ARTIFICE AND THE ANCIENT PAST

INTERPRETATION CENTRE

FOR THE RUINS OF ADAM'S CALENDAR

MIEKE VAN DER WESTHUIZEN

MAYBE GOD'S SILENCE IS AN APPEAL TO GET BEYOND FACTUALITY. MAYBE GOD'S TRICK IS TO CALL US THROUGH THE IMAGINATION. IF YOU DON'T HAVE ANY IMAGINATION, YOU LIVE A DIMINISHED LIFE. THE OVERLY REASONABLE LIFE IS A SHRUNKEN LIFE. SO MUCH ALIENATION IN WESTERN CULTURES, IS DUE TO AN EXCESS OF REASON.

YANN MARTEL, LIFE OF PI



ARTIFICE AND THE ANCIENT PAST

INTERPRETATION CENTRE FOR THE RUINS OF ADAM'S CALENDAR

This dissertation is submitted in partial fulfilment of the requirements for the degree M.Arch.(Prof).

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Declaration of original authorship

The work contained in this document has not been previously submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge, this document contains no material previously published or written by another person except where due reference is made.

Acknowledgements

This thesis is dedicated to my loved ones - All we are is dust in the wind.

This document has been proofread and/or edited by A. Coetser, C. van der Westhuizen.

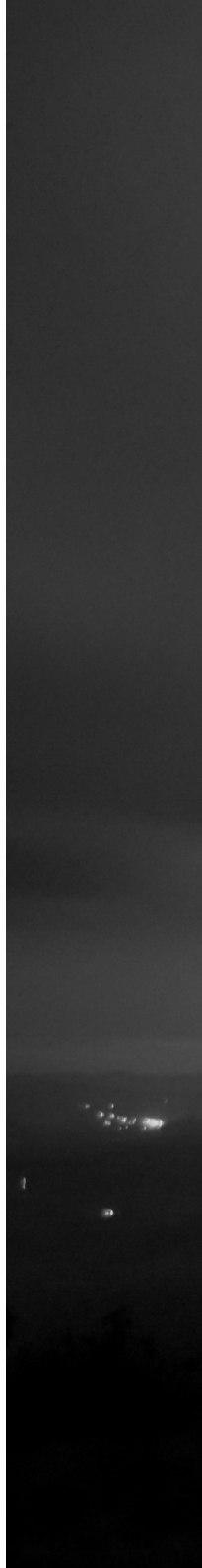
The theme of this study is the overlapping of artifice, landscape and the ancient past. It investigates different interpretations, narratives and ambiguities between the empirical and logical understanding of the landscape. The term artifice is used here in all three its primary designations: first, as a clever or artful skill; second, ingenuity, an artful stratagem; third, as trickery obscuring false or insincere behaviour. The artifice of the landscape generates the framework which choreographs the individual experience of the visitor, in architectural form.

To integrate the concepts of the investigation to a physical space, a site called Adam's Calendar, on the southern Mpumalanga escarpment, is selected. The arrangement of the stones on the site may or may not be the oldest manmade structure on earth (Heine, 2006: 2). The choice of the site is based on the mysteries and gaps still present in the historical information of an ancient African people and their understanding of their physical surroundings and the spiritual realm.

The Interpretation Centre is a tool to understand and contemplate the threshold between our world and what our ancient past means to us, as well as the mythological sphere which is filled with uncertainties, prejudice, half-truths, figments, lies, beliefs, and assumptions.

The architectural form is derived from the physical landscape surrounding the proposed site. The proposed structure takes on the purpose of an artificial landscape within the real, and signifies the in-between space where contemplation and interpretation is encouraged.

The artifice does not only act as a veil or introduction to the clues of the ancient past, but also as an informative guideline to the interpretation of the physical, mythological and symbolic narratives of the site. The site is loosely organised by the intertwinement of choreographed, mythological, exhibition and entirely imagined lines. Amid these lines, visitors are encouraged to explore the context of the site and to meditate on their capacity and willingness to find 'fragmented truths' amid their individual experience of a site, which may or may not be a relic of the ancient past.



ABSTRACT



1: Photograph of the centrepiece with Barberton and surroundings in the background. Author, 2019

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My personal interest in this study, stems from the discovery by Johan Heine and Michael Tellinger, of a large number of oddly shaped monolithic rocks, which seem to be purposefully placed along the escarpment, overlooking the Barberton Valley in Mpumalanga, South Africa. There are many different interpretations and narratives about the rocks, based on both science and more esoteric readings. In exploring the site where these rocks remain in a fragmented trail, questions of meaning and contemplation arise. In a very real sense, these rocks *'speak'*, but their message has been interpreted in different ways.

These rocks are found in many forms, shapes and sizes, and seem to mark significant paths of the sun, the moon and some stars (Heine, 2019) There are still countless spiritual and religious groups and visitors who believe in the magic and mystery of the strange rocks. However, scientists and archaeologists claim that the site has no historical value.

People are conditioned to see truth and beauty in authenticity. When they find no tangible explanation for it, they are confronted with the necessary 'untruths, half-truths and tales' in life. Adam's Calendar lies within this interplay between the mythical and factual, where individuals are the bearers of silence, pausing to interpret, contemplate and question all that they have yet to find persuasive answers for. Some choose to dwell in the mysteries, others demand clarity, even more settle into a vague sense of unease, which is never far from those who have consigned themselves to settle for indifference.

The proposed project celebrates the interplay between mystery and clarity, while challenging all forms of indifference. It consists of an Interpretation Centre, which explores the mythical ideas relating to the calendar and the sacred temporality of humankind. A research facility, visitor's centre, contemplation space and gathering space becomes the core elements of the design.

The design developed out of mythologizing the landscape, where lines are drawn from clues and theories derived from the site. The building becomes an act of artifice within the landscape '*a fictional landscape*'. Different exhibition spaces explore mythical ideas, theories and elements of the ancient site. The exhibition 'happens' amid a dialogue between the 'fictional' and the 'real'.

INTRODUCTION

THE SETTING
Topological reference to the landscape which will impact the design

THE CENTREPIECE
Typological reference to the function of the contested ancient site inspiring the design response. What is to be conveyed by the architecture?

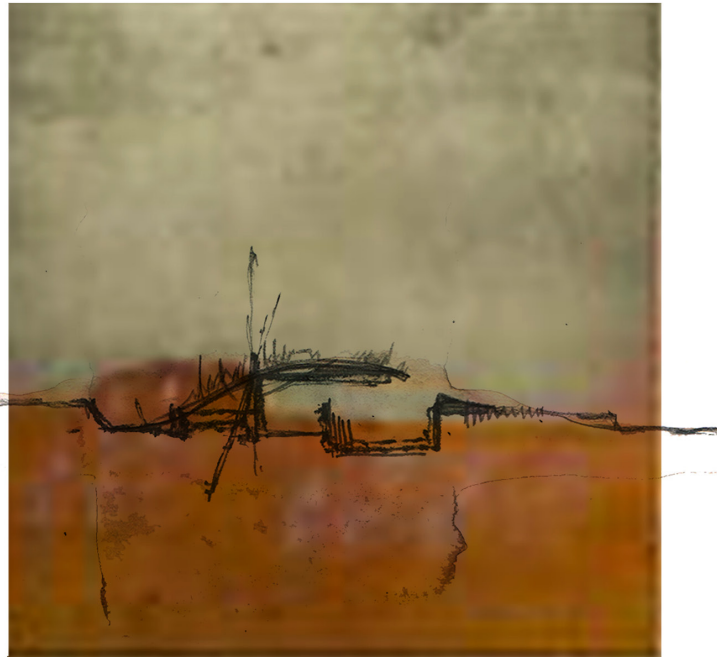
THE POET
Morphological reference to the choreographed relationship between the architect and visitor. The interactor with the artifice of the landscape.

ARCHITECTURE AS A WORK OF ARTIFICE
Techtological reference to the design response.







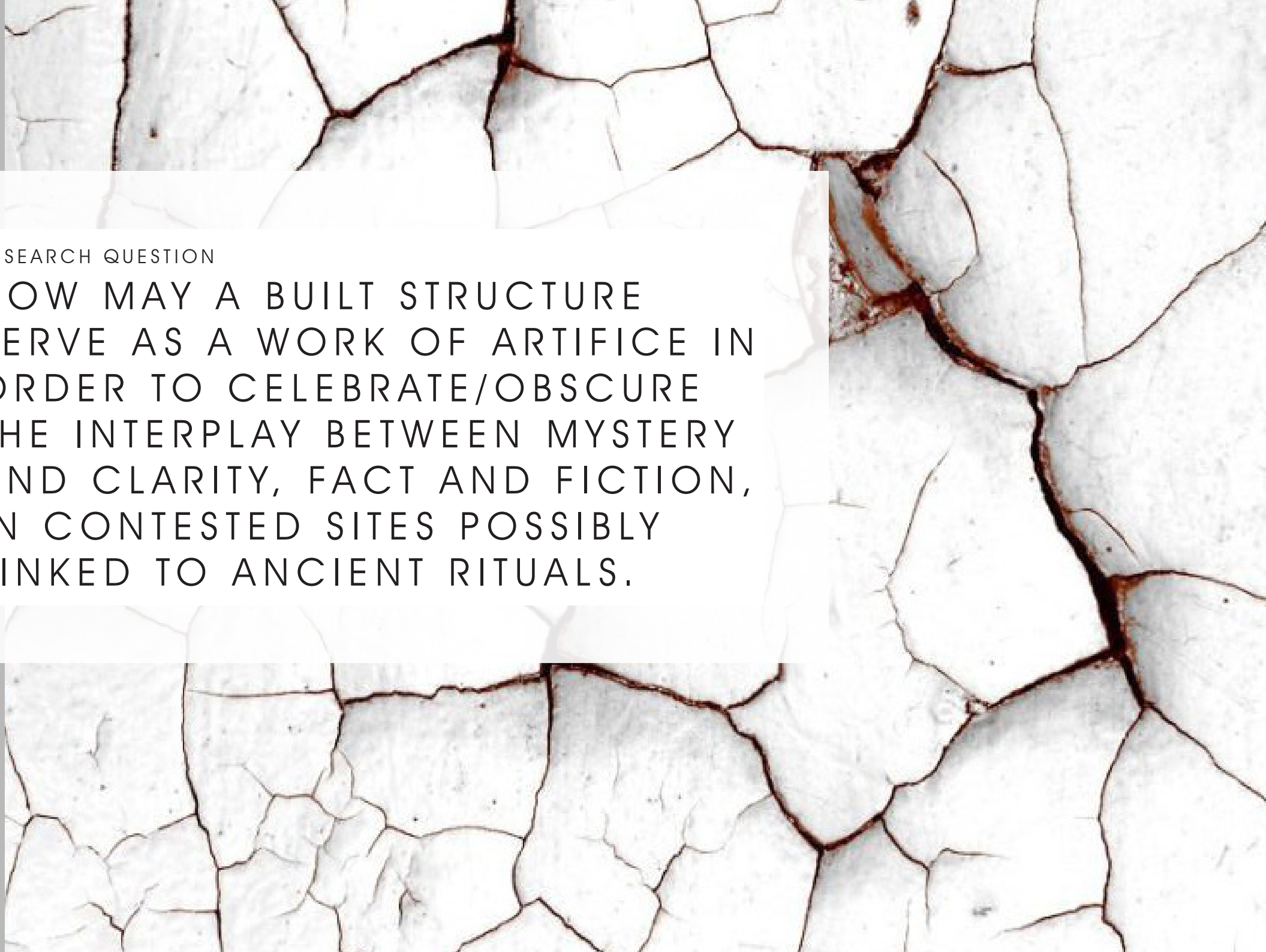


2. Photo montage of the landscape. Author, 2019

The main objective of this study is to explore ways in which specific architectures of place are shaped in the landscape. Fundamentally, reinterpreting the process of interpretation and contemplation in choreographed exhibition spaces which encourage the visitor to experience alternative ideas and theories of landmarks. The study explores alternative construction methods and creating structures made of landscape from the landscape. The structure is envisioned as a form of artifice in the landscape, blurring thresholds between past and present, science and fiction and the ways in which people attach meaning to certain landmarks; the way certain landforms are seen as 'evidence' for meaningful human dwelling.

The centre consists of spaces to interpret, contemplate, investigate and meditate in the landscape. The aim is to allow visitors to dwell on fragmented trails of information in their own individual manner and to personally connect with, or feel estranged within, the spirit of the place.

DESIGN OBJECTIVES



RESEARCH QUESTION

HOW MAY A BUILT STRUCTURE SERVE AS A WORK OF ARTIFICE IN ORDER TO CELEBRATE/OBSCURE THE INTERPLAY BETWEEN MYSTERY AND CLARITY, FACT AND FICTION, IN CONTESTED SITES POSSIBLY LINKED TO ANCIENT RITUALS.

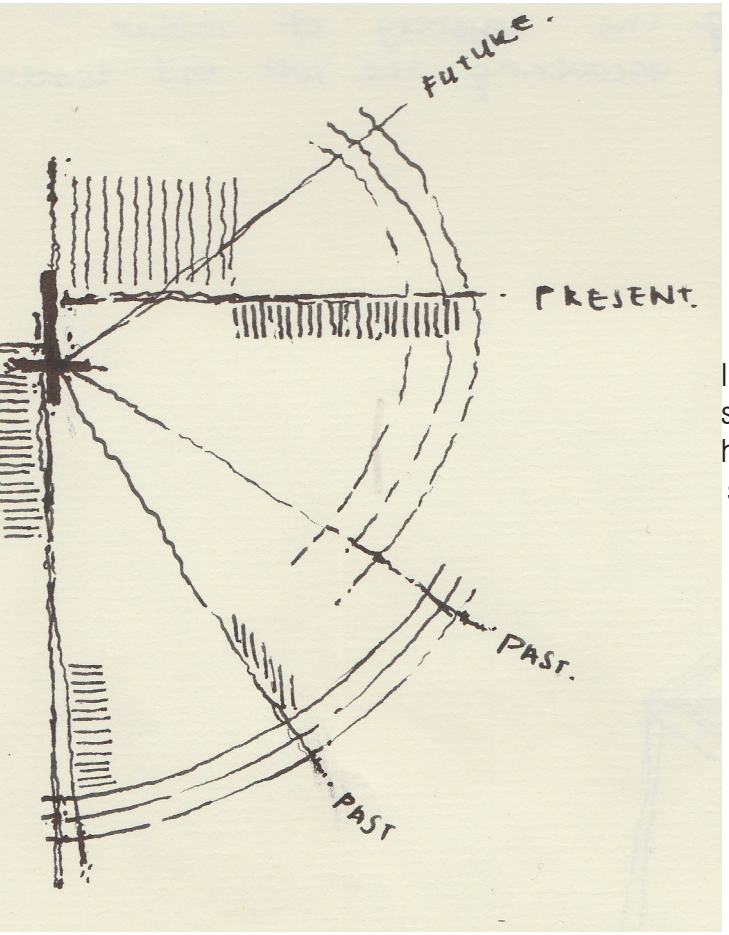


1

CHAPTER

1 | RATIONALE

[1] IN THE BEGINNING
[2] UNIVERSAL CONNECTIONS
[3] INTERVIEWS AND STATEMENTS
[4] NARRATIVES SURROUNDING ADAM'S CALENDAR
[5] CONCLUSION



In this section the following question is explored to understand the reason why this design thesis is important. Why humankind wonders and how the site Adam's Calendar is seen as a significant site to many visitors in today's times?

3. Conceptual sketch of a Calendar. Author, 2019

[1] IN THE BEGINNING

INTRODUCTION

"It is almost irresistible for humans to believe that we have some special relation to the universe, that human life is not just a more-or-less farcical outcome of a chain of accidents, reaching back to the first three minutes, but that we were somehow built in from the beginning… The more the universe seems comprehensible, the more it also seems pointless." – Steven Weinberg, The First Three Minutes. (Weinberg, 1993)

THE ORIGIN OF CALENDARS

"Around 60 000 years ago Homo sapiens migrated out of Africa on a large scale" (Daniels, 2016: 5). Small tribes of people started exploring the rest of the world by travelling over icy waters, hunting and evolving, with curious minds on a quest to know more. Later, the transition into the warmer Neolithic period favoured settling and farming. Humankind learned to domesticate animals, grow crops and build cities wherefrom the ancient civilizations were born. These beings had to understand their surroundings and the patterns of the sun, moon and stars in order to prepare for the changing seasons, which brought different challenges to their civilization.

'We cannot know when our ancestors first noted the cyclical events in the heavens that govern our sense of passing time. We have proof that Palaeolithic people thought about and recorded the astronomical cycles which give us our modern calendars. For example, a 30,000-year-old animal bone with gouged symbols, resembling the phases of the Moon was discovered in France" (Longstaff, 2005: 3).

Different types of stone calendars were built in many places over the earth to map and study the cosmic universe to understand their own time and surroundings. The sun, moon and stars played significant roles in these ancient civilizations which resulted in the construction of the first man-made objects and temples. These structures revealed knowledge on the galactic bodies and how their changes impacted events on earth.

[2] UNIVERSAL CONNECTIONS

INTRODUCTION

Traces of knowledge which tell stories about humankinds' ancient past and origin, lie scattered all over the world. Many of these discoveries indicate that some of the earliest humans came from African territories and have made their way across the continents. The Cradle of Humankind, located in South Africa, gives proof that these assumptions can be true. However, does the discovery of Adam's Calendar give us more clues to our ancient past? How is it that so many people have connected meaning thereto, some even considering it to be the oldest manmade calendar, while the scholarly community sees the same stones as a mere coincidence?

The following section introduces three other ancient monolithic stone circles, which served as a basis for the beliefs of other ancient societies.

STONEHENGE

Stonehenge is one of the most widely discussed megalithic stone circles on earth. The monument, consisting of many different stones, serve many functions. There have been long and varied discussions on theories about Stonehenge. Many of these theories are still talked about today, even though their empirical basis has fallen away over the years. The two main theories ask whether Stonehenge is a Holy Site or a Scientific Observatory. But both theories are based on the sites celestial influence. Which one of these theories are the correct theory and does it really matter? Recent theories also include the speculation that the site was a place where people came to be healed (Daniels, 2016: 6).

Existing theories on the monument are constantly being modified as new discoveries are made (Parker & Pearson, 2013: 81). Ultimately, during investigations over the years, the hypothesis' set out predictions, which could be followed up with field work, in turn feeding back to theorizing. This cycle of reflection proved to be a rewarding process of discovery. The quest for uncovering the mysteries of Stonehenge, turned out to be exactly what research should be – the excitement of potential possibilities, the triangulation of multiple lines of evidence and not knowing where this evidence will finally lead to (Parker & Pearson, 2013: 81).





4. The shadows of the Stonehenge in the afternoon light. [Online] History.com

RING OF BRODGAR

The Orkney Islands is an archipelago in the Northern Isles of Scotland. The Island consists of a series of Neolithic sites. On one of these sites is the Ring of Brodgar Henge monument (Fig 5) . These Neolithic monuments stand as constant reminders of people and events that have walked these landscapes centuries ago. The use of the stone ring has not been determined. Theories include: an astronomical observatory, a place of ceremonial rituals, a place for honouring the ancestors and a prehistoric meeting place (McClanahan, 2004: 5). A Study conducted by the archaeologist and art historian Angela McClanahan, suggests that it is important to engage in a historical review in order to understand the contemporary significance and relevance of archaeological monuments and the ideas and practices surrounding them. By examining both the oral and documented narratives, these monuments are more comprehensible (McClanahan, 2004: 16). Like the Ring of Brodgar, Adam's Calendar has also been discussed and theorised over the past few years. It is important to listen to all the voices and ideas surrounding the calendar, to essentially understand what meaning these calendars and stone circles can bring to the contemporary world.



5. The ring of Brodgar. [Online] Aboutbritan.com

CARNAC STONES

The Carnac Stones are an astoundingly large grouping (see Fig 6) of megalithic sites in Brittany, France's north-westernmost coastal region. More than 3 000 prehistoric standing stones were carved out of local granite and planted by the pre-Celtic people of Brittany. Many of the sites have been neglected and tampered with, which detracts from the history and sacredness of the site. The aligned stones stretch for several kilometres over the landscape (Roughley, 2014: 1). The sequence of events of Neolithic Brittany remains both uncertain and controversial, but remains a very frequently visited site for many tourists of Brittany. Like the Carnac stones, Adam's Calendar are also aligned in mysterious ways with many different shapes and sizes of stones along the escarpment.

With better care and conservation strategies set in place, the Carnac Stones and sites like Adam's Calendar might be preserved for interpretation for the future generations.



6. The Carnac stones.[online] ancient-origins.net

[3] INTERVIEWS AND STATEMENTS

Pierre van Zyl, a local from the Kaapsehoop community, gave a tour of the escarpment where the stones are found. He touched on all the different theories and beliefs of people when they experience the stones. He described how many people in the town as well as foreigners, form deep connections with the site when they visit, all revealing their individual experience. He stated that locals from Kaapsehoop named it "The Holy Site" and regularly get together on the escarpment for spiritual and social gatherings (van Zyl, 2019: personal communication).

Johan Heine is a founder member of the Ma-Komati Foundation, which was inspired by Cyril Hromnik, who brought the significance of other stone ruins on the Mpumalanga escarpment to his attention, back in 1990. "The foundation aims to promote the research, protection and exposure of the Mpumalanga stone ruins" (Heine, 2006). During a telephonic interview, Heine agreed to serve as the hypothetical client for this study, explaining that the next step in examining and appreciating the stone ruins is to build some form of a visitors centre. This will help the foundation reach their aims and essentially protect these magnificent ruins of Mpumalanga, including Adam's Calendar (Heine, 2019: Telephonic interview).

Dr. Alex Schoeman.
A telephonic interview was conducted with Dr. Schoeman in questioning the authenticity of the site called Adam's Calendar. Dr. Schoeman is a senior lecturer at the University of Witwatersrand in the school of Geography, Archaeology and Environmental Studies. She has done extensive research on the Bokoni tribe of the Mpumalanga escarpment and is one of the publishers of the book, *The Forgotten World* (2016). In the interview, Dr Schoeman stated that the stones called Adam's Calendar have no historical relevance and are in no way connected to the Bokoni tribe's civilization. Therefore, calling Adam's Calendar a falsehood (Schoeman, 2019: Telephonic interview).








