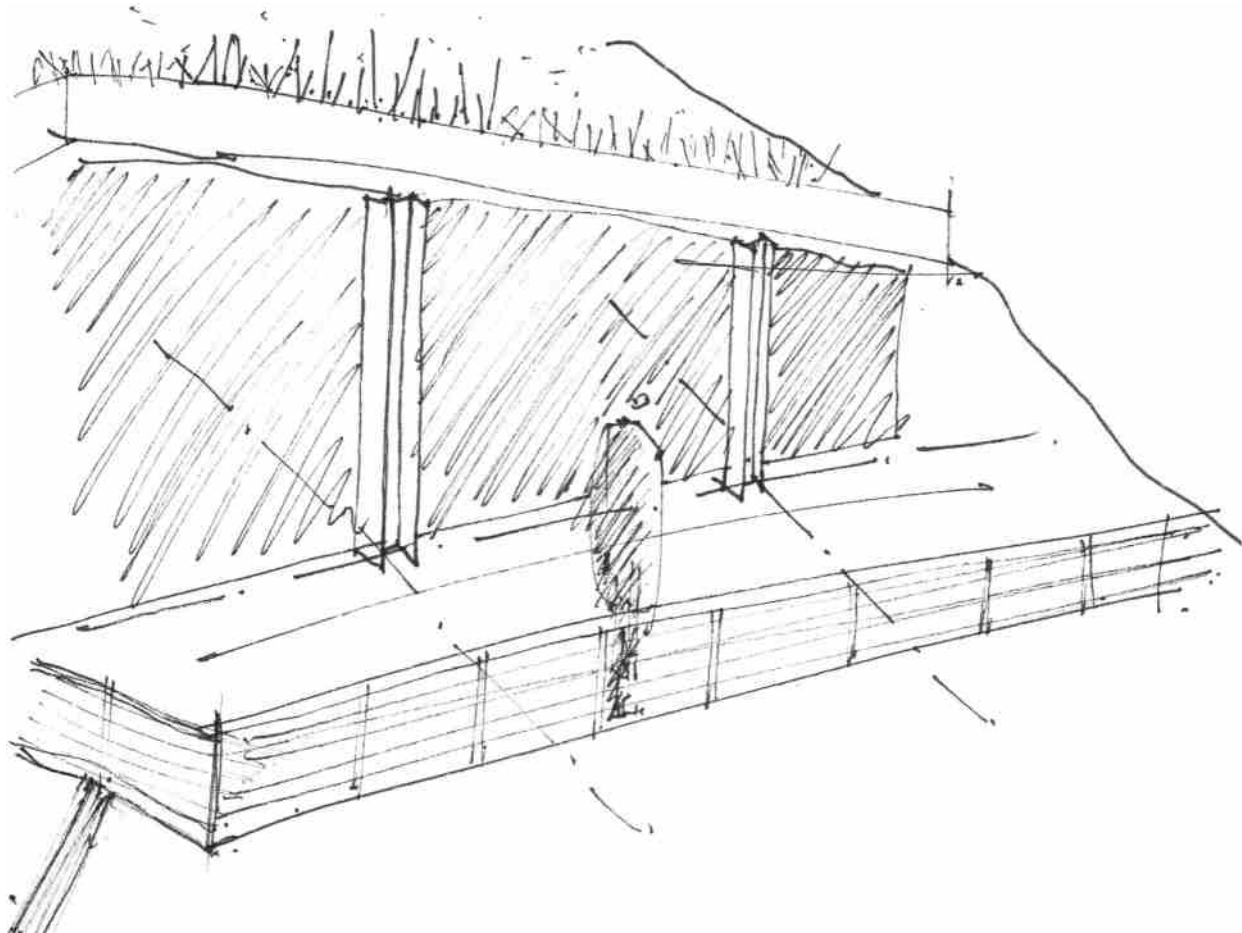


# 05

Design Development



## + Design Development

The design development begins with a more detailed analysis of the site by understanding the macro and micro climates and the pedestrian and vehicular movement on the site. Through this analysis the area is identified by the author that will best suit the location of the proposed design intervention.

It is clear that the landscape on the Northern escarpment, below the ridge is not as scarred as the landscape on the Southern part. The scarring of the landscape is by means of trees and some pedestrian movement. This distinct topography influences place making, where movement through the landscape to the ridge becomes a series of interventions of virtual and physical thresholds that frame views.

The close proximity of the Heritage village and Davisonville location houses act as a catalyst to draw the local communities people into the design. Retail and exhibition facilities gives them the opportunity to exhibit their own unique skills and to transfer these skills again to tourists visiting the building.

### SITE INFORMATION:

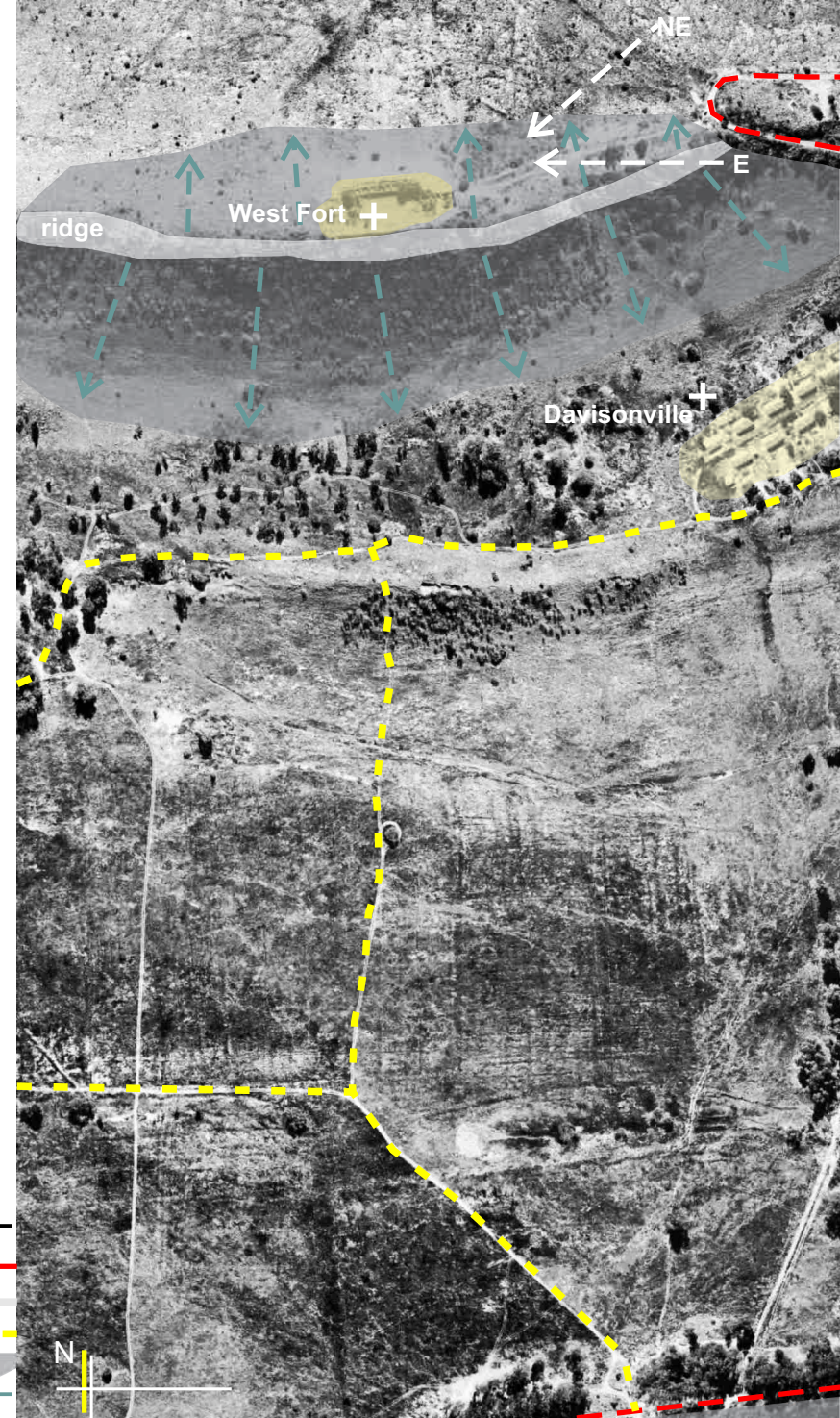
Latitude: 25.44S  
Longitude: 28.11E

Average temperature: 30°C Summer  
17°C Winter

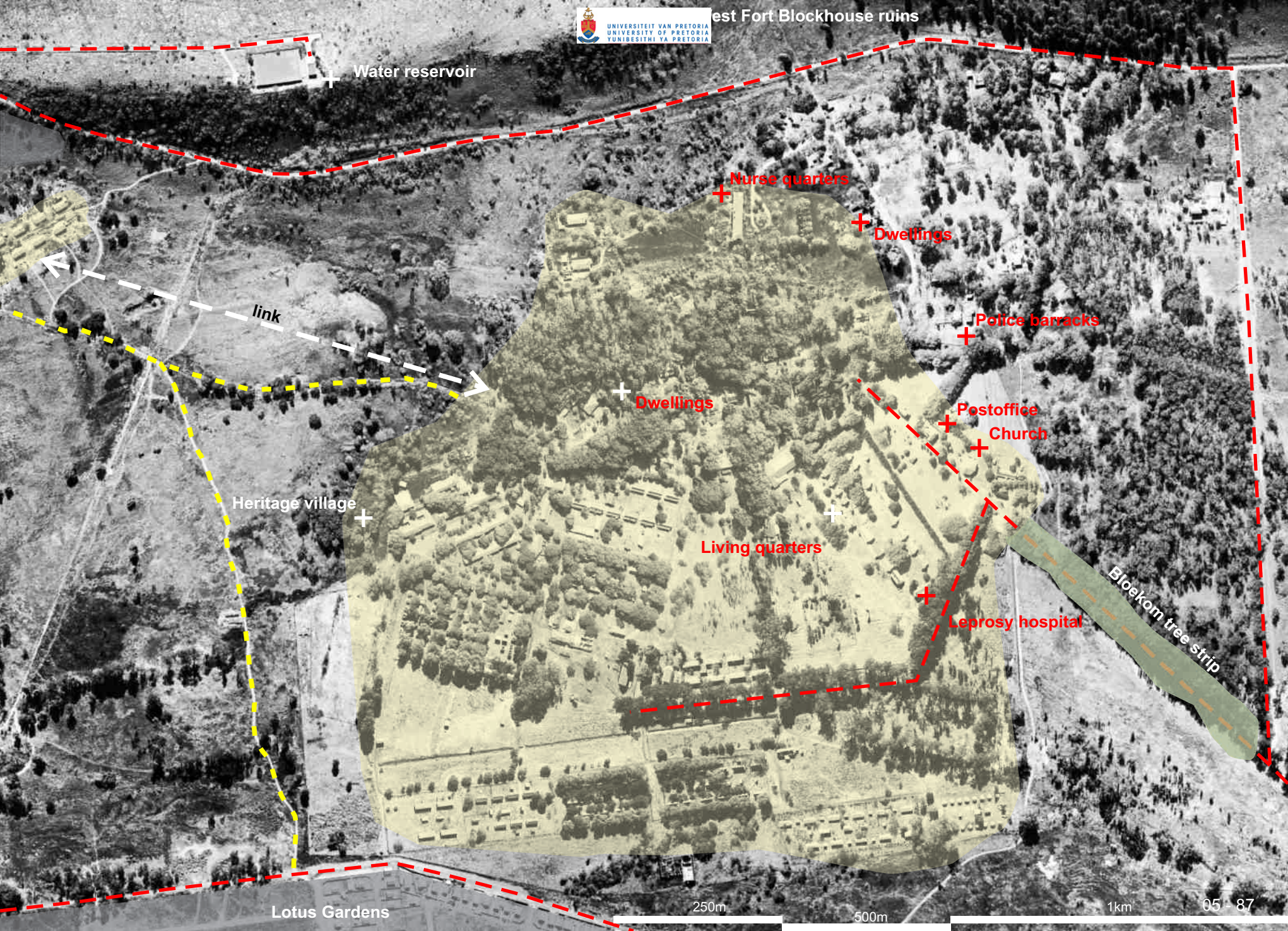
Average rainfall: 700 - 800mm annually

Wind: Prevailing wind direction is North East and East at an average 4 - 6 km/h

Relative Humidity: 56% Average annually



- prevailing wind direction ————
- tarred roads ————
- link to heritage village ————
- pedestrian movement ————
- study area ————
- stormwater run-off ————



