

06 DESIGN

Drawing the building

TRAM 86

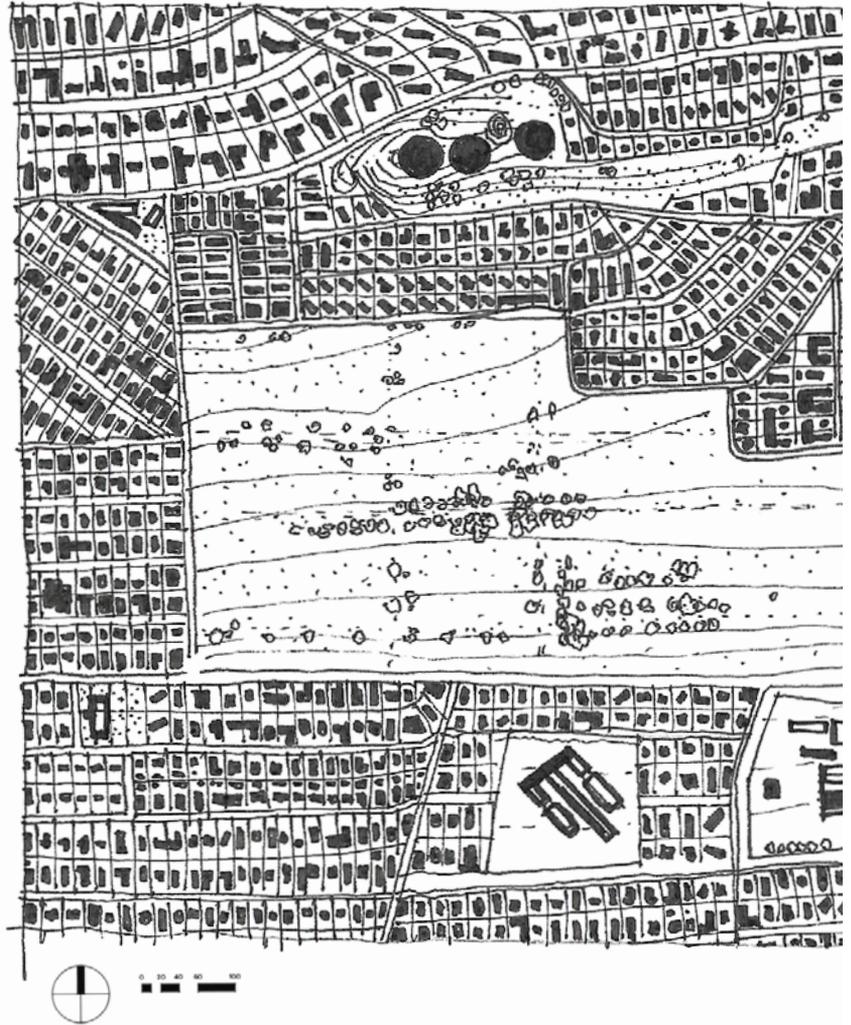


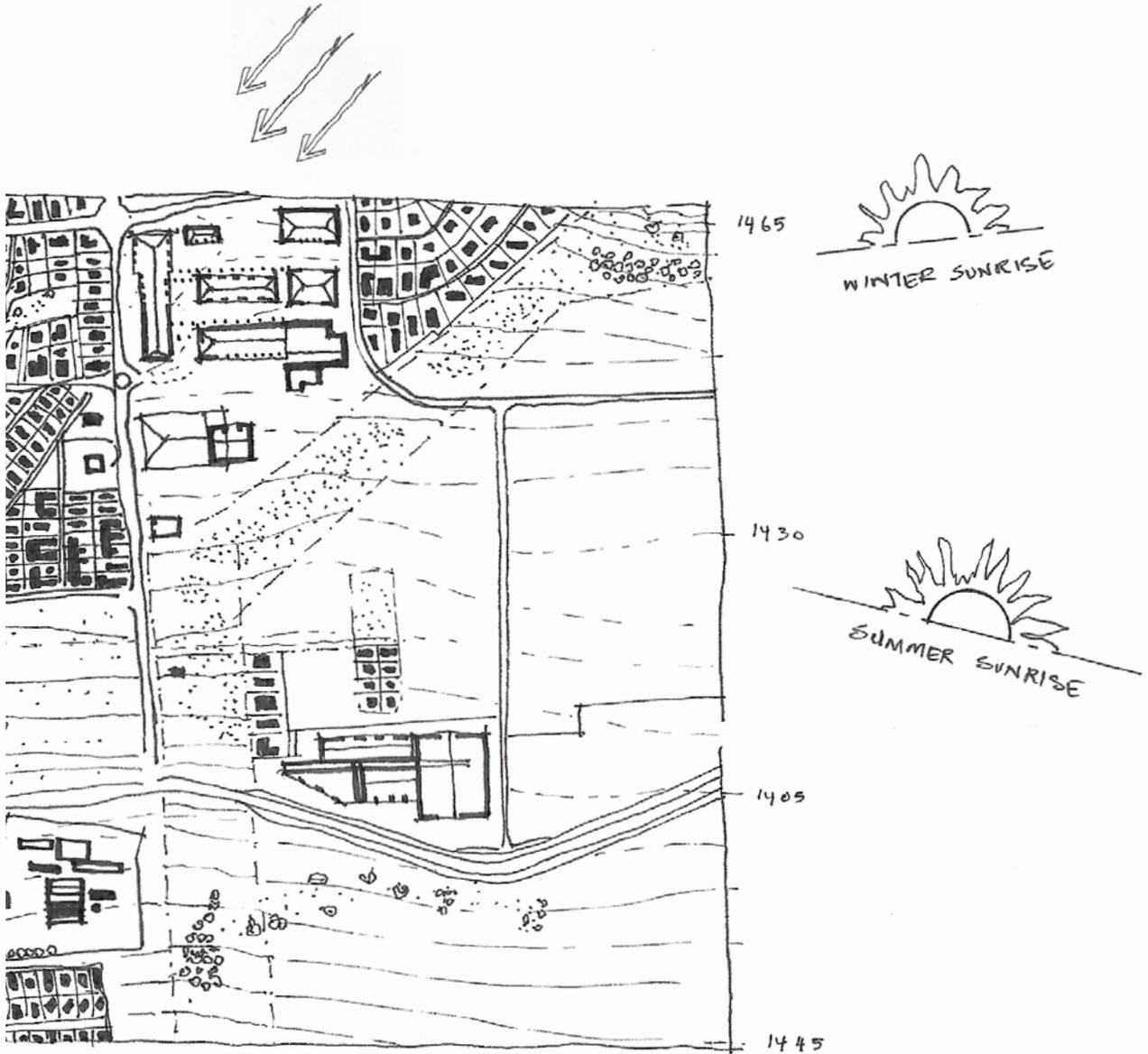
Fig.92. June design. This exploration was set aside due to the fact that it undermined the visual route and focused on the creation of a new monument on the hill. This scheme was explored to understand the effect on the genius loci of the site. The scheme is understood to be competing for attention on a tender site. A more sensitive approach is required. Plan and North elevation can be seen below.



6 CLIMATOGRAPHIC STUDY

The breeze and the shadow





One of the fundamental constituents of the qualities identified on the site is the effects of climatic conditions. Using these conditions to improve the quality of the proposal, the scheme attempts to capitalise on the fresh breeze and provide shaded gathering places to shelter from the harsh sun. In the rainy season, in stead of shying away from the storm provision is made to protect against it.

6.1 THE BOUNDARY

Borderlands

The presence of the *positive* platonic tanks on the man-made plateau calls for a site sensitive architectural response. The design process searches for the *negative* in order to provide a sensitising architecture. Blurring the boundary between the *room* and the *garden*.

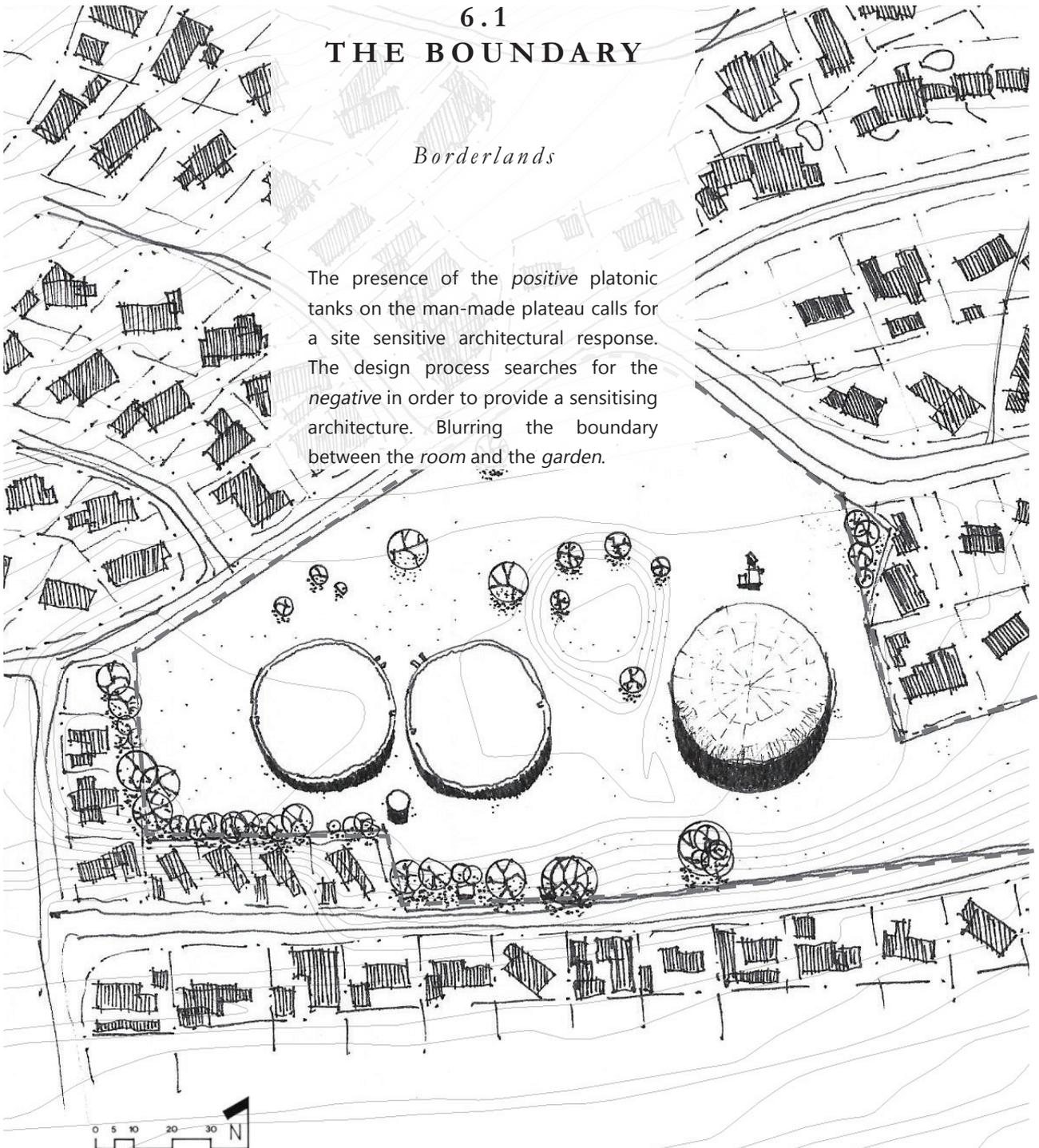




Fig.93. A room and a garden.

Inspired by Louis Kahn's phrase on his approach to architecture and landscape; simply classifying them as a room and a garden. The project aims to encapsulate this harmony in the connection between the outdoor and indoor spaces.

