

CHAPTER THREE

PHYSICAL CONTEXT

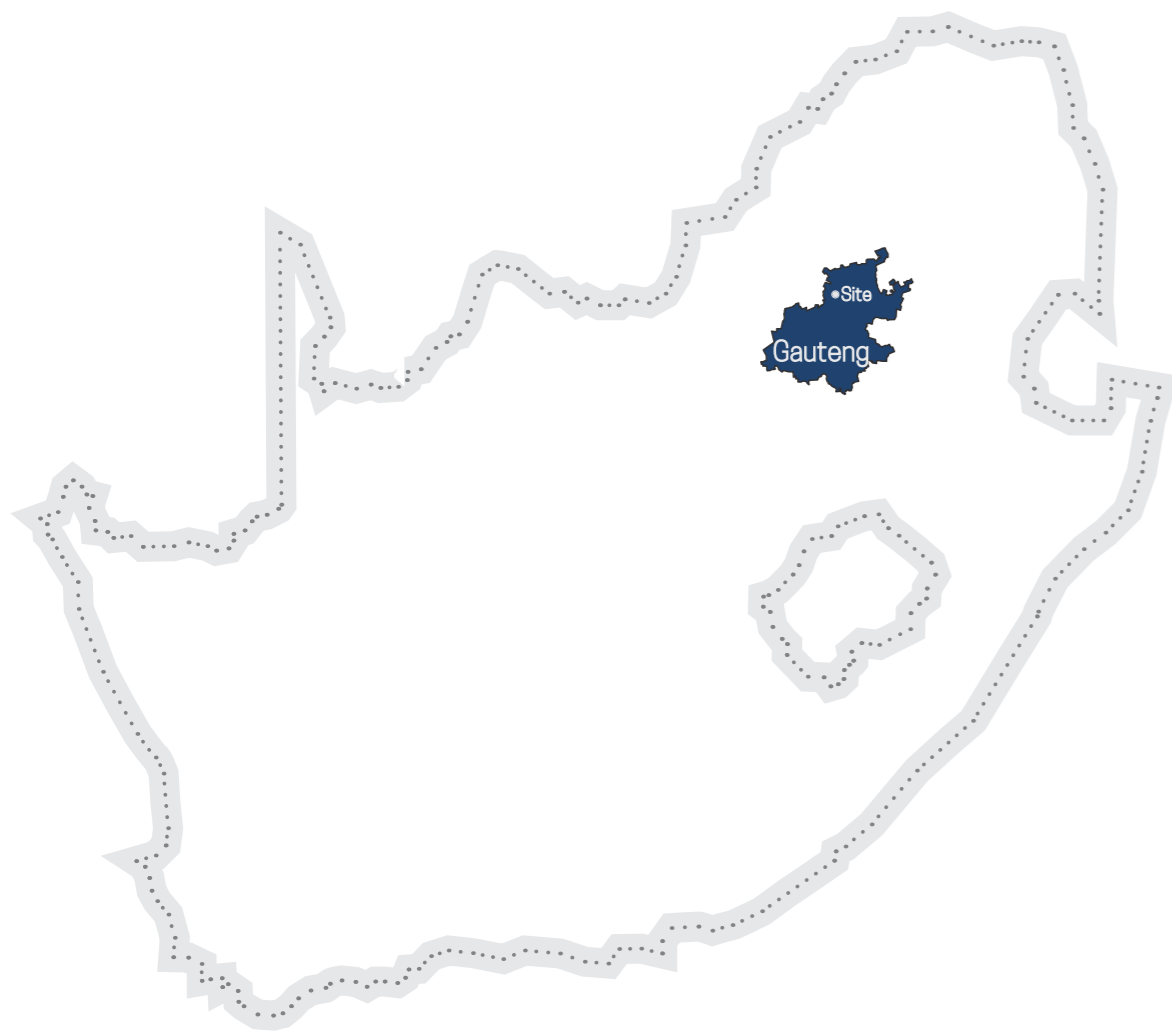


Figure 3.1 Site location in South Africa

For the purposes of this dissertation, a specific site has been identified. The site, Fort Daspoortrand, was selected due to its unique character, and need for historical and cultural preservation.

3.1 INTRODUCTIONS TO THE CONTEXT

Isolated and abandoned on the top of a hill, a beautiful ruin sits quietly and patiently. The great protector of the West, a structure of excessive character awaits its moment to be discovered by the public. Figure 3.1 shows how this historical and charming structure stands in the province of Gauteng, in the capital city of Pretoria (Tshwane). Fort Daspoortrand, as seen in Figure 3.2, is positioned 11.24km from Pretoria city centre and 52.44km from Johannesburg city centre. Placed upon a modest ridge, the fort overlooks the western entrance to Pretoria, with vantage points facing both north and south.

Fort Daspoortrand is one of the four forts which were constructed during the Anglo-Boer war as part of the second fortification plan (Van Vollenhoven 1998). Two of the structures - Fort Klapperkop and Fort Schanskop - have since been repurposed, while the remaining Forts - Fort Wonderboom and Fort Daspoortrand - remain untouched and subject to the ruin of time.

3.2 SITE SELECTION

The unique character of Fort Daspoortrand ruin is its striking bold structure and its sad untold history. The potential to re-introduce the public to the site and tell a part of its story creates a sense of intrigue and opens the site up to the unlimited possibilities. The unique and fascinating architectural structure, together with elemental damage, has created a certain beauty at the site, which will be lost forever if it is not exposed to the public. The fort is constructed of thick natural stone walls – a local material which can be found in the hills around

the site - ensuring that the architecture is camouflaged with the surroundings. The reddish-brown of the natural stone contrasts with the grey concrete, which forms part of the detailing and original roof structure. The structure is hidden from view as it is set into the earth, the natural foliage scattered around the built-up banks acts to disguise the bold architecture. Since the site is easily accessible and currently abandoned, it awaits a design intervention which will breathe life back into it, exposing its beauty and majesty for the public to see.

3.3 GREATER CONTEXT

A thorough site analysis and site investigation will expose the limitations and potential of the site-specific theatre. The analysis will be achieved through an investigation of the macro and micro context surrounding the site.

The macro analysis will focus on the surrounding areas and the general context of the site; giving a contextual understanding of the site. Considerations will include the following: where the site is located with regards to the city centre; how the site is accessed; and what is the site's proximity to other buildings of similar typology. The macro analysis of the site is depicted in the previous illustrations in Figure 3.1 and Figure 3.2. The graphics show the position and context of the site in South Africa and Gauteng, as well as its physical relationship with the Pretoria city centre.

The micro site analysis will look at the chosen site, including the existing structure and architectural design features; the materiality of the existing site; weather patterns; solar studies and decay of the structure. The macro and micro analysis will be further revealed throughout this chapter, unfolding the story of the site and its current state.

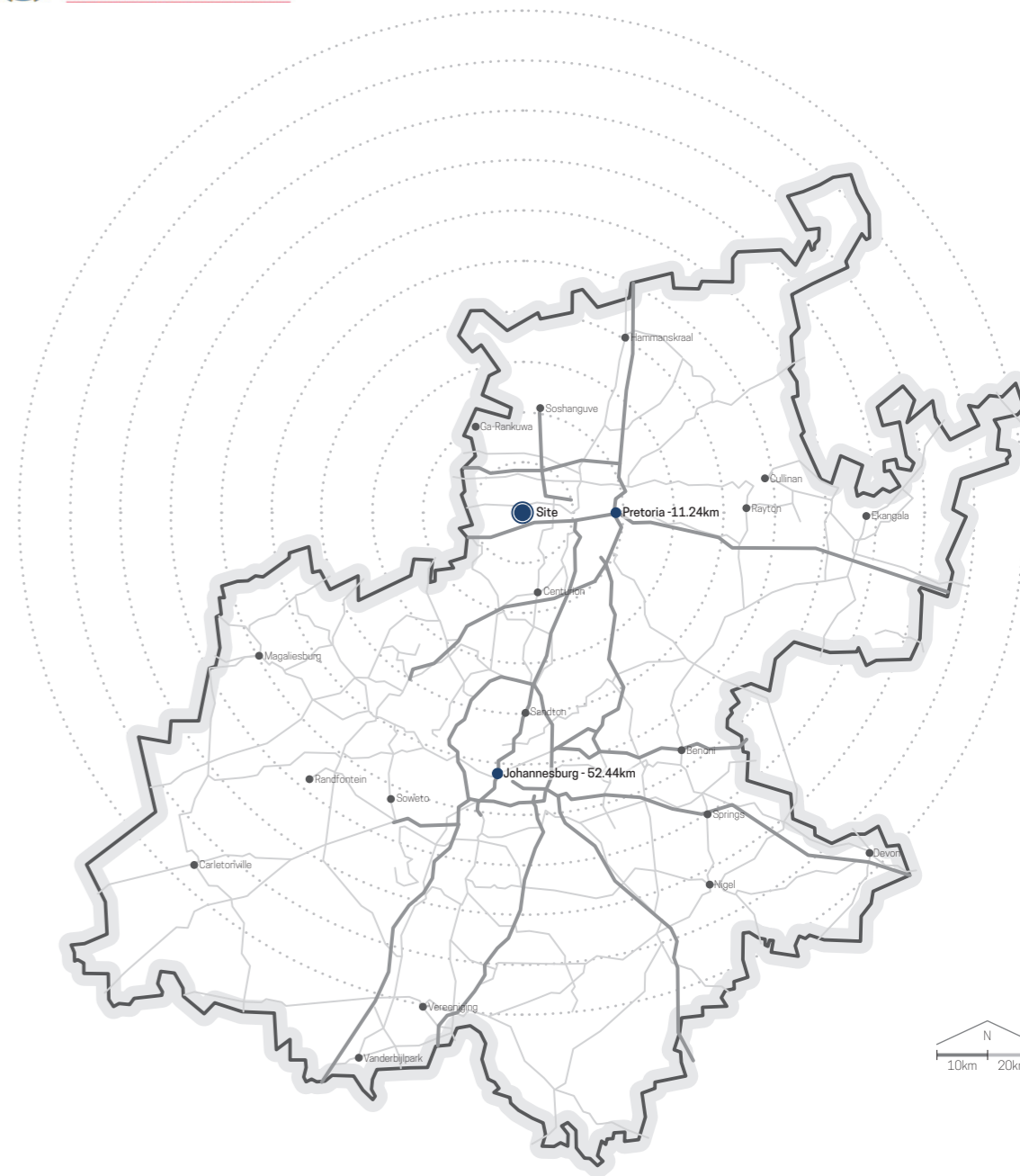


Figure 3.2 Site location in Gauteng, concerning the distance of the site and, Pretoria and Johannesburg city centre.

3.4 PRETORIA

The site is located within the greater Pretoria City and falls under the municipality of Tshwane. The fort is located 11.24km from the city centre and is easily accessible via main roads. Figure 3.4, on the following page, shows a 1km radius from the site, as well as the radial reach showing where the other three forts are located in Pretoria.