Water reservoir

Nurse quarters

Dwellings

Police barracks

Dwellings

Postoffice  
Church

Heritage village

Living quarters

Leprosy hospital

Bloekom tree strip

Lotus Gardens

250m

500m

1km

05/87

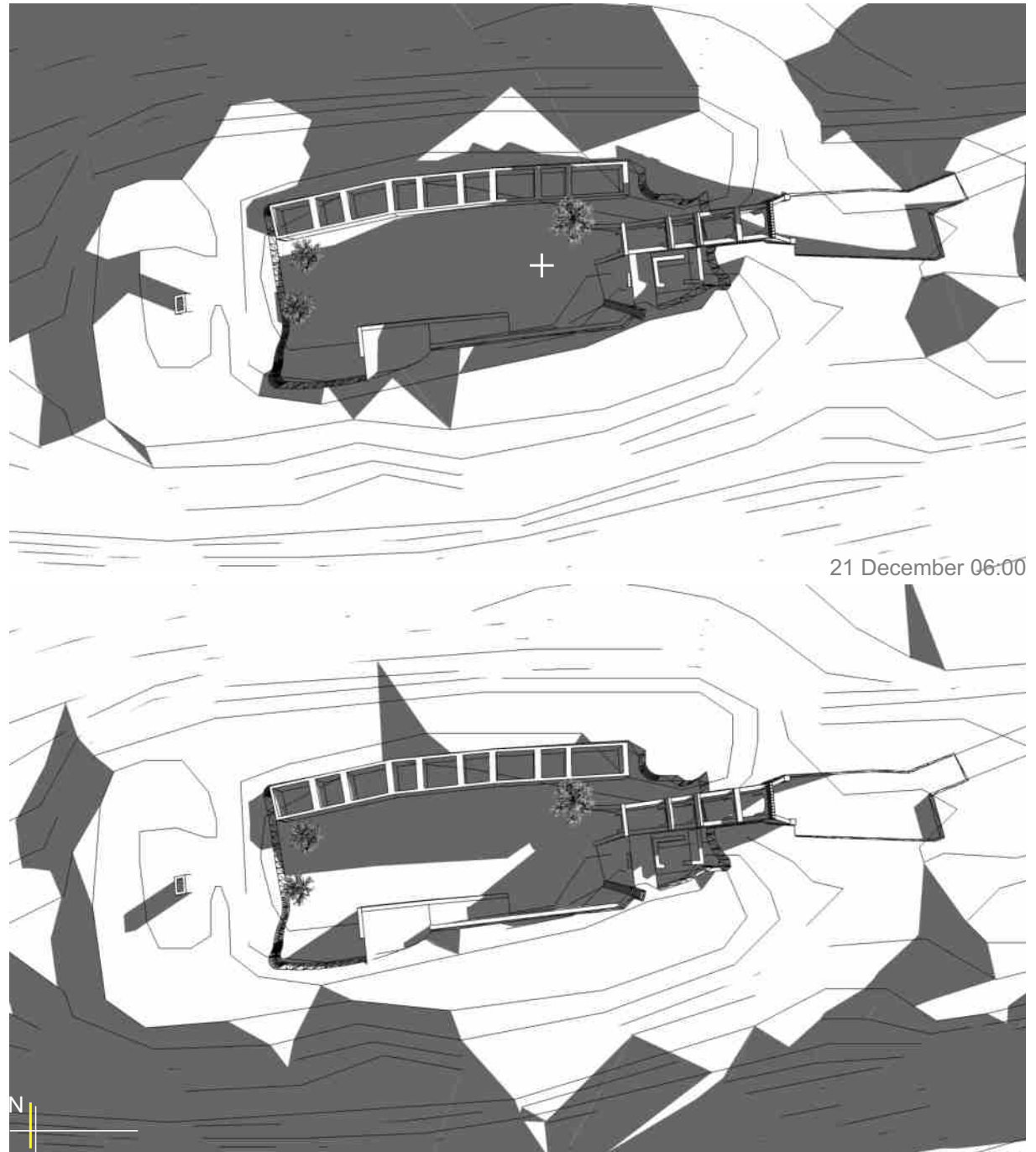
## SOLAR STUDY

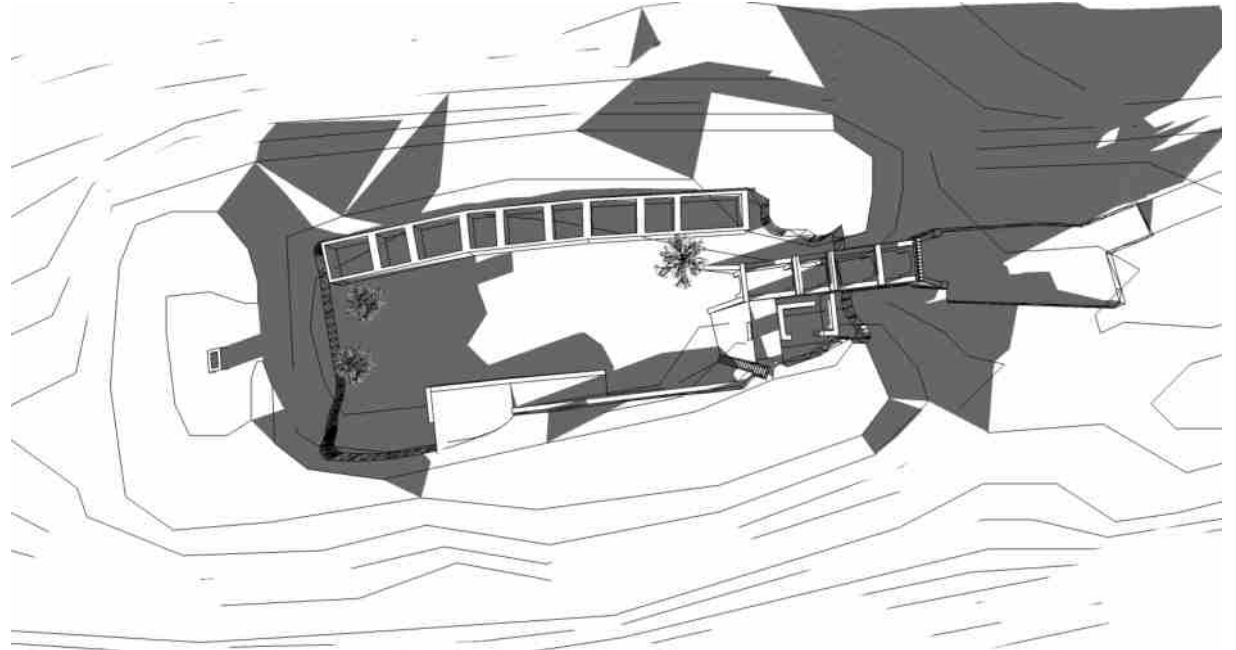
The following images show the solar angles of the sun on the site. The angles are taken on different days during the year. The times they were taken are early in the morning and late in the evening as indicated.

The reason for this study is to understand the sunlight that is available on the site and the shadows that will be cast. As the topography of the site is a steep incline, the sun light available becomes more important. As some of the buildings will be underground. To ensure that each building performs thermally well, the author concluded the study by doing various sun angle studies.

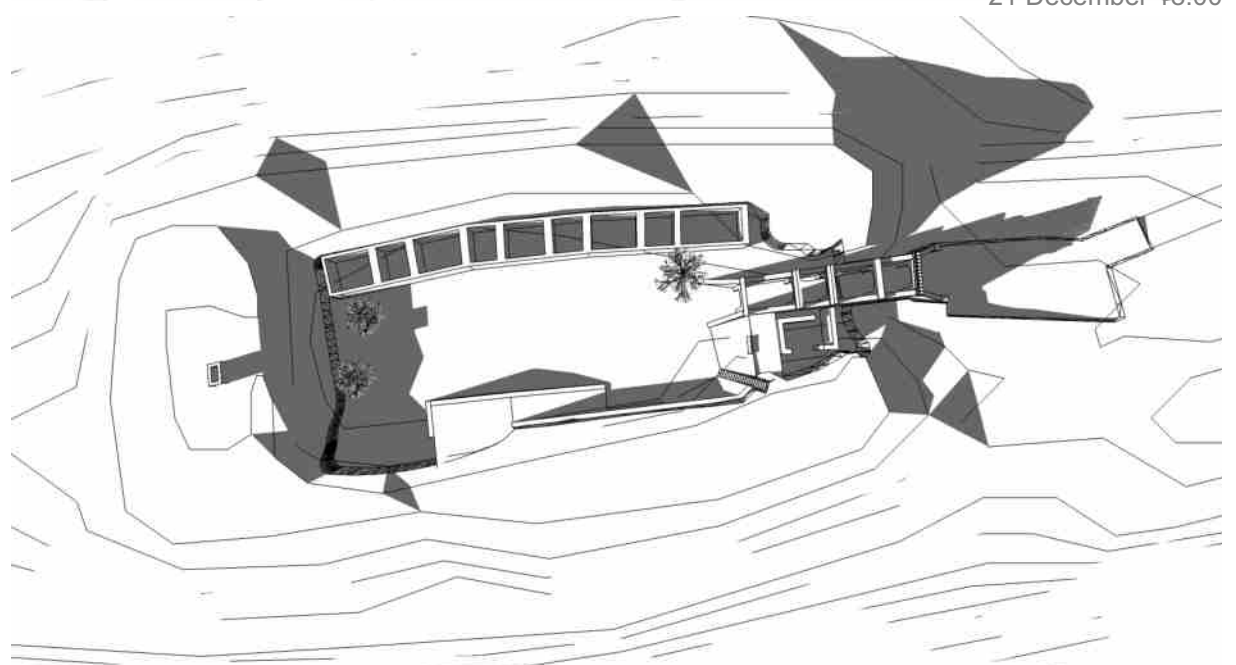
The site selection becomes evident in relation to this study, where the author chose the southern part of the mountain. The relationship between North and South will be discussed later in this chapter.

The southern slope is better climatically, as the southern slope will be a lot cooler in summer.





21 December 18:00



21 June 18:00

## DEVELOPMENT

The following parti diagram indicates the first conceptual design decisions.

The programme is drawn out into four smaller spaces. The arrival space, Visitors centre, Archaeological research centre and an outdoor performance area. The movement and circulation is based on a pin-wheel concept. Where there is a point of departure and a sequence or narrative of spaces that follows.

The hierarchy culminates with the Fort, where the two points on the axis binds the presence of the Fort within the movement. The points / spaces are informed by the landscape as their placement is carefully considered with respect to its relationship to the Fort.

The landscape becomes the transitional space from each point to the next. The experience through the landscape expresses the *genius loci* of the site. The experience is captured by the visitor as he/she transcends to the next point / space. Each building in the landscape becomes a point of attraction, drawing the visitor to the building. This encourages inquisitiveness in the visitor, moving on to the next building, meandering through the landscape, while being informed about the history, fortification and iconic monuments within the city.

As one filters through the tranquil landscape, you stop at certain dedicated points, which will then frame a view towards a certain iconic monument in the city scape. This lets the visitor become the camera, capturing views and images for himself. The landscape as exhibition spaces, creates a sensual informative experience for the visitor, simultaneously informing the viewer about history, while experiencing the landscape for what it was; an open, tranquil and sensual vantage point.

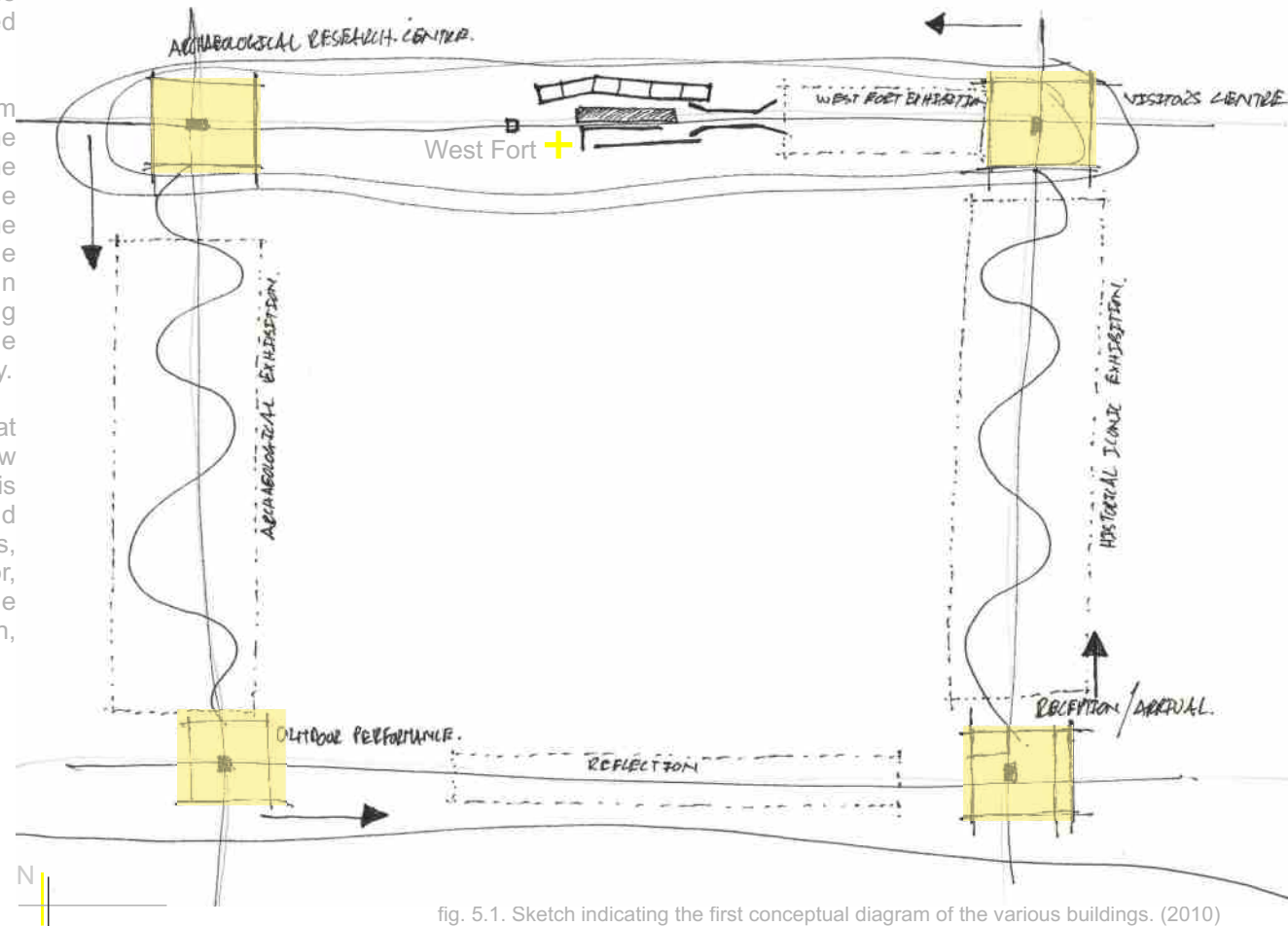


fig. 5.1. Sketch indicating the first conceptual diagram of the various buildings. (2010)

The concept model show the relationship of the buildings to the Fort and their placement in the study area. Each building becomes a threshold for the next, as each exhibition in the landscape becomes the informative space towards the following building.