6.1.1 RUIN THE SITE

Testing the flexibility of the site

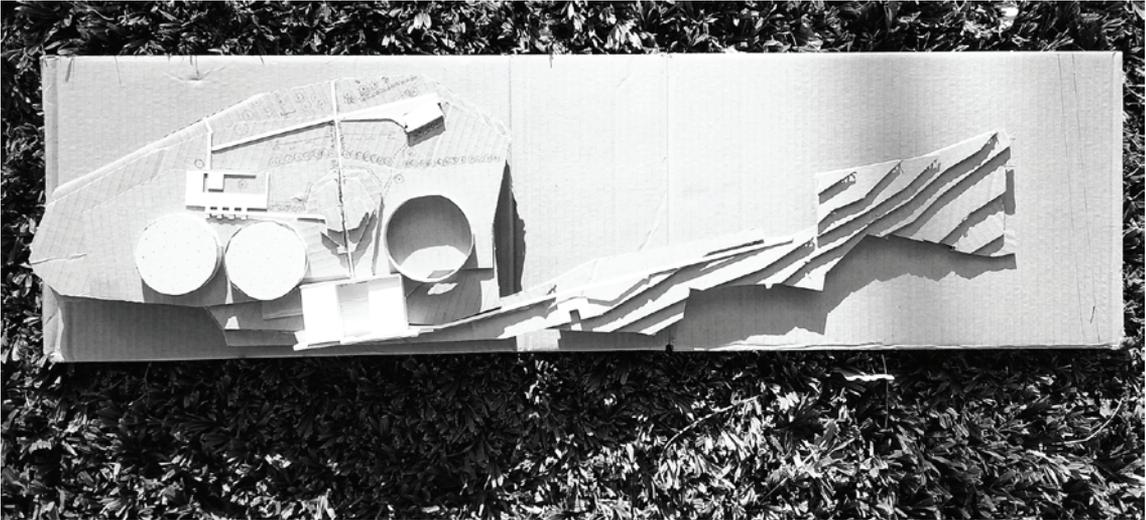
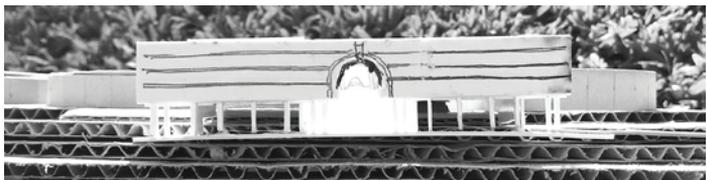
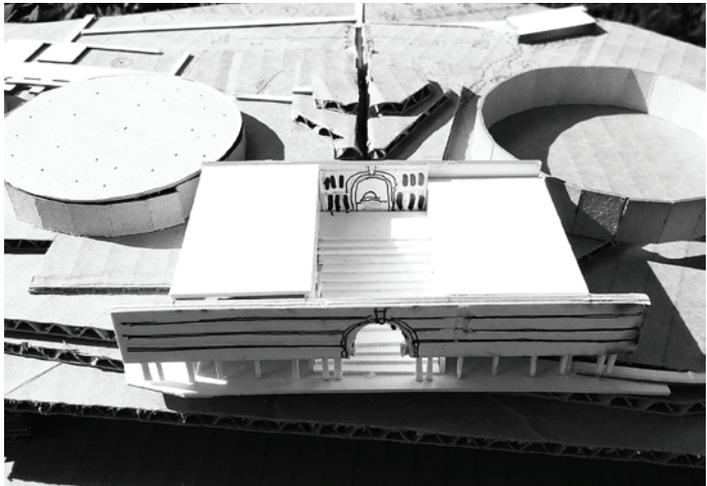


Fig.94. Ruin the site. March, 2016.
This early exploration tested the flexibility of the site. Imposing a classical order to the approach and scale of the project, the model aimed to ruin the site in order to draw conclusions. The choice was made to place the planetarium in the disused tank in the centre of the plateau, with supporting offices and youth workshop spaces on either flank of the colossal staircase.

To the north of the site, a shuttle drop off and a reception would welcome guests on arrival from Thindisa street. This decision however compromises the park and would otherwise not provide Atteridgeville residents with a reclaimed park space. The exploration also revealed that the scale of the supporting structures outweighed the main function of the proposal, namely the planetarium. Furthermore the rigidity of the classical facade competed for attention with the water tanks.



6.1.2 ABOVE GROUND

Responding to the cylinders

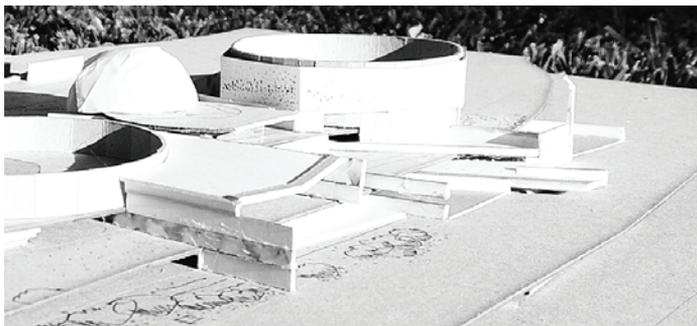


Fig.95. Above ground, April, 2016.

This exercise made use of the horizontal plane to create new platforms for engagement. Designed to include a graduation ceremony space on the southern platform, this cross pollination of programmes encourages the use of the park beyond the visit of the planetarium. This was done to ensure that the planetarium does not become isolated or disjointed from its fabric, as seen in the Johannesburg Planetarium during public holidays.

This scheme also introduced a new skin which would resurface the 20MI tank on the east. This was done to mask the large tank and accentuate the presence of the tank during the evening hours. Finally, the shuttle drop-off placed on the north would be off centre such that the park could remain operational.

The attachment to the existing tank proved problematic, with little consideration to the geometry of the cylinder. It also proved to erase the tank instead of reveal it or highlight the significance of fresh water reservoirs.



6.1.3 THE TUNNEL

Connecting the functions underground

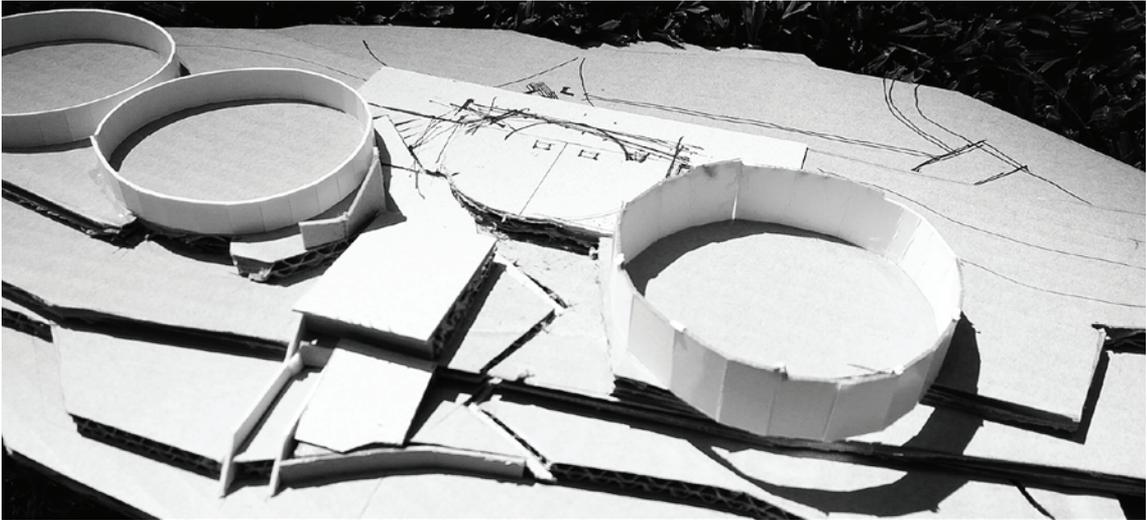


Fig.96. The tunnel. May, 2016.

Searching for a completely different approach, this model explored the gradient of the ramps necessary to bridge the embankment on the south and positioned the enclosures along the route. This positioning impeded on the natural amphitheatre which was created between the tanks. The plan and north elevation were highlighted on the cover spread of Chapter 6.

6.1.4 RECEPTION

“Makbukhu”

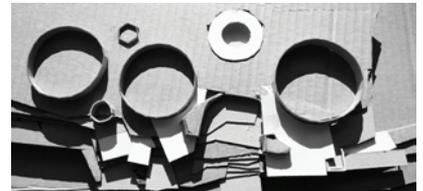
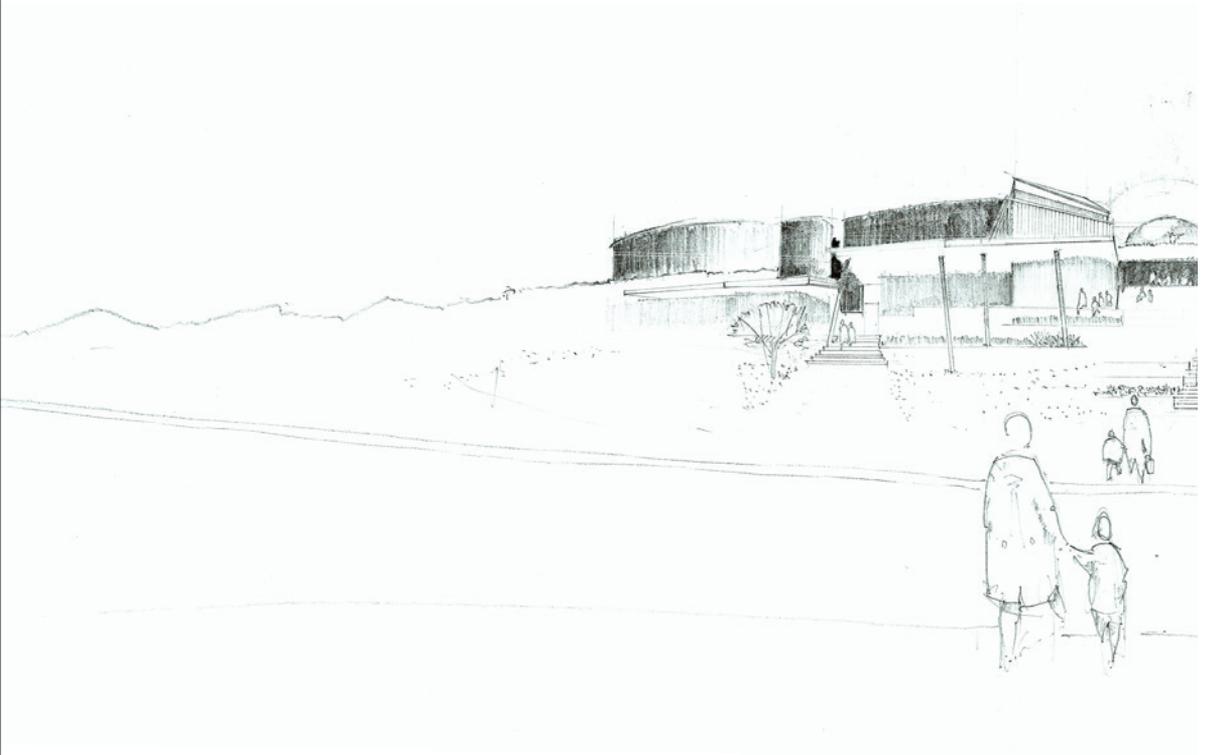


Fig.97. Urban reception. June, 2016.

This exercise was developed for the June examinations. Upon designing the elevation, the decision was made to set this scheme aside due to the architectural language, which resulted extracted from the model. The fragmented roof planes called for lighter roof materials which resembled the 'shack typology,' which this dissertation aims to find an alternative for. This iteration resulted in an understanding of the southern conditions of the site, and a reinterpretation of the horizontal plane.



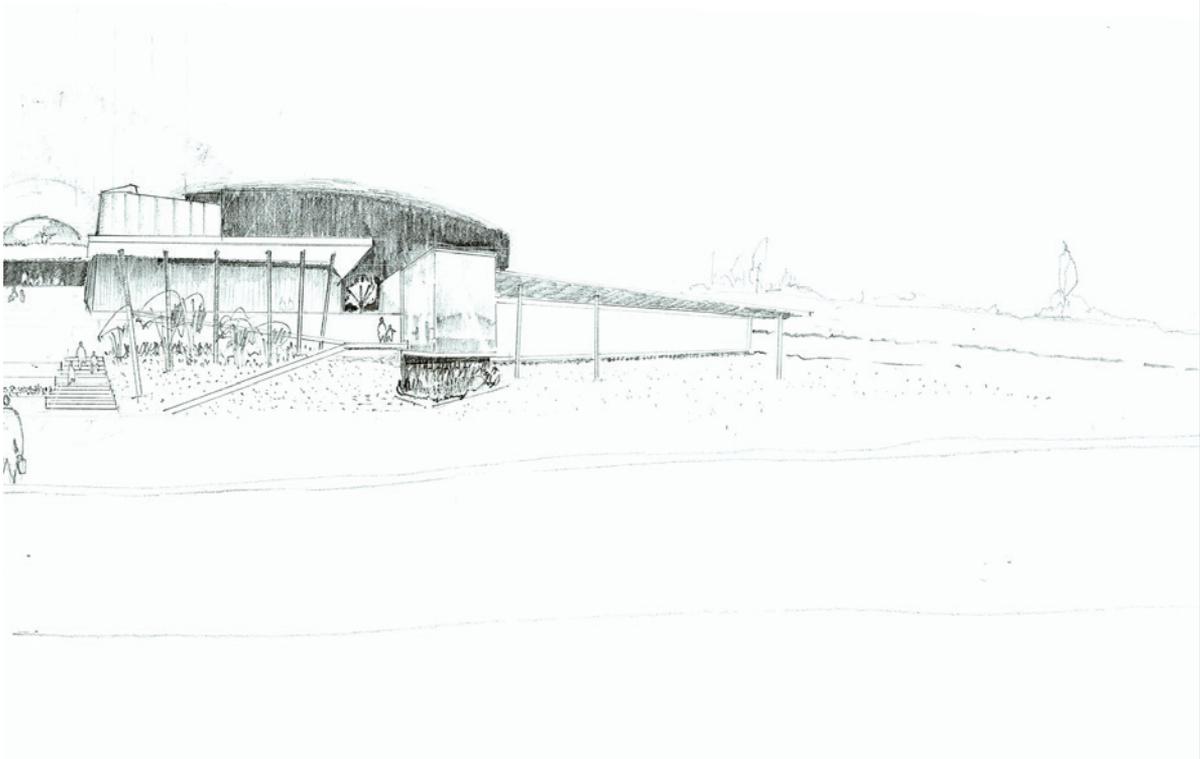


Fig.98. Makhukhu. This iteration was set aside as it perpetuates the notion of romanticised poverty. The planetarium is clad with an architectural language of circumstance, which is so often seen as *fit for township architecture*. The placement of glass and light-weight steel columns masks the reality that this language is what is being challenged. Similar to any commercial hub development in townships, this architectural language is seen to promote the apartheid spacial legacy. June, 2016.