3.5 PRETORIA FORTIFICATION

Before the breakout of the second Anglo-Boer War, there was a concern for the safety of the citizens of Pretoria. This threat to the city's safety ignited a plan to build forts at every entrance, surrounding the city. In 1896, the government approved the Pretoria Fortification plan, the construction of eight forts was proposed as protectors to the entrances to the city of Pretoria. However, due to a lack of funding and the fast-approaching war, only four of the eight forts were built. In 1898 the construction of the four forts, three German and the other French: Fort Klapperkop, Fort Wonderboom, Fort Schanskop and Fort Daspoortrand were completed. Today all four forts still stand, some more preserved than others.

3.6 FORT DASPOORTRAND, THE FRENCH FORT

Originally built in 1898 under the architect Leon Grunberg, Fort Daspoortrand, Figure 3.3b, is one of four military forts in Pretoria. Although this fort was never used, it was built as the protector of the Western entrance to the city. Unlike the other three forts, Fort Daspoortrand was fitted with a telephone, running water and electricity. The layout of this fort also differs from the others with a hexagonal shape, as seen in Figure 3.3a, while the remaining three have a pentagonal shape. The fort was commissioned by the ZAR State Artillery and was previously named 'Westfort'. It is currently owned by the City of Tshwane Metropolitan Municipality (Van Vollenhoven 1998).

As seen in Figure 3.3c, Figure 3.3d and Figure 3.3e the present state of the site is an abandoned ruin. The steel structure was removed soon after it was built and the war had ended, causing the roof to collapse. The existing structure has also been subjected to the elements, causing weathering and soil erosion. The natural periodical ruin of the site has left the structure with an interesting character which exhibits its ages and its history.

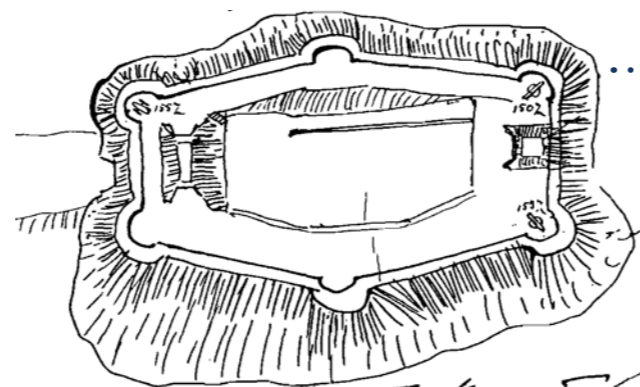


Figure 3.3a Sketch showing fort's hexagonal shape

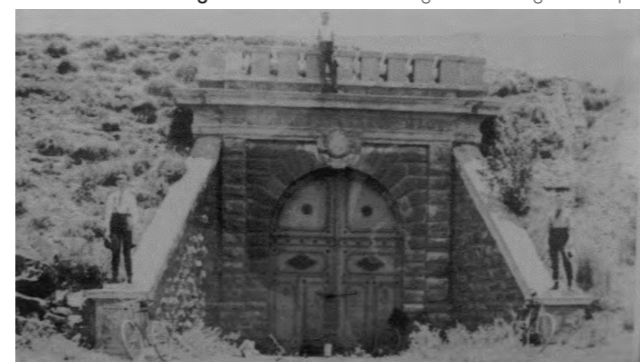


Figure 3.3b Original entrance to the fort



Figure 3.3c Current entrance and approach to fort



Figure 3.3d Entrance arch



Figure 3.3e Detail on arch

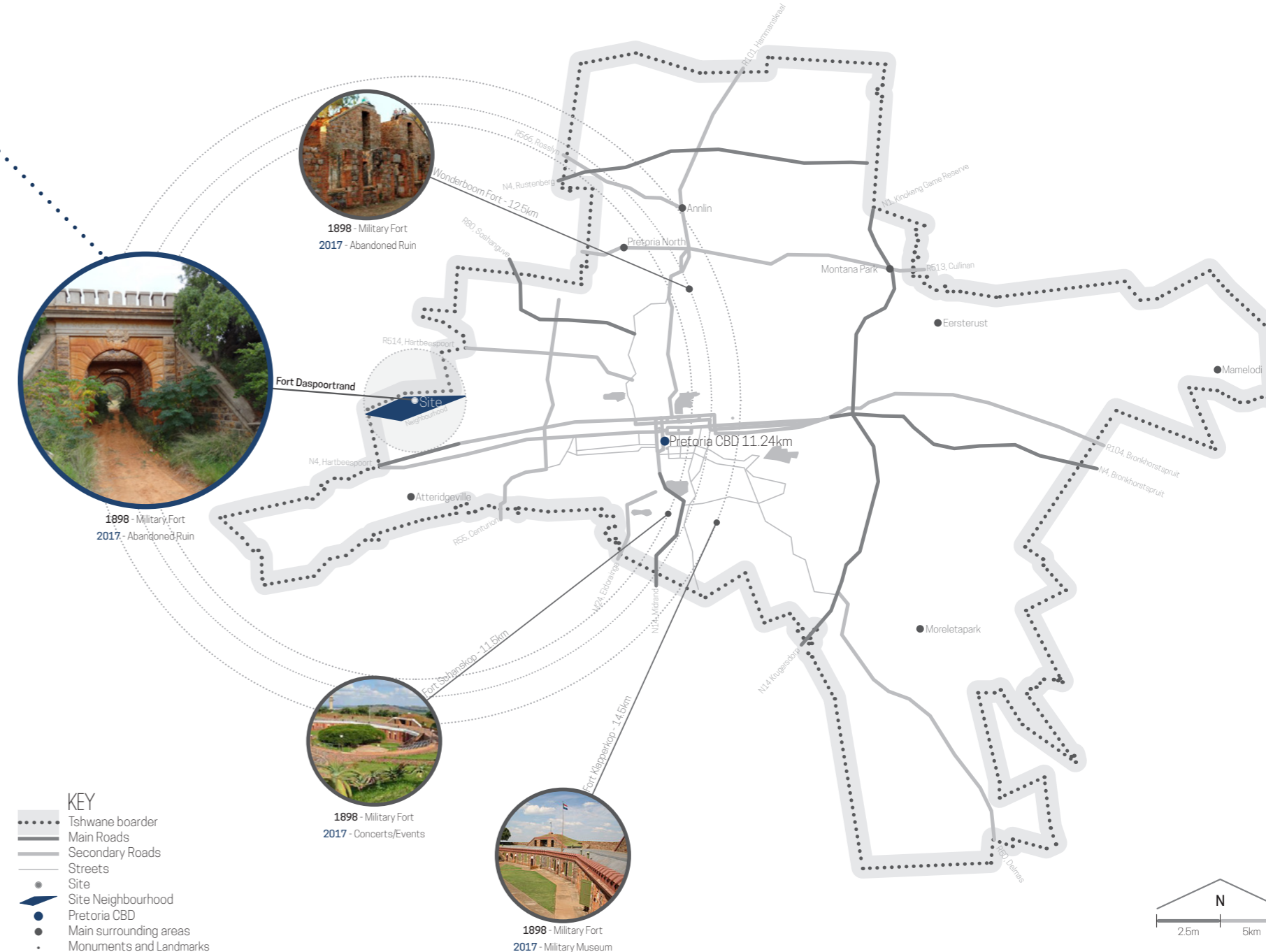


Figure 3.4 Forts of Pretoria, radial proximity to the city

3.7 OTHER FORTS IN PRETORIA

3.7.1 FORT KLAPPERKOP

Originally built as the protector of the Southern entrance to Pretoria, and designed by architects Von Dewitz and Werner, Fort Klapperkop was completed in 1898, as seen in Figure 3.5a and Figure 3.5b. After minor destruction of the fort, it has been renovated and is currently home to a Military Museum, Figure 3.5c. The future plan for the fort is to become the new South Africa parliament building.



Figure 3.5b Original photograph of Fort Klapperkop

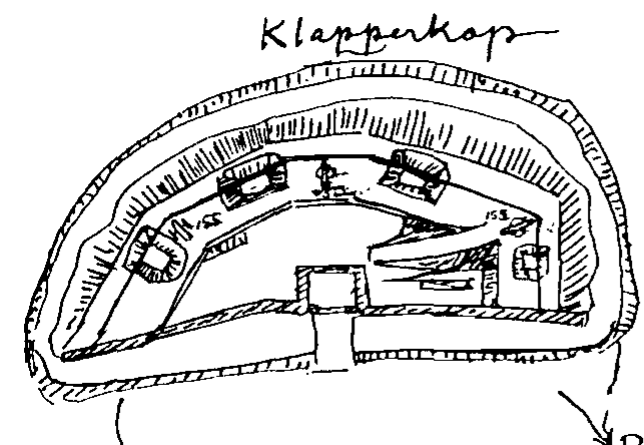


Figure 3.5a Sketch of Fort Klapperkop layout



Figure 3.5c Fort Klapperkop current condition

3.7.2 FORT SCHANSKOP

The pentagonal-shaped Fort Schanskop, seen in Figure 3.6a, was designed by Von Dewitz and Werner. Originally constructed as a military fort, it was completed in 1898 as a protector over the Southern entrance to the city during the second Anglo Boer war. Figure 3.6b shows the original state of the fort. The structure has since been restored and is currently utilised for events and is known for hosting the Park Acoustics music events, see Figure 3.6c.



Figure 3.6b Original photo of Fort Schanskop courtyard

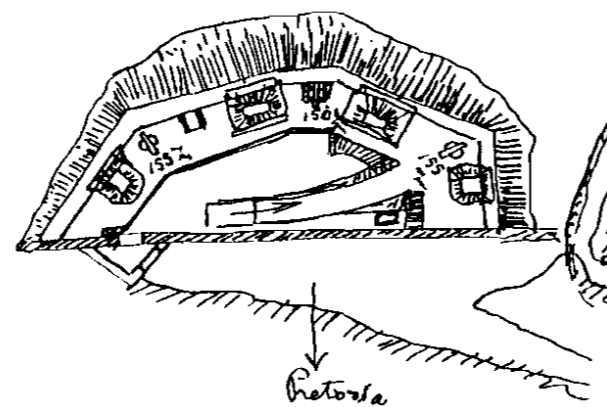


Figure 3.6a Sketch showing Fort Schanskop's pentagonal shape



Figure 3.6c Current image of Fort Schanskop's state

3.7.3 WONDERBOOM FORT

Fort Wonderboom was completed in 1898, as a part of the Pretoria fortification scheme. The fort faces the Northern entrance of the city, seen in Figure 3.7a showing the original layout. The original intent of the structure was a military fort as seen in Figure 3.7b. The fort is currently derelict and has no use. Accessible only by a 2km hike, the site has an extensive view over the city. The current state of the site is shown in Figure 3.7c.