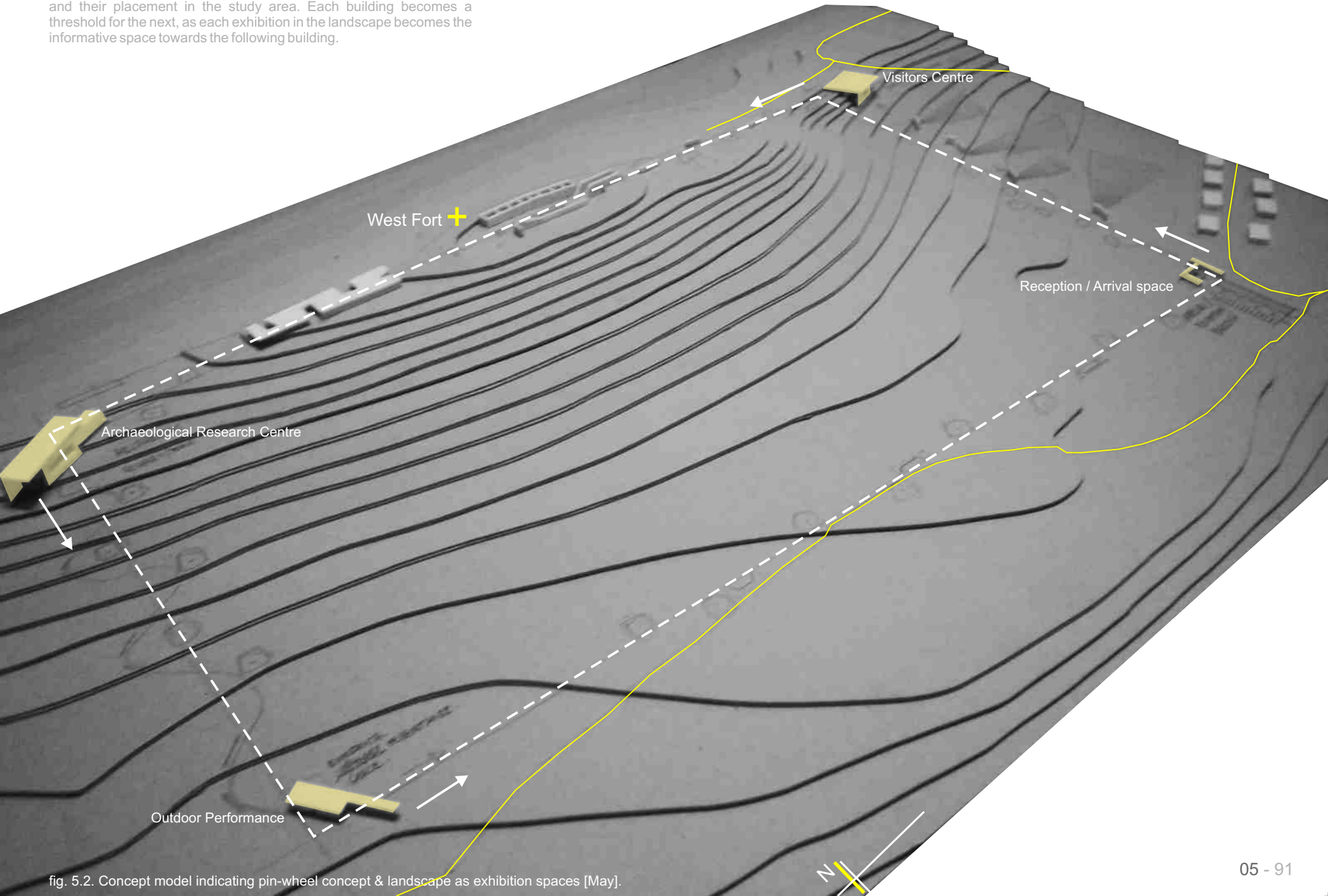


fig. 5.2. Concept model indicating pin-wheel concept & landscape as exhibition spaces [May].

The following is an introduction to the author's initial thought process by the author;  
The visitor will arrive and start the journey at the reception / arrival space. The design of this area will create a space of interaction between the visitor and the local communities. The visitor will move from the reception area to the visitors centre.

The exhibition space in the landscape, which forms the threshold to the visitors centre, will focus on various views captured by the visitor of the iconic monuments in the city. This exhibition will inform the visitor about the iconic monuments and about the military history. While experiencing and capturing the views, the visitor will turn his back on the Fort, creating a feeling of importance towards the relationship of the monuments to the Fort. The Fort still being the hierarchial focus.

The visitors centre will be the second interaction and viewing point. Here visitors will be able to rest and interact with one another.

The visitor will from there be informed about the history and importance of West Fort. The exhibition space will become the threshold for the Fort. Passing through the Fort as artifact, the visitor will become aware of the build up that has taken place leading to his approach to the Fort. A viewing platform will ensure that the visitor can interact and visually capture the Fort in ruins.

The visitor will then leave this area and move towards the archaeological research centre, with the landscape's relationship with this building. Informing the visitor about archaeology. The building will also exhibit various archaeological sites that are currently being worked on. This exhibition will be based on a bi-weekly period of two weeks.

The archaeological research centre will be a space where the public can be informed about archaeology and interact with the archaeologists and students. The visitor will then move through the landscape back to the reception area. This is intended as a reflection route, which enables the visitor to process all the information he had been informed about.

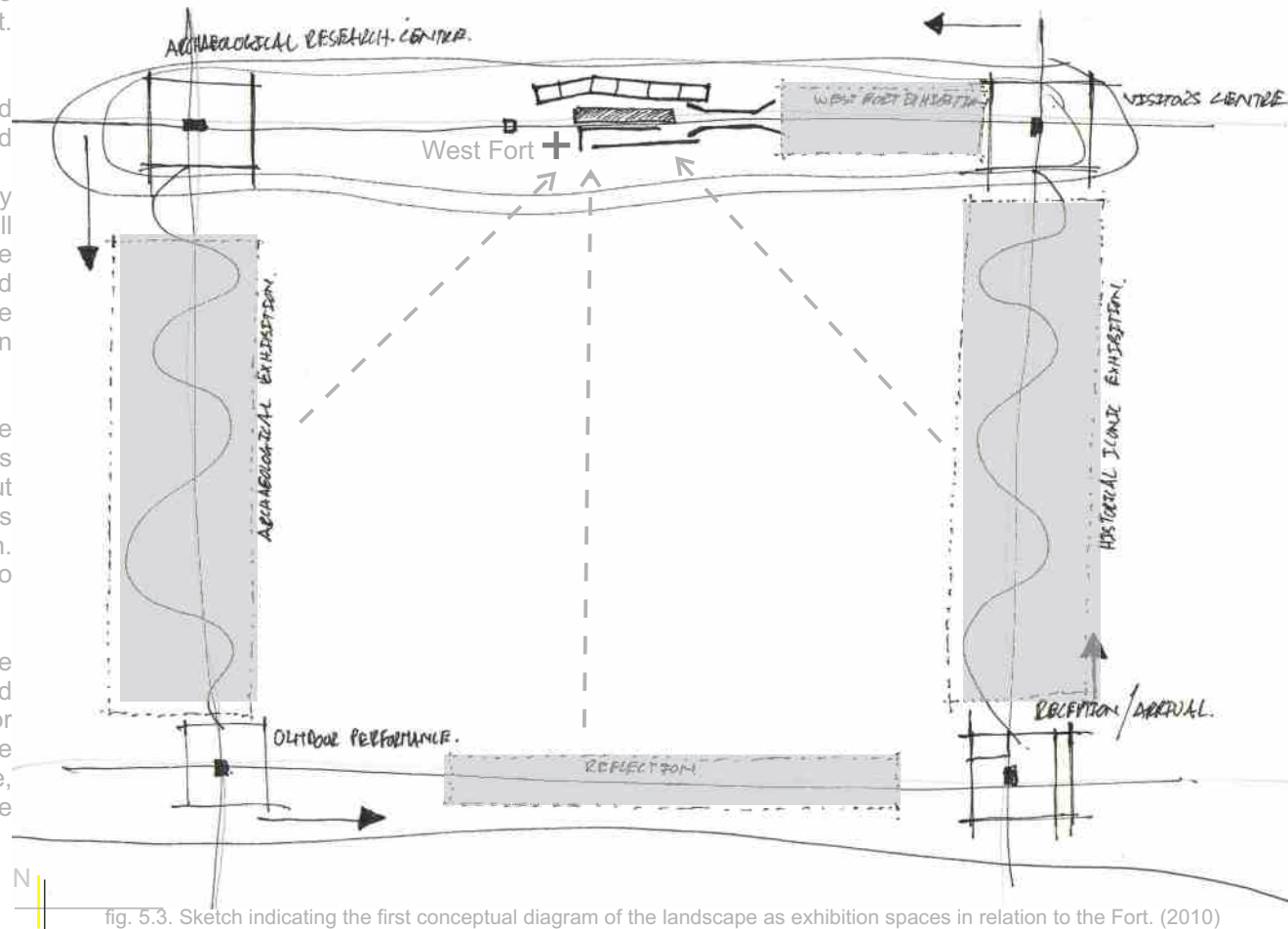


fig. 5.3. Sketch indicating the first conceptual diagram of the landscape as exhibition spaces in relation to the Fort. (2010)



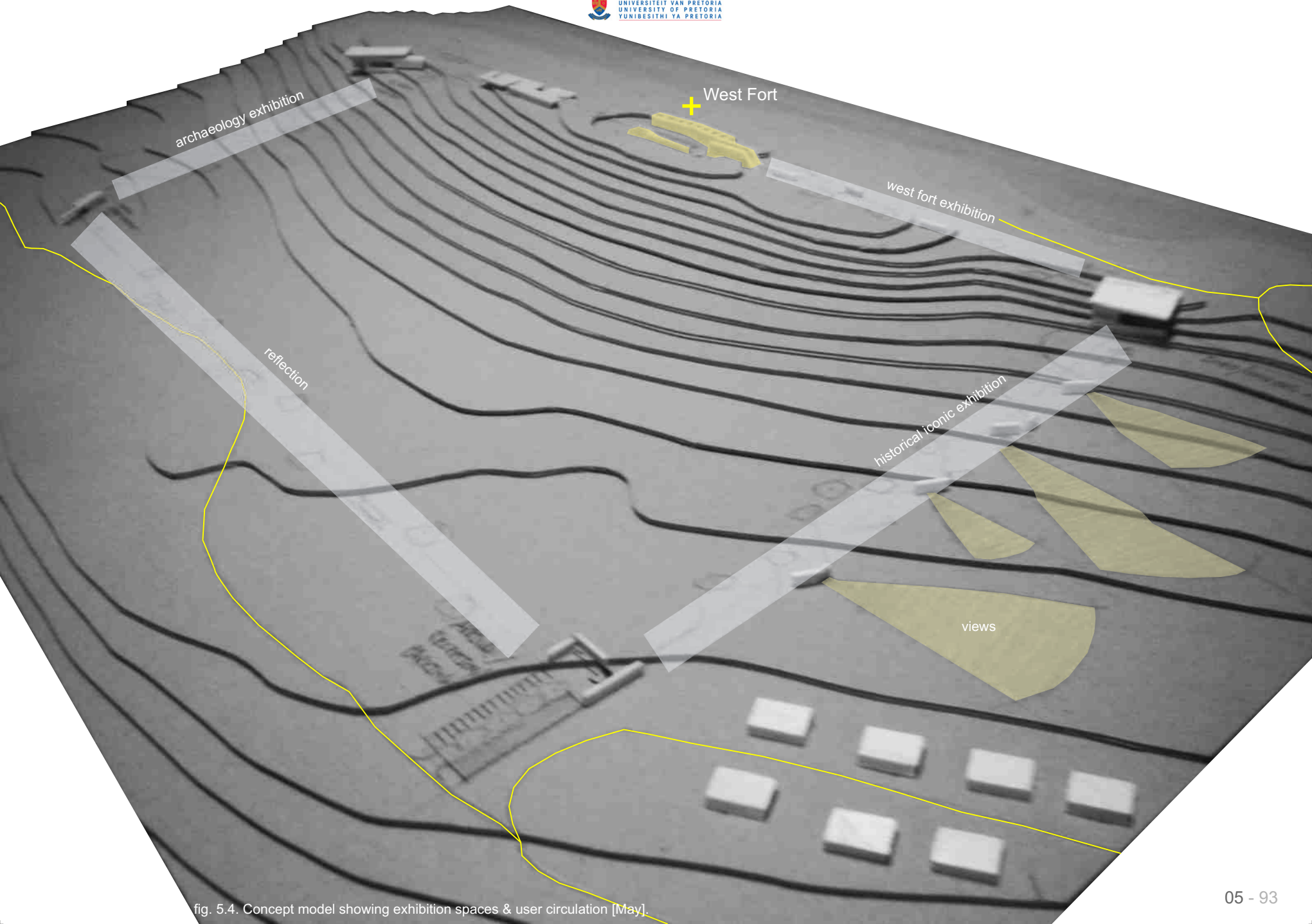
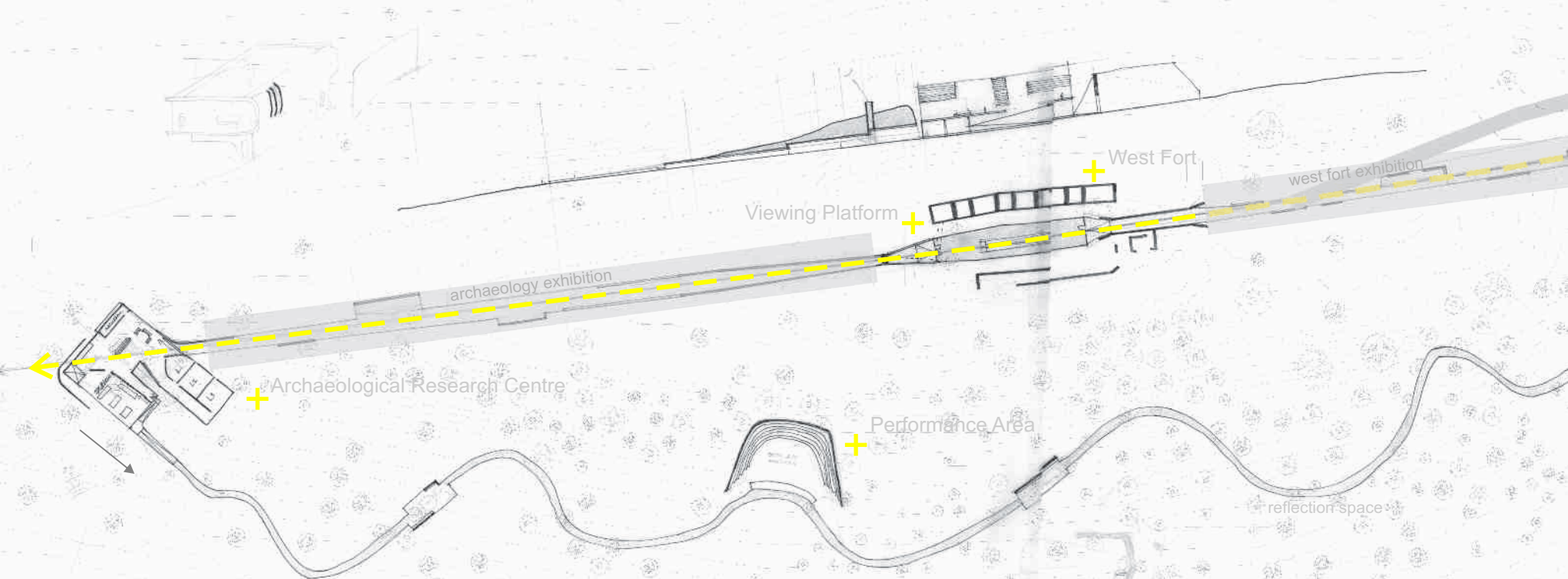


