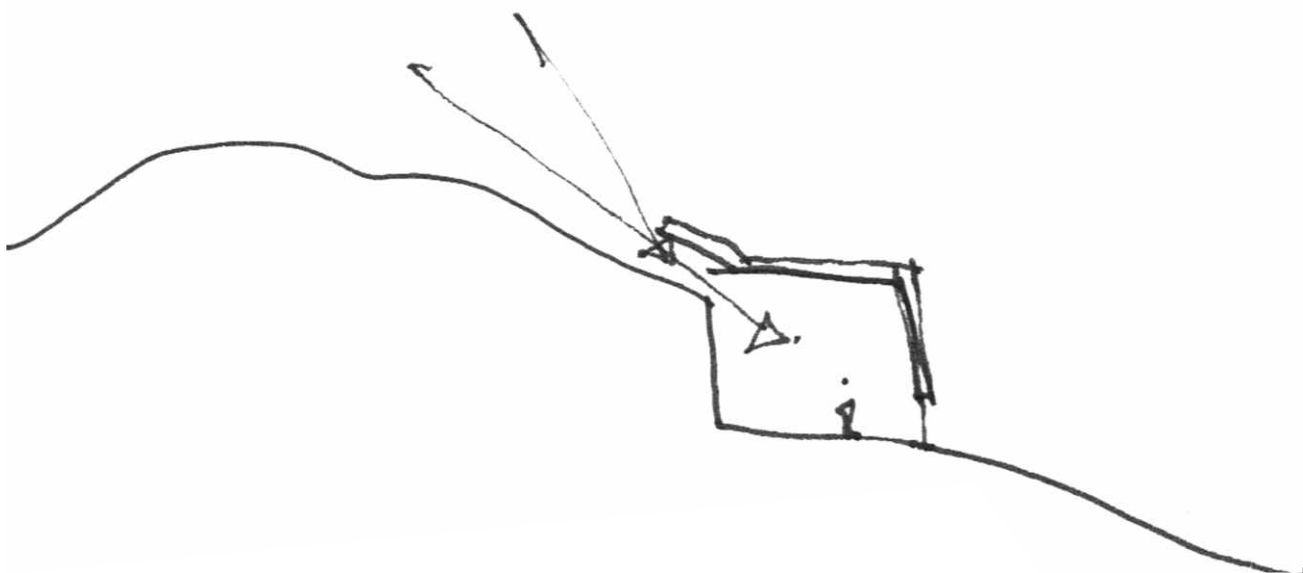
08

Drawings



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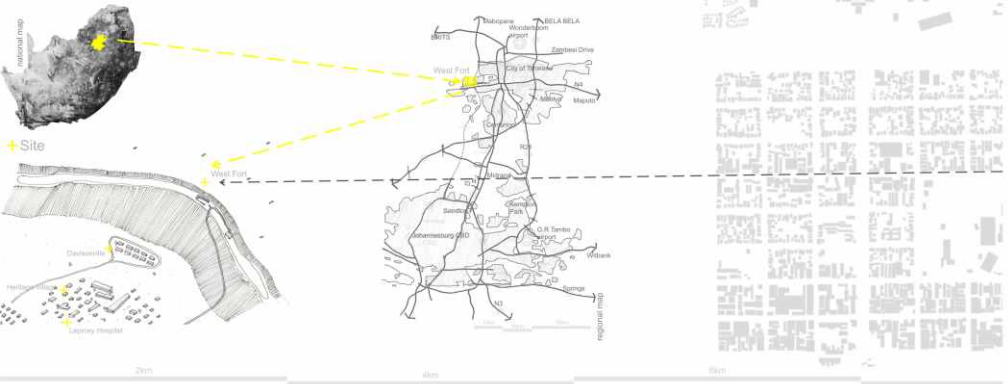
YUNIBESITHI YA PRETORIA

ARCHITECTURE IN RUINS

A Visitors + Archaeological Research Centre

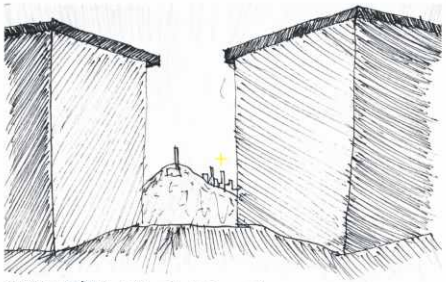


views observed through experience

Concept

The concept of camera obscura is a generative concept into the creation of various views towards the iconic monuments within the city from West Fort. The movement of the Fort is the point from which views will be captured and processed by the visitor and therefore experiencing the participant of the city. In essence the visitor becomes the camera, capturing and experiencing views and history. The road to discovery, where the experience becomes the discovery of the landscape/past, where archaeology also relates to the concept of discovery.

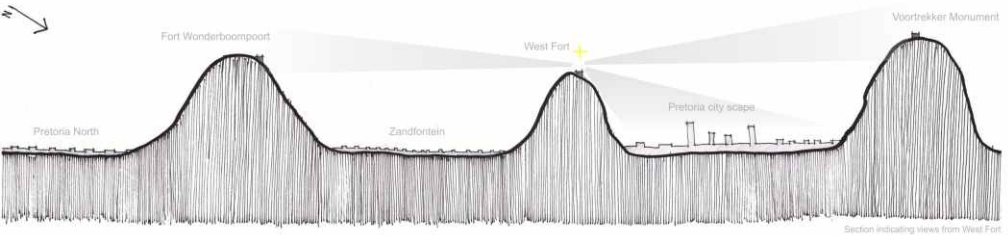
The Fort's insertion of visibility is now also brought back into the inverse, where its intention of visibility and views to keep it a entity out, contributes to the views visibility of the past. The experience through the building also relates to the concept of the camera (user) relating to the historical event, but also interaction and viewing of archaeology. The viewing also relates to the learning/observing of the information exhibited.



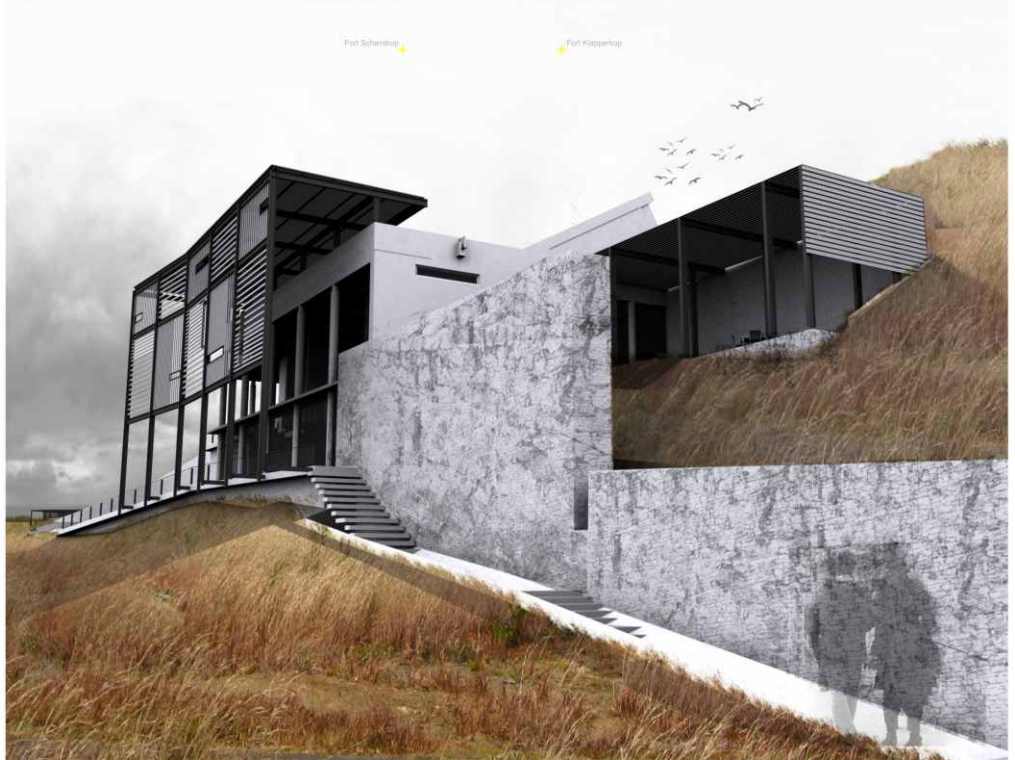

Sketch of a 1946 camera

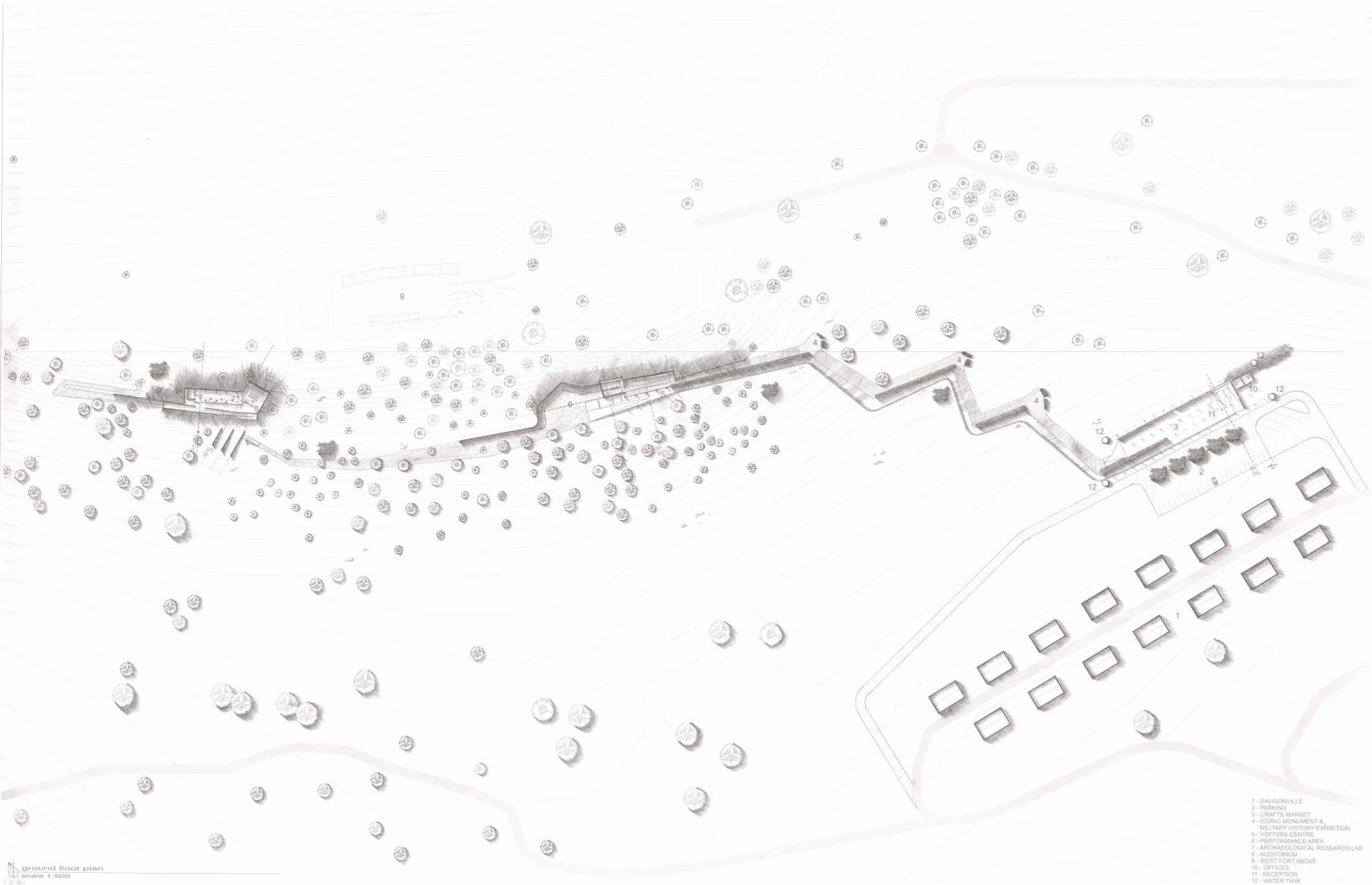
Concept 1 - The notion of forts being an exclusive structure, making it inclusive
Concept 2 - Historical layering, memory and physical layering experienced
Concept 3 - Capturing views of layered, historical icons