6.2 THE TERRACE

Synthesis of exploration

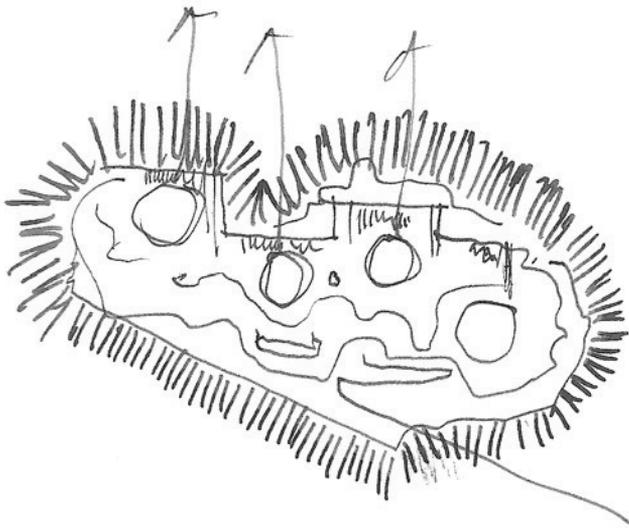


Fig.99. The table cloth. The large plateau is represented as a table cloth, the largest outdoor room allows for views outward. Adapted from a plan of the acropolis. July, 2016.

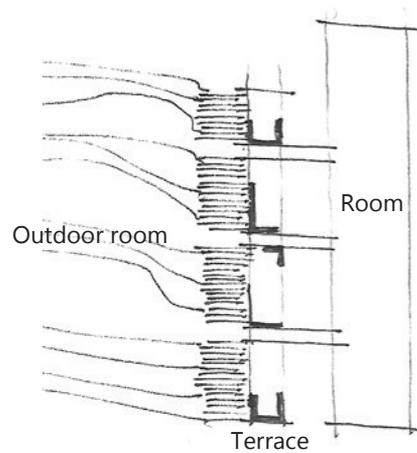


Fig.100. The outdoor room. A sequence of thresholds that balances the garden and room. July, 2016.

The threshold evolves into a series of spaces, with the building forming the background, an intermediary terrace which bridges the building and the landscape, labelled the outdoor room. This sequencing allows for the building to be set into the background allowing the terraces to become spaces of gathering and collection.

The outdoor rooms become platforms for engagement, usually highlighting a prominent view or a connection beyond, while the terraces prepare the user to approach and enter the building.

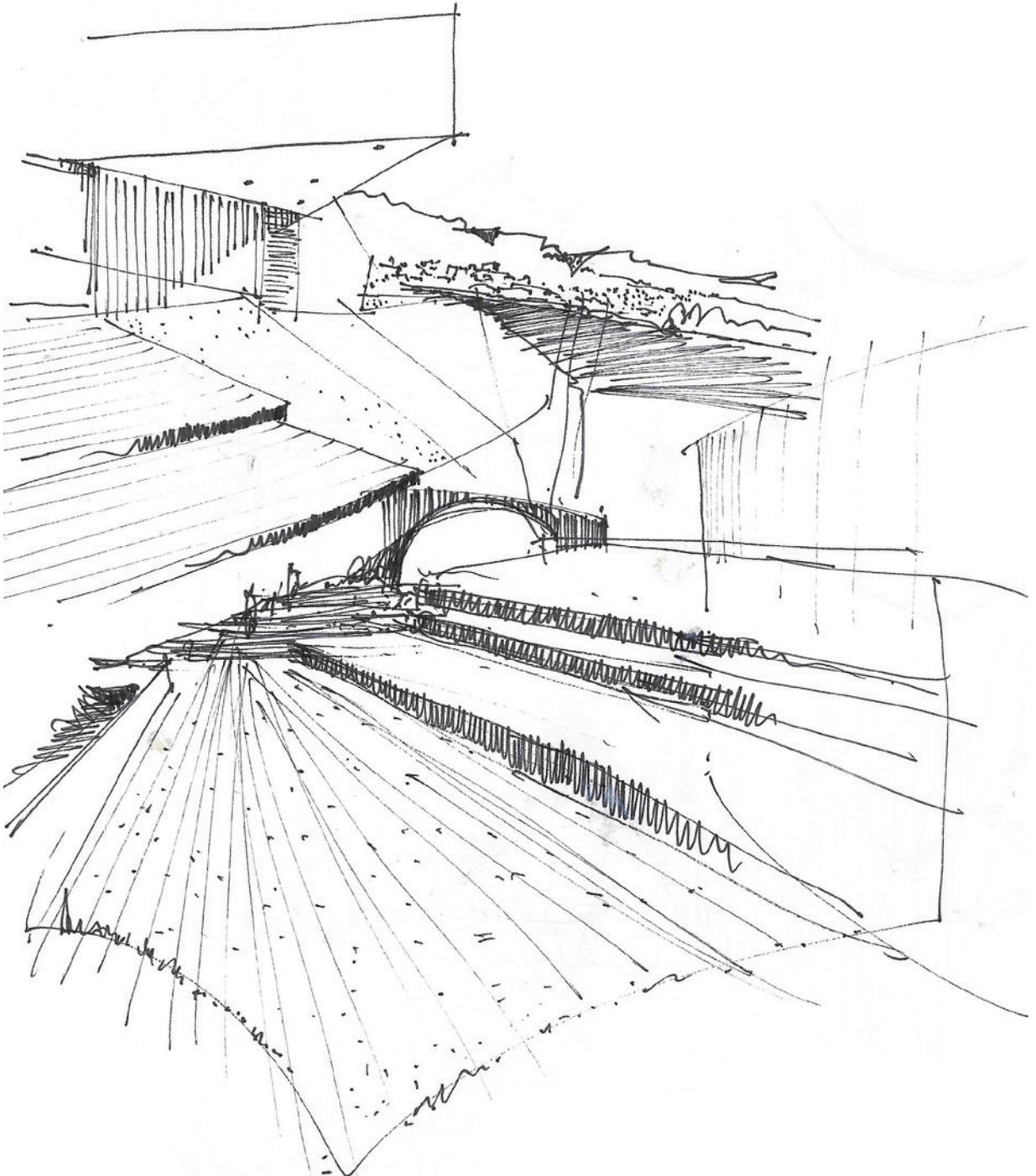


Fig.101. The terrace. Leading to the programme container, the terrace helps to guide regroup children before they enter into the building. July, 2016.

6.3 THE NEW PODIUM

Nature of municipal infrastructure

In an attempt to sensitise municipal infrastructure the architectural intention is to mediate between the residential surrounds and the disconnected site, highlighting the importance of the safekeeping of water. Taking precedent from *Colectivo 720's Articulated Site*, the project aims to reclaim usable space around municipal infrastructure and highlight its significance in urban cores.

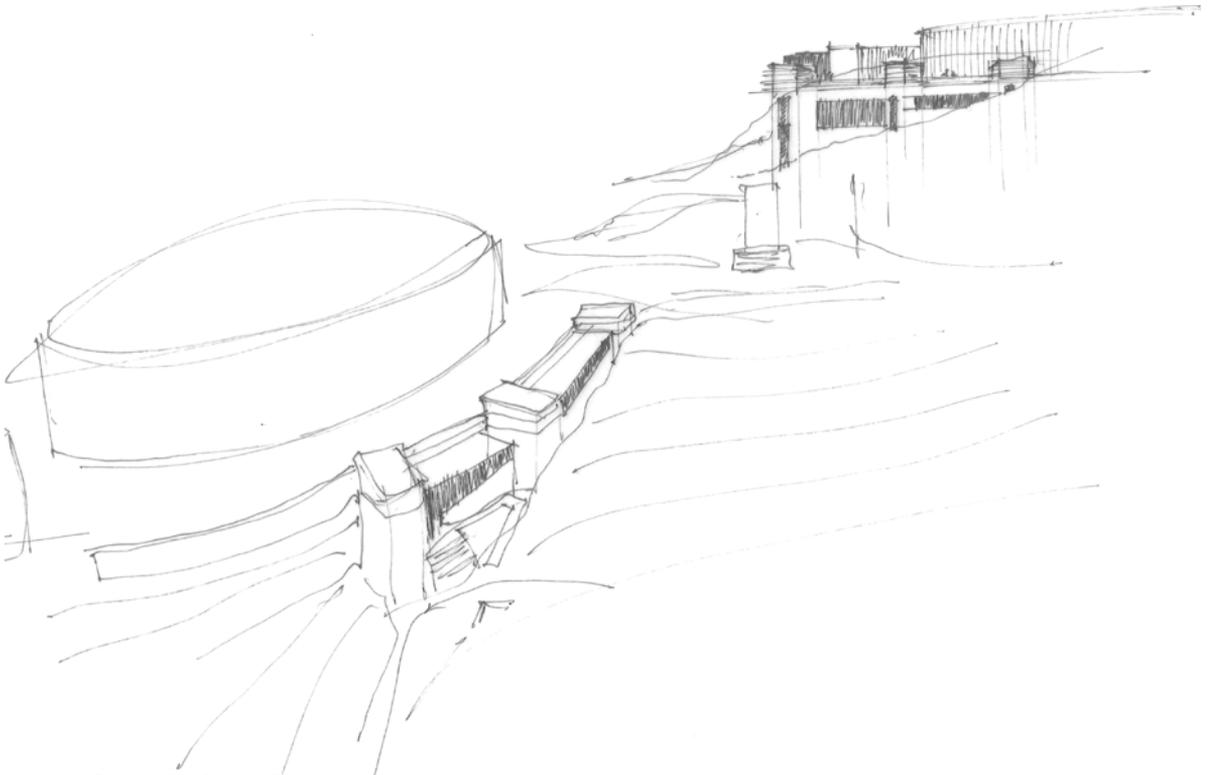


Fig.102. The Podium. The conceptual sketch determines the approach for the existing structures. Using the new architecture to emphasise the existing tanks, *the podium* redefines the southern facade mediating between the street and the plateau. July, 2016.

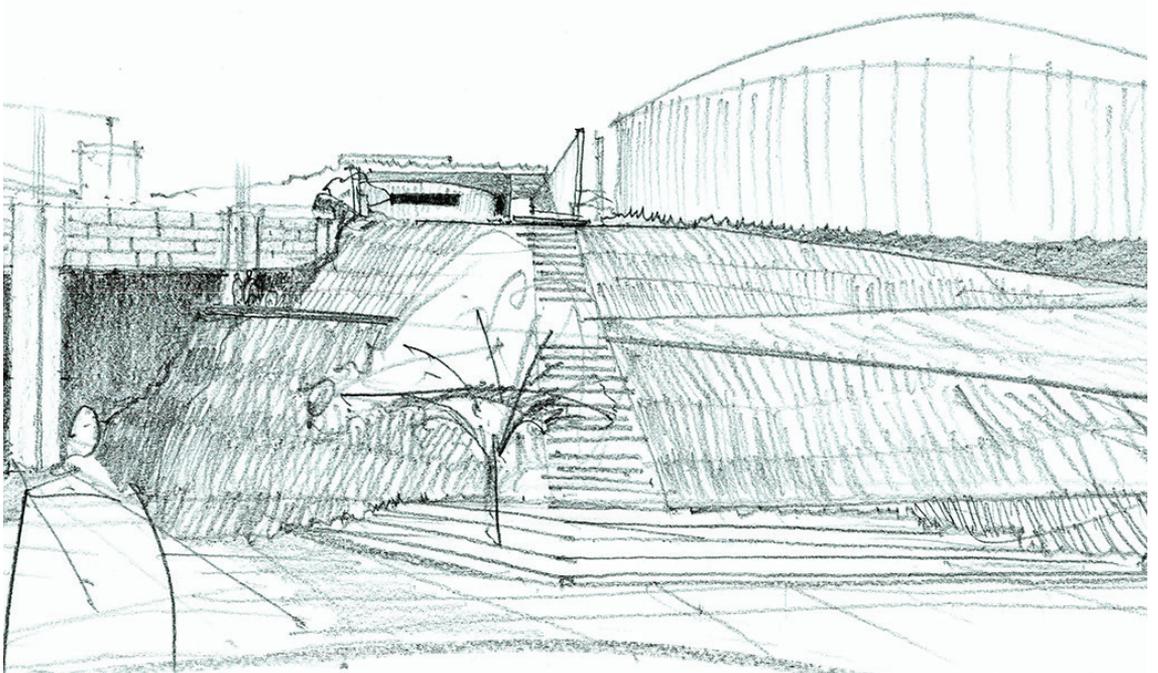
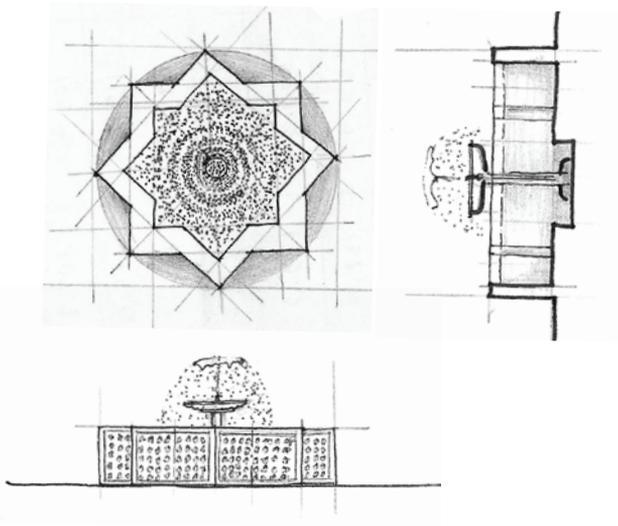


Fig.104. Ascension. The provision of a public staircase emphasises prospect and draws the user between the tanks. As one begins his journey, the gravitas of the tanks is felt and the significance of the safekeeping of water is accentuated. Once on the podium a large wall disconnects the user from the surroundings only to reveal the Magaliesburg mountain range on the north. August, 2016.



