# Recontextualising the Animal

## A Plastinarium at Groote Schuur Zoo

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This Dissertation is presented as part fulfilment of the degree of
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*Fig1: Hundertwasser, 1979 Parfum D'Humus expressing a surrealist cohesion between man, nature and architectural form*

# Abstract

The investigative driver which has motivated this dissertation is encapsulated by the thresholds and interrelationships between man, nature and architectural form.
Theories and concepts pertaining to this dissertation relate to the transformation of a site, drawing on its embodied energy as a point of reference for reinterpretation.

The relationship between man and nature has been investigated by looking at how man uses architectural elements and devices to best construct divisive barriers between *himself* and the *other.* The *other* in the context of this dissertation refers to the living creatures inhabiting nature, being the animal. By the testing of architectural strategies derived from a theoretical analysis of zoological gardens, I aim to dissect and explore the threshold between man and nature, using the narrative of my chosen site as a platform of exploration and discovery.

Throughout the centuries man has constructed stage sets between himself and the other, generating a spectacle around the actor/ spectator relationship. These stage sets have changed in hierarchical composition due to social, educational and scientific influences brought about by further research into the world of the *other.*

The aim of this dissertation is to resuscitate the life of a site by reflecting on the historical narrative at play between man and the other. I aim to achieve this by using architectural form and program as a catalyst for reinvention and transformation, this will produce an outcome that poetically reinterprets the existing site condition, into a project that has the ability to thrive and sustain social interest and activity in the context of today as well as the future.

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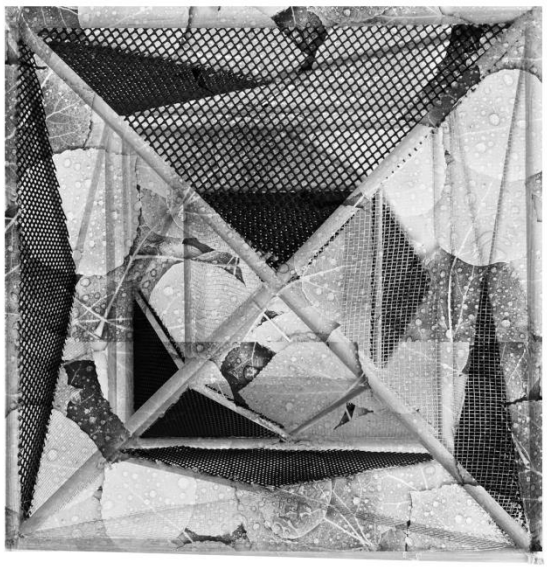
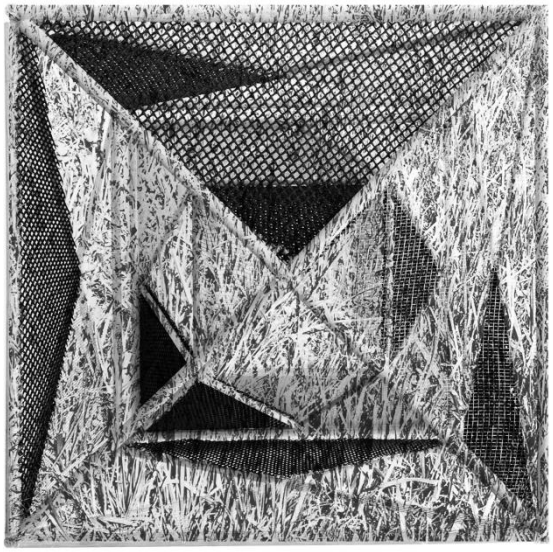




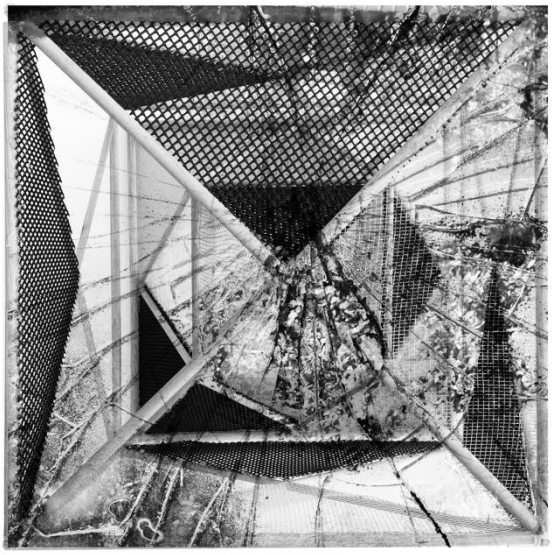
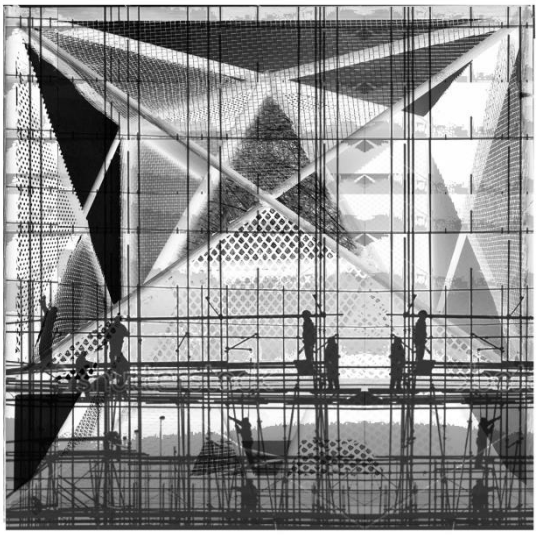


*Fig2:*
*Manipulative overlay of a manmade object cohesively thriving in a natural or foreign context*



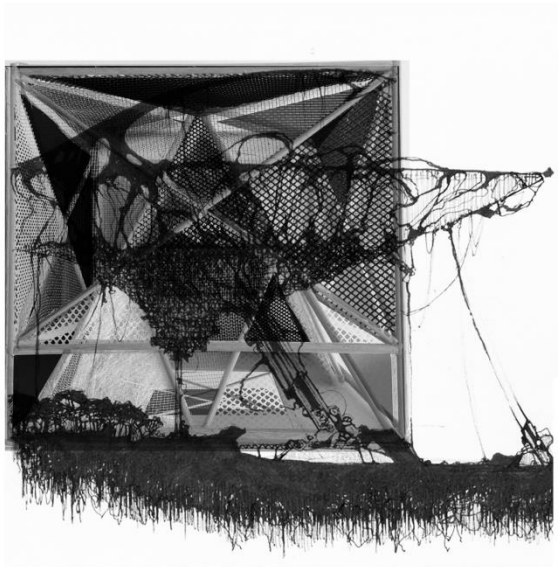


*Fig3:*
*Manipulative overlay of a manmade object transforming the narrative of an existing site condition*

# 2. Introduction

*"In all times, and in all places, man has tried to develop his environment to his own satisfaction, and thereby to enhance the beauty of his possessions."* Hancocks (1971:125)

The root from which this dissertation is grounded stems from an interest into the interrelationships between man and the natural world. Man's attempt to reinterpret and intervene in the world of the *other* has been a direct result of societies attitude toward the unknown. This has resulted in an evolution of architectural design strategies aiming to bridge the divide between *us* and *them*.

The spatial threshold between these two elements which started to generate a basis of research as well as locating a site; situates my project along the foot of Devil's Peak- between the urban city slopes and wild mountainous zone.

The historical lineage comprising this zone of land deals with the subject matter of colonialism, constituting the establishment of contact zones between *self* and *other*. The derelict site composing the old Groote Schuur Zoo, situated within this threshold, embodies a narrative similar to the constructed set pieces that comprise the estate as a whole.

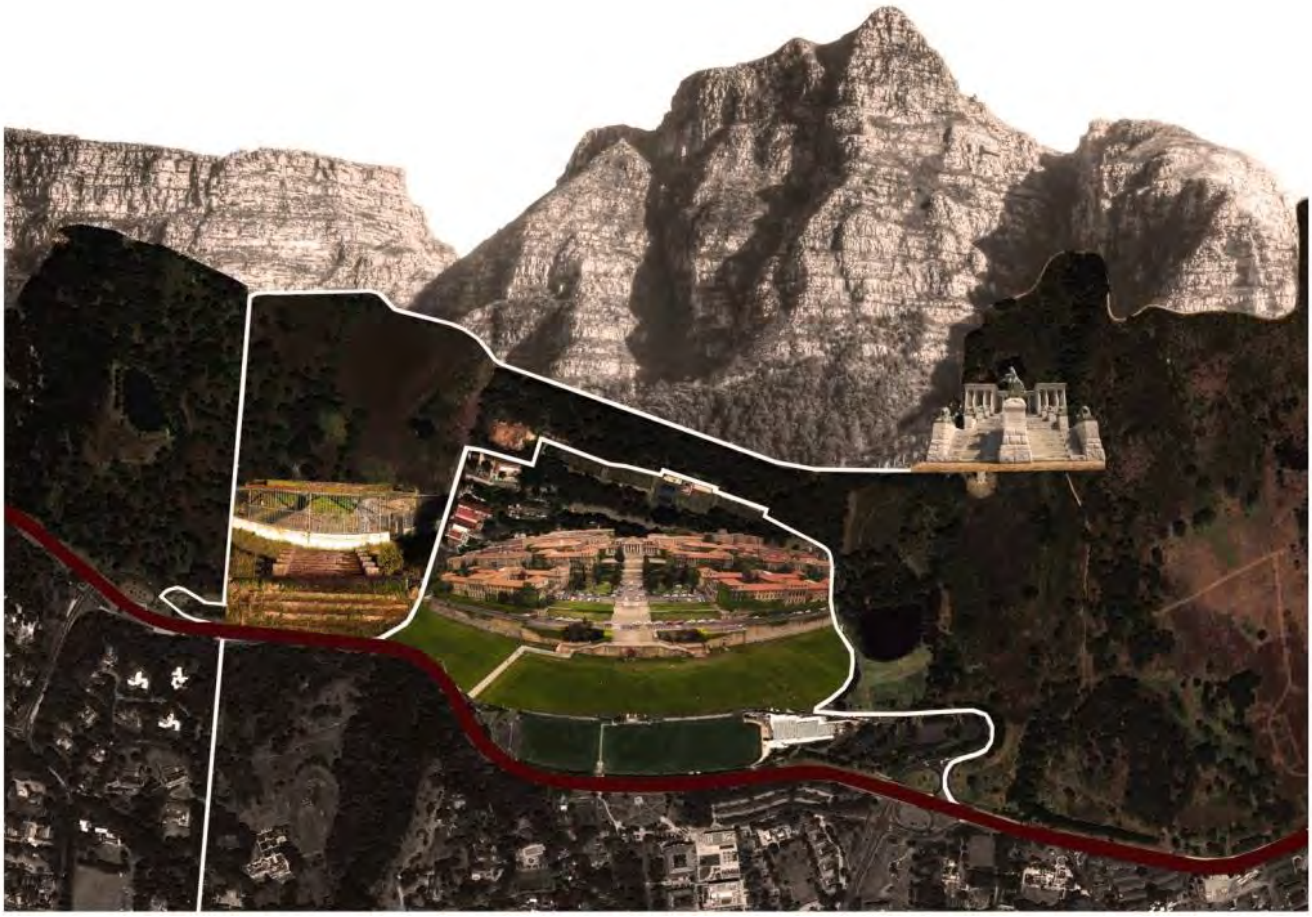


*Fig4: Propping of colonial set pieces on Groote Schuur Estate.*

Certain architectural symbols and mechanisms encoded within the zoo have been unpacked and explored. Not only does the structured landscaping of the old zoo celebrate a symbolic linkage of power to Cecil Rhodes, but it also tells a story of the disjointed relationship that man (spectator) came to view the animal (actor). This is evident by the intention of designing purely around the spectacle of the visitor's experience, opposed to that of the animal's optimal living conditions.

By investigating the evolution of the constructed/ hybrid landscapes of zoological gardens, a greater understanding of man's control and influence over nature can be explored, aiding in understanding the narrative and disposition of the Groote Schuur Zoo. The content of this theoretical approach is to understand the intentions behind the design of earlier menageries and how they have evolved due to increased urban and social growth. By interrogating thematic principles employed in modern zoological structures I aim to develop architectural techniques that integrate both the audience (man) and the performer (animal).

The evolution of zoological structures, programs and devices of separating and integrating performer (animal) and audience (man) from one another have been influenced by the changing ideas and attitude of society's relationship toward wildlife fuelled by conservationism as well as scientific and biological research.

My design intention in continuance with program development has come to flourish out of the notion of *deconstructing the illusion*- whereby the historical disjointed relationship between man and animal that exists on the site has been reconfigured, by *recontextualizing the animal* to produce an experience that is more coherent with the interactive zoological structures of today. As a dual initiative the project aims to signify a gateway to the Groote Schuur Estate as well as resuscitating the identity of the site pulling on the poetic receptors of awakening the animals that once inhabited the zoo. This will be achieved through the exhibition and biological process of plastinated and taxidermied specimens. Both plastination and taxidermy involve the process of preserving dead human and animal specimens, thus the exhibition of such specimens celebrates and creates a spectacle around both anatomical vessels in an artistic and biological light.

Strategies that will support the this intention constitute the use of a spine that contextually links the gateway to UCT, whereby the testing of the zoological structure of the moat and the aviary will be employed in fusing the dichotomy of the various programs constituting the spine together. The intervention aims to create a spectacle of audience and performer integration influenced by modern zoological barriers and enclosures, along a route that bridges two distinct nodes by awakening the curiosity into man and anima's anatomical vessels.

# 3. The Narrative of Groote Schuur

## Contact Zones

This theoretical investigation stems from historical texts and maps which trace the early acquisition of land attained by Cecil Rhodes in the late nineteenth century. This land along the foot of Table Mountain has become the threshold between the city urban slopes and the wild rocky krantz zone.

The string of properties along this threshold became a contact zone between 'self' and 'other'- weather it be the man/nature; indigenous/exotic as well as racial collisions. According to Laura Gibson (2006:3) the contact zone established itself as a space of colonial encounters; in which geographically separated people came into contact to establish on-going relations. In particular the intent of the estates became an attempt to impose a dominant imperial culture onto the Table Mountain slopes. Gibson expresses the act of constructing a colonial landscape as an exaggerated form of propping one landscape model on top of another, with the intent of 'taming' the wild African mountain by the imperial powers of Europe.

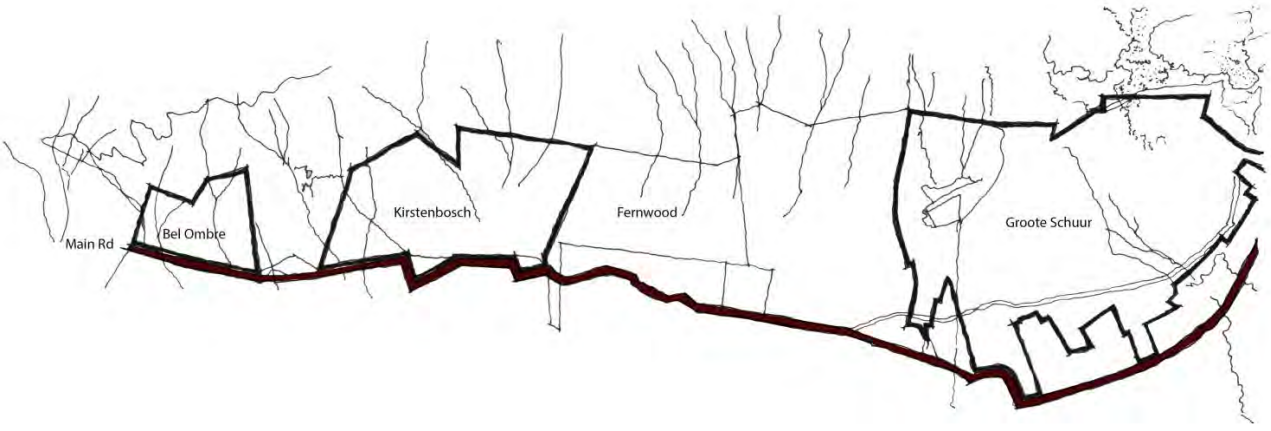



*Fig5: Acquisition of land attained by Cecil Rhodes*

1912

*Fig6: Rondebosch 1912*

2012

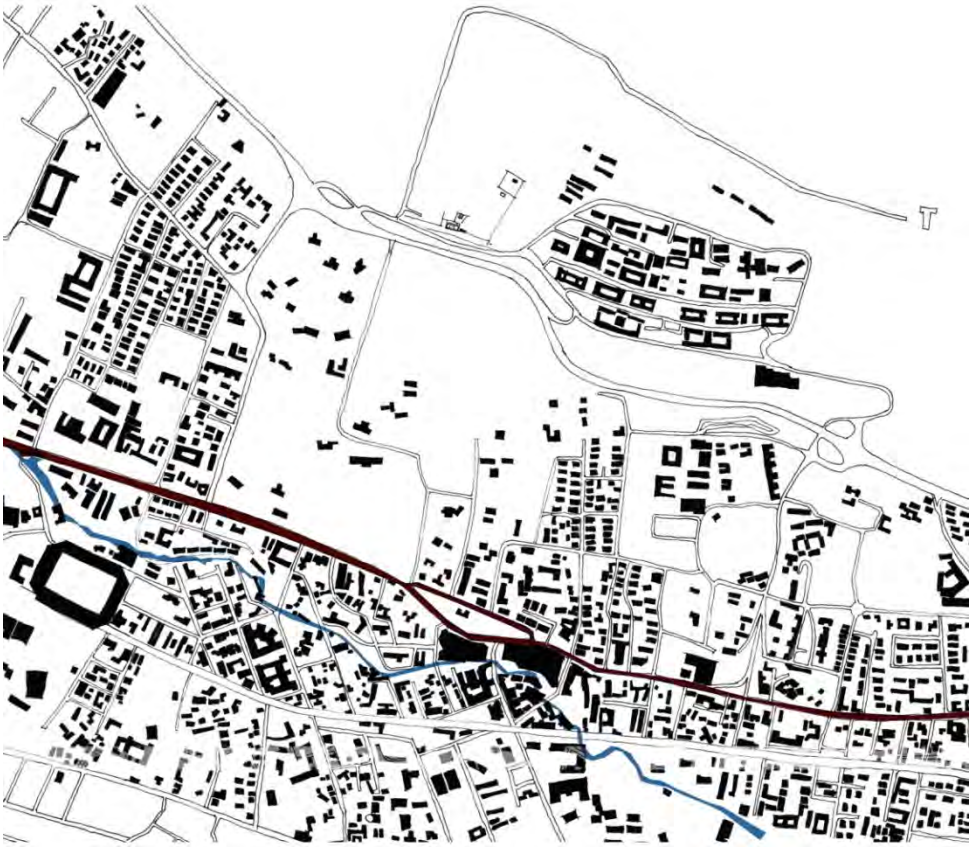


*Fig7: Rondebosch 2012*

It was through these early encounters of colonial propping of constructed landscapes as well as the control of man over nature that began to initiate an investigation into the ways in which landscaping acts as a medium of exchange between human and natural environments.

The zoo as an institution of study can be interpreted as a type of contact zone between man and animal, this being derived from man's domination over nature, and how he reconstructs his perception of nature, and attempts to interpret and explain the world around him by the act of exhibiting wildlife. The enclosures become peep holes into the world of the *other*, based on society's ideal depiction.

The ideology of the zoo as a contact zone has prompted me to dissect and examine changing attitudes of the man/ nature relationship throughout history, reflecting ideas or notions that were of their specific time. The probable outcome from the research, being how we are now able to utilize and implement principles evident in modern zoological gardens that respond to the temporal and changing needs of society, in the context of today- which will provide more interactive and democratic solutions between us and them.

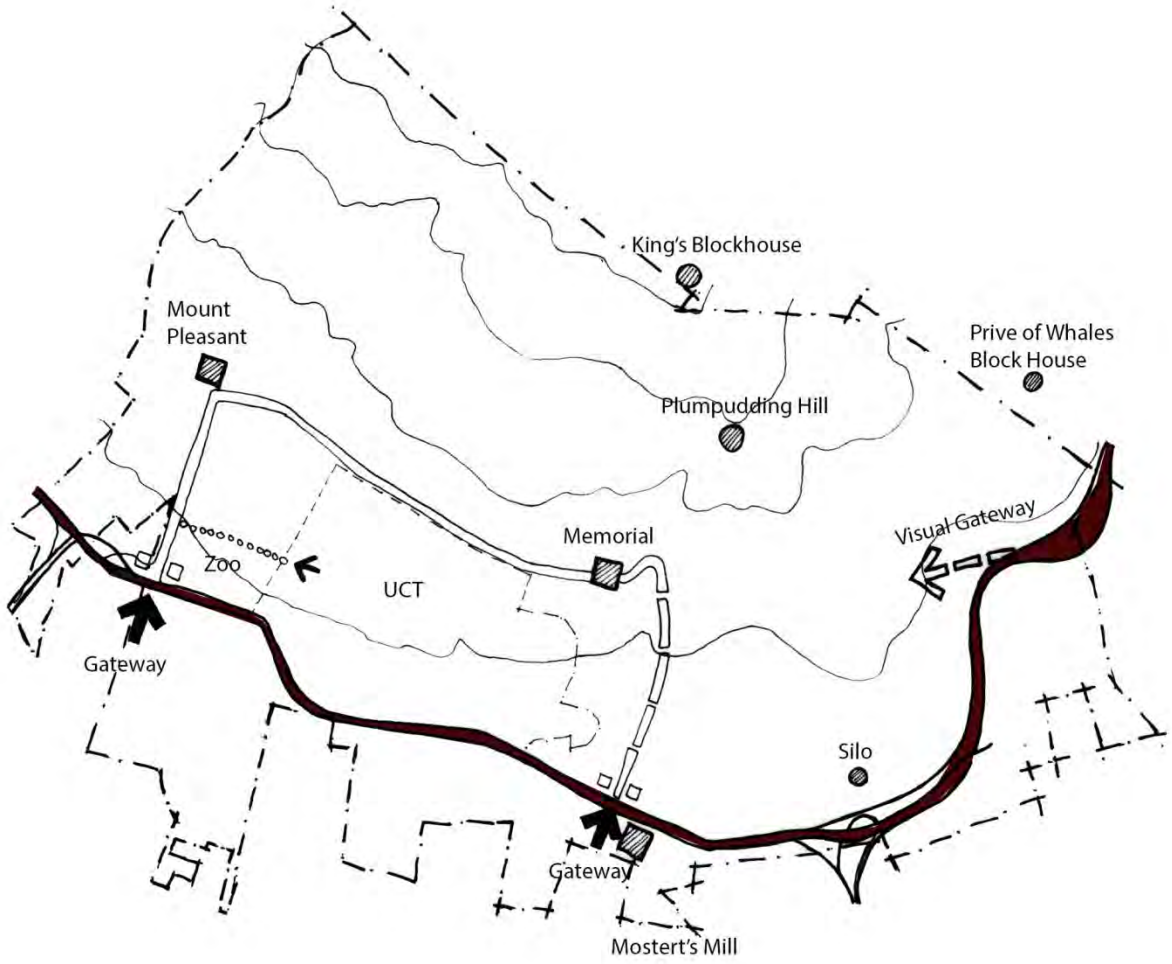



*Fig8. Landmarks on Groote Schuur Estate*

## Groote Schuur Zoo, 1929

Through the interpretation of the narrative behind the Groote Schuur Zoo; Laura Gibson (2006:44) acknowledges the majestic character and stature of the lion's den, with Table Mountain as its backdrop- in keeping with Rhode's imperialist dream of fusing the best of European culture with that which was best about Africa. She alludes to that fact that architectural mechanisms were encoded and employed in the zoo that would create a mood which emphasized the cultural quality linked to the animal to that of the civilization of classical European culture.

The constructed landscape became a cultural mirroring of human to animal, with a clear hierarchical display and arrangement. The display of animals became symptomatic of the position nature came to occupy in society- as the stigma associated with exotic animals become no longer dangerous, but rather fascinating allowing audiences to admire the actors. In the larger scheme it was a ploy in taming, shaping and civilizing the African landscape.

*Fig9. Lion's Den at the Groot Schuur Zoo*

> Zoos, as Mullan and Marvin argue, are about humans, for zoos tell us stories of human power, the exercise of control and domination (Gibson 2006:42).

*Fig10. Base of historical axis*

It is evident that the layout of the site was a part of a greater scheme of larger ideas. According to Gibson (2006:43) the sloped site allowed for the processional sequence to be planned in such a way that upon walking up the central spine of the garden the viewer's line of sight would be directed toward the lion's pit, with the back drop of Devils Peak. A symbolic interpretation of this, in Rhodes' vision, was that the lion symbolised the ultimate embodiment of British imperialism.

*Fig11: Processional isle of spine*

It can be understood that by inscribing this man-made symbol of power into the layout of the zoo- the lion became an embodiment of Rhodes, which society could then relate to. Consequently when the viewer, standing at the highest point of the lion's pit, looks behind himself; he sees a panoramic view of the city- symbolising the lion's (Rhodes') status and prosperity over the city, and beyond towards Cairo.

*Fig12: Pinnacle lion's den*

Gibson (2006:44) acknowledges that these familiar cultural signs and practices both present in the zoo and Rhodes Memorial allude to the fact that Rhodes' legacy aimed at constructing an empire, in acknowledgment of his vision and representation of the man that he was.

*Fig13: Cages located behind den*

In reading the plan, an obvious line of symmetry is reflected across the central spine of the layout, representing the classical design of the zoo. The finale of the lion's den as Gibson (2006:49) describes was centralised, being at the pinnacle position. In understanding the 'actor' and 'spectator' relationship of the lion's enclosure, it is evident that there is a fragmented relationship between man, illusion and reality.

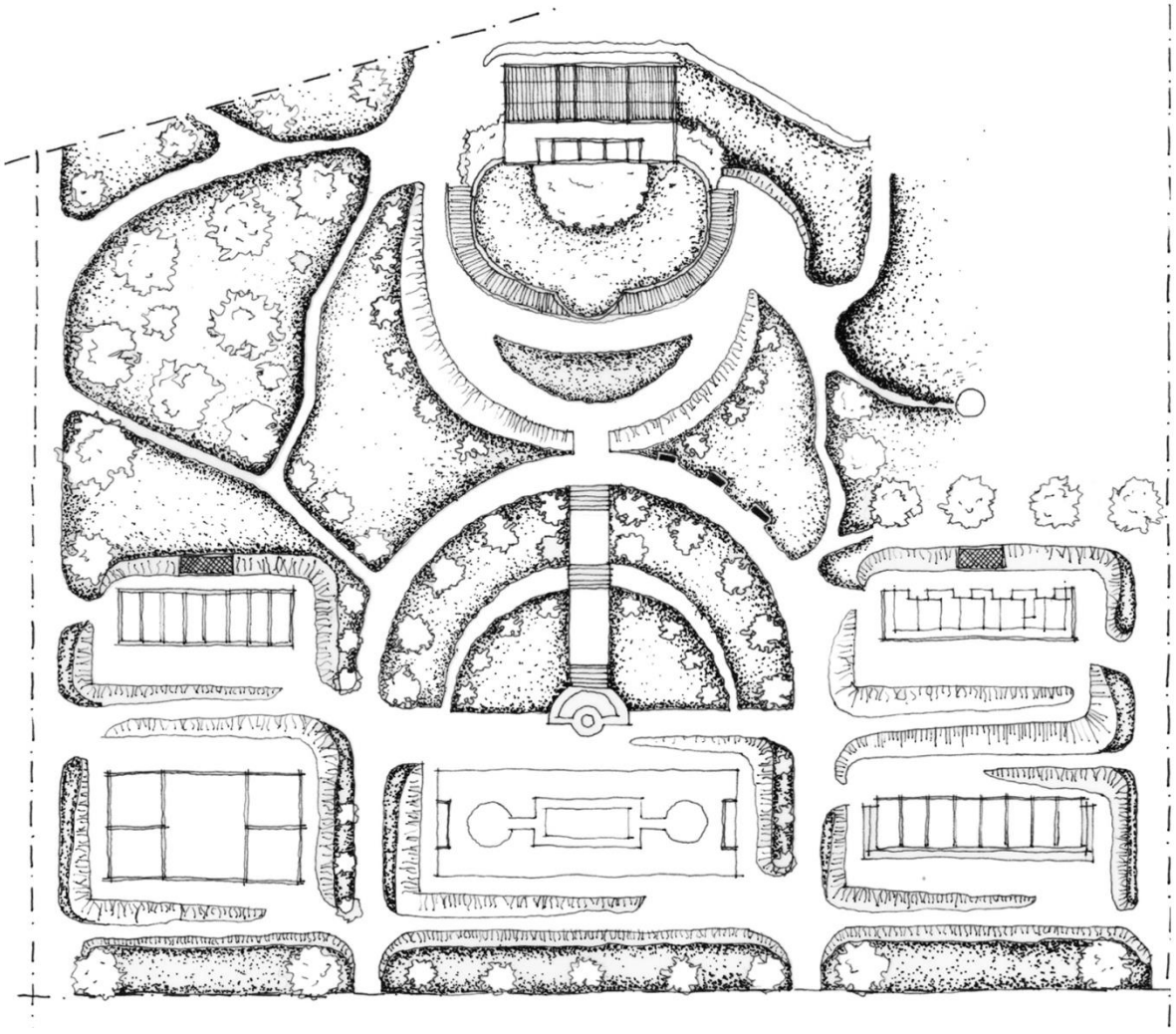


*Fig 14: Symmetrical plan of Groote Schuur Zoo*

The section through the enclosure witnesses a classical stage set, for the lion to perform for his audience, with an arrangement of caged bars located behind the amphitheatre. Gibson (2006:51) describes the cages to have been the *actual* living conditions of the lions, whereby the public could ascertain a more scientific study of the animals and their behavioural patterns.