a road to discovery

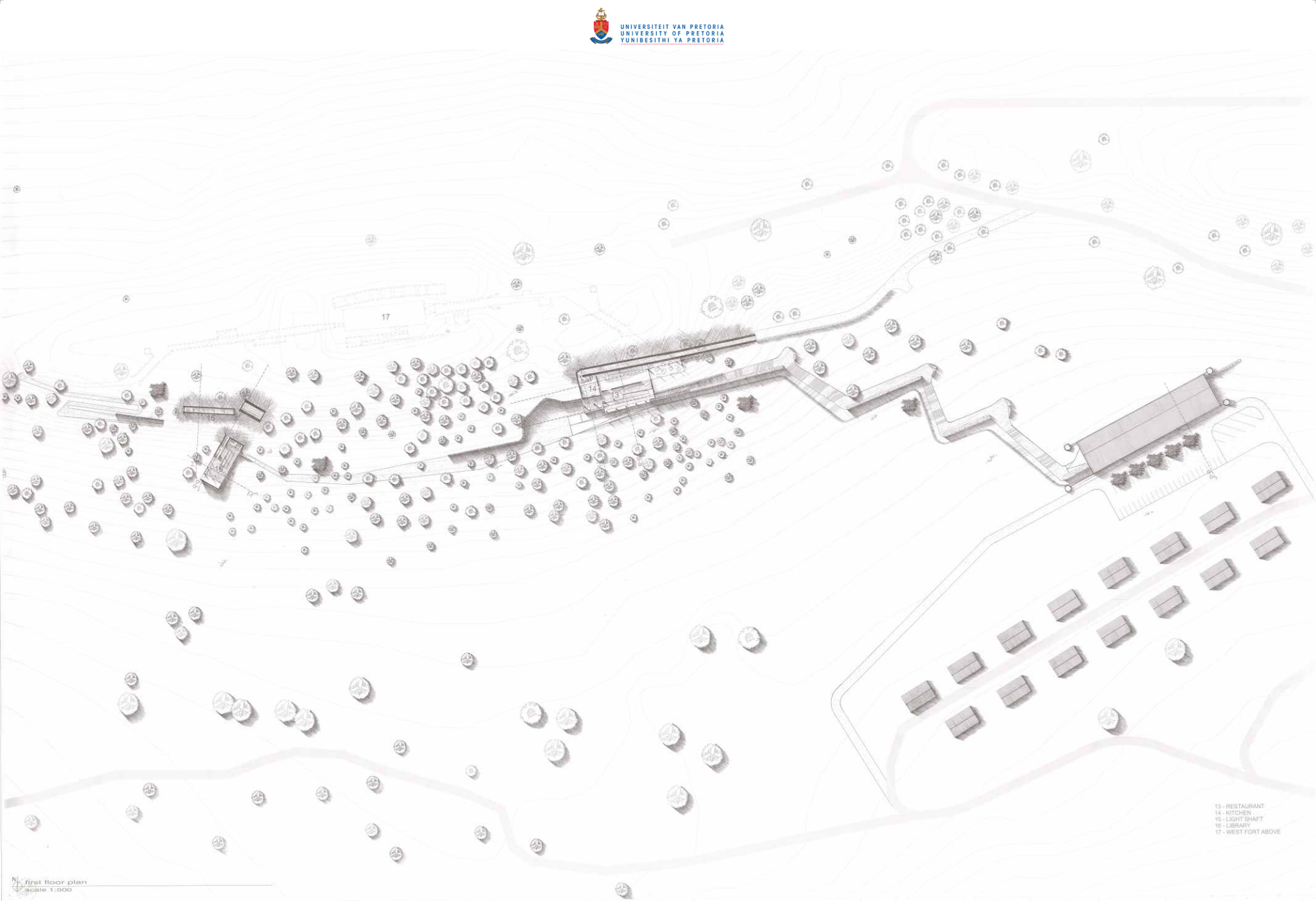


Section indicating views from West Fort





N
ground floor plan
scale 1:500



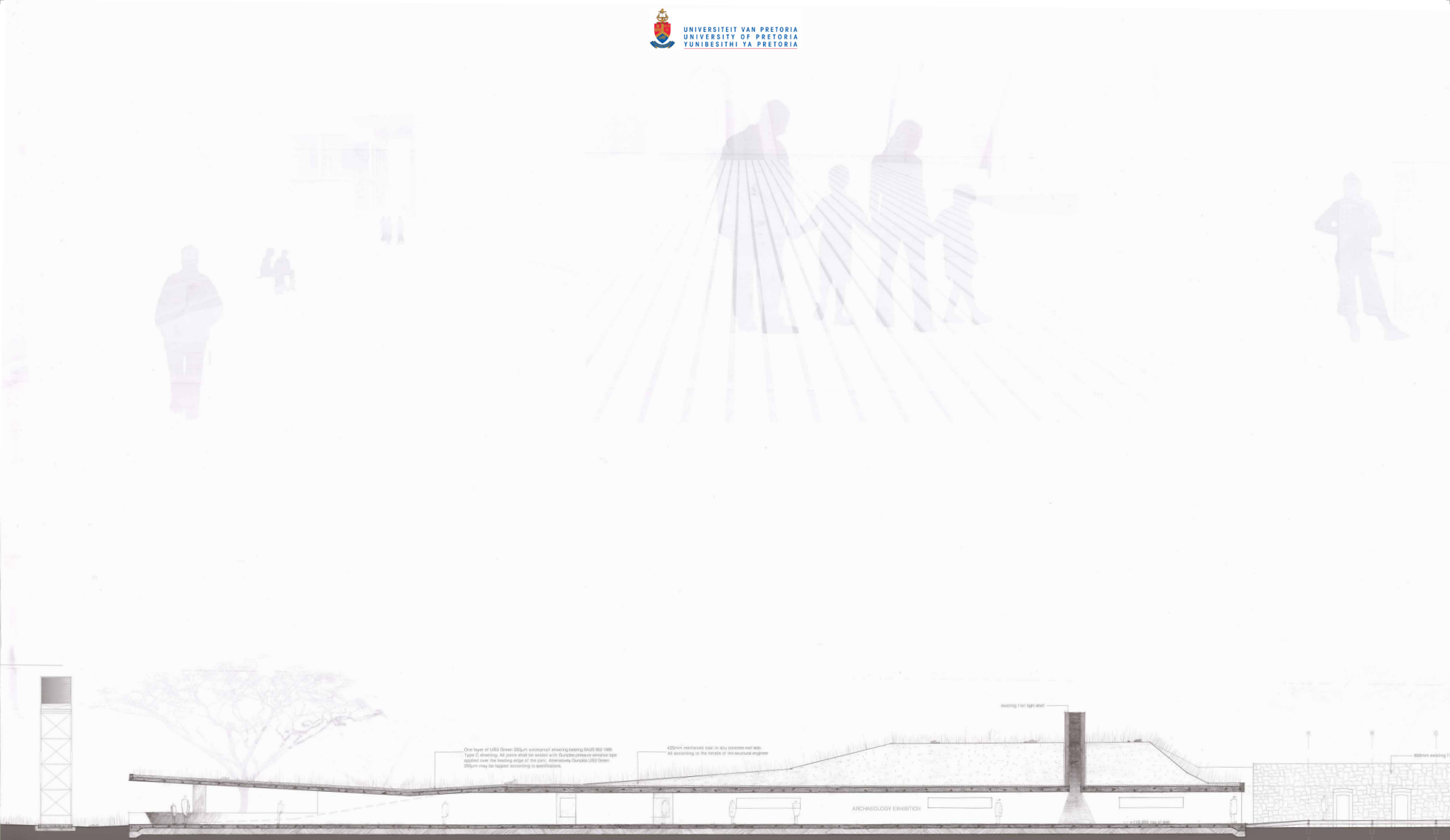
first floor plan
scale 1:600

second floor plan
scale 1:500

section aa
scale 1:50

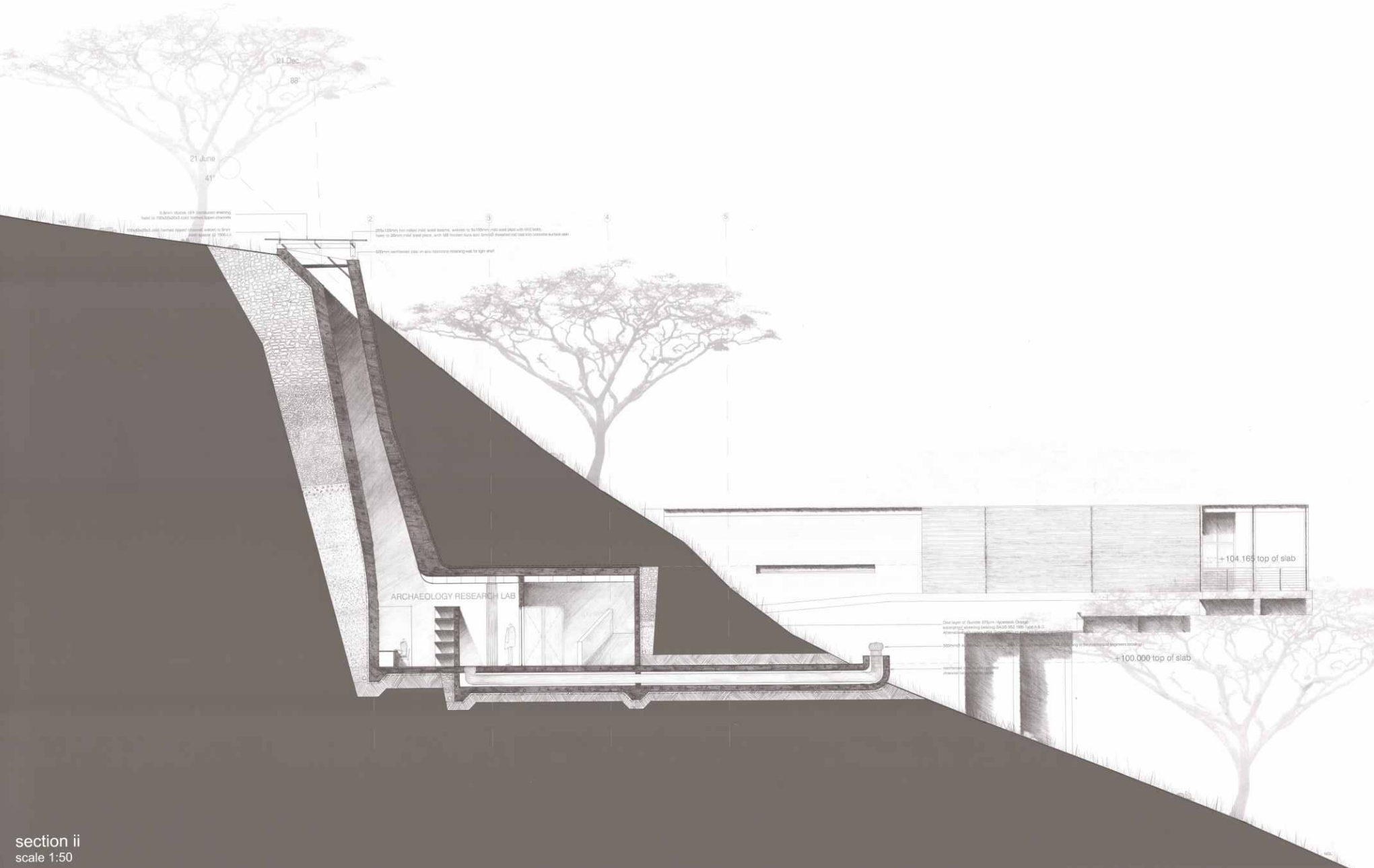
section bb
scale 1:50

section jj
scale 1:50

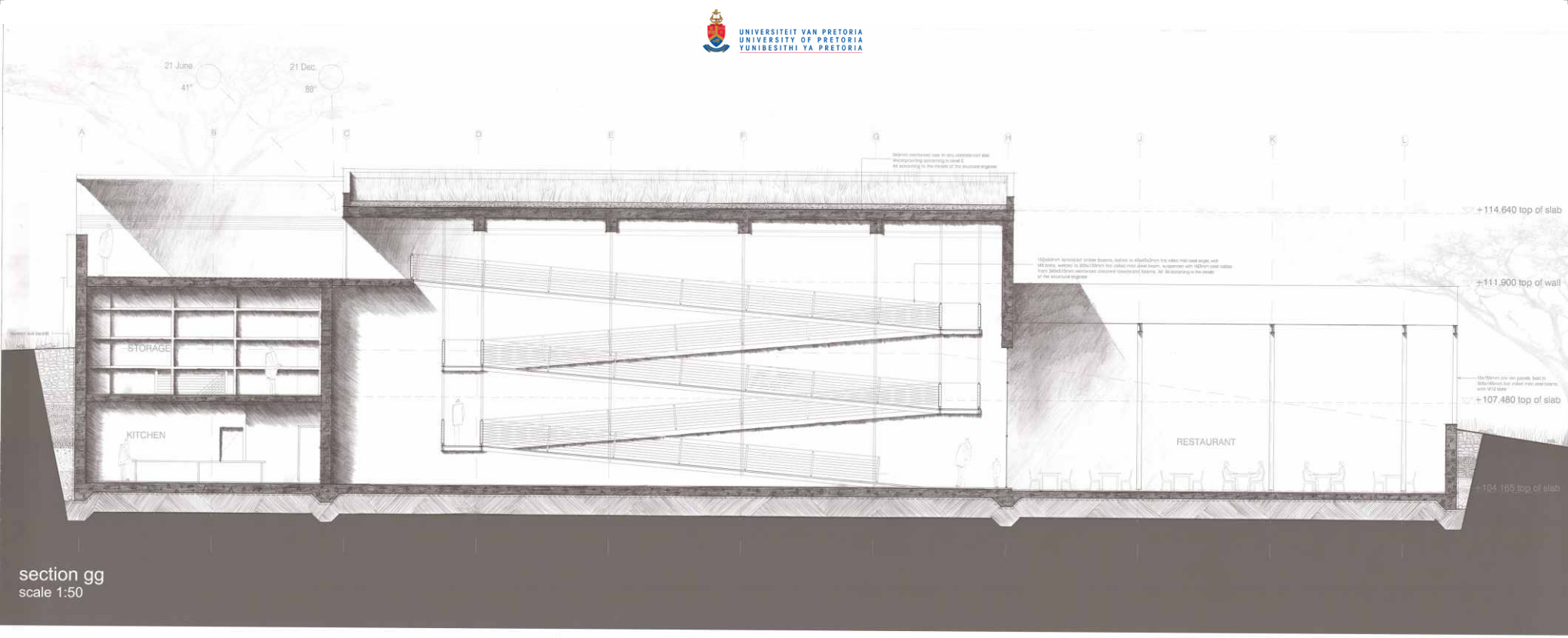


section cc
scale 1:100


VIEWING PLATFORM

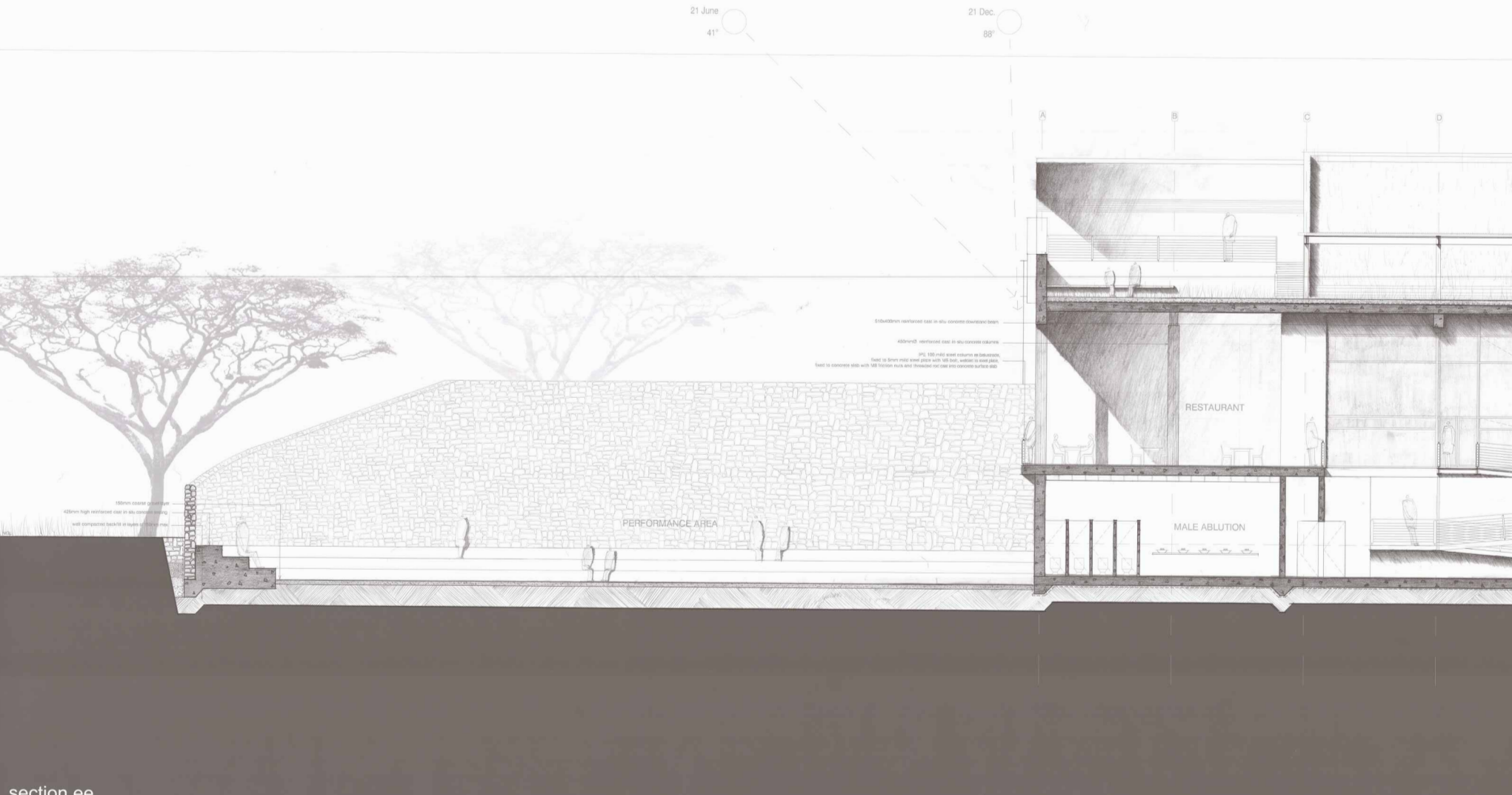


section ii