7. Photo montage of the surrounding landscape. Author, 2019.



[4] NARRATIVES SURROUNDING ADAM'S CALENDAR

AFRICAN MYTHS AND LEGENDS

Sanusi Credo Mutwa is a South African visionary, shaman and sangoma. He tells ancient African stories about the stones on the escarpment and believes that the ancient civilization to whom these stone circles belong, owned working elephants to do all the heavy lifting and moving of stones during construction. He looks at the landscape where an indented path is evident on the surface and explains that these paths, called "ley-lines" (see site analysis), were made by these large animals when they pulled the stones to their destinations (van Zyl, 2019: Personal Communication).

It is said that southern Africa holds some of the deepest mysteries in all of human history (Heine, 2006, 11). If the first humans walked the earth in this part of the world, why are there so little evidence of their activity here? One of these African theories include the story of the Queen of Sheba, whose story is told in the Hebrew Bible. She brought many valuable gifts from her country to the Israelite King Solomon, as she "came from the uttermost parts of the earth" (Mt. 12:42; Lk. 11:31).

Figure 8. Our local guide, Pierre van Zyl, on the tour of the site Adam's Calendar, Author, 2019

ANCIENT AFRICAN SETTLEMENTS

The *Forgotten World: The stone walled settlements of the Mpumalanga Escarpment* (2016), tells the story of the Bokoni tribe which settled in the surrounding areas of Lydenburg, Schoemanskloof and Waterval Boven between 1500 and 1820. These sophisticated settlements included stone dwellings, terraces and even roads which connected these dwellings over many kilometres along the Escarpment.

According to the authors, Delius, Maggs and Schoeman, there have been many misreadings of the settlements and their function and purpose in the past (Delius etal. 2016: 2). Some of these misreadings include the theory of an ancient Hindu settlement or the connection to Adam's Calendar as mining areas for the Annunaki through magnetic fields. There was even a theory of a connection to Great Zimbabwe, because it is built along the same longitudinal line as Adam's Calendar. Some state that the Mpumalanga Ruins were built as ancient observatories by a civilization that predated ancient Mapungubwe (Delius et al, 2016: 3).

Figure 9. A view from above of the stone walled settlements of the Mpumalanga escarpment. Heine, Tellinger, 2009.





THE CELESTIAL CONNECTIONS

Virtually all ancient civilizations were obsessed with the stars (Tellinger, 2013: 52). After mapping and exploring the site, amateur researches Heine and Tellinger found very promising alignments with the movement of the sun and the moon and concluded that this may be an ancient, megalithic stone calendar, built by an earlier African civilization. According to the mystic Credo Mutwa there were many ancient African "star tribes" who carry great knowledge of stars.

Several constellations and stars have played an important role in ancient mythologies and mysteries which surrounds our species (Wells, 2018). The constellation of Orion is one of the most prominent and recognizable constellations in the African sky. Some researchers who visited Adam's Calendar even found the possibility of certain stones in the calendar corresponding with the three stars in Orion's Belt in specific years. In the Book *African Temples of the Annunaki* by Michael Tellinger, an alignment with the stars in Orion's belt is shown. (see Alignments in site analysis)

Figure 10. Are these fallen Monoliths meant to mark the stars? Author, 2019

THE ANNUNAKI AND MICHAEL TELLINGER

In the self-published books, *Adam's Calendar* and *The African Temples of the Annunaki*, Michael Tellinger and Johan Heine explore the possibility that the stones on the escarpment may have belonged to extra-terrestrial beings, more than 60 000 years ago. The explorers claim to have found proof in the form of large stone monolith statues, peroglyphs and symbols discovered in Mpumalanga and other parts of South Africa (Tellinger, 2013: 4). In their book, the authors tell the stories of the vast gold-mining operations of the Annunaki from the 12th planet, Nibiru and the city of Annunaki leader Enki.

Apart from the narrative of the Annunaki, there are countless spiritual groups and visitors who believe in Adam's Calendars' pure magic, mystery and the clues to the past it may have left. Some of the spiritual groups bring offerings to an offerings structure (figure 11), which seem to connect them to the celestial beings of the world. Other claim to have visited other planets through portals found near the site (van Zyl, 2019: Personal communication).

Figure 11. The place of offering overlooking the Barberton Valley. Author, 2019





2

CHAPTER

2 | THE SITE

[1] MACRO CONTEXT
[2] MICRO CONTEXT
[3] EXPERIENCE AND PERSONAL READINGS OF THE SITE
[4] STONES THAT SPEAK
[5] ALIGNMENTS
[6] VEGETATION

[1] MACRO CONTEXT

BARBERTON VALLEY

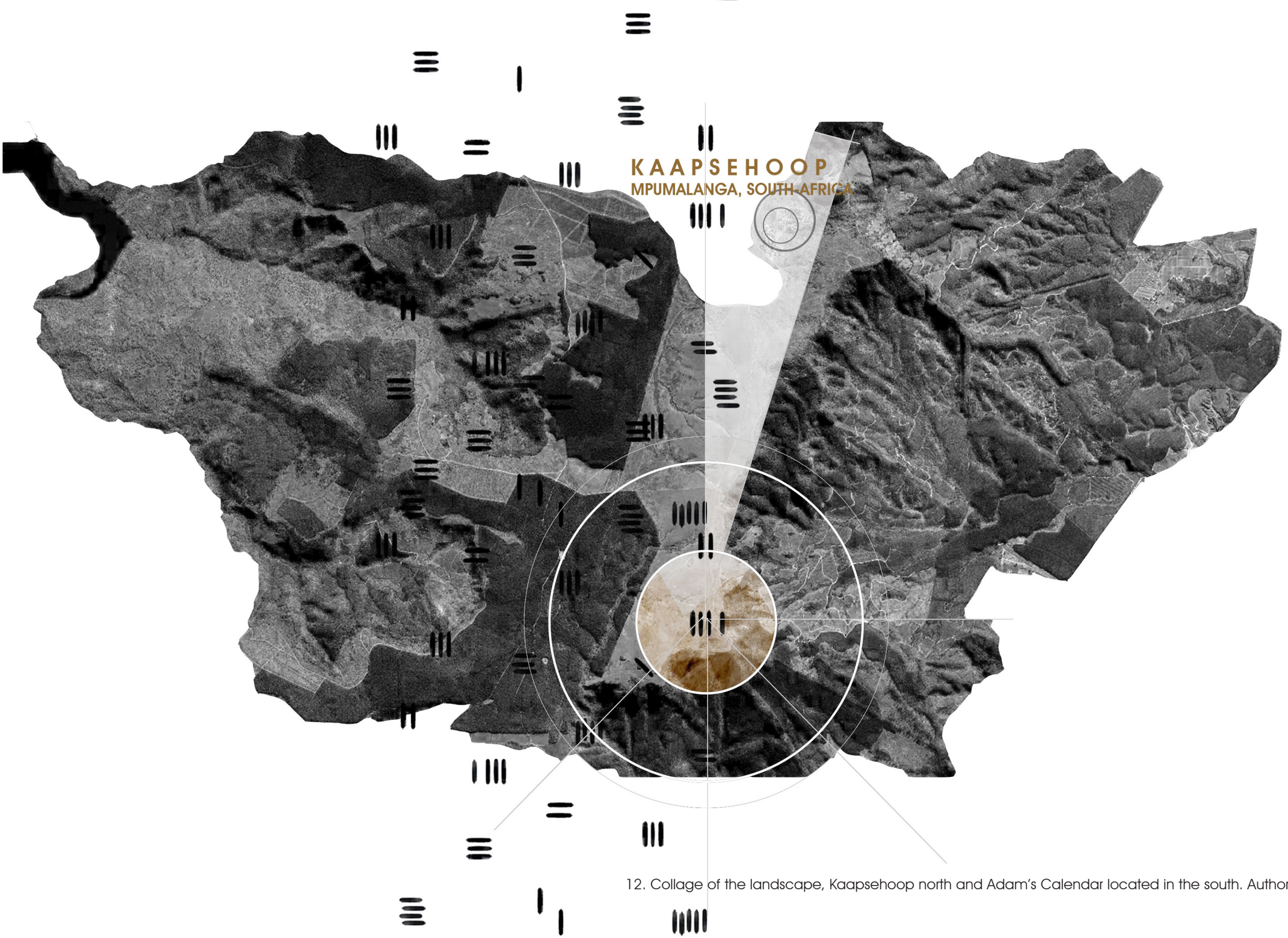
The Barberton Makhonjwa Mountain is a range of small mountains and hills which lie on the eastern edge of the Kaapvaal Craton and is known for consisting of some of the oldest rocks which are exposed on the Earth's surface. The mountain range is best known for its geological significance, yielding some of the oldest undisputed signs of life on Earth and the area is also known as the "Genesis of life". (Anon, 2018)

KAAPSEHOOP

Set above a mountain pass on the Drakensberg escarpment on an altitude of 1628 metres, Kaapsehoop reveals itself through tree plantations and as if out of the mist of time. The town's streets are gravelled and dimly lit by lantern style lights, setting the scene from the past with no more than 200 permanent inhabitants which form the small community. Established in 1882 when alluvial gold was discovered in the area, Kaapsehoop was originally meant to become a large diggers' city, only to be deserted when gold was found in Barberton and all the diggers rushed towards the valley (Fourie, 2018:3).

Today, Kaapsehoop is known as a remote tourist destination, hidden in the mountains where artists have made their homes between several restaurants, historical buildings and many wild horses that roam the streets and landscape.

The Commissioner's House and Old Town Hall are the two most significant historical buildings in the area (Fourie, 2018: 1). The wild horses of the area are said to be descendants from horses used by British troops stationed here during the Anglo-Boer South African War. The Blue Swallow Reserve is a protected area towards the escarpment, overlooking the Barberton Valley where the majority of these scarce swallows have been sighted. Unfortunately, the blue swallows have not returned over the last years after migrating to Northern Africa.



12. Collage of the landscape, Kaapsehoop north and Adam's Calendar located in the south. Author, 2019

STRUCTURES OF KAAPSEHOOP

The oldest existing buildings in the town is the Commissioner's House and the Town Hall (Fourie, 2018). These buildings give clues to the materiality and construction methods of the mining years. The beauty of these structures lay within the ways in which different stones are used in different ways to create a structure which is of the surroundings and blend in with the surroundings.

Some stones are shaped into building blocks which form the walls of the building, some larger and more robust stones are used as steps to the entrance. Some stones serve as lintels and some smaller stones form part of the mortar which hold the structures together. In figure 13 the colours, materiality and surrounding vegetations are photographed.

Adam's Calendar can be analysed in the same way as these structures. Many different stones serve different purposes and together they form a fragmented trail of information. Some stones mark directions, some stones are meant to cast shadows, where others are the stones on which the shadows are cast. Some are shaped to depict a person or animal and some are meant to frame.

Figure 13. A collage of photos of existing structures in the surrounding context. Author, 2019.

The commisioners house










The old town hall

Kaapsehoop lookout point
over the Barberton Valley
North from Adam's Calendar

VIEW TO THE EAST

At night the lights of Nelspruit are visible in the north an
Barberton and surroundings are visible in the so

north marker in
the calendar



14. Panoramic collage of the Eastern view from the site. Author, 2019

ADAM'S CALENDAR
The centrepiece to the design

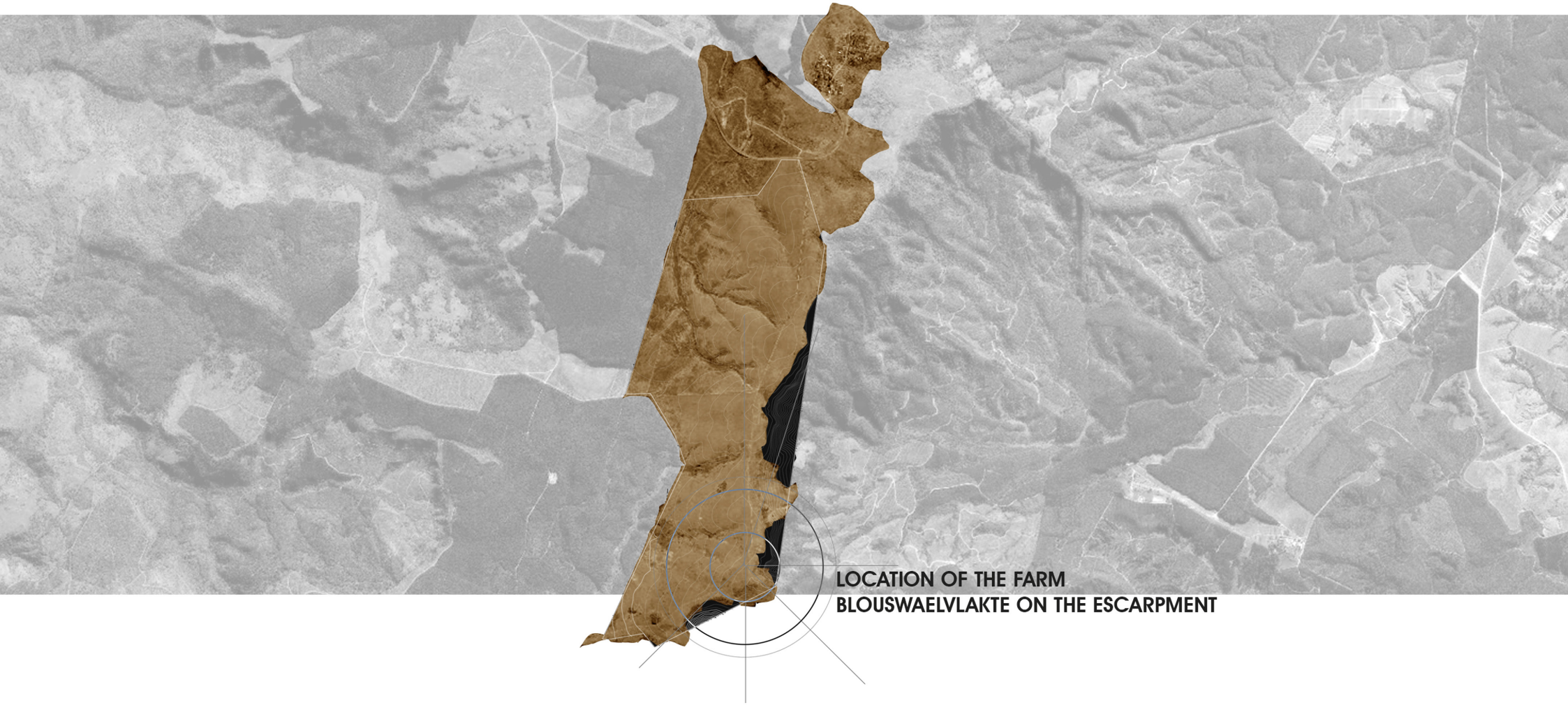
d the lights of
outh

Adam's Calendar lookout point
South from the centrepiece

gathering area of the
local community over full
moons

south marker in
the calendar





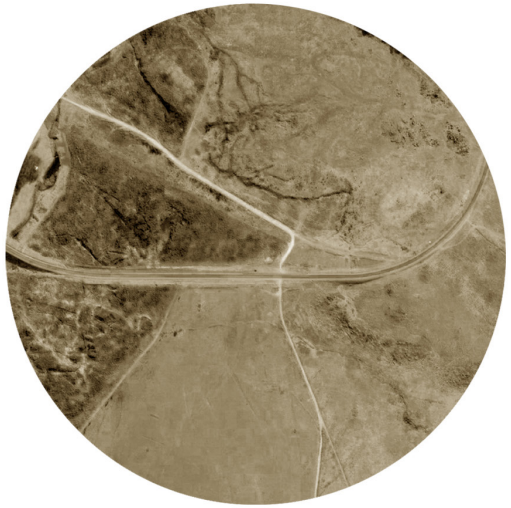
15. The farm Blouswaelvlakte. Author 2019.



[KAAPSEHOOP TOWN]

CURRENT PERMANENT INHABITANTS +- 200 PEOPLE

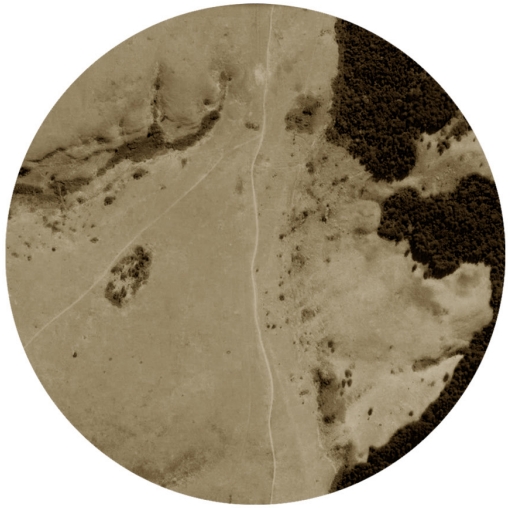
Kaapsehoop is known for its mysteries and peculiarities, which have been a part of the town since its establishment in 1882, when alluvial gold was discovered in the area. There are a number of quaint shops and eateries for the town's visitors. There are currently around 200 permanent inhabitants and about 180 wild horses who live in harmony with the locals. Many hikers and adventure seekers visit the town during holidays and is the main source of income to the locals. The town solely relies on French drains and septic tanks, as there are no municipal sewage systems. The town however does have municipal electricity and only one paved street, the rest are gravel.



[BLOUSWAELVLAKTE]

ENTRANCE TO THE FARM THROUGH A STEEL FARM GATE

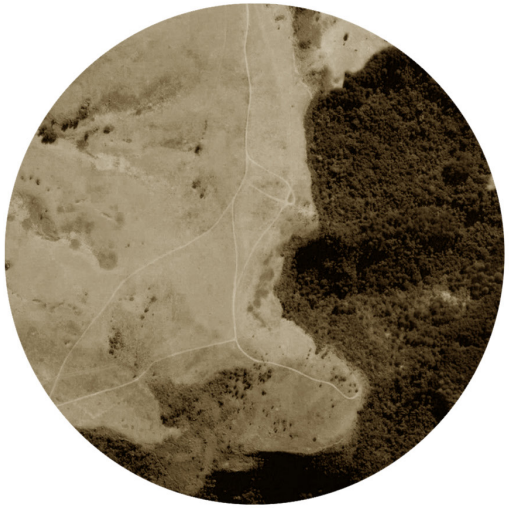
The farm Blouswaelvlakte is in the area along the escarpment, 2km outside of town, which had been declared a Blue Swallow natural heritage site. The rare Blue Swallow breed in this area and migrate to northern Africa during the winter months. Only 131 were sighted during the 2005 bird census, 34 of which were in Mpumalanga at Kaapsehoop. The farm is also the site where Adam's Calendar is located on the escarpment.



[THE WORKSHOP]

MANY ROCKS ON THE EASTERN SIDE OF THE GRAVEL ROAD TOWARDS ADAM'S CALENDAR

The "workshop" is located approximately 3km from the entrance to the farm and is situated on the escarpment overlooking the Barberton valley. The name was given by Johan Heine and Michael Tellinger, who speculated that this might have been the remains of the site where rocks have been shaped into various sizes and forms by an ancient civilization. The strangely shaped and grouped rocks lie scattered along an area of approximately 600mx100m.



[THE HOLY SITE]

ADAM'S CALENDAR ON THE FORST OUTCROP ON THE ESCARPMENT. ADACENT TO THE PROPOSED SITE FOR THE INTERPRETATION CENTRE

Adam's Calendar is locally known as The Holy site as the inhabitants in the surroundings believe in its magic and mysteries. This is the centrepiece to the discovery and the most visited area on the farm. The holy site consists of a radius roughly measured as 10-15metres. In this circle many monolithic stones are located. They seem to be purposefully placed to map the sunrise, sunset and solstices. The stones also look strangely shaped and manipulated to serve different purposes.

