

Chapter 4 focuses on the analysis of 3 major scales of intervention: urban, precinct and site scales. The analysis studies include physical and conceptual content that can be considered as being potential design generators

Church Square, the historical centre of Pretoria containing the origin of the core and dominant, the roman ordering system for city building. This public core acts as a consolidation mark for the future development of the city, and also forms one of the main platforms of pedestrian activity in the inner city.

The NZASM railway initiative that was launched in 1892 in order to connect Pretoria with Delagoa Bay. The railway tracks are laid according to the topography of the terrain and thus form a divide between the natural slope of the hill and the dense fabric of Pretoria West. This also can be seen as the main cause of the peripheral exclusion of the Military Precinct.

The Military Precinct and old Military reserve of Pretoria. This Precinct forms part of southern peripheral exclusion of the city, separated from the inner city via the railway.

This precinct consist of the administration headquarters for the South African National Defence Force.

Freedom Park
As Magazine Hill forms the western part of the southern gateway into Pretoria, Freedom Park constitutes the eastern part of the gateway, framing the southern entry into the city.

Magazine Hill
This hill forms the proposed site for intervention and is located to the south of Pretoria Correctional Services. The site is also located within the historical Military Reserve for Pretoria representing an area of unrest in South Africa in the form of a series of ammunition bunkers, ammunition factories and ammunition magazines.

Fort Scenicop
This fort forms part of the second fortification plan of Pretoria and was one of a series of fortification built on the ridges protecting the southern entry and gateway into Pretoria.



Figure 4.1: Magazine Hill and military precinct locality map (Author, 2011)

4.1 Background and Delimitations

For the purpose of this dissertation, Magazine Hill will be studied in relation to other historical and military sites of significance situated in the southern natural landscape of Pretoria, also concentrating on the site's relation to the military precinct in which it is located.

4.2 Macro analysis

4.2.1 Urban Analysis: Magazine Hill as a continuation of the monumental landscape

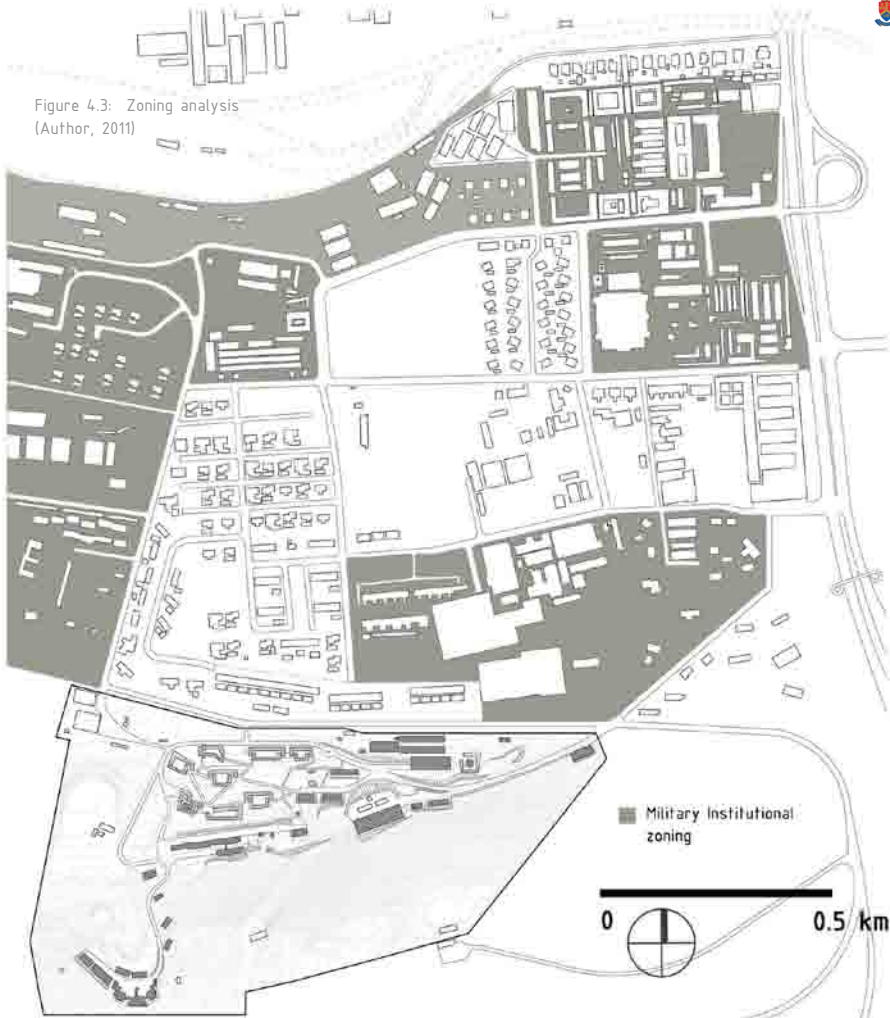
Magazine Hill forms part of a series of military and historical sites of significance, all terrains burrowed and hidden within the Groenkloof Nature Reserve region. These sites are divided into 2 main categories of cultural significance, the first being military heritage sites (Fort Commeline, Fort Tulleciwach, Fort Klapperkop, Fort Schanskop and Magazine Hill). The second category of cultural significant sites is defined as terrains or structures acting as commemorative constructs (The Voortrekker Monument, Freedom Park and Air Force Memorial). The design of all mentioned structures of significance (except the Voortrekker Monument and Air Force Memorial) can be considered as a direct interpretation of function and context, for all structures are designed for secrecy, veiled within the hills of the monumental landscape, augmenting the hilltops and following the natural edges of the hills. The pure scale and topographical character of the natural landscape had been utilised as a platform for a concealed typology of hilltop architecture, guarding the southern passageway (*Skietpoort*) into Pretoria.

Magazine Hill demonstrates the same obscure typology of architecture, veiled within the hill, establishing a connection between the proposed site and surrounding historical terrains, a connection visible in both time and place.

