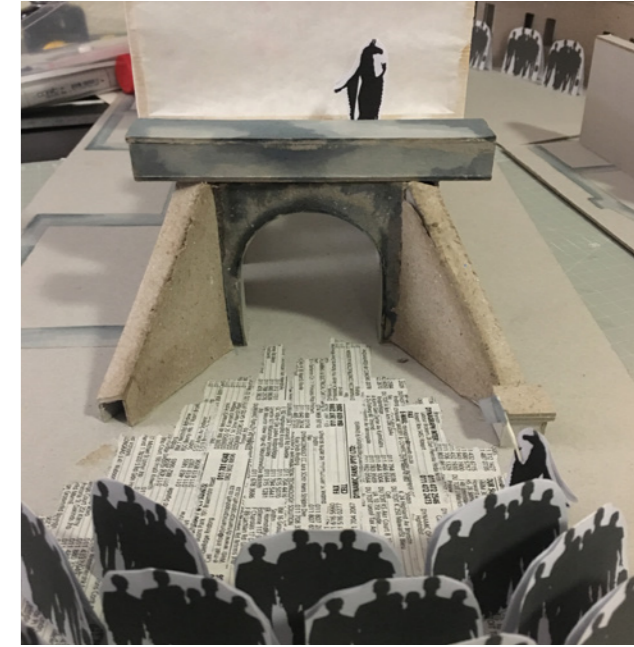


Figure 7.104 Audience locational view



Figure 7.105 Dark view of model





Figure 7.106 Start of performance  
0170

## 7. 8.7 DESIGN OUTCOME

As mentioned above, the focus of Act 1 Scene 1 is to introduce the audience to the site and to the performance, with an emphasis on bringing the two together. Figure 7.106 gives a graphic representation of what the audience will see at the start of the performance. As the audience approaches the site the sun will be setting, casting deep and dark shadows over the



Figure 7.107 Lighting progression of scene



Figure 7.108 Growing light in tunnel

fort. The audience will only visually explore the entrance to the site at this point, creating anticipation of what will be revealed in the rest of the site. The tunnel, which is more than 20m long, will draw the audience in towards the scene. Lighting at the end of the tunnel will create a scene of excitement as the light grows to reveal more of the site as the scene progresses. Figure 7.107 and Figure 7.108 show the growing light during the performance and the way in which more of the architecture

is revealed as the queen's character and motives are revealed. Figure 7.109 - the final representation of the scene - shows how the queen and the site have been fully revealed and the audience now wait in anticipation to move through site and explore what the site has to offer. The metaphorical connection between the queen and the site takes the audience on a visual exploration of the reveal of their characters and the drama of their personas.



Figure 7.109 Final development of scene



## 7.8.8 LIGHTING EXPLORATION

The lighting in this scene plays an important part in the reveal of the queen and the exposure of the character of the fort. The following photographs taken of the model with added lighting, show the possibility of lighting different sections throughout

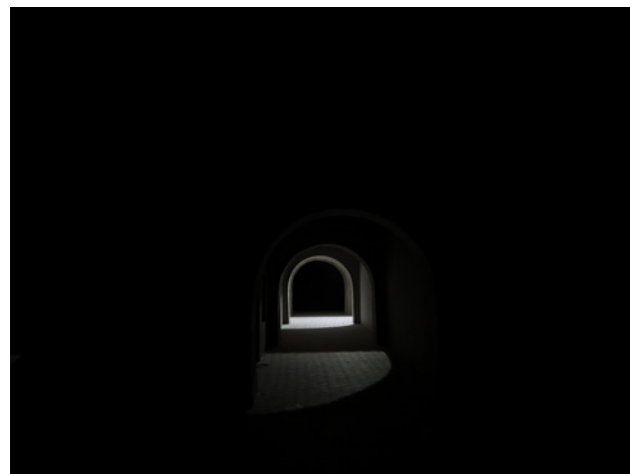


Figure 7.110 Sequence 1 of light in tunnel

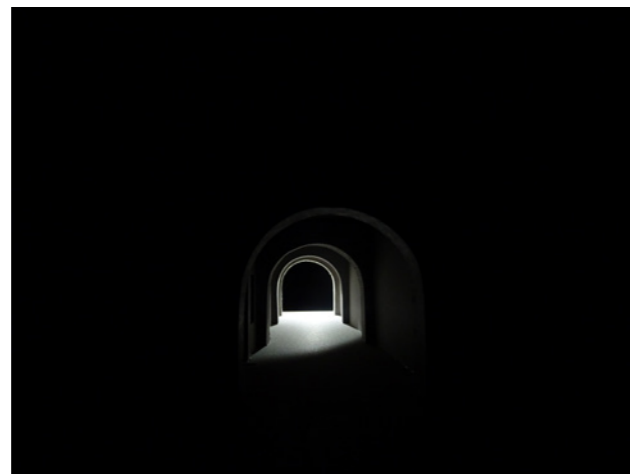


Figure 7.111 Sequence 2 of light in tunnel



Figure 7.112 Sequence 3 of light in tunnel

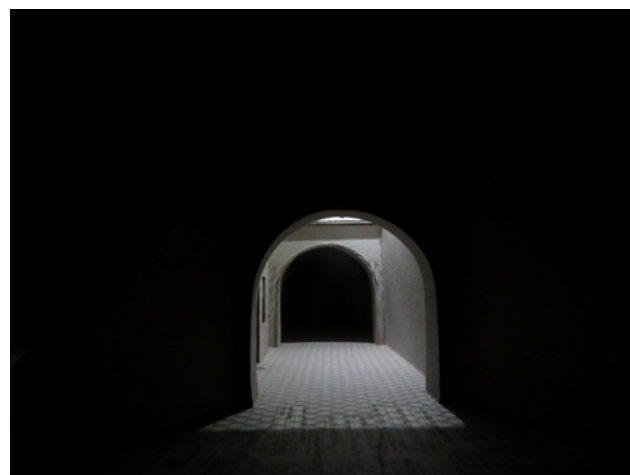


Figure 7.113 Sequence 4 of light in tunnel  
0172

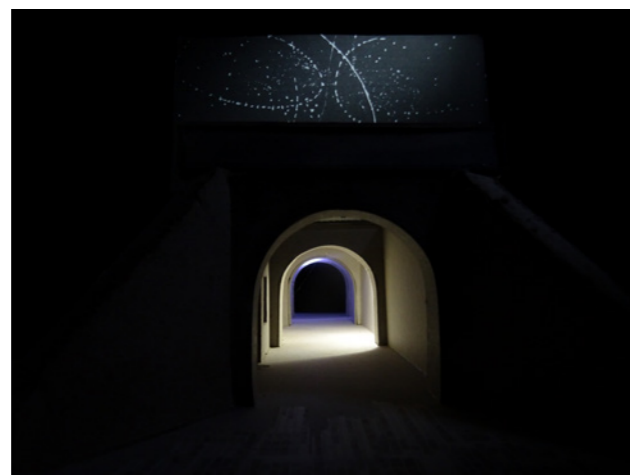


Figure 7.114 Lighting on projection screen



Figure 7.115 Further light exploration

the tunnel entrance. Figure 7.110 - the initial graphic shows the light at the end of the tunnel, used to encourage the audience to move through the space. Figure 7.111 to Figure 7.113 show how more of the site can be revealed using the light. Figure 7.114 gives an idea of the effect that different light colours can have on the creation of the atmosphere, and Figure 7.115

depicts the way in which the rest of the fort entrance can be revealed using light. The lighting for Act 1 Scene 1 is further developed in technical considerations

## 7.8.9 INITIAL TECHNICAL EXPLORATION

The following figures - Figure 7.116 to Figure 7.118 - explore the initial attempt at technical development. The focus is placed on the lighting, projection, and audience views at the site. Figure 7.116 gives a sectional view as to where the audience and actress will stand during the performance. The angle of view range forms an important part of the success of this scene. Figure 7.117 gives a sketch perspective of the lighting consideration of the tunnel - the yellow representing the need for lighting to expose the existing character of the site. Projection in Act 1 Scene 1 is important to re-iterate the proportion of the architecture against the proportion of the queen. Back projection - represented in Figure 7.118 - onto a scrim gauze material will allow for the enlarging of the queen's face and mouth onto the screen.

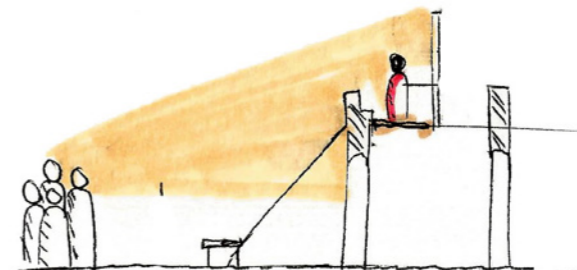


Figure 7.116 Sectional view, audience to actor relationship



Figure 7.117 Perspective of tunnel entrance



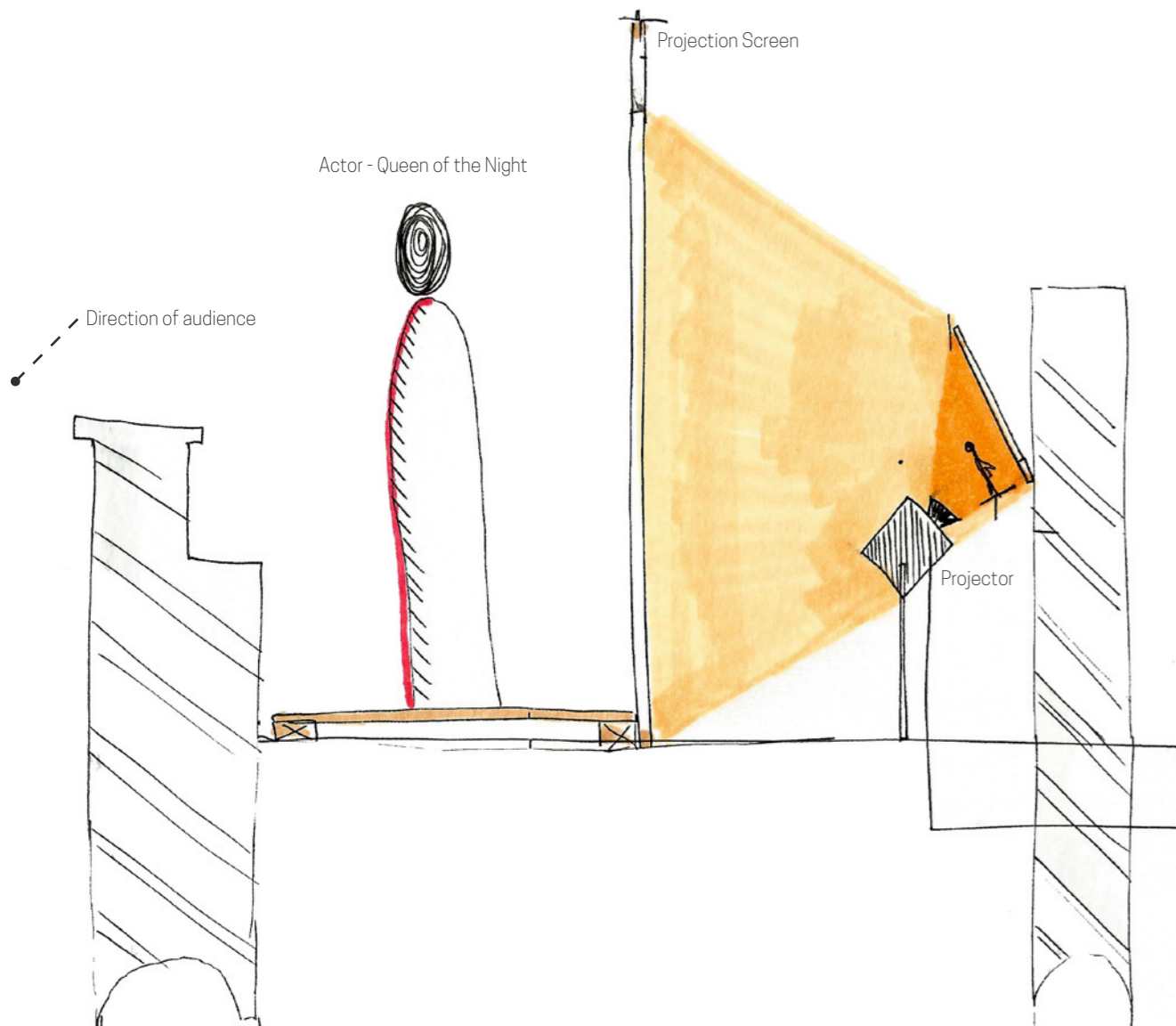


Figure 7.118 Back projection onto gauze scrim

### 7.8.10 TECHNICAL CONSIDERATIONS

The initial scene of the performance, “O zittre nicht, mein Lieber Sohn” (Oh, tremble not, my dear son) as discussed in Chapter 7.8 focuses on the portrayal of the Queen of the Night and her initial reveal to the audience. She is a powerful character and the scene should reflect that. In the initial technical exploration, Chapter 7.8.9, a focus is identified in the use of lighting, projection, and the audience’s view to enhance the actor’s character. The final technical exploration, Figure 7.119 to Figure 7.127 takes a look at the lighting in Act 1 Scene 1 is used to reveal and enhance the beauty of the site. LED neon-flexible lighting is placed on each arch in the tunnel, enhancing the form of the fort. The lighting sequence for the scene, as explained in Figure 7.119, shows at which points in the aria the lighting is used. The experiential approach is for the light intensity to grow as the scene progresses, enticing the audience to explore beyond the tunnel entrance. Figure 7.120 shows the plan of Scene 1, showing the specific areas in which the lights are placed, as well as a section, Figure 7.121 on page 17+, showing the angle and illumination of the lights. The LED-B06 RGB 3W x 54 LED PAR light, Figure 7.122, are used as spotlights to illuminate the walls of the fort and reveal its character.

As one moves through the tunnel, the light grows and the fort’s character is exposed. The first room is lit with LED rope lights along the base of the wall. This only reveals a small amount of

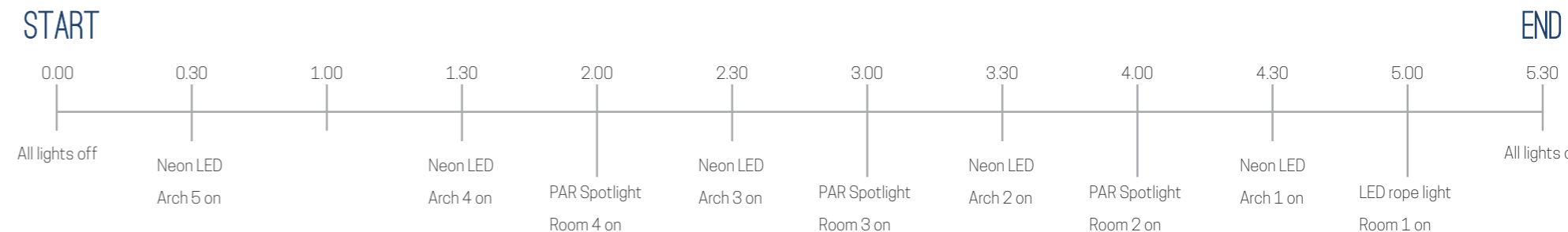


Figure 7.119 Lighting sequence

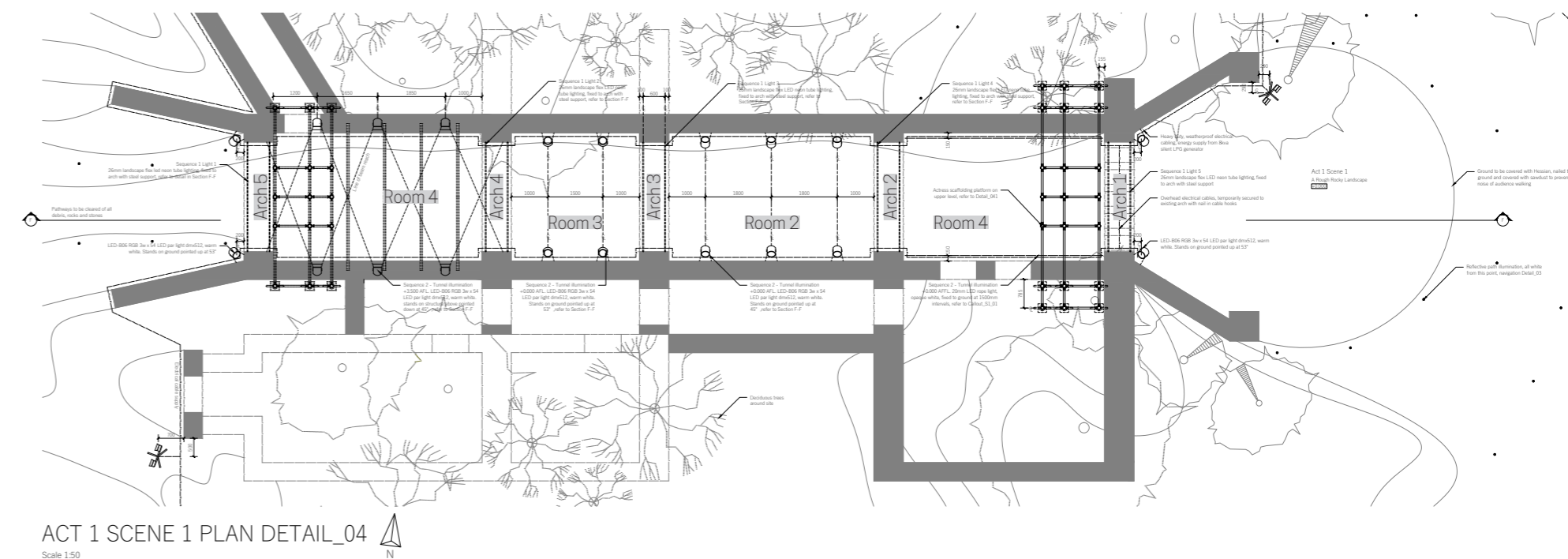
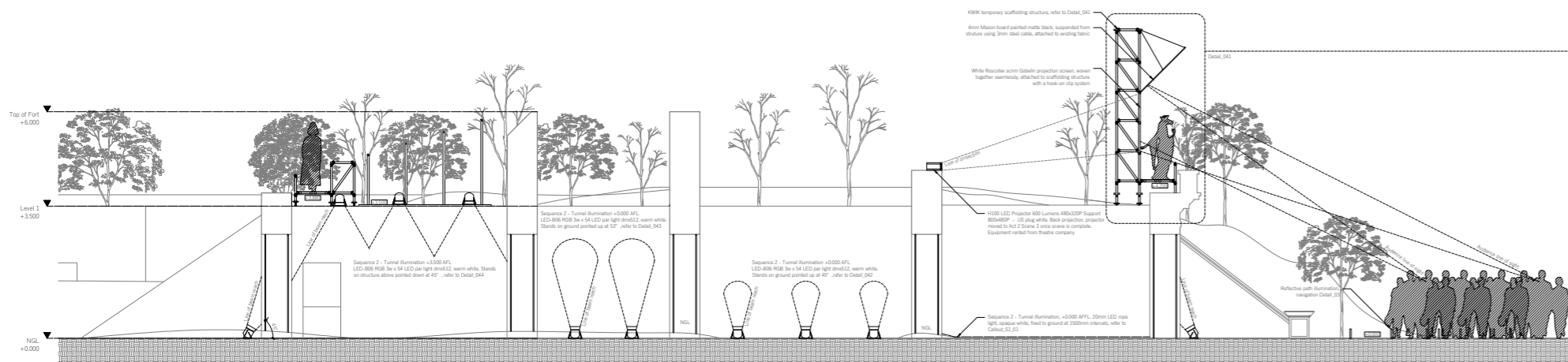
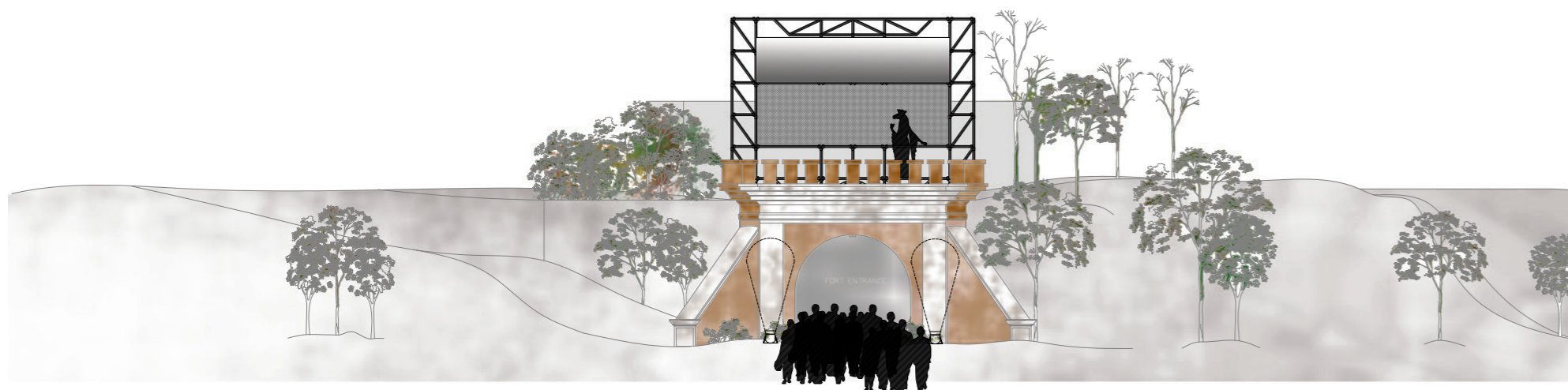


Figure 7.120 Act 1 Scene 1 plan



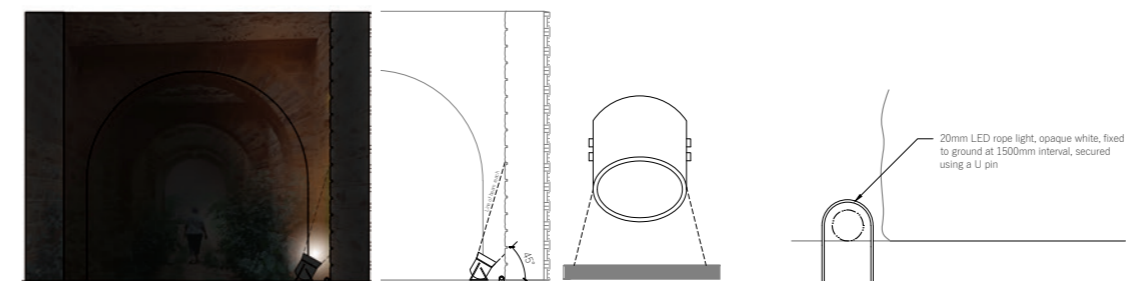


ACT 1 SCENE 1 SECTION F-F



ACT 1 SCENE 1 ENTRANCE ELEVATION

Figure 7.121 Lighting section and elevation

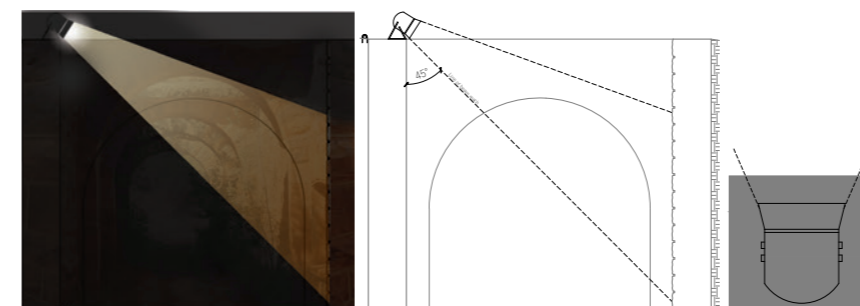


DETAIL\_042 LED PAR LIGHT 45°

CALLOUT\_S1\_01



DETAIL\_043 LED PAR LIGHT 53°



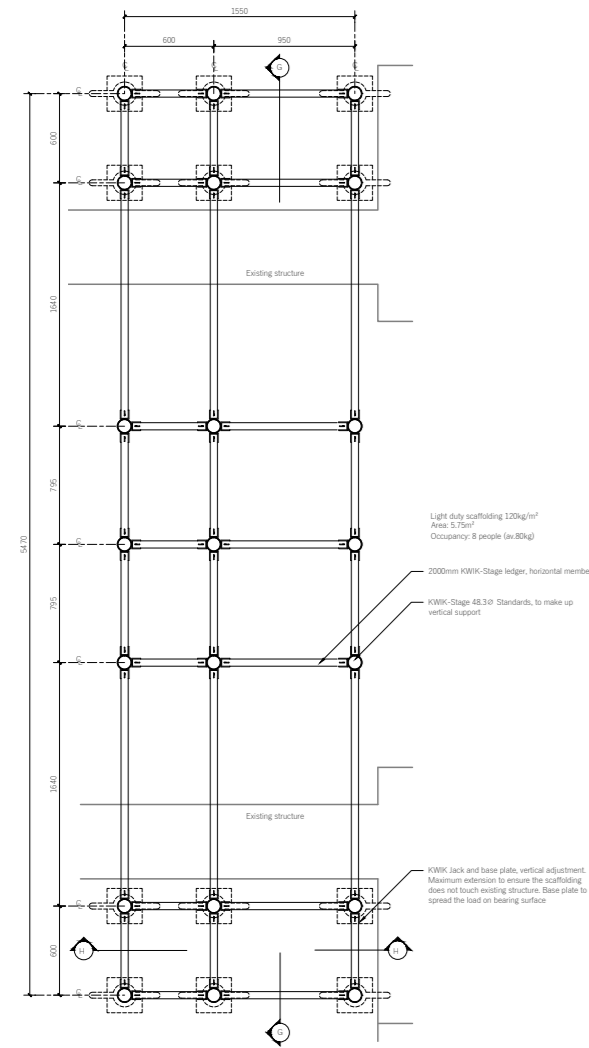
DETAIL\_044 LED PAR LIGHT 45° DOWN

Figure 7.122 Lighting details

information of the state of the site. In the second room, the PAR light beam is positioned up the wall at a 45° angle, shown in Figure 7.122. This reveals more of the structure for the audience. In the third room, a 53° angle PAR light exposes more of the structure. Finally, in room four, the PAR light is placed on the top of the wall, with the beam flooding the entire wall with light. In this room, all the character and detail of the fort's architecture is revealed.

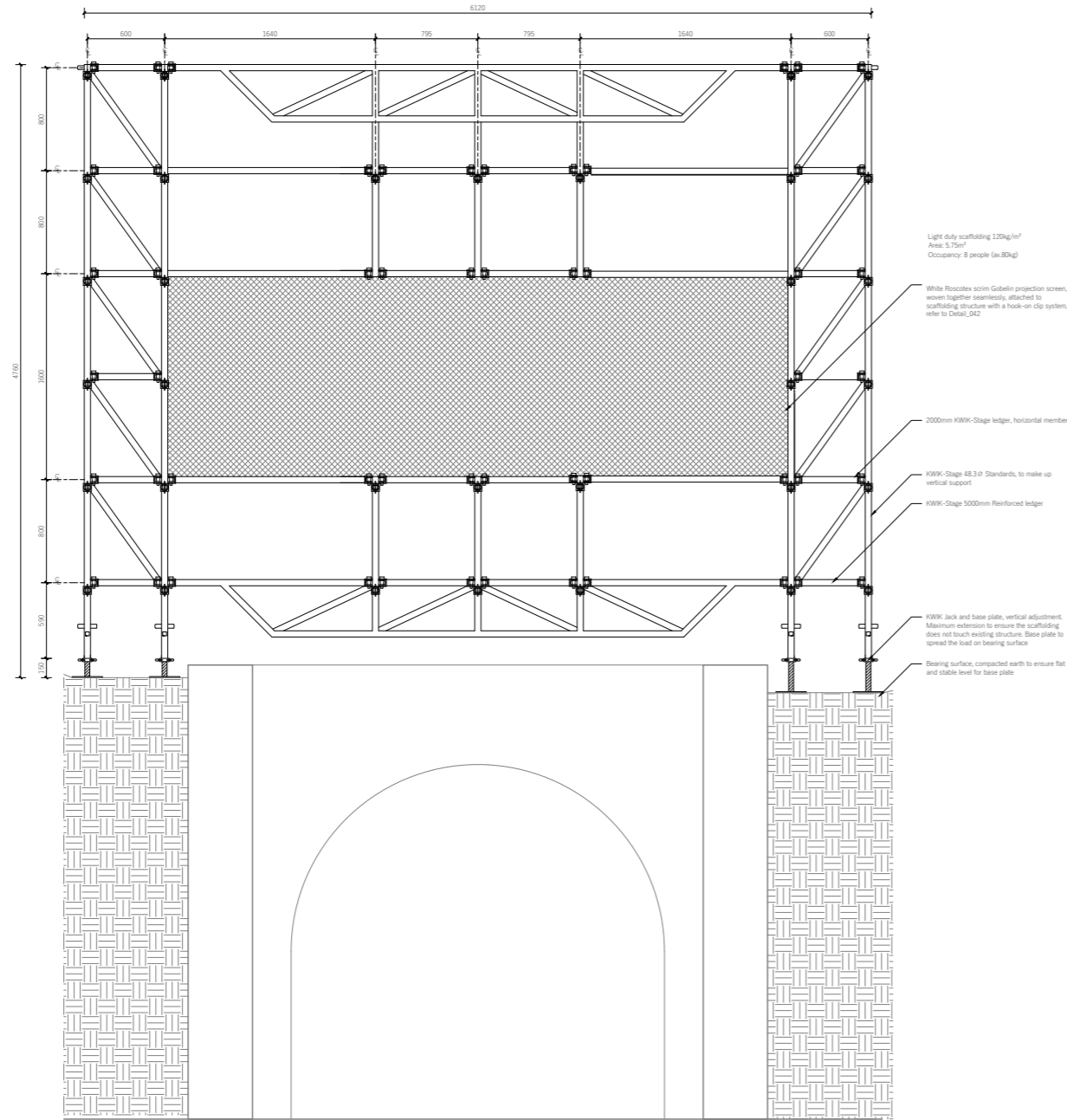
The scaffolding structure is perched above the entrance tunnel, giving the actress a place to stand. She is placed on the raised platform so that the audience members below can see her clearly. The height of the platform is worked out by looking at the typical eyelevel of an average human (approximately 1550mm) and projecting lines up towards the fort entrance. Behind the actor is a Roscotex scrim Gobelin projection screen, Figure 7.124, with pre-recorded images of her face back projected onto it. The images of her face grow as the scene develops, until only her mouth is seen on the screen. The Projector, Figure 7.125, is positioned behind the scaffolding and screen to ensure that the actor's shadow is not cast onto the screen. Figure 7.123 shows technical development of the scaffolding, the front section of the scaffolding structure, similar to that used for the disabled viewing platform. The reinforced ledger ensures that the desired span between the two existing walls can be achieved. The acoustic refraction structure is visible in the section. The 4mm mason board is used to reflect the actors voice towards the audience below, ensuring no sound is lost during her performance.