16. Collage of the different significant points in the landscape. Author, 2019

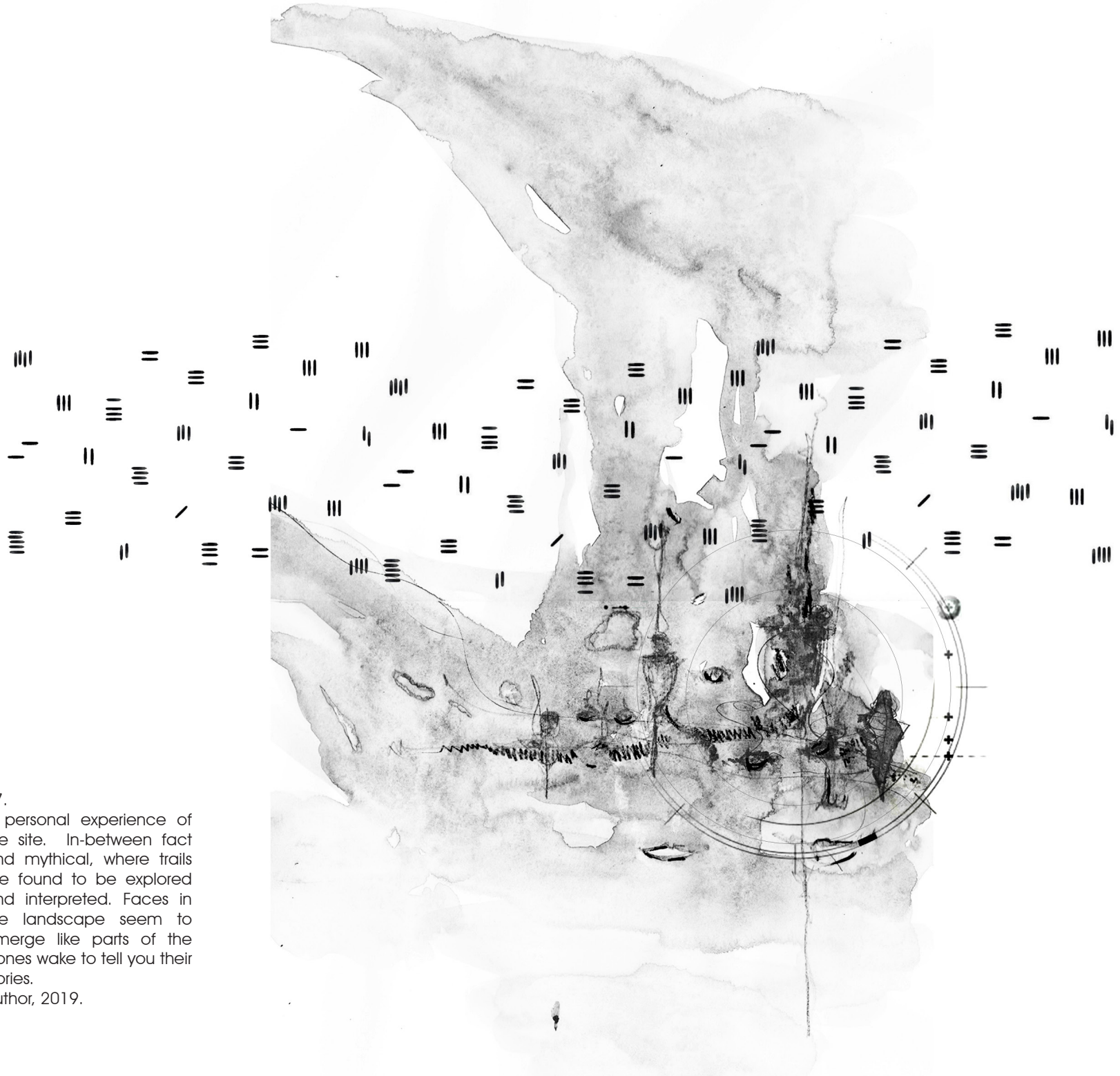
[3] EXPERIENCE AND PERSONAL READINGS OF THE SITE

Upon arrival on the farm Blouswaelvlakte, it is impossible to hide the curiosity about what lies ahead - a human condition, which has been passed down to us by our ancestors. Out of respect for the landscape, the local guide removes his shoes, stating that we should tread lightly on the land. The first stop is just after we have passed through the farm gate onto the gravel road. Here we are greeted by a stone which vaguely resembles the form of an average sized human. Even with limited imagination you can make out the head, neck and body. This is Adam, the stone after which the site had been named. Already intrigued to see the rest, we continue on the road towards the second stop. The stone at this stop is different in shape and composition. This place looks more like an altar, or a place of offering, where many tiny objects and sentimental items are placed. Directly south from here is our final destination, a few hundred meters away.

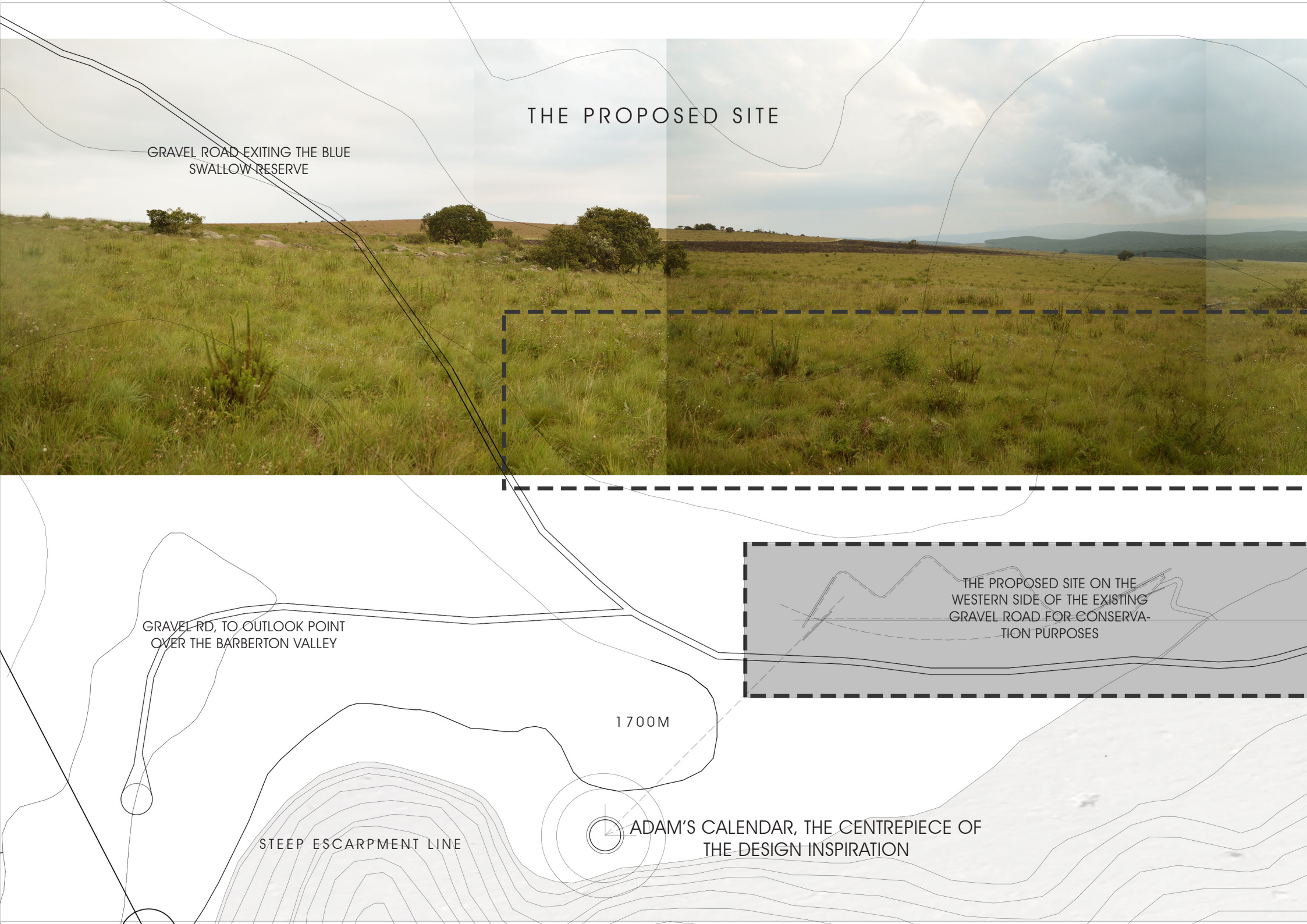
Next stop is The Workshop. Here loose dolerite stones are scattered across an area of roughly 100 metres wide and 400 metres long. The local tour guide explains why these stones might have these strange shapes. It must have been manipulated in some way. The patterns of repetition seem clear where stones of certain shapes have been grouped together over the landscape. Odd shapes, which indicate either gender or different functions or markings, were placed alongside each other. The stones here are believed by people like Heine and Tellinger, to be the remains of a stone working area where the stones for Adam's Calendar, the centrepiece, were carved. Even the sceptical mind struggles not to entertain the veracity of these ideas.

Now on foot, we walk the last 100 metres to the final stop on an astonishingly clear and deep indentation on the surface of the landscape. This is believed to be what is called a ley line or ancient road, which only adds more mystery to the site. As Adam's Calendar slowly reveals itself over the last hill, all that is left behind starts to fade into the landscape and for a moment all concept of time is lost. One feels completely removed from the world we know and crave only this fragment of wonder. This is The Holy Site, as the locals call it. Overlooking the vastness of the Lowveld and waiting for the sun to set and the moon to rise, this, in the silent mountain air, is where we will pause to question. As the celestial bodies continue on their paths around the earth, the scene darkens and the quiet night sneaks in.





17.
A personal experience of the site. In-between fact and mythical, where trails are found to be explored and interpreted. Faces in the landscape seem to emerge like parts of the stones wake to tell you their stories.
Author, 2019.


THE PROPOSED SITE
GRAVEL ROAD EXITING THE BLUE SWALLOW RESERVE
THE PROPOSED SITE ON THE WESTERN SIDE OF THE EXISTING GRAVEL ROAD FOR CONSERVATION PURPOSES
GRAVEL RD, TO OUTLOOK POINT OVER THE BARBERTON VALLEY
1700M
STEEP ESCARPMENT LINE
ADAM'S CALENDAR, THE CENTREPIECE OF THE DESIGN INSPIRATION





NOORDKAAP RIVER

ENTRANCE FROM THE NORTH ON GRAVEL RD.

TURN OfF TO FORESTRY FARMS ON THE WEST OF THE BLUE SWALLOW RESERVE

THE AREA WHERE THE WORKSHOP IS LOCATED

[4] STONES THAT SPEAK

THE WORKSHOP

It is speculated by locals and people who have visited the area that these loosely scattered stones are either the workshop for the monoliths for the calendar or remains of ancient ritual spaces. Many of the stones looked carved and shaped to serve a purpose. In the figures the different types of stones are shown with the names given to them by the locals and explorers. Interestingly, some of the rocks - called sounds rock - sounds metallic when tapped with another solid rock. Very few of the other stones in this area sound similar. This is possibly because these are dolerite rocks, which are some of the hardest stones found.

The stones seem to be planted and not part of the bedrock. Geologists have confirmed that the bedrock is of black reef quartzite and the monoliths are dolerite (Heine, 2006: 61).

A RARE SOUND ROCK



STONE WOMAN



STONE FAMI





THE SPHINX



THE SAD MAN



GROUPING OF STON

18. The Workshop significant stones. Author, 2019
19. The Workshop and surroundings. Author 2019



THE CENTRE PIECE



20. Photo montage of the centrepiece Adam's Calendar. Author 2019

Approximately 1 700m above sea level the centrepiece – Adam's Calendar, is located a mere five metres from the cliff line of the Escarpment. Upon arrival, the two large rocks in the centre of what seems like a lain-out circle, are clearly visible. The monoliths in the centre are about 2,7 metres above the earth's surface. A footpath is the only means of entrance to the calendar and one enters the circle from the northwest.

Many of the monolithic rocks have fallen over, which is probably a result of the movement of the soil on the surface of the escarpment. This area has been named "The Holy Site" by the locals of Kaapsehoop and they visit the site occasionally for spiritual and community gatherings. The explorers and amateur researchers Heine and Tellinger have mapped the significant days of the sun and moon and these celestial bodies rise over the calendar.

Missing from the calendar is the stone man, nicknamed Adam. The large man-shaped stone - roughly shaped in the form of a human being - was moved to the entrance of the farm Blouswaelvlakte in 1994, marking the official entrance to the Blue Swallow Reserve.

Image to the left: The two biggest standing monoliths on the escarpment with the tree above the north marker in the background.
The slight tilt of the monoliths is shown in the second image and in the last image, the two smaller stones, where the sun sets through during the winter solstice, are shown.

Figure 21. A photo taken in 1982 of the centrepiece ,Bradley Lee. (Heine, 2003:182)



[4] ALIGNMENTS



Heine and Tellinger mapped the calendar extensively. For the purpose of this study, the alignments which will have a direct impact on the design, will be shown.

22. A three dimensional reconstruction of adams calendar shows the horus statue and three orion stones, aligned perfectly to the rise of orions belt on the vernal equinox. Tellinger, 2013:53



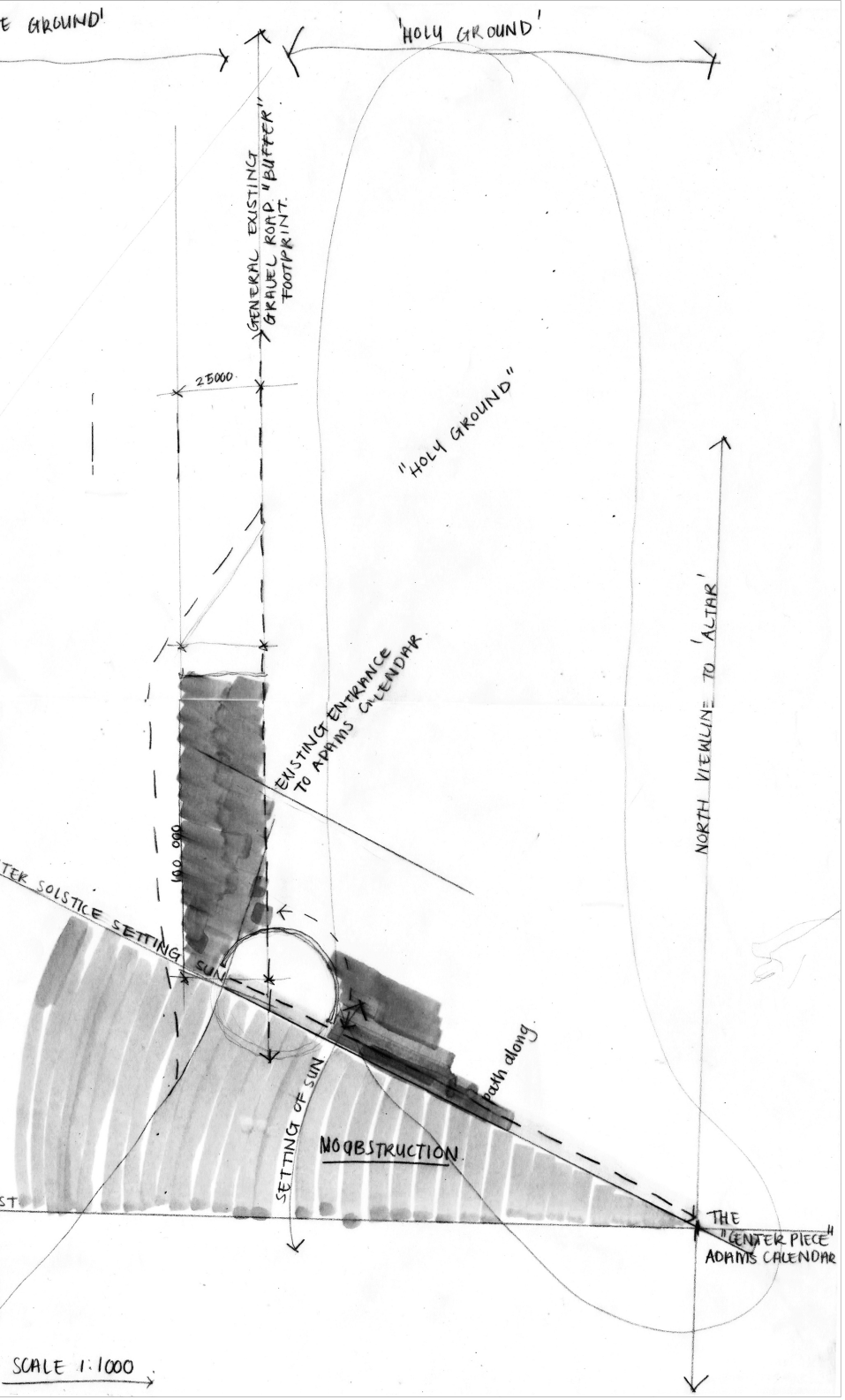
An indent in the landscape is very clear. This forms a road along the escarpment, leading from the workshop to the calendar.

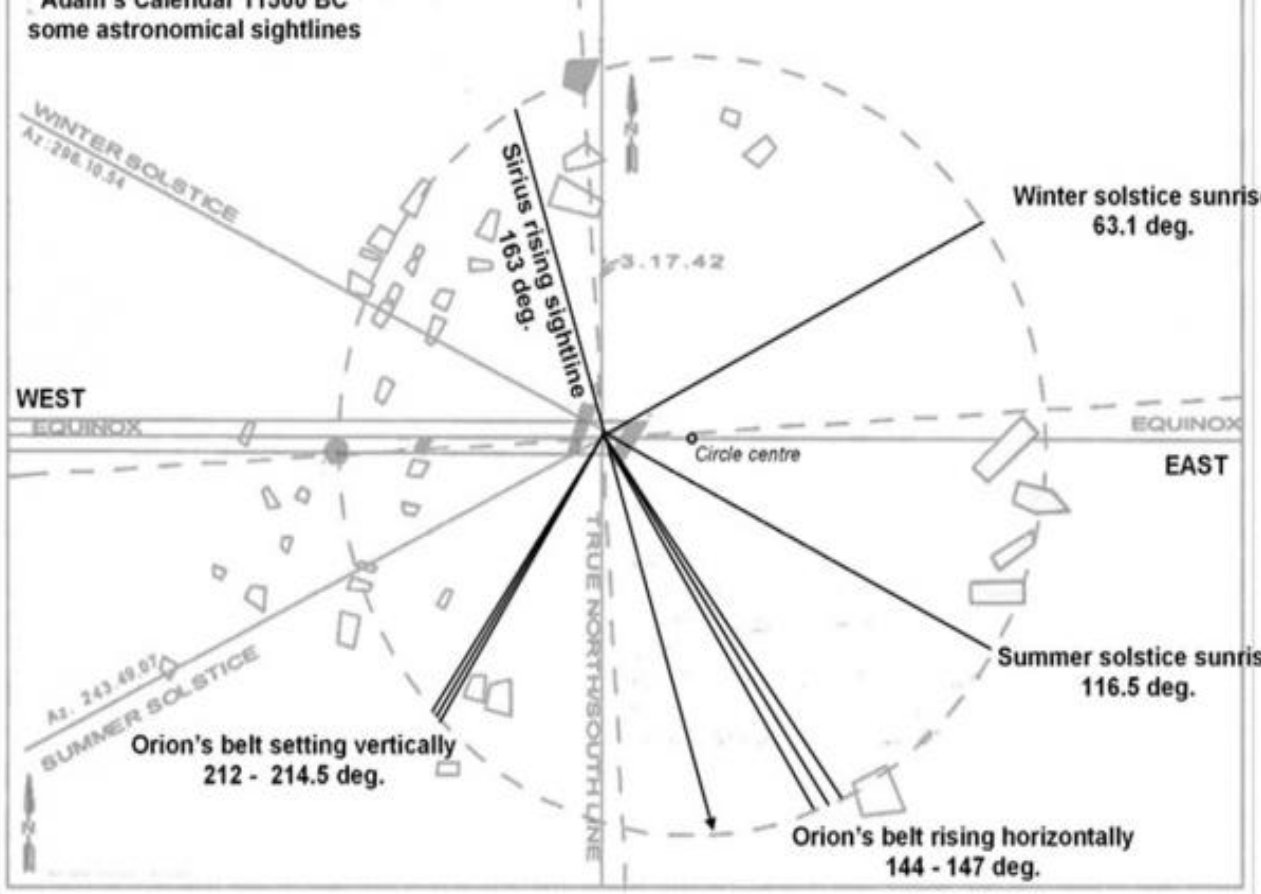
23. Lines on the landscape, Tellinger, 2013

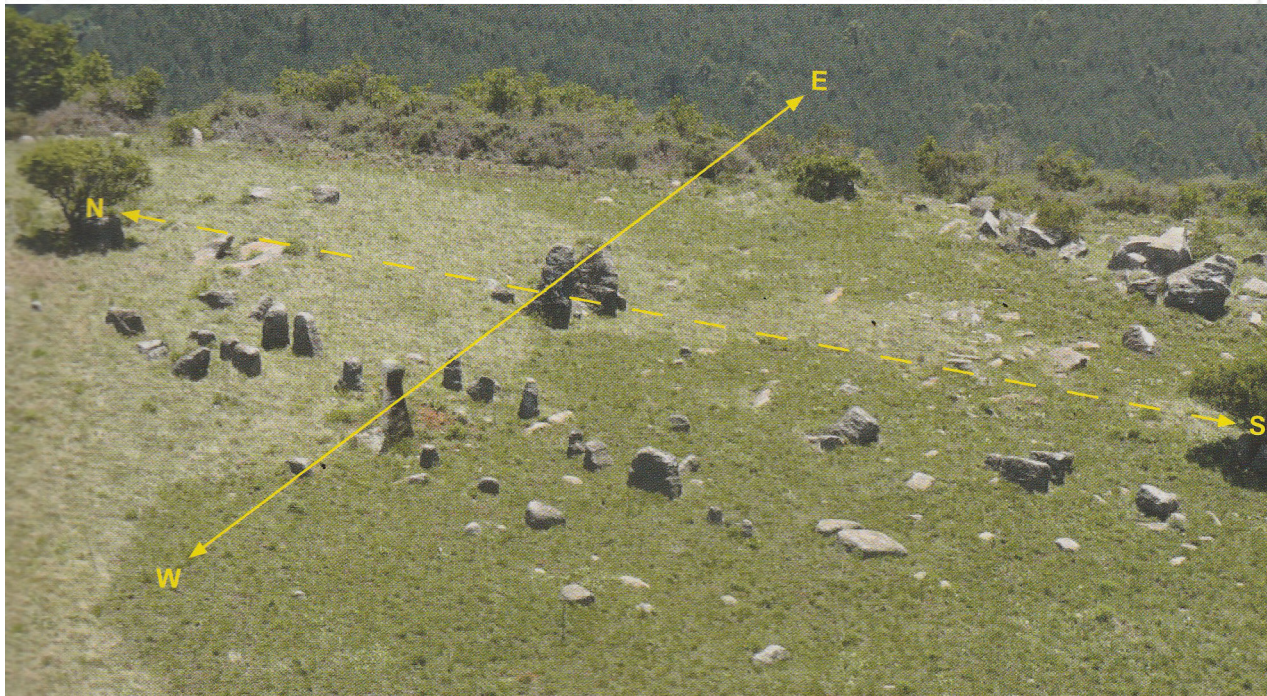


A three dimensional reconstruction of the calendar as seen from the east is shown. This is the Horus stone, another connection to the Annunaki and the East marker in the calendar.

24. Three dimensional reconstruction East, Tellinger, 2013
25. Analysis of the site according to alignments, Author. 2019
26. The alignments of Adam's Calendar. Heine, 2003
27. The directions over the Calendar showing the alignment of the stones, Heine 2003.