fig. 5.4. Concept model showing exhibition spaces & user circulation [May].



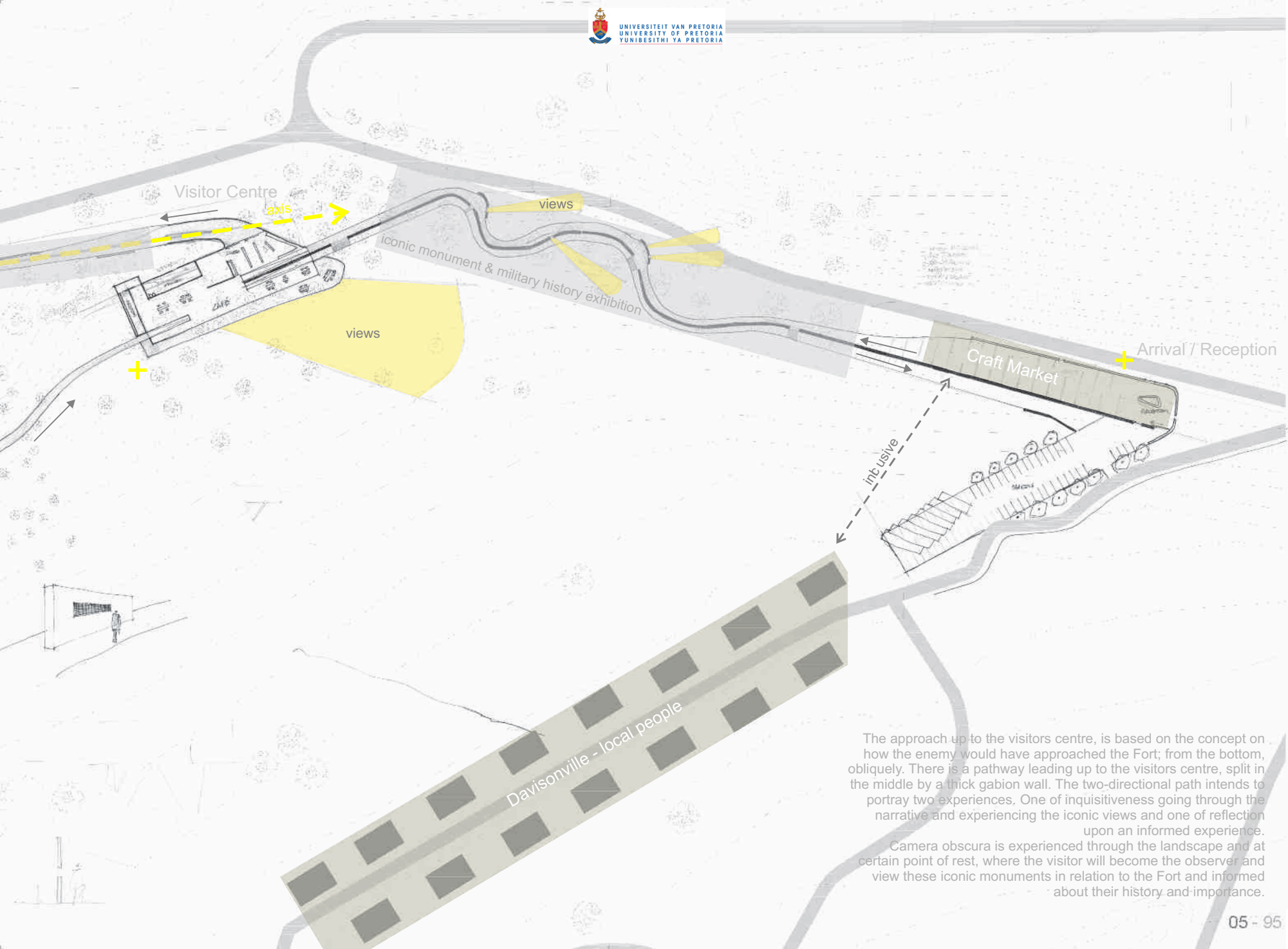
The following is the development from the parti diagrams & concept model:

The approach up the mountain was changed from the current access road, so that the approach is more of a military approach. The approach is derived from the conceptual visualization of the site, rather than a rigid and fixed one as seen in the parti diagrams. By placing the arrival space closer to the local community and heritage village, enables better interaction and also includes the community in the project on a larger, macro scale.

The reflection route also changes to a more free and meandering route, than the first rigid concept. This ensures the visitor experiencing the spirit of the place and its respect to the Fort as artifact. This means that the route is parallel to the Fort axis, which indicates hierarchy towards the Fort.



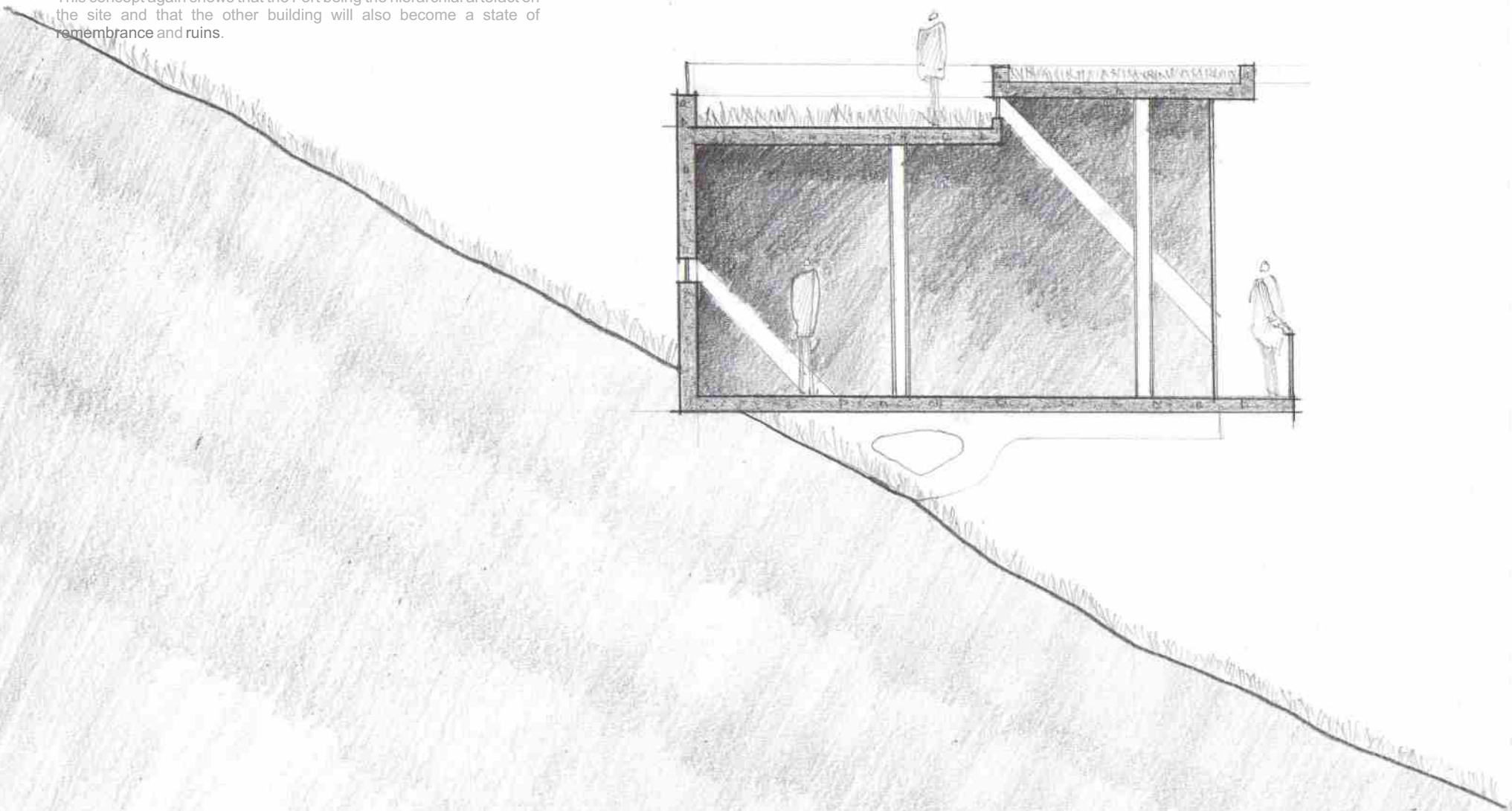
250m

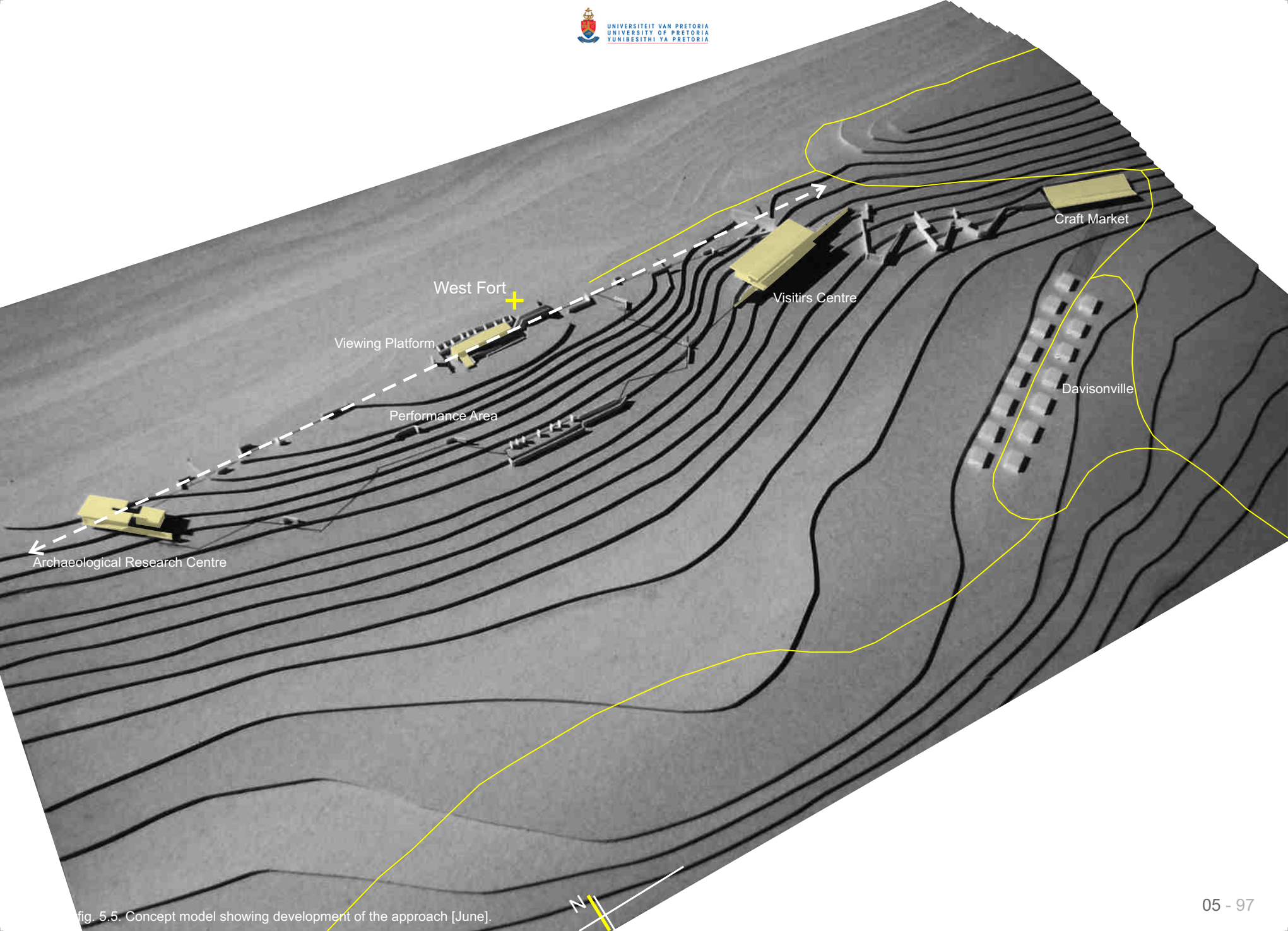


The approach up to the visitors centre, is based on the concept on how the enemy would have approached the Fort; from the bottom, obliquely. There is a pathway leading up to the visitors centre, split in the middle by a thick gabion wall. The two-directional path intends to portray two experiences. One of inquisitiveness going through the narrative and experiencing the iconic views and one of reflection upon an informed experience.