scale 1:50

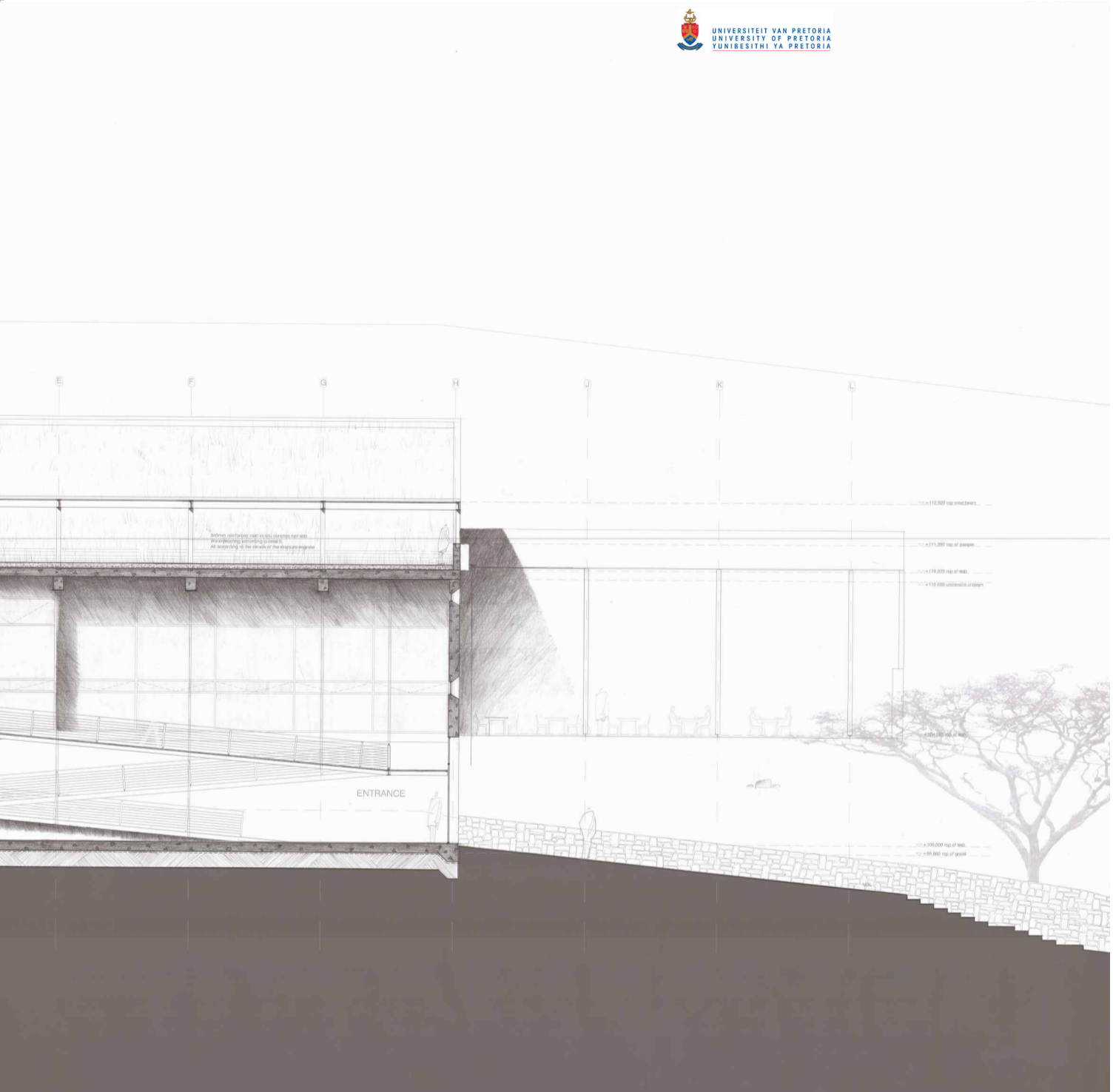


section gg
scale 1:50

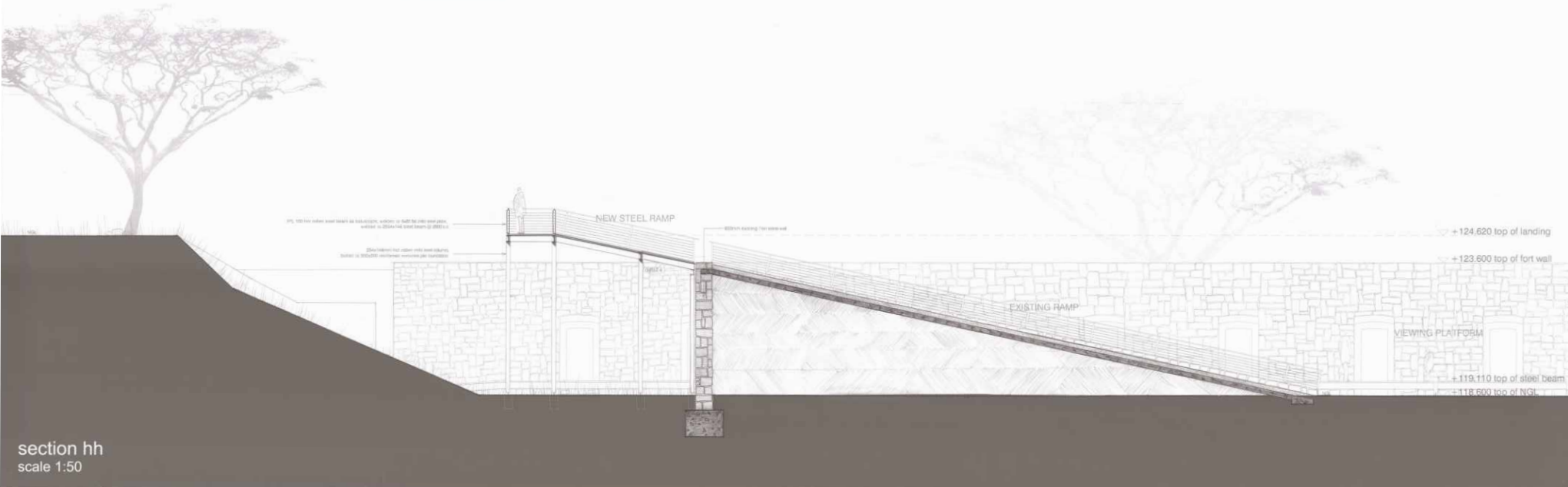
section dd
scale 1:50



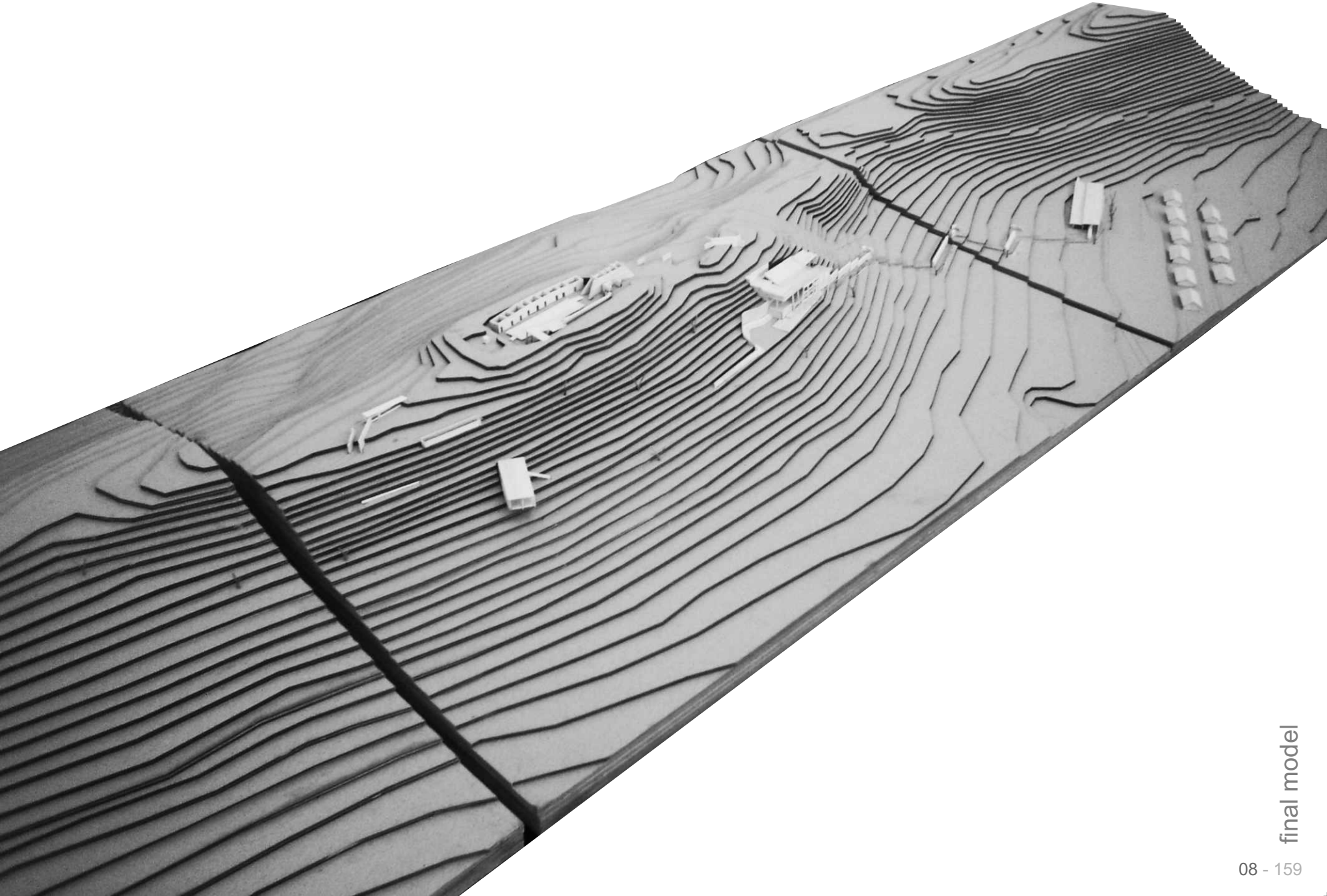
section ee
scale 1:50


E
F
G
H
J
K
L
ENTRANCE

section ff
scale 1:50



section hh
scale 1:50



final model

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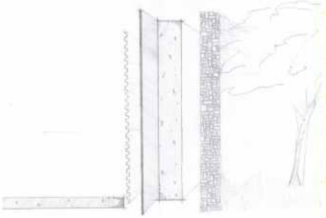
POETICS OF CONSTRUCTION

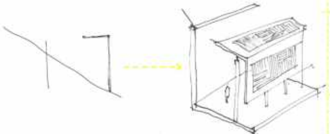
Construction and technology have evolved over the past centuries. The way in which we perceive construction and the theory thereof - from the construction of the Great Egyptian Pyramids, e.g. designed by Imhotep (c. 2650-2600 BC) - to the most recent building, has not changed much. Even though technology in construction has evolved, the poetics thereof has been reused and continuously explored. Many architects have developed their own "signatures" within construction, by either details, the uses of light and materials.