'HOLY GROUND'
'HOLY GROUND'
GENERAL EXISTING GRAVEL ROAD "BUFFER" FOOTPRINT.
25000
"HOLY GROUND"
NORTH VIEWLINE TO 'ALTAR'
EXISTING ENTRANCE TO ADAMS CALENDAR
100 000
TER SOLSTICE SETTING SUN
path along
SETTING OF SUN
NO OBSTRUCTION
THE "CENTER PIECE" ADAMS CALENDAR
SCALE 1:1000


some astronomical sightlines
WINTER SOLSTICE
Sirius rising sightline
163 deg.
Winter solstice sunris
63.1 deg.
WEST
EQUINOX
Circle centre
EAST
EQUINOX
TRUE NORTH/SOUTH LINE
SUMMER SOLSTICE
Summer solstice sunris
116.5 deg.
Orion's belt setting vertically
212 - 214.5 deg.
Orion's belt rising horizontally
144 - 147 deg.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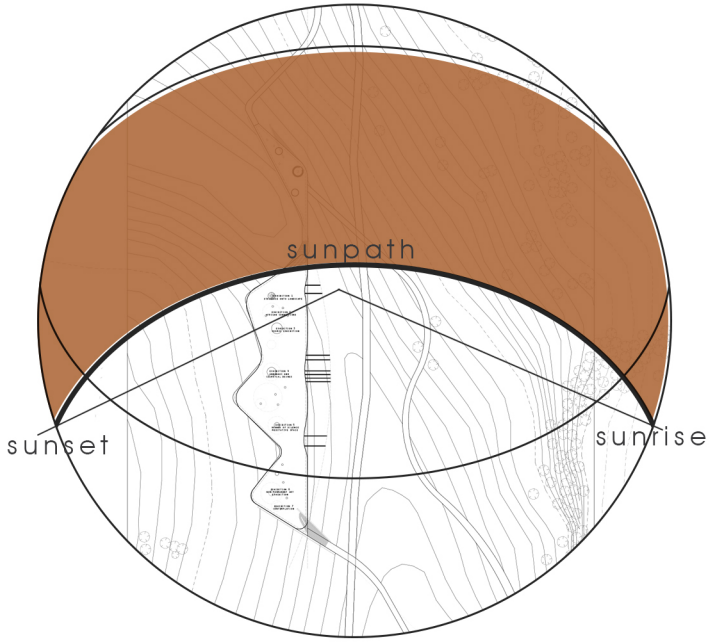
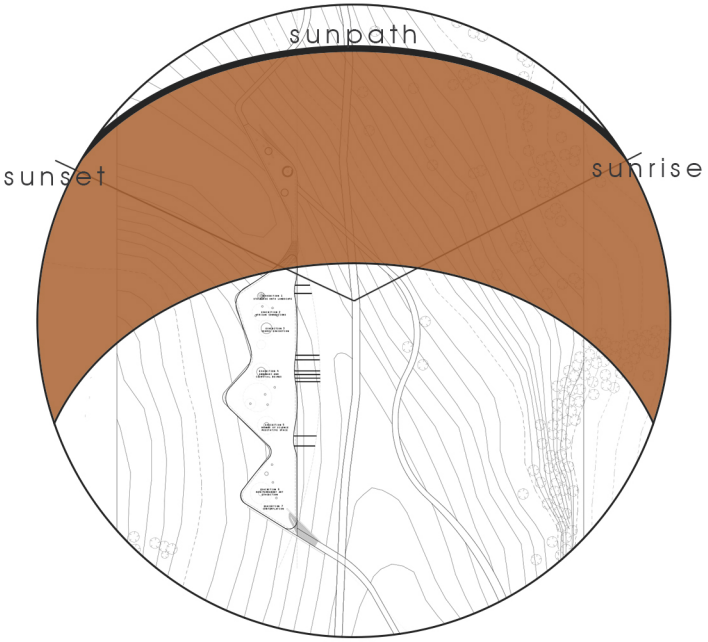
W

SUN PATH ANALYSIS

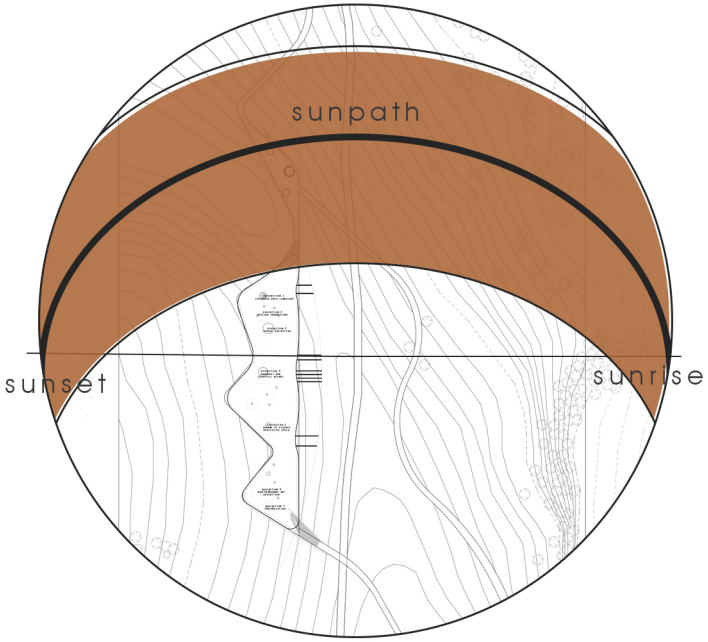
SUMMER SOLSTICE



WINTER SOLSTICE



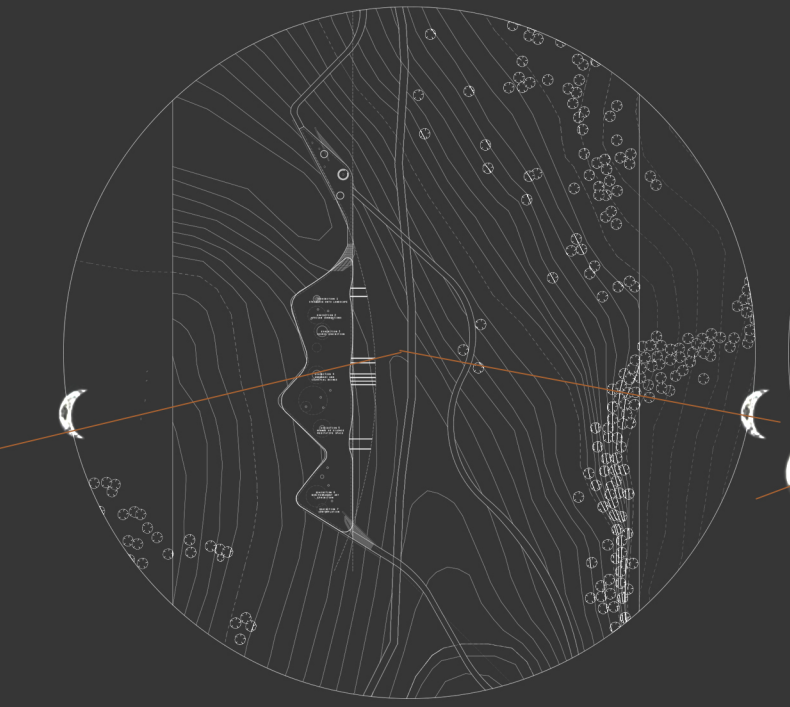
MARCH & SEPTEMBER EQUINOX



28. sunpath over the proposed site. Author, 2019.

MOON PATH ANALYSIS

SUMMER SOLSTICE



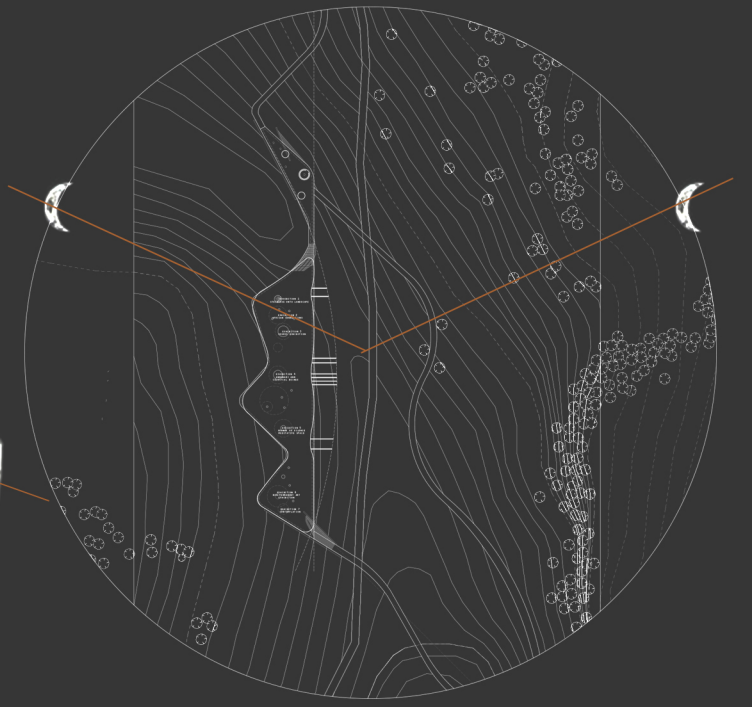
22 DEC 2019
MOON AZIMUTH 175 degrees
WANING CRESENT 13.6%

WINTER SOLSTICE



21 JUN 2019
MOON AZIMUTH 108.20 degrees
WANING GIBBOUS 81.8%

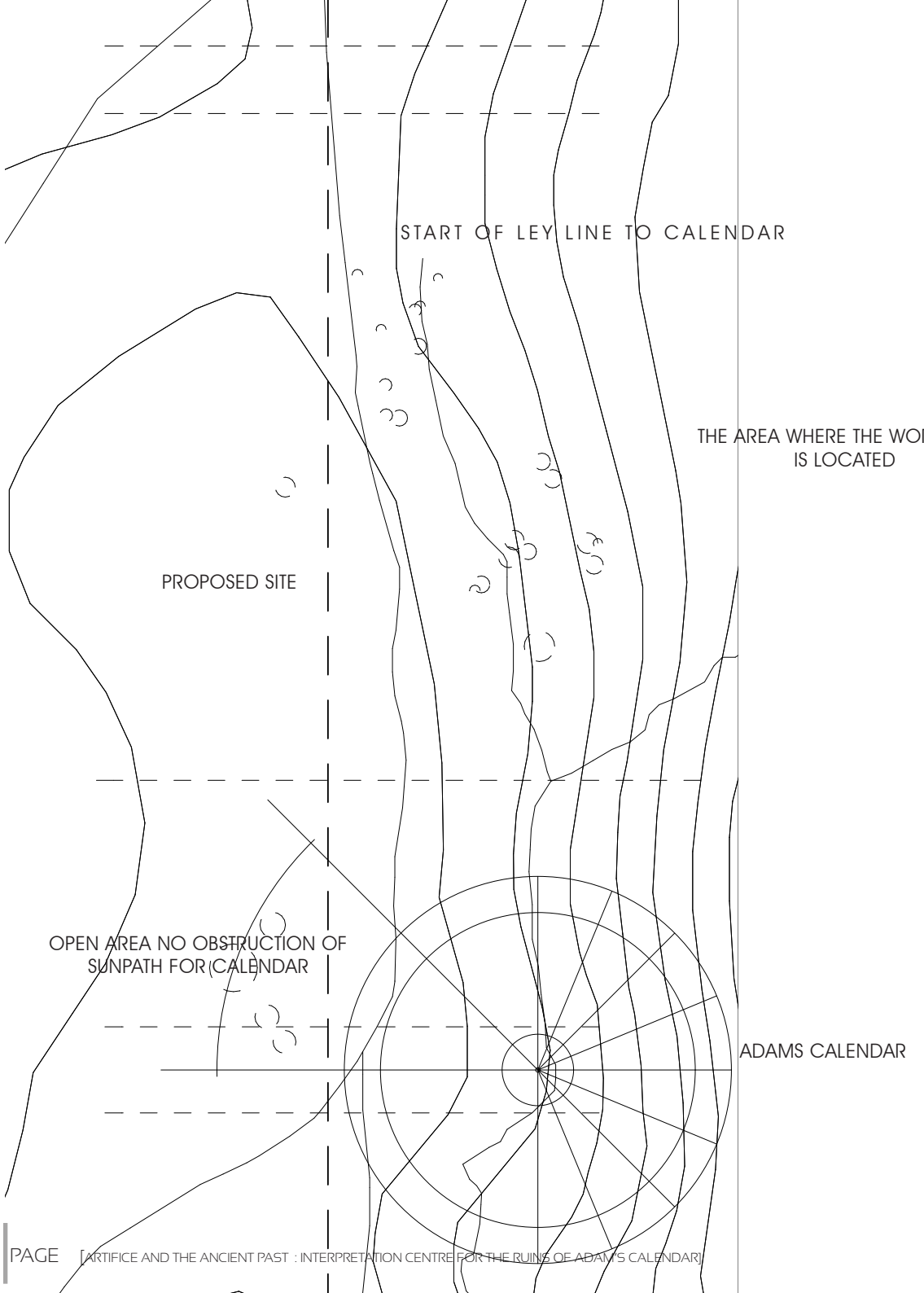
MARCH & SEPTEMBER EQUINOX



23 SEPT 2019
MOON AZIMUTH 91.82degrees
WANING CRESENT 32%



29. Moon path analysis, adapted by Author, 2019. [online]
https://www.mooncalc.org/#/-25.5885,30.7656,15/2019.09.23/21:10/1/3



LEY LINES

"Ley lines were first theorized in 1921 and since then, the debate has been over whether or not they exist, and if they do, what purpose they serve" (Serena, 2018). The main argument over ley lines are that they connect many ancient sites, at different points around the world, similar to latitudinal and longitudinal lines (Serena, 2018).

Mystics and spiritual groups have identified these lines on the landscape at Adam's Calendar, speculating that the stones connect with certain landmarks in the Barberton Valley below as well as the Workshop. Some visitors talk about mythological lines (a very clear indented path in the landscape) which runs through the workshop along the escarpment to Adam's Calendar. The mystic Credo Mutwa, tells a story of ancient elephants that were used as labourers on the site, to pull the monoliths across the landscape to their destined places. This has left a clear marking on the landscape (Van Zyl, 2019).

30.Conceptual diagram of the different lines on the landscape surrounding Adam's Calendar. Author, 2019

VEGETATION AND WILDLIFE

The vegetation on the escarpment is fairly well preserved, with mainly sour grassland on the plateau and thicker, scrubby vegetation in the valleys and forest-edge. The farm Blouswaelvlakte lies within the South African mist-belt and receives over 1 000mm of rain per year (Update: Birdlife South Africa, 2018). A plantation of exotic trees surrounds the heritage site and may cause threats to the conservation of the Blue Swallow and the Kaapsehoop cycad, which are also found in the area. Other Biodiversity include Rain frogs, Natal ghost frogs, Striped Harlequin snake, Black-spotted dwarf gecko, Giant legless skink and Montane dwarf burrowing skink. It is essential for the development not to threaten the conservation of the biodiversity on the escarpment, but to act as a tool to conserve and fund conservation in the area. There is also an estimate of 180 wild horses in the area (Louw, 2018: online). The horses have become a part of the Kaapsehoop community.





31.The endangered Blue Swallow of the Kaapsehoop escarpment. Online
32.One of the many wild horses grazing in-between the forestry plantations close to Kaapsehoop. Author, 2019







FORESTRY FARMS SURROUNDING THE FARM BLOUSWAELVLAKTE BUT ARE RESTRICTED TO MESIC VALLEYS

IN THE TOWN KAAPSEHOOP MANY FOREIGN TREES HAVE BEEN PLANTED BY INHABITANTS OF THE COMMUNITY LIKE PINE TREES AND BLACK WATTLE.

THREE TWO TRACK GRAVEL ROADS ARE THE ONLY MEANS OF ACCESS TO THE SITE. ALONG WITH A SMALL NUMBER OF OLD GOLD CLAIMS FROM THE MINING AGE IN KAAPSEHOOP

UNDULATIN
THE FARM



NG SOUR GRASSLANDS OF
BLOUSWAELVLAKTE



THE VEGETATION OF BLOUSWAELVLAK-
TE IS WELL PRESERVED WITH SOME
TREE FERNS IN THE RIVER VALLEYS.
THE ENDANGERED SPECIES - KAAPSE-
HOOP CYCAD IS ALSO RARELY FOUND
ON THE ESCARPMENT AND IN THE
SHELTERED AREAS.



ROCKY SANDSTONE OUTCROPS
ALONG THE ESCARPMENT WITH
SCRUBBY, FOREST EDGE SPECIES
ALONG THE ESCARPMENT

33. Vegetation collage of the elements on site. Author, 2019



3

CHAPTER

3 | CLIENT AND ACCOMMODATION

[1] CLIENT
[2] ACCOMMODATION LIST

[1] CLIENT

Johan Heine is a firefighter, working in the area of the scattered stones. During a rescue operation in 2003, Heine spotted the strange arrangement of giant rocks on the escarpment overlooking the Barberton valley. Together with explorer and amateur scientist, Michael Tellinger, they conducted a survey to measure the site and its alignments (Heine, 2006, 4). Heine is a founder member of the Ma-Komati foundation, which was inspired by historian Hromnik, to promote the research, protection and exposure of the Mpumalanga stone ruins. Heine had been mapping the site monthly over eight months and concluded that there is evidence which proves it to be an accurate calendar, according to himself. He strives to persuade research teams form universities or the Heritage council to map these stones and to establish the site as a national heritage site, in order for it to be conserved.

In a telephonic interview the following was discussed with Heine. (2019)

[1] Heine discovered the stone fragments called Adam's Calendar in 2003 and with the help of Michael Tellinger, they mapped and analysed the area thoroughly in search of answers of its significance.

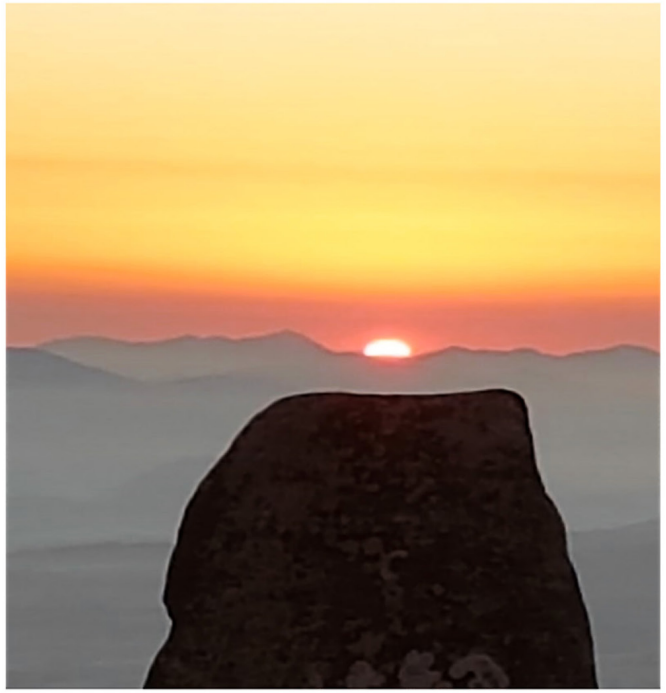
[2] He is very passionate about making people aware of Adam's Calendar and states that the need for a visitors' centre, research centre or any form of legitimised space, will help the case in achieving its goal.

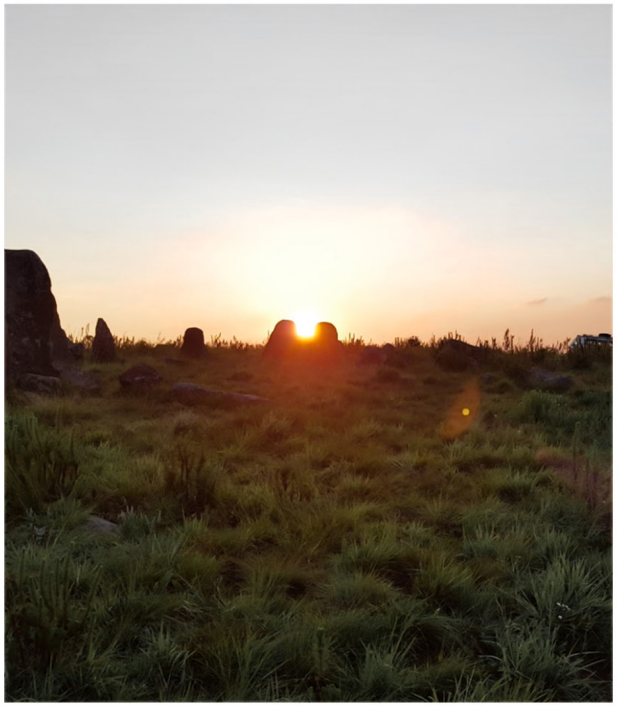
[3] The aim of the Ma-Komati Foundation is to protect the Mpumalanga stone ruins and Adam's Calendar for the next generations.

[4] Heine is currently busy with discussions in legitimising these stone ruins by the Heritage Committee, in order to get the right funding and tools to go forward with construction and legitimisation of the sites.

[5] Heine believes in the absolute magic and mystery surrounding Adam's Calendar and states that more people should get together and care about these hidden ancient wonders of Southern Africa.