Camera obscura is experienced through the landscape and at certain point of rest, where the visitor will become the observer and view these iconic monuments in relation to the Fort and informed about their history and importance.

The conceptual section through the visitors centre, shows the idea of the building touching the landscape lightly. The landscape should be integrated with the building, the same as the Fort's being sunken into the ground. The buildings becoming one with the landscape and vantage points towards the city scape. The concept of **permanence** and **transience** will be explored by the author. The visitors centre will be the catalyst and permanent building, whereas the archaeological research centre and craft market area, will become ruins in the future. This concept again shows that the Fort being the hierarchial artefact on the site and that the other building will also become a state of remembrance and ruins.





Archaeological Research Centre

Viewing Platform

West Fort +

Performance Area

Visitors Centre

Craft Market

Davisonville

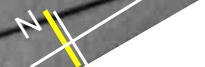
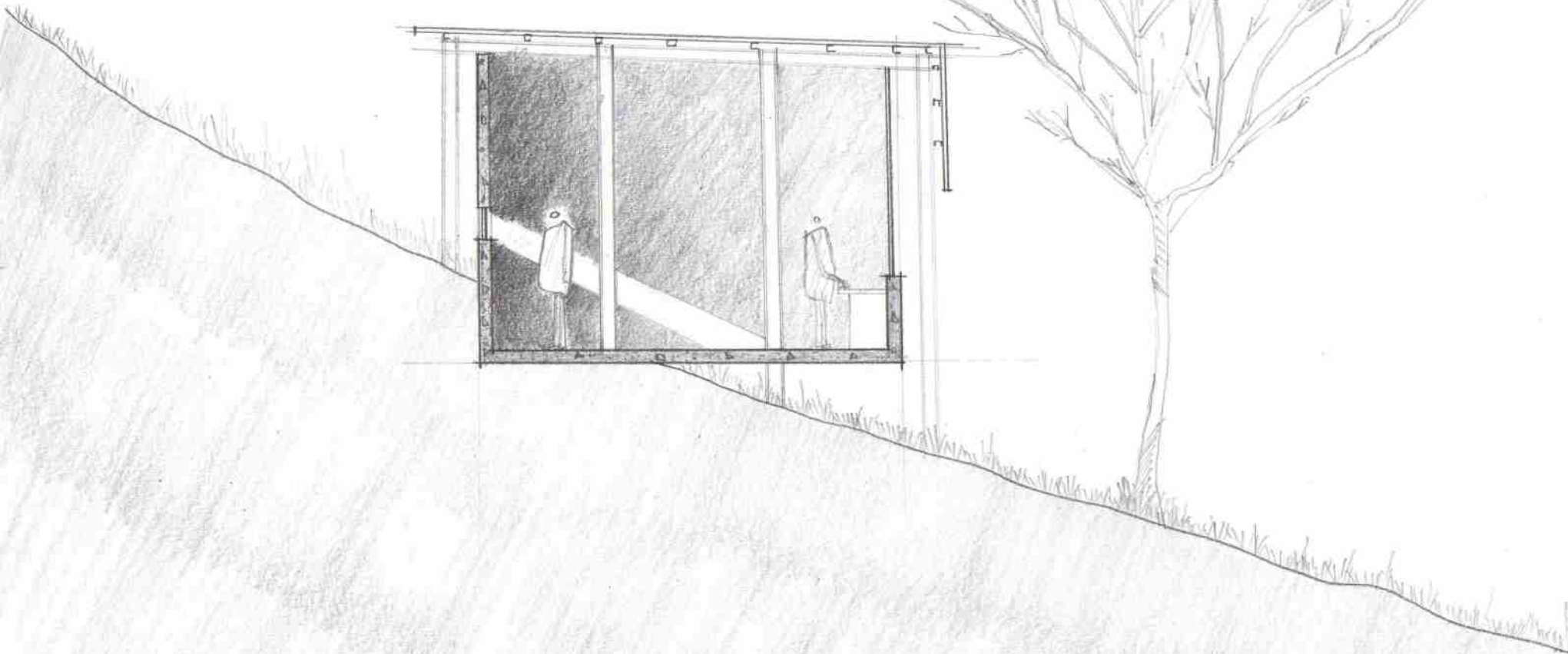


fig. 5.5. Concept model showing development of the approach [June].

A conceptual section through the archaeological research centre, indicates the idea of **transience**. This concept is generated from the idea of memory and its meaning. The Fort as artefact and in ruins, influenced this concept. The concept of transience will be explored through the use of materials and building placement. As stated earlier, the visitors centre will be the permanent building, while the other buildings, the Craft Market / reception area, exhibition spaces and the archaeological research centre will become ruins in themselves. The concept is that the Fort is still the most prominent artefact in the landscape. The other buildings will therefore become **land-art ruins** in later years and the visitors centre will be intact.

This concept of transience is also to support the fact that archaeology is exhaustive and not necessarily permanent. Therefore, as long as the buildings are occupied, the concept of transience will be delayed, but evidently they all again will become **ruins in the landscape**.



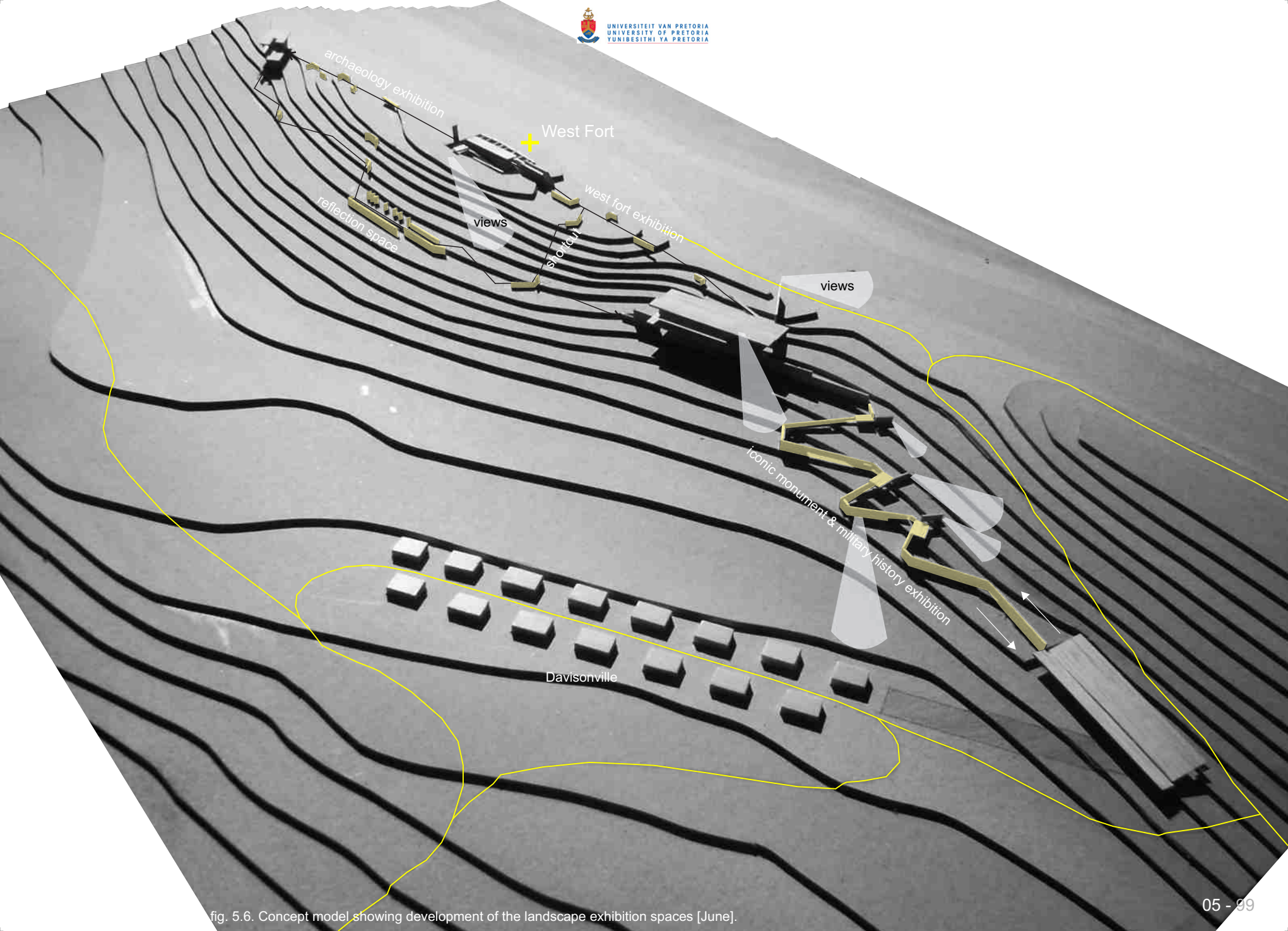


fig. 5.6. Concept model showing development of the landscape exhibition spaces [June].

The following are three dimensional exploration models, where the author started to explore and develop volumetric proportions and also materials.

The relationship between the Fort and the different buildings are explored. The way in which each building relates to the next is an essential part of the project. The buildings are experienced in a narrative form, which means that each building informs the next. The visitors centre informs the visitor about the history and iconic monuments, and the viewing platform in the Fort, informs the visitor about the Fort itself and becomes the threshold towards the archaeological building. The archaeological research centre informs the visitor about the archaeological work done on the Fort and various archaeological sites, as discussed in earlier chapters.

The thick, gabion wall leading up to the approach of the visitors centre becomes a linear, land-art element guiding the visitor up the hill, with various vantage points back to the iconic monuments in the city. The material chosen at this stage for the wall is to explore the concept of the wall “growing” out of the landscape. This concept enables the architecture to become one with the landscape and not compete with it. This is the same concept of the buildings not competing with the Fort. Essentially the Fort and the landscape becomes the hierarchial entities in the project.

This is portrayed to the visitor in response to the architectural problem stated earlier. The visitor should be informed about the importance of the Fort as artifact and that it should be protected and admired by all. The archaeological concept informs this by doing further work on the Fort and various others, always informing the visitors about the importance artifacts and ruins. These include the Blockhouses and other Forts that are in ruins in the city, lying dormant and unnoticed. Therefore the response to the problem is persisted in the visitor being informed about the other Forts and Blockhouses that are in ruins and the archaeological work that will be done on these.



fig. 5.7. 3D model of the Craft Market area & viewing platform in the Fort. (2010)

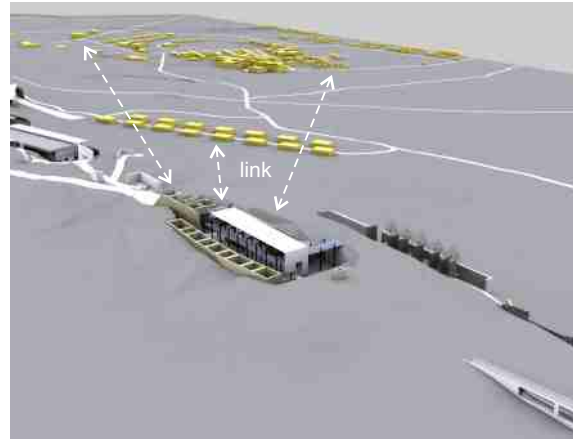
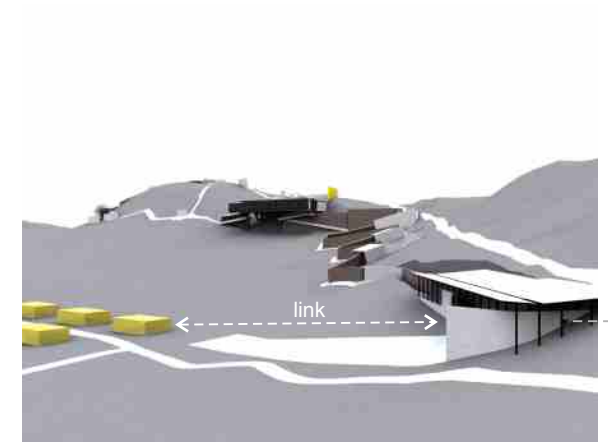


fig. 5.8. 3D model of the visitors centre floating above the landscape & the project in relation to the local community. (2010)