*Fig 17: Actor /spectator relationship*

*Fig 18: Caged barrier codition*

## Lion's Den Analysis

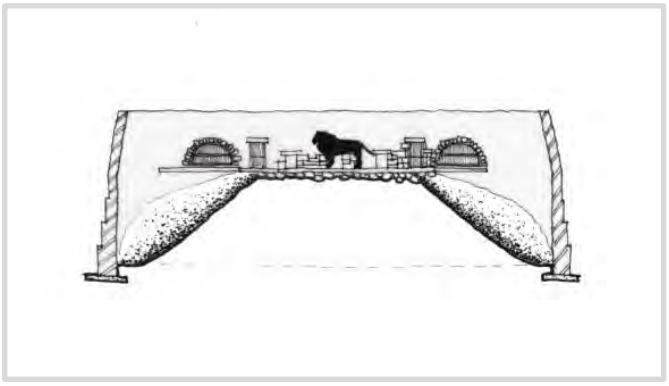


*Fig 15: Front elevations of lion's den.*

*Fig 19: Performing with the lion*

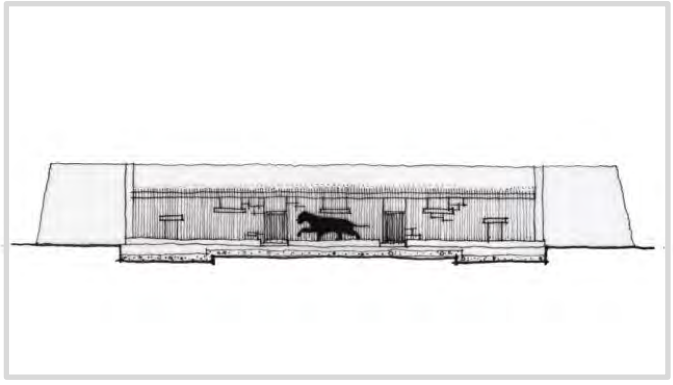


*Fig 16: Back elevations of lion's den.*

*Fig 20: Demolished aviary at the old zoo*

*Fig 21*

*Fig 22:*

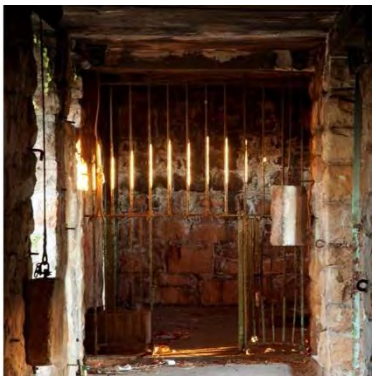


*Fig 23*

*Fig 24*

It is apparent that the zoo can be seen as a constructed landscape of cultural interpretations which society uses to manifest ideologies of animals and their surroundings. I am, however, more so interested in the architectural changes in set pieces as well as changing ideas over the course of time; which man uses to depict these idealistic environments for animals.

> Behavioural problems, human or animal, can often find their own answers in good architecture. In zoos the influence of such good architecture is also welcomed because of the inherent character of such an exhibition Hancocks (1971:125).

It is through this architectural exhibition of designing for animals that we can further understand the rational of designing for 'performer-animal' and 'audience-man' in a way that tries to bridge the gap between man and nature; and in doing so might aid in better approaches to human design.

Through these theoretical perspectives of architects and theorists I intend to discover ways in which the fragmented relationship between man and nature can be better fused to produce an outcome in maintaining a democratized relationship between the two.

*Fig 25*

*Fig 21-25 Depict the current conditions of the lion's den, as well as additional uses such as a theatre space (fig24) up until 2014*

# 4. From Menagerie to Immersion

This section deals with the historical lineage of zoo design, structured in a thematic method. This will aid in understanding the intentions behind the design of the Groote Schuur Zoo. I then aim to unpack techniques which modern zoo structures exhibit, influencing the program as well as design strategies to follow.

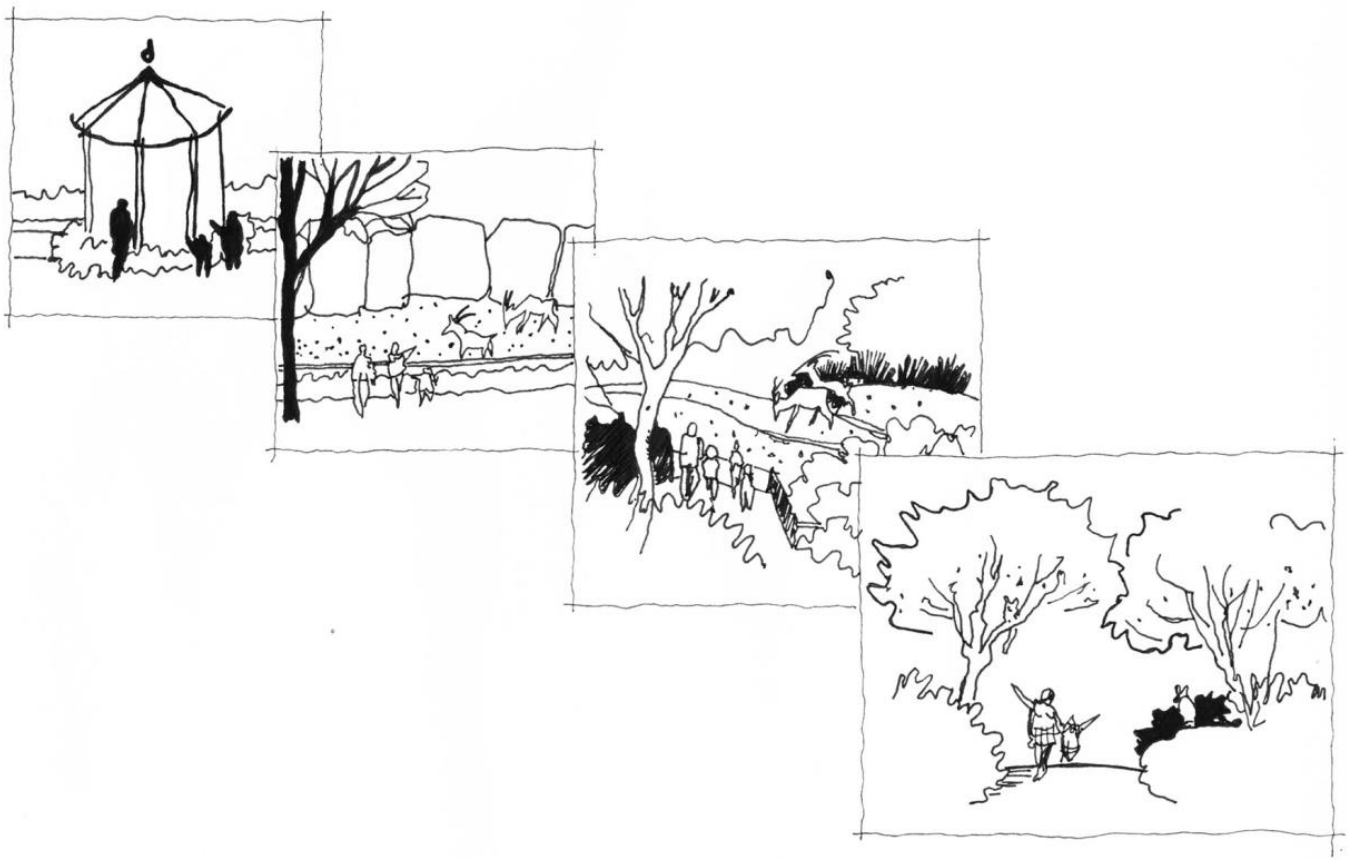


*Fig 26: Evolution of the zoo*

## The Menagerie

According to Hancocks (1971:105) the earliest menageries were designed to elaborately display animals in a manufactured environment whereby they could be appreciated by their regal owners. The idea was to create an exhibition, reflecting man's ideology of beautifying the natural world at his will, oppose to that of the requirements of the animals.

Hancocks (1971:106) describes the master plan of the menagerie at Schonbrunn, Vienna to have been conceived by Empress Maria Theresa. It initiated out of the desire to create a spherical arrangement of the ornamented animal cages that rotated around a central vantage point where she could breakfast every morning and admire the beauty of the caged animals.

The general trend of enclosing wildlife was never to the prerequisite of the animal, but rather to recreate a mood that could be associated with that animal from a humanistic perspective.

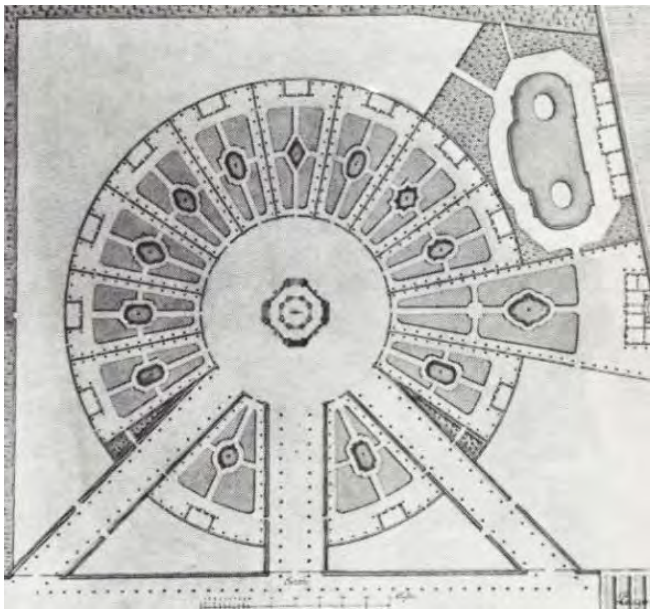


*Fig 27: Schonbrunn Menagerie, with animal cages rotated around a central vantage point*

This case study thematically relates to that of the Groote Schuur Zoo, as both plans were structured in such a way whereby a clear hierarchical disposition was achieved between man and the animal.

Thematically the Groote Schuur Zoo situates itself among earlier menagerie typologies; therefore it does not chronologically fit into the larger scope of modern zoo design, as the progression of modern zoo concepts and principles had already evolved prior to its development.

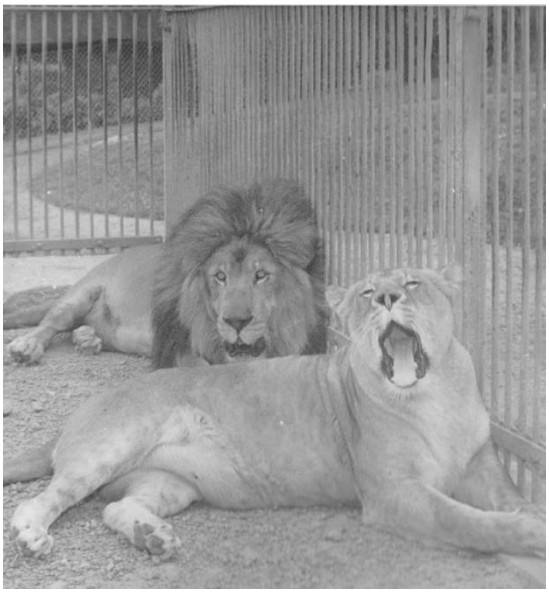


*Fig 28 & 29: Hierachical relationship  apparent between man and the animal at the Groote Schoor Zoo*

## The Modern Zoo

According to Ordil Ainslie(2002:2) urbanization, industrialization and developments in technology have brought about a change in the relationship between humans and animals in urban western settings. She emphasizes that institutions such as zoos are designed to provide for the lack of tangible experience of animals that are meaningful to people.

Ainslie (2002:7) brings across a much needed moral outlook in the relation toward constructing animal environments, which has come about in the evolution in the institution of the zoo. Ainslie (2002:7) argues about the ability of humans to make decisions on what represents an adequate environment for animals. She identifies the scale of *human environmental happiness*- derived from a *human social context*, not measuring with that which pertains to animals; and that morality is a product of *human consciousness* which has been influenced and filtered through culture.

She highlights the nature of the zoo in an urban environment as a multi-layered and multi-dimensional space which caters for a variety of social requirements as well as providing a contact zone or space of exchange into the natural world. It functions personally on a smaller scale by providing knowledge and educating society regarding foreign environments of animal habitats as well as providing recreational spaces of unrelated activities.

## Programmatic Development

In continuance with the evolution of zoo design, Graetz (1995:para 11) points out the fact that prior to 1750, zoo design had always been an architectural manifestation of the society which cultivated it; and that most zoological gardens have come to represent a mix of epochs. He accounts for the fact that following 1750, with the arrival of London's Regent Zoo: social, scientific and technological advances within society have changed the subject of design from *man* to *animal.*

The shift according to Kallipoliti (2011:9) came about with the concept of the *Age of Enlightenment*, where an interest developed in the natural world. "Thoreau—a philosopher of nature and its relation to the human condition—identified Nature as 'the outward sign of inward spirit'."
(Kallipoliti 2011:9)

Hancocks (1971:112) draws on the conclusion that many zoos of today began as menageries that have developed and reconstructed their image in society due to scientific and educational needs, as well as being urban institutions catering for social needs.

## Integrating the Performer/Audience Relationship

According to Graetz (1995:para 25) London's Zoological Gardens were a part of architect John Nash's larger urban development, comprising Regents Park. The merging of zoo and park was symptomatic of the recreational needs that society demanded. He accounts for the integration of the zoo to provide variety, entertainment as well as organized activities; as relaxing natural environments alone weren't enough in sustaining the public's interest.

A major shift in the 'actor' and 'spectator' relationship had emerged from the organizational techniques of animal exhibition. Graetz (1995:para 25) denotes the symbolic change in the power relationship between man and animal; whereby animal exhibitions, being previously viewed from a single vantage point had now been integrated with simultaneous viewing points owing to the increased social nature of the park.

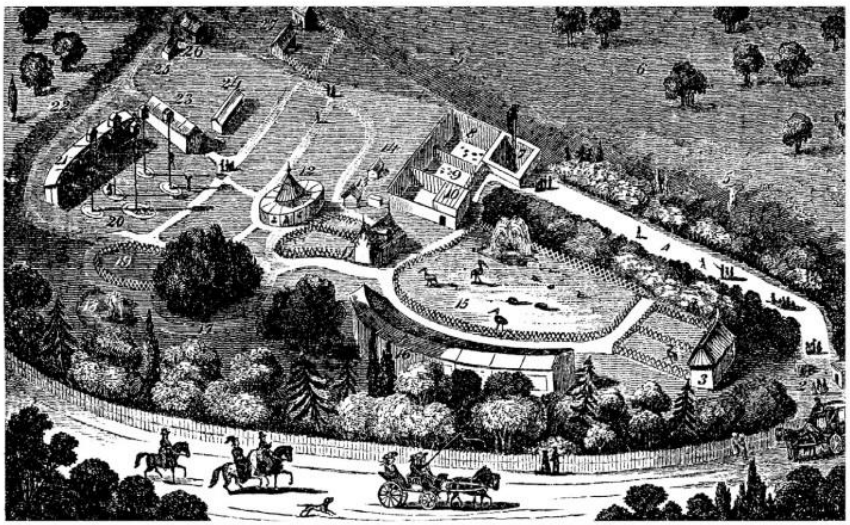


*Fig 30: London Regent Zoo, 1828,designed by John Nash*

The penguin enclosure by Berthold Lubetkin, Tecton Group in 1934 exhibited testing of ideas which attempted to integrate simultaneous viewing points within the enclosure. According to Hancock (1971:125) the design intended to be of a purely functional nature, with the reinforced concrete structure expressing its function with simple planes and sweeping surfaces.

The functionalist design as well the use of reinforced concrete was popular among modern architects. Thus, the penguin enclosure became a mirroring of a style of design that man had adopted for himself at the time.

This can be seen as a repetition of the ideology unto which earlier menageries had been conceived. However, Lubetkin had studied the natural habitats of penguins, through which he was able to derive a structure that created a fitting artificial environment for the animals. The elliptical structure provided multiple viewing points for the public, owing to the social nature of the park.

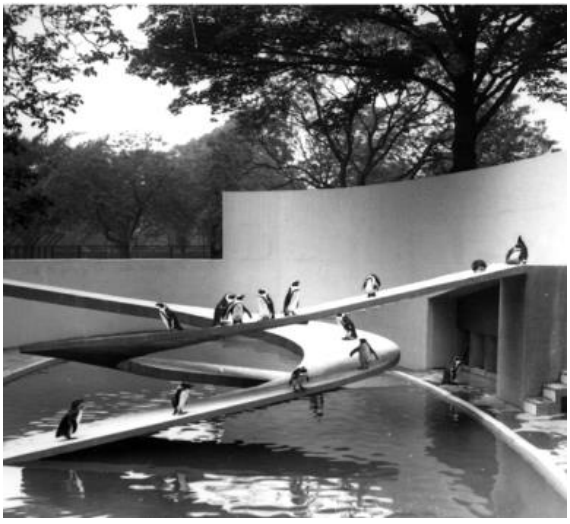


*Fig 31: View inside penguin enclosure*


*Fig 32: View outside of penguin enclosure, indicating simultaneous viewing points*

Cedric Price's Snowdon Aviary build in 1965 is a structure which attempted to test his ideas regarding adaptable buildings capable of changing over time. The walk through aviary, intended for closer contact between humans and animals. It is comprised of a tensile structure, with innovative use of materials such as aluminium castings, stainless steel forgings and lightweight welded mesh.

According to Lydia Kallipoliti (2011: 14) the design was intended to house a community of birds, upon which, once the birds had established their home the netting would be removed with the remains of the steel work intact- anchoring the entry and exit points of the aviary. The Aviary became a testing ground of Price's ideas, which produced a different kind of relationship that man came to experience with nature.

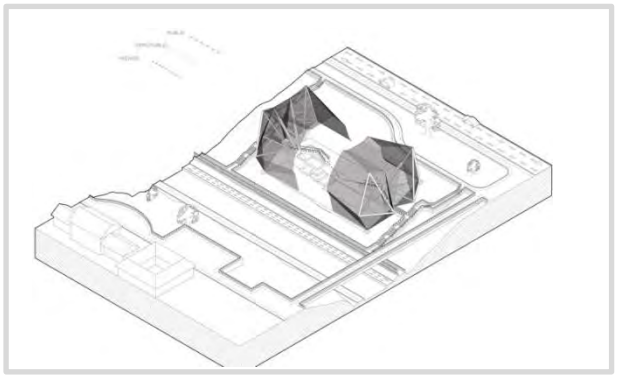


*Fig 33: Cedric Price Aviary*

*Fig34: Photograph tensile structure*

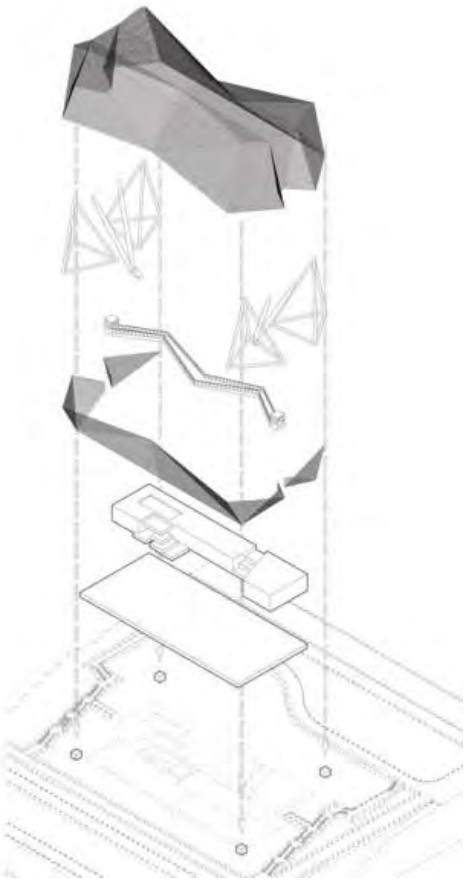


*Fig35: exploded axonometric of the aviary*

## Landscape Immersion

The Tierpark Hagenbeck Zoo, Hamburg originally designed by Carl Hagenbeck in 1907 was another example which tested ideas of animal exhibition; through the scope of recreating panoramic naturalistic environments. Graetz (1995: para 28) terms this type of display as the *naturalistic exhibit*, whereby artificial landscaping elements such as the moat, waterfalls and rock faces were integrated within the animal exhibits. These devices eliminated the use of the cage, thus bringing man closer to the animal, and the realistic stage sets further submerge man into the 'natural' world of the animal.

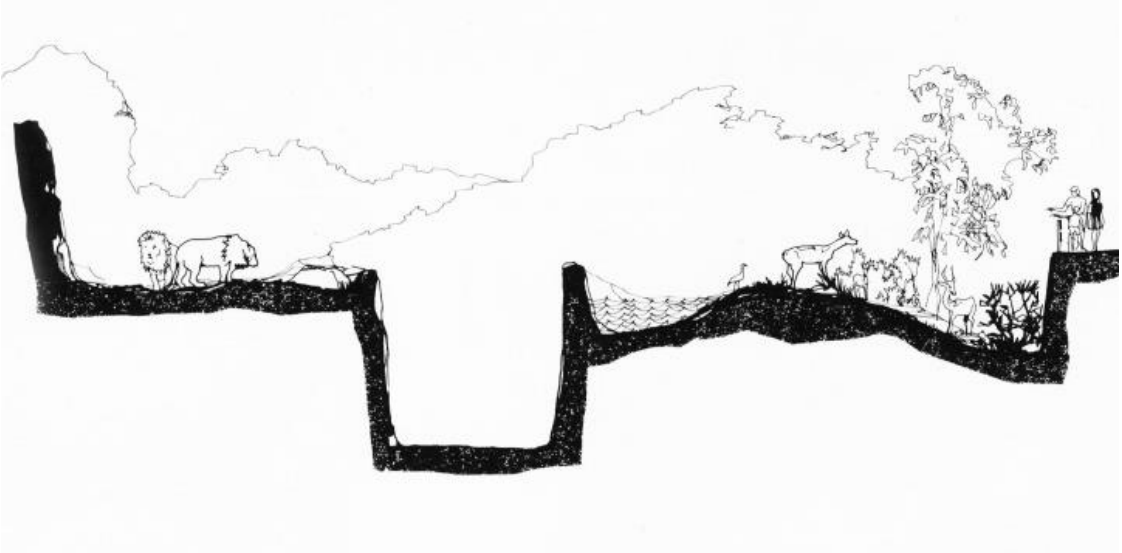


*Fig 36: Milwaukee Zoo, depicting principles of landscape immersion with predator and prey separated by moat in African panorama*

Zoo de Vincennes was a renovation project undertaken by Bernard Tschumi. Tschumi (2014:para 2) outlines the fundamental basis of reconstruction in preserving the identity of the historic zoo by building around its important conservationist inheritance. The project, therefore aimed at preserving the old; but also presenting a fresh scientific and educational platform of engaging with animals.

*Fig 37: Walk through aviary at Zoo de Vincennes*

> The project team used techniques of immersion, visibility and camouflage to simultaneously address the comfort of the animals in their habitats and to create a strong sensual and emotional visitor experience. (Tschumi 2014:para2).

In maintaining the principles of landscape immersion of Hagenbeck, the project aimed at a twofold initiative. It accommodated animal habitation needs; as well as creating an architecture that ventured away from traditional zoological structures, toward creating mediums that would camouflage and compliment the buildings within their 'natural' environments.

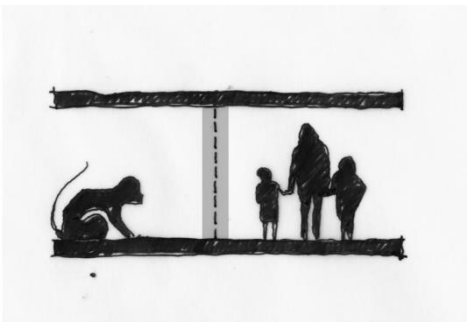
*Fig 38: Giraffe enclosure at Zoo de Vincennes*

These vast and long spanning structures (see fig:37) that house foreign environments, are frontrunners in bridging the divide, not only between man and animal but also between nature and science, which is a clear objective for redevelopment projects of this nature.

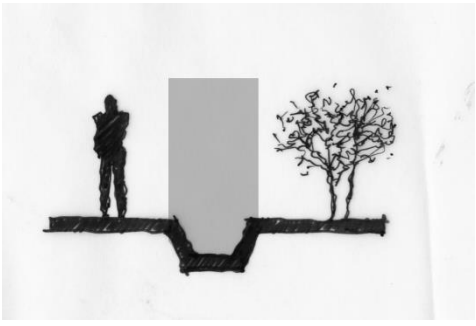
# 5. Interpretive Analysis

The theoretical content aforementioned has informed and dictated the experiential narrative, including concepts and ideas that I aim to achieve throughout the development of the project. Ideas of social and educational platforms; barrier typologies, as well as landscape immersion have influenced the strategies that shall be implemented.

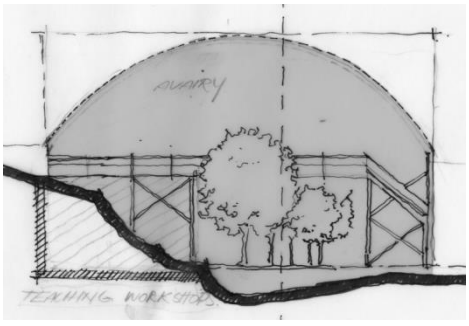
## Exploration of Zoological Thresholds



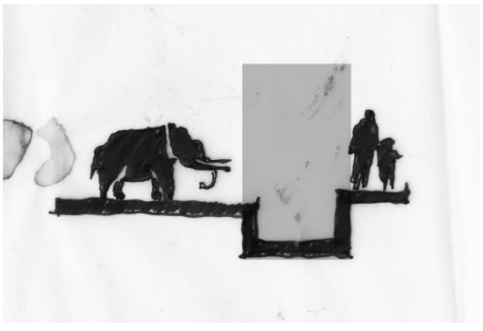
Glass



Water Moat



Aviary



Dry Moat

*Fig 39: Exploratory Sketches*

## Audience / Performer Relationship

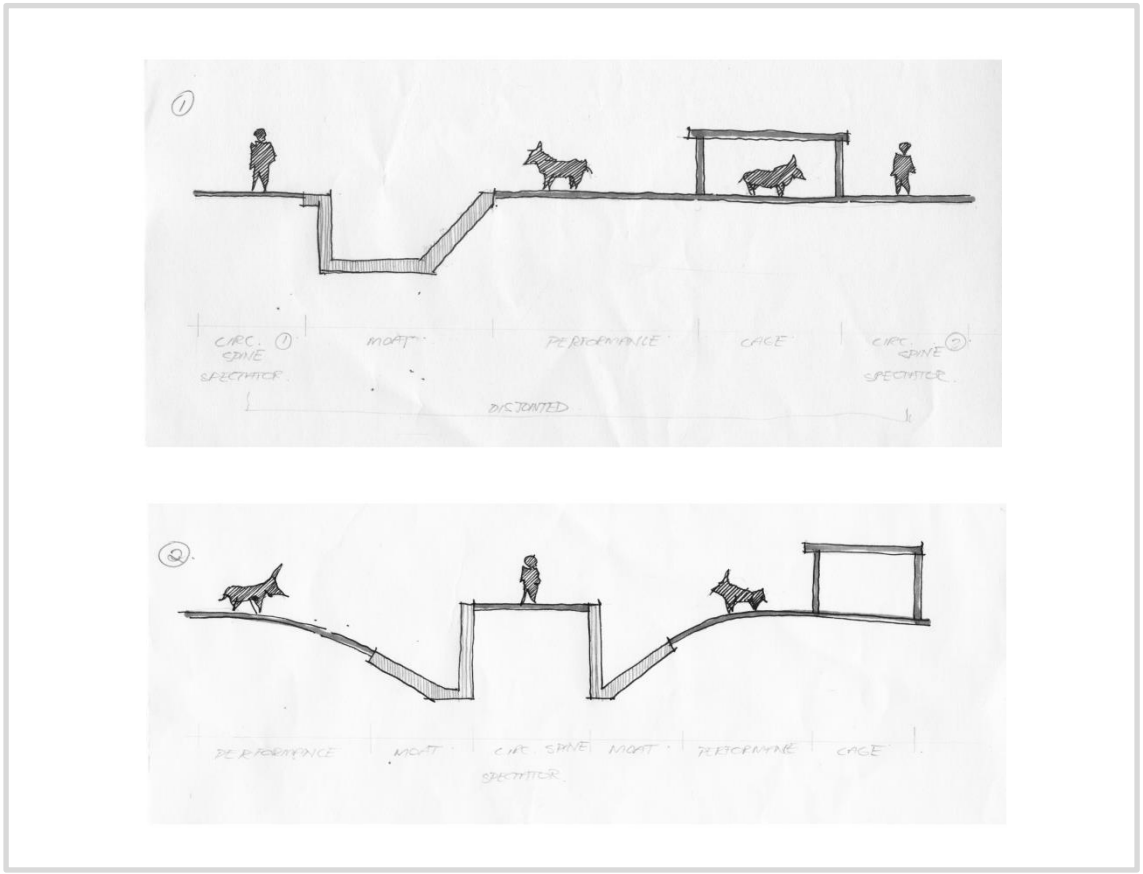



*Fig 40: Exploratory Sketches*

## Inhabiting the Moat

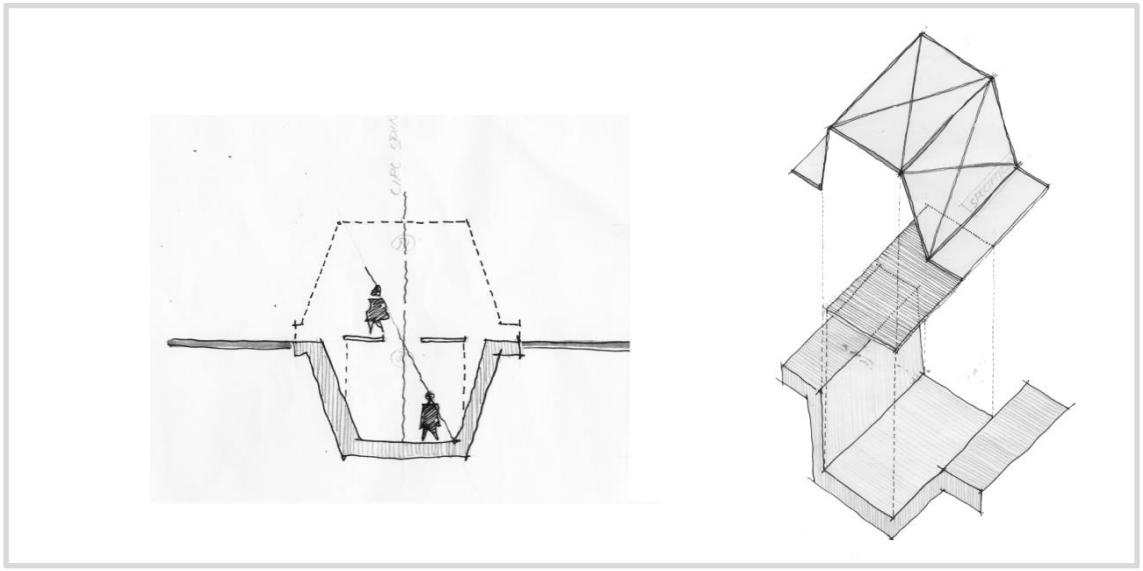


*Fig 41: Exploratory Sketches*

*Fig 42*

*Fig 45*

*Fig 43*

*Fig 46*

*Fig 44*

*Fig 47*

*Fig 42-47: Photographs taken at the National Zoological Gardens of Pretoria, depicting barrier typologies*