Figure 3.7b Original photo of Wonderboom's courtyard

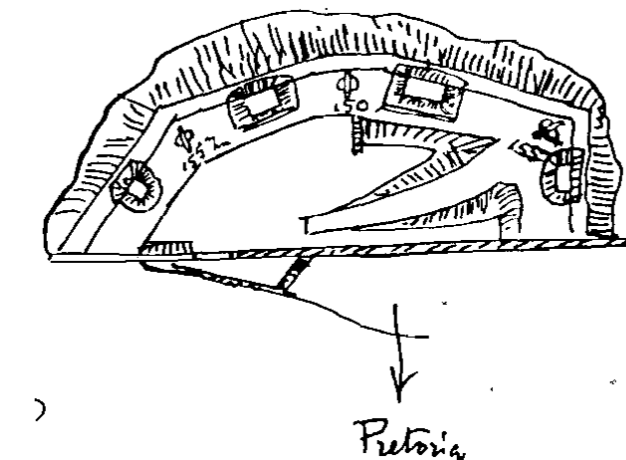


Figure 3.7a Sketch showing Wonderboom's pentagonal shape



Figure 3.7c Current image of Wonderboom's state

3.8 BROEKSCHEUR 318-JR

Figure 3.8 shows the location of Fort Daspoortrand at the top of the Daspoort ridge, within the Broekscheur 318-JR area. It is accessible by one road, Van den Berg Street. To the east of the fort, there is an old water tower, which is currently still in use.

At the base of the ridge is the old fort village, Westfort. During the period when the fort was in use, this village hosted the facilities such as hospitals and schools for the military employees. The village is visible from the upper (ground) level of the fort.

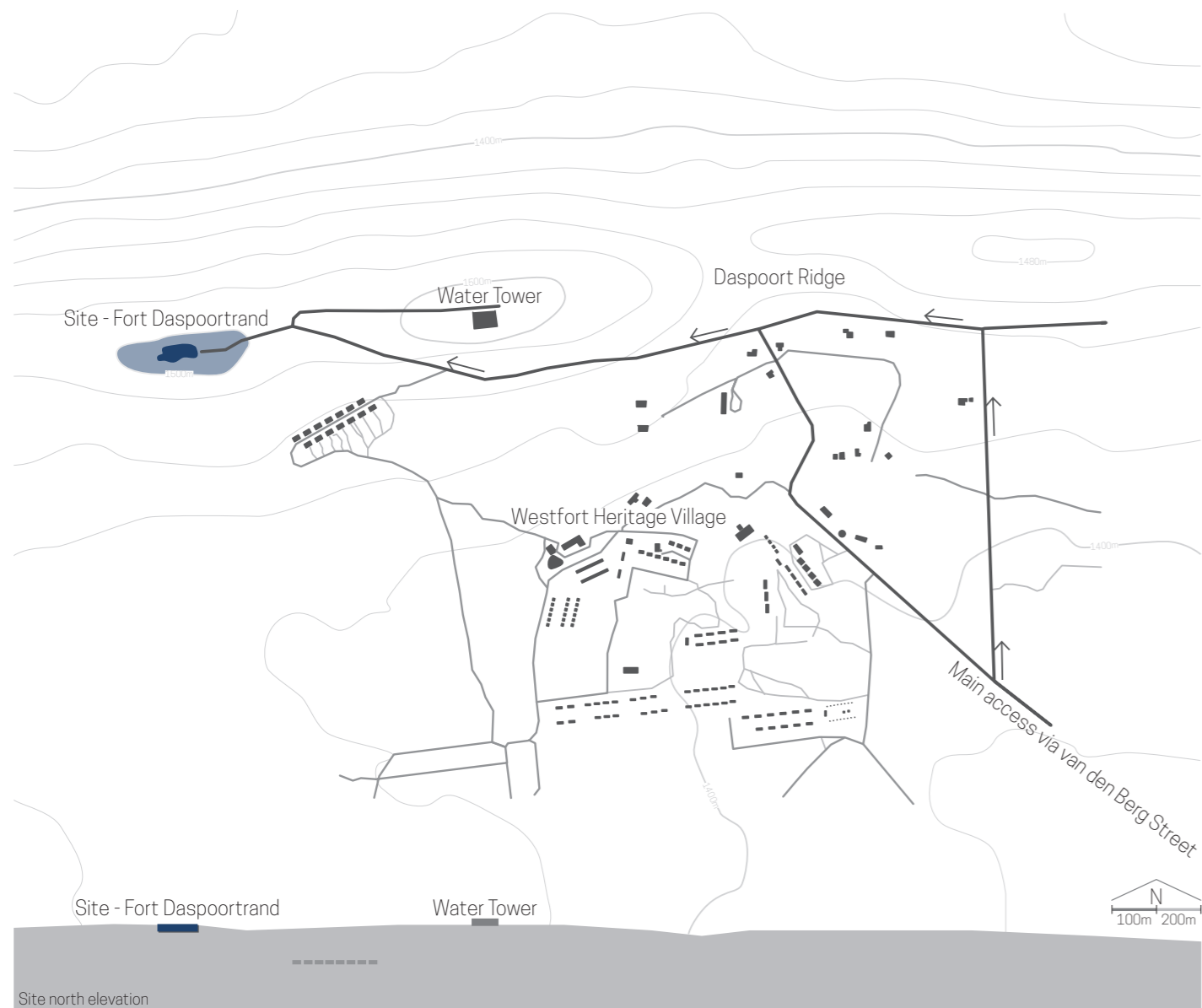
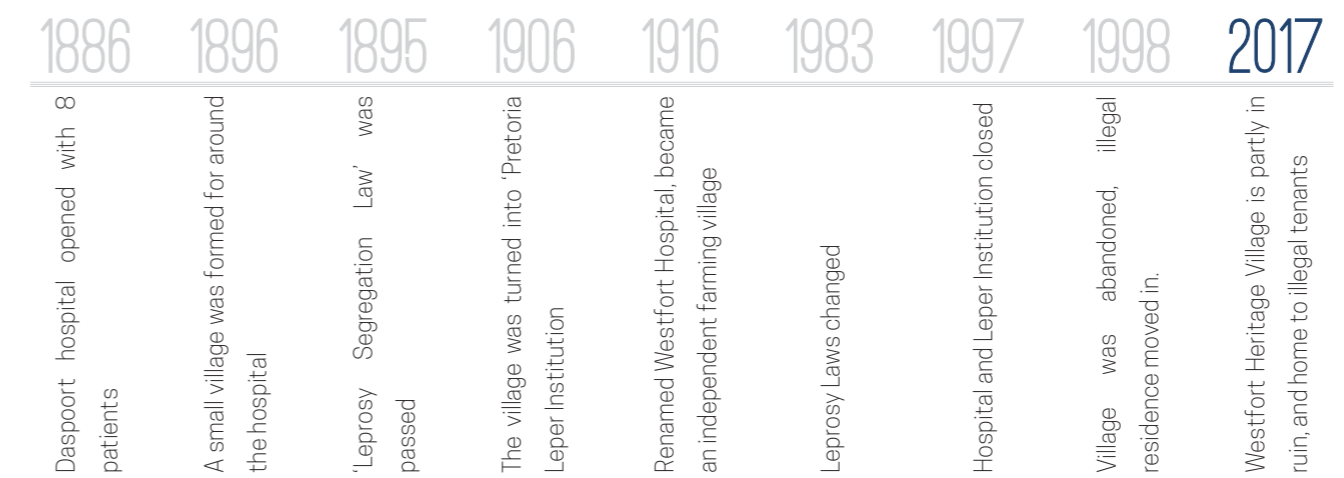


Figure 3.8 Access and location of Fort Daspoortrand

3.9 WESTFORT HERITAGE VILLAGE

Westfort Heritage Village is not a vital aspect of the design of the Fort. However, it is an important to consider due to the proximity and context. According to the Burra Charter, it is imperative that when dealing with a heritage site, one should consider the relationship the site has with the surrounding, as the potential cultural significance of the site could have a valuable relationship with the surroundings (The Burra Charter 2013:3).

A brief history of Westfort Village explains the original intention of the village, its use as a Leprosy colony and its current use as an illegal housing village. Figures 3.9a to Figure 3.9f show current photographs of the village as an illegal housing settlement. Figure 3.10 on the following page shows an aerial view of the Fort and the Heritage village below.



Figures 3.9c Rondavel-shaped accommodations



Figures 3.9d Illegal house



Figures 3.9e Dilapidated structure



Figures 3.9f Old church



Figures 3.9a Old city hall



Figures 3.9b Field with village in the background



Figure 3.10 Aerial view of Fort Daspoortrand and Westfort Heritage Village

3.10 FORT DASPOORTRAND – ORIGINAL FUNCTION

Positioned as the protector of the Western entrance to the city of Pretoria, Fort Daspoortrand is located on Daspoort Ridge between the Magaliesburg and Witwatersberg mountains. The fort faces both the North and South from its vantage point. Fort Daspoortrand, the only French designed fort, is the biggest of the four, not only in physical size but also by the number of occupants it could facilitate. Architect Leon Grunberg was the leader of a team of Italian craftsmen who assisted in the construction of the fort. Costing the South African government £46 500 the fort was manned by 25 gunmen and four canons. It was one of the only forts to have electricity, water and telecommunication devices (Van Vollenhoven 1998). The image below, Figure 3.11, shows the original programming of the site. The canons were placed at the four corners of the Fort, and the rooms along the Northern side of the structure.