The merger of programme and site will focus on accentuating the significance of water provision to urban cores. Highlighting the importance of water in daily activities and demonstrating how water can be *conserved*. The theme of learning and exploring will be aided by the steep topography and the presence of the large reservoirs to generate curiosity on site.

Fig.103. The Moroccan fountain, typically found in the centre of a residential courtyard, demonstrates how a domestic necessity has evolved to become animated. This animation does not override or deteriorate the functional integrity of the fountain. It beautifully accentuates the use of water as a part of the daily ritual.

6.4 THE MASTER PLAN

Merging intentions and contours

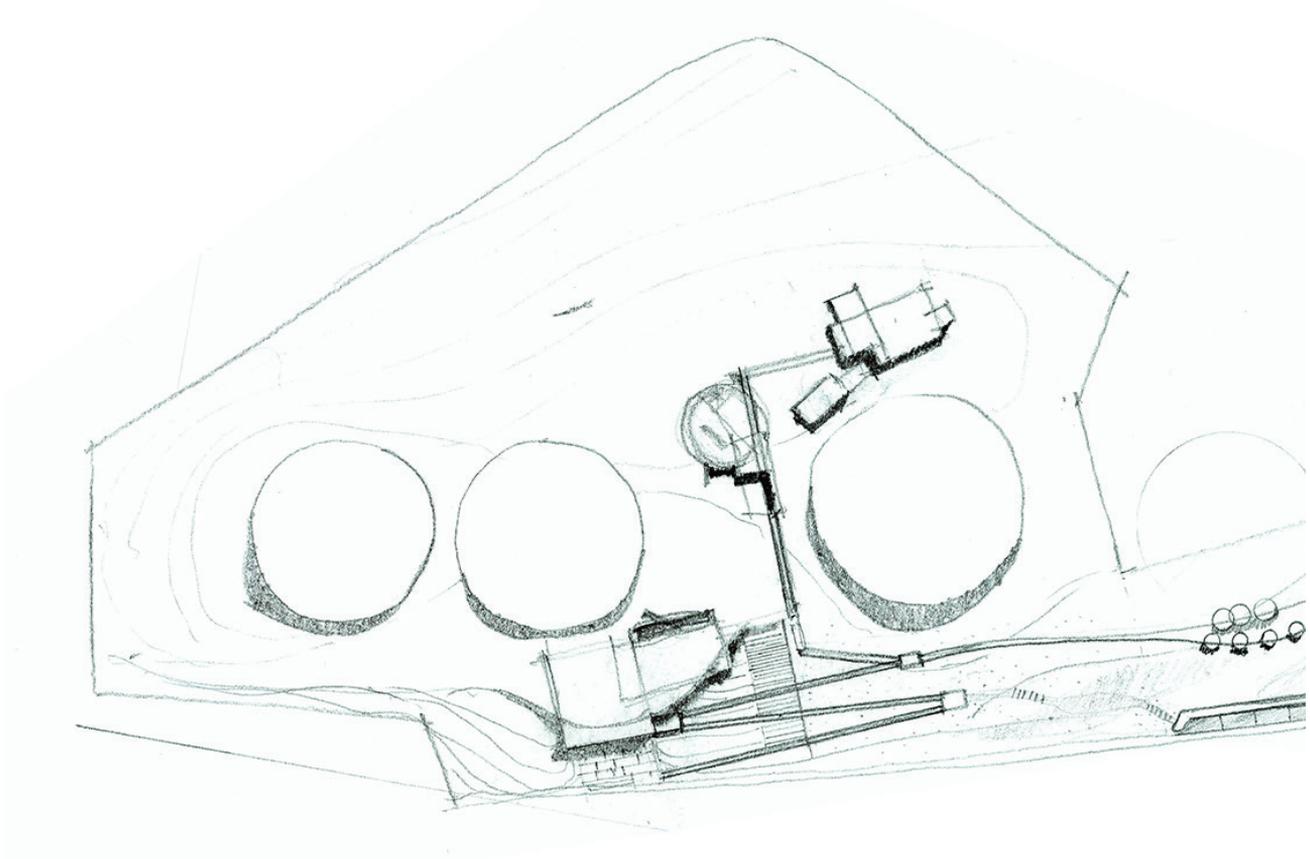
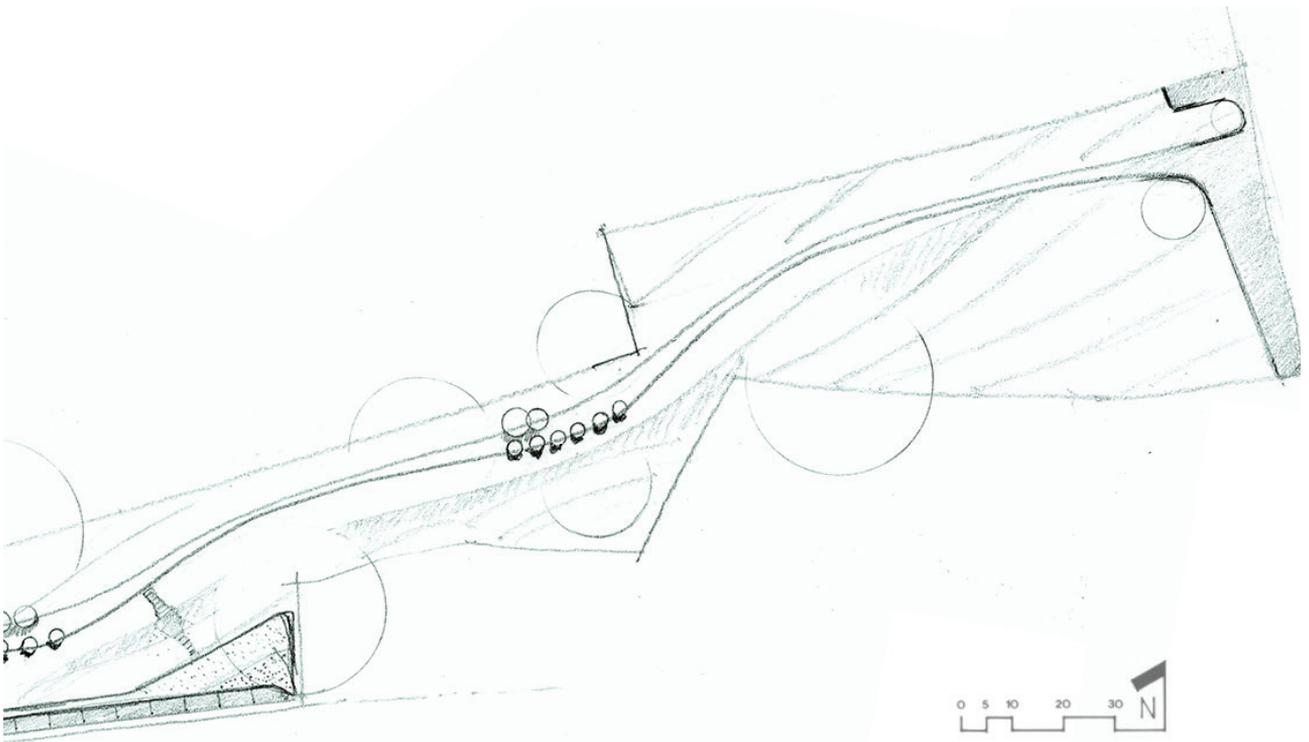


Fig.105. The Master Plan. Illustrated above, the synthesis of space design culminates in a large scale drawing, the master plan. The green island is shown under the new design; the terraces, urban balconies, rooms and gardens are shown in relationship to one another. August, 2016.

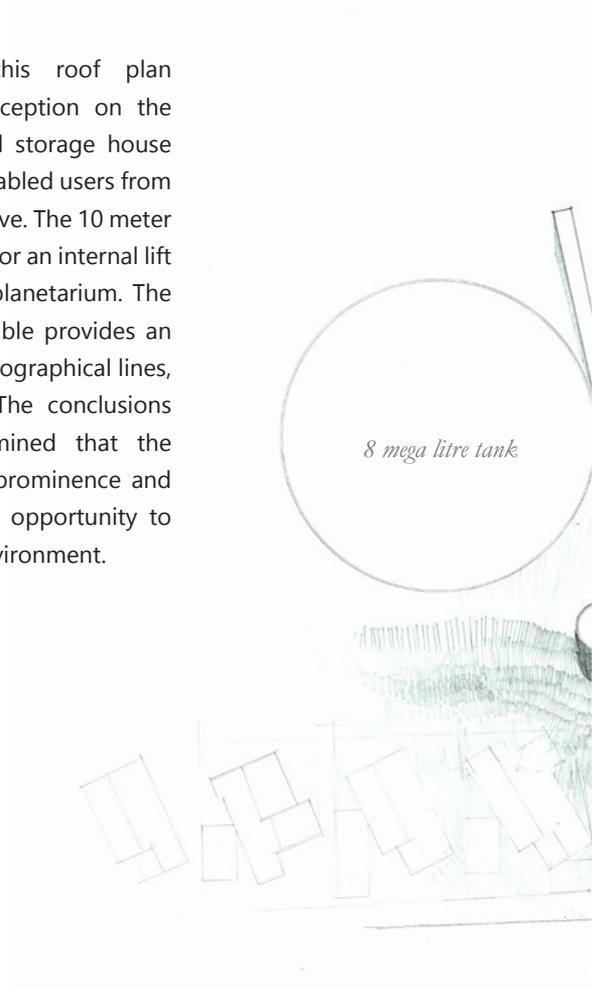


Nestled between the existing tanks, the architectural language evolves from an underground enclosure (the Planetarium) to the modern cave in the centre of the plateau (The Environment Gallery), finally the architecture emerges on the north with the Restaurant to activate the neighbourhood park.

6.5 THE ROOF PLAN

Between the room and the garden

The development following this roof plan considers a larger accessible reception on the southern facade. The offices and storage house golf carts that would transport disabled users from the lowest level to the plateau above. The 10 meter elevation is bridged via the ramps or an internal lift accessible to the visitors of the planetarium. The decision to make the site accessible provides an opportunity to accentuate the topographical lines, and design a public staircase. The conclusions based on this iteration determined that the staircase should be given more prominence and made wider to give the user an opportunity to pause, and reconnect with the environment.



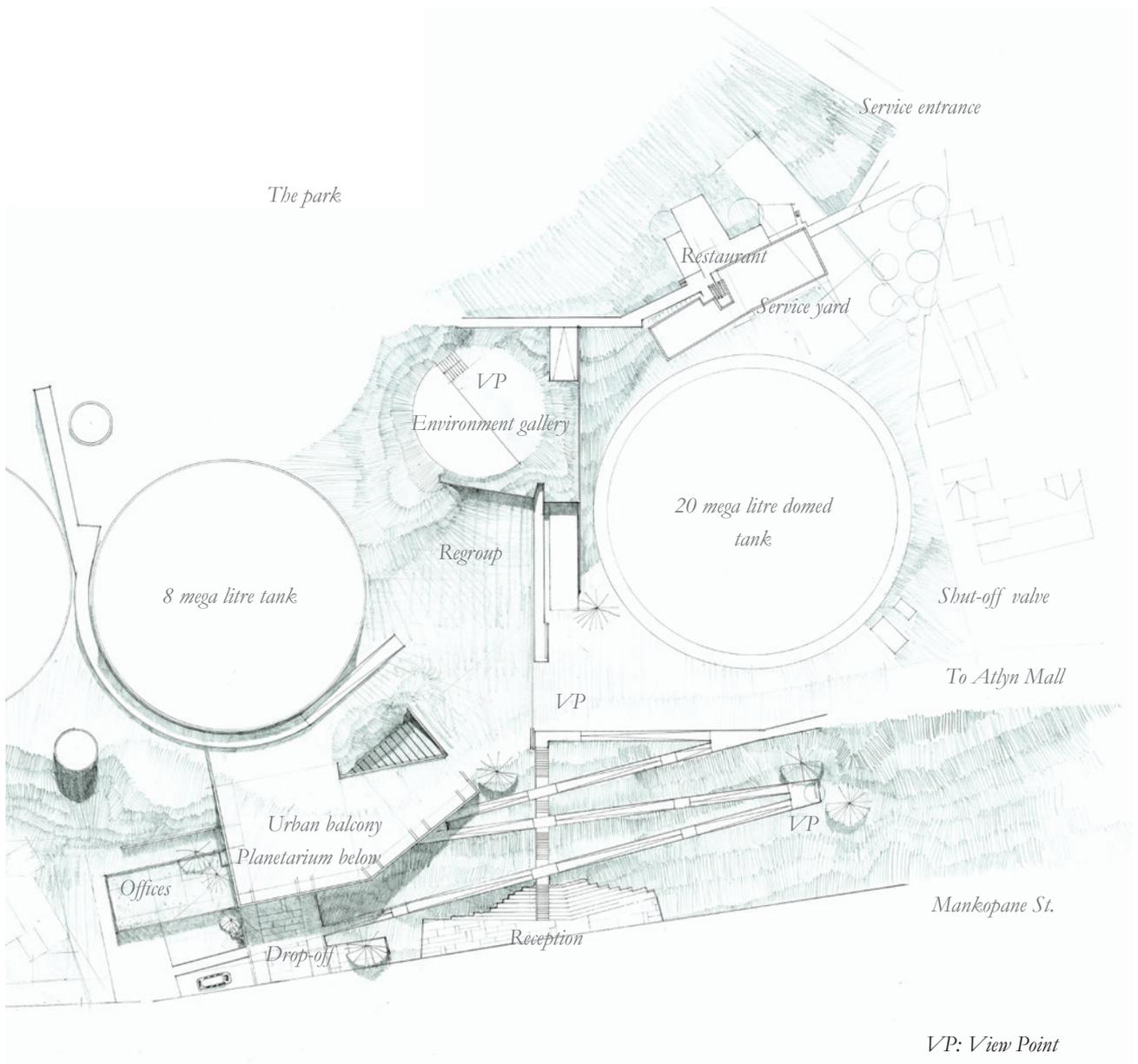


Fig.106. The roof plan. The circulation routes zigzag through the landscape providing moments of pause for the user. For the child these points become opportunities to meander off the route and interact with the natural topography. NTS. September, 2016.

