NAMIBIAN MUSEUM FOR ARCHITECTURE

PRESERVING AND ARCHIVING ARCHITECTURAL HERITAGE

Candidate: Bratwin Rufshé Bock
2017056546
Date: 08 October 2019

ACKNOWLEDGEMENTS

God is Great; First and Foremost.
In light of that;
I dedicate this work to my little sister Mikayla Brown, and my younger brother Micheal Roy Brown,
whom both look up to me and therefore I have to give my very best.

To my family;
it has been a long journey, rough at times but I thank you for
all the support, continuous investment and for seeing the potential within me.

To my friends,
Damien Henry Britz and Gabriel Williams,
for the unbiased constructive criticism only to be expected from brothers.

and last but not least;
to my Studio Masters,
Prof. J. D. Smit, P. Smit, J.W Ras, D. Vd Merwe and A. Wagener
at the Department of Architecture, University of the Free State;
thank you for the guidance and the opportunity to be
under your mentorship.

DECLARATION

This design dissertation is submitted in partial fulfilment of the requirements for the Masters of Architecture (Professional) at the Faculty of Natural and Agricultural Sciences, Department of Architecture;
University of the Free State.

Declaration of original authorship.

The exploration within this treatise is a critical analysis and documentation of how I perceive the built environment, the discourse and how I apply it to create a meaningful response; therefore, this work has not been previously documented, submitted or presented in order to obtain an award at this or any other institution of higher learning.

To the best of my knowledge and belief, this treatise contains no previously published content by another person except in the cases were due reference to such content and work is made.

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Year: 2019

PREAMBLE

This dissertation stems from the love and appreciation of things that tells a story of time and makes us reflect on our impermanence as the individual self. Personally; the vast open horizons that are infrequently defined by mountainous sprouts that draws one in, added with the rhythmic silhouettes of the mountains as dusk sets as a backdrop to seemingly infinite flat plains; reminds us of just how majestic this land is. The ghost towns of the Namib Desert, washed away by the passing waves of sand dunes contrasted by the indigenous villages still animated by intricate dance rituals and social gatherings. In the Namibian context these are the contexts that invokes a sense of nostalgia and mortality which humble us in our approach to life.

This dissertation attempts to create awareness of our unique environments that we often find ourselves in and that there is merit in preserving such places and elements for both our future generations and people from other regions to experience and learn from.

In reference to this; this dissertation proposes the preservation of only a fraction of that which is valuable in Namibia; its vernacular, and German-colonial architecture which have a considerable influence on the identity of the country as a whole.

The establishment of a museum and research centre in Windhoek, Namibia will primarily focus on the restoration and documentation of both indigenous vernacular and colonial architecture as a preservation mechanism and to create awareness of this tangible heritage as it makes up an integral part of the identity of culturally diverse Namibia.

DOCUMENT STRUCTURE

CHAPTER I

PROJECT RATIONALE AND AIMS

This chapter is an introduction to the project through the investigation of its Typological, Topological and Morphological characteristics. It further gives and introduction to the problem statement that defines the purpose of this dissertation. The identified aims serve as the theoretical and design undertaking to develop an architectural response to the identified problem.

Typology:

The client and users are identified in this section with an applicable architectural typology in response to similar case studies and precedents.

Topology:

The selected site is briefly discussed and investigated in terms of its location and contextual merits of which a detailed analysis is conducted in Chapter II.

Morphology:

The morphology of the building is influenced by the theoretical discourse, conceptual approaches and the natural landscape and context.

Tectonics:

The technical and structural exploration of putting the building together in a creative way.

CHAPTER II

PROBLEM STATEMENT AND RESEARCH

This chapter is the major focus of the dissertation and is an in-depth investigation of the state of architectural heritage in the Namibian context and is ultimately the problem that is addressed through this dissertation.

Heritage and its Physical and Cognitive Ruin:

It discusses a perceived identity crisis that exists in a post-colonial context where a lack of pride exists in preserving both our indigenous and inherited heritage.

Aims:

Explores the aims of the dissertation in regards to the identified problem and challenges.

Namibia's Architectural Heritage:

A documentation of both Namibian Vernacular and German Colonial Architecture to emphasize how little is known about the diverse architectural styles and its cultural representation in Namibia.

CHAPTER III

Exploration and Theoretical Grounding

Research

Topology:
Pertains to the qualitative and quantitative characteristics of the micro and macro context.

Typology:
The investigation of similar precedents and case studies to formulate a design that is supported by proven concepts and successful works.

Morphology:
The theoretical underpinning and discourse towards a design synthesis.

Touchstone:
An abstract representation of the project and the main theme signifying what the project wants to be.

CHAPTER IV

Design Synthesis

Conceptual Exploration:
Three concepts are formulated in relation to the site and the main themes of the project of which one is selected to drive the design process.

Design Development:
The design development in stages from conceptual sketches towards a final design.

Technical Exploration and Resolution:
Exploration of technical solutions to design and structural challenges and the final contract documentation thereof.

CHAPTER V

Reflection and Evaluation

The critical reflection on the work produced and evaluating its shortcomings and positive attributes and how it can be improved upon.

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CHAPTER V: REFLECTION AND EVALUATION

Creeper plants encroaching on a German-colonial style dwelling opposite the heritage protected 10-Mann-Haus.
Photograph: Author, 2018

CHAPTER I : PROJECT RATIONALE AND AIMS

PROPOSAL: MUSEUM FOR ARCHITECTURE AND ARCHIVE CENTRE
LOCATION: WINDHOEK, NAMIBIA
CLIENT: NATIONAL HERITAGE COUNCIL OF NAMIBIA

1.1 INTRODUCTION

The motivation for this dissertation stems from the progressive appreciation for the cultural diversity in Namibia through its key landmarks and distinct landscapes. It addresses the neglect of heritage in the form of architecture, shelters and the common shared space by proposing a framework that will start a process of active preservation and management of sites under such heritage protection. (McGregor & Schumaker, 2006) defines heritage as being artefactual more than it is textual and it manifests as "... material objects such as works of art or craft, tools and buildings, sites, special places and even whole landscapes, ..." that links the past to the present. (p. 650)

Most proclaimed heritage buildings in Namibia are of a colonial descent which still makes up an active part of the architectural fabric and identity of the country today. However, this highlights a core problem in the identification and qualification of heritage sites as most indigenous cultural groups in rural Namibia don't have their physical constructs such as space and architecture that forms an integral part of their culture proclaimed under such heritage protection.

Fig. 1 Windhoek's Iconic landmark, the Christ-Church..
Photograph: Schoedder, E. 1987-
(adapted from: www.dna.nust.na: Online)

Contrastingly, two colonial towns namely; Luderitz and Swakopmund on the coastal plains of Namibia are widely popular for its distinct architectural landmarks and identity (fig. 2 & fig. 3) while Windhoek the capital, city also boasts a few German colonial buildings of which the Christ-Church is its iconic landmark and forms an integral part of the identity of the city. (fig. 1) Although these buildings are protected under the National Heritage Act of 2004 it does not mean they are immune to neglect and destruction. Moreover, the lack of recognition of indigenous cultural significant places in the northern parts of the country represents the cognitive and physical neglect of such places and highlights a dichotomy and inequality that exists amongst the representation of importance amongst a culturally diverse Namibia.

This unique architectural identity is important in the manifestation of character and place-making of villages, towns, cities and country's as a whole effectively distinguishing one from the other. Therefore, the preservation of heritage fundamentally comes down to pride and identity building through architecture that is specific to that country.

In reference to this, the proposed design aims to draw reference to historical and culturally significant architecture in the Namibian context. Furthermore, it signifies the start of a process of documentation of such structures to build a digital data-base for future reference and research. Very little research has been done about architecture in Namibia and this dissertation highlights this neglect but also draws on its significance through the exhibition of that which is left.

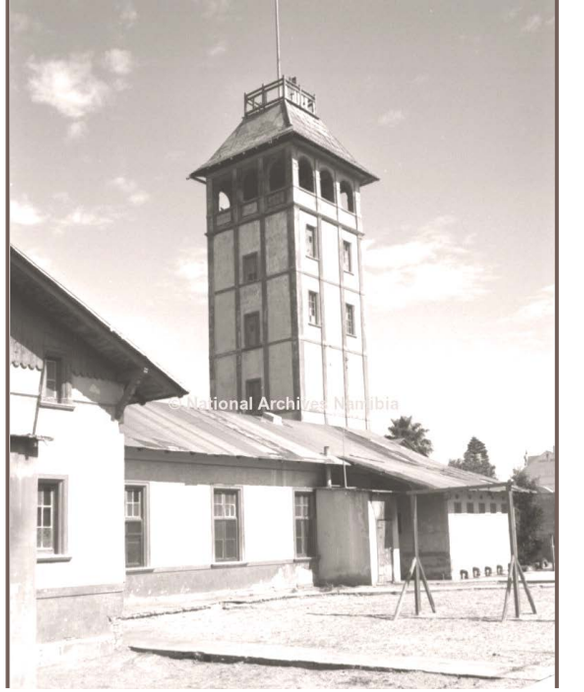


Fig .2 Woermann House in Swakopmund,Namibia
Photograph: Schoedder, E. 1973
(adapted from: www.dna.nust.na: Online)

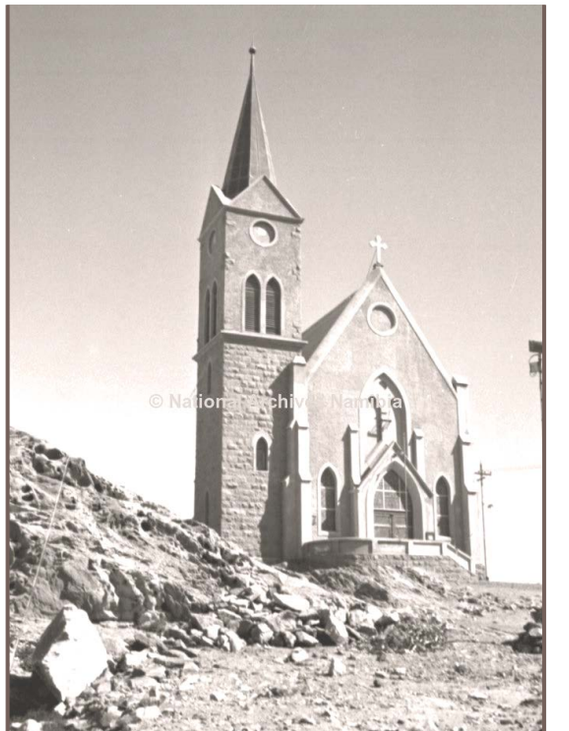


Fig. 3 Felsenkirche in Luderitz, Namibia.
Photograph: Schoedder, E. 1974
(adapted from: www.dna.nust.na: Online)

1.2 TYPOLOGY

To address the challenge of neglect and restore a holistic sense of cultural significance, a museum and archive centre is the proposed typology that will exhibit and preserve the architectural diversity that is indigenous to the Namibian context. For the purpose of this study the definition of preservation shall be interpreted as ". . .maintaining a place in its existing state and retarding deterioration." (Australia ICOMOS Burra Charter, 2013) Therefore, the act of documenting, capturing and exhibiting of construction techniques and architectural typologies is both the cognitive and physical preservation of such heritage artefacts in the minds of the public and society as a whole.

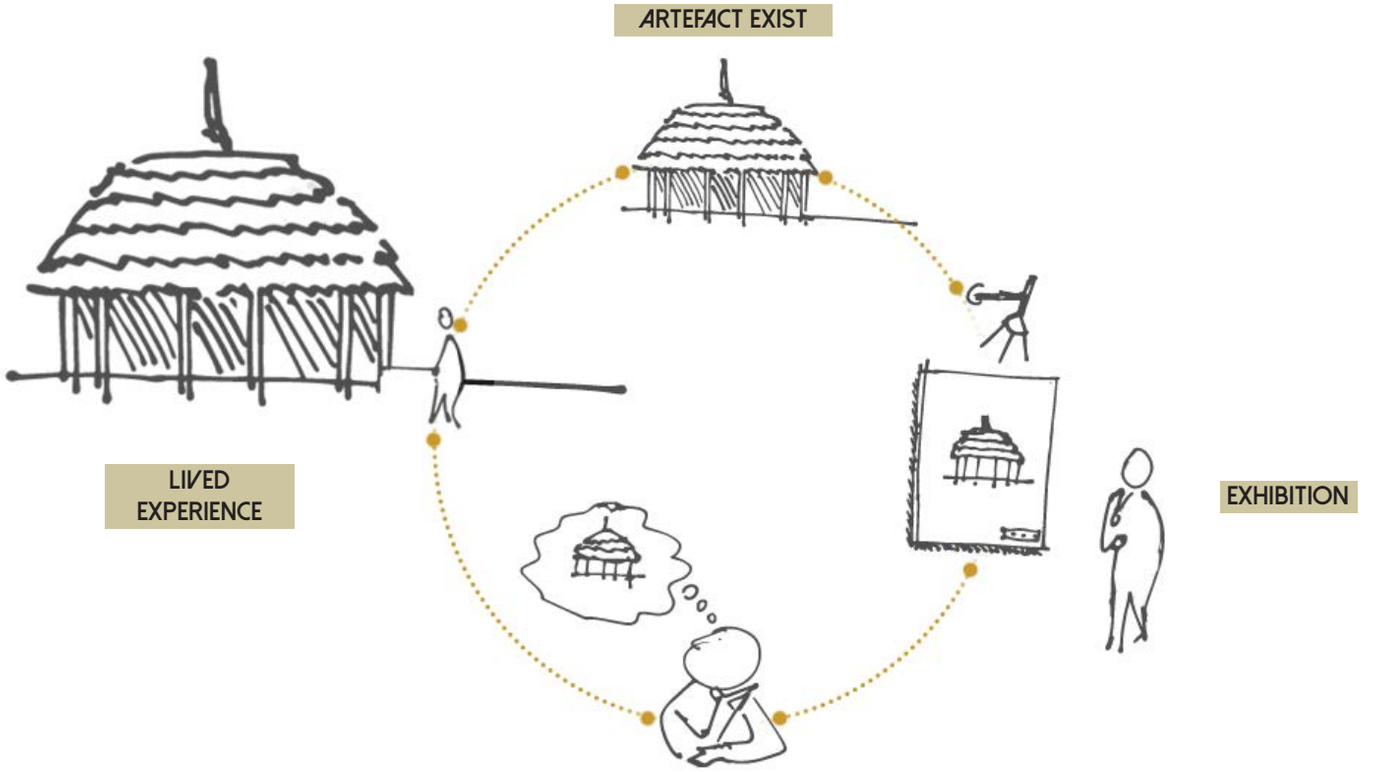


Fig. 4 Diagrammatic representation of the idea of cognitive preservation.

Clients:

The two main clients for the proposed museum includes the National Heritage Council of Namibia (NHC) and the Namibia Institute of Architects (NIA) with a supporting client being the Museums Association of Namibia (MAN). The NHC is the statutory body of the Namibian Government that ". . . is responsible for the protection of Namibia's natural and cultural heritage." (National Heritage Council of Namibia, 2019) The NHC thus constitutes as the principle client as their core functions include to identify, protect and manage places of heritage significance. In the context of this dissertation the role of NHC will be to identify and document both vernacular and colonial architecture for the purpose of further research and public education.

The NIA will render its support to NHC through documenting and making important decisions regarding identified sites where architectural interventions are required to ensure that from an architectural and historical perspective, sensitive decisions are made. The NIA being a non-profit statutory institution and a representative of the architectural profession in Namibia will thus take a central stage in the approval of design works that involve the restoration, preservation and decisions regarding demolition to historical buildings. The NIA being a representative of Namibian architects, would therefore ensure that cultural and intellectually motivated decisions will be made that is important in decisions regarding heritage.

The role of the Museum Association of Namibia (MAN) is in unison with that of NHC and will render its support through the establishment of the museum and assisting with educational and experiential guidance of managing a museum.

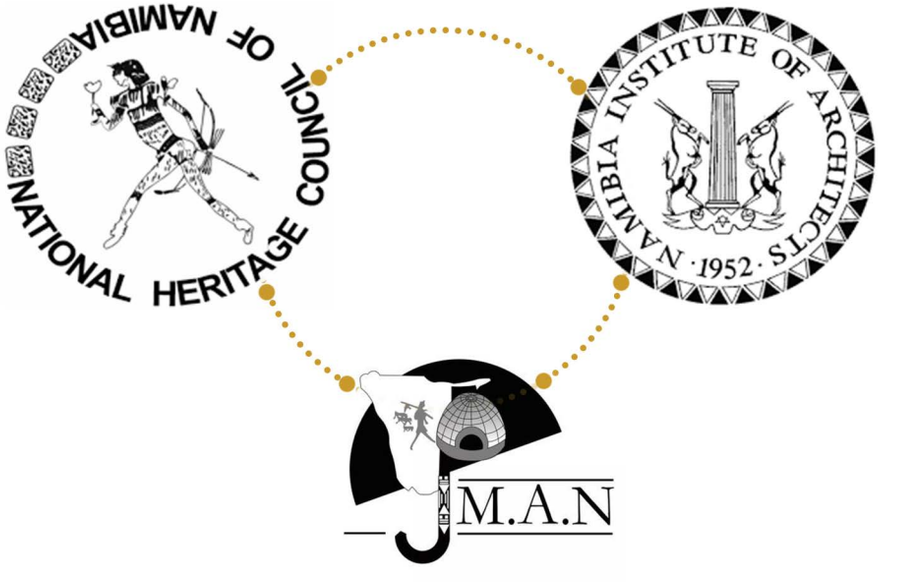


Fig. 5 Diagram of clients working in collaboration.

Client List and Roles:

1. National Heritage Council of Namibia: Identifying and protection of national heritage.
2. Namibia Institute of Architects: Documenting buildings and making decisions regarding interventions.
3. Museum Association of Namibia: Render assistance in museum management.

CHALLENGES

One of the main challenges of proposing a museum that addresses site specific content for instance buildings; is that the exhibiting of such buildings can actually withdraw emphasis on the actual structure and thus worsen the problem of neglect rather than actually solving it. A further challenge that the museum is to portray the different architectural typologies and styles in an equal fashion and draw a platform of equal importance. In a multicultural setting it is important to think about the curation process and in what light such exhibitions are displayed. The practical display of the various subjects along a time-line, can also be misinterpreted as a line of importance and highlights the care that needs to be practiced in layout of exhibition subjects. In the case of architectural styles and influences the display of subjects along a traced time-line is however deemed practical.

AIMS

Considering the list of challenges, the main aim of the museum is therefore to preserve such structures of heritage significance through both the documentation and retaining of the actual structures. In the context of the selected site this can be achieved by drawing visual reference to the historical buildings in exception to historical structures in neighbouring or far located towns. Therefore, the retention of historical buildings must play and active role in the exhibition experience. Through this, the process of active preservation of these structures become important and draws relevance to both the museum and the buildings in its context. To achieve a curation not based on importance but that's rather style based, each architectural style will be exhibited in a lights of its own merits and contributions to the architectural diversity in the Namibian context.

TYPOLOGY

1.3 TOPOLOGY

A brief introduction in terms of the selected site and the topological characteristics. The site is located in the CBD of Windhoek, the capital city of Namibia. The site is located on the corner of Sam Nujoma Drive and Robert Mugabe Avenue. The city's centrality in reference to the broader context of the country makes the site easily accessible. Furthermore, the main institutions are located in Windhoek and thus renders the project feasible from a management perspective. However, the site selection was primarily made on the historical references that are in close proximity of the site.

Challenges

The challenges posed by the site is its relatively steep slope. Furthermore, to draw reference to the historical context in which the site is located will pose a further challenge as the context is relatively populated with modern high-rise buildings. The greater geological composition of the context of Windhoek consist of Mica-schist or Kuiseb-schist which hard metamorphic rocks. This extends to the selected site and therefore creates interesting design challenges in terms of physical expression and form of the building.

Aims

In reference to the topological challenges, this dissertation aims to propose an intervention that responds physically and visually to the heritage buildings in the context of the site. Furthermore, approaching with the notion of heritage preservation and sensitivity, the site should thus be approached in the same fashion. The proposed design aims to address the landscape in a sub-terranean approach. The design will take a passive stance in relation to the historical context that it wish to emphasize.

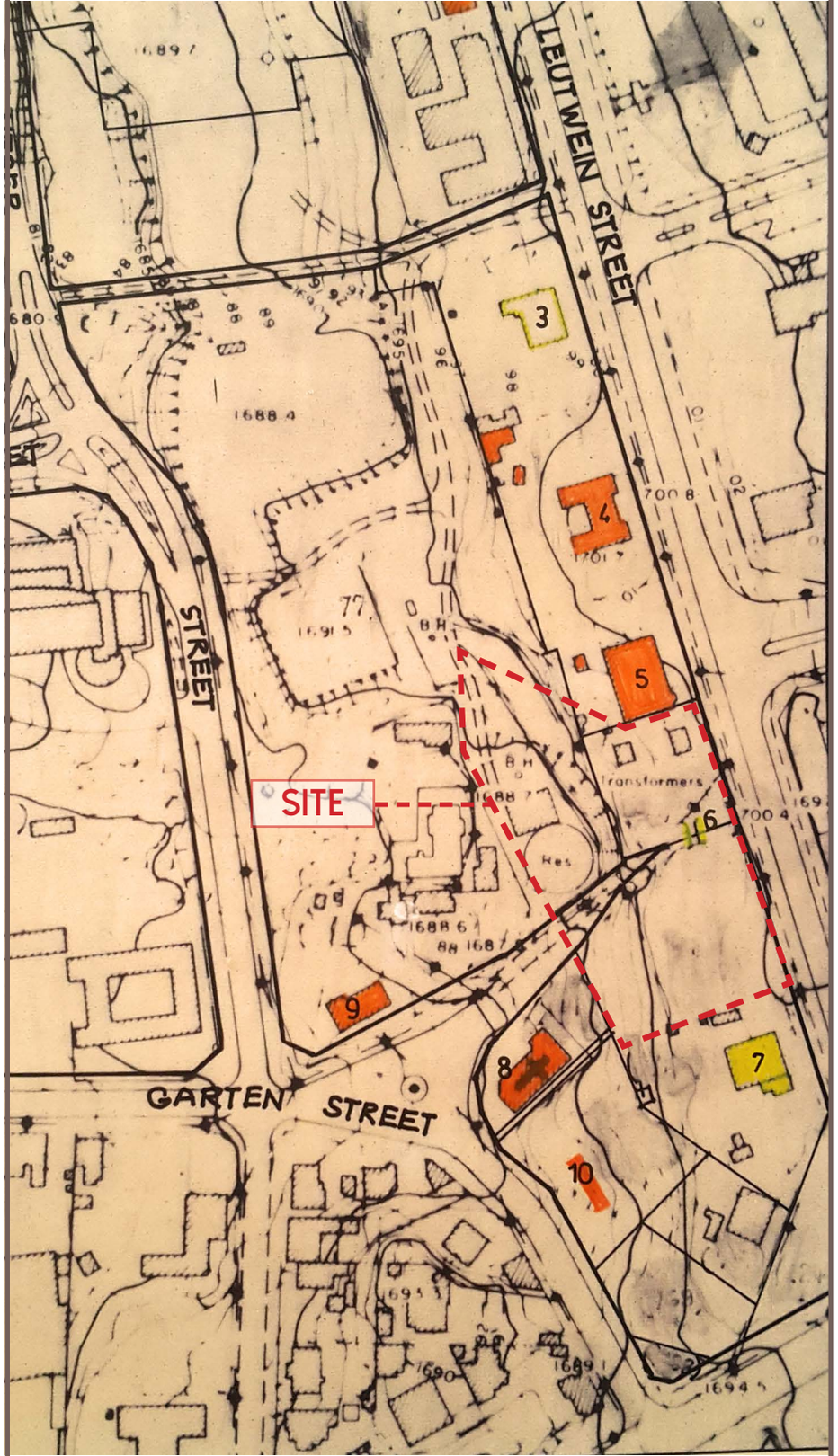


Fig. 6 Historical footprint map of the site and its immediate context. The site location is labelled no. 6. The position of the New Apostolic Church is labelled no. 8 and is located on the extreme right in Figure 7 p. 10.
(Map [print] n.d, Held at: Windhoek: National Archives of Namibia)

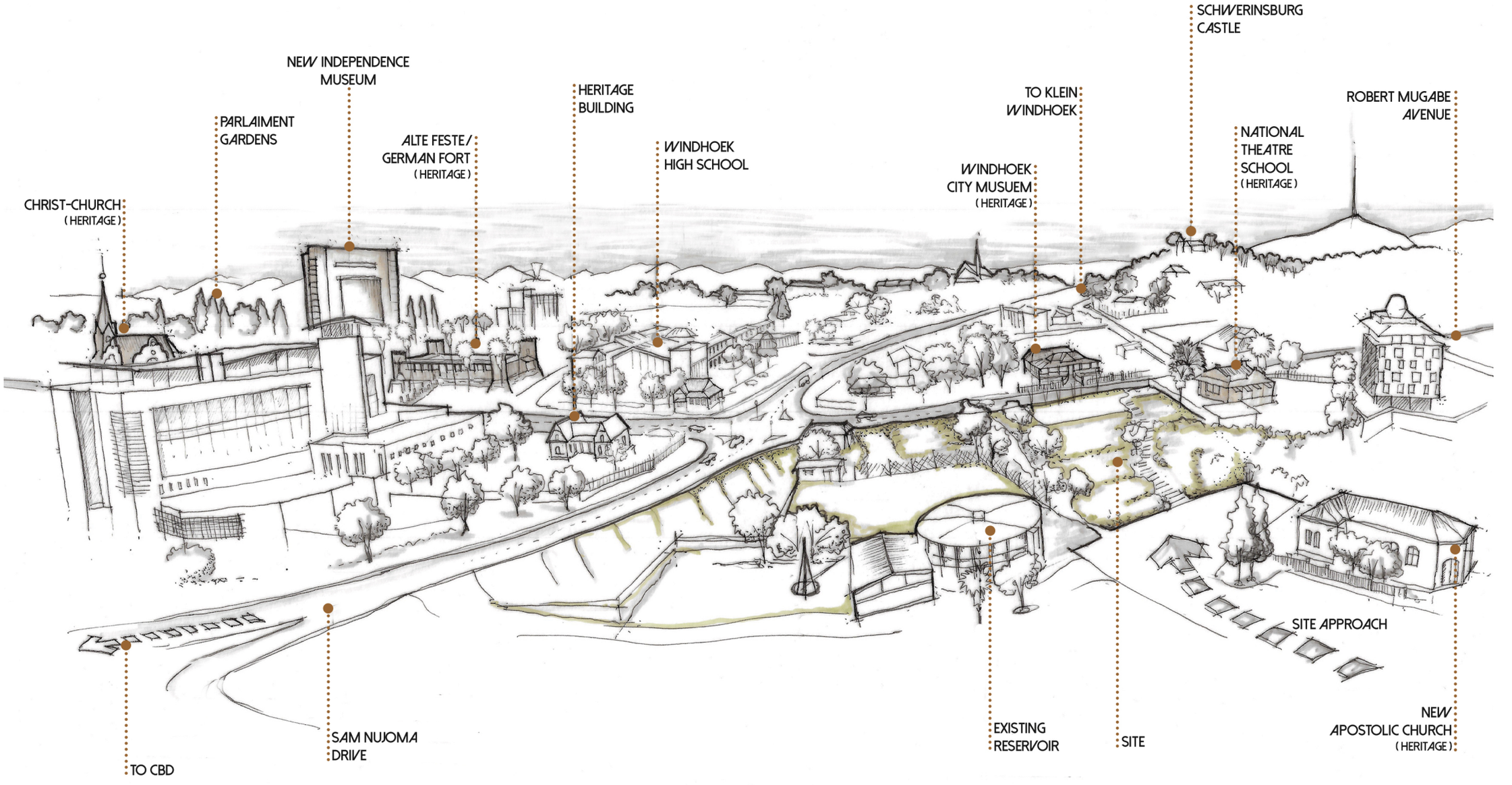


Fig. 7 Site sketch facing east showing relevant buildings in the immediate context. It should be noted that Robert Mugabe Avenue was formerly known as Leutwein Street as indicated in (Fig .6) p. 9.

TOPOLOGY

1.4 MORPHOLOGY

A cognitive imbalance exists in the link between architectural heritage and cultural heritage. Architectural heritage being an expression of the latter. The proposed design will take centre-stage through the landscape as the common medium to bring this imbalance in harmony.

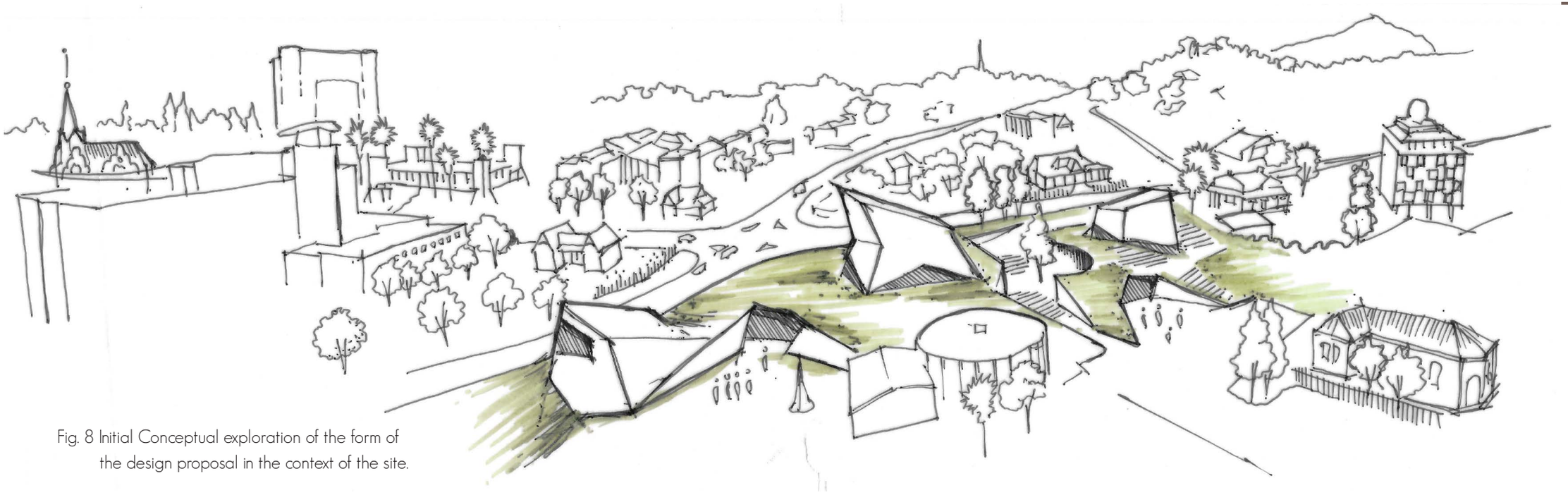


Fig. 8 Initial Conceptual exploration of the form of the design proposal in the context of the site.

CHALLENGES

The challenge of form-giving in the context of historical buildings mainly lies in the decision of drawing reference to them through their style, order and its form or to take a polar opposing approach and propose a contemporary response. However, drawing literal reference to the historical buildings in this context means it would single out this specific architectural style and potentially highlight it as more important and superior to the indigenous vernacular styles in the broader context of the country.

AIMS

Therefore, the morphological aims of this dissertation are not to make any physical and literal reference to the architecture that the museum will exhibit by incorporating forms and expressions into its design language. The morphological aims involve the expression of the proposed design to not be affiliated to any specific architectural style and form that it exhibits. This dissertation does however aim to make material reference in a subconscious way to relate to the Namibian landscape and the context that it is in.

1.5 TECTONICS

Architectural quality is derived from "[m]an's identifying himself with what he builds, and also uses it as a means of self-expression." (Allsop, 1970 as cited in Prussin, 1974, p. 185). Therefore, tectonics can be defined as "the art and science of construction, both in relation to use and artistic design." (Maulden, 1986: Online) This can be translated to the creative putting-together of material components to make a building or structure. However, the structural expression should reflect the conceptual approach and strengthen the aims of the design proposal.

CHALLENGES

Concerning the contrast between the intricate tectonic expression of indigenous Namibian vernacular architecture and the stereotomic language of German-colonial architecture; the challenge is to achieve a structural resolution that is in harmony and an expression of both the vernacular and inherited colonial architectural language without making direct reference to it. I.e. designing a tectonic structure in the form of a rondavel that is a direct representation of the vernacular architectural typology.

AIMS

This dissertation without making direct reference the aforementioned archetypes still aim to introduce expressions thereof through modern material interpretations and rituals. This material and structural expression should reflect the conceptual approach and strengthen the aims of the design proposal and should not be merely selected on its aesthetic merits.

CHAPTER II : PROBLEM STATEMENT AND RESEARCH

Architectural Heritage and its Physical and Cognitive Ruin

This chapter investigates and interprets a post-colonial reaction or lack thereof, towards heritage; culminating into a current problem of physical and cognitive neglect and deterioration of heritage artefacts such as buildings and vernacular structures in the context of Namibia. This dissertation will explore the evaluation of historical German-colonial buildings in Namibia as conducted by Edda Schoedder in the 1980's. This will highlight the extent of the physical neglect as documented in the National Archive of Namibia but also through photographic documentation of the buildings in their current state. The cognitive ruination of heritage is expressed through the difficulty to obtain written and documented material on vernacular architecture and culture specific to the Namibian context. In the context of this dissertation, cognitive ruination refers to the loss of intangible traditions and rituals that make up an integral part of how vernacular settlements are developed and constructed. The lack of scientifically rigorous documentation thereof is a further testament to this disregard and neglect and highlight the vulnerability of architectural heritage.

Aims

Through the proposal of a museum and research centre; the aim of this dissertation is to document some of the buildings through digital means to the best possible extent to which blueprints and relevant documents could be obtained.

Through this documentation process it will define the purpose of the museum as a catalyst to historical and heritage preservation by documenting historical buildings, both colonial and vernacular and at the same time provide a platform for the exhibition thereof. This preservation will not only manifest through the documentation, but through the safeguarding of the very physical buildings and settlements that are under such heritage protection.

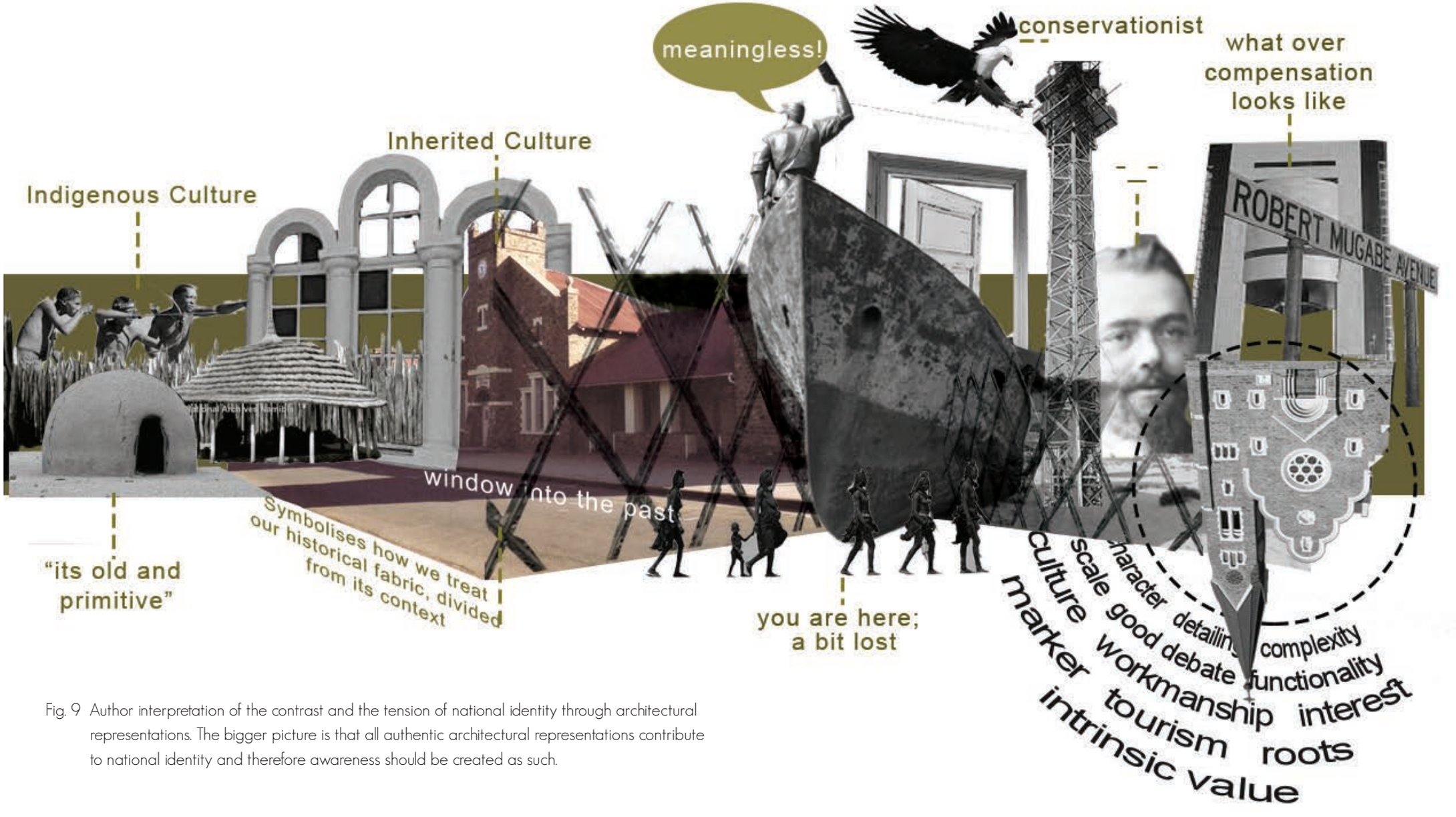


Fig. 9 Author interpretation of the contrast and the tension of national identity through architectural representations. The bigger picture is that all authentic architectural representations contribute to national identity and therefore awareness should be created as such.

Fig. 10 Decay on facade and window sill of the Elizabeth House: a heritage building in Windhoek. The decay is a metaphorical representation of the state of heritage buildings in Namibia. Photograph: Author, 2018

ARCHITECTURAL HERITAGE IN NAMIBIA:

2.1 GERMAN-COLONIAL ARCHITECTURE

This chapter is a brief investigation into the state of architectural heritage in Namibia. It specifically focuses on a key number of heritage buildings in Windhoek. This investigation is a progressive introduction into the process of documenting, surveying and archiving historically important architectural constructs for future research and reference. It involves a brief historical background on the identified building followed by an evaluation of its condition as done by Edda Schoedder coupled with its present-day condition. The proposed archive process is characterized by the digitizing and of the original drawings, surveying of the building in its current state to build a digital documented database of historically important buildings.

2.1.1 10-MANN-HAUS

Brief Description

The 10-Mann-Haus (10-man-house) will form the benchmark for this dissertation as it is a building that has been intensively researched on by the Namibia University of Science and Technology, Department of Architecture. The initial blueprints of the building are located in the National Archives of Namibia which consist of Elevations, Façade details, and Floor Plans. More documents are also available at the Department of Works in Windhoek. The blueprints obtained in-conjunction with the physical measuring up of the building have been used to produce a digital set of drawings of the building in its original state and setting. The documenting process included a photographic survey to assess and document the physical damage of the building for future research and restoration purposes. The evaluation done on the 10-Mann-Haus as recorded in the National Archives, describes the building as in a "good state". However, on physical inspection the building shows clear signs of neglect and deterioration and the evaluation could likely have been conducted as early as 1987 by Edda Schoedder.

This dissertation therefore, aims to emphasize the state of architectural heritage in Namibia of which the 10-man-house is a prime example. Through the design proposal, this dissertation therefore aims to start a process of documenting, identifying and restore and preserve architectural heritage in the country as a whole.

Fig. 11 Redecker, G. 10-Mann-haus in its historical setting. Former Neser Street, Windhoek. (1906-1907)
Photograph: Schoedder, E. (1987)
[Photograph -online] Available at: National Archives of Namibia; http://dna.nust.na. Edda Schoedder Collection.

EVALUATION [1]

A. ARCHITECTURAL QUALITY	
1. STYLE	The 10 Mann-Haus is a unique example of its particular German architectural style. Its verandah typology is notable as there are many examples in the context. However, the romanticist aesthetic of its façade and the articulation of its timber balustrades and trusses indicates its uniqueness in its context.
2. CONSTRUCTION	A very good example of a German-colonial dwelling with verandahs. Its typology and morphology slightly more military expressive with its guard towers to give a language of fortification.
3. AGE	Constructed in 1906-1907, it is an excellent example of the first German-colonial buildings in Namibia.
4. ARCHITECT/BUILDER	Designed and constructed by architect Gottlieb Redecker and the Department of Works under German authority.
B. HISTORICAL ASSOCIATION	
5. PERSON / GROUP ASSOCIATION	Currently serves as accommodation for high ranking officials and indicates a primary and high importance and association to the building. Historically it was constructed for 10 German officials.
6. EVENTS	The building has no known connections with important present-day events.
7. CONTEXT	The building is indicative of patterns of primary importance in political and military terms.
C. ENVIRONMENTAL CONTRIBUTION	
8. LANDMARK	An excellent example of a structure that is visible and identifiable in its context and the city as a whole.
9. CONTINUITY	The 10-Mann-Haus shows good contribution to the continuity and character of its immediate context and is part of a group of buildings in its context that is similar in its architectural language.
10. SETTING (IMMEDIATE)	The building being in a degraded state shows no compatibility within its immediate boundaries. The garden and the boundary walls are in in a dilapidated and ruinous state.

Footnote:

1. Table adapted and interpreted from documents of National Archives of Namibia; Historical Building Collection, Reference No. KWi 8-6

ARCHIVAL DRAWINGS: PLANS

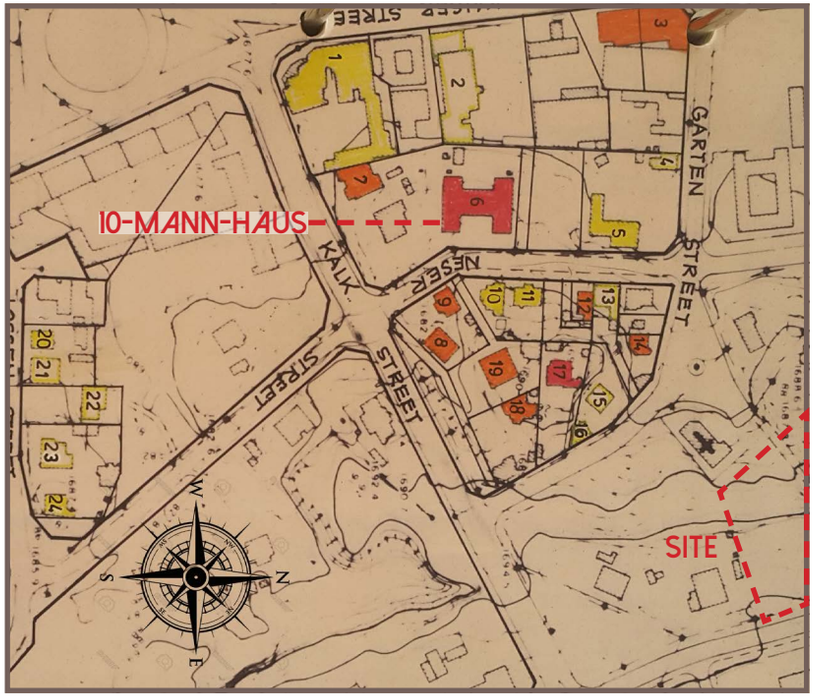


Fig. 12 Historical footprint map indicating the 10-Mann-haus in relation to the site and neighbouring historical buildings.
(Map [print] n.d: Held at: Windhoek: National Archives of Namibia.)

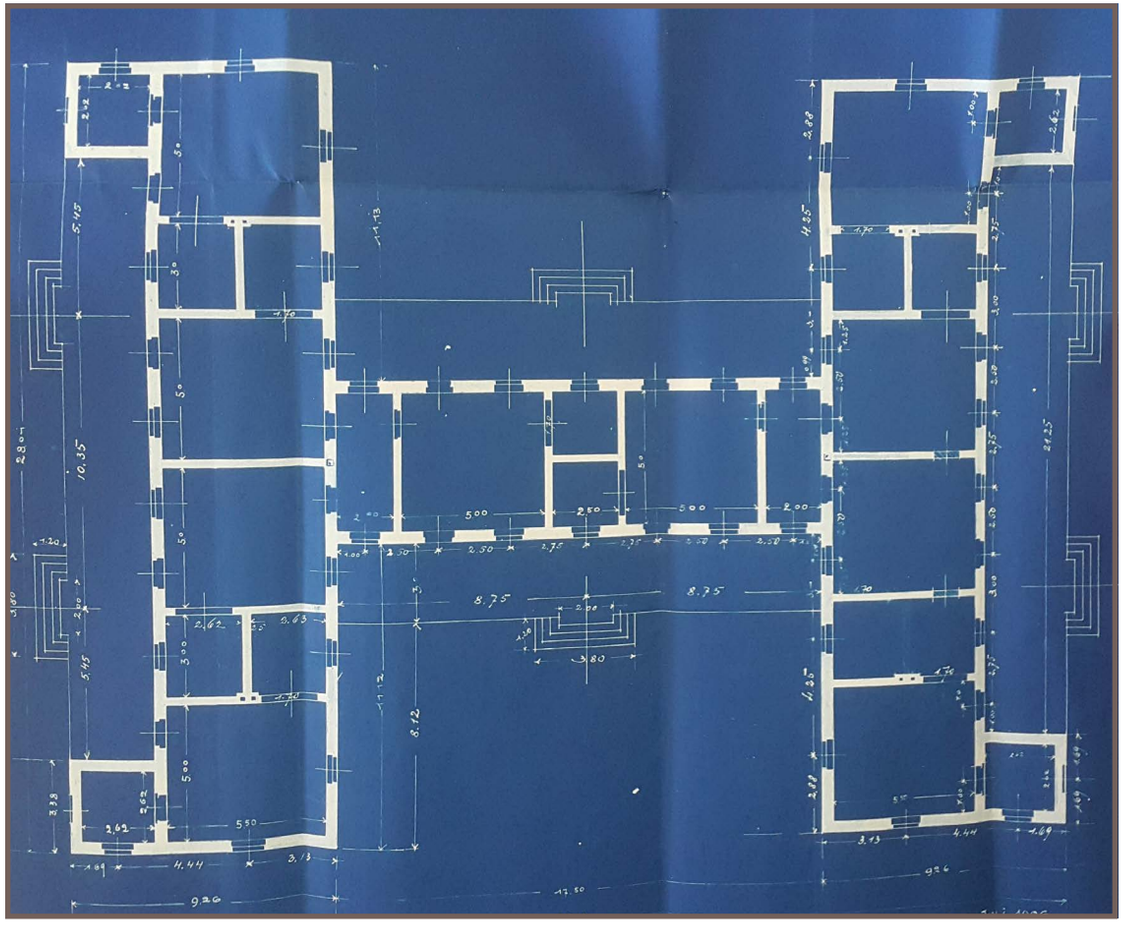


Fig. 13 Photograph indicating the pristine condition of the blueprints of the 10-Mann-Haus' plan. The blueprint is dated 1906 and indicates the year the 10-Manhaus was constructed.
(Department of Works. (1906) *Groundfloor Plan*, 1:100. [Print] Held at: Windhoek: National Archives of Namibia.)

Digitized Drawings
Plan

Fig. 14 Reproduced Ground Floor Plan of the 10-Mann-Haus with its current layout as part of the documentation process to have digital sets of drawings of historical buildings.
(NUST, Department of Architecture (2017) *Ground Floor Plan*, 1:100. [Print] Held at: Windhoek: Namibia University of Science and Technology:.Department of Architecture)

10-mann-haus: ground Floor Plan

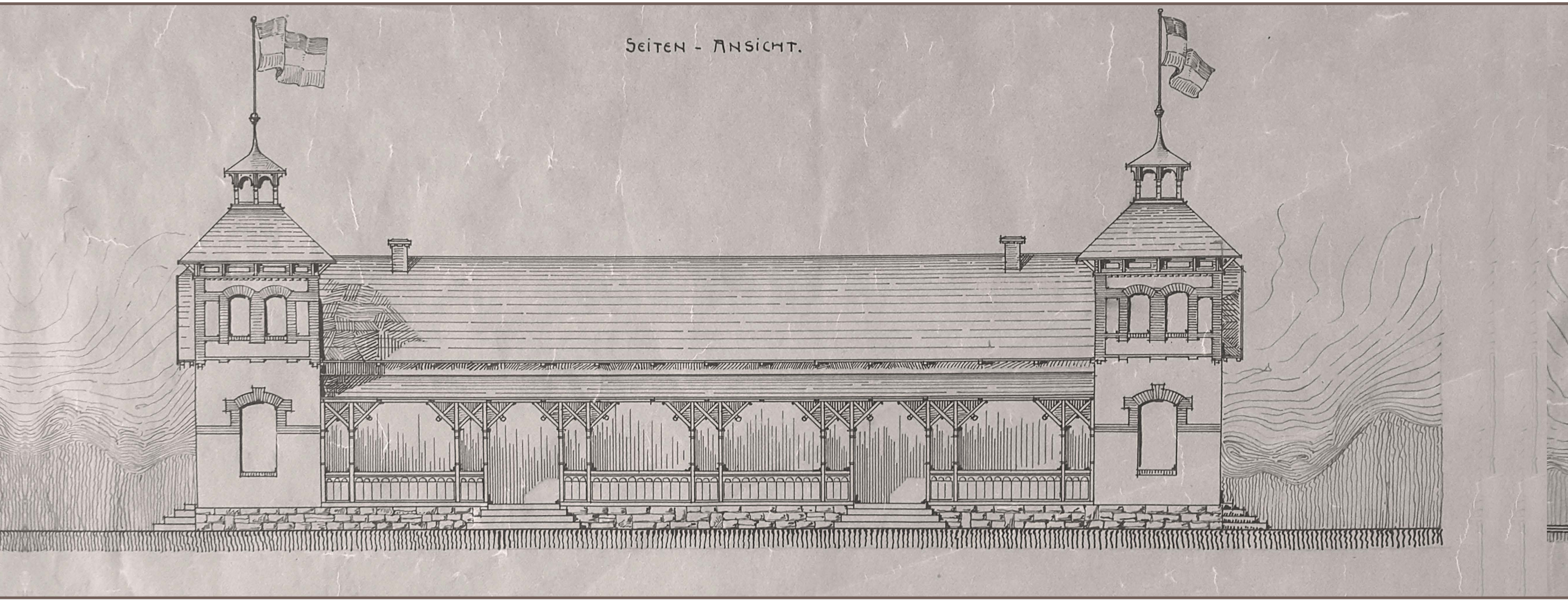


Fig. 15 Photograph of Side Elevation of the 10-Mann-Haus drawn on bumph (tracing) paper possibly by architect Gottlieb Redecker in 1906. The elevation indicates the original design of the timber balustrades and the brickwork expressions on the towers that can still be seen today in a degraded state. The tracing paper is also indicative of the vulnerability of archived blueprints and original drawings.
(n.d) *Side Elevation,* 1:100. [Ink Drawing] Held at: Windhoek: National Archives of Namibia.)

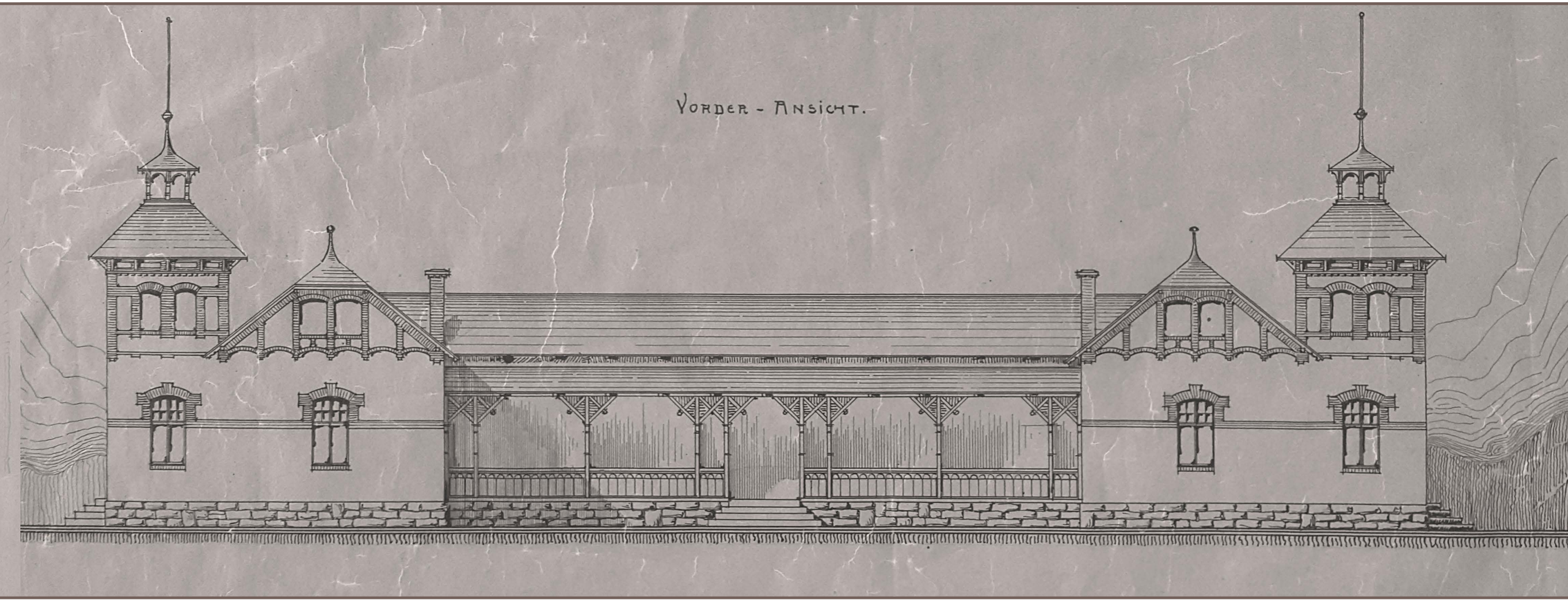
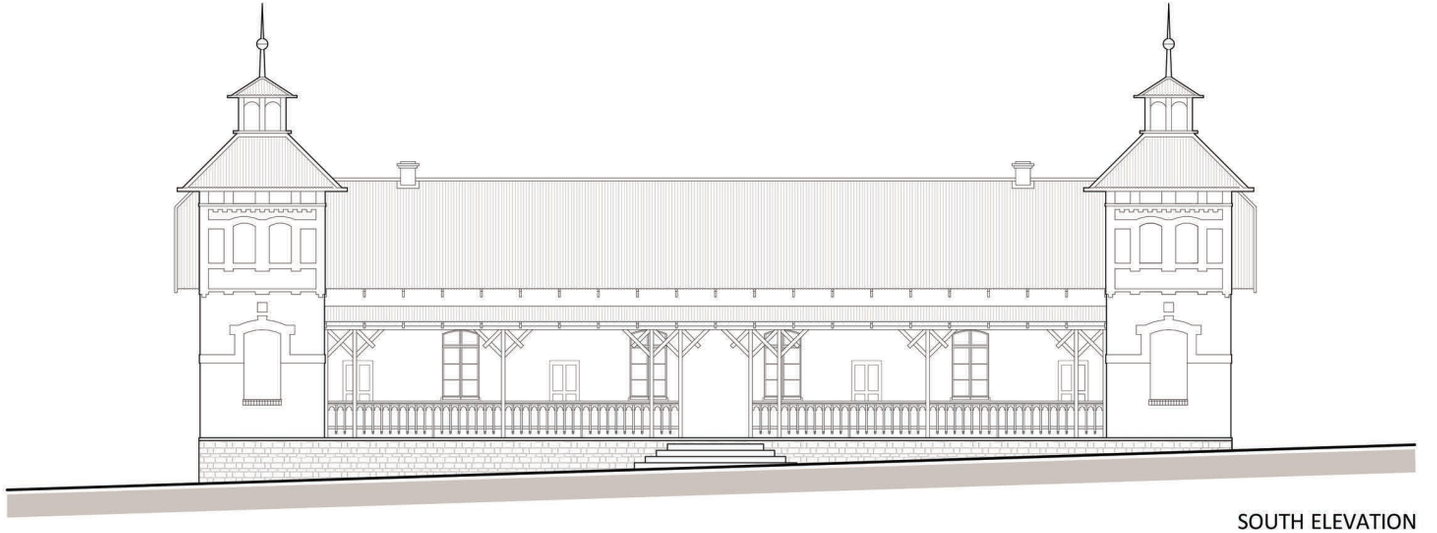


Fig. 16 Photograph of the Front Elevation of the 10-Mann-Haus drawn on bumph (tracing) paper.
(n.d) *Front Elevation,* 1:100. [Ink Drawing] Held at: Windhoek: National Archives of Namibia.)

Digitized Drawings
Elevations

NORTH ELEVATION



SOUTH ELEVATION

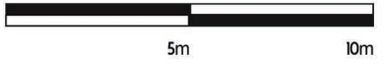
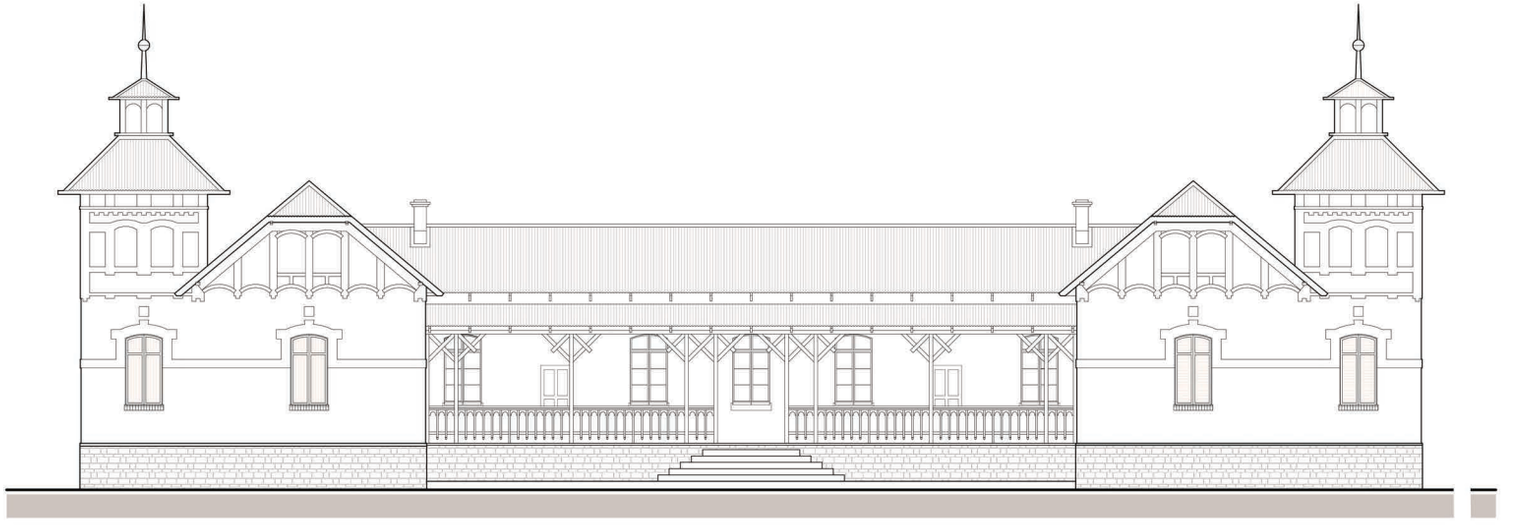


Fig. 17 Reproduced and digital drawings of the North and South Elevation of the 10-Mann-Haus from original drawings and site measurements.
(NUST, Department of Architecture (2017) *North and South Elevations*, 1:100. [Print] Held at: Windhoek: Namibia University of Science and Technology: Department of Architecture)

EAST ELEVATION



WEST ELEVATION

5m 10m

Fig. 18 Reproduced and digital drawings of the East and West Elevations of the 10-Mann-Haus from original drawings and site measurements.
(NUST, Department of Architecture (2017) *North and South Elevations,* 1:100. [Print] Held at: Windhoek: Namibia University of Science and Technology: Department of Architecture)

Photographic Survey and Documentation

The photographic documentation of the 10-Mann-Haus was undertaken to have a visual record of the extent of the neglect and deterioration of the building. The photographs and documentation are only focused on the exterior envelope of the building but shows considerable amount of damage, decay and unauthorized alterations that undermine the architectural expression and historical importance of the building.

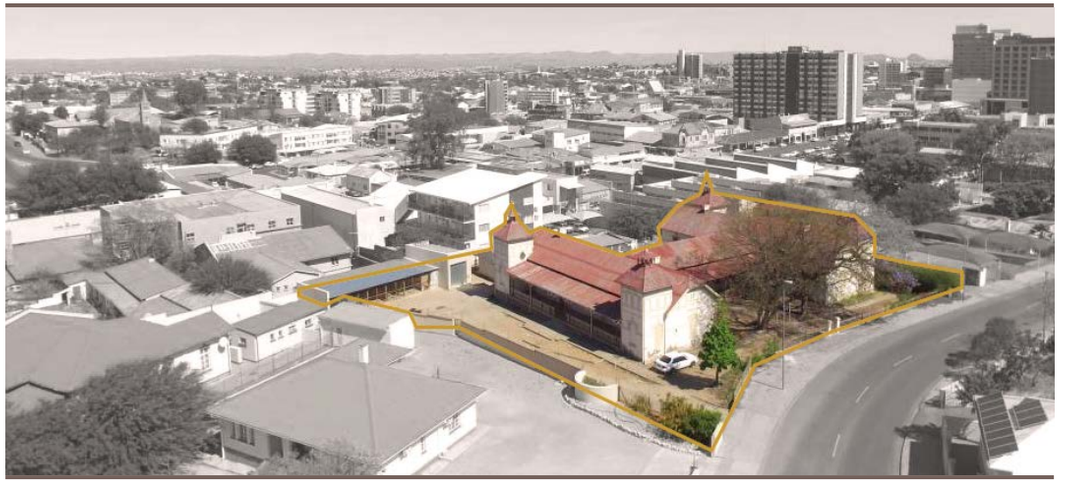


Fig. 19 Birds eye view of the 10-Mann-haus in its current context in Rev Michael Scott Street, Windhoek.
Photograph: Smith, F. 2017.

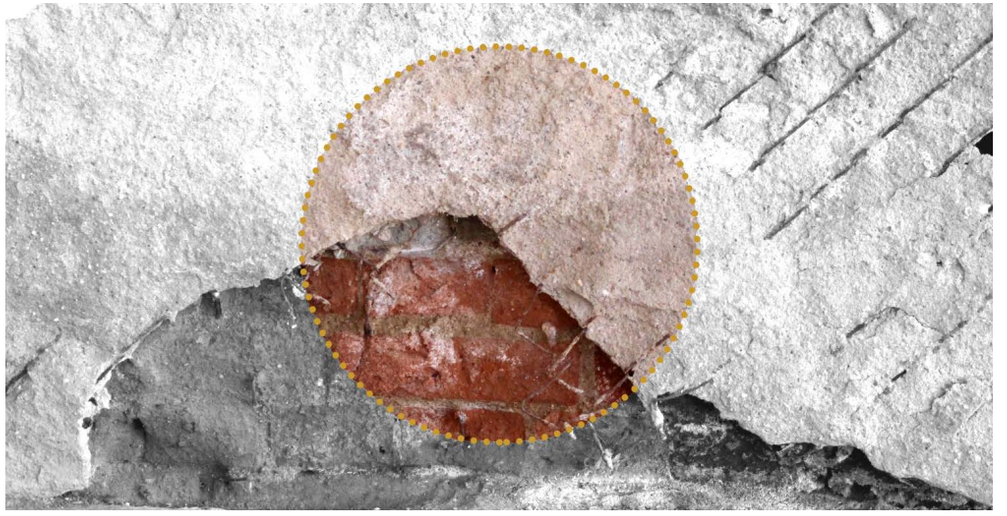


Fig. 20 Weathering of the plaster rendering exposing the wire mesh and brickwork also indicative of bad weathering.
Photograph: Author, 2018.

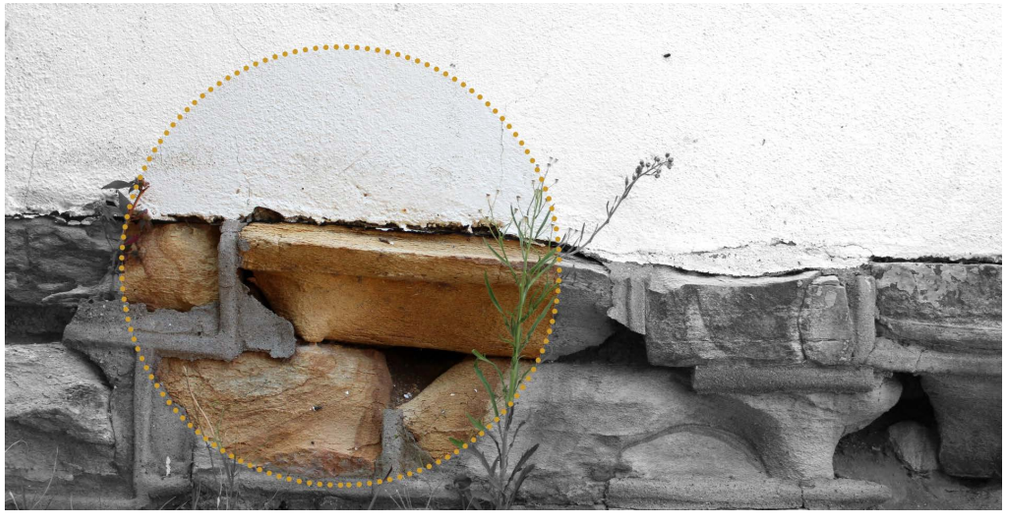


Fig. 21 Clay foundation walls and plinth in overall poor condition due to decay and weathering which can possibly undermine the structural integrity of the building.
Photograph: Author, 2018.

Fig. 22 Balustrades and exterior timber elements shows extreme wear and neglect. The exterior details of a building can indicate the level of attention it gets.
Photograph: Author, 2018.

Fig. 23 Roof purlins shows structural failure and obsolescence due to water penetration through roof sheeting. The structure needs immediate attention in this regard.
Photograph: Author, 2018.

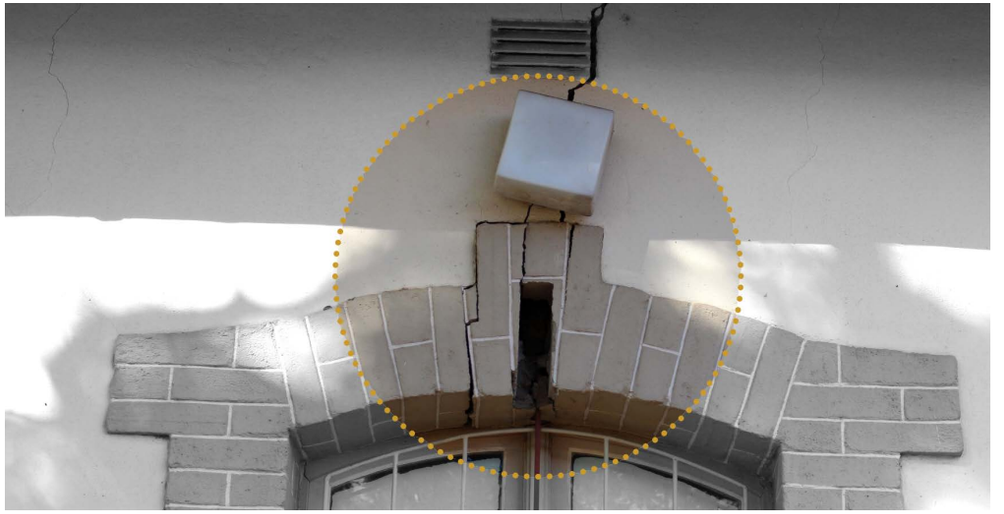


Fig. 24 Structure shows deep cracks possible due to differential subsoil settlement. Structural integrity will have to be investigated in this regard.
Photograph: Author, 2018.

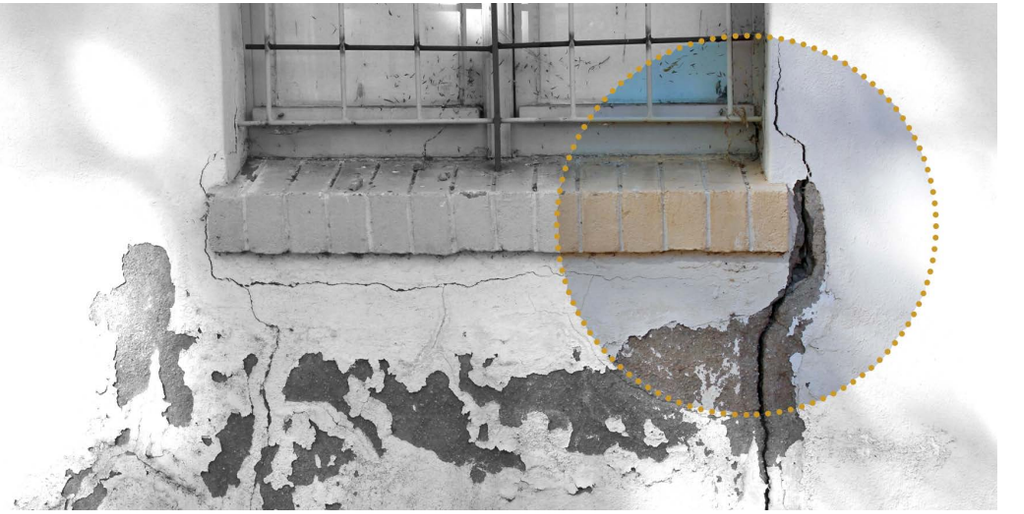


Fig. 25 Plastered facade indicative of clear lack of maintenance and disregard.
Photograph: Author, 2018.

2.1.2 ALTE FESTE (OLD FORT)

Brief Description

The Alte Feste is the oldest building in Windhoek, Namibia and therefore one of the city's iconic landmarks. The fort was commissioned and constructed in 1890 by Curt Von Francois, a German commander and commissioner of the then German-South West Africa. (City of Windhoek, 2019: Online) The fort served as a military command post for the German Schutztruppe (Colonial Forces) from 1892 and as the headquarters for the South African Administration from the year 1915.

The Alte Feste has gone through changes a few times of which the last documented alterations have been conducted by architect Gottlieb Redecker in 1901 and by the Department of Works in 1912 which still serves as the present-day layout (see Fig. 30 &31). (City of Windhoek, 2019: Online). 200 workers; men and women of Damara and Nama ethnicity, constructed the fort using flat stones from the surrounding context. Later baked and air-dried bricks were used. (Dierks, 2005: Online) Although the construction of the fort meant the controversial rule over the Namibian people; the merit is embodied in the skills transfer and understanding between the colonial regime and the indigenous groups of Namibia.

Therefore, the importance of the Alte Feste should not only be viewed in the lights of the representation of the colonial regime, but the fort's very existence embodies the hard-work and craftsmanship of the hands that constructed it. It is therefore a tangible representation of the achievements of indigenous groups in Namibia. (Fig. 27)

Fig. 26 Von Francios, C. Alte Feste in its historical setting. The first building to be constructed in Windhoek by German schutztruppe (forces). Former Leutwein Street, Windhoek. (1890) Photograph: Schoedder, E. (1987) [Photograph -online] Available at: National Archives of Namibia; http://dna.nust.na. Edda Schoedder Collection.

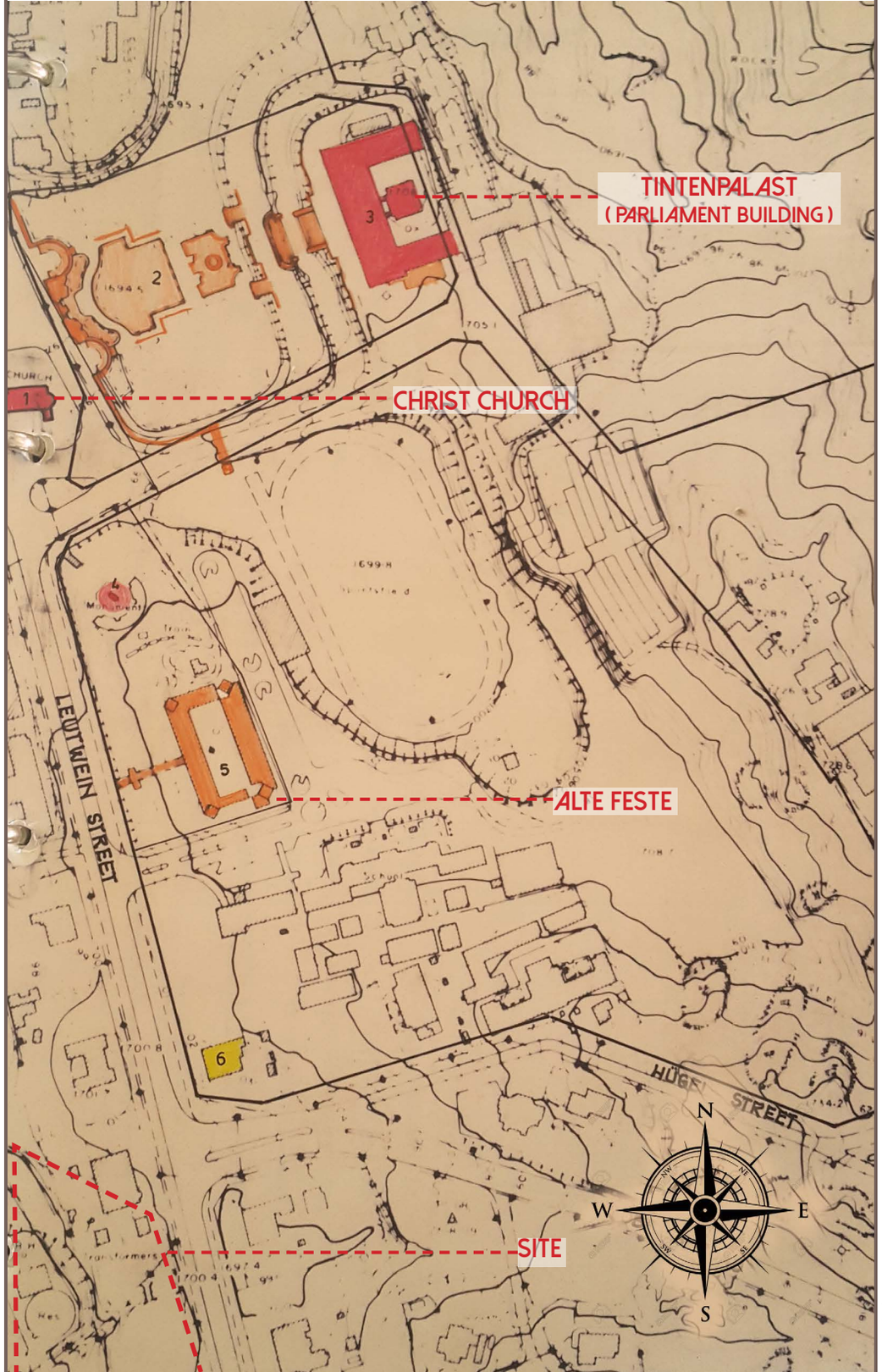
Fig. 27 *Indigenous people busy making bricks for the Feste.* (n.d) [Photograph -online] Available at: National Archives of Namibia; http://dna.nust.na. ONR Private Photo Collection

EVALUATION [2.]