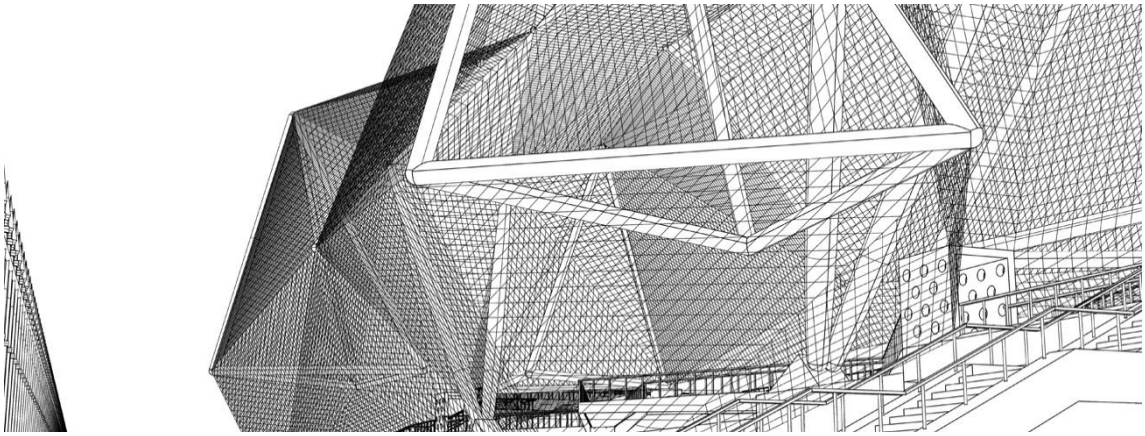


*Fig 48*

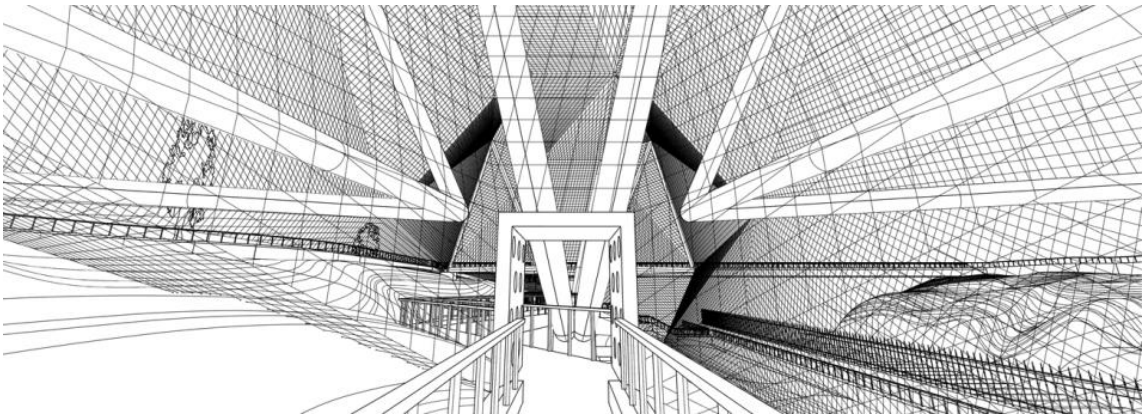


*Fig 49*

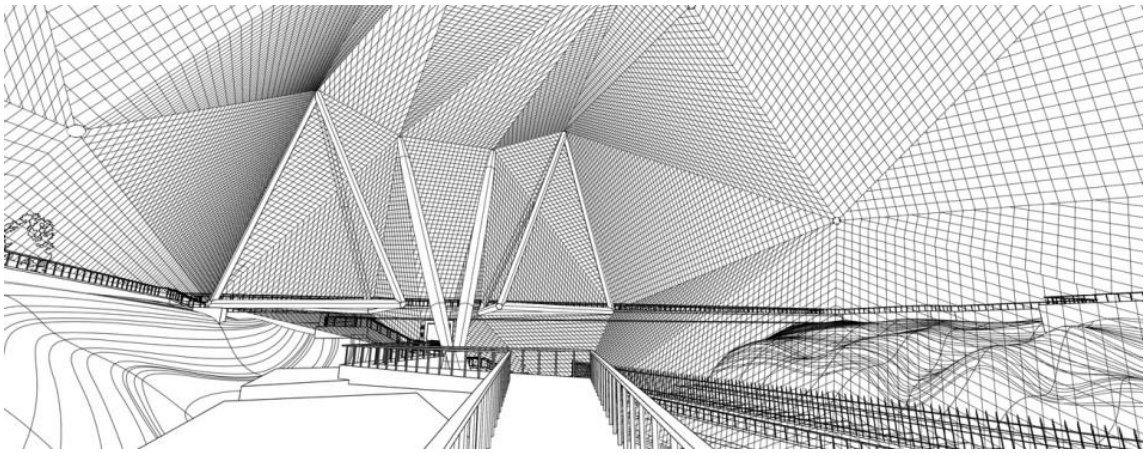


*Fig 50*

*Fig 48-50: Depict the possible spatial experience that an aviary can exhibit*

# 6. Technical Explorations

In order to concretize an appropriate architectural response to the above theories of modern zoo principles, the technical analysis of tensile structures shall be undertaken. It has become clear to me that the structural formation of the aviary provides opportunity in responding to the integration of the man and animal relationship.

## Tensile Structures

The translucent nature of tensile structures attempts to blur the threshold between inside and outside, which views architectural form being the mediator between man and nature.

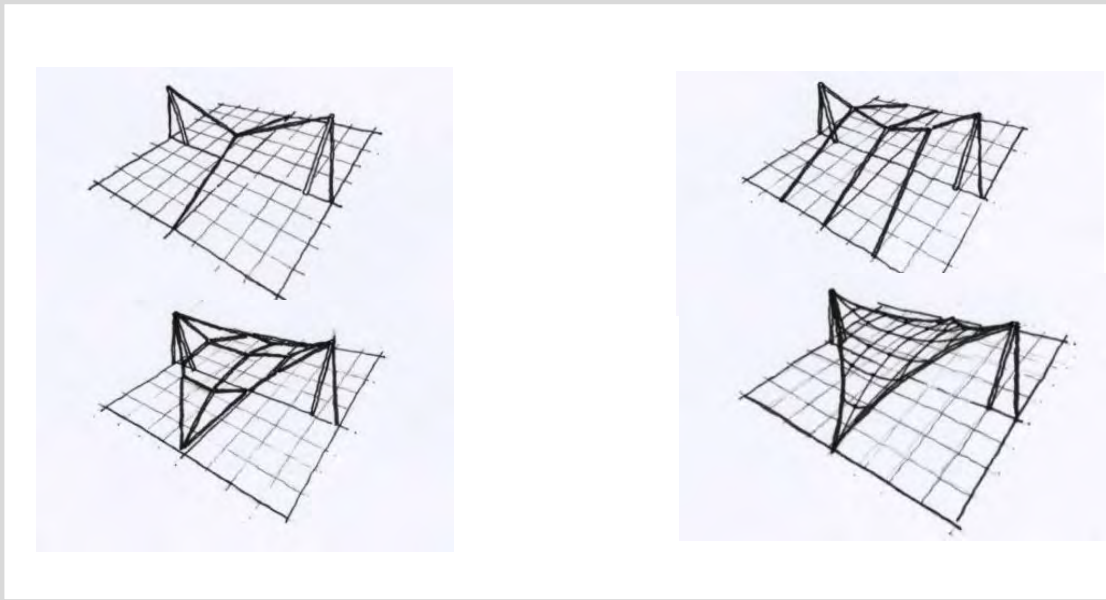


*Fig 51: Form active shaping of tensile structure- defined by a minimum of four points with at least one out of plane.*

Man and animals physical bodies can be seen to exhibit the general structural formation of tensile structures- with the skin, in tension- being kept taut by muscle tissue and blood pressure, enabling it to support distributed surface loads; accompanied by the rigid skeleton- sustaining compression and bending. It's thus through simple biological forms, such as air bubbles and blood vessels that many man-made pneumatic and tensile structures have been derived

Lewis (2003:1) describes the wide range of uses of tensile structures applied to roofing systems, bridge structures as well as gaining increasing popularity with more modern architectural forms due to efficiency. He adds that these structures provide an outlet of aesthetically pleasing dramatic artistic expressions. He continues to justify that their lightweight load-carrying systems and structural integrity conform to the doctrine: 'for an efficient structure use tension rather than compression, and either in preference to bending.'

Seidel (2009:1) describes tensile structures as form- active systems, due to the fact that external forces are transferred exclusively through tension, therefore in accordance with the type of materials utilized- it constitutes to a varied and flexible amorphous structure corresponding to the line of the applied loads.

The following case study by Frei Otto, produced for the German Pavilion Expo in Montreal 1967 was a materialization of tests and experiments, using soap film models, in the investigation of tensile structures.

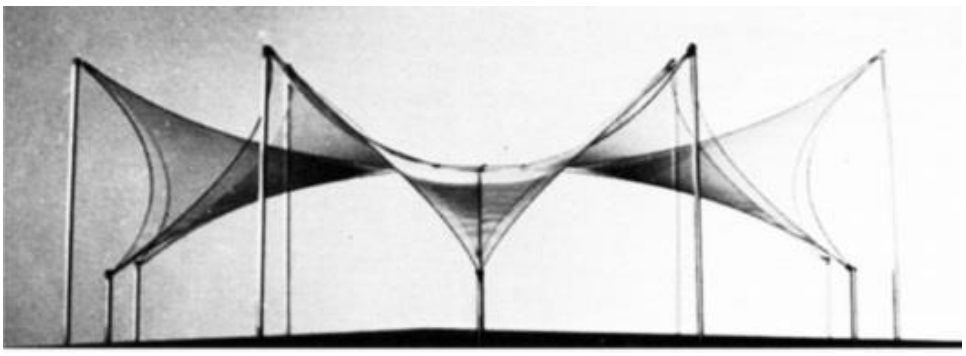


*Fig 52: Frei Otto's soap bubble experimental model, Tanzbrunnen Cologne*

According to Glaeser (1976:109) the intention of the project was to recreate a man-made landscape, harmonizing with the natural setting of land and water around it. The lightweight, undulating roofscape was spread over a constructed landscape incorporating a variety of exhibition terraces.

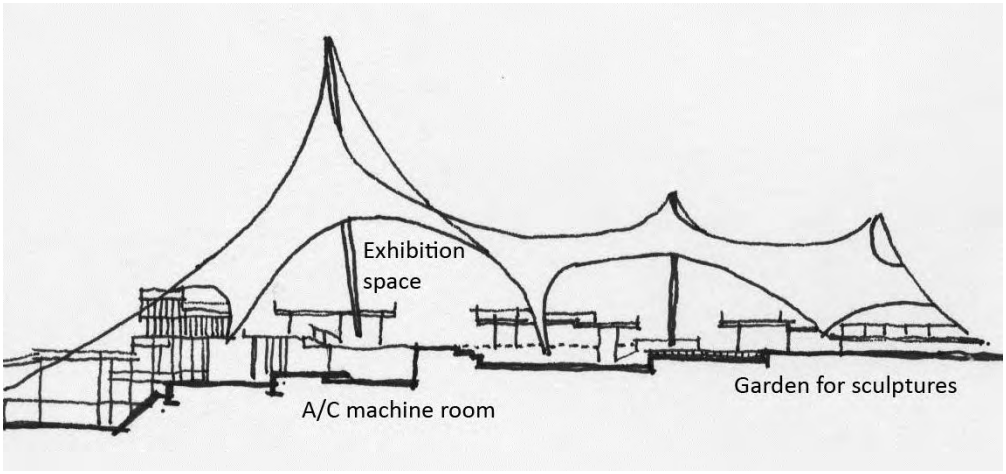



*Fig 53: Section through pavilion*

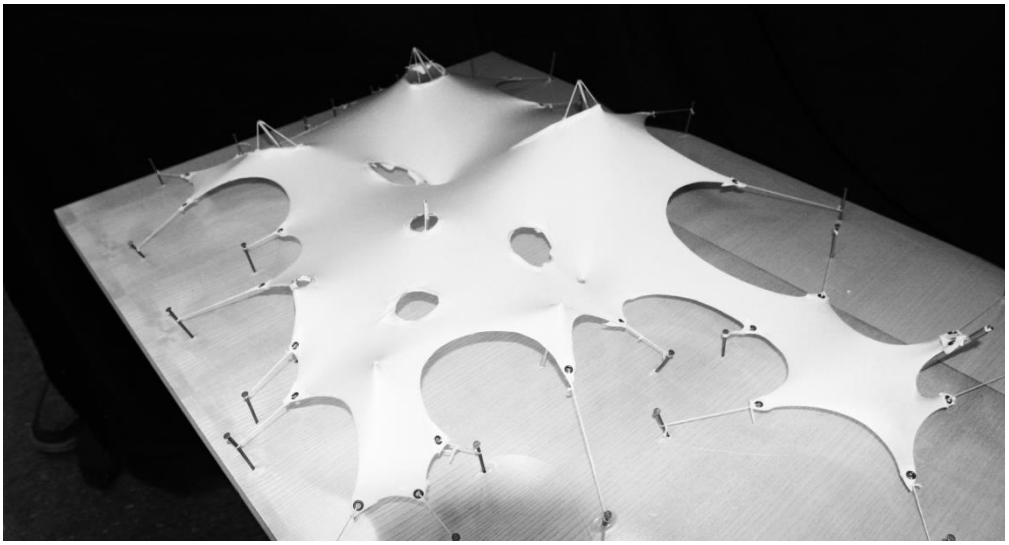


*Fig 54: Model of pavilion expressing amorphous form  tensile structure*

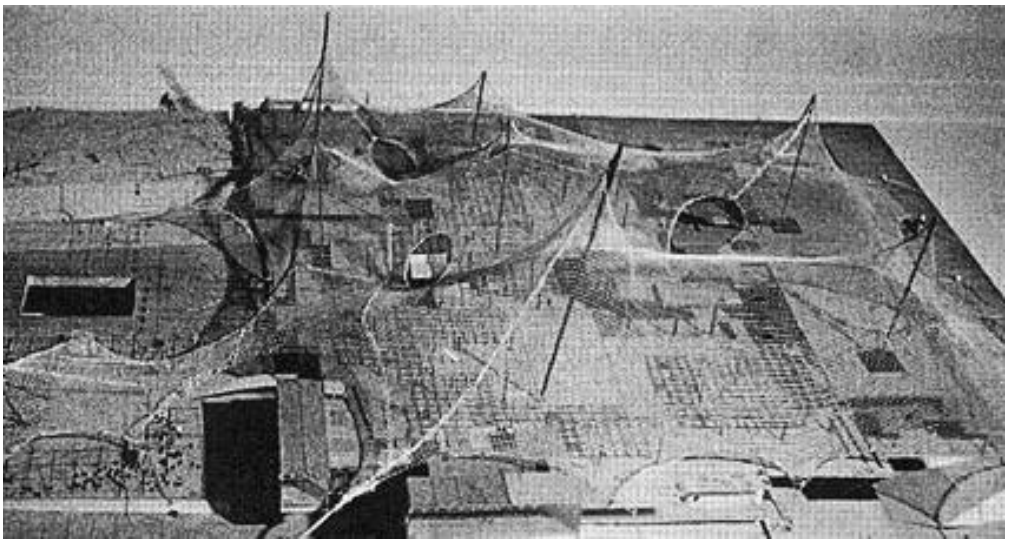


*Fig55: Undulating form of steel mesh covering*

# 7. Site Response

In order for these strategies to be executed in a meaningful approach, the physical site constraints shall be addressed in the following section. This will site the project as well as constitute a framework of opportunities unto which these ideas shall develop.

## The Gateway

The entry point to Rhodes Memorial Road constitutes a highly active social node, (located further south from the zoo), being the sole vehicular and pedestrian access route into the estate, terminating at Rhodes memorial. Additional landmarks as well as hiking trails accessed from this terminate include The Kings Block House and Plumpudding Hill.
The estate holds a lot of civic value pertaining to the contested legacy of Cecil Rhodes (as aforementioned); as well as recreational activities activating the social nature of the estate.

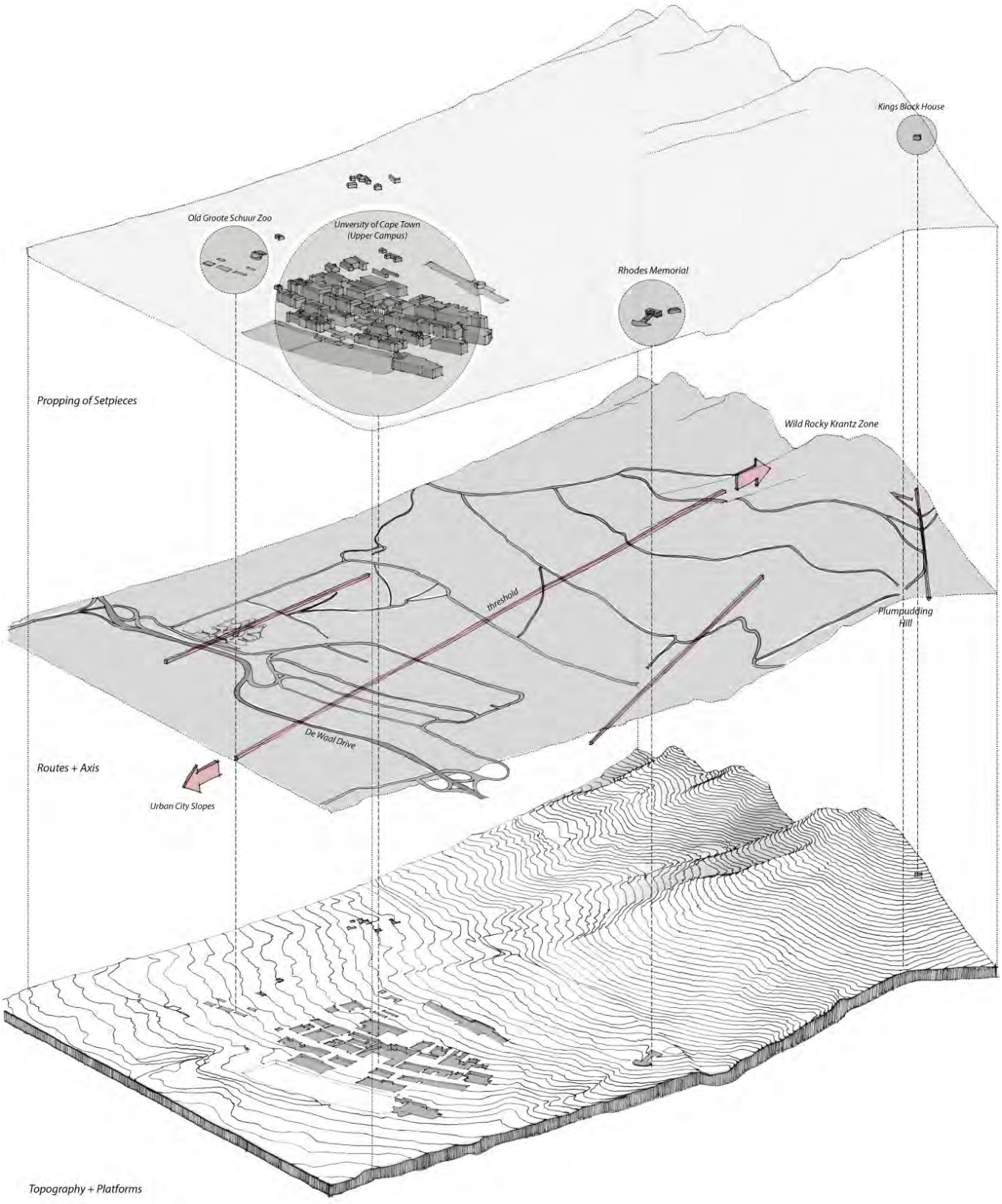



*Fig 56: Site Analysis_ Groote Schuur Estate*

## UCT

Contextually UCT has the strongest urban influence in relation to my site. In fact the larger zone of land composing my site gives opportunity for possible expansion of the university to occupy.

The development of the university comprises a series of terraced islands sloping down the foot of Devil's Peak. Accessibility is achieved by a series of North –South aligned roads intersecting the layers of which it is constituted; with De Waal Drive serving as the strongest divisive threshold.
In terms of the hierarchical composition between De Waal Drive; UCT disintegrates from upper to lower campus with the upper Groote Schuur estate disjointed from the ministerial homes inhabiting the lower slopes.

*Fig 57: Site photograph depicting routes and accessibility*

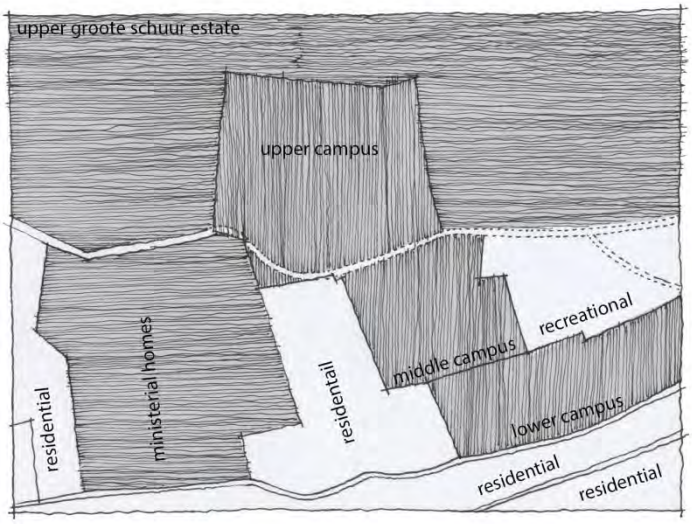



*Fig 58: Zoning*

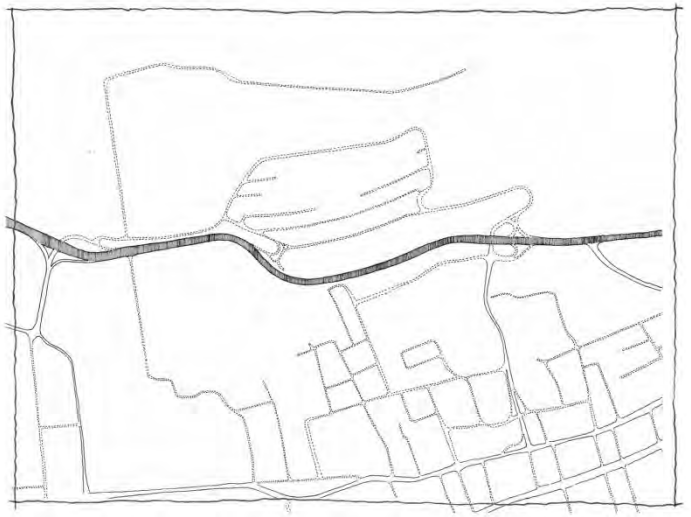


*Fig 59: Routes*

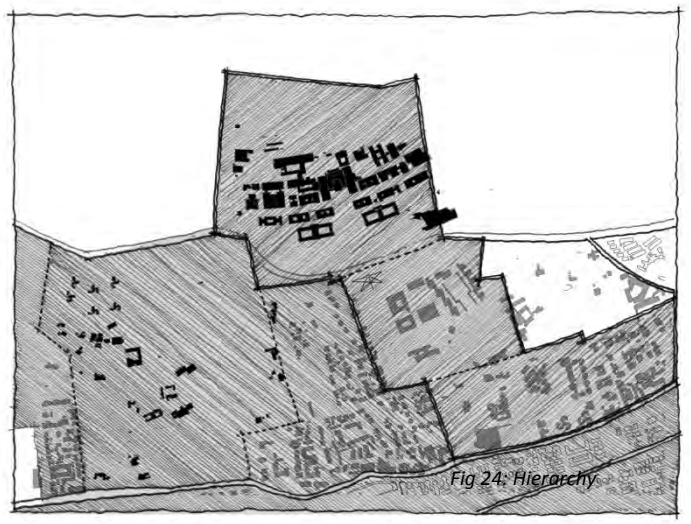


*Fig 24: Hierarchy*

*Fig 60: Hierarchical composition*

## Acknowledgement of the Spine

The strongest longitudinal axis, University Avenue, anchors itself as being the most prominent pedestrian corridor cutting through upper campus. The avenue intersects with the latitudinal axis orientating UCT as well as the public plaza proceeding the pinnacle Jamieson Hall. Transport nodes (Jammie bus stops), further define the avenue on either end as well as activate movement along this route, (with the closest node being located further north from the zoo). These defined axes lie perpendicular to the contours, facilitating a North and South expansion opportunity on both ends of UCT (following the contours).

Having defined these social magnets relating to my site, the opportunity in creating a corridor linking the university to the gateway became an interesting prospect in bridging the disjointed nature of the University, old zoo and gateway. The existing pedestrian experience comprises a monotonous linearity of parking coinciding with the derelict and eerie character of the zoo, thus the approach actively aims to cohesively string these elements together.