Figure 4.2: Magazine Hill context map (Author, 2011)



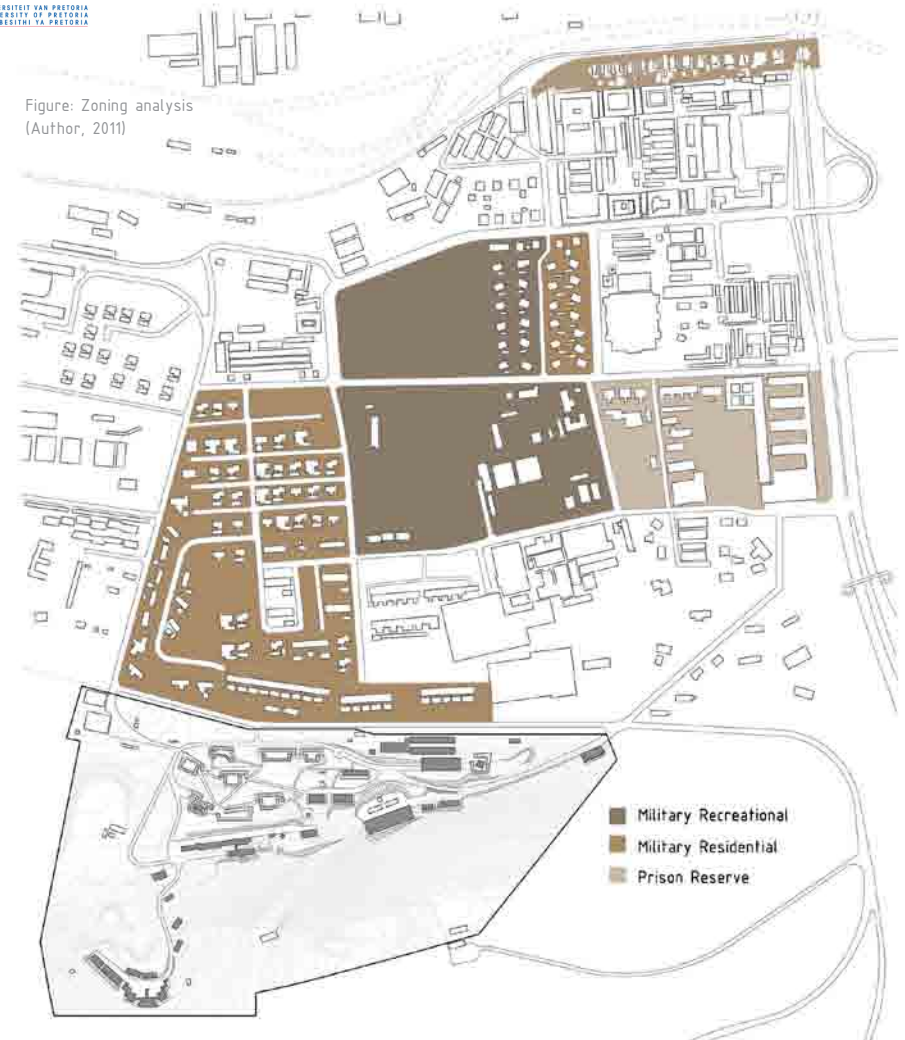
Figure 4.3: Zoning analysis
(Author, 2011)



4.2.2 Precinct Analysis: Magazine Hill as the border of the Military Precinct

SANDF institutional buildings form the majority of the precinct's built fabric and consist of military training facilities, parade grounds, indoor shooting ranges, SANDF Headquarters, vehicle repairs, health depots, military-industrial facilities and a number of private military workshops. The western part of the Institutional zone includes barracks and brigade housing that share the border with the Weskoppies Mental Institution and the SAP Precinct to the west of the Military Reserve. The Prison Reserve forms the only institutional zone that falls outside military occupation.

Figure: Zoning analysis
(Author, 2011)



Zoning analysis:

Recreational areas dedicated for Military use only, form a public network within the residential zones which houses military brigades, battalions and regiments. The recreational military grounds form the centre of the Precinct and functions according to activities between the brigades and regiments in the residential zones. These grounds have the potential to establish a platform for the conceptual mediation between the military and the Public in the forms of military exhibitions, auctions, music events etc.. Currently, the grounds are only utilised for intermittent sport events and military gatherings.

Figure 4.5: Open space analysis
(Author, 2011)



Open/Soft space analysis:

The Residential zones in the military precinct are set within an open space network, consisting of low density single family houses. Recreational grounds are also included in the open/soft space network, including a variety of sports fields and grass surfaces. As one moves to the south in the precinct, open and soft space becomes more abundant towards Magazine Hill. The site is located on the threshold where the precinct meets the Groenkloof Game Reserve to the south, containing a dichotomy of manmade structures within the natural realm on the hill. Magazine Hill thus forms the meeting place of hard space (military infrastructure) and soft space (natural hill landscape).

Figure 4.6: Corridor development
(Author, 2011)



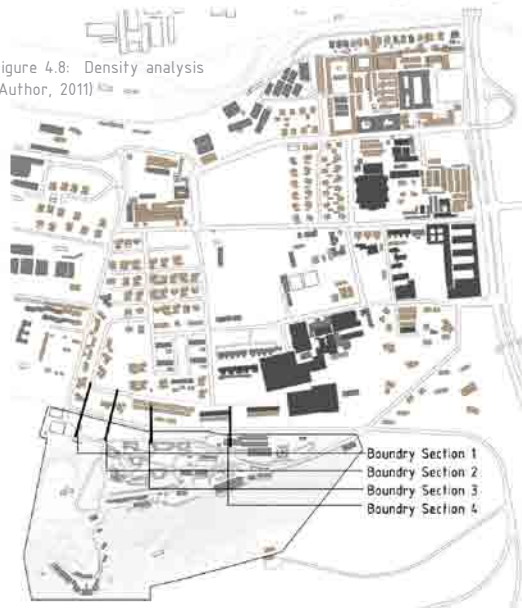
Possible Corridor Development:

The introduction of a road hierarchy network in the precinct could enable development to occur in a formal fashion, addressing density and organisational issues. The main arterial road, Dequar Road, has the potential to function as the main possible corridor for development. These corridors can connect open public spaces that will enable the recreation nodes to function as a green and circulation network.