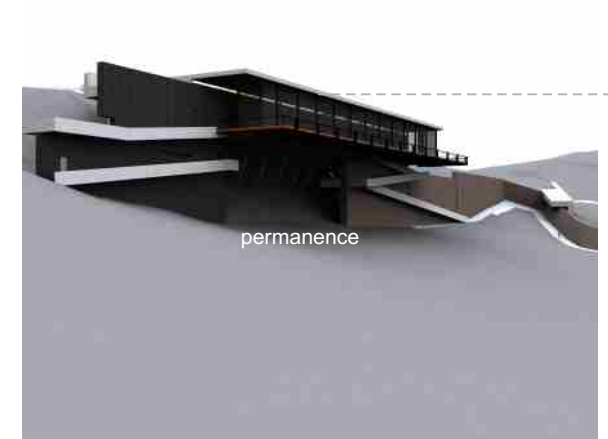


fig. 5.9. 3D model of the archaeological research centre, a lighter more transient building. (2010)



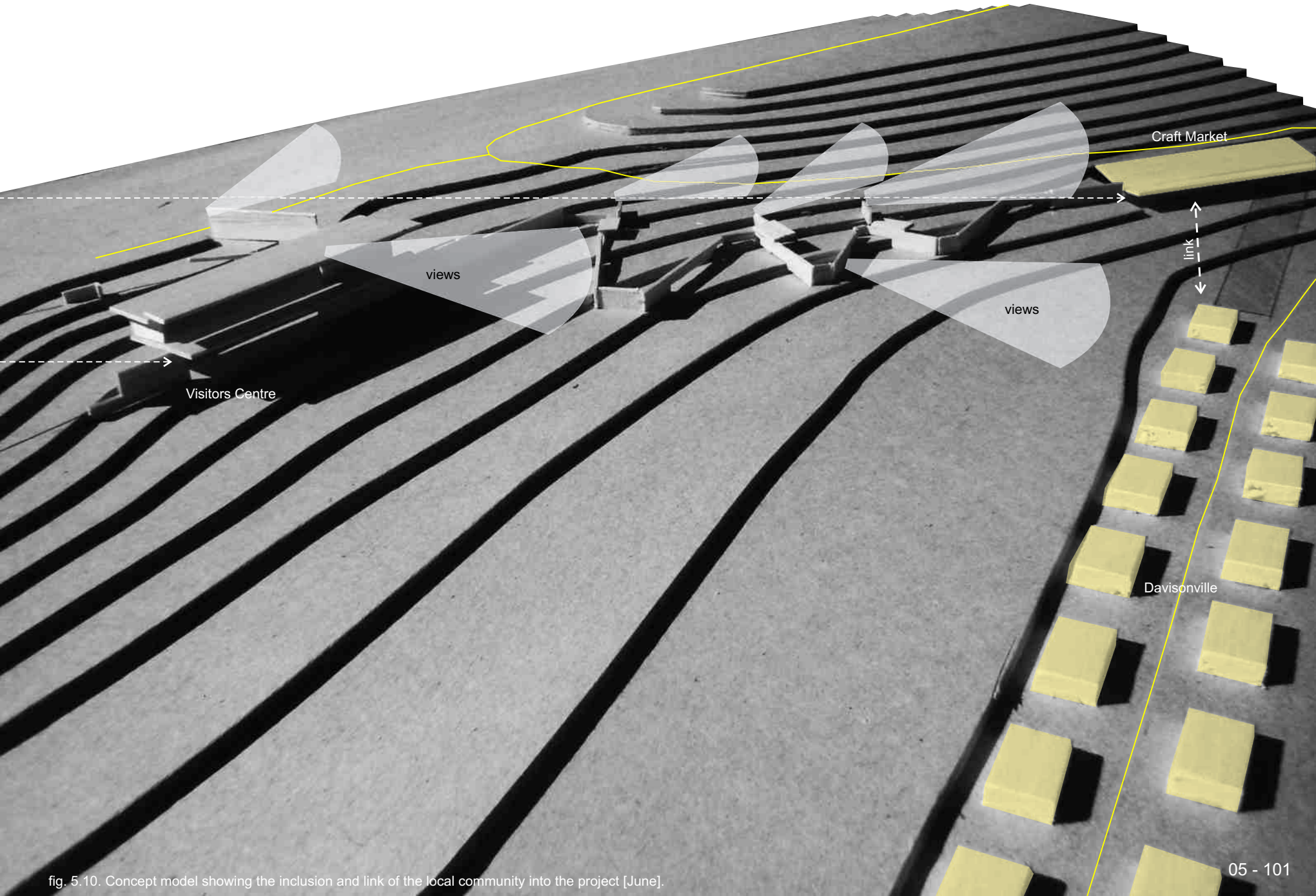


fig. 5.10. Concept model showing the inclusion and link of the local community into the project [June].

## SUSTAINABILITY

The following is the investigation into the sustainability in the project.

The visitors centre becomes the most important part of the project being sustainable on an economical and social level. The visitor using the restaurant/ cafe area and buying artefacts in the curio shop, together with the entrance fees generated on a daily basis, will contribute to the project being sustained economically.

The concept of recycling and re-use will be introduced to include the limit the waste of materials generated in the restaurant. The idea is that all cans, plastics and paper be recycled and given to the local people, where they can use these materials to create and craft different artefacts and then sold by them in the crafts market to the visitors.

The concept of community participation and interaction at the crafts market area ensures that the visitors and local people learn from one another. This essentially is not only the arrival space to the project, but becomes the first form of educating the user.

The various technical sustainable systems, passive and active, will be discussed later.



fig. 5.11. 3D model of the viewing platform in the courtyard of the Fort. (2010)



fig. 5.12. 3D model of the reflection route and the performance area. (2010)

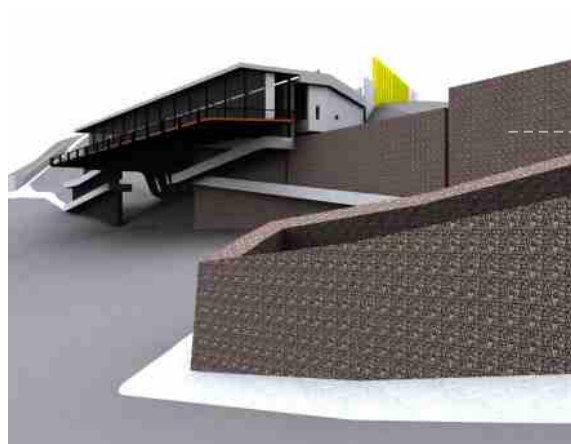


fig. 5.13. The gabion wall up to the visitors centre. (2010)

Archaeological Research Centre

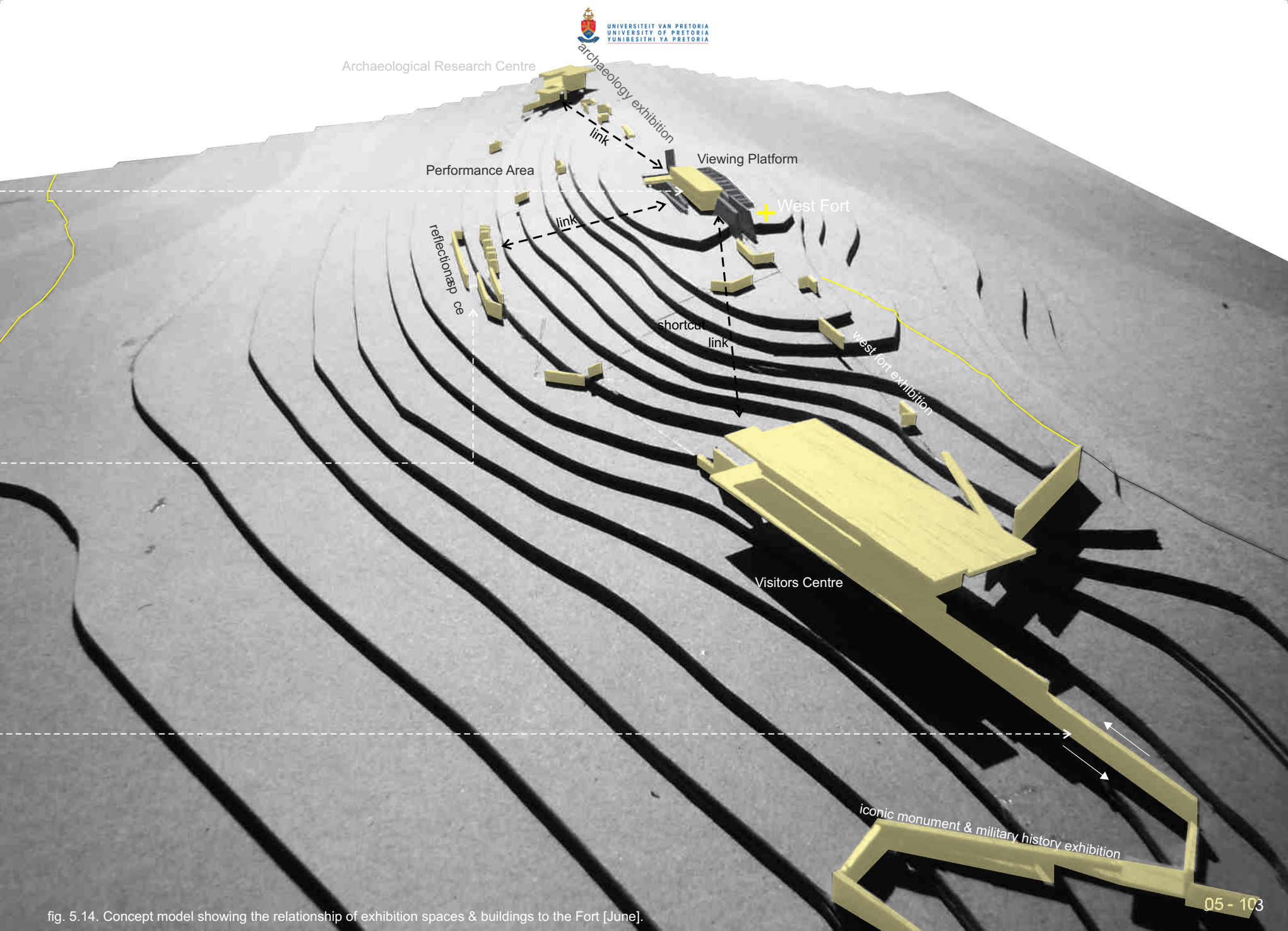
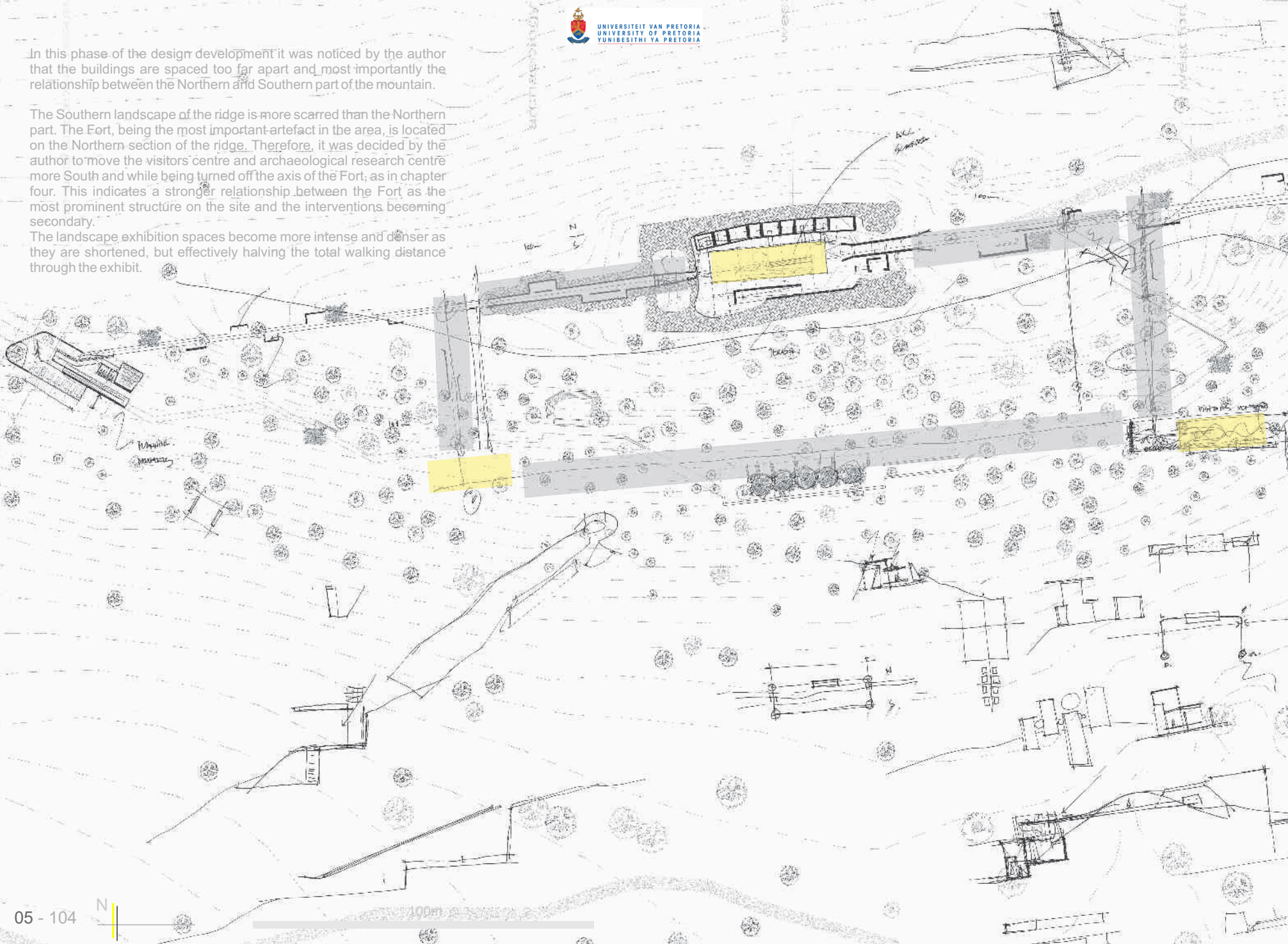


fig. 5.14. Concept model showing the relationship of exhibition spaces & buildings to the Fort [June].