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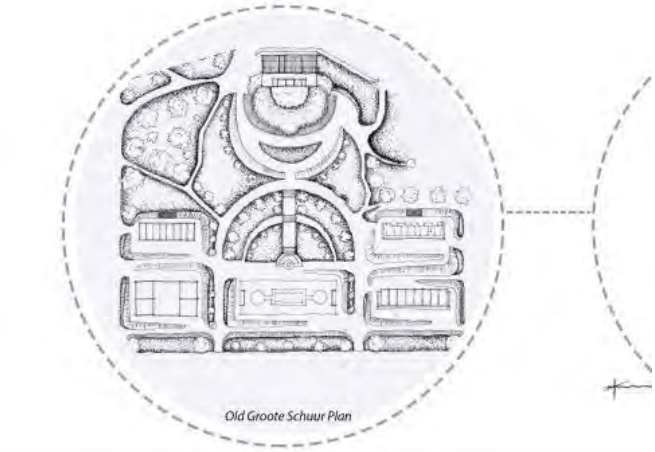
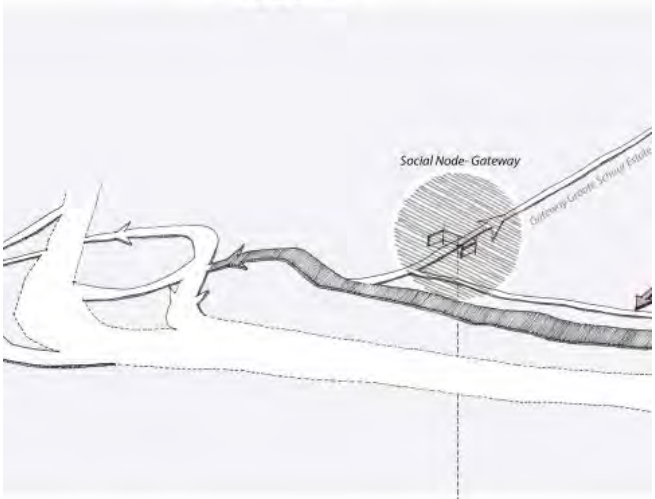
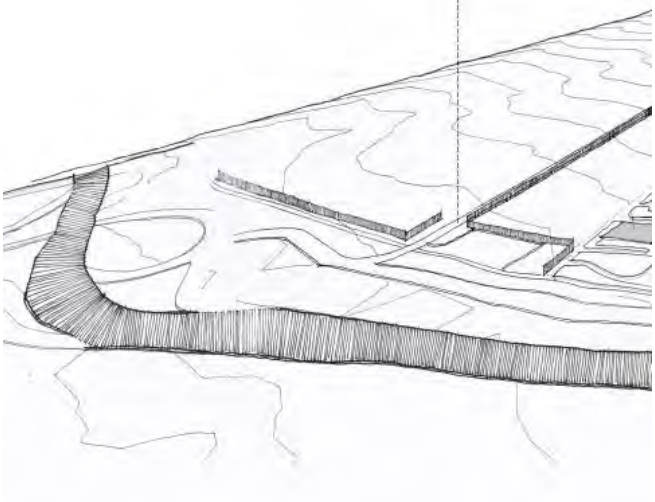


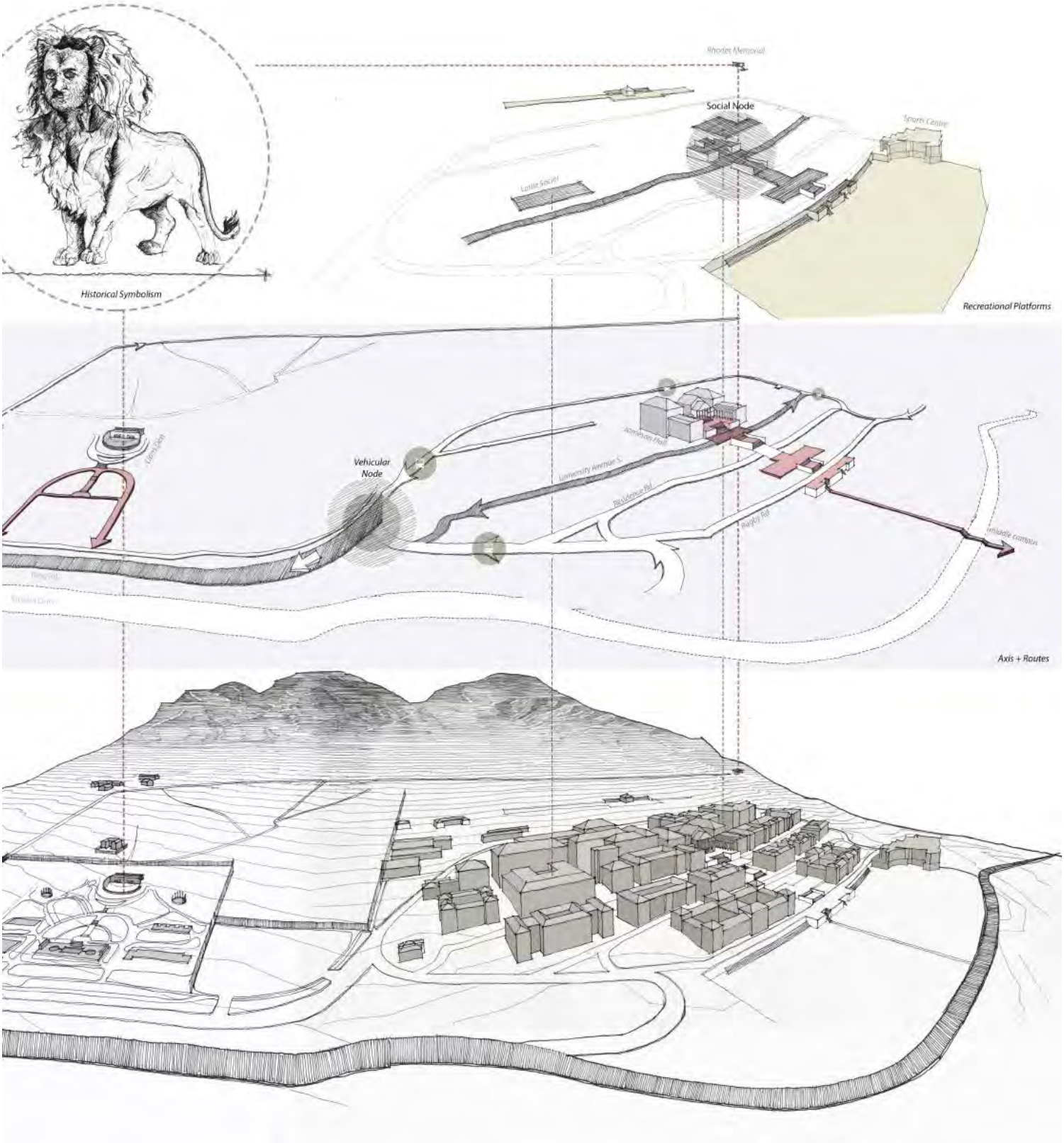



*Fig 61: Site Analysis*


*Fig 62: Site Plan*


*Fig 63: Existing site opportunities*

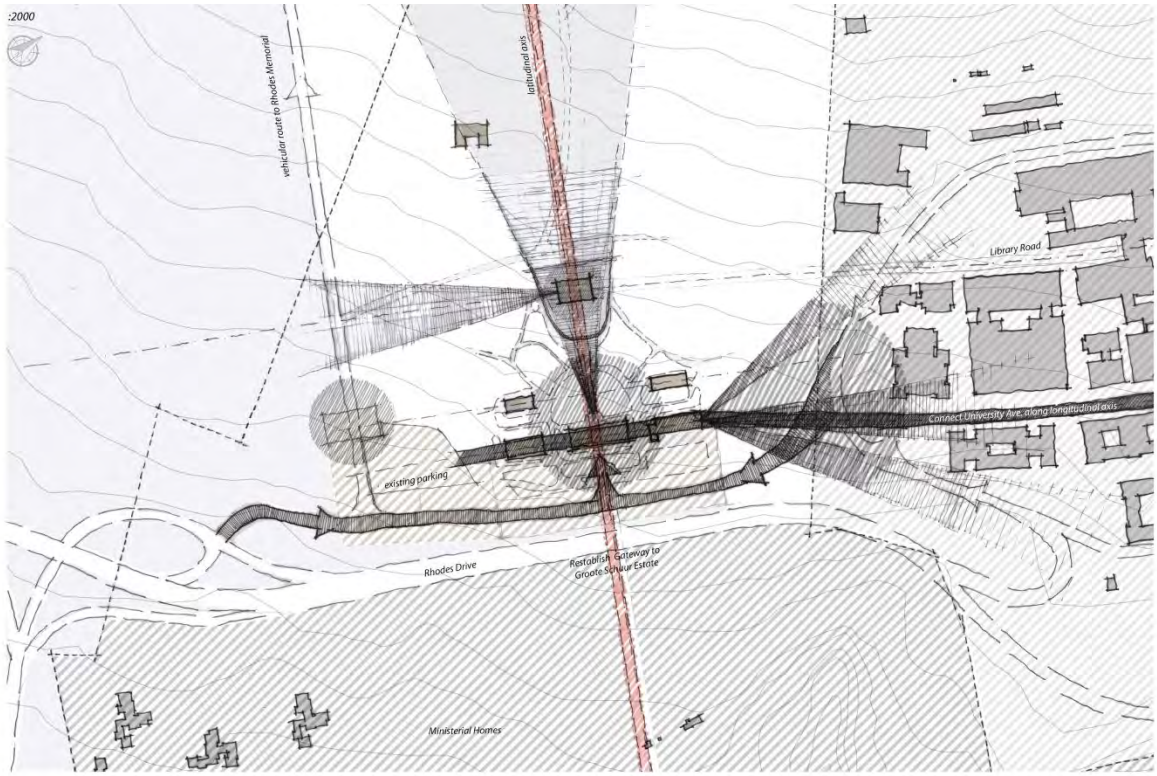



*Fig 64: Extension of University Avenue coinciding with historical axis*

# 8. Resuscitating the Animal-
# Program Development

The programmatic response adheres to both the pragmatic as well as poetic archaeology of the site, with both the theoretical and site response components having informed the program configuration.

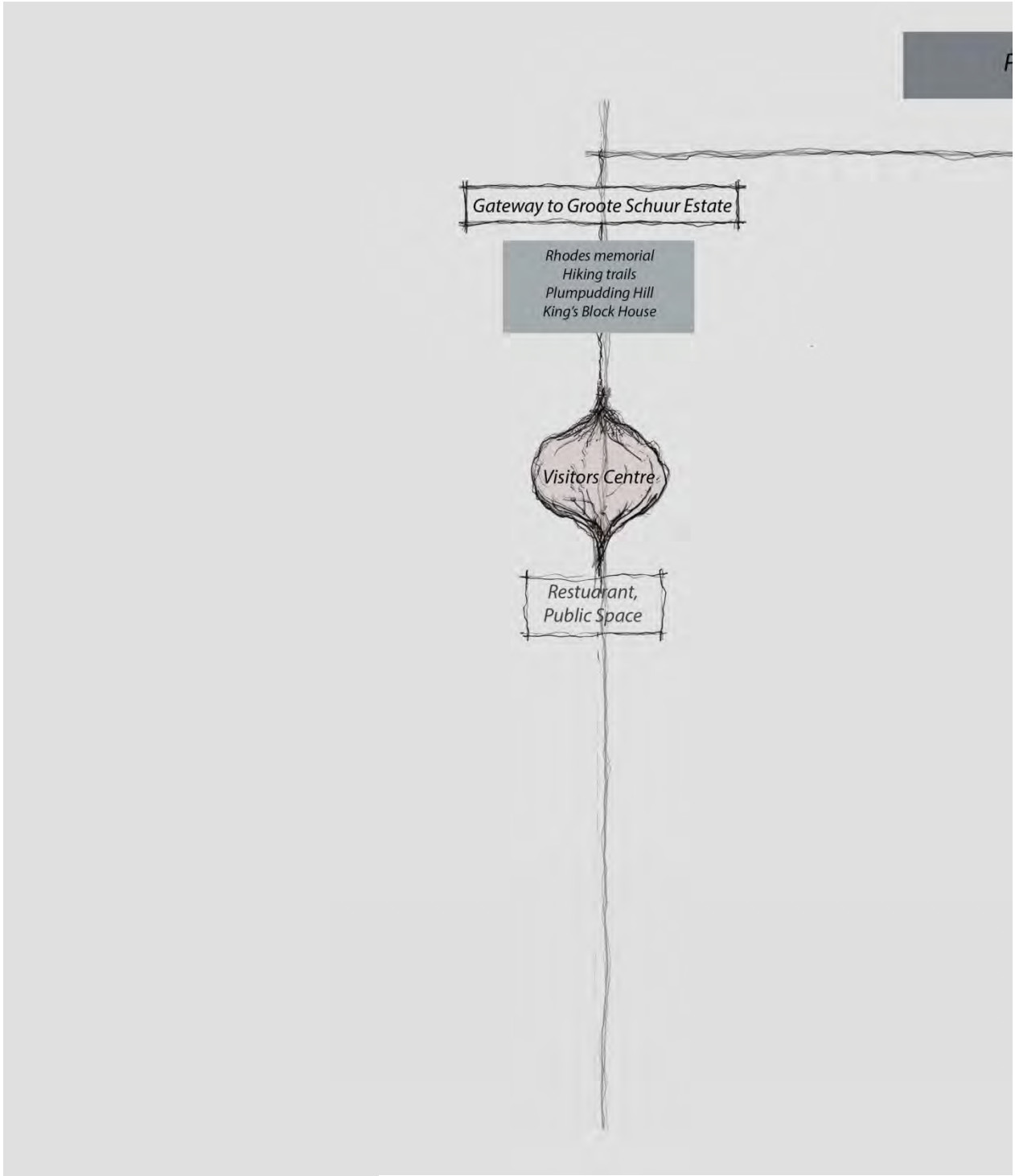
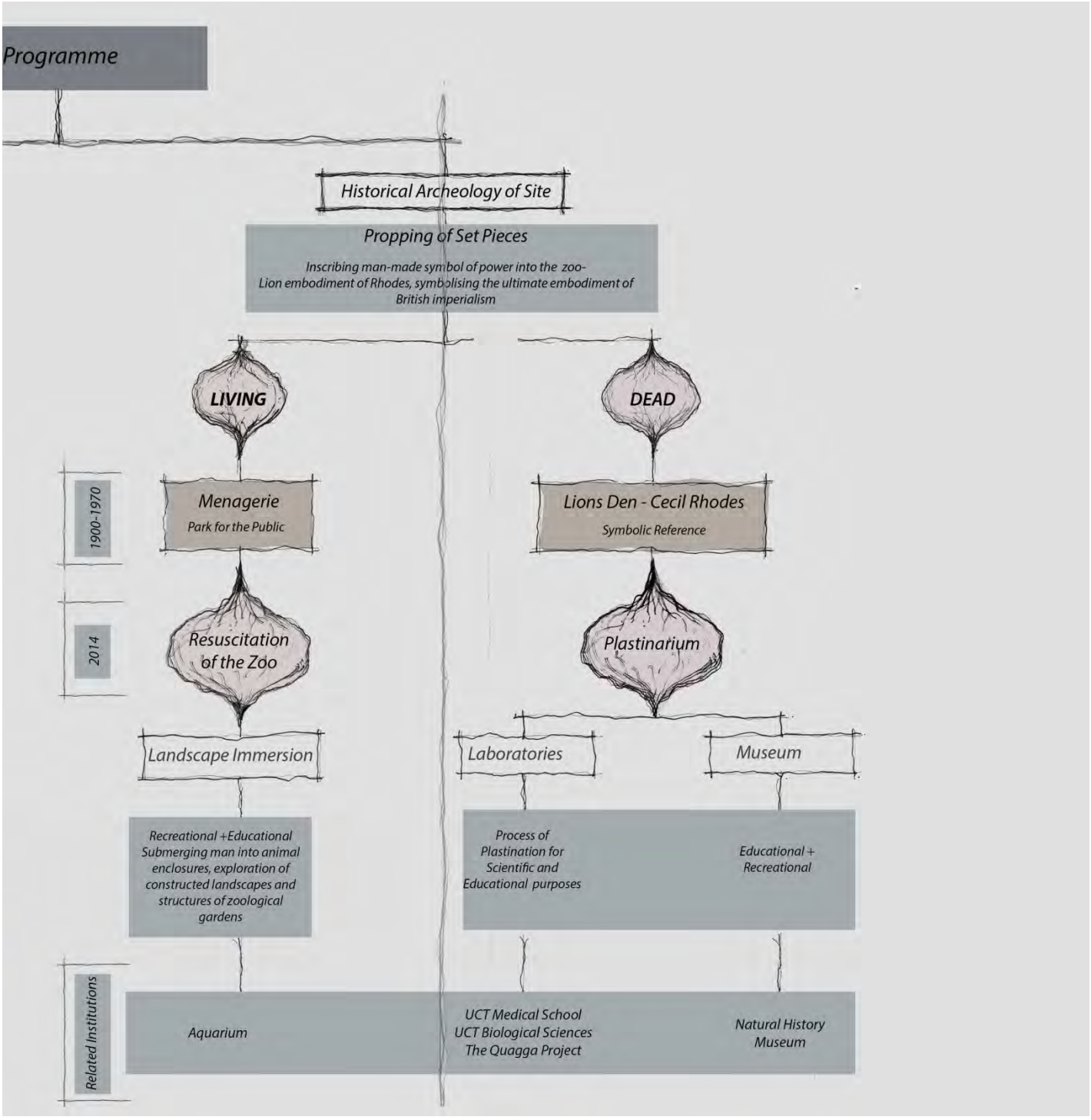


*Fig 65: Programmatic mind map*



## Establishment of the Gateway

In acknowledgement of the highly active entry point into Groote Schuur estate the need for a social platform that signifies and celebrates the estate as well as the landmarks and recreational activities on offer need be established. Social programming in the form of a Vistor's centre including a restaurant, museum and anatomical theatre adhere to the needs feeding off this important entry point.

## Historical Archaeology

There was a twofold initiative in revitalizing the spectacle around the public nature of the old zoo, as well as responding educationally to UCT. Throughout the theoretical lineage of zoo programming, aside from the novelty of viewing exotic animals, there evolved a strong platform of biological and scientific research initiatives aimed at educating society.

*Fig 65-67*
*Remembrance of the animals that once occupied the site*

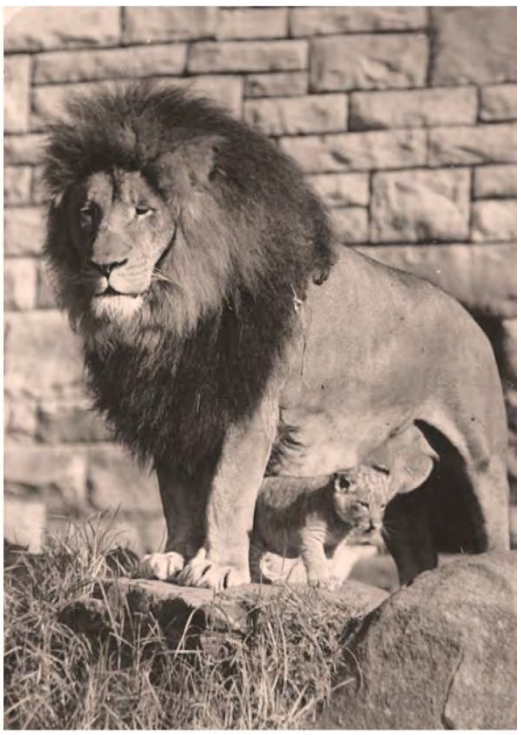


*Fig 66*

*Fig 67*

*Fig 68*

In resuscitation of the historical narrative pertaining to my site two dichotomising elements arose, the *Living*- celebrating the occasion of exhibiting wildlife; and the *Reincarnated*- the remembrance of the animals that once inhabited the zoo including the symbolic association that the pinnacle lion's den commemorated being a metaphorical expression of power and control.

With the *living* component I aim to achieve an integrated experience where the bridge between performer (animal) and spectator (man) is dissolved. As previously analysed, an aviary not only experientially bridges this divide but also structurally allows for the exploration and use of tensile membrane structures, blurring the threshold between man and nature and allowing the visitor to be fully immersed into the enclosure. The aviaries will exhibit both bird, butterfly as well as plant species.

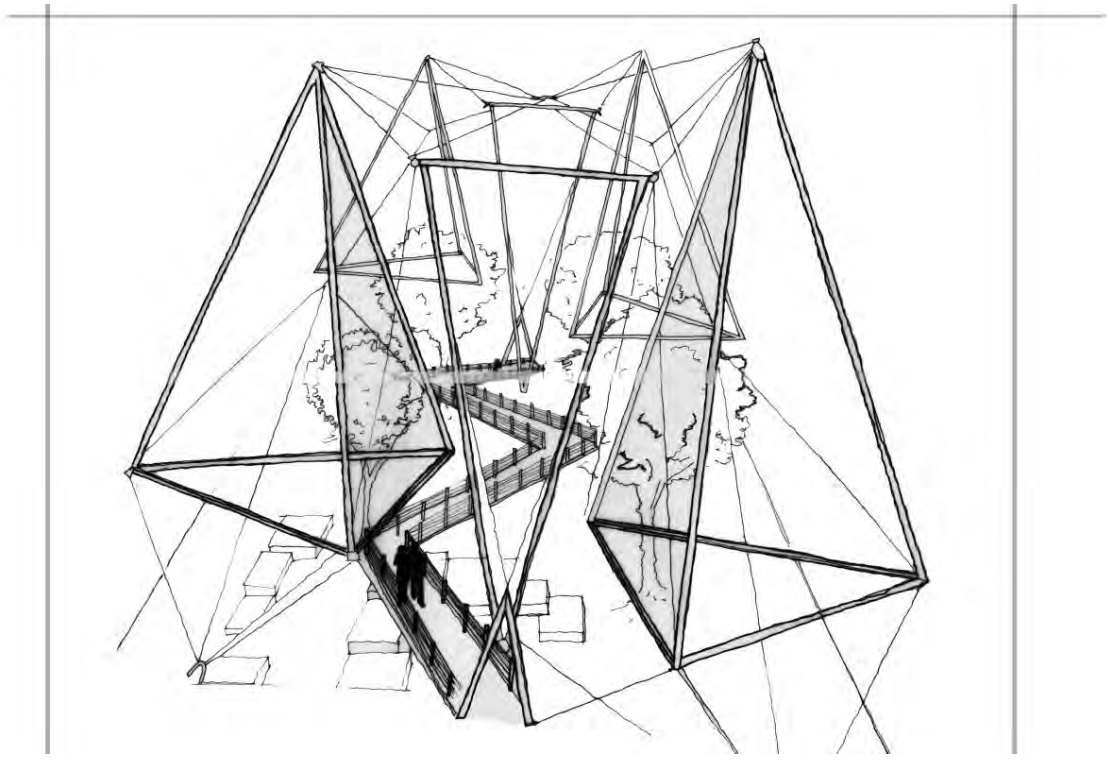


*Fig 69: Integrated relationship as depicted in Cedric Price Aviary*

The *reincarnated* component materialised itself into the proposal of a plastinarium. The plastinarium laboratories and taxidermy workshops will not only contextually but also programmatically link to UCT as an extended educational institution involving biological study and research. This process poetically aims to reincarnate the animal specimens, in remembrance of the zoo – through the scope of various preservation techniques, resulting in a spectacle for the public.

The narrative of this programmatic experience also aims to break down the hierarchical relationship that man has over the *other* by showcasing both man and animal in a purely biological light. The public therefore ascertains a more thorough understanding of the complex bodily systems apparent in man's anatomy, compared to the equal complexity apparent to that in animals.

## Substantiating Program

The list of institutions which I have mapped relate not only programtically to my developed  program but they also represent institutions whereby man comes into contact with the *other*

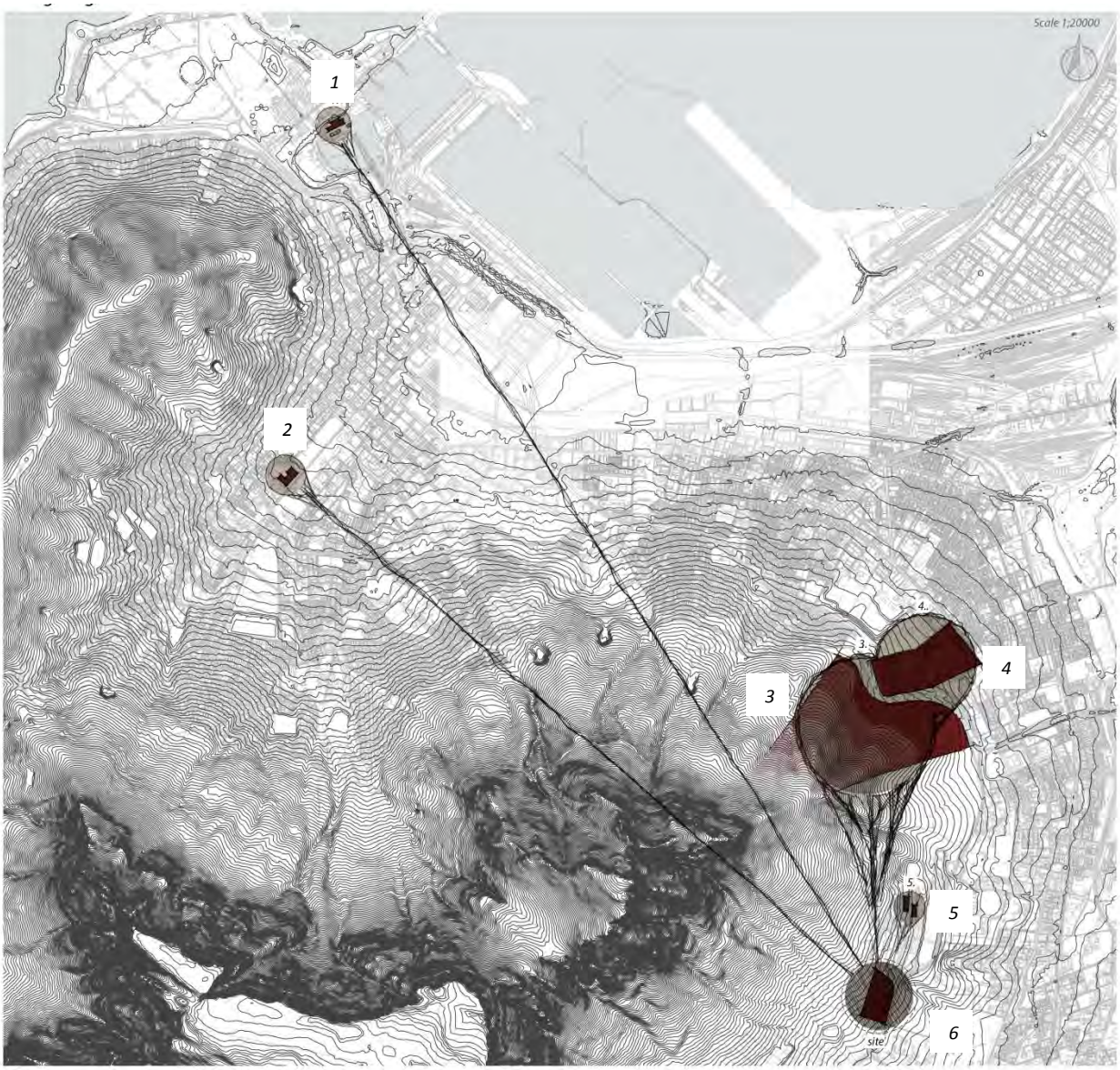



*Fig 70: Key map indicating institutions relating to the site*


*Fig 71. The Aquarium creates a spectacle around the creatures inhabiting the ocean. This institution relates to the immersion principles as discussed.*

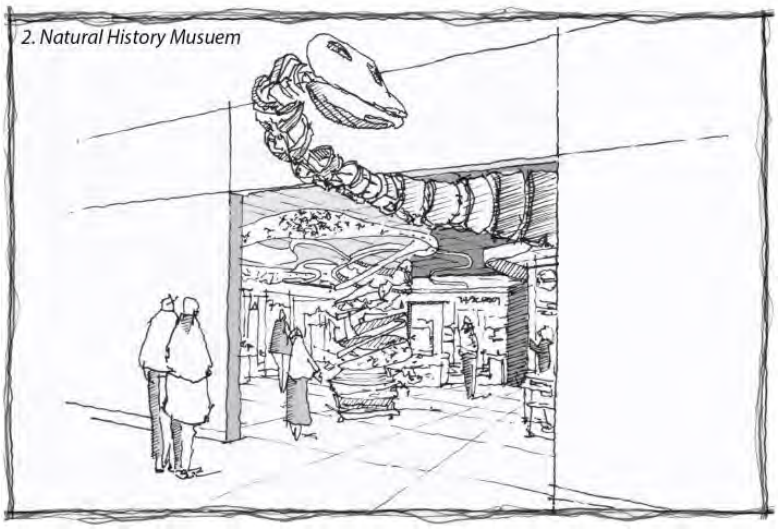



*Fig 72. The Natural History Museum represents an institution where man comes into contact with the other. A spectacle is created around the taxidermied animals as theyare displayed in idealistic evironmemts as interpreted by man.*

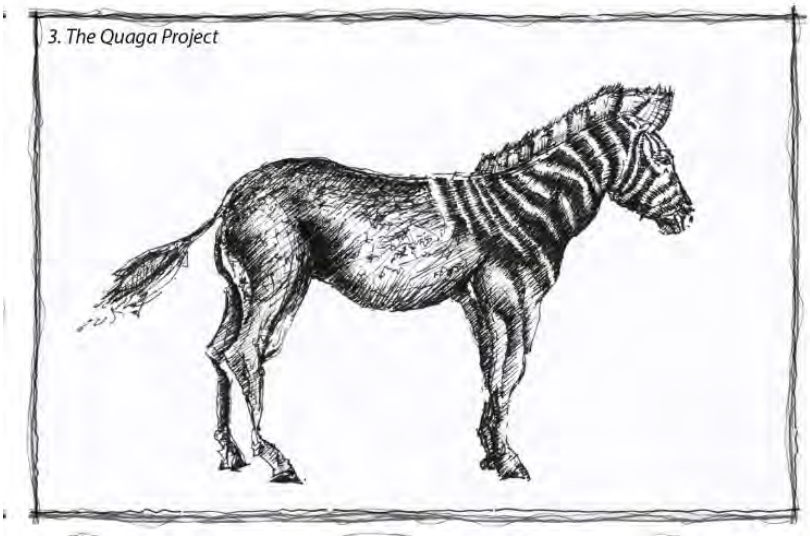



*Fig 73. The Quagga Breeding Project was initiated out of man's interest and ability in recreating the extinct Quagga.. The 'Quagga' is often sited grazing on the slopes of Devils Peak*

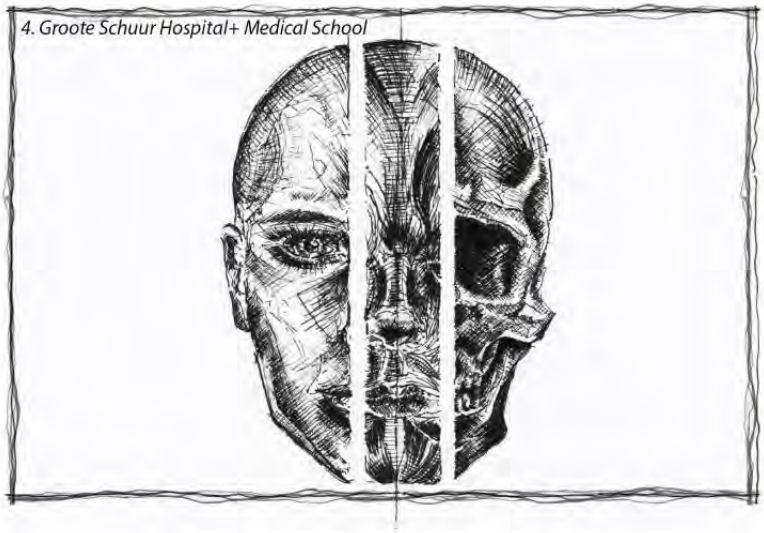



*Fig 74. The Groote Schuur Medical Campus which engages with the anatomical study of human beings is an institution which would communicate with the Plastinarium. It would allow for further study and engagement for the students.*