Figure 4.7: Transportation structure (Author, 2011)



Figure 4.8: Density analysis (Author, 2011)



Transportation Structure:

This Precinct is served by 2 main modes of transport, vehicular and railway infrastructure. The first transport node is the NZASM train station that is located in Artillery Street on the northern border of the precinct. This transport node is mainly focused on the distribution of military hardware, serving the industrial sector of the precinct. Currently, the railway infrastructure acts as a barrier between the precinct and the inner city, reinforcing the peripheral exclusion of the Military Reserve. The road structure in the precinct is set out without a definite road hierarchy that promotes mass development, thus low density settlement accompanies the area. Dequar road forms the main arterial road that connects the precinct with the inner city of Pretoria.

Density and Fabric analysis:

The northern sector of the precinct is defined by a denser urban fabric, the Military Administration Sector. Density, both institutional and residential, declines as one moves south to Magazine Hill. The south eastern part of the precinct is the least dense and starts to contravene borders with the Groenkloof Game Reserve. The precinct consists mainly of 1-4 storey buildings.

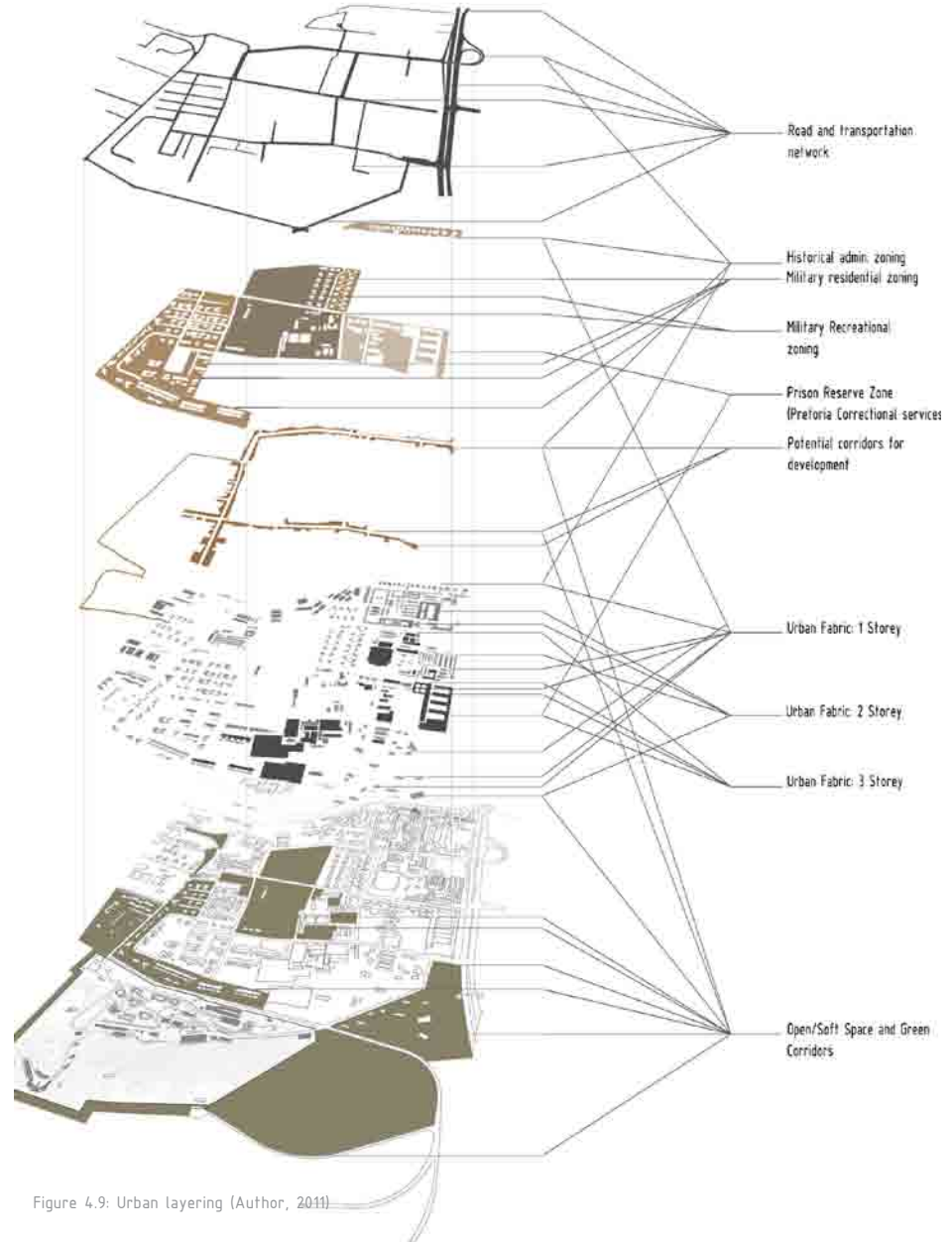


Figure 4.9: Urban layering (Author, 2011)



Figure 4.10: Rekgabisa Framework Proposal
(TCT, 2006. Edited by Author)

4.2.3 Existing Spatial development framework – Rekgabisa Tshwane Framework

The Rekgabisa Tshwane Framework was developed in 2006 with the main objective focused at reinstating the National Government within the city centre of Pretoria. The proposal concentrates on the development of the 2 main corridors of the Pretoria city centre (Cardo and Decomanis Maximus), in order to promote a safe public network with accessibility to government departments, with each public node serving a different governmental division (The City of Tshwane, 2006). The Rekgabisa framework focuses on Salvokop and the Military Reserve, depicting the precincts as possible nodes for development. 2 Parade grounds are proposed along Potgieter Street linking up with a covered boulevard/parking structure in Dequar Road. No densification programme is introduced within the existing military residential zones. The heritage of Magazine Hill is not only compromised by large scale housing and governmental development, but also not recognised in the future development strategy for the site or precinct.