A. ARCHITECTURAL QUALITY	
1. STYLE	The Alte Feste is an early and good example of a German fort in Namibia as there are many examples of fort typology in the broader context of the country.
2. CONSTRUCTION	The foundation constructed of natural stone and the walls of unburned and burnt clay bricks, the Alte Feste is a very good example of construction methods and materials of early German-colonial buildings.
3. AGE	Constructed in the period from 1890-1892 it is an excellent example of the first German-colonial building in Windhoek.
4. ARCHITECT/BUILDER	The Alte Feste was constructed by Curt Von Francois who was a German Commissioner in colonial Namibia.
B. HISTORICAL ASSOCIATION	
5. PERSON / GROUP ASSOCIATION	Currently serves as a museum, it is the first building in Windhoek and therefore has invaluable merit and is an excellent example of a building that has numerous affiliations and is iconic to the city.
6. EVENTS	Being the first building constructed in Windhoek it has made a significant contribution and indicates a primary importance as one of the iconic landmarks of the city.
7. CONTEXT	The building is indicative of patterns of primary importance in political, military and social historical terms.
C. ENVIRONMENTAL CONTRIBUTION	
8. LANDMARK	An excellent example of a structure that is visible and identifiable in its context and the city as a whole.
9. CONTINUITY	The Alte Feste is an excellent example of a building that contributes to the continuity and character of its immediate context and is part of a group of significant buildings in its context that is similar in its architectural language.
10. SETTING (IMMEDIATE)	The building being in a degraded state shows no compatibility within its immediate boundaries. The landscaping that forms part of the Alte Feste is in a poor state. The Equestrian Monument (Statue of a horse in commemoration to German-colonial troops and civilians) have been removed and further weakens the historical setting of the building.

Footnote:

2. Table adapted and interpreted from documents of National Archives of Namibia; Historical Building Collection, Reference No. KWi 1-5



Alte Feste Context

Fig. 28 (left) Historical footprint map indicating the Alte Feste in relation to surrounding historical buildings in walking distance. The selected site is located to the south of the cluster of historical buildings.
(Map [print] n.d: Held at: Windhoek: National Archives of Namibia.)

Fig. 29 (above) The TintenPalast (Parliament Building) in its present setting, making up part of the historical footprint of buildings surrounding the Alte Feste.
(Photograph: Holger Osterbuhr, 2008: Online)

Fig. 30 (above) Alte Feste in new Robert Mugabe Avenue in its present context with the Genocide Memorial in the foreground inaugurated in 2014.
(Photograph: unknown, 2014: Online)

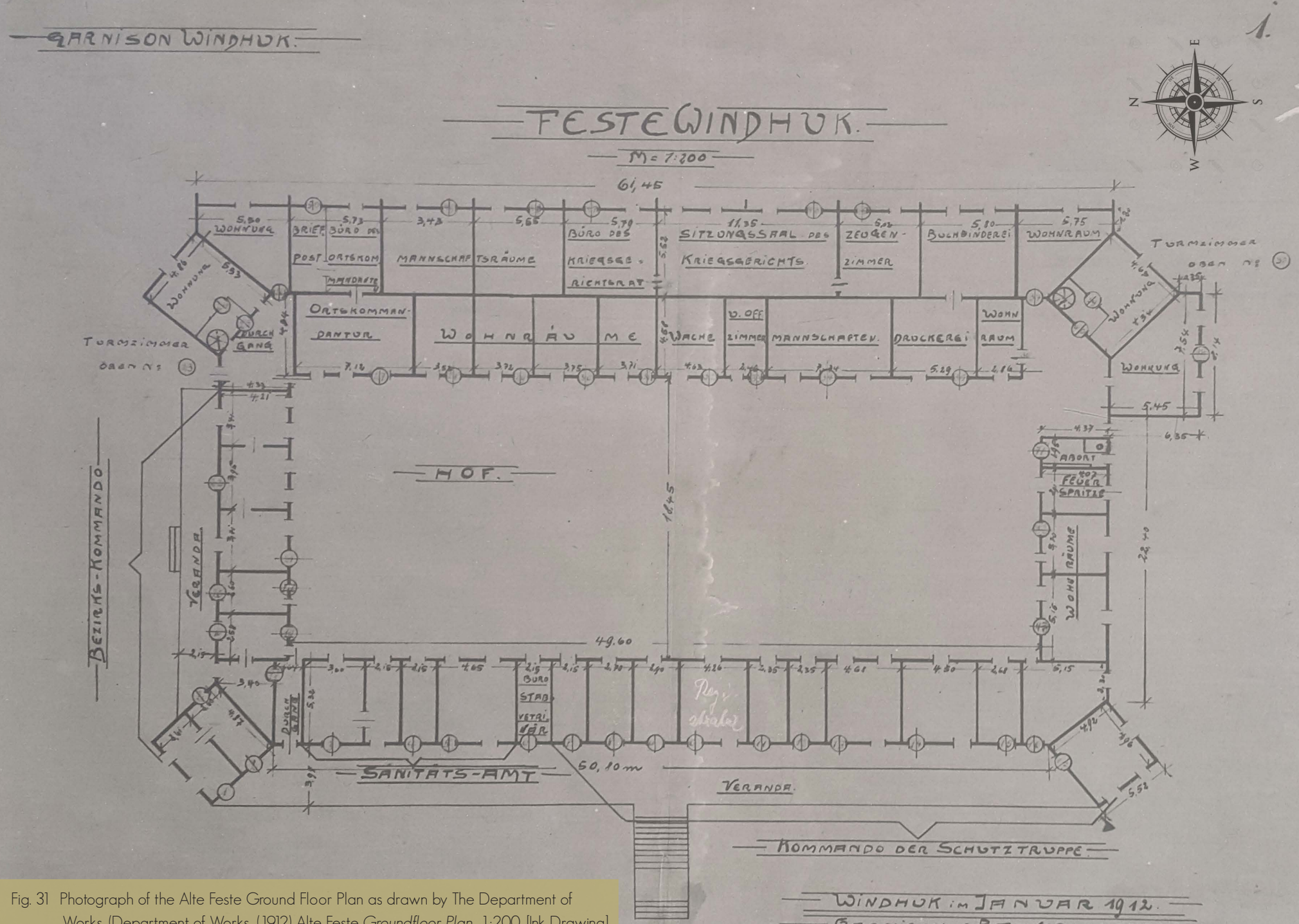


Fig. 31 Photograph of the Alte Feste Ground Floor Plan as drawn by The Department of Works. (Department of Works, (1912) Alte Feste *Groundfloor Plan,* 1:200. [Ink Drawing] Held at: Windhoek: National Archives of Namibia.)

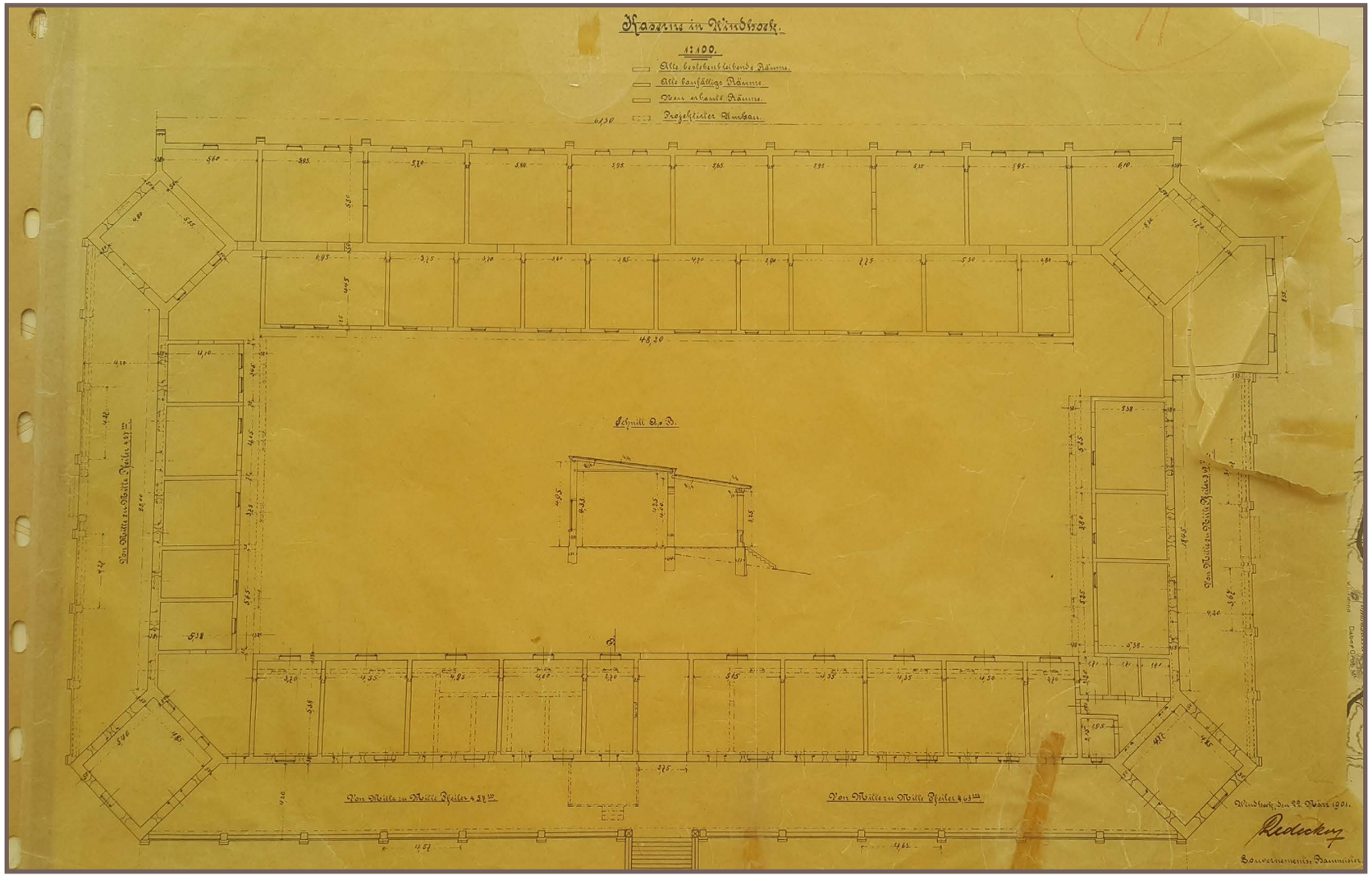


Fig. 32 Photograph of the Alte Feste ground floor plan indicating walls to be demolished in dotted lines. as drawn and signed by architect Gottlieb Redecker in 1901. Looking at the sheet itself, it indicates the degraded state of the drawings.
(Redecker, G. (1901) Alte Feste *Groundfloor Plan*, 1:100. [Ink Drawing] Held at: Windhoek: National Archives of Namibia.)

Digitized Drawings:
Plans

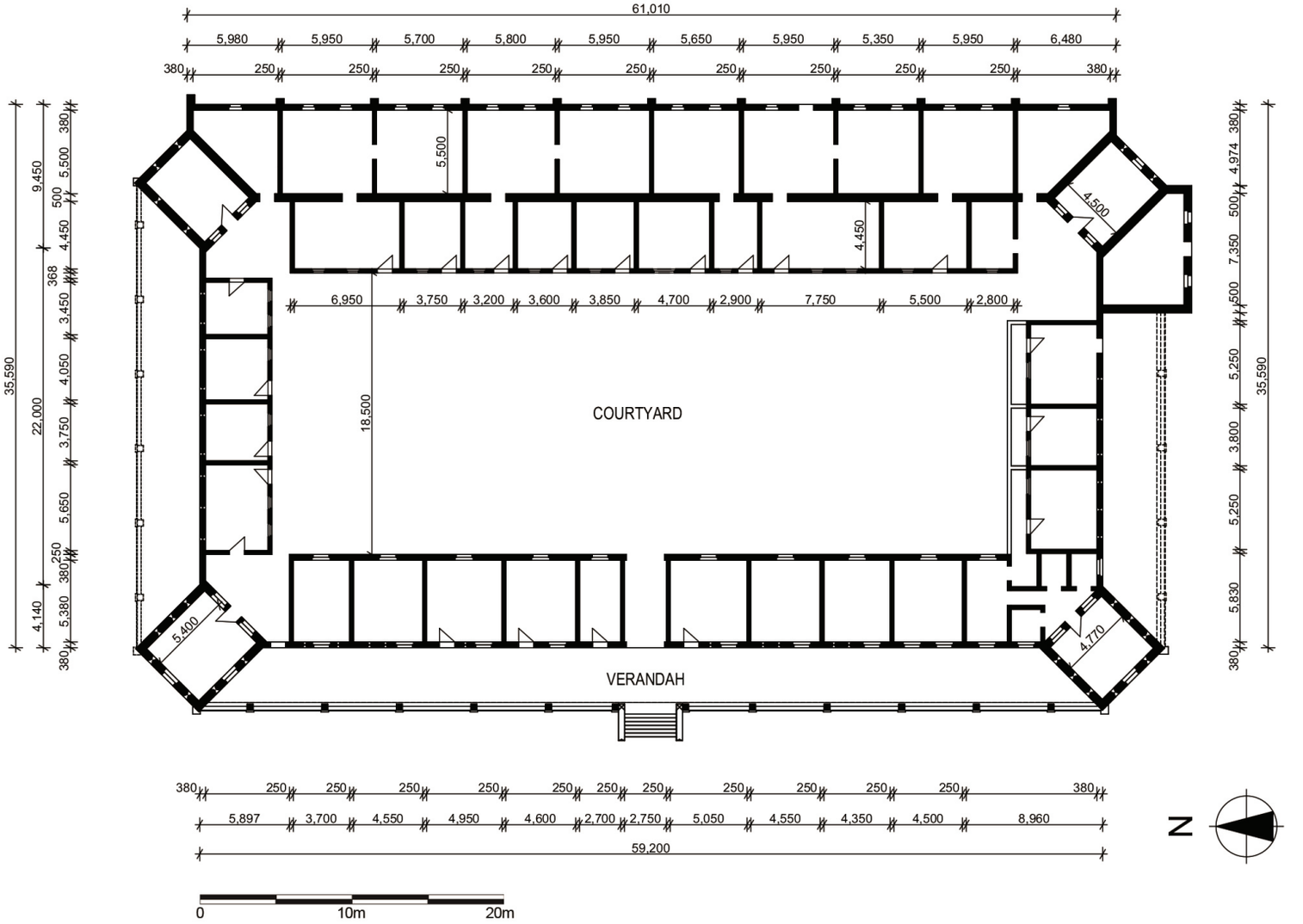


Fig. 33 Reproduced Ground Floor Plan of the Alte Feste in accordance with the plan dated (1901) drawn by architect Gottlieb Redecker, who made alterations to the Alte Feste.
(Drawing done by author. Alte Feste Ground Floor Plan, 1:500, 2019)

Alte Feste: ground Floor Plan

2.1.3 OLD HIGH COURT AND PRISON

Brief Description

The Old High Court and Prison in downtown Windhoek is a further historical extension to the former Leutwein Street and precinct. The main court building is located on the corner of Robert Mugabe Avenue (Leutwein Street) and Korner Street with the buildings main façade focused on Goethe Street. (fig. 37, p.35)

The Court comprise of a symmetrical single-storey structure in exception to the right-hand gable (fig. 38, p. 37) which has a writing room on the upper floor. (KWi 15-14: National Archives of Namibia). The Building was commissioned by the Department of Works under the German Colonial Administration. Prominent architect of the time, Gottlieb Redecker supervised the construction of the Prison in 1906 and 1907 while the Court building was constructed a year later in the period between 1908 and 1909. (City of Windhoek, 2019: Online)

The Court and Prison building's foundation is constructed in natural stone whilst the superstructure is of cement bricks speaking a language of rigidity and monumentality. The interior wall finish is of lime mortar. (KWi, 15-14: National Archives of Namibia)

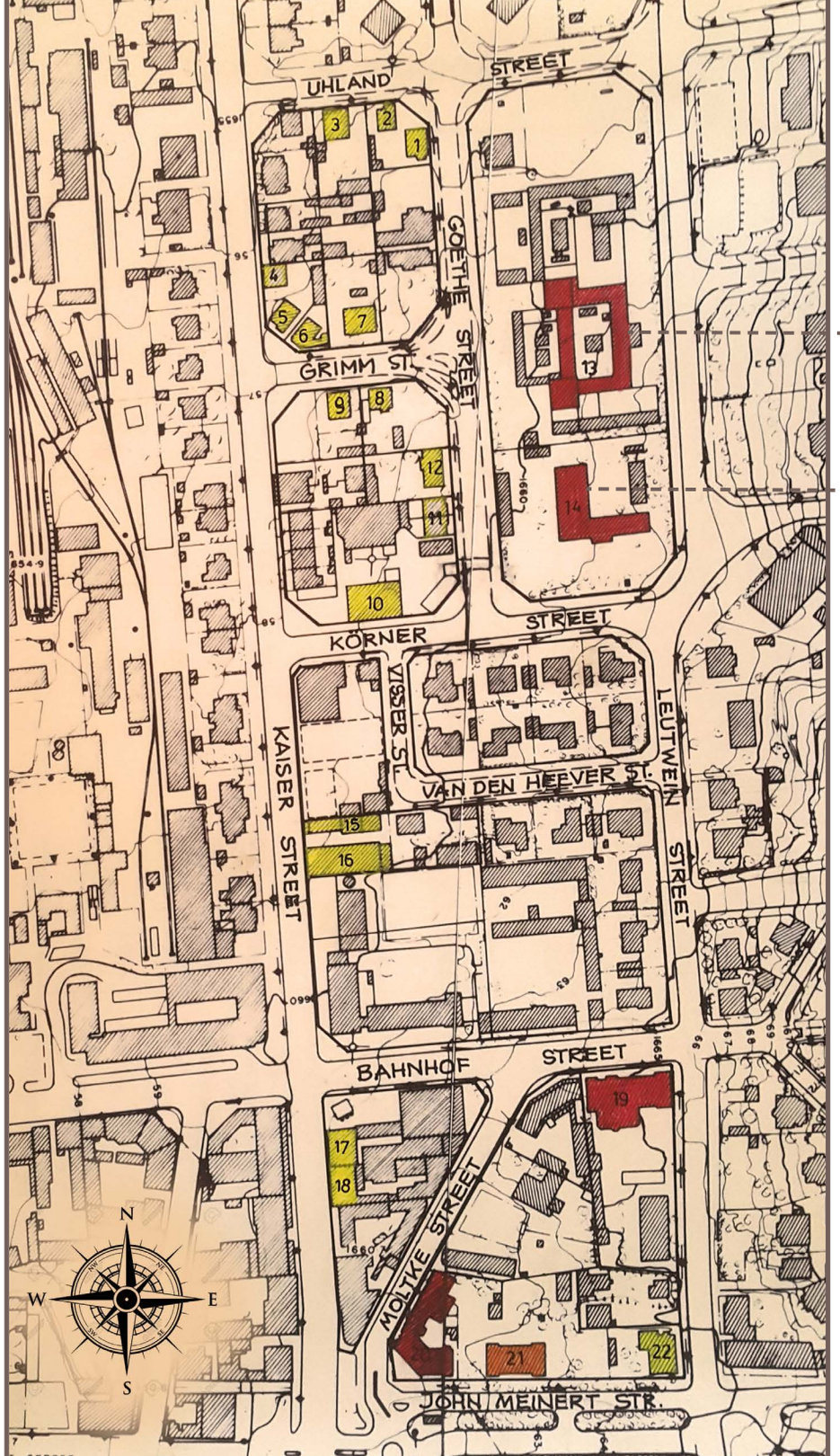
Fig. 34. Department of Works. Old High Court building in its historical setting. Goethe Street, Windhoek. (1908-1909)
Photograph: Schoedder, E. (1987)
[Photograph -online] Available at: National Archives of Namibia; http://dna.nust.na. Edda Schoedder Collection.

EVALUATION: OLD HIGH COURT [3.]

A. ARCHITECTURAL QUALITY	
1. STYLE	The architectural language of the Old High Court building is unique in its context an Excellent example of Romanesque Architectural influences. This language is expressed in the detailing of the cornice in what is termed the "Lombard Band."
2. CONSTRUCTION	The foundation constructed of natural stone and the walls of cement bricks and unburned clay bricks; it is an early and Excellent example of this type of construction method in the context of Namibia.
3. AGE	Constructed in the period from 1908-1909 it is a Very Good example of some of the first German-colonial buildings in Windhoek.
4. ARCHITECT/BUILDER	The Old High Court was designed by the Department of Works under the German-colonial Administration. Construction was supervised by architect Gottlieb Redecker.
B. HISTORICAL ASSOCIATION	
5. PERSON / GROUP ASSOCIATION	Served as the first justice building in Windhoek and therefore has invaluable merit and is an excellent example of a building that has a credible importance to the city.
6. EVENTS	The building has no known present-day events associated to it apart from its historical purpose.
7. CONTEXT	The building is indicative of patterns of primary importance in judicial and correctional terms.
C. ENVIRONMENTAL CONTRIBUTION	
8. LANDMARK	Located on the corner of Goethe and Leutwein Street; it is a Very Good example of a structure that is visible and identifiable in the context of the city.
9. CONTINUITY	The Old High Court contributes to the continuity and character of its immediate context and is part of a group of buildings in former Leutwein Street precinct that is similar in architectural language.
10. SETTING (IMMEDIATE)	Good setting within the immediate boundaries with existing lawn and trees adding to the character of the building.

Footnote:

3. Table adapted and interpreted from documents of National Archives of Namibia; Historical Building Collection, Reference No. KWi 15-14



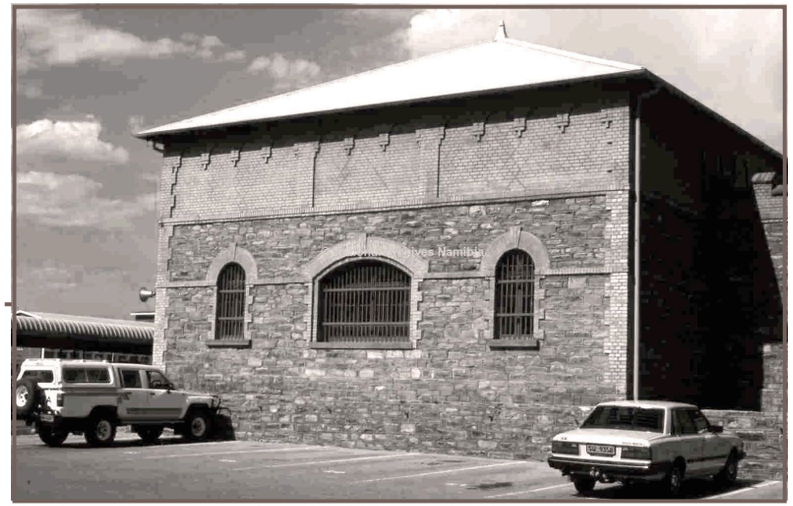


Fig. 35. (Above)Department of Works. Old Prison building in its historical setting. Goethe Street, Windhoek. (1906- 1907)
Photograph: Vogt, A. (1989)
[Photograph -online] Available at: National Archives of Namibia; http://dna.nust.na.

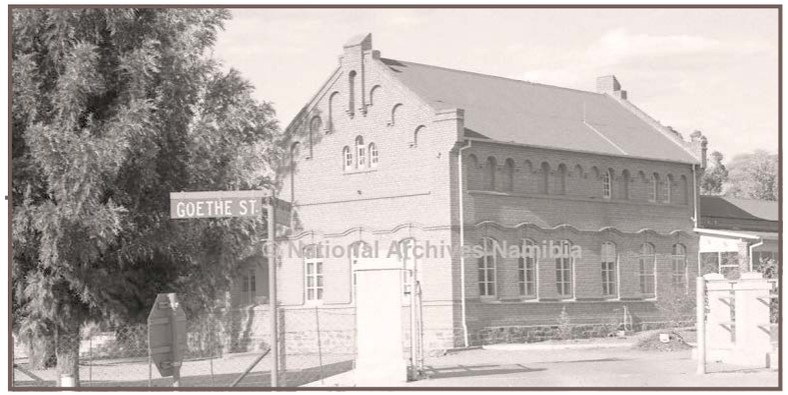


Fig. 36. (Above) Old High Court as viewed from Goethe Street, Windhoek. (1908- 1909)
Photograph: Schoedder, E. (1987)

Fig. 37 (Left) Historical footprint map indicating the Old High Court and Old Prison along Leutwein Street in the context of the city.
(Map [print] n.d: Held at: Windhoek: National Archives of Namibia.)

Evaluation: Old Prison [4.]

A. Architectural Quality	
1. Style	The architectural language of the Old Prison building is unique in its context and an Excellent example of Romanesque Architectural influences.
2. Construction	In a fairly good state; the foundation constructed of natural stone and the walls of cement bricks; it is an early and Excellent example of this type of construction method in the context of Namibia and consist of intricate face-brick work and stonework finishes.
3. Age	Constructed in the period from 1906-1907 it is a Very Good example of some of the first German-colonial buildings in Windhoek.
4. Architect/Builder	The Old Prison Building was designed by the Department of Works under the German-colonial Administration and construction thereof was supervised by architect Gottlieb Redecker.
B. Historical Association	
5. Person / Group Association	Served as the first Correctional facility in Windhoek and therefore has invaluable merit and is an excellent example of a building that was associated with the German colonial Administration.
6. Events	Decommissioned as a prison in 1963, the building serves as a monument to the City of Windhoek and has no significant events connected to it apart from its historical purpose.
7. Context	The building is indicative of patterns of primary importance to the Department of Justice in both judicial and correctional terms..
C. Environmental Contribution	
8. Landmark	Located on the corner of Korner and Leutwein Street; it is a Very Good example of a structure that is visible and identifiable in the context of the city.
9. Continuity	The Old Prison is and Excellent example of a building that contributes to the continuity and character of its immediate context and is part of a group of historical buildings in former Leutwein Street precinct that is similar in architectural language.
10. Setting (Immediate)	The immediate boundaries neither contributes to or subtract from the character of the building.

Footnote:

4. Table adapted and interpreted from documents of National Archives of Namibia; Historical Building Collection, Reference No. KWi 15-13

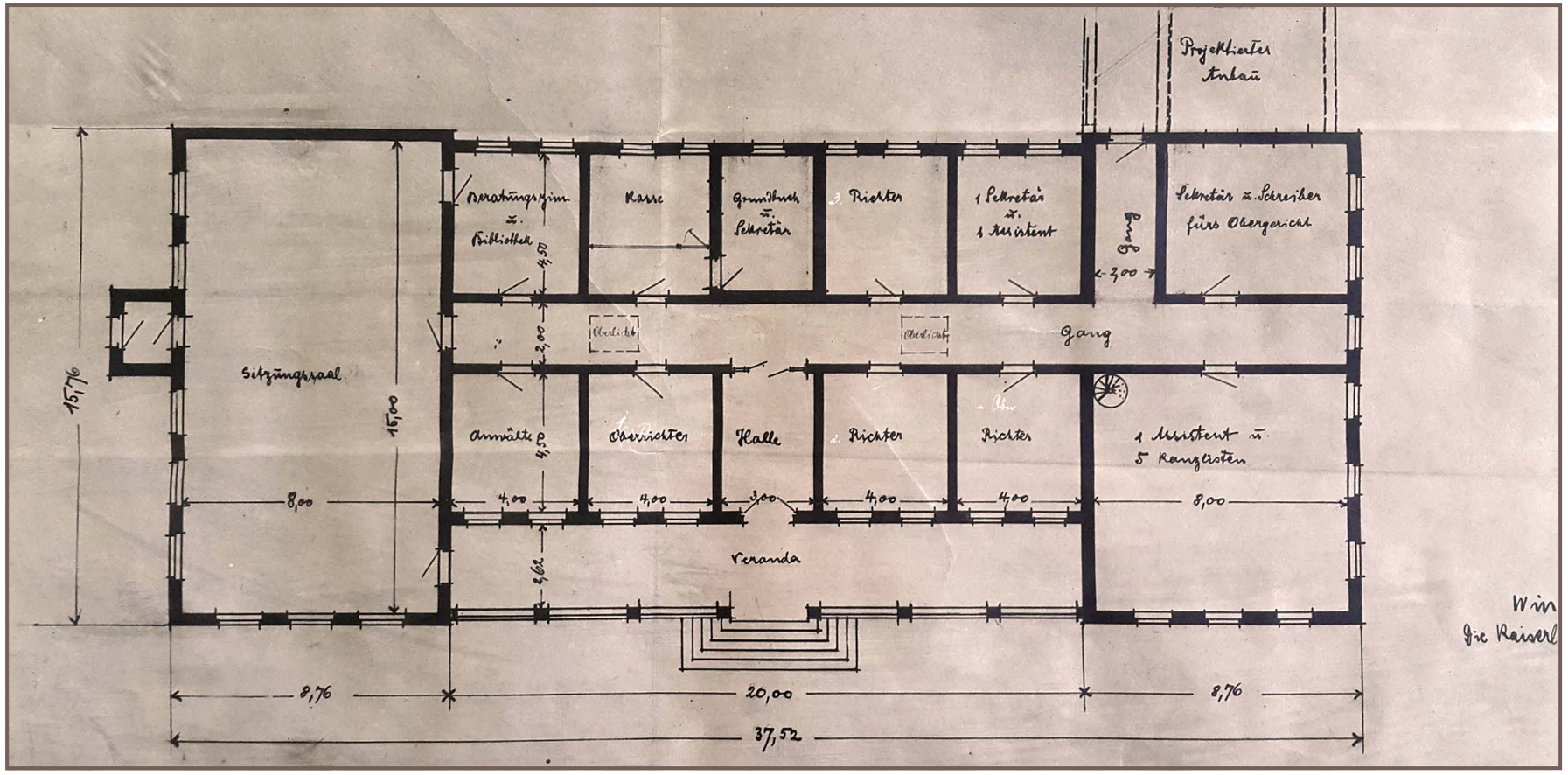


Fig. 38 Photograph of the floor plan sketch of the Old Court building.
(Department of Works. (1908) *Groundfloor Plan Sketch*, 1:100. [Ink Drawing] Held at: Windhoek: National Archives of Namibia.)

GROUND FLOOR PLAN

Digitized Drawings: Plan
Old High court

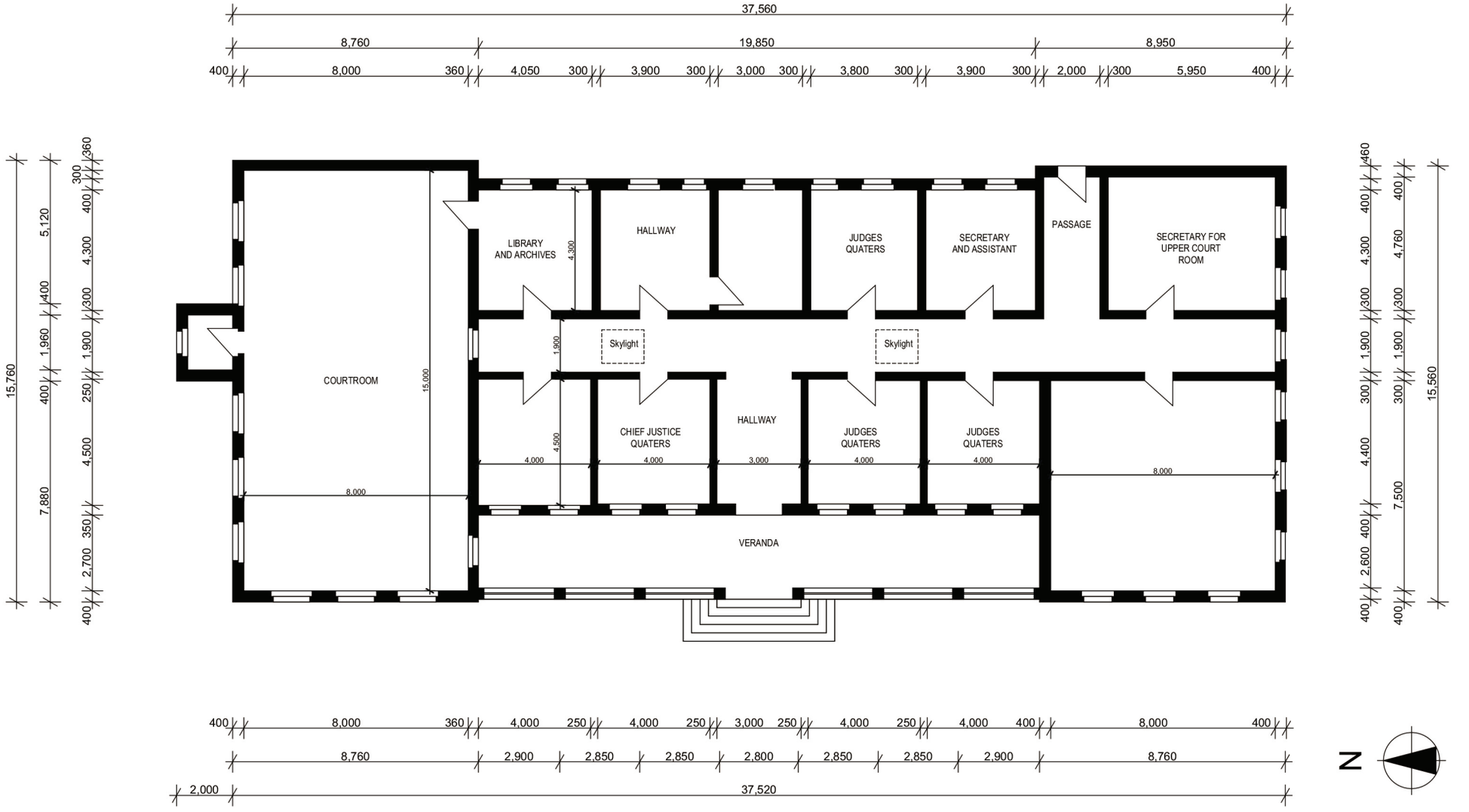
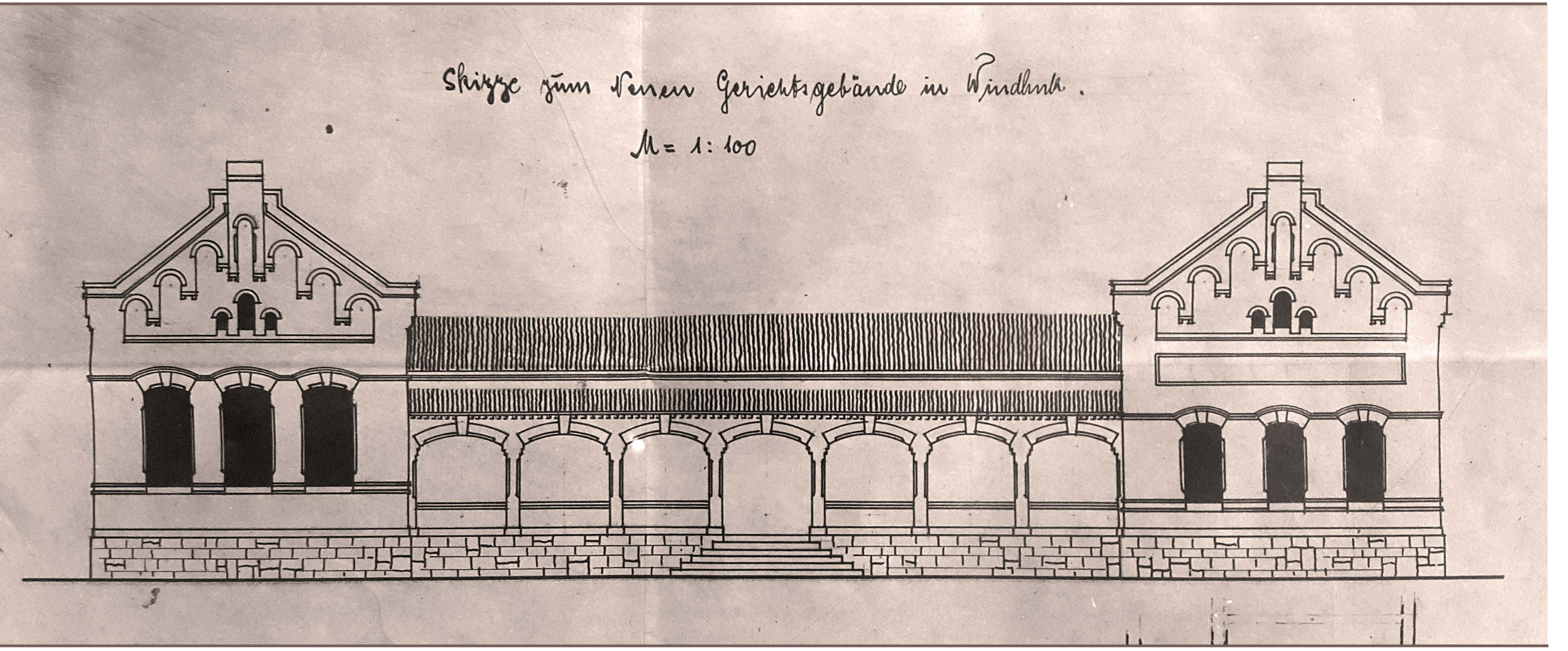
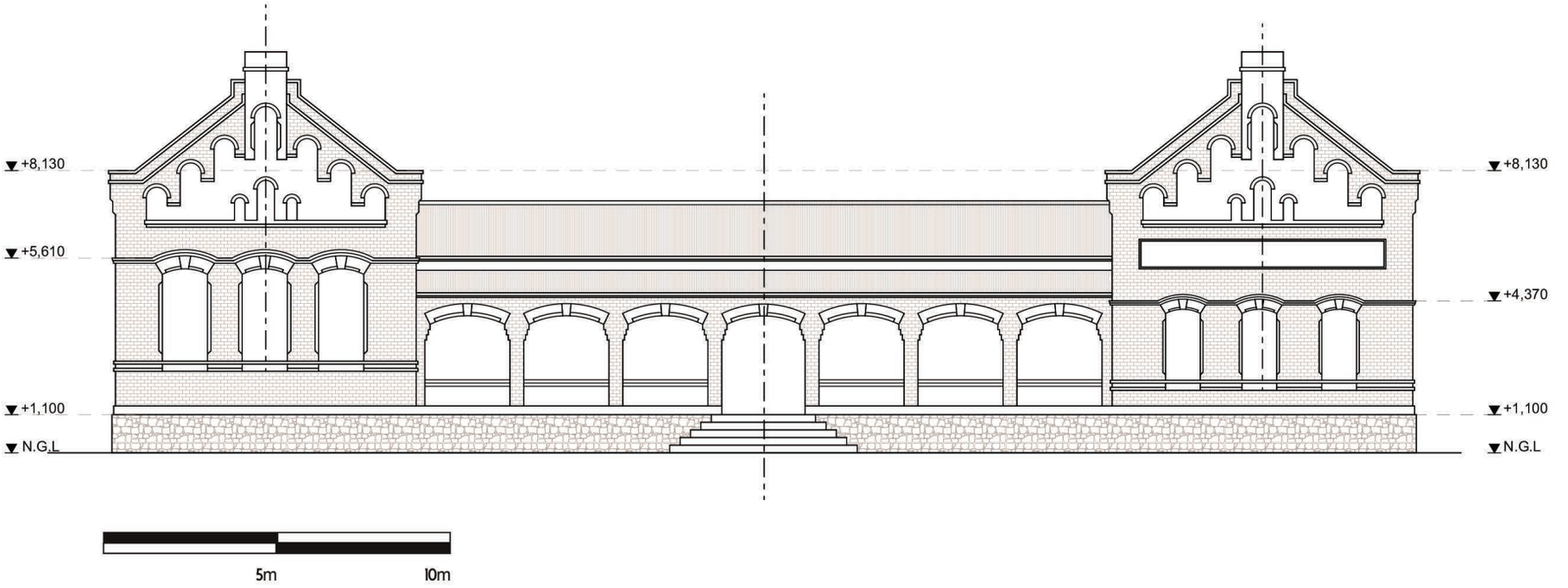


Fig. 39 Reproduced Ground Floor Plan of the Old High Court in accordance with the plan dated (1908) (fig. 38)
(Drawing done by author, Old High Court Front Elevation. 1:200, 2019)



FRONT ELEVATION SKETCH

Fig. 40 Photograph of a sketch at scale 1:100 of the Old High Court building depicting its front elevation. The gable ends express a language of Romanesque architectural influences.
(Department of Works. (1908) *Sketches of Court-building,* 1:100. [Ink Drawing] Held at: Windhoek: National Archives of Namibia.)



FRONT ELEVATION

Fig. 41 Reproduced drawing of the Old High Court front Elevation in accordance with the sketch dated (1908) drawn by Department of Works, (fig. 40).
(Drawing done by author. Old High Court Front Elevation, 1:200, 2019)

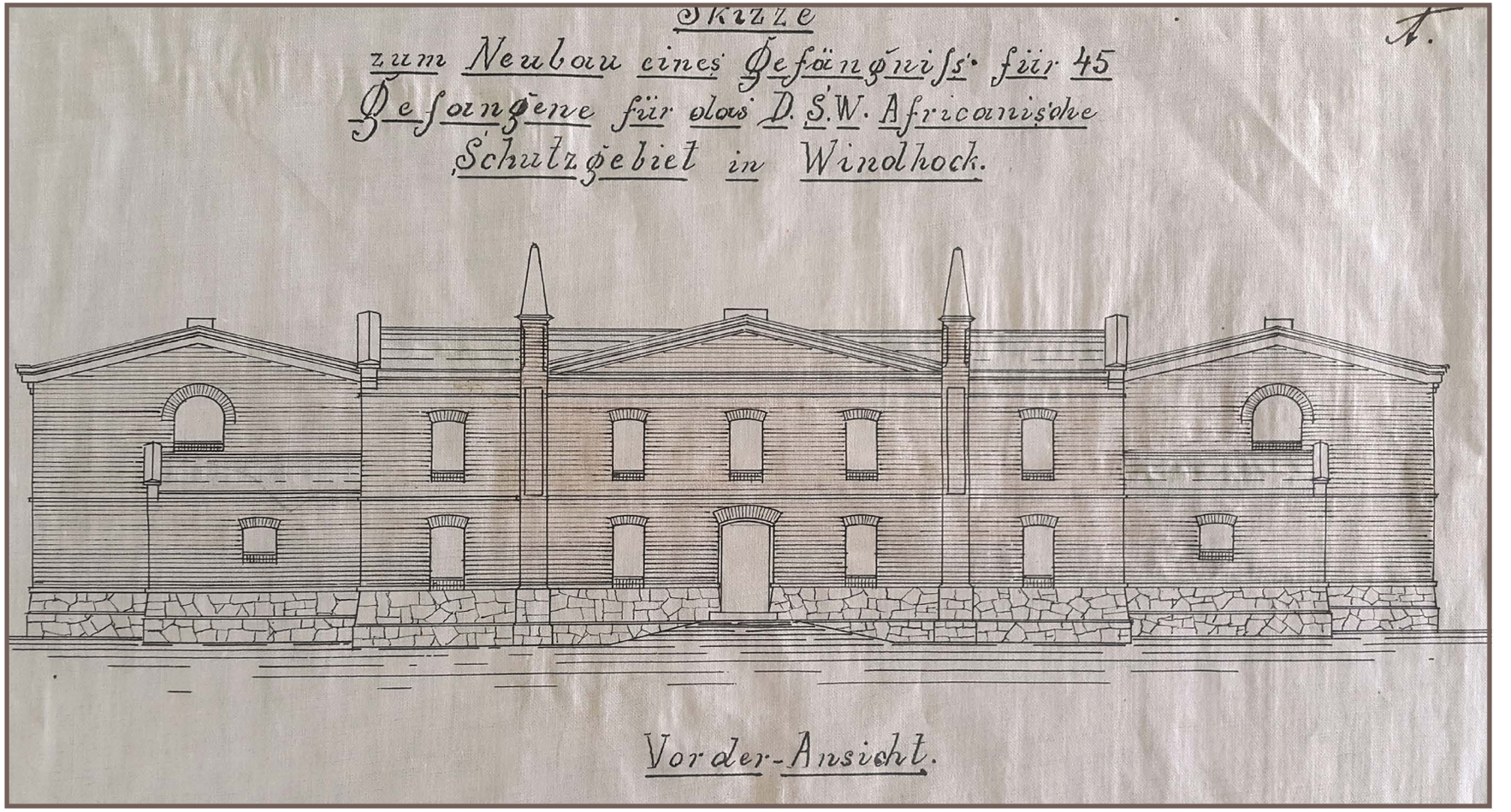


Fig. 42 Photograph of the initial sketch of the front elevation for the proposed construction of the Old Prison. (Department of Works. (1895) *Sketch for the Construction of a new Prison for 45 Inmates(Front Elevation),* No Scale. [Ink Drawing] Held at: Windhoek: National Archives of Namibia.)

FRONT ELEVATION SKETCH

Digitized Drawings: Elevations
Old prison

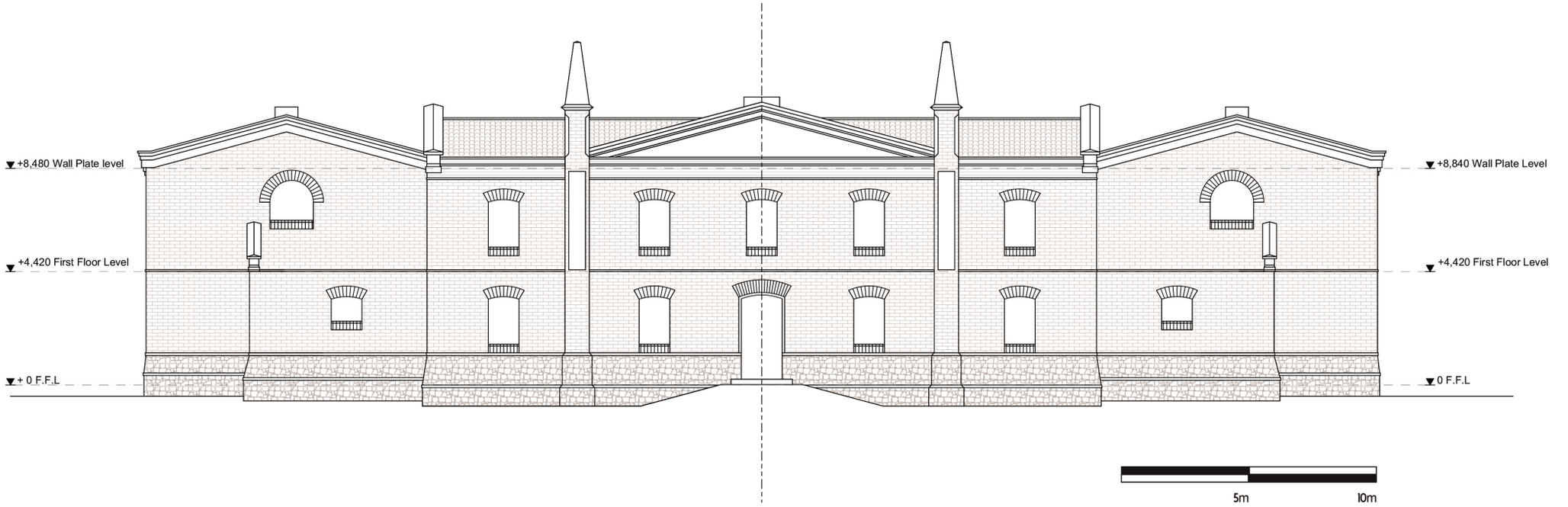


Fig. 43 Reproduced drawing of the Front Elevation in accordance with the sketch dated (1895) drawn by Department of Works, (fig. 42).
(Drawing done by author. Old Prison Front Elevation, 1:200, 2019)

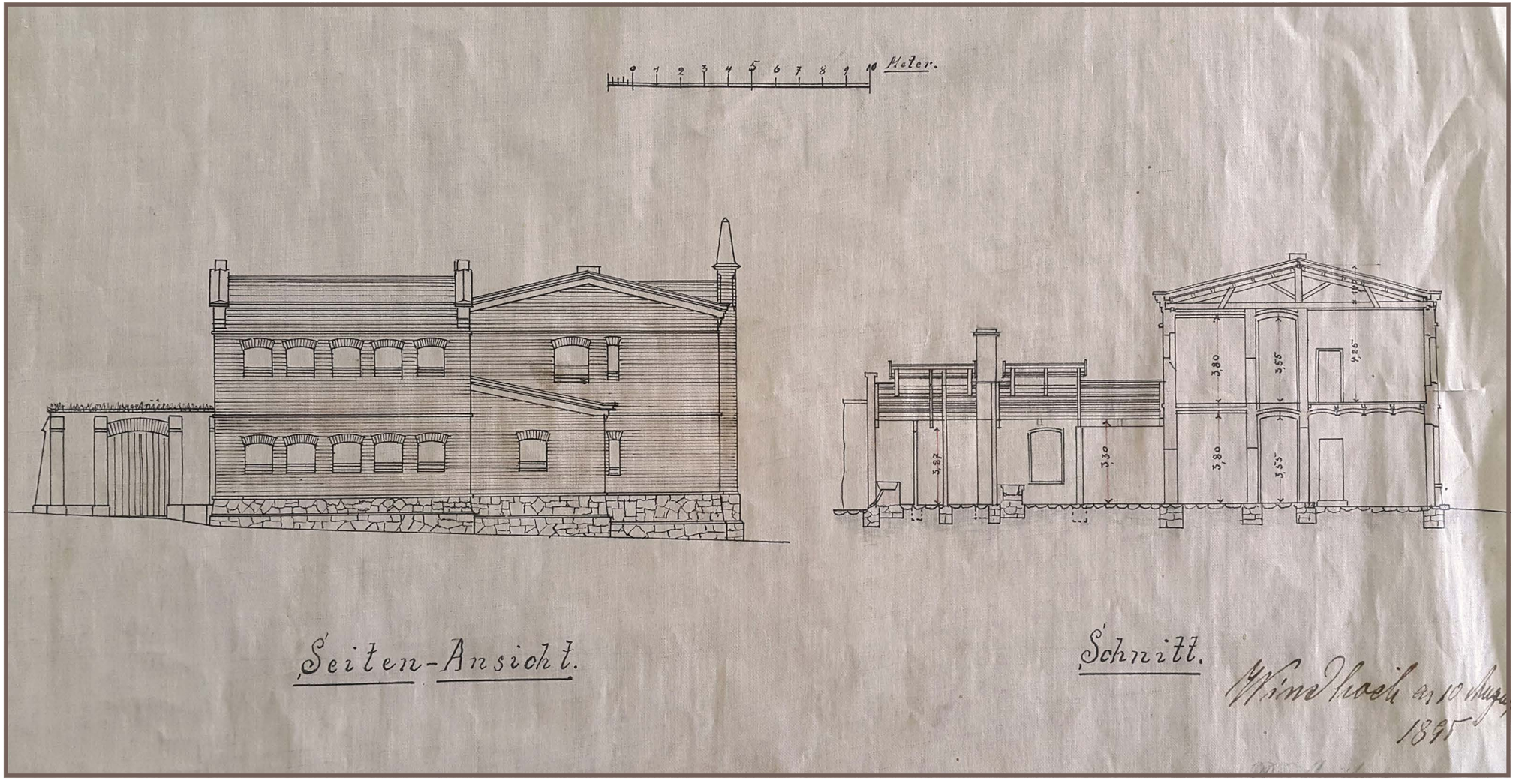


Fig. 44 Photograph of the initial sketch of the Side elevation and Section of the Old Prison.
(Department of Works. (1895)*Sketch for the Construction of a new Prison for 45 Inmates (Side-elevation and Section,* No Scale. [Ink Drawing] Held at: Windhoek: National Archives of Namibia.)

SIDE ELEVATION AND SECTION SKETCH

Digitized Drawings: Elevation and Section
Old Prison

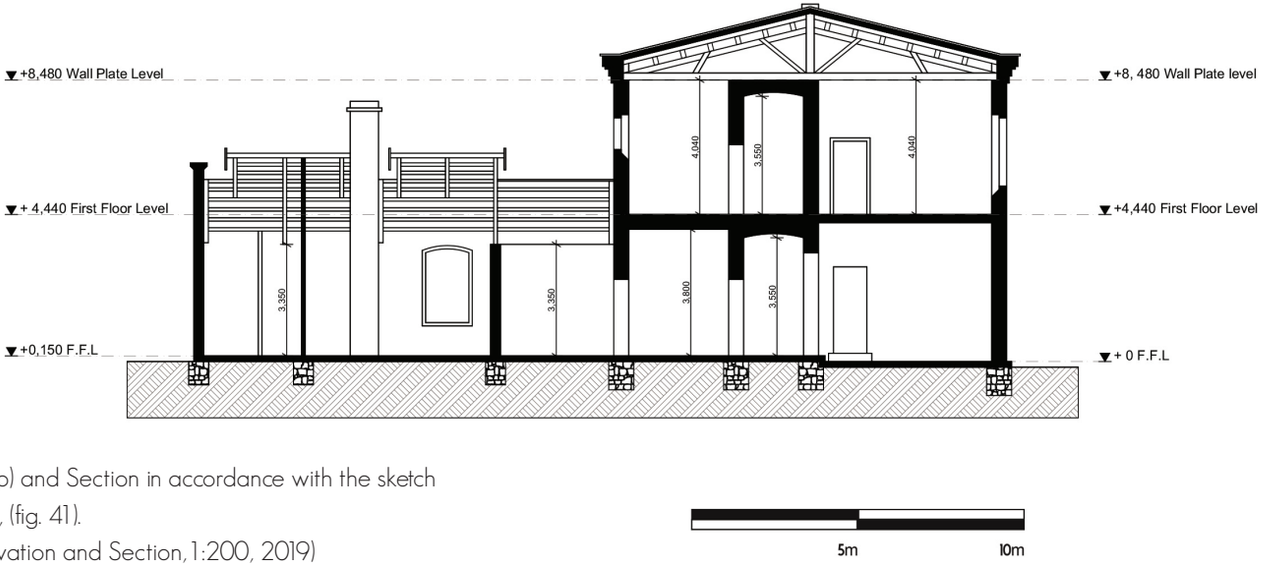


Fig. 45 Reproduced drawing of the Side-elevation (top) and Section in accordance with the sketch dated (1895) drawn by Department of Works, (fig. 41).
(Drawing done by author. Old Prison Side Elevation and Section,1:200, 2019)

GERMAN-COLONIAL HERITAGE:
CONCLUSION

It is with certainty that the city of Windhoek's urban fabric is still characterized by German-colonial style architecture. Upon closer investigation through the archived documents and the physical representation and state of the buildings themselves; it is clear that there is a degree of neglect in the memory and identity that reflects itself in the representations of the constructs that make up Namibia's historical past. Even if such neglect means that the society is maturing from a post-colonial regime where a new identity is sought after. It is imperative for such identity to be based on a previous collective historical narrative for example, its architecture. Meghan Kirkwood an art historian; confirms this identity seeking through new architectural representations by stating that Namibia's post-colonial government uses North-Korean built monuments and architectural styles to explicitly formulate and assert a break with its colonial past. (as cited in Becker, 2018, p. 4)

Although seeking a new found identity of unity and nationalism is highly commendable, but if such identity is not a true representation of the cultural and historical background of the people it represents; then what does it represent? Internationally acclaimed architect Jaco Wasserfall (2010), argues in this regard that, with the new architectural manifestations such as the new Independence Memorial Museum in Windhoek; it is completely foreign to Namibia, its people, culture and history and that it further fails to reflect the "soul of the new Namibian nation, its beliefs, cultures and values." (as cited in Becker, 2018, p. 11)

Therefore, it is clear that in the current context of Namibia that its historical fabric both vernacular and colonial are being neglected whether directly or indirectly. And the importance of establishing a new identity is fundamentally based on the acknowledgement of the past and building on from it. The preservation of the historical architectural fabric thus becomes an important aspect in the formation of this identity as it is a physical representation of the history of Namibia, its people and its narratives of liberation.

“ARCHITECTURAL PRESERVATION
is a matter of
establishing
NATIONAL IDENTITY.”

- Kathie Brill

Fig. 46 Namibia Weaving detail on sorghum storage huts in Northern Namibia.
Photograph: Elao Martin.
Source: www.africavernaculararchitecture.com,2019

2.2 NAMIBIAN VERNACULAR ARCHITECTURE

This chapter focuses on vernacular architecture in Namibia as a recommendation for heritage proclamation and preservation of sites and structures to be identified. The National Heritage Council of Namibia declared Omhedi as a Cultural Landscape and thus falls under Heritage Sites to be protected. Omhedi is a historically important village in the northern parts of Namibia dating back to the pre-colonial era of the 1800's. Omhedi is but one example of settlements that is a physical representation of the indigenous cultural groups that built them. Therefore, they form an integral part of the architectural identity of Namibia and the people that embody them. The impermanent nature and fragility of vernacular constructs further raises the importance of its preservation.

In acknowledgement; this chapter does not focus on the documenting process of identified constructs, but explores a deeper understanding of the cultural traditions and beliefs that gives structure to the development of such settlements. More often than not, architecture is characterized on its face value whilst some requires researching on a deeper level to understand the rules that gave its form. It is this deeper understanding that this chapter aims to explore to certify the credibility embodied by vernacular architecture and to create awareness thereof.

2.2.1 THE AWAMBO VERNACULAR ARCHITECTURE

Brief Description

The Awambo or 'Ambo' people are indigenous to the northern parts of Namibia and southern Angola commonly known as Ovamboland. Awambo is also the collective term for the sub-groups or 'tribes.' Ovamboland is bordered by the Etosha Pan to the south and Kaokoveld to the west whilst Kavangoland borders its east. (Mills, 1985, p. 34) The topography is relatively flat for extended distances. The origin of this group of people to their present context as Mills argues, is "imperfectly understood." (1985, p. 34) There are many opinions on how long these groups have settled in the area and this reflects how little is actually known of the indigenous Awambo people.

The Awambo homestead is characterised by a palisaded fence consisting of wooden posts with living huts on its interior. Vernacular architecture in the context of Southern Africa and the rest of the world respectively cannot only be merited on surface qualities such as aesthetic attributes or its level of appearance. Doing so is an injustice to the complex social patterns that generate them. Therefore, vernacular architecture and settlements should be analysed in terms of its deeper reasoning such as the interactions between social relations and the physical context that give structure and formation to such settlements.

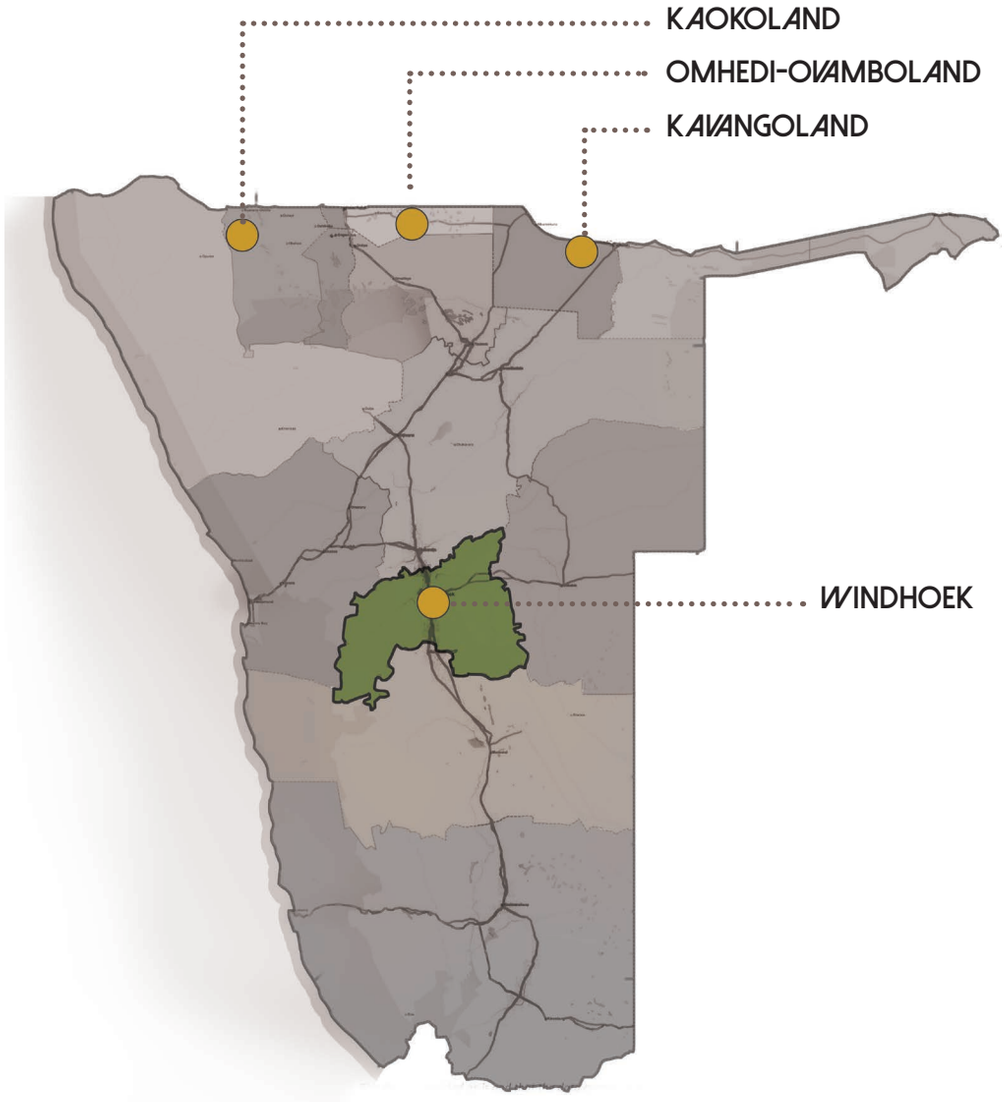


Fig. 47 Map of Namibia showing location of Ovamboland relative to its neighbouring cultural landscapes Kaokoland and Kavangoland.

ARCHITECTURAL MERIT BY DIFFERENT RULES

Through the increased interest and anthropological enquiry into the livelihood of indigenous cultures, there still remains an unfulfilled gap in the study of the design and planning of traditional settlements and architecture. Architects and planners in the context of Africa have remained relatively complacent in developing the process of understanding the meaning of space and architecture as it is manifested in indigenous vernacular cultures. Mills (1985) states in this regard that ". . . these investigations have been mostly at the level of formal description."

What this means is that vernacular architecture is approached as an object and often in singularity which depreciates it to mere artefact. Western architectural influences is concerned with ornamentation as much as it is about space but categorical classifications of architecture according to decoration, aesthetics, technology, style, and plan shape may not necessarily be applicable in the context of vernacular architecture.

Fig. 48 Awambo vernacular architecture often regarded as vulnerable and impermanent by virtue of its materials. But understanding it in terms of deep embodied social structures and spatial organization; there is a lot of credibility and awareness should be created thereof.
[Photograph: Online] Available at: Digital Namibian Archive Collections: dna.nust.na

AWAMBO HOMESTEAD

The homestead is characterized by a cluster of "... huts, shelters, courtyards, passages and palisades." (Mills, 1985, p. 47) The arrangement thereof is made in regards to the requirements in the relation to inside and outside spaces. That is the relation between sheltered spaces and common spaces such as the central meeting space referred to as the 'Olupale.'

A homestead is carefully designed according to the needs of the family as a unit, but also in relation to the requirements of the village and district as whole to ensure that the homestead is integrated into its context holistically. This is a representation of the 'deep structure' of the group which refers to the non-physical as well as the socio-economic requirements that manifests as a social structure in the form of architecture. (Mills, 1985, p. 35)

It is therefore important to acknowledge that to understand the merit of vernacular architecture it is important to study the social structures and societies that produce it. Therefore, its merit is not necessarily embodied in the aesthetics of the architecture but in the functions that they represent. Furthermore, the micro relationships between space and social structures can give important information in its application in contemporary challenges.

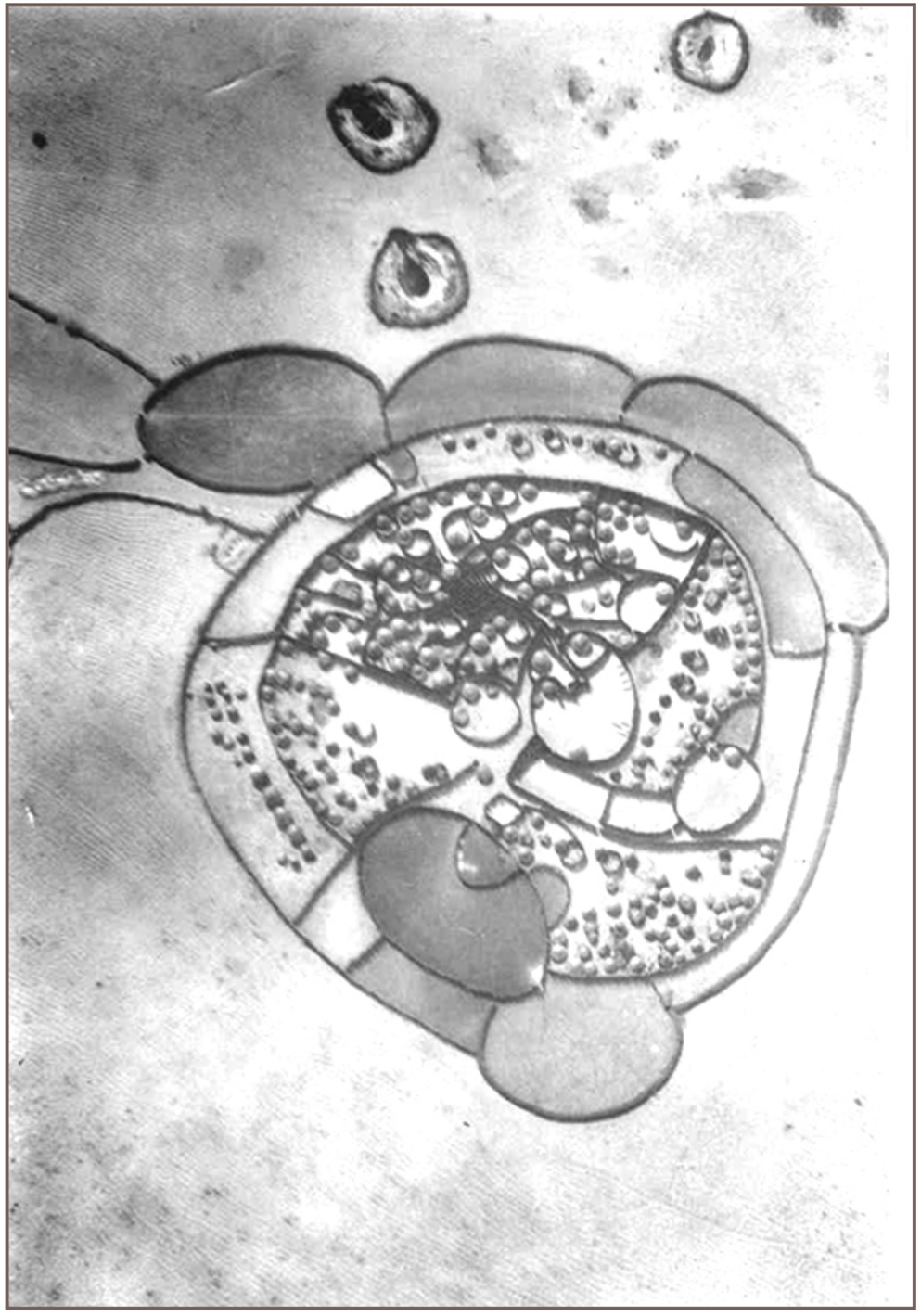


Fig. 39. (Right) Aerial view of a typical homestead in northern Namibia showing the complex arrangement of spaces.
[Photograph: Online] Available at: Digital Namibian Archive Collections: dna.nust.na

HOMESTEAD CHARACTERISTICS

Each homestead is a series of functional spaces and spatial relationships that work together to meet the day-to-day activities and requirements of families. These spaces are ". . . derived from the roles of the individual members of the family, as well as from the dictates of social obligations, . . ." (Mills, 1985)

However, in addition to the homestead's layout around key spatial relationships; the following are other key characteristics that all homesteads respect:

1. STRUCTURE -CENTRALITY
2. ORIENTATION
3. TEXTURE
4. ORGANIZATION

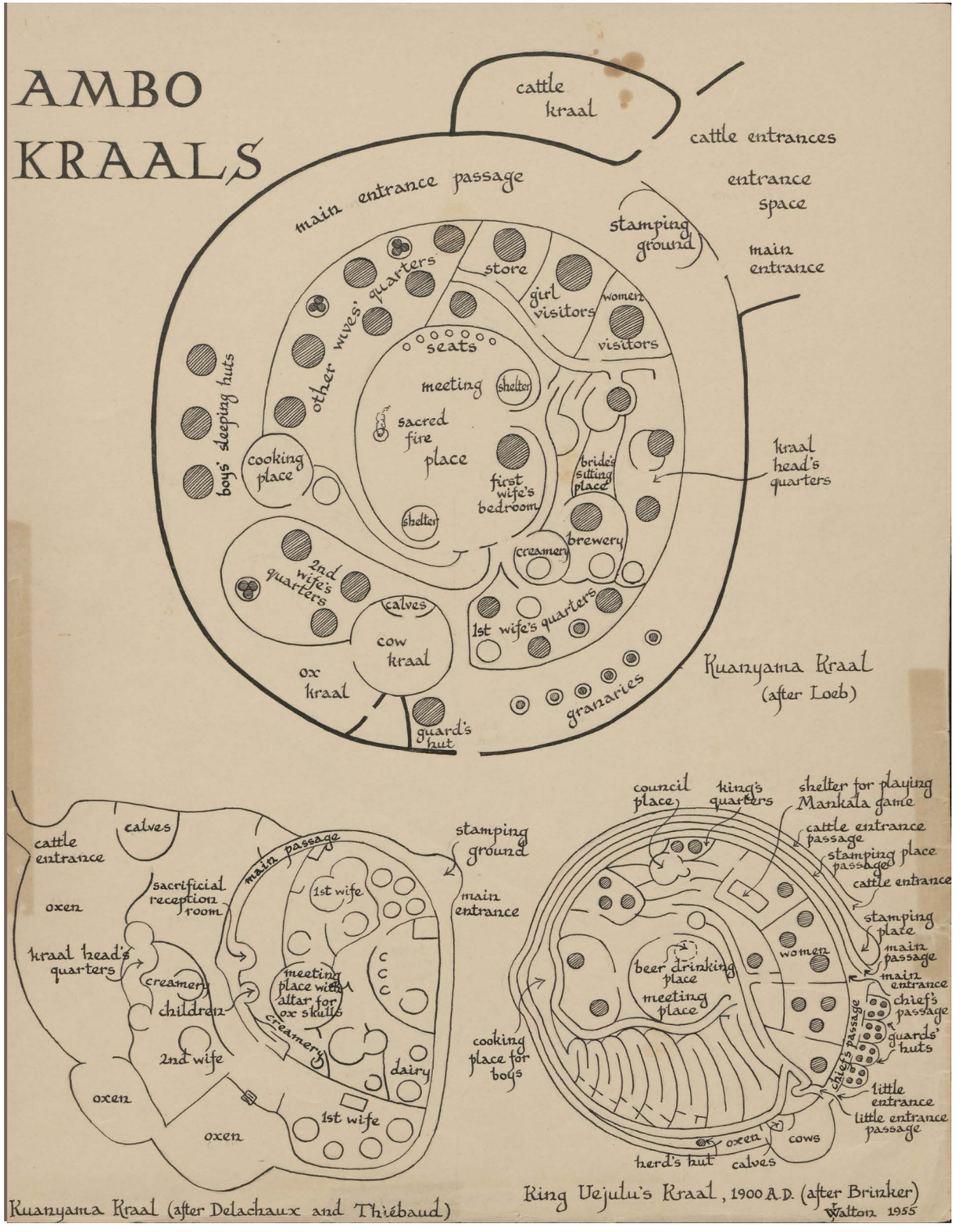
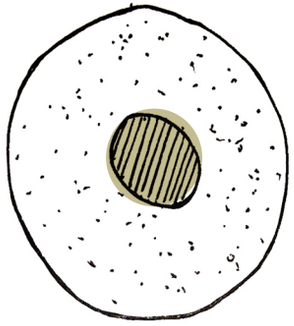


Fig. 50. (Right) Diagram of typical variations of the Awambo homestead depicting the spatial organization with the central meeting place also referred to as the 'olupale.'
Author: Walton, J. (1955)
[Online] Available at: Stellenbosch University Digital Collections: digital.lib.sun.ac.za
James Walton Collection.