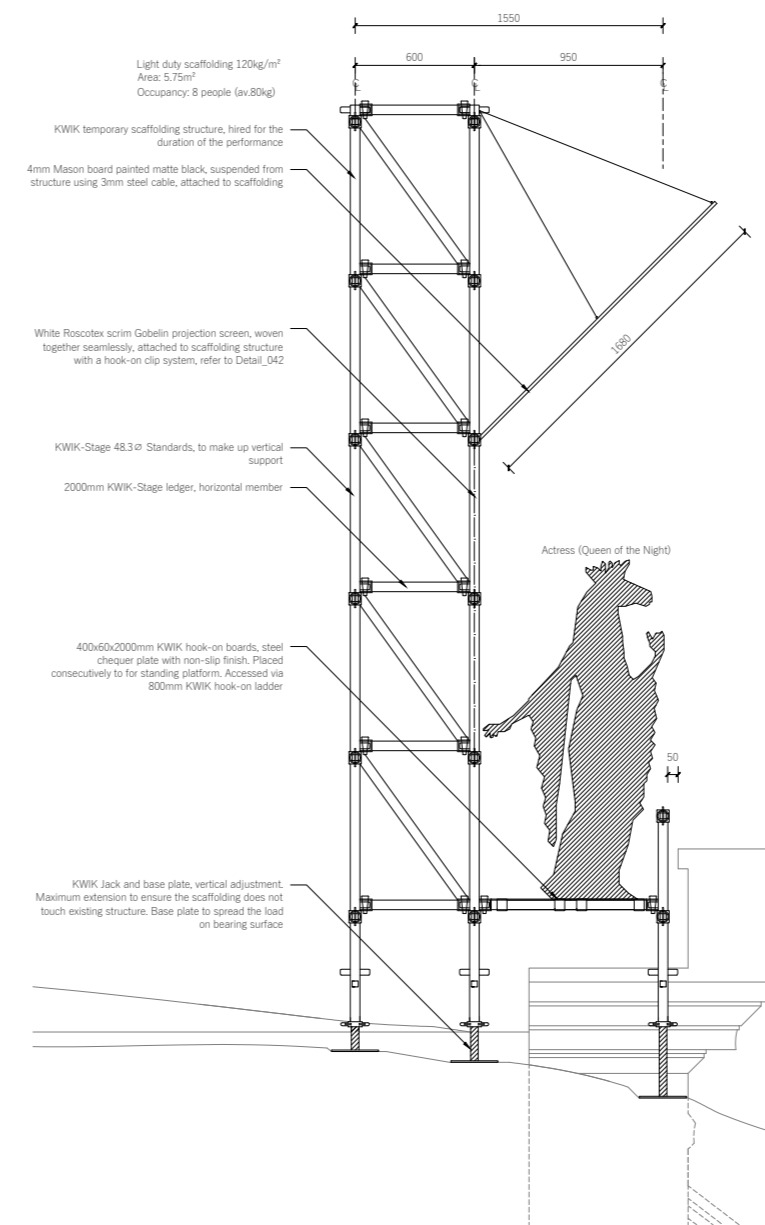


DETAIL\_041 SCAFFOLDING PLAN

Figure 7.123 Scaffolding detail



TEMPORARY SCAFFOLDING PLATFORM AND SUPPORT SECTION G-G



SCAFFOLDING PLATFORM CONSTRUCTION SECTION H-H

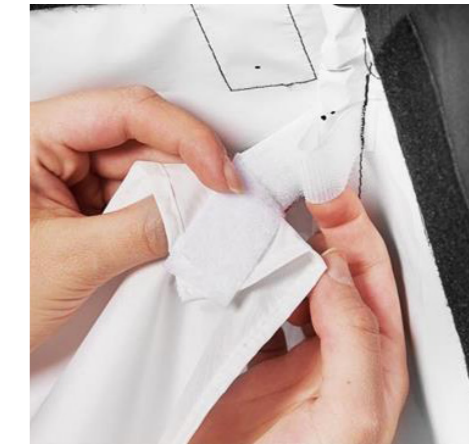


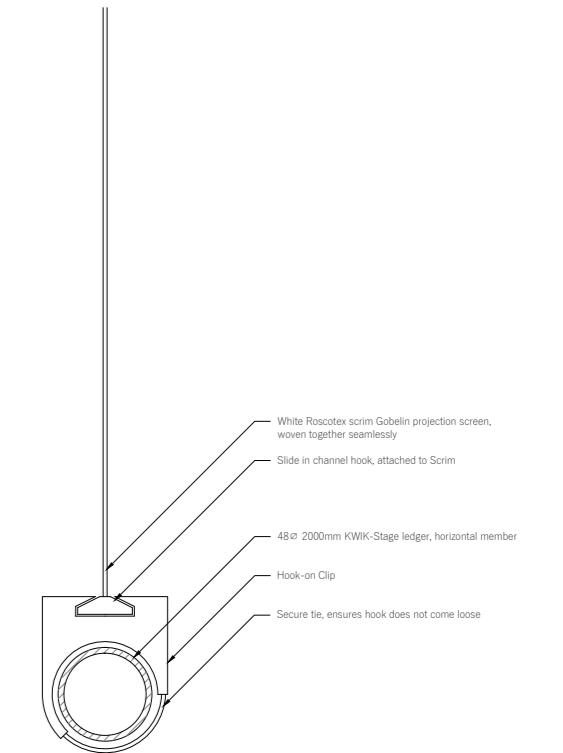
Figure 7.124 Roscotex scrim



Figure 7.126 Spot Light

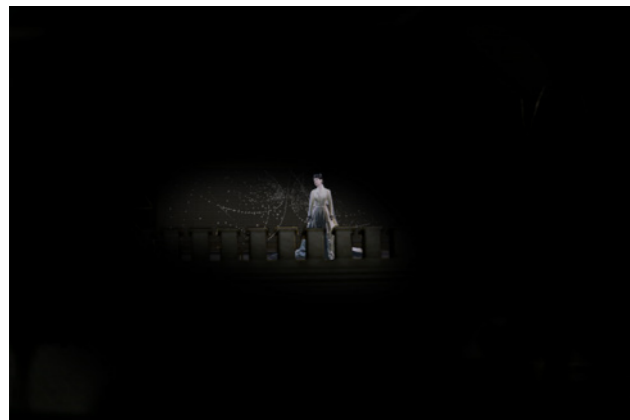


Figure 7.125 Back projection



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Queen of the night first reveal



Projection of Kentridges Magic Flute to enhance her performance



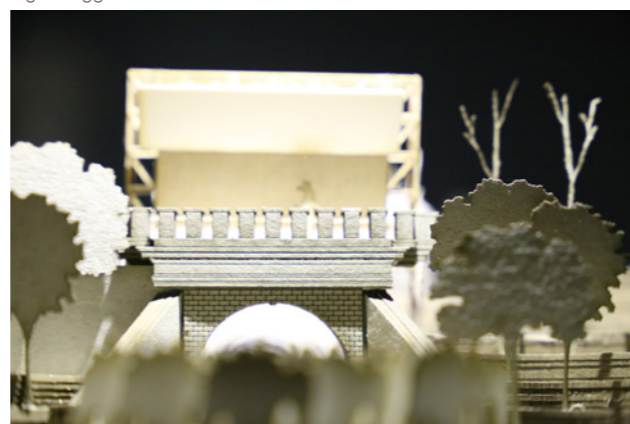
Light suggests the character of the structure



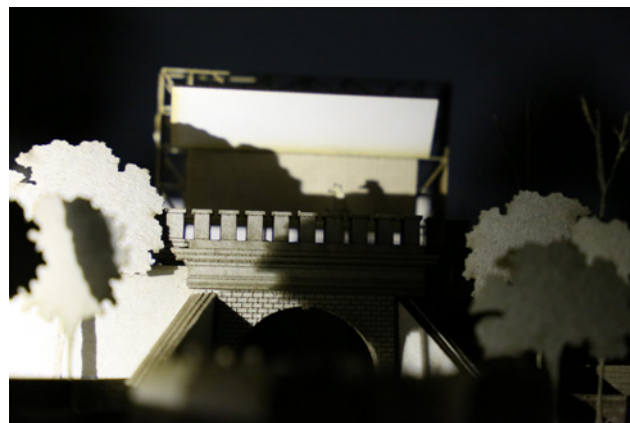
Light illuminates the existing tunnel



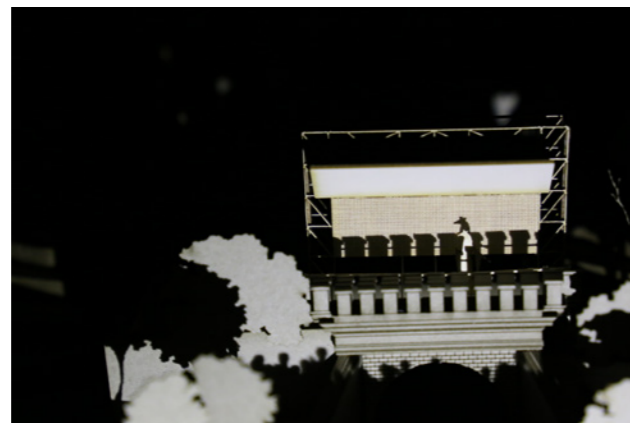
Architecture is more exposed



Scene ends with reveal of the structure



Light used to enhance the drama



Combination of structure and Queen of the Night



Audience view of the Queen of the Night



Figure 6.20 "Nun stolzer Jungling, nur hierher" (Proud youth, come this way)

## 7.9 ACT 1 SCENE 3 – A GROVE IN FRONT OF THE TEMPLE

In Act 1 Scene 3 – as discussed in Chapter 6.2.3 – Pamina and Tamino meet for the first time. Sarastro explains in "Nun stolzer Jungling, nur hierher" (Proud youth, come this way) that the two young and in-love children will need to prove their worth and go on a path of enlightenment if they wish to be together. The scene was selected as it is the final scene of Act 1 and is a key point in the development of the thematic notion of enlightenment and the path to greatness. A strong sense of light versus dark is evident in this scene, and the design development later explains the significance of this. The scene takes place outside the temples. The three entrances read, 'Wisdom', 'Reason' and 'Nature'.

## TRIAL, KINDNESS AND UNITY



Figure 6.12 Act 1 Scene 3 - Traditional version 1991

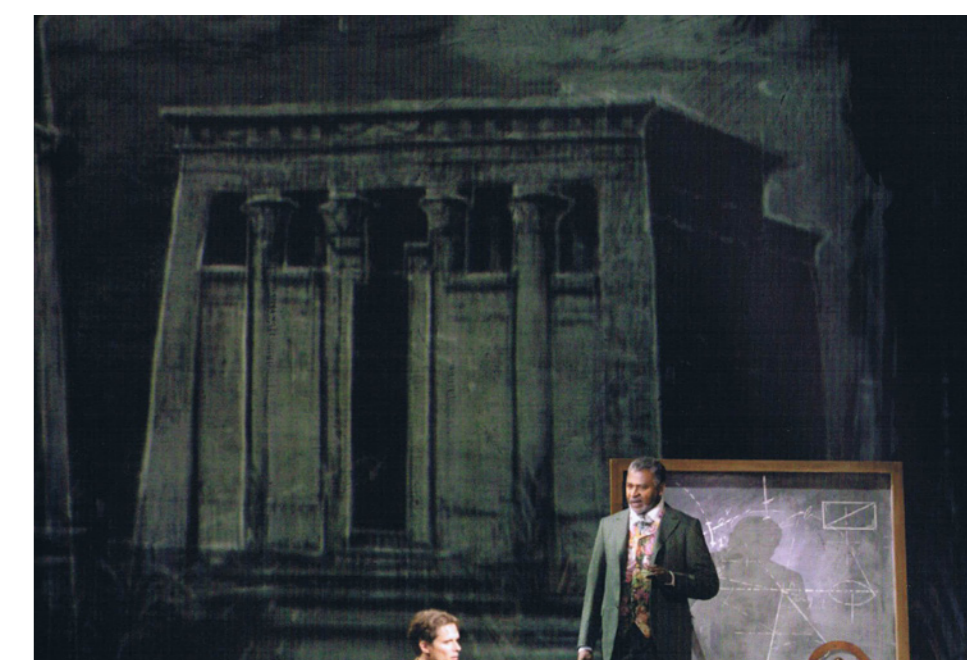


Figure 6.13 Act 1 Scene 3 - William Kentridge version 2001



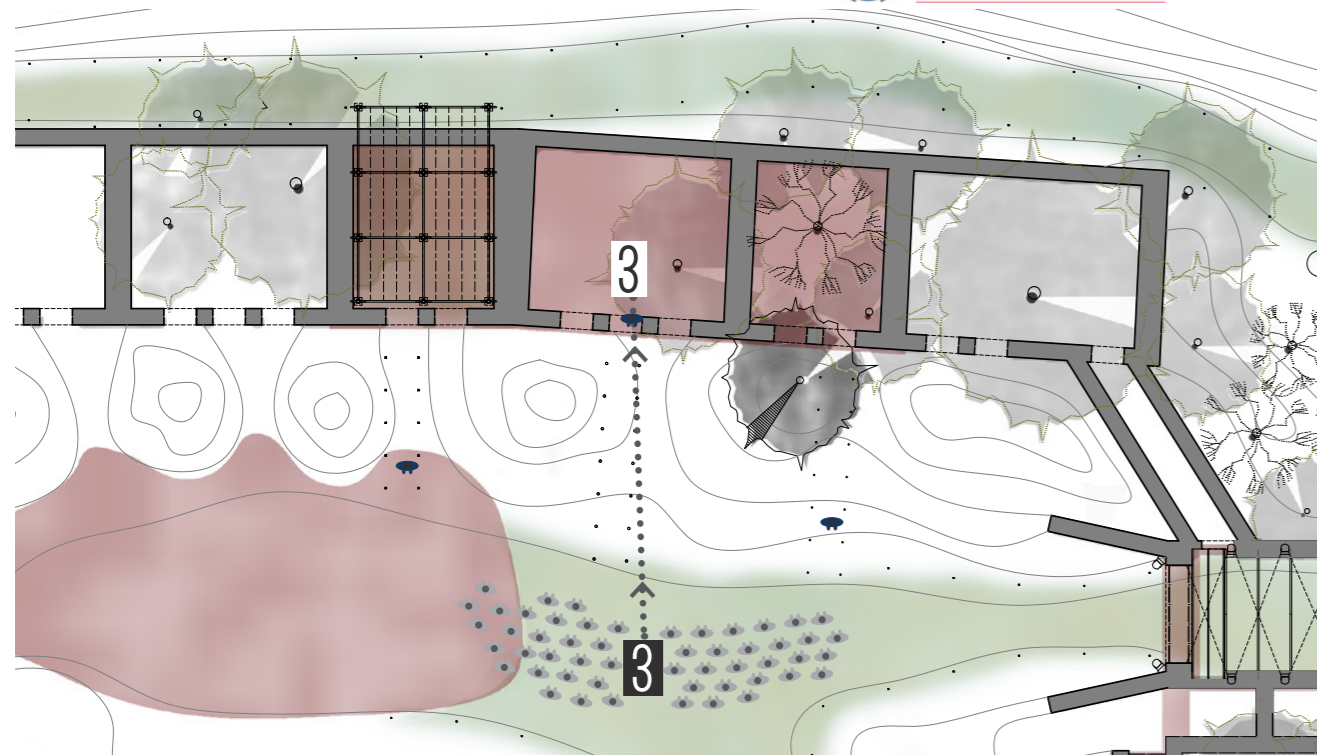


Figure 7.128 Plan of Act 1 Scene 3 location

KEY

- Selected Scenes
- Other Scenes
- Audience pathway
- Audience movement
- Scene visual link
- Audience 50-60 members
- Actors

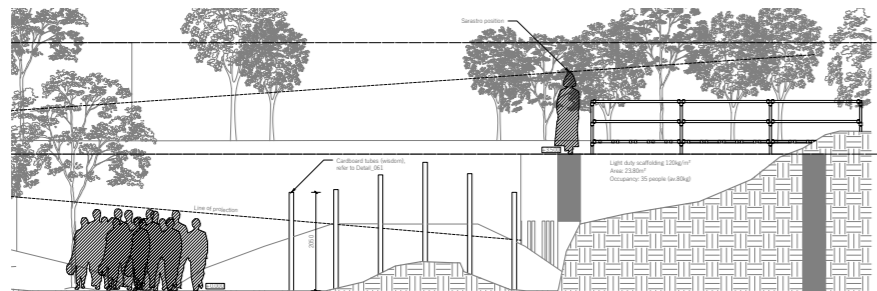


Figure 7.129 Sectional view of Act 1 Scene 3

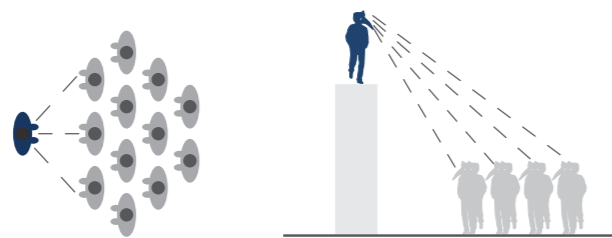


Figure 4.5 Actor above audience

### 7.9.1 SCENE LOCATION

Act 1 Scene 3 takes place in front of the temple. In order to achieve the effect of the temple-like original environment, this scene takes place above and in front of the original ruin rooms at the site. In Figure 7.128, the white [3] shows the actors positioning and the black [3] the audience's location. The audience is required to stay within the prescribed walkable area as to not encounter any danger from the damage of the ruin. The members of the audience are represented by the grey bird's-eye view figures. The audience will be both on the same playing level as the actors, and viewing the main actor Sarastro from below, giving him a sense of authority. Figure 7.129 shows a section of the scene, and the relationship between where the actors and audience are located. As discussed in Chapter 4.8, Figure 4.5 shows the relationship between the audience and actor, where the actor is placed above the public, giving the actor a sense of power and authority. Figure 4.4 shows an illustration of the actor and audience on the same playing level, denoting a sense of equality and relatability. In this scene the main father-like character – Sarastro – is placed above the audience and the two younger children – Tamino and Pamina – at the same level of the audiences showing their immaturity.

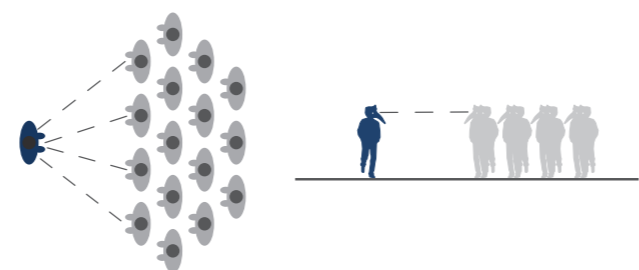


Figure 4.4 Audience facing actor

### 7.9.2 LOCATION CHARACTER

Selected for its similarity in architectural structure to the temple scene of the original Magic Flute, the site plays an important role in this scene. The height differences and structure allow the actors to be placed on both levels to reiterate their psychological character. As seen in Figure 7.130, the built-up nature of the rooms lends themselves to the needed structure for this scene. The three selected areas, as seen on the plan Figure 7.131, represent each of the three temples, Reason on the left, Nature on the Right and Wisdom in the middle. Figure 7.131 gives an overall view of the existing rooms at the site and the amount of natural erosion and degradation of the structure. Similarly, Figure 7.132 depicts the view from the upper level of the fort, showing the open nature of the rooms. Inside the rooms, trees and plants have started to grow. In this scene, these elements add to the creation and relatability of the thematic development of the narrative to the site. The trees will also be used to suspend acoustic boarding to ensure the sound is controlled. This will be further developed in Part three. The photograph in Figure 7.133, shows the view that the audience will see when watching the progression of the scene.



Figure 7.131 Overview of the rooms where the scene takes place



Figure 7.130 View towards the playing area of the scene



Figure 7.132 View from upper level, looking at scene location



Figure 7.133 Audience view of scene



### ENVIRONMENT



### SPACE



### LIGHT



### ENCLOSURE



### GROUND PLANE



### SUPPORT



### DISPLAY



### DECORATION



### INFORMATION



### PROPORTION



### ACOUSTICS



Figure 7.134 Interior Architecture Principles

## 7.9.3 A LINK TO INTERIOR ARCHITECTURE

Act 1 Scene 3 focuses on the creation of the environment in which the performance takes place. The interior architecture elements, Figure 7.134, selected for the scene are: environment, space, and lighting as the main elements, and support and proportion as the secondary elements. These design details will be explored later in the design development, of this scene. The relationship between the existing site fabric and set design is an important aspect of the design. A metaphorical abstraction assists in the creation of the environment which in turn responds to the site and the set design for the scene. Lighting and projection are used to enhance the thematic development of the narrative and give and add to the visual information by laying existing, new and previous works onto the same playing area. The support structures for this scene address the acoustics and staging for the actor. These will be further developed in Part three, technical considerations. Proportion is manipulated in this scene through projections onto the acoustic panelling, which serves a dual purpose.

## 7.9.4 INITIAL CONCEPTUAL MOOD BOARD

The initial concept board, Figure 7.135, brings together all the selected elements of the scene. The black and white photographic image shows the physical location of the site, representing the audience view of the performance. The white plan gives a graphic representation of where the site is located in the fort. The bird illustration and yellow shining graphic are taken from William Kentridges version of the magic flute, ensuring that this scene utilises the imagery that he has already created. The dark figure represents Sarastro - his character development can be seen in Chapter 6.3. The collage of imagery brings together the site, actors and audience, aligning the scene with the site-specific nature of this project. The existing structure will be illuminated to ensure focus is placed on its character as well as the additional scene design.



Figure 7.135 Initial mood board collage



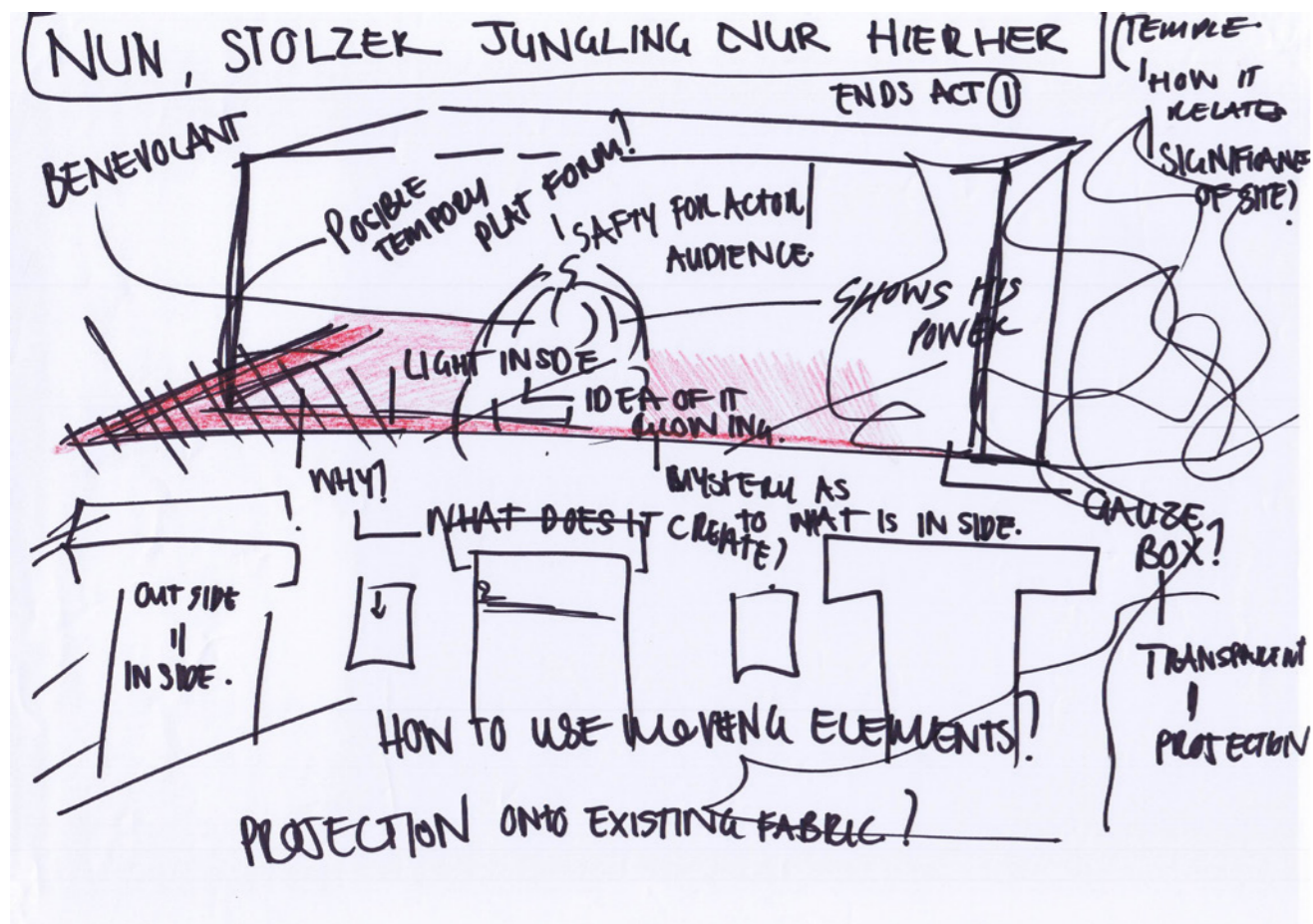


Figure 7.136 Interior Architecture Principles

## 7.95 DESIGN DEVELOPMENT

The following two concept development sketches, Figure 7.136 and Figure 7.137 on the following page, shows the initial design exploration of the scene. Both graphics focus on the use of the existing site as the starting point for the scene progression. The themes identified in The Magic Flute narrative are then layered onto the existing site, growing from the information already provided. An example of this is the choice of this location to host Act 1 Scene 3. The similarities in structural nature of the site and the temple in the narrative are prominent. This ties the performance to the existing site and gives it an opportunity to enhance the performance with its unique character. The scene focuses strongly on the path towards enlightenment and the fact that light will always win. These themes are then developed and enhanced using lighting and projection. Materiality play an important role in this scene - the materials used to highlight the paths towards the temple carry metaphorical meaning, giving the performance more depth. The cardboard tubes are used to represent 'Reason', the man-made structure enhancing the metaphor. Natural sticks are uses to symbolise the 'Nature' temple, the organic form placing emphasis on nature. 'Wisdom' is represented by a combination of both cardboard - man-made - and sticks - nature-made. The refined timber columns represent both 'Reason', 'Nature', and together the two show the maturity and balance of 'Wisdom'.

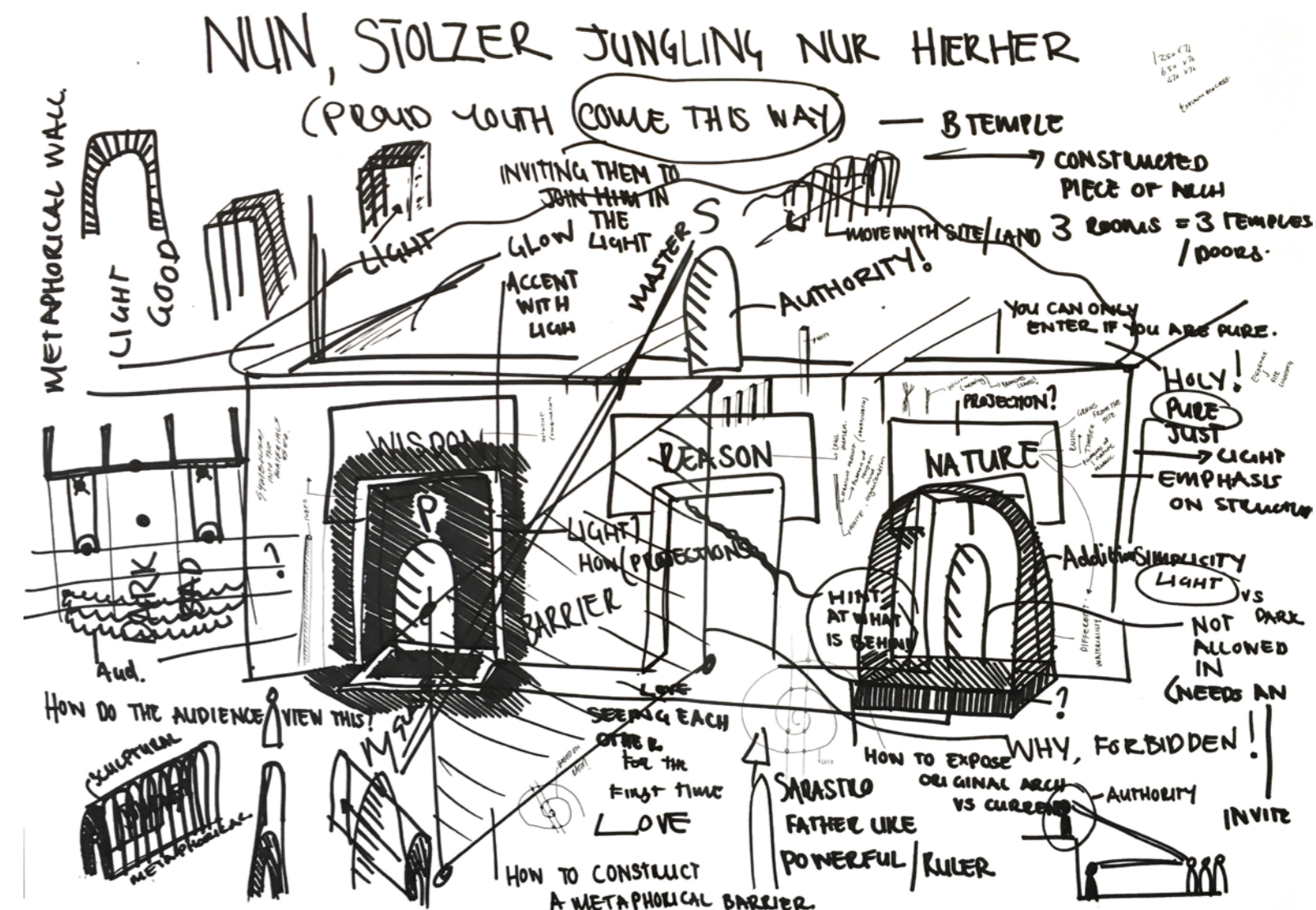


Figure 7.137 Interior Architecture Principles



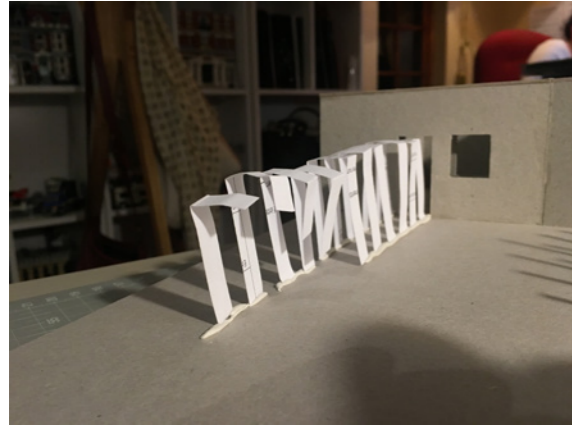


Figure 7.138 Paper walkway

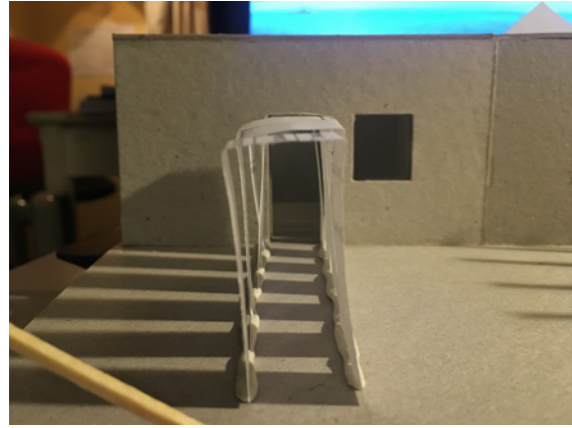


Figure 7.139 Paper exploration

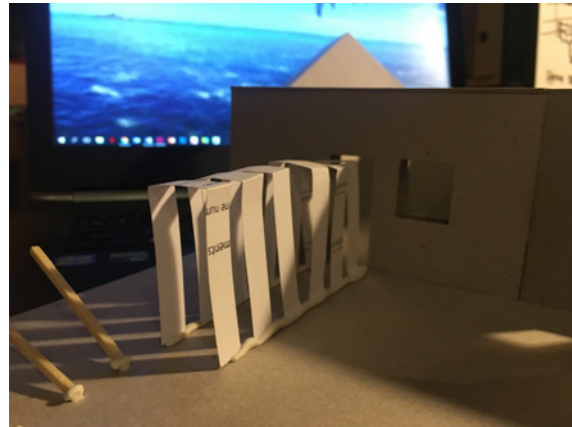


Figure 7.140 Walkway paper idea

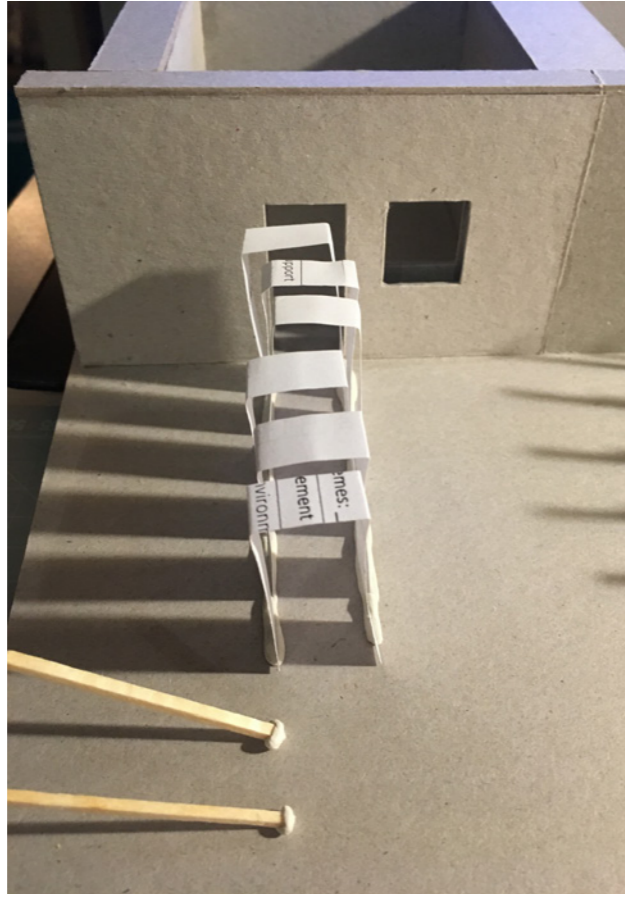


Figure 7.141 Above view of paper

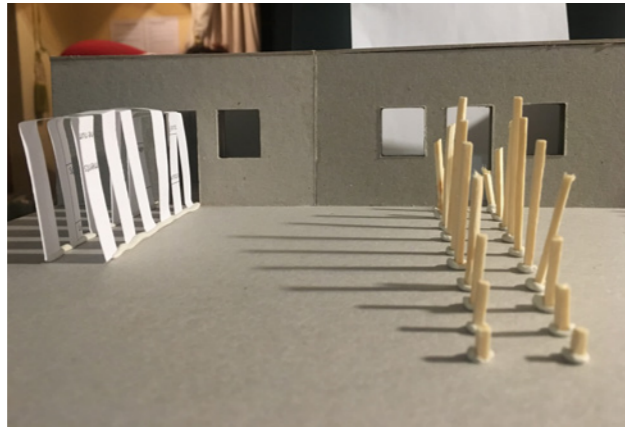


Figure 7.142 Stick exploration

## 7.9.6 MODELS AS A TOOL FOR DESIGN EXPLORATION

The following images, Figure 7.138 to Figure 7.148, show the use of the model as a means of design exploration. The images focus on the manipulation of the pathways and how the materials can be changed to create different effects. Various materials are explored: Figure 7.139 to Figure 7.141 show the use of paper and Figure 7.142 to Figure 7.147 use wooden sticks. Figure 7.148 shows a darkened view of the model after final additions. The model iterations form part of the design development for each scene.