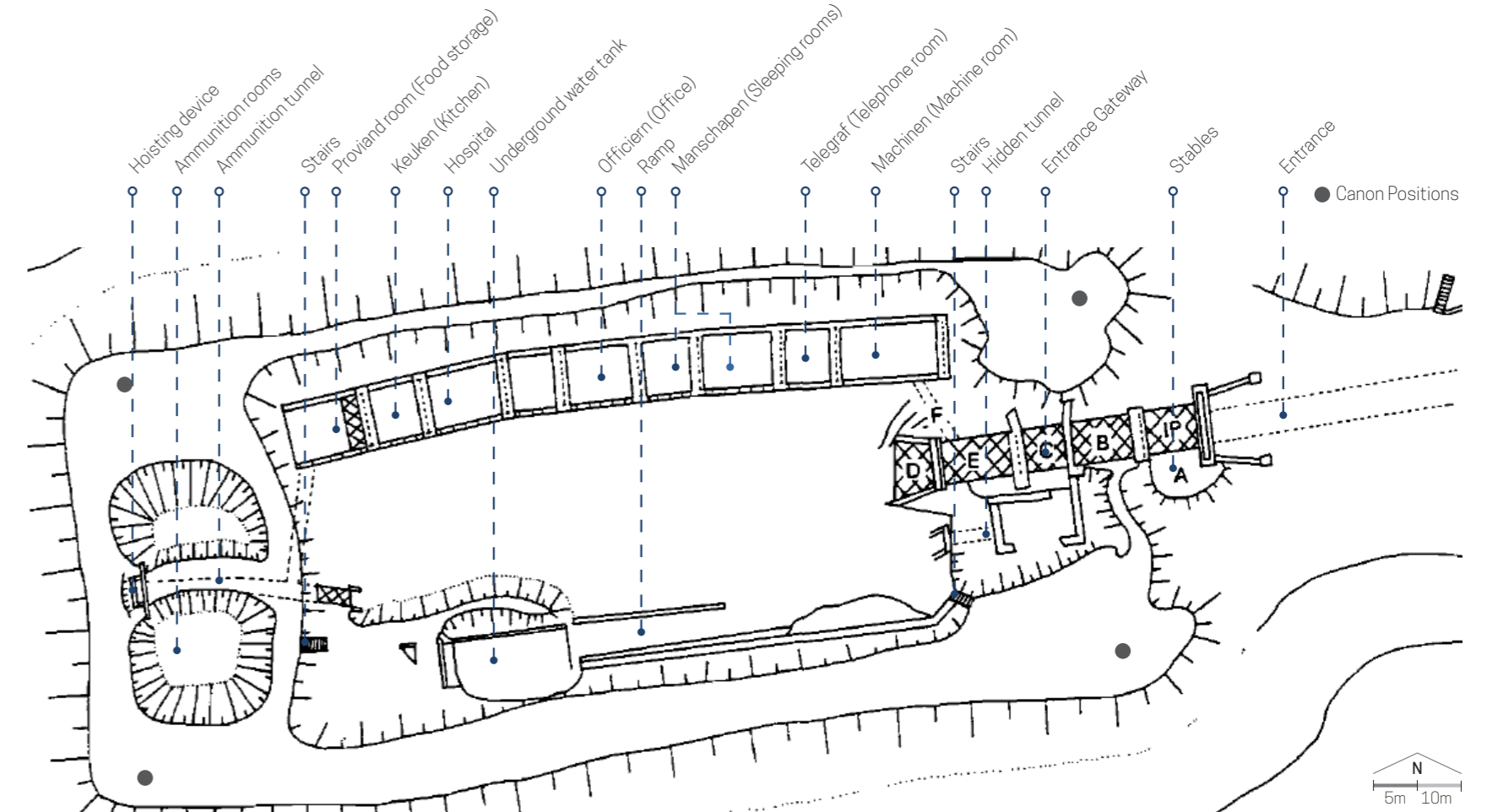


Figure 3.11 Fort Daspoortrand original function

3.11 FORT DASPOORTRAND HISTORY

The damage and destruction at Fort Daspoortrand can be traced back to 1800, starting with the First Anglo-Boer War up until its current state in 2017. The timeline below, Figure 3.12, shows the progression of the Fort over this time.

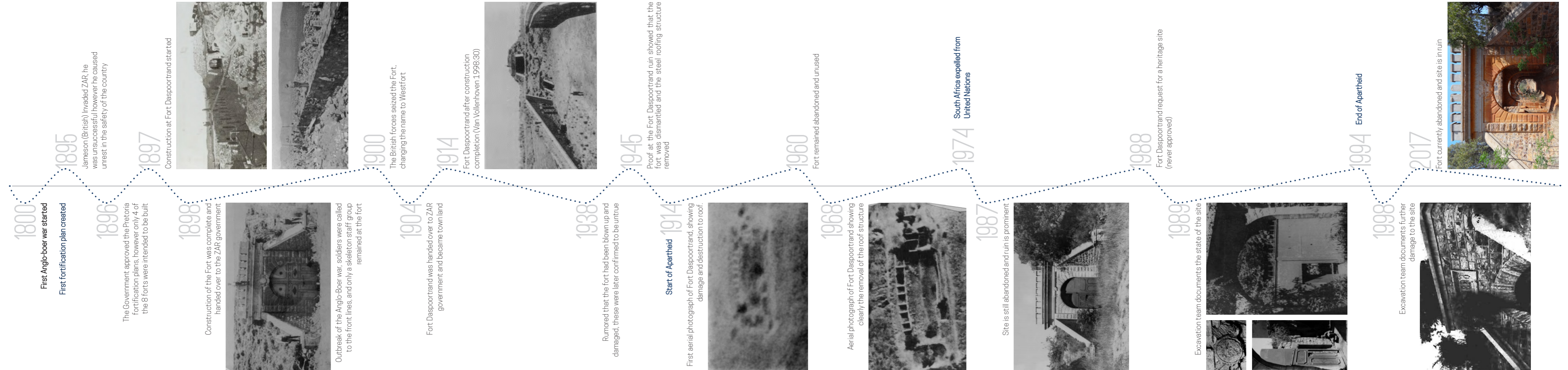


Figure 3.12 Timeline of Fort Daspoortrand history

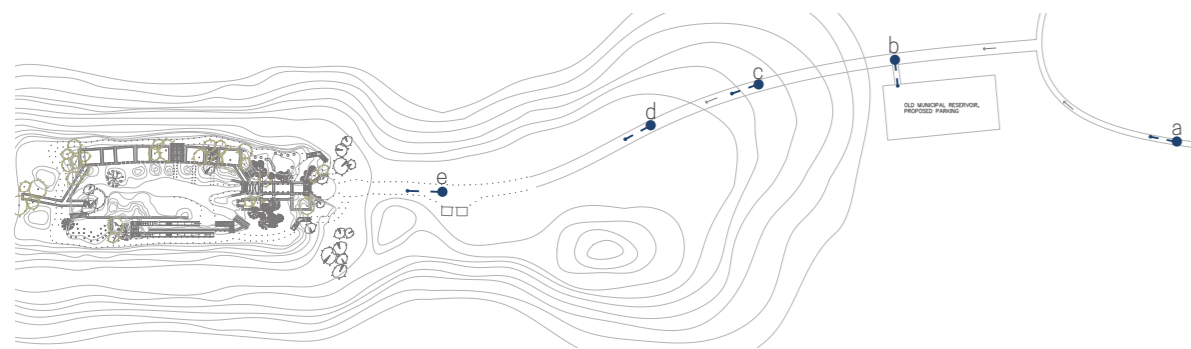


Figure 3.13 Map overview of the site

3.12 APPROACH TO SITE

The approach to the site is important as it is the first time the audience will see the site and the views from its vantage point. The performance will take place during the night, so the audience will arrive as the sun is setting, giving them only a few minutes to explore the site before it is cast into darkness. The darkness will heighten intrigue for the audience as they wonder about what the site looks like, and thus generating interest for a view of the site during the day. Figure 3.13 gives a map overview of the site and its correspondent views on the approach to the Fort. Figure 3.14a is a photograph of Van den Berg Street, the access road to the site. Figure 3.14b shows the old municipal reservoir, which will act as a parking area during the period of the performance. The initial view of the Fort is seen from the gravel road at the approach to the structure; Figure 3.14c shows this road and the top of the fort. As one would approach the fort, more of the structure is revealed, as seen in Figure 3.14d. Finally, the entrance of the fort is revealed, and the beauty of the structure is seen, shown in Figure 3.14e.



Figure 3.14a Photograph of Van den Berg Street, the access road



Figure 3.14b Old municipal reservoir



Figure 3.14c Gravel road at the approach



Figure 3.14d Approach to the fort



Figure 3.14e Entrance of the fort is revealed

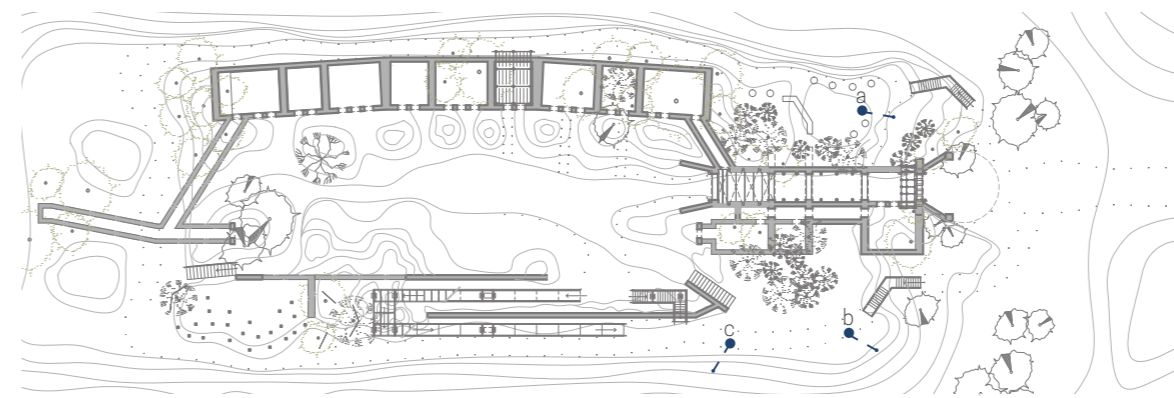


Figure 3.15 Diagram of fort, showing views

3.13 VIEWS DURING THE DAY

During the day, the city of Pretoria is visible from the top level of the fort. The views from the fort give a new landscape and backdrop against which the performances will take place. Since the fort is isolated on a ridge, the views show the remote location and relationship to Westfort Heritage Village below. Figure 3.15 shows a diagram of the fort and the location of the views can be seen in Figures 3.16a to Figure 3.16c.



Figure 3.16a Photograph looking along the ridge towards the water tower east of the fort



Figure 3.16b Photograph of the Heritage Village's location to the fort



Figure 3.16c Panoramic view of Atteridgeville, West Pretoria

3.14 VIEWS AT NIGHT

The performance of the opera, Magic Flute, will take place during the night. It is therefore important to understand what the character of the site will be during those times. Figure 3.17 shows a diagrammatic plan of the site and the direction at which the views are taken. From the site at night, the city's lights, as well as the rural areas around the site are seen, as shown in Figures 3.18a to Figure 3.18f. The nighttime brings a certain mystery to the site, which is enhanced by the vantage point looking down over the villages and people below. The site is quite mesmerising in the dark: its greatness accentuated by the spectacular views,