Main objectives of Rekgabisa framework:

- Linking of symbolic or heritage sites
 - Creating an infrastructural spine that promotes private development
 - Creating a public space network between precincts linking government departments
 - Linking of symbolic or heritage sites
 - Providing commercial opportunity
 - Promote cultural and heritage programs linked to tourism
 - Creating a visual link between Salvokop and union buildings
- (The City of Tshwane, 2006)



Shortcomings of Rekgabisa Framework:

- Insufficient densification programme for military precinct
- Insufficient housing provision as per military brigade and regiment structures
- The lack of heritage recognition (Magazine Hill) for future development programmes
- Placing military parade grounds outside brigade and regiment residential zones
- The lack of a connection between Magazine Hill and the surrounding sites and monuments of heritage significance.
- Insufficient provision for controlled, occasional military and public interaction.

4.3 Micro Analysis

4.3.1 Photographic site study

This study is concluded in order to establish a visual understanding of both the architectural and natural characteristics of Magazine Hill. The weathered state of the remaining structures emphasises the large scale abandonment of the site after the mysterious explosion in 1945. Magazine Hill is now friends only to the foes of the past, trapped within time and desolation.

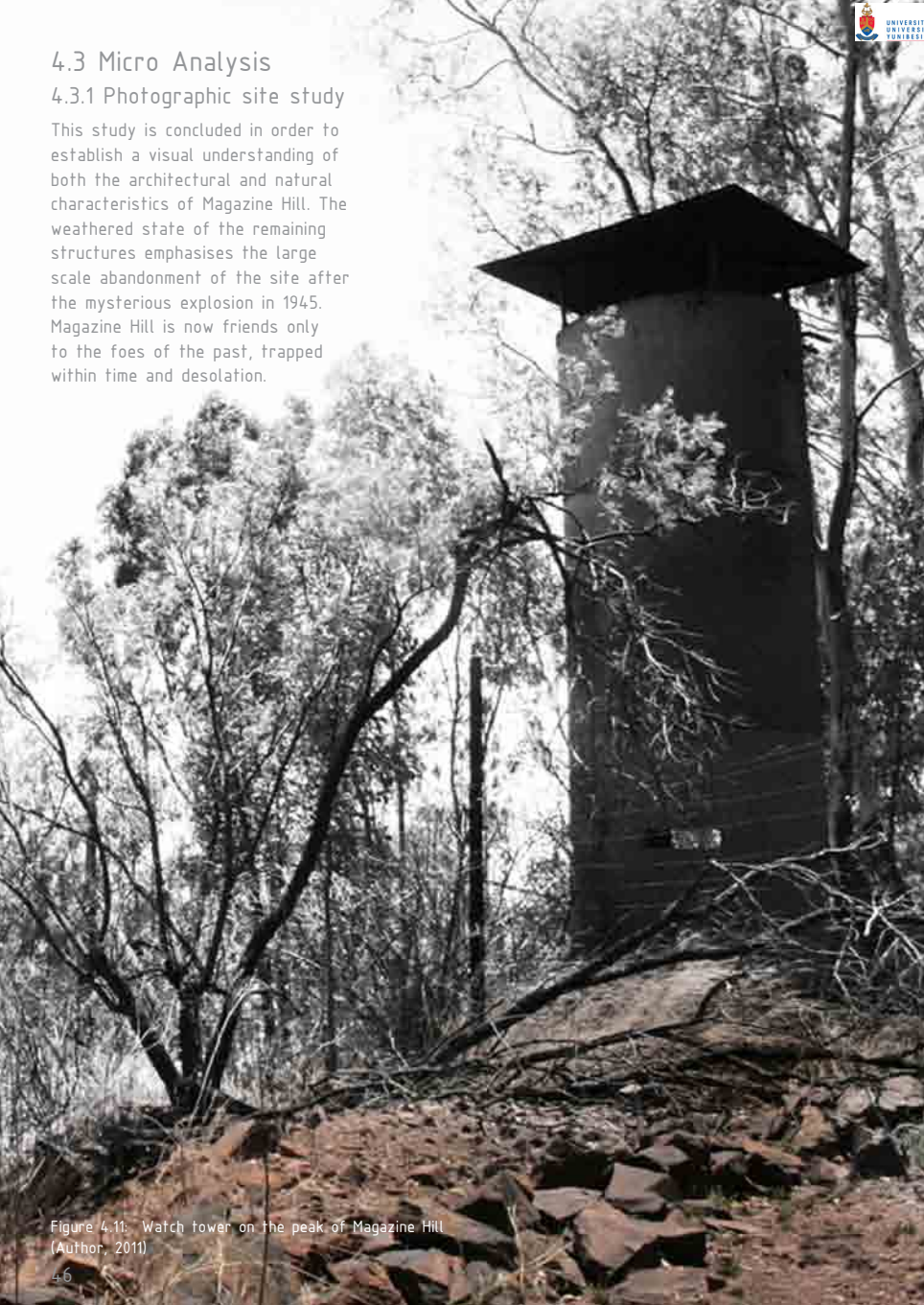


Figure 4.11: Watch tower on the peak of Magazine Hill
(Author, 2011)



Figure 4.12: Flame Tracer building
(Author, 2011)



Figure 4.13: Overgrown staircase leading into the hill. (Author, 2011)



Figure 4.15: Existing ammunition bunker, submerged within the landscape (Author, 2011)



Figure 4.14: Empty mortar shells at Magazine Hill. (Author, 2010)