Figure 7.143 Side view

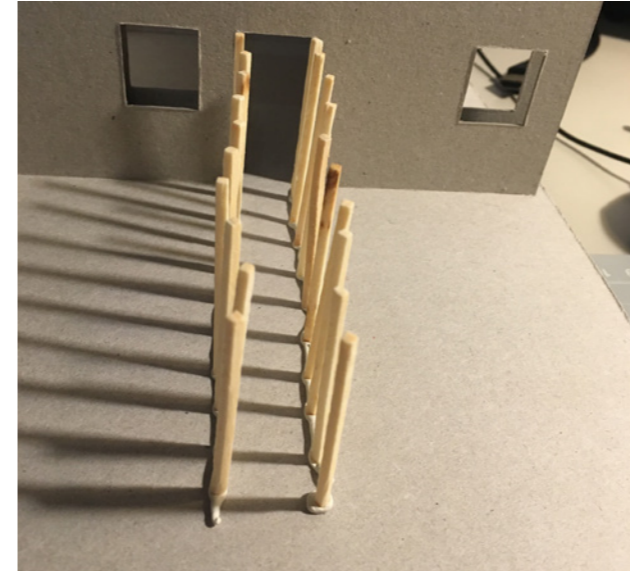


Figure 7.144 Same height

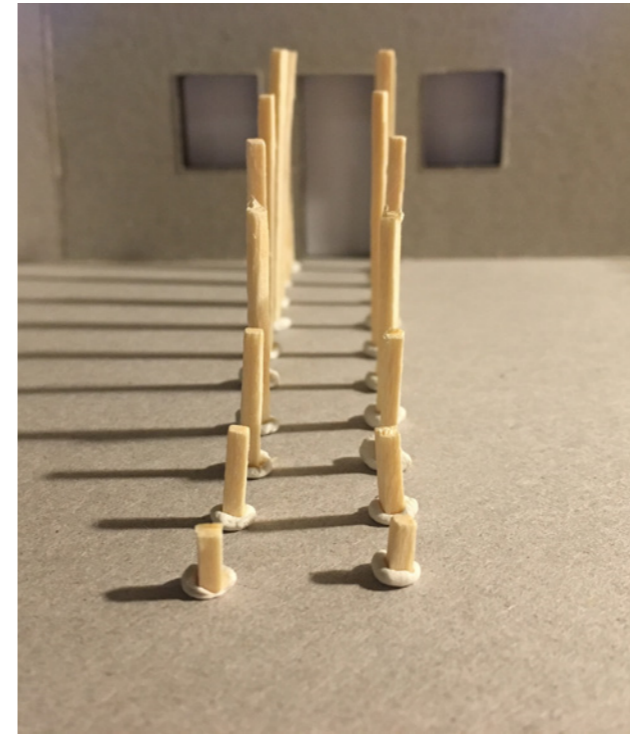


Figure 7.147 Height variation

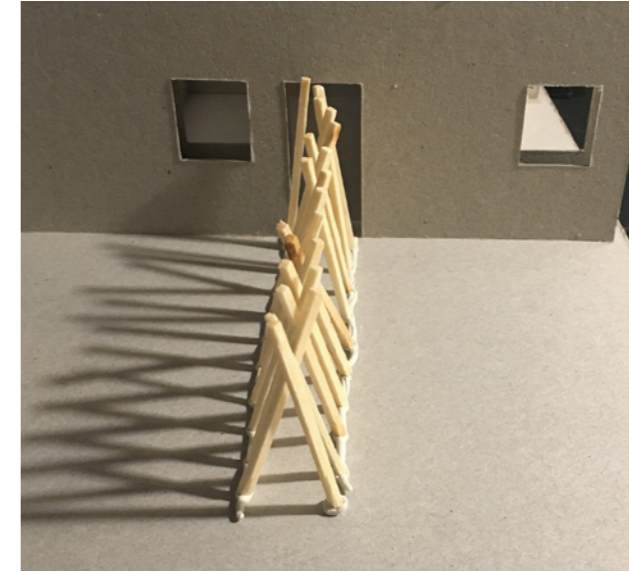


Figure 7.145 Cross over

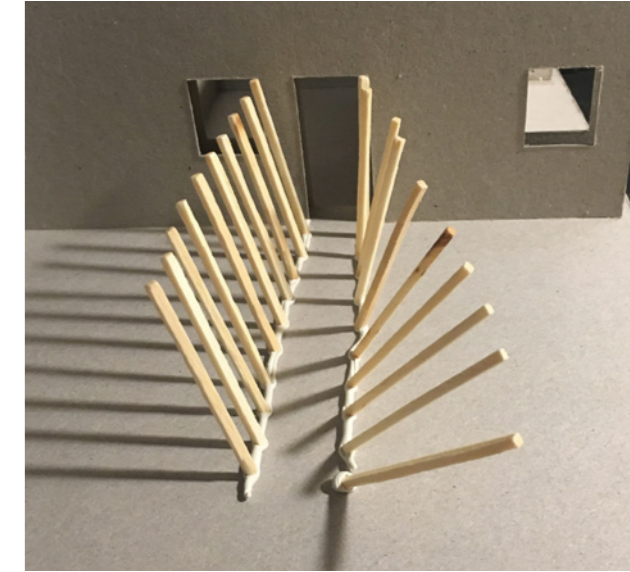


Figure 7.146 Open effect

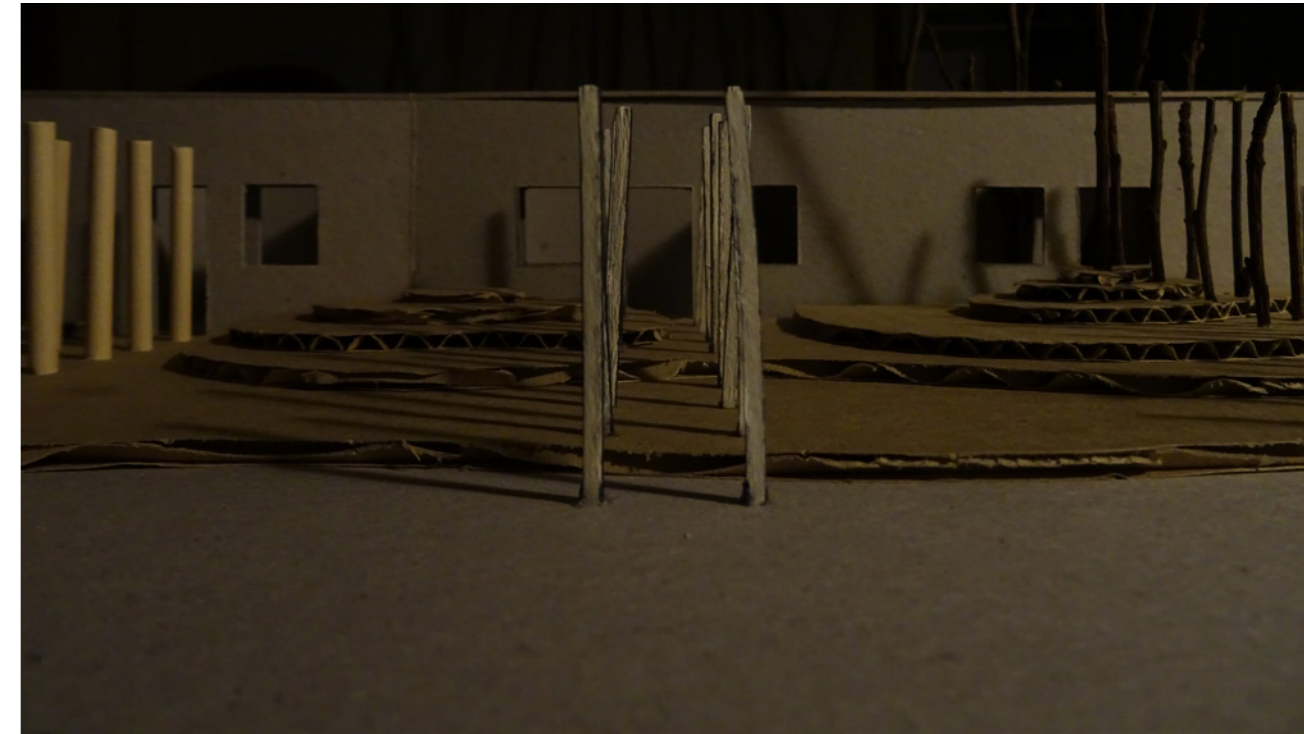


Figure 7.148 Darkness view





Figure 7.149 Start of Act 1 scene 3  
0190

## 7.9.7 DESIGN OUTCOME

As mentioned above the focus of this scene is on the creation of the environment, layering of visual detail, and the metaphorical meaning in the selection of materials. Lighting and projection also play an important part in the design of the scene. Figure 7.149, shows the start of the scene, where the focus is on the actors performing. The lighting at the start of the scene focuses on Sarastro, who stands above the existing structure. He is the most powerful character and the light enhances his character's enlightened state. Figure 7.150 shows the final moments of the scene. The playing area is flooded with light and the couple head toward the temple to begin their journey to enlightenment. Figure 7.151 to Figure 153 show the various use of materials. These materials carry the metaphors of the theme through the scene. The materiality, acoustic and lighting design will be further discussed in technical consideration.



Figure 7.150 Ending moments of Act 1 Scene 3



Figure 7.151 Cardboard tubes representing reason



Figure 7.152 Timber poles representing wisdom



Figure 7.153 Sticks representing nature



## 7.9.8 LIGHTING EXPLORATION

The following images, Figure 7.154 to Figure 7.156 show the manipulation of lighting on the models of the scene. Lighting,

as mentioned, is important in the metaphorical development of this scene. The light becomes a symbol of all things good and the power which comes with following the light.



Figure 7.154 Light illumination of structure

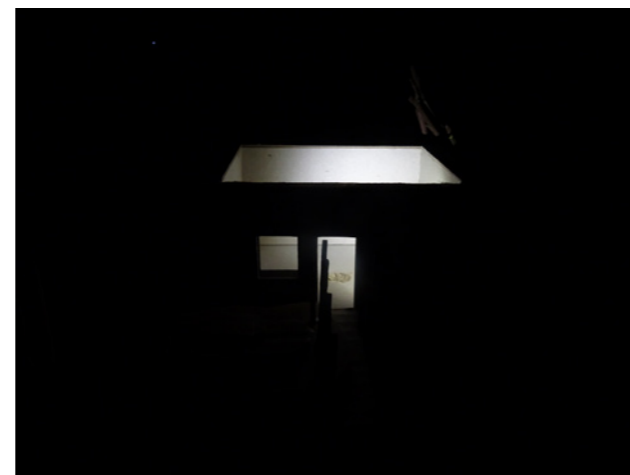


Figure 7.155 Focal light on interior of room

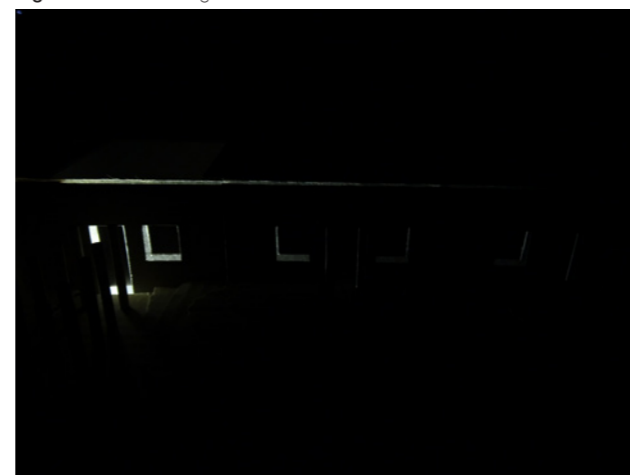


Figure 7.156 Light Highlighting structure

## 7.9.9 INITIAL TECHNICAL EXPLORATION

The following figures, Figure 7.157 to Figure 7.162, explore the initial attempt at technical development. Focus is placed on the use of lighting and projection.

Figure 7.158, as well as the choice of materials, Figure 7.159 to Figure 7.161. The technical design for this scene is further explained.

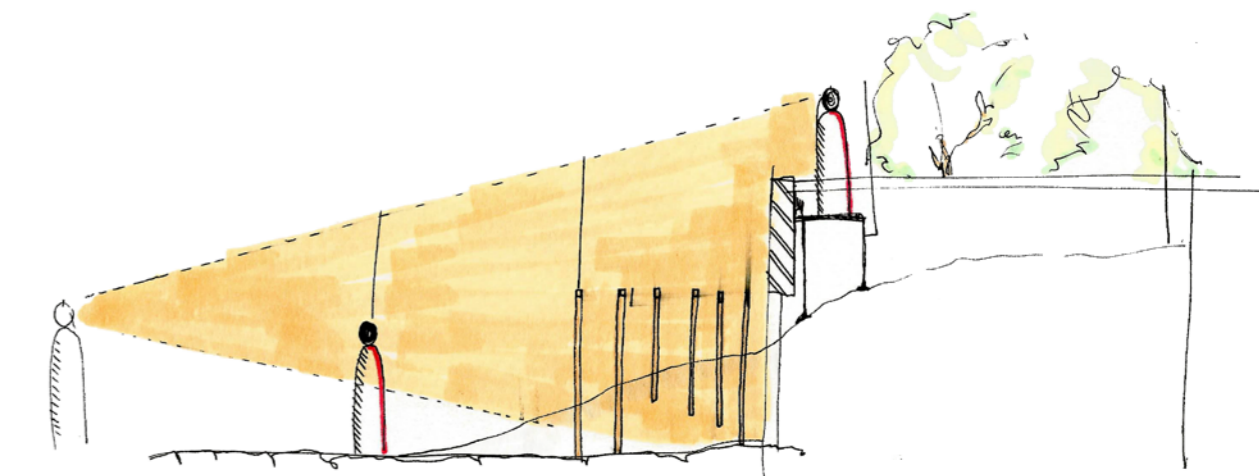


Figure 7.157 Audience view towards performance

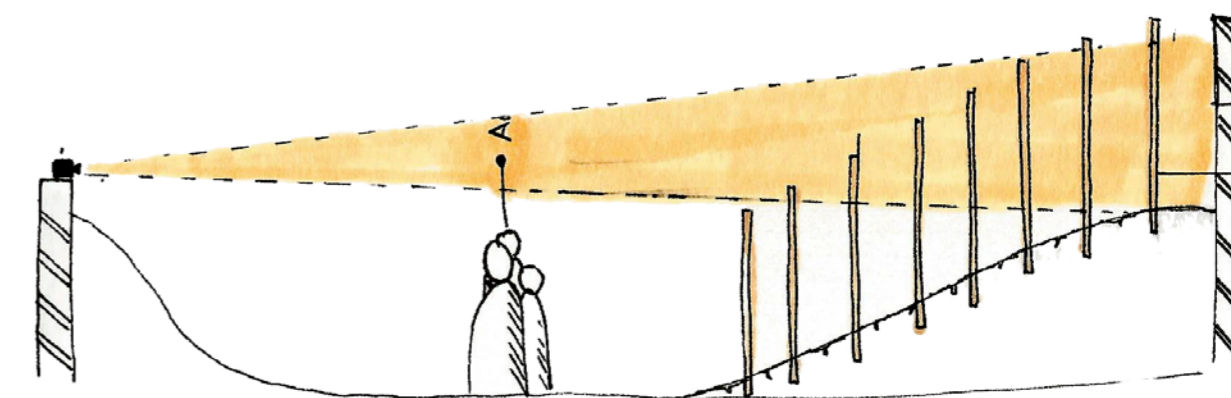


Figure 7.158 Projection layering for scene



Figure 7.159 Cardboard tubes

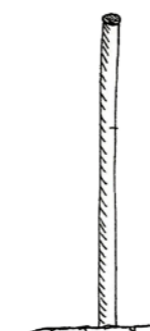


Figure 7.160 Timber columns



Figure 7.161 Natural sticks



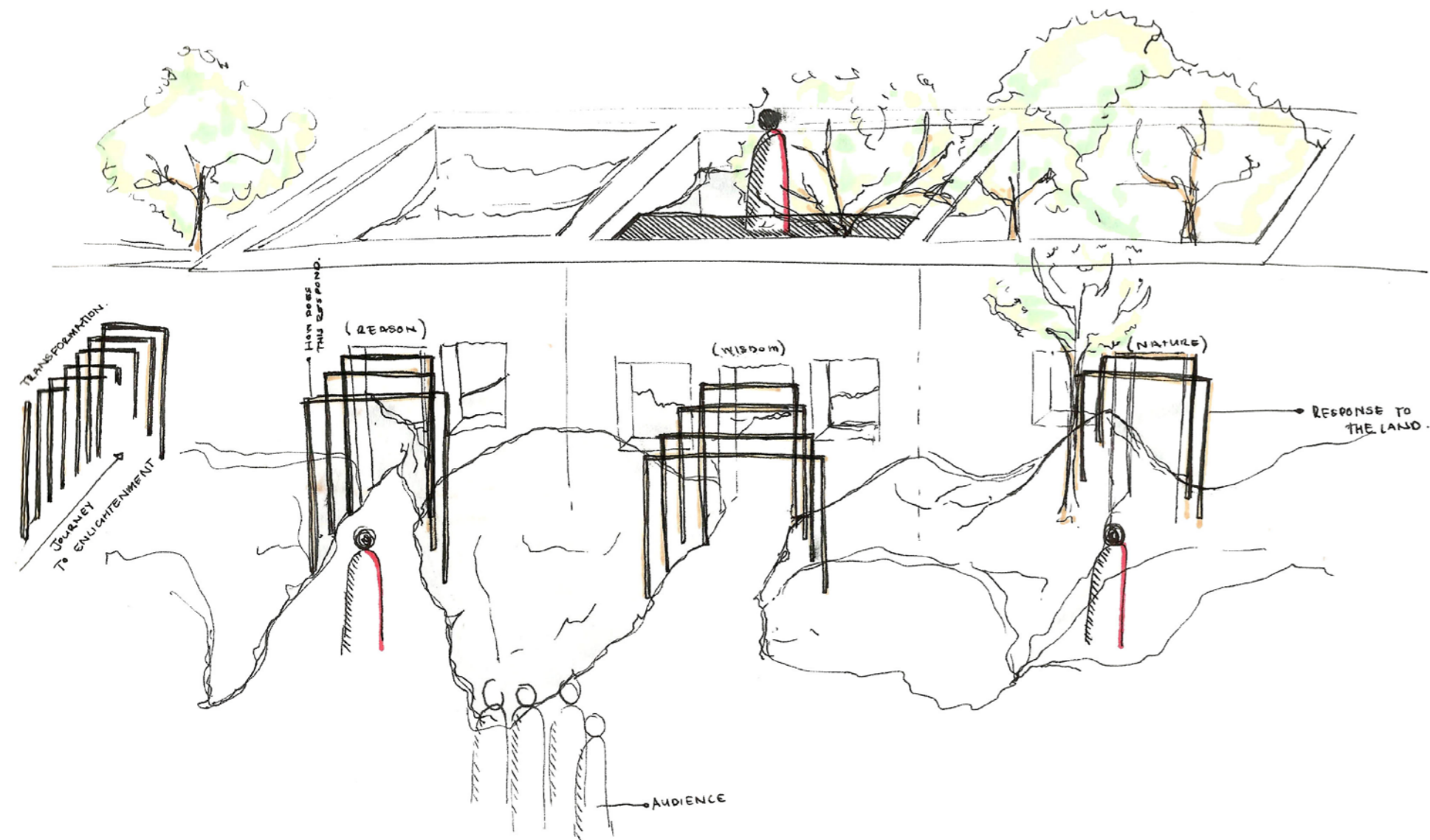


Figure 7.162 Scene overview

## 7.9.10 TECHNICAL CONSIDERATIONS

In “Nun stolzer Jungling, nur hierher” (Proud youth, come this way), as discussed in 7.9, the theme of good versus evil is prominent. Lighting and projection are important aspects of achieving this drama of dark versus light. Acoustic considerations and enhancements as well as the exploration of materials and symbolic means are another focus in this scene’s technical development, Figure 7.163 to Figure 7.171. As mentioned in the lighting exploration, Chapter 7.9.8, the illumination of the existing fort’s rooms is used to create a glowing effect. The colour yellow is used for its psychological properties, mentioned in Chapter 7.5.9.2. Most of the light is focused on the interior of these spaces, to create the illusion of a temple (symbolizing good and light). At the start of the scene, the light on the interior is dim and it then grows, controlled by a dimmer controller, Figure 7.163. The LED spotlights, Figure 7.164, have a bright intensity making this effect possible. The cabling for this scene is concealed by the fort structure.

Acoustic panels, which are painted cardboard structures as seen in Figure 7.165, have been suspended between the two sets of trees on either side of the playing area. The use of cardboard allows for the flexibility of bending the material and recyclability in its afterlife. The cardboard sheets are suspended from a steel cable using a hook method. String keeps the cardboard curved and rocks are used as weights to

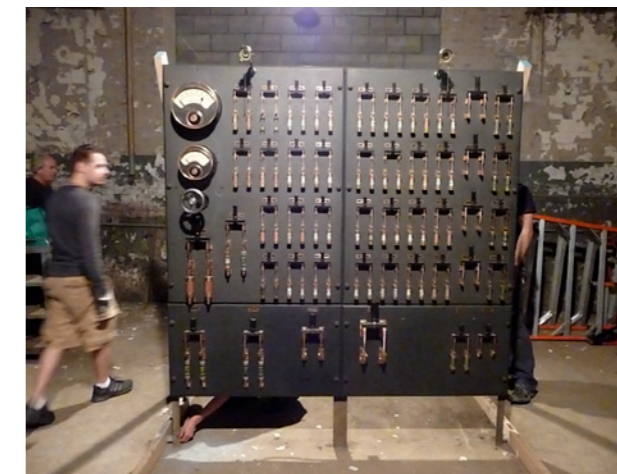


Figure 7.163 Dimmer Control



Figure 7.164 Spot Light

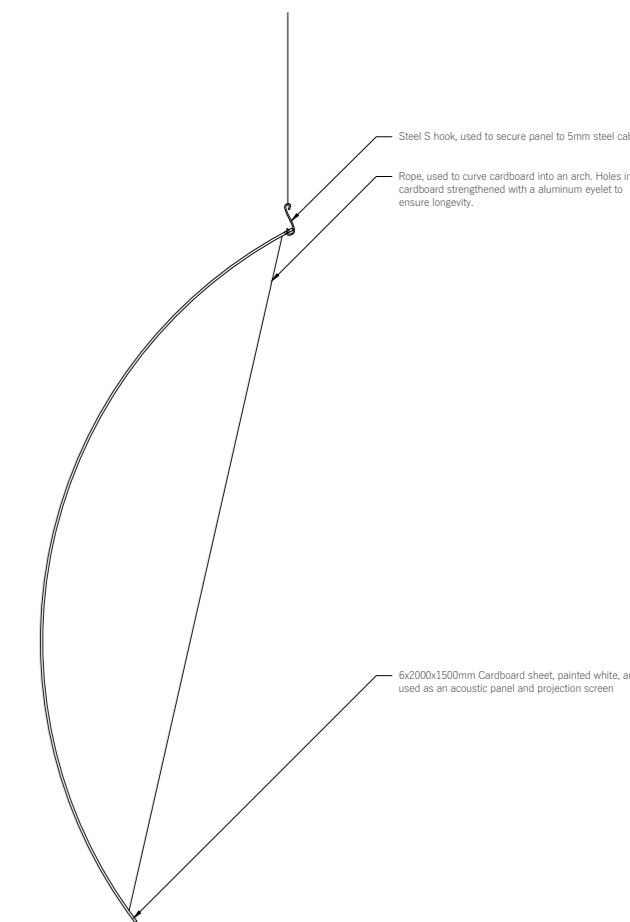
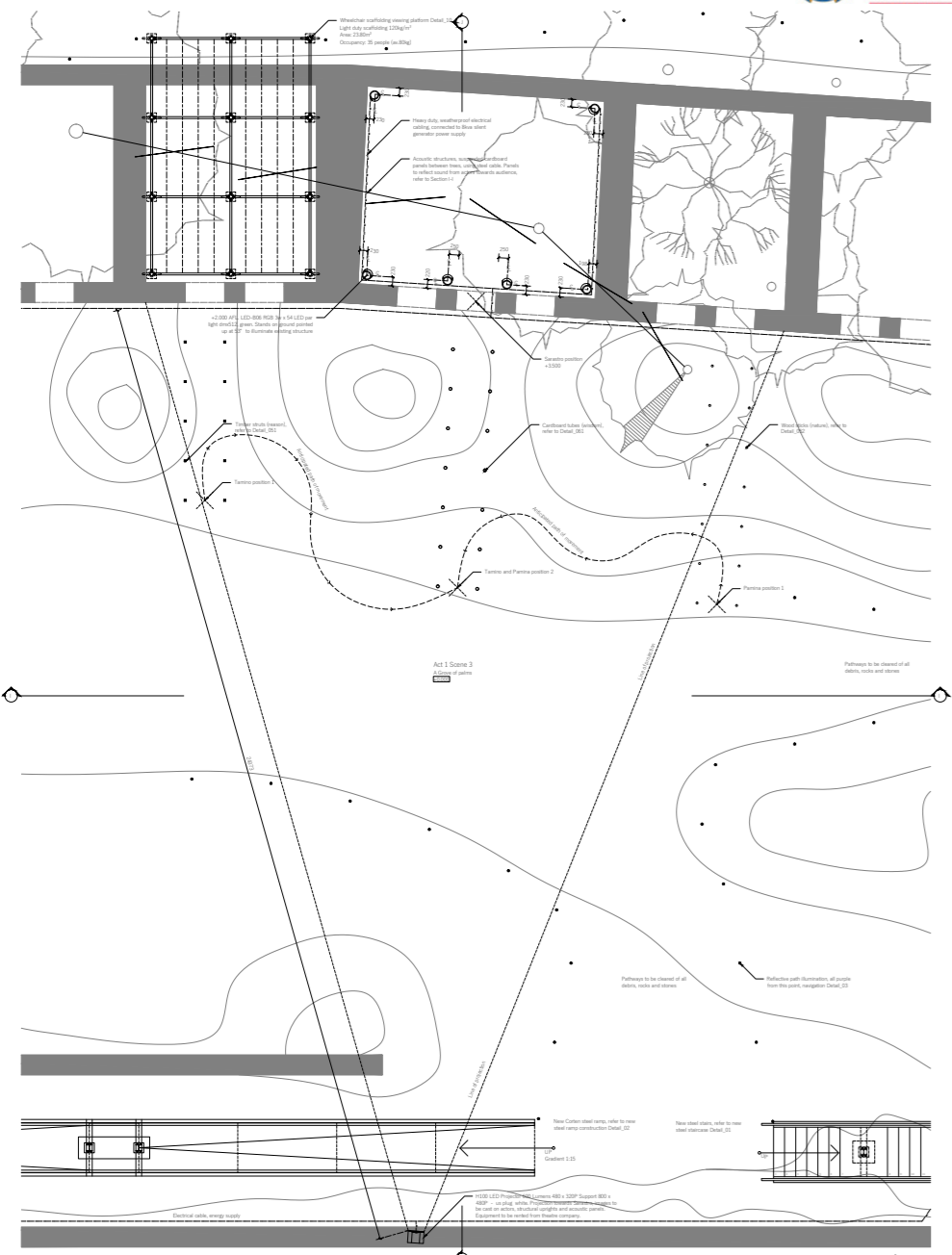


Figure 7.165 Hanging acoustic panel

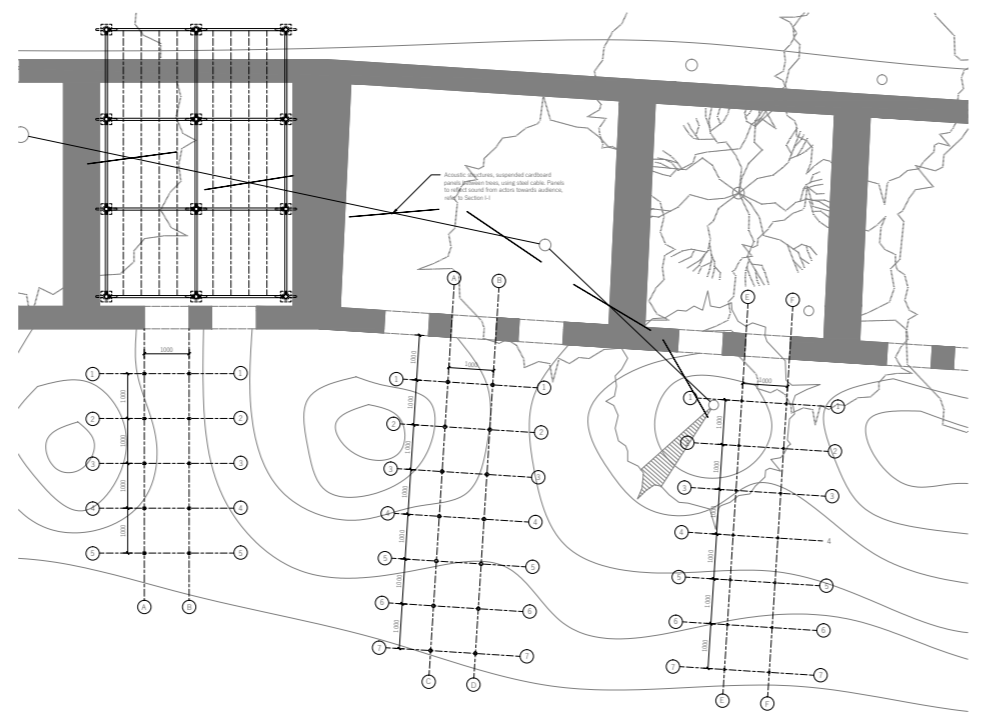




ACT 1 SCENE 3 PLAN DETAIL\_05  
Scale 1:50

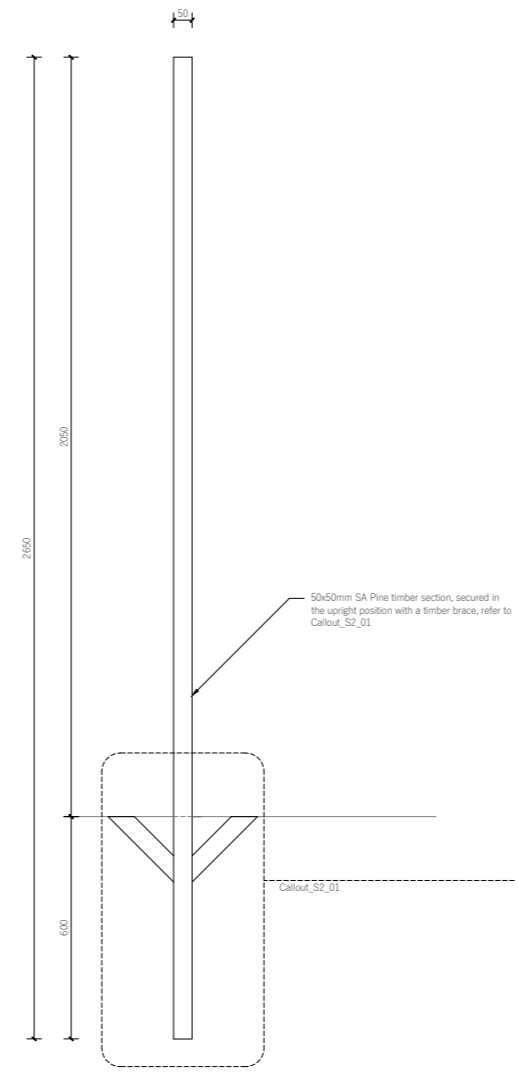
prevent the panels from swinging in the wind. The acoustic panels capture the actor's sound and reflect it towards the audience, Figure 7.168. The panels, Figure 7.170, also serve a dual purpose as a projection screen. For the projection in this scene, the projector is situated behind the audience, Figure 4.1, William Kentridge's images are projected onto the existing site, acoustic panels, actors and audience to fracture the narrative while the intensity of light grows throughout the scene.

Figure 7.166 - the plan of Act 1 Scene 3 - depicts the simplistic intervention. These timber, cardboard and natural stick walkways are symbolic of the 'Wisdom', 'Reason' and 'Nature' temples in the opera, Figure 7.167. Therefore, the selection of the materials and their symbolism is important. A range of materials were studied and identified; the table below, Figure 7.169, shows the comparison of the three materials and their qualities.



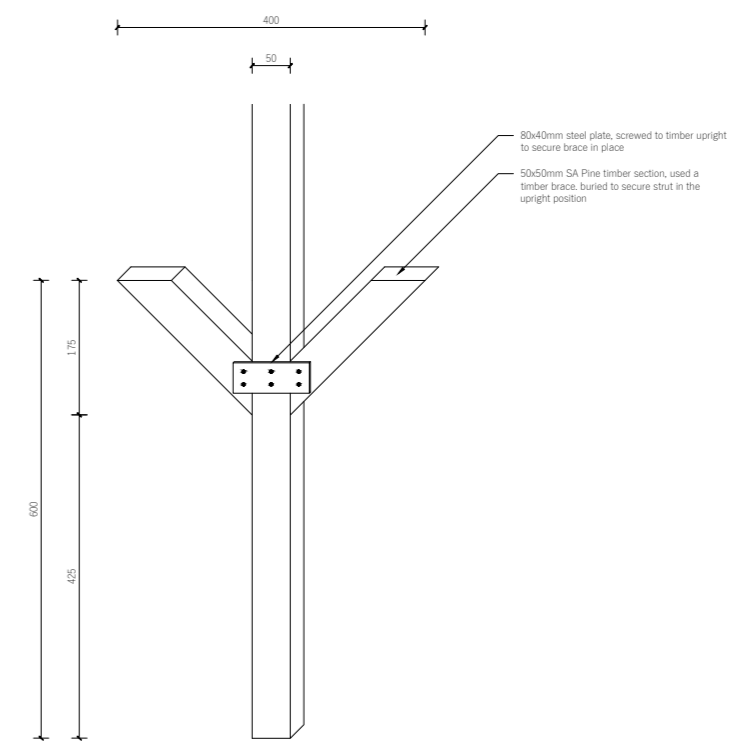
ACT 1 SCENE 3 STRUCTURE GRID SET-UP

Figure 7.166 Act 1 Scene 3 plans

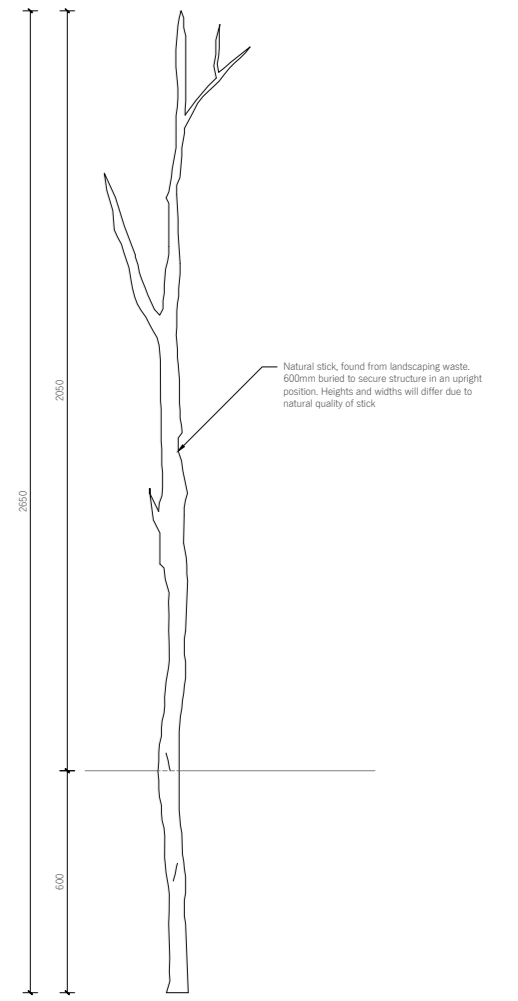


TIMBER STRUT DETAIL\_051

Figure 7.167 Upright details

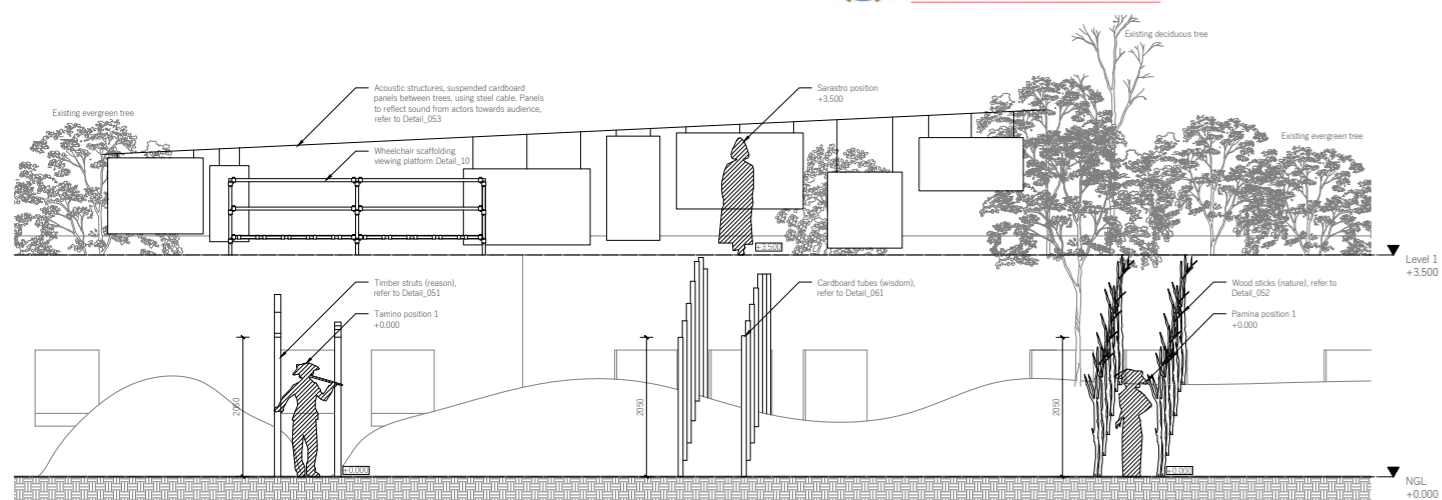


TIMBER STRUT CALLOUT\_S2\_01



WOOD STICKS DETAIL\_052

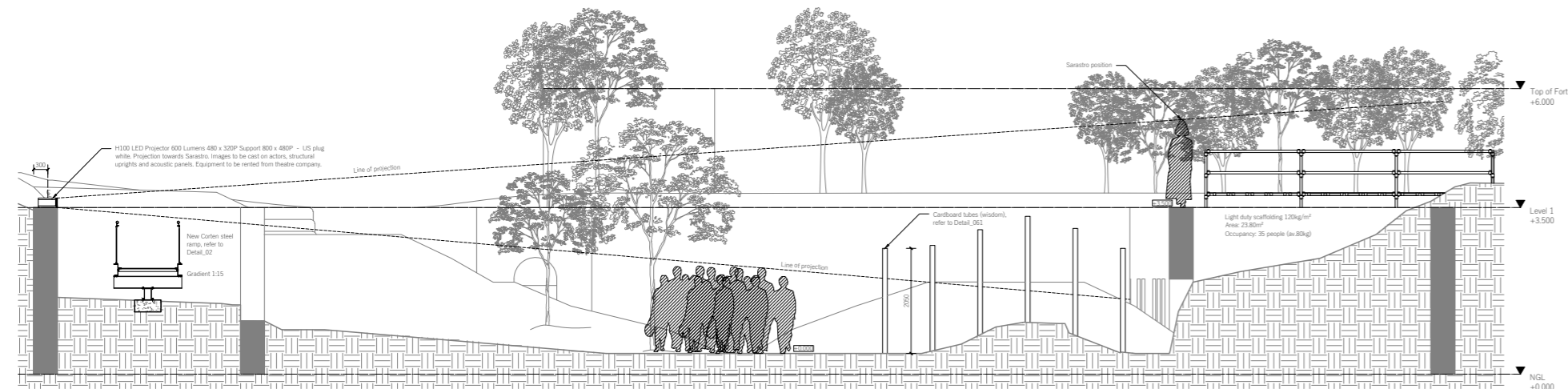




ACT 1 SCENE 3 SECTION I-I



Figure 4.1 Collage of William Kentridge's Magic Flute production.