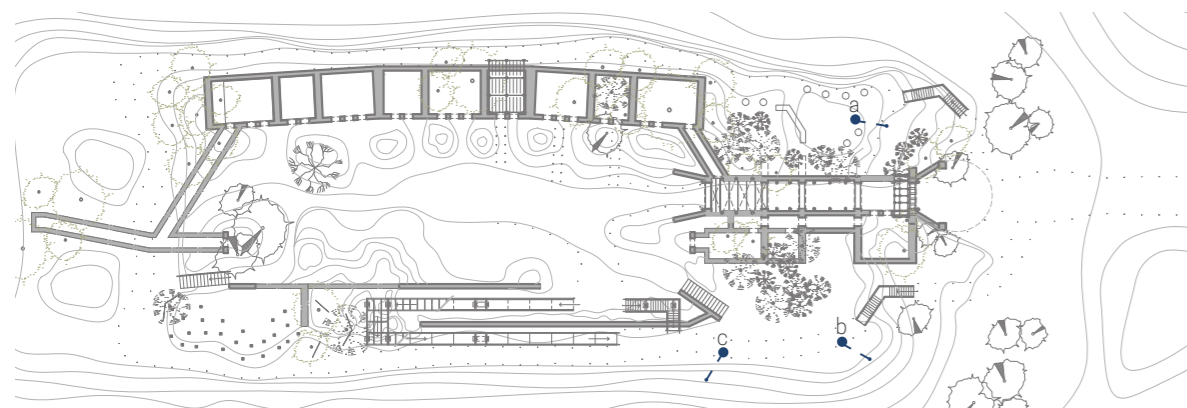


Figure 3.17 Diagram of fort's plan, showing views

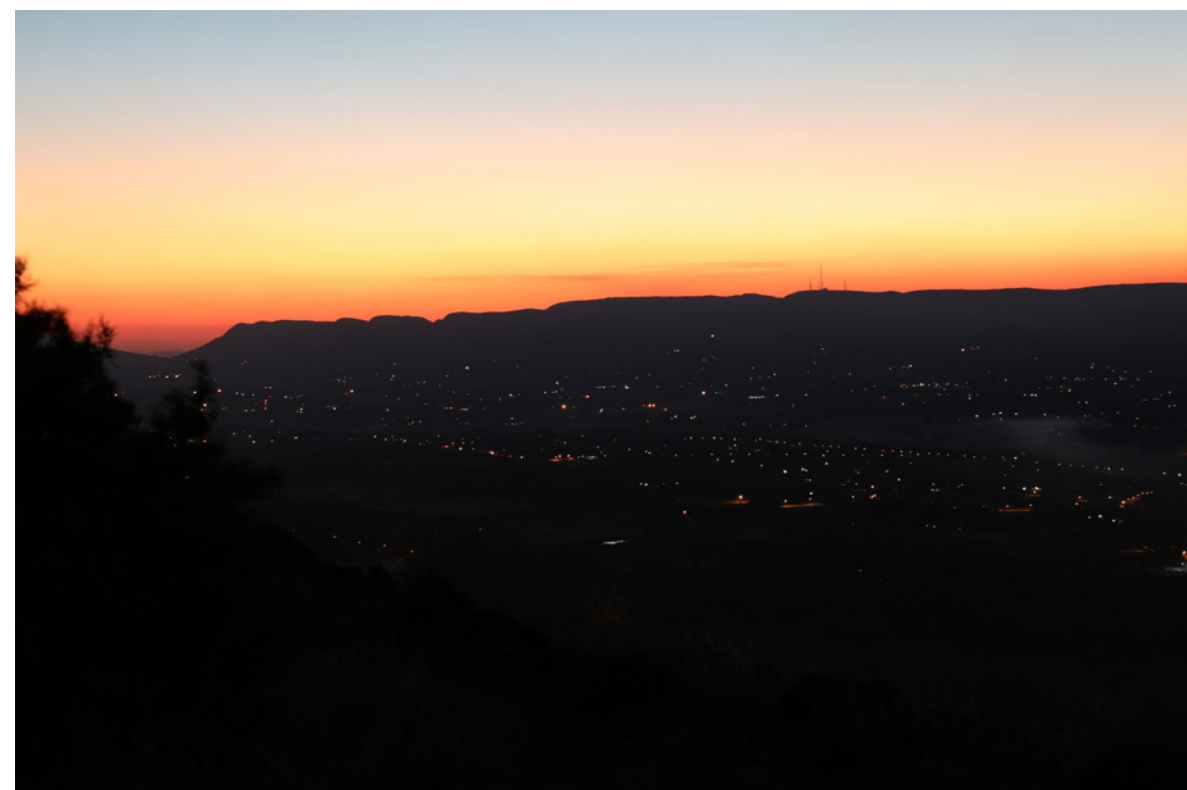


Figure 3.18a Setting sun at the fort

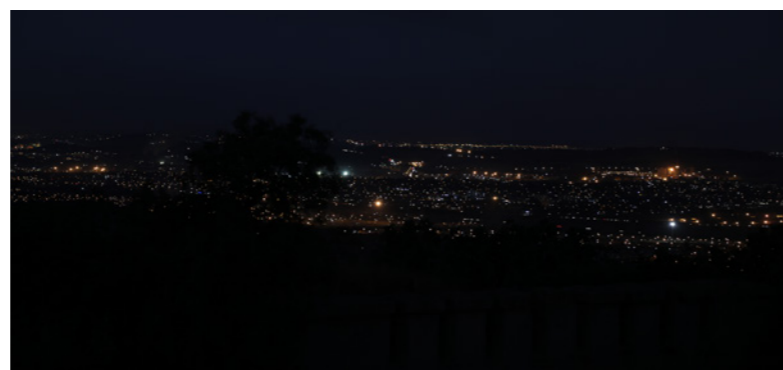


Figure 3.18b View towards Pretoria city centre

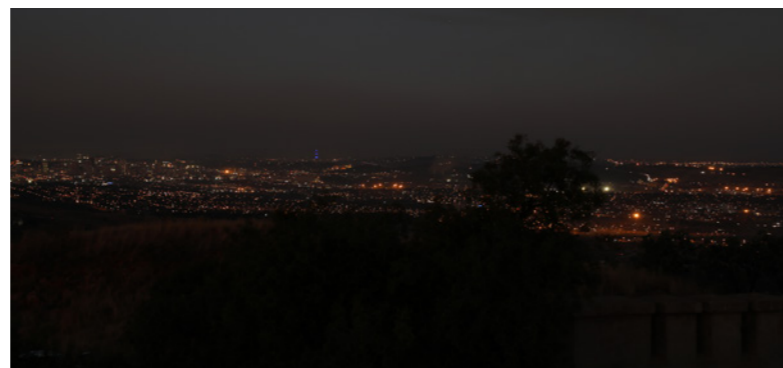


Figure 3.18c View looking towards Pretoria

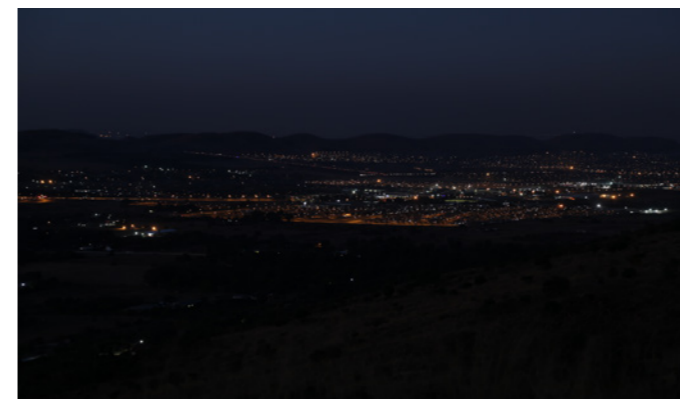


Figure 3.18d View of the town on the northern side of the fort

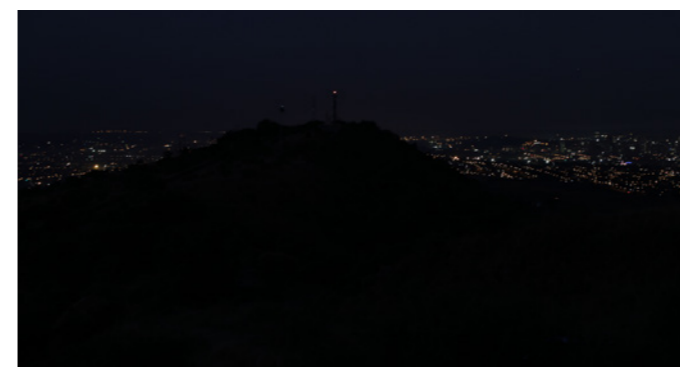


Figure 3.18e View looking along ridge towards water tower

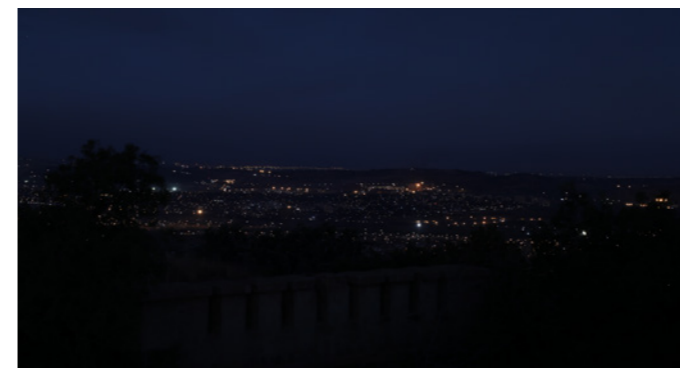


Figure 3.18f View towards Westfort Heritage Village below

3.15 MATERIALS ANALYSIS

The material study takes a look at the existing materials found at the site, both naturally occurring and man-treated. The material analysis forms an important aspect of the design, as the thematic developments of the Magic Flute opera are associated with the existing materials and structures of the site. Figures 3.19a to Figure 3.19f, show the natural materials and Figure 3.20a to Figure 3.20f the man-treated materials.

3.15.1 NATURAL MATERIALS

Loose building matter



Figures 3.19a A mixture between the rubble of the building and the natural environment

Stones and burned grass



Figures 3.19b A combination of the building rubble, local stone and burned grass

Sand



Figures 3.19c Existing natural sand

Grass



Figures 3.19d Existing veld grass

Sand pathways



Figures 3.19e Local sand exposed through human erosion

Compacted sand



Figures 3.19f Local sand naturally compacted and exposed through erosion

3.15.2 MAN-TREATED MATERIALS

Regular stone bricks



Figures 3.20a A construction of the local stone, detailed with a cement finish, used to build the majority of the fort

Exposed aggregate



Figures 3.20b Erosion of concrete to expose large stone aggregate

Regular & Irregular bricks



Figures 3.20c A structured construction of the local stone, used to build supporting walls

Irregular stone bricks



Figures 3.20d Irregular shaped local stone used in the building structure

Natural stone and cement



Figures 3.20e A combination of the natural stone and cement, used to retain earth

Construction ruin



Figures 3.20f Areas of construction exposed through aged ruin

3.16 SITE ANALYSIS

The following site analysis shows the identification of five specific areas around the fort; which will be used for the set design of the five selected scenes as discussed in Chapter 7. The site analysis, Figure 3.21, depicts the selected areas of the Fort and the physical character of those areas. The following page shows the sectional views – Figure 3.22 and Figure 3.23 – as well as a front elevation of the site – Figure 3.24. The sections and elevations show the heights and level changes around the structure.