34. Images taken by the client of the alignments of the setting and rising sun over the calendar. (Heine, 2019)





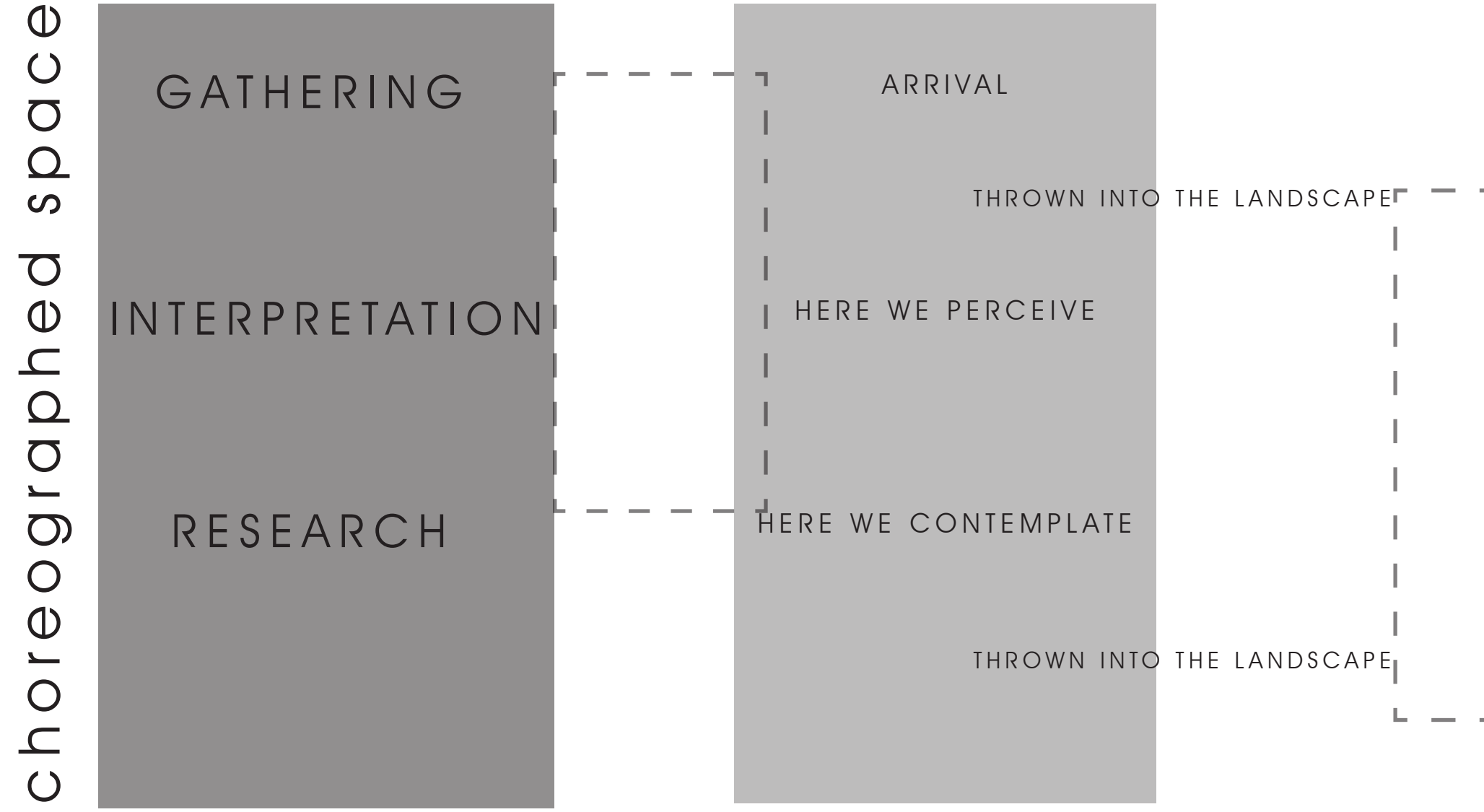








[2] ACCOMMODATION LIST



exhibition line



CURIO SHOP
COFFEE STALL
SEATING AREA
INFORMATION CENTRE

LANDSCAPE VIEWING

RECEPTION
EXHIBITION SPACE
MULTIFUNCTIONAL
VENUE SPACE

EXHIBITION SPACES
CONTEMPLATIVE SPACE

PUBLIC TOILETS
OFFICE
STORAGE

STAFF AREA
OFFICES
STORAGE
PRIVATE TOILETS

KITCHEN
PUBLIC TOILETS

SEMINAR ROOM
WORKSHOP
COMMUNAL SPACE
EMERGENCY ROOM
METAL LAB
SOIL LAB
ARCHIVES



4

CHAPTER

4 | RESEARCH METHODOLOGY

[1] INTRODUCTION
[2] TOUCHSTONE
[3] CONCEPTS
[4] PRECEDENT STUDIES

RESEARCH METHODOLOGY

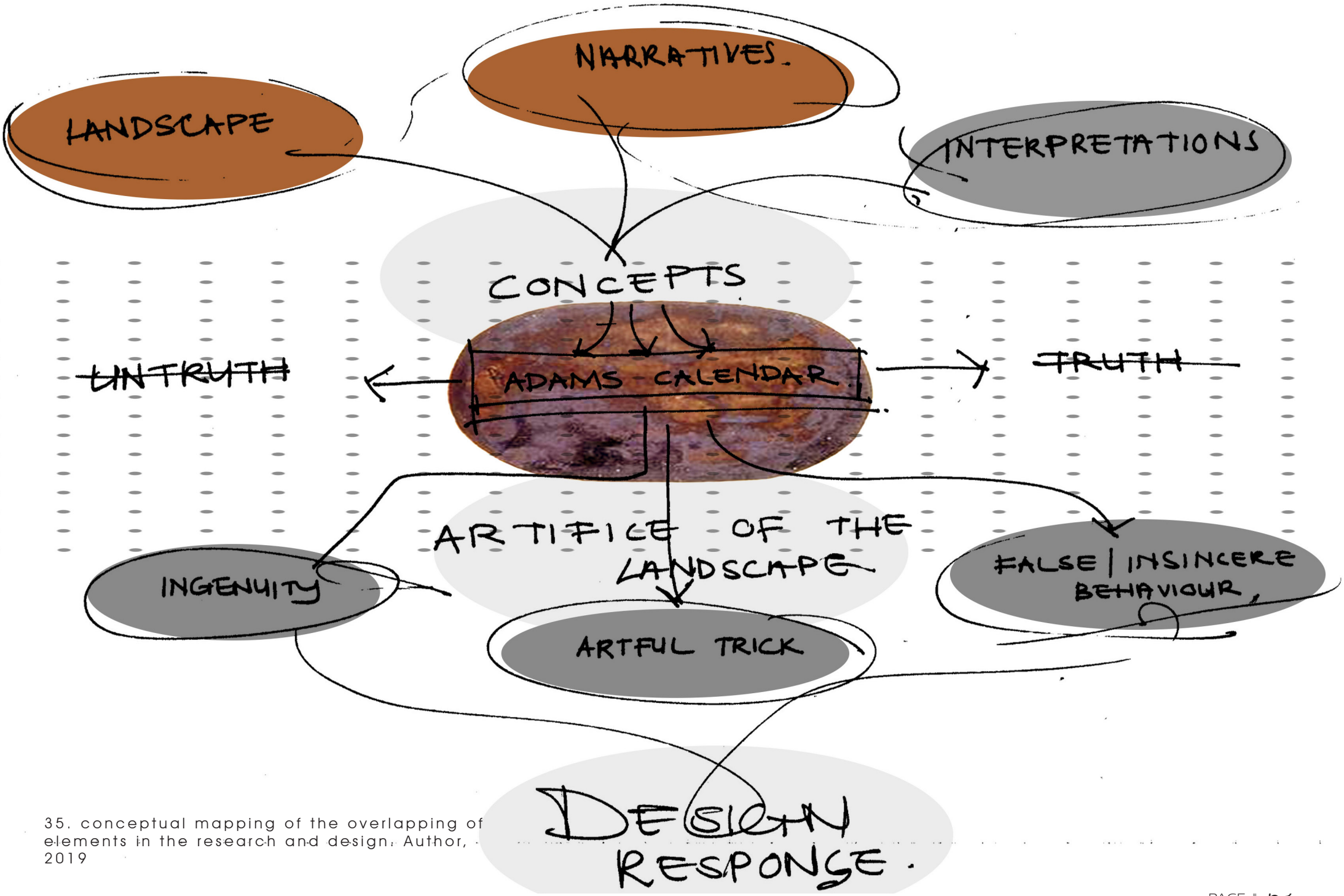
Research methods are developed out of the primary problem statement. The location of the proposed structure is chosen on grounds of sensitivity towards the landscape, experience and the centre piece – Adam's Calendar. The Morphological response is sculpted out of a mixed- method study on landscape and alternative construction.

The Touchstone explores the essence of what the design aims to achieve. These thoughts and ideas are presented in abstract form and serves as a guide during the study to ensure focused design and as little deviation from the initial idea as possible.

This study investigates ways in which a fragmented trail of information, which is found on the site of Adam's Calendar, is interpreted and experienced by different individuals when they visit the building. These experiences are personal and unique. Therefore, the design response aims to act as a guide for these unique experiences to take place.

Three Concepts form the core on which design decisions are made. Together, the concepts are drawn from the landscape in which the design is located as well as Adam's Calendar. The result is a layering of landscape, theoretical discourse and architecture.

The Conceptual Framework is comprised of the ideas explored during the touchstone and concepts phases. These ideas developed with applicable precedent studies.



35. conceptual mapping of the overlapping of elements in the research and design. Author, 2019

[2] TOUCHSTONE

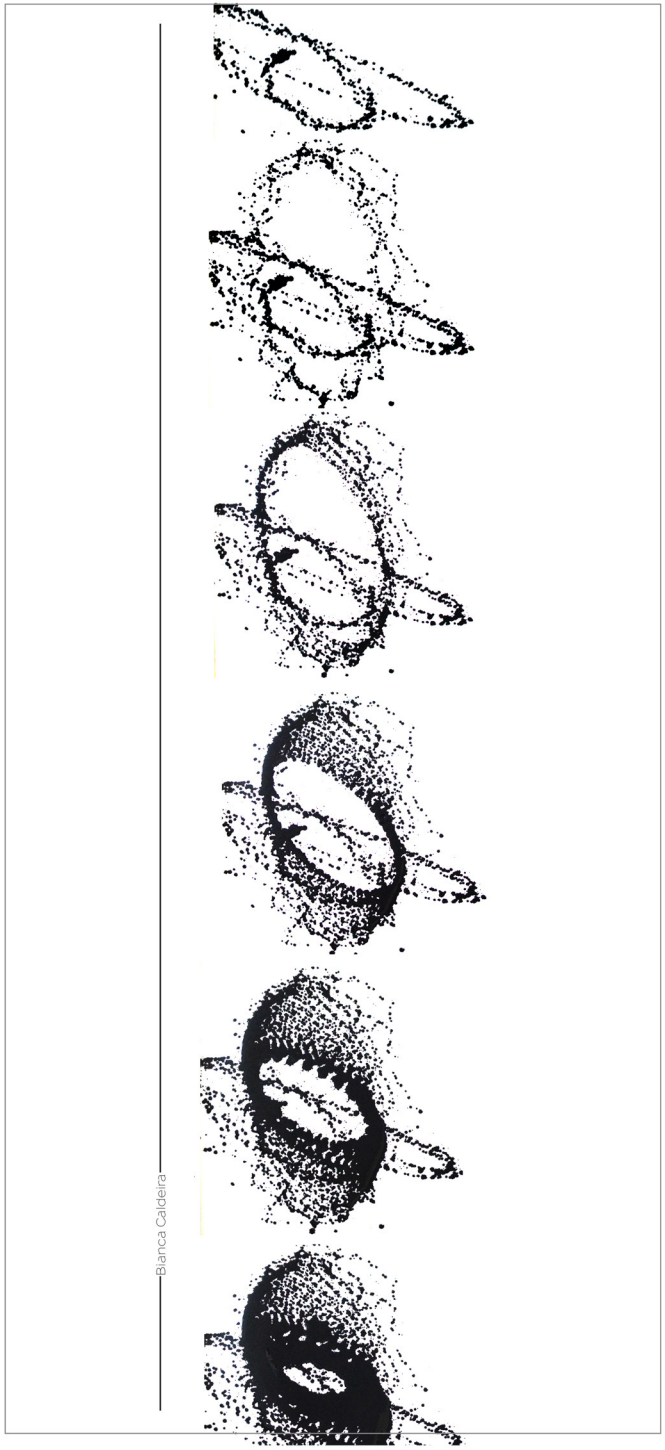
Fundamentally, this project aims to perform an act of artifice (in all three senses of the word) in a landscape where competing truths and mysteries have overlapped over time. The touchstone (Figure: The artful interactor and the touchstone) can also be read in terms of the notion of artifice. Within the limitations of a timber box, a transparent bag of black ink hangs from a string over a blank page representing Adam's Calendar and all the truths that orbit around the site. The artful interactor (the visitor on the site), puts life and movement into the pendulum and allows the scatterings of truths to be made known as fragments on the landscape. The interactor is faced with the trickery of gravity, the viscosity of the ink and the artful strategy devised by self. These trails of truths and falsities lead the interactor to contemplation amid the silence.

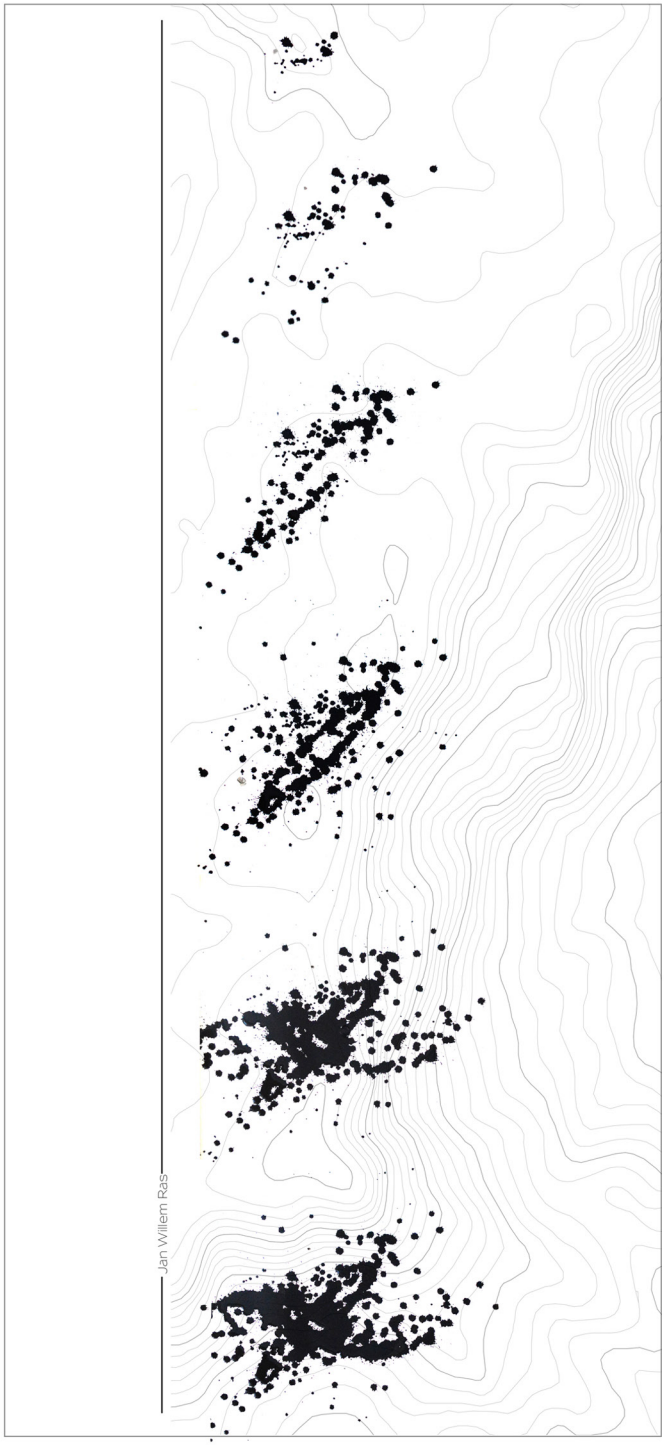


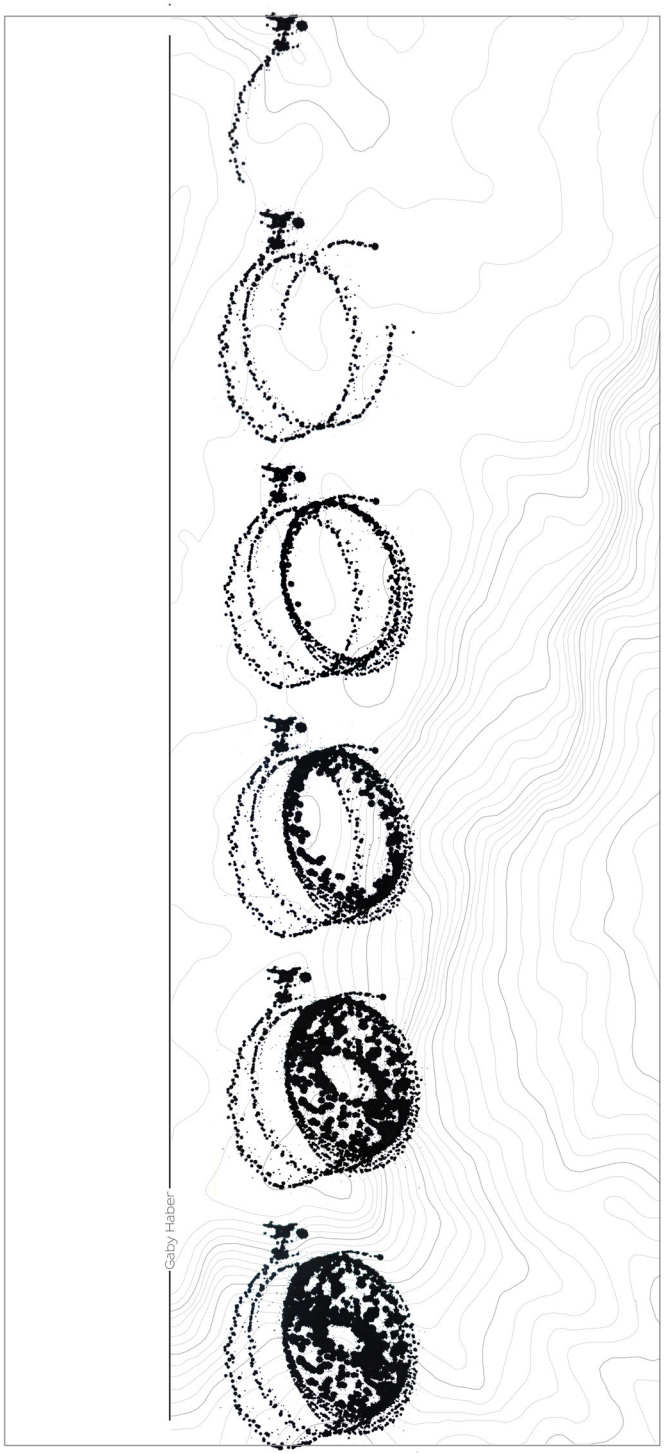




Figure 36. images of different beings interacting with the touch stone, author. 2019
Figure 37. A collage of the results of the ink-trails left over time. Author, 2019


Bianca Caldeira

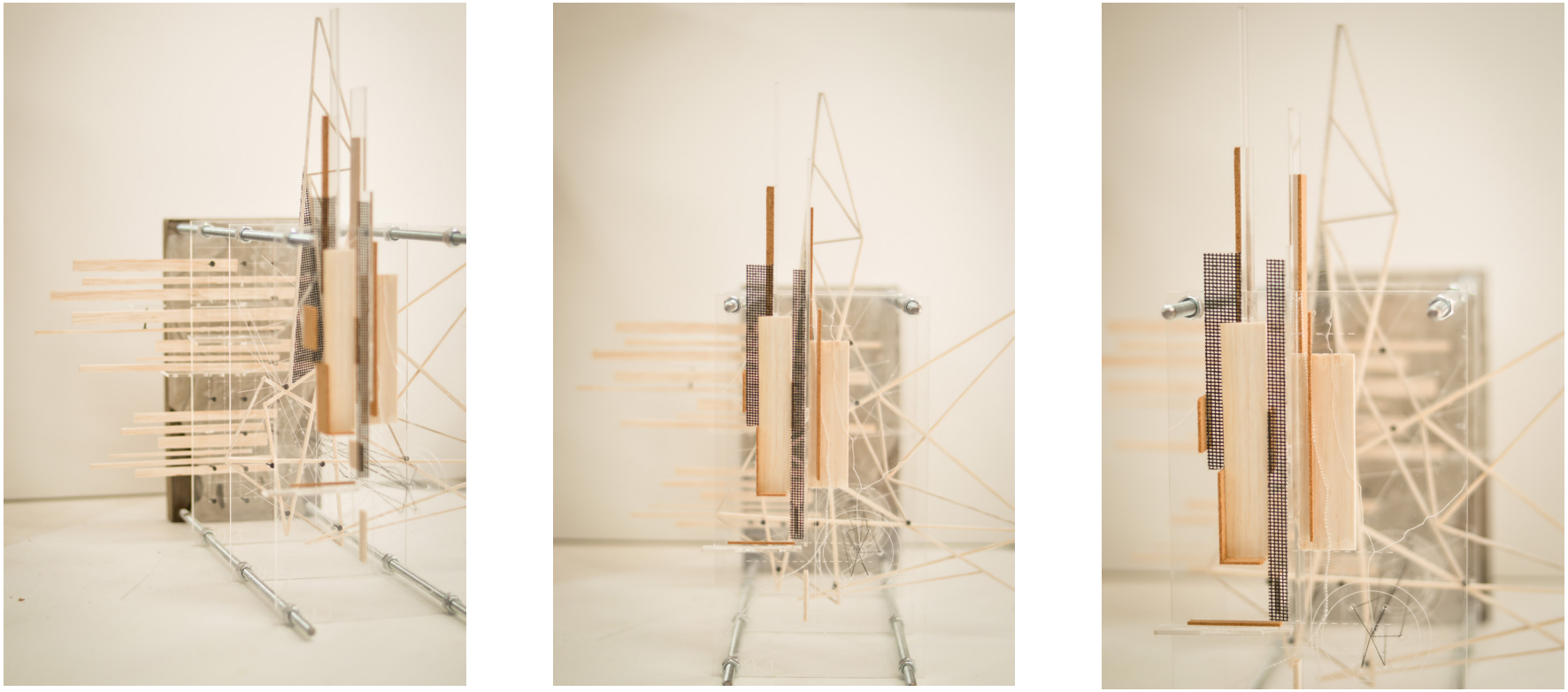

Jan Willem Ras


Gaby Haber

[3] CONCEPTS

Adam's Calendar is the golden thread from which all the concepts are drawn and connected to. The name Adam refers to the origin of humankind – a historical and biblical connection to our ancestors. The word calendar refers to humankind's fundamental need to understand their surroundings, order time and essentially attempting to understand the existence of all beings.