The German architect, Gottfried Semper (1803-1879) pointed out in his Die Vier Elemente der Baukunst (Four Elements of Architecture), that the "earthwork", the "hearth", the "framework-roof" and the lightweight enclosing "membrane" classify the craft of building into two distinct procedures, "tectonics" and "stereotomics" (1995:5). Whereas "tectonics of the frame, in which lightweight, linear components are assembled so as to encompass a spatial matrix, and the stereotomics of the earthwork, wherein mass and volume are conjointly formed through the repetitious piling up of heavyweight elements" (1995:5). These procedures are evident in the relation to how a construction detail would be designed and the use of different materials, within its specific purpose. The art of combining these construction procedures in a design is therefore often flaunted by well-known architects. The importance of the dialogue created between heavy and light, core and skin, should be explored in all architectural designs. We can observe that these relationships should be fused into the construction process, by interpreting the value of the spaces created within the building procedure. The interplay of light and heavy construction therefore creates inquisitiveness in the design and space making process. By combining these procedures through the use of material, light and detailing the poetics of space is created.

The architectural theorist Kenneth Frampton testifies to the two modes of building, the "compressive mass" and the "tensile frame" (Ibid:13). Semper also pointed out that, "the history of culture as it manifests occasional transpositions in which the architectonic attributes of one mode are expressed in another for the sake of retaining traditional symbolic value" (Ibid:6). Frampton also stated that Semper's Four Elements was borne from vernacular building throughout the world. Architect and theorist Roger C Fisher states that "it could be argued that regionalist architecture will be generated by the designer directly responding to the following aspects in a specific way: climate, materials, site, defence, economics, and religion. To this could be added the particular cultural expression of the community" (1998:123). In addition, Semper illustrated that when traditional masonry is bonded into stonework, (fig 2) it is also a form of weaving (Ibid:8). This illustrated that heavy construction, like masonry or concrete, can be perceived as woven or lighter entities within design construction.



Sketch indicating the concept of layering and progression



Conceptual technical sketches

STUDY ON THE POETICS OF CONSTRUCTION

The following is a study done by the author to further his understanding in the use of different materials to illustrate their stereotomic and tectonic values. The study was done to understand that light materials could also be used as stereotomics.

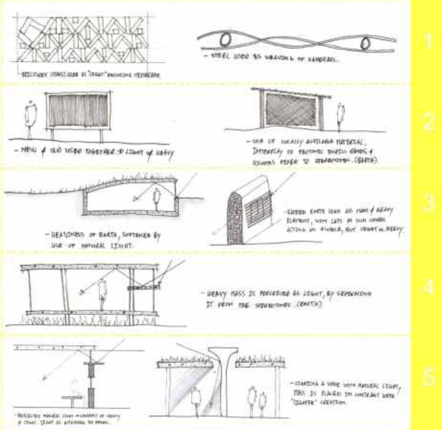
1. Weaving - weaving is a means to respond to the vernacular and the interplay of tectonic and stereotomic principles.

2. Vernacular - The use and precedents set by traditional vernacular architecture principles, should be interpreted and further developed today. The use of local heavy and light infill materials should be brought into regionalist designs.

3. Heaviness - The perception of heavy materials, e.g. brickwork and concrete, could be used as a "light" material, by means of weaving & light. The stereotomics of the earth, could be separated from the light material, creating articulation and hierarchy.

4. Lightness - Lighter materials, tectonics, could be used to "soften" heavy materials, and like heaviness, create distinction between the two, but in the same sense marrying the materials in an architectural manner.

5. Light - light could be used as a building material, creating sensual spaces and the detailing thereof, also relates to the physical detailing of filtering the light into a space. Light is inevitably one of the profound design & construction generators.



TECHNICAL CONCEPT

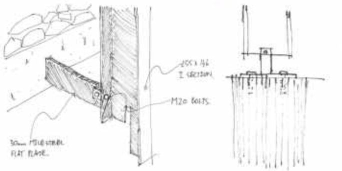
The technical concept therefore is derived from the study of the poetics of construction. The architectural typology of the Fort influenced the concept by means of structural mass being used. The structural mass of the Fort that is sunken into the landscape has stereotomic qualities.

The concept is therefore incorporated into the buildings, through the use of mass and buildings being sunken into the ground. The earth in this sense also becomes stereotomic.

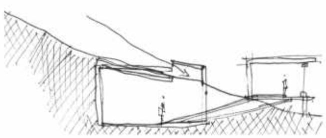
The visitor centre's walls and floors have stereotomic qualities by retaining the earth. This references the typology of the Fort. The stereotomic mass becomes the primary structural element. The steel and timber screen containing the stereotomic structure have tectonic qualities. This tectonic structure becomes the secondary element in the structural system. This play between light and heavy not only relates to the architecture of the Fort, but it also illustrates movement through the building. One enters a tectonic structure and then is guided through the space towards the stereotomic structure. This spatial quality is also facilitated by the progression from the contained towards the retained space.

The movement from tectonic to stereotomic also has a definite threshold, where the visitor moves from the defended side towards the defensible side towards the Fort.

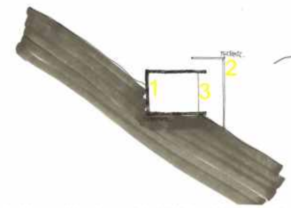
The glass, windows and doors become the tertiary structure, where they act as thresholds between spaces and also between stereotomic and tectonic structures.



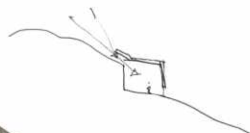
Connection detail sketches



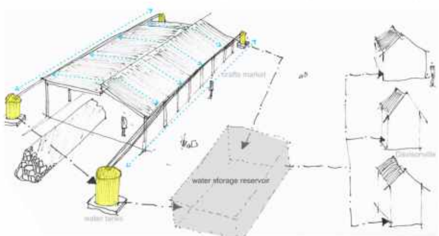
Structural system sketch indicating stereotomic vs tectonic system



Conceptual diagram of stereotomic vs. tectonic, indicating retained vs. contained



Conceptual sketch of the passive ventilation approach



Sketch indicating the water collection process

MATERIALITY

The material pallette consists of various materials, but the three primary materials and finishes are Concrete, Stone and Steel.

These materials will be discussed briefly by the author briefly to determine their structural qualities and their influence in the design process.

CONCRETE:
The raw concrete finish will be used throughout the buildings. As discussed earlier, the concept of the concrete becoming symbolic of the Fort and ruins is important to illustrate that the new buildings are didactic in their use of materials as well. This means that the visitor will be aware of the rough, raw concrete, therefore visually and physically experiencing the material.

STONE:
Dry packed stone walls again become symbolic of the Fort, which was partially built with concrete, but mainly of a very hard sandstone material. Certain dry packed stone walls come to function as land art elements, creating an aesthetic as if they are "growing" from the landscape, but still maintaining the Fort's position as primary structure.

The stone walls become stereotomic, structural elements to certain spaces, while also functioning as directional elements as land art walls in the landscape. These walls "pull" the visitor through the spaces and lead them up the mountain.

The visitor experiences the stone walls as directional and symbolic to the Fort on approaching the visitors centre. As the visitors moves into the visitors centre, the floor finish becomes slate tile, cut in various shapes. The interior is therefore slate stone tiles and once exiting the building, the plane changes to stone walls again. This is to distinguish between exterior and interior, but keeping the threshold minimal. The stone walls will be constructed by using stone from the site. Finer aggregate could be used in the concrete mix, to attain a smooth finish.

STEEL:
The steel forms part of the secondary structural elements. The steel used in the project is mainly mild steel and a small amount of cor-ten panels as cladding.

The mild steel forms part of the tectonic elements. The steel becomes structural and contains the stereotomic elements.

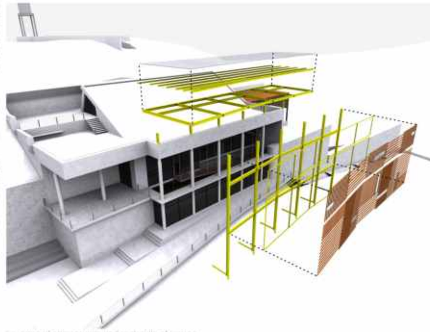
The steel and timber viewing platform in the courtyard of the Fort will create a tectonic aesthetic in a stereotomic context. The extension of the existing canopy, will be constructed from mild steel. The mild steel also becomes symbolic on a smaller scale of the Fort, where mild steel beams were used as lateral support for the tunnels moving underneath the ground.

The cor-ten steel will enhance the effect of the archaeological research centre becoming a ruin in the landscape. The weathering steel will ensure that the building will look like a ruin before its time.

The mild steel will be finished with two coats of red oxide primer and painted black.

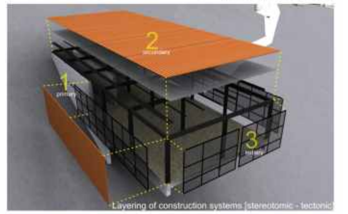
The Beton Brut finish the author intends using

Dry packed stone wall is symbolic of the sand stone walls of West Fort



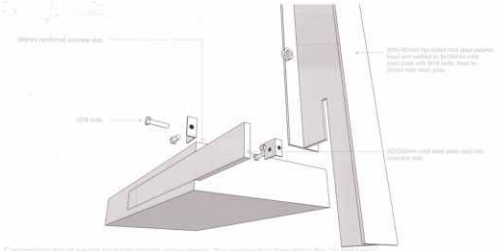
Layering of components and materials of screen

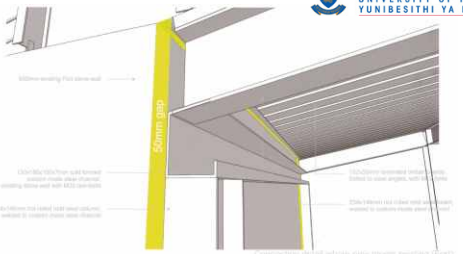
Sand stone wall of West Fort

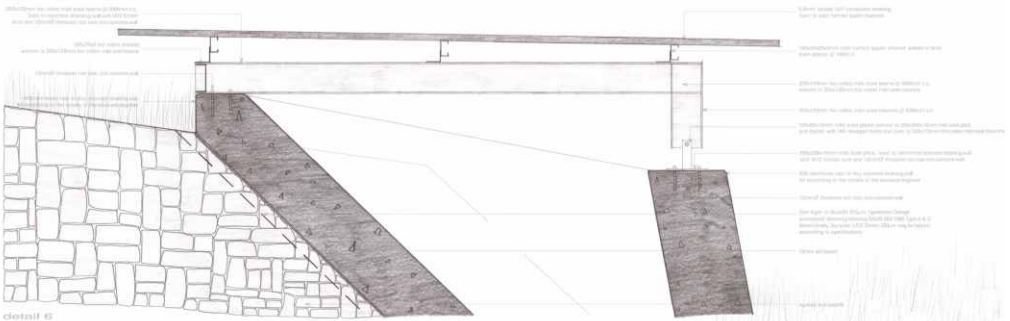


Layering of construction systems (stereotomic - tectonic)