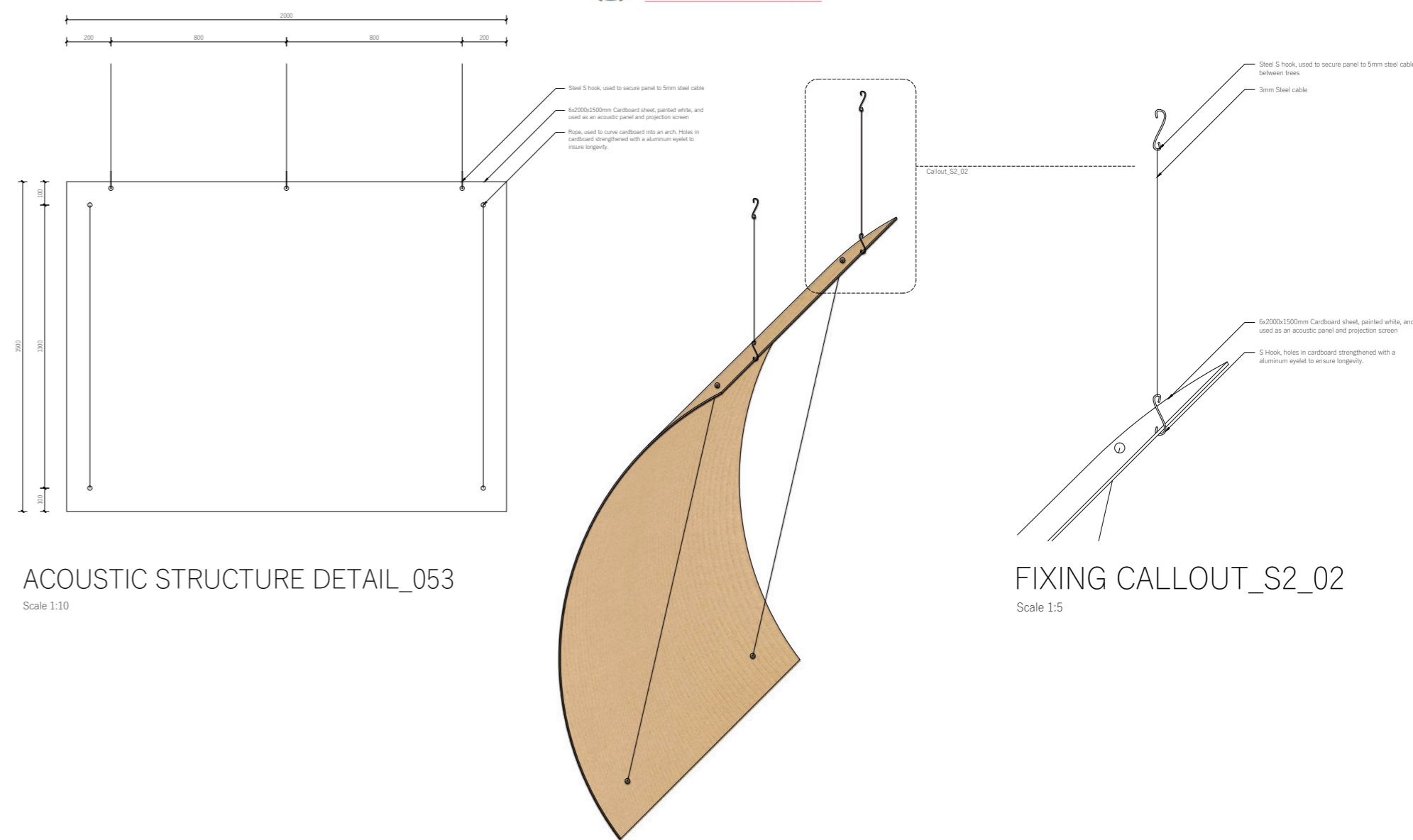


ACT 1 SCENE 3 SECTION J-J

Figure 7.168 Act 1 Scene 3 sections

Materials	Qualities			Availability		Cost			Recyclable (Sustainable)		Re-use afterlife			Noise Production			Acoustic qualities		Time frame (life)	
	Structural	Semi-structural	Aesthetics	Found	Created	High	Affordable	Cheap	Reuse	Recycle	Recycle	Biodegradable	Reuse (Donate)	High	Moderate	Low	Absorb	Refract	Temporary	Permanent
Cardboard Tubes	x			x	x		x		x				x		x		x		x	
Timber (pine)	x			x			x		x				x		x			x	x	
Landscape waste		x		x			x			x		x		x			x		x	

Figure 7.169 Materials comparison table



ACOUSTIC STRUCTURE DETAIL\_053

Scale 1:10

FIXING CALLOUT\_S2\_02

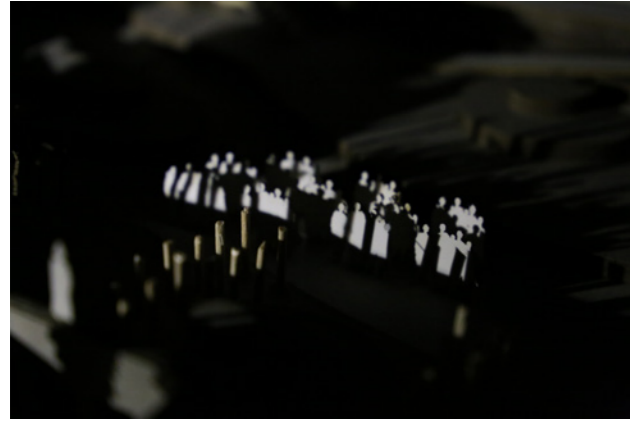
Scale 1:5

ACOUSTIC STRUCTURE 3D

Scale 1:10

Figure 7.170 Acoustic detail





Actor perspective



Exploration of light, cool colours



Exploration of light, warm colours



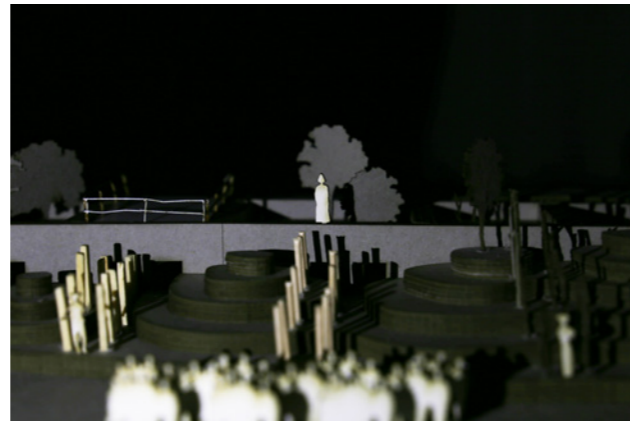
Intensity of illumination, focus of light



Reveal of Sarastro



Light used to enhance the purity of his character



A Point of enlightenment

Figure 7.171 Final Model

## 7.10 ACT 2 SCENE 3 – A GARDEN

The plot of Act 2 Scene 3 is discussed in Chapter 6.2.6 wherein the aria “Der Holle Rache kocht in meinem Herzen” (The revenge of hell rages in my heart) the queen gives Pamina a dagger and orders her to kill Sarastro or she will be disowned. Selected as one of the most well-known arias of the Magic Flute, this piece of music is dramatic, emotion-filled and exposes the power of the soprano’s voice. Throughout the piece, the Queen of the Night tells Pamina - her daughter - of the betrayal and disappointment that she feels towards her. The Queen of the Night sings in anger at her dissatisfaction with Pamina. The strong themes of anger, disappointment and betrayal ring through this aria, creating a dramatic and powerful performance.



Figure 6.33 “Der Holle Rache kocht in meinem Herzen” (The revenge of hell rages in my heart)

## ANGER, PASSION AND, BETRAYAL



Figure 6.30 Act 2 Scene 3 - Traditional version 1991

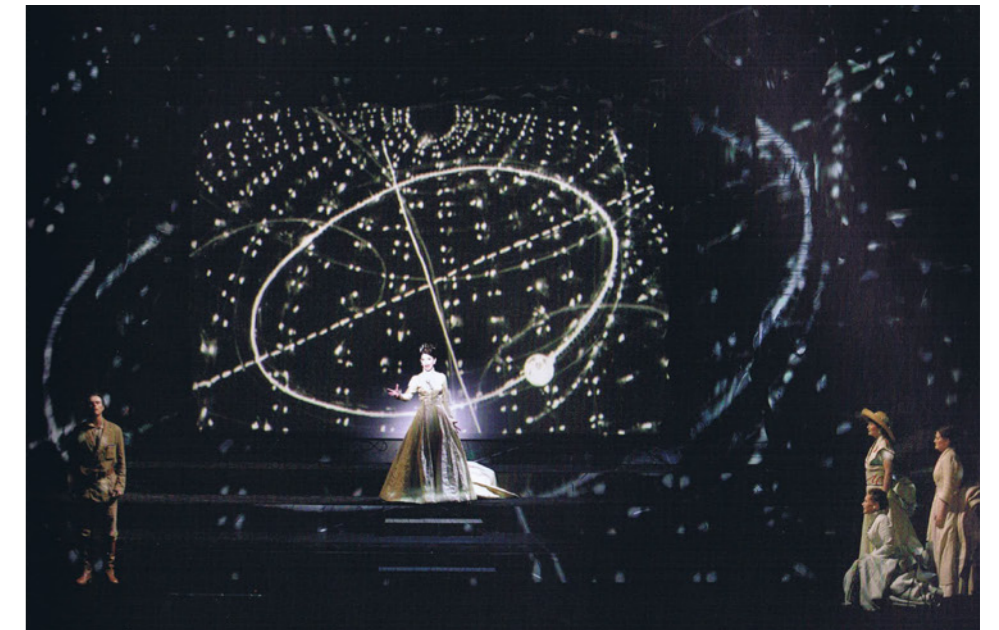


Figure 6.31 Act 2 Scene 3 - William Kentridge version 2001



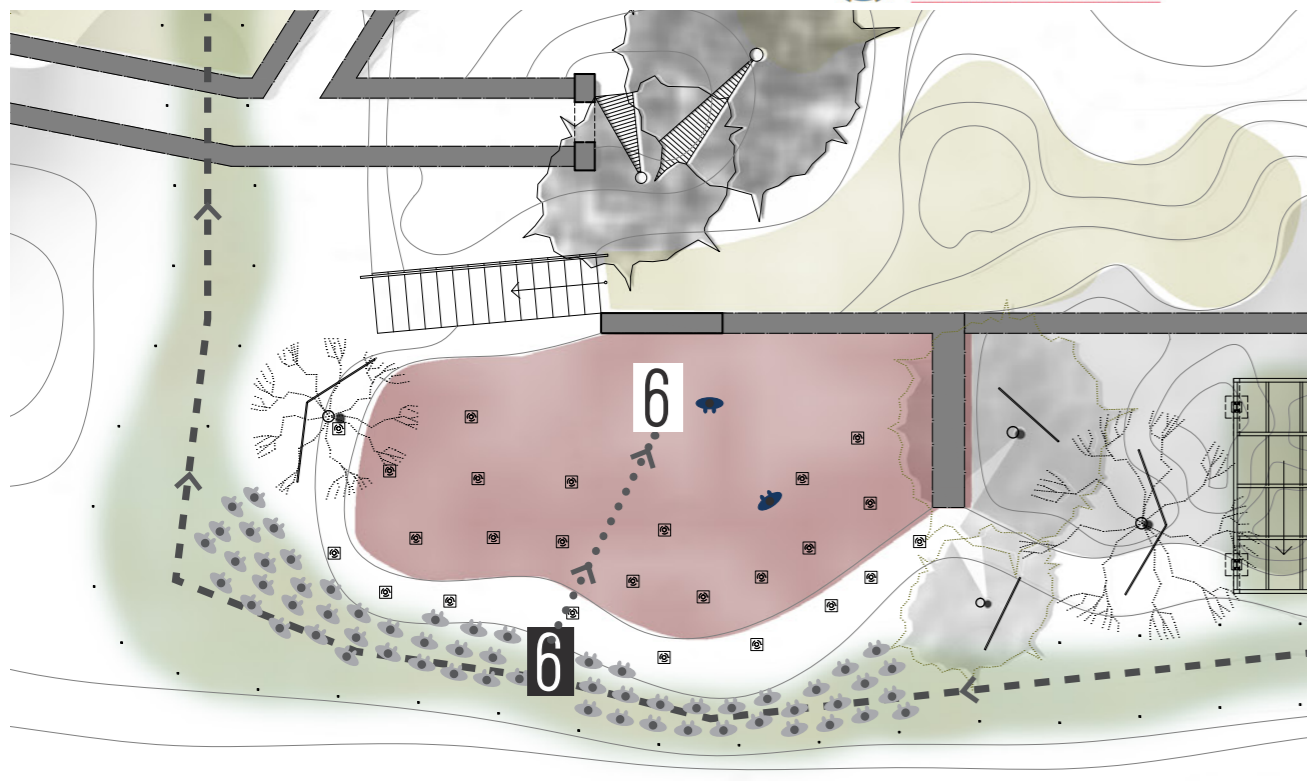


Figure 7.172 Plan of Act 2 Scene 3 location

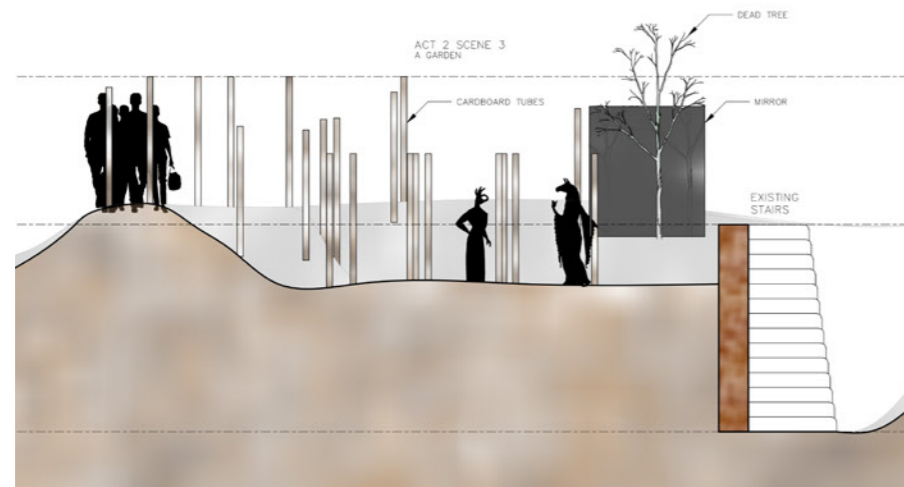
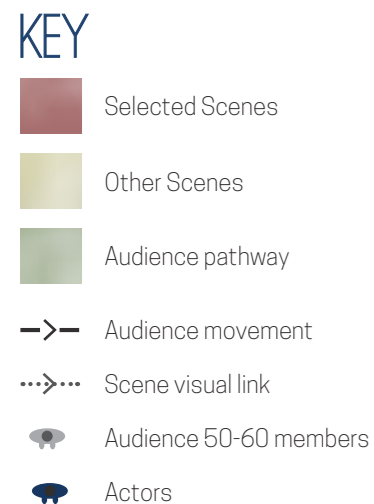


Figure 7.173 Sectional view of Act 2 Scene 3

## 7.10.1 SCENE LOCATION

Act 2 Scene 3 takes place in the palace gardens. The location of this scene was chosen due to the proximity to the existing trees on the site. Figure 7.172 shows a plan of the scene - the red highlights where the performance will take place, the white [6] shows the actors positioning, and the black [6] shows where the audience will be located. The arrangements of the audience will be in a rounded line around the scene; the audience is denoted by grey bird's-eye view figures. The degradation at the location of the scene enhances the thematic emotion of disappointment that the queen feels; the damage at the site mimicking the destruction of her trust. The actor's stage area is placed lower than the audience, giving the queen a sense of vulnerability, and showing how her daughter's betrayal has weakened her. The levels of audience-actor relationship are seen in the section, Figure 7.173, and in the illustration, Figure 4.8, which was previously discussed in Chapter 4.8.

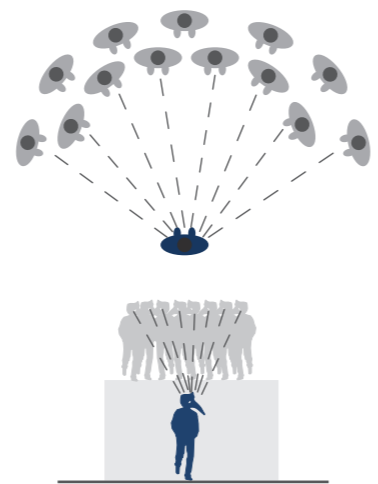


Figure 4.8 Actor below and surrounded by audience

## 7.10.2 LOCATION CHARACTER

The site was selected for the trees which surround the playing area (stage) as well as the level change between where the audience would stand and where the actress will perform. Figure 7.174 showing the audience's view shows the lone tree which stands at the top of the stairs. As the trees form an important part of this scene, an emphasis in the scene design of the scene will be placed on this tree. The other trees around the scene location are seen in Figure 7.175, where the stage is viewed from the interior of the courtyard, looking towards the playing area. Figure 7.176 also shows the stage from a different perspective, showing the size of the stage and the sloped incline towards where the audience stands. Since the degradation and natural damage at the site play an important part in the link to the thematic developments of The Magic Flute, Figure 7.177 shows the deterioration of the existing stairs which form part of the backdrop of the scene.



Figure 7.174 View of playing area from audience perspective



Figure 7.175 Fragility and damage to site



Figure 7.176 Actor playing area



Figure 7.177 Deterioration of the existing stairs



### ENVIRONMENT



### SPACE



### LIGHT



### ENCLOSURE



### GROUND PLANE



### SUPPORT



### DISPLAY



### DECORATION



### INFORMATION



### PROPORTION



### ACOUSTICS



Figure 7.178 Interior Architecture Principles

## 7.10.3 A LINK TO INTERIOR ARCHITECTURE

Act 2 Scene 3 focuses on the use of lighting, projection and reflection from mirrors to create effects for the scene. The interior architecture elements, as seen in Figure 7.178, which have been focused on for the creation of the scene are: environment, space and light as the main elements, and ground plane, support, display, and proportion as secondary elements. The creation of the garden-like environment and the fragmented visual space has been created through the use and focus on the lighting experience in the scene. These design details will be later explored in the design development, Chapter 7.8.5 of this scene. Lighting forms an important part of the scenography and design creation for this performance. Different lighting effects and methods have been used to create an illusion or environment within the design.

## 7.10.4 INITIAL CONCEPTUAL MOOD BOARD

The initial concept board, Figure 7.179, brings together all the selected elements of the scene. The site location is shown through the photograph in the background of the sketch, emphasising the trees which are vital to the performance of this scene. The monochromatic plan overlay display the location of the scene at the fort. Character's images developed in Chapter 6.3 are used to represent the actors in the scene: the large dominating figure represents the Queen of the Night as the main character, and the smaller figure represents her daughter, Pamina. The red imagery which is placed over the scene is William Kentridge's graphics from his adaptation of The Magic Flute. Together this collage of imagery gives a basic conceptual idea of the focal aspect of the scene. These notions are then translated into the three-dimensional design.

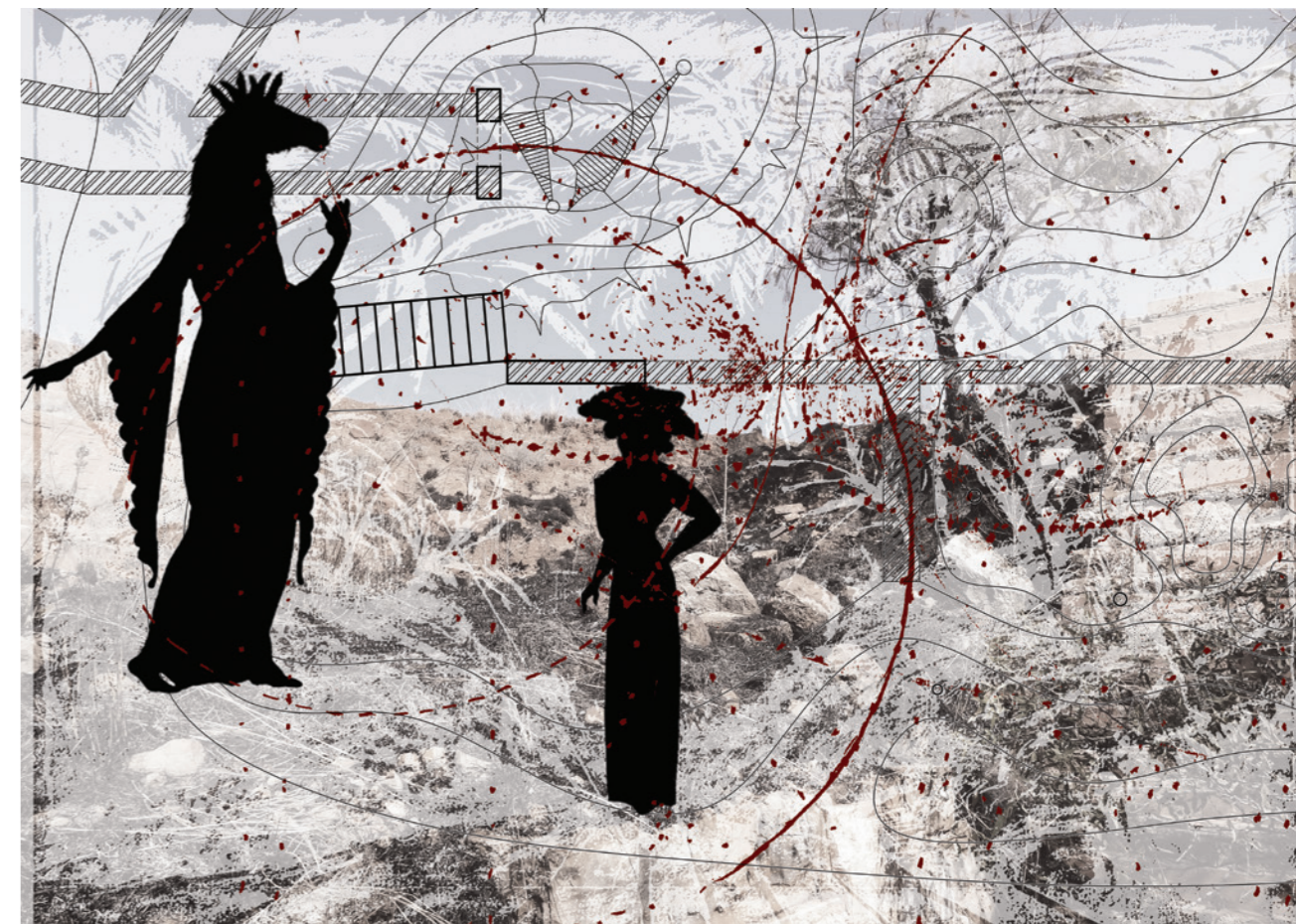


Figure 7.179 Initial mood board collage



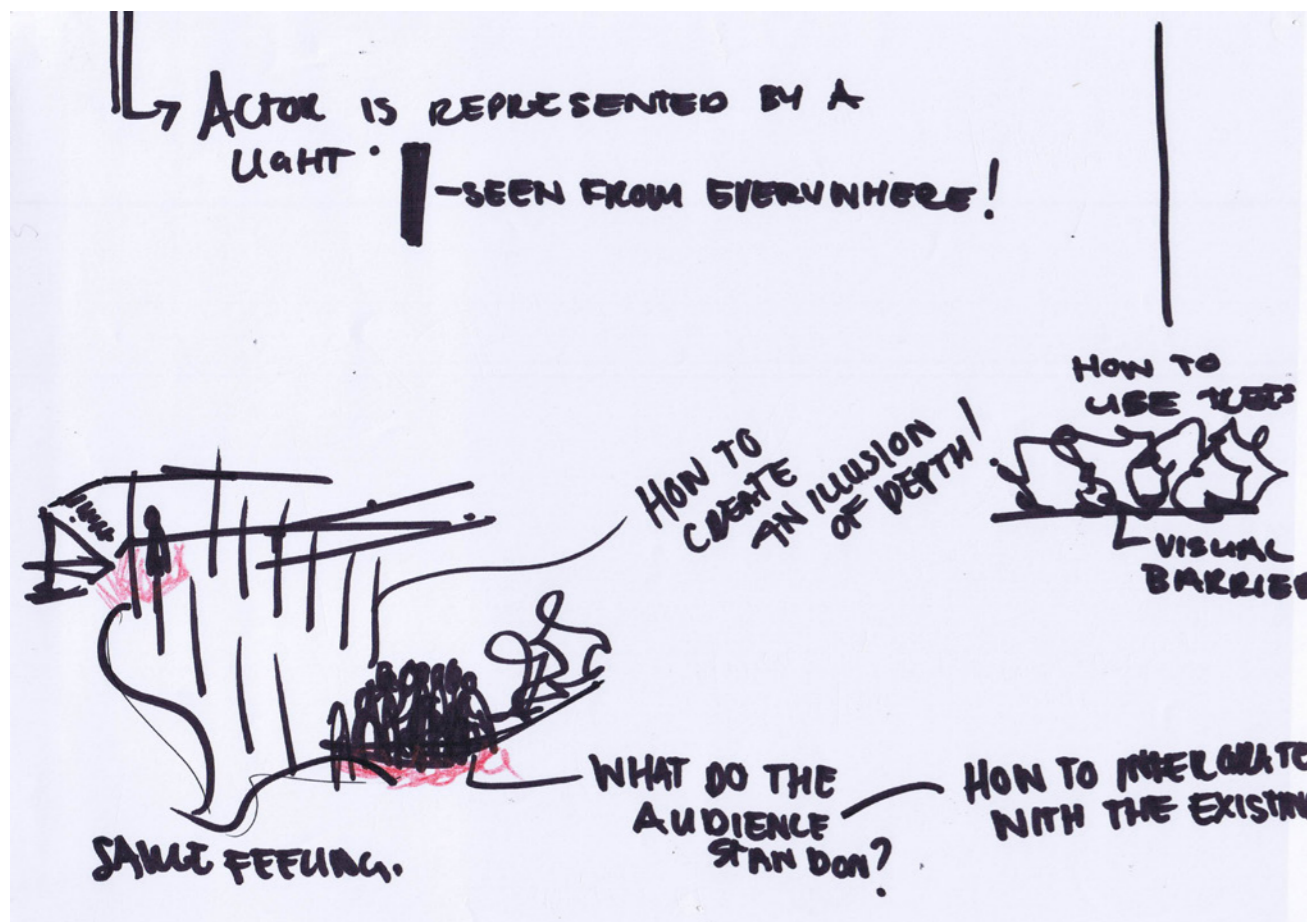


Figure 7.180 Initial concept sketch showing scene development



Figure 7.181 Attempt at plan development

## 7.10.5 DESIGN DEVELOPMENT

The following concept pages, Figure 7.180 to Figure 7.182, shows the initial design exploration of the scene. At first, the site was identified and explored, then a focus was placed on what the existing site has to offer, whether it be the built-up areas, structured walls, or in this case the location of the tree which forms a vital part of the design. The scene and its thematic developments were then broken down into core themes by looking at the character progression through the scene and identifying what needs to be visually conveyed to the audience. This scene focuses a lot on the queen and her emotions of betrayal towards her daughter Pamina. She is a powerful character, and the use of projection to enlarge the queen exposes her dominance. The scene is then graphically and emotively explored to convey the dramatic feel, and the layering of information shows the design considerations for the scene.

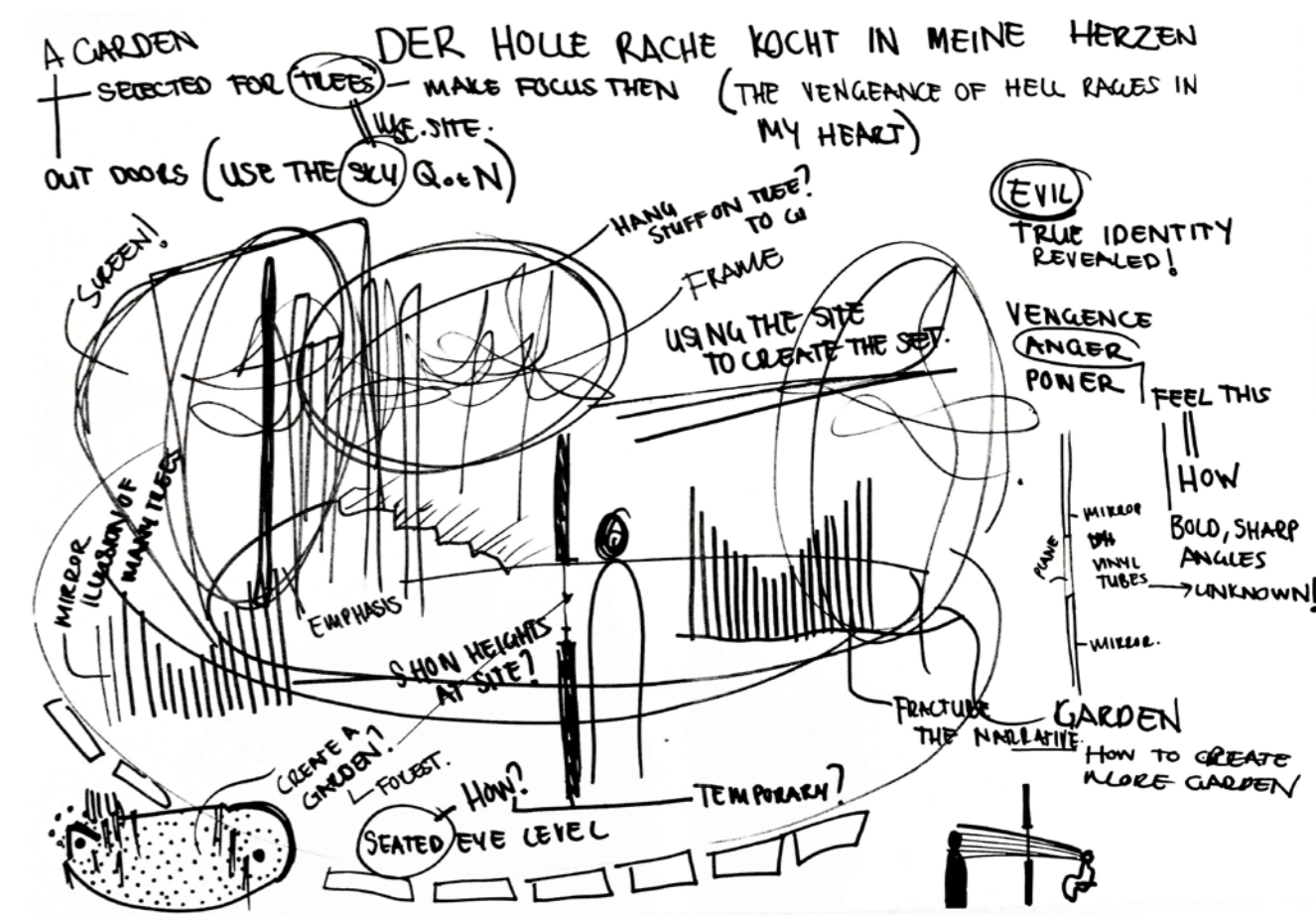


Figure 7.182 Concept page of site, performance themes and set development





Figure 7.183 View from audience position

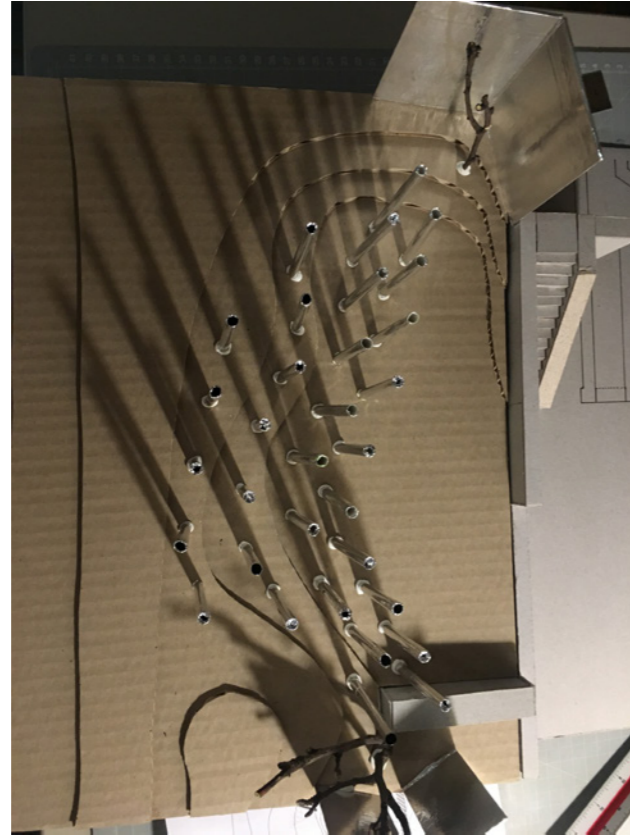


Figure 7.184 Plan of cardboard tube layout

### 7.10.6 MODELS AS A TOOL FOR DESIGN EXPLORATION

The following images, Figure 7.183 to Figure 7.189 of the models have been used as a means to explore the design of the scene. Iterations of the models coupled with the feedback of the scene design has informed the outcome of the design development. The materials used are foil-covered straws to mimic the effect of mirror vinyl-covered cardboard tubes.