1. Structure and Centrality

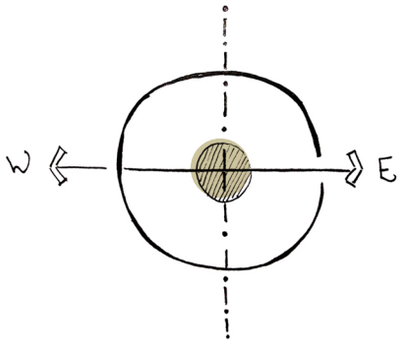


The idea of centrality is reflected in the homestead layout and organization. The 'Sacred Fire' is the most dominant feature around which every homestead constitutes. The Sacred Fire located in the 'olupale' or central meeting space is the all-important symbolic ". . .representation of the community, the Supreme Being and historically the chief or king.

Fig. 51. Idea of centrality.
Diagram Adapted from: Mills, 1985

Fig. 52. Aerial view of the layout of a homestead depicting the central meeting space.
[Photograph: Online] Available at: Digital Namibian Archive Collections: dna.nust.na

2. Orientation



Ideally, a homestead comprises of only one entrance, an east facing opening called the 'onu' in the outer palisaded fence and boundary. The east/west axis has symbolic merit in reference to the sun which rises in the east and therefore brings life and the sun setting in the west is often referred to as the fore bringer of death.

Fig. 53. The meaning of axis.
Diagram Adapted from: Mills, 1985

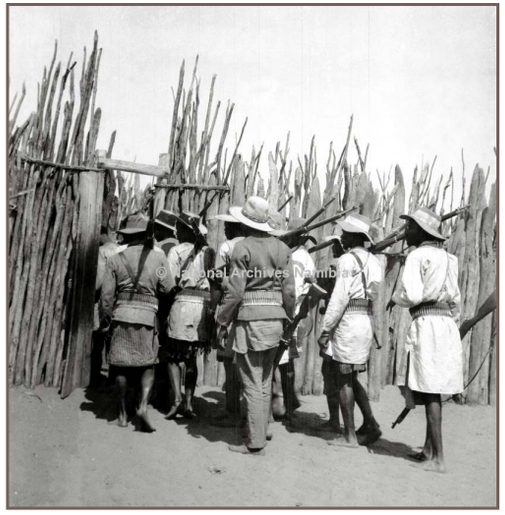
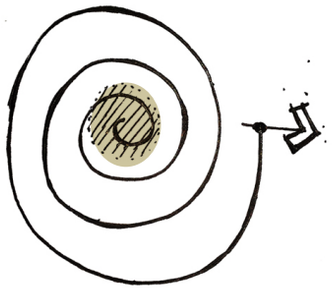


Fig. 54. Men entering at an 'onu' facing a possible easterly orientation. The 'onu' serves both a symbolic and functional purpose.
Photograph: C.H.L. Hahn, 1929
[Photograph: Online] Available at: Digital Namibian Archive Collections: dna.nust.na

3. Texture

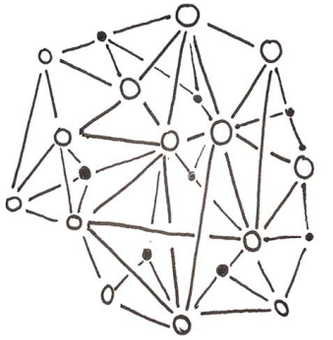


This is an interpretation of the maze-like quality represented by the ground plan of a typical homestead. This can serve as a purpose of defence and disorientation to intruders but also as a complex connection of functional spaces.

Fig. 55. The labyrinth quality of homesteads.
Diagram Adapted from: Mills, 1985

Fig. 56. Awambo women in a homestead depicting the maze-like quality of the space.
Photograph: C.H.L. Hahn, 1929
[Photograph: Online] Available at: Digital Namibian Archive Collections: dna.nust.na

4. Organization



This symbolizes the network of social relations within a homestead as well as its relation in the broader context of the village as a whole. The underlying principles of homestead planning is governed by the cultural complexity of the society. I.e. polygamy which reflects in the plan of a homestead as links between the specific sets of relationships.

Fig. 57 The complex relationship structure.
Diagram Adapted from: Mills, 1985

Fig. 58. Awambo women at a homestead depicting possible relationship complexity.
Adapted from: dna.nust.na
[Photograph: Online] Available at: Digital Namibian Archive Collections: dna.nust.na

NAMIBIAN VERNACULAR HERITAGE:
CONCLUSION

The brief background study and research touches on the 'deep structure' referring to the social complexity of the Awambo people and how that defines the planning and spatial layouts of their homesteads and villages respectively. Vernacular architecture requests for a new means of interpreting architecture apart from aesthetic qualities and material permanence. It is therefore the duty of architects and not only anthropologists to study the indigenous populous to draw credible conclusions for the effective documentation and representations of the vernacular constructs and its people alike. African architecture remains largely undocumented and under-researched as it is still considered not worthy of recognition amongst many. (Prussin, 1974)

The The perceived lack of interest is not based on individual ignorance but is a subconscious Western-thinking inspired by Darwinian-theories of evolution in which a range of disciplines including architecture subsequently became characterized according to a logical sequence of an evolutionary model. (Prussin, 1974, p. 184)

In this respect vernacular architecture remains largely intact in its perceived 'primitive' edifice and therefore does not fit on any evolutionary scale. As the research in this dissertation suggests, a deeper level of research is required to understand the components that make up the architectural space and characteristics of the Awambo homestead.

CHAPTER II-PROBLEM STATEMENT: CONCLUSION

This chapter highlights the dire state of the heritage buildings in the context of Windhoek. Some of which are in need of immediate attention such as the 10-Mann-haus which in certain instances show extreme deterioration. If these buildings are lost it takes with them an embedded history that would otherwise have contributed significantly to the narrative of reconciliation and identity.

The same can be said of the intrinsic and tangible aspects of indigenous cultures in Namibia in an increasing modernizing world. And merely investigating and documenting indigenous vernacular homesteads by virtue of its quantitative numerical characteristics, is not enough. Therefore, this chapter focused on the deeper understanding of the social structures that inform the designs of homesteads. This chapter is therefore a direction into the corrective measures to document, analyse and archive the data obtained on the historically important buildings and structures and present it to the public to create awareness and foster the narrative of 'national identity' through the exhibition thereof.

The archiving and preservation of heritage buildings is important in the fact that it embodies historical narratives such as the Alte Feste which is historically the very first building in Windhoek. The construction was commissioned by a German Imperial but was only possible through the hands of the local people that built it brick-by-brick. (fig. 26, p.27) Therefore, these buildings is not a representation of previous colonial regime; and should not be seen as such but it is the physical representation of the triumph and understanding and history of the hands that built them.

Fig.59 Wooden post to top chord connection detail of raised sorghum vernacular storage huts.
Photograph: Elao Martin.
Source: www.africavernaculararchitecture.com,2019

CHAPTER III : EXPLORATION AND THEORETICAL GROUNDING

3.1 : TOPOLOGY: CONTEXT AND SITE ANALYSIS

This chapter explores the contextual relevance for the proposal of a museum through the investigation of the quantitative and cognitive data presented. The cognitive data refers to the emotive qualities of the site and the surrounding context. It leans towards that which is subjective, almost unseen and requires an understanding beyond the factual data that is presented to make informed decisions. Contrastingly; quantitative data is the fixed data that the site and context presents.

This analysis will further demonstrate how multiple sites and contexts have been considered and how it ultimately informed the final site selection in Windhoek, Namibia.

TOPOLOGY

MACRO CONTEXT ANALYSIS

In the broader Namibian context, the capital city Windhoek is quite centrally located and is the main economic hub of the country. Bordered by the Atlantic ocean to the West its coastline is also home to two German-colonial towns.

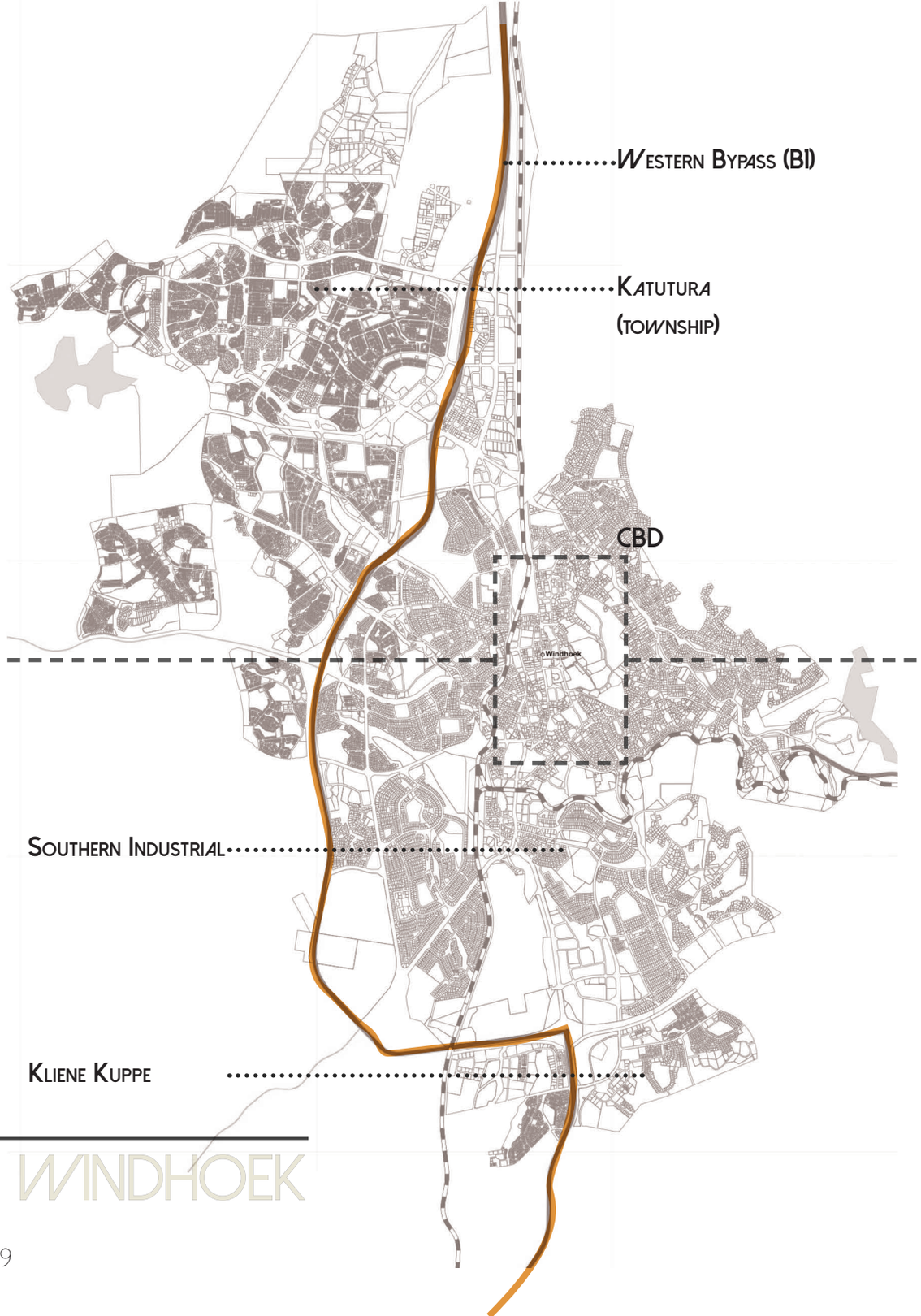
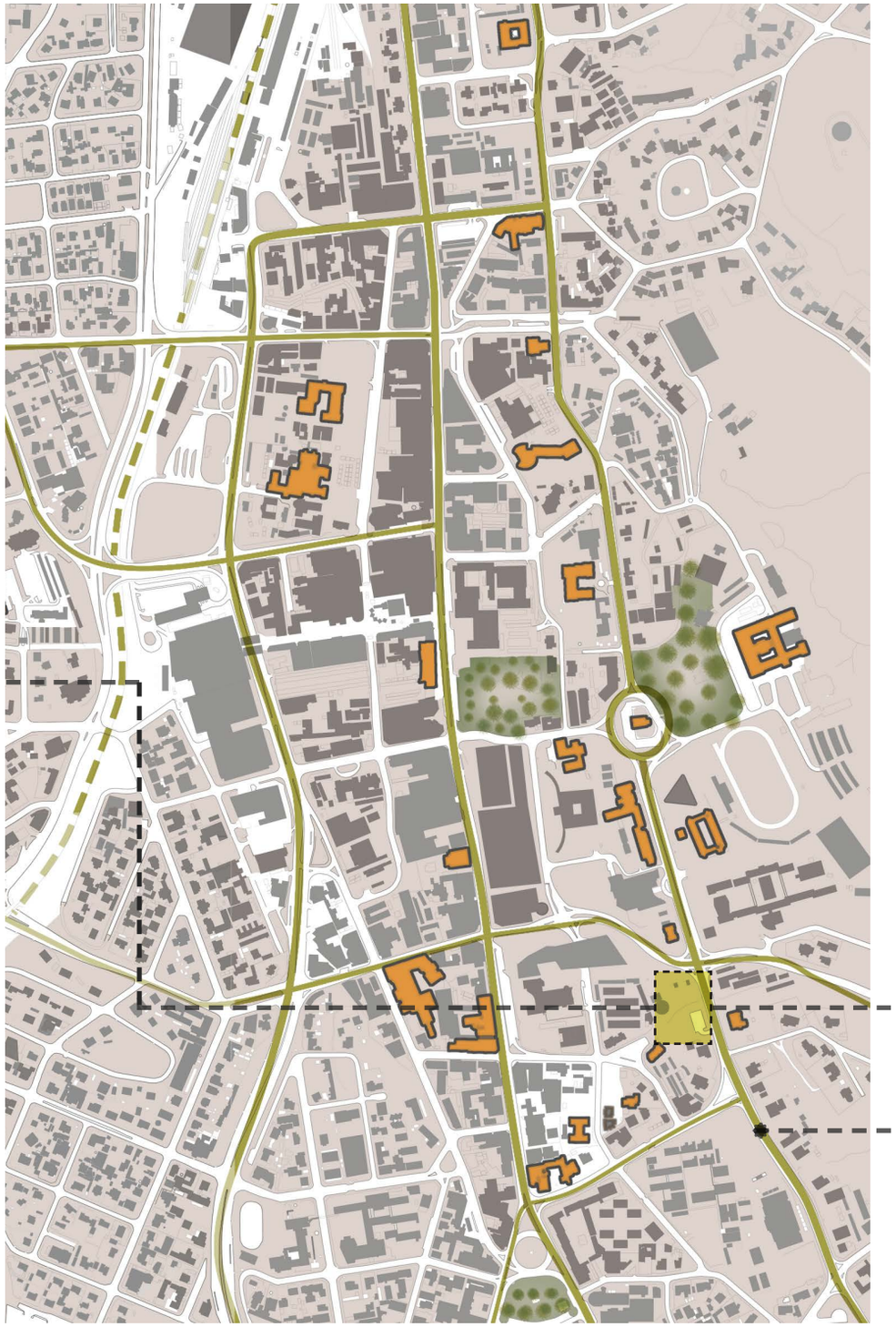


Fig. 60 Map of Namibia indicating Windhoek in relation to other major towns.



The site is located in the central business district of Windhoek on Robert Mugabe Avenue formerly known as Leutwein Street. Leutwein street is widely known as one of the first streets in the town that gave rise to modern Windhoek by the settlement of German Schutztruppe in the 1890's. (Simon, 1983: 101)

The oldest buildings particularly those that speak a German colonial architectural language are located along this street. This means the site is located in a historically important context and becomes part of a historical footpath of not only German colonial architecture but also the symbol of Independence with the location of the Independence Memorial Museum in the same street.

Therefore, any architectural intervention on this site should represent an extension to history and further address and reinforce the cultural and historical significance presented by the context.

LEGEND

HISTORICAL BUILDING

MAIN ROAD

RAILWAY LINE

Fig. 61 Heritage buildings in relation to proposed site.

DEMOGRAPHICAL ANALYSIS

The following investigation aims to understand the flow of pedestrians in the context surrounding the site. This is achieved through a general familiarization of the context as well as predicted movement patterns based on the location of institutional and commercial buildings from public transportation hubs.

The general pedestrian flow follows a north-western trajectory. This is a result of the concentration of public transport hubs which are located on the western side of downtown Windhoek. Furthermore, most of the working class live in the suburbs on the western side of the B1 high-way (western bypass, p. 59) and gives further credit to this western trajectory.

Two schools are located in the immediate vicinity of the site; Windhoek High School to the north and Delta Primary School to the south of the site (fig.62). Although not in the immediate footpath of both learners and the working class; the site is easily accessible to the general public.

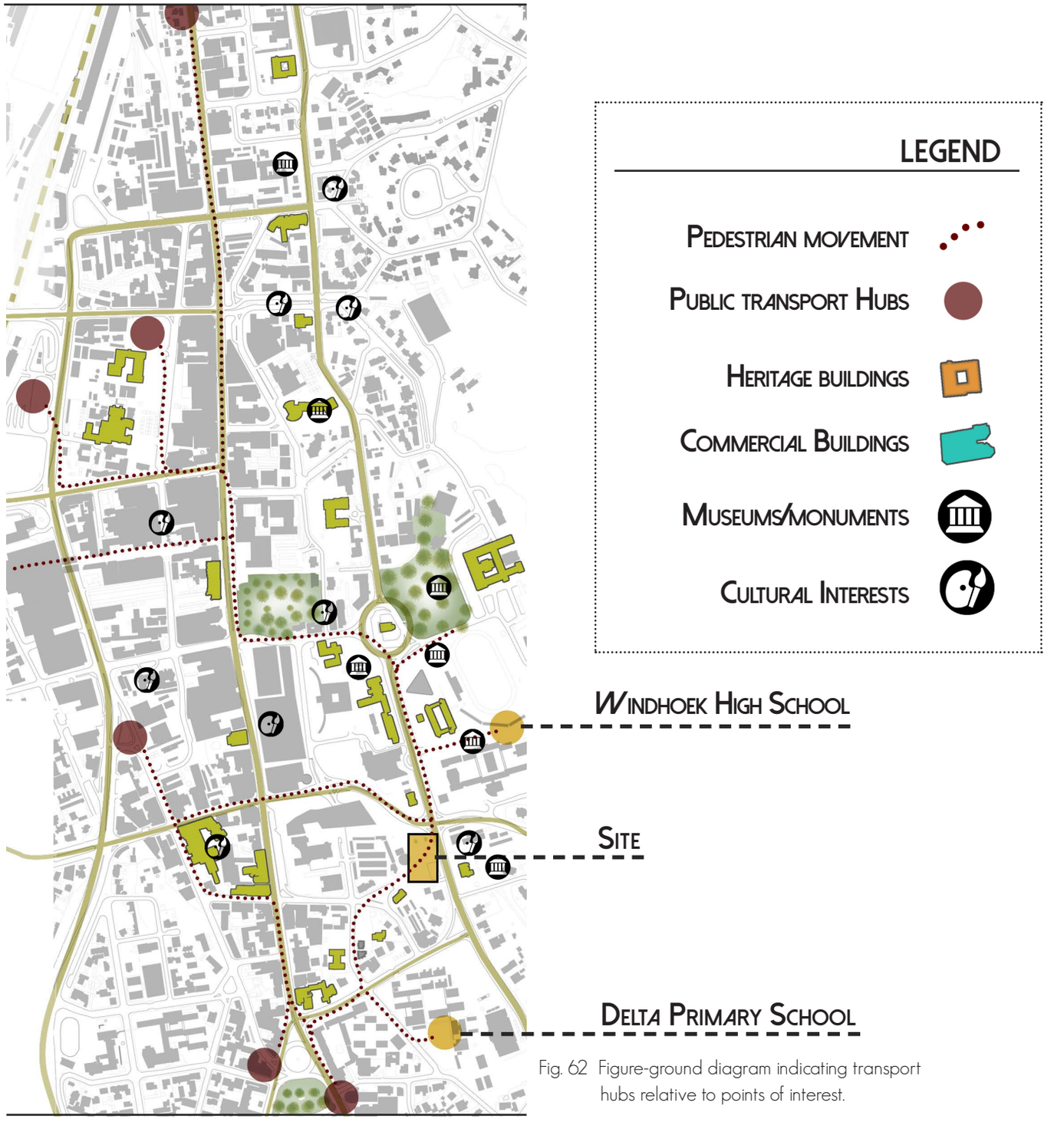


Fig. 62 Figure-ground diagram indicating transport hubs relative to points of interest.

CONTEXTUAL CATALYSTS

A 'catalyst' is defined as an event or thing that causes or precipitates a certain change or reaction. (Definition of "catalyst": Online) Climate change can be a catalyst for sustainable design as an example.

In the case of downtown Windhoek, the construction of Freedom Plaza by Tina Muwanga & Associate Architects, which commenced in 2009 comprises of mixed-use developments that became a central hub that contributes to the local economy. (Shejavali, 2008: Online) Furthermore, the proposal of the Liberation Square by Barnard Mutua Architects; a museum that commemorates Angola and Cuba's contribution in Namibia's journey to independence means a future context where these proposals and interventions become a catalyst for socio-economic and cultural development.

The proposed architectural museum however off-centre, will form a part of this broader context and will contribute to the cultural identity and unique place-making through the preservation of the historical fabric located within the context.

Fig. 63 Figure-ground diagram indicating commercial activities and buildings.

Fig. 64 Artist impression of Freedom Plaza. (www.tma.co.za, 2019)

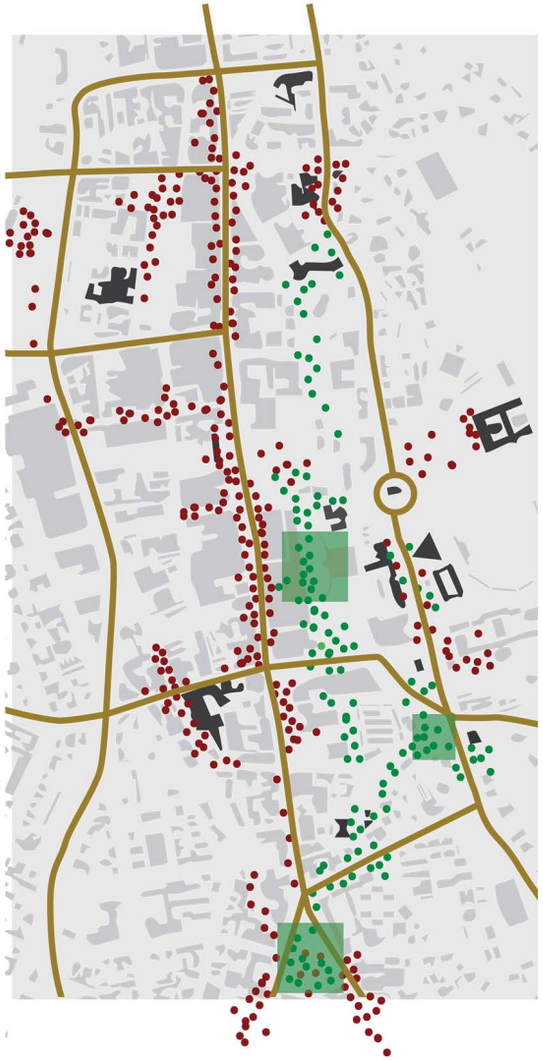
Fig. 65 Architects impression of Liberation Square. (adapted from Sam,nd)

USER ANALYSIS

On an urban scale, understanding the movement of people is vital in determining the potential position of an architectural intervention and how its functions will respond to that. Windhoek has a distinction between work-live-play environments typical of most cities. A good city will see a balance and integration between these environments. The construction of mixed-use buildings and cultural hubs and activities in the city centre suggests that Windhoek is progressively leaning towards finding this balance between work, living and leisure.

Pedestrian density in downtown Windhoek is generally more concentrated along Independence Avenue as businesses and commercial buildings are located along this corridor. With the development of Freedom Plaza, a shift in pedestrian flow is anticipated along Rev. Michael Scott Street. This shift can be crucial in fostering a balance between the cultural corridor (Robert Mugabe Ave.) and the commercial corridor (Independence Ave.) resulting in a well integrated socio-economic setting.

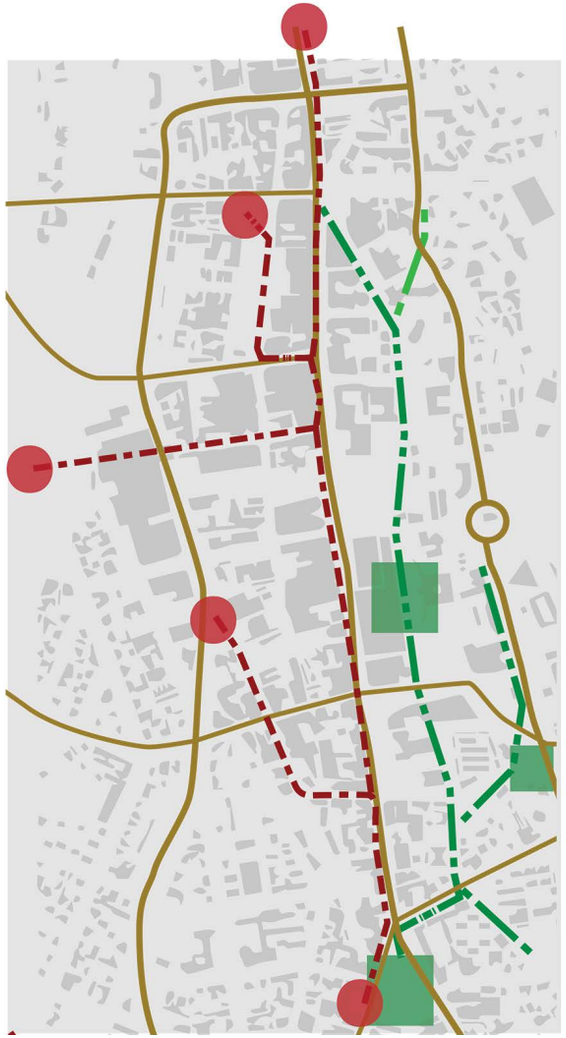
PEDESTRIAN DENSITY



CURRENT PEDESTRIAN DISTRIBUTION

ALTERNATIVE DISTRIBUTION

PEDESTRIAN FLOW



CURRENT FLOW

ALTERNATIVE FLOW

PROPOSED DEVELOPMENTS

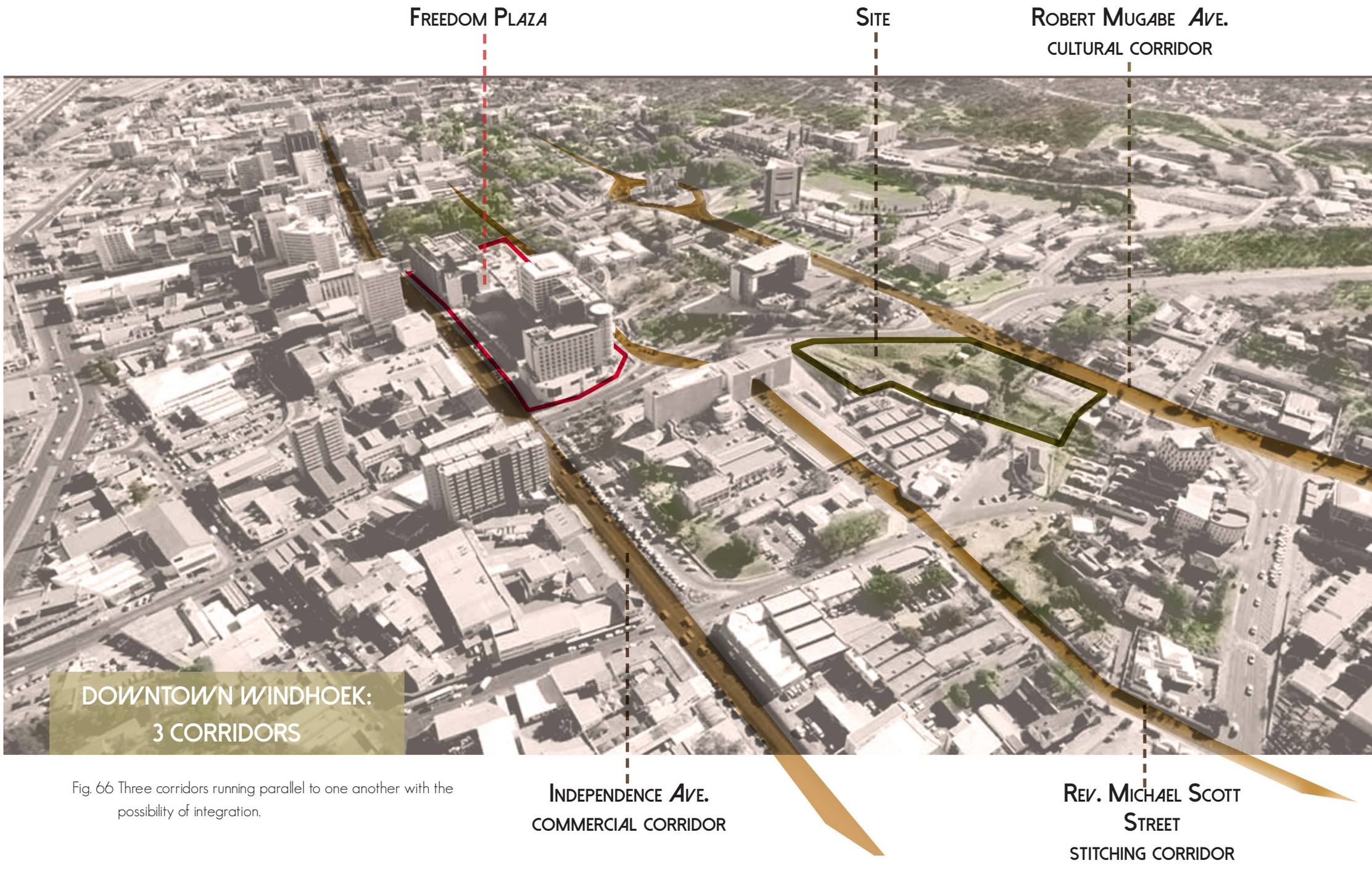


Fig. 66 Three corridors running parallel to one another with the possibility of integration.

3.2 CASE STUDY:

V & A WATERFRONT

LOCATION: CAPE TOWN, SOUTH AFRICA
YEAR: 1989 - 2019
TYPE: URBAN DEVELOPMENT

This case study aims to investigate how a real estate development makes use of contextual characteristics and possibilities to create an urban environment that is unique, culturally relevant and preserves heritage and identity.

The V&A waterfront in Cape Town, South Africa is a progressive real estate development that started between the years of 1989 and 1990 and saw the Cape Town's harbour ". . . restored to new life and vibrancy." (Waterfront Development, van Zyl: 2005) Cape Town has a rich history of trading that dates as far back as the 16th century when the Dutch established a halfway-station for ships travelling between Asia and Europe. The construction of coastal fortifications to protect against invaders further established the settlement of Dutchmen and still makes up the brief historical fabric of Cape Town's waterfront.

However, serious harbour development only started as late as the 1860's with the construction of the breakwater after which the first basin (Alfred) was constructed 10 years later to provide sheltering for ships against wells and strong winds. This was subsequently followed by the Victoria basin as the size and volume of ships increased. (Waterfront Development, van Zyl: 2005)

The 'Victoria and Alfred Waterfront (Pty) Ltd' being the umbrella body that funded and steered the development; this case-study further investigate how the existing historical context influenced and informed the decision making that led to a complimentary functional layout that is beneficial to the socio-economic and cultural development of the city. The Watershed market and Zeitz MOCAA designed by Heatherwick Studio, are only two of many examples in the context that used derelict structures for innovative reuse and to become part of a larger framework in the V & A waterfront.

The Map dated 1911, showing Table Bay Harbour including the layout of the Victoria and Alfred basins making up Cape Town's waterfront today. The map further indicates the graving dock, Craig's Battery, R.N.V.R. Drill Battery, Fort Knocke and the Military Hospital making up a fraction of the waterfront's historical footprint.
(UCT Digital Archive, 2019: Online)

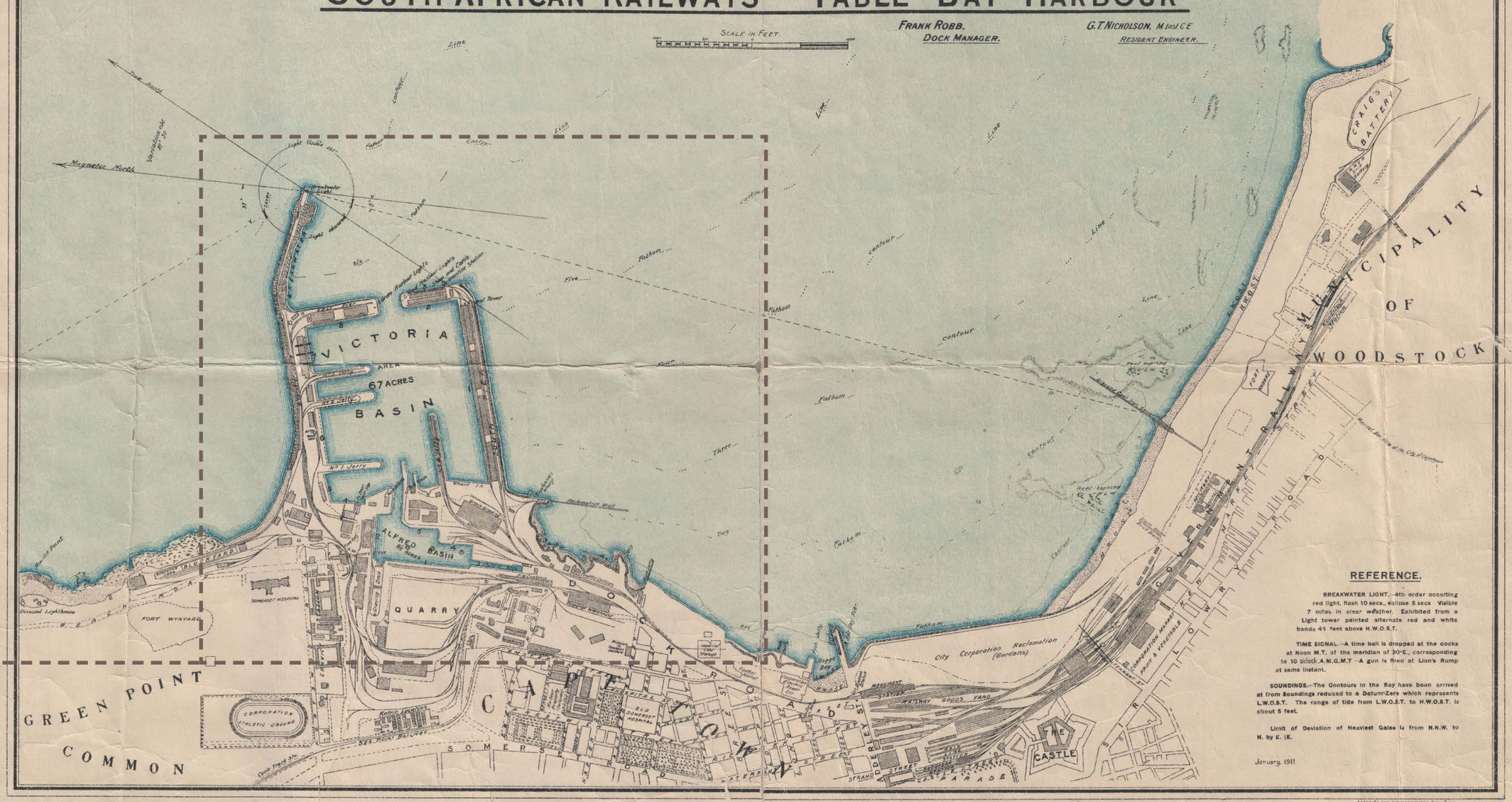
Fig. 67. 1911 Plan of Cape Town Harbour. Not to Scale.
(UCT Digital Archive: Online)

—SOUTH AFRICAN RAILWAYS— TABLE BAY HARBOUR—

FRANK ROBB, DOCK MANAGER.

G.T. NICHOLSON, M Inst C.E. RESIDENT ENGINEER.

SCALE IN FEET.



REFERENCE.

BREAKWATER LIGHT.—4th order occulting red light, flash 10 secs., eclipse 5 secs Visible 7 miles in clear weather. Exhibited from a Light tower painted alternate red and white bands 41 feet above H.W.O.S.T.

TIME SIGNAL.—A time ball is dropped at the docks at Noon M.T. of the meridian of 30°-E., corresponding to 10 o'clock A.M.G.M.T.—A gun is fired at Lion's Rump at same instant.

SOUNDINGS.—The Contours in the Bay have been arrived at from Soundings reduced to a Datum-Zero which represents L.W.O.S.T. The range of tide from L.W.O.S.T. to H.W.O.S.T. is about 5 feet.

Limit of Deviation of Heaviest Gales is from N.N.W. to N. by E. ½E.

January, 1911

ARGUS CO. LTD LITHOGRAPHERS, CAPE TOWN.

V & A WATERFRONT

The Link between The WaterShed and Zeitz Museum of Contemporary Art Africa.

The pedestrian link between the commercial hub and the art museum (fig. 68) is crucial in understanding how one building can have an influence on another in a larger urban framework. The aim of The Watershed designed by Wolff Architects, was to increase the diversity and the intensity of human interactions not only in the building but in the waterfront and the city as a whole. This was achieved by proposing a street throughout the entire building that sets up an ". . . urban pedestrian network which connects several popular areas around the shed." (Wolff Architects, 2014: Online) The shed itself is an incubator that provides opportunity for small scale businesses that really speaks of diversity and a Capetonian vernacular.

The Watershed being the business hub and amplifying the foot traffic in and around the waterfront; a certain need developed for a sort of cultural interaction and satisfaction to balance the activity. With careful consultation The Zeitz MOCAA was established and ". . . considered a good balance between civic significance and public access." (V&A Waterfront, 2019)

Although housing a world class collection of contemporary art from Africa, the museum recognizes the historical importance of the Grain Silos as a landmark in the Cape Town urban context and the preservation thereof through adaptive re-use further strengthens the heritage and identity of Cape Town's waterfront.

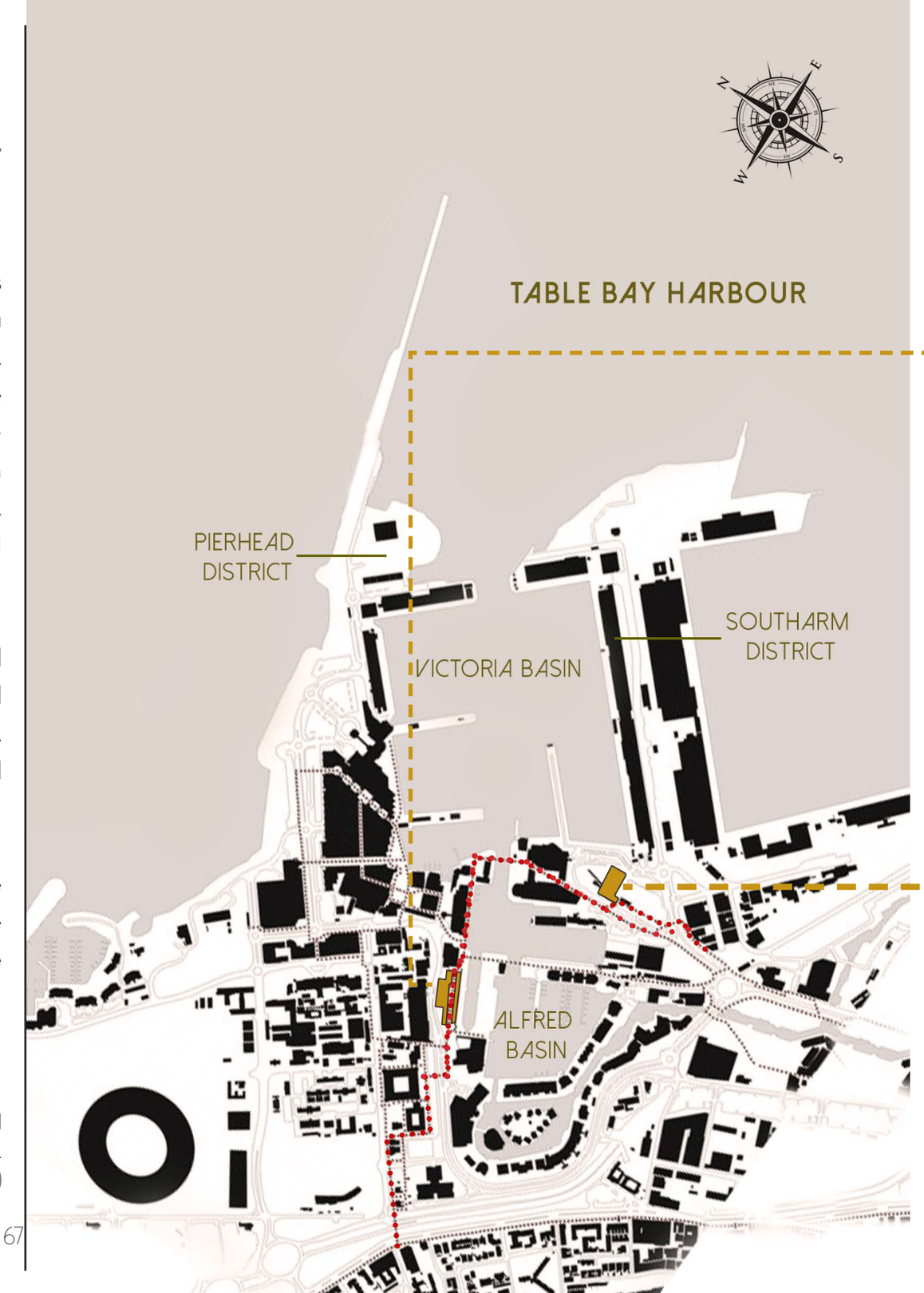


Fig. 68 Figure-ground diagram of V & A Waterfront showing the WaterShed in relation to Zeitz MOCAA.
(adapted from: Wolff Architects, n.d: Online)

The WaterShed

Design Team:
Wolff Architects
Year:2014
Type: Commercial

Fig. 69 The WaterShed forming a business and trading hub in the broader waterfront context.

Zeitz MOCAA

Design Architects:
Heatherwick Studio
Year:2011
Type: Art Museum

Fig. 70 The refurbished Grain Silo into a contemporary art museum the Zeitz MOCAA.

Fig. 71 Aerial view of Table Bay Harbour with the Victoria basin in the foreground and the Grain Silos in the middle-ground. Picture dated circa 1960-62. (Pivnic & Lewis: Online)

Fig. 72 The Grain Silo constructed in 1921 makes up an important part of Cape Town's skyline. (www.heatherwick.com, n.d.: Online)

MACRO CONTEXT: CONCLUSION

Windhoek is still well known for its German-colonial heritage and this is an important aspect to consider not only in the identity of the city but also as heritage as a whole. The city is progressively moving in a phase of becoming more integrated with new developments that has the potential to shift the current trajectory of pedestrians. With the preservation and celebration of this unique cultural and architectural vernacular is crucial in fostering a sense of identity and pride.

Similarly, to the V & A Waterfront in Cape Town; Freedom Plaza is the equivalent to the Watershed and is a potential catalyst that can re-vitalize and stitch the historical landscape and urban fabric of Windhoek providing a commercial and culturally integrated city that can foster pride and sense of identity that is unique to the city.

3.3 MESO AND MICRO CONTEXT ANALYSIS

The micro context pertains to the selected site and its immediate surroundings. This sub-chapter investigates the quantitative merits and the characteristics of the site and its selection. This includes the surrounding historical footprint, pedestrian flow through and around the site as well as its topographical characteristics. Whereas the Macro context analysis investigated the characteristics of the broader city as a feasible location for the proposed museum; the micro analysis considers the information to formulate a site and context specific design resolution.

SITE LOCATION: WINDHOEK, NAMIBIA
STREET: CORNER OF SAM NUJOMA DRIVE AND ROBERT MUGABE AVENUE (FORMER LEUTWEIN STREET)
SITE TYPE: GREYFIELD

Fig. 73 The selected site looking in a northerly direction with Bank of Namibia in the background.
(Photograph: Author,2019)

HISTORICAL FOOTPRINT

Downtown Windhoek consist of a number of historical buildings that are under heritage protection. The selected site is located relatively central in relation to these buildings and becomes a link between them. The site becomes a fare-through that acts as a link from the historical footprint in the south of the city with the Heritage buildings towards the north. The museum will create both visual and physical links to these historical buildings in an attempt to create awareness and justify its historical importance in its setting.

CHRIST CHURCH

ALTE FESTE

10-MANN-HAUS

NATIONAL THEATRE SCHOOL

Fig. 74 (Left) Figure-ground diagram of Downtown Windhoek indicating the immediate historical footprint in the context of the selected site.

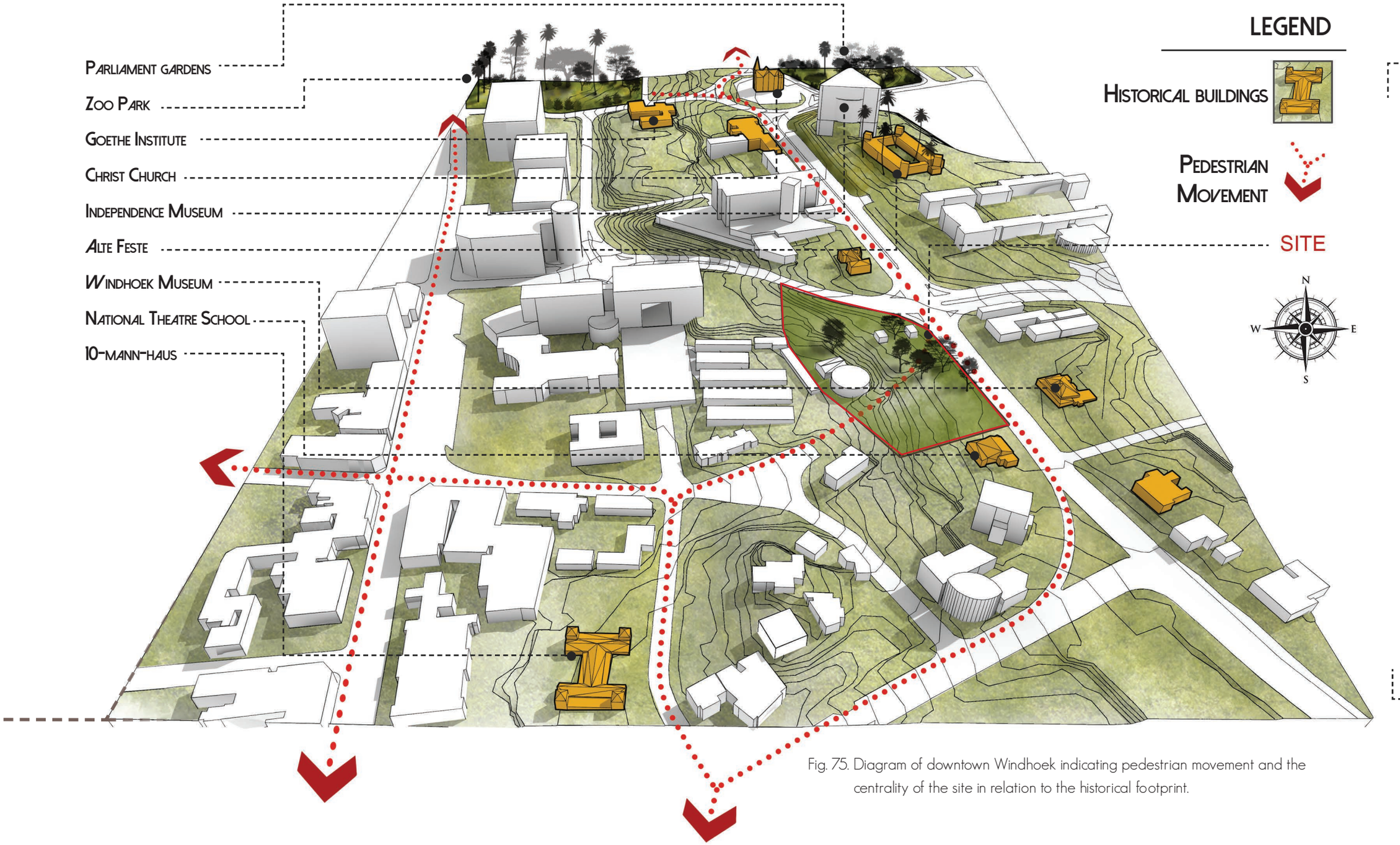


Fig. 75. Diagram of downtown Windhoek indicating pedestrian movement and the centrality of the site in relation to the historical footprint.

PLACES OF INTEREST

1. City of Windhoek Headquarters

2. Hilton Hotel precinct, Freedom Plaza and Independence Avenue Street market

3. Apostolic Church (Declared as Heritage) and Millennium House corporate Building

4. 10-Mann-haus and colonial dwellings in Garten Street precinct

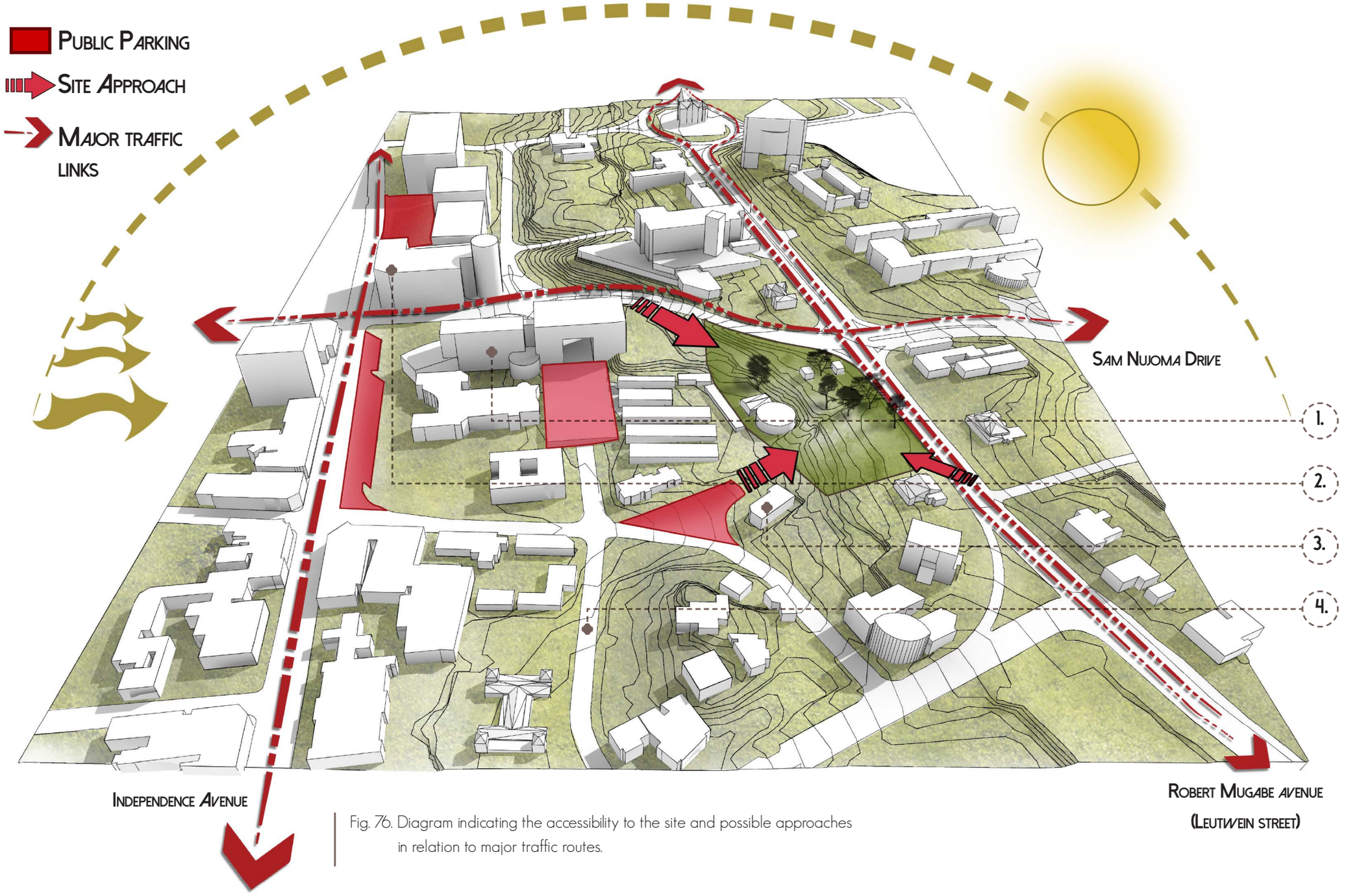


Fig. 76. Diagram indicating the accessibility to the site and possible approaches in relation to major traffic routes.

3.4 MICRO CONTEXT: SITE

This section is a brief analysis of the site on four main categories namely: contextual building footprints, site topography, movement through and around the site and finally the zoning pertaining to the site and the adjoining erven.

1. Contextual Footprint

The National Theatre School and the Windhoek City Museum on the adjacent sites are of particular German-colonial character are direct links to the site.

Site Boundaries
National Theatre School/ Windhoek City Museum
Buildings under heritage protection
Reservoir
Other

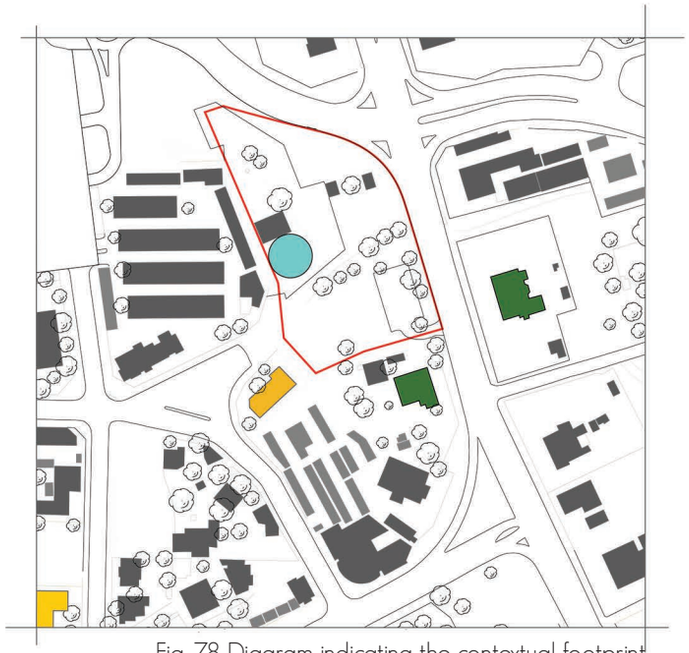


Fig. 78 Diagram indicating the contextual footprint and spatial organisation.

2. Site Section and Topography Diagram

The site is fairly steep and consist of a height difference of 10m from the east to the west of the site. This is depicted by the narrowing of the space between contour lines suggesting rapid change in topography (fig. 79). The topographic changes present interesting opportunities as well as important views to the south-west of the city.

Contextual Footprints
1 meter Interval Contours

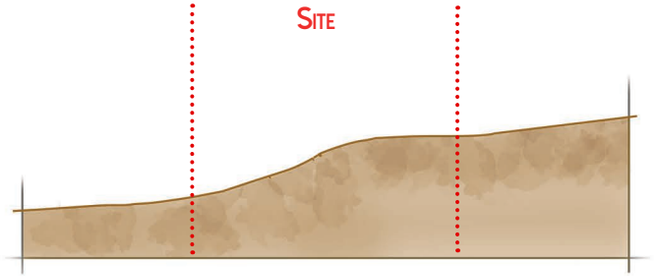
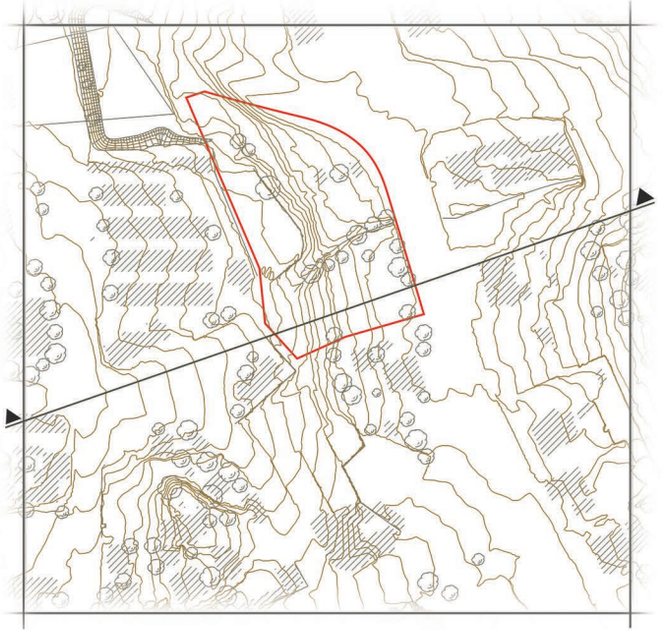


Fig. 79 Diagram indicating the steep slope of the site which present design opportunities.



3. Flow Diagram

The site is located on a major intersection namely Sam Nujoma Drive and Robert Mugabe Avenue; and thus, makes it easily accessible. The current pedestrian trajectory follows from two Schools namely Windhoek High School and Delta Primary School and both traverse around the site as students move to transport Hubs. The alternative pedestrian routes are anticipated with the current development of Freedom Plaza and proposed Liberation Square as contextual catalysts. (Fig. 64 - 65, p. 62)

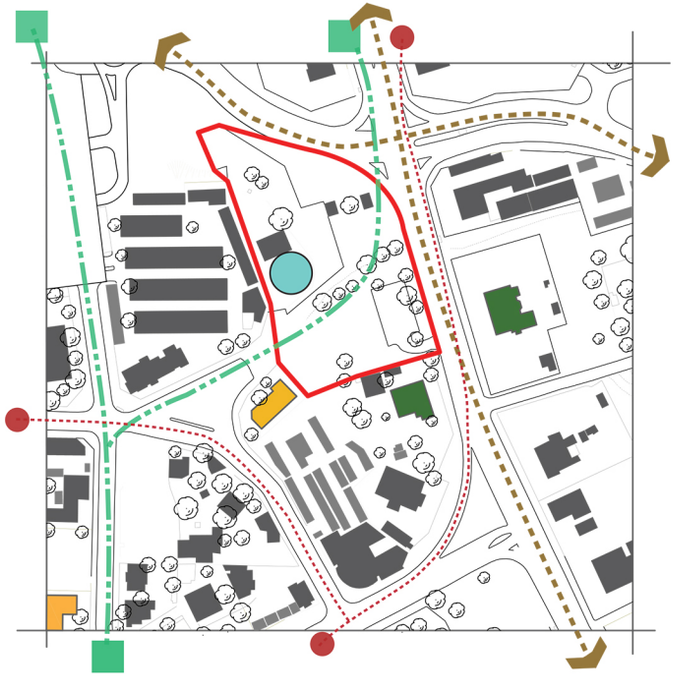
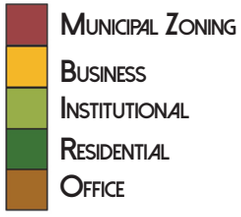


Fig. 80. Diagram indicating the various movement in and around the site.

4. Site Zoning Diagram

The site is a consolidation of the municipal zone and the residential zone and is documented in chapter (4). The context consists of a fairly mixed-use nature, with institutional zones to the north and south of the demarcated site. These two institutional zones are the aforementioned schools. The indicated residential zones dates back to the construction of German-colonial dwellings in the early 1900's which are still existing today. Most buildings on these residential zones have adopted a new contemporary function such as museums, art schools and offices.



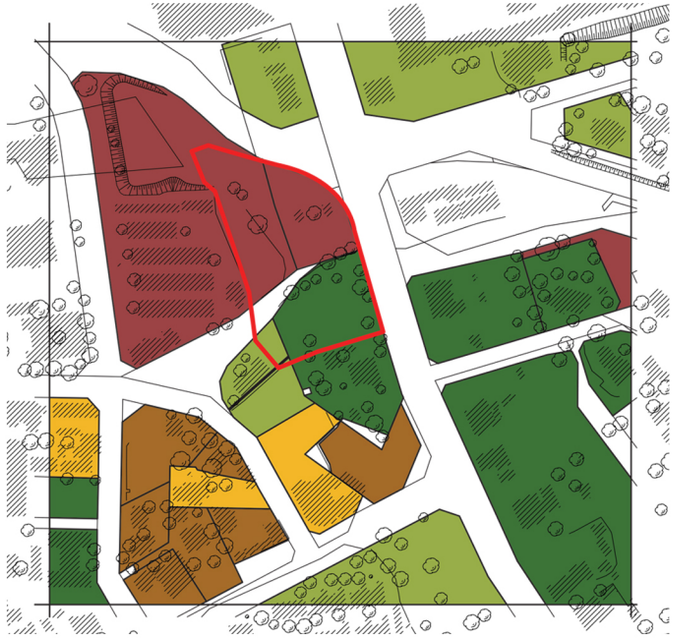


Fig. 81. Diagram indicating the mixed use nature of the context in respect of its zoning.

MESO AND MICRO CONTEXT: CONCLUSION

The selected site was considered on various contextual merits that are as equally important as the characteristics of the site itself. The centrality of the site in relation to the historical buildings creates the opportunity for the proposed museum to draw visual and physical reference to such buildings as part of its exhibition experience.

Furthermore, the site is in walking proximity of the identified heritage buildings and Freedom Plaza as an important socio-economic hub in the city and therefore the proposed museum coupled with the identified contextual features contributes to a fulfilling experience form both an economic and historically significant point of view.

3.5 : TYPOLOGY

PRECEDENT STUDIES AND ANALYSIS

This investigation and critical analysis of successful buildings can give important information to understand how a certain challenge can be approached and applied in another context. Although not only analyzed for their functional clues, precedent studies can often hand inspiration on a cognitive level and be a driving force in the whole design.

FREEDOM PARK

Mashabane Rose Architects

+

GAPP Architects

TYPOLOGY

FREEDOM PARK

DESIGN TEAM: MASHABANE ROSE ASSOCIATES + GAPP ARCHITECTS + MMA

LOCATION: PRETORIA, SOUTH AFRICA

YEAR: 2011

TYPE: CULTURAL INTERPRETATION CENTRE & MUSEUM

"... a pioneering and empowering heritage destination that challenges visitors to reflect upon our PAST, improve our PRESENT and build on our FUTURE as a united nation."

Fig.82. Freedom Park Memorial.
Source: mashabanerose.co.za, 2019

Two Sites; One Overarching Idea: Reconciliation through nation building.

The Freedom Park was constructed in two (2) phases of which the first phase includes the Garden of Remembrance and the Memorial (Fig. 82) to commemorate fallen fighters in the pursuit of peace and freedom in Apartheid South Africa. (Mashabane Rose Associates, 2019: Online)

As with many of Mashabane Rose's architectural endeavours, the intervention had to tell a story and leave an impression on its user that is beyond visual appeals; an impression that has an effect on an emotional and cognitive level. Considering this, the whole experience of Freedom Park involves a narrative that challenges its visitors to reflect on the past of South Africa, to further improve on its present state and finally to build on the nation's future.
(Freedom Park, Phase 2, 2012: Online)

The symbolic final resting place for the fighters is depicted through the Isivivane (Fig. 83), which refers to stones arranged as piles or ". . . throw your stone upon the pile" in Zulu, was used in the ancient world to mark places of ". . . spiritual, astronomical and historical significance."
(Isivivane for Change, 2014: Online)

The Isivivane is derived from indigenous knowledge systems and with the input from traditional healers to foster a spiritual presence on the Salvokop Hill as commemoration to the fallen fighters. (Mashabane Rose Associates, 2019: Online)

The Memorial and Isivivane form the ritualistic experience and the culmination of the conciliatory journey, while the Museum house the intrinsic knowledge and history of South Africa and the broader Southern African context. The two sites thus play complimentary roles to have a valued impression on its visitors.

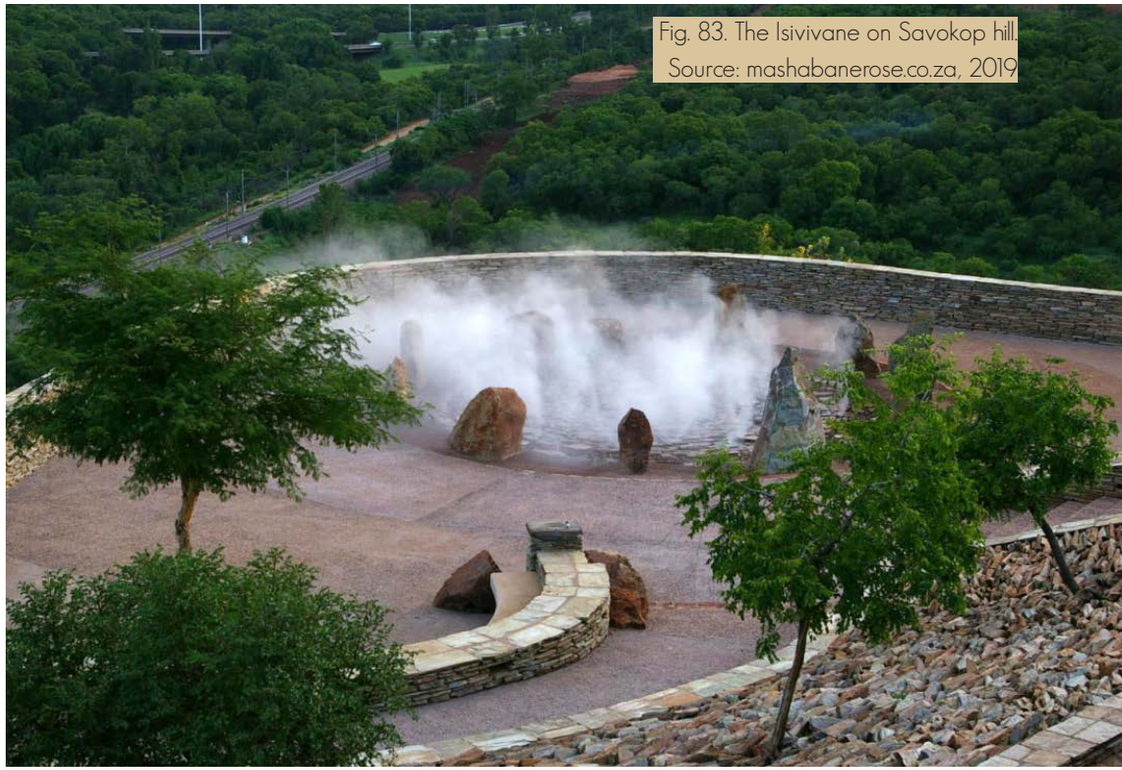
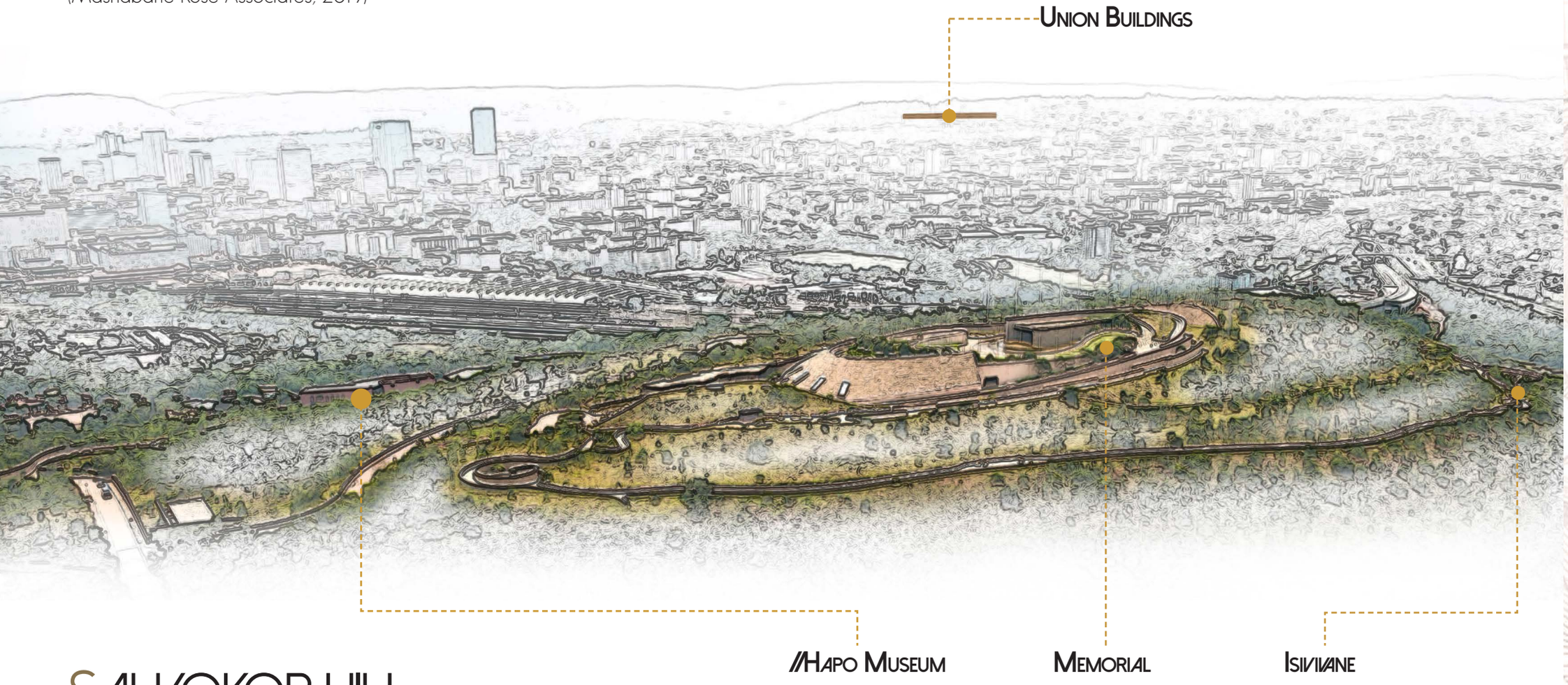


Fig. 83. The Isivivane on Savokop hill.
Source: mashabanerose.co.za, 2019

With specific focus on the second phase of Freedom Park; the //Hapo Museum, which is located on the base of the Savokop Hill; it defines the beginning of the journey of Freedom Park and the process of reconciliation. The Memorial is located on the summit of the "koppie" in similar fashion to other politically important buildings in the city, namely; the Union Buildings, University of South Africa and the Voortrekker Monument.
(Mashabane Rose Associates, 2019)

These buildings in the surrounding context form an important part of the reconciliation narrative of Freedom Park and one has to traverse through the landscape on a spiral path as the views to these significant buildings are framed before reaching the Memorial. (Mashabane Rose Associates, 2019: Online)



SALVOKOP HILL: PRETORIA

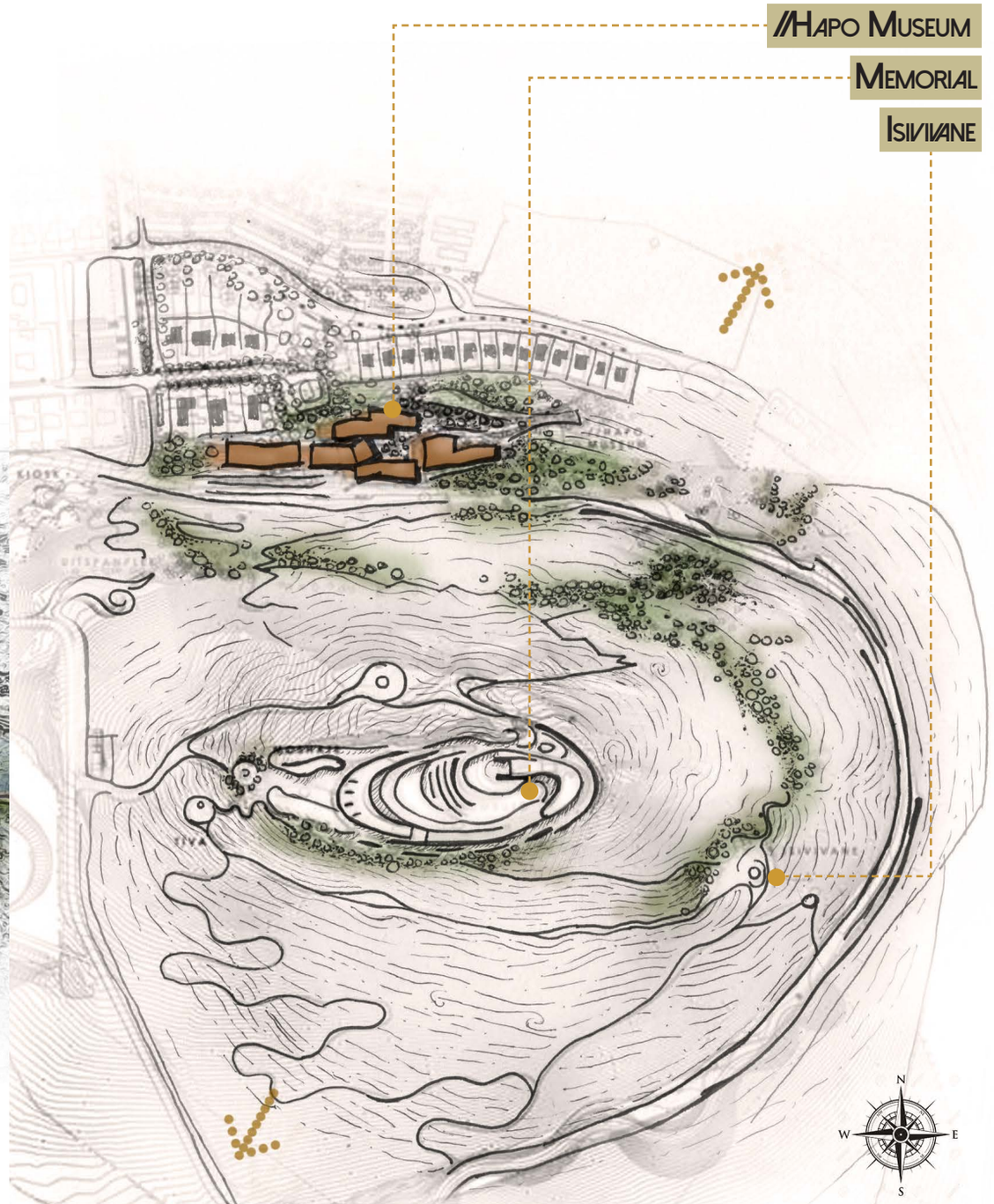


Fig. 84 Site-Plan of Freedom Park on Savokop Hill showing the pathways one uses to traverse up the site.