Image indicating the structural systems







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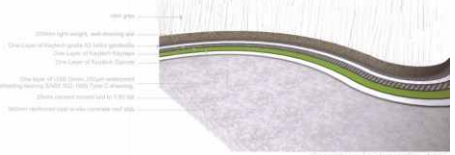
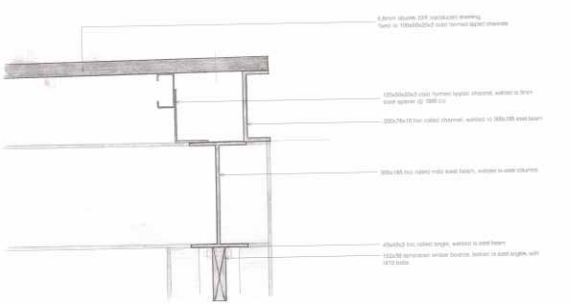


perspective section dd



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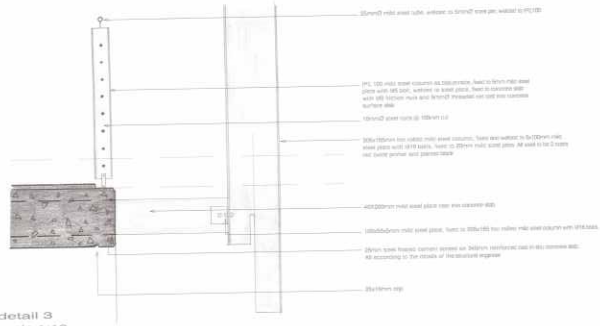

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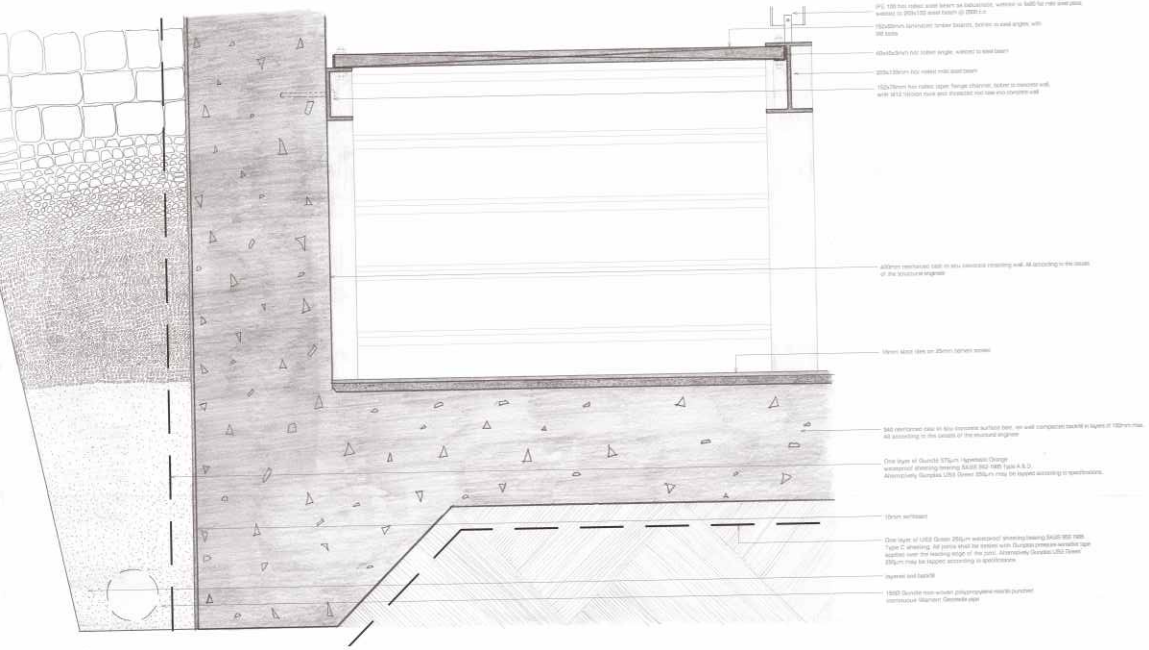

detail 2
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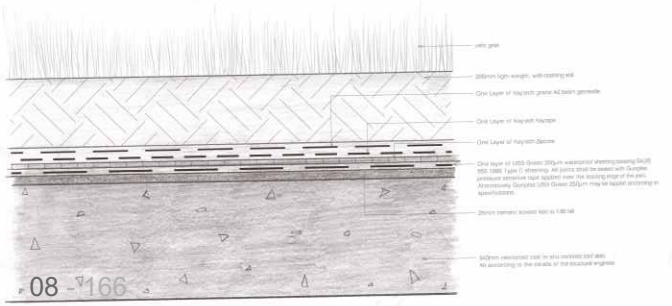

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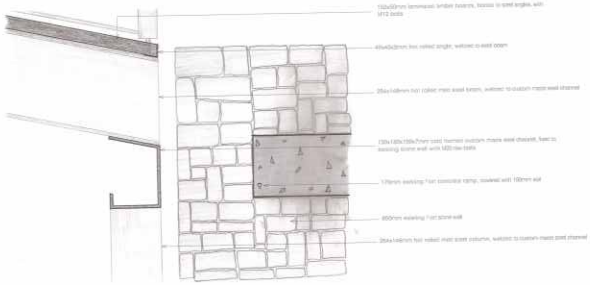

detail 4
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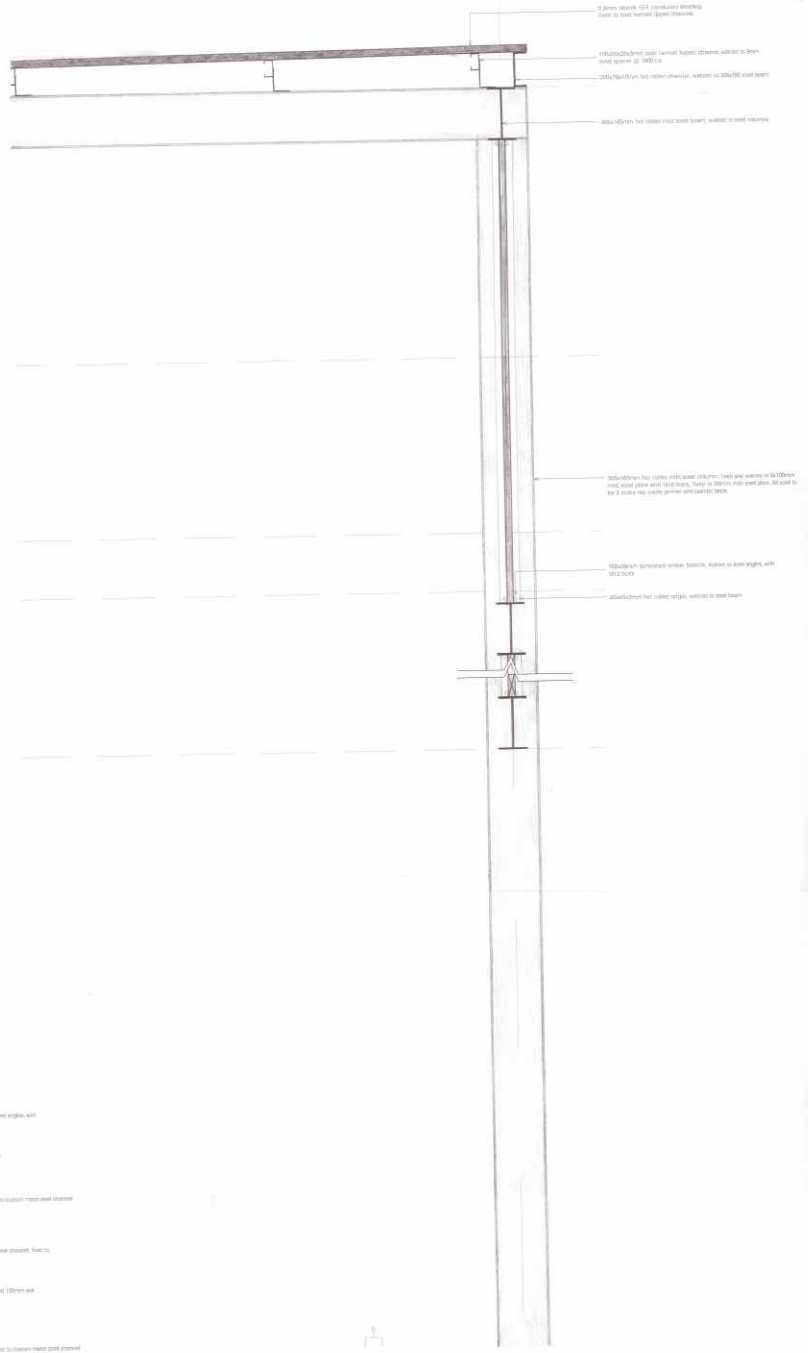