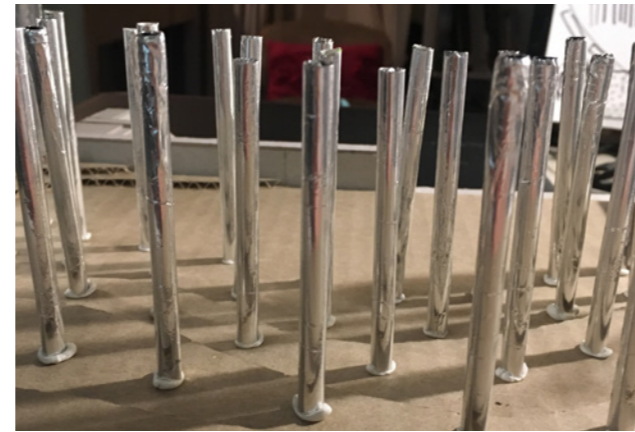


Figure 7.185 Close up of tubes

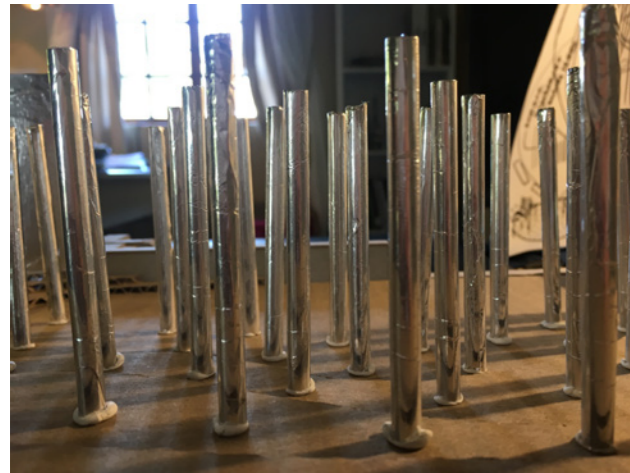


Figure 7.186 Actor view through tubes  
0208



Figure 7.187 Exploration with less tubes



Figure 7.188 Density of tubes



Figure 7.189 Final view from audience standing position  
0209



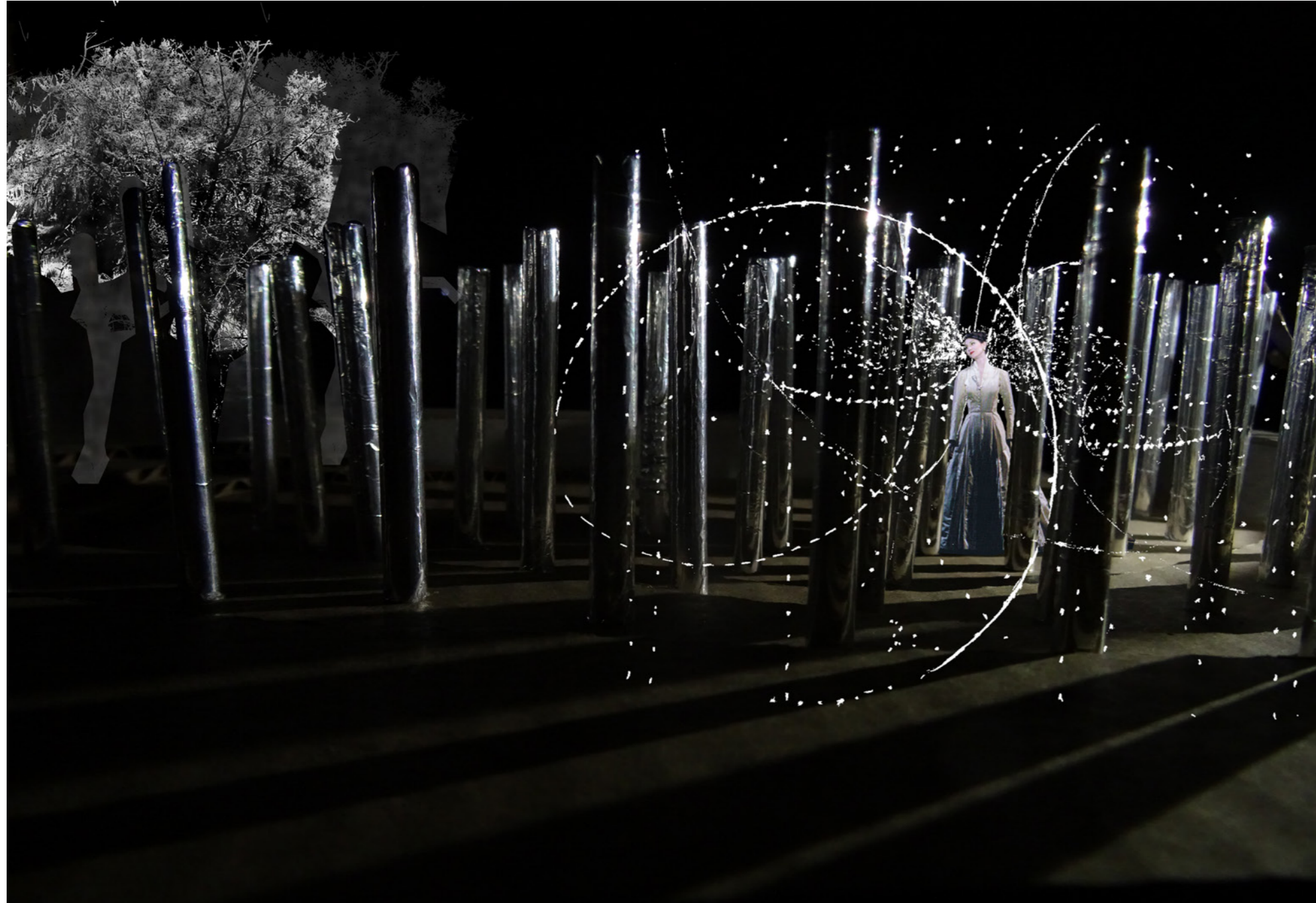


Figure 7.190 Start of Act 2 Scene 3  
0210

## 7.10.7 DESIGN OUTCOME

The focus of Act 2 Scene 3 is to create the illusion of a forest in addition to the existing trees at the scene location. The use of angled mirrors behind the existing trees reflects multiple trees through the space. The mirror vinyl-covered cardboard tubes scattered through the playing area represent more trees. The intention of the mirror finish on the tubes is to reflect the existing trees, as well as the actresses and audience members to create a fractured narrative. The cardboard tubes are all the same heights and are placed on different contours of the scene to accentuate the natural slope and flow of the site. Projections of William Kentridge's graphics add to the creation of the scene and lighting that shines on the bases of the mirror columns accentuates the forest-type environment. The use of mirrors allows the audience to view the performance, the site and themselves in one visual collage. Figure 7.190, shows the start of the scene when the Queen of the Night arrives. The queen is lit up by her costume which has integrated lighting, to be explored further. Figure 7.191 shows the scene towards the end of its duration. The queen has grown in proportion – created using perspective and projection. The smaller images, Figure 7.192 to Figure 7.194, show a progression of the lighting and reflections of the mirrors in the scene. As the mirrors need light to reflect effectively, the lighting of this scene is very important for the success of the visual experience.

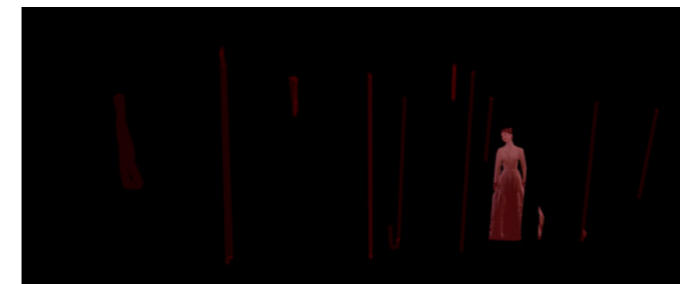


Figure 7.192 Reflections of Queen of the Night



Figure 7.191 End of Act 2 Scene 3

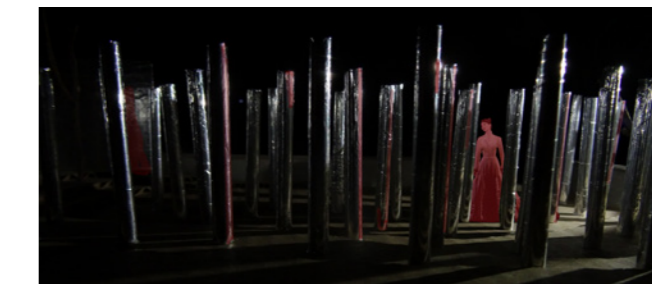


Figure 7.193 Queen in the mirror forest

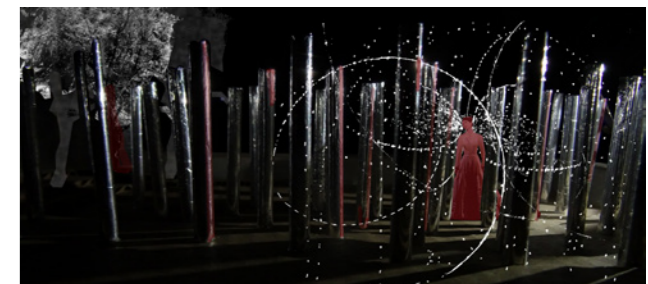
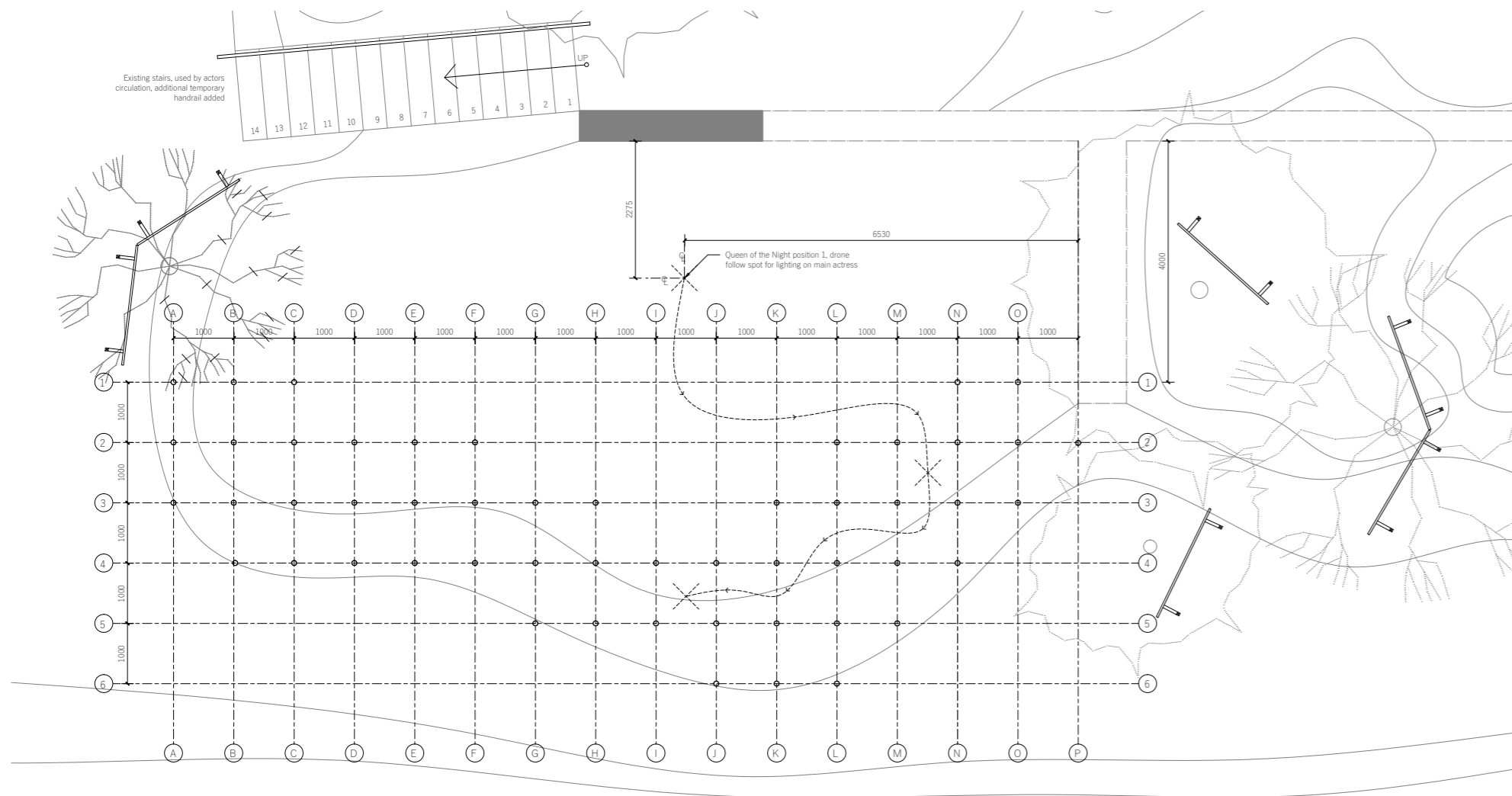


Figure 7.194 Layering of lighting and colour









ACT 2 SCENE 3 MAN-MADE FOREST LAYOUT GRID

Scale 1:50

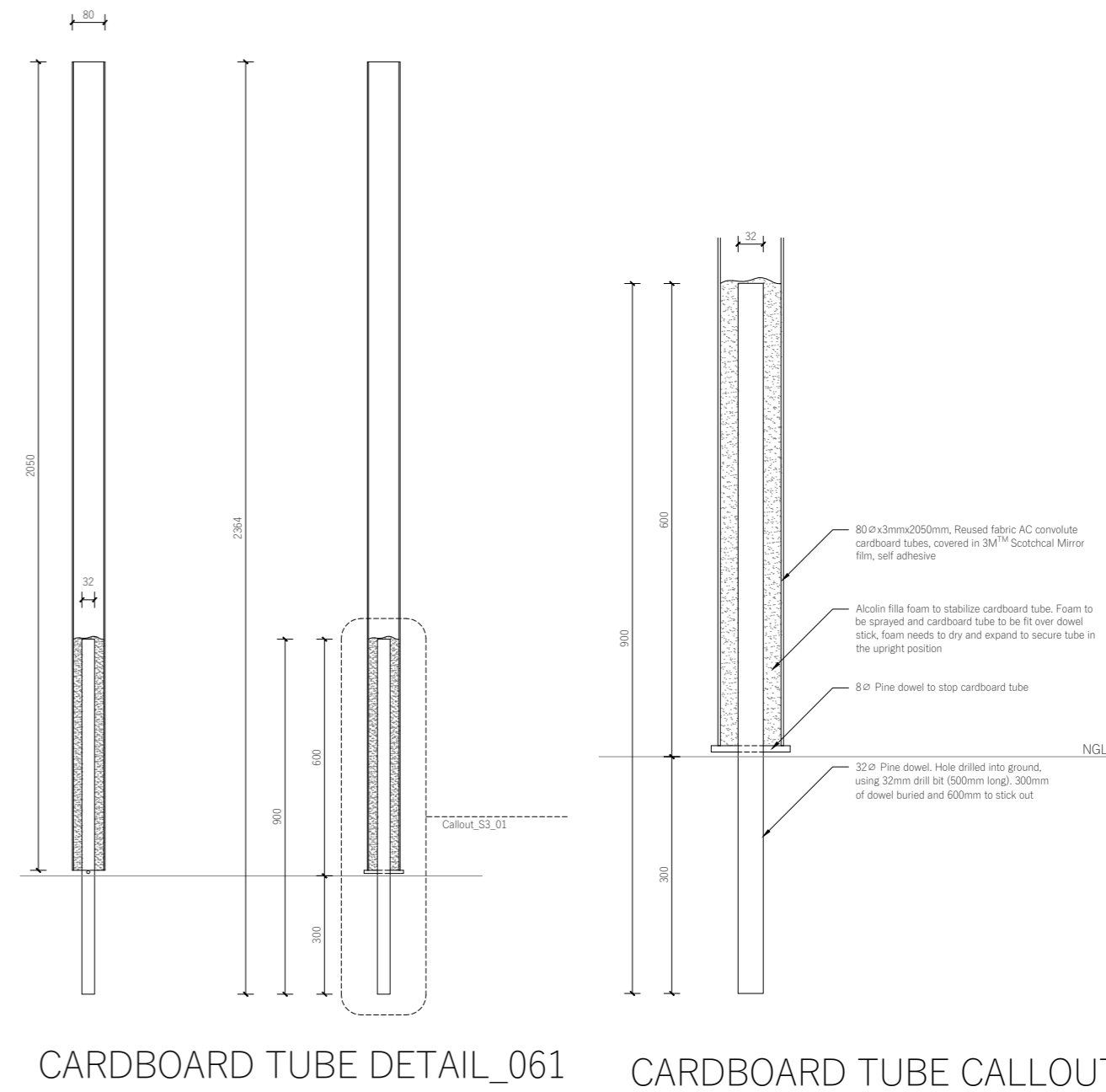


Figure 7.203 Act 2 Scene 3 forest grid

The materials used are lightweight, cost-effective, standard sizes and easy to manipulate. Figure 7.205 shows the intended tree-like structures design. A simple bracket with a steel stake is used to secure the structure in the ground, with minimal site interference. The bracket will be knocked into the ground at the specified intervals and then the cardboard tube will be secured over it. Re-used AC Convolute cardboard tubes (made of fabric) or AZ Spiral cardboard tubes (made of paper) will be sourced and used for these structures. The use of the standard 2050mm lengths tubes, shown in Figure 7.204, has been specified, however this will be determined by availability.



Figure 7.204 2050mm Cardboard tube

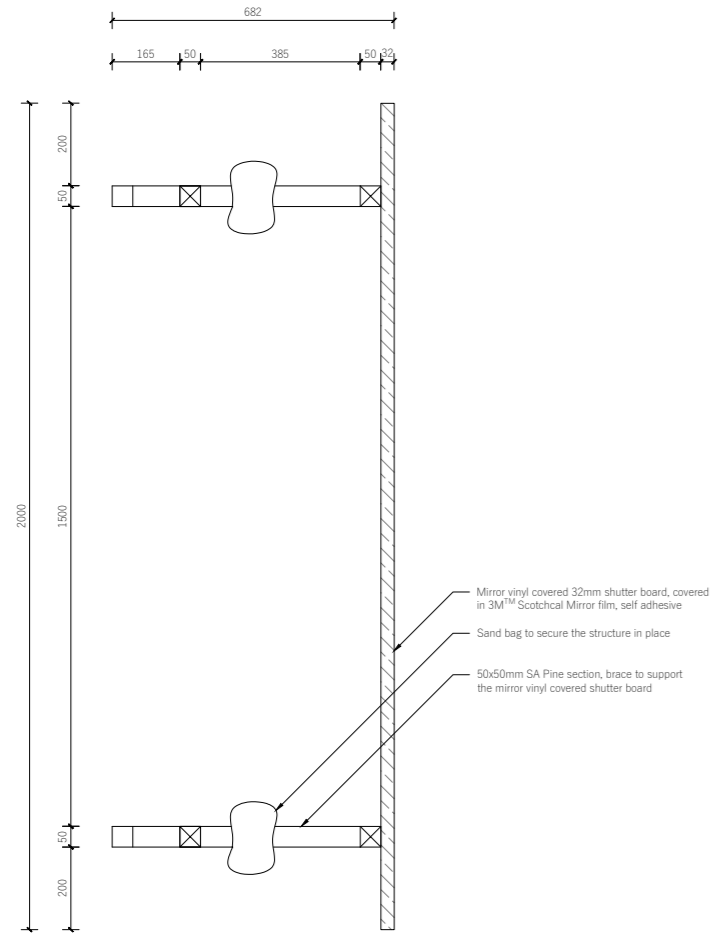


CARDBOARD TUBE DETAIL\_061

CARDBOARD TUBE CALLOUT\_S3\_01

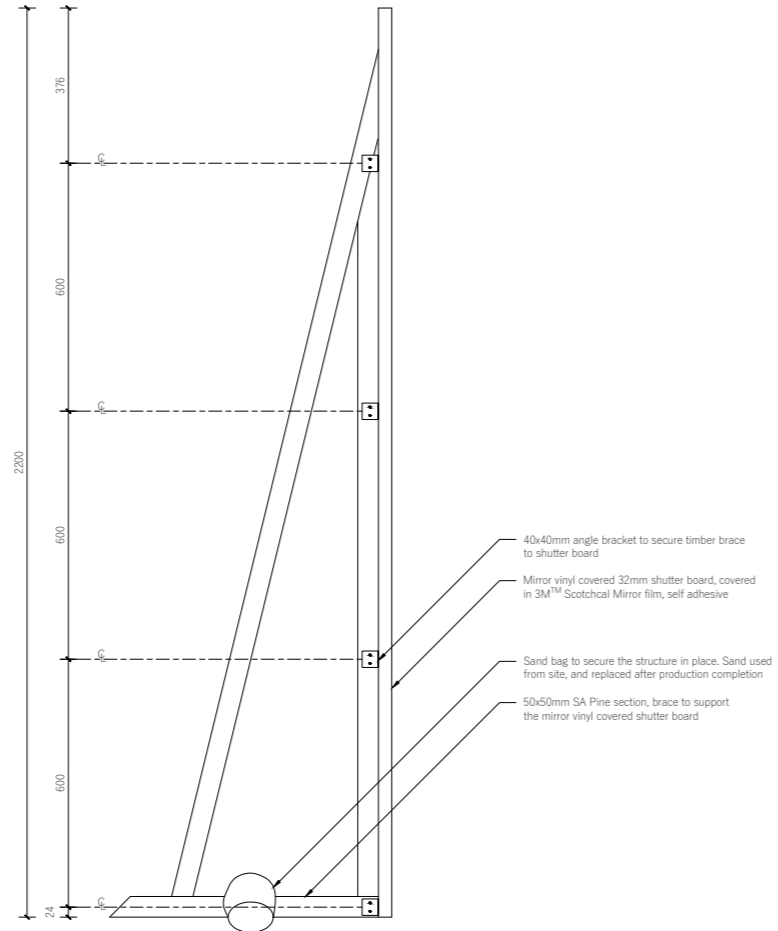
Figure 7.205 Cardboard tube detail





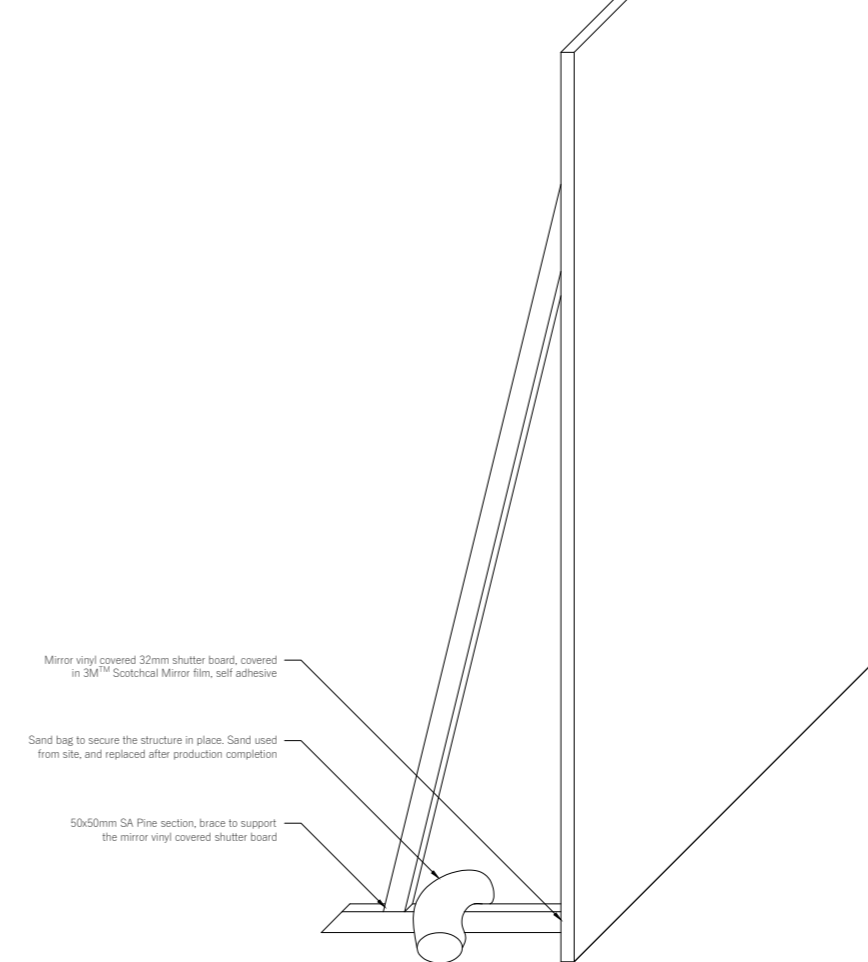
- Mirror vinyl covered 32mm shutter board, covered in 3M™ Scotchcal Mirror film, self adhesive
- Sand bag to secure the structure in place
- 50x50mm SA Pine section, brace to support the mirror vinyl covered shutter board

MIRROR UPRIGHT DETAIL\_062



- 40x40mm angle bracket to secure timber brace to shutter board
- Mirror vinyl covered 32mm shutter board, covered in 3M™ Scotchcal Mirror film, self adhesive
- Sand bag to secure the structure in place. Sand used from site, and replaced after production completion
- 50x50mm SA Pine section, brace to support the mirror vinyl covered shutter board

MIRROR UPRIGHT ELEVATION



- Mirror vinyl covered 32mm shutter board, covered in 3M™ Scotchcal Mirror film, self adhesive
- Sand bag to secure the structure in place. Sand used from site, and replaced after production completion
- 50x50mm SA Pine section, brace to support the mirror vinyl covered shutter board

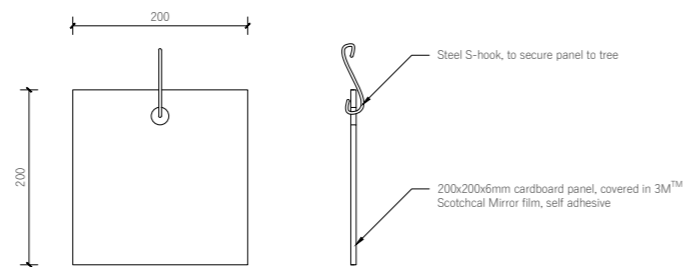
MIRROR UPRIGHT SECURING DETAIL\_062



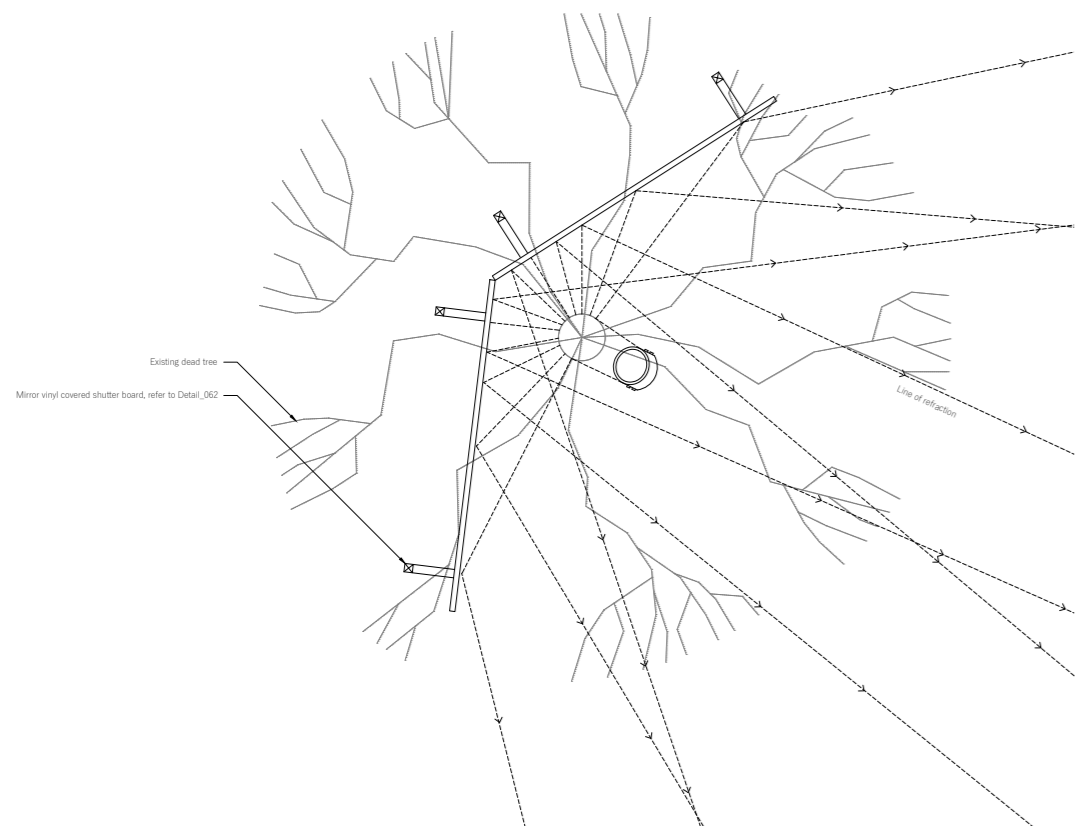
MIRROR UPRIGHT 3D

Figure 7.206 Mirror upright detail

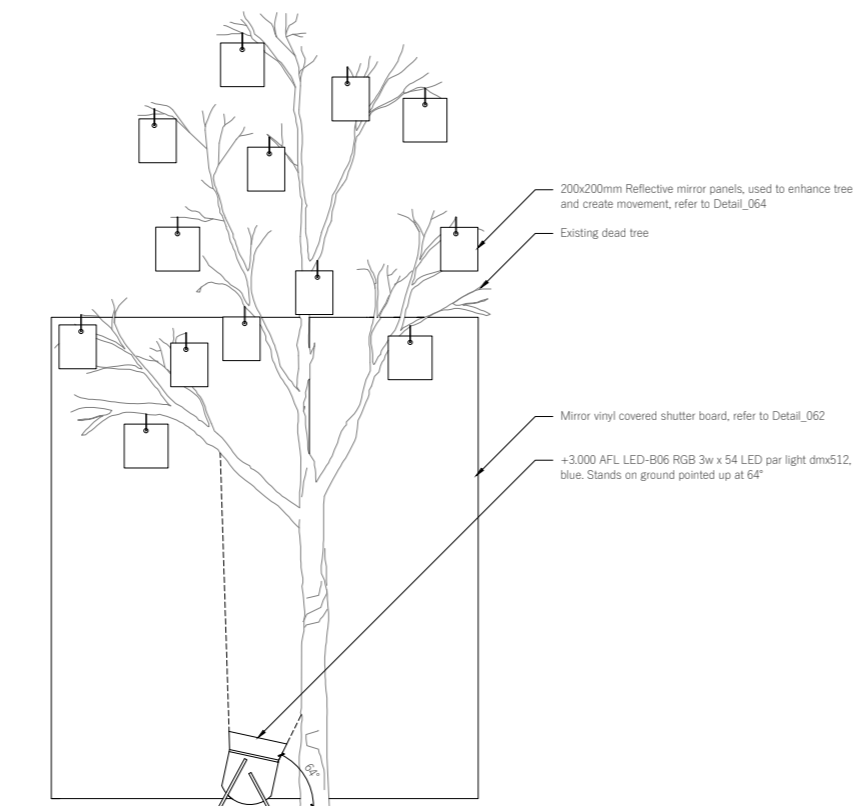




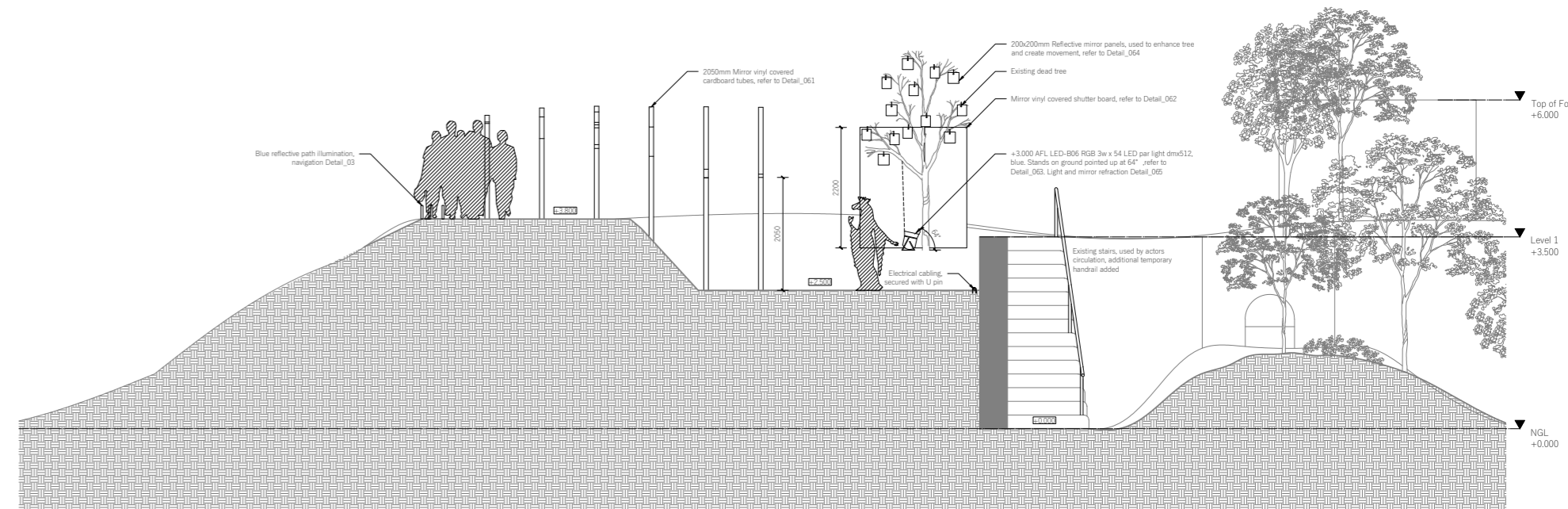
REFLECTIVE TREE DETAIL\_064



LIGHT AND MIRROR REFRACTION DETAIL\_065



LIGHT POSITIONING DETAIL\_063



ACT 2 SCENE 3 SECTION K-K

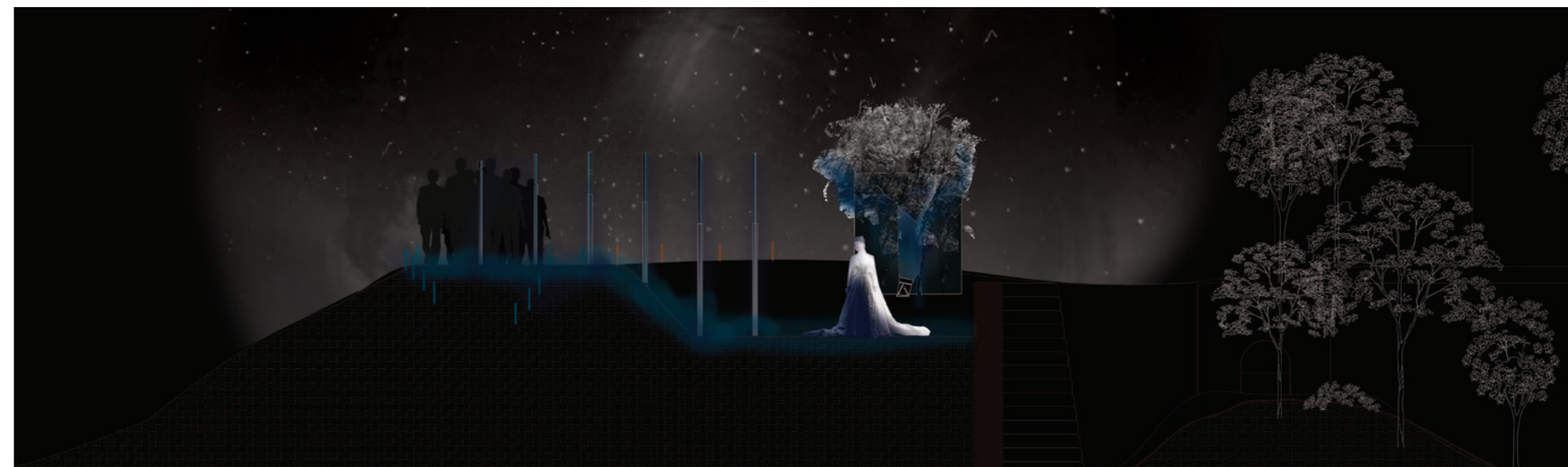


Figure 7.208 Act 1 Scene 3 final sections

Figure 7.207 Reflection of light detail

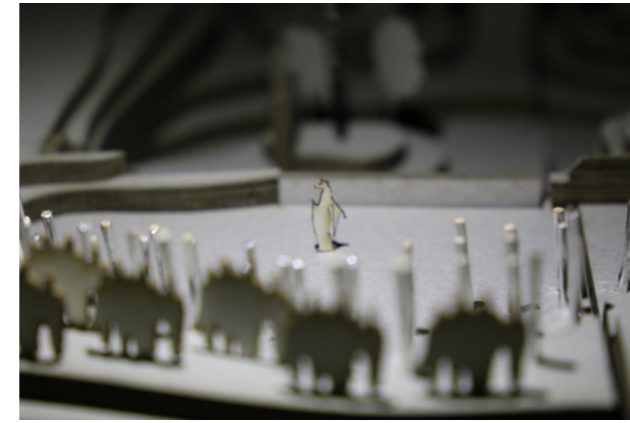




Audience view of the queen



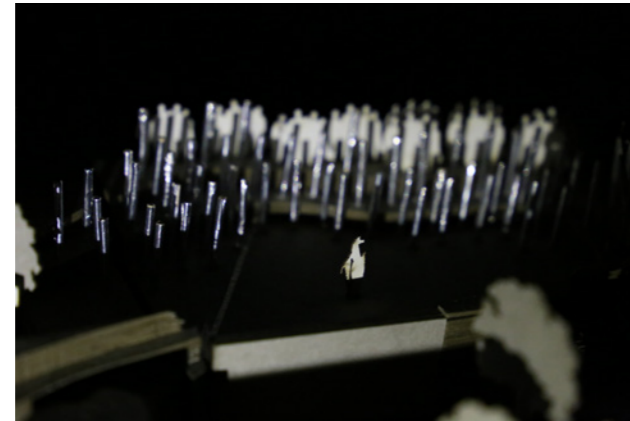
Fractured narrative



Light used to enhance the drama



Tree reflection in mirror detail



Reflection of cardboard tubes

Figure 7.209 Act 1 Scene 3 model final outcome

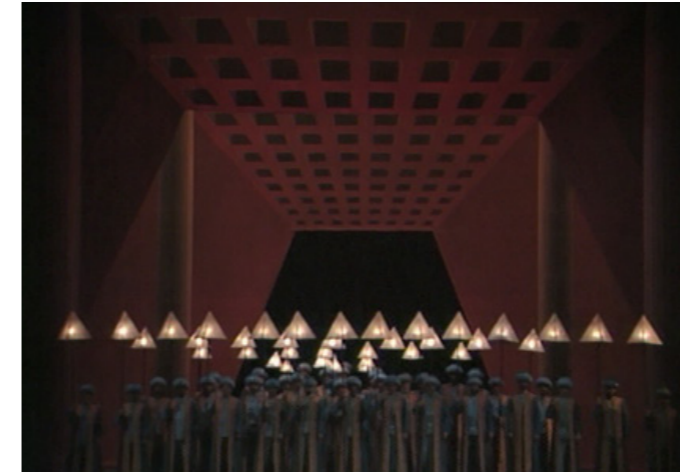


Figure 6.41 "O Isis und Osiris" (Oh Isis and Osiris)

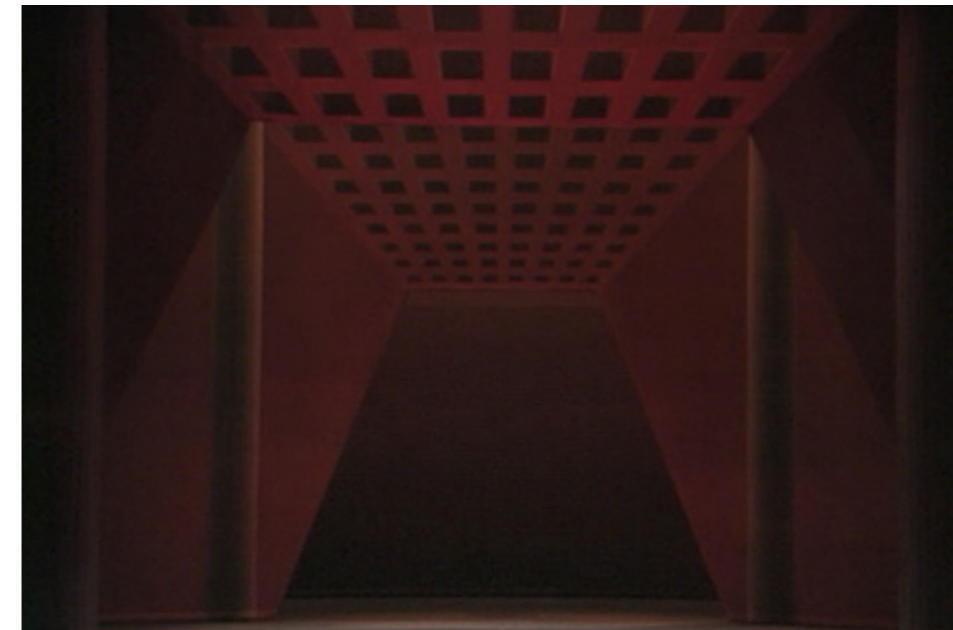


Figure 6.39 Act 2 Scene 5 - Traditional version 1991



Figure 6.40 Act 2 Scene 5 - William Kentridge version 2001

## 7.11 ACT 2 SCENE 5 - THE PYRAMID

The plot of Act 2 Scene 5, as discussed in Chapter 6.2.8, is based on Tamino's progress on his path to enlightenment. In this scene the priesthood is pleased with his progress, and they pray that he will find success and be worthy of their order. In the chant-like song "O Isis und Osiris" (Oh Isis and Osiris), the chorus are singing to their gods, Isis and Osiris. This scene was selected as it makes use of a chorus, as well as strong freemason symbolism. Since the cast of this specific production is small, there is no availability for a chorus. Therefore, this is achieved using dynamic lighting and projection, further explored in Part three of this chapter. Strong themes of trial and worthiness are prominent in this scene, and the music mimics a prayer-like tone.