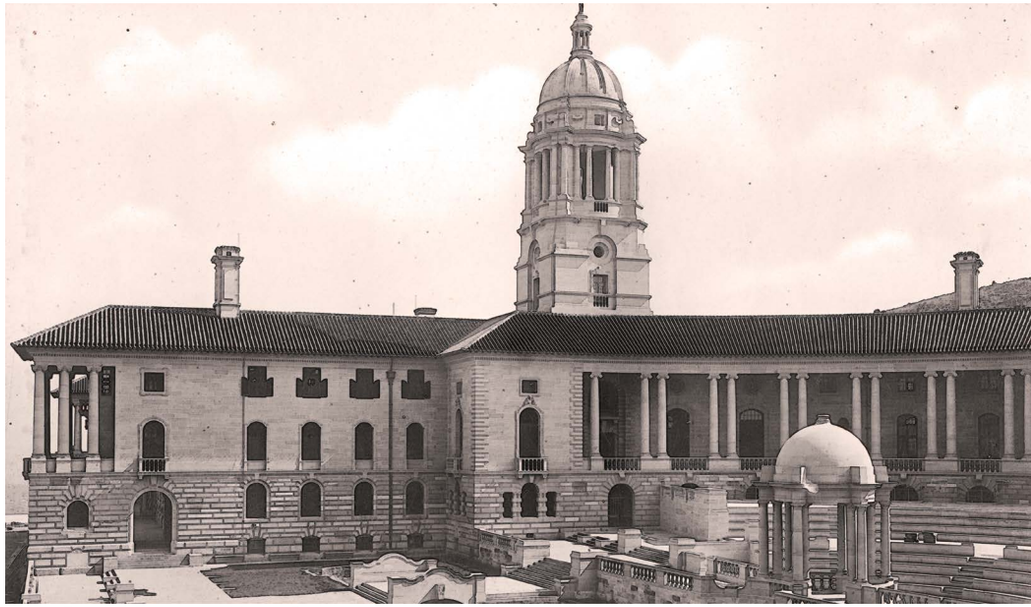


Fig. 85 The state Union Buildings on Meintjieskop in Pretoria forming part of the reconciliation narrative of Freedom Park.
(adapted from: repository.up.ac.za, 2015: Online)

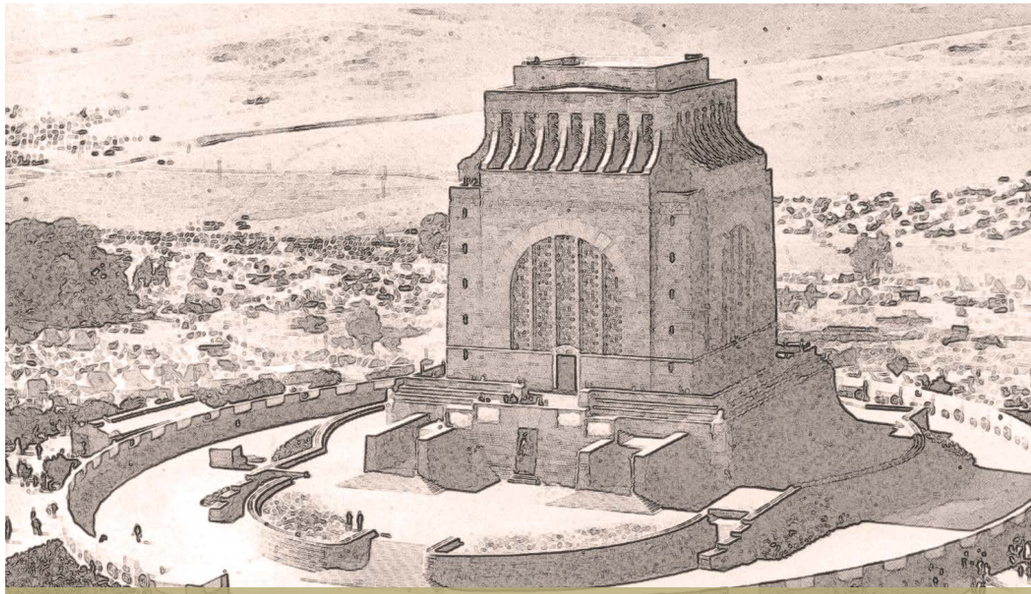


Fig. 86 The Voortrekker Monument inaugurated in 1949 forming part of Pretoria's historical fabric.
(adapted from: af.wikipedia.org, 1949: Online)

Fig. 87 //HAPO Museum's boulder-like morphology.
Source: mashabanerose.co.za, 2019

The //HAPO Museum has its own intrinsic story to tell that forms part of the broader narrative of Freedom Park's experience. With the exploration of a few concepts it was only until the visit to a homestead in Kuruman in Northern Cape when the concept that drove the design forward was envisioned. The homestead in Kuruman consisted of a "healing garden" that is surrounded by boulders and this ". . . idea of a series of large rocks or boulders surrounded by healing plants became the primary idea of the //HAPO scheme."
(Mashabane Rose Associates, 2019, para. 22)

The design followed this boulder-like morphology in which each boulder represents a story of its own. It further represents the African storytelling rituals in which histories and knowledge are orally ". . . passed on over the years from one generation to the next." (Mashabane Rose Associates, 2019)

Therefore, each rock-like formation of the museum is a physical representation of the knowledge and history passed down and exhibited to the generations of the future forming part of the narrative of the Freedom Park as a whole.

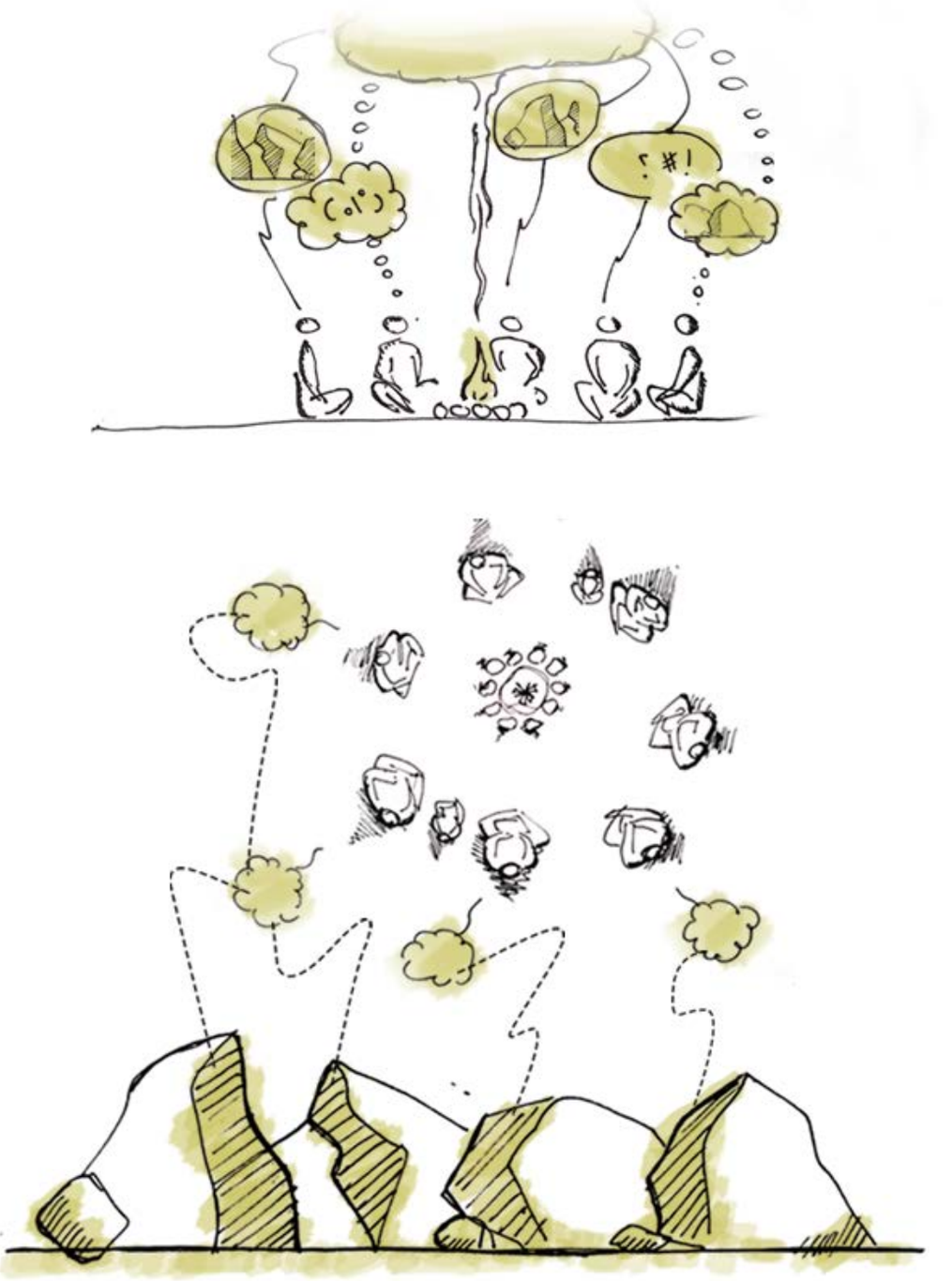


Fig. 88 (Right)The African ritual of storytelling around a central fire where knowledge is passed down from generation to generation. This knowledge is figuratively represented as rock-like formations and thus future generations can learn from it.

//HAPO Museum Programme

The relationship between permanent exhibition and temporary exhibition spaces are defined by a time-line which encourages a dialogue between the exhibition subjects. (Mashabane Rose Associates, 2019) This curation explores the subjects of earth and its origins as a general introduction followed by our African ancestry and the introduction of colonialism and the resistance against it. This time-line culminates in the struggle for and inclusive nationalism and nation building as the overall aim of Freedom Park.

The exhibition spaces are separated from the functional library, seminar and administrative facilities by a central public square, making these facilities separately accessible for visitors (fig 89).

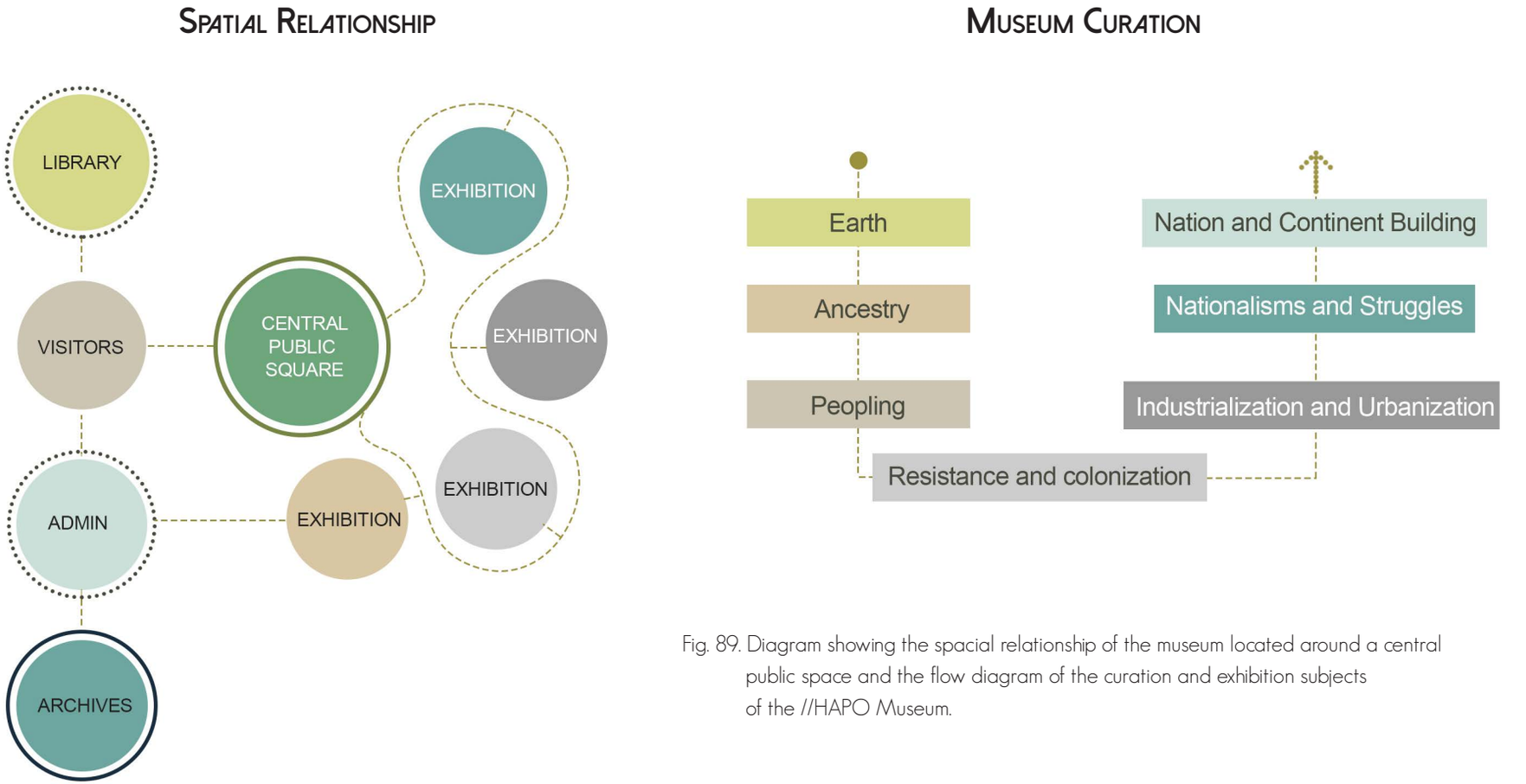
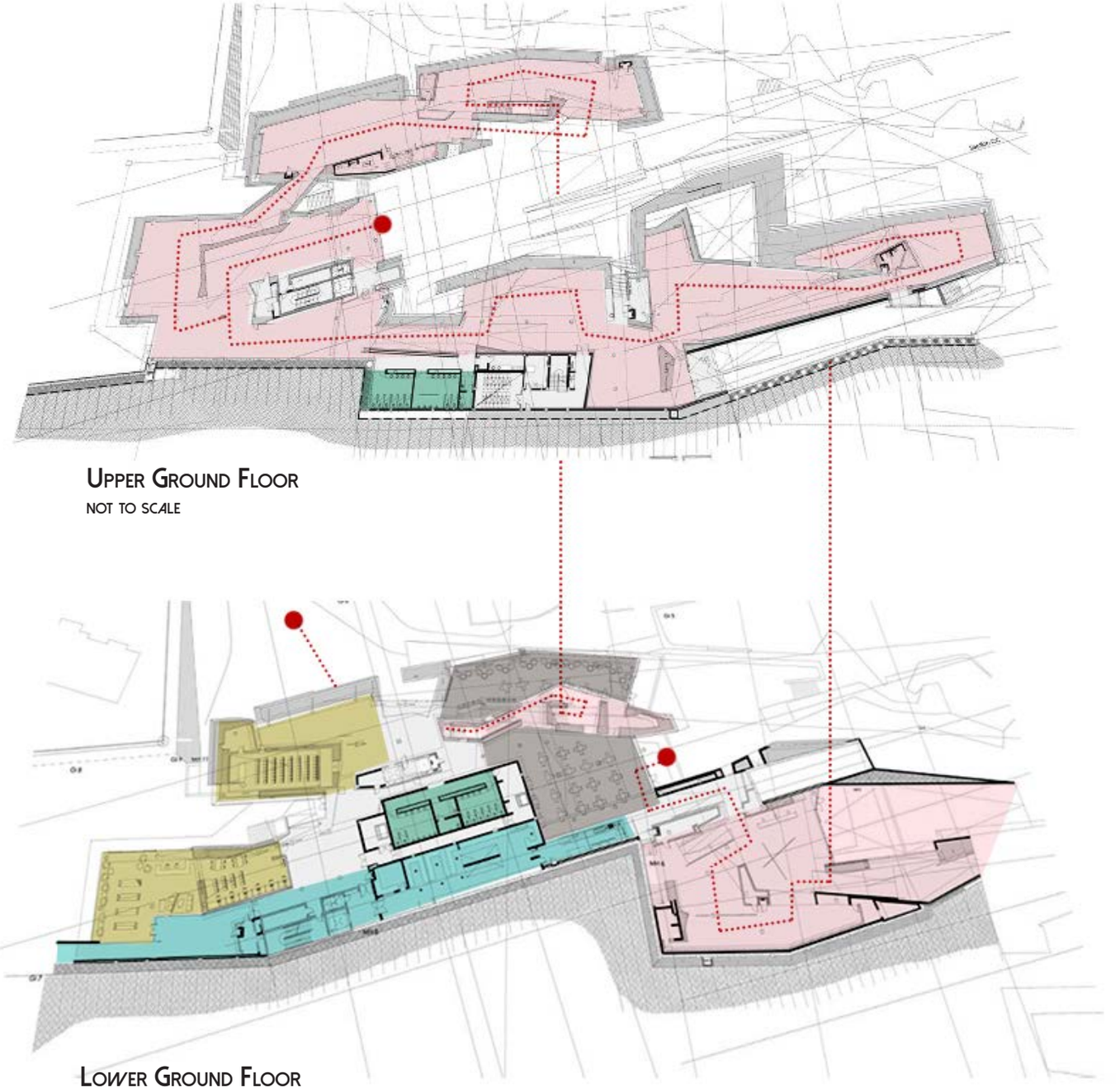


Fig. 89. Diagram showing the spacial relationship of the museum located around a central public space and the flow diagram of the curation and exhibition subjects of the //HAPO Museum.

The importance of the curation of the exhibition is reflected in the plan of the museum. A museum is almost always designed around its aims and the story it wants to communicate to the users. The //HAPO Museum follows this principle as the exhibition spaces is set at several level and rises as the user walks through. The central courtyard space is thus viewed from several vantage points and reminds the user of the plants that grow through the rocks on the Savokop hill. (Mashabane Rose Associates, 2019)

LEGEND

- Exhibition spaces
- Library / research
- Service Space
- Ablution
- Restaurant / Cafe
- Exhibition Route



Upper Ground Floor
NOT TO SCALE

Lower Ground Floor
NOT TO SCALE

Fig. 90. (Right) Floor plans indicating the route through the exhibition spaces of the museum.

FREEDOM PARK: INTERPRETATION

KEY MERITS

- Freedom Park is particularly unique and bold in achievements as a museum in the respect that it is not only rooted in its specific site boundaries but challenges the visitor to think in broader terms; both physically through the surrounding city as well as cognitively through the stories presented by a multi-cultured society.

- Freedom park uses contextual references, specifically historically important buildings and monuments such as the Union Buildings (fig. 85) and the Voortrekker Monument (fig. 86) as part of its narrative of reconciliation. These buildings are visually linked and framed as one traverse through the landscape on Savokop Hill.

- The //Hapo Museum use boulder-like morphology in which each boulder is a metaphorical representation of a set of knowledge passed down from generation to generation. In essence it informs the building's functional and spatial organization. (Fig. 88)

- The //Hapo Museum's curation follows a gradual progression in subject matter to build its narrative. (Fig. 89)

PRECEDENT *ANALYSIS*: CONCLUSION

APPLICATION TOWARDS A DESIGN SYNTHESIS

- The //Hapo Museum is successful in the contextual references it creates through its context; in a similar approach the proposed museum and archive centre will draw visual and physical reference to the historical buildings in the surrounding context of its site. This is achieved through the strategic site selection that locates the site central to the historical footprint along Robert Mugabe Avenue.

- The key buildings to be framed in the context are: the Alte Feste (German-colonial fort), Christ Church, 10-Mann-House and the New Independence Memorial Museum as an architectural reference.

- The proposed museum will form a similar curated exhibition that is a linear and progressive exploration of architecture in Namibia.

In conclusion, the //Hapo Museum can be interpreted as an intermediate reference point that connects the broader city with the Freedom Park Memorial on the summit of the Savokop Hill. It provides the crucial knowledge to the visitor on their journey to reconciliation. In reference to this interpretation, the proposed museum and archive aims to uphold a similar vision to be a platform of communication within the city of Windhoek and the country as a whole; to not be a final destination but an intermediate reference point that creates awareness and opens new ways of interpreting historical architecture.

3.6 : MORPHOLOGY: THEORETICAL GROUNDING

THE CULTURAL SYNTHESIS THROUGH ARCHITECTURAL PRESERVATION IN NAMIBIA

INTRODUCTION.

This dissertation forms part of the universal attempts and progressive search for cultural unification and understanding through recognition and heritage preservation. The discourse stems from the diversified cultural background that is home to Namibia and the immediate Southern African context with its diverse and rich cultural history. This history is often regarded in the lights of social segregation, division and resentment. One needs to acknowledge the emotional depth of such a topic and take careful consideration before proposing a restorative process. This emotional restoration will open the conversation for a new collective living, social acceptance and regard of our cultural individuality.

Therefore, this research wishes to respect this individuality and portray it in a fashion that gives it credibility and importance through the preservation of its cultural artefacts. Once this individual and cultural significance has been established; a common ground is sought after in which this diversified culture can meet one another to celebrate a new found identity that signifies its acceptance and unification.

> "We may live without her, and worship without her, but we cannot remember without her. How cold is all history, how lifeless all imaginary, compared to that which the living nation writes, and the uncorrupted marble bears! - how many pages of doubtful record might we not often spare, for a few stones left one upon another."
>
> - John Ruskin

John Ruskin was a 19th century architectural theorist and critic who wrote The Seven Lamps of Architecture; a book-long essay in which he lays down seven moral principles to guide sincere architectural practice. (Shrimpton, 2019: Online) One of the lamps, "The Lamp of Memory" specifically deals with heritage and the preservation thereof. For Ruskin, buildings and ruins is the only tangible and visual link to history, for they are the eyewitness and the progressive result of a continuous passing time. He compares the scenery between that of a newly discovered

John Ruskin explains the importance of preserving ruins or artefacts of historical significance by stating that our history will be cold; as will our imagination be if such is not studied or written about. Often, a lot of doubt can be averted by ". . a few stones left one upon another. . ." referring to the preservation of buildings, structures and monuments.

In a multi-cultural context these artefacts becomes crucial points of inquiry to interpret, understand and learn from other cultures.

Fig. 91. The Ruins of Great Zimbabwe.

countryside and old and long known lands. He states that the former knows none of the struggles and achievements of mankind, ". . . neither the birth, nor the dissolution of empires; . . ."; while we can relate to the latter because we know them, whether it is through the glory or the suffering, for they have been with us through the great achievements of mankind. (Ruskin, 1851, p. 313) He further continues to emphasise that the feelings one would experience is more intense ". . .when there are visible and tangible memorials of the events." (Ruskin, 1851)

Therefore, it is important to realize the value of both tangible and intrinsic heritage artefacts to its cultural group. In a multicultural context, it becomes increasingly challenging but also equally rewarding when all differences is brought to equilibrium and portrayed as equals. For in all our cultural differences there is but one common ground, and that common ground is architecture. This architecture manifests itself as buildings, monuments, ruins, indigenous structures, homesteads and landscapes.

These constructs are often the only physical remains outside of museums that can stimulate a sense of belonging, identity and serve as a reminder of our cultural origins. The celebration of this tangible remnants is an approach this dissertation pursues to achieve such unification and acceptance.

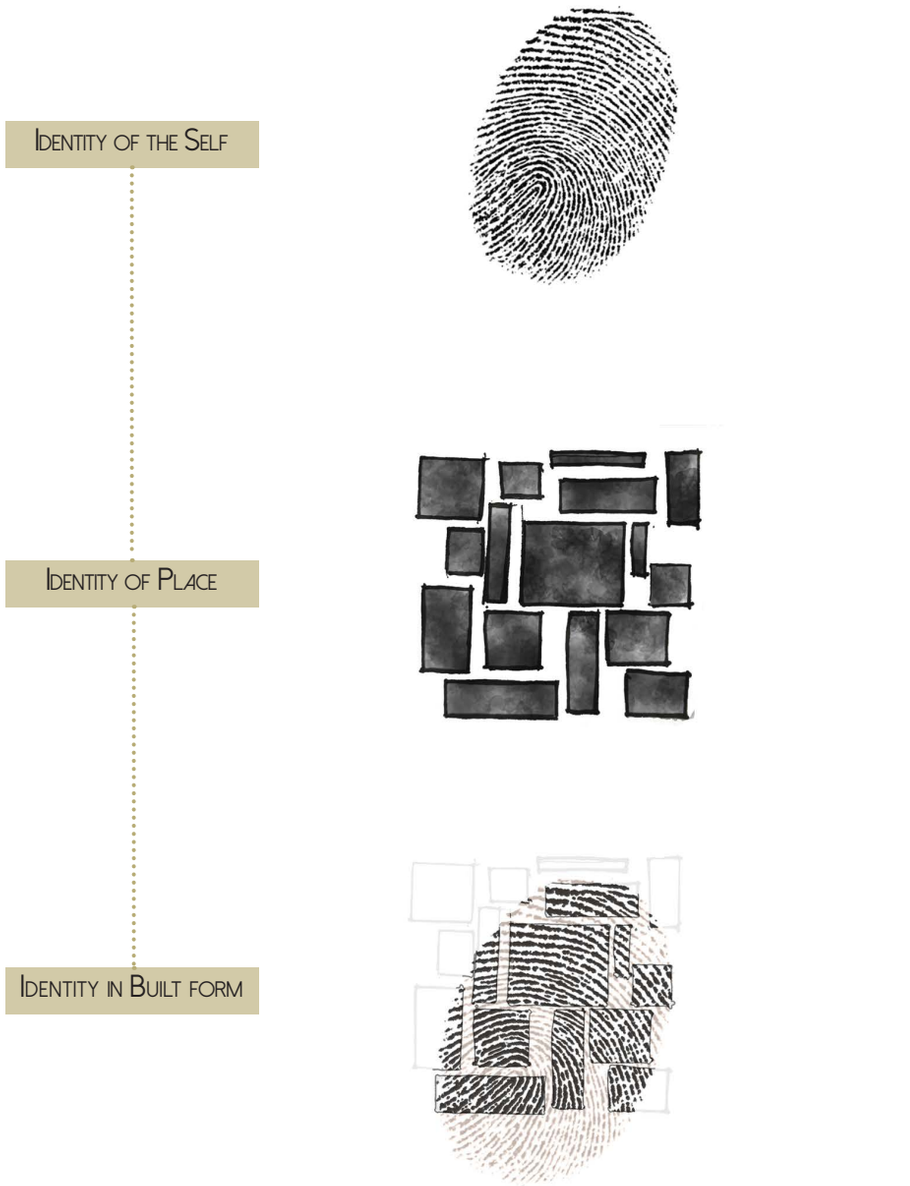


Fig. 92. Interpretation of Norberg-Schultz's identity of the self, identity of place and identity in architecture.

Defining Architectural Heritage in a Post-Colonial Context.

A leading American journal in the pursuit to do a feature article on the "... great epochs of African history. . .", sent a team of photographers to document monumental architectural illustrations and features. However; upon returning, the photographer's first comment was, "All we could find were a bunch of mud huts!" (Prussin, 1974, p. 183) In excuse of all ignorance on the part of the photographers; perhaps the response would've been far more perceptive if anthropologically inclined individuals made up the team of photographers. However, this team of photographers is a representation of the general population and thus their perception of architectural illustrations is a true demographical indication of what is understood about indigenous African vernacular architecture. Prussin (1974) states in this regard that the comment made by the photographers is a reflection of a prevailing attitude that "... monumentality and permanence are prerequisites to architectural definition ... identity and meaning." (p. 183)

The earliest inhabitants of Southern Africa were hunter-gatherers dating back as far as the 10th century CE. (Salokoski, 2006, p. 58). Their lifestyle required their settlements and shelters to be of a fairly impermanent nature. This meant that they could move and travel across vast areas of land and resettle based on the availability of water, rains and the movement of animals.

Therefore, the constructing of fixed structures was not important to the hunter-gatherer. Thus, this prevailing attitude identified by Prussin, reveals a fundamental limitation in what the definition of architecture encompasses. If in any consolation, the hunter-gatherer upon the domestication of animals; adopted a more balanced agro-pastoralist lifestyle and therefore became more rooted in their setting and could develop on their unique cultural identity and their expression through physical artefacts.

Christian Norberg-Schultz, an architectural theorist well-known for his discourse on the phenomenology of place and architecture states that the "[h]uman identity presupposes the identity of place . . ." and that the true meaning of the architecture is defined accordingly. Therefore, the fundamental principle of architecture is to understand the true "vocation" or calling of a place. (1997) (as cited in Salman, 2018, p.3) Thus he draws a clear link between cultural identity, place and architecture. In this sense, architecture, vernacular in particular; can be defined as ". . . a product of people, place and culture." (Salman, 2018)

To define architectural heritage is to look at architecture as a characteristical by-product of human settlement and evolution of its society over time that is unique and specific to that setting and context.

Therefore, architectural heritage is in essence an extension of "cultural landscapes" which is defined as ". . . a diversity of manifestations of the interaction between humankind and its natural environment." (ICCROM, 2005, p. 22) It can be further described as a landscape that ". . . retains an active social role in contemporary society closely associated with the traditional way of life, and in which the evolutionary process is still in progress." (ICCROM, 2005, p. 23)

These aforementioned definitions are important in the context of Namibia which is still defined by its multicultural identity. In the pre-colonial context of Namibia dating before the period of the 19th century; the country was largely occupied by the Khoisan, Damara, Ovambo, Herero and the Nama ethnic groups that are now indigenous to Namibia. (Simon, 1983, pp. 55,56) Each ethnic group occupied a certain geographical location based on their migration patterns. Their unique 'human identity' coupled by their specific geographical locations resulted in settlements and expressions that are specific to that natural environment.

Vernacular architecture and artefacts are thus encompassed by this natural and cultural landscapes of which many ethnic groups still practice their 'traditional way of life' in a contemporary post-colonial era. The importance of its retention lies in the merits of its significant material evidence of its evolution over time through the very settlements, the homesteads and architectural representations.

In contrast, the introduction of German architectural styles through the two most influential architects that defines the historical built environment of towns in Namibia, Gottlieb Redecker and Wilhelm Sander (Nikolai, 2018); meant that they had to consciously apply their German-inspired skills to the environmental characteristics of Namibia. What this resulted in is a language of architecture that is specific to the context and is commonly referred to as 'Verandah style' in a design effort to curb the extreme heat and sun that is synonymous with the name 'Namibia'. Therefore, the term 'colonial architecture' although reference to the German colonial regime, should not only be seen in the lights of that; but for its physical representation and manifestation as a result of the natural setting it finds itself in and as a true representation of the hands that built it making it a true 'vocation' of its place. Although in contrast to the vernacular in its monumentality; both can be regarded as heritage in their own merits.

Theoretical Framework: The Aesthetics of Ruins.

The theoretical framework is based on Robert Ginsberg's theories of Ruin. He formulated two basic theories on approaches toward ruins. The first being the Romantic attitude and the second being the Classical attitude towards ruins. There is a fine line between the two concepts but by applying it to local examples and precedents it becomes clear how the theories are interpreted in the Namibian and Southern African context. Each theory will be broken down to determine how one would derive a design approach from them. A logical question would be if it is not better for architecture and design to safeguard ruins as opposed to the ruins actually informing the design? This question comes in light of architecture that is often uninformed and has no sensitivity to its context. Therefore, the standpoint taken in this instance wish to address the ruin as the important entity itself, either by virtue of its history that it possesses or for its pure aesthetic qualities. Only then a proposed design in or around such ruin will have meaning. To impose a design approach without understanding the value of the historical building and context can mean the miss of a good opportunity for society to understand its significance.

However, before one can delve in the Ginsbergian concepts; it is crucial to understand the term "ruins" and "heritage" in context of this argument. Ruins or 'ruin' is commonly understood as the reference to something that is destroyed or broken beyond repair so that nothing can be salvaged from it to restore it. In architecture, ruins apply to buildings that suffered some form of destruction, weathering and neglect. But not all buildings that suffered destruction are considered to be ruins. Robert Ginsberg states from an aesthetic point of view that ". . . a ruin is the irreparable remains of a human construction that, by a destructive act or process, no longer dwells in' the unity of the original, but may have new entities that we can enjoy." (Ginsberg, 2004, p. 285) He makes further reference to the expression of ruins that have formulated as a result of such neglect and deterioration. He states that when one visits a ruin, we ". . . get away from the world to get a glimpse of what the world was, and hence of what it will be." (Ginsberg, 2004, p. 315) In this instance he is referring to the inevitable passing and ruin of us as mortal beings and all our associated achievements as mankind.

The ruins of Great-Zimbabwe of the Shona civilization dating as far back as the 15th century; is one such example of the idea of ruins that Ginsberg tries to convey. (fig. 93). Furthermore, on the West coast of Namibia, in the sandy deserts lies a more recent established town that are in ruins; Kolmanskop is a ghost town that has succumbed to the extreme forces of the Namib Desert and renders itself to the Ginsberg appeal of 'ruins.' These two examples will form the basis of what Robert Ginsberg

defines as the 'romanticist approach' to ruins.

In contrast to this; with the absence of its aesthetic qualities, ruins can be regarded as a "cultural treasure" depending on its historical significance. (Ginsberg, 2004, p. 286) It is within this light that architectural heritage prospers. D, Cosgrove (2003) concurs with this idea of heritage by stating the following:

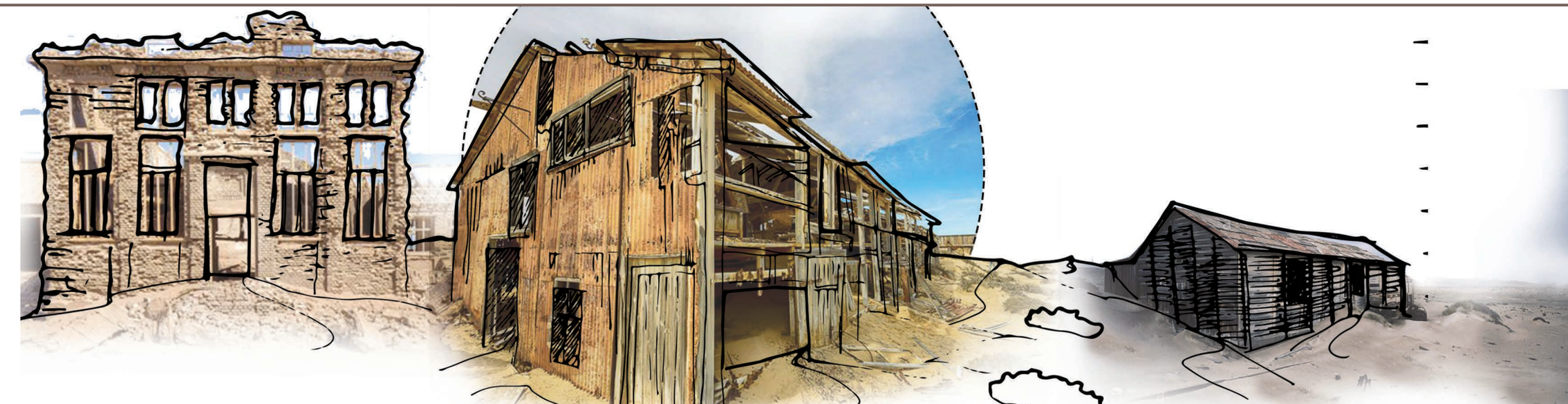
"Heritage is artefactual more than textual, it is realised in material objects such as works of art or craft, tools and buildings, sites, special places and even whole landscapes, or else it is performed in speech, in dress or in rituals. . ." (as quoted in McGregor & Schumaker, 2006, p. 650)

It is not always that a certain building or monument possess aesthetic merits that are embodied in ruins; but they do possess certain rituals from the past that is specific to a certain culture that justifies its existence and gives it historical significance. The Burra Charter, which is ". . . a set of principles that have been adopted to create a nationally and internationally accepted standard for heritage conservation. . ." (2017); describes cultural significance as ". . . aesthetic, historic, scientific, social and spiritual value for past, present or future generations."

(The Australia ICOMOS Charter for Places of Cultural Significance, 2013)

Therefore, in the context of this dissertation, ' heritage' means buildings and structures in particular that may not fit the Robert Ginsberg's conceptions of ruins; but are important in their embodied rituals, history and contextual significance. This heritage in contrast to the timeless ruins of Kolmanskop, are the historical buildings and structures identified in Windhoek and the vernacular structures of Indigenous Groups in Namibia.

Fig. 93. (Below) Author interpretation of Ruins at Elizabeth Bay; one of the ghost towns in the Namib Desert.

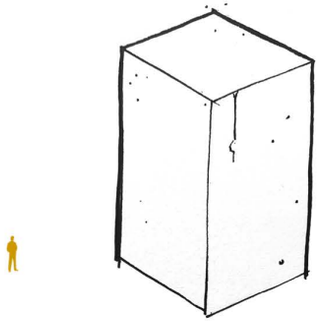


"... AESTHETIC value is found in what the RUIN IS, not what the ORIGINAL WAS"

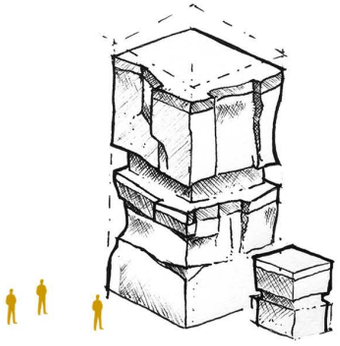
Fig. 94. Ruins at Kolmanskop

The Romanticist Attitude towards Ruins.

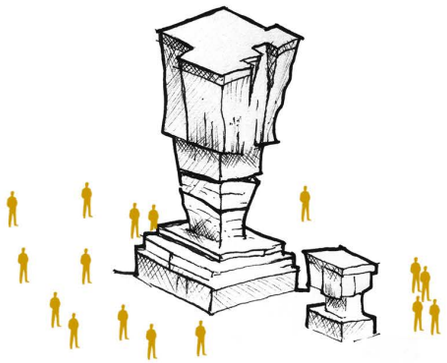
Fig. 95. (Left & Above) Author interpretation of the ruins at Kolmanskop, in southern Namibia, depicting the romanticist scene associated with ruins.



THE INVISIBLE WHOLE



RUIN IN PROCESS



RUIN IN CELEBRATION

Fig. 96. Diagram illustrating the romanticist attitude towards ruins.

The romanticist attitude towards ruins is not an encouragement to view ruins in a certain light, but instead it is everything from the approach to the mood and setting of the ruin in its context. Everything surrounding the ruin is part of, and contributes to its ruin atmosphere. For that reason, it adds to the whole experience. Ginsberg describes the romanticist ruin as one that is ". . . remnant of an irrecoverable past and thereby weighted with the burden of loss." (2004, p. 315) The feeling of melancholy is brought about this type of ruin. It can be described as the type of ruin that has crumbled to the test of time, enduring physical destruction by nature but sill staying majestic enough to announce its presence. It is the kind of ruin not easily discovered and often found in remote locations. This ruin is perfect in its state and do not need to be intervened upon. Ginsberg argues that, "[t]he ruins claimed from destruction is a ruin lost." (2004, p. 319) Therefore, not everything that is in ruins need to be restored.

Kolmanskop is a ghost town in the South-west desert of Namibia. It used to be a prospective mining town that was founded in the early 1900's on the onset of the discovery of diamonds. Even with the remoteness of the location and harshness of the desert landscape, the ". . . place was vibrant, alive and the social life was multi-faceted and luxurious as the gems that sustained it." (Kelly, 2018)

However, after World War 1 and the fall of German rule coupled with the crash of diamond prices after the Russian Revolution, and no other vital economic activities; it meant the town was unsustainable and soon became a ghost town. Being located in the Namib Desert, the strong winds and scorching sun took its toll on the urban fabric of the town. Here Ginsberg says that "[w]hat we have taken from the Earth will be retaken by the Earth." (2004, p. 317) The buildings in isolation is in destruction, but viewed as a whole they become ruins in their setting. The shifting dunes are testimonies of the time and with the buildings almost submerged; adds to the solemn atmosphere. The ghost town have sparked international interest and have since become a tourist destination. Certainly, the cultural and aesthetic value in the landscape outweighs the need to restore the town as Robert Ginsberg argues against the restoration of ruins to its former state. One need not be an archaeologist to make the conclusion that the town in its current ruined setting offers more than if it should be restored. For that reason, it is able to attract tourists from as far as Europe to visit the site.

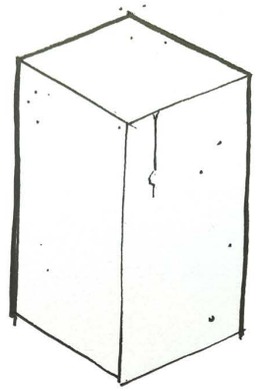
"...the UPLIFTING experience in REGAINING the ORIGINAL."

The Classicist attitude toward Ruins.

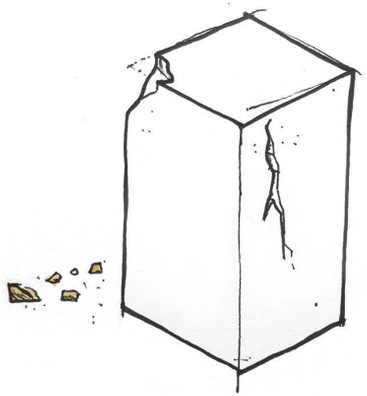
The definition of a classicist according to Mirriam Webster Dictionary refers to a person who prefers a "... traditional and usually graceful and simple style in art, literature, music ..." and specifically architecture. (Mirriam Webster Dictionary, n.d.) In the same regard, Ginsberg's classical approach towards ruins is more logical, formal and exhibitive. It is as if the ruin itself is not enough and needs to be pampered to express its true value. Ginsberg contrasts this approach to the romanticist approach by saying that the ruins of least value to the romanticist is one that is neat and carefully reconstructed, signposted and plagued with human agencies. (Ginsberg, 2004, p. 319) The agencies he is referring to being the parastatals in which the trust to safeguard the prolonged existence of such ruin is given to. They exist in the form of museum associations, archaeological institutions and NGO's.

Nevertheless, the classical approach is not necessarily wrong; in fact, it can be considered to be the more sustaining attitude towards ruins and sites of cultural significance. The classicist view focus more on portraying the site, monument or building as an exhibition hence Ginsberg refer to it as an attitude that is "...fond of plans, models, replicas and reconstructed drawings and inclines towards repairs, preservation and restoration." (Ginsberg, 2004, p. 324) The Burra Charter is one such policy developed by the International Council on Monuments and Sites (ICOMOS) that "... provide guidance for the conservation and management of places of cultural significance." (The Australia ICOMOS Charter for Places of Cultural Significance, 2013) It is a guiding policy for agencies that manage such sites and thus the vast majority of ruins and heritage site fall under the classical approach. The sheer desire to preserve such sites for future generations means some sort of intervention is required. The classical approach should not be seen in a negative light and as opposing to that of the romantic view. It should be embraced as an alternative approach to present a ruin in the best yet most conservative way possible. Ginsberg says that often from a classical point of view; a ruin may need additional layers such as its history and perhaps art history to support its current existence. This history can often times be retrieved by the careful peel-back of layers to reveal what is important. (Ginsberg, 2004) Figuratively speaking, the constant research on a ruin can reveal its intended purpose and its use throughout its lifetime. This history can add value and credibility to the ruin and create a new sense of awareness.

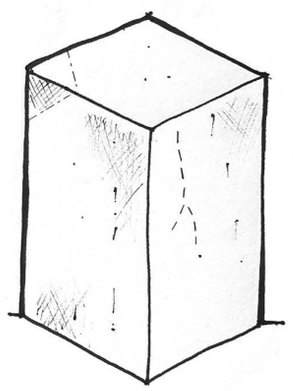
In contrast to the scenic ruins of Kolmanskop fitting the romantic profile, there are a few proclaimed heritage buildings in Windhoek, Namibia that often sparks interest and adds character to the Windhoek city fabric. It should be noted that these buildings are not necessarily in a ruinous state, but they are what can be referred as



THE WHOLE



DAMAGE V DECAY



THE RESTORED WHOLE

Fig. 97. Diagram illustrating the classicist restorative attitude towards ruins.

'ruins in time', their history is in a state of degradation and neglect and this threatens the integrity of the building as a whole. Besides having and 'old' character, people often do not know the history behind the buildings and thus they are treated with indifference.

Therefore, the Classical view will not apply in a literal manner but more on a subconscious level to repair the history of the buildings to create an exhibition of the buildings. One such building the 10-Mann-haus which is currently under Namibian Heritage protection, designed and constructed by architect Gottlieb Redecker in 1906 to 1907 sparked particular interest because of both its current physical state and the history it possesses. The 10-Mann-haus was constructed for 10 German officials of the then German-colonial period. The buildings use changed considerably over time and at one point it also served as a woman's hostel and today it is still used as accommodation for government officials. However, upon conducting a photographic documentation of the building one would question the seriousness of the heritage body in terms of safeguarding buildings entrusted to it. The tenants are not aware of the historical value of the building and thus they can attempt to alter the building according to their preferences often making cruel adjustments.

In respect to Ginsberg's theories on ruin, from an aesthetic standpoint the 10-Mann-haus is not a ruin yet, but it is in such a state of degradation that it needs to be repaired, reconstructed and brought to its former glory. Robert Ginsberg argues that one ". . . must not allow sadness caused by what the original has suffered to interfere with the uplifting experience of regaining the original." (Ginsberg, 2004) This is particularly true to the 10-Mann-haus, that if it continues to suffer neglect it will reach a stage where it will be of no value and eventually face demolition in the wake of future development. The classicist view of ruins requires the support layers and human intervention that supports the retention of historical buildings. With the rich history of the 10-Mann-haus and the fact that it is not complete lost means there is a possibility of its restoration.

Fig.98. Framed view of the Villa Savoye as a concept of the promenade.

The Promenade In Architecture

The promenade has been a tool used by architects to capture and enhance the experience of an event. Bernard Tschumi argues that "There is no space without event" (Tschumi, 1996, p. 139) and French theorist Henri Lefebvre, shares the same views as Tschumi that architecture reflects an intrinsic human need to move. (Hessain, 2013). Whether unintentional or as a result of conscience progression; humanity's journey has always been characterized by movement through time and space. This movement can be through time, space and perspective. The following is a supporting theme on the importance of the promenade in architecture, its origins, purpose and how it applies to the proposed design concept and scheme.

The theory of the promenade is mainly attributed to Le Corbusier and his two buildings the Villa La Roche (1923) and the Villa Savoye (1929-31). The La Roche he described as an 'architectural spectacle' that offered a series of perspectives and frames as the traveller makes their way through the building. (Le Corbusier and Jeanneret P, 1929 p.60 as cited in Promenade Architecturale, 2016: Online). Similarly, he describes the Villa Savoye as an architectural promenade whose architectural poetry and value can only be experienced in movement. (Le Corbusier and Jeanneret P, 1934, p. 24).

The guiding principle in the concept of the promenade is that of movement and transition marked by the ever-changing perspective. It can be described as a journey that is aimed at evoking the visual sense of the traveller. This is very evident in the Villa Savoye where the ramp acts not only as a guiding path but as a 'ceremonial ascent' that makes the traveller even more conscience of the journey and its pause places. (Promenade Architecturale, 2016: Online)

It is thus through movement and framed pauses that the promenade offers a narrative of the building itself and the perspectives that it captures. Hessain (2013), states in her dissertation on 'The Importance of the Promenade in Architecture' that, Wim Wender explained that stories and narratives give meaning to people's lives. He further argues that sequence and coherence is what makes it possible for people to understand and find understanding in the phenomena that surrounds them. (Graf, 2002). Similarly, the promenade endeavours to do the same by constructing a sequenced narrative through which one walks; receiving framed chapters of a whole until the full story is understood at the end of the journey.

Fig.99. Framed view of the Villa Savoye as a concept of the promenade.

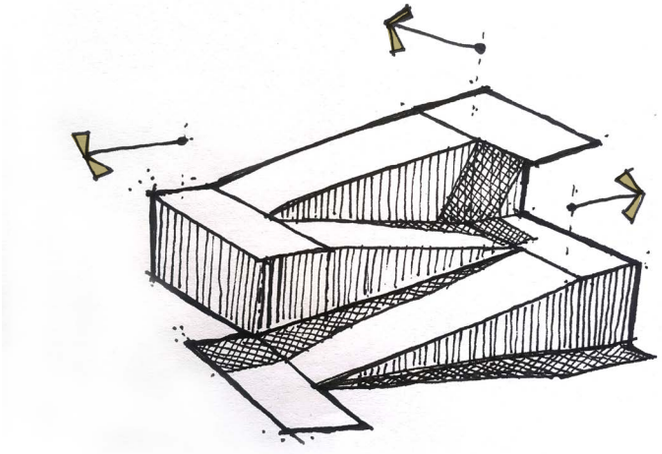


Fig.100 Simplified diagram of the promenade: a ramp coupled with framed views.

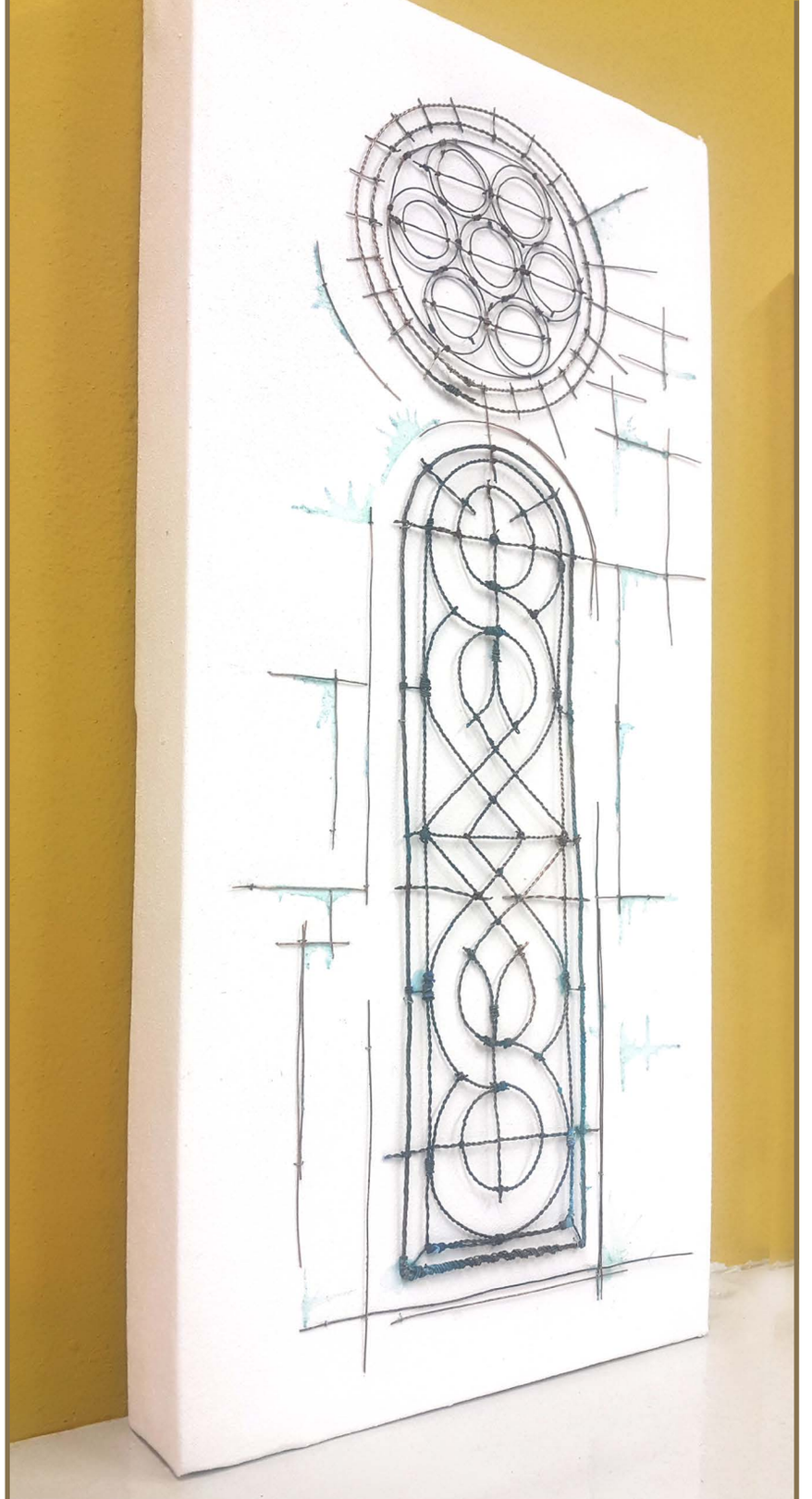
The proposed intervention aims to do the same by capturing the views towards the historical context as the visitor moves through space and time. The promenade is an experiential route that will take the traveller through space as well as through a narrative of the history of Windhoek by framing the selectively framing historical buildings as they come into view. The museum's ramp will serve as a passage through time while also representing a passage through history, creating visual and physical links to the various historical building across the city.

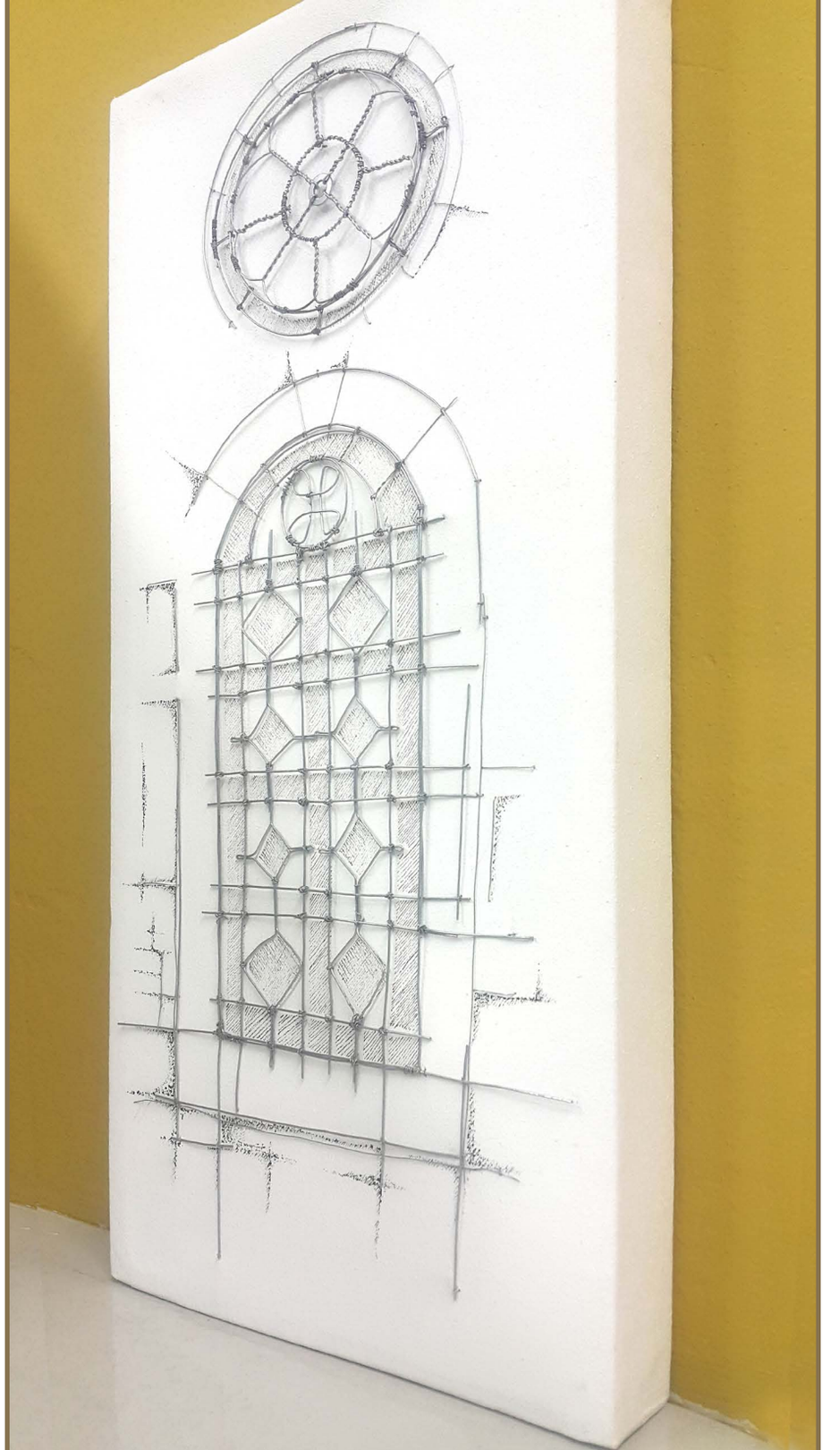
Hessian argues that a promenade demands a 'frame' or event (Hessian, 2013) which is why the capturing the essence of the historical buildings is key. The caption must go 'beyond the frame' and give the narrative of the history which can be tied to our present. She goes on to describe how the promenade offer an opportunity of self-reflection for the traveller to experience a sense of meaning and understanding. The purpose of a museum is not only the state what is in our past but to give meaning to our present by honouring and acknowledging our past and giving us the opportunity to learn and progress as humanity. Similarly, the solicited movement effect of the promenade will give the traveller knowledge and understanding as the progress through the building.

Furthermore; the concept of the proposed museum acting as an axis and reference point in the city. History is to many people the anchor upon which we understand or present and build our future. Similarly, the promenade is described by Le Corbusier as an 'axis' upon which basic human understanding and movement is based. (Le Corbusier, 1960). The museum will therefore act, in function and in form as an axis to the city, a grounding element that represents not just the past by our progression into the future.

In conclusion, the museum is a promenade, a physical ramp taking the traveller through a space, as well as a path taking the traveller through time by offering a narrative of the architectural history of not only Windhoek, but the country as a whole. The promenade's sensual experience shall be marked and determined by the frames through which one is given actual and visual access to history, closing each chapter as they move onto the next as the narrative becomes more and more complete. The museum's promenade will act as an anchor to history, reflection point to the present a symbol of transition to the future.

Fig.98 & fig. 99 Source: Archdaily.com (Online)
Photographer: Unknown

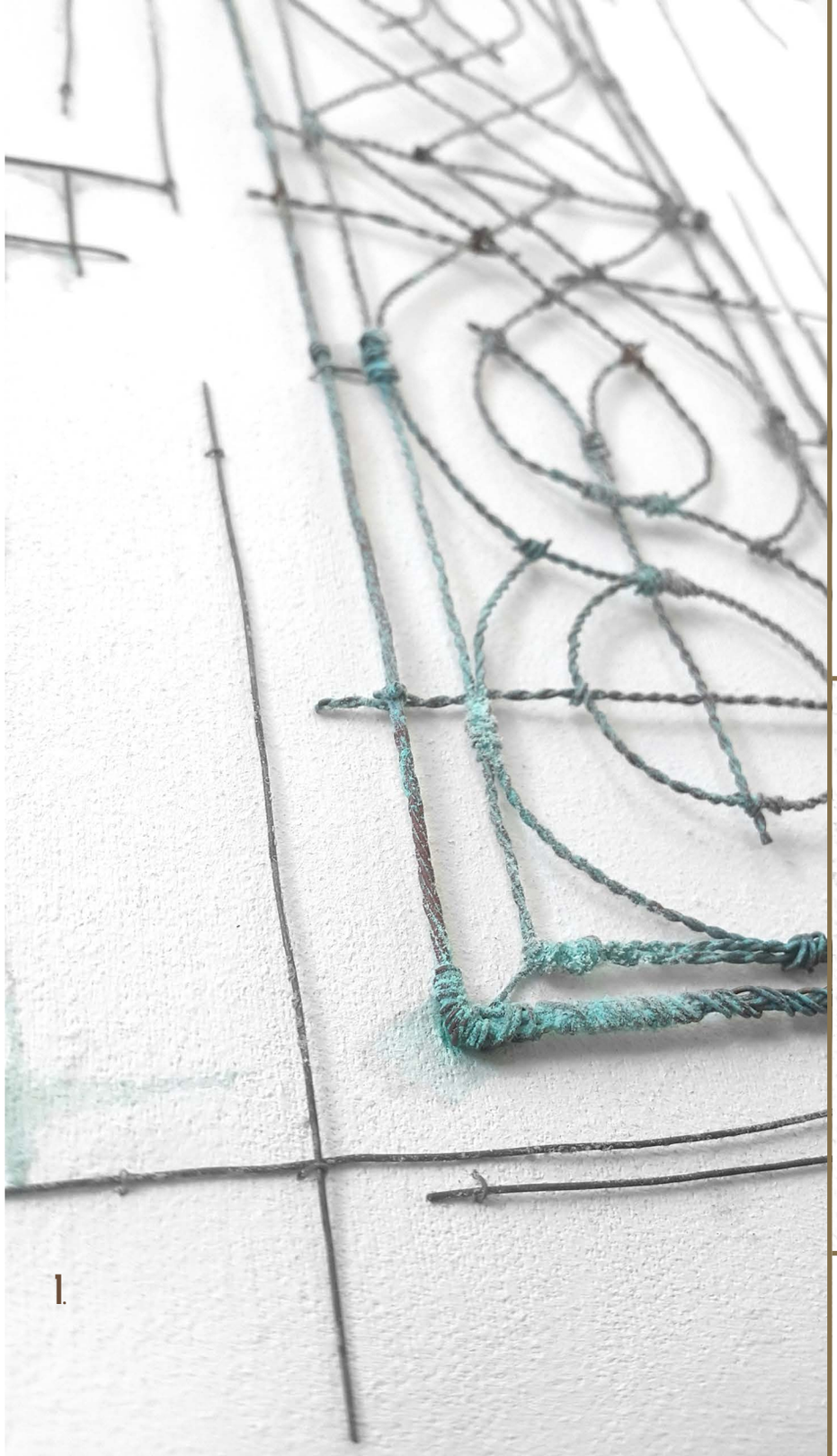




3.7 TOUCHSTONE

THE CANVAS AS THE PLATFORM FOR ARCHITECTURAL PRESERVATION

The touchstone represents the capturing and exhibition of two contrasting architectural styles in one unified presentation through cotton canvases. The first architectural style namely; the Namibian vernacular, is represented through the intricate copper wire details that is woven into the canvas. The wire forms a window detail from one of Namibia's iconic Architectural landmarks, the Christ Church in Windhoek. The copper window detail on close inspection forms a rusted patina and figuratively represents the fragile and decaying state of vernacular architecture in Namibia. The second canvas, made of stainless-steel wire also woven into the canvas, represents the more rigid and timeless German Colonial Architectural styles that forms part of the Namibian history. It is also subjected to decay but at a slower rate then the former copper representation.

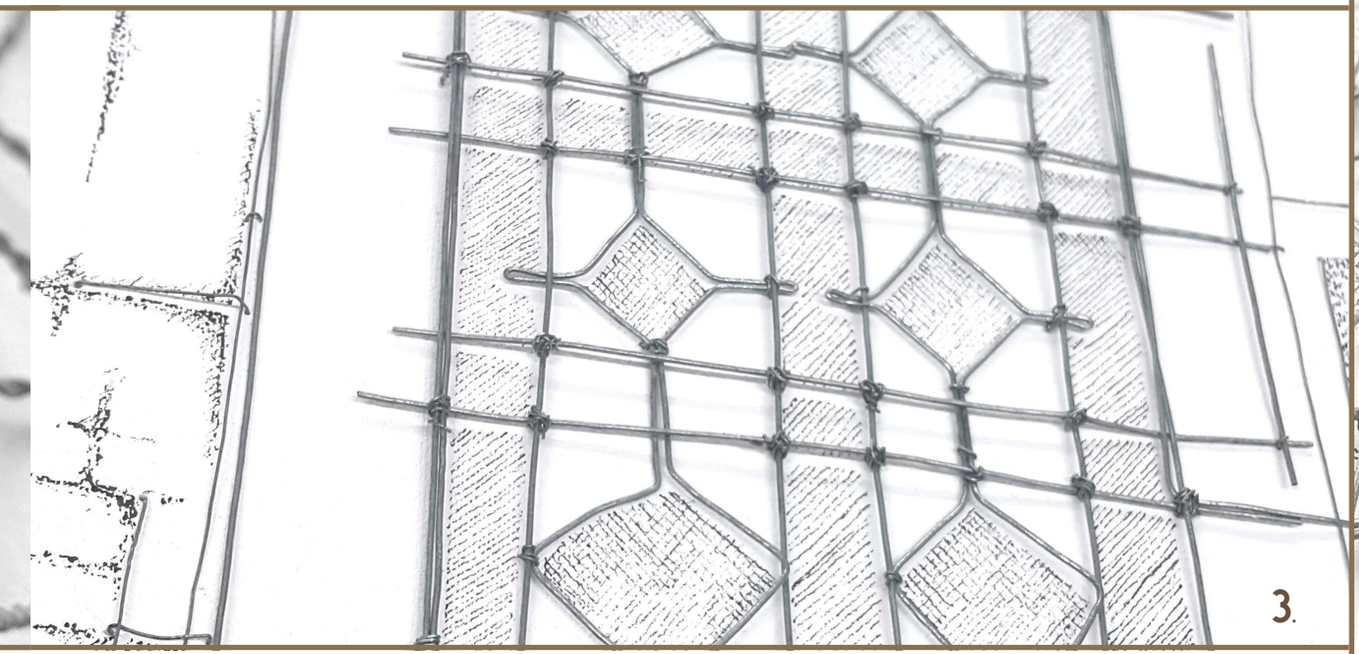


1.

1-2. Representation of the Namibian Vernacular architecture through copper wire embedded into the canvas. The rust patina as the metaphorical representation of the fragile state of indigenous vernacular heritage.

2.

3–4 The representation of German Colonial Architectural style in Namibia through stainless steel wire. The stainless steel has a degree of corrosion resistance and represents the timelessness and monumentality of post modernist materials.



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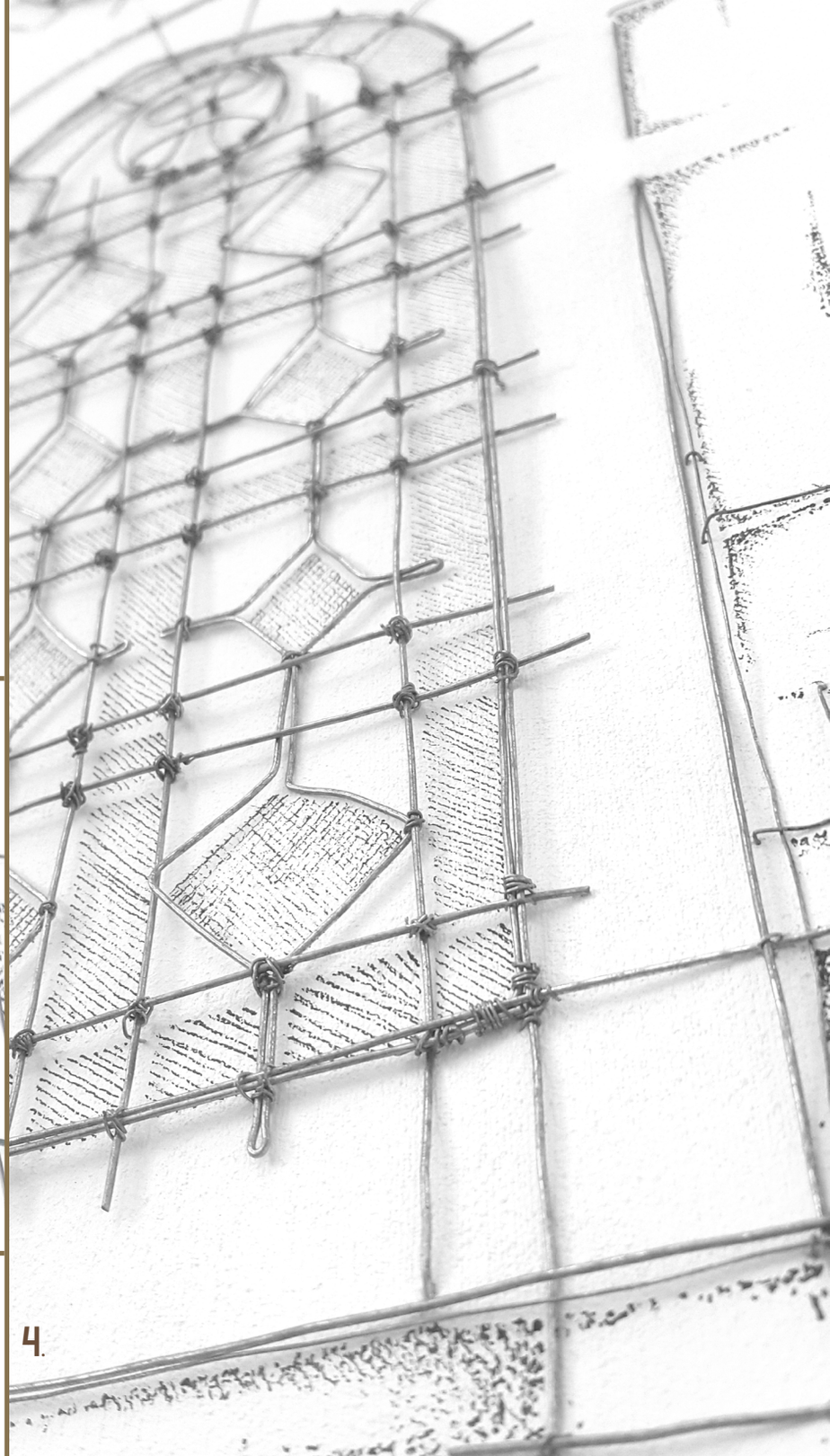


4.

Fig. 101 Connection details of a palisaded fence of a homestead in northern Namibia.
Photograph: Elao Martin.
Source: www.africavernaculararchitecture.com,2019

CHAPTER IV : DESIGN AND CONSTRUCTION

SYNTHESIS

CONCEPTUAL EXPLORATION
BUILDING [IN] [AS] AND [ON] THE LANDSCAPE

DESIGN DEVELOPMENT
PHASE 01
PHASE 02
PHASE 03
TOWARDS A FINAL DESIGN

TECHNICAL EXPLORATION AND RESOLUTION

4.1 CONCEPTUAL EXPLORATION

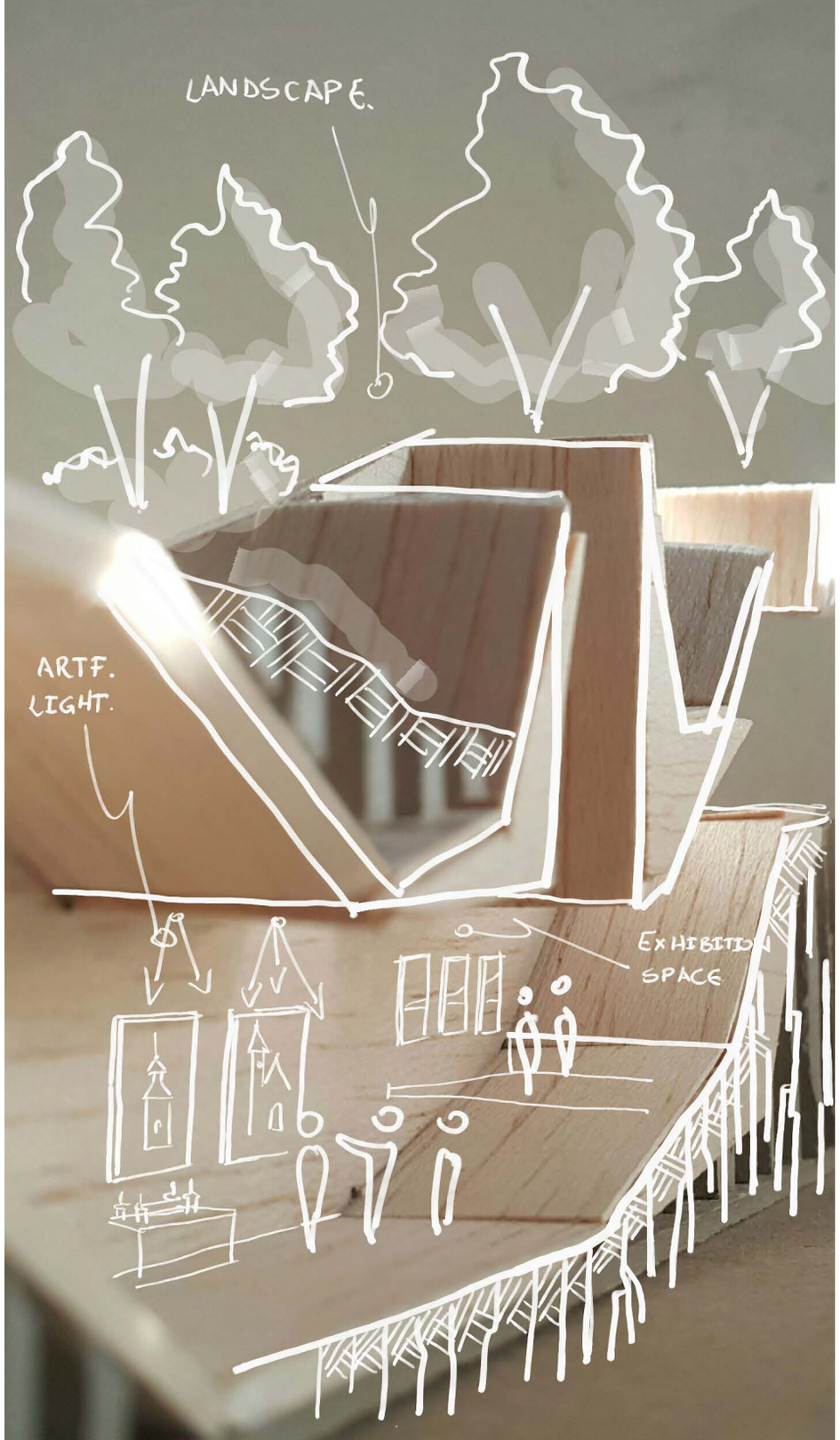
BUILDING [IN] - [AS] - [ON] THE LANDSCAPE

In a cosmic setting a mountain outcrop can be referred to as sitting well [in] the landscape; in the same way as it can be the defining element and therefore referred to [as] the landscape itself. One dimension further and the same mountain can be in the far distance [on] the horizon and still be part of that very same landscape. This multiple meaning of what it is to be part of the landscape creates an interesting fine line between the different concepts. However, for the purpose of this exploration the terms 'in', 'as' and 'on' refers to the physical position of a man-made construct i.e. (a building) in reference to the Landscape and Site in question.