In this phase of the design development it was noticed by the author that the buildings are spaced too far apart and most importantly the relationship between the Northern and Southern part of the mountain.

The Southern landscape of the ridge is more scarred than the Northern part. The Fort, being the most important artefact in the area, is located on the Northern section of the ridge. Therefore, it was decided by the author to move the visitors' centre and archaeological research centre more South and while being turned off the axis of the Fort, as in chapter four. This indicates a stronger relationship between the Fort as the most prominent structure on the site and the interventions becoming secondary.

The landscape exhibition spaces become more intense and denser as they are shortened, but effectively halving the total walking distance through the exhibit.





Davisonville

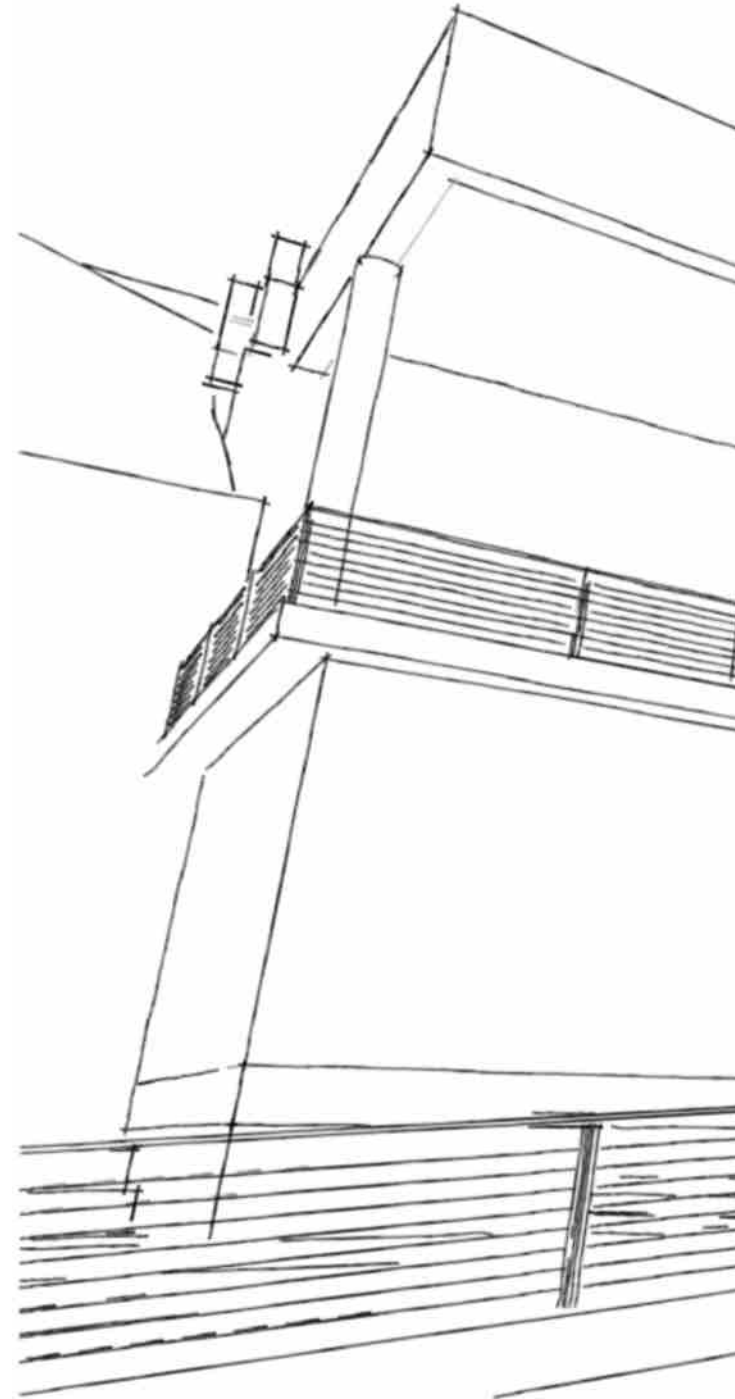
The typology of Fortification construction is introduced into the concept of the visitors centre and archaeological research centre. Both buildings are sunken into the landscape and contributes to the genius loci of the site, that constitutes subtle interventions. The buildings create a Fort like atmosphere. The arrival space is moved closer to the location houses, which illustrates the concept of inclusion more effectively.

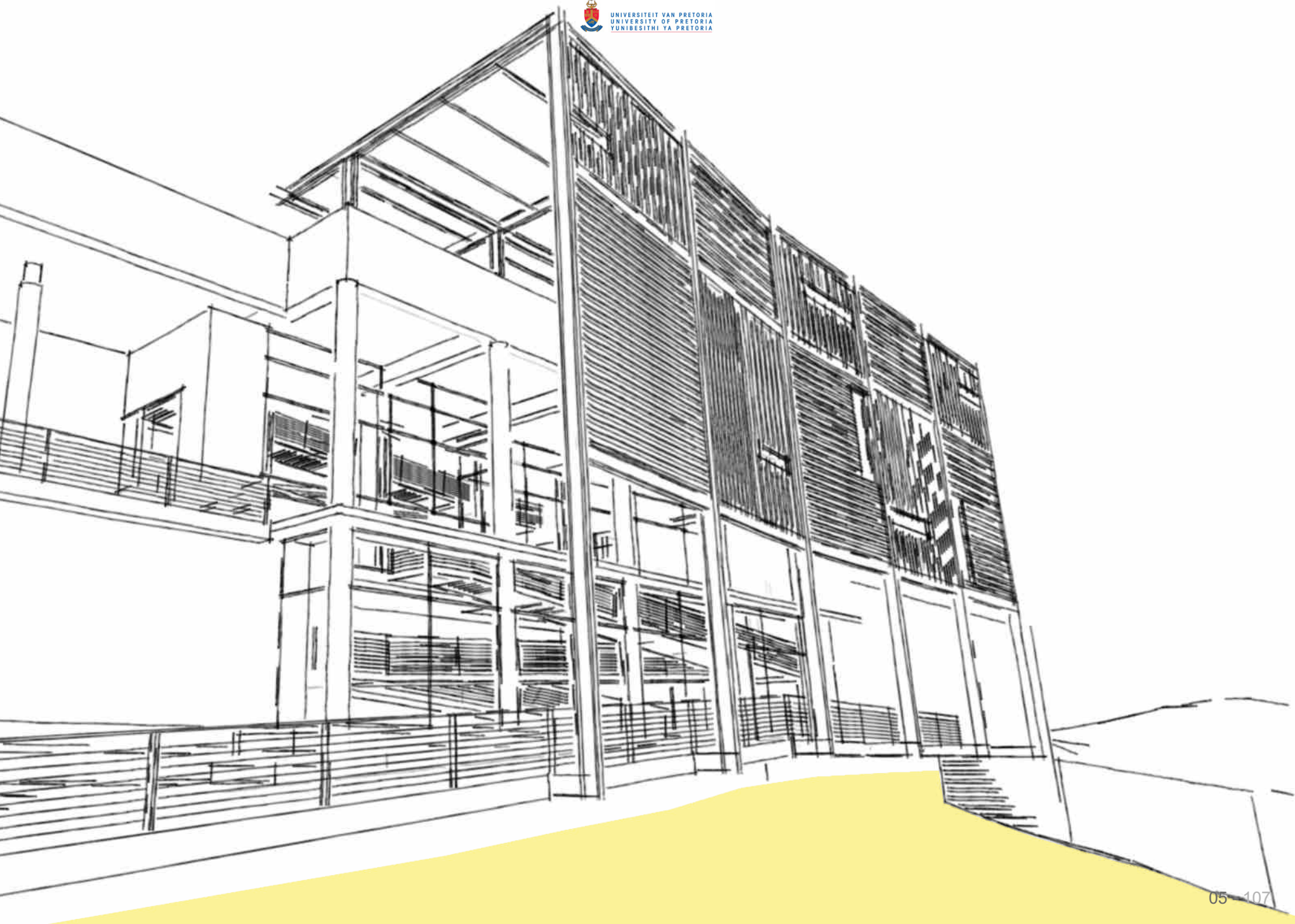
The new access road creates a feeling of enclosure and inclusion to the community and also creates space in the landscape for social usage for the visitor and local people.

The sketch by the author illustrates the concept of the visitors centre becoming a military like structure, by means of using mass and it being sunken into the ground like the Fort. The visitors centre's entrance space lets the visitor feel as if he is on the defended side, whereas he moves through the building towards the Fort, he crosses the threshold towards the defensible side. This anticipation builds up as one moves through the building. The way in which the structure steps towards the landscape and eventually the Fort, indicates movement and circulation. The volumetric quality of the building also illustrates the movement of the visitor.

From the entrance to the restaurant level and through the building, the visitor is guided by the various materials. The packed stone wall transforms into stone slate tiles, and again into a packed stone wall. This illustrates to the visitor the symbiotic relationship between inside and outside. The tectonic screen has viewing frames punched through it, to let the visitor again experience various focussed views towards the city.

The roof over the visitors centre is tilted upwards to the same slope as the natural landscape. This creates a feeling as if the roof is gently lifted out of the landscape and indicates the sensitivity towards the site. The roof is also planted, therefore , it looks as if the roof continues into the landscape.





The landscape is cut open just before the visitor enters the Fort, this creates another threshold towards the Fort, but also creates a visual link with the landscape. This insertion in the landscape conceptually portrays the entrance to the Fort. This also again links the old and the new; the old being the existing Fort, is mimicked in the landscape, but at the same time creates a feeling of progression towards the old.

The visual link is experienced through the movement of the visitor through the space, where the eye links up with the landscape on the other side of the mountain, again becoming an important threshold towards the Fort.

The same insertion in the landscape is made when the visitor moves through the archaeological exhibition space towards the archaeological research centre. This insertion indicates to the visitor that he/she is moving away from the Fort, therefore becoming a threshold for the next building. When the visitor moves through the space towards the archaeological research centre he is visually linked with an archaeological site at the foot of the mountain. This archaeological site is the Iron Age site. Both these insertion spaces in the landscape has the typology of the Fort's entrance and symbolises the importance of the Fort.

The archaeological research centre's labs and auditorium is located underground. This symbolises the concept of archaeology to the visitor. Where archaeology work is done in layering from above ground to below ground. The visitor's experience is therefore, moving from a visual link above ground, towards an underground level.

The archaeological centre is also set out on a grid. The structural grid symbolises the process of archaeology work done in practice, where the archaeological excavation is set out on a grid. The archaeological centre circulation is the inverse from the visitors centre, where one moves from the stereotomic underground mass, towards the tectonic structure. The structure is a light steel and timber box cantilevering out from the landscape. The visitors centre is the constant (permanence) and the viewing platform and the archaeological centre, becoming the variable (transience). This indicates the rationale behind the idea of the archaeological labs being underground. The steel and timber box containing the library will become ruins in the future and the archaeological labs will be left undisturbed and ruins underground.

The outdoor performance area is connected to the visitors centre. This allows for space making, but also serve as a visual link between the visitor and the performer, serving as the performance area for the visitor watching from the visitors centre. The performance area's space is again an illustration of contained space. The stone wall creates the idea of linearity and continuation into the landscape, but also the linkage towards the visitors centre.