## TRAIL AND WORTHINESS



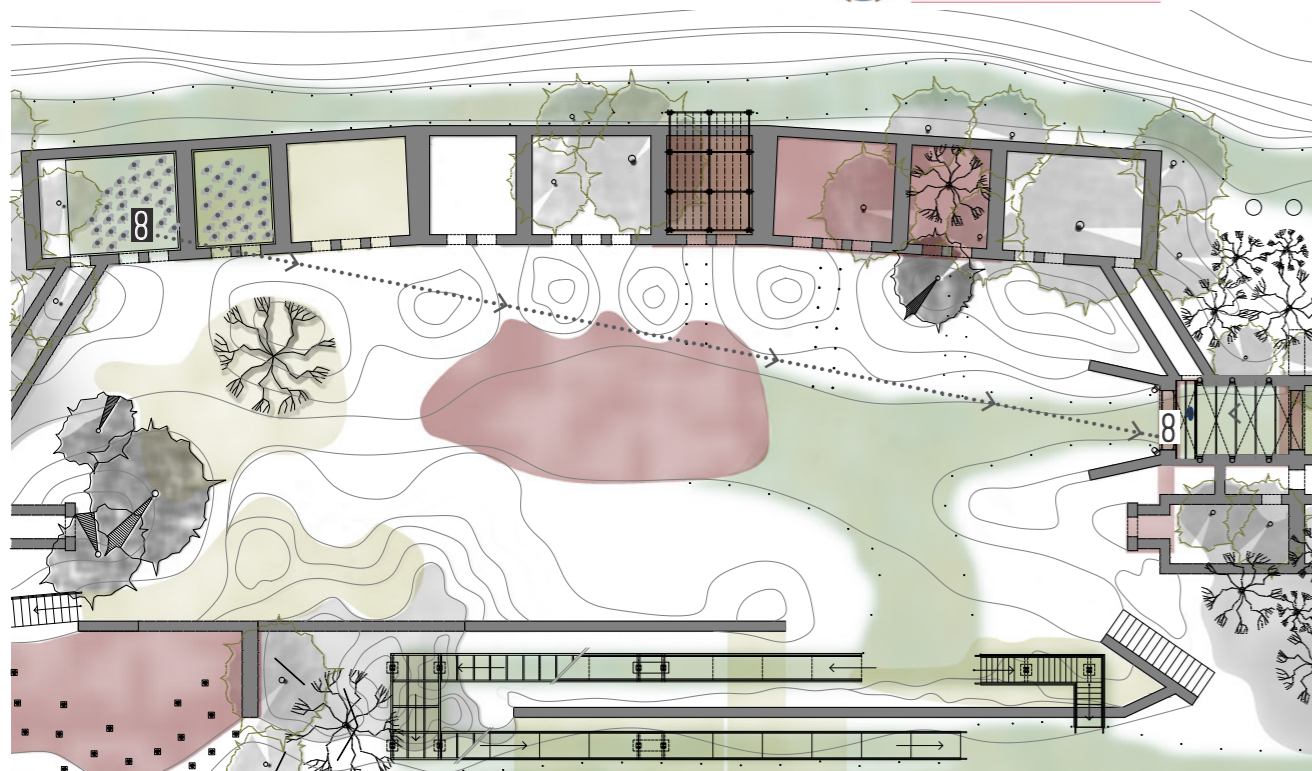


Figure 7.210 Plan of Act 2 Scene 5

KEY

- Selected Scenes
- Other Scenes
- Audience pathway
- Audience movement
- Scene visual link
- Audience 50-60 members
- Actors

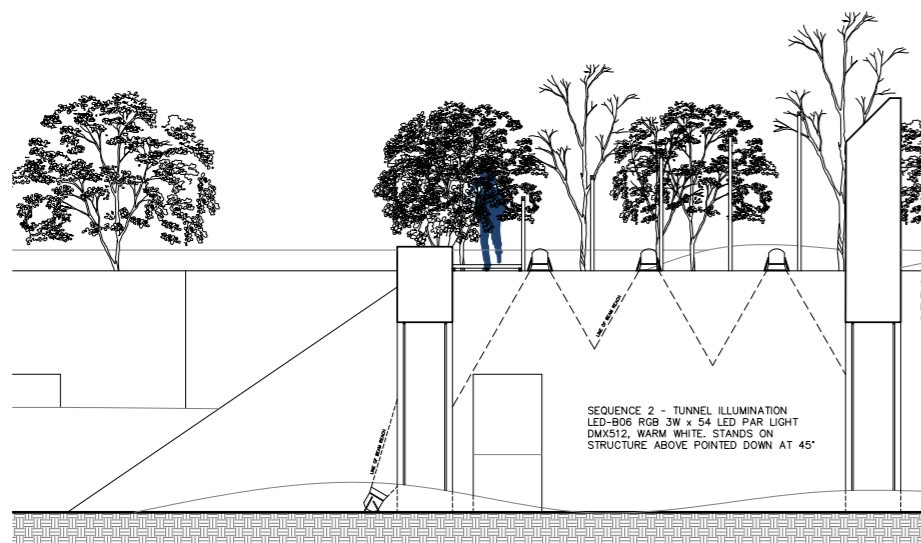


Figure 7.211 Section of Act 2 Scene 5

### 7. 11.1 SCENE LOCATION

Act 2 Scene 5 takes place in the pyramid of the ordeal. The use of the exit side of the tunnel provides the structural needs for this scene. The location of this scene is shown on the plan, Figure 7.210, where the white [8] represents the positioning of the actor and the black [8] the location of the audience. The audience is standing on a scaffolding structure which is perched above the existing fabric. On the plan, the audience is represented by the grey bird's-eye view figures. To represent the levels at which the audience views the performance, a section - Figure 7.220 - shows the heights and audience views. Figure 7.221 shows the illustration, as discussed in Chapter 4.8, of the audience and actor on the same elevated level of interaction.

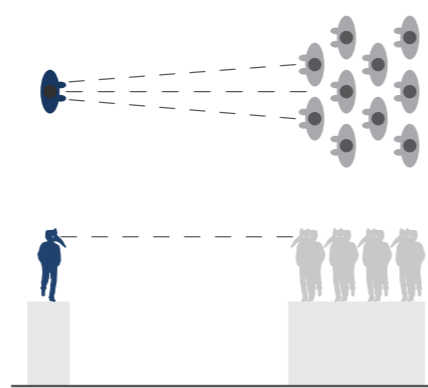


Figure 4.7 Actor on same level as audience

### 7. 11.2 LOCATION CHARACTER

As mentioned the location of the scene was selected for the composition of the existing structure. Over the distance from where the audience stands to the actor's position, the natural perspective of the structure implies a triangular shape. This shape relates to the imagery and symbolism of the narrative, and can be used to enhance the performance. Figure 7.212 gives a view of the playing area from where the audience is located. The triangular shape is seen on the walls leading up to the arch. At some points during this scene, the audience perspective will be fractured; Figure 7.213 shows the restricted view of certain audience members. Figure 7.214 shows the view from the built platform, again accentuating the triangular form while including other views around the site. To keep the focus on the structure, lighting will be used to emphasise the existing fabric. Figure 7.215 shows a view of the actor playing area, the height at which the actor will stand is accentuated in this image.

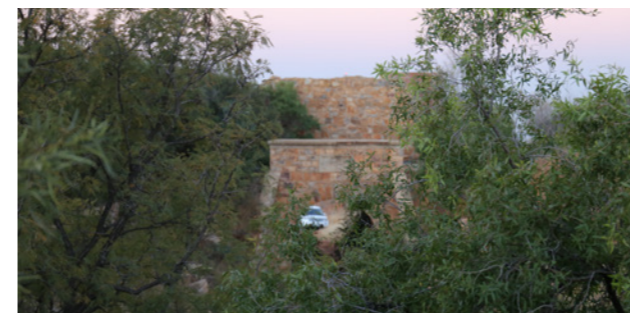


Figure 7.213 Restricted view from platform approach



Figure 7.212 View from audience platform



Figure 7.214 View from audience platform



Figure 7.215 Actor playing area



ENVIRONMENT



SPACE



LIGHT



ENCLOSURE



GROUND PLANE



SUPPORT



DISPLAY



DECORATION



INFORMATION



PROPORTION



ACOUSTICS



Figure 7.216 Interior architecture principles

### 7.113 A LINK TO INTERIOR ARCHITECTURE

Act 2 Scene 5 focuses on the layering of information to convey the themes of the scene. The interior architecture elements, Figure 7.216, of most importance is space, light, and information. Secondary to this, is environment and display. These elements have become the focus in the design development of the scene, ensuring that the site and performance come together in one realm. The physical use of the existing fort is a point of interest for the scene. It will be enhanced with lighting and layering of information, later explored in the design development, Chapter 7.9.5 of this scene.

### 7.114 INITIAL CONCEPT MOOD BOARD

The initial concept board, Figure 7.217, brings together the selected elements of the scene. The monochromatic image of the existing site, layered with a white plan to show its location, gives an indication of the environment for the performance. The layering of William Kentridge's graphics provides the viewer with more information about what is to be expected in the scene. The black and grey figures represent the chorus and Sarastro, the repetition of the imagery emphasising the fraternal brotherhood. As a whole, this collage suggests the intended outcome for the scene.



Figure 7.217 Initial concept mood board



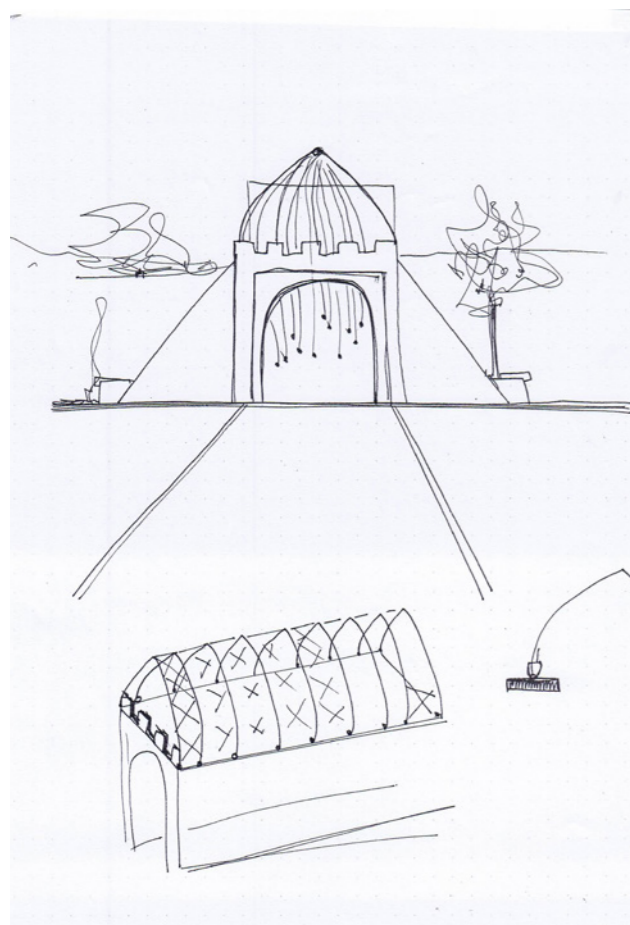


Figure 7.218 Concept sketch



Figure 7.219 Emotive sketch exploring imagery

## 7.115 DESIGN DEVELOPMENT

The following pages of concept sketches show the initial design exploration of the scene. The imagery starts with an exploration of the existing site and how the scene can grow from it. Figure 7.218 shows the structure of the existing fabric used to enhance the triangular shape and extend the architecture beyond where it stands. The graphic in Figure 7.219 shows the initial idea of repetition of the triangular form. This is used to enhance the idea of the chorus and keep with the strong imagery of William Kentridge's narrative. The thematic development of this scene has a focus of the fraternal order and the freemason society - the repeated imagery also represents this part of the narrative. Lighting and movement in the scene are important in order to mimic the idea of a larger chorus. The scene focuses on how to enhance the existing structure and create the needed symbolism from it. Figure 7.220 shows the unpacking of the scene, starting with the site, then narrative and then merging the two.

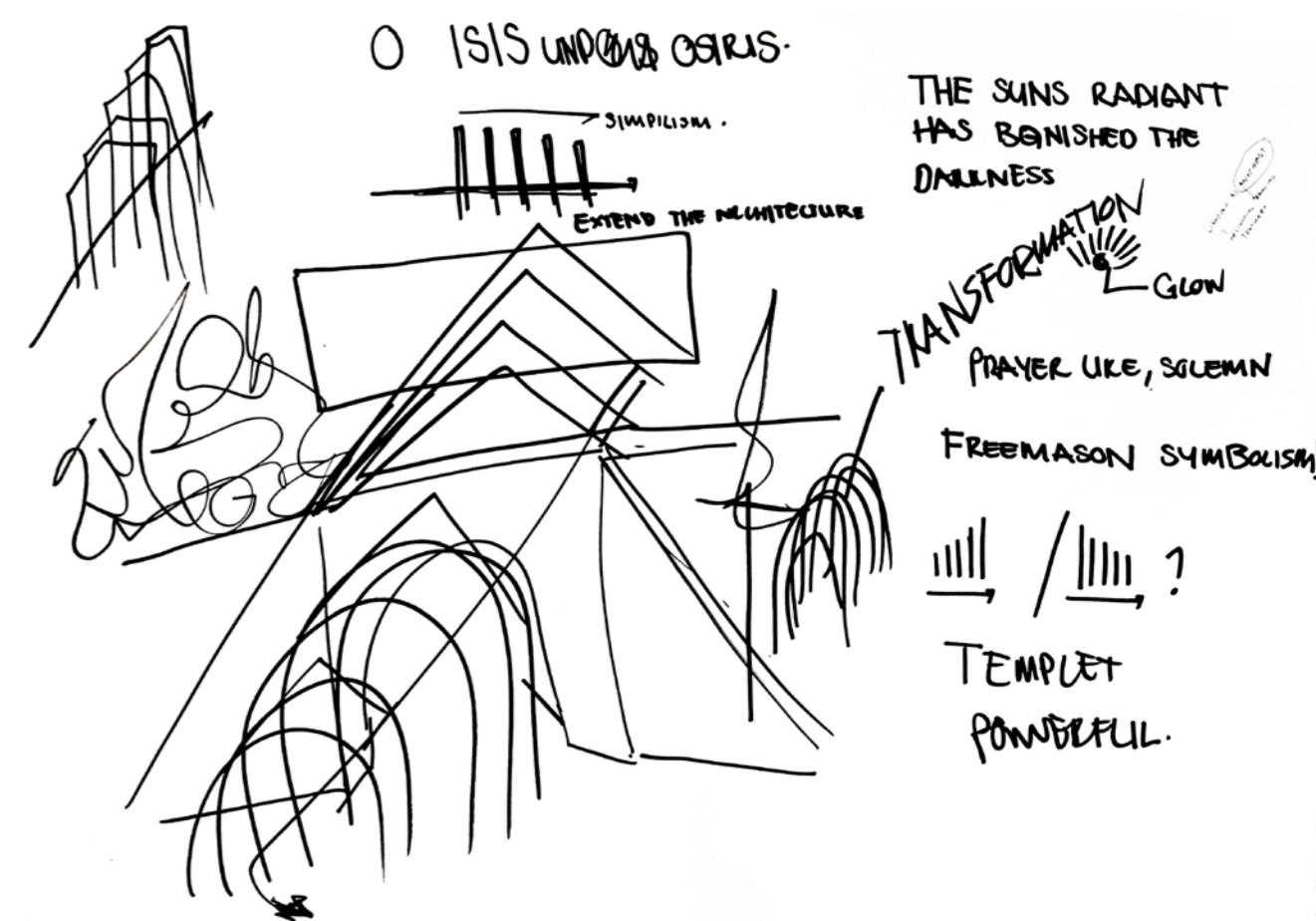


Figure 7.220 Initial unpacking of the scene





Figure 7.221 Initial model of scene  
0228



Figure 7.222 Development of rounded form



Figure 7.223 Mimicking the archways

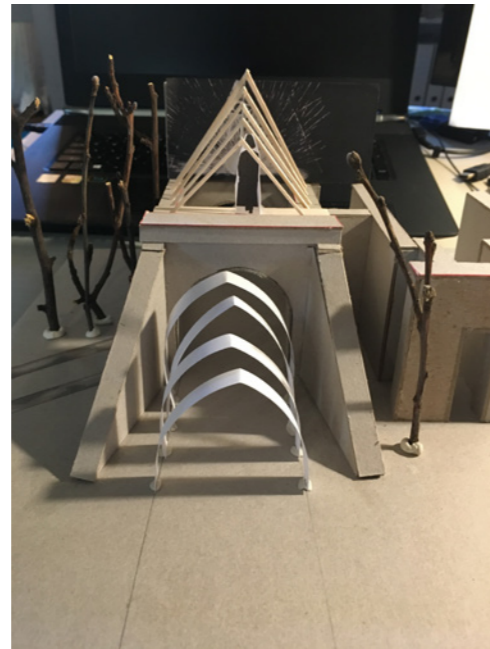


Figure 7.224 Angular structure development



Figure 7.225 Exploration of site and form relationship

## 7.11.6 MODELS AS A TOOL FOR DESIGN EXPLORATION

The following images, Figure 7.221 to Figure 7.228, show the models used to explore the design development of the scene. The iterations of the scene show the progression of the design and the intention of the added structures. Testing of the design on the model was an important part of the design process. Figure 7.221 is an example of the initial model. The triangular form is prominent; this is then further explored to ensure that the choice of design is correct. Figure 7.222 and Figure 7.223 show the use of a rounded structure to mimic the arches. However, these structures do not enhance the narrative imagery. Figure 7.224 and Figure 7.225 show a progression of a more angular curve, again not supporting the narrative imagery. Finally, Figure 7.226 and Figure 7.227 mimic the triangular structure found at the site and within the narrative. Figure 7.228 gives an overview of the scene in the darkness, using lighting to enhance the triangular structure.

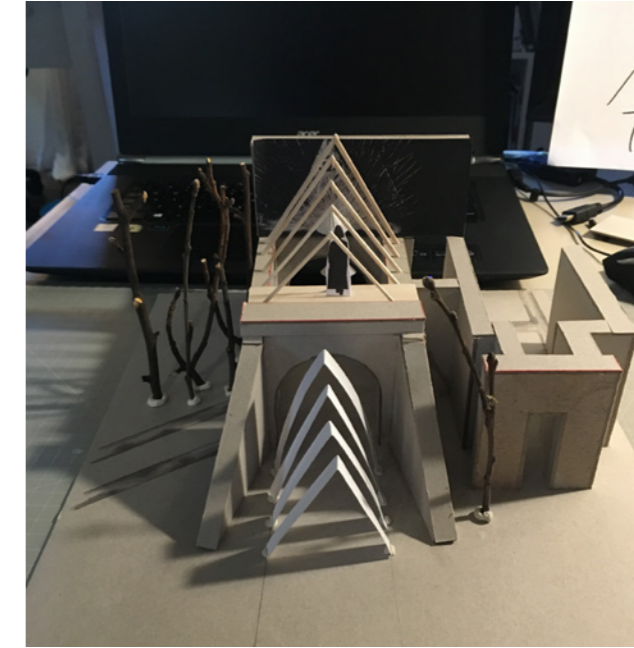


Figure 7.226 Development of triangular form



Figure 7.227 Focus on extending the architecture



Figure 7.228 Final model, in darkness, to enhance the form



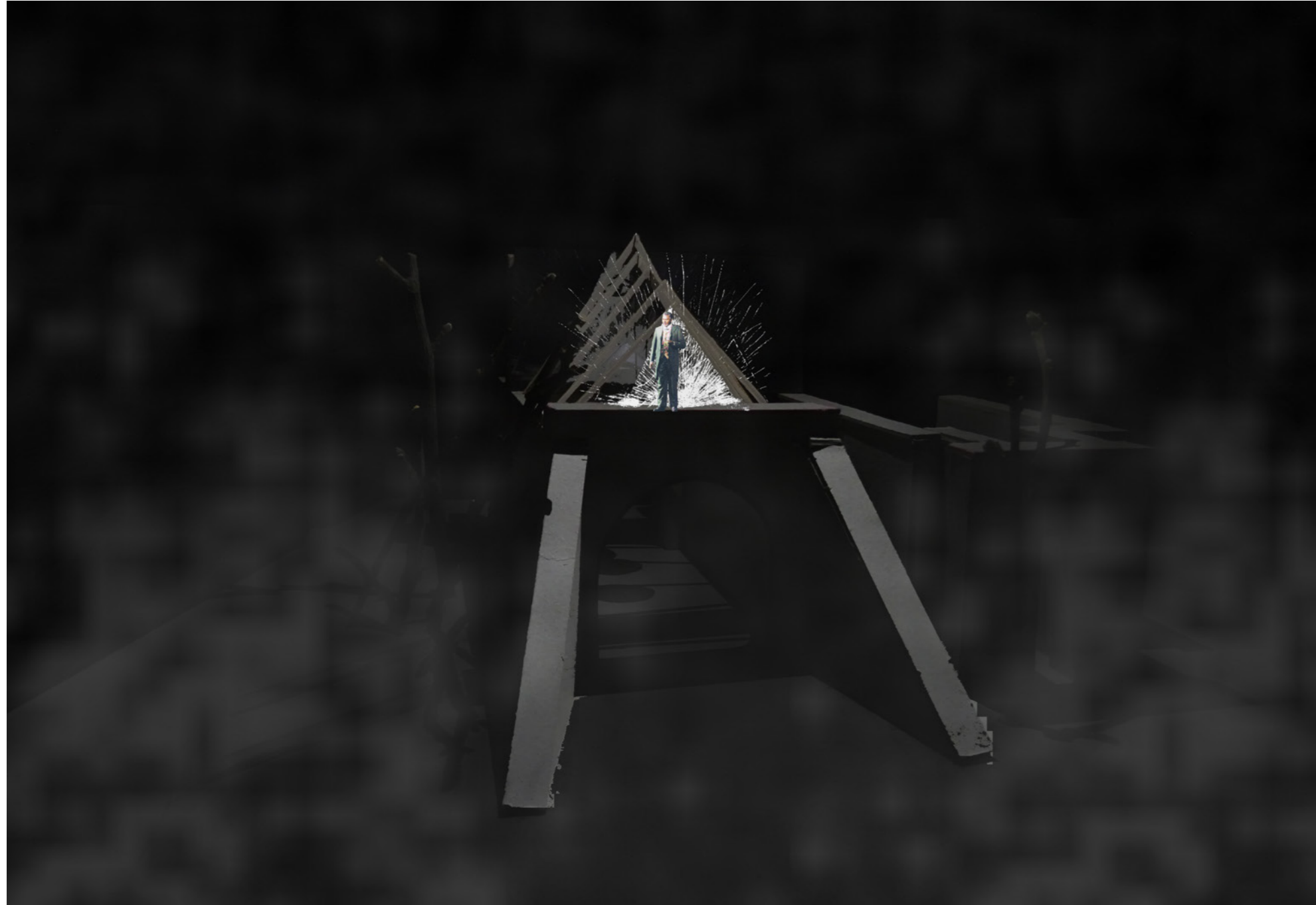


Figure 7.229 Start of Act 2 Scene 5  
0230

## 7. 11.7 DESIGN OUTCOME

The focus of Act 2 Scene 5 is to create imagery that relates to both the site and the narrative. The use of the freemason triangular shape is important in this scene of The Magic Flute. Therefore, it forms an important part of the scene development. In the scene, the chorus and Sarastro stand above the existing structure, surrounded by triangular forms. The use of lighting and projections enhance the symbolism and the form. Figure 7.229 shows the start of the scene. A focus is placed on the main actor and the triangle form. As the scene progresses so does the lighting, and the dynamic movement of the light. Figure 7.230 shows the end of the scene and how the light has grown; this is achieved using projection and filtered lighting. Figure 7.231 to Figure 1.233 explore the lighting at the scene, using light and shadows to emphasise specific aspects.

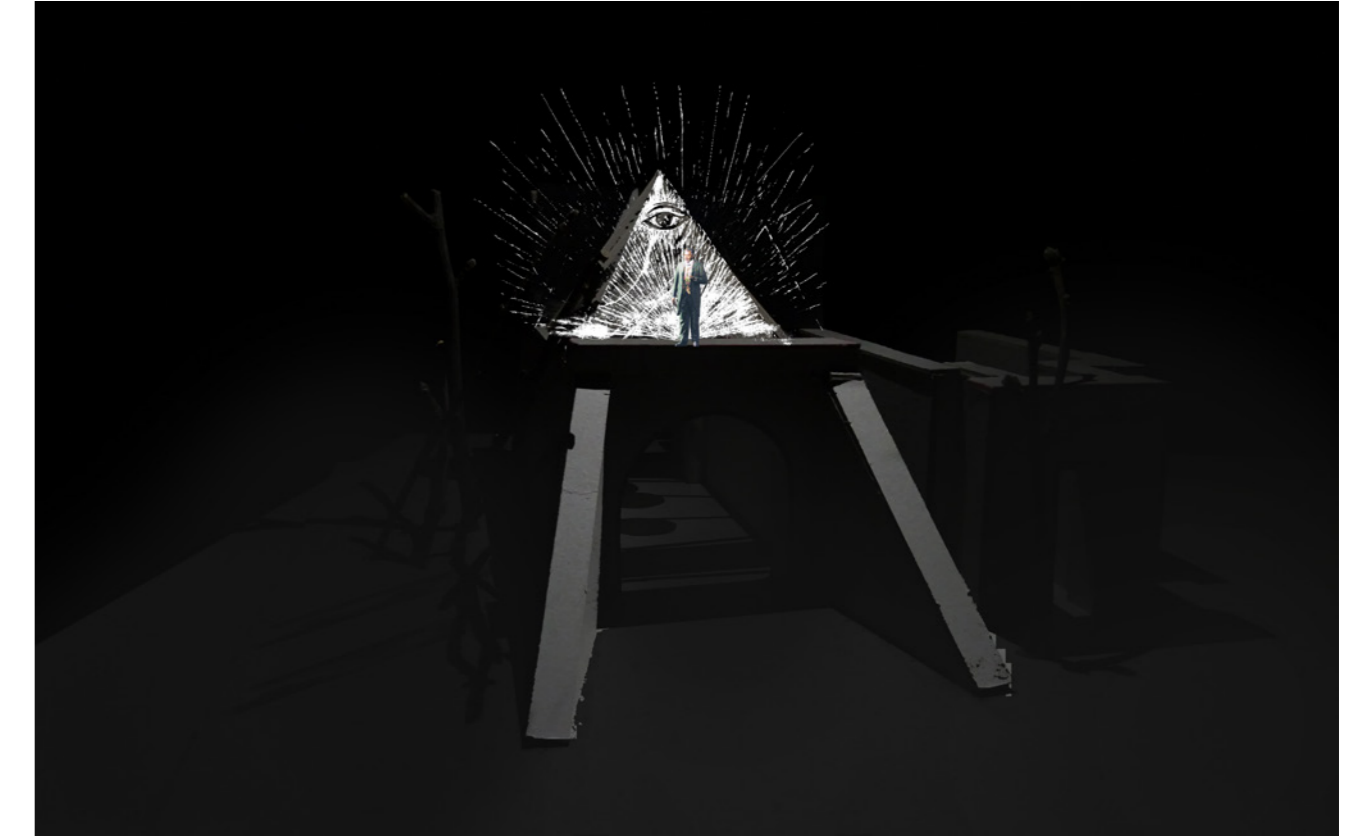


Figure 7.230 End of Act 2 Scene 5

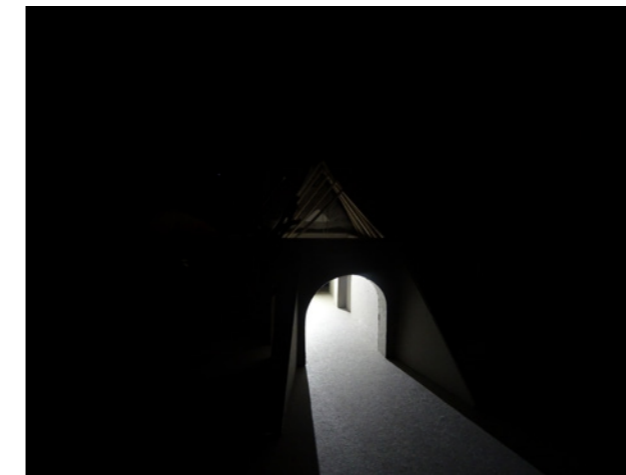


Figure 7.231 Tunnel lighting exploration

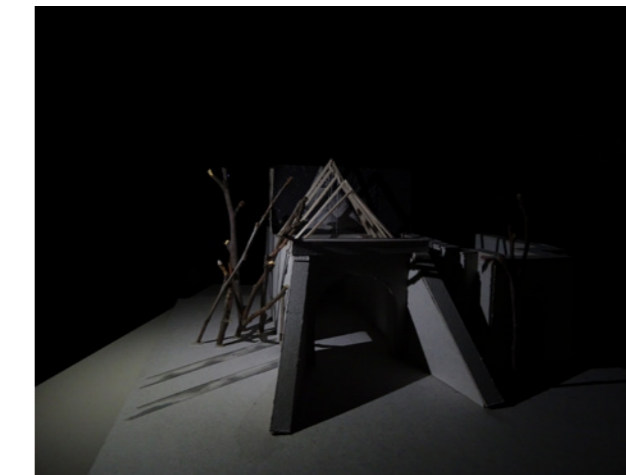


Figure 7.232 Light from the side of structure  
© University of Pretoria

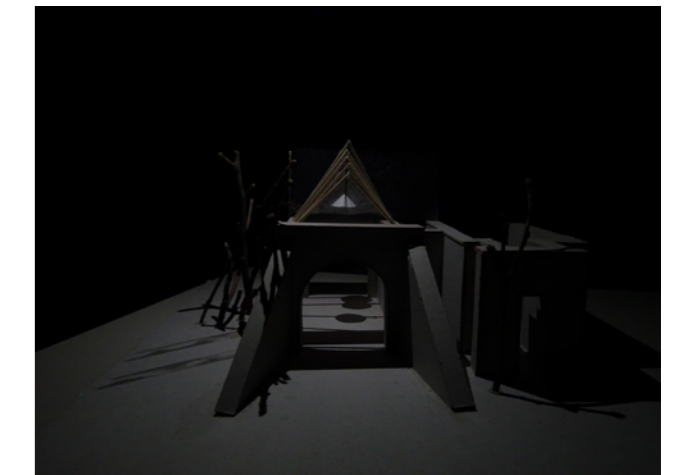
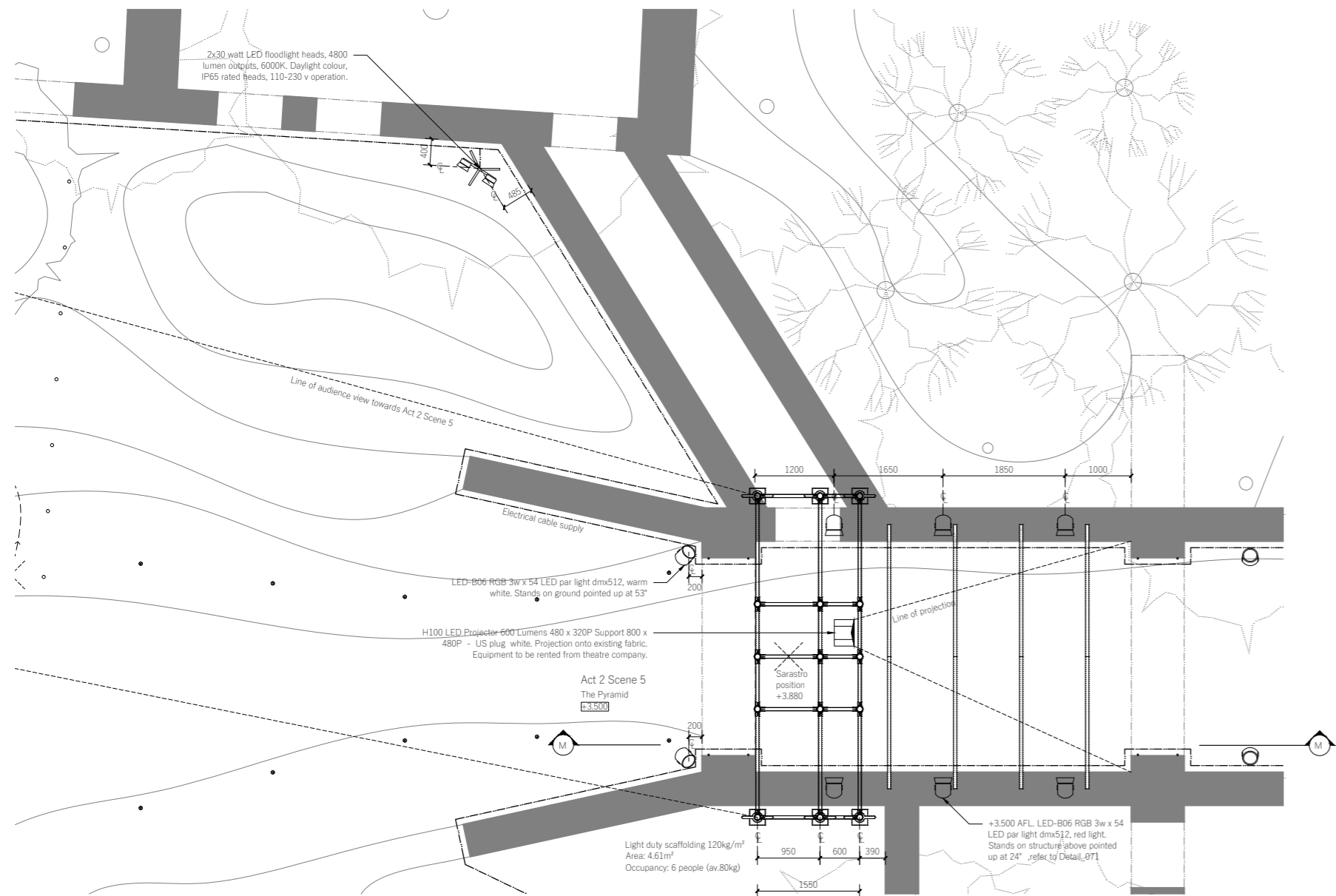