Fig. 102 Spitzkoppe [In] the landscape.
Source: xflow.eu

Fig. 103 Spitzkoppe [on] the horizon.
Source: xflow.eu

Fig. 104 Spitzkoppe [as] the landscape.
Source: xflow.eu



1. BUILDING IN THE LANDSCAPE

The building being the mediator between man and culture, its purpose is to be the middle ground; a canvas that fosters a platform for communication, bringing an understanding between the man and not only his culture, but also the culture of others.

The preposition 'in', determines where this canvas and exhibition is relative to the Landscape. And therefore 'Building in the landscape' suggests spaces that are underground, harvesting natural light to for illumination and using monolithic earth walls to define the spaces.

Fig. 105 Sketch (above) depicting the functional spaces beneath the landscape and the building being a sculptural element in the landscape.

Fig. 106 (Left) Conceptual exploration of building in the landscape and showing functional exhibition spaces in relation to natural ground level.

Fig: 107 Concept model suggesting the flow through the landscape and the use of natural light.

2. BUILDING *AS* THE LANDSCAPE

A concept in which the building becomes the landscape through a series of raised platforms in which the platforms create functional spaces and niches underneath it and suggests movement above it (Fig. 9). This is the analogy of the movement of man through nature where the landscape is an intermediate space between features in its surrounding context. The building is an intermediate platform between the historical buildings in the surrounding context of the site.

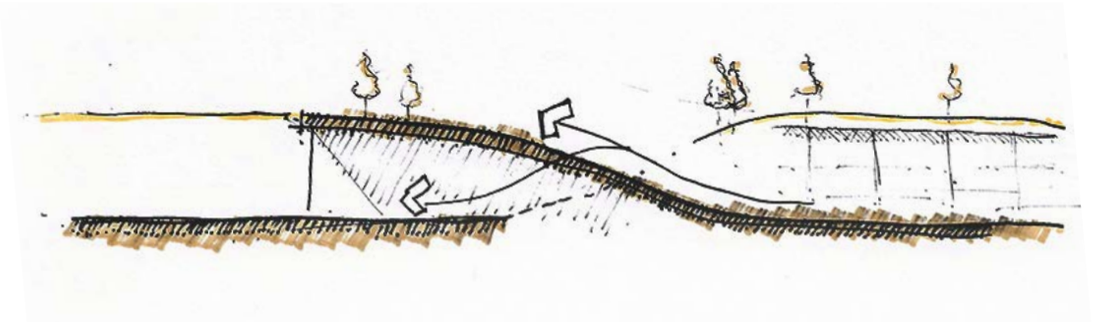


Fig: 108 Sketch (above) depicting the space and flow created as the building informs and become the landscape.

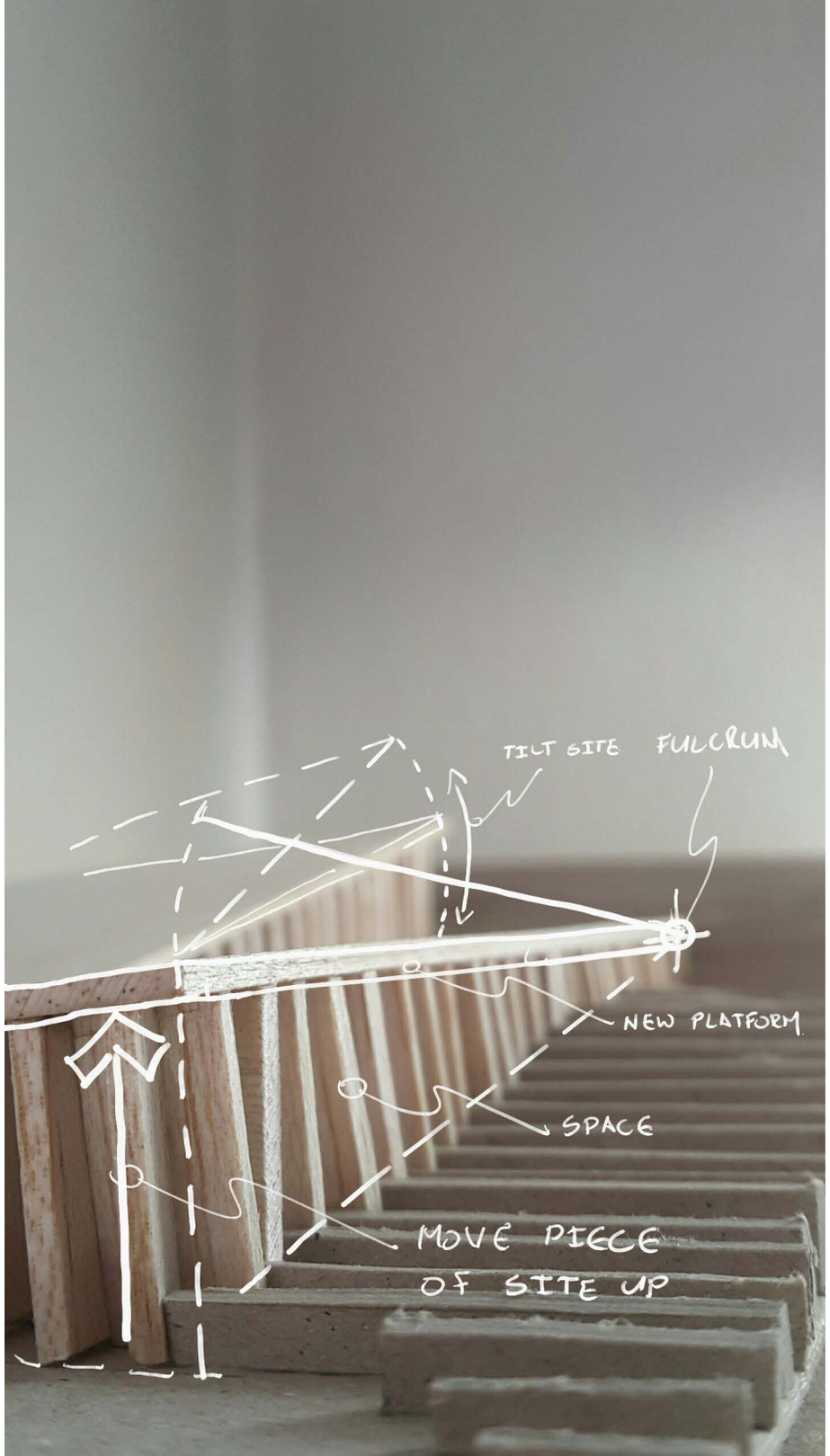


Fig: 109 (left) Conceptual exploration of the building as a series of raised landscape platforms to create functional space underneath.

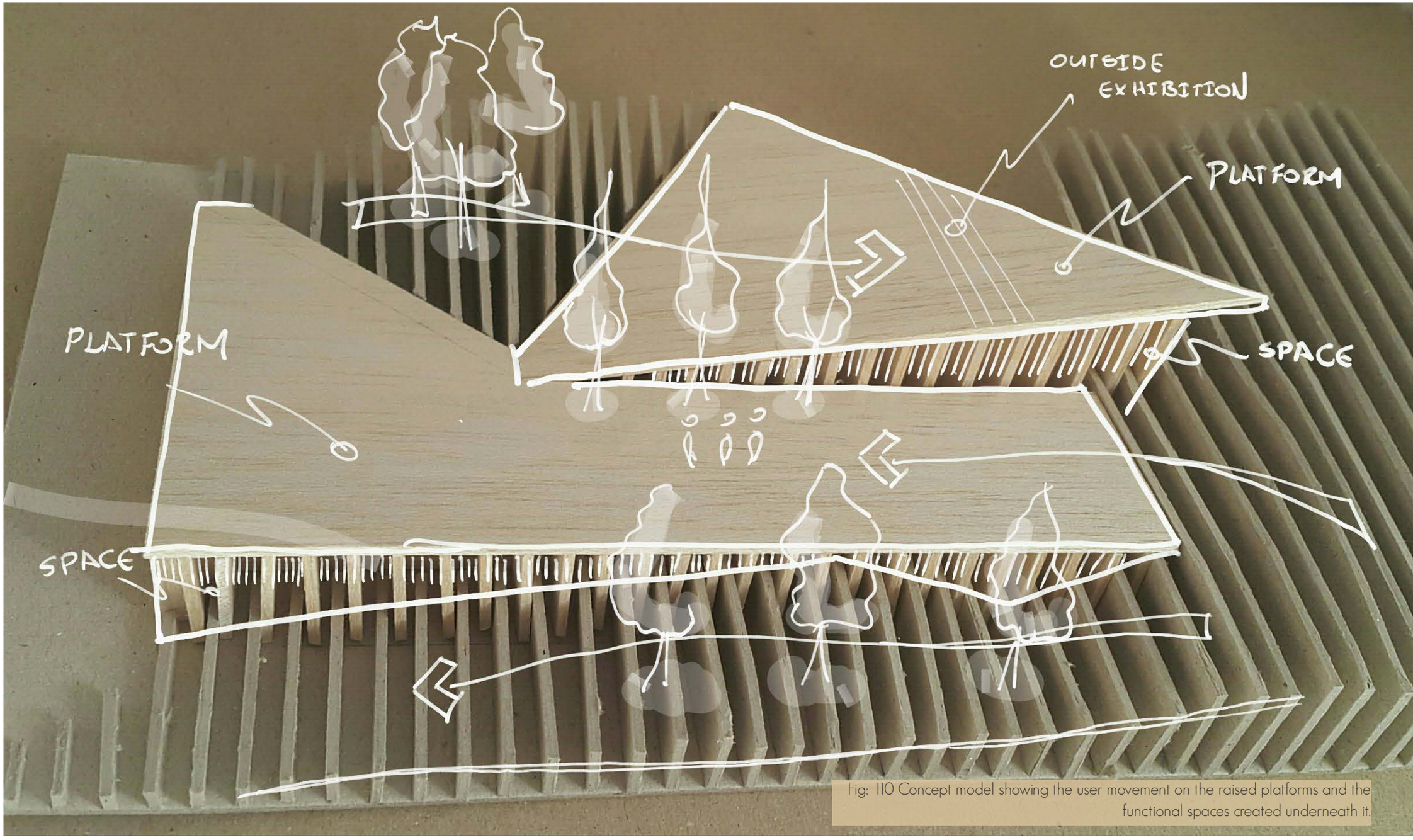


Fig: 110 Concept model showing the user movement on the raised platforms and the functional spaces created underneath it.

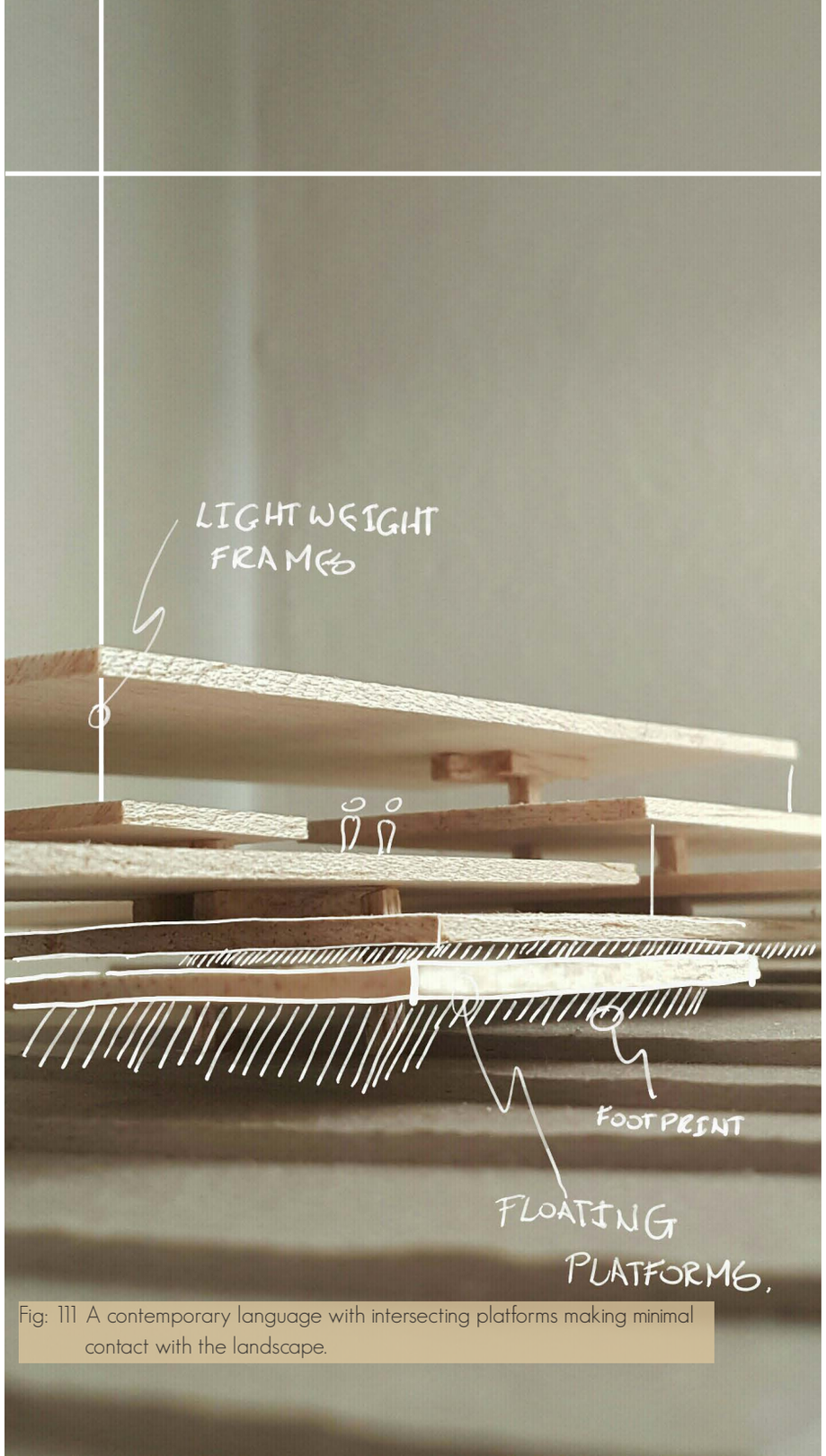


Fig: 111 A contemporary language with intersecting platforms making minimal contact with the landscape.

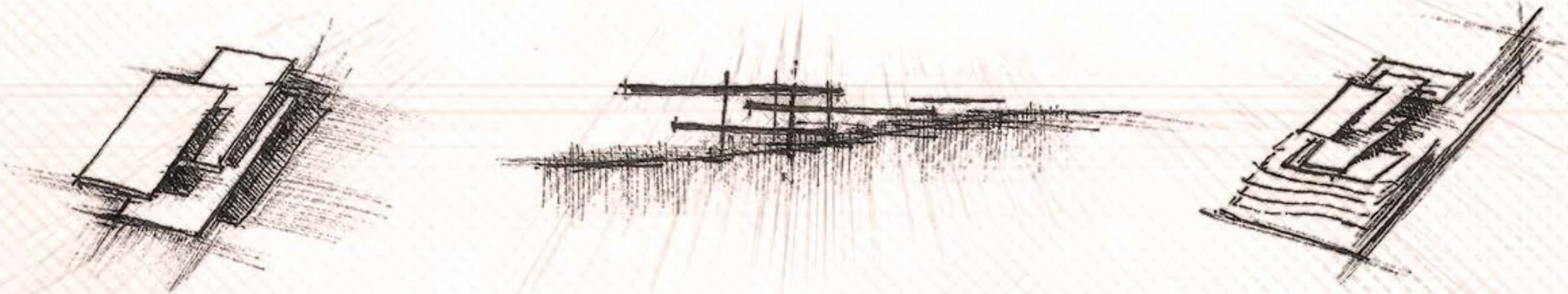
3. BUILDING ON THE LANDSCAPE

'Building on the landscape' as a metaphor for the contemporary approach to design in which man strives to triumph over the forces of nature. Therefore the floating platforms is a representation of the illusion of this achievement. Paradoxically; the suspension of the platforms also represents the power of nature over human constructs; and if mankind is not in continuous effort to avert the forces of nature, it shall eventually succumb and be overcome by it.

Fig: 112. "What we have taketh from the Earth, will be retaketh by the Earth."
- Robert Ginsberg

Fig: 113 Concept model creating a floating illusion.

Fig: 114 (Below) Conceptual exploration sketches.



CONCEPTUAL EXPLORATION:
CONCLUSION

BUILDING [IN] THE LANDSCAPE

All three concepts harbours great design potential. However; it is the concept "Building [In] The Landscape" that will create interesting design challenges but it also has the most potential to address the problems set out by this dissertation. The final outcome of the design may celebrate principles of each concept as they are closely tied together through the landscape as a common entity.

4.2 DESIGN DEVELOPMENT

The background research forms an integral part in the design inception and becomes an intuition that inspires and drives the design process forward. However; very specific logical decisions are made to end in a design resolution that address the identified challenged and aims to solve them through designed space and architecture. The touchstone, which draws on the perceived contrast between indigenous cultural artefacts and those of Inherited cultures are one of the challenges that will be addressed in the design process.

From a morphological point of view, the concept 'Building in the Landscape' forms the foundation of the entire process towards the final design. The concept 'Building in the Landscape', explores the built form from a formalistic point of view as in how it communicates the language of its context and how is it perceived as a building that is 'in' its landscape.

The concept (as seen in fig.107) aims to achieve a seamless route through its landscape in which the user approaches from one point and is guided along a perceived route and culminates in a different area however still being in the very same context. The concept further explores the sculptured expressions in a similar fashion to natural rock outcroppings in which natural light plays an important role.

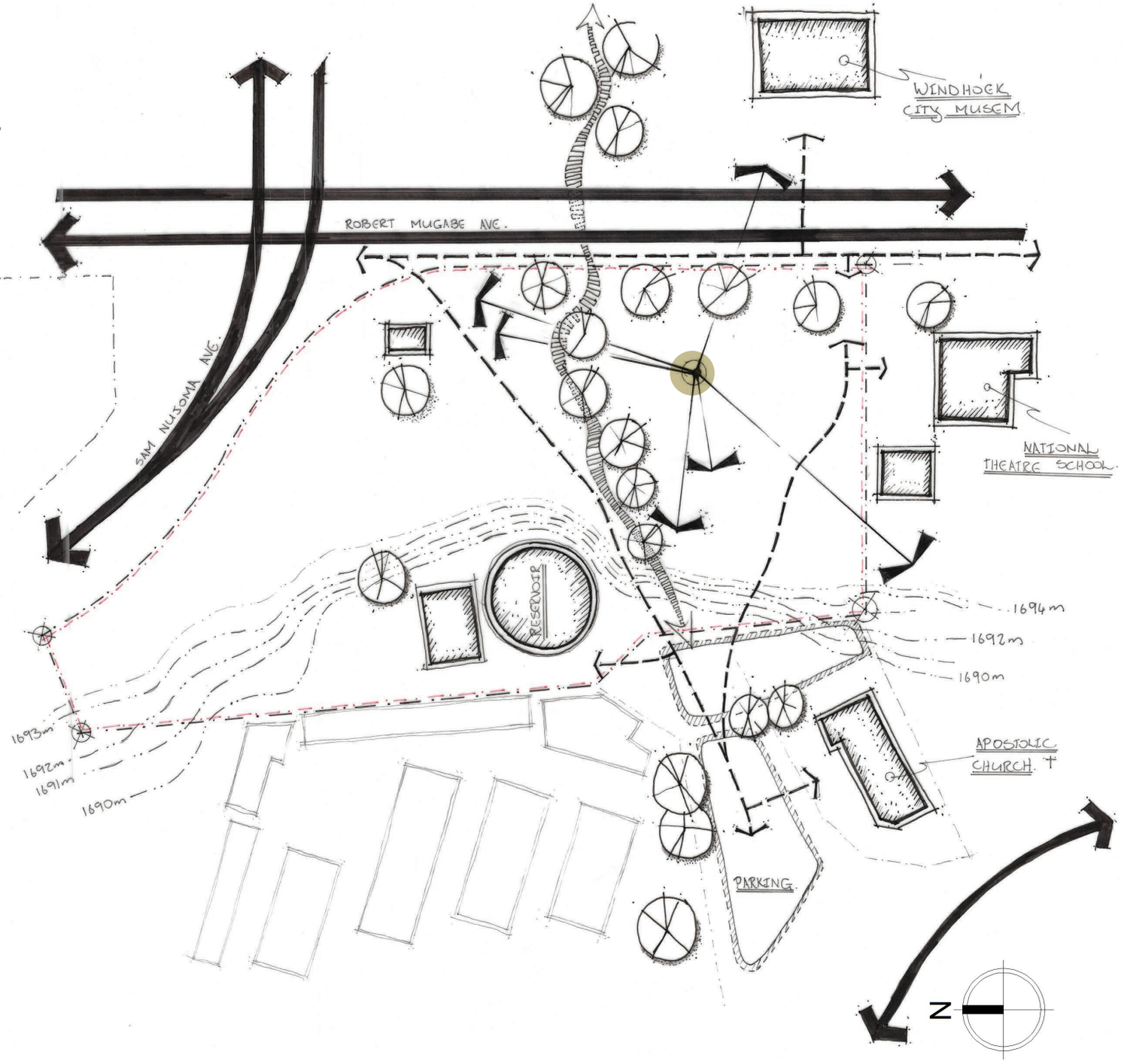
Therefore, the landscape being the only constant and universal language that binds all cultures; this design aims to be a platform of inter-cultural communication and learning without drawing any specific cultural references in the articulation of its form and language.

DESIGN DEVELOPMENT 01

PHASE 01

The first phase of the design is really about adopting a relationship with the site and its context. This relationship manifest through the initial site sketches to get a feeling for scale, spatial organization and form.

The site analysis sketch identifies key influences on the site of which the views towards the historical buildings in the broader context are very important.



TRAFFIC ROUTES

PEDESTRIAN ACCESS AND MOVEMENT

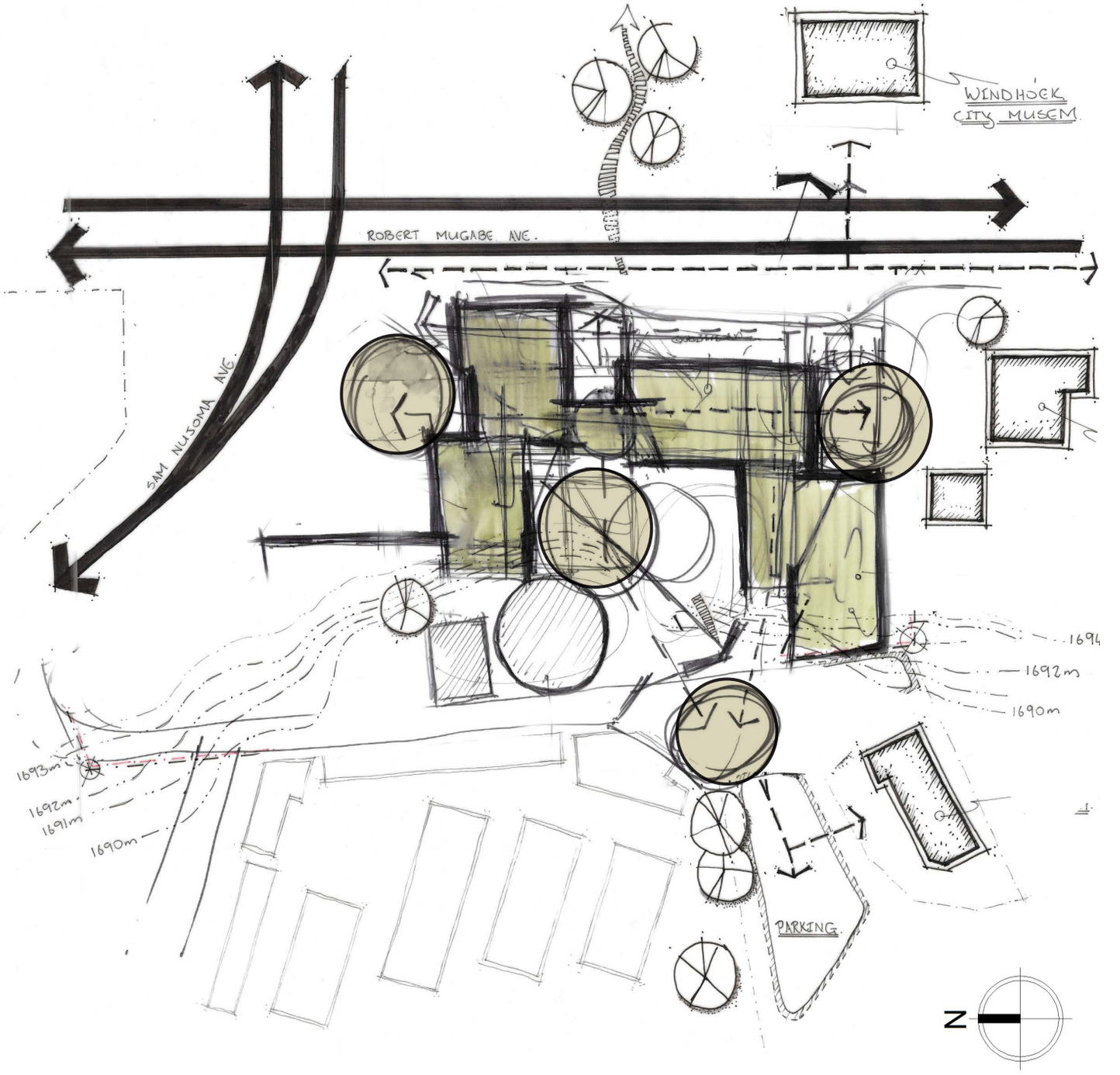
STORMWATER

VIEWS TO HERITAGE BUILDINGS

Spatial organization

This exercise explored the idea of the relationship of solid functional spaces in relation to permeable courtyard spaces that relates to the site and context in some way. The courtyard spaces act as a threshold before any engagement is made with solid built spaces.

These courtyard spaces are organized around the axis that relates to the street corner, the two adjacent buildings (Windhoek City Museum and National Theatre School) and then finally the approach from the east.



Public Courtyard Space

Functional Spaces

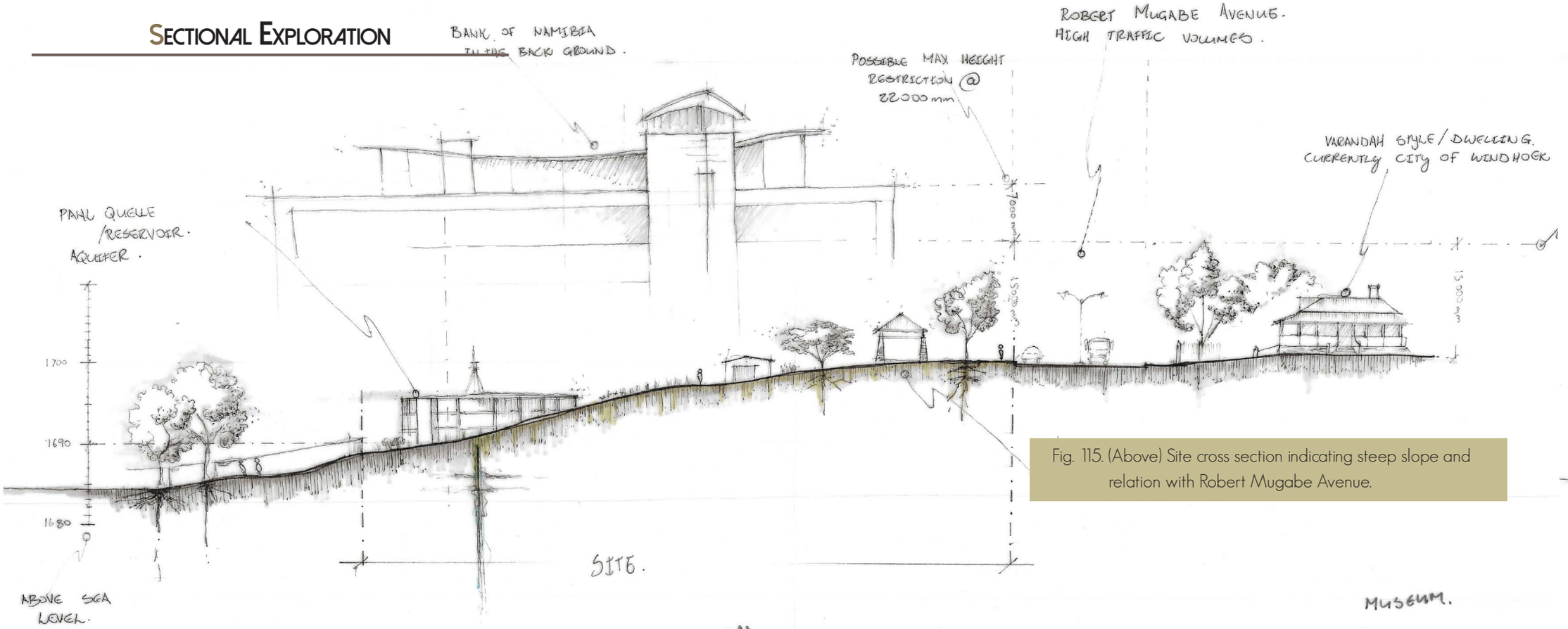


Fig. 115. (Above) Site cross section indicating steep slope and relation with Robert Mugabe Avenue.

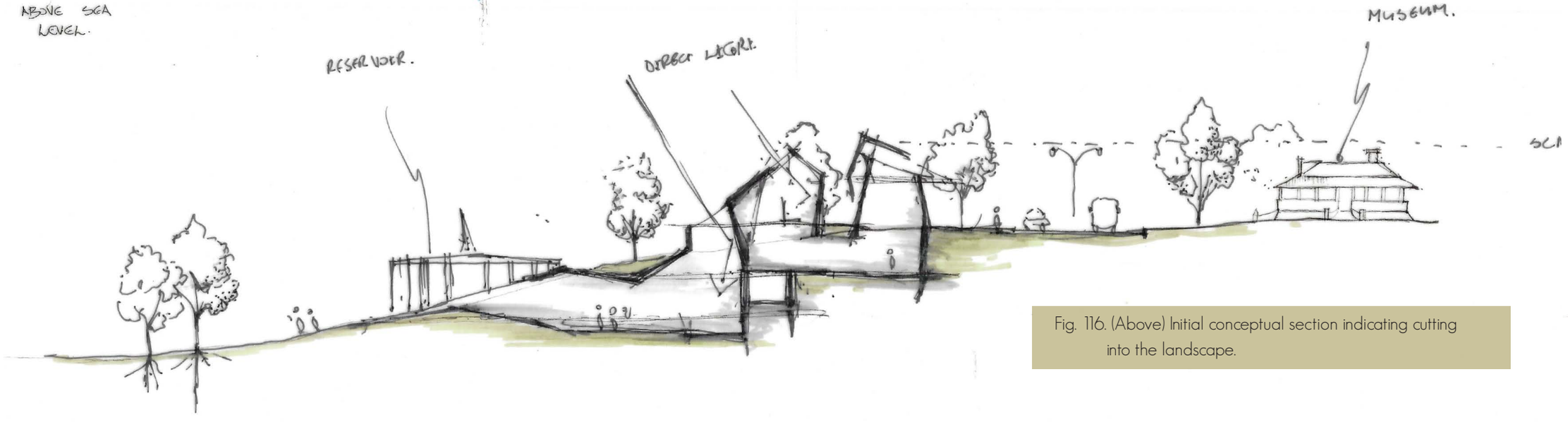


Fig. 116. (Above) Initial conceptual section indicating cutting into the landscape.

Sections are a powerful design tool and can easily communicate scale, spatial quality and technical approaches in a design. The sectional diagrams illustrated became the core inspiration that informed further design decisions. The sectional exploration aims to capture natural light to illuminate spaces. Furthermore, cutting into the earth can provide opportunities to invite the landscape into the building in interesting ways.

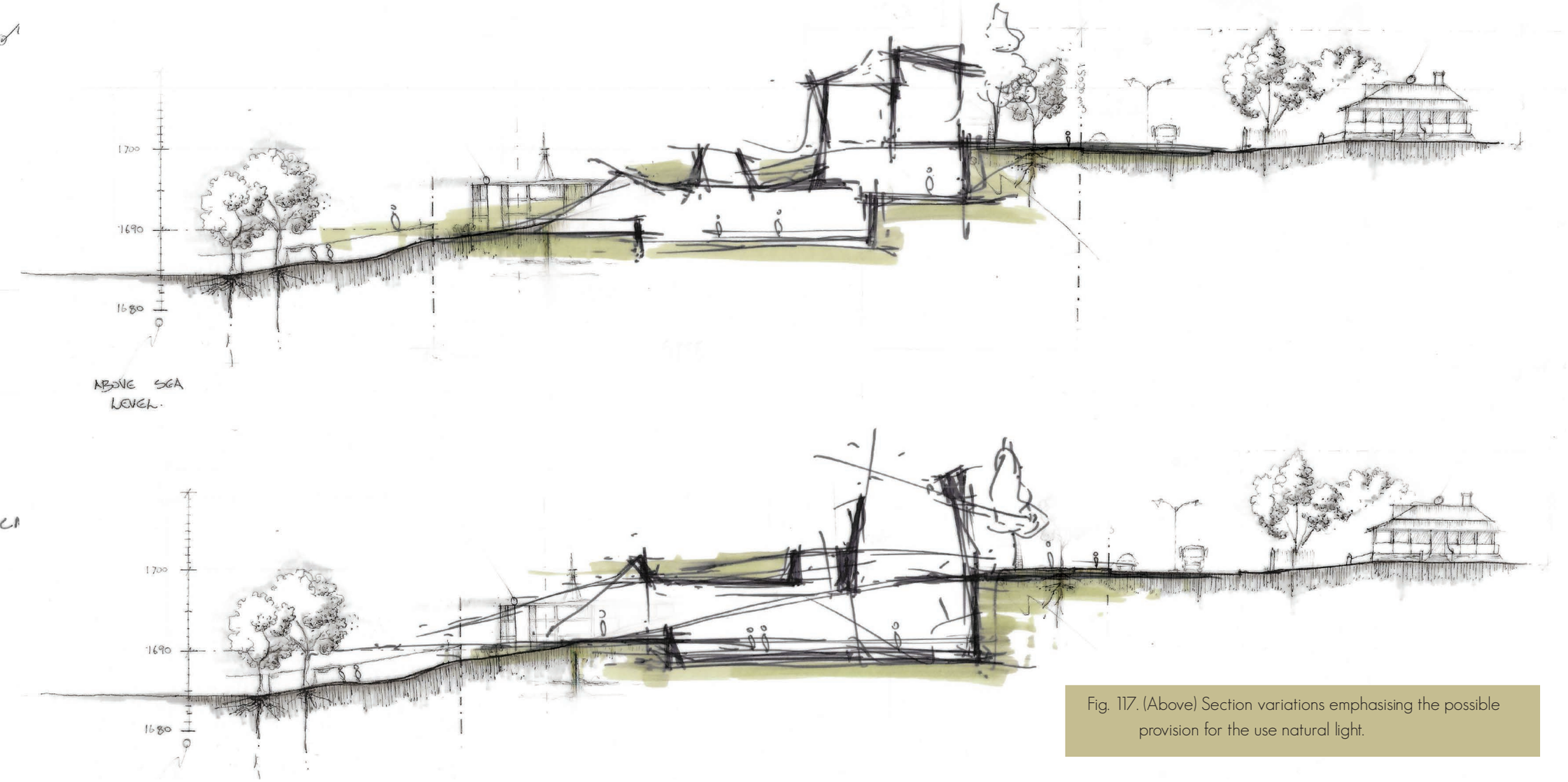


Fig. 117. (Above) Section variations emphasising the possible provision for the use natural light.

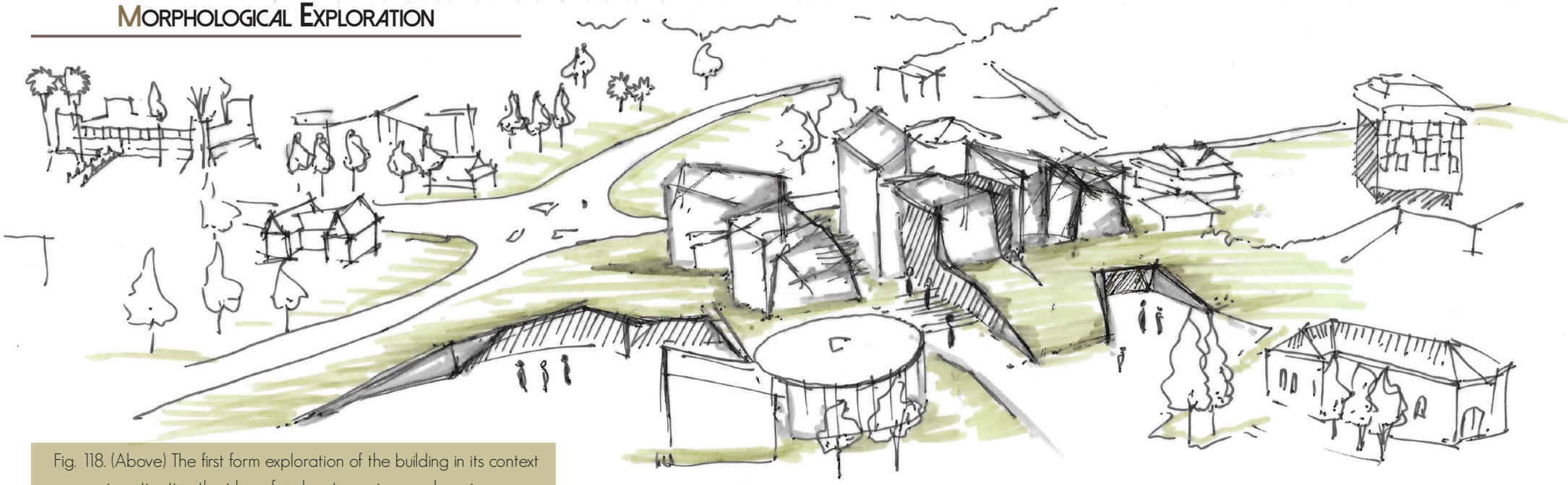
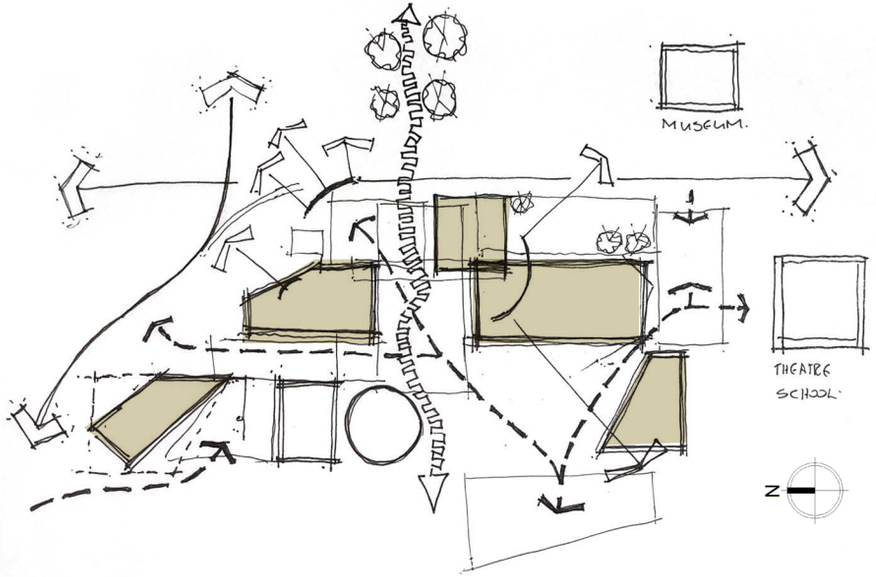


Fig. 118. (Above) The first form exploration of the building in its context investigating the idea of rock outcroppings and crevices.



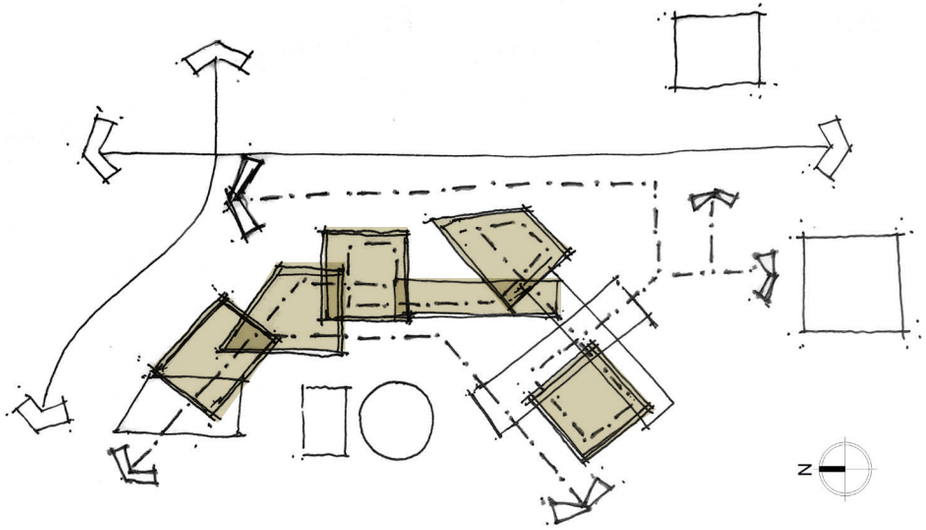
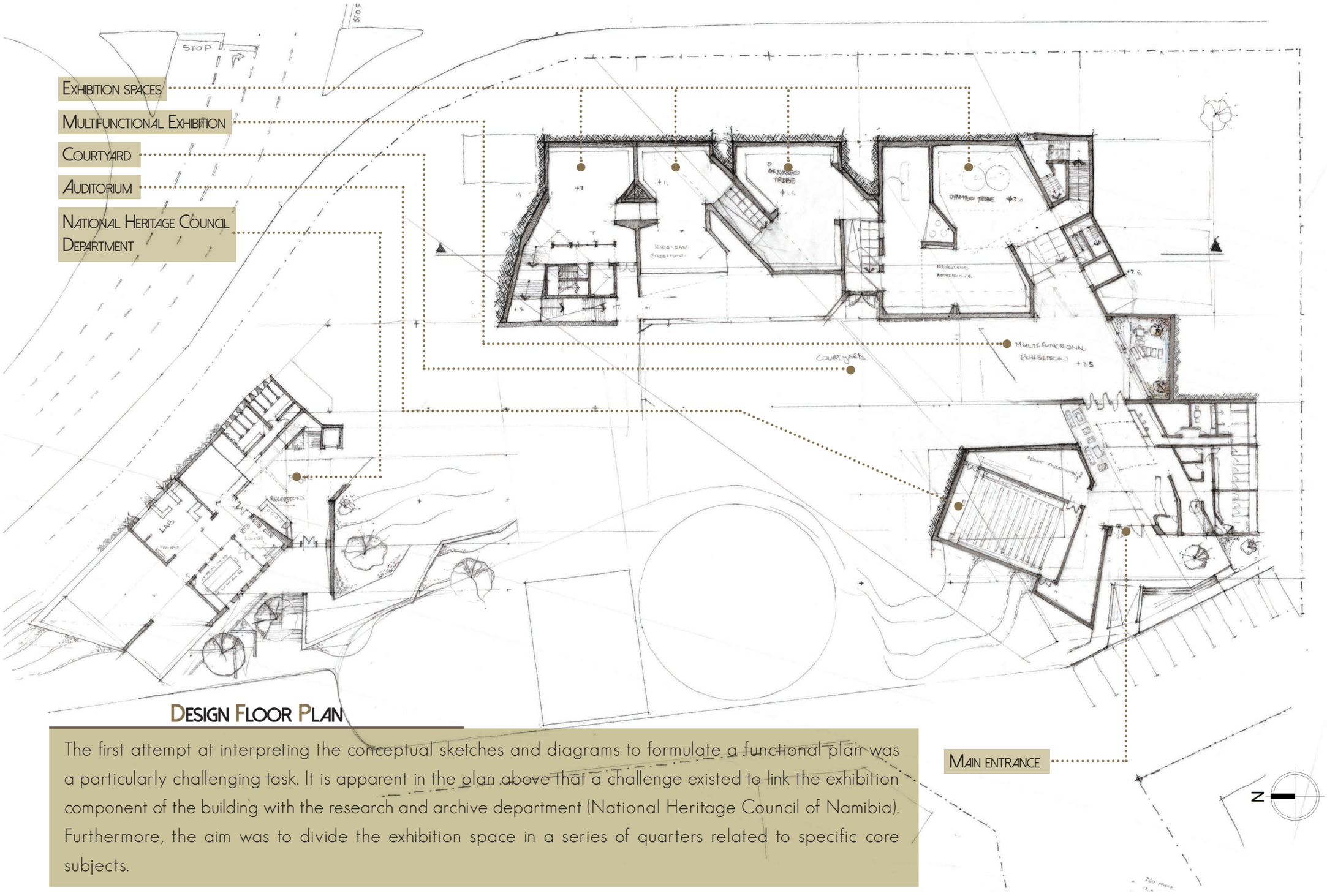


Fig. 119. Further spatial investigation with particular focus on circulation through spaces as part of the curation of the museum.

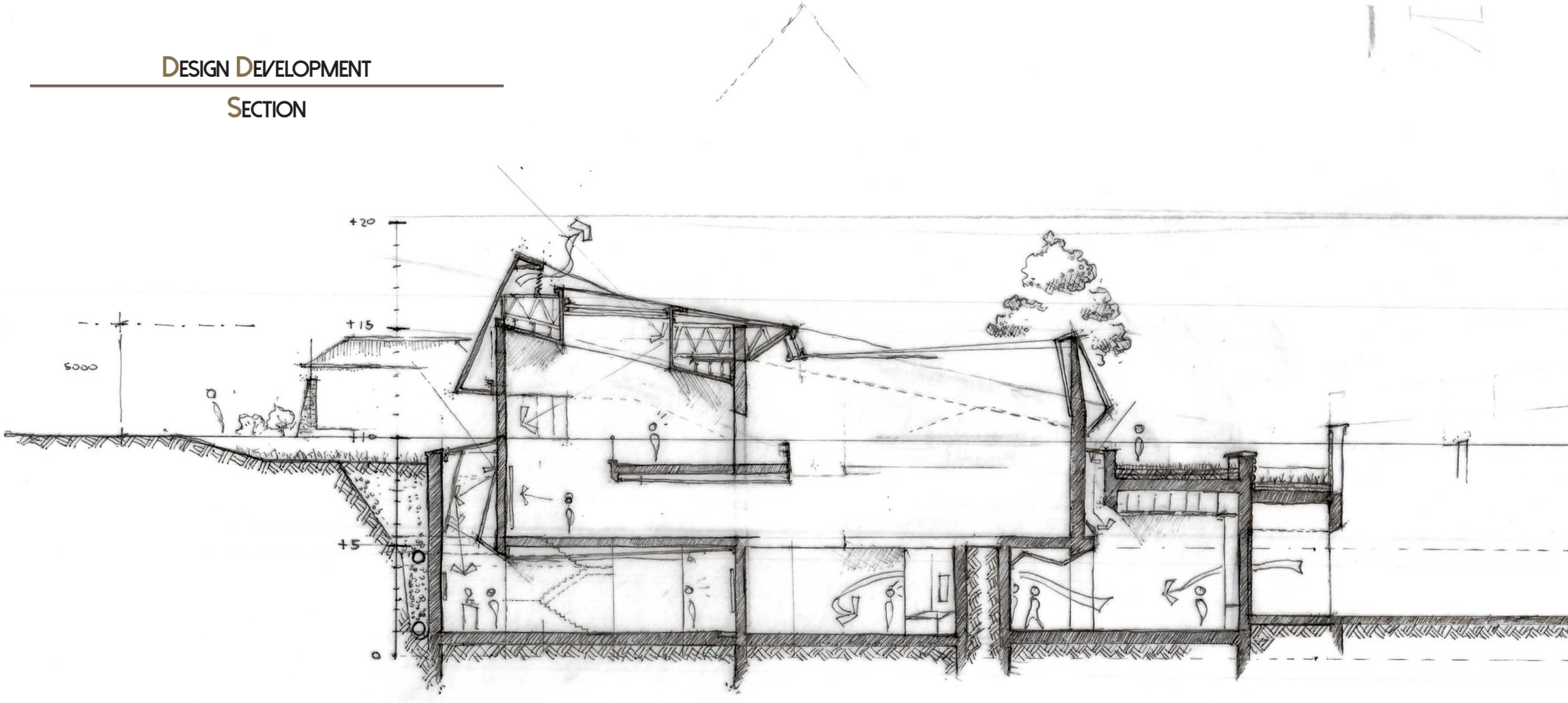


Design Floor Plan

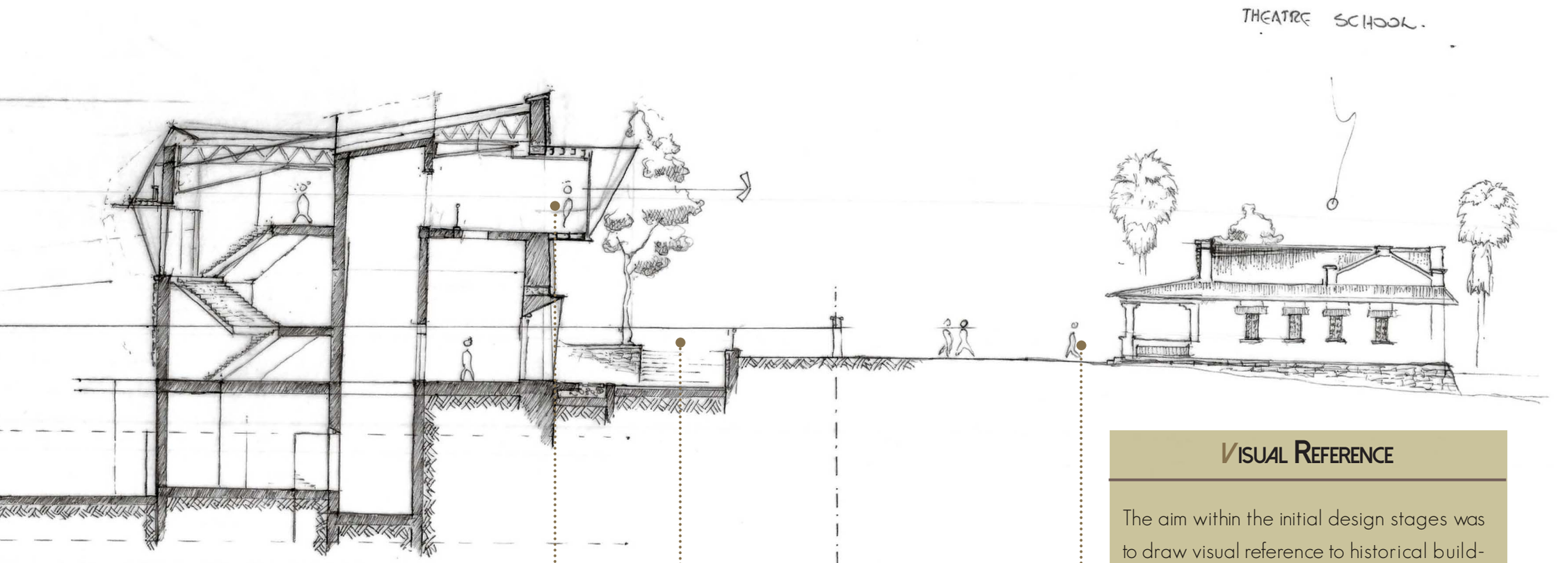
The first attempt at interpreting the conceptual sketches and diagrams to formulate a functional plan was a particularly challenging task. It is apparent in the plan above that a challenge existed to link the exhibition component of the building with the research and archive department (National Heritage Council of Namibia). Furthermore, the aim was to divide the exhibition space in a series of quarters related to specific core subjects.

Design Development

Section



The sectional exploration emphasises the complexities experienced in the plan depicting small spaces with intricate corners and junctions. This complex way of developing space creates interesting opportunities for the play of natural light. However successful this expression can be, it is a polar extreme in reference to the pure spatial quality that is explored in the conceptual model. Therefore, this was an important exercise in terms of what the design really ought to be. A design that is pure and simplified in its form and circulation.



LOOK-OUT POINT

APPROACH FROM ROBERT MUGABE AVENUE

NATIONAL THEATRE SCHOOL (GERMAN-COLONIAL DWELLING)

VISUAL REFERENCE

The aim within the initial design stages was to draw visual reference to historical buildings in the immediate context through lookout points.

This coupled with the exhibition content that focus on colonial architecture gives the visitor a well-rounded experience and awareness of the importance of preservation of architectural heritage.

DESIGN DEVELOPMENT 02

PHASE 02

In reference to the first phase in which spatial organizational challenges were encountered; the first aim in phase two was to devise a logical and proportional layout on the site that unifies the spaces in a simple and logical sequence. The existing reservoir being centrally positioned is a dominant element on the site and became a crucial reference point in the development of the spatial organization and layout.

The successful incorporation of the reservoir is a result of only using a crucial arc to orientate the plan around its axis and not in its use in the entire layout of the plan. (Fig. 121) This divides the plan into the exhibition component and the research and archive component whilst seamlessly linking it through the arc around the axis of the reservoir.

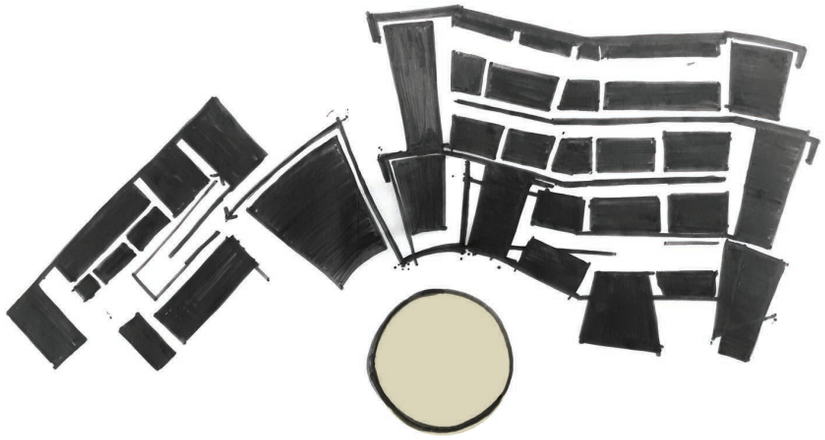


Fig. 120. Functional spaces located around central axis of the reservoir.

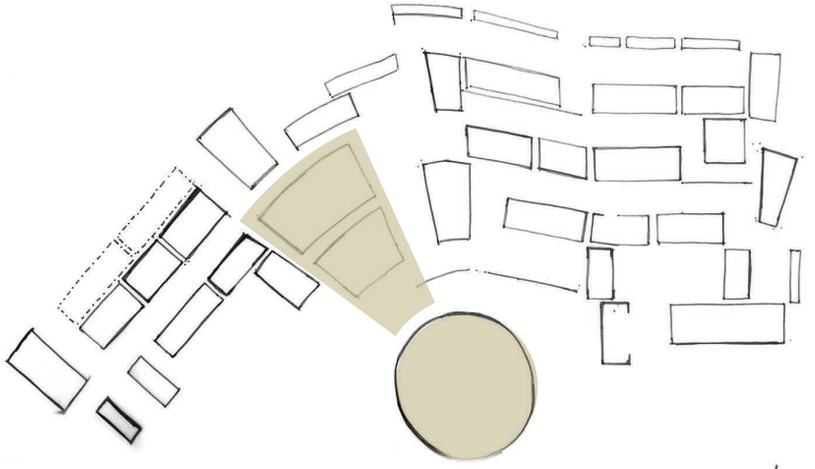


Fig. 121. Arc with axis around the reservoir informing the spatial layout.

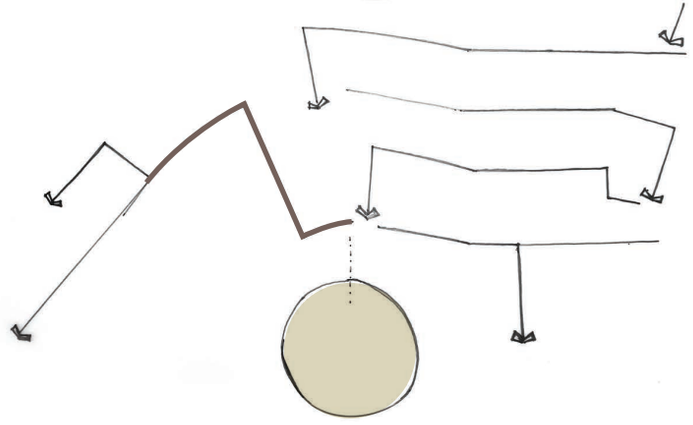


Fig. 122. Circulation diagram.

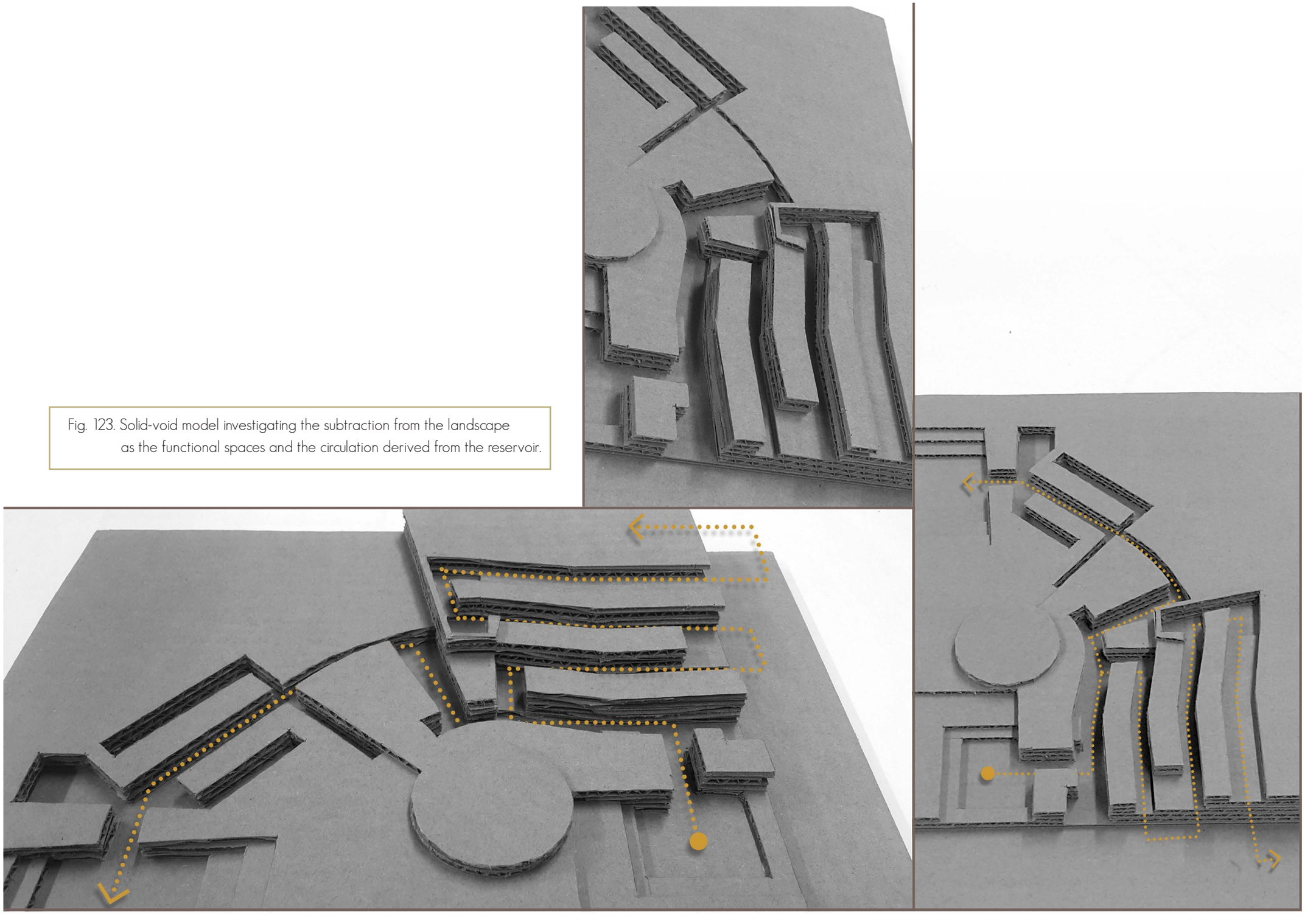
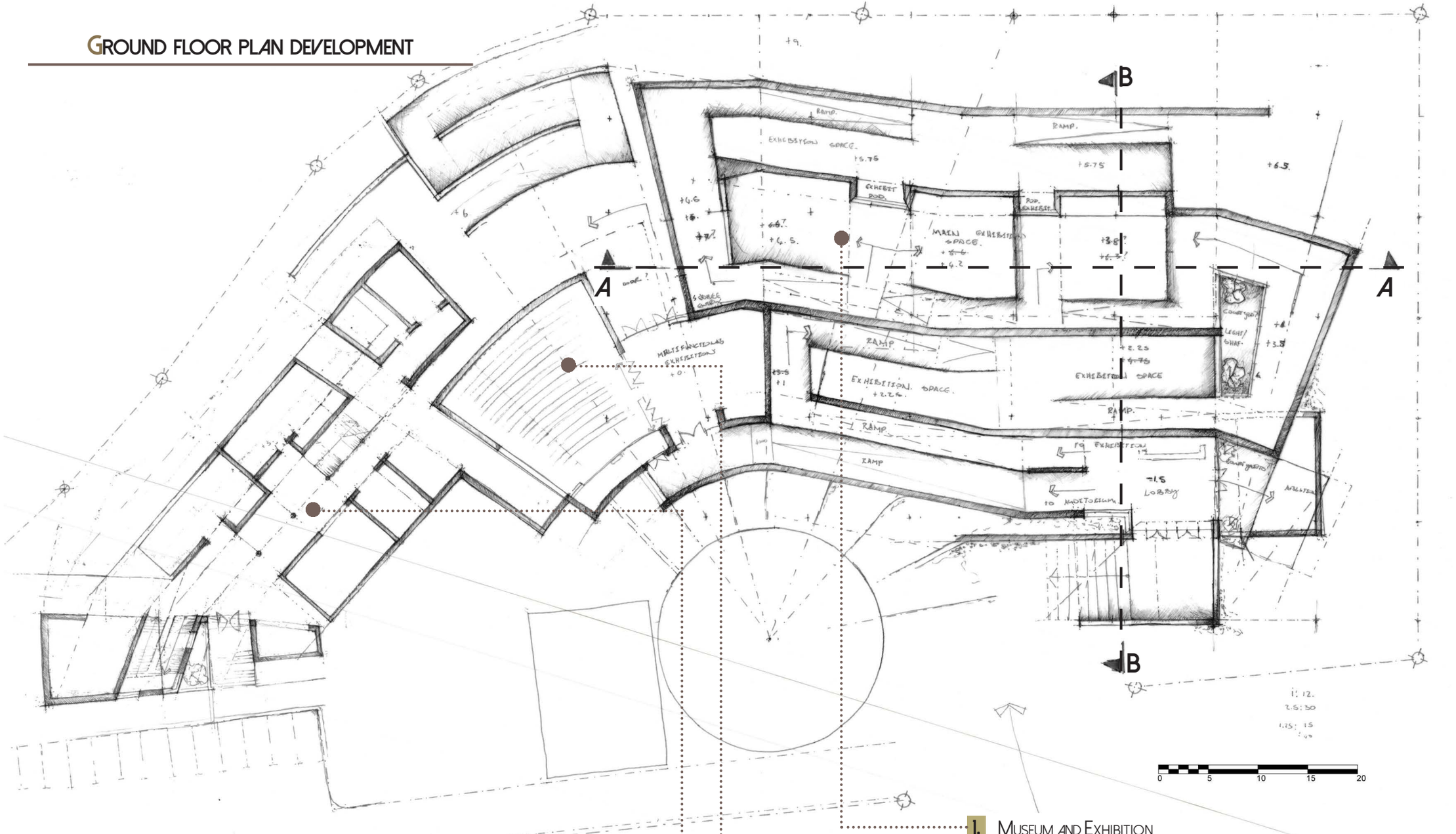


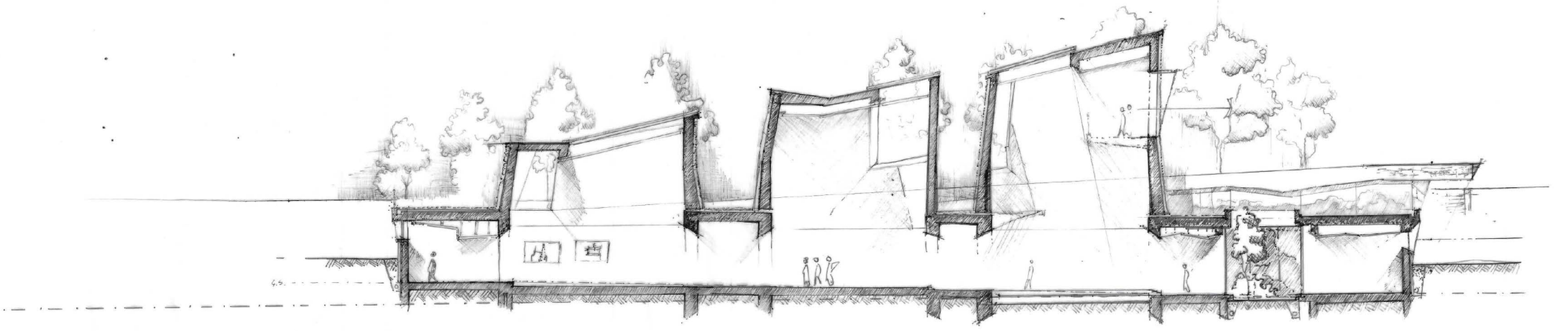
Fig. 123. Solid-void model investigating the subtraction from the landscape as the functional spaces and the circulation derived from the reservoir.

GROUND FLOOR PLAN DEVELOPMENT



1. MUSEUM AND EXHIBITION
2. AUDITORIUM AND MULTIFUNCTIONAL EXHIBITION
3. HERITAGE COUNCIL AND ARCHIVE CENTRE

Fig. 124. Ground floor plan using the reservoir central axis as a guiding principle in the development of the floor plan and the design.



Section *A-A*

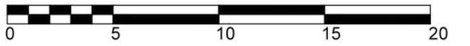
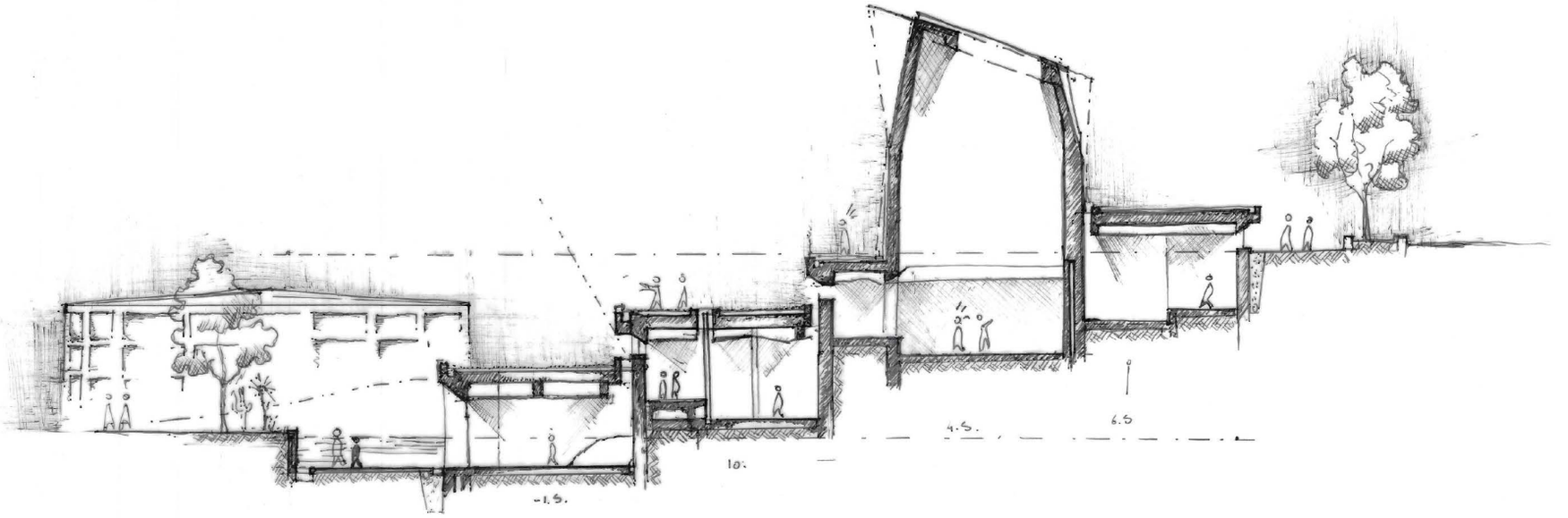


Fig. 125. Long section through main exhibition space indicating potential use of skylights to illuminate exhibition spaces.



Section B-B

Fig. 126. Terraced cross section in response to the steep slope of the site.

East Elevation

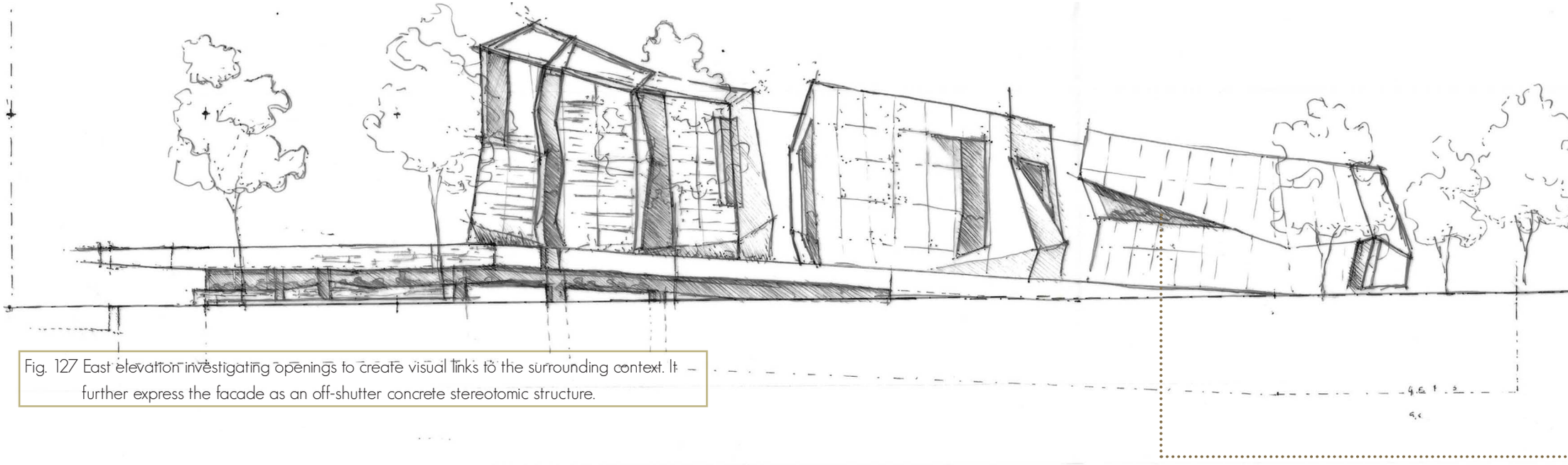


Fig. 127 East elevation investigating openings to create visual links to the surrounding context. It further express the facade as an off-shutter concrete stereotomic structure.