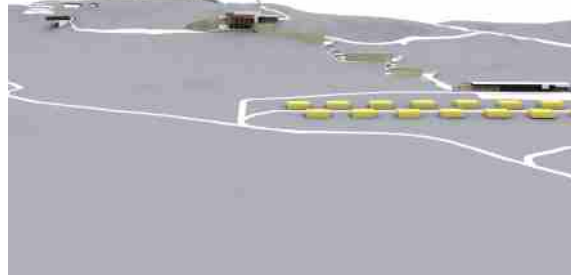


fig. 5.15. 3D model of the visitors centre and performance area creating space to the exterior. (2010)

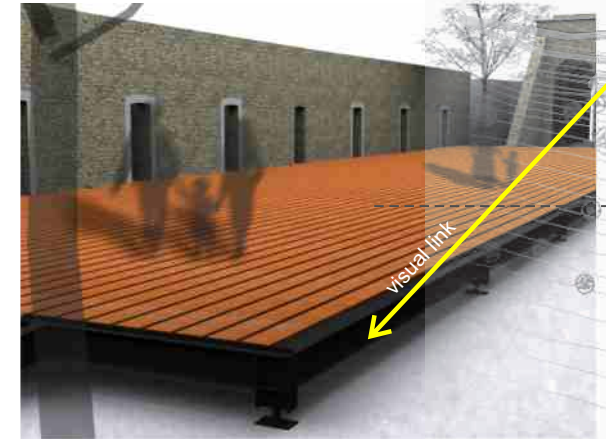
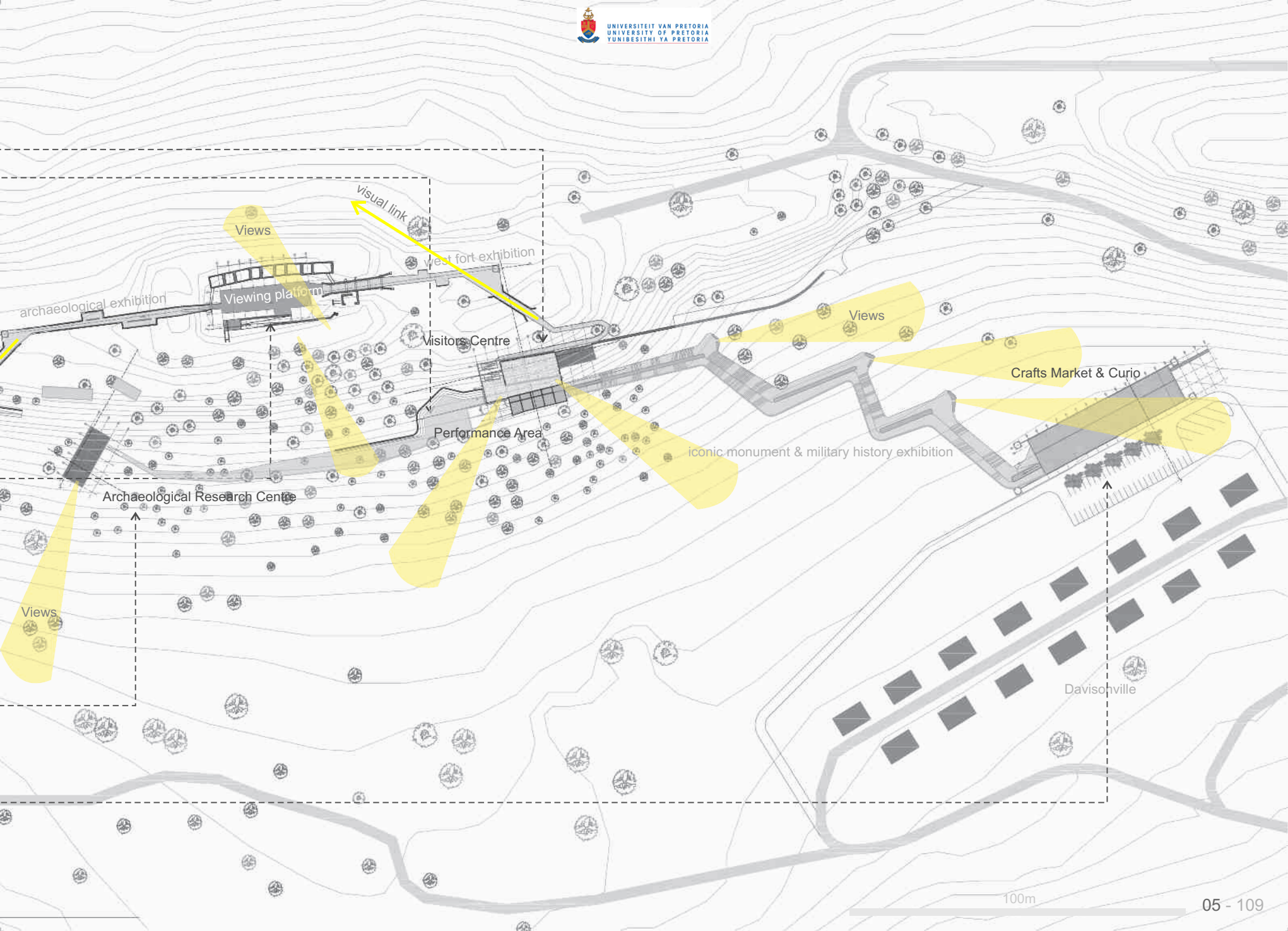


fig. 5.16. The viewing platform raised from the ground, "taken away" from the artefact. (2010)



fig. 5.17. The crafts market area, also becoming the curio shop, integrated into the stone wall. (2010)



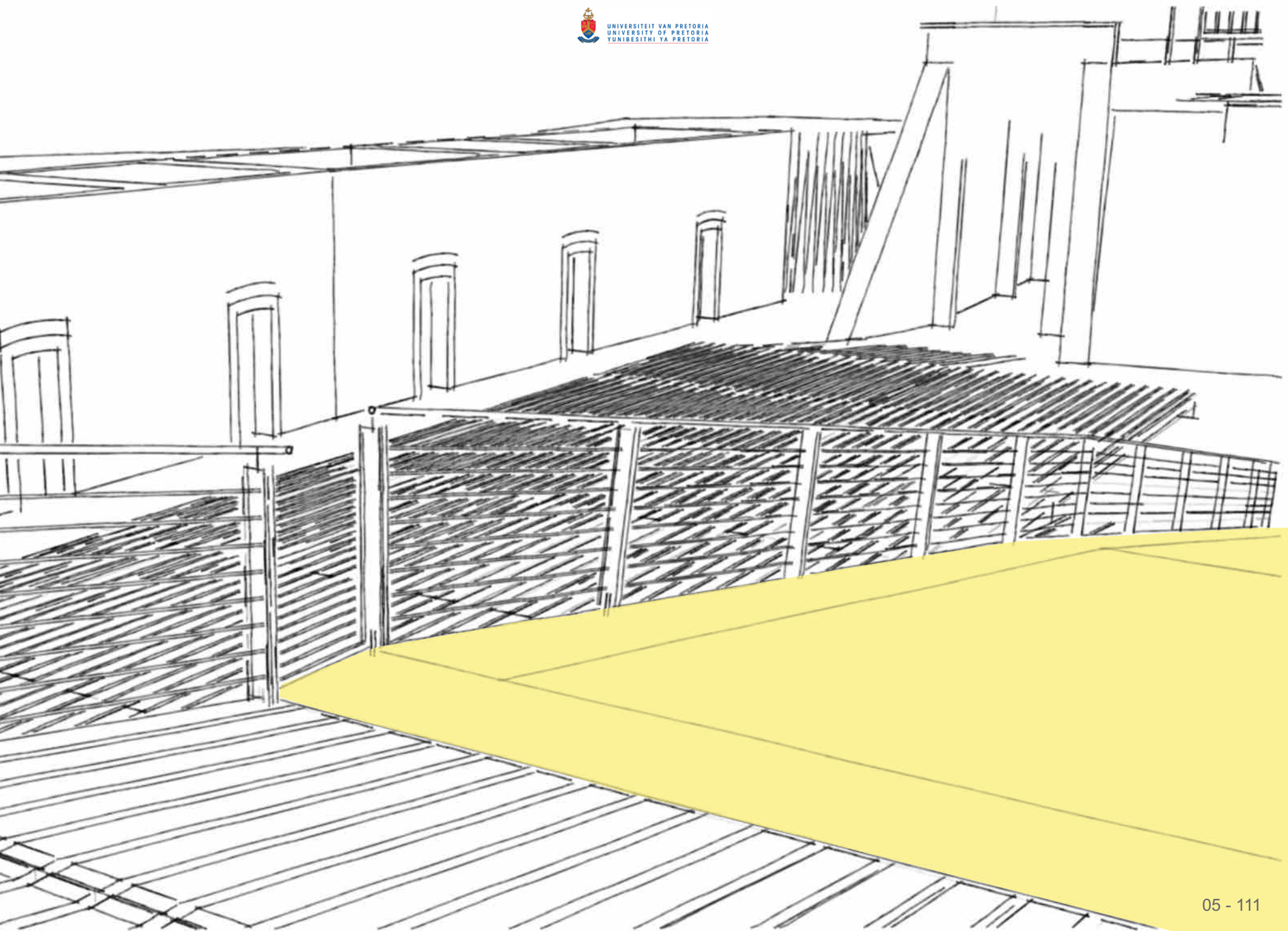


100m

The sketch illustrates the viewing platform in the courtyard of the Fort. The Fort is stereotomic and heavy, while the platform becomes the tectonic structure. The concept of this space is to leave the Fort as an untouched artifact. This idea of taking the visitor away from the Fort physically, illustrates the importance and respect to the Fort. The platform is lifted slightly from the ground, to enhance the feeling of being pulled away from the Fort. The concept therefore relates to the concept of the visitor being the observer, capturing images for himself. This lets the visitors experience the Fort as monument visually.

The existing ramp will be extended by a steel and timber ramp to its original length. This will clearly indicate the relationship between new and old; the old being stereotomic and new being tectonic. The ramp extension will also be drawn away from the existing Fort structure, to again illustrate the concept of the new respecting the old, as artifact and ruin.





The 3D diagram illustrates the circulation through the sequence of spaces.

The experience starts at the Crafts Market area. The visitor will move from this space through the landscape to various spaces in the landscape. These spaces are framed views towards various iconic monuments within the cityscape, as discussed earlier in the chapter by the author.

Moving through these spaces, the visitor will be led up the mountain through a sequence of dry packed stone walls, which in themselves will become land art and from part of the iconic monument exhibition spaces.

Once through these spaces, the visitor will arrive at the Visitors Centre, where he will be able to experience the building as a catalyst and threshold towards the Fort, creating anticipation at the arrival point. The first floor of the visitors centre becomes the initial threshold, moving from the defended side, which is the city itself, towards the defensible side the Fort.

Once the visitor has passed through the visitors centre, he will move through the landscape towards the Fort, moving through a fort-like space to create a threshold before the arrival at the Fort. This exhibition space in the landscape, becomes the West Fort exhibition.

Inside the Fort, the visitor will be led onto a viewing platform, raised slightly from the ground, to create a feeling of seclusion and hierarchy towards the Fort. The visitor will be able to move up the existing canon ramp and new steel and timber extension, towards the landscape and capture a panoramic view of the cityscape.

The visitor will then move from the Fort underground through the archaeological exhibition towards the Archaeological Research Centre. The visitor will then move through these spaces back towards the Visitors Centre, where he will be led back to the Crafts Market and Curio shop. The visitor will circulate on the other side of the wall going back down.

This is to let the visitor experience other visitors arriving and moving up the mountain through the iconic monument exhibition spaces. The route going back towards the Crafts Market is 1500mm lower than the route going up. This is to illustrate that the visitor has experienced the narrative through the landscape, but most importantly, it creates a vantage point towards the visitors moving up the mountain.

The visitors will therefore experience one another visually, seeing how each visitor reacts to certain views captured and the experience of what he has “learnt” through the exhibitions.

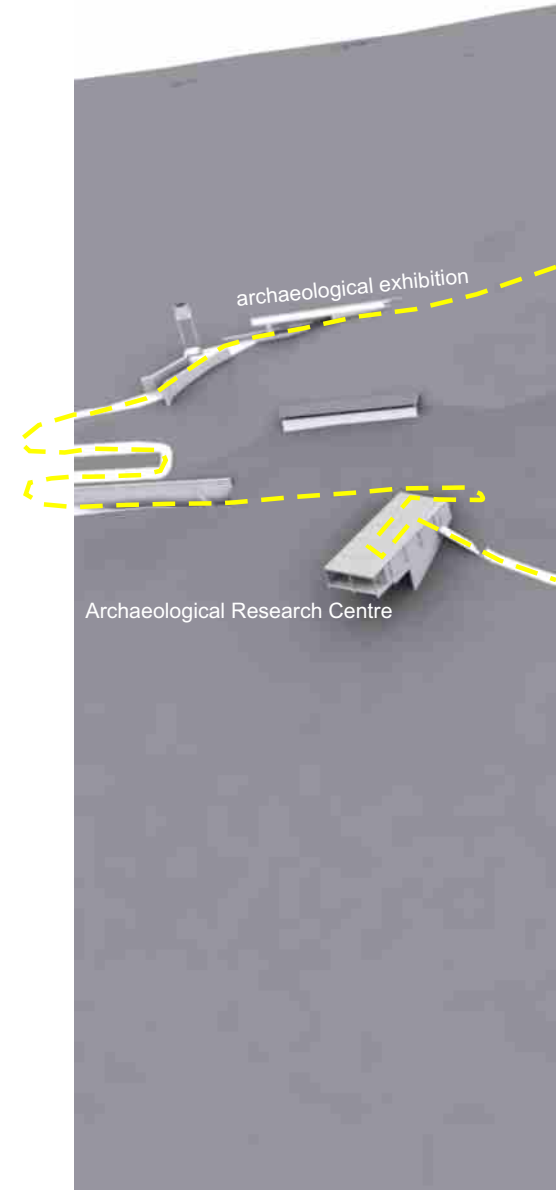




fig. 5.18. Circulation diagram.(2010)

## ARCHITECTURE IN RUINS

The following relates to the concept of the architecture is ruins and respecting the context of the Fort [permanence & transience]. The Fort is currently a ruin and the other buildings, except the visitors centre, will eventually become ruins as well.

The visitors centre is the constant entity in the landscape. The stereotomic qualities of the visitors centre relates to the typology of the Fort. The heavy, stereotomic approach also ensures the visitors centre's permanence. As stated previously by the author, the archaeology aspect, influences the concept as well. This means that the archaeology building and arrival space / craft market area should become a ruins.

These ruins become land-art that responds to the aesthetic of the landscape. They respond in the context to the Fort as a ruin, but most importantly indicating that the Fort is still the most important ruin on the site. The Fort is the artefact that the new buildings respond to through the use of materials and construction.

The following is only an indication of how the author perceives the future aesthetics of the buildings and not necessarily how the buildings will respond in actual life. The concept is therefore portrayed to the reader in a hypothetical and conceptual manner.



fig. 5.19. Crafts market area - 2010



fig. 5.20. Crafts market area - 2030



fig. 5.21. Crafts market area - 2060

2010

2030

2060

# architecture in ruins



fig. 5.22. Archaeological Research Centre - 2010



fig. 5.23. Archaeological Research Centre - 2030



fig. 5.24. Archaeological Research Centre - 2060