Mathematically, calendars consist of a beginning, length and divisions within the length of time. By analysing these elements of a calendar, new connections and conclusions can be drawn. Calendars also speak about mythological ideas of time. By just investigating the different types of calendars over the world, inconsistencies are found. The duality is inevitable. Out of these ideas of the calendar and the understanding of humankind's meaningful existence, the following concepts were formed.

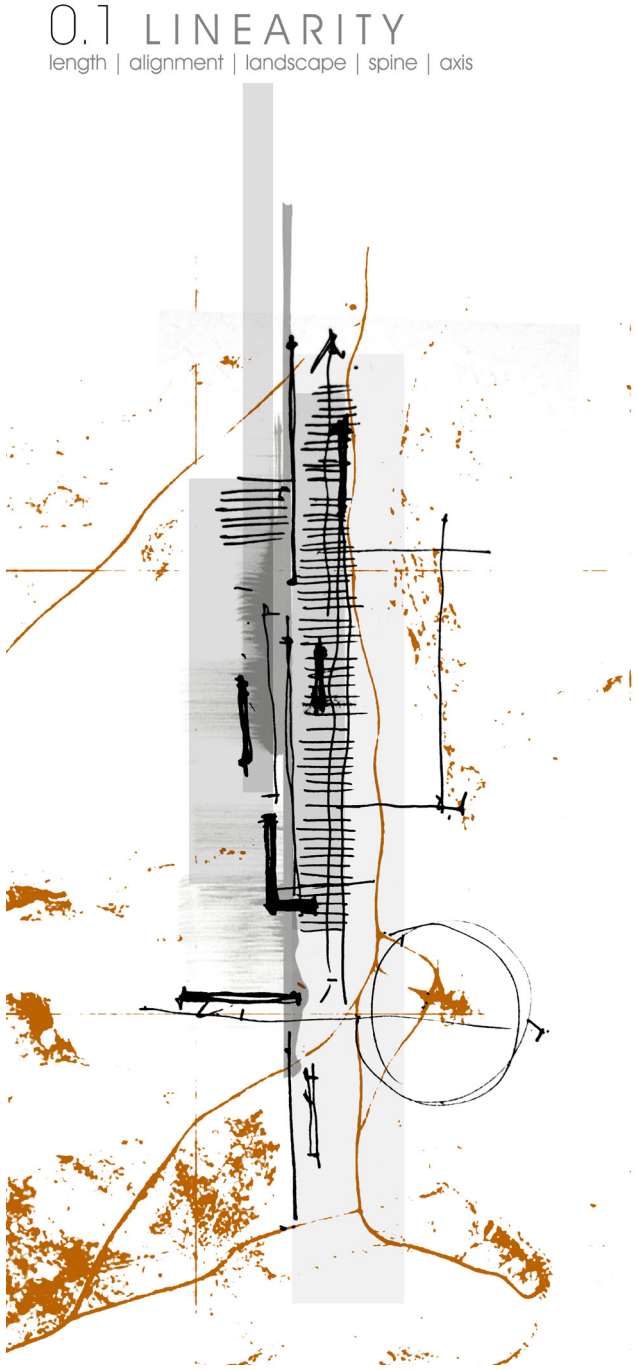


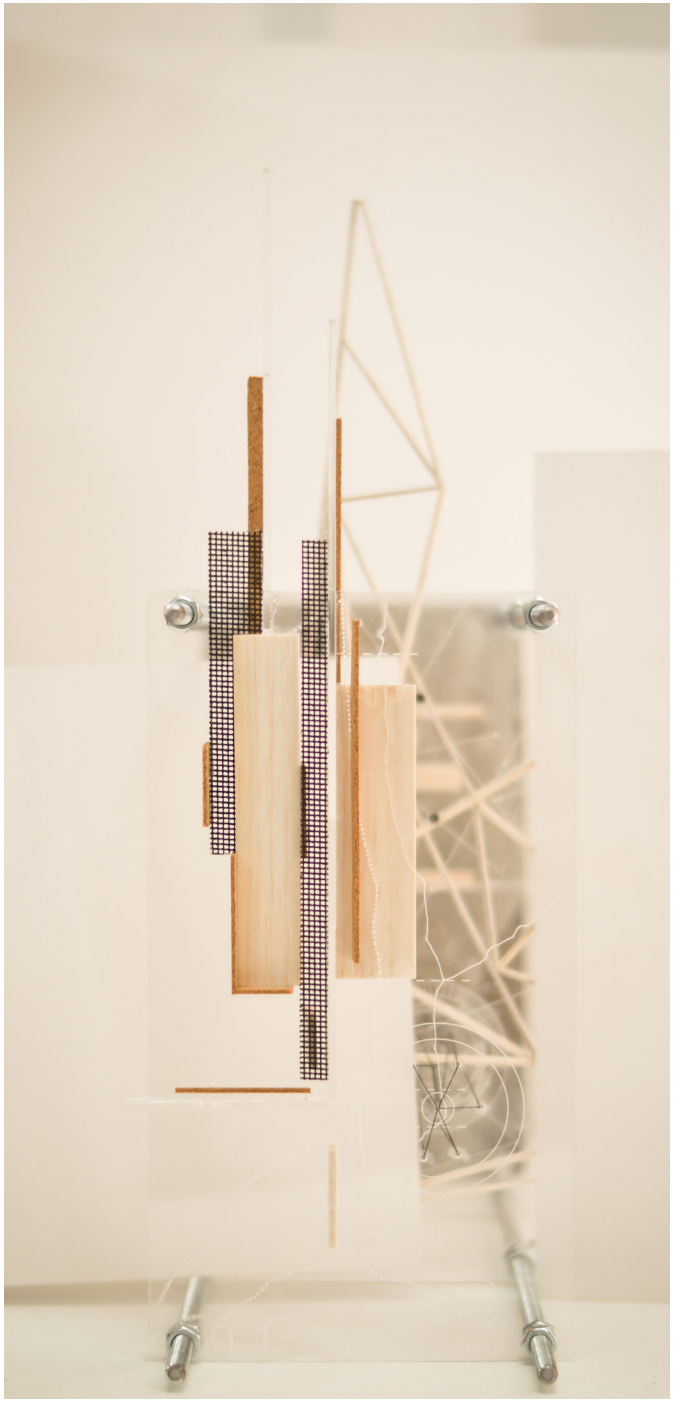
38. The concept model. A layering of the concepts are all drawn from the site and connected by the thread Adam's Calendar. Author, 2019.

CONCEPT 0.1
LINEARITY

The structure is formed from the many linear spines which are found at, as well as imposed on the site. Mythological lines, lay lines, irrational lines, imposed lines, choreographed lines and exhibition lines form the guiding route for the experience of the Interpretation Centre. Together, these lines sculpt an integrated axis of discovery towards The Holy Site.

39. concept sketch, author, 2019
40. concept model, author 2019

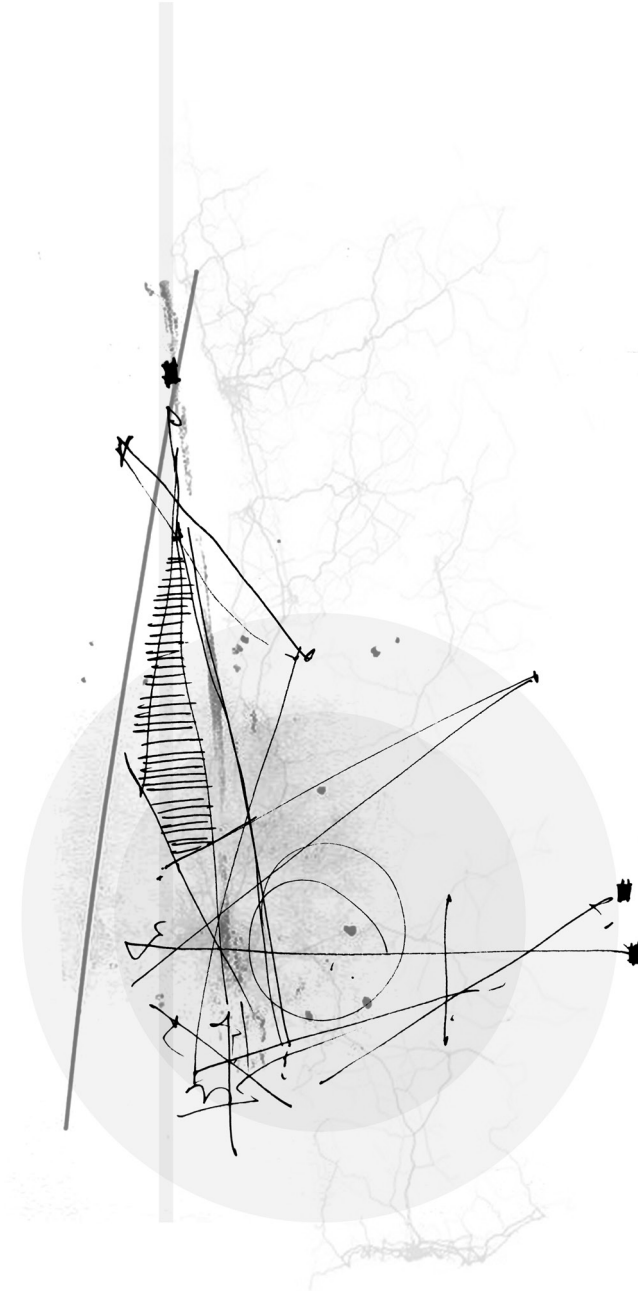






0.2 CONNECTIVITY

universal | unificatiion | circulation | principle | spatial points



CONCEPT 0.2
CONNECTIVITY

This concept is explored as a mapping of the surrounding landscape of Adam's Calendar and all the dualities orbiting the site. The project aims to reveal the paths between the brutal truths, misleading half-truths, white lies and deliberate falsehoods surrounding Adam's Calendar. Significant points on the physical landscape voice larger contextual and theoretical ideas on which the exhibition is based.

41. concept sketch, author, 2019
42.concept model, author, 2019

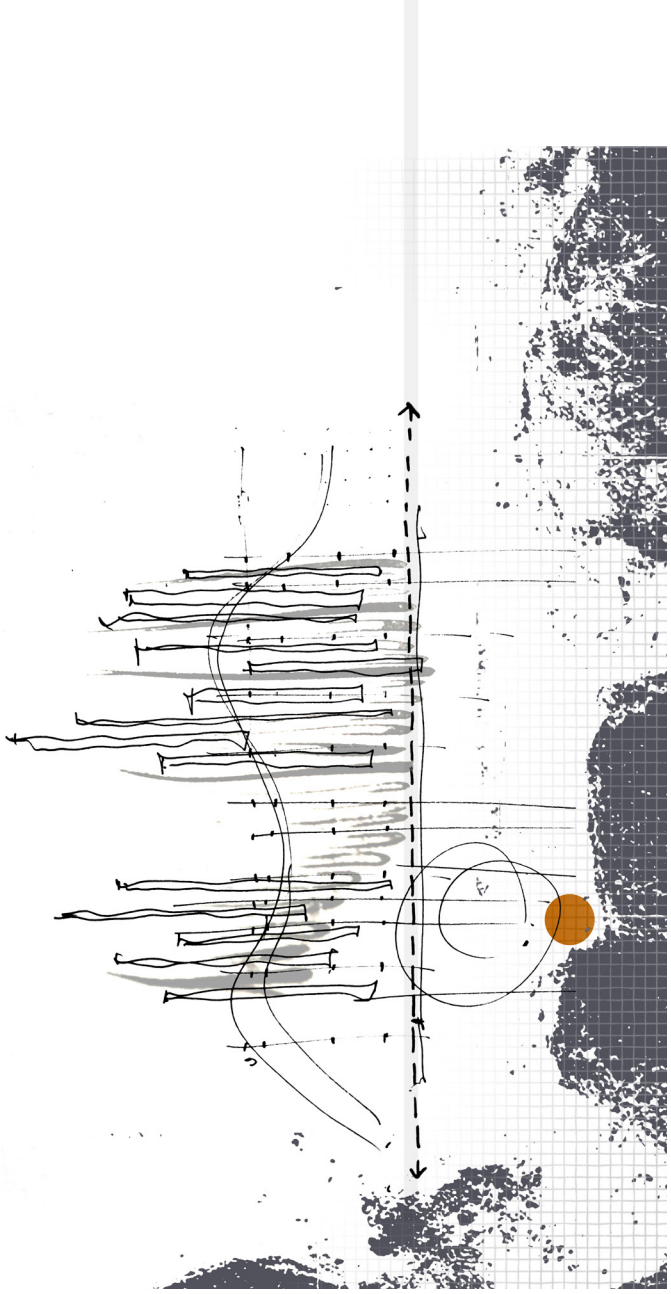
0.3 SEGMENTATION

division | threshold | framing | ordering | porosity

CONCEPT 0.3
SEGMENTATION

This concept refers to the ordering of the different spaces and thresholds which the interactor passes through on the route of the exhibition. From the point of arrival, the visitor is confronted with the different fragments of information and exhibitions scattered over the landscape. Each change in the landscape evokes a new experience to the visitor up to the arrival to Adam's Calendar where the moment of clarity, confusion or contemplation is revealed, depending on the visitor's own experience.

43. concept sketch, author, 2019
44. concept model, author 2019





PRECEDENT STUDY 0.1

STONEHENGE VISITORS CENTRE

ARCHITECTS DENTON CORKER MARSHALL
LOCATION STONEHENGE, A344, AMESBURY, WITTSHIRE SP4 7DE, UK
TYPOLOGY VISITORS CENTRE
YEAR 2013

The visitor's centre is located out of sight of the ancient Stonehenge World Heritage Site and is designed with a light undulating canopy hovering over the landscape. Three enclosures, clad in different materials (Denton, 2013) "house the different functions" (Denton, 2013) of the building. The visitor's centre is envisioned as a prelude to the stones. The architectural forms and character, according to the architects, should in no way diminish the visual impact and sense of timelessness of the stones (Denton, 2013).

The visitor's centre is designed according to the following principles:

- Sustainable design
- To return the site to its original state
- Slender steel columns, lightweight frames walls, semi-external spaces.
- On site water treatment to avoid sewage and water connections.

Lessons Learnt:

- The visitor's centre should in no way reduce the experience of the visitor when encountering Adam's Calendar, but rather illuminate its intensity.
- The building should blend in with the surrounding landscape and be embedded into the earth, in that way, not obstructing the view from the stones.
- The proposed structure will be separated from the Calendar and stone journey with a buffer zone of more than 50 metres to ensure no damage is done to the existing landforms.

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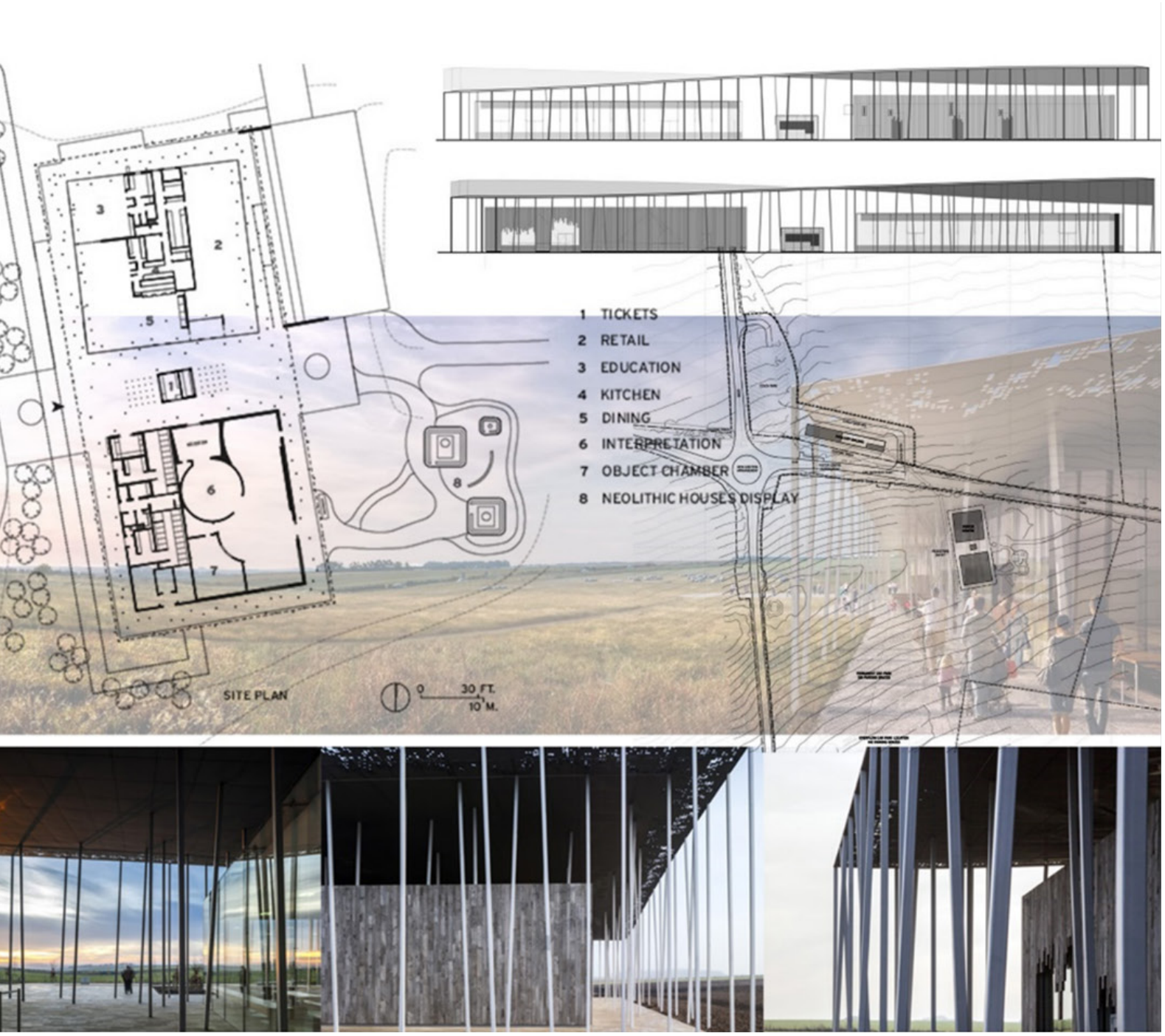
45.0Images: Figures from left to rightPhotos of the Visitors Centre (P. Cook, 2013)

46.Plans, elevations, renders
(Denton, Corker, Marshall, 2013)

47.Detail Photos of the façade and roof (P. Cook, 2013)

48.Render of the Visitors centre (Denton, Corker, Marshall. 2013)


1 TICKETS
2 RETAIL
3 EDUCATION
4 KITCHEN
5 DINING
6 INTERPRETATION
7 OBJECT CHAMBER
8 NEOLITHIC HOUSES DISPLAY
SITE PLAN
0 30 FT. 10 M.




The purpose of Stonehenge is lost to us. There will



PRECEDENT STUDY 0.2

AYLA GOLF ACADEMY

ARCHITECTS OPPENHEIM ARCHITECTURE
LOCATION AQABA, JORDAN
TYPOLOGY SPORTS CLUBHOUSE
YEAR 2018

Oppenhein Architecture threw out all tradition and payed homage to the spectacular setting surrounding the Ayla Golf Club (Stamp, 2019). The undulating architecture is silent and yet dramatically integrated with the landscape and opens up to the surrounding mountains. As the location is so captivating, the architectural team found inspiration to create a manmade dune to occupy the space. The curved roof mimics the rolling landscape and is a "simple, elemental building" (Stamp, 2019). The building seems to be an extension of the context.

The accommodation list includes a retail space, dining and lounge areas, a spa, dining and shopping areas as well as an indoor swing analysis. Ventilation and lighting systems are hidden in order to "maintain the purity of the building's form" (Stamp, 2019).

The fundamental sim of the structure is to feel like the building is constructed with the land and not on the land, connecting the visitor "deeply with nature and heightening their surroundings of the landscape around" (Stamp, 2019)

Lessons Learnt:

- The large 12 00 square meter structure is of evolutionary design. It is possible to develop such a large-scale building with the right techniques and use of materials (Walsh, 2019).
- The way that the building blend in with the colours of
the surrounding setting is an inspiration to find the correct materials in the setting of Adam's Calendar.
- The colour and materiality of the stones will form an integral part of the choice of material of the proposed development.
- The polished, yet natural and raw look and feel of the building is essential to creating the correct soul and character in the architecture and will also be essential to this design.

49.Floor Plan: Oppenheim, Architecture. (Walsh, 2019) [online] https://www.archdaily.com/918738/oppenheim-completes-vernacular-golf-academy-in-jordan

50.Images: Gardiner, R. 2018 [online] https://www.archdaily.com/918738/oppenheim-completes-vernacular-golf-academy-in-jordan








SILICA





PRECEDENT STUDY 0.3

ANTINORI WINERY

ARCHITECTS	ARCHEA ASSOCIATI
LOCATION	50026 BARGINO FLORENCE, ITALY
TYPE	WINERY
YEAR	2012

Located in the countryside and "surrounded by the unique hills of Chianti" (Associati, 2013: online), the winery becomes an "enhancement of the landscape" (Associati, 2013). The building expresses the "cultural and social valence of the place where wine is produced" (Associati, 2013). Therefore, the functionality of the building is essential to the design itinerary, which is centred around the "geo-morphological experimentation of a building understood as the most authentic expression of a desired symbiosis and merger between anthropic culture, the work of man, his work environment and the natural environment" (Associati, 2013). The construction of the winery is inspired by the deep-rooted ties with the land and conceals itself to blend into it.

Antinori Winery inspires this project in the way that the building merges with the rural landscape where the building façade is only visible from the entrance road where light is let into the interior and provides the view of the landscape. The façade extends horizontally along the natural slope.