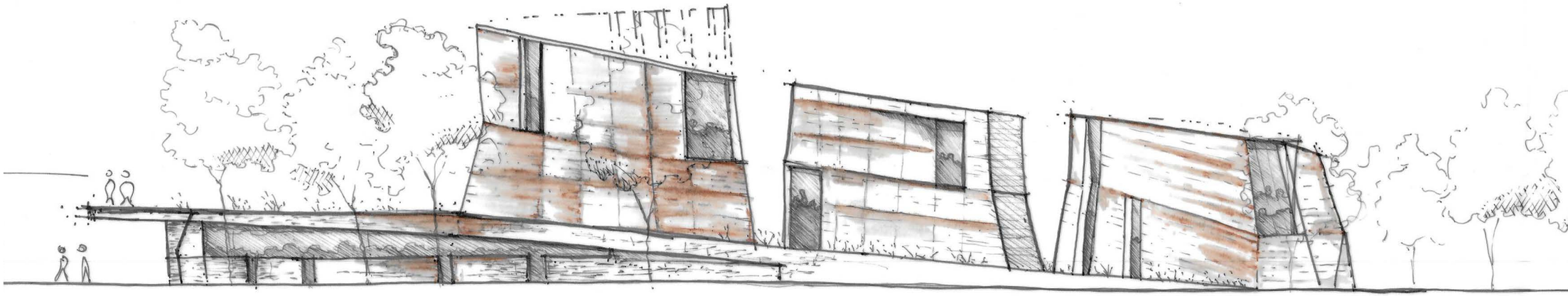
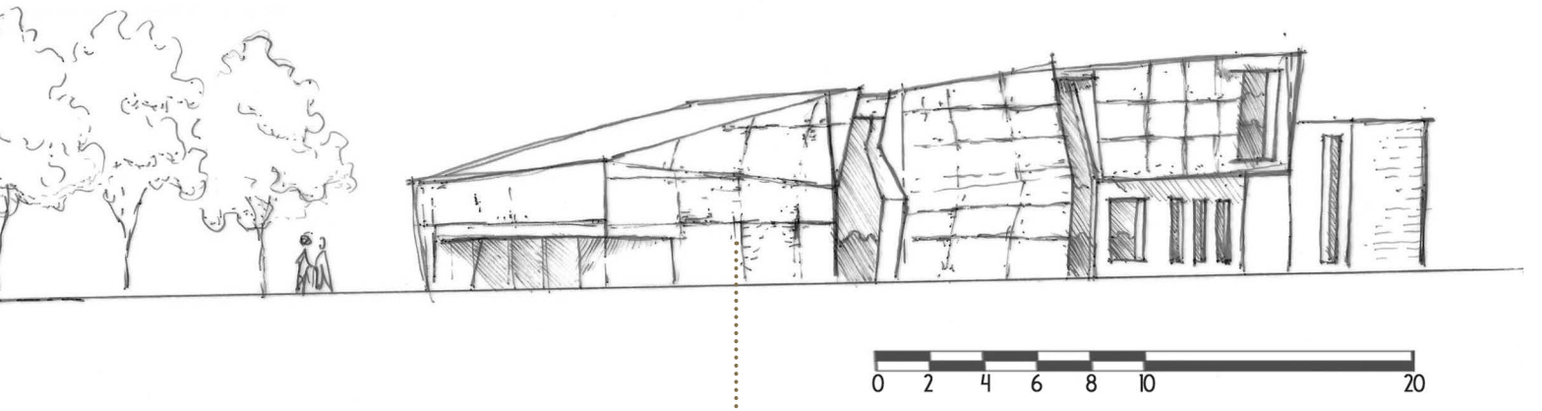


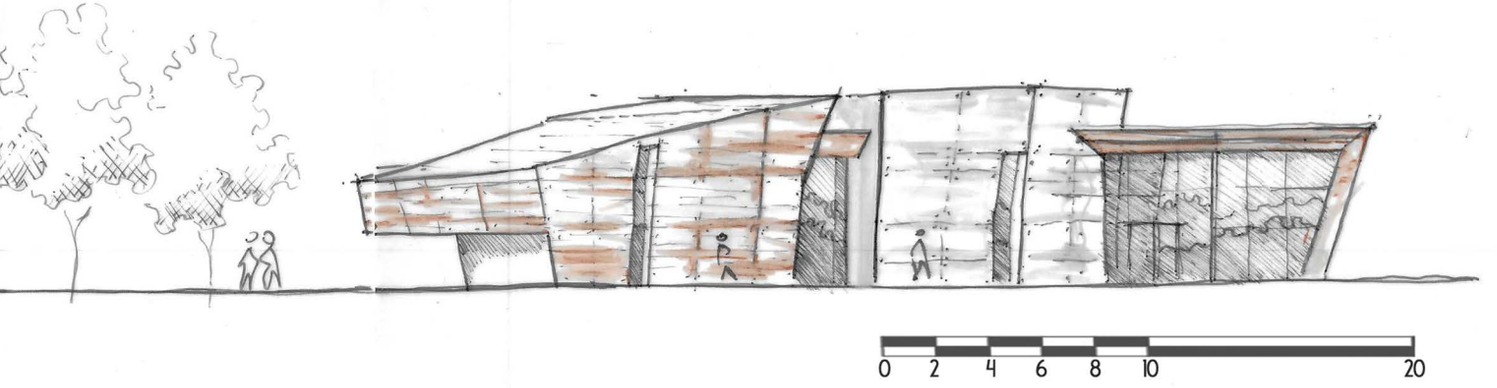
Fig. 128. East elevation investigating the scale and proportion as it would be experienced from Robert Mugabe Avenue with the aesthetic appeal of rammed earth.

Elevation Investigation



Heritage Council and Archive

Look-out point



Following the initial morphological exploration in phase one (1) in which the complexities of the plan projected in the articulation of the sections; (p. 123) the second phase is a step closer to in achieving a pure form that shares the inspiration of the concept.

The plan further developed in its simplicity with particular focus on the exhibition and museum section. The aim is still to make visual reference to the context through the skin and structure of the museum. This is apparent in the façade openings (fig. 127)

The elevations depict the contrast between concrete as both a structural and aesthetic material (fig. 127) and rammed earth. (fig. 128)

Tectonic Exploration

This investigation explored the possible expression of the Namibian vernacular architecture typology through the architectural language of the museum.

However successful in the quality of interior space; the result of the exploration is far too direct in its reference to the vernacular styled architecture. This direct expression is not in coherence with the aim of the design to be a neutral platform for the interpretation of architectural heritage in Namibia.

Furthermore, it may be wrongly interpreted as the more important style and culturally affiliated and therefore this exercise draws one back to initial conceptual exploration that is pure in its form and expression.

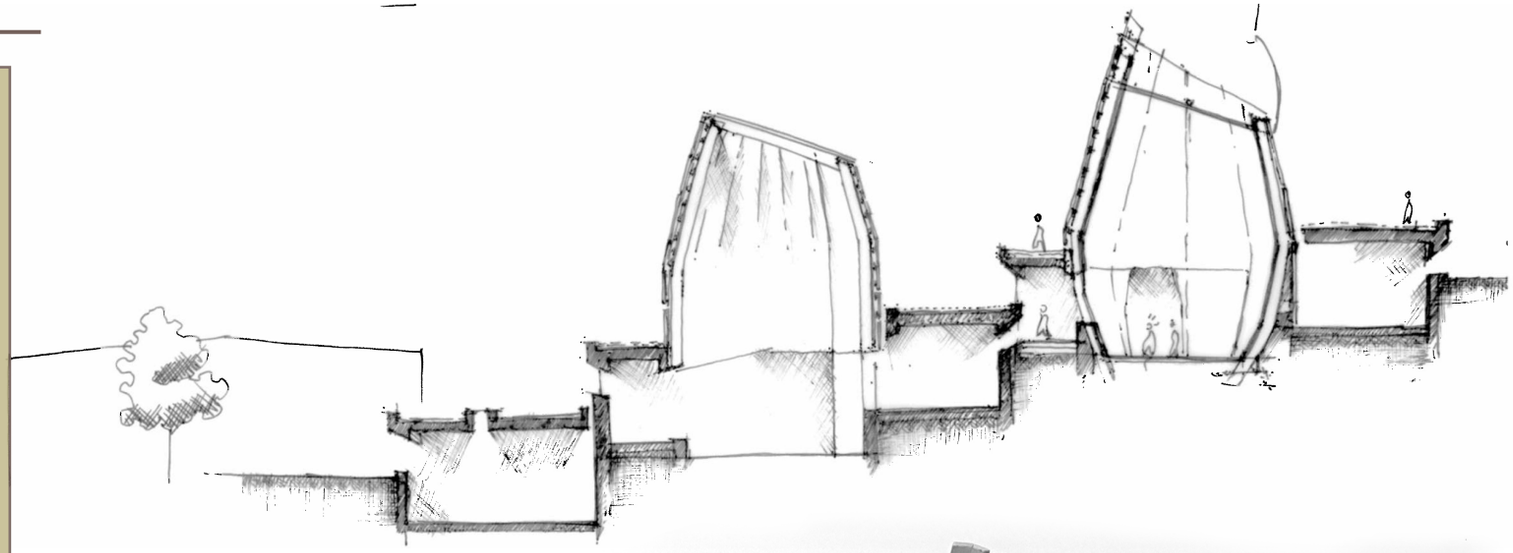


Fig. 129. (Above) Cross section indicating conical form as an inter pretation of Namibian vernacular huts.

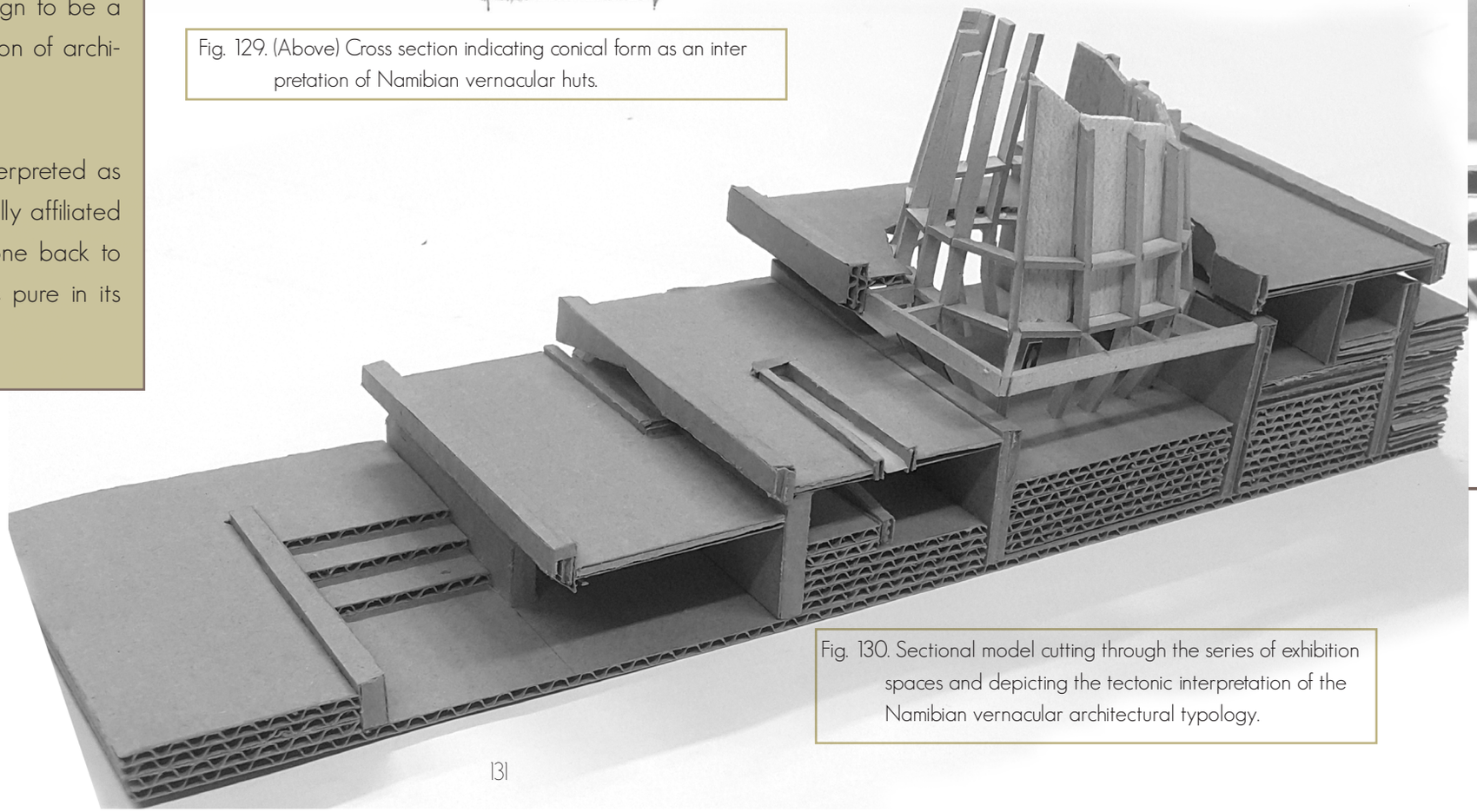
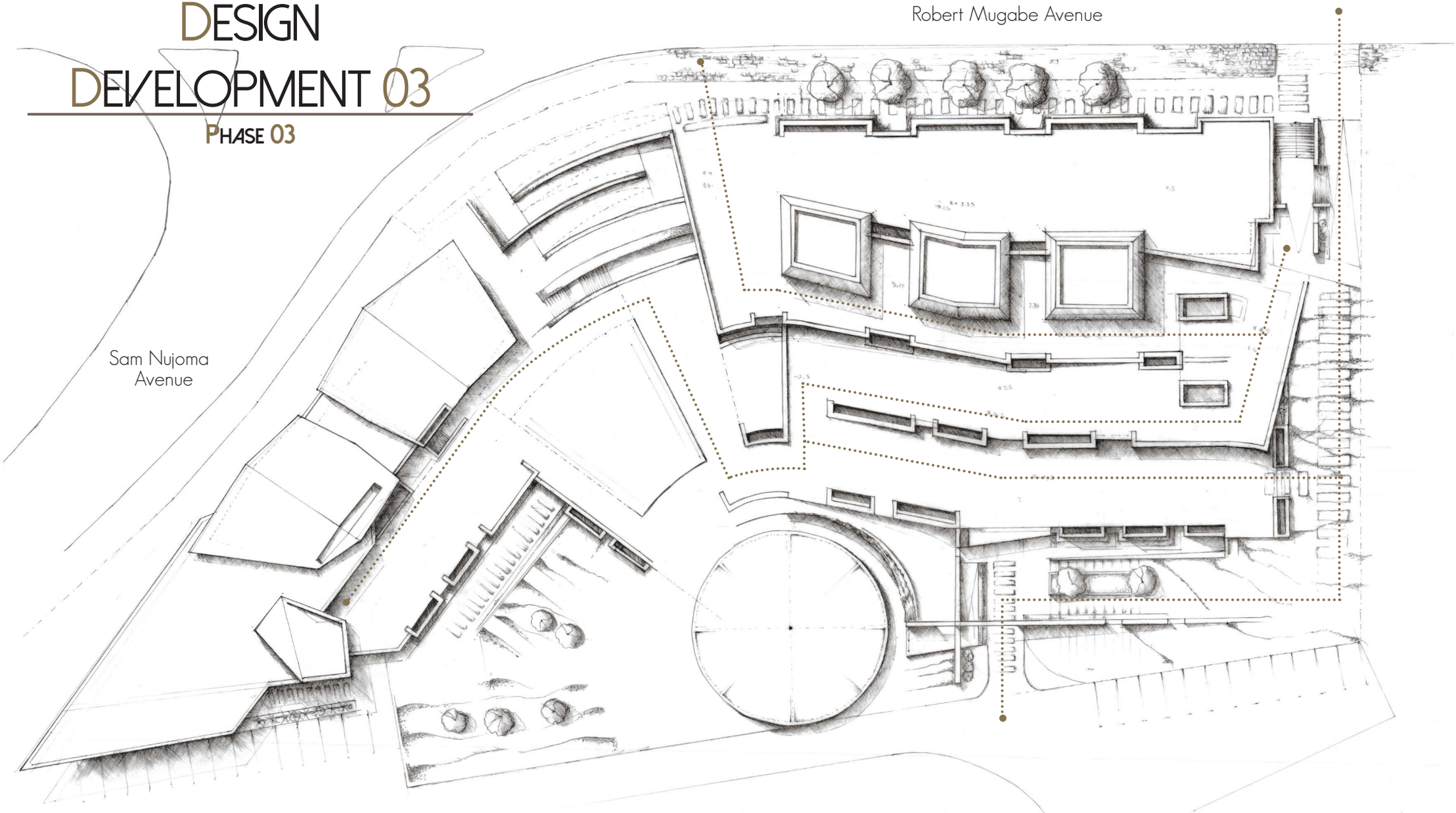


Fig. 130. Sectional model cutting through the series of exhibition spaces and depicting the tectonic interpretation of the Namibian vernacular architectural typology.

Fig. 131. Model exploring the interior light quality in (A) and (B) through skylights. (B) is the interior spatial quality of the tectonic structural expression also depicted in (C).

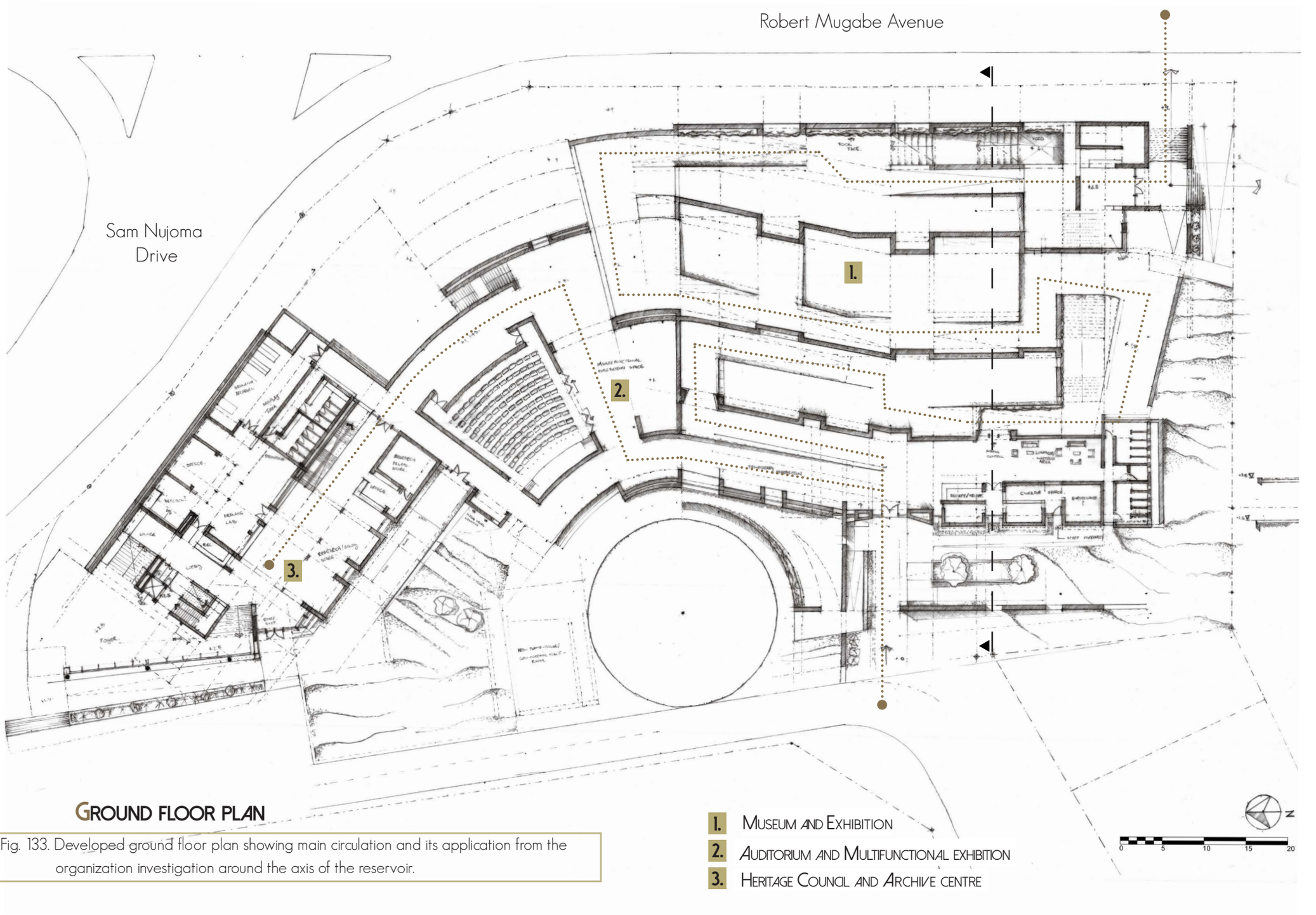
DESIGN DEVELOPMENT 03

PHASE 03



ROOF PLAN

Fig. 132. Roof Plan linking the site from Robert Mugabe Avenue to Garten Street. The building becomes a promenade linking historical buildings within its context.



GROUND FLOOR PLAN

Fig. 133. Developed ground floor plan showing main circulation and its application from the organization investigation around the axis of the reservoir.

1. MUSEUM AND EXHIBITION
2. AUDITORIUM AND MULTIFUNCTIONAL EXHIBITION
3. HERITAGE COUNCIL AND ARCHIVE CENTRE

ELEVATIONS

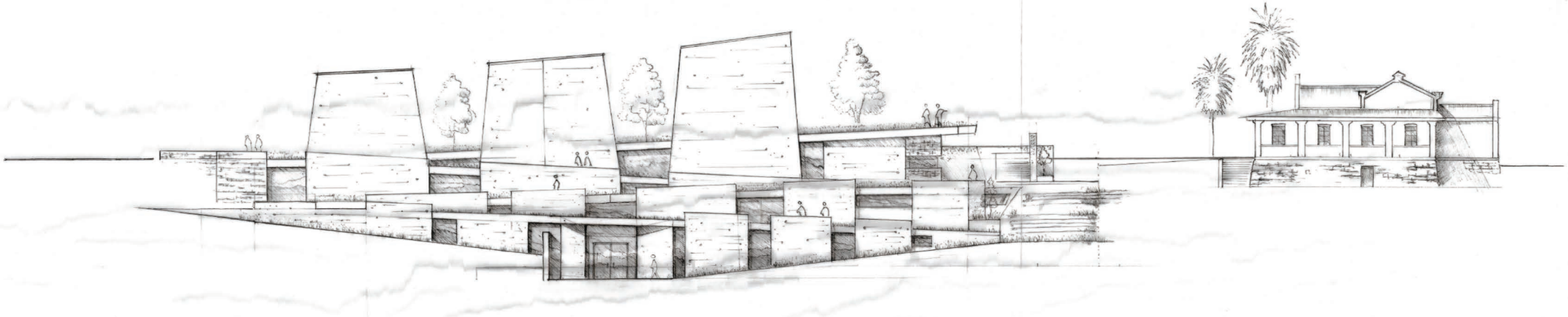


Fig. 134. West elevation showing the monolithic language of the facade as well as the roof-scape as one traverse up the site.

WEST ELEVATION

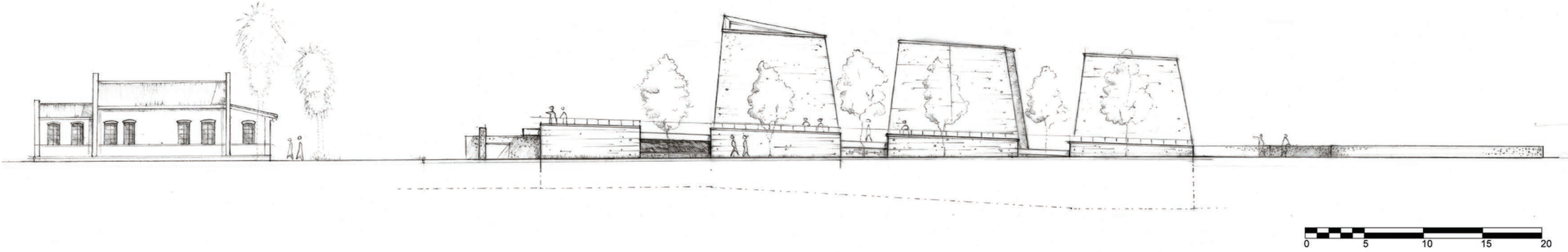


Fig. 135. East Elevation indicating the scale of the museum in relation to the adjacent buildings. The roof scape becomes a platform on which visual reference can be drawn to historical buildings in the context.

EAST ELEVATION

Section

The material complexity is derived from the metaphorical representation of rammed earth as a temporal material. The rammed earth skin is therefore a symbolic representation of the temporal and sensitive nature of the indigenous vernacular architecture in Namibia. In the same regard, the ruins of the ghost town of Kolmanskop, Namibia that is washed away by the desert is also represented through this temporal language that the rammed earth represents.

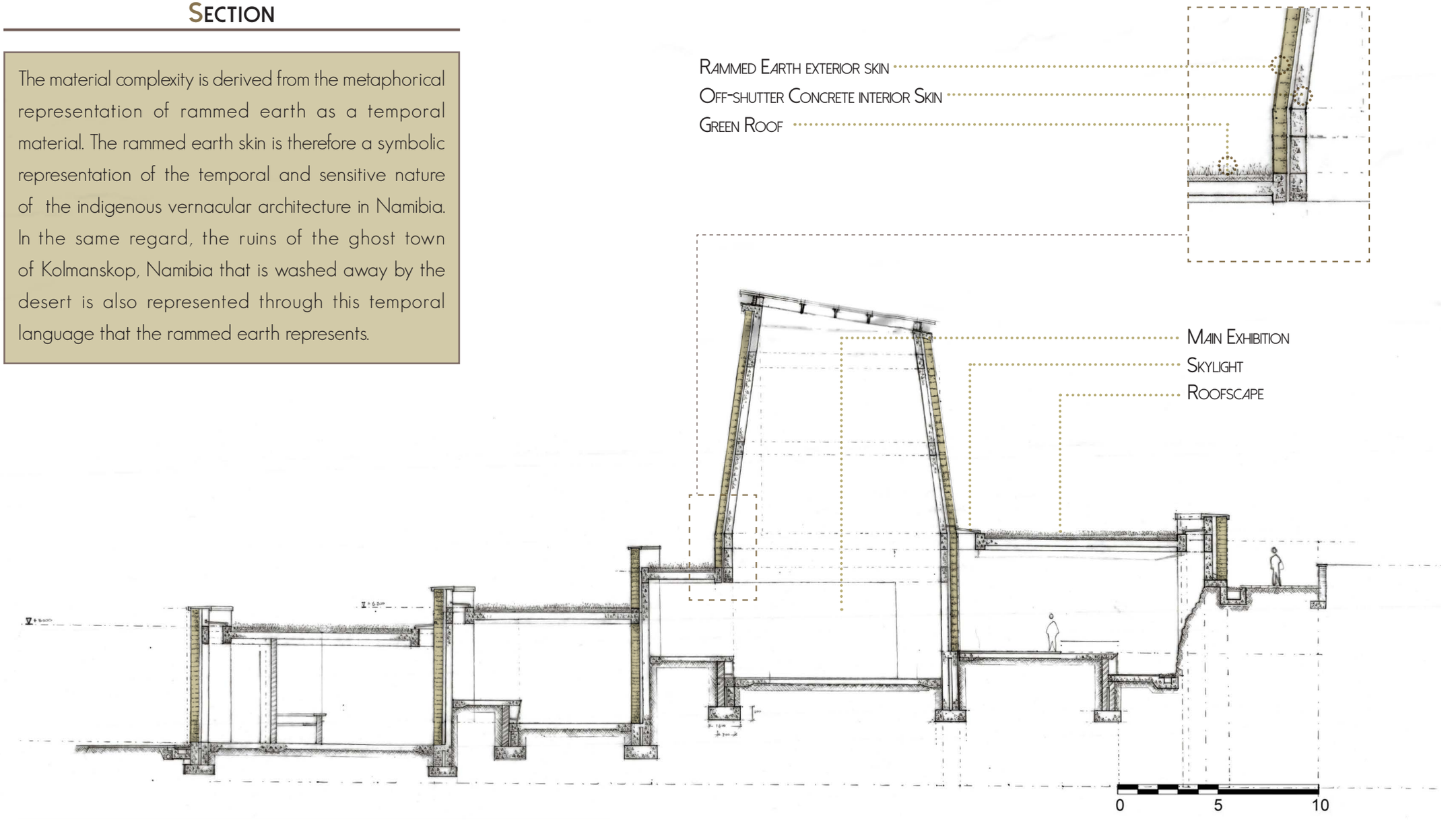


Fig. 136. Cross section investigating material application, scale and proportion of exhibition spaces.

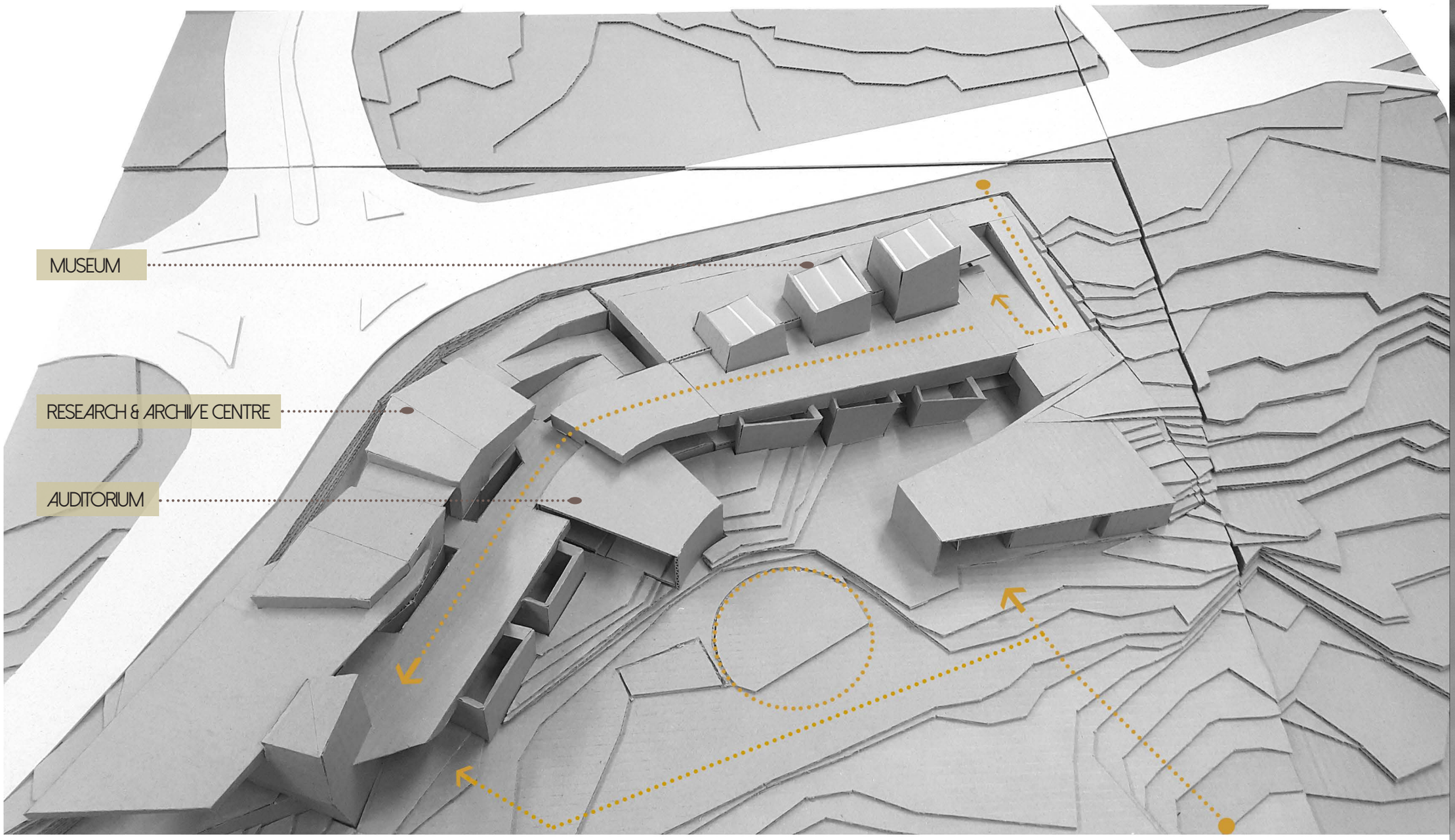
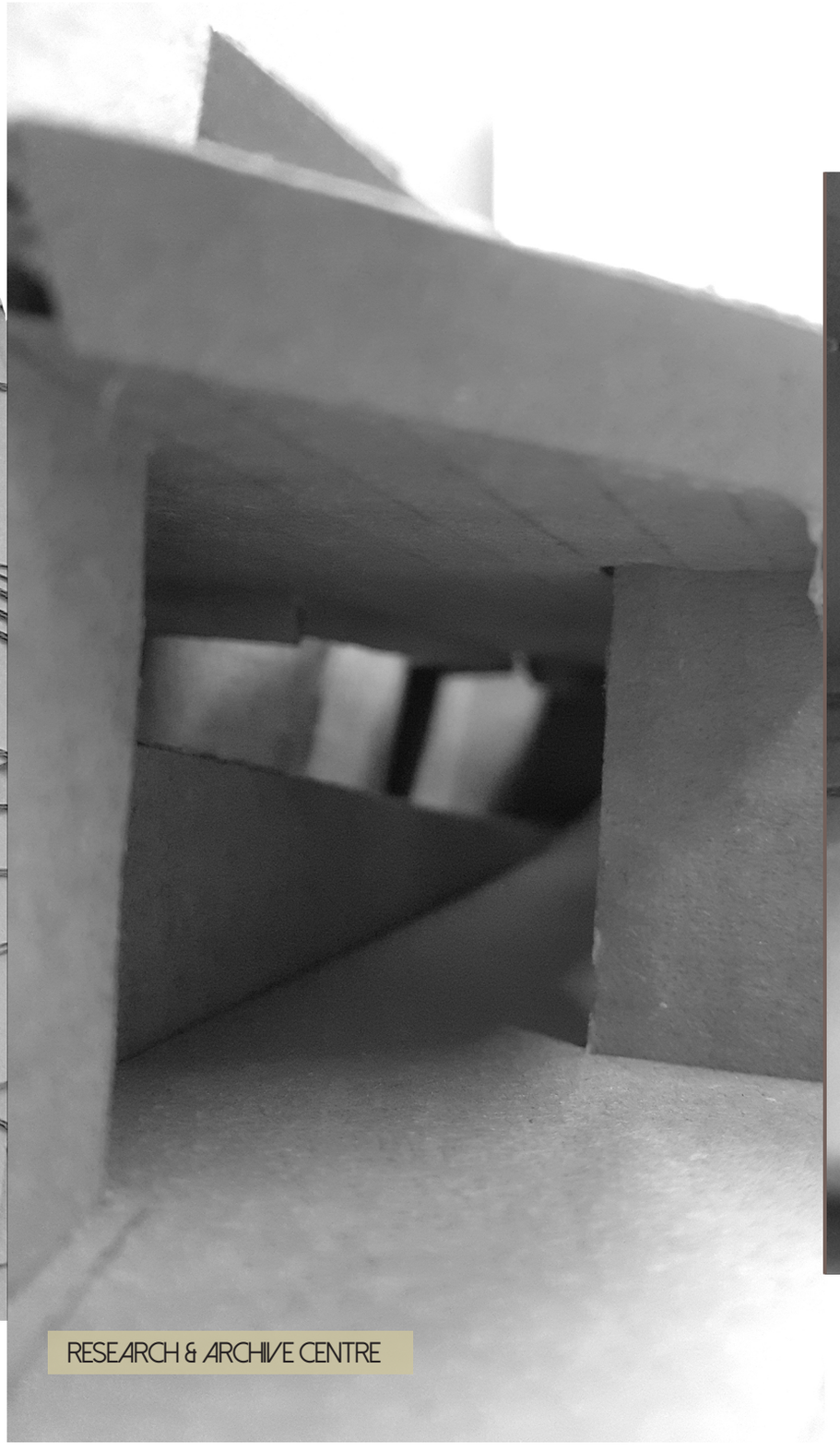


Fig. 137 Model Showing approach and movement through the building and site.



RESEARCH & ARCHIVE CENTRE

MUSEUM EXHIBITION SPACE

Fig. 138 Natural light quality in the exhibition spaces with ramps flowing through the space.

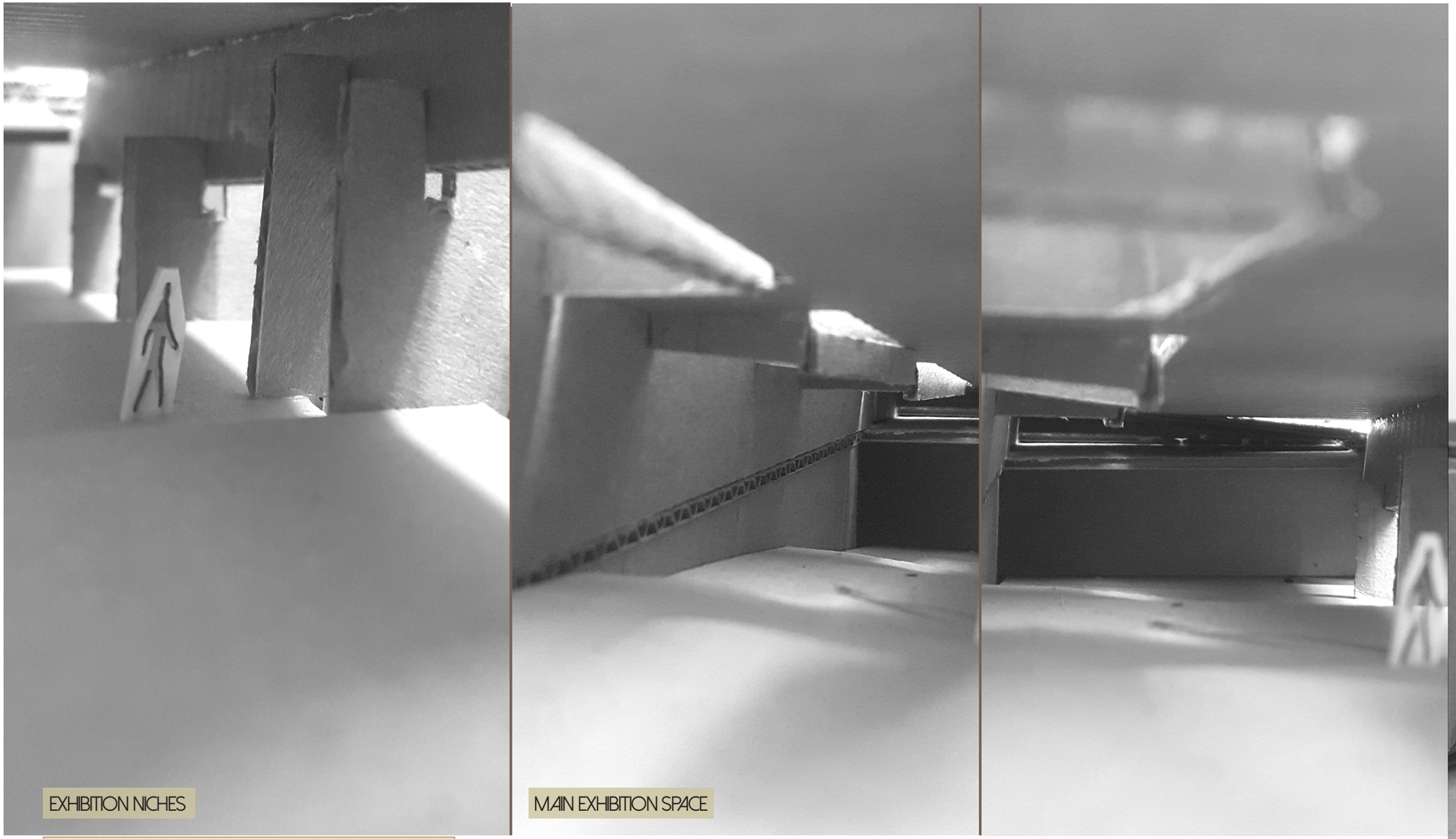
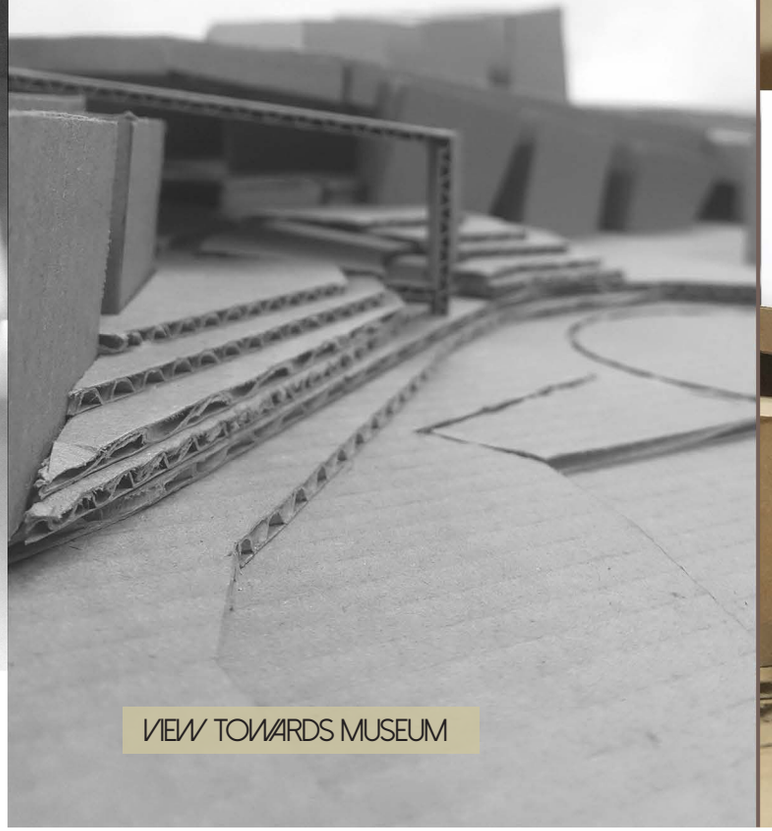


Fig. 139 Natural light investigation in the main exhibition space.



VIEW TOWARDS MUSEUM

VIEW FROM RESEARCH CENTRE

APPROACH

TOWARDS A FINAL DESIGN

PHASE 04

'Building [In] the Landscape' as the design concept; suggests the design to be taking a passive presence relative to the landscape and context. The visitor is encountered with an outcrop in the landscape that invites them to walk on the roof-scape as they appreciate the context around them. This experience is a critical part of the exhibition as a whole in establishing awareness towards architectural heritage both in that context and the country as a whole.

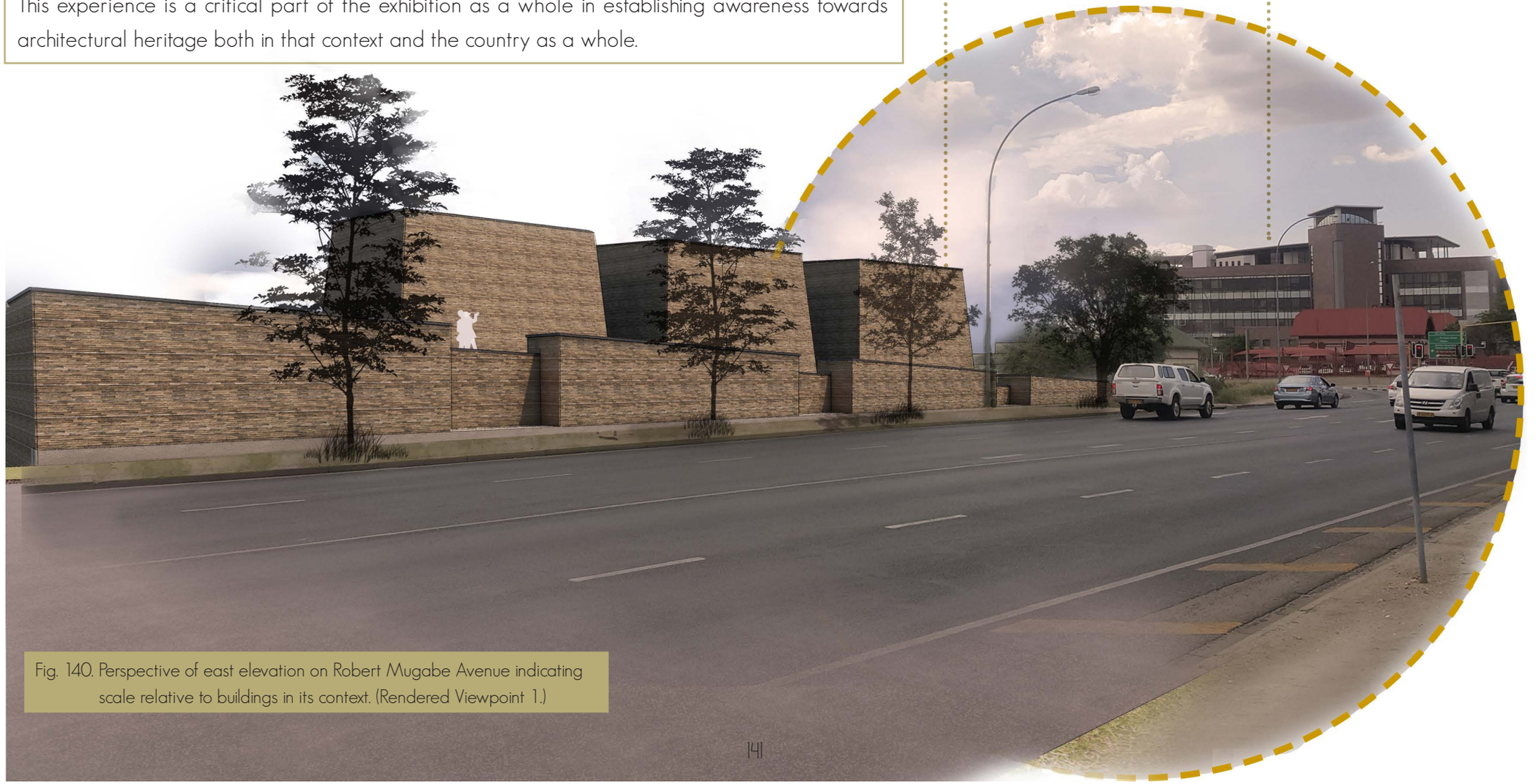
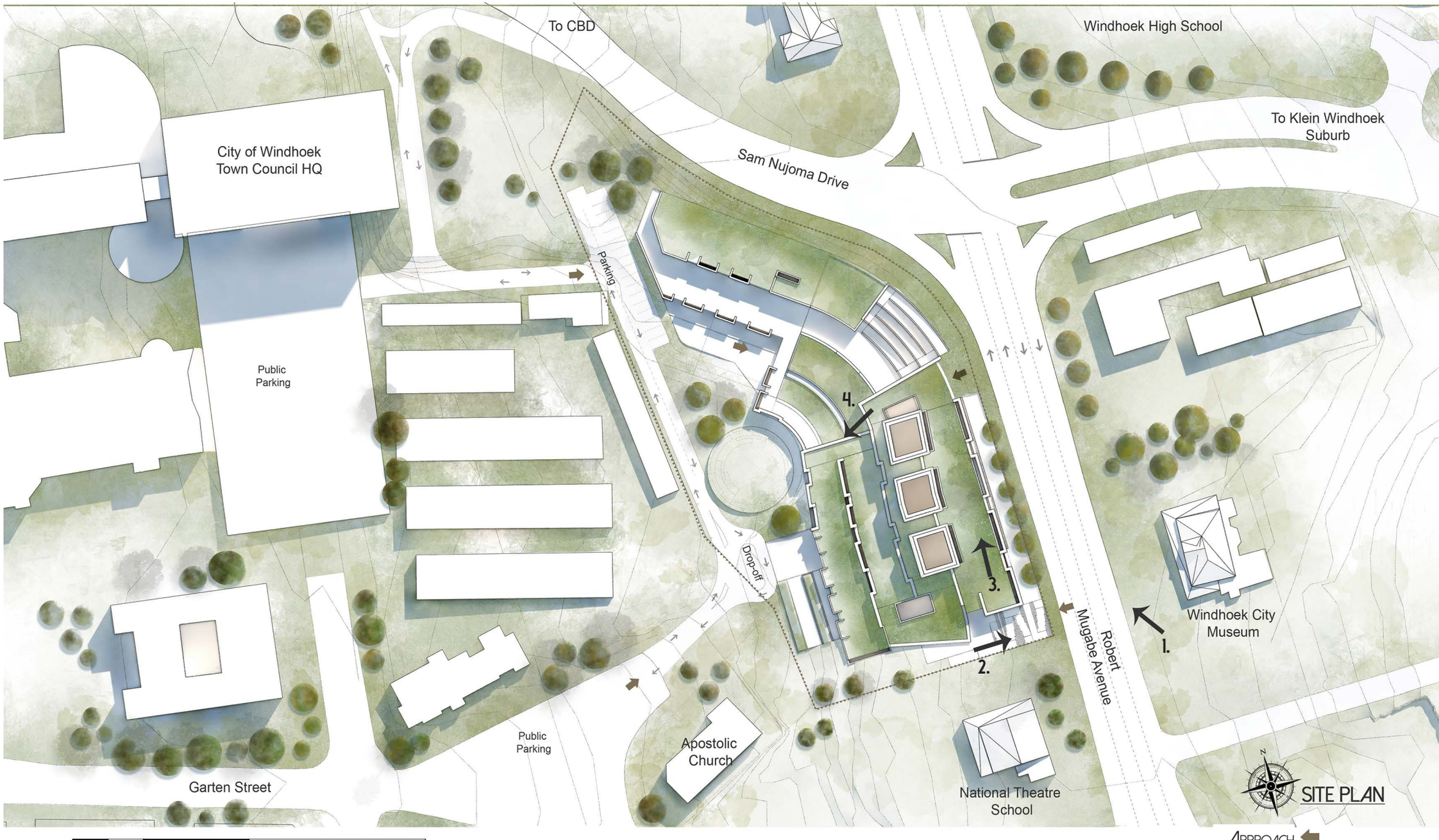


Fig. 140. Perspective of east elevation on Robert Mugabe Avenue indicating scale relative to buildings in its context. (Rendered Viewpoint 1.)


To CBD
Windhoek High School
To Klein Windhoek Suburb
City of Windhoek Town Council HQ
Sam Nujoma Drive
Parking
Public Parking
4.
3.
2.
1.
Drop-off
Robert Mugabe Avenue
Windhoek City Museum
Public Parking
Apostolic Church
National Theatre School
Garten Street
0
20
50
100
SITE PLAN
Approach
Rendered viewpoints

Museum entrance on Robert Mugabe Avenue

Fig. 141. Rendered view from the entrance of the Proposed Museum making visual and physical link towards the adjacent Windhoek City Museum. (Rendered Viewpoint 2)

Visual reference to Historical Context

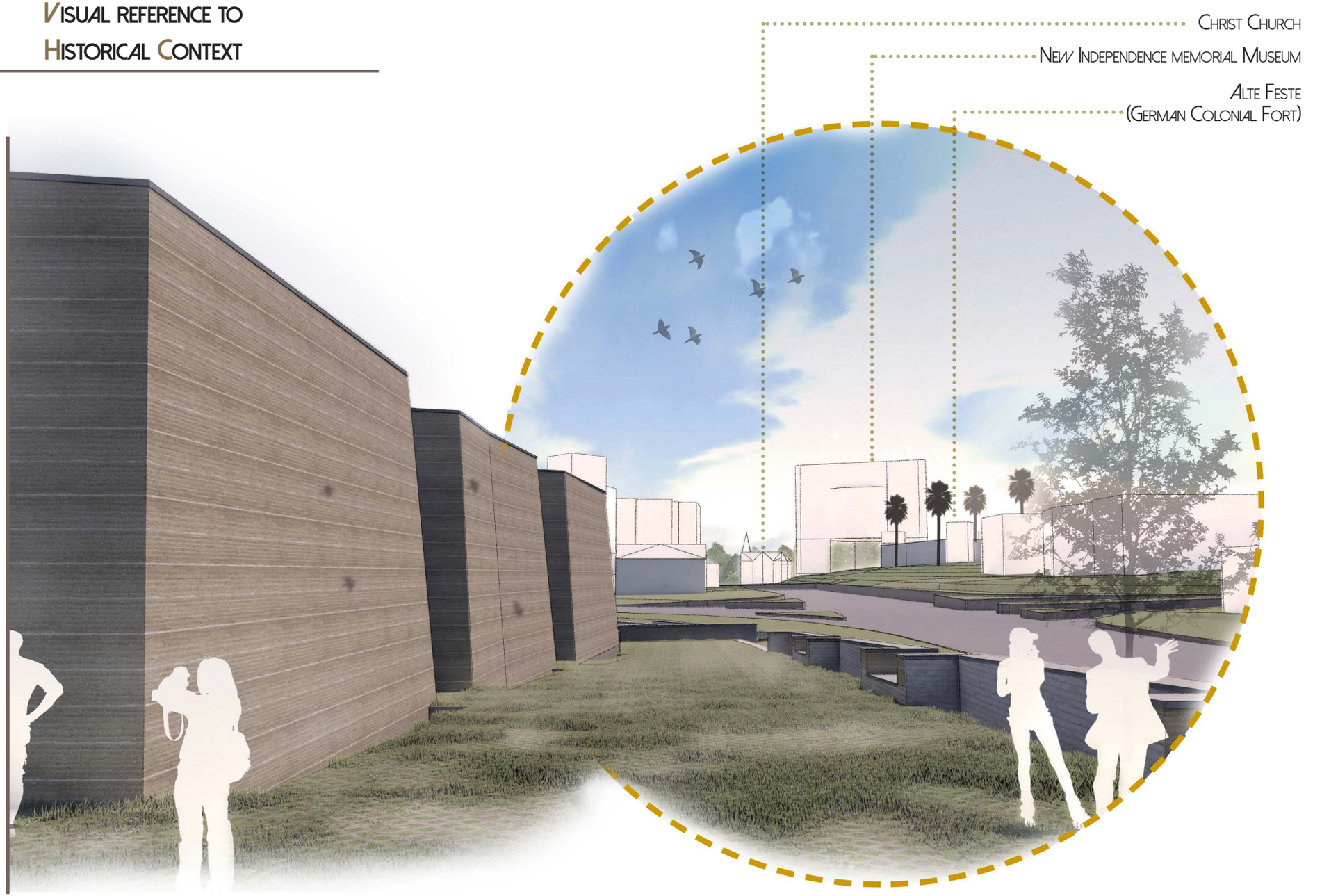
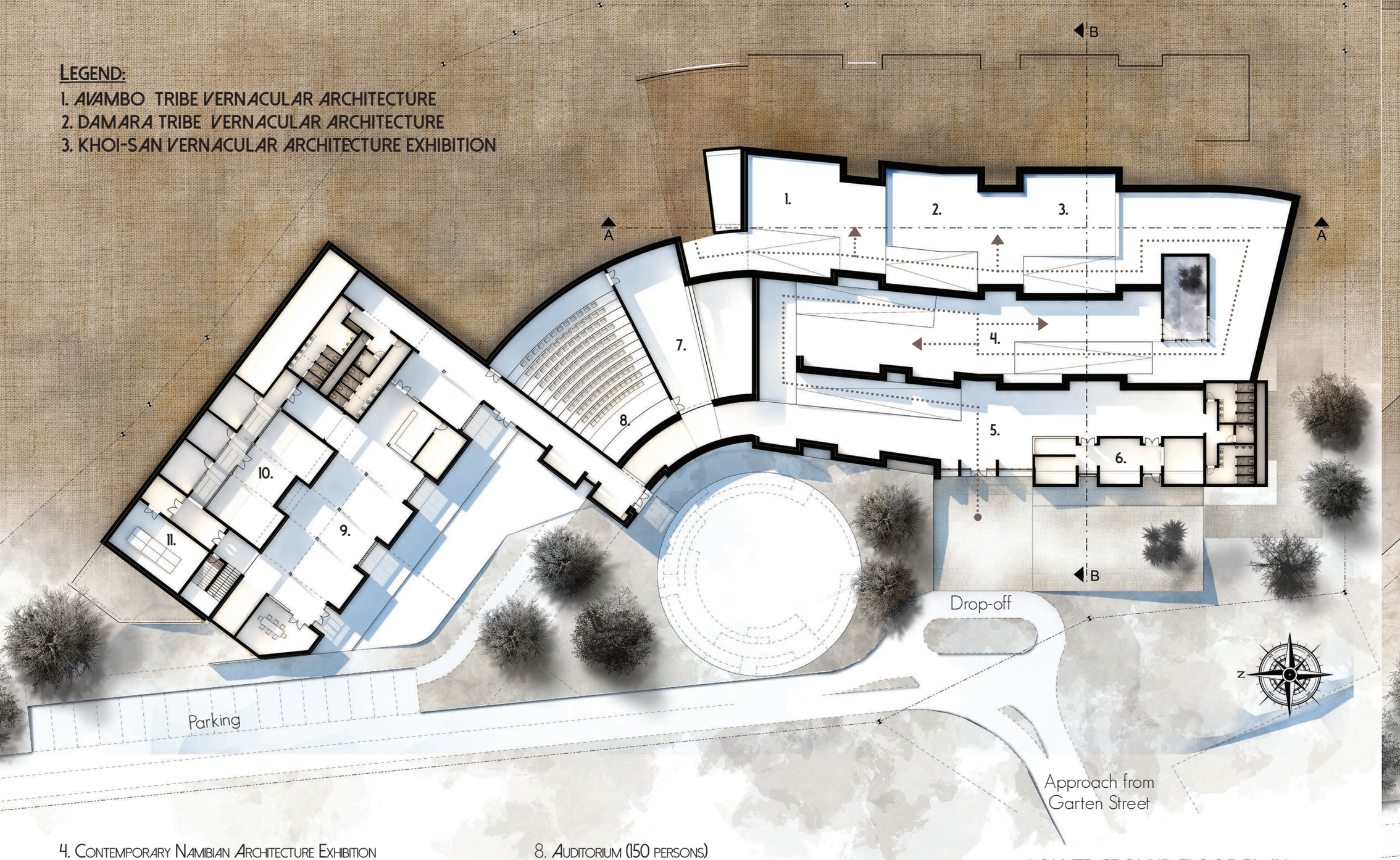


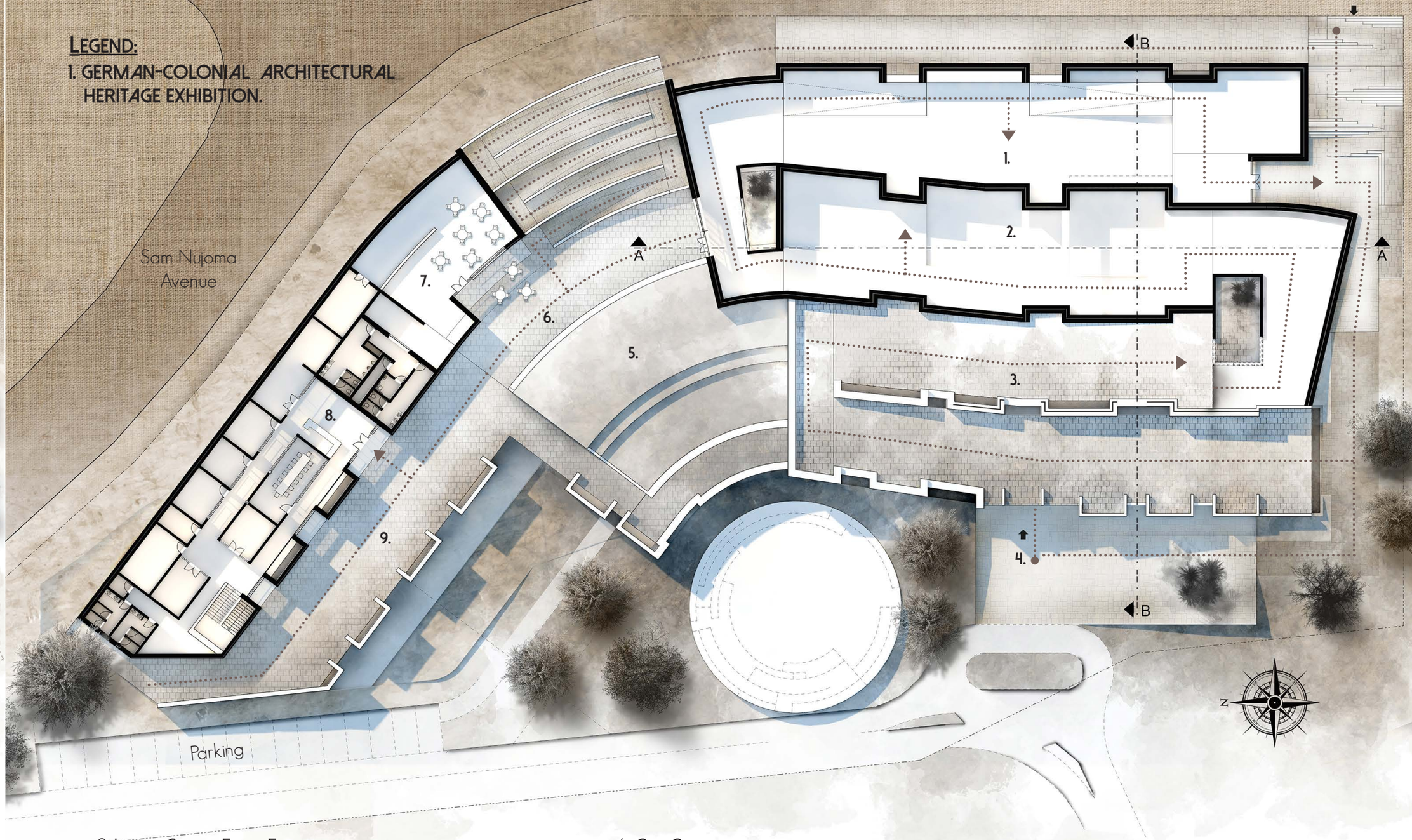
Fig. 142. Perspective view from roof-scape creating visual link to historical buildings (Alte Feste and Christ Church) in the background as part of the exhibition. (Rendered Viewpoint 3)



4. Contemporary Namibian Architecture Exhibition
5. Lower-Ground Entrance Foyer
6. Curators Office
7. Multi-functional Exhibition
8. Auditorium (150 persons)
9. Research Library
10. CAD Drawing and Research Laboratory
11. Drawing Archives

LOWER GROUND FLOOR PLAN

0 5 10 15 20

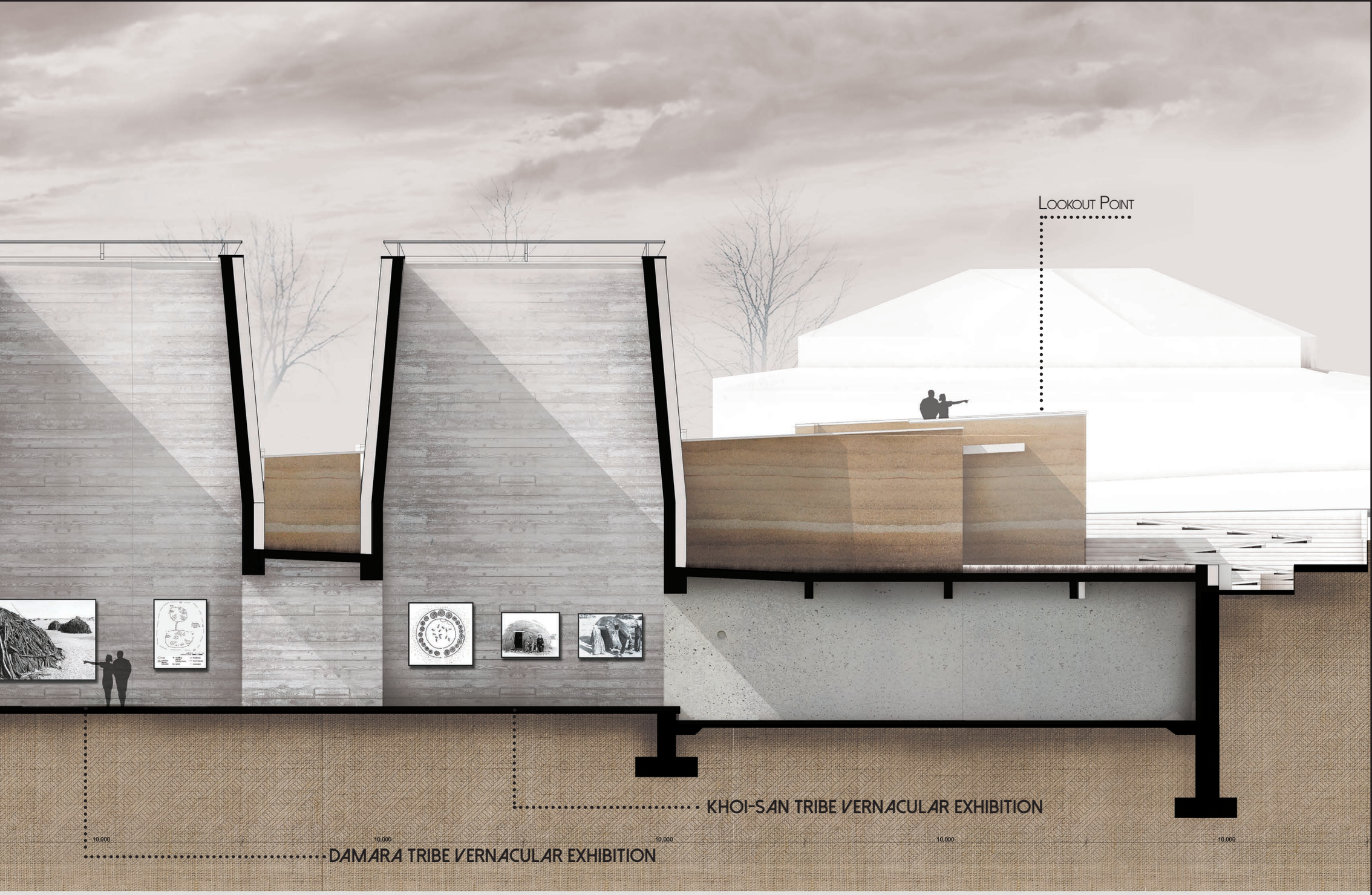


2. Lower Ground Floor Exhibition
3. Roof Walkway
4. Lower Ground Floor Entrance
5. Auditorium Roof Garden
6. Cafe Courtyard
7. Cafe
8. National Heritage Council Offices
9. Roof walkway

UPPER GROUND FLOOR PLAN

SECTION A-A

0 2 5 10

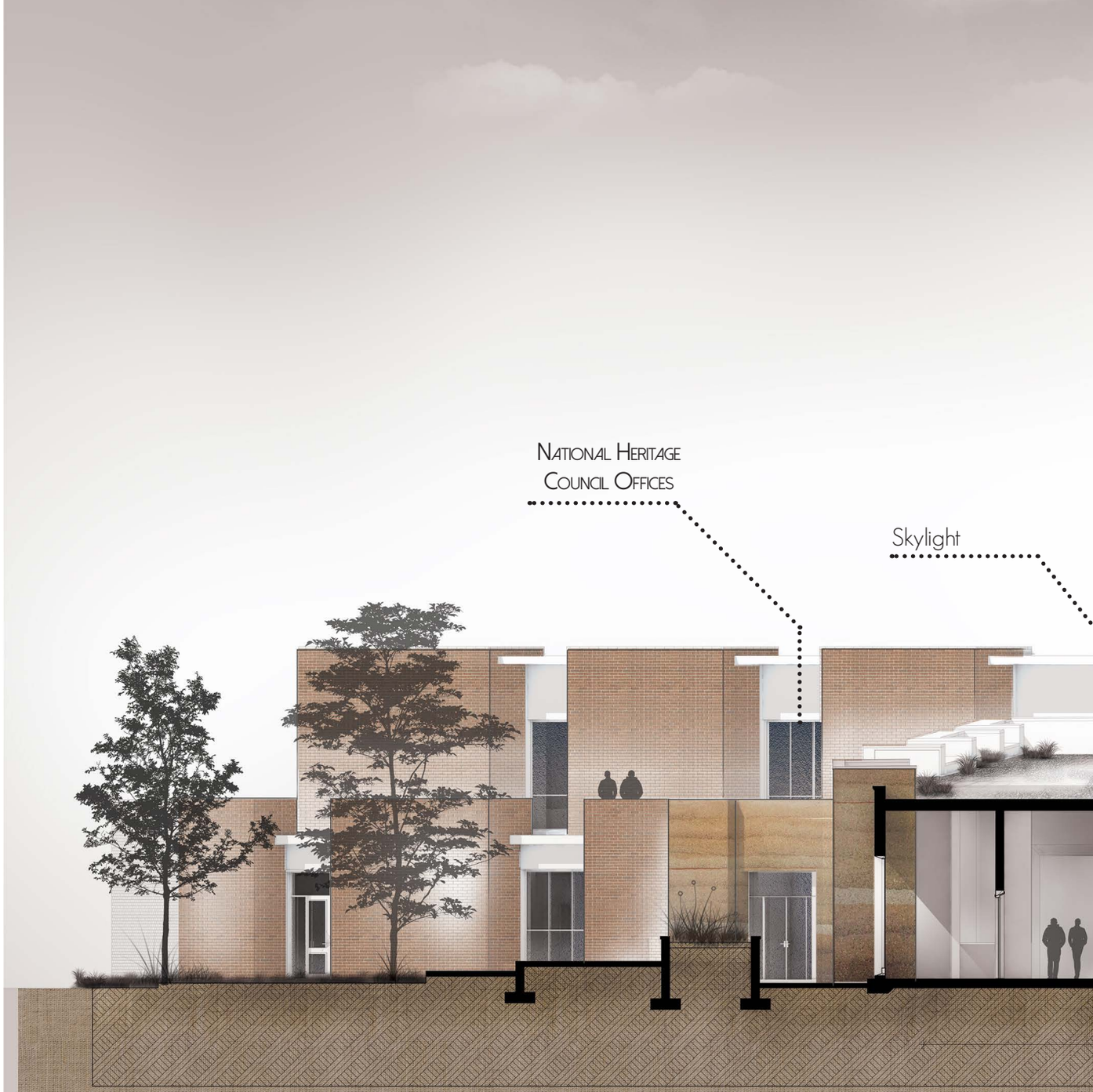

LOOKOUT POINT
KHOI-SAN TRIBE VERNACULAR EXHIBITION
10,000
10,000
10,000
10,000
10,000
DAMARA TRIBE VERNACULAR EXHIBITION

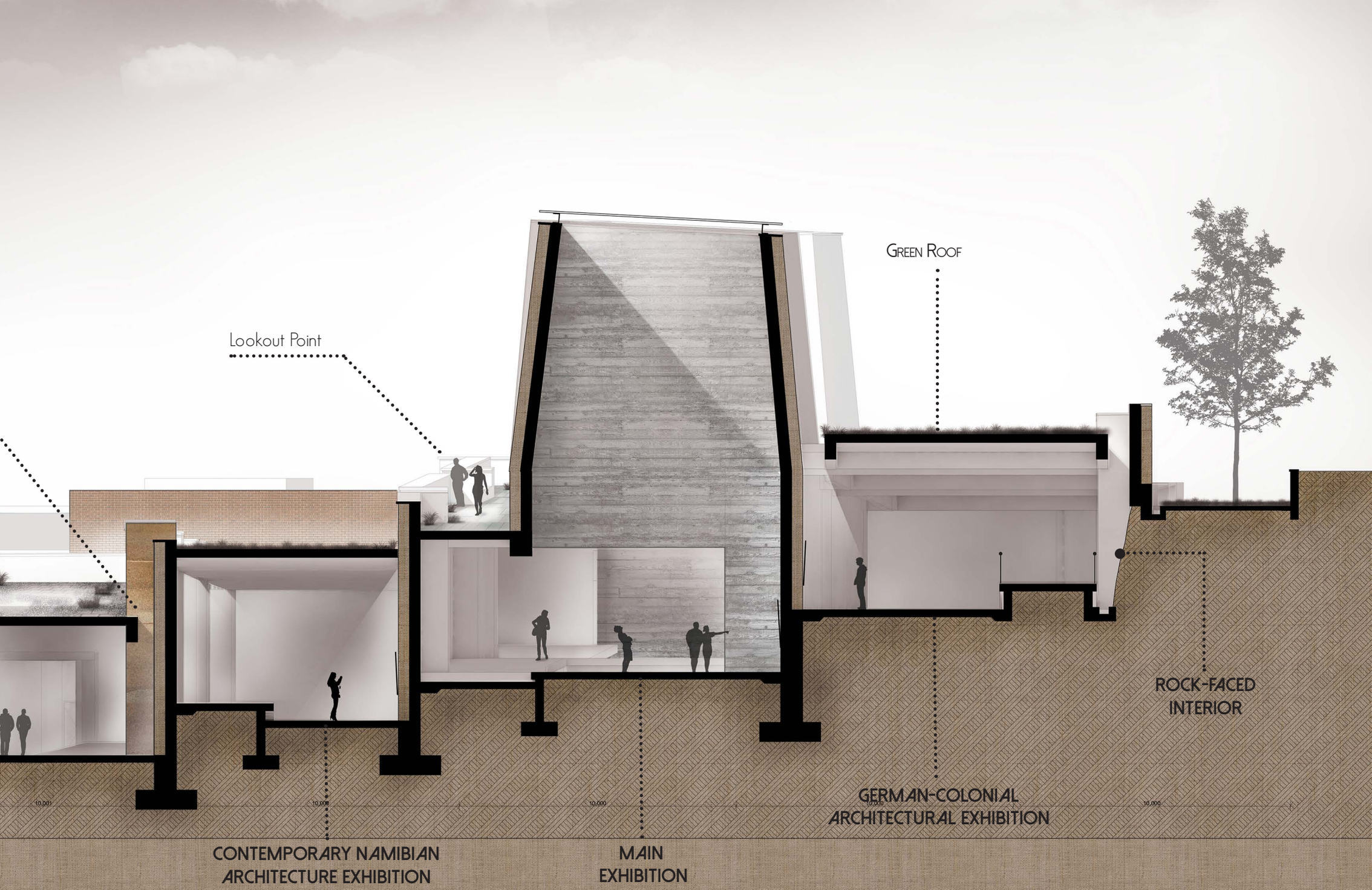
Towards a final Spatial Experience

The main Exhibition Hall characterized by the three pods representing the stereotomic language of the Namibian landscape but also as a reference to the architectural individuality of indigenous cultures in Namibia that meets on an exhibitive platform as a unity. The Exhibition spaces are illuminated by means of natural light.

The main exhibition collection comprise of photographic surveys, digital plans and documentation and scale models of the architectural artefacts of the Awambo, Damara and Khoisan Tribes of Namibia. The contemporary architecture exhibition is a collection of buildings that successfully applied vernacular architectural principles in a contemporary way. This educates the visitor on the merits of vernacular architecture as a reference point for future research and design application.

The German-colonial exhibition is a time sequence of modern architecture constructed in Namibia at the turn of the 20th century and its influences in a colonial and post-colonial era.