Figure 7.233 Light to emphasise the existing form







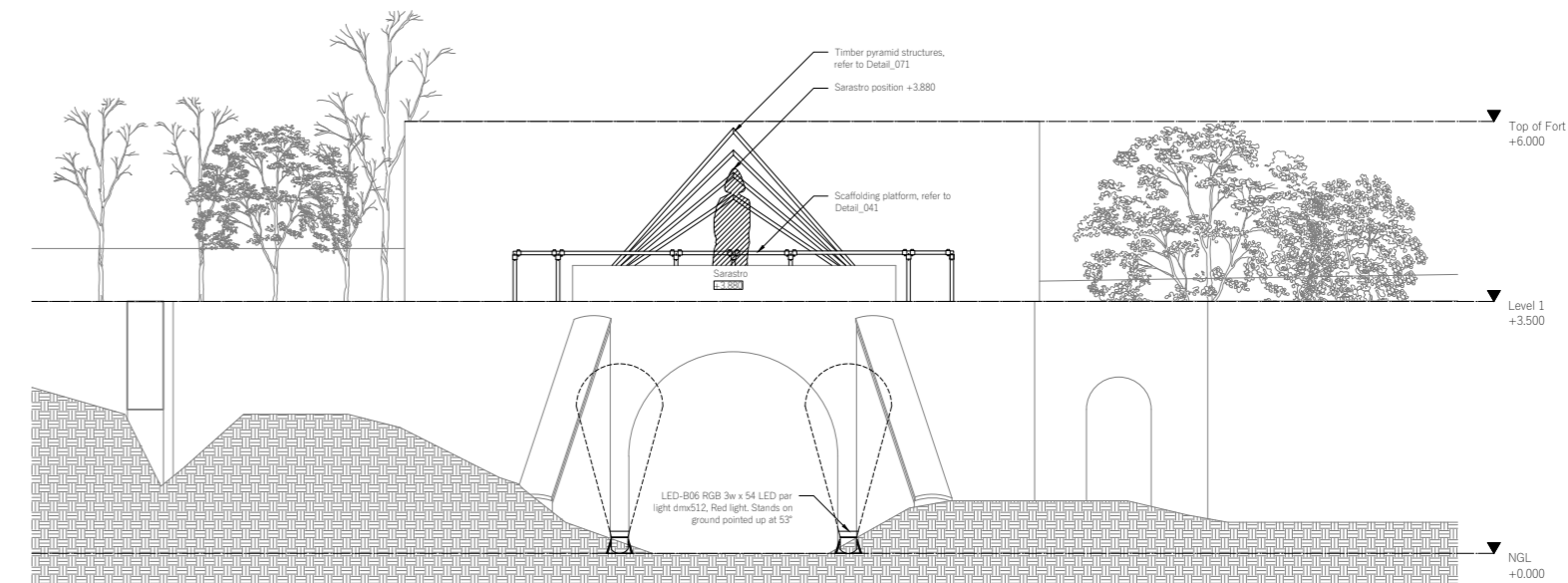


ACT 2 SCENE 5 PLAN DETAIL\_07

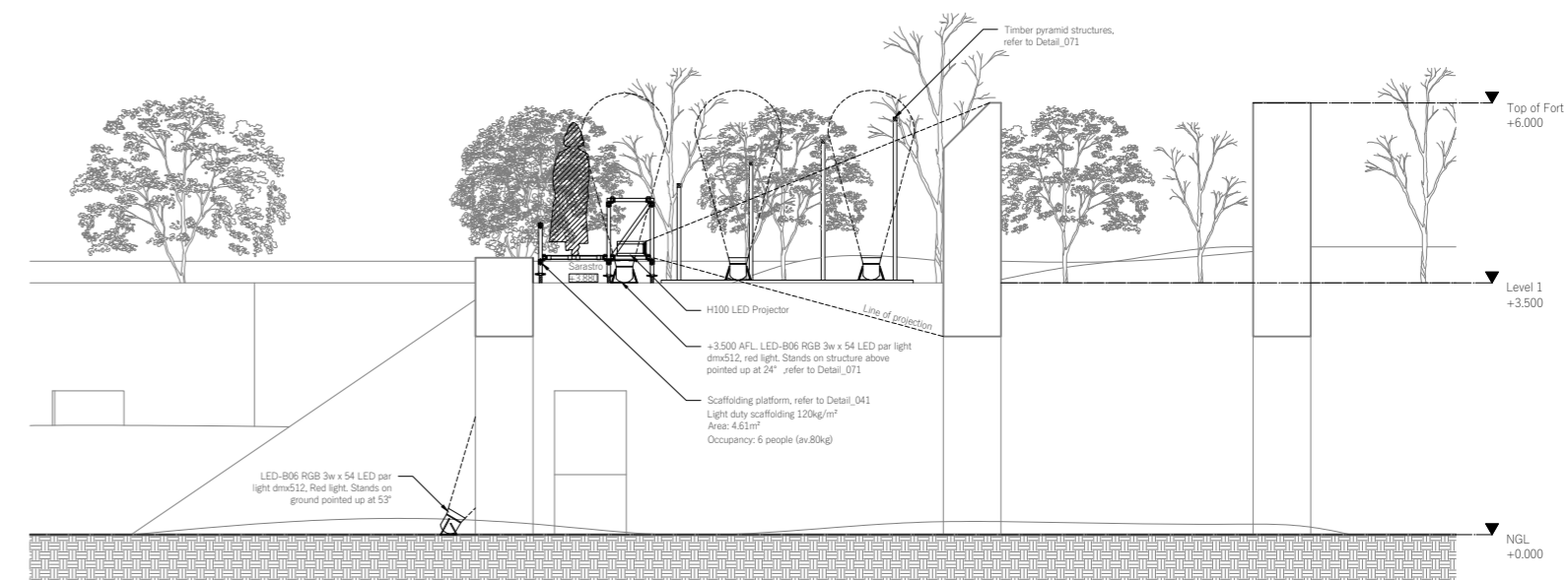
Scale 1:50



Figure 7.239 Act 2 Scene 5 plan



ACT 2 SCENE 5 SECTION L-L



ACT 2 SCENE 5 SECTION M-M

Figure 7.240 Act 2 Scene 5 section and elevation





Figure 7.241 William Kentridge drawing with light

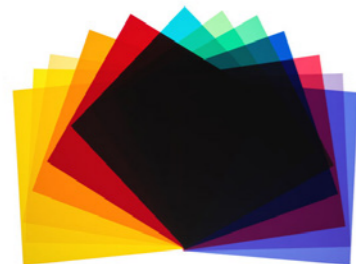


Figure 7.242 Colour light filters

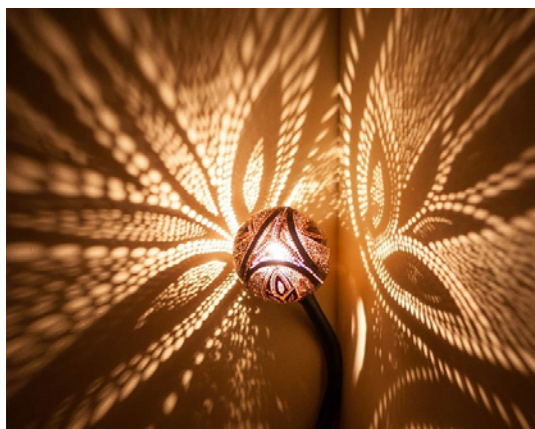
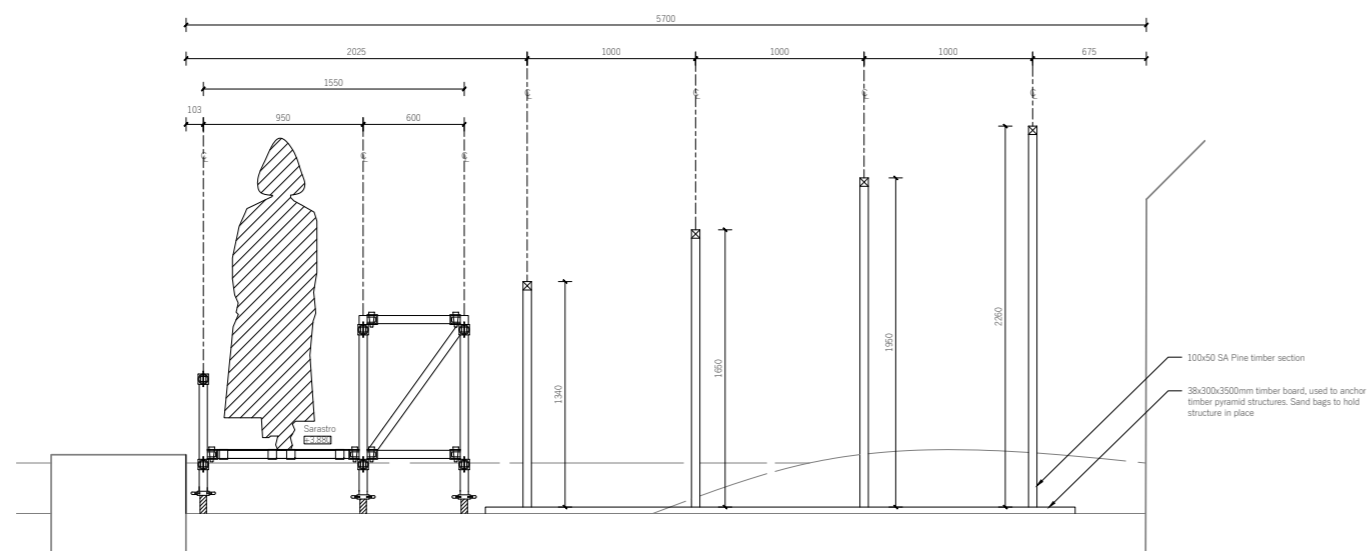
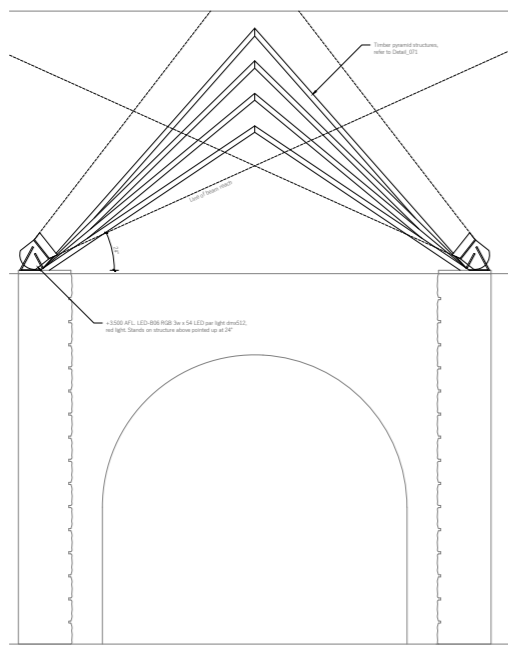


Figure 7.243 Example of light filter texture

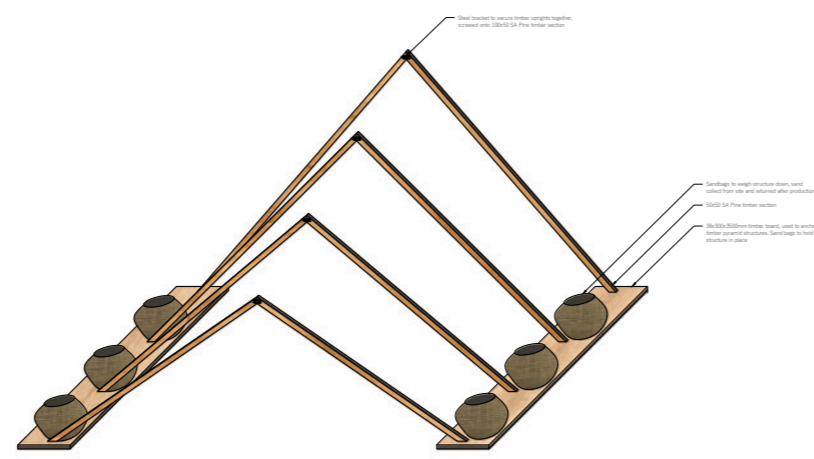


TIMBER PYRAMID STRUCTURE DETAIL\_071

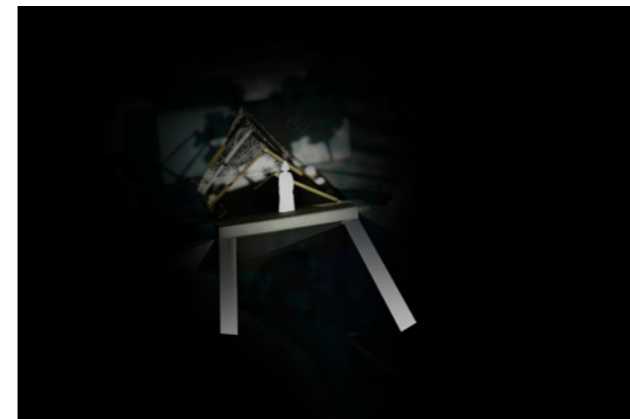


TIMBER PYRAMID STRUCTURE FRONT ELEVATION

Figure 7.244 Pyramid structure detail



TIMBER PYRAMID STRUCTURE 3D



Start of scene



Light used to create movement, shows of actor move across the structure, illusion of chorus

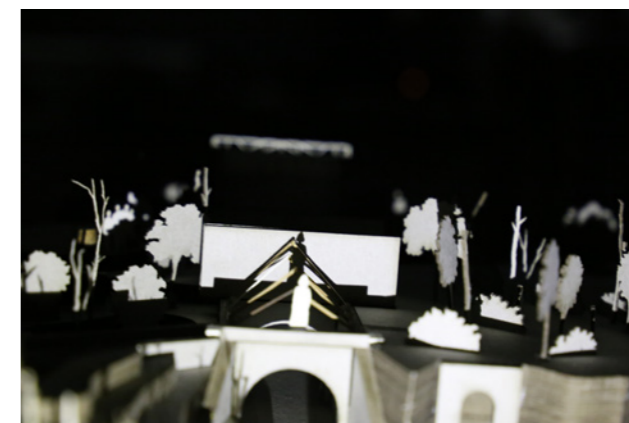


Light reveals Sarastro

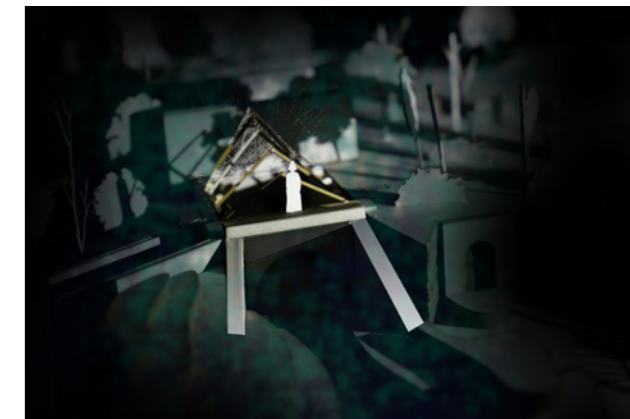
Figure 7.245 Act 2 Scene 5 model outcome



Middle of scene



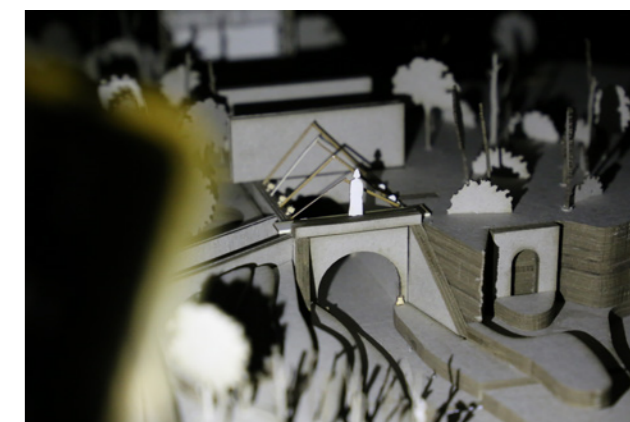
Light reveals structure



End of scene



End of scene





# CHAPTER EIGHT

## CONCLUSION



# CONCLUSION

This dissertation intended to bring awareness to the cultural and historical value of the Fort Daspoortrand ruin, through the introduction of a temporary, site-specific opera. The opera as a catalyst aims to serve as an initial event to illuminate the beauty and drama of this old military ruin. The performance will encourage and enhance the appreciation of the fort, after which, if successful, another developer would be able to add a more permanent function to the site.

Opera in the 21st century has been identified as a culturally rich entity which can add value to society. However, opera around the world has seen an attendance decline over the last decade. This dissertation has provided a way in which the re-imagining of an opera can challenge and encourage a new range of audience members, ultimately making opera an all-inclusive cultural experience. The site-specific performance of The Magic Flute can give life back to the fort and opera, by taking the audience on a journey of the site, creating a homogenous experience of site heritage, theatre, and escapism.

The audience will have minimal contact with the heritage fabric; this is achieved through controlled walkways and circulation interventions. The initial intent was not to add any permanent structures to the fort, but rather to use temporary interventions and materials to develop the design. However, it was noted through the exploration of the site that the erosion from the human movement poses a threat to the future preservation of the ruin. Therefore, permanent circulation was proposed, creating the possibility of the public revisiting the site once the opera has finished. The materiality choice for the new structures would ensure sensitivity, allowing the structure and site to weather and change together, slowly becoming one.

The temporary scene design poses a non-invasive method in the creation of the three-dimensional experience. Re-used, recycled and repurposed materials compose the additional fabric, ensuring that a sustainable and ecological approach is achieved. The design intervention highlights and exposes the unique character of the fort, using lighting, projection and minimalist structures to simultaneously uncover the drama of the heritage fabric and reveal the narrative of The Magic Flute. The strategy of 'touch gently and leave nothing' is considered throughout the design, ensuring the preservation of the historical and cultural value of the site.

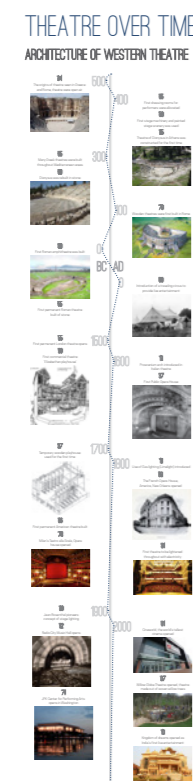
Since this dissertation project has a temporary and short-term life-span, the theories set out for scenography in interior architecture can be further explored in future projects. The Magic Flute at Fort Daspoortrand could become a benchmark and model to create awareness of uncelebrated historical landmarks of South Africa.



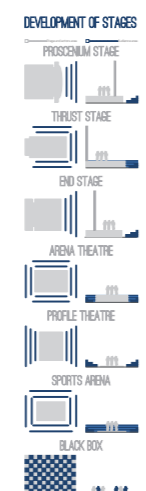
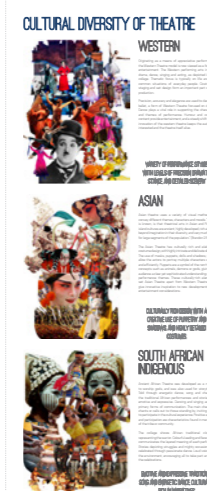
# FINAL PRESENTATION



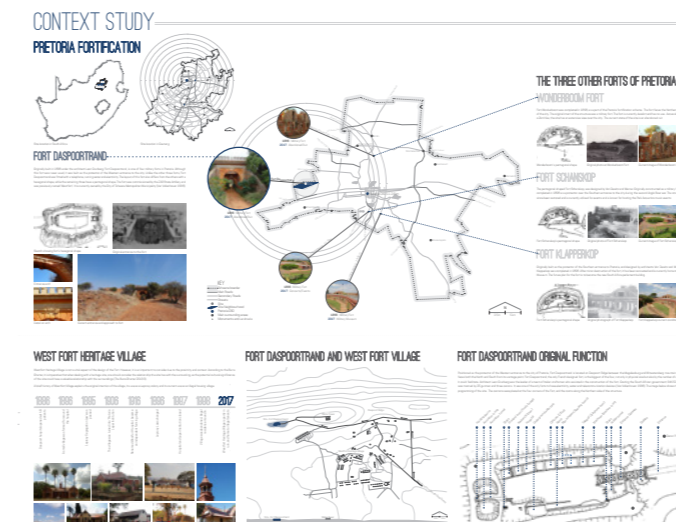
Cover Page



Theatre theory



Proposal



Context

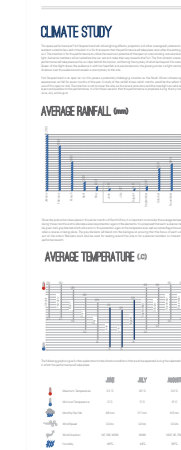
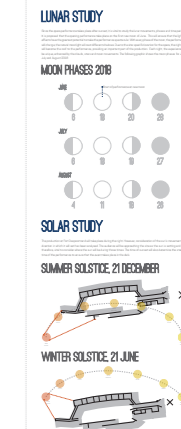
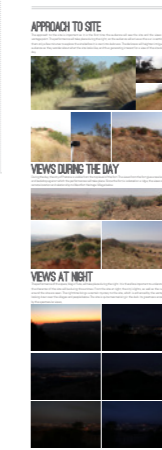
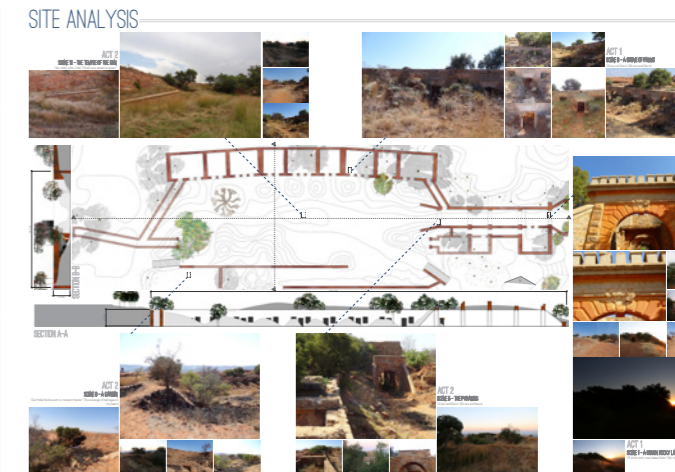
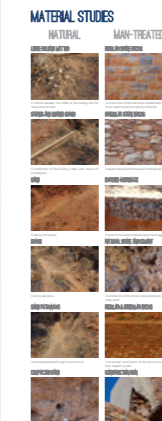


Figure 8.1 Final presentation scheme



### SITE-SPECIFIC THEATRE

ORIGINATED IN THE 1970'S

The term site-specific theatre and site-specific performance was first used in the 1970s to describe a form of performance that is created specifically for a particular site and is often performed in a non-traditional theatre space.

Types of site-specific theatre include site-adaptation and site-sensitive.

Main theory

### ELEMENTS OF INTERIOR DESIGN

- ENVIRONMENT**
- SPACE**
- LEIGHT**
- ENCLOSURE**
- GROUND PLANE**
- SUPPORT**
- DISPLAY**
- DECORATION**
- INFORMATION**
- PROPORTION**
- ACOUSTIC**

### HERITAGE

APPROACHES  
RECONSTRUCTION

RESTORATION

PRESERVATION

CULTURAL SIGNIFICANCE

HERITAGE

SITE

HERITAGE

OPERA

### AUDIENCE-ACTOR VIEW

- SURROUNDED CLOSE
- SAME LEVEL
- ACTOR LOOKING DOWN
- ACTOR LOOKING UP
- FAR DISTANCE VIEW
- SURROUNDED ACTOR LOOKING UP
- OBSTRUCTED VIEW