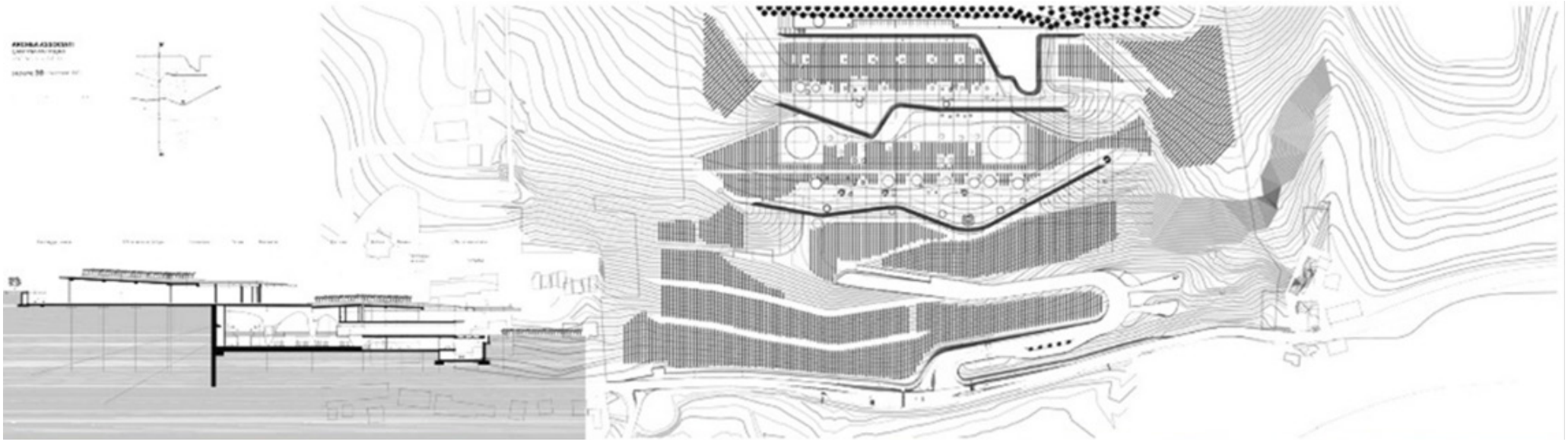
The building becomes a precedent for the use of local materials and technologies to evoke local tradition and simplicity, expressing the theme of studied naturalness.

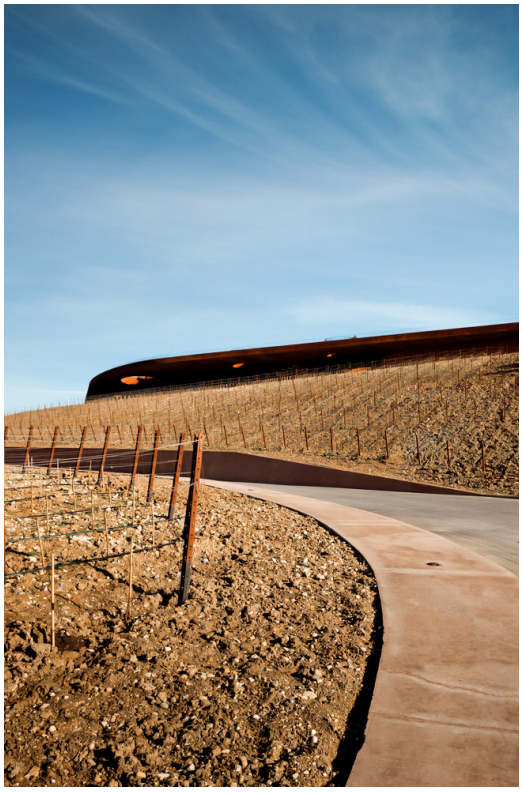
Lessons Learnt:

- The scale of the building becomes a precedent to the proposed design in terms of how the landscape can be manipulated and shaped.
- The structure and light shafts are investigated as a precedent of construction.

51.Images of the winery. Pietro Savorelli, 2013 [online] https://www.archdaily.com/371521/antinori-winery-archea-associati

52.Floor Plan and Section: (Associati, 2013) [online]

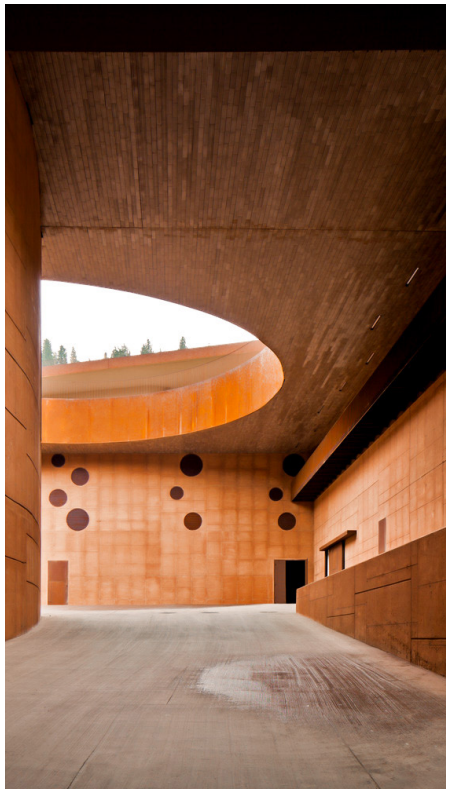












PRECEDENT STUDY | TESHIMA ART MUSEUM

ARCHITECTS	RYUE NISHIZAWA
LOCATION	TAKAMATSU, KAGAWA PREFECTURE, JAPAN
TYPOLOGY	MUSEUM
YEAR	2010

The museum is located in a hilly area on an island of the Takamatsu port area in Japan. The design of the pristine, white structure is inspired by the idea of a "droplet of water caught in the middle of gliding across the land" (Kim, 2010). The open gallery space features a 25cm thick concrete shell with two elliptical openings that are open to the elements. The fundamental idea of the design was to challenge and push the boundaries between nature and architecture (Kim, 2010).

Part of the experience is the meandering of the path around Mt. Myojin, encouraging the visitors to walk freely around the museum and surroundings to connect with the present wonders.

The Teshima Art Museum serves as a design and structural precedent to the proposed development (see technical investigation). The design of the development at Adam's Calendar aims to blend into the surrounding landscape like the Art Museum does in its surroundings. The way in which the development morphs out of the landscape as an extension of the hill lends ideas to the proposed design.

Lessons learnt:

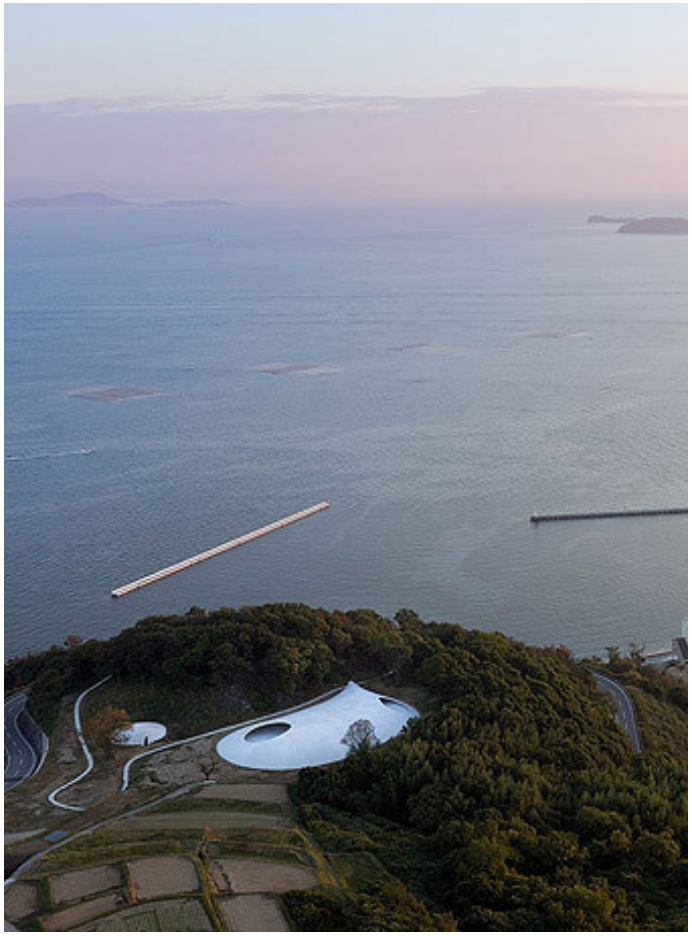
- The proposed structure aims to frame the surrounding landscape through openings in the roof
- The precedent lends ideas to which materials can be used
- The most significant lesson from the precedent study is the play of light and how the structure changes internally as the light changes externally

53.Interior photos of the museum (Baan 2011: online)

54. Aerial view of the museum
(Baan, I 2011) [online] https://www.designboom.com/architecture/ryue-nishizawa-teshima-art-museum/

55. Plans
(Nishizawa, R. 2011)



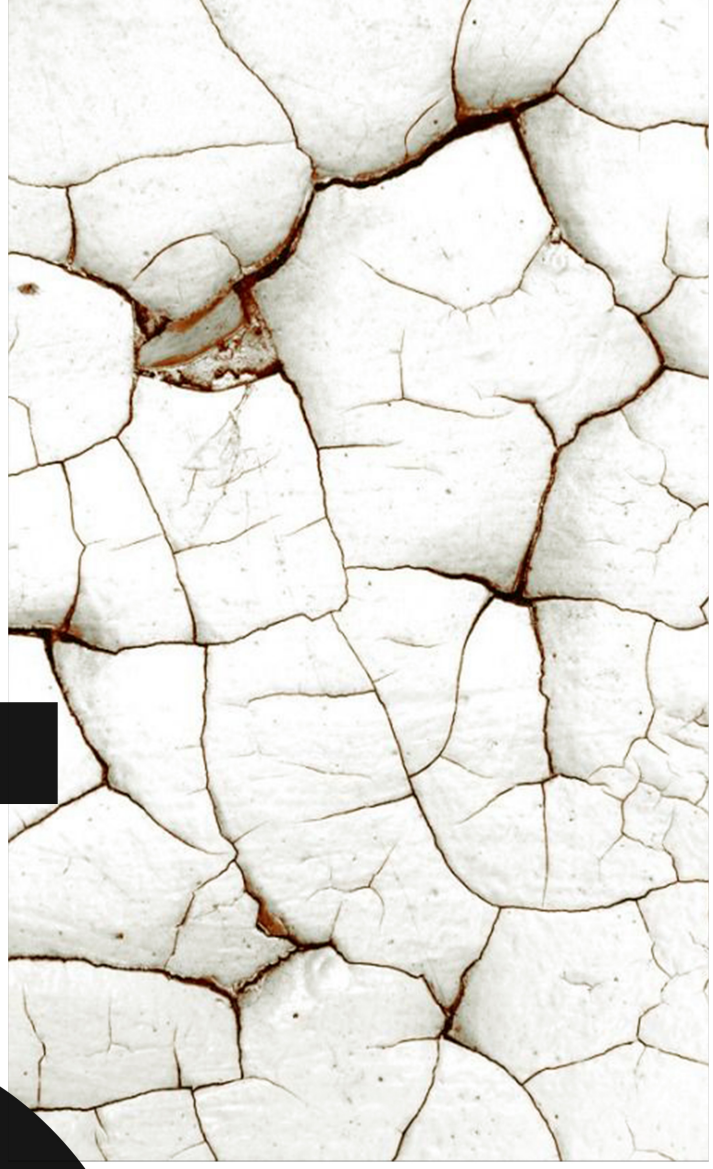










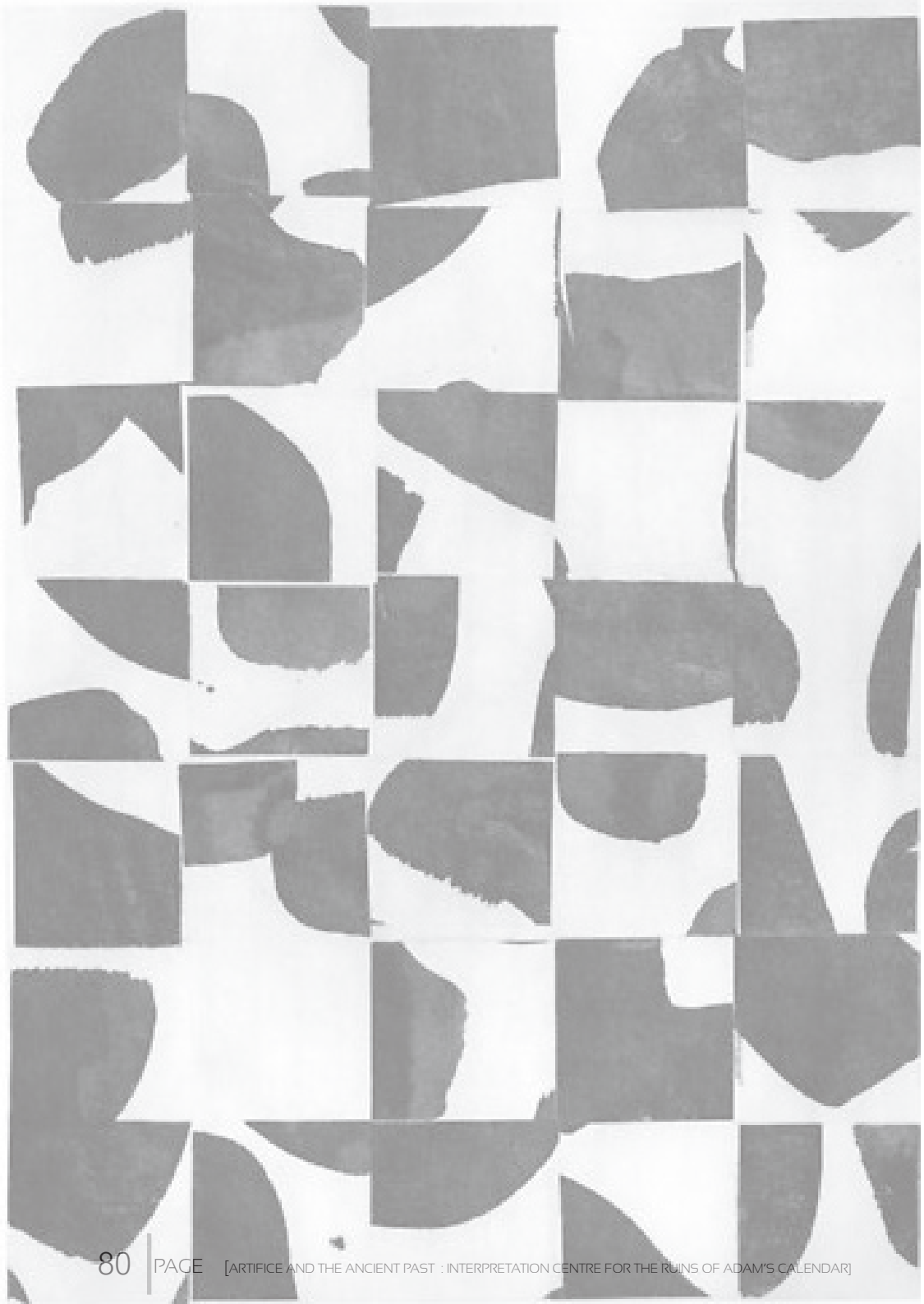


5

CHAPTER

5 | THEORETICAL DISCOURSE

[1] CARE, HISTORICITY AND FACTICITY: FINDING MEANING IN ARCHITECTURE
[2] GENIUS LOCI, PLACE AND INTIMATIONS OF TRUTH
[3] THE BEARING OF SILENCE: THE SPEAKING AND SILENCE OF STONES
[4] ALETHEA | LETHE: ADAM'S CALENDAR BETWEEN REALITY AND TRUTH
[5] THE ARTIFICE OF THE LANDSCAPE
[6] CONCLUSION



ARTIFICE AND THE ANCIENT PAST

This chapter explores theoretical ideas and concepts which together, form a foundation which draws on the conceptual exercises explained in the previous section and is aimed at motivating possible design approaches in the next section. The goal is to develop an understanding of the overlapping of artifice, the landscape and the ancient past. In the blurred space between the physical, mythological and symbolic narratives of the site, one finds a place where contemplation and meditation on the 'fragmented truths' can be found amid each individual experience of a possibly ancient site.

[1] CARE, HISTORICITY AND FACTICITY: FINDING MEANING IN ARCHITECTURE

According to the Norwegian theorist, Christian Norberg-Schulz: "Man's most fundamental need is to experience his existence as meaningful" (Norberg-Schulz, 1980: 166). Why do we need to search for meaning? The German philosopher, Martin Heidegger, proposed that the search for meaning reveals something very fundamental about human beings. In contrast to the cartesian notion, that we are rational subjects trying to make sense of inanimate objects, Heidegger explained our situation as one that is intimately involved with the world. To describe this interwoven reality, he explained our existence as being-in-the-world (Heidegger, M. 1927) and human beings as *Dasein*. By using the term *Dasein*, loosely translated as 'being-there', Heidegger aimed to ground the 'question of being' in a more authentic and deeper understanding of being human (Heidegger, 1927). Not only are we spatially in the world, we are fundamentally involved because, as Heidegger argued, human beings are beings of care: "Dasein is a being that does not simply occur among other beings. Rather, it is ontically distinguished by the fact that in its being, this being, is concerned about its very being "(Heidegger, 1927: 12). Ours is an existence of emplaced concern.

In his book, *Heidegger: An Introduction*, Richard Polt stated that "Care is revealed most fully in authentic temporality, which involves resolutely facing up to mortality and repeating one's heritage in a moment of vision" (Polt, 1999: 108). As beings of care, humankind have contemplated, meditated and endlessly searched the earth and universe for the 'meaning of life'.

Human beings are concerned with how to understand what it means to be in the world and experience Being itself. To Heidegger, it is "our own temporality that makes us sensitive to Being" (Polt, 1999: 5), not only understood in terms of being temporary, i.e. mortal, but the fact that we are historical. In the words of Heidegger: "the analysis of the historicity of Dasein attempted to show that this being is not 'temporal' because it 'is in history,' but that, on the contrary, it exists and can exist historically, only because it is temporal in the ground of its being" (1927:376). Thus, Heidegger's study is not about history, but our concerned being that lets something like history, matter to us. Only by understanding the motivating force which enables us to inherit our past traditions and imagine future possibilities, can it be possible to understand our way of Being. In other words, Heidegger's study is less about history as a field of study, than it is about mortal "historicity" (1927:375). Similar to the differentiation between the subject-object dichotomy, historicity does not "cut us off from reality" (Polt, 1999: 5), but rather opens us up to the meaning of Being.

Heidegger's ontology of being-in-the-world and historicity therefore shows that as beings of care, we are intimately involved in our existence. Yet, we are also bound by the fact of our existence. Heidegger used the term facticity to reveal the way human beings first find themselves situated in a world (Heidegger, 1927:56). In contrast to the notions later developed by existentialists, who tried to argue that humans are absolutely free to choose their lot in life, Heidegger's facticity acknowledges the boundaries wherein humankind's freedom is delimited (Sherman, 2009: 1). Heidegger's *Being and Time* (1927) attempts to fight against the "groundlessness" of the contemporary world, by uncovering lasting meanings and values, which endure despite the limitations of human existence (Guignon, 1984, 322).

Dasein is thrown into the world, meaning that one will, in some sense, be the product of the time, place and culture within which one is born, lives and dies. However, within the boundaries of facticity, there is the freedom and necessity of choice. As thrown beings, humankind is thrust into a set of circumstances, but the freedom lies in choosing to embrace our thrown possibility. Our lives are confronted by many contesting realities or facts, which together, form the contradictory nature of human experience as we know it. These involvements, our responses to the facts of existence, are informed by our cares and show who we really are and create the potential for living in a way which can be described as authentic (Sherman, 2009).

Heidegger believed that there were authentic *(eigentlich*) and inauthentic *(uneigentlich)* ways to respond to the facts of existence. In German, the potency of these terms lies in the root word '*eigen*', which designates *Dasein*'s ability to interpret and 'own' (through a process of appropriation) the divergent possibilities presented by the situation (Auret, 2015: xxiv).

Traditionally, the notion of truth has habitually been linked to the notion of authenticity, but for Heidegger, being authentic does not require some exceptional "effort of discipline" (Sherman, 2009). In fact, for the most part, Heidegger maintained that people live fundamentally inauthentic lives, they "fall prey" to their world's expectations and become "absorbed" in the norms of their society (1927:175). Unexpectedly, Heidegger did not see this as a negative quality, because "Dasein can fall prey only because it is concerned with understanding, attuned being in the world" (1927: 179). Therefore, Heidegger did not value authenticity more than inauthenticity, since both are everyday reactions to the facticity of mortal existence. Moreover, this frees us to a more nuanced and revelatory appreciation of authenticity for now, "authentic existence is nothing which hovers over entangled everydayness, but is existentially only a modified grasp of everydayness" (1927:179).

This modified formulation of authenticity makes it possible to question the assumptions we have about reality. Even mythical 'things' are beings and although they might not exist, we talk about them because images, concepts and myths about them do exist. So, for Heidegger, there seems to be some kind of involvement of being in anything we can talk, think and speak about, whether it is considered authentic or inauthentic.

Heidegger describes human existence as involved, imbued with historicity and constantly oscillating between the realms of authenticity and inauthenticity. How does this relate to the way we appreciate our place in the world? One of the key shifts proposed by Heidegger, when considering the ancient question posed by philosophers, namely why is there something rather than nothing, is to challenge us to consider this question not as a "search for a cause, but an act of celebration" (Polt, 1999:2). Meaningful architecture depends upon noticing and celebrating the historicity, facticity and concerned involvement of mortals in their world. But in order to do so, this act of celebration must be rooted in the places that serve as the backdrop for human existence.