Lookout Point
Green Roof
Rock-faced
Interior
10.000
10.000
10.000
10.000
German-colonial
Architectural Exhibition
Contemporary Namibian
Architecture Exhibition
Main
Exhibition

Visual link to 10-manhouse and Windhoek South

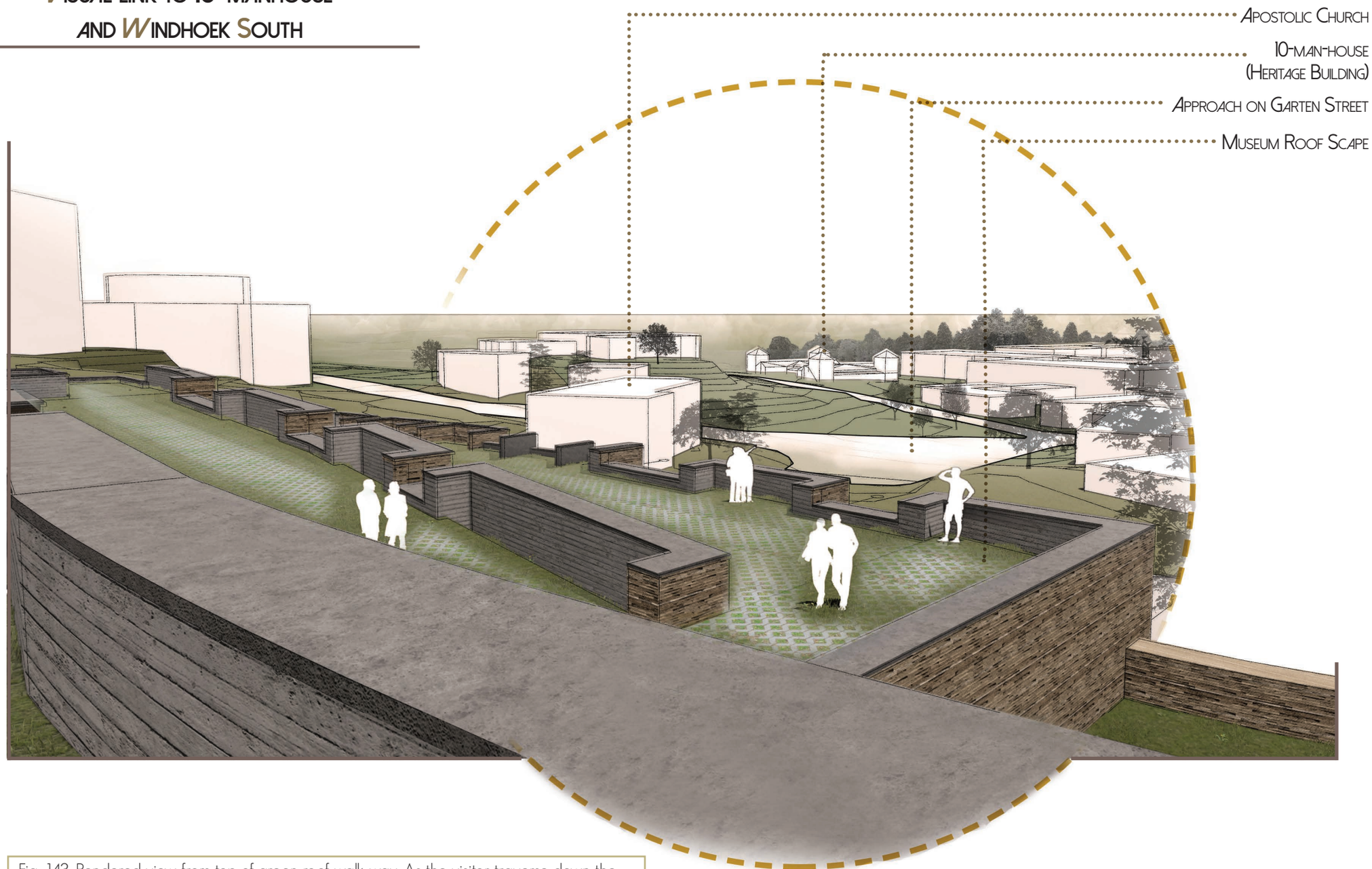


Fig. 143. Rendered view from top of green roof walk-way. As the visitor traverse down the building rooftop their perspective changes framing the city. (Rendered Viewpoint 4)

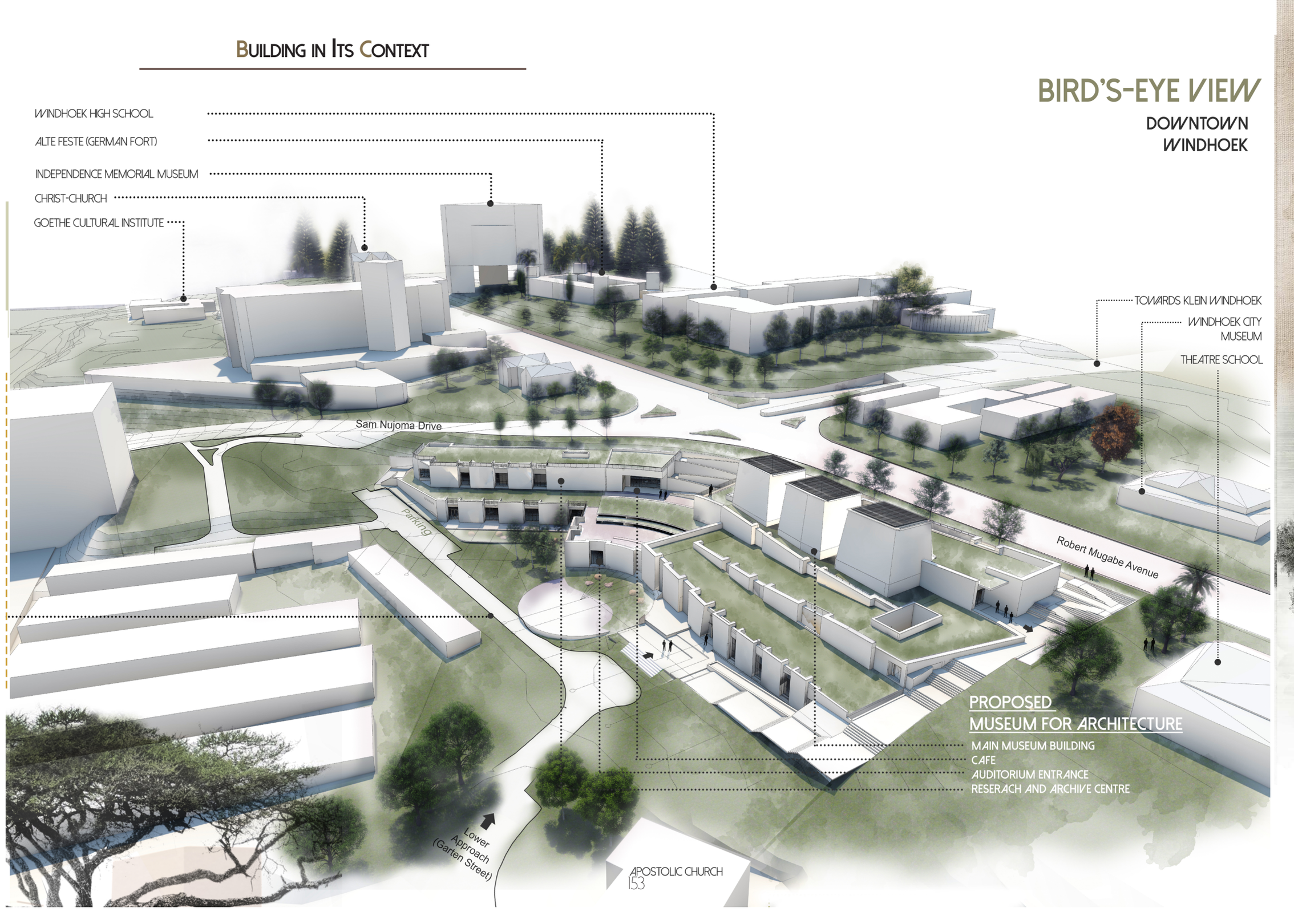
A FINAL DESIGN

PHASE 05

MUSEUM LOWER ENTRANCE FOYER

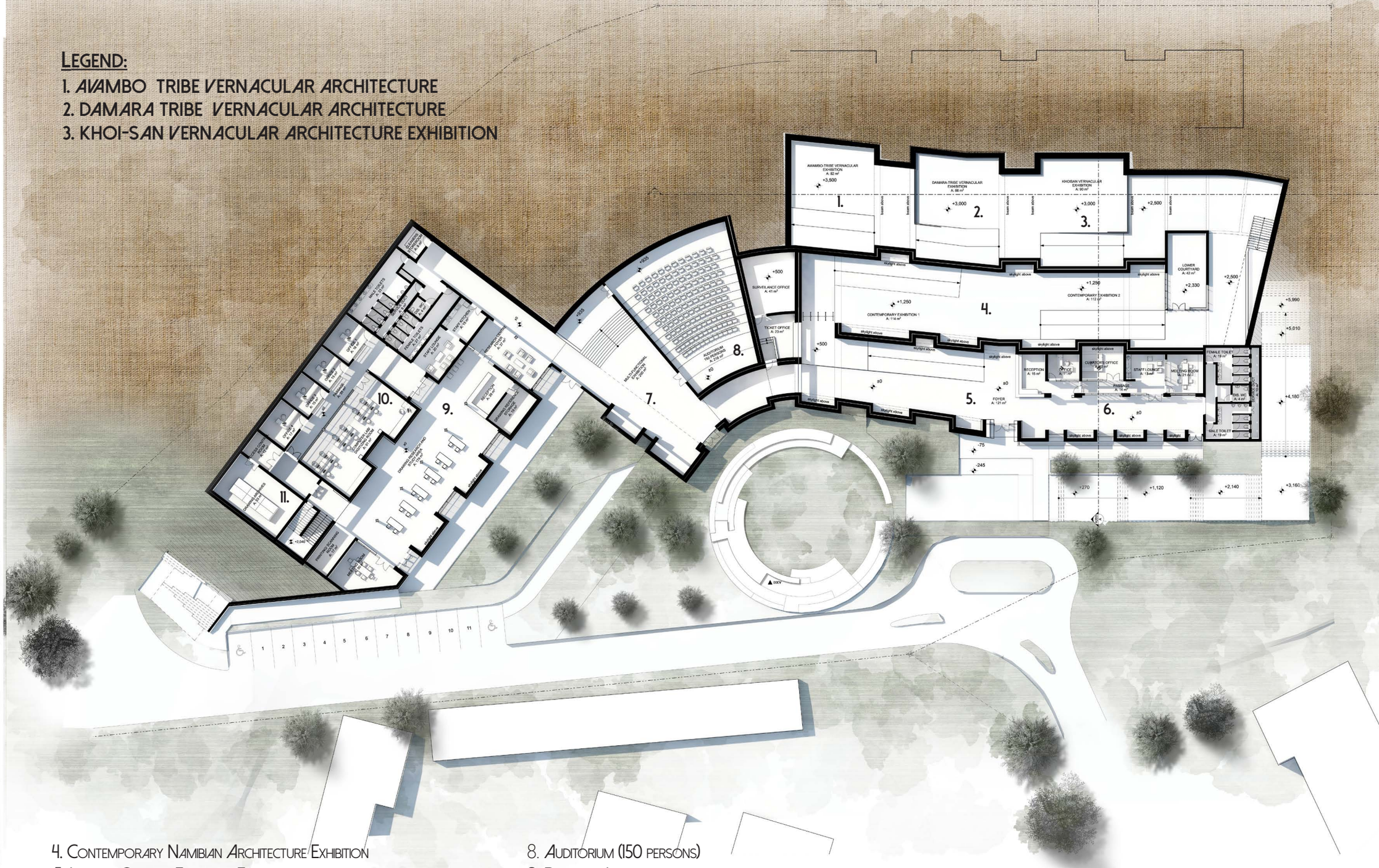
BIRD'S-EYE VIEW

DOWNTOWN WINDHOEK



LEGEND:

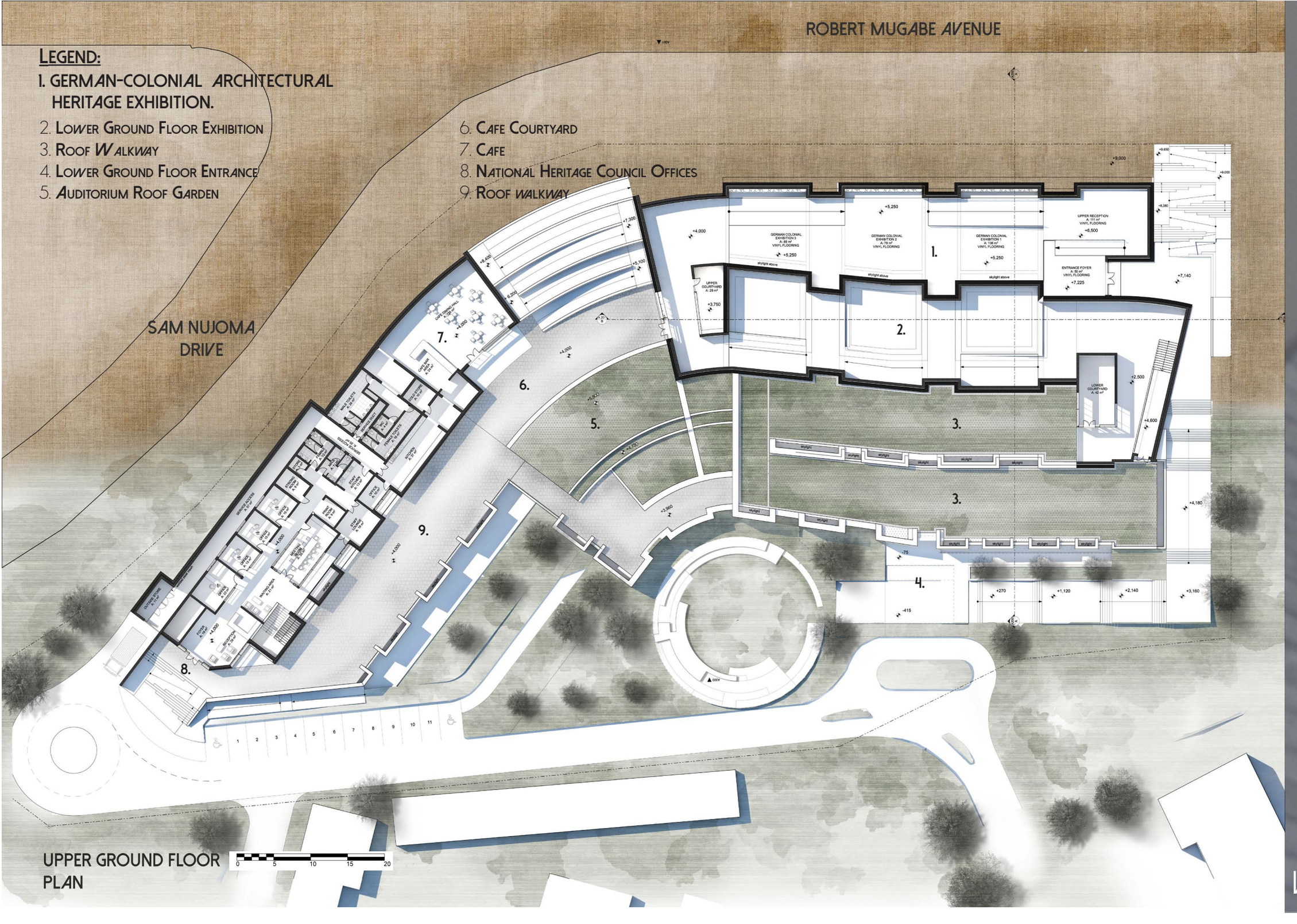
1. AVAMBO TRIBE VERNACULAR ARCHITECTURE
2. DAMARA TRIBE VERNACULAR ARCHITECTURE
3. KHOI-SAN VERNACULAR ARCHITECTURE EXHIBITION

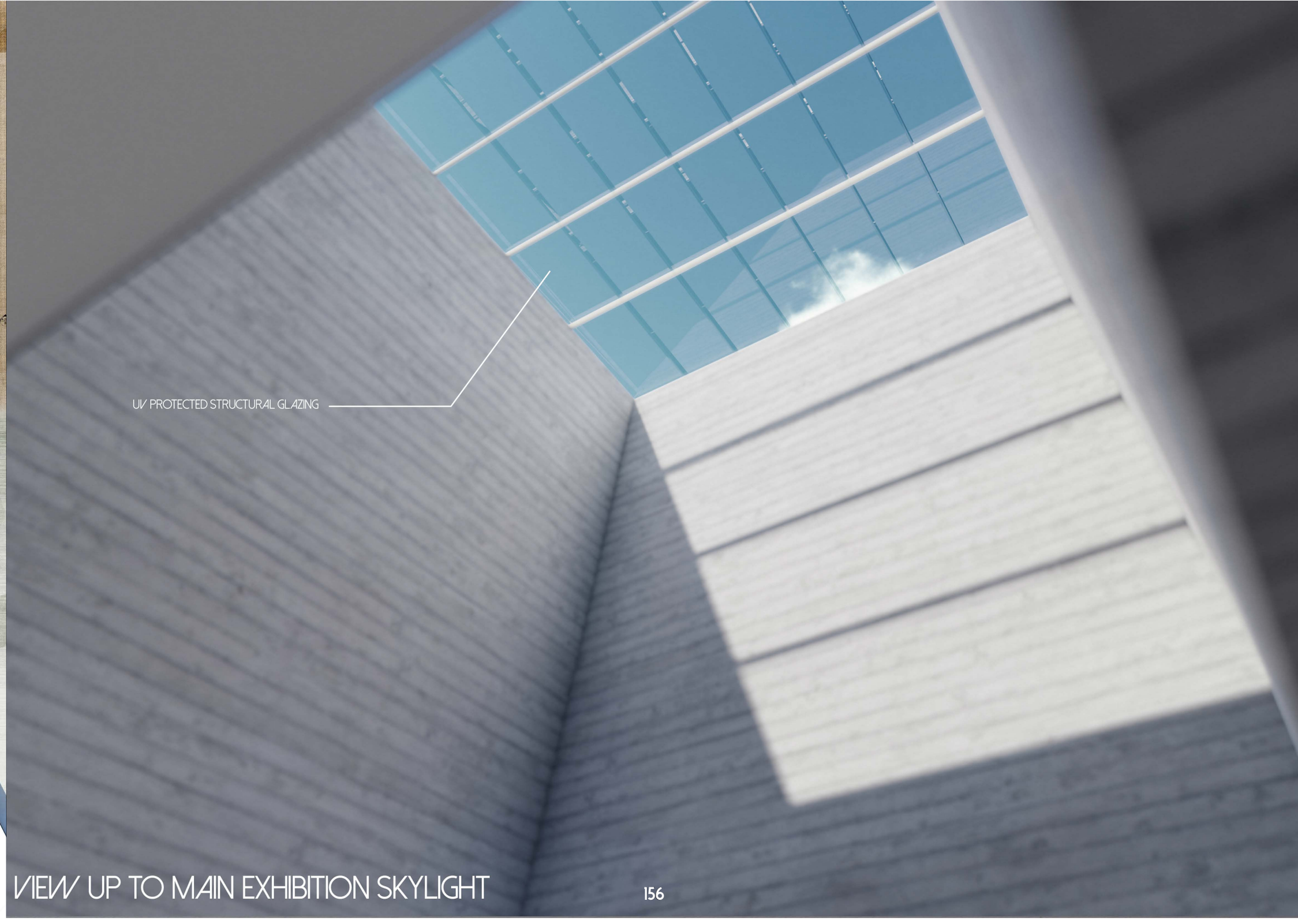


4. CONTEMPORARY NAMIBIAN ARCHITECTURE EXHIBITION
5. LOWER-GROUND ENTRANCE FOYER
6. CURATORS OFFICE
7. MULTI-FUNCTIONAL EXHIBITION
8. AUDITORIUM (150 PERSONS)
9. RESEARCH LIBRARY
10. CAD DRAWING AND RESEARCH LABORATORY
11. DRAWING ARCHIVES

LOWER GROUND FLOOR PLAN

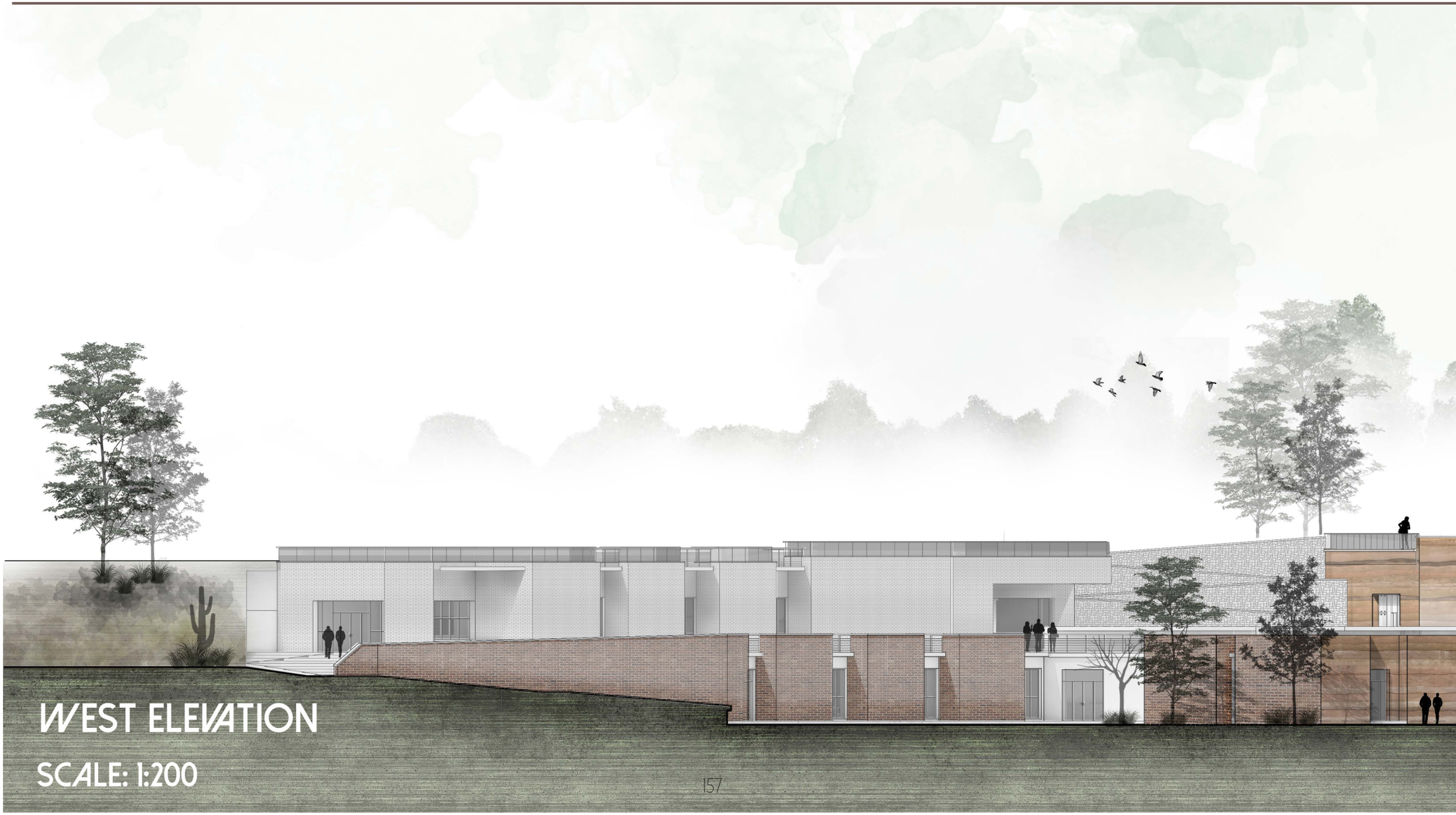
0 5 10 15 20


ROBERT MUGABE AVENUE
LEGEND:
1. GERMAN-COLONIAL ARCHITECTURAL HERITAGE EXHIBITION.
2. LOWER GROUND FLOOR EXHIBITION
3. ROOF WALKWAY
4. LOWER GROUND FLOOR ENTRANCE
5. AUDITORIUM ROOF GARDEN
6. CAFE COURTYARD
7. CAFE
8. NATIONAL HERITAGE COUNCIL OFFICES
9. ROOF WALKWAY
SAM NUJOMA DRIVE
UPPER GROUND FLOOR PLAN
0 5 10 15 20



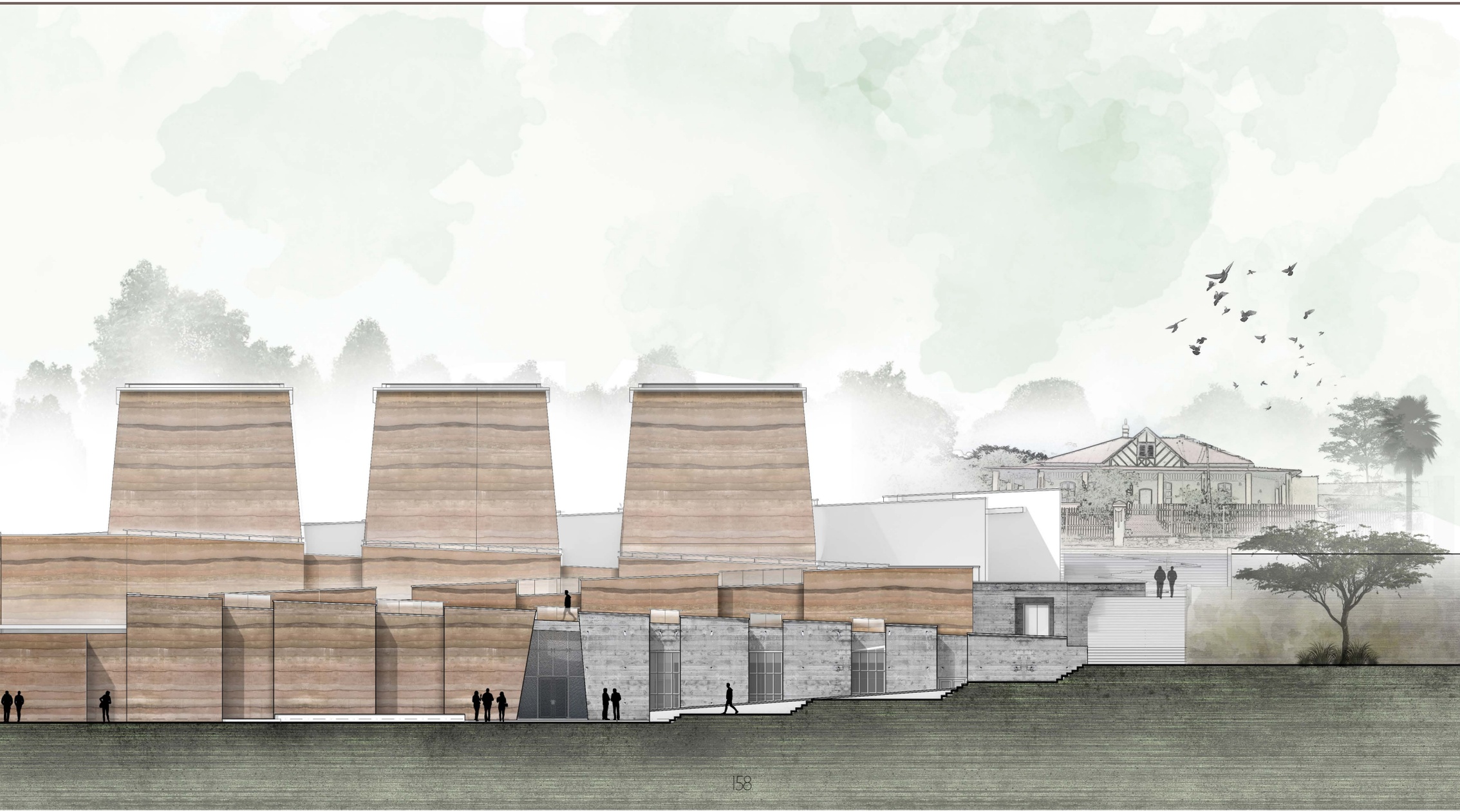
VIEW UP TO MAIN EXHIBITION SKYLIGHT

ELEVATIONS



WEST ELEVATION

SCALE: 1:200



EAST ELEVATION

SCALE: 1:200

CURATOR'S OFFICE WAITING AREA

MAIN EXHIBITION HALL (NAMIBIAN VERNACULAR ARCHITECTURE)


VIEW TOWARDS MUSEUM

DESIGN DEVELOPMENT:
CONCLUSION

BUILDING [IN] THE LANDSCAPE

In acknowledgement of the challenging task to design a building that is a successful representation of the initial inspiration and design concept, the resulting design could have been more successful in the capturing of the provocative sculptural qualities explored in the conceptual model. However, the following key objectives have been achieved:

The building celebrates a passive relation to its context with its distinctive form and architectural expression. It is successful in this regard as it draws minimal reference to any particular architectural style. The idea of incorporating a vernacular language through structural expressions have been explored and the conclusion was drawn that it could have an opposite effect of the real intention of the intended design.

Fig. 144 Palisaded fence in vicinity of 10-Mann-haus
Photograph: Author, 2018

4.3 TECHNICAL DOCUMENTATION AND RESOLUTION

This report is a technical investigation for the design proposal of a museum of architecture that addresses the neglected colonial and vernacular architectural heritage in the context of Namibia. This progressive research aims to analyse the contextual, and intrinsic characteristics of the specific selected site to make well-informed decisions to formulate a professional and meaningful thesis design response.

The site is discussed briefly in terms of its location, cadastral information and topographical characteristics. The document will then continue into the research of suitable sustainability concepts that will render the design contextually sensitive. Materiality plays an important role in both sustainability and realizing the conceptual intent of the design and thus forms a further part of the report. The document will culminate in the structural investigation which reflects the various structural applications and considerations that incorporate the aforementioned principles and investigations.

SITE LOCATION

Windhoek is the capital city of Namibia and the economic hub of the country. Its centrality plays a key role in relation to the rest of the country that fosters an even platform for socio economic opportunities with its neighbouring SADC member states. After careful consideration of a range of possible site locations across the country; the most suitable site is located within Windhoek for the specific focus of its contextual historical building footprint, rich history and the city's existing civic functions.

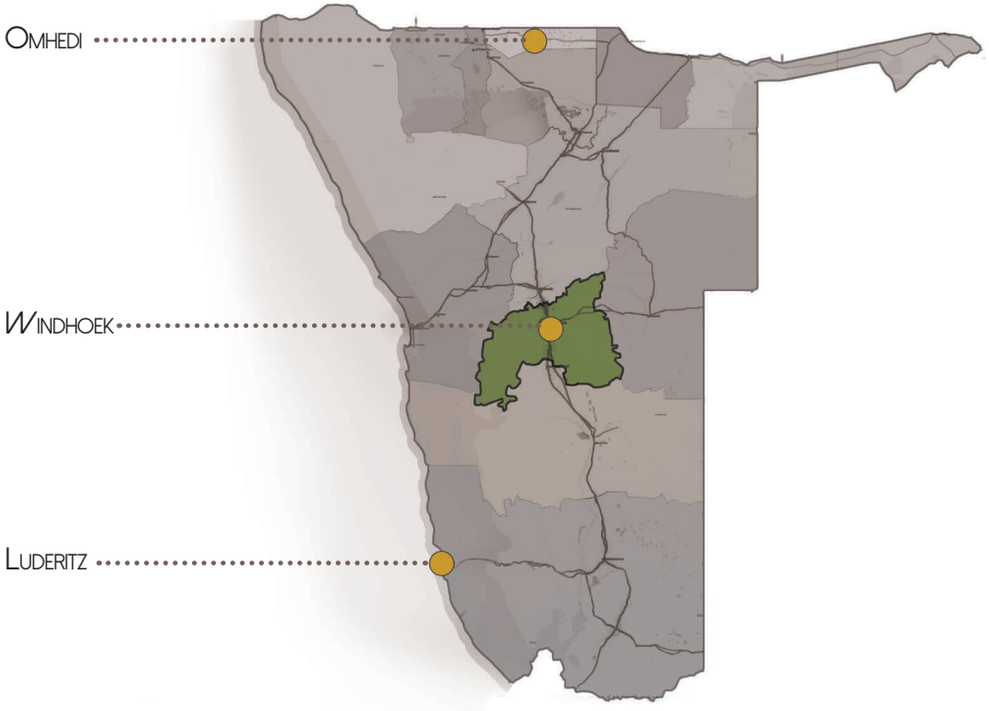


Fig. 145 (Above) Map of Namibia indicating the considered locations for the design proposal.

SITE ANALYSIS

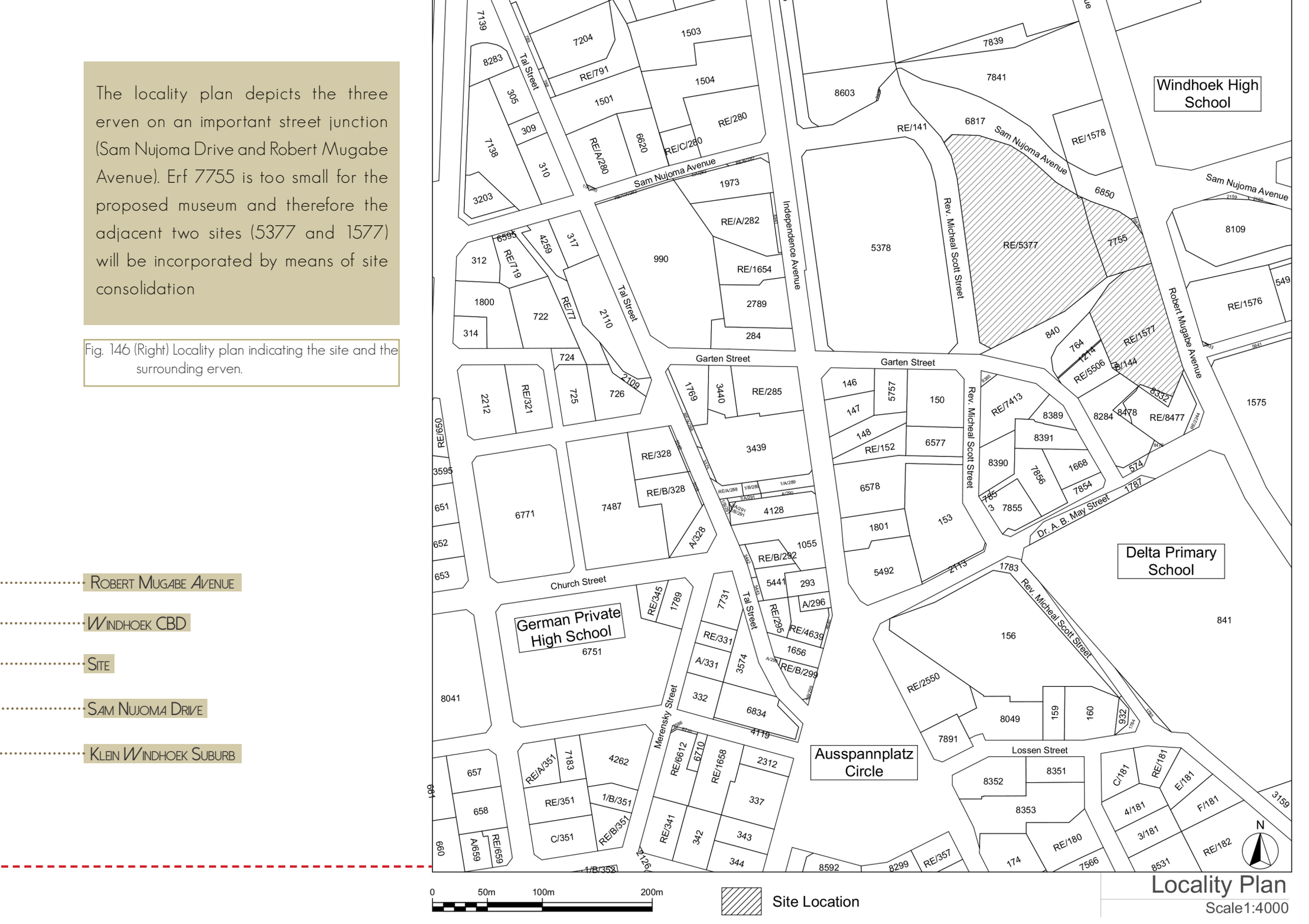
This chapter aims to provide the cadastral information pertaining to the site and analyse the development rights and limitations on such site. Secondly, a topographical analysis of the immediate and macro context to identify design opportunities and relationships to the context in terms of scale and architectural language. With the main conceptual approach being "Building in the Landscape"; it is important to consider the geo-technical characteristics of the site as well and thus this will be briefly analysed.

Locality Plan

The selected site for the thesis is located on the corner of Sam Nujoma Drive and Robert Mugabe Avenue in downtown Windhoek.

The locality plan depicts the three erven on an important street junction (Sam Nujoma Drive and Robert Mugabe Avenue). Erf 7755 is too small for the proposed museum and therefore the adjacent two sites (5377 and 1577) will be incorporated by means of site consolidation

Fig. 146 (Right) Locality plan indicating the site and the surrounding erven.



CADASTRAL INFORMATION

The selected site incorporates three parcels (erven); two of which has underutilized space making up a suitable site on the prominent corner of Sam Nujoma Drive and Robert Mugabe Avenue in the Windhoek Central Business District.

The site is centrally located in a historical context consisting of old German colonial buildings. The museum draws reference to these buildings in its narrative of architectural restoration and preservation. However, the site (erf 7755) (fig. 4) is too small to accommodate the spatial requirements of the museum. The adjacent sites (erf RE/5377 and RE/1577) is underutilized and thus creates an opportunity to be incorporated with erf 7755 to create a site sufficient enough for the proposed museum.

The first parcel, Erf 1577 consist of an existing building, namely the National Theatre School of Namibia. The building is placed on the parcel so as to allow for an easy subdivision of the site. The theatre school is housed in a German Colonial styled building and thus the proposed museum will serve its interests. The second parcel, Erf 7755 is an undeveloped site except for an electrical substation which will be incorporated into the design. The third parcel, Erf RE/5377 on which the City of Windhoek Town Council's parking is located; consist of a small portion that is to be sub-divided and that can be consolidated with Erf 7755. Together the three sites will form one site that will meet the spatial requirements for the proposed design.

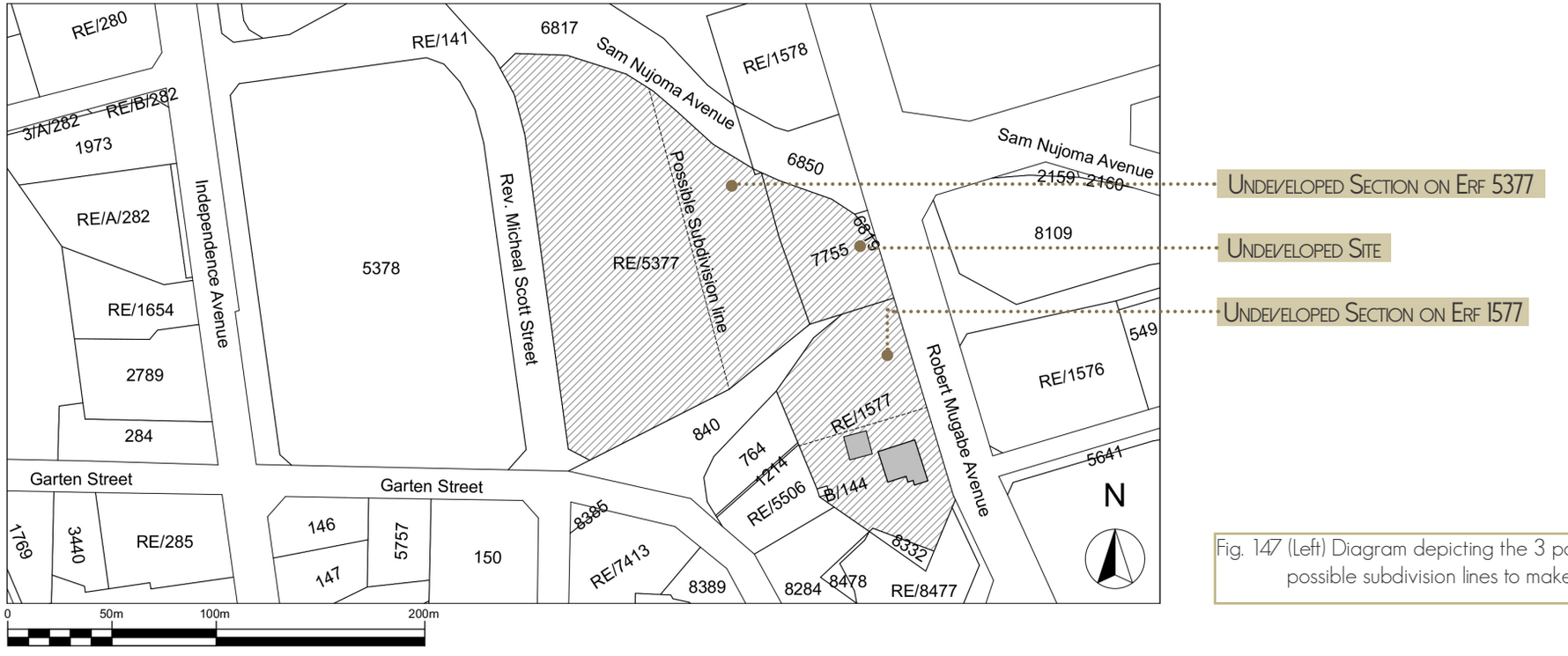


Fig. 147 (Left) Diagram depicting the 3 parcels with the possible subdivision lines to make up one site.

SUB-DIVISION OF ERF 1577

Erf 1577 is occupied by the National Theatre School. The building forms part of the broader historical fabric along Robert Mugabe Avenue and thus its retention and preservation add value to the narrative and aims of the museum. Furthermore; a contemporary function in a historical building can have a positive impact on the retention of historical buildings provided that their historical character is well preserved and considered.

The subdivision of erf 1577 is therefore supported by the following; the site consists of underutilized space on both the north and south of the building located on it. This gives ample space to both the Theatre School and the proposed museum. The northern subdivision is situated directly opposite the Windhoek City Museum and creates a direct link to the site. The Windhoek City Museum will play a and important role in the proposed design as it forms part of the broader historical context.

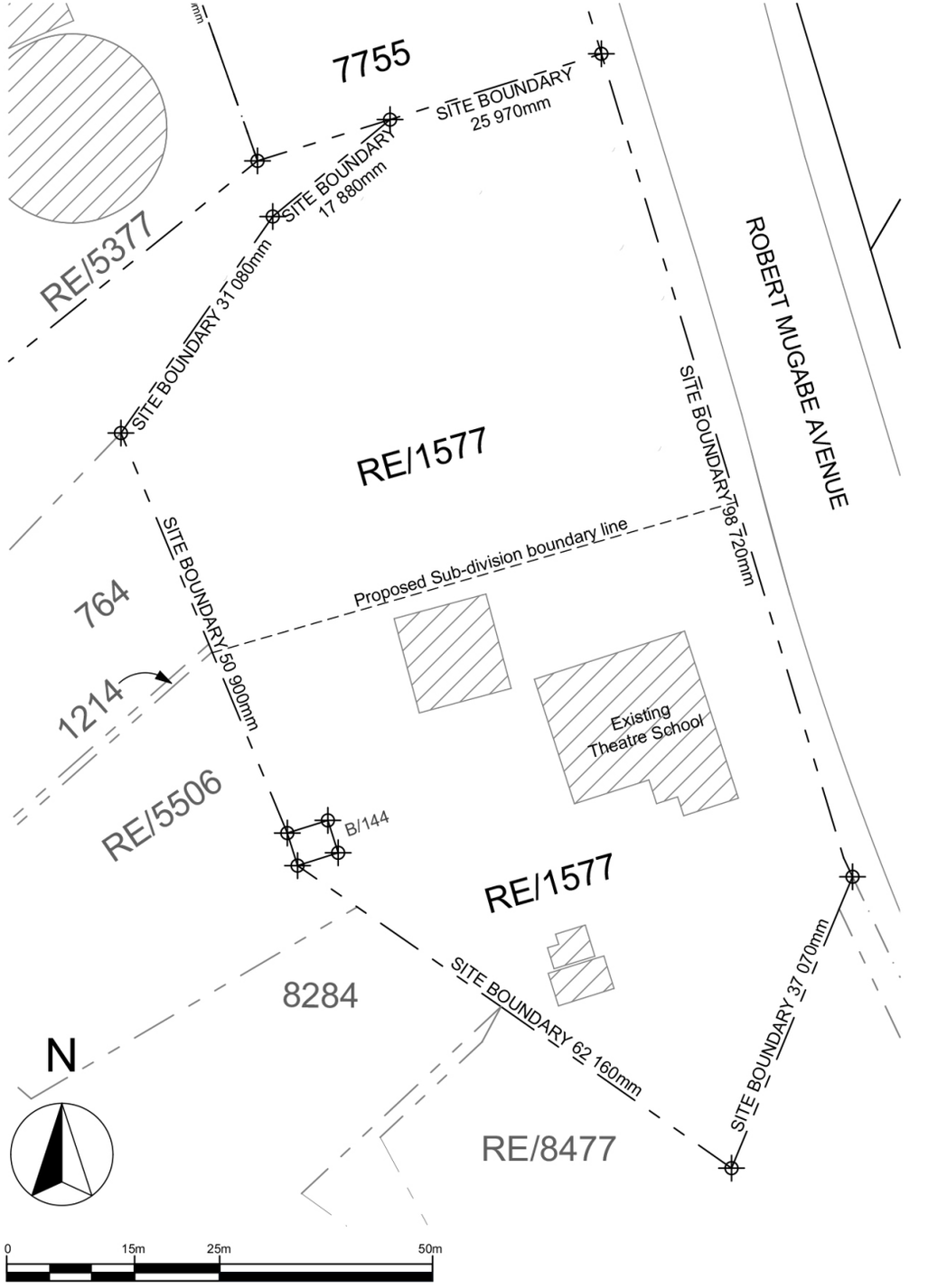


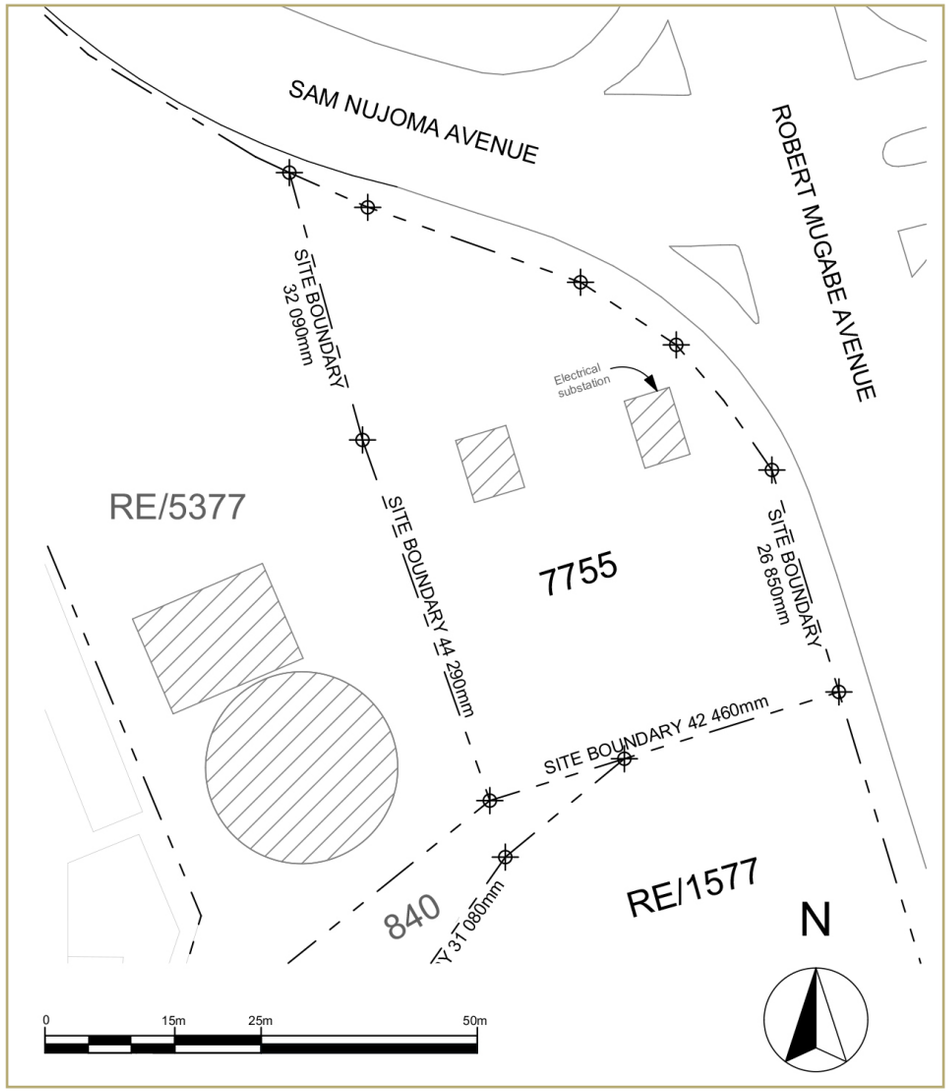
Fig. 148 (Right) Site Diagram for Erf 1577 indicating position of the new proposed boundary line for subdivision.

ERF 7755

Erf 7755 which is to the north of Erf 1577 (fig 4), is an undeveloped site in exception of the electrical substation situated on it. The site is bordered by Sam Nujoma Drive to the north and Robert Mugabe Avenue to the east of the site and is to be consolidated with the subdivided Erf 1577.

ERF 5377

Surveyor General Diagram of Erf 5377 shows a complicated nature of the site which includes the municipal road and a portion of land across Sam Nujoma Avenue as part of it. For the purpose of this study the road and the portion across the street is excluded from the new Sub Divisional Erf Diagram.



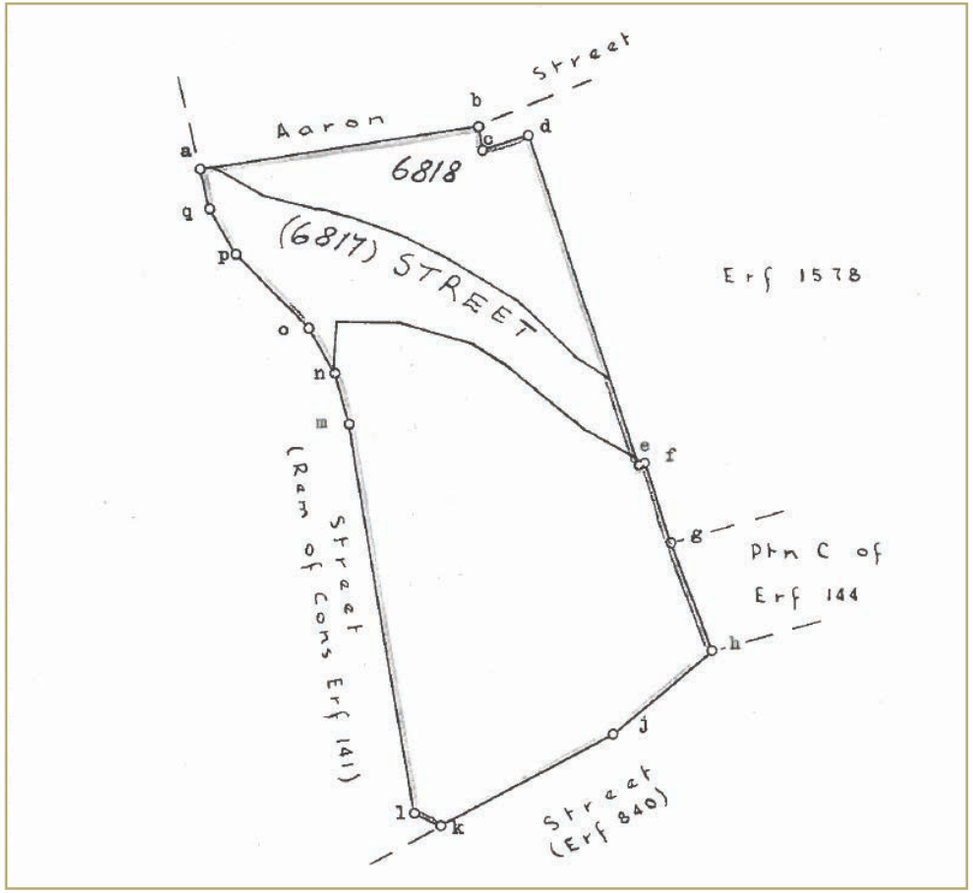


Fig.. 149 (Left) Site Diagram for Erf 7755 indicating the position of the electrical sub station and the relation to Erf 1577 with which it will be consolidated. Diagram (above) indicates complex nature of Erf 5377.

INTENDED SITUATION PLAN

As per requirement by the City of Windhoek Urban Planning Application Rules (City Of Windhoek, n.d.); in order to consolidate or subdivide an erf; application drawings shall include:

- 1: The Existing Situation Plan which indicate the erven in its current state. This is provided by (Fig. 147) respectively.

- 2: The Intended Situation Plan which is a complete erf diagram to show the new erf and positions of new site beacons. This is indicated by (Fig. 150).

- 3: A locality plan is also to be included in the submission drawings.

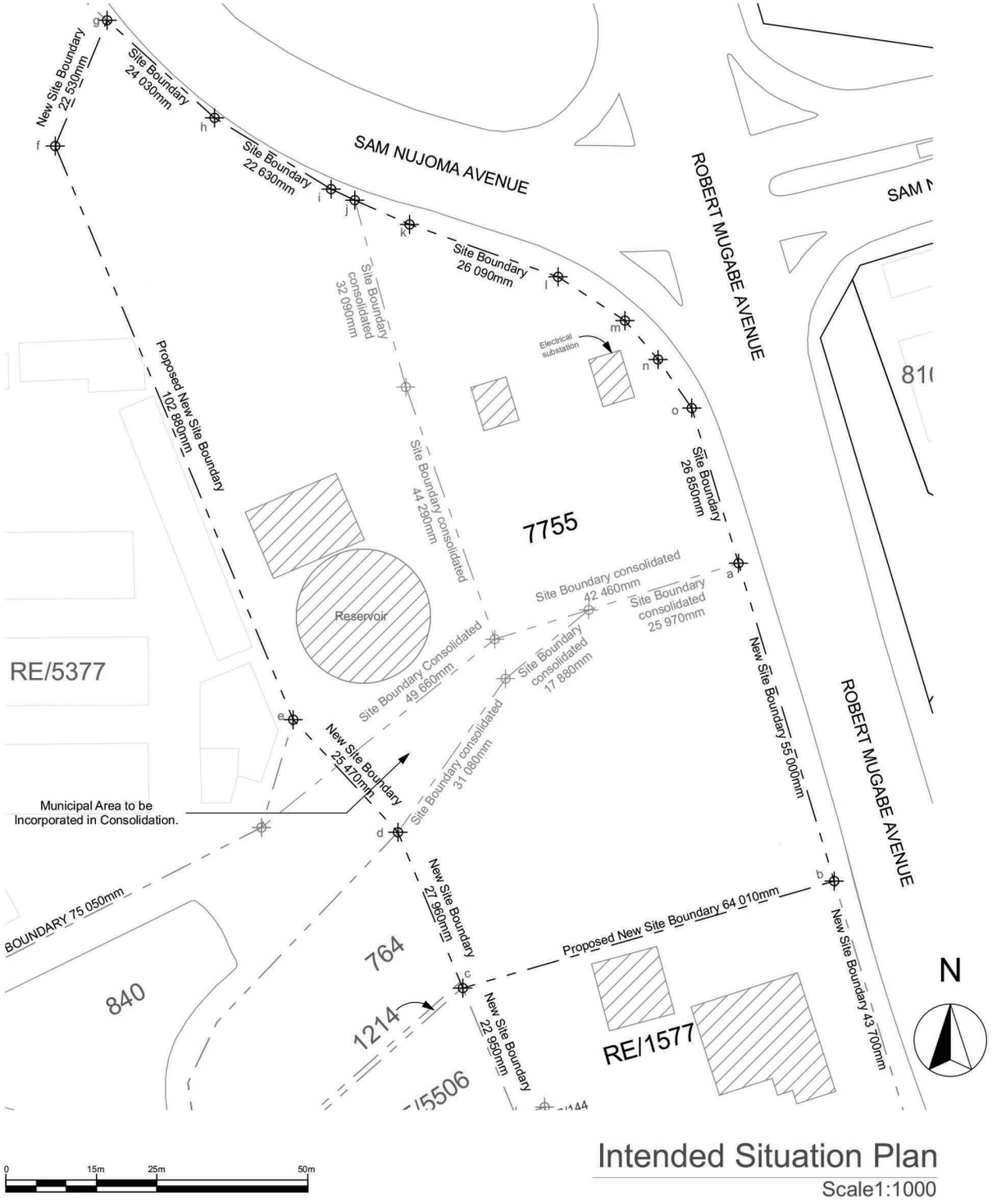


Fig. 150 (Right) Intended Situation Plan depicting the new consolidated site with new site boundary lines.

SITE DEVELOPMENT RIGHTS

BULK FACTOR DIAGRAM

According to Sub-Regulation 29A(c) of the Municipality of Windhoek Building Regulations, it describes the general area and its specific applicable bulk factor. The site is located within the area bordered by Bahnhof Street in the north, Leutwein Street (Robert Mugabe Avenue) in the east, Peter Muller Street in the south and Tal Street in the west within the city of Windhoek and therefore has an applicable bulk factor of 4.2 (Municipality of Windhoek, 1969).

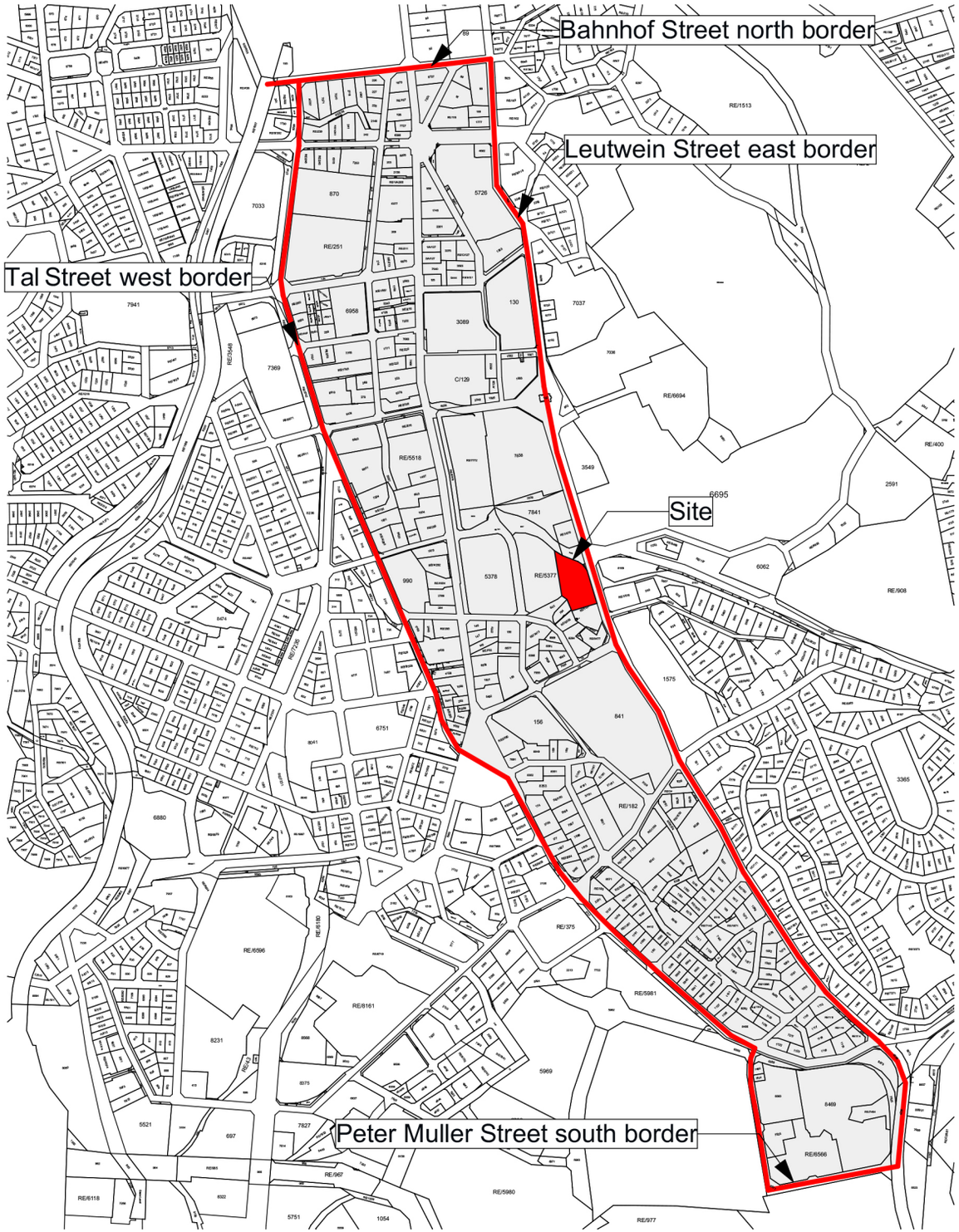


Fig. 151 (Right) Diagram indicating the border of the zone with an applicable bulk factor of 4.2.

Site Coverage

According to the city of Windhoek Town Planning Scheme under table (G) which deals with coverage; the allowable coverage for all zones excluding business, restricted business, garage and industrial shall be 70%. (City of Windhoek, n.d., p. 63)

Adapted From: (City of Windhoek, n.d., p.63)

TABLE G: COVERAGE

(1) USE ZONE NO	(2) DWELLING UNITS AND RESIDENTIAL BUILDINGS	(3) ALL OTHER BUILDINGS
All use zones Except IV, V, VII, VIII	50% (increase to what is average between the 3 & 5 meter building lines – 60/65%?)	70%
IV (business)	60%	85%
V, VII, VIII (restr. business, garage, industrial)	50%	75%

Schedule of Rights

The proposed over-arching zoning for the site will be termed under "Special" because of the combination of uses which include office and institutional uses. Under table B no. IX of the Windhoek town planning scheme; institutional zoning includes places of instruction, places of public worship and social halls. (City of Windhoek, n.d., p. 42)

In this regard the design of an architectural museum would specifically fit the sub-category of places of instruction and it is described as a building designed for educational and cultural purposes including all administrative activities related to it. (City of Windhoek, n.d., p. 8)

Fig. 152 (Right) Schedule of Rights table indicating the permissible heights of buildings in Windhoek which is governed by the Eros Airport aerodrome.

Schedule of Rights			
Property Description			
Erf/ Portion: 7755		**Site Area:** 10 189.5m^2	
Township: Windhoek		Title Deed No.	
Zoning Information			
Town Planning Scheme	Windhoek Town Planning Scheme.	**Amendment Scheme No.**	14 June 2013
Use Zone	Special		
Development Control Measures			
Permissible	**Control**	**Actual**	
Height Restriction @1785m above Sea level. (Site is @ 1700m above Sea level) Permissible Height = 85m	**Height of Building**	-	
10 189.5m^2 x (70%) = 7 132.65m^2	**Coverage**	-	
4.2	**Floor Area Ratio**	-	
5m	**Building Lines**	-	

TOPOGRAPHICAL ANALYSIS

SITE SECTION

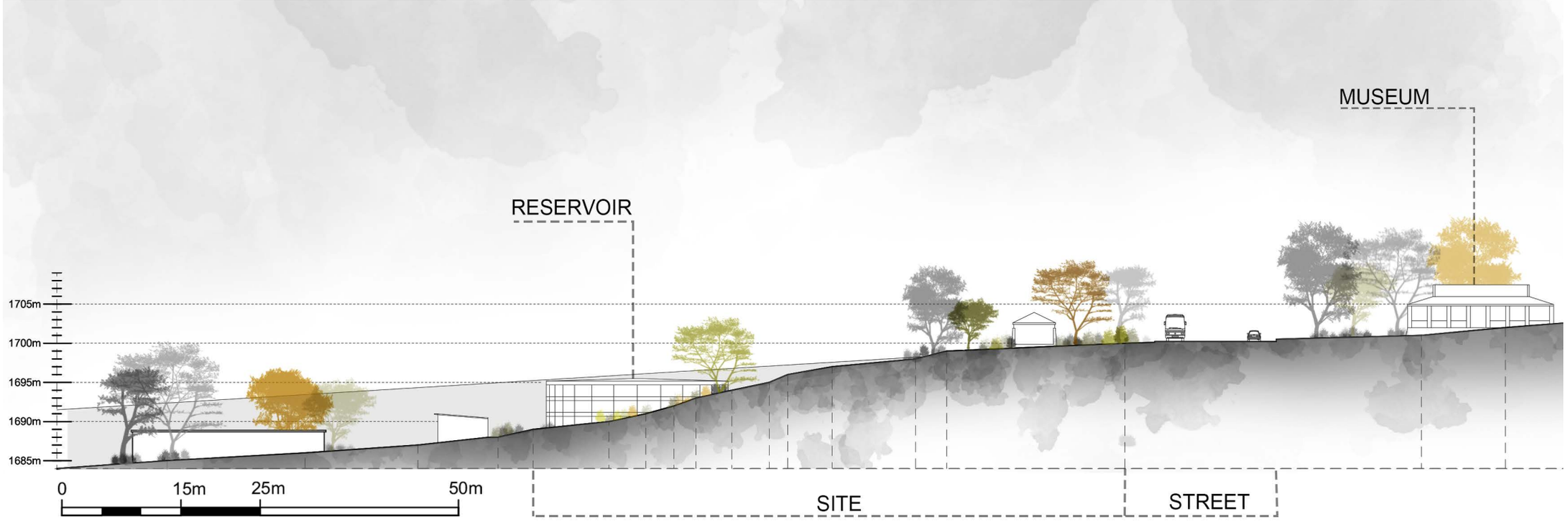
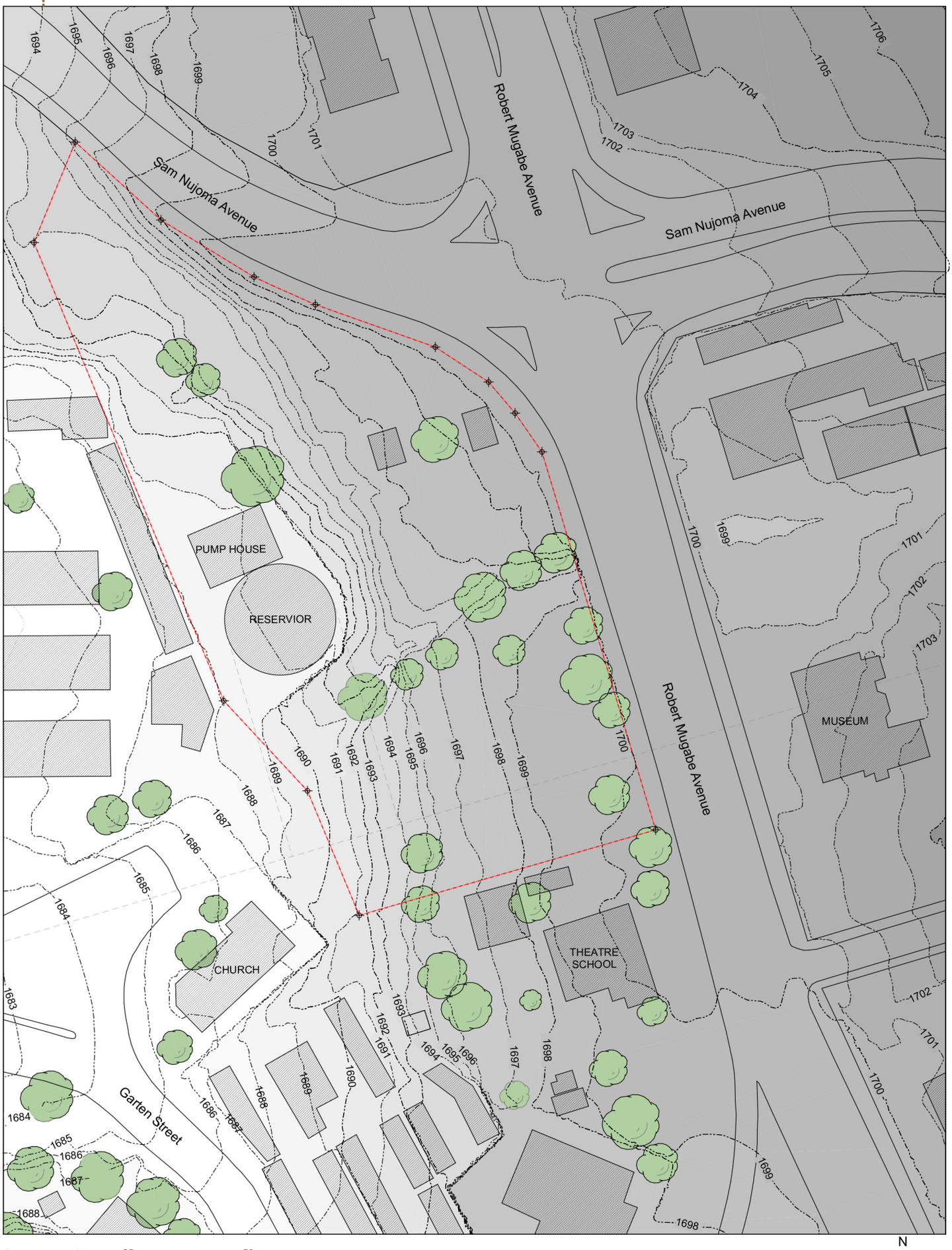


Fig. 153 (Above) Cross Section through site indicating the intervals above sea level and the steep slope with an approximately 10 meters relief.

Fig. 154 (Right) Topographical diagram indicating the slope of the site and context from Low (white) to high (grey).


Sam Nujoma Avenue
Robert Mugabe Avenue
Sam Nujoma Avenue
Robert Mugabe Avenue
PUMP HOUSE
RESERVIOR
MUSEUM
CHURCH
THEATRE SCHOOL
Garten Street
1694
1695
1696
1697
1698
1699
1700
1701
1702
1703
1704
1705
1706
1690
1691
1692
1693
1688
1687
1686
1685
1684
1683
0
15m
25m
50m
Buildings
Contours
Vegetation
N

The City of Windhoek is located in the central Khomas Highlands of Namibia with and average height of 1800m above sea level. The Khomas Highlands is an arrangement of mountains which forms part of the Damara Sequence which extends North-eastwards through the central parts of Namibia. (meneghini, et al., 2017)

The Southernmost part of the Damara sequence consist of metamorphic rocks which comprise of ". . . carbonates embedded with graphite mica schists, quartzites, mass-flow deposits, lavas and iron formations. . ." (Mapani, 2005, p. 676). The Mica schists is commonly referred to as Kuiseb-schist and makes up a larger whole of the geo-morphology of Windhoek.

The properties of the Kuiseb-schist are explained as highly fractured and brittle especially in the vicinity of the Pahl Fault-line which runs through the city. (Mapani, 2005) The brittleness and fractured nature is to be considered on a larger scale. It should however not to be mistaken as a soft rock. This type of rock is also the main constituent of the chosen site. In addition to the schists the Auas quartzite is another rock type that make up the composition of the geology of the Windhoek area. The quartzite is mainly found to the south of the city. Figure (56) shows the relationship between the Kuiseb-schist and the Auas Quartzite.

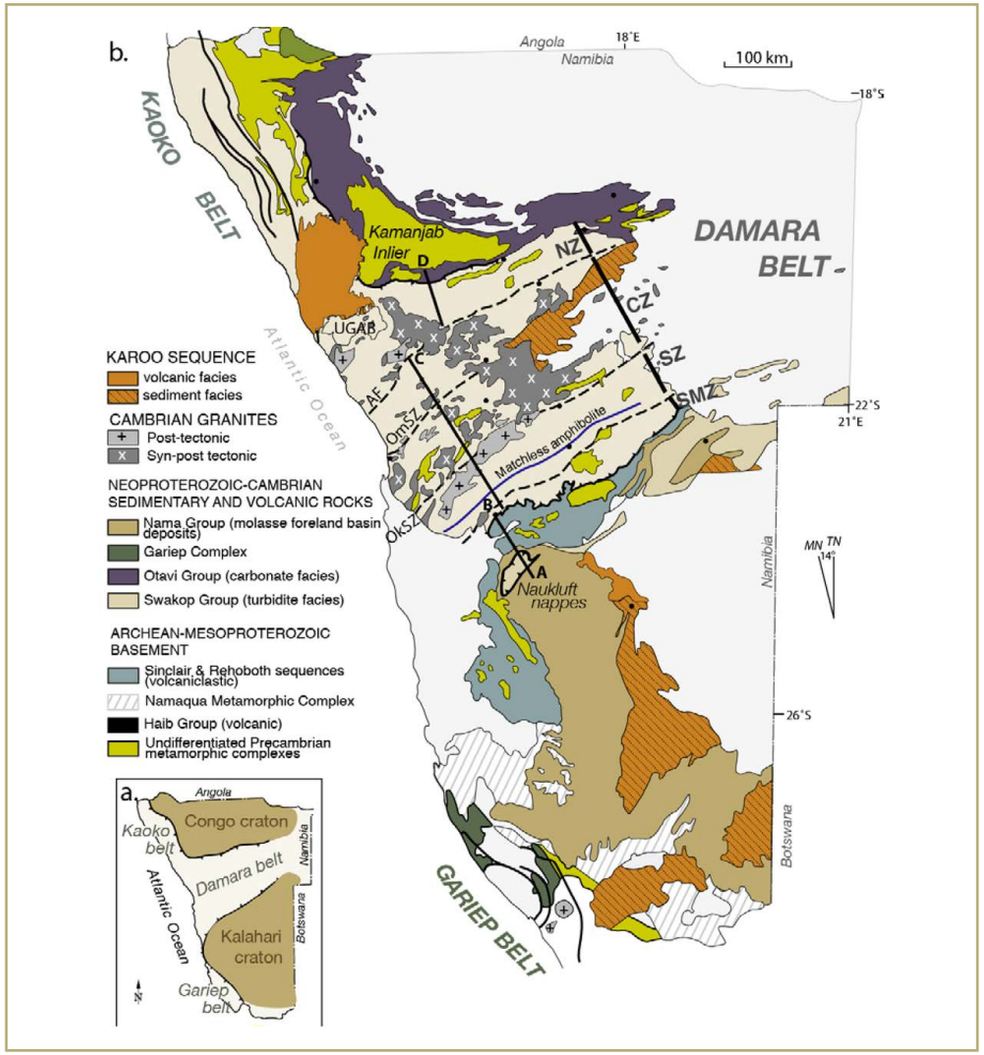


Fig. 155 Map of Namibia showing the geological composition of the landscape with the major Damara Sequence in the map (lower left). (Foster & Goscombe, 2013)

Geological Composition of Windhoek

This investigation reveals the composition of the underlying geographical strata and the anticipated soil conditions to be expected on the site. In reference to this, the design proposal incorporates the natural stone Kuiseb-schist into the interior space. The stone can further be used for finishing and cladding applications to respond to the local context and site.