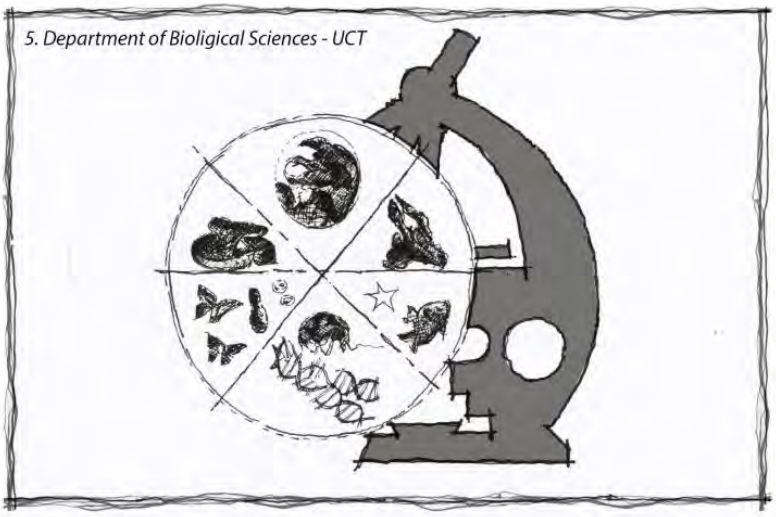



*Fig 75. The University of Cape Town's department of Biological Sciences is an institution which engages with the anatomical and biological study of animal and insect specimens. A Plastinarium would thus allow for further interaction for students.*

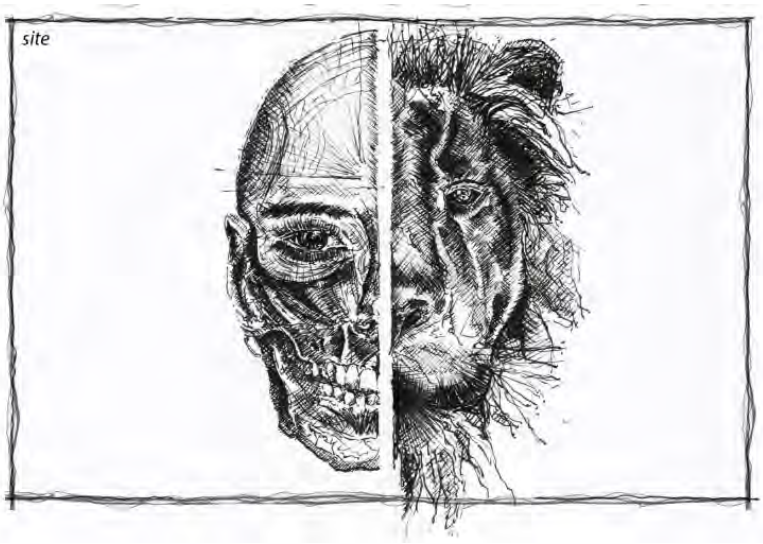
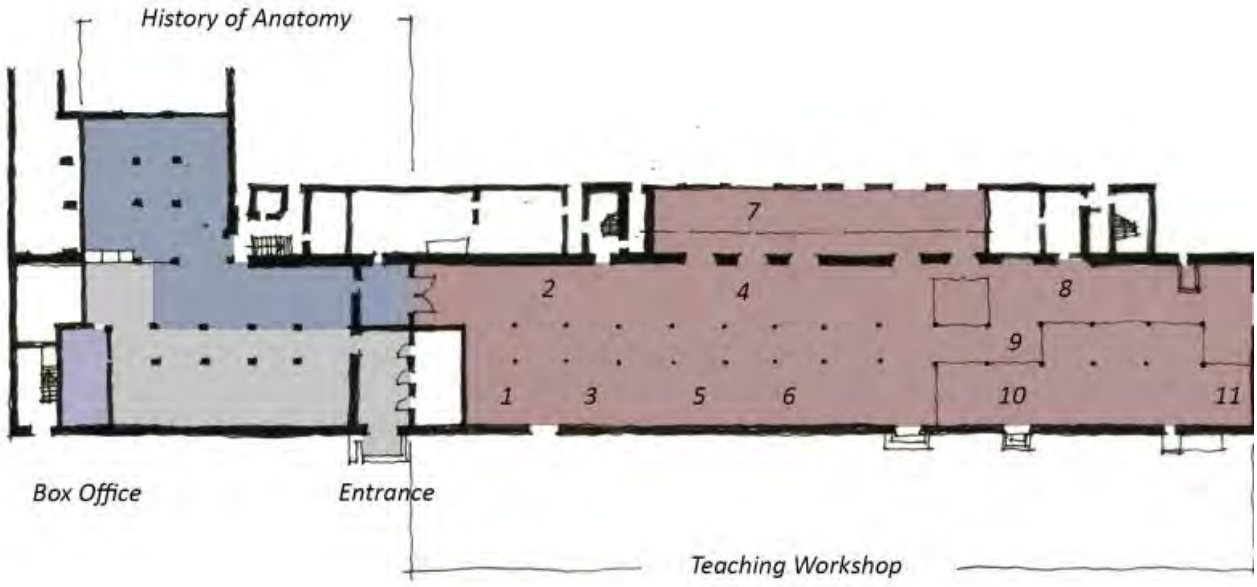



*Fig 76. The Idea of the Plastinarium thus thinks to all of the aforementioned institutions. It does so by providing educational platforms for further study and research, but also being a place where animals and human specimens can be showcased in a completely different format, than ever before exhibited.*

## The Plastinarium

Institutionally there exists only one established plastinarium in Guben, Germany although universities such as the University of Michigan, University of Texas as well as the University of Vienna have incorporated plastination laboratories within their schools. The programmatic breakdown or tour of a plastinarium includes:

- Historical preservation techniques of the anatomy (up until the invention of plastination).
- Teaching workshops, educating society regarding the process of plastination and the various methods involved.
- The gallery and showroom- showcasing of the plastinated specimens.



| Area Schedule | Area (sq.m) |
|---|---|
| Box Office | 42sq.m |
| Entrance | 323sq.m |
| History of Anatomy | 338 sq.m |
| Teaching Workshop | 1437 sq.m |
| Musculoskeletal system (1) (2) (3) | |
| Nervous System (4) | |
| Cardiovascular System (5) | |
| Respiratory System (6) | |
| Urogenital system (9) | |
| Digestive system (10) | |
| Embryonic development (11) | |
| Anatomical Dissection / Preparing anatomical specimens (7) | |
| Positioning Section (8) | |

| | |
|---|---|
| Gallery | 512 sq.m |
| Video Room | 110 sq.m |
| Exhibition | 1123 sq.m |
| Silicone Plastinates | |
| Slice Plastinates | |
| Blood Vessel configurations | |
| Large Animal Basin | 21 sq.m |
| Offices | 224 sq.m |

*Teaching Workshop -Process of Plastination*

*Fixation (Anatomical Dissection),*
*Dehydration (Removal of Body Fat and Water),*
*Forced Impregnation (in a vacuum),*
*Positioning,*
*Hardening*

*Sheet Plastination*

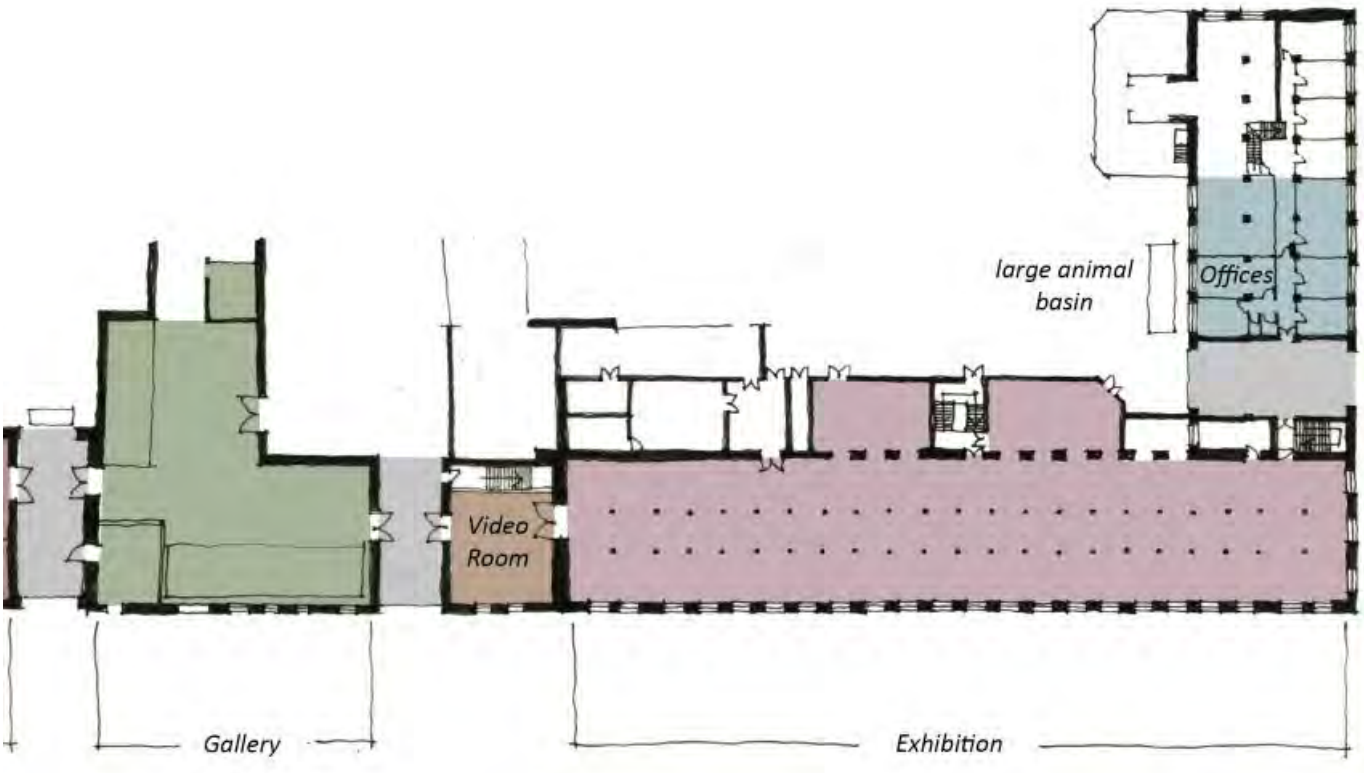



*Fig 77: Spatial Analysis of Plastinarium, Guben*

## Process of Plastination

The process of plastinating specimens, contained within the teaching workshops is divisively separated into four sections

- Anatomical dissection
- Dehydration
- Forced impregnation
- Positioning and hardening in a vacuum

This sequence enables the visitor, student or layman to ascertain a thorough breakdown of the process as well as engage with professionals throughout the whole procedure, before viewing and displaying the specimens in the exhibition space. The type of plastination files the specimens according to anatomical systems such as circulatory, muscular skeletal, digestive, respiratory as well as nervous systems apparent in the body of both man and animal. The whole idea aims to highlight the appreciation toward the anatomical vessel by objectifying the animal's body, being comprised of systems which imitate themselves throughout all life forms.

*Fig 78: Plastinated blood vessel within the hand*

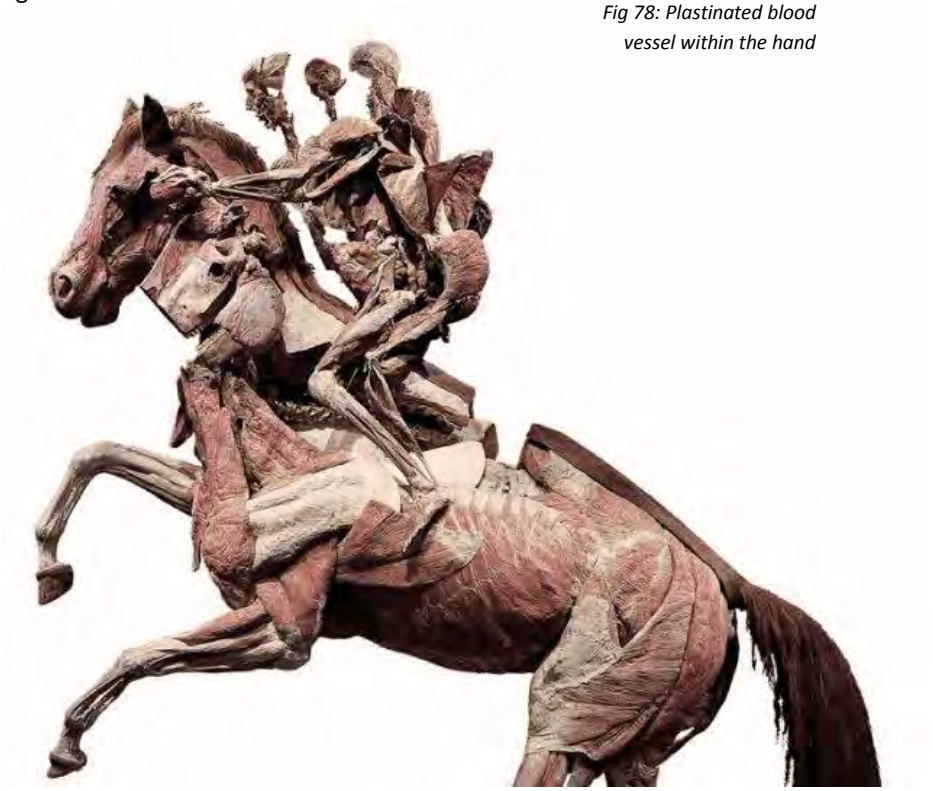


*Fig 79: Plastinated man and horse*

Anatomical Dissection


*Fig 80*

Dehydration


*Fig 81*

Forced Impregnation

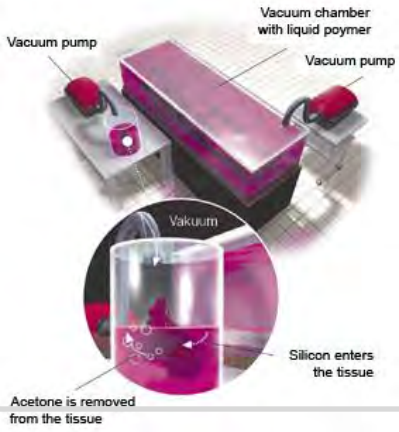



*Fig 82*

Hardening in a vacuum

*Fig 83*

*Fig 79-82 Depicting the process of platination*

## The Spectacle around the Anatomical Vessel

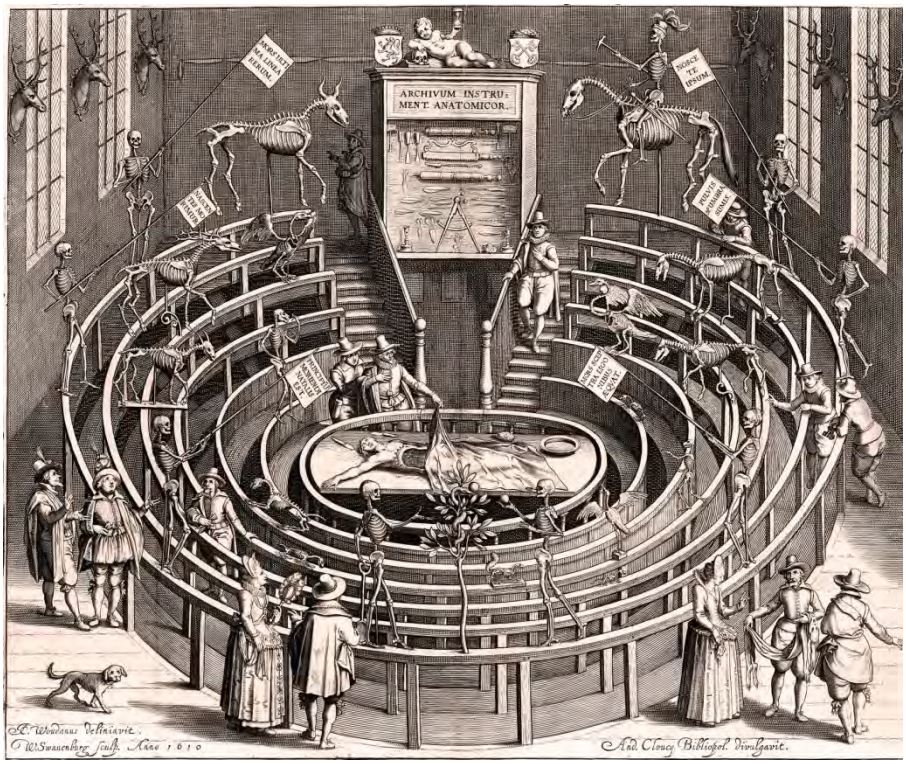



*Fig 84*

*Fig 85*

*Fig 83 and 84*
*Depict the historical spectical created around the human anatomy*

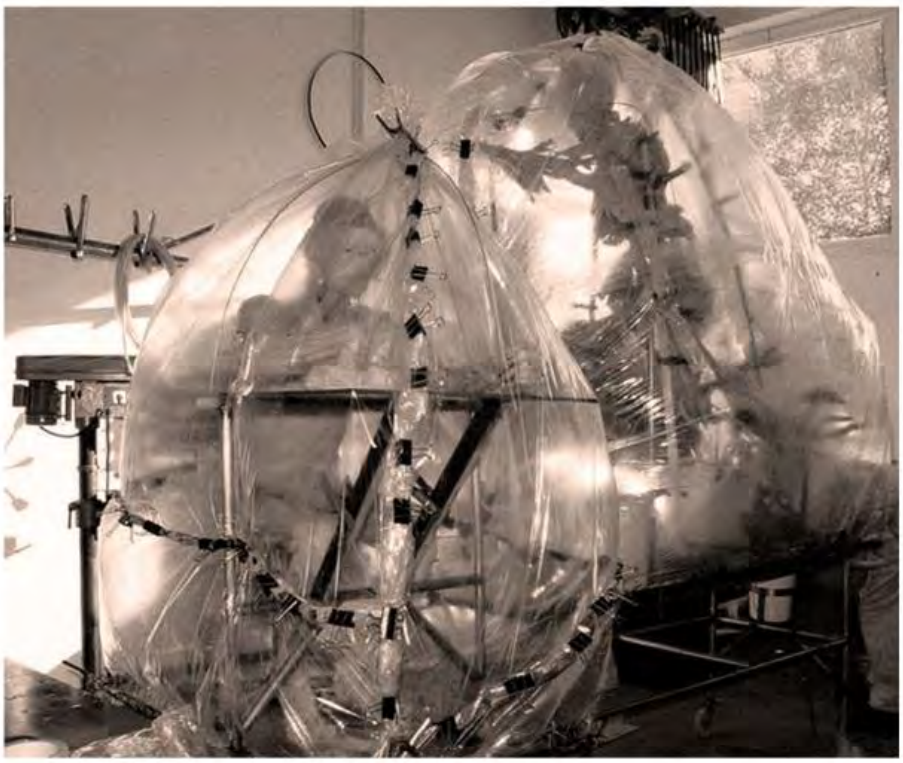


*Fig 86*

*Fig 87*

*Fig 85 and 86 Depict the evolved method of human dissection and preservation, allowing a spectacle to be created around the process of plastination*

# 9. The Anatomical Safari-

## Design Development

In acknowledgment of the spinal cord which was derived out of the intention of gluing the disjointed elements of UCT, the old zoo and gateway together. A series of exploratory work was undertaken in programming the linear form of the project, using strategies investigated from modern zoological structures. The assemblage of program was derived out of gearing the civic functions including the visitor's centre, restaurant and exhibition space and theatre toward the gateway and directing the educational spaces toward UCT.

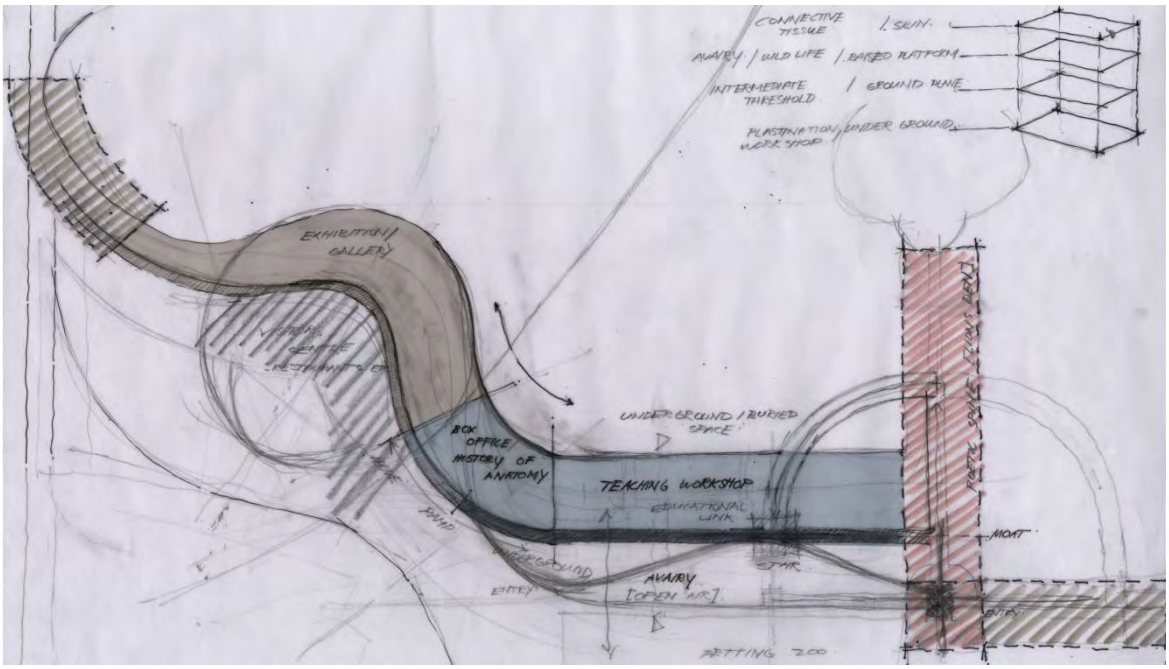



*Fig 88. Development of the spine*

Due to the linear form of the spine coinciding with the structured layout of the old zoo the form resulted in two segments arising: the tail- which coincided with the old zoo; and the head- terminating at the entry of Rhodes Memorial Road. The strict liner form of the tail compositionally aligned perpendicularly with the base of the historical axis of the zoo (aforementioned), whist the remaining segment comprising the head beginning to morph itself into a spherical arrangement emphasizing a rupture and breakage away from the historical plan. The programmatic sequence of the process of plastination also informed this decision as the plastinated specimens and human corpses would be transported to the exhibition space as well as the anatomical theatre, where live dissection shows would be performed.

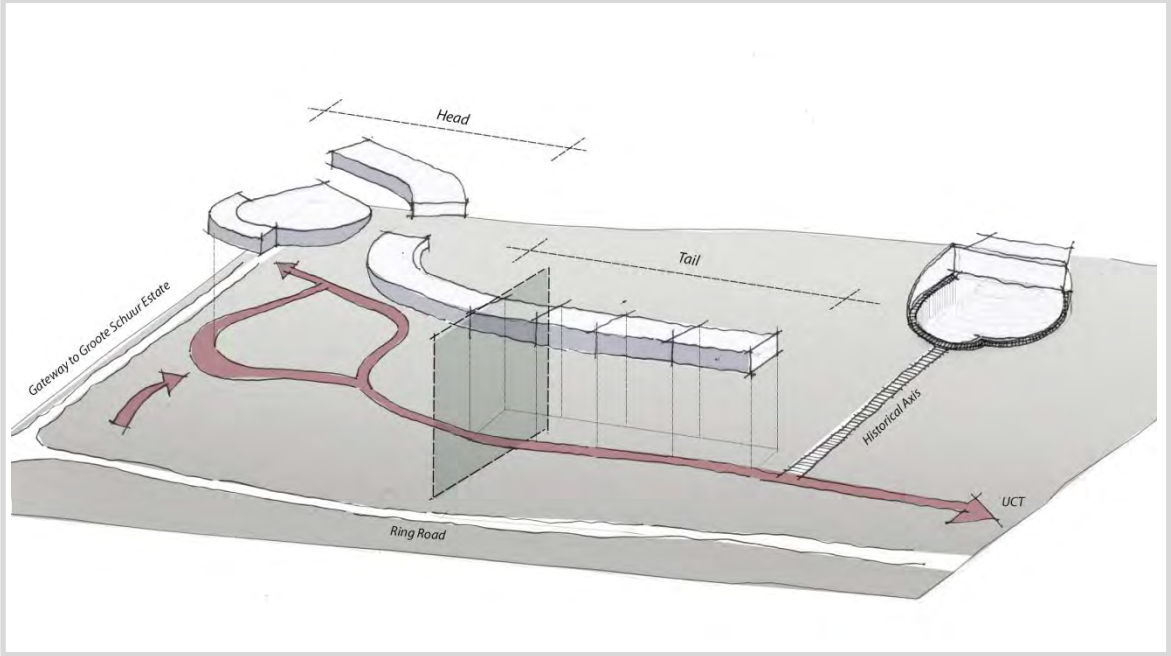



*Fig 89. Structuring the spine*

## The Tail

Programmatically the plastinarium and taxidermy workshops occupied this segment of the spine. Being of an educational nature they were orientated closer toward UCT for ease of accessibility. With this segment coinciding with the historical plan of the old zoo, my architectural response was to create a rigid form which cohesively fused to the structured geometry of the old zoo layout. The access point to the entry of plastinarium work shop from UCT was situated perpendicularly to the historical axis of its line of symmetry, creating a tension between the existing processional isle and the start of my building.

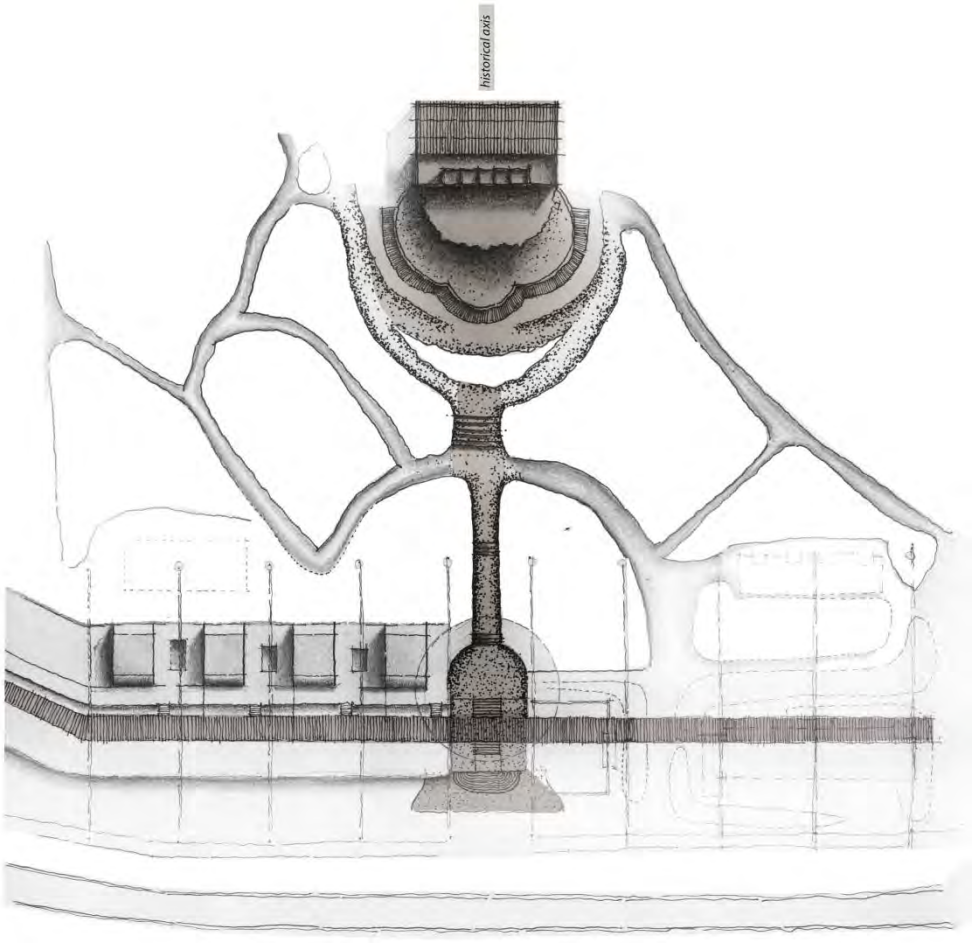



*Fig 90. Junction between the start of the plastinarium and the historical axis of the old zoo*

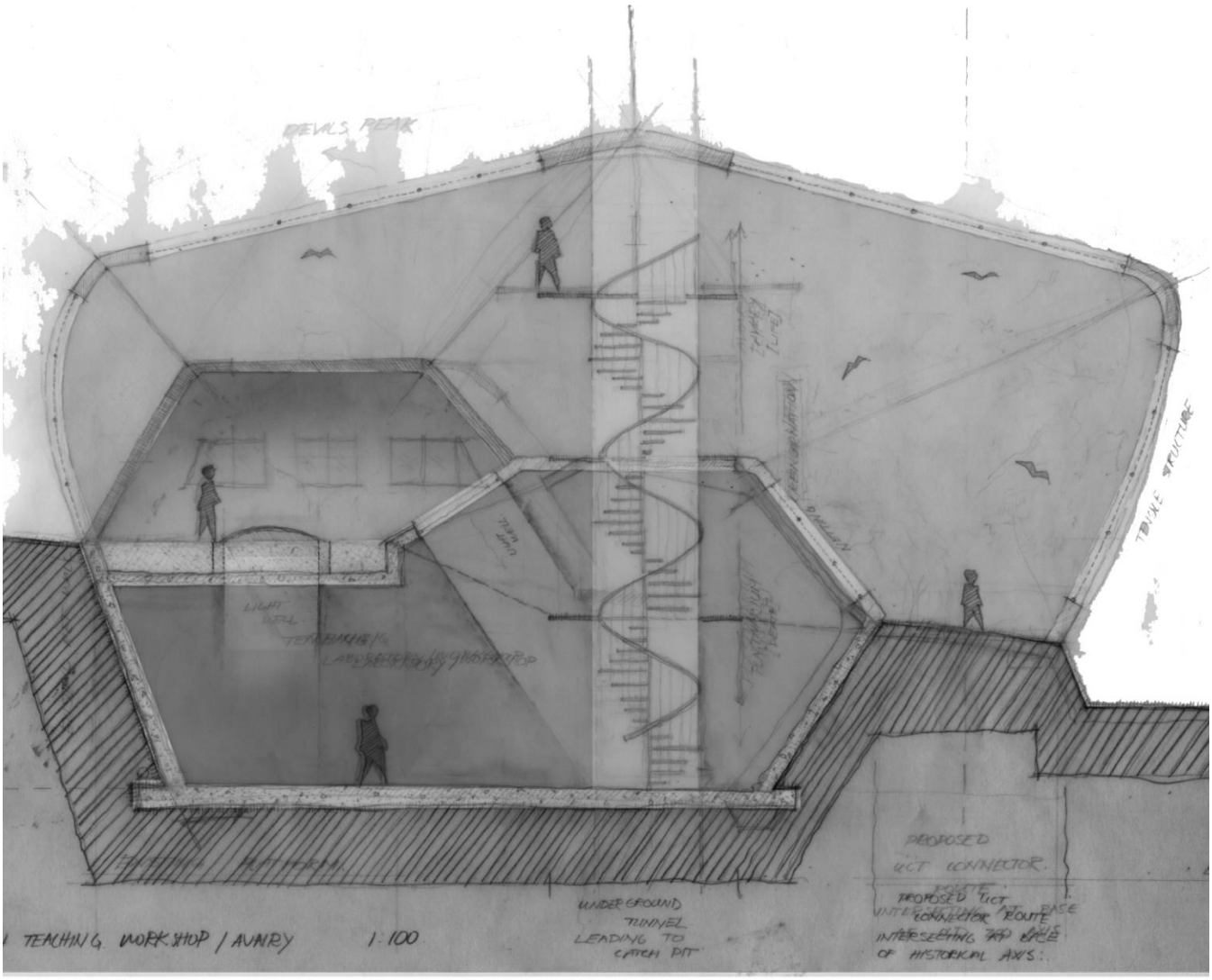



*Fig 91. Poetic sketch depicting the relationship between the aviary and the plastinarium*

In accordance with the earlier concepts interrogating the actor/spectator relationship as well as landscape immersion I aimed to achieve multiple viewing platforms through a series of vertically stacked levels varying from a public to private nature. The underground component constituting the workshops being completely private, whilst the ground level, constituting the aviary being of a public nature. To blur this threshold, the nature of the form of the roof of the workshops/ laboratories folded out of the ground, allowing for visual accessibility for the public from the ground level. The design of the aviary included a skywalk bridge, allowing the public to walk among the tree tops and appreciate the breathtaking view of Devil's Peak and the city below.