6.5.1 THE RESTAURANT

Defining the park

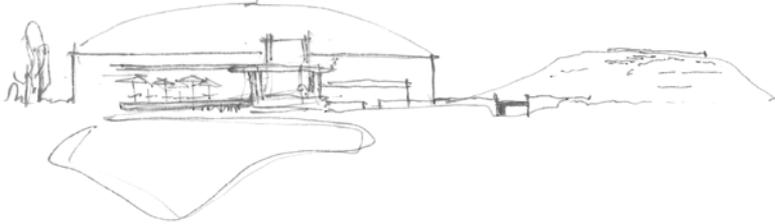


Fig.107. Restaurant 1. First attempt at designing the restaurant elevation, the intention is to mediate between the surrounding residential scale, the undulating topography of the site and finally the 20MI domed reservoir. July, 2016.

From the highest point on the north portion of the park, the seated restaurant fulfils two purposes. The first to contain the site and overlook the park, where children are freely playing. Secondly, the restaurant aims to bridge the scale of the gigantic tank, mediating between the concrete structure and the gentle dome above.

The ablution block is tilted off the main axis to not compete with the restaurant's presence and to lead the approachers eye towards the environment gallery.

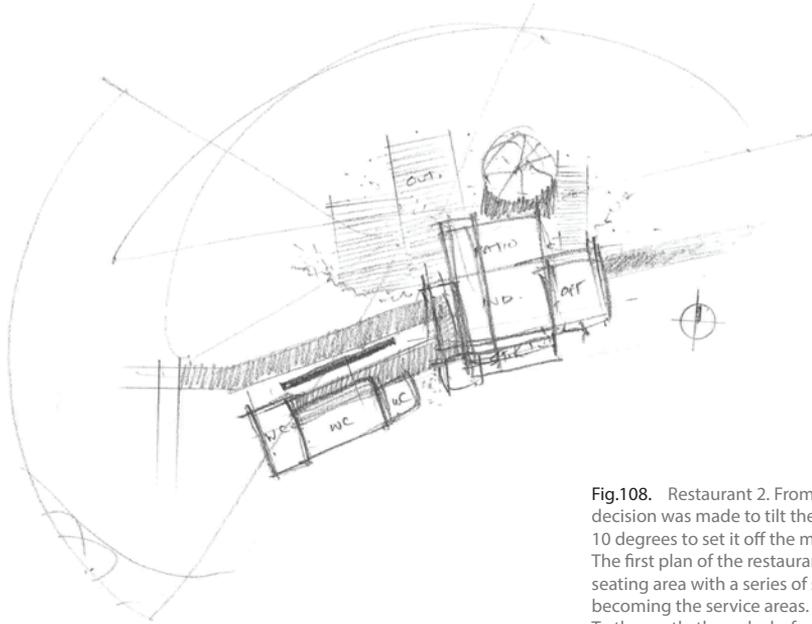


Fig.108. Restaurant 2. From the elevation, the decision was made to tilt the ablution block by 10 degrees to set it off the main approach axis. The first plan of the restaurant shows a main seating area with a series of smaller attachments becoming the service areas. To the north, three decks form the outside seating, overlooking the park the decks allow for various levels of intimacy. July, 2016.

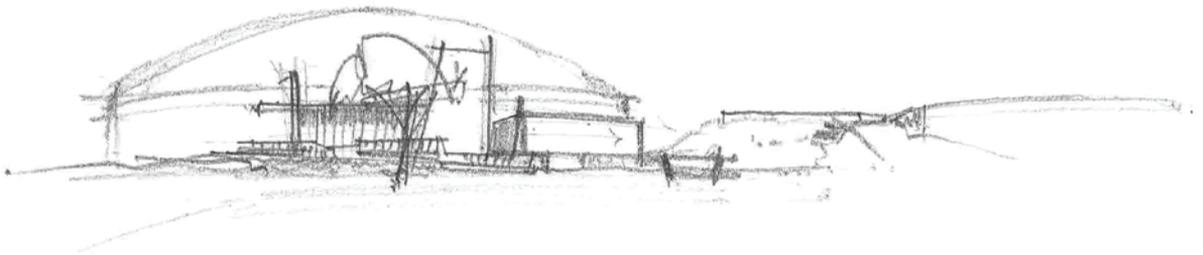
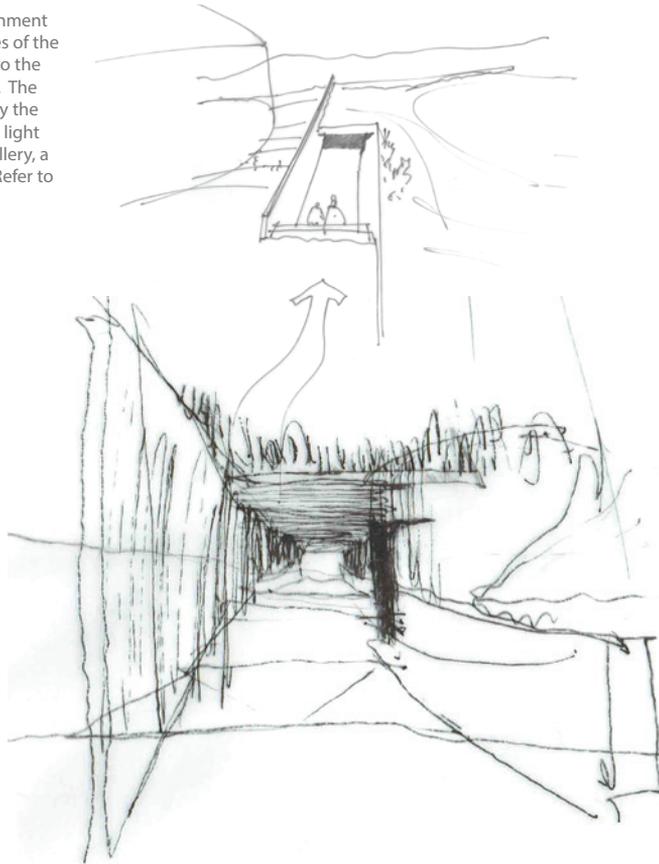


Fig.109. Restaurant 3. The perspective reflects the intentions of the plan and explores the volumetric mass of the restaurant's entrance. July, 2016.

6.5.2 THE ENVIRONMENT GALLERY

Concentrating the view

Fig.110. The Environment Gallery. Early sketches of the threshold leading into the Environment Gallery. The light lobby created by the tunnel maintains the light quality within the gallery, a mystical play room. Refer to Interlude.



Inspired by the kumkummi the Environment Gallery makes use of story telling and play to teach children. The presence of water creates a playful environment for the children and a look out point for the elders. Contained within the disused 19m diameter tank the large indoor room becomes a storm watching platform.

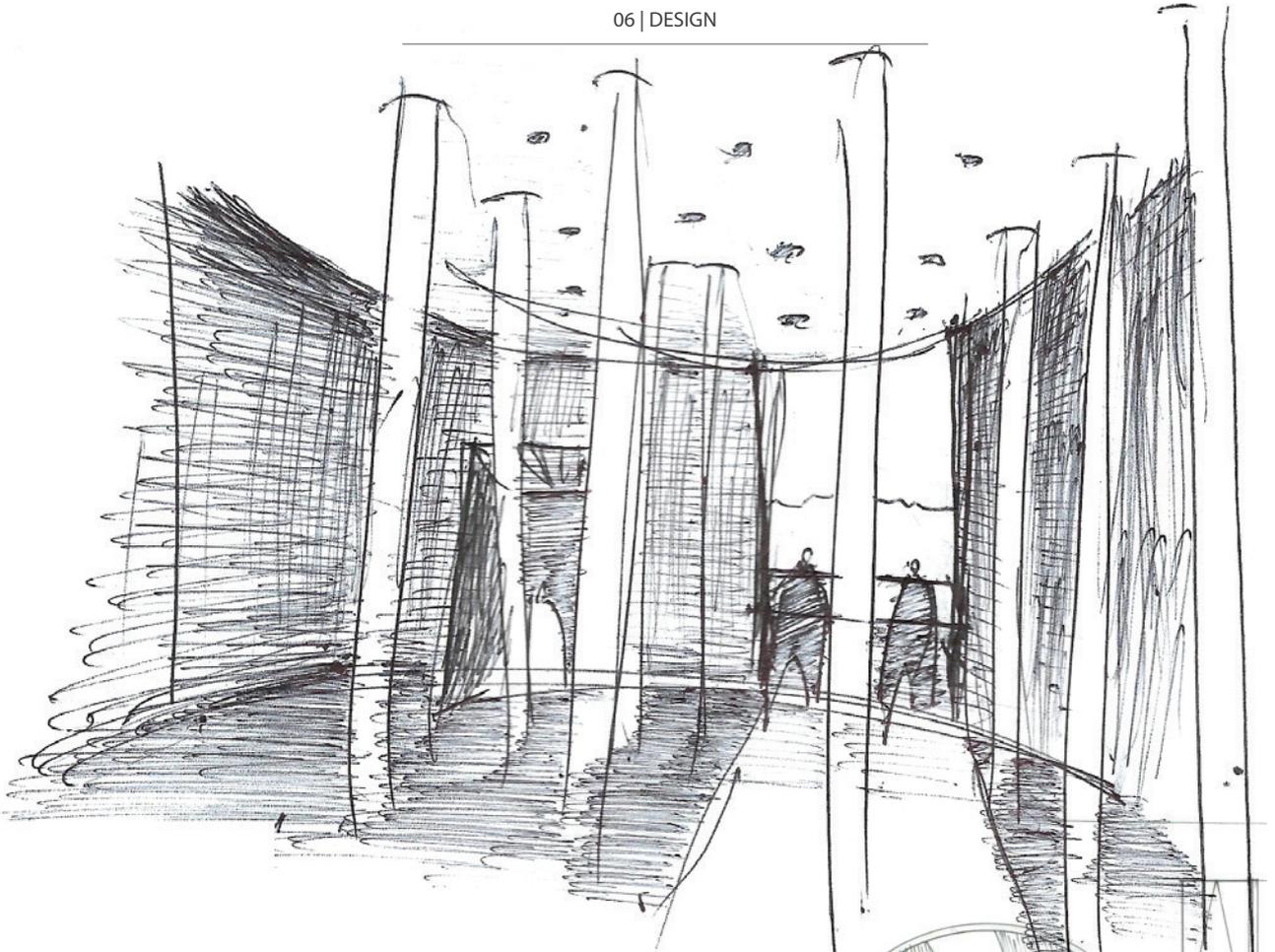


Fig.111. Concentrating the view. From the heart of the disused tank a new window focuses views on the Quagga Mountain Range. During the rain season this window can be used to explain the water cycle to children. The legend of the Rain Animal will continue to have a place in the South African landscape. July, 2016.

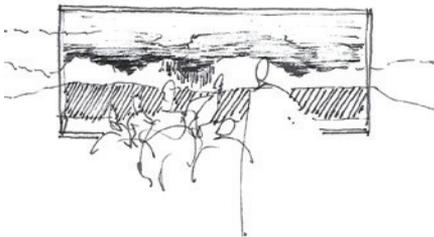


Fig.112. Observing the Rain Animal. April, 2016.

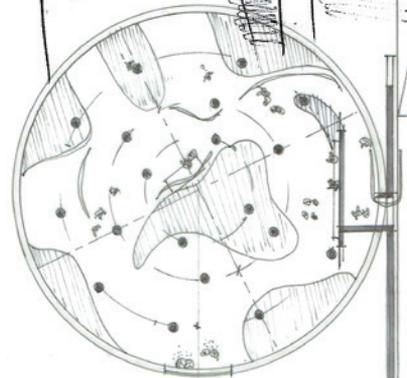


Fig.113. Early plan of the Environment Gallery. Showing the circulation route and splash pools as play areas. Note the columns carrying the roof. August, 2016.