Figure 4.16: Ammunition bunker (Author, 2010)

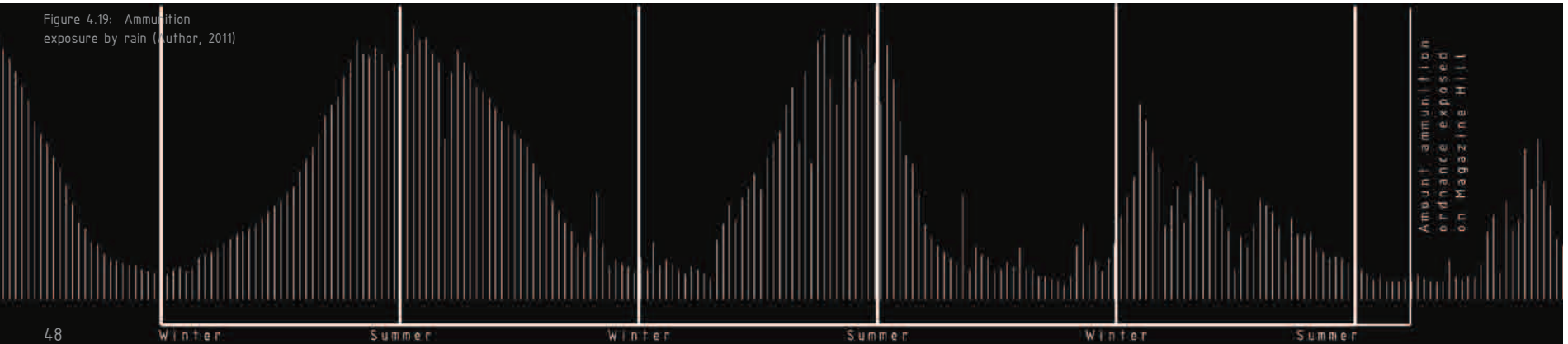


Figure 4.17: Green Magazine entrance (Author, 2011)



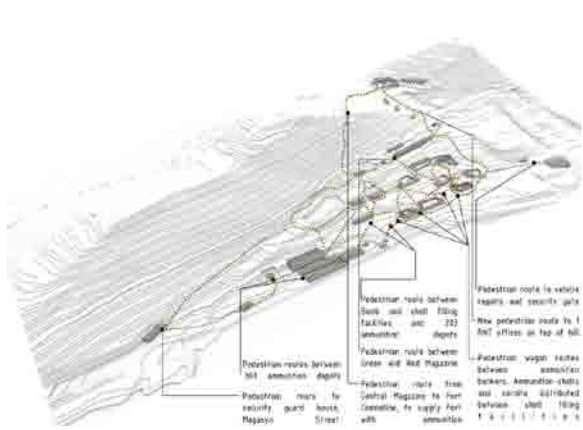
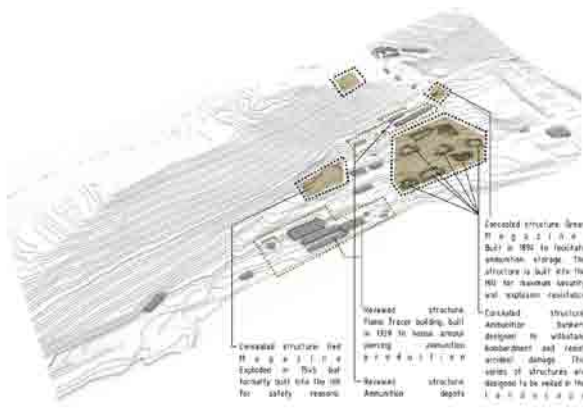
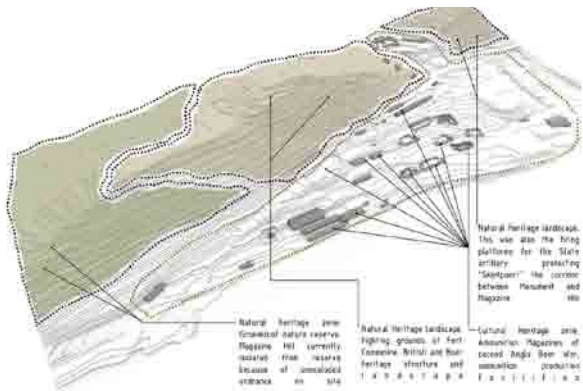
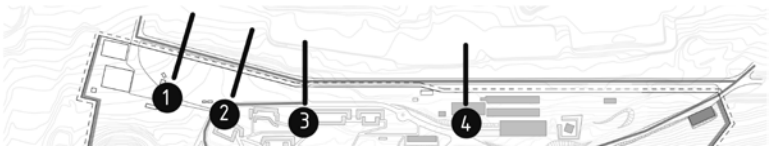
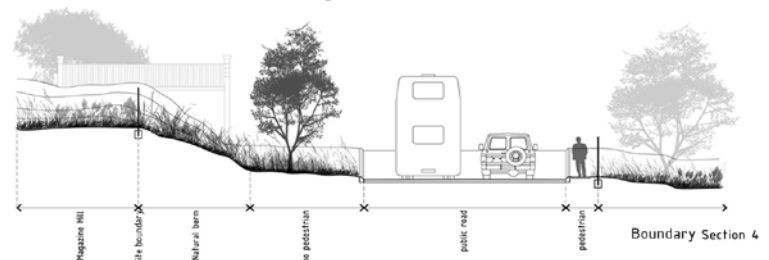
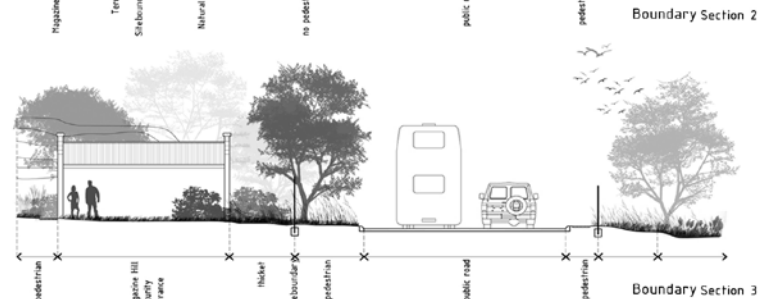
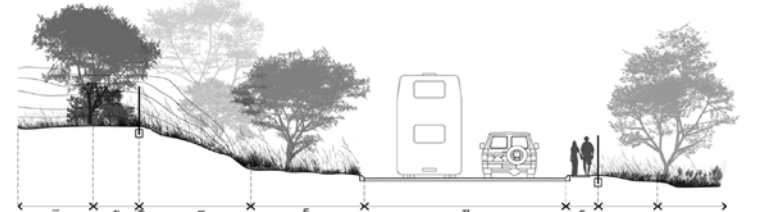
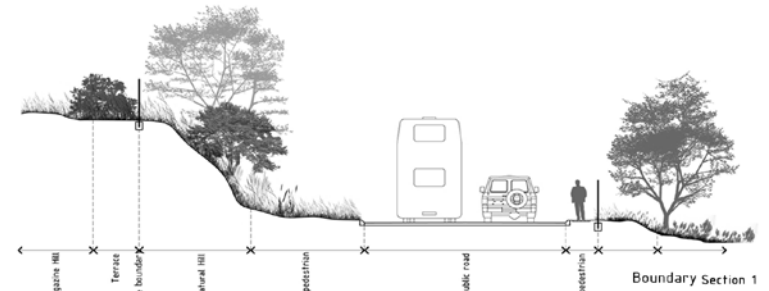
Figure 4.18: The MRG3 kitchen building (Author, 2011)