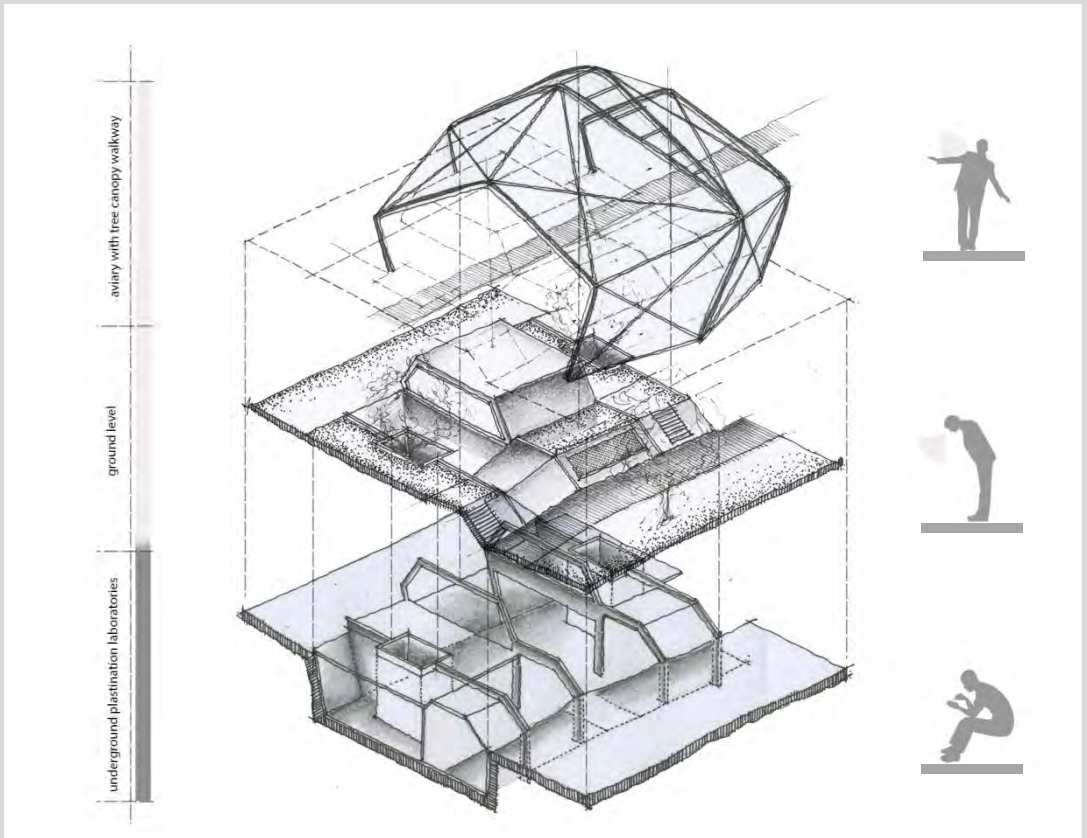



*Fig 92. Axonometric depicting the degree of public to private thresholds between the spaces*

The idea of the sleeve comprising the tensile structure was driven by the dichotomy between the living, (wildlife) aspect contrasted with the underground reincarnation process of plastination. The idea was to create a lightweight structure on the ground level providing an ethereal experience for the public, which did not disrupt or obtrude from the beauty of the surrounding landscape and views. The sleeve of the aviary ruptures at the base of the historical axis and continues northwards, disintegrating itself along the line of the spine.

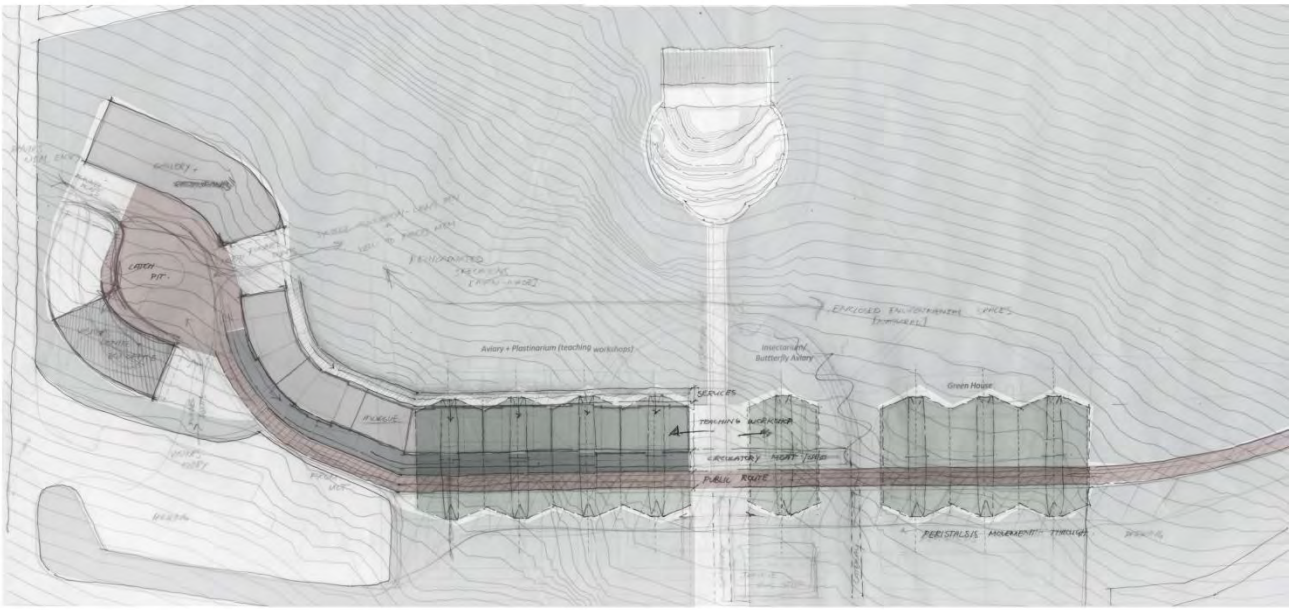



*Fig 93. The sleeve*

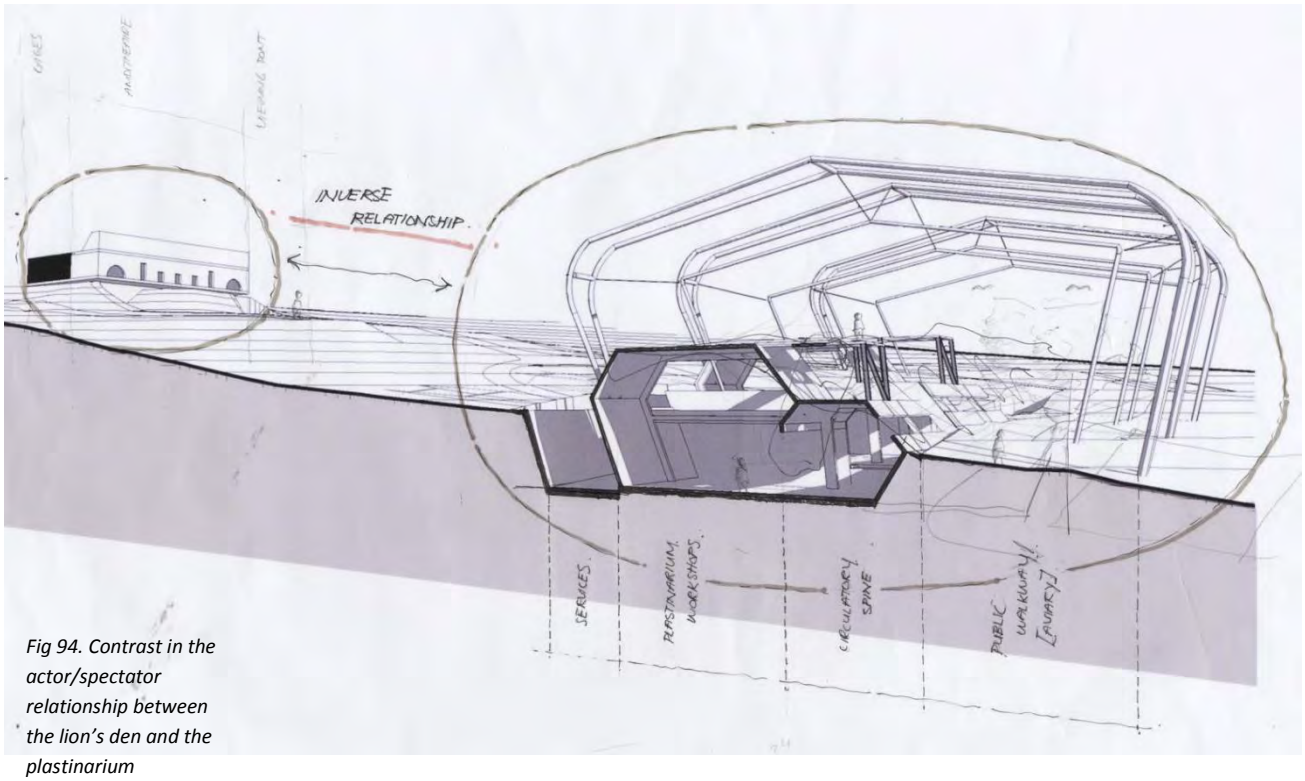



*Fig 94. Contrast in the actor/spectator relationship between the lion's den and the plastinarium workshops and aviary*

*Fig 95. Model photograph*

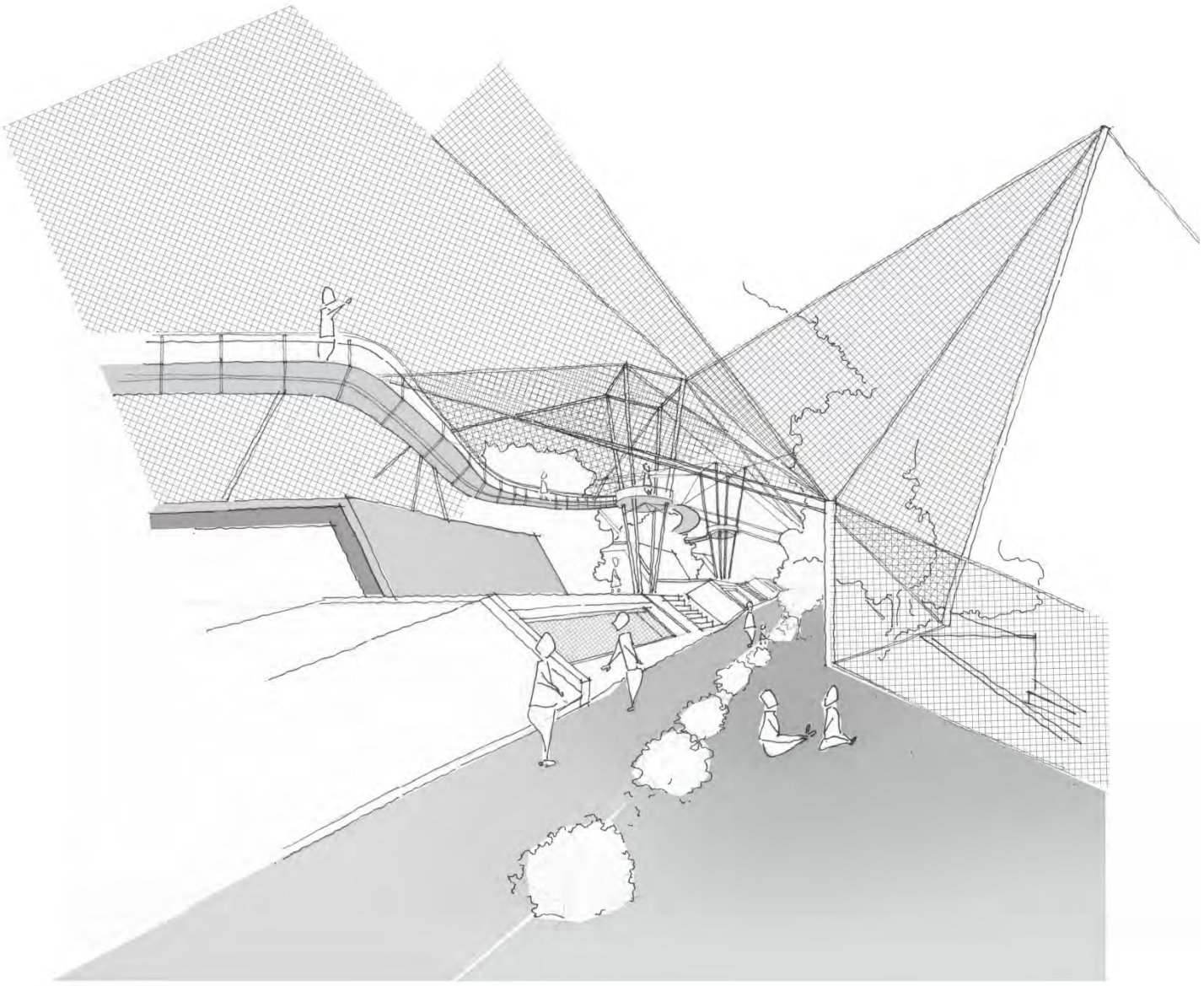


*Fig 96.*
*Sketch showing the juxtaposition between the ethereal lightweight structure of the aviary in comparison to the roof scape of the workshop laboratories*

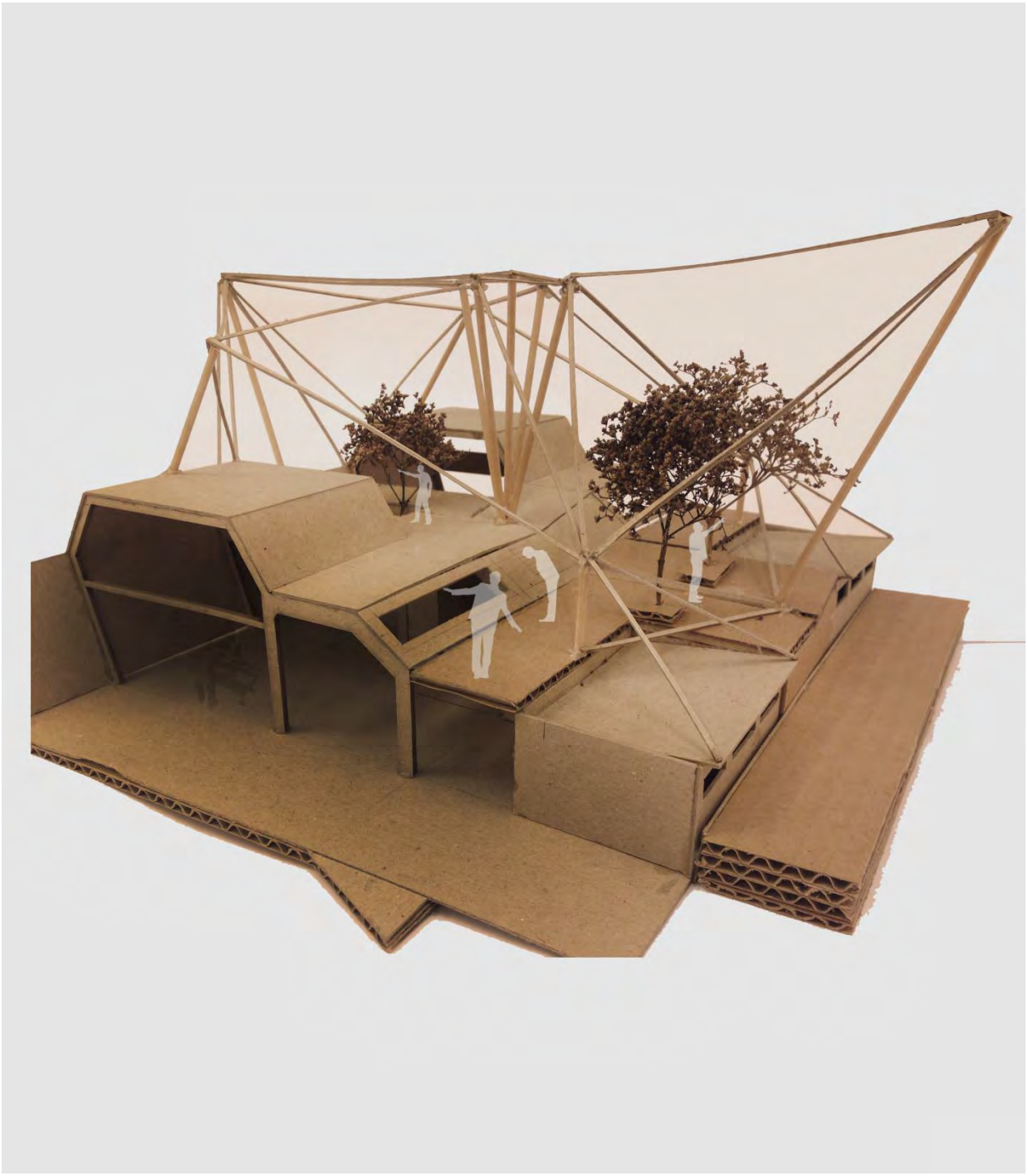


*Fig 97.*
*Model Photograph*

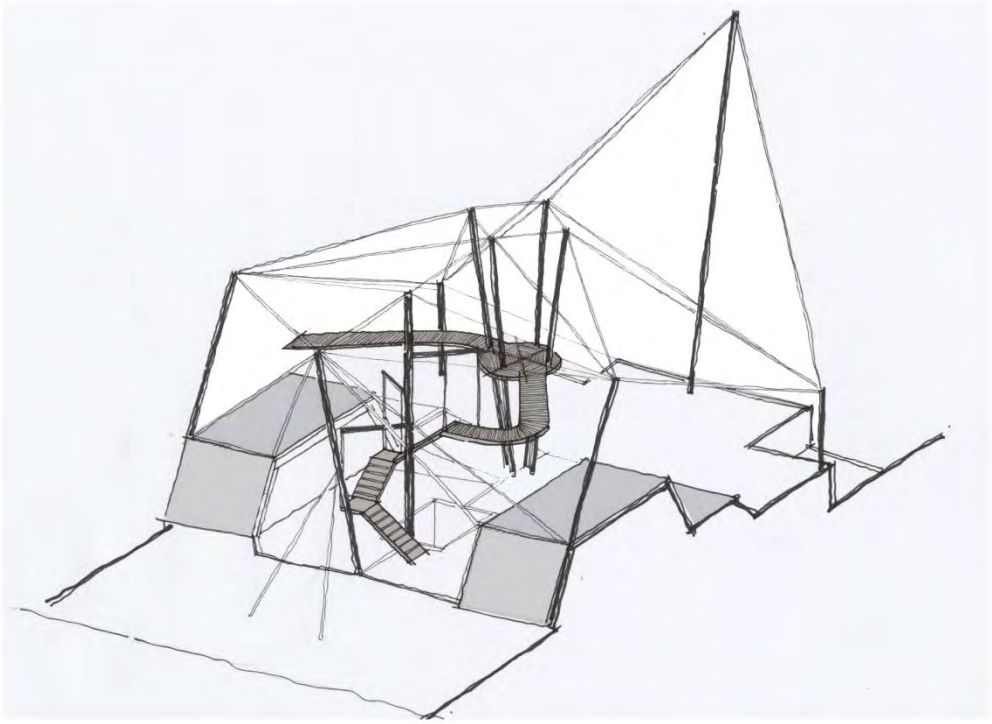


*Fig 98.*
*Sketch of the tree canopy walkway and stair, which was structurally integrated within the mast of the tensile structure*

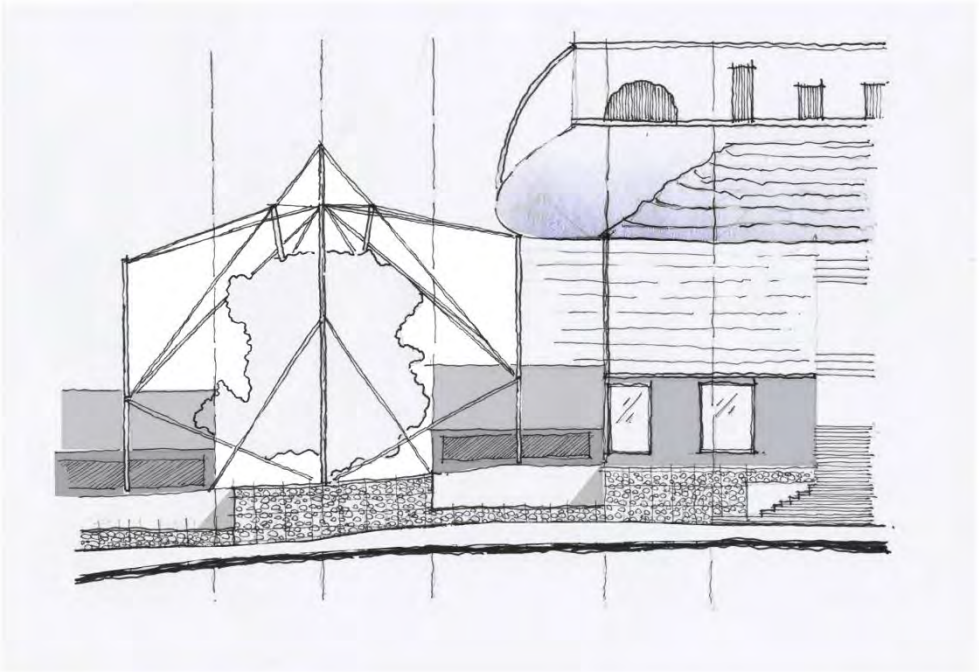


*Fig 99.*
*A portion of the Ring Road Street elevation of the aviary. A Gabion wall was used to cohesively imitate the texture of the stone used in the structure of the lion's den.*

## The Head

The spherical design of the extension of the spine constituting the head, terminating at the gateway of Rhodes Memorial Road, initiated out of the idea of a rupture resulting in a change of form from the workshops which had coincided with the historical footprint of the old zoo.

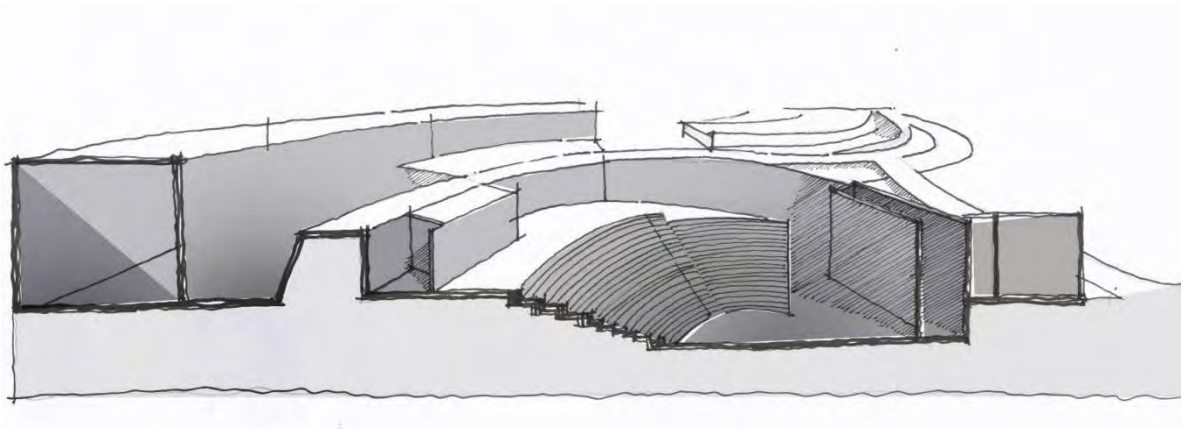


*Fig 100. Diagrammatic sectional perspective of the anatomical theatre encompassing the head of the spine.*

*Fig 101*

*Fig 102*

*Fig 99 &100. Comparitive photographs of the actor spectator relationship in the lion's den apparent throughout its history*

The civic functions of the restaurant, visitors centre and exhibition space were rotated and arranged around the anatomical theater. The idea behind this sequence stemmed from a twofold initiative. Firstly the idea of sinking the theatre and allowing the restaurant to spill out onto its roof imitated the type of threshold of what was proposed along the tail of the spine, (between the workshops and the aviary).

I achieved this by the use of a publically accessible roof which the restaurant would spill out onto, separated from the private theatre space below. In terms of visual accessibility of the restaurant certain restrictions and devices were employed to prevent unsightly views into the theatre by means of level changes. Secondly the circular form of the anatomical theatre also aims to disrespectfully relate to the disjointed relationship between the actor and spectator apparent in the design of the lion's den. Live dissection shows present a strictly truthful and biological performance of anatomical systems apparent in humans and animals where the surgeon and spectator engage with one another; whereas the design of the lion's den, as discussed, presented a false interpretation between the performance space of the lions compared to the actual living conditions to which they were subjected to.