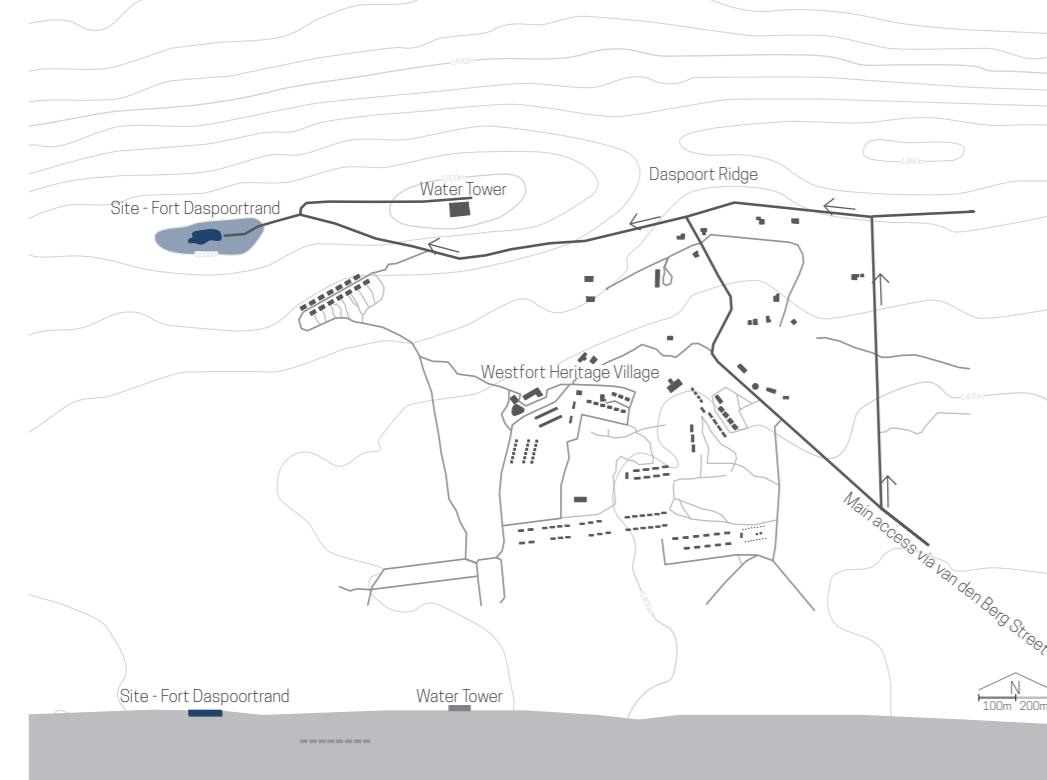


Figure 3.8 Access and location of Fort Daspoortrand

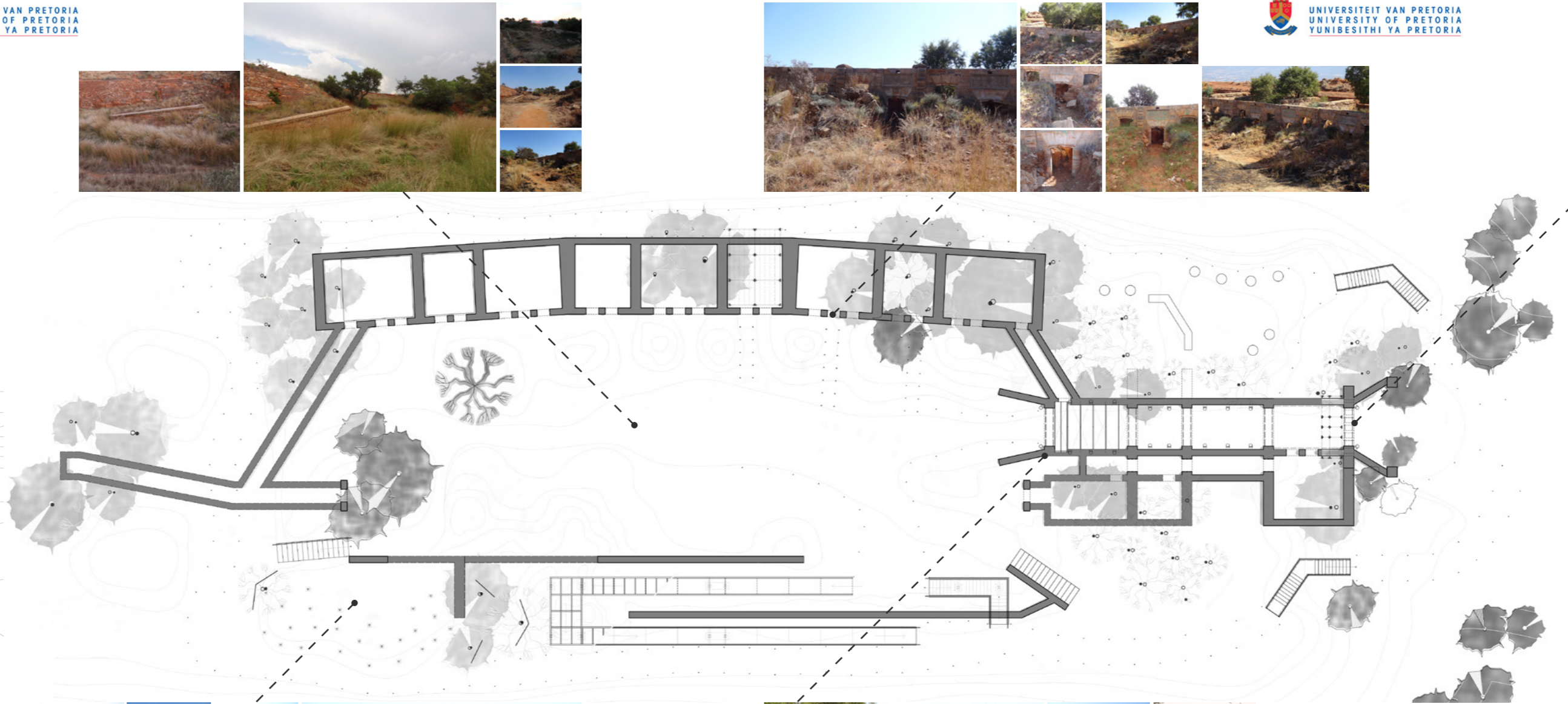
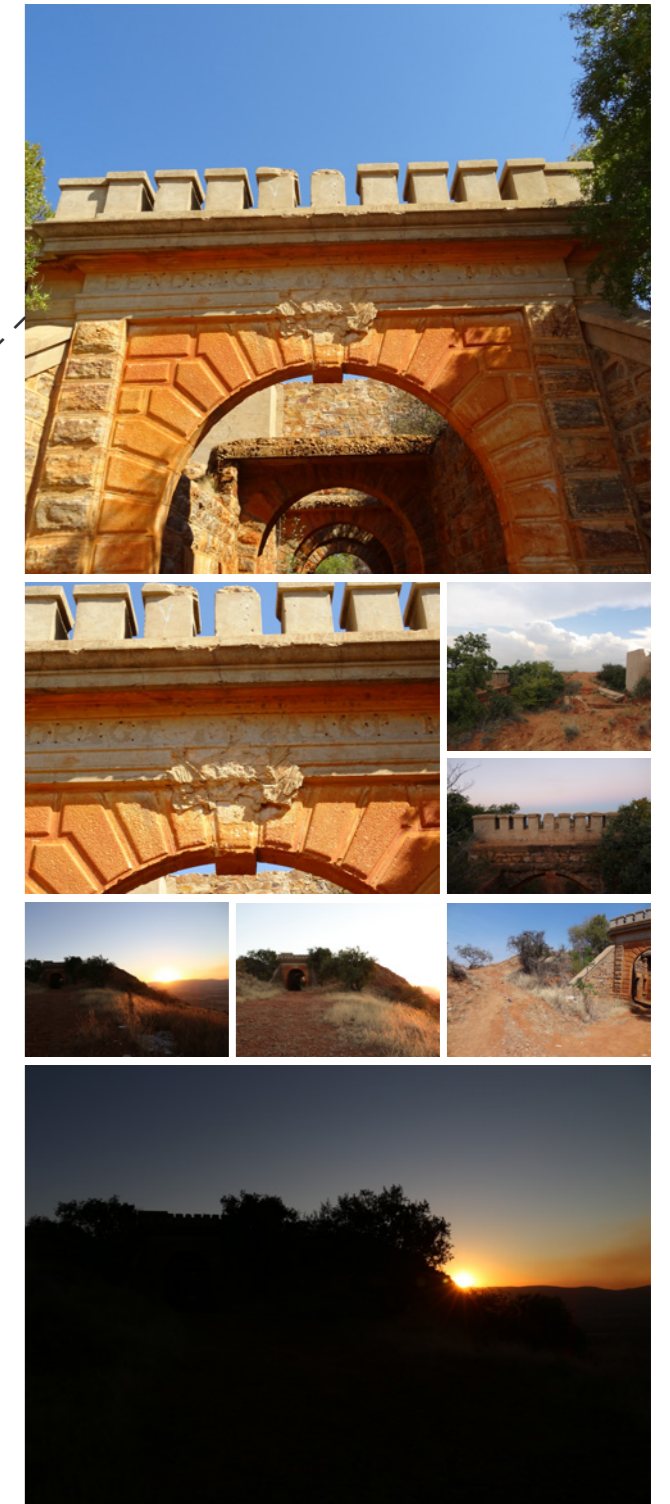