### THE MAGIC FLUTE

SELECTION OF THE MAGIC FLUTE

OVERVIEW, 1801 TRADITIONAL VERSION

ACT 1

SCENE 1 - A RURAL, ROCKY LANDSCAPE

SCENE 2 - A GARDEN

SCENE 3 - A ROOM IN SARASTROS PALACE

SCENE 4 - A GROVE IN FRONT OF THE TEMPLE OF ORICAL

SCENE 5 - A GARDEN

SCENE 6 - THE PYRAMIDS

SCENE 7 - A GARDEN

SCENE 8 - A GARDEN WITH A TREE

SCENE 9 - A GARDEN

SCENE 10 - THE TEMPLE OF THE SUN

SCENE 11 - A GARDEN

SCENE 12 - A GARDEN

SCENE 13 - A GARDEN

SCENE 14 - A GARDEN

SCENE 15 - A GARDEN

SCENE 16 - A GARDEN

SCENE 17 - A GARDEN

SCENE 18 - A GARDEN

SCENE 19 - A GARDEN

SCENE 20 - A GARDEN

SCENE 21 - A GARDEN

SCENE 22 - A GARDEN

SCENE 23 - A GARDEN

SCENE 24 - A GARDEN

SCENE 25 - A GARDEN

SCENE 26 - A GARDEN

SCENE 27 - A GARDEN

SCENE 28 - A GARDEN

SCENE 29 - A GARDEN

SCENE 30 - A GARDEN

SCENE 31 - A GARDEN

SCENE 32 - A GARDEN

SCENE 33 - A GARDEN

SCENE 34 - A GARDEN

SCENE 35 - A GARDEN

SCENE 36 - A GARDEN

SCENE 37 - A GARDEN

SCENE 38 - A GARDEN

SCENE 39 - A GARDEN

SCENE 40 - A GARDEN

SCENE 41 - A GARDEN

SCENE 42 - A GARDEN

SCENE 43 - A GARDEN

SCENE 44 - A GARDEN

SCENE 45 - A GARDEN

SCENE 46 - A GARDEN

SCENE 47 - A GARDEN

SCENE 48 - A GARDEN

SCENE 49 - A GARDEN

SCENE 50 - A GARDEN

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SCENE 100 - A GARDEN

The Magic Flute opera

### ACT 2

SCENE 1 - A GROVE OF PALMS

SCENE 2 - THE COURTYARD OF THE TEMPLE OF ORICAL

SCENE 3 - A GARDEN

SCENE 4 - A HALL IN THE TEMPLE OF ORICAL

SCENE 5 - A GARDEN

SCENE 6 - THE PYRAMIDS

SCENE 7 - A GARDEN

SCENE 8 - A GARDEN WITH A TREE

SCENE 9 - A GARDEN

SCENE 10 - THE TEMPLE OF THE SUN

SCENE 11 - A GARDEN

SCENE 12 - A GARDEN

SCENE 13 - A GARDEN

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SCENE 98 - A GARDEN

SCENE 99 - A GARDEN

SCENE 100 - A GARDEN

The Magic Flute opera

### FINALE SCENE 8-10

SCENE 8 - A GARDEN

SCENE 9 - A GARDEN WITH A TREE

SCENE 10 - THE TEMPLE OF THE SUN

SCENE 11 - A GARDEN

SCENE 12 - A GARDEN

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SCENE 100 - A GARDEN

The Magic Flute opera

### KENTRIDGE INTERPRETATION

- 1
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### SELECTED SCENES

- 1
- 2
- 3
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- 12
- 13

### CHARACTER SKETCHES

THAMMO

PANDRA

PAPAGENO

PAPAGENO

QUEEN OF THE NIGHT

DAVARTO

MONETARIO

### PRECEDENT STUDIES

TEXTURE, LIGHT AND SENSORY EXPLORATION

PROJECTION, SCALE AND LIGHT

AUDIENCE PLACEMENT AND SITE-SPECIFIC PERFORMANCE

TEMPORARY, MULTI-LEVEL THEATRE AND LAYERING

Precedent studies

### DESIGN INFORMANTS

SITE-SPECIFIC THEATRE

HERITAGE

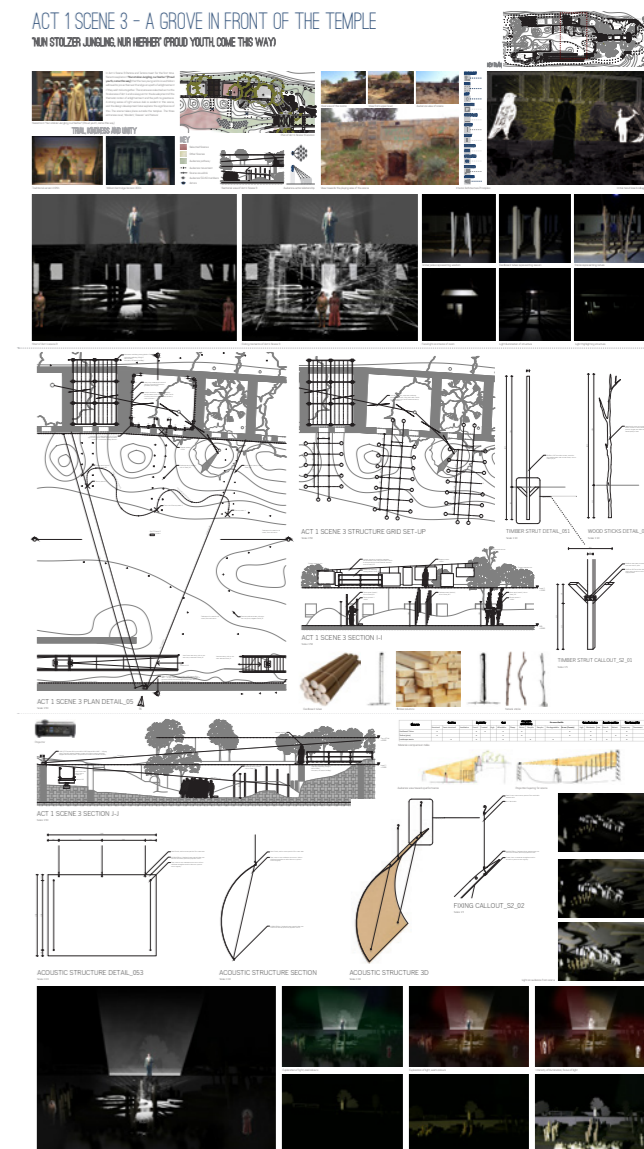
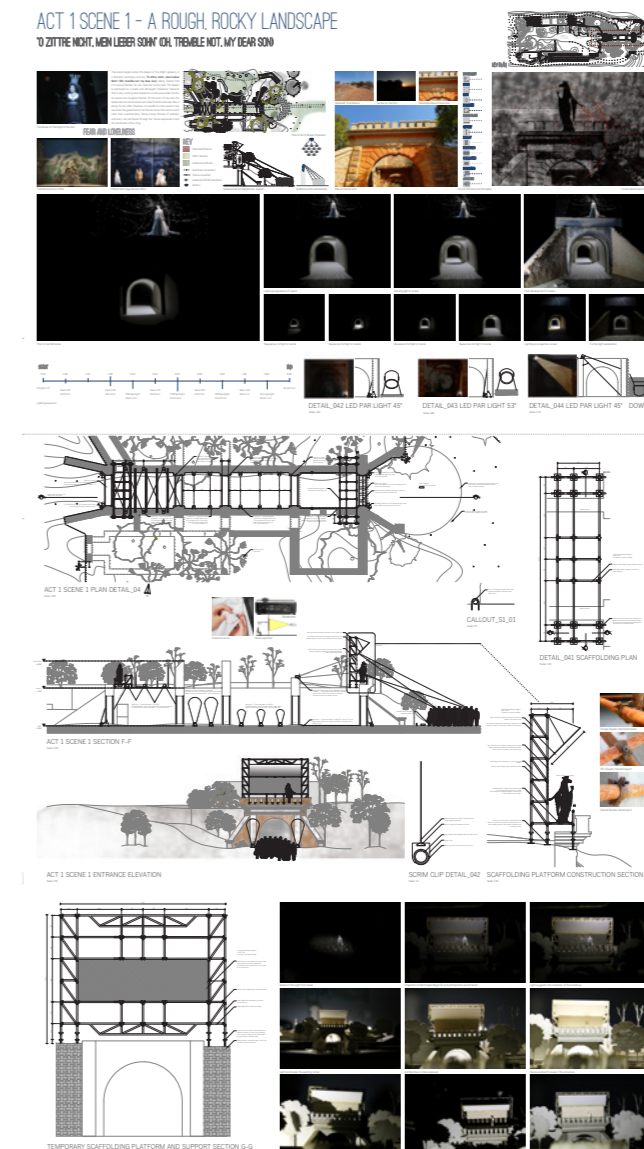
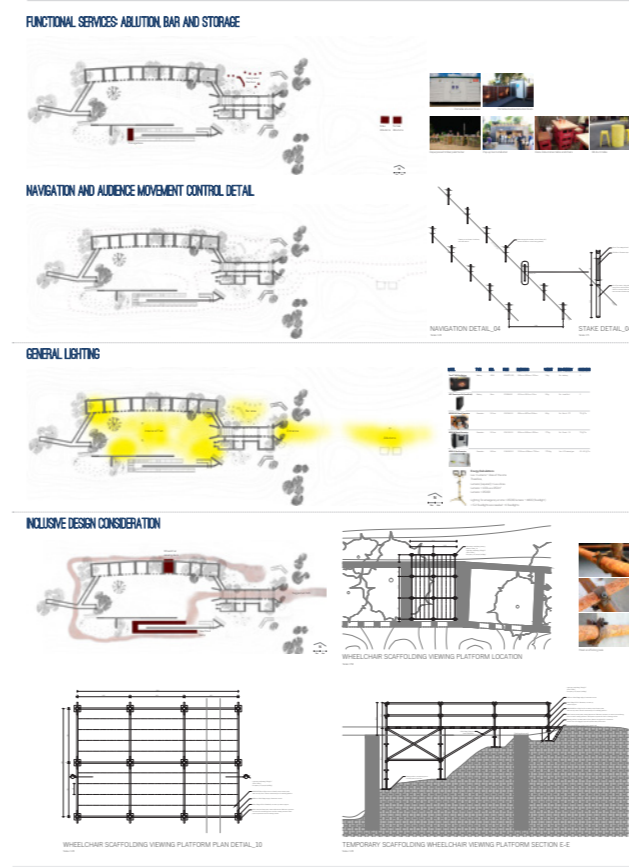
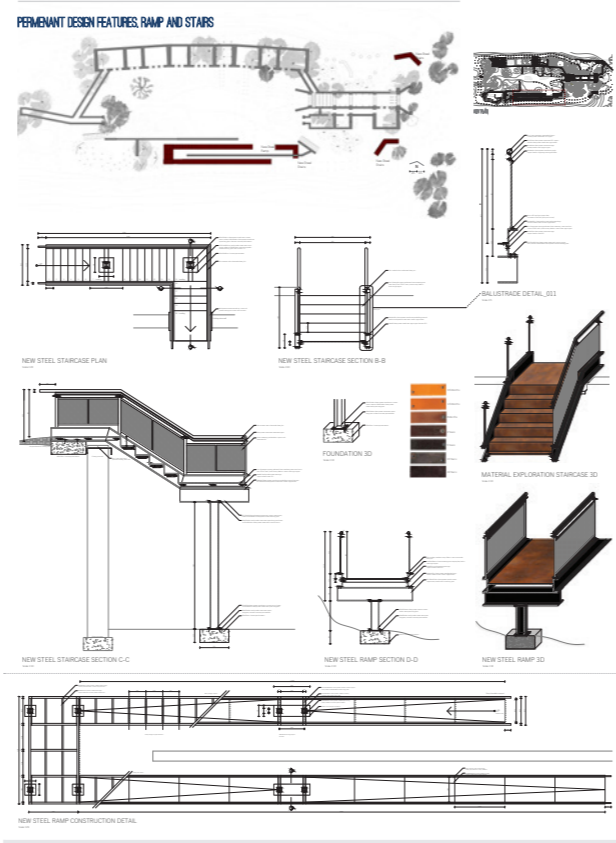
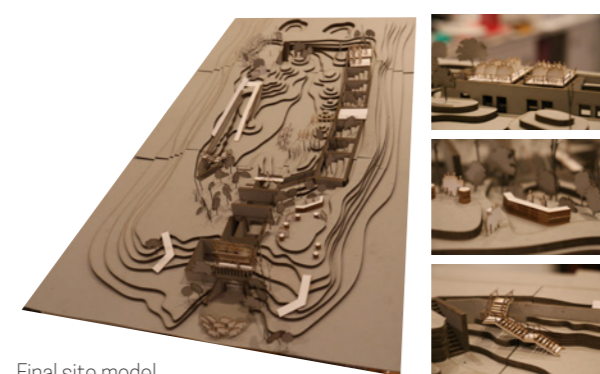
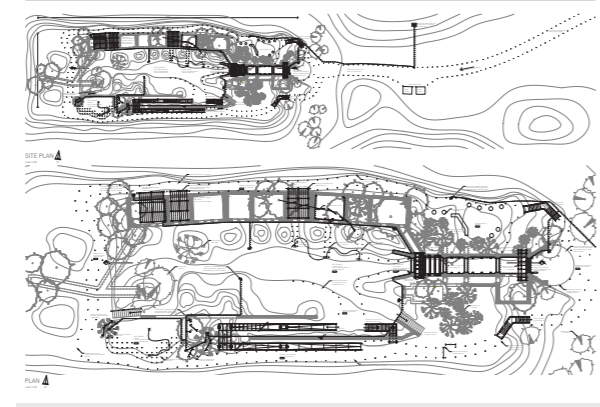
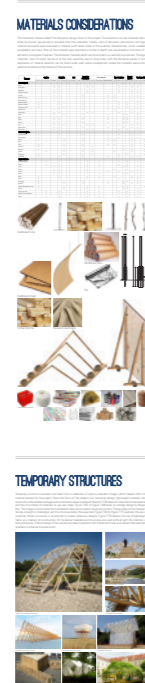
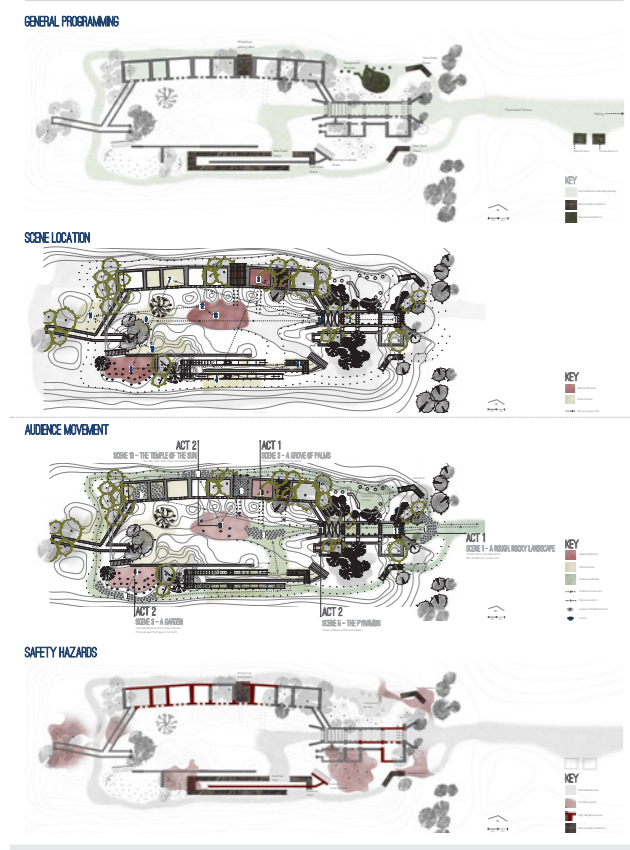
ELEMENTS OF INTERIOR DESIGN

WILLIAM KENTRIDGE

TEMPORARY STRUCTURES

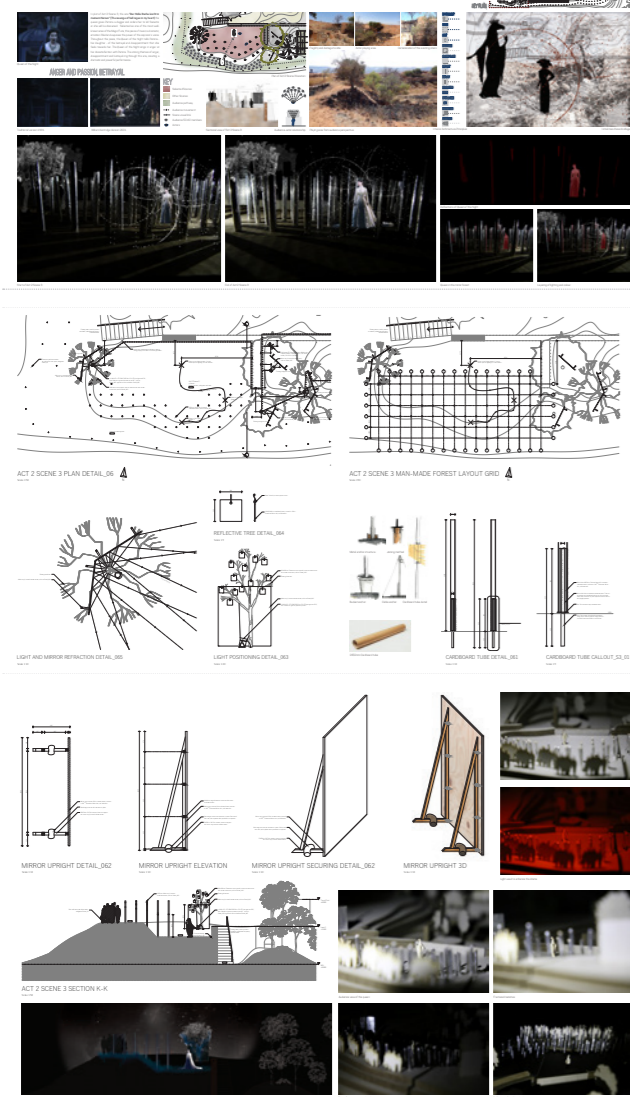
Design informants



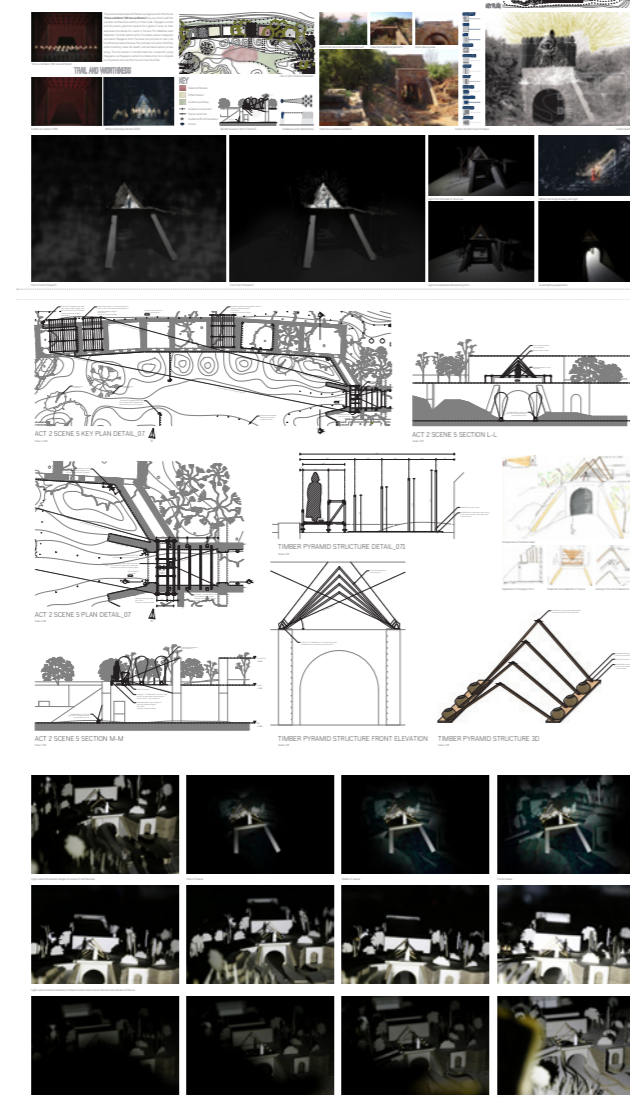




ACT 2 SCENE 3 - A GARDEN  
DER HÖLLE FACHE KÖCHT IN MEINEM HERZEN (THE REVENGE OF HELL PAGES IN MY HEART)



ACT 2 SCENE 5 - THE PYRAMIDS  
TO ISB UND OGBIS' GH ISS AND OGBIS'





# THANK YOU

## Barbara

For your constant support, inspiration, encouragement and knowledge that you have shared over the last two challenging years.

## Catherine

For your dedication, enthusiasm and for creatively nudging me along throughout the year.

## Mom, Dad, Dane and Kaley

For your endless love, belief, handiness and support. You have inspired me to always reach further than I can see and to believe in the seemingly impossible.

## Frank

For pushing me to my limits and encouraging me to reach beyond my potential. You have been my rock, pep talker, late night companion, social translator, best friend, and inspiration.

## Children of Jekot (2016) Armand and Leani

For all your encouragement, acceptance and love you showed towards me. You made the new-comer feel like she belonged.

## Sassy interiors (2017) Antonette, Laurika and Mark

For all the reassurance, laughter, coffee-breaks and G&T's - it has been a pleasure to have had the opportunity to have achieved this alongside the three of you.

# LIST OF REFERENCES

## BOOKS, PUBLISHED LITERATURE

Architective Building Construction Standards for South Africa, First Edition 2013, Architective Publications (Pty) Ltd, Johannesburg, South Africa

Barris. 1972. Culture as Battleground. Cambridge University Press, Cambridge pg. 111

Birch, A and Tompkins, J. 2012. Performing Site-Specific Theatre: Politics, Place, Practice (Performance Interventions), Palgrave Macmillan, New York

Brandon J. 1993. The Cambridge Guide to Asian Theatre. Cambridge university press. UK.

Brecht, B. 1961. On Immersive Theatre. Journal Vol. 6, No. 1, pg. 2-17

Edwards, C. 2017. Form and Structure in Interior Architecture, 2nd ed. Graeme Brooker and Sally Stone, The Design Journal, 20:1, 153-156

Groat, L and Wang, D. 2013. Architectural Research Methods, 2nd Edition. Wiley, New York.

Houston, A. 2007. Environmental and site-specific theatre.

Playwrights Canada Press, Toronto.

Johnstone, K. 1979. Impro: Improvisation in the Theatre. Faber and Faber Ltd, England. Pg. 1

Kentridge, W. 2007. Flute. David Kurt Publishing. Ultra Litho, Johannesburg.

Machon, J. 2013. Immersive Theatres: Intimacy and Immediacy in Contemporary Performance. Palgrave Macmillan, New York

Mason, B. 1992. Street Theatre and Other Outdoor Performance. Routledge, New York

Oddey, A & White, C. 2006. The Potentials of Space, The Theory and Practice of Scenography and Performance. Intellect Books, Bristol, UK.

Person, M. 2010. Site-Specific Performance. Palgrave Macmillan, New York

Read, G. 2003. Architecture and Drama: The Theatre of Public Space. Florida International university. Pg. 3-10

Search for Common Ground. 2012. Participatory Theatre for Conflict Transformation: Training Manual. Pg 5

The Burra Charter: The Australia ICOMOS Charter for Place of Cultural Significance, 2013:1-10

Van Vollenhoven, A. 1998. The Military Fortification of Pretoria: A study in Historical Archaeology. A. C, Van Vollenhoven: Pretoria

W. Oren Parker & Harvey K Smith. 1979. Scene Design and Stage Lighting, Fourth Edition. Holt, Rinehart and Winston, New York.

White, G. 2012. On Immersive Theatre. Theatre Research International, 37(03), pp. 221-235.

White, G. 2013. Audience Participation in Theatre: Aesthetics of the Invitation. Palgrave Macmillan, New York.

White, G. 2015. Applied Theatre: Aesthetics. Bloomsbury, New York

## FILM

The Metropolitan Opera, DVD Opera Collection. 2003. Die Zauberflote, WA Mozart. Conductor James Levine



## MASTERS DISSERTATIONS

Chita, M. (n.d). Reinventing Theatrical Education. Submitted in partial fulfilment of the requirements for the degree Masters in Interior Architecture (Professional) in the faculty of Engineering, Built Environment and Information Technology, Department of Architecture, University of Pretoria, Pretoria

Gerneke, L. 2012. Real fictions: a heterotopic production design for The Lorax. Submitted in partial fulfilment of the requirements for the degree Masters in Interior Architecture (Professional) in the faculty of Engineering, Built Environment and Information Technology, Department of Architecture, University of Pretoria, Pretoria

Myburgh, J. 2011. Wood for the trees: a temporary Theatre for the performance of 'Circles in a Forest.' Submitted in partial fulfilment of the requirements for the degree Masters in Interior Architecture (Professional) in the faculty of Engineering, Built Environment and Information Technology, Department of Architecture, University of Pretoria, Pretoria

Wiggin, J. 2010. Extending the skin(s) of the Capitol Theatre. Submitted in partial fulfilment of the requirements for the degree Masters in Interior Architecture (Professional) in the faculty of Engineering, Built Environment and Information Technology, Department of Architecture, University of Pretoria, Pretoria

## WEBSITES OR ONLINE

(Sa). 2016. Immersive Theatre. [O] Available at: <https://immersivetheatre.com/> Accessed on 2016-03-19

AccuWeather. 2017. Pretoria. [O] Available at <https://www.accuweather.com/en/za/pretoria/305449/weather-forecast/305449> Accessed on 2017-03-14

Alderson, M. 2002. Theatre Spaces. [O] Available at: <http://www.ia470.com/primer/theatres.htm> Accessed on 2016-03-19

Arena di Verona. 2017. [O] Available at: <http://www.arena.it/arena/en> Accessed on 2017-06-10

Art21. 2016. Krzysztof Wodiczko. [O] Available at: <https://art21.org/artist/krzysztof-wodiczko/> Accessed on 2017-05-23

Center Stage Opera. The Magic Flute. [O] Available at: <https://centerstageopera.org/productions/2013-2014/magic-flute.php> Accessed on 2017- 06-25

Collins English Dictionary.2017. [O] Available at: <https://www.collinsdictionary.com/dictionary/english/scenography> Accessed on 2017-06-26

Driscoll, DP. 2016. Occupational Safety and Health Administration Section III: Chapter 5. [O] Available at: [https://www.osha.gov/dts/osta/otm/new\\_noise/](https://www.osha.gov/dts/osta/otm/new_noise/) Accessed on 2017-10-16

Driscoll, R. 2017. Just Under the Surface, London, UK, 2011. [O] Available at: <http://rosalynriscoll.com/portfolio/installations-2/just-under-the-surface-london-uk-2011/> Accessed on 2017-04-20

Emmerson. 2012. The secret to attracting opera audiences. [O] Available at: <http://ja-nae.blogwrangler.net/blog/secret-attracting-opera-audiences/> Accessed on 2017-05-01

Gascoigne, B. 2001. History World, History of Theatre. [O] Available at: <http://www.historyworld.net/wrldhis/PlainTextHistories.asp?ParagraphID=cui> Accessed on 2016-08-11

Google online dictionary, 2017. Dramaturgy. [O] Available at: <https://www.google.co.za/h?q=Dramaturgy&oq=Dramaturgy&aqs=chrome..69i57j0l5.1423j0j8&sourceid=chrome&ie=UTF-8> Accessed on 2017-07-31

Green Building Council of South Africa. 2017. Greenstar rating systems. [O] Available at: <https://www.gbcsa.org.za/green-star-sa-rating-system/> Accessed on 2017-10-16

History of Theatre. 2000. Theatre Timeline. [O] Available at: [http://www.glencoe.com/theatre/Timeline/timeline\\_content.html](http://www.glencoe.com/theatre/Timeline/timeline_content.html) Accessed on 2016-03-26

How Opera Can Get Its Groove Back In The 21st Century... . 2017. [O] Available at: [http://www.huffingtonpost.com/janae-duane/how-opera-can-get-its-gro\\_b\\_5236372.html](http://www.huffingtonpost.com/janae-duane/how-opera-can-get-its-gro_b_5236372.html) Accessed on 2017-07-23

Immersive Theatre. 2016. About: Entertainment technology has changed.... [O] Available at: <https://immersivetheatre.com/> Accessed on 2016-03-26

Ja-Nae Duane. 2014. The secret to attracting opera audiences. [O] Available at: <http://ja-nae.blogwrangler.net/blog/secret-attracting-opera-audiences/> Accessed on 2017-05-01

Participatory Theatre for Conflict Transformation. 2017. [O] Available at: <http://dmeforpeace.org/sites/default/files/Participatory-Theatre-Manual-EN.pdf> Accessed on 2017-07-23

The Magic Flute in Berlin. 2017. Opera, My Love. [O] Available at: <https://operamylove.com/2013/12/27/the-magic-flute-in-berlin/> Accessed on 2017-07-25

Time and Date. 2017. Weather Pretoria. [O] Available at:

<https://www.timeanddate.com/weather/south-africa/pretoria/climate> Accessed on 2017-03-14

University of Oregon. 2016. Department of Architecture: Interior Architecture. [O] Available: <https://architecture.uoregon.edu/programs/iarch> Accessed on 2017-05-14

University of Pretoria. 2016. BSc (Interior Architecture) Interior Architecture Code: 12132008 Programme Information. [O] Available at: <http://www.up.ac.za/yearbooks/pdf/programme/12132008> Accessed on 2016-08-14

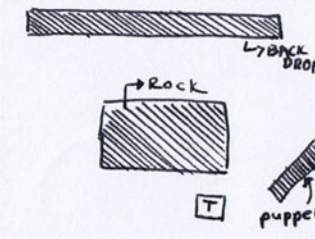
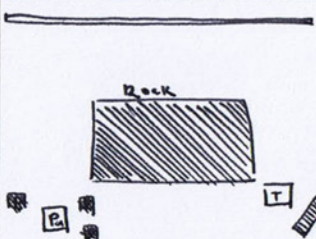
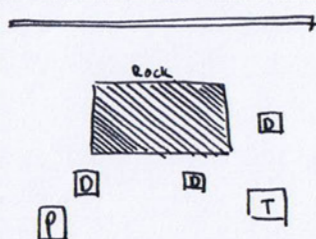
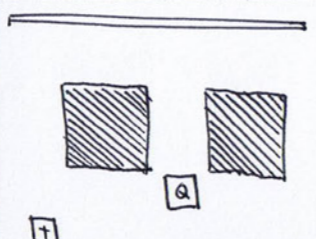
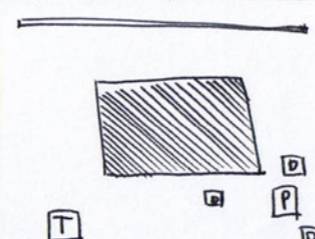





We Players. 2017. Macbeth at Fort Point, 2014 [O] Available at: <http://www.weplayers.org/macbeth-at-fort-point-2014/> Accessed on 2017-04-20


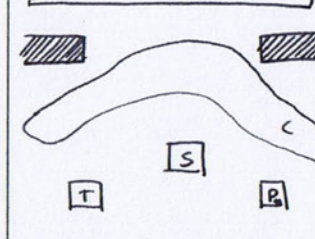
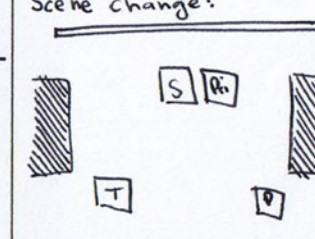
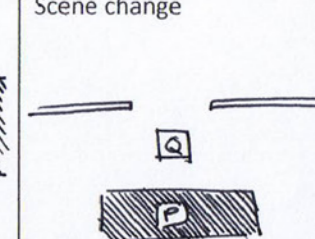


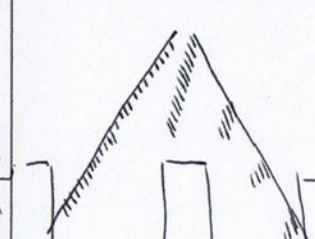


White, G. 2016. Gareth White: The Royal Central School of Speech and Drama. [O] Available at: <http://www.cssd.ac.uk/staff/dr-gareth-white-ba-phd> Accessed on 2016-05-30

Windfinder. 2017. Wind statistics, Pretoria. [O] Available at: [https://www.windfinder.com/windstatistics/pretoria\\_swartkop](https://www.windfinder.com/windstatistics/pretoria_swartkop) Accessed on 2017-03-14

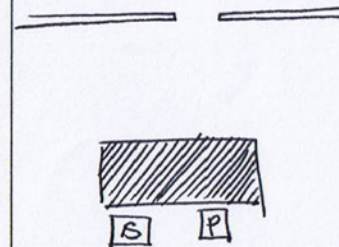
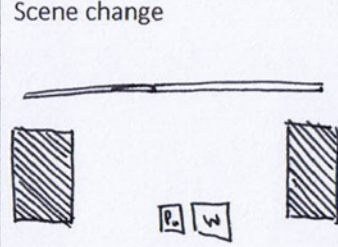
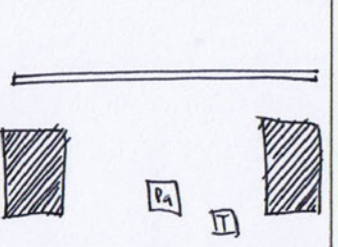
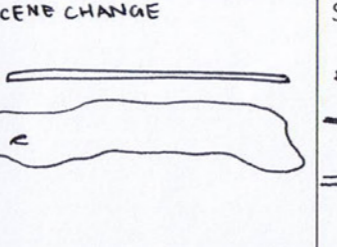
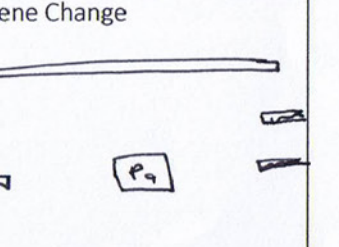


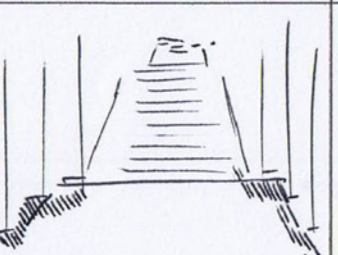
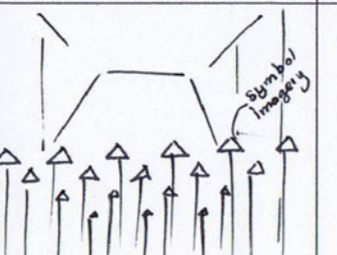
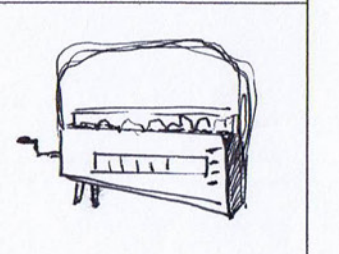


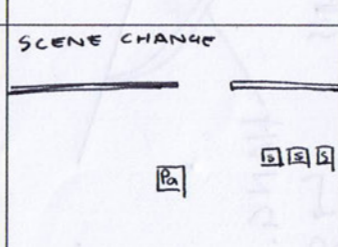
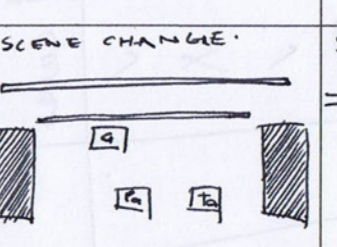
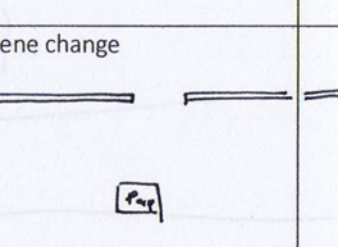
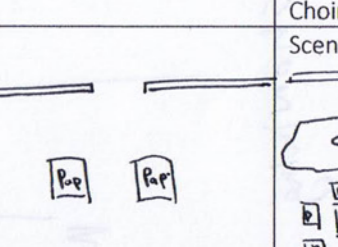
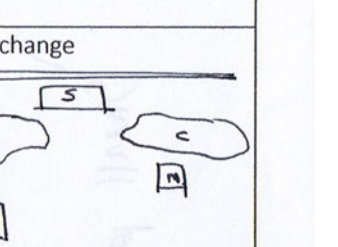

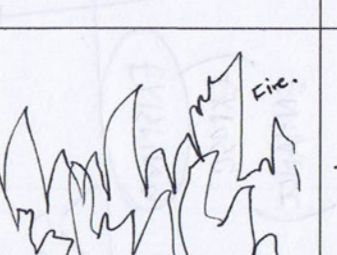
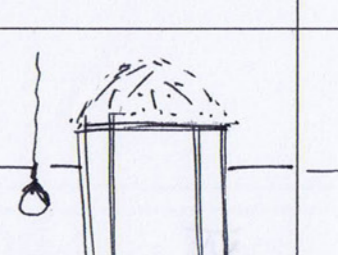

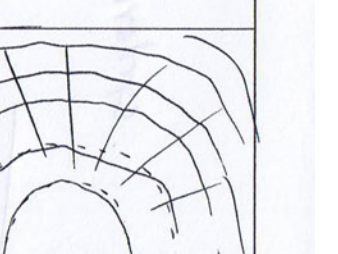
# APPENDIX A

Chapter / Arie Number:	Act 1:1-2	1	3-4	2	5 - 6	3	7	4	8	5
Arie Name:	Zu Hilfe! Zu Hilfe! Sonst bin ich verloren		Der Vogelfanger bin ich ja		Dies Bildnis ist bezaubernd schon		O zittre nicht, mein lieber Sohn! Zum leiden bin ich auserkoren		Hm, hm, hm, hm	
Translation:	'Help! Help! Otherwise I am lost'		The bird catcher am I		This is a portrait of an enchanting beauty		Do not tremble, my dear son!		-	
Actor/s:	Tamino, Drei Damen		Papageno, Tamino, Drie Damen		Tamino, Drie Damen,		Queen of the Night		Papageno, Tamino, Drie Damen	
Stage layout:										
Graphic Illustrations:										
Themes:	Tension among audience Reflection of human race Lively Lustrous Fear Fighting		Introduction of Papageno motif Trust Thankfulness Deception (Papageno)		Love Passionate ardour Emotion of love Desire Instant Love		Pain of daughter's loss Mysterious character of the queen		Humour Punishment for a lie	
Environment Comment:	Day, Exterior		Day, Exterior		Day, Exterior		Night, Exterior		Day Exterior	

Chapter / Arie Number:	Act 2: 20	9	21-22	10	23	19	25	11	28 - 29
Arie Name:	March der Priester		O Isis und Osiris		Soll ich dich, Teurer, nicht mehr sehn?		Bewahret euch vor weibertucken		Oh weh, die Konigin der Nacht
Translation:	March of the priests		O Isis and Osiris		Shall I see you, dearer, no more?		Protect yourself from being wiped out		Oh, the queen of the night
Actor/s:	Orchestra		Sarastro, Choir		Pamina, Sarastro, Tamino		Zwieter Priester, Sprecher		Queen of the night, Monostatos, Pamina
Stage layout:	Scene change overture!						Scene change: 		Scene change 
Graphic Illustrations:									
Themes:	Themes for second act Solemn		Immense humanity Solemn  Nobility (Tamino) Strength Uneasy (Papageno)		Love Leaving Sadness		Delicate		Aggressive and cold Evil Vindictive Betrayal Love (Bad) Blame on Pamina Cold-blooded cruelty
Environment Comment:	n/a		Exterior, Day		Exterior, Day		Night, Interior, storm (Thunder)		Dark, Interior, Thunder



Chapter / Arie Number:	31	15	32-33	16	35	17	37	18	39	20
Arie Name:	In diesen heil'gen Hallen	Dialogue – Hier seid ihr euch beide allein uberlassen	Ach, ich fuhl's es ist verschwunden		O Isis und Osiris				Ein Madchen oder Weibchen	
Translation:	In these holy halls	Here you are left alone	Oh, I feel it, it's gone		O Isis and Osiris				A young girl or a young wife	
Actor/s:	Sarastro	Papageno, Weib	Pamina		Choir				Papageno (fun Charcter)	
Stage layout:		Scene change 			SCENE CHANGE 				Scene Change 	
Graphic Illustrations:										
Themes:	Peaceful lightness Humanistic ideals Good and evil Light and dark  Fantasy (celestial)	<i>Frailty.</i>	Pain from lost Love Broken heart Melancholy Anxiety Sadness		Majestic prayer Light hearted atmosphere				Lonely Desire for love Want for love Depression Conditional Love Dramatic Superficial Symbolism of future	
Environment Comment:	Night, Exterior	Night, Interior	Night, Interior		Interior Night, Artificial Light				Night Exterior	

Chapter / Arie Number:	41	21	43	45	46	47	
Arie Name:	Bald prangt, den Morgen zu verkunden	O welch ein gluck	Papagena! Weibchen! Taubenchen!	Pa-Pagena! Pa-Pagena!	Nur stille, stille, stille		
Translation:	Soon the sun will shine to announce the morning	Oh, what a lucky one	Papagena! Female! Pigeon!	Pa-Pagena! Pa-Pagena!	Only quiet, quiet, silent		
Actor/s:	Drie Knaben, Pamina	Pamina, Tamino, die geharnischten Manner	Papageno, Drie Knaben	Papagena, Papageno	Monostatos, Queen of the night, Drie Damen, Sarasto, Choir		
Stage layout:	SCENE CHANGE 	SCENE CHANGE 	Scene change 				
Graphic Illustrations:							
Themes:	Human frailty Passionate love Temperamental Desire for love Anguish from love Sorrow Tormented love Dramatic love	Love will concur all Love will prevail Journey to truth love Sacrificial Love Love for a powerful woman	Desperate Love Happy Sad Heart on fire Very passionate	Childish Love Juvenile Temperamental Love Reunited Love delight Joy	Enlightenment Journey through darkness Strength of love Love prevails		
Environment Comment:	Night, Exterior	Night, Exterior	Day, Exterior	Day, Exterior	Exterior Night (bright light)		



# APPENDIX B

Materials	Qualities			Availability		Cost			Recyclable (Sustainable)		Re-use afterlife			Noise Production			Acoustic qualities		Time frame (life)	
	Structural	Semi-structural	Aesthetics	Found	Created	High	Affordable	Cheap	Reuse	Recycle	Recycle	Biodegradable	Reuse (Donate)	High	Moderate	Low	Absorb	Refract	Temporary	Permanent
<b>Domestic Waste</b>																				
Paper			x	x						x	x							x		x
News paper			x	x						x	x							x		x
Magazines			x	x						x	x							x		x
Telephone books			x	x						x	x							x		x
Tin cans			x	x					x				x	x				x		x
Aluminium cans			x	x					x				x	x				x		x
Plastic bottles			x	x					x				x	x				x		x
Cardboard Boxes	x			x	x				x				x		x			x		x
Cardboard Sheets	x			x					x				x		x			x		x
Cardboard Tubes	x			x	x				x				x		x			x		x
Glass bottles			x	x					x				x	x				x		x
Plastic bags			x	x						x	x				x			x		x
Fabric			x		x				x				x			x	x			x
Rope			x	x					x				x			x	x			x
String			x	x					x				x			x	x			x
Twine			x	x					x				x			x	x			x
Foil			x	x	x					x	x				x				x	x
Plastic crates			x	x					x				x				x		x	x
Polystyrene			x	x						x	x				x			x		x
<b>Construction waste</b>																				
Timber (pine)	x			x					x				x		x			x		x
Wood Pallets	x			x					x				x		x			x		x
Metals	x				x				x				x	x				x		x
Glass		x			x				x				x	x				x		x
Steel	x				x				x				x	x				x		x
Concrete	x				x				x		x					x		x		x
Masonry	x				x				x		x					x		x		x
Copper		x			x				x		x			x				x		x
Drywalling	x				x				x		x				x			x		x
Scaffolding	x				x				x					x		x			x	x
<b>Organic materials</b>																				
Landscape waste		x			x					x		x			x			x		x
Thatch		x			x					x		x			x			x		x
Grass			x	x						x		x				x	x			x
Leaves			x	x						x		x		x				x		x
Water			x	x						x			x		x				x	x
Sand			x	x						x		x				x	x			x
Stone	x				x					x		x		x					x	x
Rocks	x				x					x		x			x				x	x
Earth Bags	x				x				x					x			x	x		x
Bamboo	x				x				x					x				x		x
Organic Blocks (Mushrooms)	x				x					x		x					x	x		x
Hemp	x				x					x		x					x	x		x
Sugar Cane husk		x			x					x		x						x		x
Agricultural waste(husks)		x			x					x		x						x		x
Straw		x			x					x		x						x		x