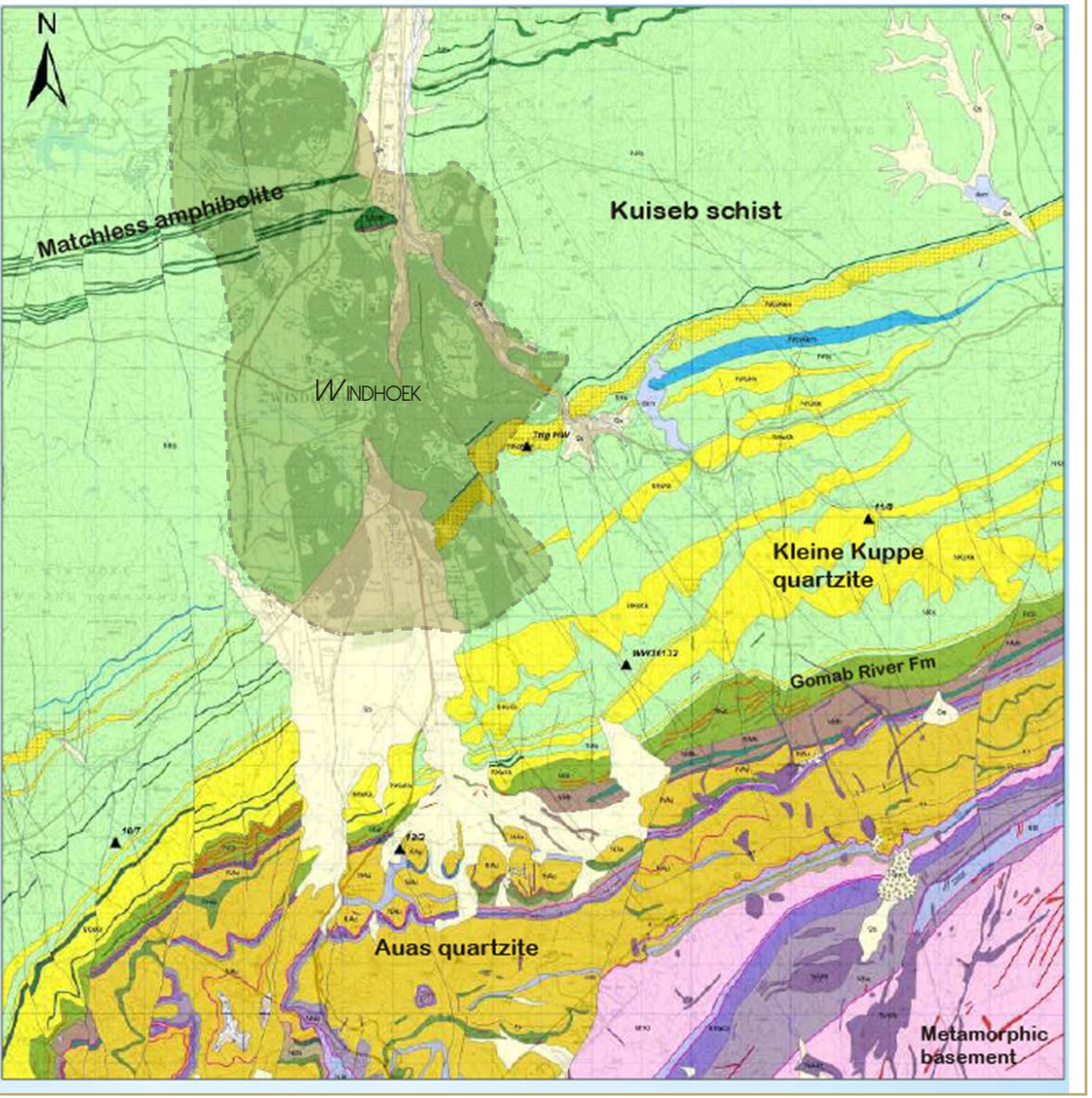


Fig. 156 Geological map of the Windhoek area with the Auas mountains to the south consisting of the Auas quartzite and the Kuiseb schist to the center and north of the city. (Mapani, et al., n.d.)

SUSTAINABILITY AGENDA

This chapter serves to investigate the introduction of sustainability concepts in the initial design stages to achieve a building that responds well to climatic and social factors that ultimately has a positive influence on its context. The importance of this report is to develop critical thinking of sustainability as not only a design incentive but also a social and environmental responsibility that should be incorporated from the beginning of every project.

The design of a museum of Architecture with a conceptual approach that is to design 'in the landscape' suggest sensitivity to the site and for the building to take a passive and secondary stance. The three main categories for consideration includes: 1) sustainable material application; 2) passive design principles and lastly important socio-economic considerations.

UNDERSTANDING SUSTAINABILITY

In order to understand where we are leading to in terms of sustainable design, we need to know what it means to 'sustain' and how it can be incorporated into building design and construction. The widely accepted no. 1 cause of greenhouse gases from consumer products is believed to come from the automobile industry. This is partially true for the mere fact that buildings are overlooked as one does not necessarily see the direct energy input and carbon waste output during the construction process of the building. But buildings however, actually embodies a substantial amount of energy and continues to demand energy over its lifespan.

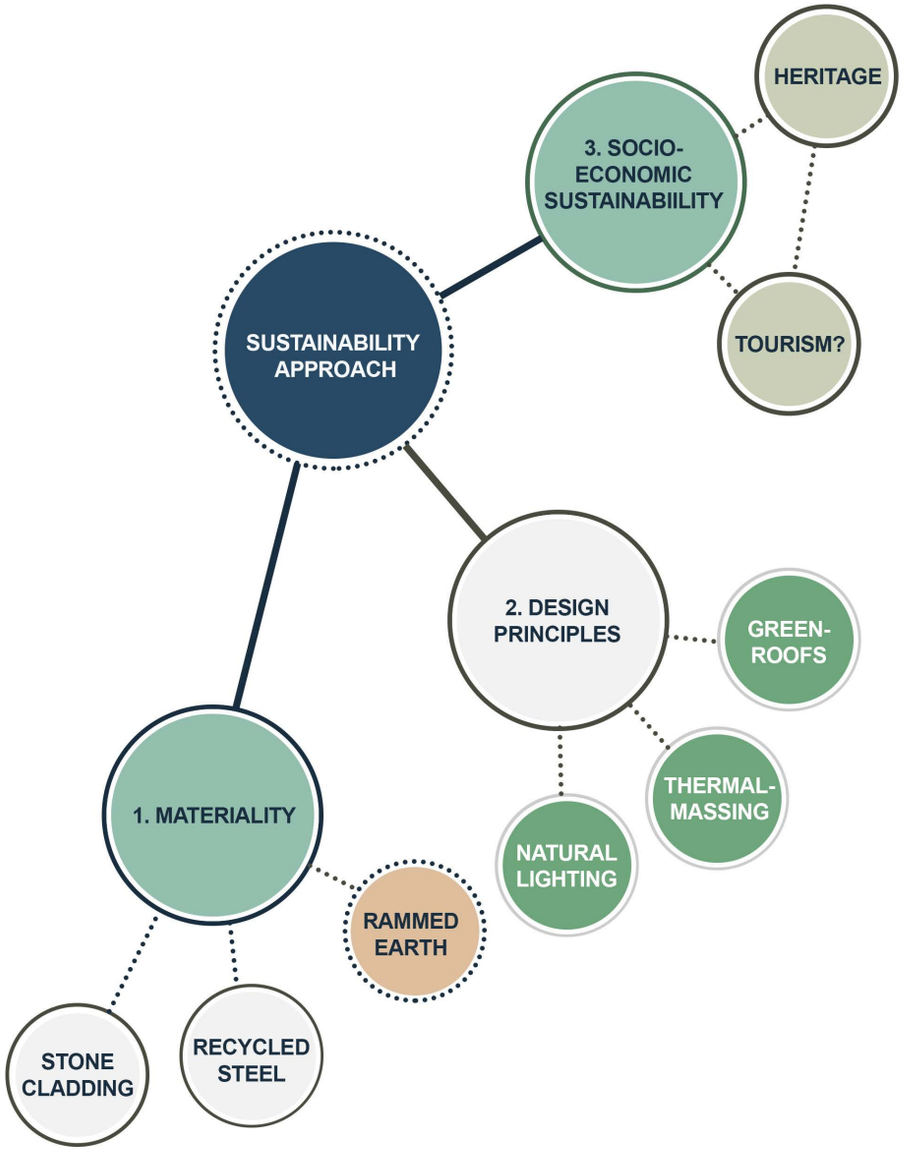


Fig. 157 Sustainability approach diagram broken down in three main categories.

According to Abair (2008, p. 623) building maintenance and construction accounts for almost half of the world's energy consumption with no exception to the use of raw materials. Furthermore, Abair (2008) states that ". . . [i]n the United States, 30% of the country's carbon dioxide emissions, 40% of its ozone pollution, and 35% of municipal solid waste come from building-related activities." (p. 623)

In light of this it is quite clear that buildings have a substantial reliance on raw materials for both energy production and construction. It not only consumes such raw materials but it also releases by-products that are negatively affecting the environment. It is this over-reliance on raw materials that makes a building unsustainable.

The historical development of what it means to 'sustain' as Tze-Yin states; is to hold and or to manage something (in this case resources) carefully, in essence almost holding it together and at a constant level. Although he continues to state that it may not necessarily be for the ". . . endurance beyond a temporal limit . . ." (Tze-Yin, 2013, p. 28); this is what we should strive for when thinking of sustainable concepts.

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SUSTAINABLE MATERIAL APPLICATION

EARTH CONSTRUCTION

Rammed earth is a construction method that utilizes earth from the immediate context to construct thick, durable walls that is cost-effective and has good structural and thermal properties. (Dabaieh, 2015) Rammed earth is therefore known for its innumerable sustainable properties. The intensive excavation that is required on the site means that the material can be used in the construction of the building adding to the environmental sensitivity and cost-effectiveness of the building. Rammed earth is further defined as ". . . a traditional walling construction of clay laid and compacted in boarded formwork, . . ." and allowed to dry in the sun. (Davies & Jokiniemi, 2008, p. 289) The construction of rammed earth is however time consuming, labour intensive and often requires the input of skilled carpenters to design the formwork. (Dabaieh, 2015, p. 9) In this regard, the social benefits of rammed-earth construction outweigh the intensiveness of the construction. The manual input in the construction process drives out the need for machinery increasing employment opportunities and involves skills transfer to the local community.

The application of rammed earth in the proposed design goes beyond its material benefits and is also used as a metaphorical representation of the vernacular construction methods used by indigenous groups in Namibia and the broader African context.

Stone Cladding

A considerable amount of excavation is needed on the site for the building and therefore the excavated material can be reused in the construction and finishes of the building. The excavated Mica-schist stone which is found in abundance on the site can be applied as a cladding material on the walls and can add to the thermal properties of the building. Its application in the building further reduces the reliance on imported material. Furthermore, employment opportunities are created for stone masons to cut the rocks in accordance with specifications for its application in the building.

Corten-Steel Application

The use of steel and metal sheets as an additional material in the design is a priority for its aging characteristics. The sustainable application of steel involves in the recycling thereof to reduce the extraction of iron ore and the factory production of steel materials.

Steel has a high embodied energy if extracted from its ore and developed into its various forms. Therefore, the use of recycled steel and the minimization of aluminium component in the design is crucial to an environmentally sensitive design. Corten-steel; in the right climatic conditions creates a protective rust layer and patina that pro-longs the lifespan of the material and adds to aesthetic characteristics of the design (Grubb, Weathering Steel in Architectural Applications, 2009). The Corten-steel will however only be limited to the application of windows, doors and various finishing and cladding requirements. The Corten-steel is applicable in the design as this will represent the aging and ruin metaphor the design wish to achieve.

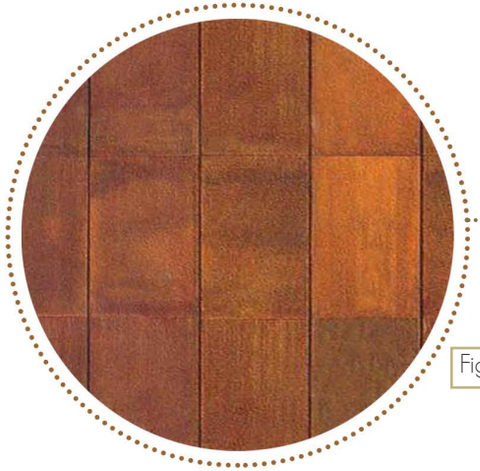


Fig.158 Corten Steel sheet with a rusting patina.

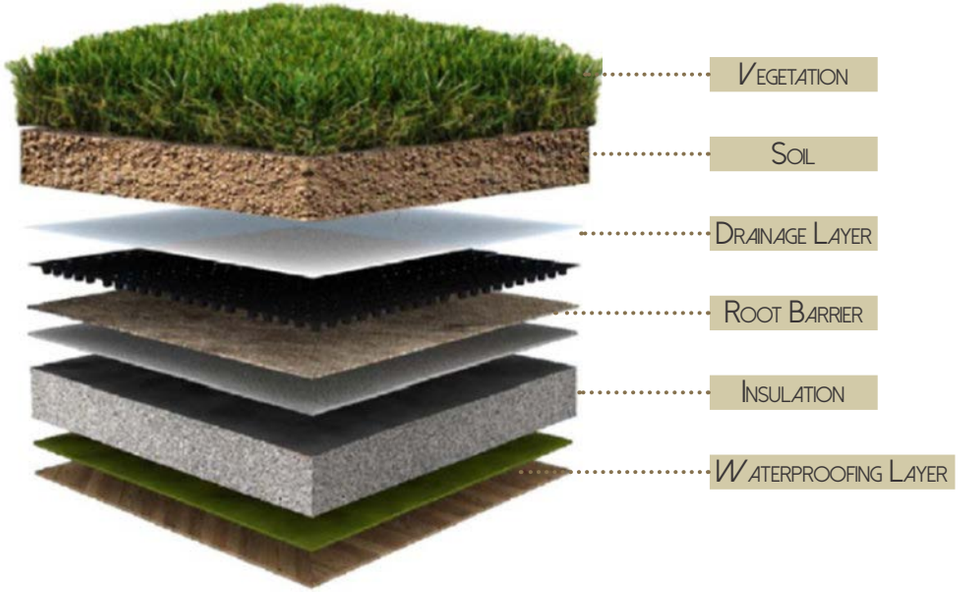
Fig. 159 Layered finish of Rammed Earth.

Fig. 160 Dry-stacked Mica-Schist Cladding.

SUSTAINABLE DESIGN PRINCIPLES

GREEN ROOFS SYSTEMS

Green roof systems although not popular in the Southern African context is known in the for their sustainable qualities. With the overall design concept being "Design in the Landscape" the green roof principles will be quite applicable. Green roofs typically aim to replace the surface area of the site which is removed by the building footprint. Furthermore, it has insulating qualities that prevent heat gain and loss in the building. In this particular instance the Extensive Green roof system will be investigated which supports the least amount of plant growth but is also the lightest of the various green roof systems. The extensive roof system supports moss and succulent growth and thus require little to no maintenance.



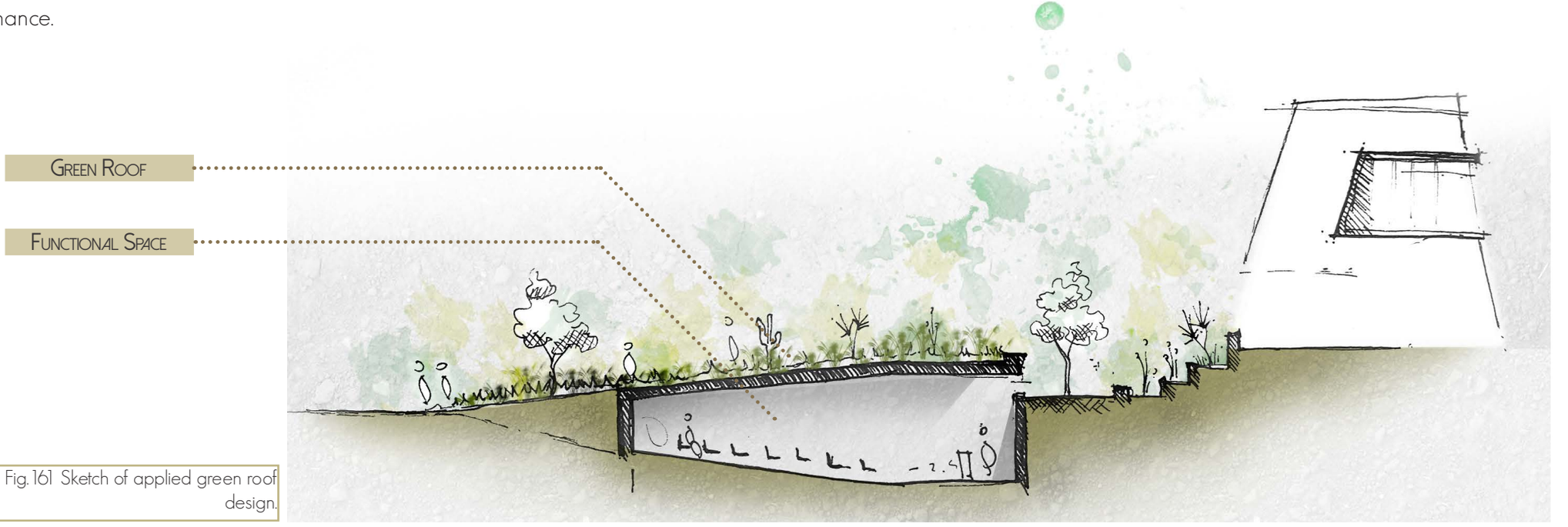


Fig. 161 Sketch of applied green roof design.

Thermal Massing

Thermal massing is a concept where a material absorbs the suns radiation during the day keeping interior temperatures cool and releasing that heat at night to keep interior temperatures warm. This allows for interior temperatures to be fairly constant. This is crucial in museum typologies as extremely fluctuating temperatures can potentially damage paintings and relevant exhibits. Furthermore, when temperatures in a space are constant it reduces the need for air conditioning requirements. The building will be fairly sunken in the ground and therefore the number of walls that will be exposed to the sun's radiation will be minimal. However, the surrounding earth's mass can also maintain the required thermal comfort in the building (fig. 162).

Natural Lighting

The architect Louis Kahn is well known for his applications of natural lighting principles in his museums and art galleries. Natural daylighting and thermal mass are concepts that in work coherently together in particular cases. When natural daylighting is incorporated into a design it presents good design opportunities. Natural daylight in buildings has both sustainable and interior space qualities that is not presented by using artificial lighting. In the case of this design the use of indirect light will be investigated for the purpose of exhibition spaces. Indirect natural lighting eliminates direct heat gains from the sun but still allows for natural reflected light in the building.

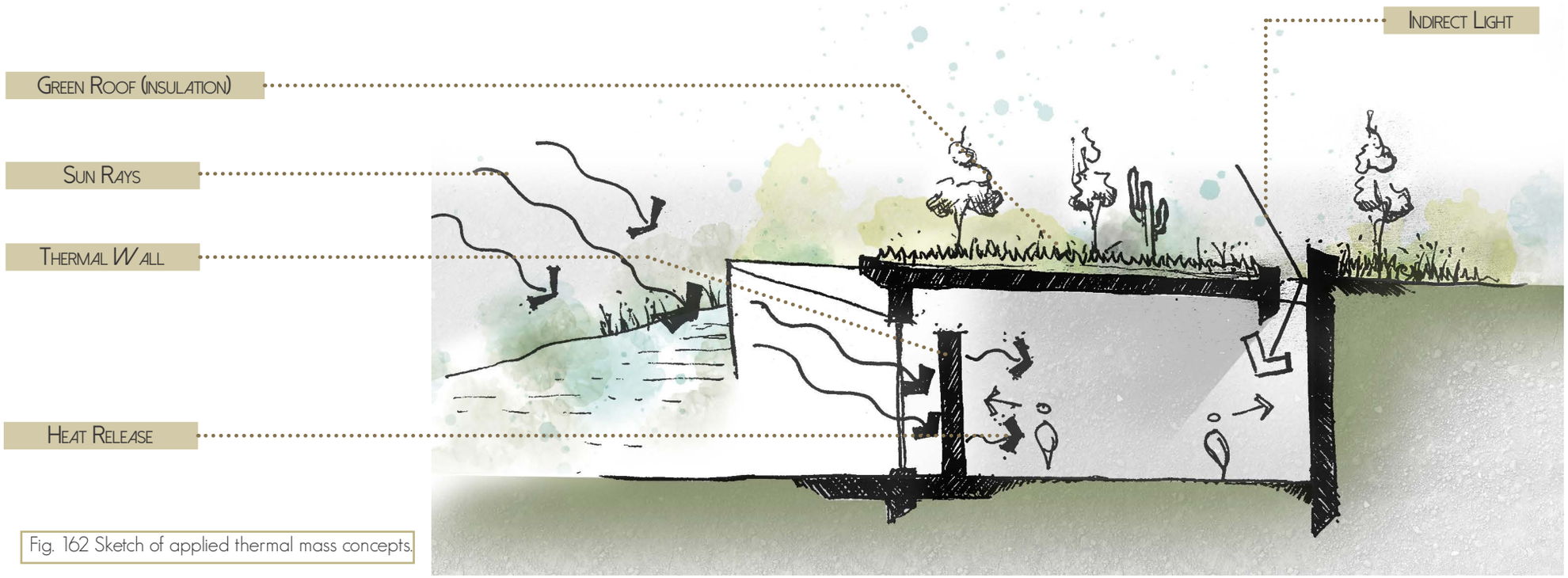


Fig. 162 Sketch of applied thermal mass concepts.

SOCIO-ECONOMIC SUSTAINABILITY

ARCHITECTURAL HERITAGE

The architect Louis Kahn is well known for his applications of natural lighting principles in his museums and art galleries. Natural daylighting and thermal mass are concepts that in work coherently together in particular cases. When natural daylighting is incorporated into a design it presents good design opportunities. Natural daylight in buildings has both sustainable and interior space qualities that is not presented by using artificial lighting. In the case of this design the use of indirect light will be investigated for the purpose of exhibition spaces. Indirect natural lighting eliminates direct heat gains from the sun but still allows for natural reflected light in the building.

Fig. 163 Damara-tribe Vernacular Architecture.

Fig. 164 Okavango-tribe Vernacular Architecture.

Fig. 165 Ovahimba-tribe Vernacular Architecture.

MATERIALITY

THEORETICAL IMPERATIVES ON MATERIAL SELECTION

The proposed museum addresses the dichotomy between vernacular and colonial architecture. Therefore, a very challenging task is undertaken to bring to an understanding between the two extremities. Namibian vernacular architecture is characterised by a degree of earth construction. The earth/mud is used as an application and an added layer to timber huts to aid in thermal mass, privacy and protection against weather elements. It is however subjected to weathering over a period of time. Traditional rituals include the restorative process to apply new layers of earth and mud to sustain dwellings and huts. In contrast, the colonial architectural language is characterised by modern material applications such as cement brick and mortar construction with concrete foundations which became the fundamental building materials and methods in the modern era. These materials are far more durable and requires little to no maintenance for extended periods of time.

The success in building a conversation between the two extremes is not through the forms and language they represent, but through the characteristics of the materials themselves. The restorative rituals of indigenous Bantu cultures speak both of a timelessness as well as sensitivity. A sensitivity to the process of ruination at the hands of the elements. This ritual can be incorporated into the proposed design with the modern interpretation of the mud-smear that is characteristic of vernacular architecture. Rammed earth is both a structural element and embodies the intrinsic qualities of this vernacular architecture. The design proposal will therefore also go through the ritualistic restoration cycle and in that sense represents the preservation of our indigenous vernacular architecture.

Fig.166 Namibian Vernacular architecture.

Fig.167 Namibian German-Colonial architecture.

The material monumentality and permanence of concrete is a metaphorical representation of the Namibian German-colonial architecture. The interior envelope of the proposed museum will consist of fair-faced concrete to play both a structural and aesthetic role. Concrete is known for its extremely durable properties and therefore the interior envelope serves the metaphorical and functional purpose of protecting the delicate exhibition content, effectively "preserving" it.

Fig. 168 Namibian Vernacular Architecture.

Fig. 170 Rammed earth as the contemporary material Interpretation.

Fig. 169 German-Colonial Architecture.

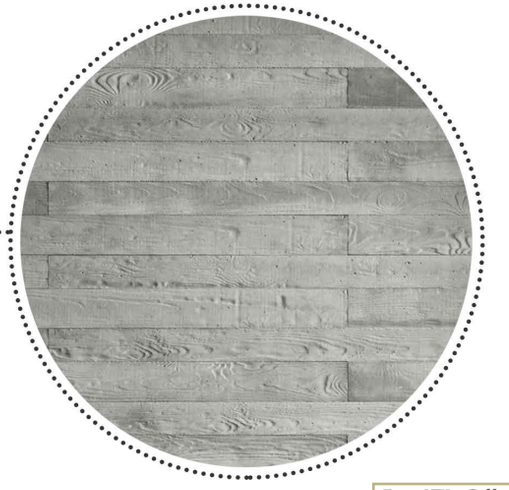


Fig. 171 Off-shutter Concrete as the contemporary material Interpretation.

STRUCTURAL INVESTIGATION

structural investigation serves to aid the design and conceptual approaches to formulate a sound and technically rigorous structural system for a feasible design. It further encourages the solving of structural challenges is a meaning and possibly new way. When the structural solutions are integrated with the design process and not approached as a secondary layer to be implemented at a later stage, the architecture that results can be an expression of contextual characteristics and relevance.

Therefore, the exploration of indigenous Namibian vernacular architecture and its structural principles can inform the structural and architectural language of the proposed intervention.

THE AWAMBO-TRIBE ARCHITECTURAL EXPRESSIONS

The Awambo tribe of northern Namibia is one of the first Bantu-speaking populations that migrated to Namibia as far back as the tenth century CE. (Salokoski, 2006). These early inhabitants typically followed a hunter-gatherer lifestyle resulting in temporary structures and shelters. However, with the change of cultural dynamics and the new use of pastoral and grazing land, structures became more permanent. The Awambo vernacular architecture is a hut-typology characterized by a cone-shaped thatch roofs and wooden stick and mud block walls and clay plaster. (Maio, et al., 2017)(fig. 172).

Fig. 172 Mud block and thatch traditional hut building in northern Namibia. (Martin, 2017)

Structural Interpretation

De-constructing the traditional hut is vital in discovering structural systems that can be implemented and interpreted in a modern way and with modern materials. The goal is not to translate the vernacular form into a design but rather for its material complexity and application to inform such design.

Two-layered Multi-plexity

Vernacular architecture often has ingenious design solutions with often minimum material complexity. In the case of the traditional hut, the sticks act as the structural system whilst at the same time allowing natural light and air passage through. With the application of a second layer (mud/adobe) the whole system gains new properties of thermal mass, privacy and air flow restrictions.

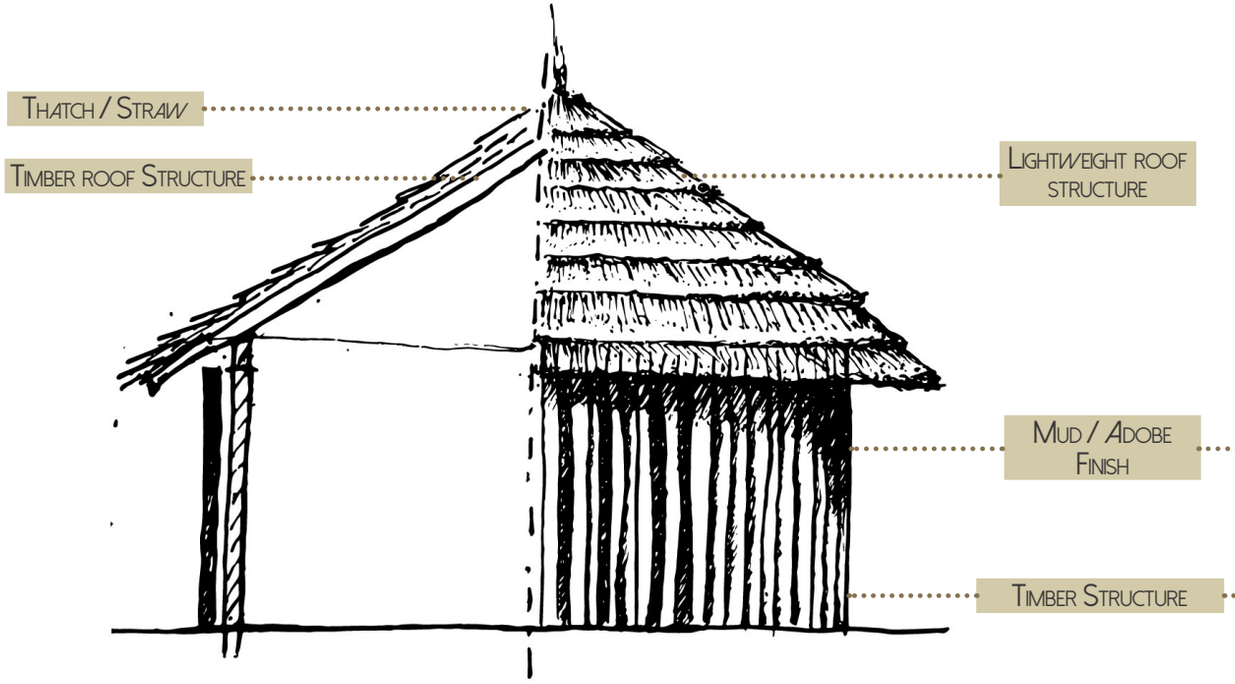


Fig. 173 Section-elevation showing material complexity of the traditional hut.

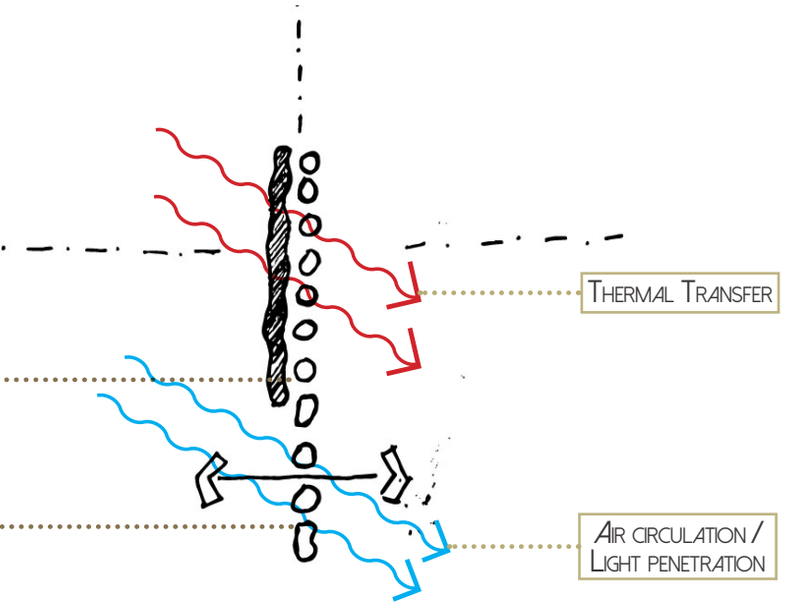


Fig. 174 Plan view of traditional hut partitioning indicating the functional complexity.

Contemporary Structural Interpretation

Technological advances have made it possible for the implementing and interpreting of vernacular materiality in a modern and sustained way.

Ovahimba Hut and Rammed Earth Construction

The Ovahimba tribe from Kaokoland in northern Namibia, uses the same principles of a timber structural frame combined with an exterior clay finish. This clay finish and the ritual of its application can be interpreted in modern terms as rammed earth construction which also requires a ritual of continuous layering to sustain its longevity. Rammed earth has an additional structural purpose compared to traditional applications of earth construction in the Namibian context.

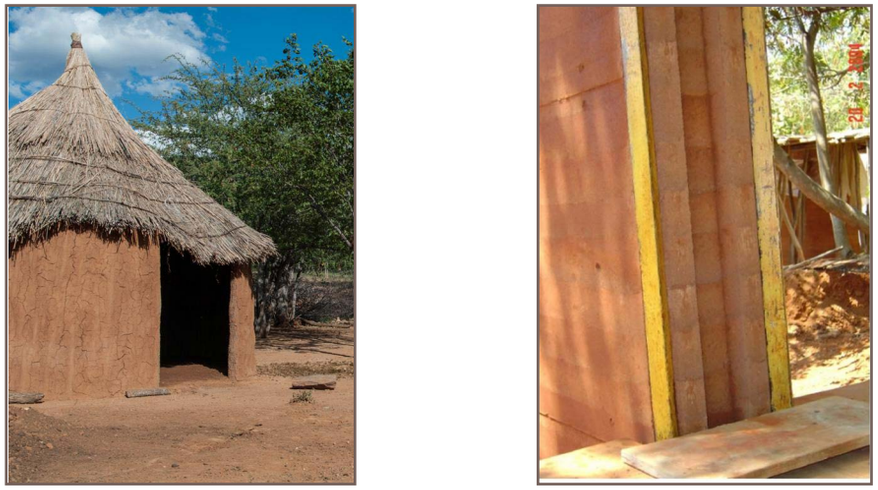


Fig. 175 The material similarity between a traditional earth hut and rammed earth construction.

Awambo Adobe Huts and Concrete Construction

Awambo adobe and mud block huts are indigenous monolithic structures although requiring continuous maintenance served a structural purpose. Concrete can be interpreted for its same monolithic and structural abilities. The shear versatility of concrete can see its application in both tectonic and monolithic structural forms.

Fig. 176 The material similarity between traditional adobe construction and concrete construction.

Applied Structural Concepts

Concrete beam and column system

The structural dia-grid represents the tectonic vernacular language and will be implemented in all horizontal planes as beams in support the green roof. In the vertical plane, the column structure acts as a structural frame for the implementation of rammed earth walls. An interior concrete skin further acts as the load bearing structure.

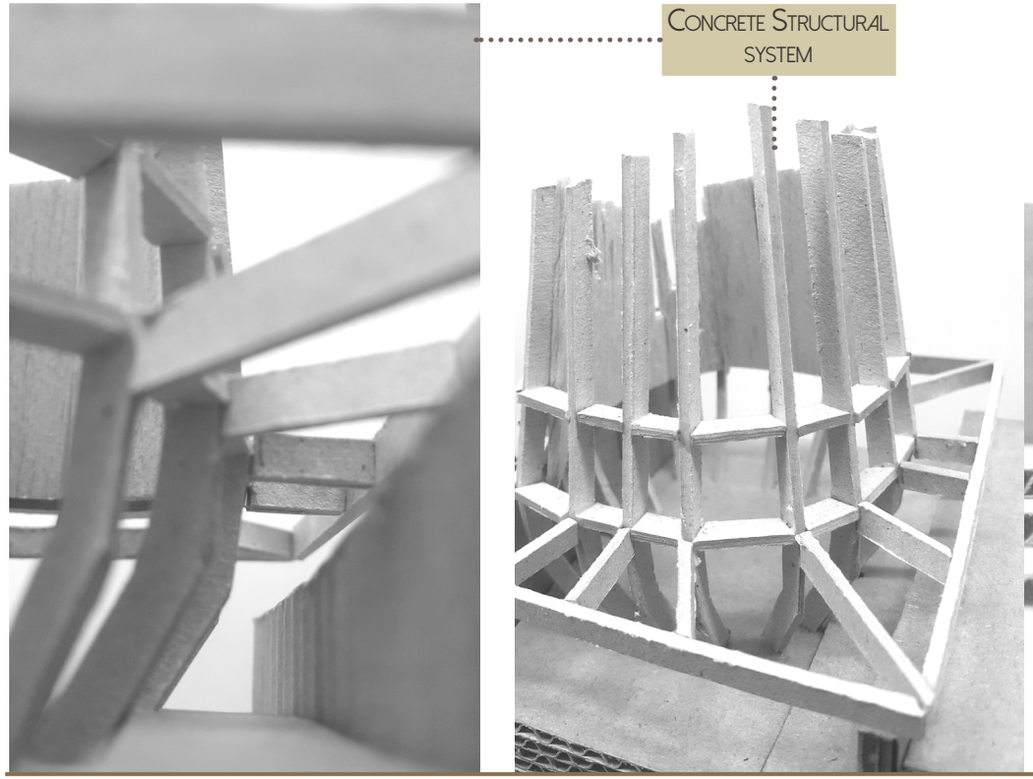


Fig. 177 Models investigation tectonic structural expressions.

Monolithic Structural Construction

The exploration of a double-skinned monolithic wall of which the interior is a structural concrete skin and the exterior a non-structural rammed earth wall. The rammed earth wall serves to represent the vernacular language

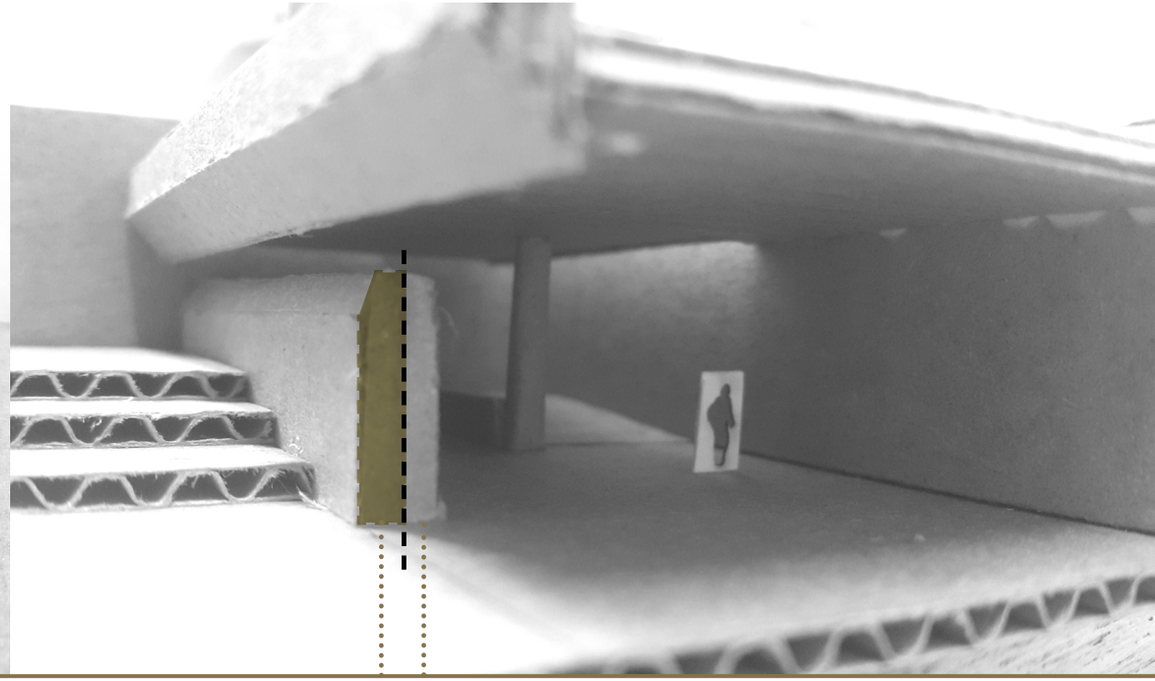
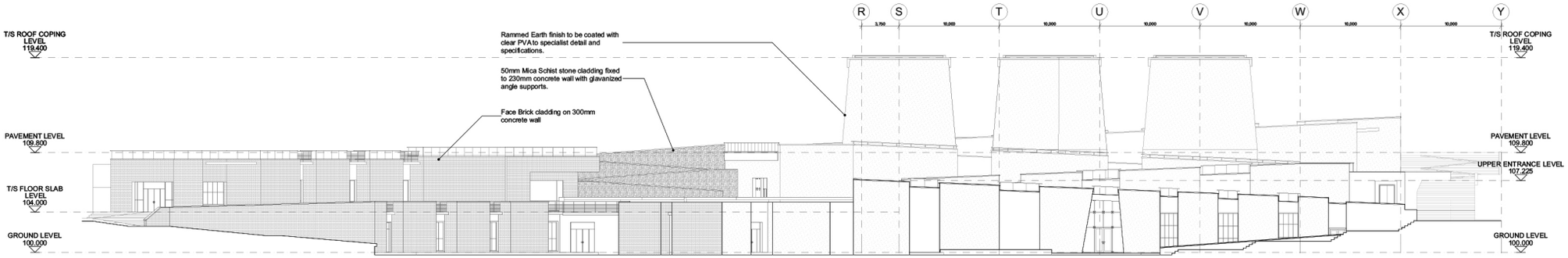


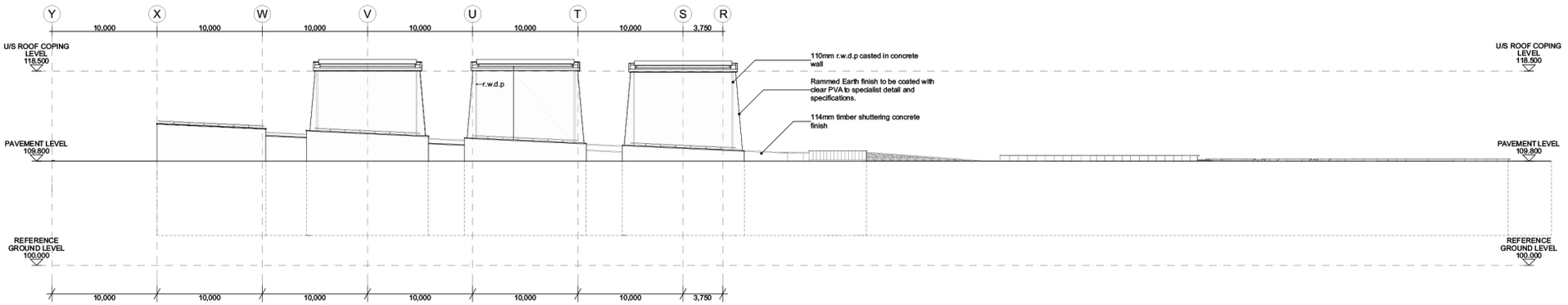
Fig. 178 Model investigation stereotomic structural expression.

TECHNICAL DOCUMENTATION



A300 West Elevation

0 5 10 15 20



A301 East Elevation

0 5 10 15 20

ELEVATIONS

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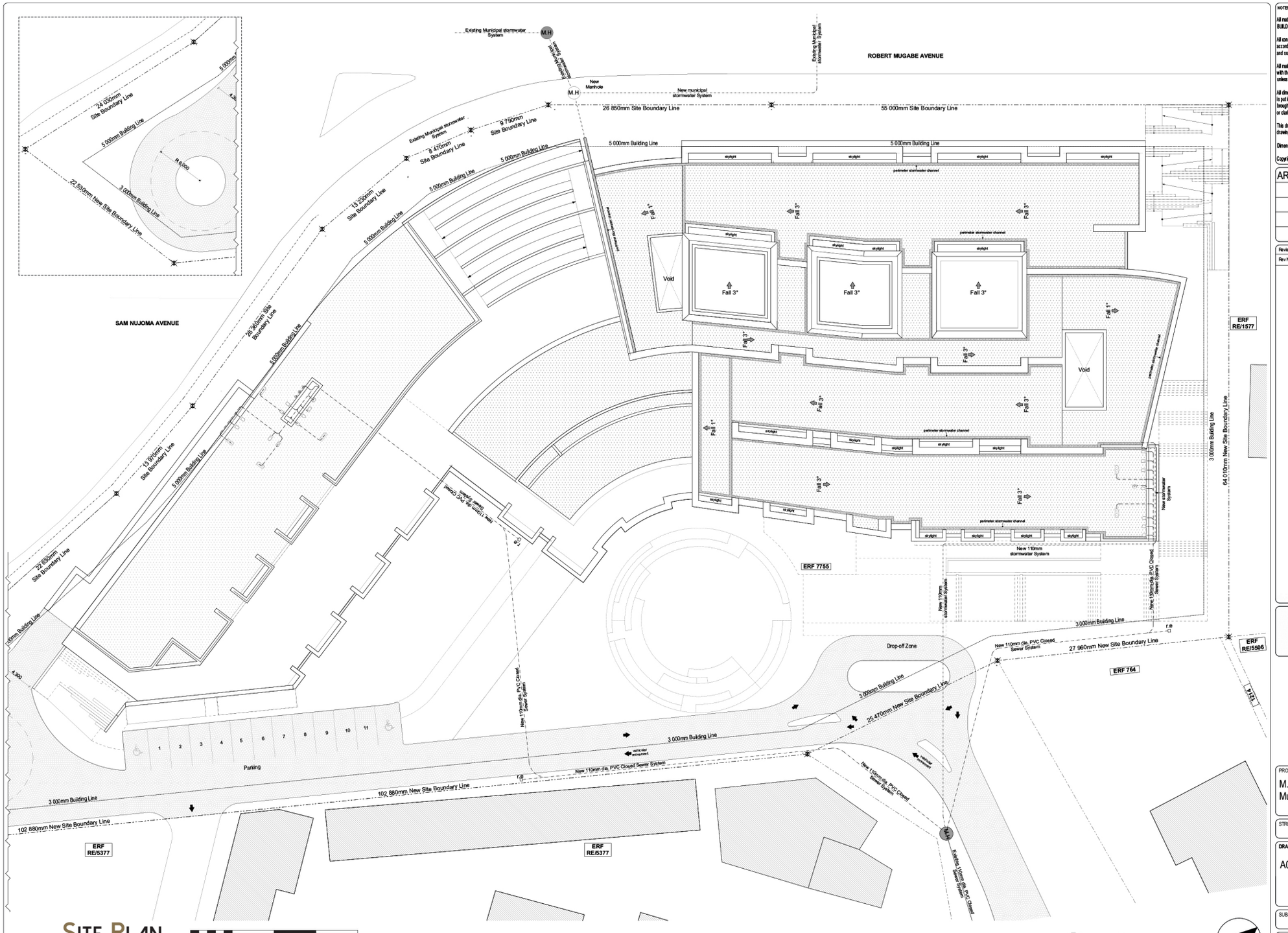
PROJECT TITLE:
M.Arch Thesis: New Namibian Museum for Architecture

STREET: Robert Mugabe Avenue
ERF: 1577 + 7755

DRAWING TITLE:
ELEVATIONS:
A300 West Elevation;
A301 East Elevation

SUBJECT: CONS 7908
LECTURER: A. Wagener
DRAWN: Bratwin R. Bock
STUDENT NO: 2017056546
SCALE: As Indicated
DATE: 29/10/2019



SITE PLAN

0 5 10 15 20

A001 Site Plan

NOTES:

All materials and methods are to comply with the NATIONAL BUILDING REGULATIONS (Act No. 103 of 1977), and ammendments.

All construction methods and specifications are to be in accordance with "THE MODEL PREAMBLES FOR TRADES" (1999 ASAQS) and supplimentary preambles unless otherwise specified.

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This drawing to be read in conjunction with the relevant engineer's drawings where applicable.

Dimensions are not to be scaled from the drawing.

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DRAWING TITLE:
A001Site Plan

SUBJECT: CONS 7908
LECTURER: A. Wagener

DRAWN: Bratwin R. Bock
STUDENT NO.: 2017056546

SCALE: As Indicated
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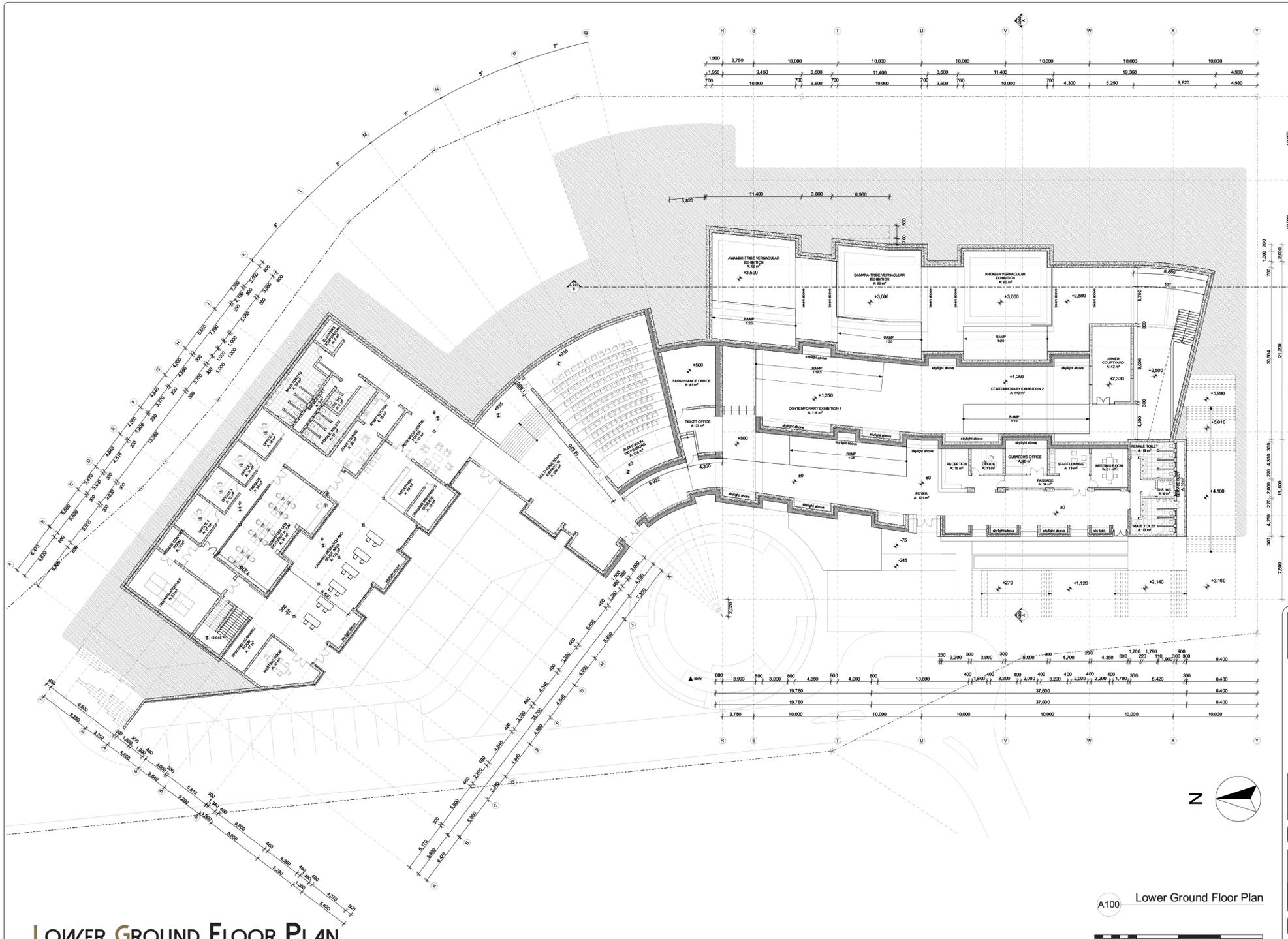

LOWER GROUND FLOOR PLAN

A100 Lower Ground Floor Plan

0 5 10 15 20

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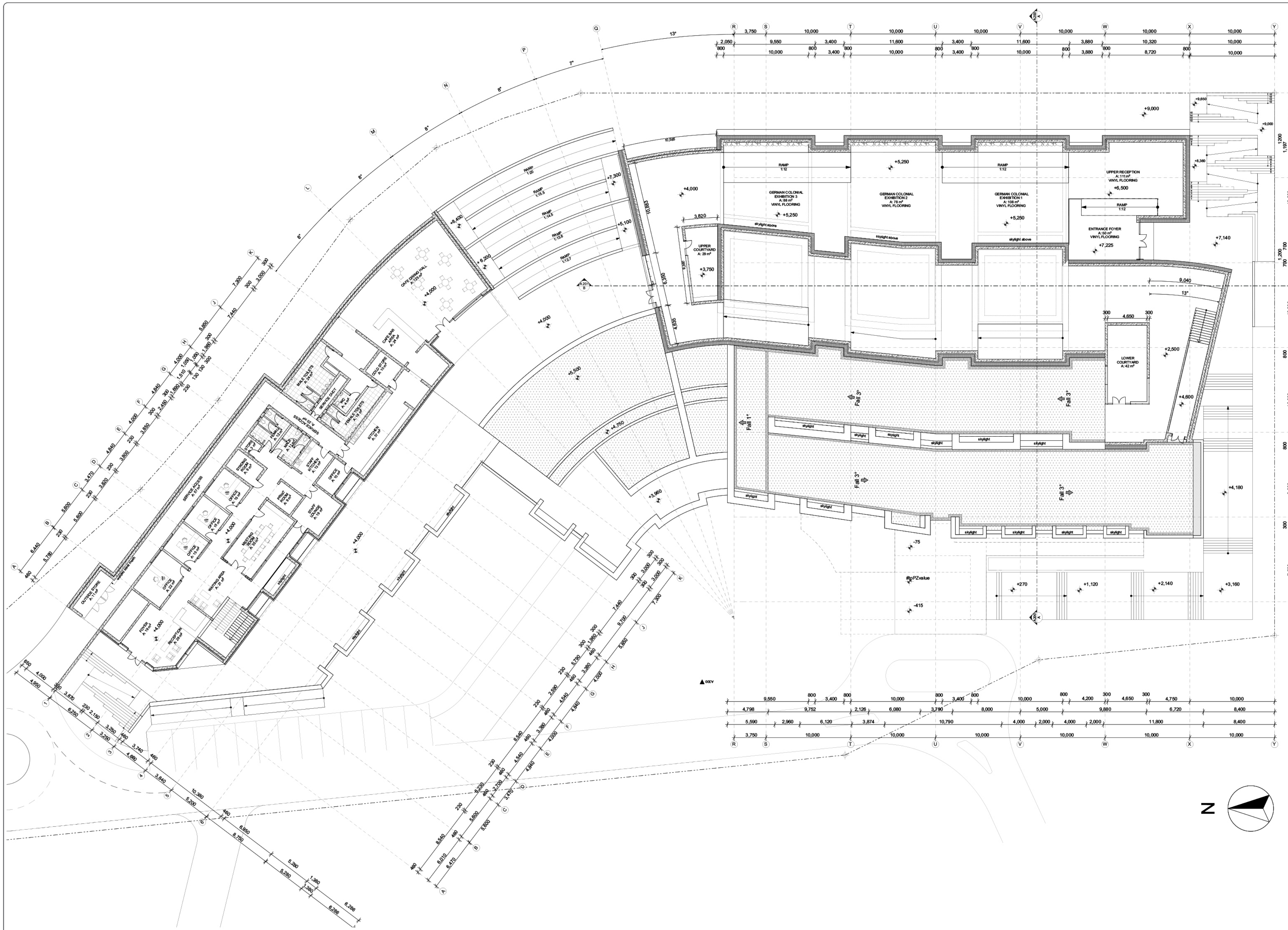
DRAWING TITLE:
PLANS:
A100 Lower Ground-Floor Plan

SUBJECT: CONS 7908
LECTURER: A. Wagener

DRAWN: Bratwin R. Bock
STUDENT NO: 2017056546

SCALE: As Indicated
DATE: 29/10/2019



Upper Ground Floor Plan

0 5 10 15 20

A101 Upper Ground Floor Plan

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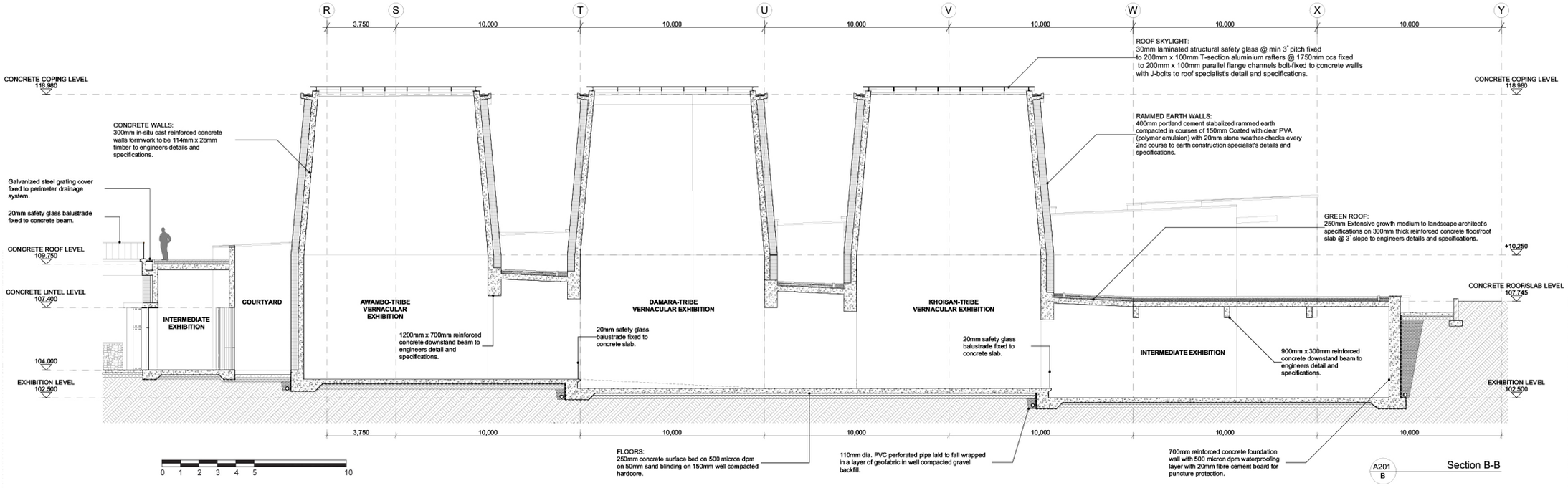
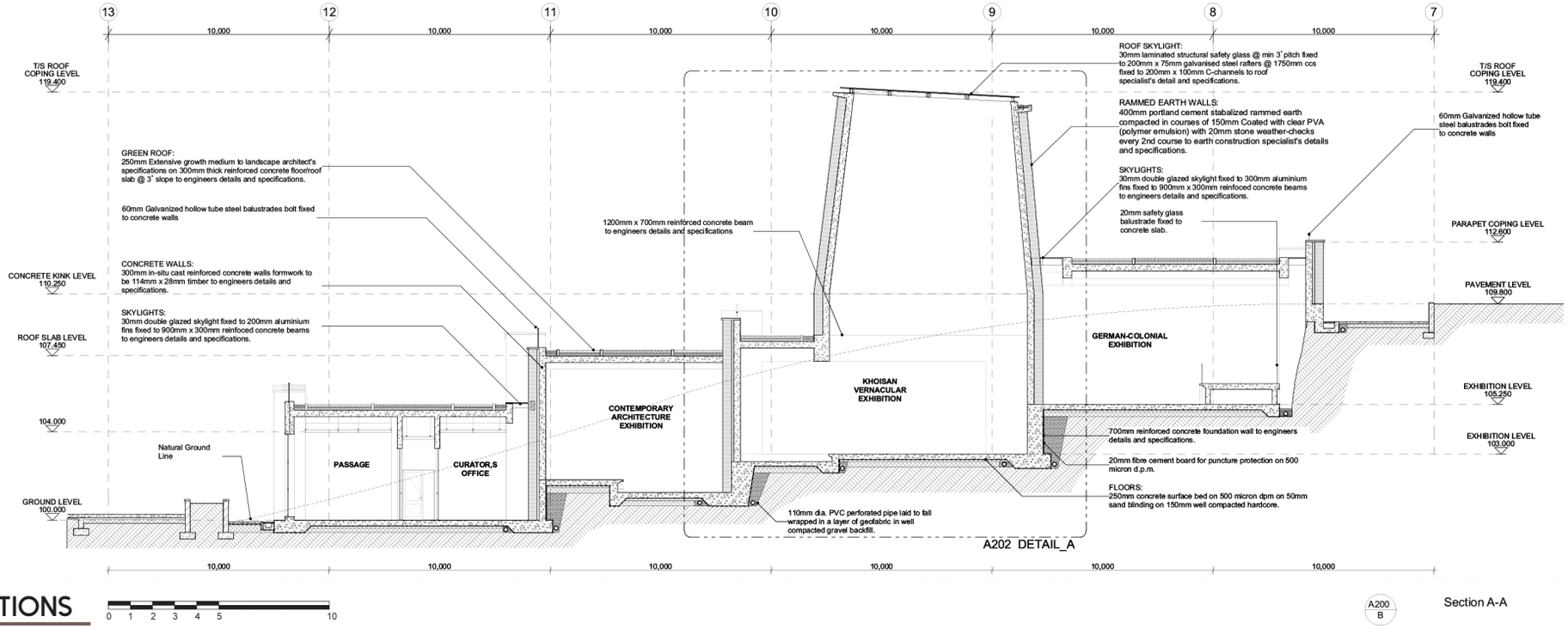
DRAWING TITLE:
PLANS:
A101 Upper Ground-Floor Plan

SUBJECT: CONS 7908
LECTURER: A. Wagener
DRAWN: Bratwin R. Bock
STUDENT NO: 2017056546
SCALE: As Indicated
DATE: 29/10/2019



A201 B Section B-B



A200 B Section A-A

SECTIONS

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STREET: Robert Mugabe Avenue
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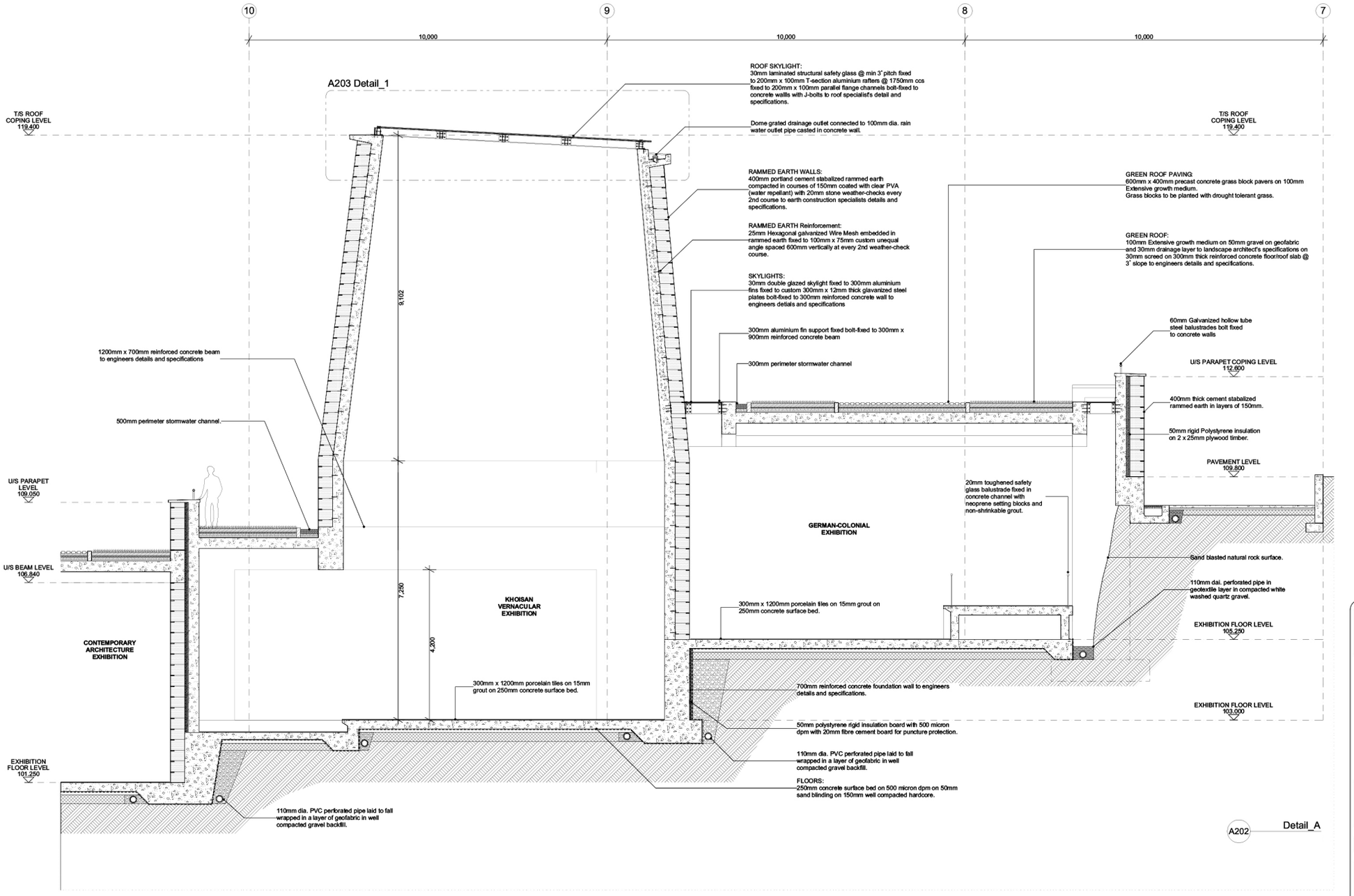
DRAWING TITLE:
SECTIONS:
A200 Section A-A;
A201 Section B-B

SUBJECT: CONS 7908
LECTURER: A. Wagener
DRAWN: Bratwin R. Bock
STUDENT NO: 2017056546
SCALE: As Indicated
DATE: 29/10/2019



DETAILED SECTION

0 1 2 3 4 5 10

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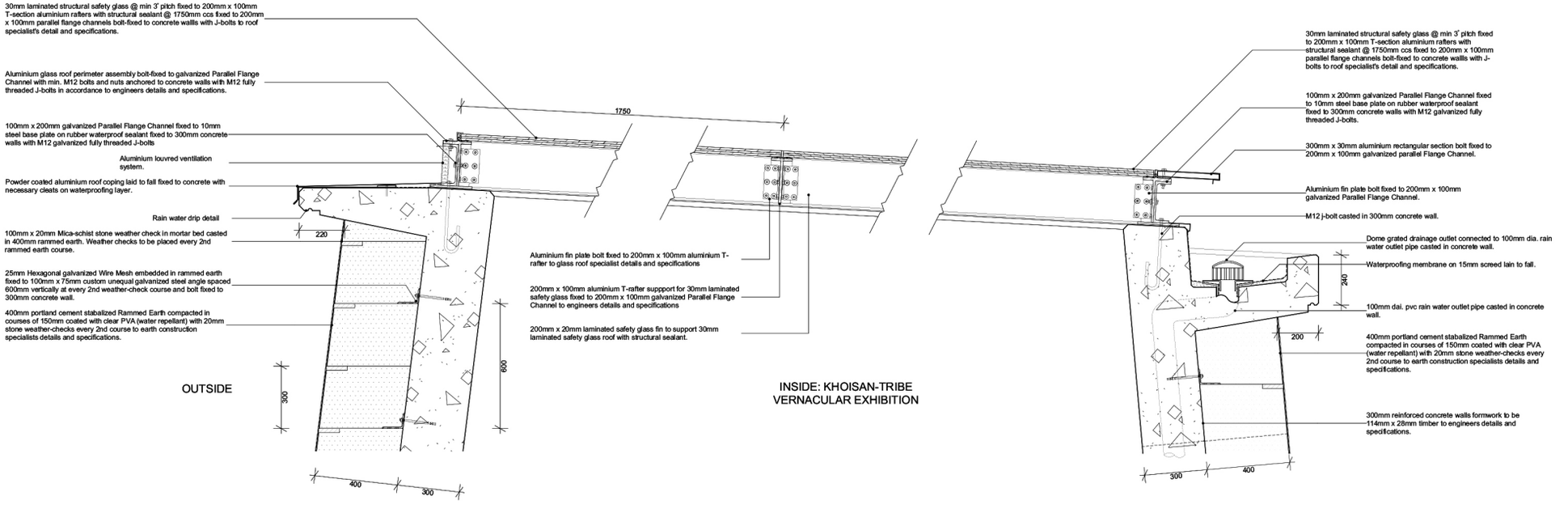
ERF: 1577 + 7755

DRAWING TITLE:
DETAIL SECTIONS:
A202 Detail_A;

SUBJECT: CONS 7908
LECTURER: A. Wagener
DRAWN: Bratwin R. Bock
STUDENT NO: 2017056546
SCALE: As Indicated
DATE: 29/10/2019



A203 Structural Glass Roof Detail_1

GLASS ROOF DETAIL

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PROJECT TITLE:
M.Arch Thesis: New Namibian Museum for Architecture

STREET: Robert Mugabe Avenue
ERF: 1577 + 7755

DRAWING TITLE:
A203 Structural Glass Roof Detail_1

SUBJECT: CONS 7908
LECTURER: A. Wagener
DRAWN: Bratwin R. Bock
STUDENT NO: 2017056546
SCALE: As Indicated
DATE: 29/10/2019

TECHNICAL DOCUMENTATION AND RESOLUTION: CONCLUSION

The technical resolution is an important investigation in a sense that it materializes and gives structural integrity to the design concept. The interpretation of indigenous building methods and materiality was an important task to determine its application in the design and its impact on the environment as a whole. The double skinned layer is derived from the Namibian vernacular building concepts in which it consists of a structural interior skin usually constructed out of timber and an exterior skin comprising of earth for thermal insulation and in some instances also serving a structural purpose.

The interpretation reflects through the contemporary use of rammed earth and concrete as the structure within the design.

CHAPTER V : CRITICAL REFLECTION AND SELF-EVALUATION

Namibia is a relatively small country in terms of population at an estimated 2.4 million people only in 2018 compared to its South African neighbours which is at an estimated 57.7 million people. This demographic results in a perceived undermining attitude of its cultural diversity, unique landscapes and both tangible and intangible historical richness on an international platform. This is an unsolicited illusion and therefore the task is up to the nation to embrace and critically research on this individuality and uniqueness, foster the value thereof and present it on an international platform that gives it due credibility.

Herein with I reflect on the process undertaken, the research done and the work produced and analyse it critically to determine the shortcomings and how it could have possibly have been improved upon. This document was quite a pleasure to put together; it serves as a reminder of the learning process. If given the opportunity to choose the same project, a museum for architecture; I would not hesitate for a second as there are many unexplored trajectories such a proposal can develop into.

One key area I would have loved to improve upon is the background research on which the proposal is based. There are many abandoned sites and fortifications that add to the historical discourse of Namibia. Personal research and investigations on buildings apart from the ones conducted in the context of Windhoek; would add to the collection of archive collections. Site visits to the villages in northern Namibia would have posed an interesting challenge as to how one would document the intricate structures found in rural contexts. The data obtained would have added an extra layer of discourse on the documenting of vernacular constructs based on personal observations. Perhaps one need to adopt the traditions and culture of the studied tribe in order to truly understand how they perceive space and the built environment. This is an interesting thought and perhaps can be further investigated on a Doctorate level where due diligence in research is required.

The ample heritage buildings which I am fortunate enough to study really increased my perceptibility to the context around me; to ask deeper questions and to respond accordingly. Pursuing a career in the built environment; means that at some point along the career path we will have to address historic contexts and other culturally important sites. It is in this instances that we as professionals need to be able to address it with confidence that we are assertive in our response.

WHY A MUSEUM FOR ARCHITECTURE AS OPPOSED TO A CULTURAL OR LANDSCAPE INTERPRETATION CENTRE.

The most critical shortcoming identified in the final stages of the dissertation is whether it should be a museum for architecture and how it is relevant to its context and Namibia as a whole. Critically evaluating other options such as an interpretation centre came to mind but upon reflection on the research done in this dissertation; the conclusion was drawn that there certainly is a need for museums addressing the concern for architecture and therefore serves as credibility for the proposal thereof.

The key shortcomings of the dissertation are therefore in regard to the emphasis on the archiving, research and documentation process of heritage artefacts that is a critical part of this design proposal. The evaluations, photographic surveys and digital documentation done on the onset of this dissertation in Chapter 2 is only a small representation of the importance of archiving architectural heritage. The documentation and archival process is achieved through the National Heritage Council which is both the custodians of heritage artefacts Namibia and in the proposal of this dissertation embark on the research and documentation of the heritage buildings in Namibia.

On an international stage; there is a serious concern and need for the preservation and archiving of architecture. Dr. Arthur Barker, et al., (2016, p. 6) states on the importance of architectural archives that it "... is a reminder of the past, but more importantly, it is a source of knowledge, caution or inspiration for the future." In this respect, the National Archives of South Africa "... coordinate the management and preservation of artefacts for posterity and future use." (Barker, et al., 2016)

The need for architectural archives is not only reserved for international first-world countries, but more importantly need reflects locally in the South African context through the establishment of the Barrie Biermann Architecture Library on the University of KwaZulu-Natal campus, the Architecture Archive at the University of Witwatersrand, whilst University of Pretoria's Architectural Archive was established as far back as in 1966 and housing over 80 significant collections. (Barker, et al., 2016)

> "The concept of the ARCHITECTURAL MUSEUM ... must be almost as OLD as the PROFESSION ITSELF."
>
> (Kotze, P (1998). As cited in Barker, et al., 2016, p. 6)

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