6.5.3 REGROUP

Concentrating the view

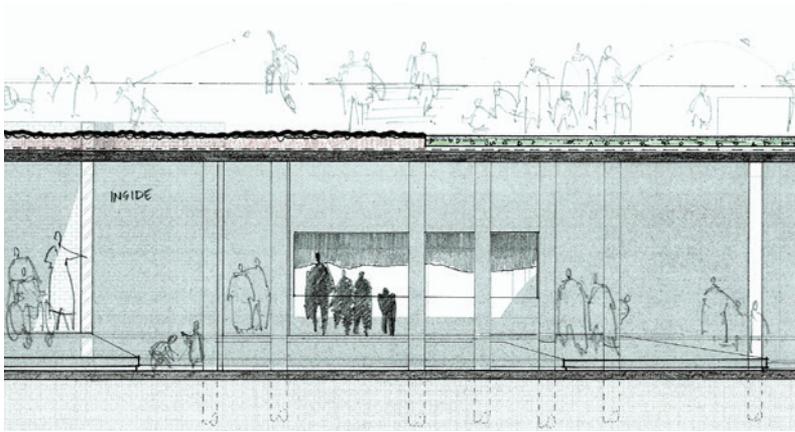


Fig.115. Framing the view. Cross-section of the environment gallery. Breaking the existing tank to permit natural light and frame the view across the valley. July, 2016.

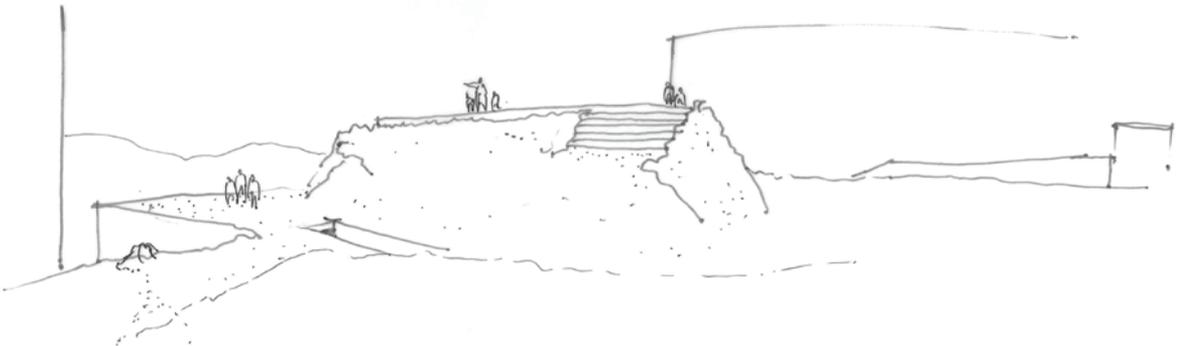


Fig.114. Perspective of the outdoor room from the restaurant. Surface treatment to accommodate crowds where views are highlighted. July, 2016.

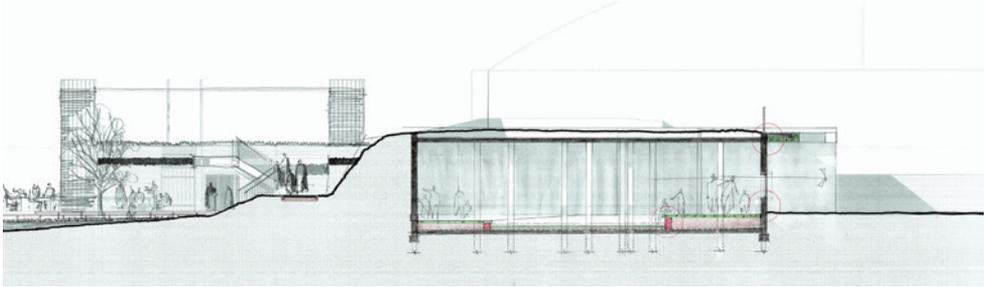


Fig.117. The disused tank. On section, the columns can be seen populating the interior of the tank. With the exception of the walkway, the remaining portions of the ground floor make up the play area. In elevation an early exploration of the restaurant can be seen. July, 2016.

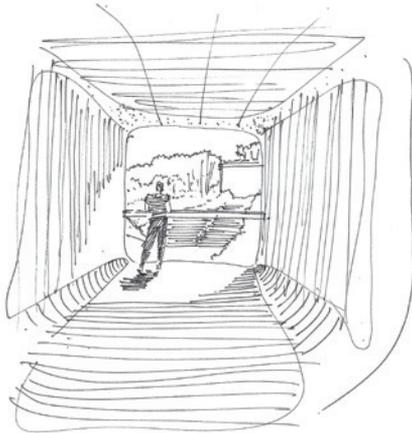


Fig.118. A glance into history. Musée Gallo-Roman, Lyon, France. Bernard Zehrfuss, 1975. The omniscient viewer over looks the Roman ruins at Lyon.

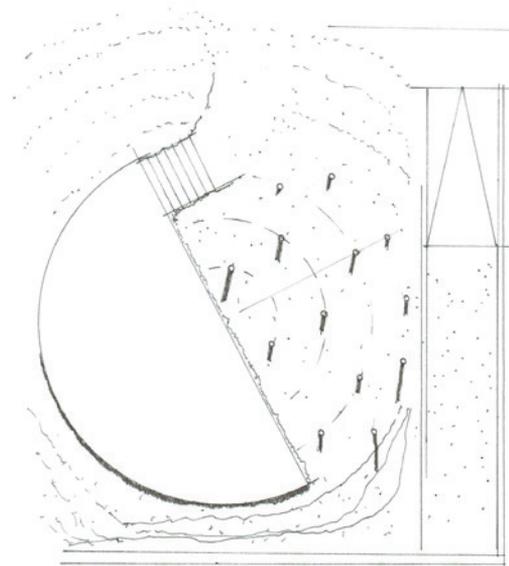


Fig.116. Roof plan of environment gallery. Reflecting the position of the columns beneath, the roof becomes a new landscape for play. In the evenings this urban balcony becomes a place to appreciate the sunset or feed the birds. August, 2016.

6.5.4 REGROUP

Inspiring Imagination

The sequencing of spaces allow children to settle down before the main show, these story telling spaces are educational in nature, like the Kumkummi these narratives provide the children with stories that help them unlock the cosmological framework of the 21st century. To welcome repeat visitors, these stories are changed frequently and adapted to the age group of the viewer, ensuring that the experience is unique with every visit.

The requirements of these regroup spaces demands additional staff members.

The staff break down becomes: 5x Security, 2x Maintenance (grounds), 2x Technicians (mechanical and studio), 6x Permanent guides and finally a total of 10 restaurant staff.

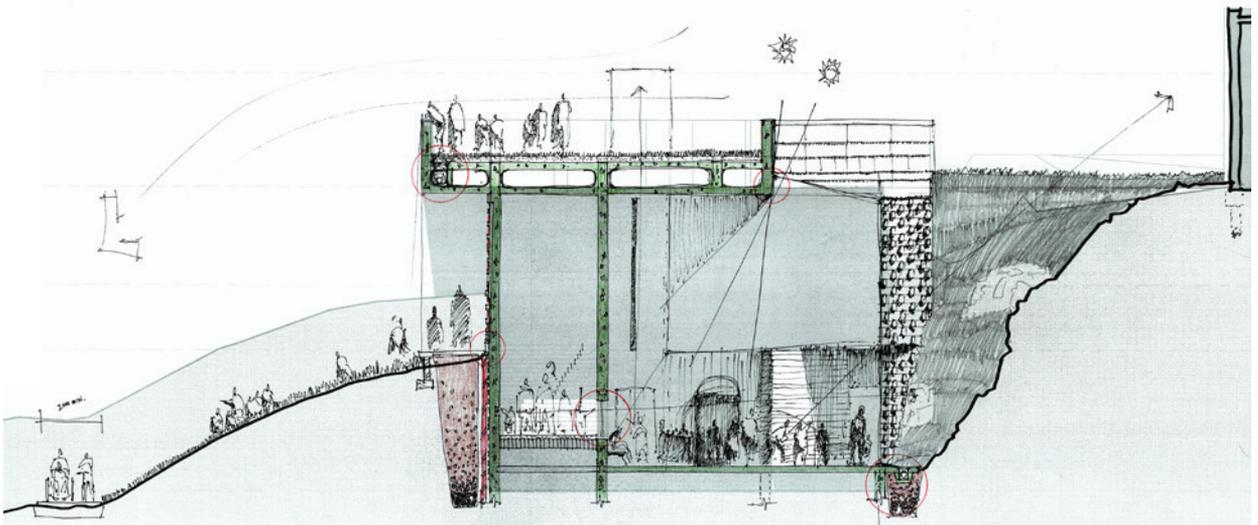


Fig.119. Experience. While waiting for the show (1h run time) the visitor spends most of his time waiting. The lobbies and receptions are designed to intrigue children to ask questions. In this section, a view towards the water tank allows for an engagement. A story is designed into the programme such that a child is inspired to question and form an understanding before entering the planetarium. Upon exiting the planetarium, the child can re-explore his environment, one element at a time. August, 2016.

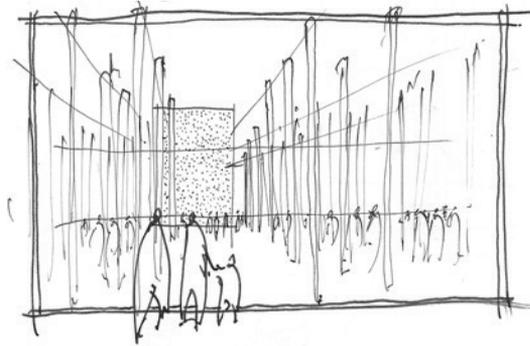


Fig.121. Visual participation. *Sticks and Stones* pavilion, 2014. David Chipperfield. Berlin, Germany.

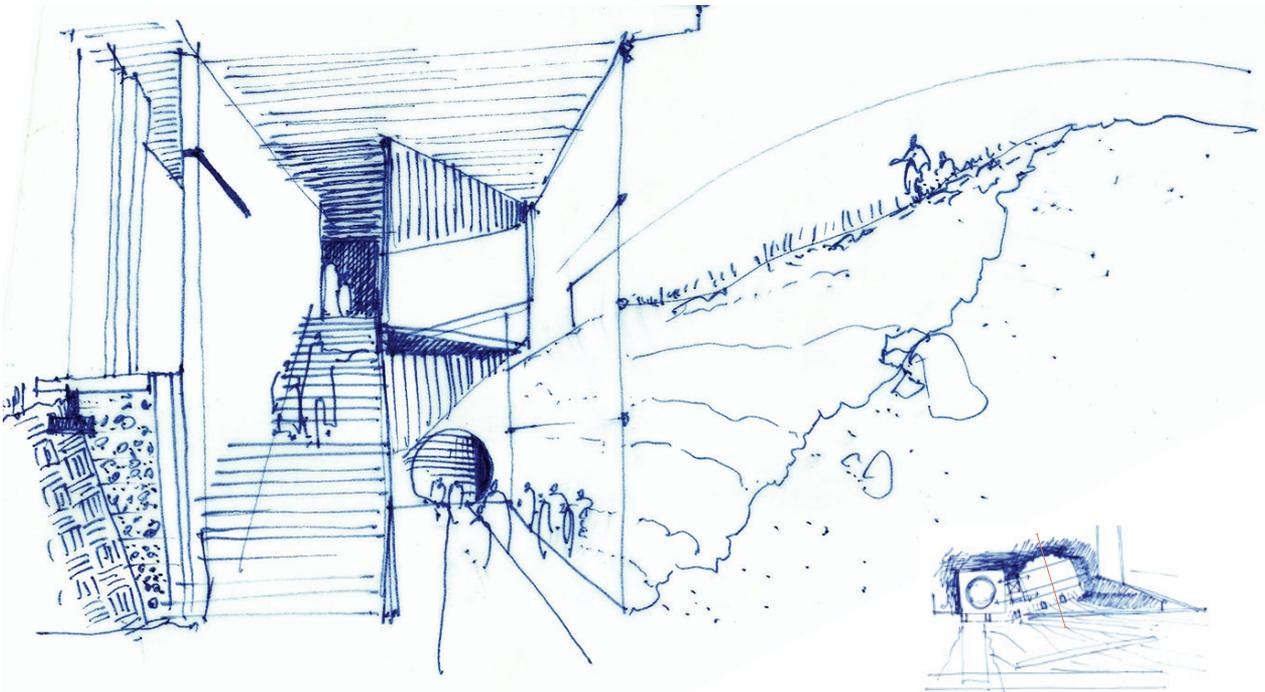


Fig.120. The story of water. The planetarium's lobby becomes another story telling room. The story of the safe-keeping water is told to the children. With the tank positioned directly above the viewer, the child experiences the significance of these formidable containers. This glass facade permits natural light into the lobby and encourages visual participation. Inspired by David Chipperfield's *Sticks and Stones* pavilion, the lobby becomes accessible to passers-by, encouraging them to explore. August, 2016.

6.5.5 THE URBAN BALCONY

An alternative route home

The urban balcony is envisioned as a widened pavement, a place for a moment of pause. This swell in the walkway inviting a neighbourly conversation, or a greeting. For the early bird this could be a place to watch the sunrise or stretch on a morning jog.