Figure 4.19: Ammunition exposure by rain (Author, 2011)



4.3.2 Seasonal site study – ammunition exposure by rain

The steep hill above the crater of the Red Magazine is considered as possibly dangerous, for unexploded ordnance and remnants of live ammunition are still extracted from the fields on the hill at the end of each rain season (Du Plessis, 2010). This phenomenon accentuates the natural healing process of the landscape, with time being the primary healer. (Figure: xx)



4.3.3 Site boundary analysis

The northern site boundary of Magazine Hill is separated from the street front by a natural ground berm, concealing the classified content of Magazine Hill (Figure: xx). This natural element contributes to the secretive character of the site, while at the same time limiting interaction with Magasyn Street. The vertical height of the berm varies across the northern border of the site, allowing controlled access at strategic points.

This page:

(top left) : Figure 4.20: Heritage zone analysis (Author, 2011)

(middle left) : Figure 4.21:

Revealed and concealed analysis (Author, 2011)

(bottom left) : Figure 21b: Pedestrian corridors on Magazine Hill (Author, 2011)

(right) Figure 4.22: Magazine hill edge condition analysis (Author, 2011)

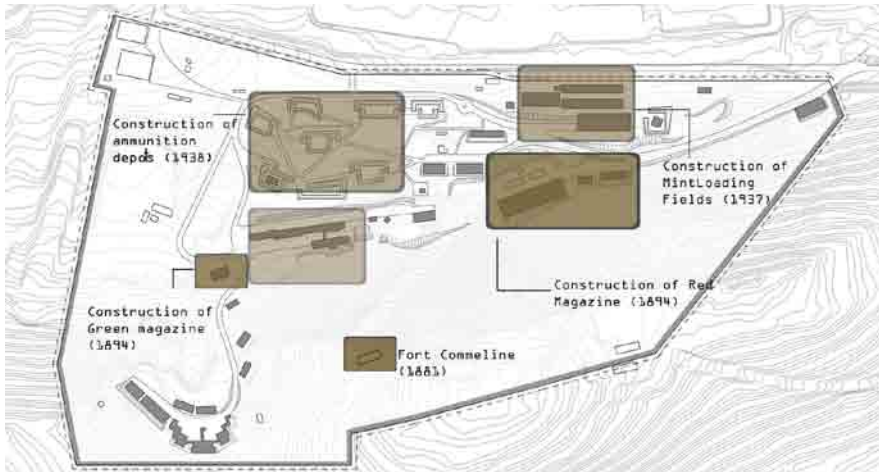


Figure 4.23: Time Based Development (Author, 2011)

4.3.4 General Site analysis

Magazine Hill developed according to a number of different political, social and urban events which were governed by different leaders and government rulers. It is a site that forms an evidential platform for a time line of South African history, the different political leaders, eras and thought patterns that stretch from the First World War up to the First Election in 1994. As South Africa developed, Magazine Hill developed.

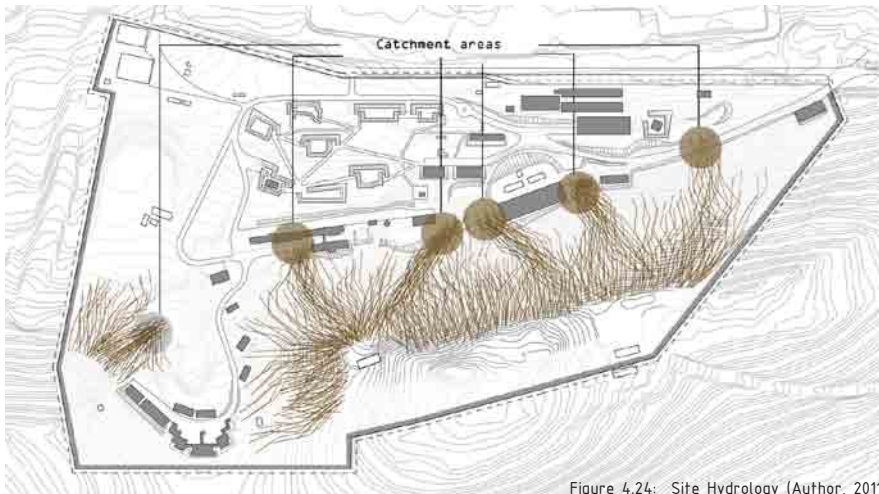


Figure 4.24: Site Hydrology (Author, 2011)

Magazine Hill is located on a hilltop, therefore hydrological activity becomes a major design generator. Site hydrology formed part of the initial design of Magazine hill, locating catchment areas on strategic point on the lower part of the site, where water could be reused in the ammunition production process. Through studying the vegetation density on site, it becomes clear that the Central Magazine crater currently acts as a natural accumulation point for runoff water, for it is the most vegetated part on the hill.