Figure 3.21 Site analysis



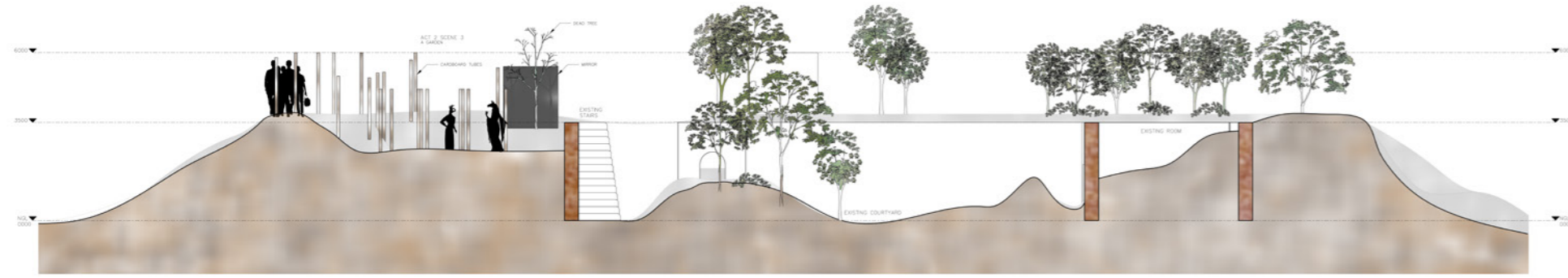


Figure 3.22 Section BB through the width of the fort

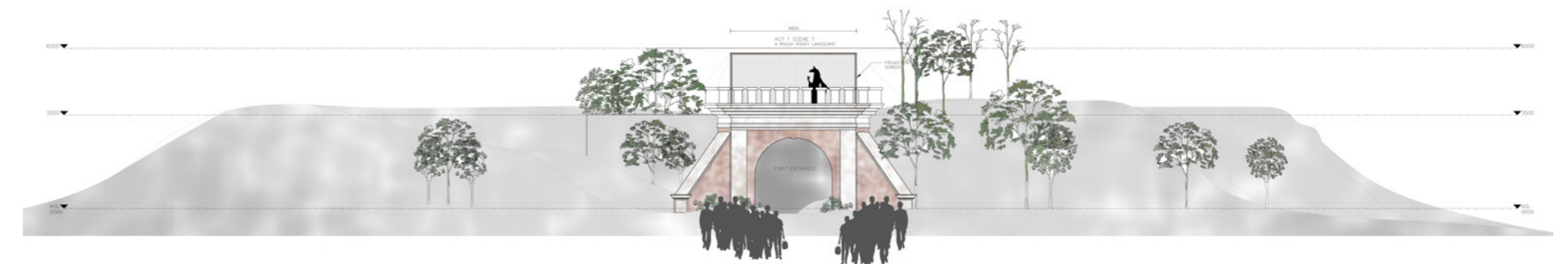


Figure 3.24 Front elevation of the entrance

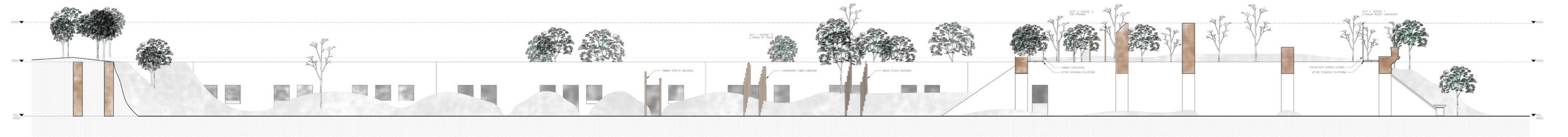


Figure 3.23 Section AA through the length of the fort

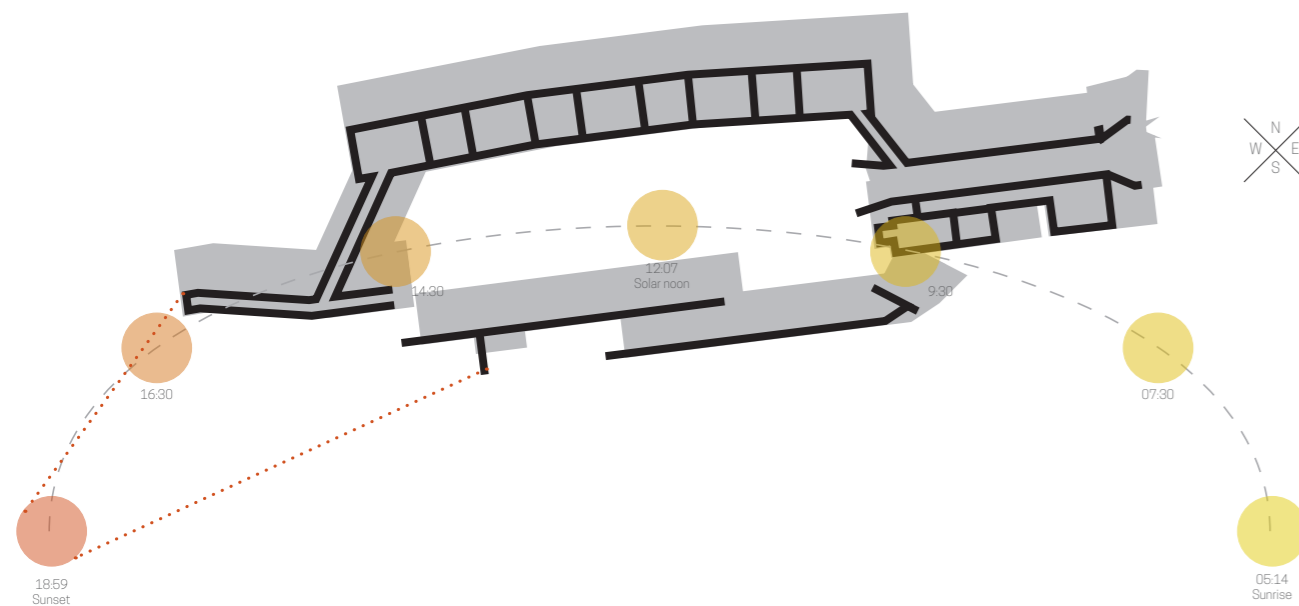


Figure 3.25 Summer sun movements

3.17 SOLAR STUDY

The production at Fort Daspoortrand will take place during the night. However, consideration of the sun's movement and direction in which it will set has been analysed. The audience will be approaching the site as the sun is setting and it is, therefore, vital to consider where the sun will be during those times. The time of sunset will also determine the starting time of the performance to ensure that the event takes place in the dark. (AccuWeather, 2017)

3.17.1 SUMMER SOLSTICE, 21 DECEMBER

The summer solstice for the southern hemisphere takes place on the 21st of December. A simulation of the sun movement and shadows has been used to explain the solar movements at the fort in summer. The following graphic, Figure 3.25, details the times of sunrise and sunset on the 21st of December. The sunrise at 117°ESE at 05:13 and sets at 243°WSW at 18:58 making the day length 13h45min3sec, the longest day of the year.

3.17.2 WINTER SOLSTICE, 21 JUNE

The winter solstice for the southern hemisphere takes place on the 21st of June. A simulation of the sun's movement and shadows has been used to explain the solar movements at the fort in winter.

The following graphic, Figure 3.26, explains the sunrise and sunsets on the 21st of June. The sun rises at 64°ENE at 06:53 and sets at 243°WSW at 17:25, making the day length 10h31min46sec, the shortest day of the year.

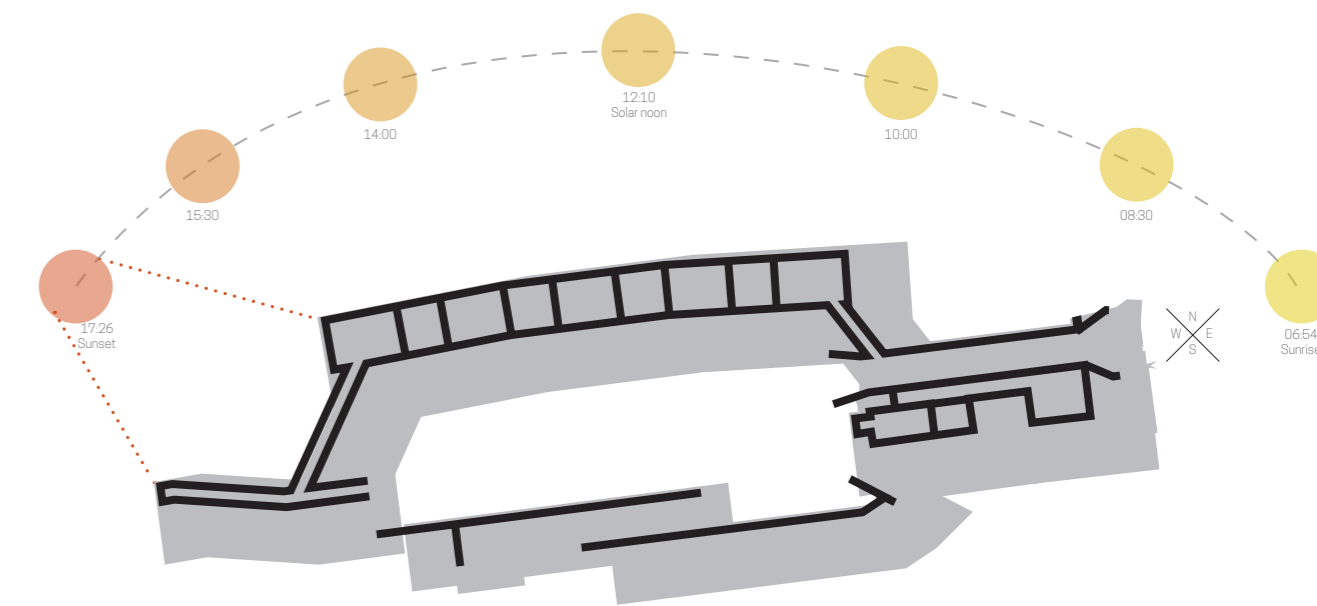


Figure 3.26 Winter sun movements

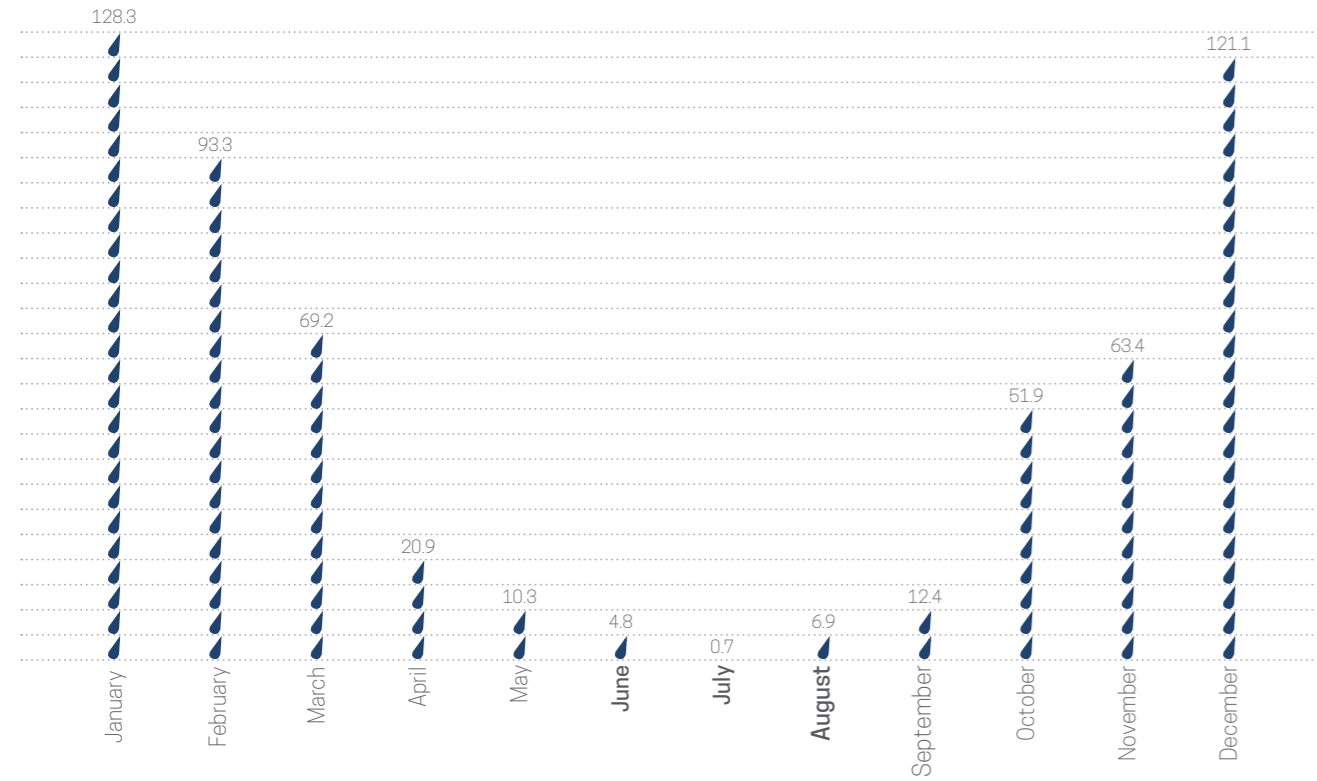


Figure 3.27 Average rainfall over the year

3.18 WEATHER STUDIES

Due to the open-air nature of the site, the performance will take place in the winter months, as the winter season in Pretoria is the dry season. Figure 3.27, shows a chart of the average rainfall over the months of the year (Windfinder, 2017). The months June, July and August are identified as the driest months, ensuring that the performance should not be disturbed by rain. The moon will provide the performance with a natural illumination.