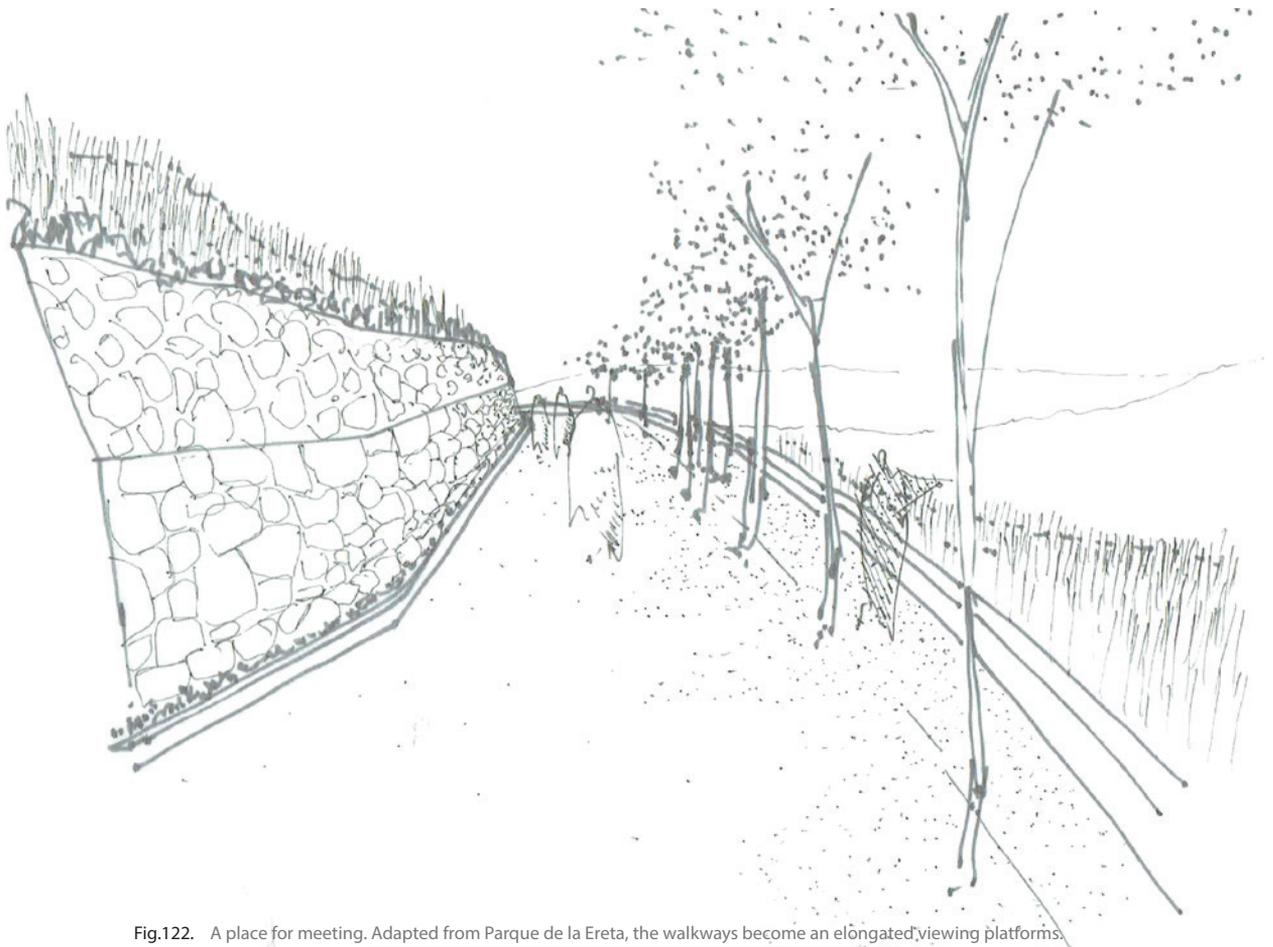


Fig.122. A place for meeting. Adapted from Parque de la Ereta, the walkways become an elongated viewing platforms. June, 2016.

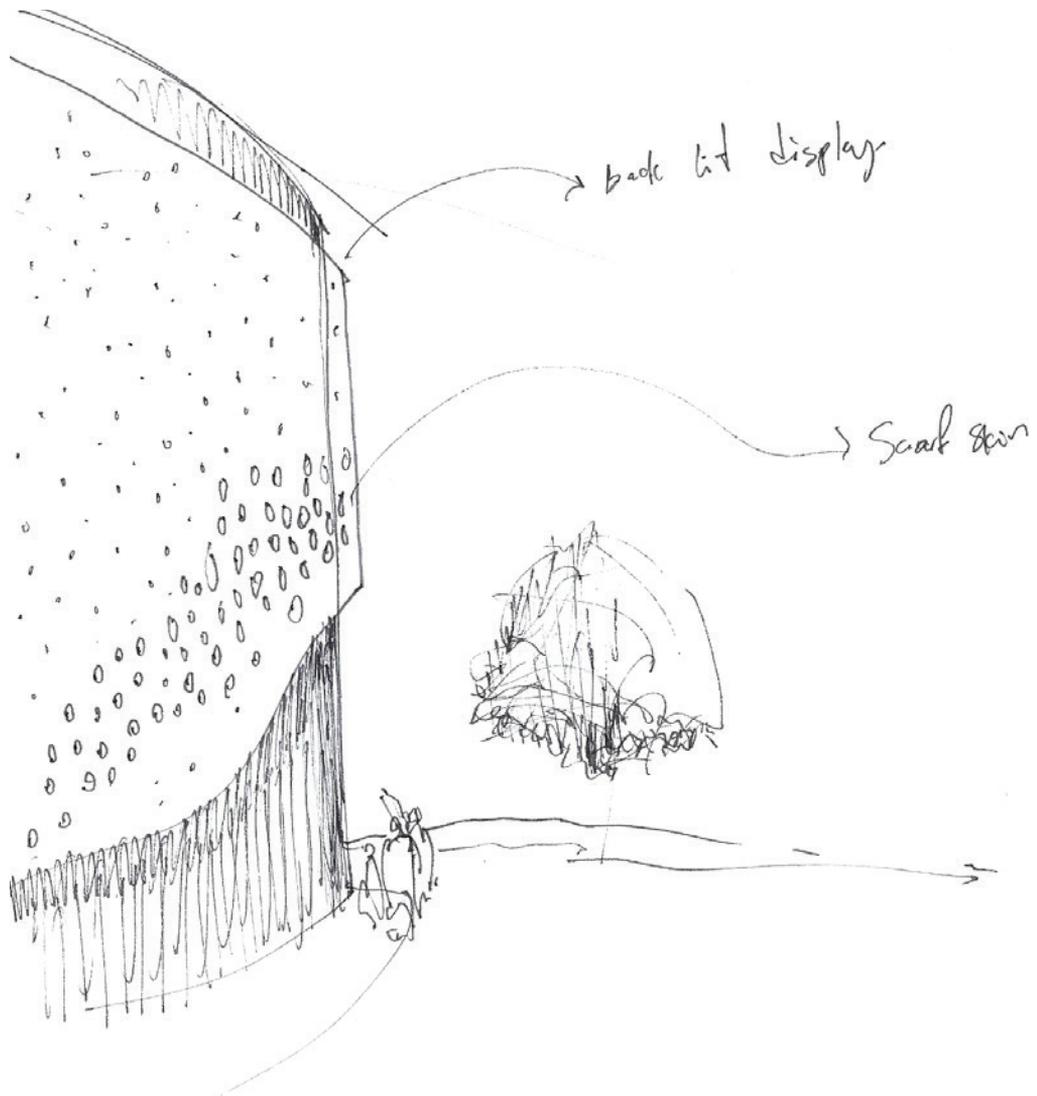


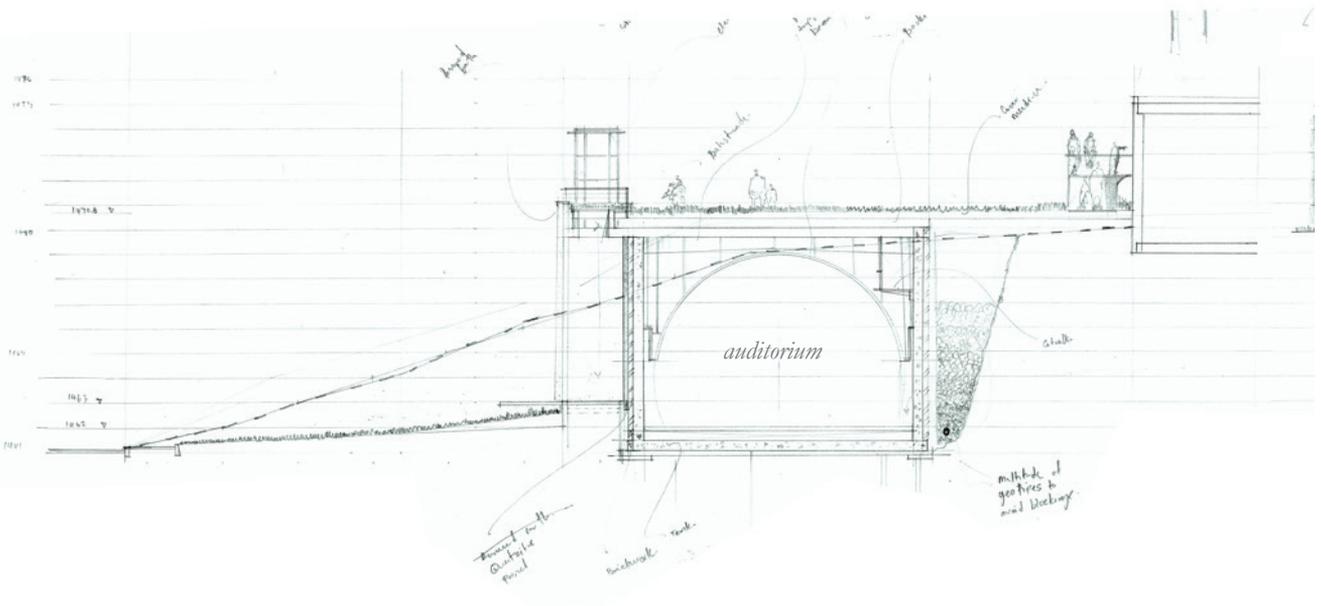
Fig.123. A new skin. Provision for lighting makes the pedestrian routes safer for the local user during the evening. This also provides an opportunity to reconfigure Atteridgeville's skyline. Exemplifying the significance of the hill and the planetarium with a new backlit skin that attaches itself to the existing structure. As the movement routes meander past the tanks people can interact with the new skin.

Initially conceptualised to represent all the students who matriculate from Atteridgeville, the skin would begin blank and with time become populated. Making the water tank a memorial to all the students who remain curious. March, 2016.

6.5.6 THE MODERN CAVE

Invitation to wonder

In anticipation of the twenty-fifth anniversary of a democracy, the Thebe Medupe Planetarium offers an inclusive park to all children of the rainbow nation. It is a place on the hill that allows for all its peoples to congregate and appreciate the diversity of South Africa. This scheme provides an example for future developments in underprivileged suburbs. This park becomes an invitation to wonder and rejoice the new South Africa.



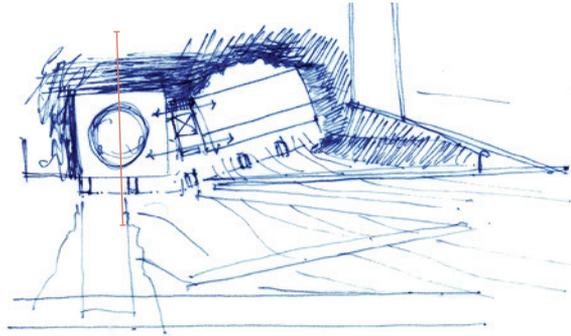


Fig.125. Carved out of the landscape the planetarium does not compete with the existing structures, rather it highlights them by becoming the podium on which they rest.

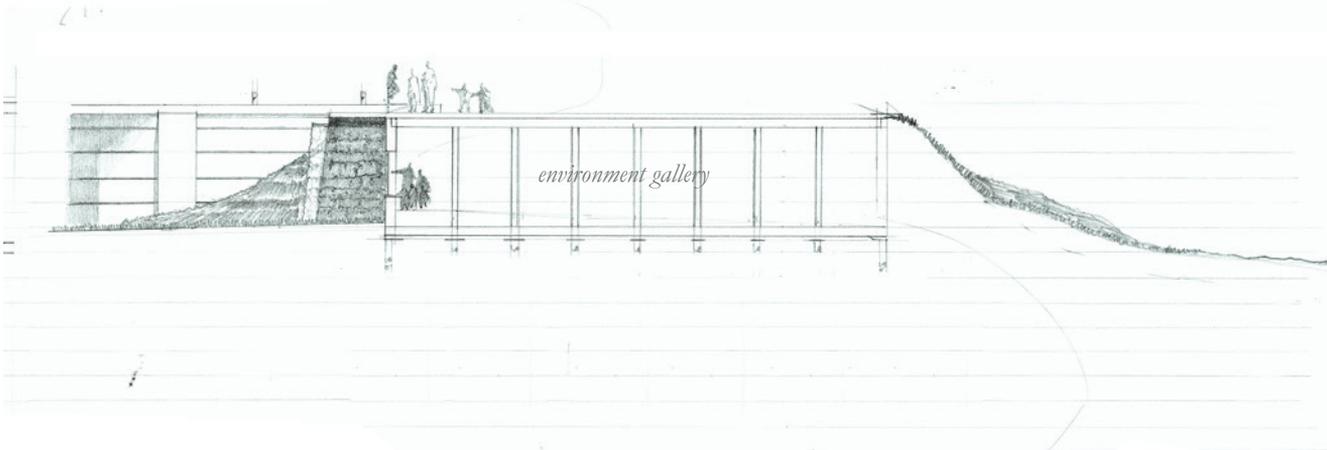
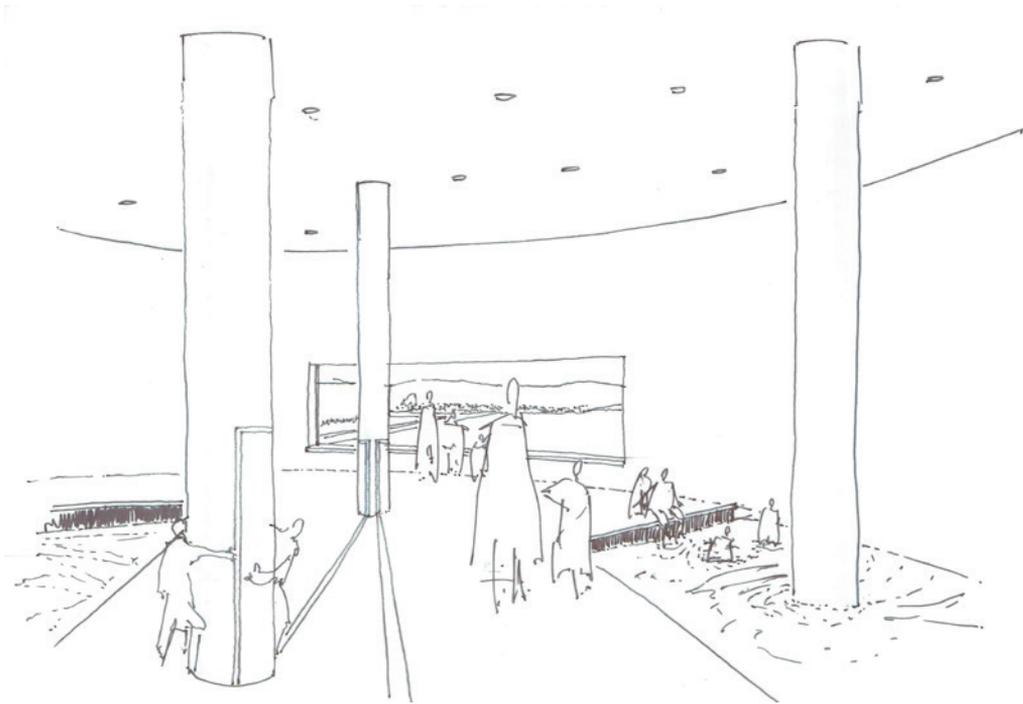