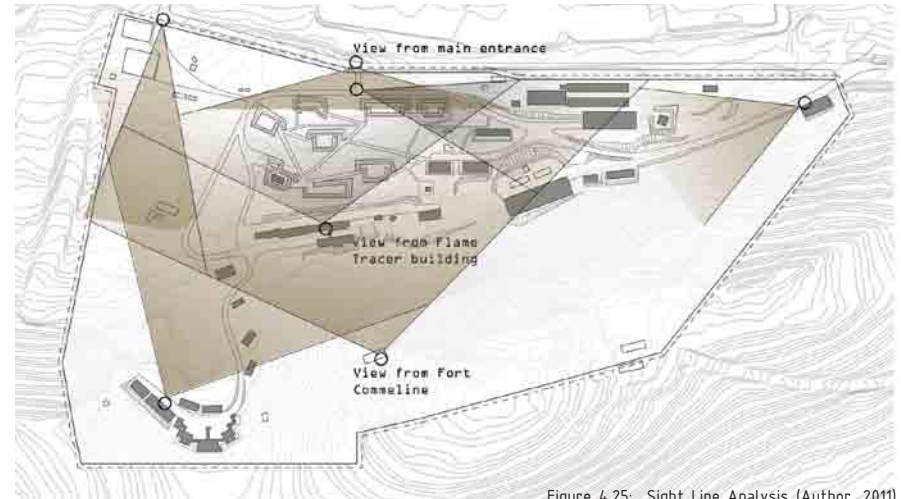


Figure 4.25: Sight Line Analysis (Author, 2011)

The topography of Magazine Hill allows for different visual experiences, with sight lines changing constantly, revealing different parts and mysterious structures as one progresses through the site. The veiled character of the site places emphasis on the sight line studies, where different parts of Magazine Hill can be revealed from strategic anchor points within the site.

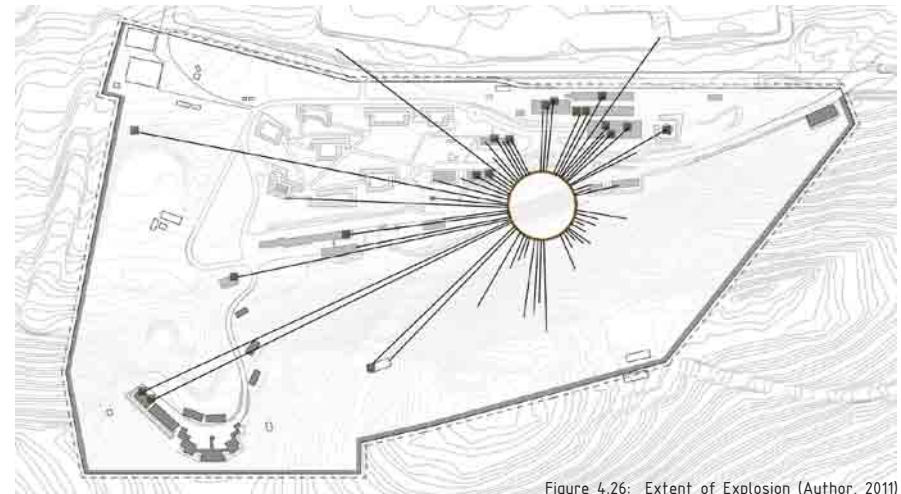


Figure 4.26: Extent of Explosion (Author, 2011)

The mysterious explosion of the Red/Central Magazine in 1945 led to massive destruction on Magazine Hill. Damages were reported as far as Church Street (Du Toit Spies, 1955: 78). According to The Royal Mint, 146 casualties were reported: 34 people died on direct impact and 234 people were injured (Panagos, 2000: 7). This study depicts the damage (both architectural damage and casualties) on Magazine Hill as a direct result of the explosion.

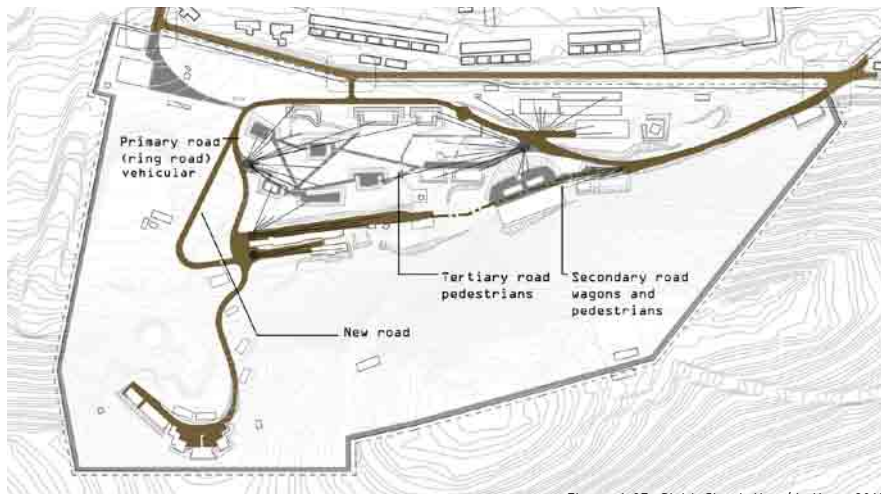


Figure 4.27: Sight Circulation (Author, 2011)

Primary roads form a ring road system around important zones on Magazine Hill. These roads cater for vehicular traffic while secondary and tertiary roads provide movement platforms between primary roads, catering for pedestrians and ammunition wagons (historical use). The entire site can thus be accessed from strategic points on the primary ring road.