edge detail 1
scale 1:10

N
site plan
scale 1:2000

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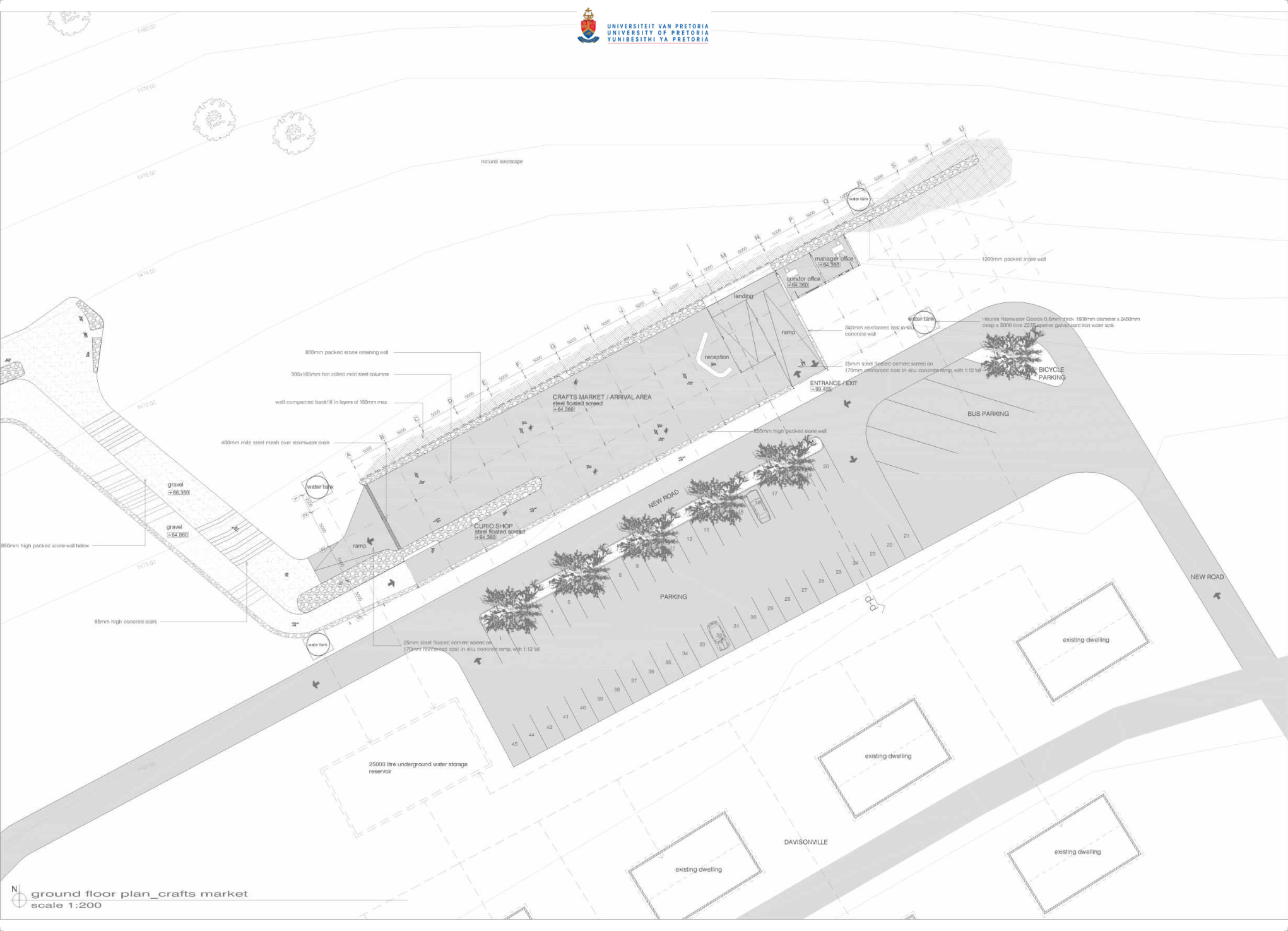
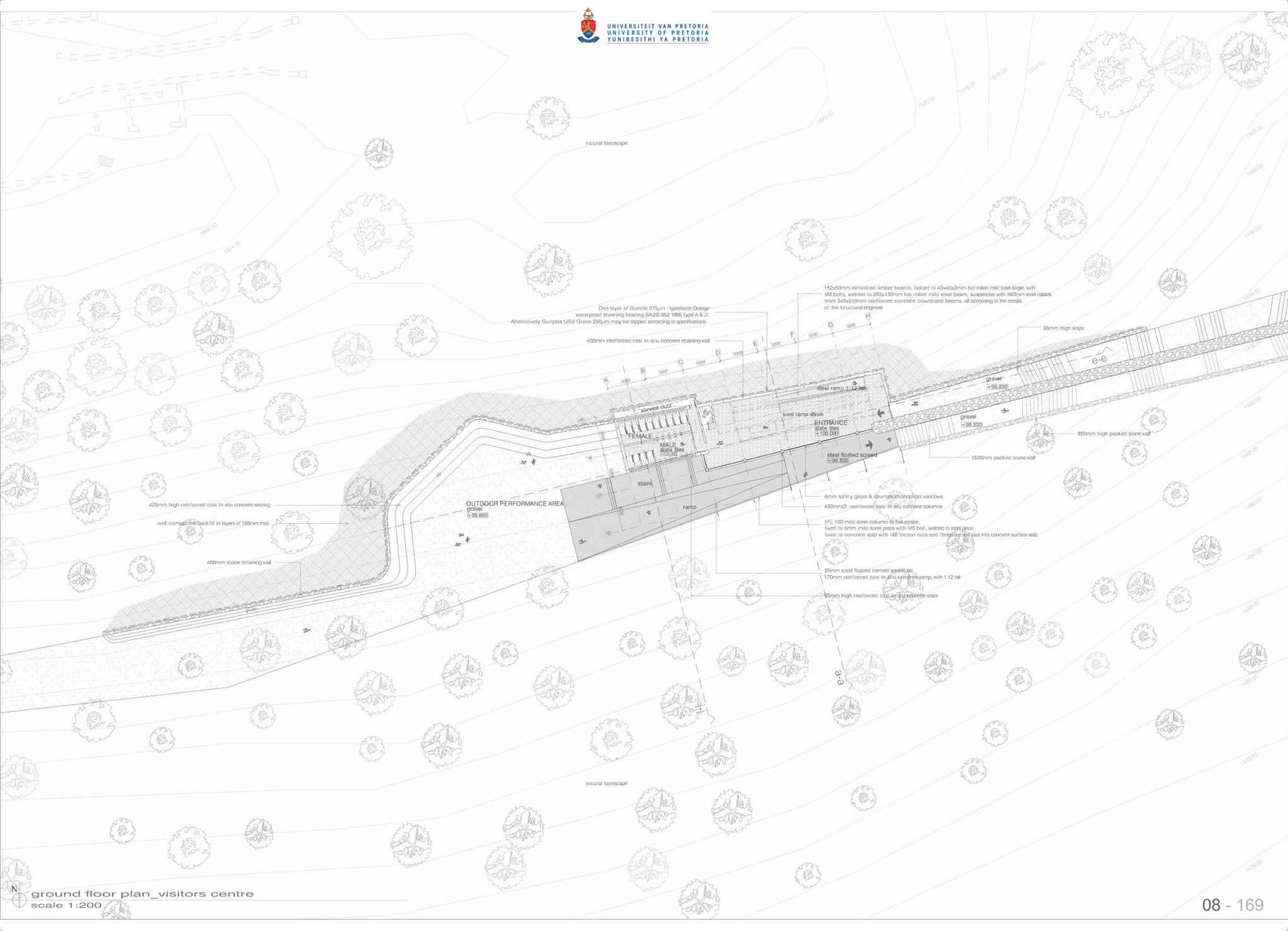


N

ground floor plan_crafts market
scale 1:200



N

ground floor plan_visitors centre
scale 1:200

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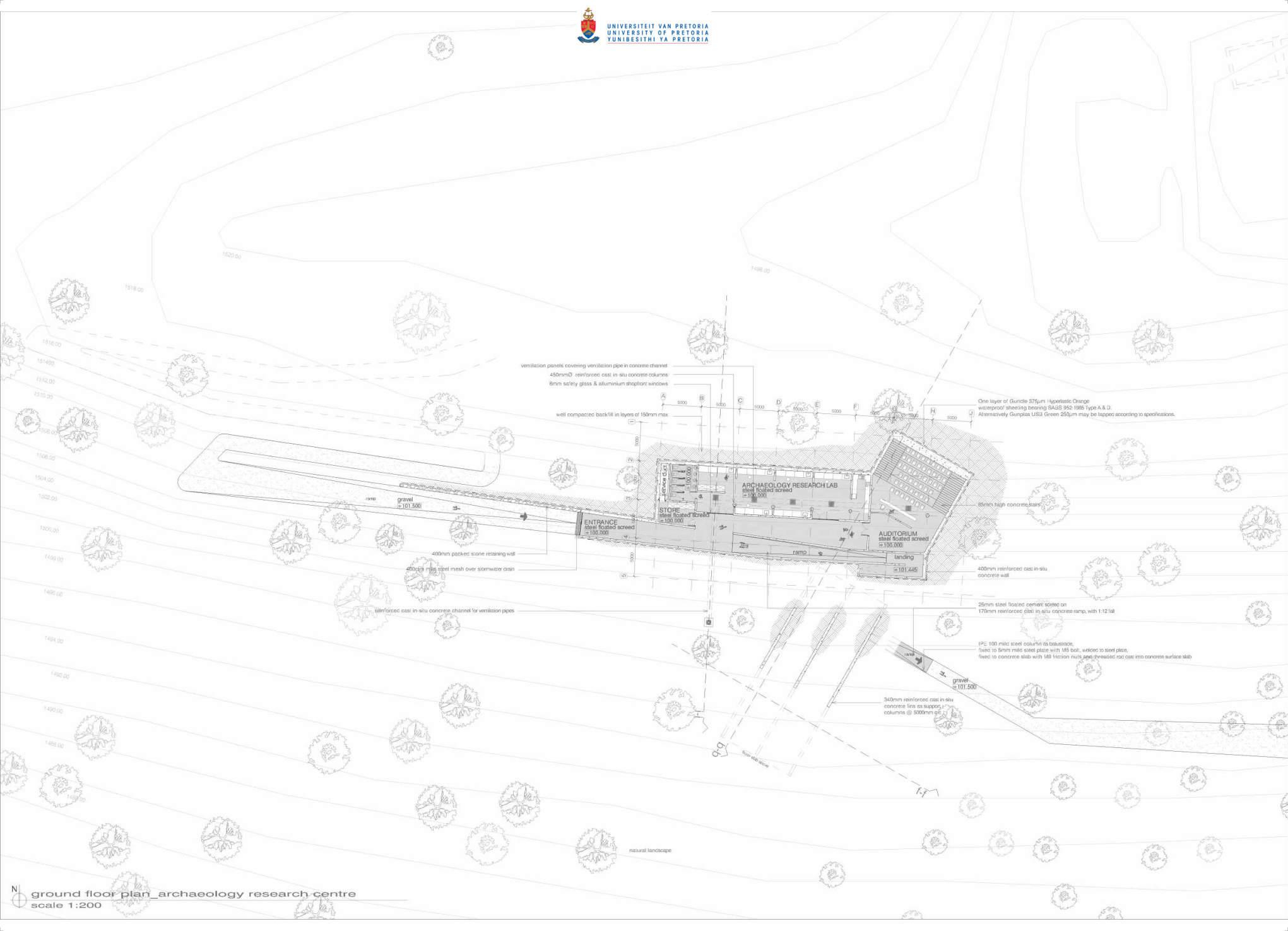
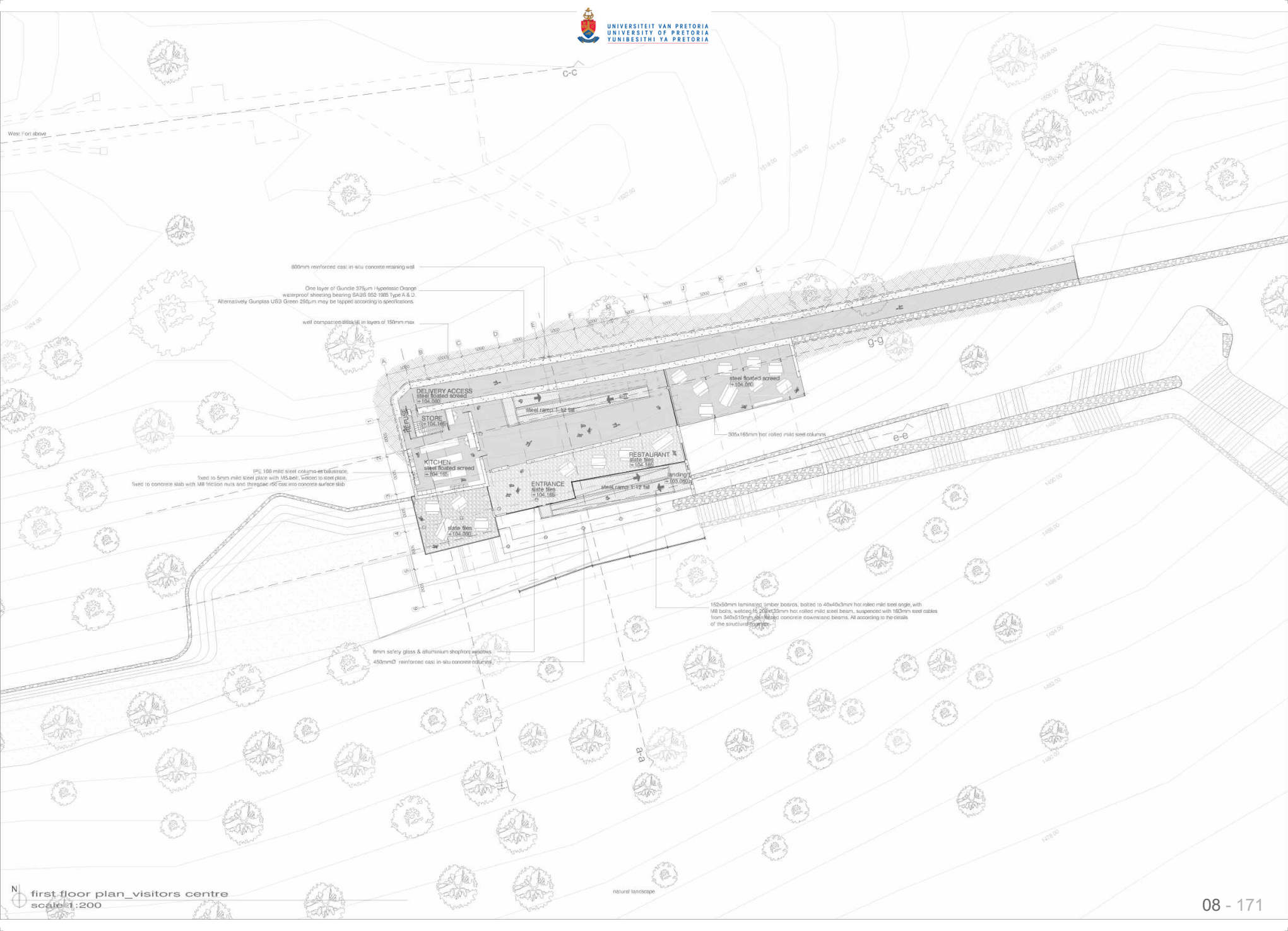