# 10. Plastinarium at Groote Schuur Zoo-

## Final Design Drawings

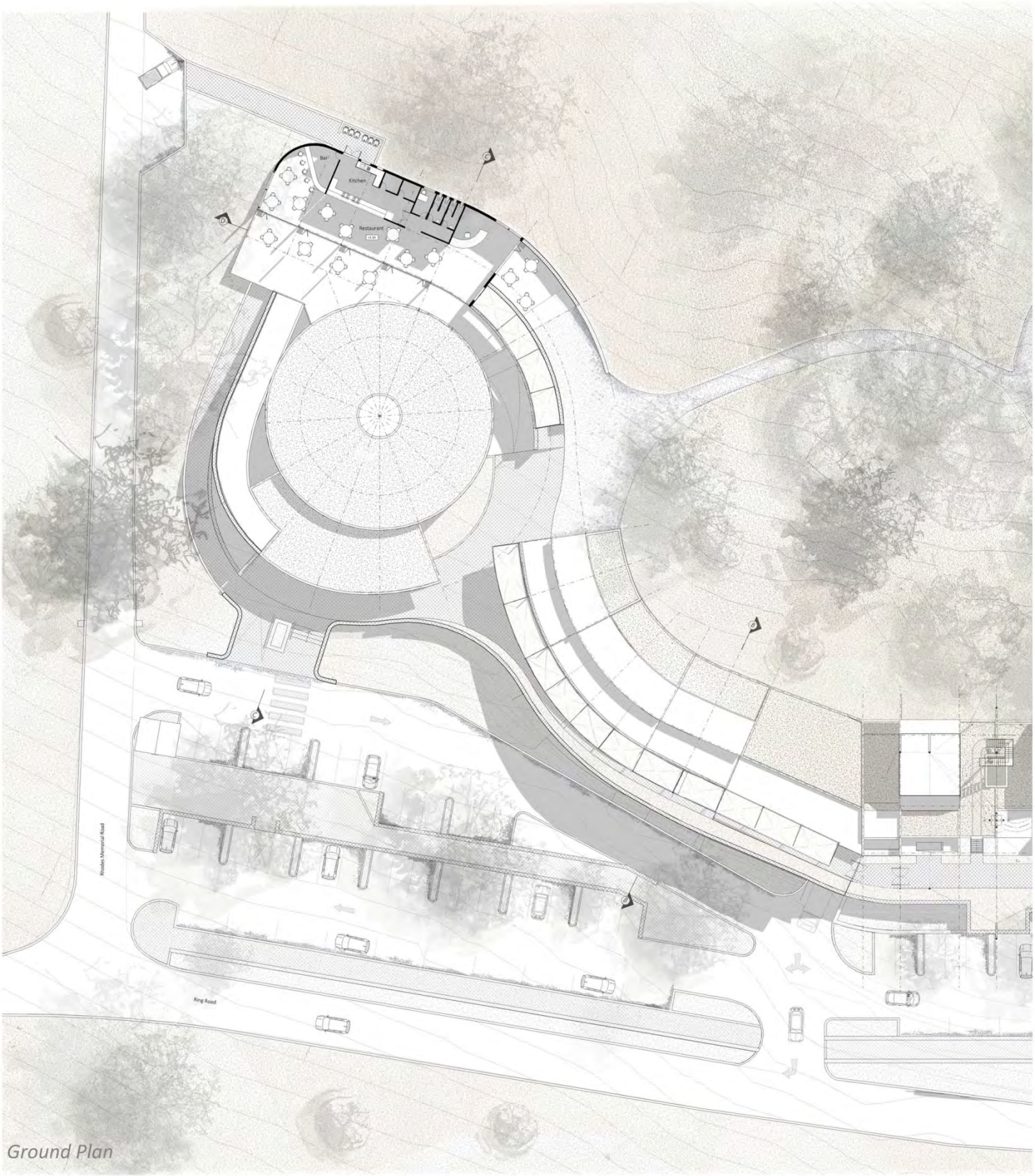
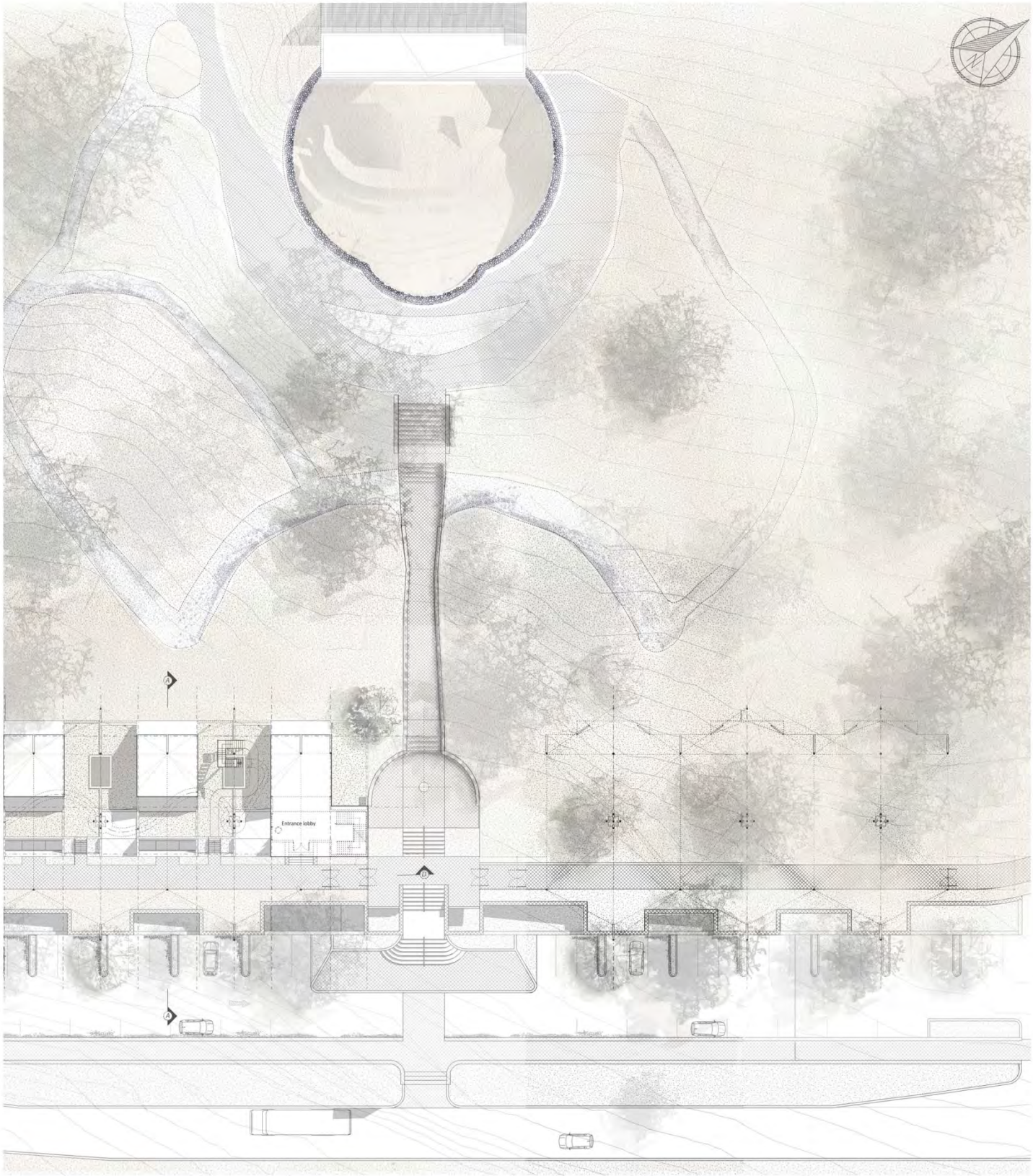



*Fig 103. Ground Floor Plan. NTS.*


Entrance lobby

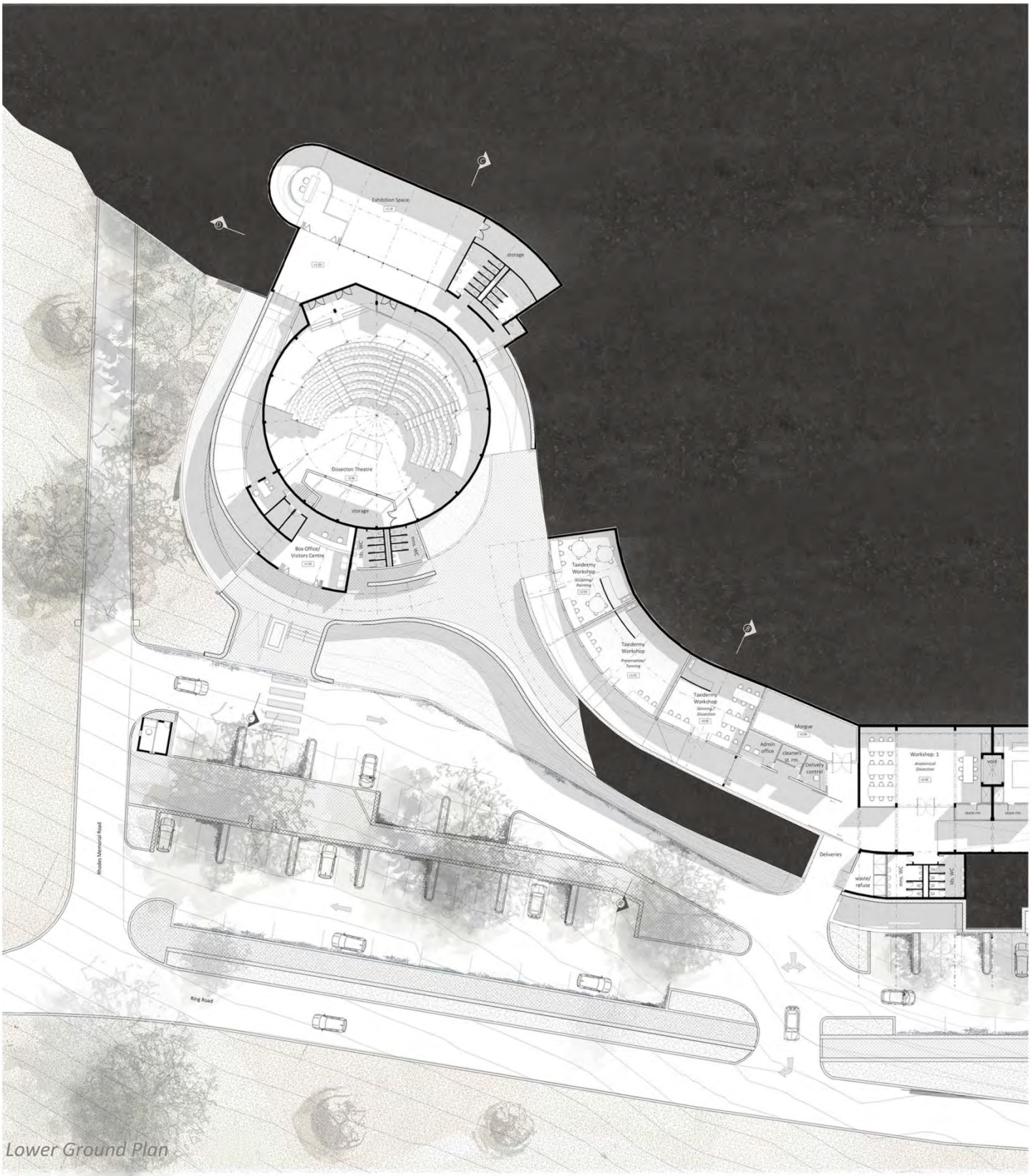
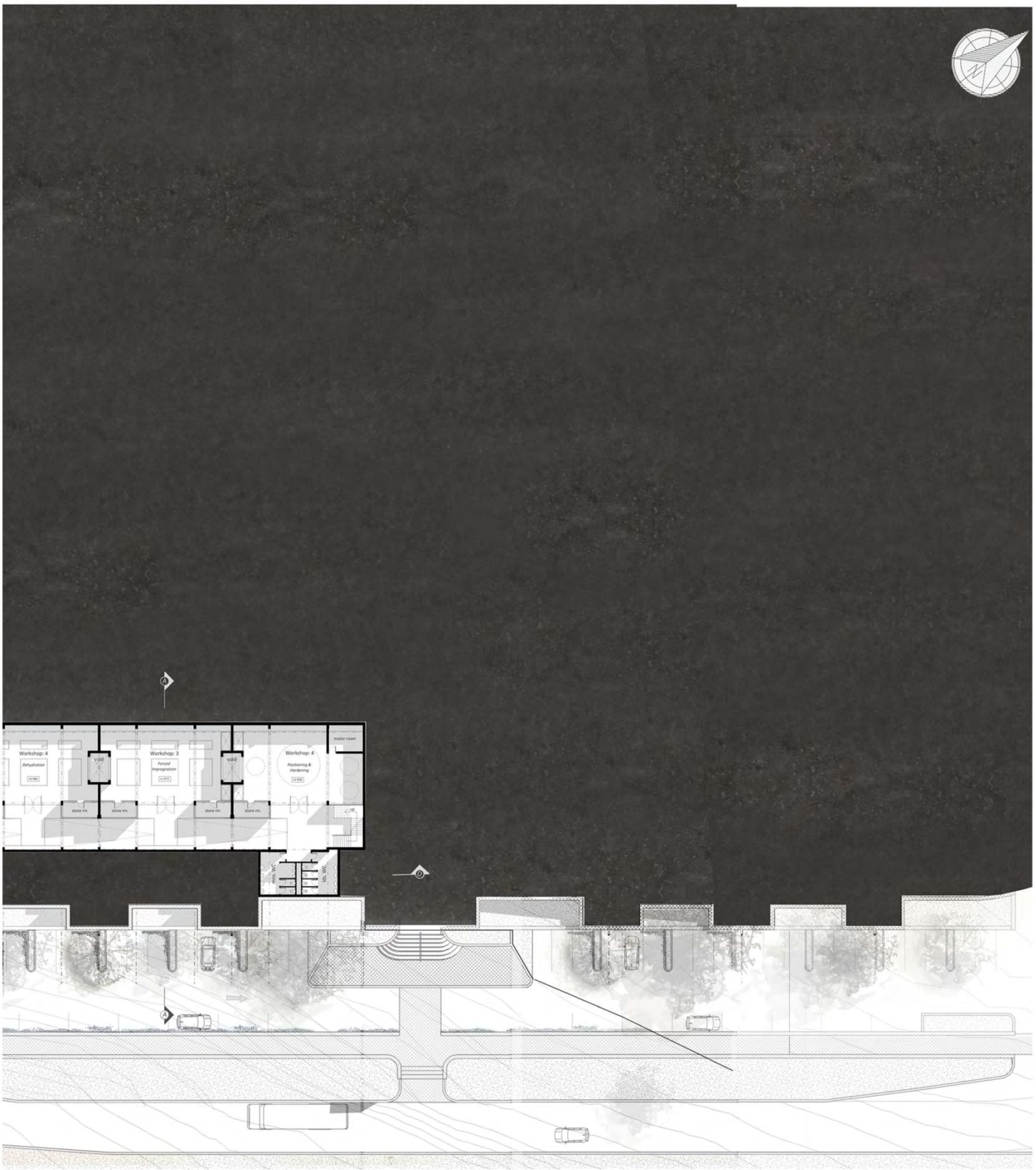



*Fig 104. Lower Ground Floor Plan. NTS.*


Workshop: 4
Dehydration
void
Workshop: 3
Forced Impregnation
void
Workshop: 4
Positioning & Hardening
motor room
store rm.
store rm.
store rm.
store rm.
WC
WC