As the performance takes place in the evening and the theatre is in the open, it is vital to understand the weather expectations. The following graphic, Figure 3.28, shows the expected temperatures over the year, with June having temperatures of 21°C max and 5°C min, July with 20°C max and 5°C min and August 24°C max and 8°C min. Since the performance will take place in the winter months, heat and protection from the cold will need to be considered. The audience will be requested to be prepared for the cold. However, blankets will be provided for extra warmth, as well as a disguise and additional comfort for seating.

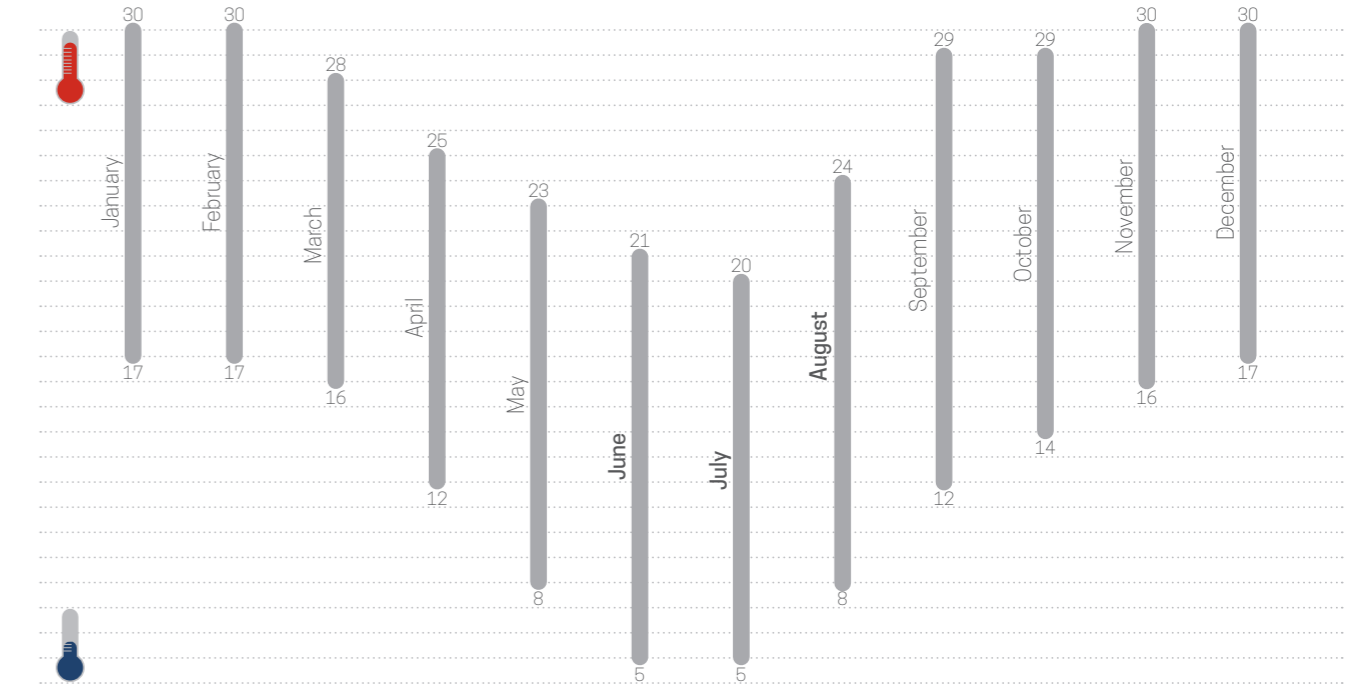


Figure 3.28 Temperature chart of annual averages

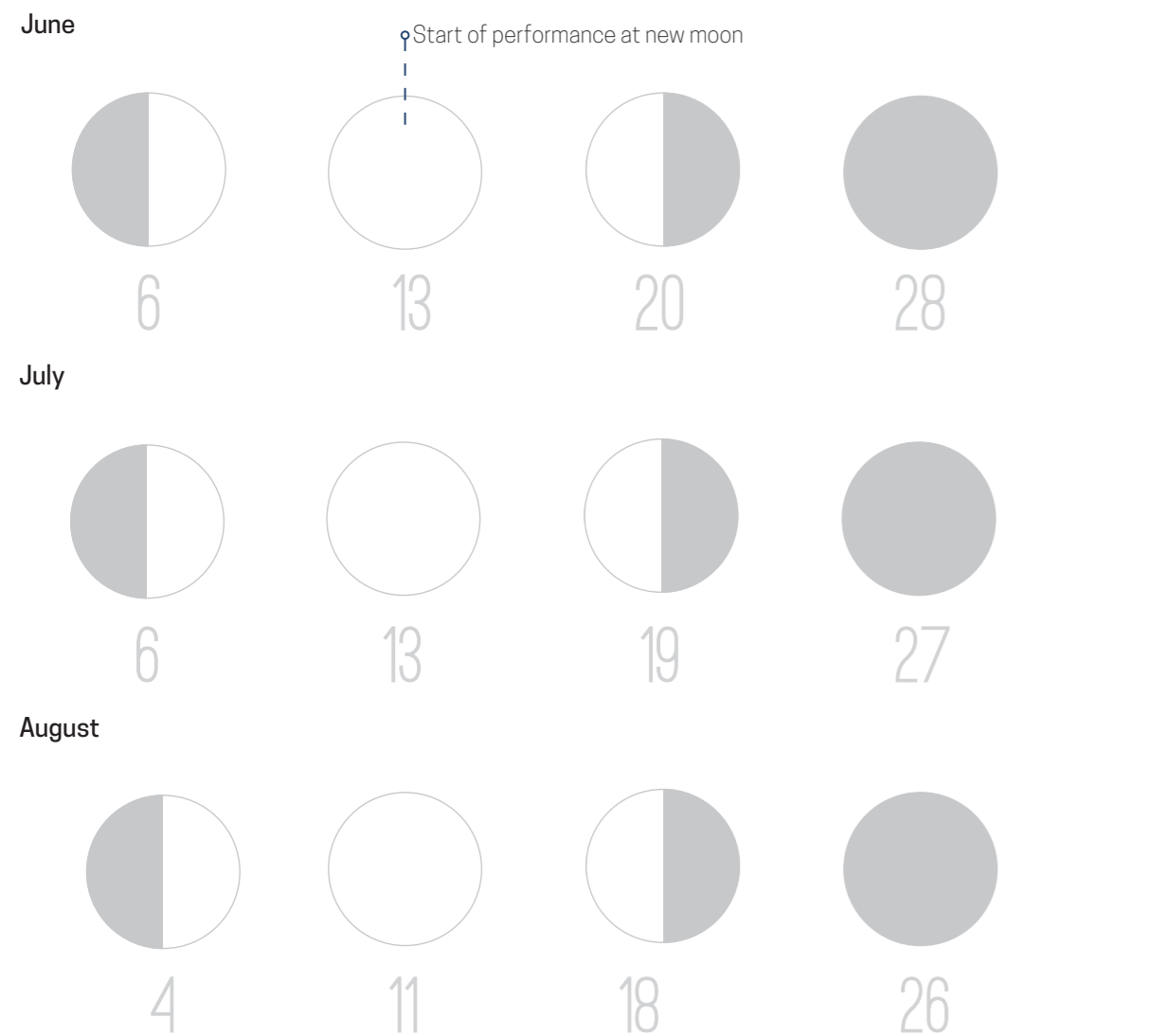


Figure 3.29 Moon phases for 2018

3.19 LUNAR STUDY

Since the opera performance takes place after sunset, it is vital to study the lunar movements, phases and time periods. It is proposed that the opening performance take place on the first new moon of June. This will ensure that the lighting effects have the greatest potential to make the performance spectacular. With every phase of the moon, the performance will change, the natural moonlight will cast different shadows. Due to the site-specific location for the opera, the night sky will become the roof to the performance, providing an important part of the production. Each night, the experience will be unique, enhanced by the clouds, stars and moon movements. The following graphic, Figure 3.29, shows the moon phases for June, July and August 2018 (Date and Time, 2017).

3.20 CONCLUSION

Fort Daspootrand provides a location which has the structural abilities to facilitate a site-specific theatre. The site has character and unique explorative features which will invite the audience to experience the space. The large built-up area contrasting with open areas provides a variety for different audience-actor interaction. The open-air structure creates an interesting opportunity for the inclusion of the natural elements and the drama of the site. However, it possesses many challenges including bad weather and acoustic considerations. The character and nature elements of the building offer an interesting backdrop and performance opportunities.

The location of the site supports the enhanced effects of the theatre, as the audience are removed from their reality and submerged into the performance. The secluded location encourages the spectators to lose themselves in the performance, and the structure of the building encourages exploration and the sense of adventure. Figure 3.30 gives a graphic summary of the weather patterns for the focal months.

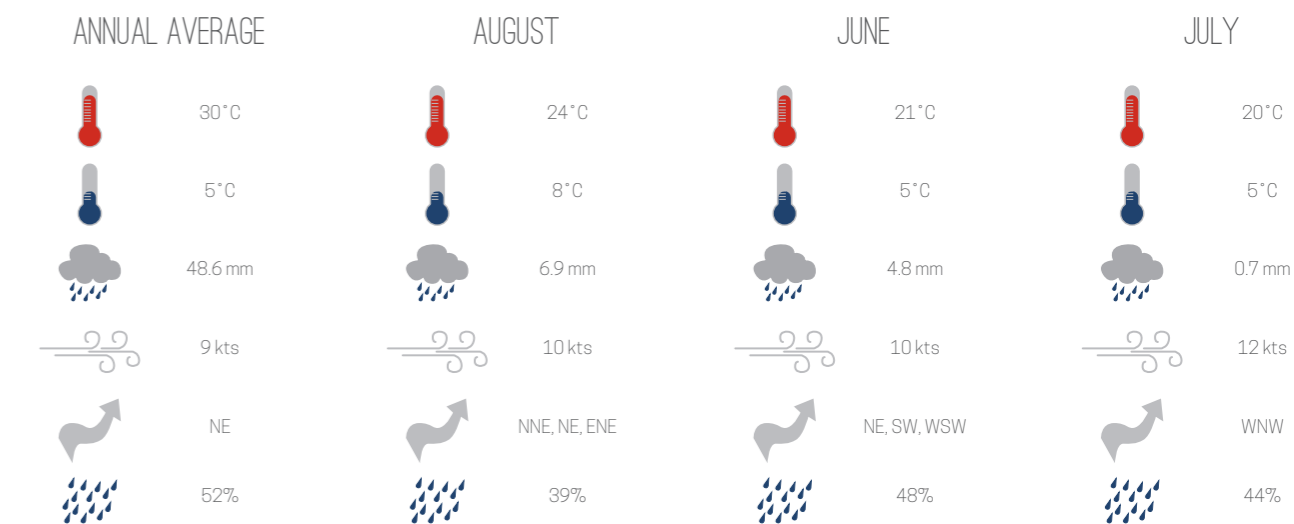


Figure 3.30 Summary of weather conditions