Fig.124. A stepped section through the environment gallery and planetarium. The architecture is that of a cut-and-fill-back, creating a large platform for engagement. The planetarium is integrated into the landscape creating a new language on the hill, the elevation will appear to be emerging out of the landscape. Early section illustrating the spatial requirements of the planetarium, seating 170 people. August, 2016.

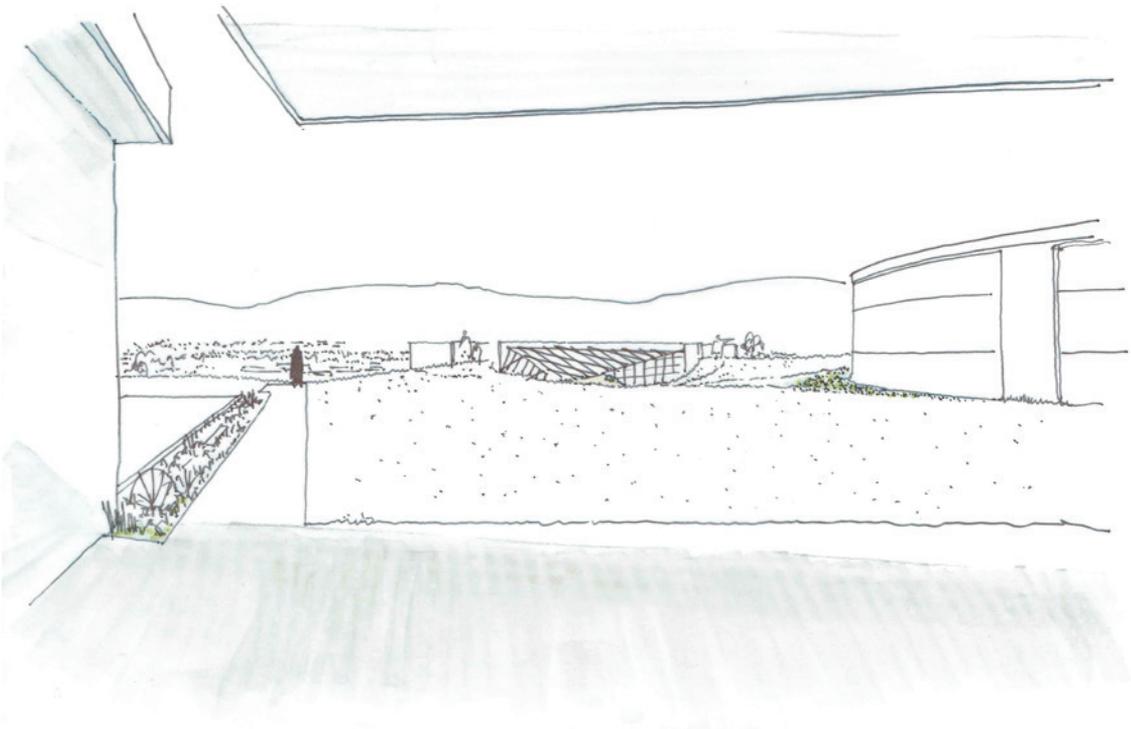
THE ENVIRONMENT GALLERY

'The rock pool'



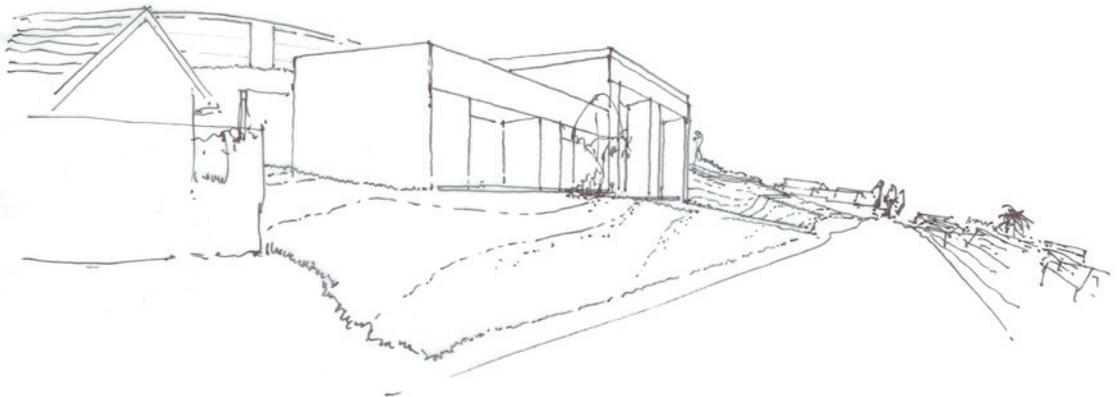
CONCENTRATING THE VIEW

Emphasising the background



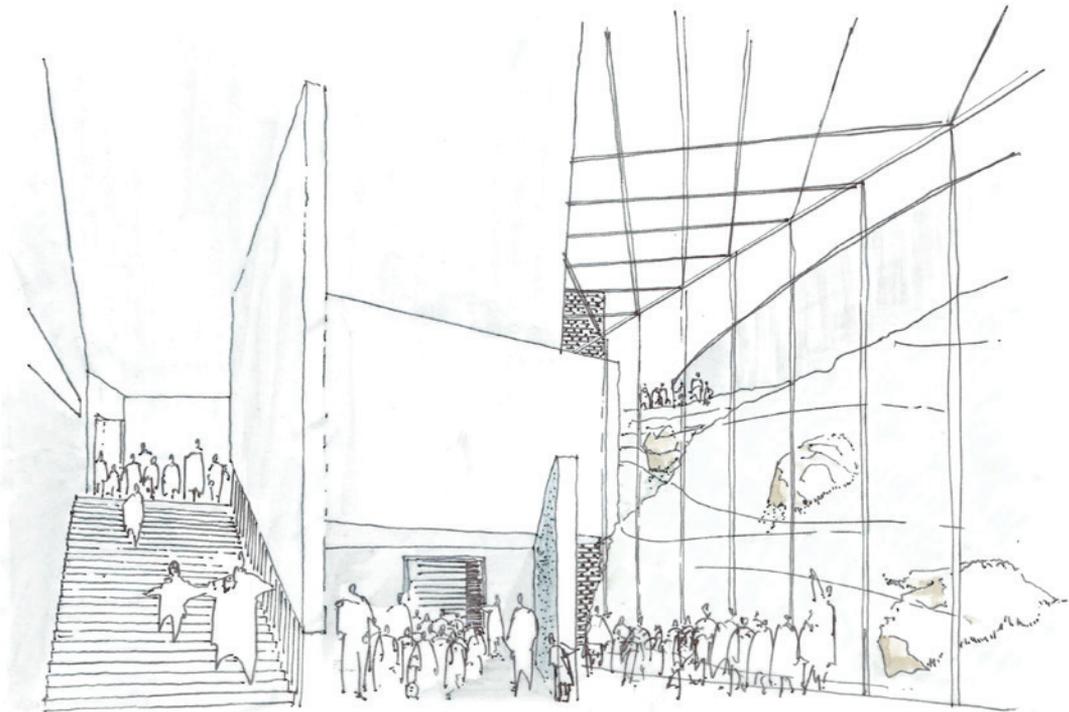
THE HILLTOP

Approach from Mankopane Street



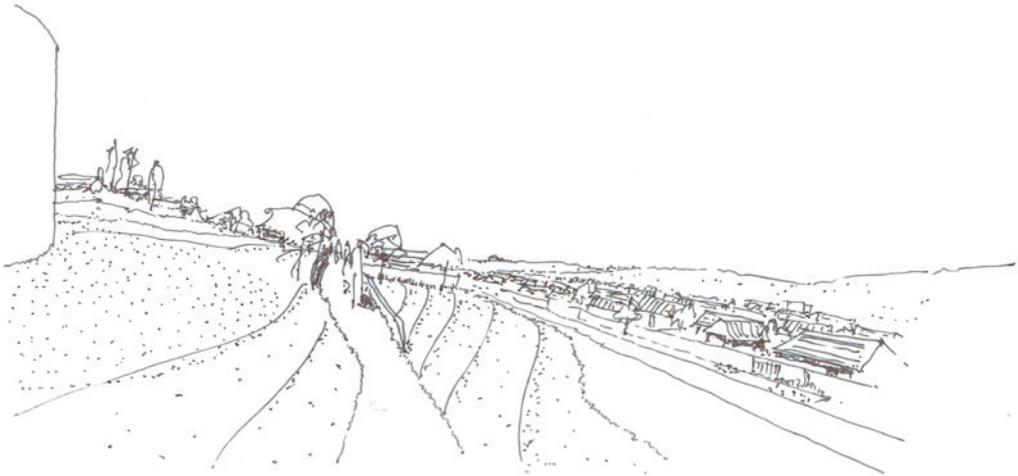
STORYTELLING

Thebe Medupe Planetarium



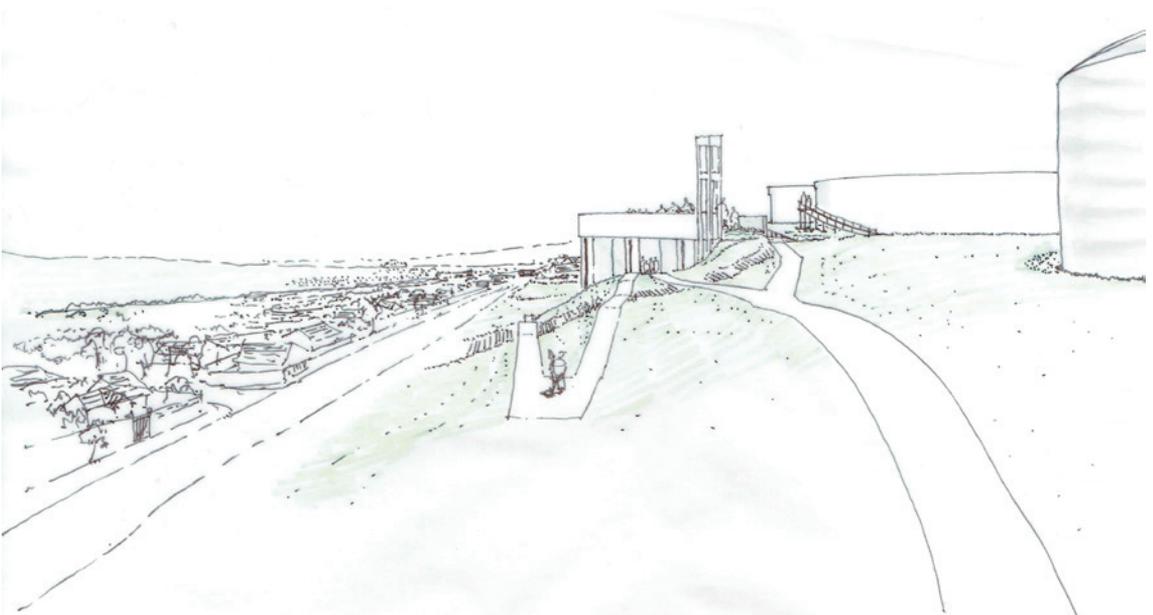
THE EVERYDAY

“Double-up”



3RD PLACE

Reading the landscape



“We may define the ideal outcome of architecture as being that a building should serve as an instrument which mediates all the positive influences and intercepts all the negative influences affecting man... a building cannot carry out this task unless it is itself as finely nuanced as the surroundings in which it stands.” - Alvar Aalto.