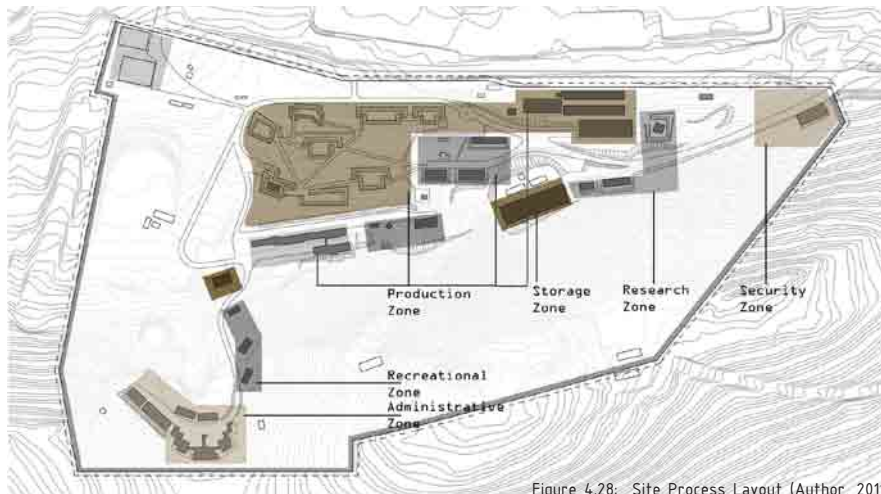


Figure 4.28: Site Process Layout (Author, 2011)

This study can be seen as an additional layer to the site circulation study. Magazine Hill is divided into 4 different process sectors. The first zone is the Production Zone, where ammunition was produced from the early 1930's. The second zone is the Storage Zone where ammunition was stored as from 1894, while the third and fourth zones still function as the administration and recreational zones. The security zones on the 2 extremities of the site form the last sectors of the site, limiting public access to Magazine Hill.

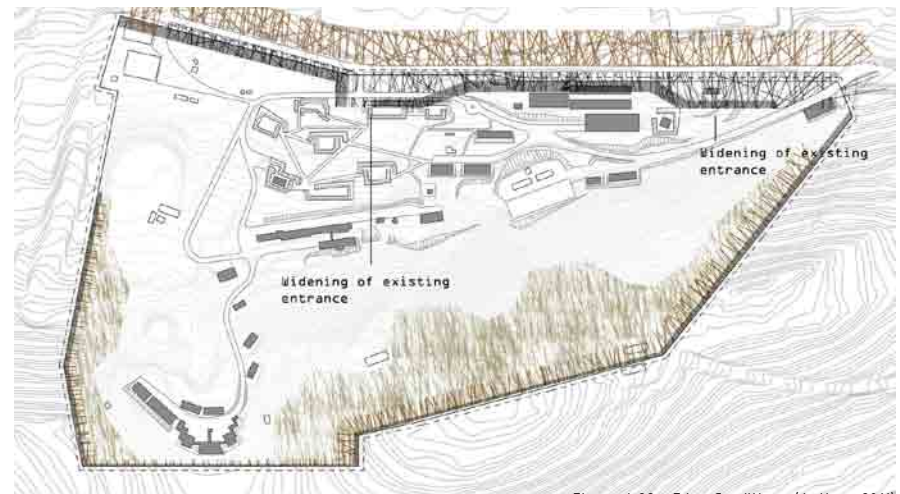


Figure 4.29: Edge Conditions (Author, 2011)

Because of the privatised character of the site, the northern edge condition is defined by a berm forming a permanent barrier. The northern perimeter street level is thus lower than the site boundary which results in a lack of site-street interaction. The eastern and southern edges are fenced off from the Groenkloof National Reserve to protect wildlife from unexploded ordnance still present on Magazine Hill after the explosion.

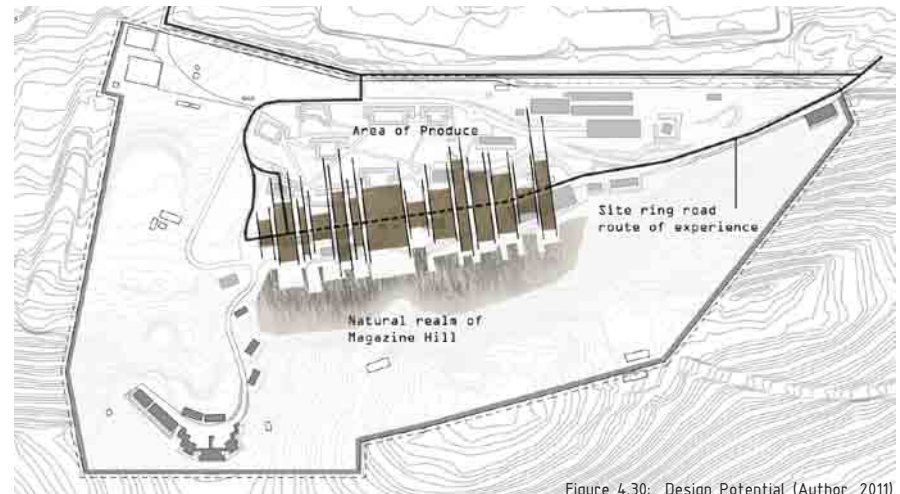


Figure 4.30: Design Potential (Author, 2011)

Taking the original 1945 circulation network into consideration, the ring road around the ammunition production zones allows for interaction with the natural hill of the site (south), as well as the heritage of ammunition production to the north. This corridor is situated on the threshold between Nature and Man, between production and storage, stretching across the entire site, allowing for interaction with all existing structures.