ground floor plan_archaeology research centre
scale 1:200



first floor plan_visitors centre
scale 1:200

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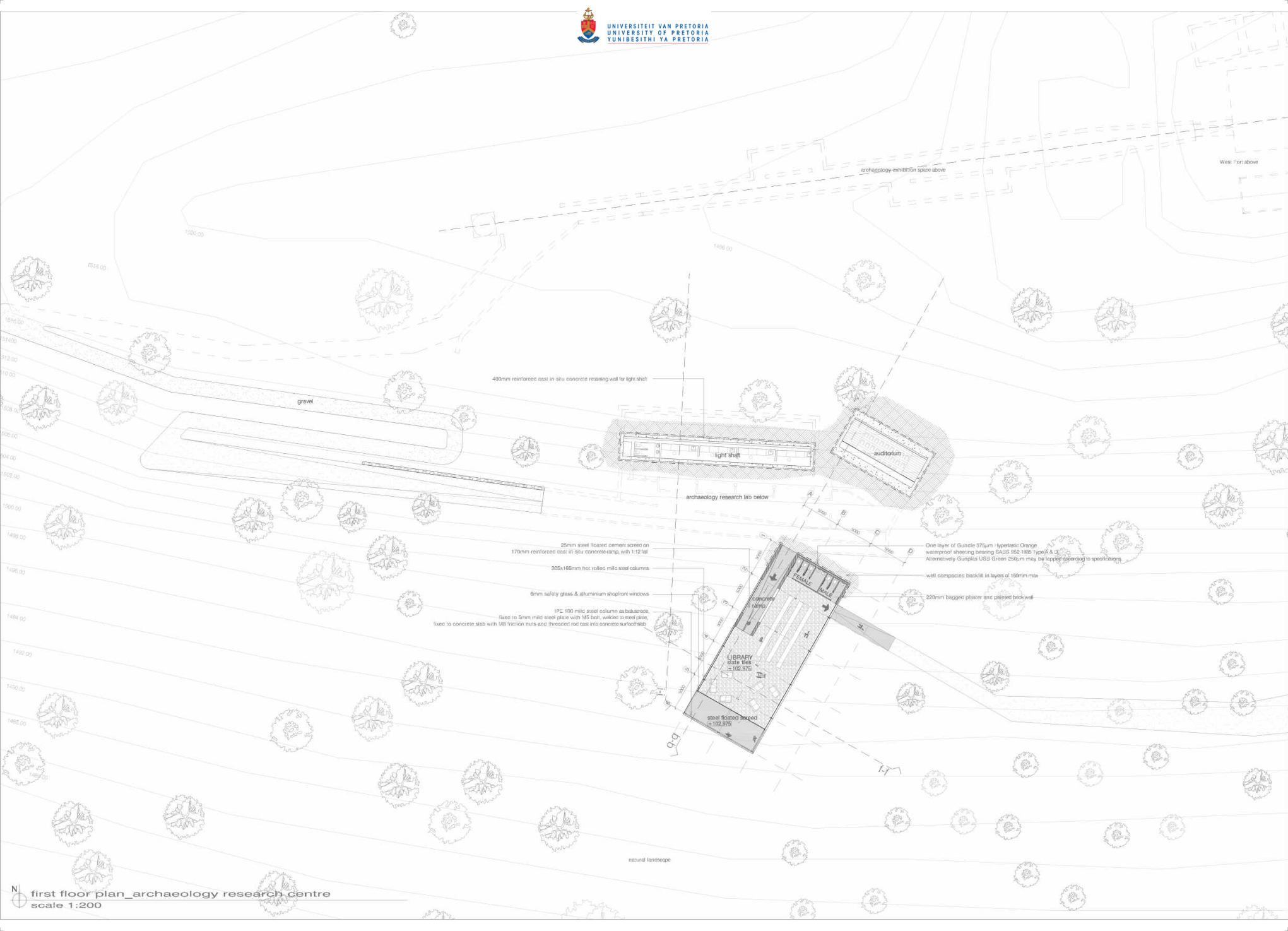

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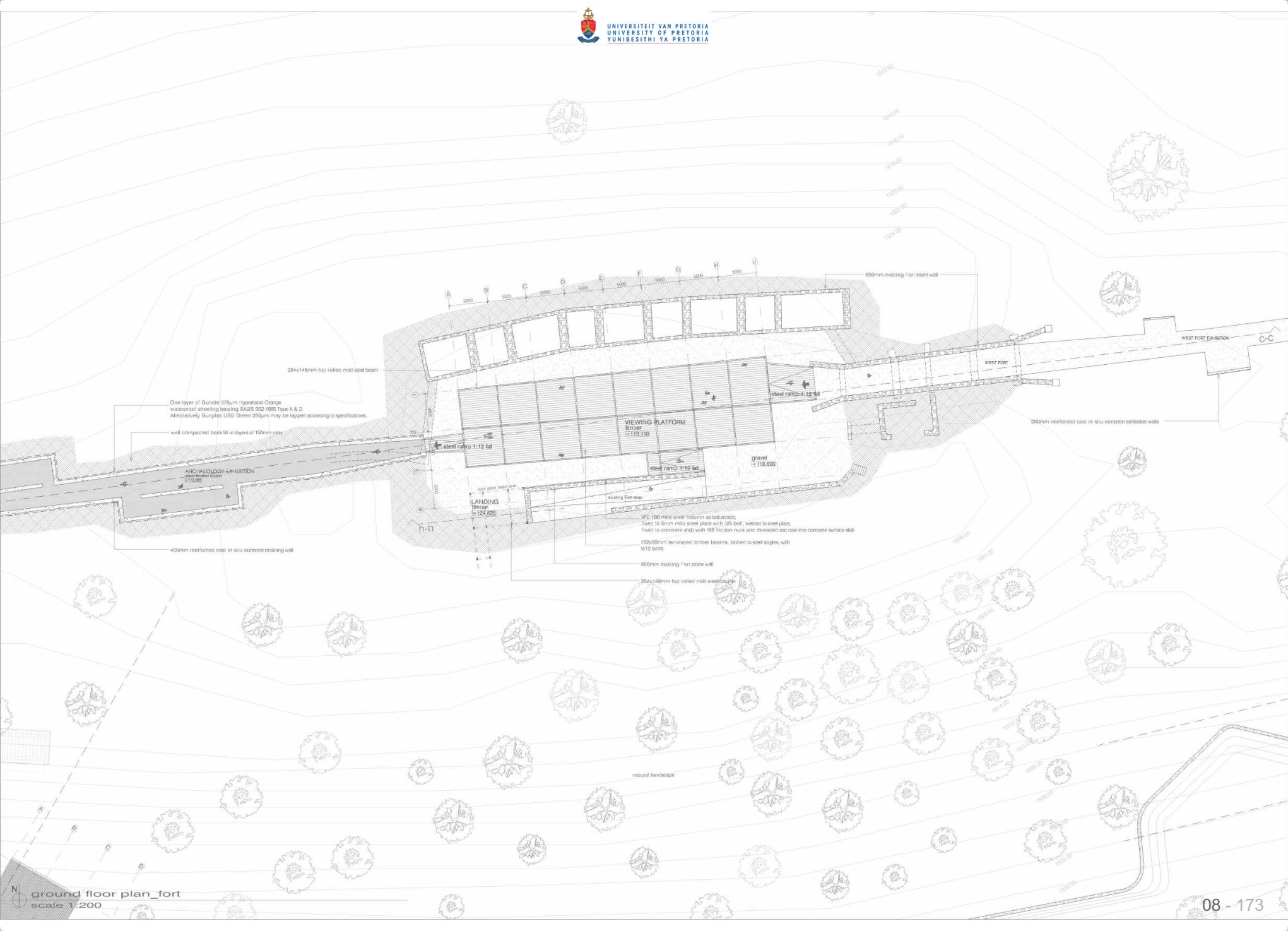
first floor plan_archaeology research centre
scale 1:200



N

ground floor plan_fort
scale 1:200