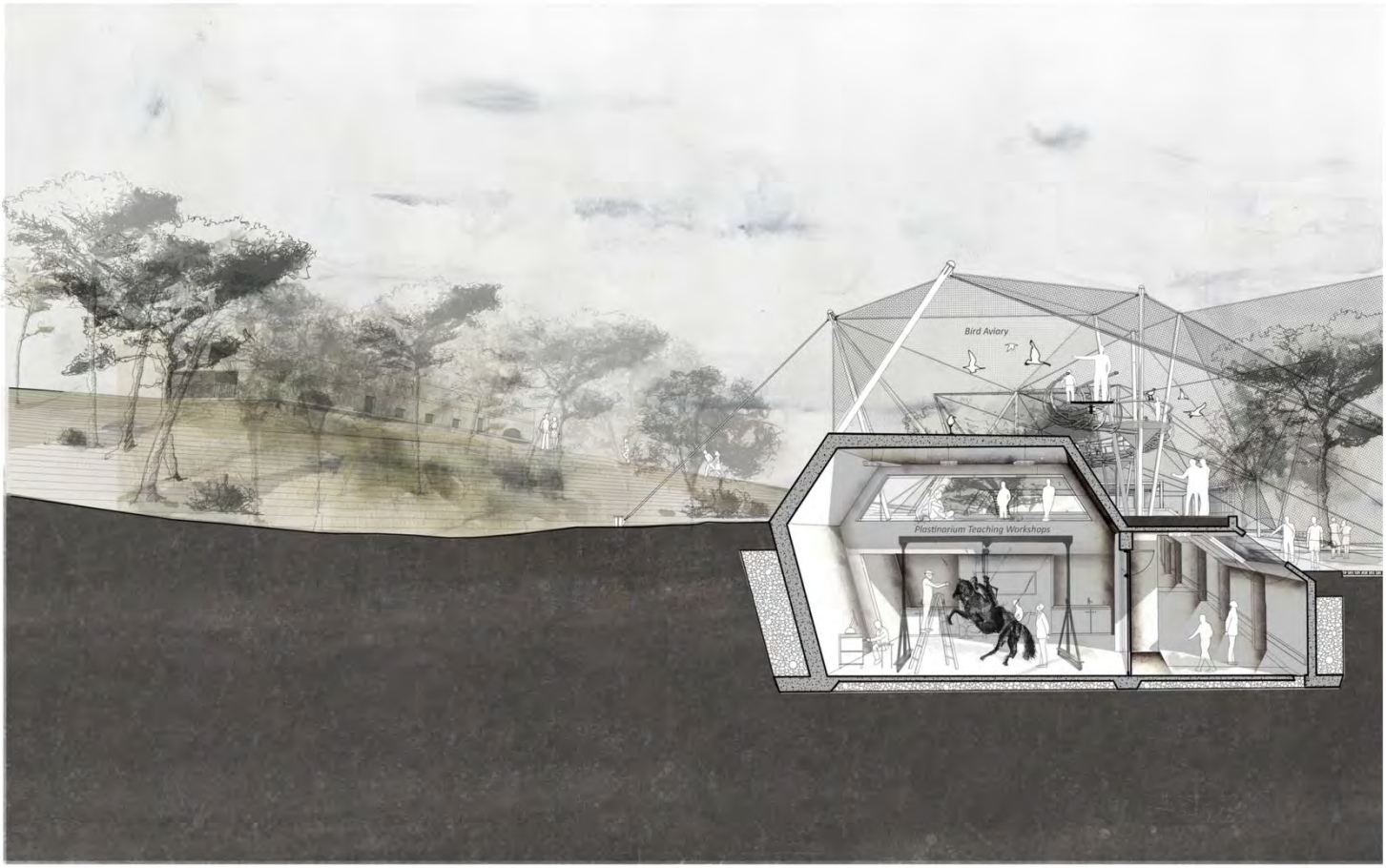



*Fig 105. Section A-A, NTS.*

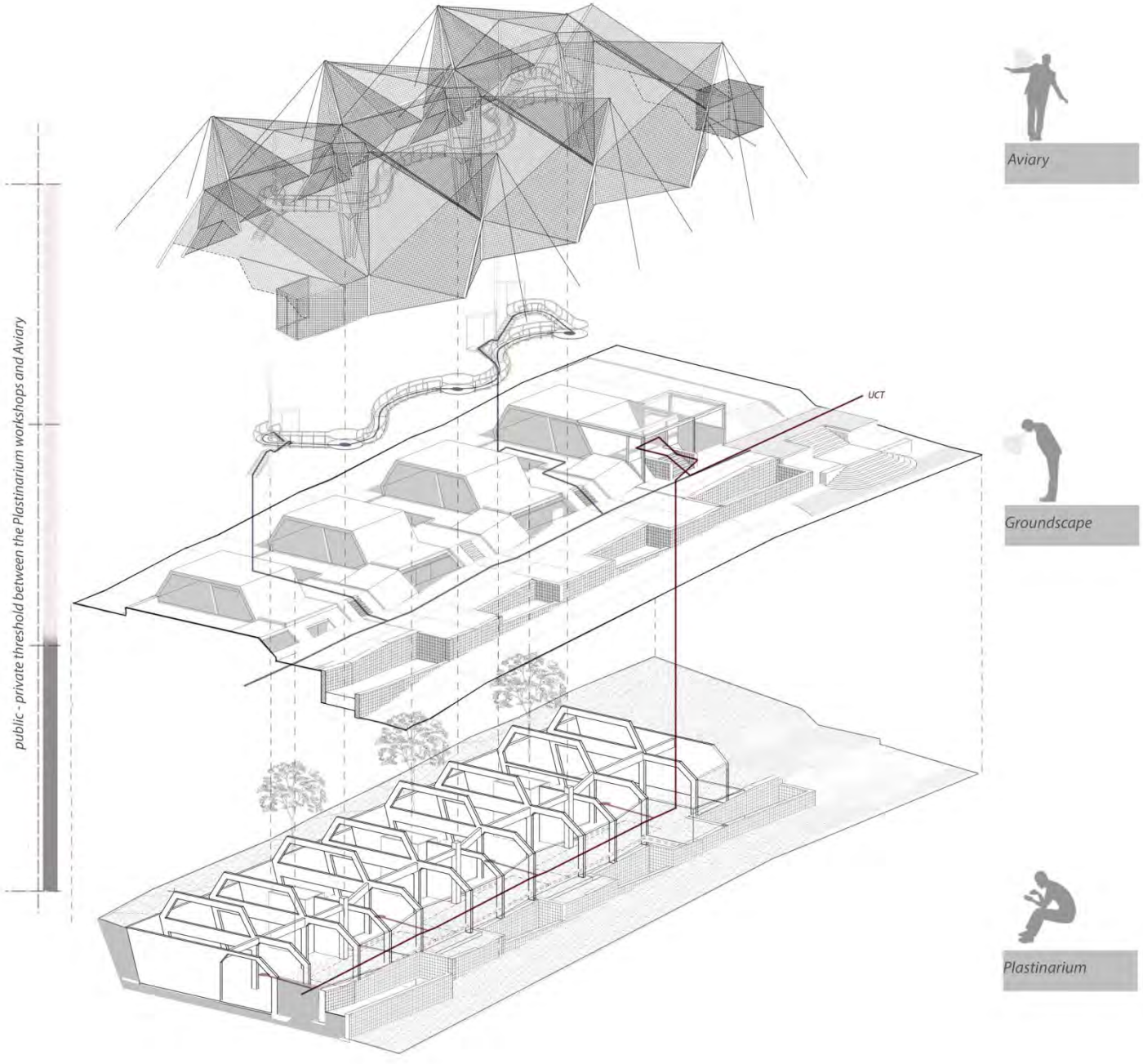



*Fig 106. Structural Analysis_ Tail*

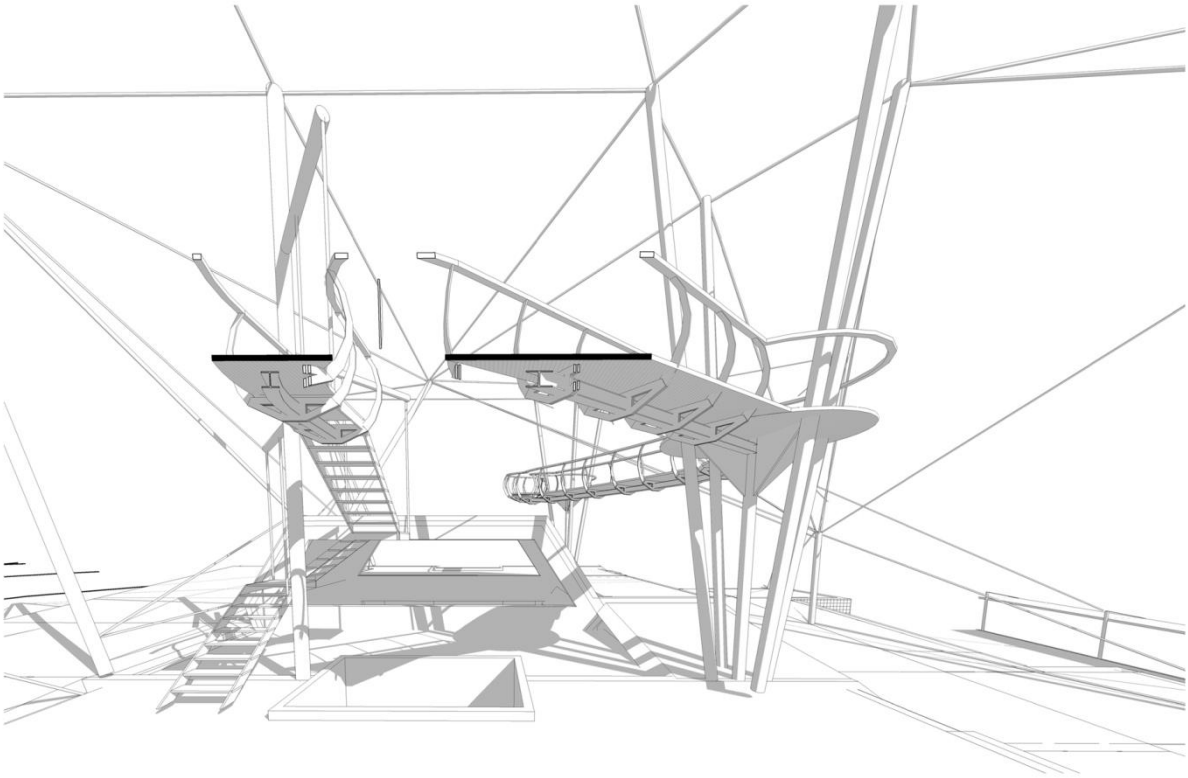


*Fig 107. Perspective Inside Aviary*

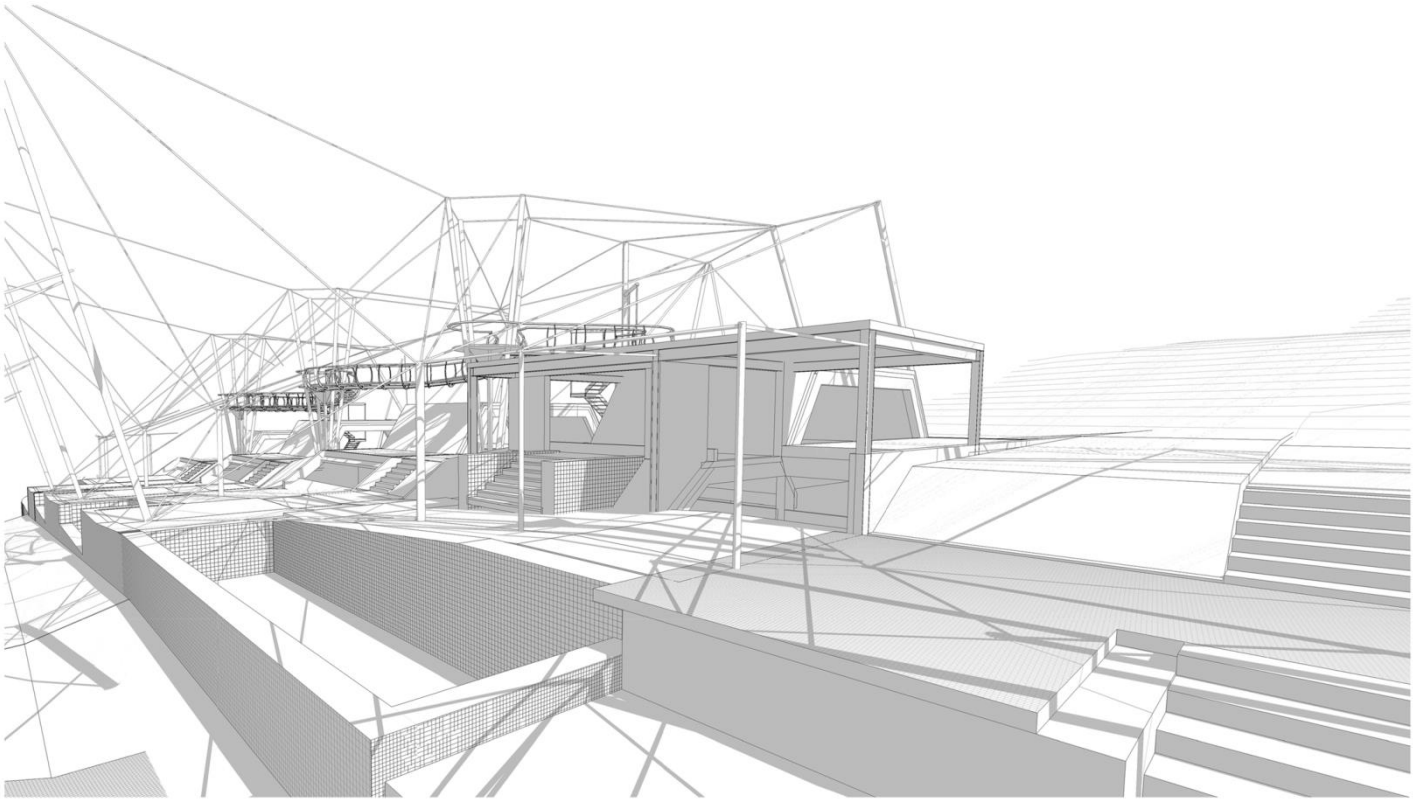


*Fig 108. Perspective of Entry to Underground Laboratories*

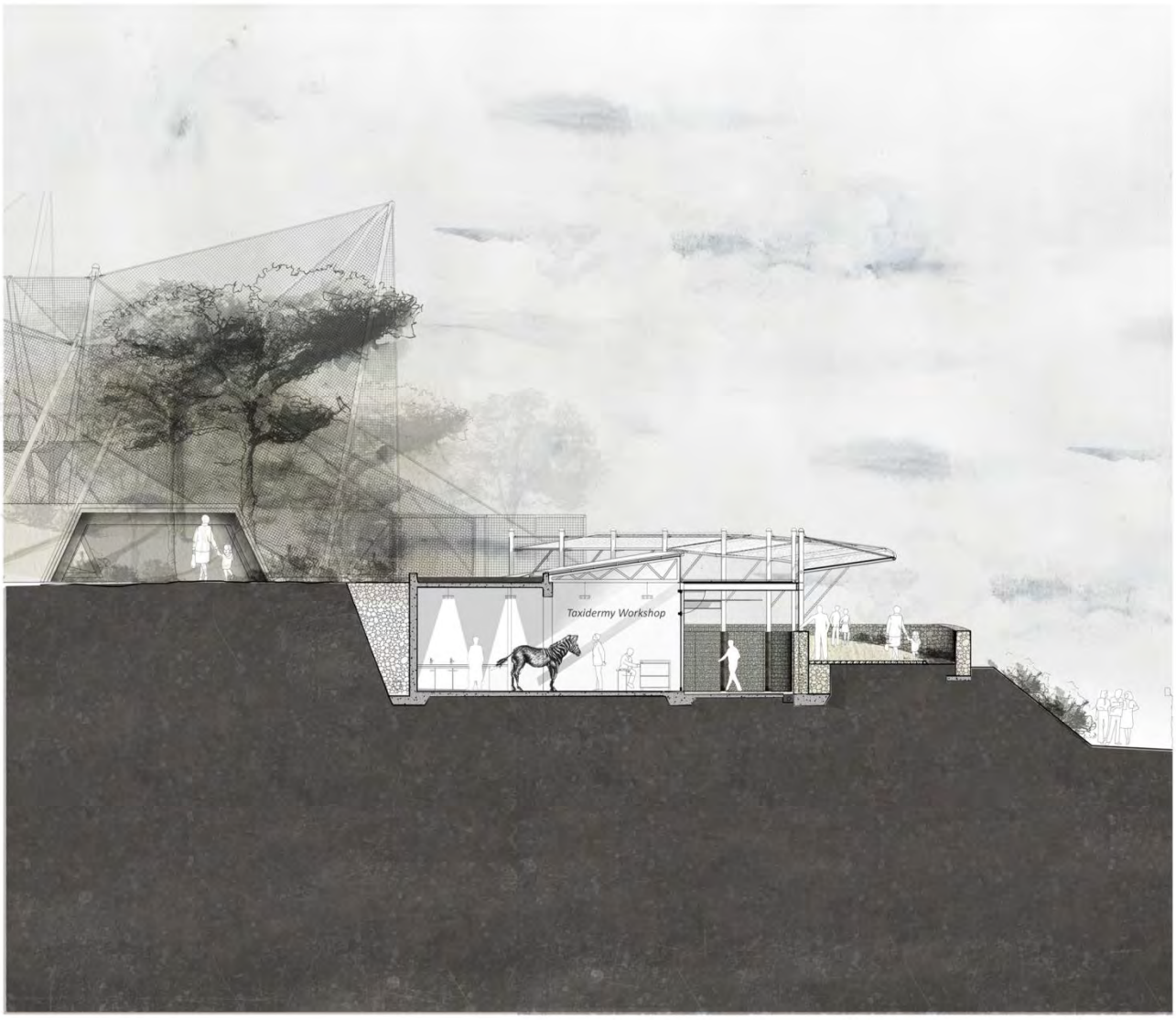



*Fig 109: Section B-B, NTS.*

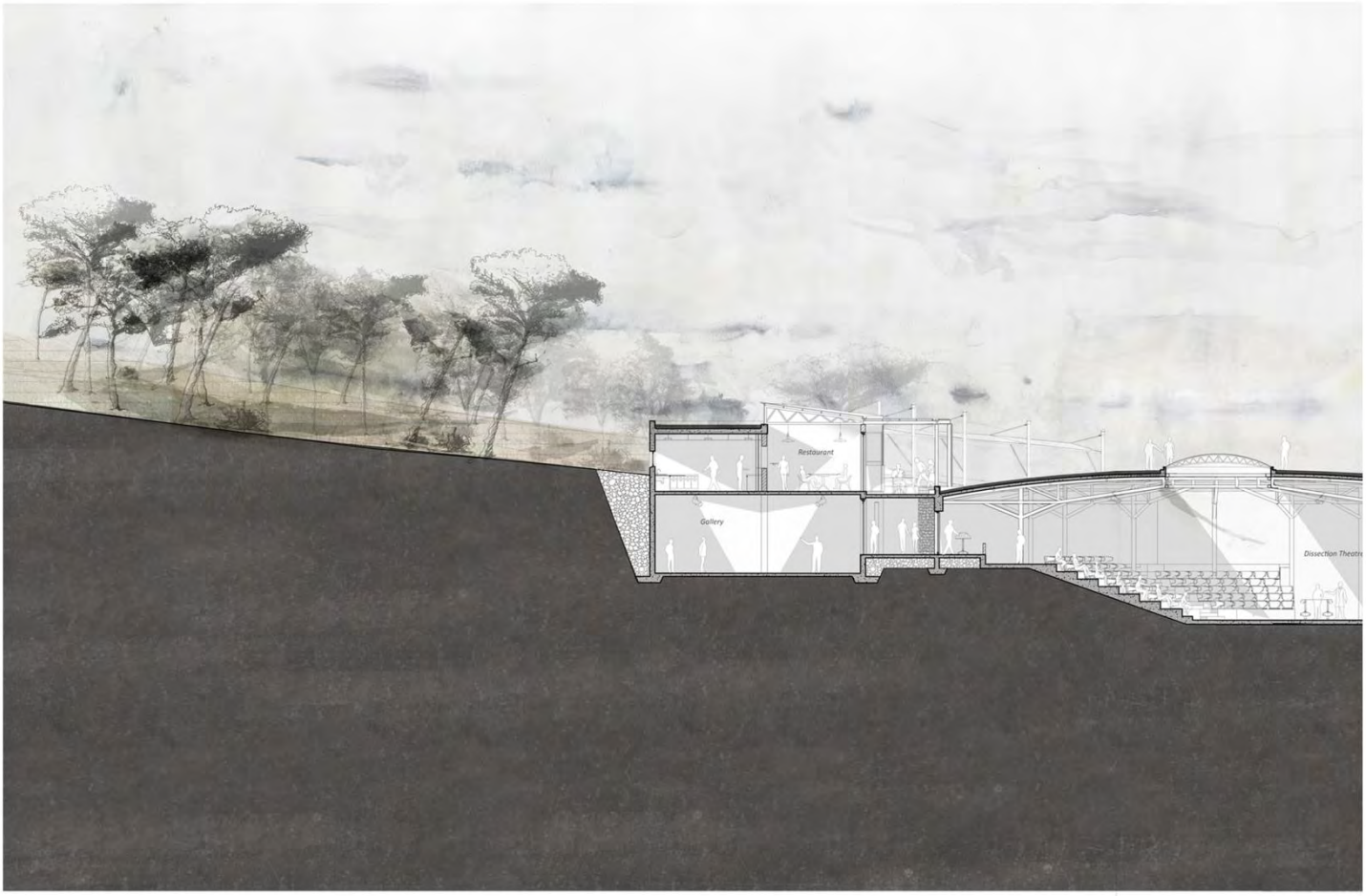



*Fig 110: Section C-C, NTS.*


Visitor's Centre/ Box Office

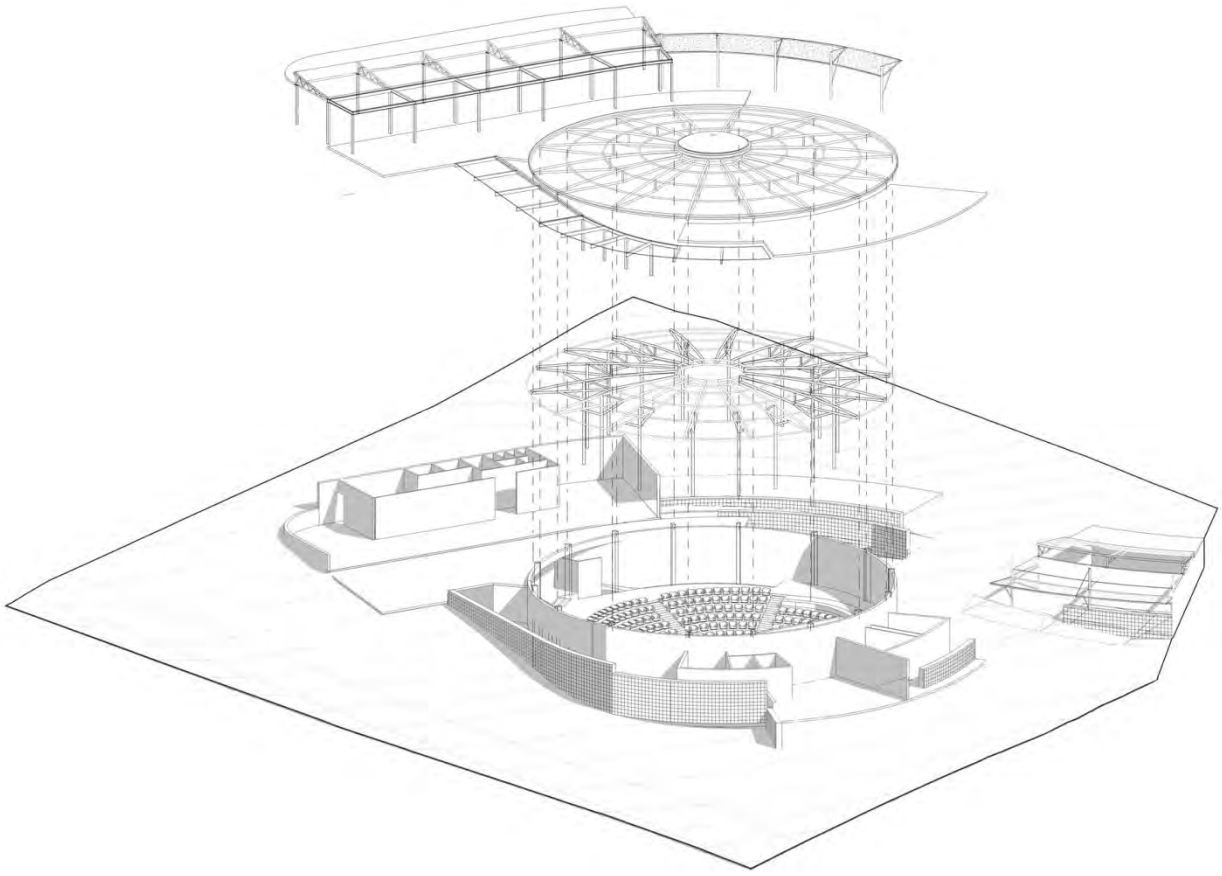



*Fig 111: Structural Analysis_ Head*

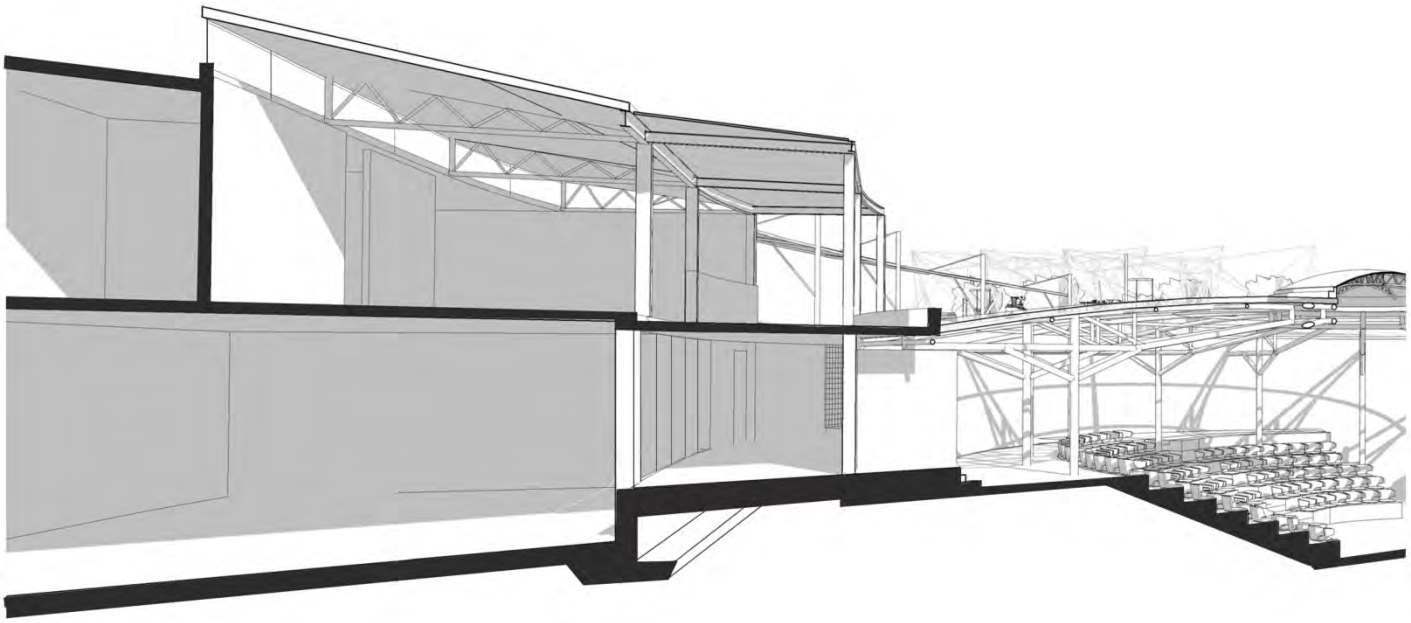


*Fig 112. Sectional Perspective through Restaurant, Gallery and Dissection Theatre*

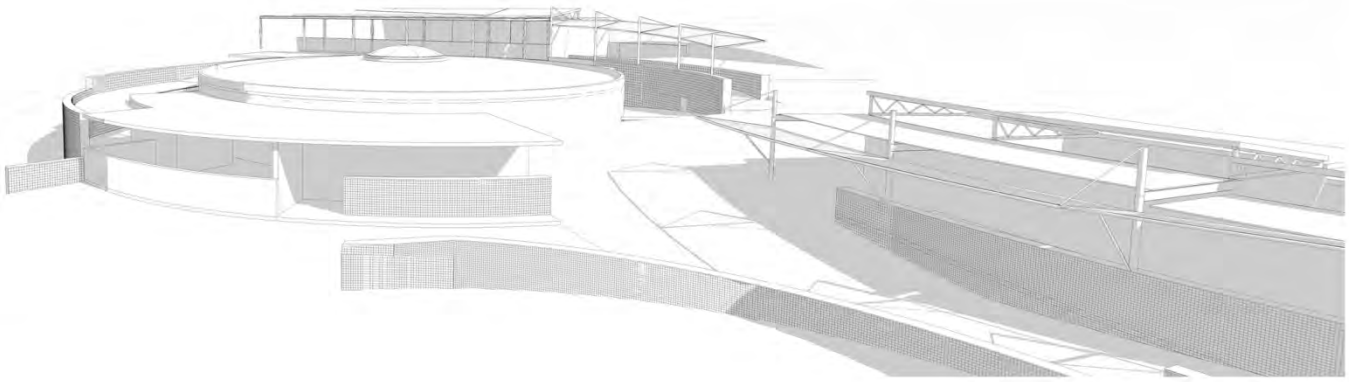


*Fig 113. Perspective of Restaurant, Dissection Theatre and Visitor's Centre*

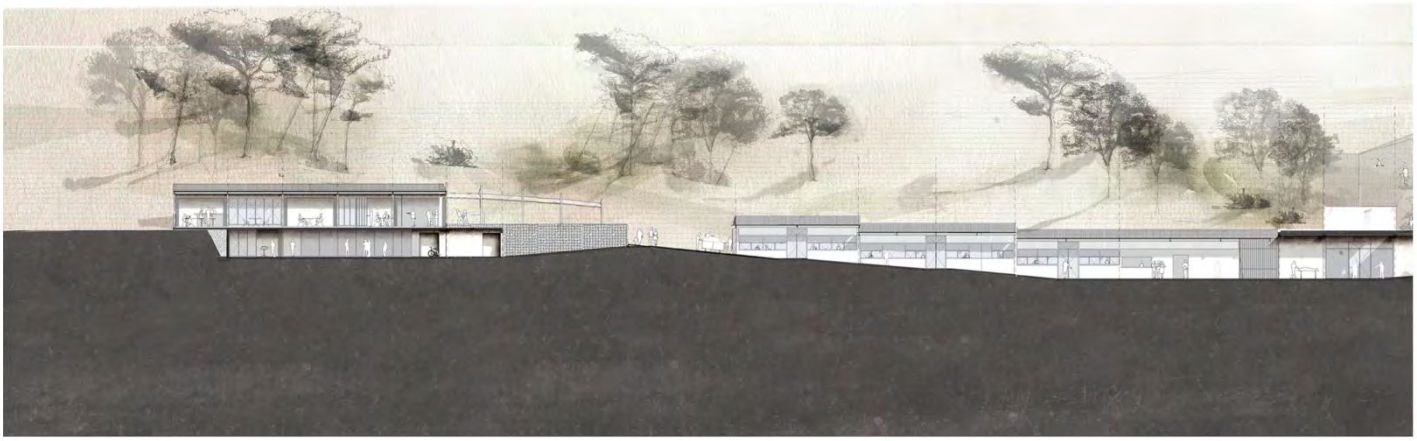
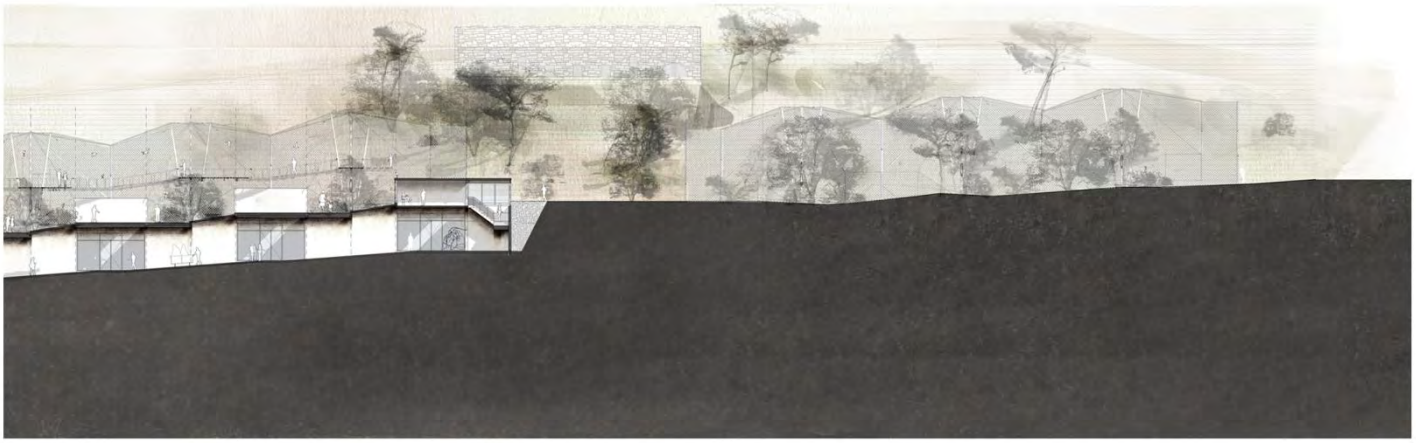


*Fig 114: Section D-D, NTS.*



# 10. Conclusion

It is clear that my journey throughout this dissertation has developed from an interest in the transformation of an existing narrative embedded within the context of a site. The relationship between man and the other has been explored through the act of developing a project that responds both poetically as well as pragmatically to the historical archaeology as well as physical site constraints.

A sensitive approach was undertaken in weaving the developed program into a design that utilized principles discovered in modern zoological gardens and structures.

The final design aims to showcase a compilation of structural and spatial devices that allow for an integrated experience between man and the other. The outcome has hoped to produce a project that bridges the divide between *us* and *them* through the technique of voyeurism, in an act that delicately responds to the narrative of the old Groote Schuur Zoo.

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# 12. Ethics Clearance Report

## EBE Faculty: Assessment of Ethics in Research Projects (Rev2)

Any person planning to undertake research in the Faculty of Engineering and the Built Environment at the University of Cape Town is required to complete this form before collecting or analysing data. When completed it should be submitted to the supervisor (where applicable) and from there to the Head of Department. If any of the questions below have been answered YES, and the applicant is NOT a fourth year student, the Head should forward this form for approval by the Faculty EIR committee: submit to Ms Zulpha Geyer (Zulpha.Geyer@uct.ac.za; Chem Eng Building, Ph 021 650 4791).
**NB: A copy of this signed form must be included with the thesis/dissertation/report when it is submitted for examination**

***This form must only be completed once the most recent revision EBE EiR Handbook has been read.***

---

Name of Principal Researcher/Student: Brett Marc Ho Department: APG (School of Architecture, Planning and Geomatics)

Preferred email address of the applicant: brettho4189@gmail.com

**If a Student:** Degree: MArch (Prof) Supervisor: Nic Coetzer

If a Research Contract indicate source of funding/sponsorship: N/A

Research Project Title:

**Reconstructing the Illusion, by Decontextualizing the Animal**

**Overview of ethics issues in your research project:**

| | | |
|---|---|---|
| **Question 1: Is there a possibility that your research could cause harm to a third party (i.e. a person not involved in your project)?** | YES | ~~NO~~ |
| **Question 2: Is your research making use of human subjects as sources of data?** If your answer is YES, please complete Addendum 2. | ~~YES~~ | NO |
| **Question 3: Does your research involve the participation of or provision of services to communities?** If your answer is YES, please complete Addendum 3. | YES | ~~NO~~ |
| **Question 4: If your research is sponsored, is there any potential for conflicts of interest?** If your answer is YES, please complete Addendum 4. | YES | ~~NO~~ |

If you have answered YES to any of the above questions, please append a copy of your research proposal, as well as any interview schedules or questionnaires (Addendum 1) and please complete further addenda as appropriate. Ensure that you refer to the EiR Handbook to assist you in completing the documentation requirements for this form.

**I hereby undertake to carry out my research in such a way that**

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

**Signed by:**

| | Full name and signature | Date |
|---|---|---|
| Principal Researcher/Student: | Brett Marc Ho | 2014/07/23 |

**This application is approved by:**

| | | |
|---|---|---|
| Supervisor (if applicable): | Melinda Silverman | 2014/07/23 |
| HOD (or delegated nominee): *Final authority for all assessments with NO to all questions and for all undergraduate research.* | Nic Coetzer | 2014/07/23 |
| Chair : Faculty EIR Committee For applicants other than undergraduate students who have answered YES to any of the | G. Sithole | 13/08/2014 |

— Missing a consent form

| | | |
|---|---|---|
| above questions. | | |

**ADDENDUM 1:**
Please append a copy of the research proposal here, as well as any interview schedules or questionnaires:

## Reconstructing the Illusion, by Decontextualizing the Animal

### Introduction - Theme of Enquiry

*In all times, and in all places, man has tried to develop his environment to his own satisfaction, and thereby to enhance the beauty of his possessions."* Hancocks (1971:125)

By investigating the constructed/ hybrid landscapes of zoological gardens, as well as studying the natural and artificial environments of animals we can learn more about the physiology and psychology of man. The research which I plan on undertaking, is intended to aid in the discovery of ways in which architects have been able to create environments through which this ongoing relationship between man and nature can be examined. The lens through which I am concerned is, however, the environments that architects and society throughout the centuries have constructed as a means to cater for animals, and in essence materialise a 'stage set' of sorts that best represents their perception of the natural world.

The investigative propeller that has fuelled this theory paper stems from historical texts and maps which trace the early acquisition of land attained by Cecil Rhodes in the late nineteenth century. This land along the foot of Table Mountain has become the threshold between the city urban slopes and the wild rocky krantz zone.

The string of properties hence became a contact zone between 'self' and 'other'- weather it be the man/nature; indigenous/exotic as well as racial collisions. According to Laura Gibson (2006:3) The contact zone established itself as a space of colonial encounters; in which geographically separated people came into contact to establish on-going relations. In particular the intent of the estates became an attempt to impose a dominant imperial culture onto the Table Mountain slopes. Gibson expresses the act of constructing a colonial landscape as an exaggerated form of propping one landscape paradigm on top of another, with the intent of 'taming' the wild African mountain by the imperial powers of Europe.

It was through these early encounters of colonial propping of constructed landscapes as well as the control of man over nature that began to initiate an investigation into the ways in which landscaping acts as a medium of exchange between human and natural environments.

The zoo as an institution of study, was derived out of the ideology of man's domination over nature, and how man reconstructs his perception of nature, and attempts to interpret and explain the world around him- through the act of exhibiting wildlife.

The goal is to dissect and examine changing attitudes of the man/ nature relationship throughout history, which reflect ideas or notions that were of their specific time. The outcome, being how we are now able to generate a weft that responds to temporal and dynamic changes in society whereby man's link with nature can be sustained and further explored. The theory is bound by how zoological structures can be understood in challenging the barriers between man and nature- the architectural form thus acts as a catalyst, in projecting the changes of ideas in society of man's relationship with nature, providing more interactive and democratic solutions in the 21$^{st}$ century.

### Research Summery

The type of research which I intend on undertaking will be done so through the process of engaging with related texts, mapping, site visits to the Johannesburg Zoo and the National Zoological Gardens of Pretoria, as well as related interviews.

**SCHOOL OF ARCHITECTURE, PLANNING AND GEOMATICS**
University of Cape Town
Private Bag x3, Rondebosch 7701
Centlivres Building
Email: Janine.Meyer@uct.ac.za Tel: 27 21 6502359

## UNIVERSITY OF CAPE TOWN

August 2014

**STATEMENT TO BE READ OUT TO AN INTERVIEWEE BY A STUDENT ABOUT TO UNDERTAKE AN INTERVIEW FOR THE PURPOSES OF A MASTERS DISSERTATION**

A copy of the form can be given to the respondent if they request it.

MY NAME IS BRETT MARC HO AND I AM CURRENTLY DOING MY MARCH (PROF) AT THE UNIVERSITY OF CAPE TOWN.

I AM DOING RESEARCH ON *THE CONSTRUCTED LANDSCAPES OF ZOOLOGICAL GARDENS* AS PART OF MY MASTERS DISSERTATION AND I WOULD LIKE TO ASK YOU SOME QUESTIONS TO HELP ME WITH MY RESEARCH.

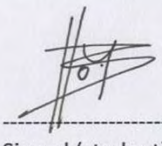
I CAN PROMISE THAT I WILL NOT RECORD YOUR NAME OR ADDRESS, AND YOUR PERSONAL DETAILS WILL NOT IN ANY WAY BE REVEALED IN MY DISSERTATION OR ANY PUBLICATION I PRODUCE.

THE QUESTIONS I ASK ARE ONLY FOR RESEARCH AND THEY CANNOT DIRECTLY BENEFIT YOU OR YOUR COMMUNITY.

IF YOU WANT TO END THE INTERVIEW AT ANY POINT YOU ARE FREE TO DO SO.

MY SUPERVISOR IS MELINDA SILVERMAN AND HER CONTACT DETAILS ARE:

Email: melinda.silverman@uct.ac.za



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Signed (student)

## Interview Questions

Most of the interview questions will be directed toward the zoo personnel/ employees of the zoo's I intend on visiting.

On what basis were the pathways of the landscape constructed in order to achieve a cohesive narrative in the visitors experience at the zoo?

When constructing an animal enclosure, in what ways does the zoo aim in achieving the most animal friendly as well as best visitor experience?

How does the zoo curator aim in designing and replicating the natural environment of the animal?

What types of the service spaces (sizes) needed in catering for the animal enclosures, and which animal enclosures require additional/ the most service space?

In terms of the animal barriers, which do you find to be the most successful, in allowing visitors to be fully submerged into the enclosures, but at the same time being protected from the animals?

**ADDENDUM 2:** To be completed if you answered YES to Question 2:

It is assumed that you have read the UCT Code for Research involving Human Subjects (available at http://web.uct.ac.za/depts/educate/download/uctcodeforresearchinvolvinghumansubjects.pdf) in order to be able to answer the questions in this addendum.

| | | |
|---|---|---|
| 2.1 Does the research discriminate against participation by individuals, or differentiate between participants, on the grounds of gender, race or ethnic group, age range, religion, income, handicap, illness or any similar classification? | YES | NO |
| 2.2 Does the research require the participation of socially or physically vulnerable people (children, aged, disabled, etc) or legally restricted groups? | YES | NO |
| 2.3 Will you not be able to secure the informed consent of all participants in the research? (In the case of children, will you not be able to obtain the consent of their guardians or parents?) | YES | NO |
| 2.4 Will any confidential data be collected or will identifiable records of individuals be kept? | YES | NO |
| 2.5 In reporting on this research is there any possibility that you will not be able to keep the identities of the individuals involved anonymous? | YES | NO |
| 2.6 Are there any foreseeable risks of physical, psychological or social harm to participants that might occur in the course of the research? | YES | NO |
| 2.7 Does the research include making payments or giving gifts to any participants? | YES | NO |

If you have answered YES to any of these questions, please describe below how you plan to address these issues:

**ADDENDUM 3:** To be completed if you answered YES to Question 3:

| | | |
|---|---|---|
| 3.1 Is the community expected to make decisions for, during or based on the research? | YES | NO |
| 3.2 At the end of the research will any economic or social process be terminated or left unsupported, or equipment or facilities used in the research be recovered from the participants or community? | YES | NO |
| 3.3 Will any service be provided at a level below the generally accepted standards? | YES | NO |

If you have answered YES to any of these questions, please describe below how you plan to address these issues:

**ADDENDUM 4:** To be completed if you answered YES to Question 4

| | | |
|---|---|---|
| 4.1 Is there any existing or potential conflict of interest between a research sponsor, academic supervisor, other researchers or participants? | YES | NO |
| 4.2 Will information that reveals the identity of participants be supplied to a research sponsor, other than with the permission of the individuals? | YES | NO |
| 4.3 Does the proposed research potentially conflict with the research of any other individual or group within the University? | YES | NO |

If you have answered YES to any of these questions, please describe below how you plan to address these issues:

Brett Ho <brettho4189@gmail.com>

## Ethics application Brett Ho

**Brett Ho** <brettho4189@gmail.com> Fri, Aug 29, 2014 at 1:56 PM
To: Zulpha Geyer <Zulpha.Geyer@uct.ac.za>

Hi Zulpha

Please find attached my consent form

Best regards

Brett Ho
HXXBRE001
[Quoted text hidden]

**Brett Marc Ho- Consent Form.jpg**
759K

Gmail - Ethics application Brett Ho https://mail.google.com/mail/?ui=2&ik=4637de8ad6&view=pt&search=...

Brett Ho <brettho4189@gmail.com>

## Ethics application Brett Ho

**Zulpha Geyer** <Zulpha.Geyer@uct.ac.za> Fri, Sep 5, 2014 at 11:16 AM
To: Brett Ho <brettho4189@gmail.com>
Cc: Janine Meyer <janine.meyer@uct.ac.za>

Dear Brett,

Please find attached your approved application.

Kind Regards,

-Zulpha

**From:** Brett Ho [mailto:brettho4189@gmail.com]
**Sent:** 29 August 2014 01:57 PM

[Quoted text hidden]

[Quoted text hidden]

**HXXBRE001_Brett Ho_ Ethics Form - Reviewed - Missing consent form.pdf**
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