[2] GENIUS LOCI, PLACE AND INTIMATIONS OF TRUTH

Traditionally, people have ascribed sacred content to places. "The reason that some places are felt to be special, is that they are considered to be inhabited by gods/ goddesses, spirits, fairies, etc..." (Brook, 2000: 141). Adam's Calendar is a place where intense energies and spirits have been felt. Places like these are sacred to humankind and the patterns of energy can be interpreted and analysed whether it be in scientific, religious or philosophical terms.

According to Norberg-Schulz, such places give structure and identity to human settlement in natural places. These structures and identities are then formalised as "mythologies" (1979:23). In such places, the presence of spatial structure and atmosphere, coupled with the notion of time as the dimension of constancy and change, makes space and atmosphere parts of a living reality, which at any moment, is given as a particular place and fundamentally as a Genius Loci (Norberg-Schulz, 1979: 32). It is this spirit of place which motivated Norberg-Schulz to claim that "place represents architecture's share in truth" (1979: 6). But if humans live equally and often simultaneously in both authenticity and inauthenticity, could we ever prescribe with complete certainty the full extent and content embodied in this truth? The stones forming part of Adam's Calendar, or any stone for that matter, may indicate a fruitful way to approach this incongruity.



56. Adams Calendar at night. Author . 2019

1 KINGS 19:11-13 EXPANDED BIBLE (EXB)

11 THE LORD SAID TO ELIJAH, "GO, STAND ·IN FRONT OF [BEFORE] ME ON THE MOUNTAIN, ·AND I WILL PASS BY YOU [FOR THE LORD IS ABOUT TO PASS BY]." THEN A VERY STRONG WIND ·BLEW UNTIL IT CAUSED THE MOUNTAINS TO FALL APART AND LARGE ROCKS TO BREAK IN FRONT OF [TORE APART THE MOUNTAIN AND SHATTERED THE ROCKS BEFORE] THE LORD. BUT THE LORD WAS NOT IN THE WIND. AFTER THE WIND, THERE WAS AN EARTHQUAKE, BUT THE LORD WAS NOT IN THE EARTHQUAKE. 12 AFTER THE EARTHQUAKE, THERE WAS A FIRE, BUT THE LORD WAS NOT IN THE FIRE. AFTER THE FIRE, THERE WAS ·A QUIET, GENTLE SOUND [THE SOUND OF A GENTLE WHISPER/BLOWING/WIND; OR A BRIEF SOUND OF SILENCE; A STILL SMALL VOICE]. 13 WHEN ELIJAH HEARD IT, HE COVERED HIS FACE WITH HIS COAT AND WENT OUT AND STOOD AT THE ENTRANCE TO THE CAVE. THEN A VOICE SAID TO HIM, "ELIJAH! ·WHY ARE YOU [WHAT ARE YOU DOING] HERE?"

The silence in the passage to the left, contains no language, and yet meaning is communicated. This is indicative of Heidegger's attempts to free language from the constraints of communication and "assertion"; the tendency in post-Socratic Western thought to turn language into a form of assertion and truth into a verifiable condition of "correctness" (Heidegger, 1935: 144). Instead of seeing language as a tool of communication, Heidegger saw language as a form of revelation (Norberg-Schulz, 1985: 111) Language then becomes the 'naming of things' and the gathering of these 'things' which make up the world in which we dwell. Norberg-Schulz states that "language represents a 'unifying middle' of the world and things" (1980: 23). The 'unifying middle' is the place where 'truth' is revealed.

Heidegger described a thing as a "gathering-appropriating staying in the fourfold which resonates with and (rings out into) its world" (Auret, 2015: xxxv). "The thing things" as Heidegger put it (1950:170-172). As beings of care, mortals are open to the speaking of things. In fact, Heidegger described humans as the "be-thinged… ones" (1950: 179). When things are made by *Dasein*, including calendars and architecture, the challenge for the mortal is to gather the fourfold in such a way that it speaks revealingly. In addition to the efforts of humankind, all 'things' always already consist of their own voices and narratives.

Adam's Calendar lies within the interplay between mythical and factual, perhaps the 'unifying middle', a sacred and silent place, where the 'be-thinged' ones listen to the stones which call out in the silence of their 'thinging'. The stones can only hope that the 'be-thinged' beings of care will hear them. But, how can we be certain that we hear and interpret their message truthfully?

Dasein, enmeshed in historicity, involvement and facticity – always already between authenticity and inauthenticity – lives between truth and falsehood. So often, we wish to speak and assert our 'certainties', but Heidegger cautions against such audacity. In fact, we would do better to humbly and persistently see ourselves as 'bearers of silence' (Heidegger,1938:62-64) as described in 1 Kings 19:11-13. In this space of silent potential, we pause to notice and question, solely relying on our existential experience. Potentially, this hesitance safeguards us from our unexamined assumptions about truth and authenticity. We may know less than we think and waiting may be our most prudent response. When considering our highest possibility, Heidegger put forward the notion of "the mortal being of care [as] the steward of the stillness of the passing by of the last god" (Heidegger, 1938:232).

[4] ALETHEA | LETHE: ADAM'S CALENDAR BETWEEN REALITY AND TRUTH

From a cartesian perspective, the ultimate goal is to rationally explain and categorize reality. The previous sections should cast doubt on this position. Not only are we more intimately involved in our reality, but the nature of reality itself may depend on human presence. Reality, as explained by Richard Polt, depends on human understanding: "Real things are dependent on us, but what it means to be real, depends on us" (1999,82). For us, to understand what it means to be real, we have to investigate the ways in which "things present [display] themselves as real in the context of human life" (1999:82).

For example, an ancient calendar which is undeniably real, is studied by an archaeologist. It was real before the scientist studied it, and it will continue to be real after the study has concluded. The meaning of the ancient calendar as being 'real' or 'unreal' to the archaeologist can only be understood if we investigate the existence of the archaeologist, which is "rooted in a past, projects towards a future and falls into the present" (Polt, 1999:82).

Viewed from this perspective care "provides the context that gives meaning to reality" (Polt. 1999:82). It is within this context that the archaeologist, informed by her world of many concerns – family, religion and her profession – studies the ancient calendar in a certain way. Not only informed by the 'objective reality', but by the full poetic reach and content of her existence as a region of concern.

Fundamentally, in contrast to the traditional equation of truth with "correctness" (Heidegger, 1935: 199), Heidegger proposed to understand truth as a form of "uncovering" as is suggested by the Greek word for truth, *Alethea* (Polt, 1999:82). In order to understand the full depth of *Alethea*, Heidegger's equated the term to the notion of an *Ab-grund.* The term suggests that every revelation (thing uncovered) implies a "wealth of hiddenness" (Auret, 2015: xxii). Heidegger's interpretation of *Alethea* consists of an "interaction between *Grund* and *Ab-grund*" (Auret, 2015: xxiii). These terms communicate the "interplay of… hiddenness *[Lethe]* and unhiddenness *[Alethea]*" (Dahlstrom, 2010:117).

Dasein, as the being of care, is called to safeguard "the openness of self-concealing" (Heidegger, 1938: 294-295/232) and is able to interpret the 'interplay' as the event of the uncovering of truth, in which the things can "present themselves as they are" (Dahlstrom, 2010:117). Fundamentally, what is guarded by the being of care, is the potential for mystery, wonder and uncertainty.

Some see Adam's Calendar as a profoundly sacred space. Some see Adam's Calendar as no more than a random grouping of stones. Amid the silence of the stones and the bearing of silence by the mortal, the challenge lies in safeguarding the space between *Alethea* and *Lethe* as the 'interplay' between concealment and unconcealment. Here the lines between fact and fiction is blurred, but is this not true of all human existence? In fact, as beings of emplaced care, always already between authenticity and inauthenticity, we cannot establish our grasp on truth too unquestioningly. Instead, the most appropriate response may be to serve as agents of artifice.

[5] THE ARTIFICE OF THE LANDSCAPE

When considering an architectural response to Adam's Calendar, Norberg-Schulz set architects the impossible imperative of making works of architecture which reveal the 'truth' of the place (1979: 170). In light of the argument submitted above, I would like to suggest an alternative: practicing architecture as artifice.

The term artifice is derived from the Latin word 'artificium', which is defined as a talented skill. The term can be described in three different ways: an artful skill or ingenuity, an artful stratagem or trick and false or insincere behaviour. The Merriam Webster dictionary (2019: online) provides three possible definitions of artifice, each with their own implications for this study, which serves as the underpinning of the design response: False or insincere behaviour, an artful stratagem or trick and an artful skill.

ARTIFICE AS FALSE OR INSINCERE BEHAVIOUR

In the light of the discussion above regarding truth as a form of Alethea, both Tellinger and the archaeologists in portraying their stance as the sole truth, may be practicing this form of artifice. Imposing ideas and thoughts are always already part of the context of being human and therefore cannot be removed from the context surrounding Adam's Calendar.

ARTIFICE AS A TRICK: OR ARTFUL STRATAGEM

The artifice in terms of a trick or an artful stratagem is found in the mythologization of the narratives and complexities surrounding Adam's Calendar and the landscape. The architecture is rooted in the overlapping of the different theories and ideas and can be understood as a new layer of landscape, where contemplation and interpretation is encouraged.

ARTIFICE AS AN ARTFUL SKILL

The third definition of artifice is found in the making of architecture as a sculpture of landscape, within the landscape. It forms an intimate relationship between nature, stones and built architecture, resonating with the immensity, the roughness, the silence and the magical atmosphere of the place. A precedent study to the making of the artifice of the landscape is found in Structures of Landscape, designed by Ensemble Studio.

Ensemble studio (see precedent study: 134) have created several concrete structures in the landscape of the northern edge of the Yellowstone park in Fishtail, Montana. These sculptural installations are site specific to the immediate surroundings, harmoniously responding to the environment by blurring the boundaries of art, architecture and nature (Ensemble Studio 2016 :online).

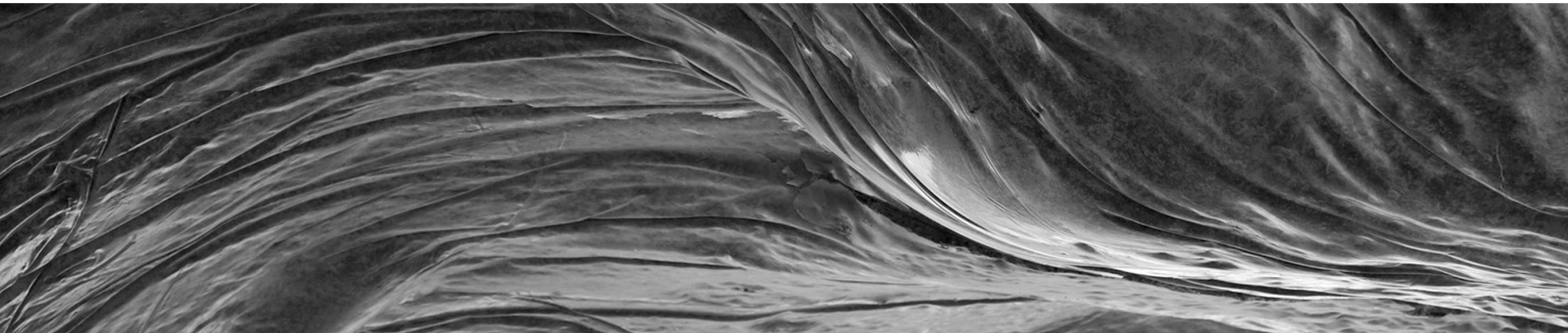
As a precedent to the study, Ensemble studio's large-scale sculptures lend ideas to how works of architecture, can serve as artifice within a landscape. Working with earth and rocks to form and sculpt the structures, the artifice is a structure of landscape, from the landscape. The architecture flirts with the context in the same way in which the interplay between the authentic and inauthentic overlaps on contested sites like Adam's Calendar. Essentially the structures of landscape reveal another layering of landscape where beauty, poetry and the context of being human can be celebrated.

56. Structure of landscape. Ensemble studio (online)
57. Texture of landscape. Enseble studio (online)









[6] CONCLUSION

Even at the last moment, we are prone to revert to our preconceptions. Consider the persuasiveness of the following assertion: "Like an archaeologist, we try to uncover the truth of a site. Searching for an architecture that becomes one with its surroundings, while amplifying the connection to place" (Oppenheim, 2019: online). While laudable, the being of care – involved, imbued with historicity, beholden to its facticity – would do well to keep a more open stance. It is not truth which is important, but the enduring search for truth. Assertion may be the greatest enemy of truth in our times. Instead, we may have to create works which let the fundamental uncertainties of the situation ring forth. In the words of the German writer, Johann Wolfgang von Goethe: "It is not always necessary that what is true should embody itself; it suffices for it to float about intelligibly and evoke harmony, as it drifts through the air like a serious but friendly sound of a bell" (Goethe cited in Heidegger, 1969: 309).



59,. Exploration model of the artifice in the landscape texture, curve and massing. Author, 2019.



6

CHAPTER

6 | DESIGN DEVELOPMENT

[1] TOWARDS A DESIGN RESPONSE
[2] OUT OF THE MYTHOLOGIZATION OF THE LANDSCAPE
[3] THE IN-BETWEEN
[4] THE WORK OF ARTIFICE
[5] A DESIGN RESPONSE
[6] A STRUCTURE OF LANDSCAPE
[7] CONCLUSION

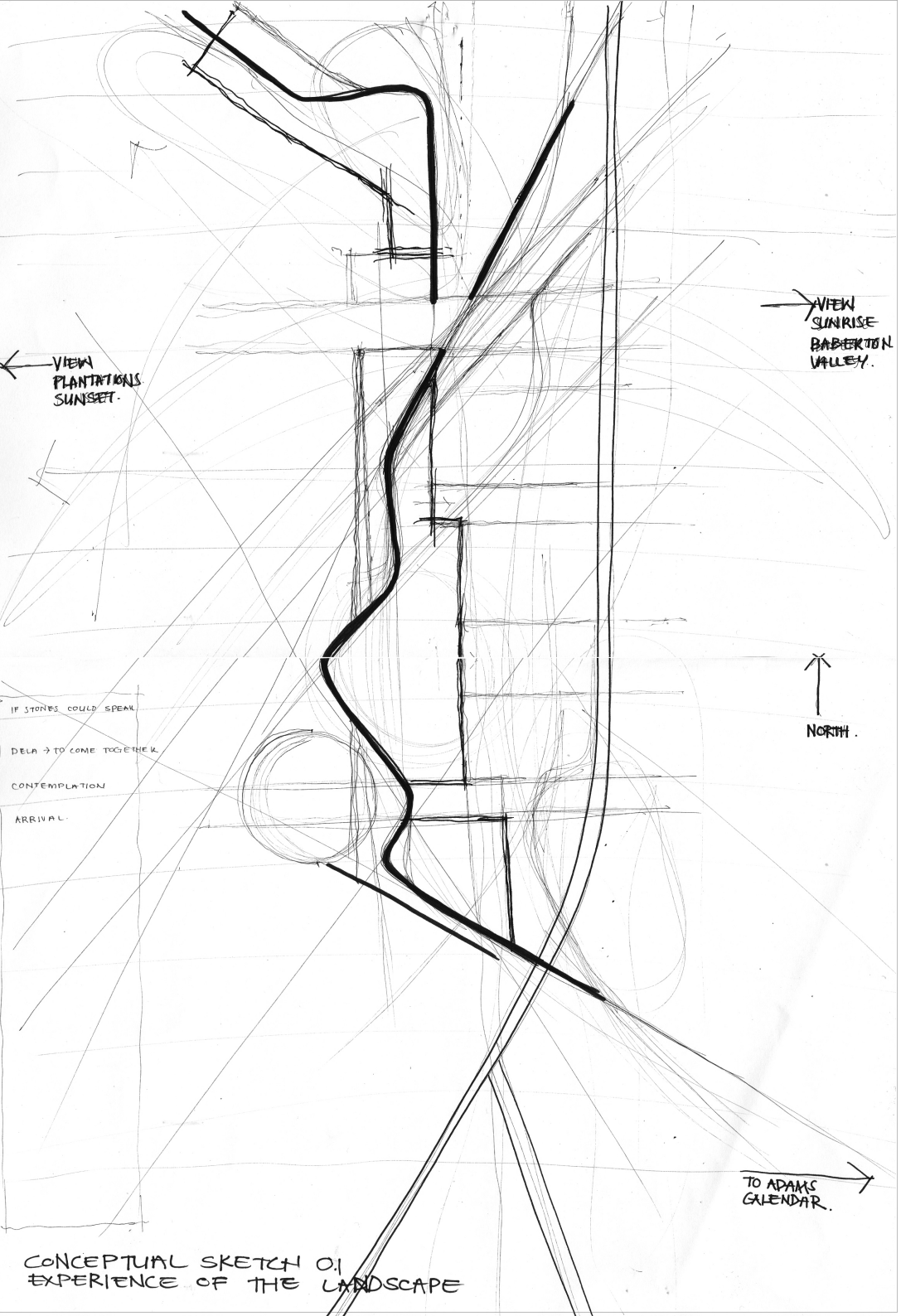
In the following chapter, the design response to the investigations and theoretical interpretations are explained. The first attempt to develop an appropriate design response in the contested landscape, is to understand the different narratives and overlapping of 'lines' on the site in phase 1. This brings the design to the next phase where the architecture becomes a tool for not only understanding and exploring the narratives surrounding Adam's Calendar, but also the physical landscape it sits in. This is the response to the physical paths and elements on the site, which is also explored through the concepts in the previous section of the study. The architecture as a work of artifice, is derived from all these elements and is explained in this section.

The response to the 'place' and landscape in terms of the mythologization of the landscape, the layering of linearity, connection and segmentation and how the design has morphed out of these ideas, are interpreted. Finally, the built work of architecture is explained in terms of the artifice and as a structure of landscape.

[1] VISUAL HYPOTHESIS



61. experience of the landscape, watercolour. Author, 2019



CONCEPTUAL SKETCH 01
EXPERIENCE OF THE LANDSCAPE

TOWARDS A DESIGN RESPONSE

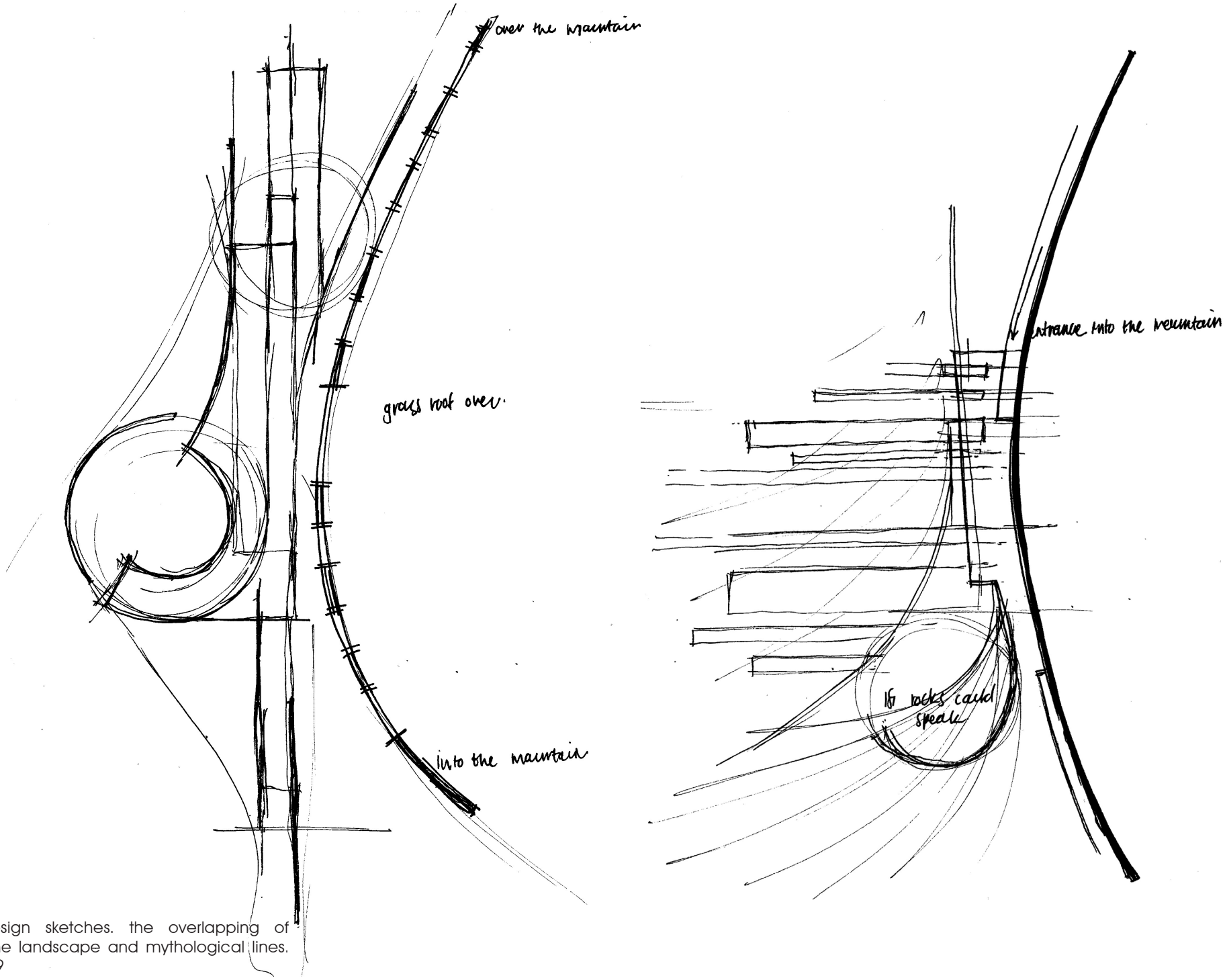
In interpreting the visual landscape and the different mythological and theoretical ideas surrounding Adam's Calendar, the 'place' can be understood. In the conceptual sketch, the overlapping of the different elements is visible. An interpretation of the surrounding mountains and hills are visualised in a curved, ongoing element. There is a definite blurred space between the landscape and where the building might come into being. A layering of the concepts, is explored as a layering on the exploration of the landscape.

The existing gravel road serves as a buffer space between the contested site and the proposed development. This ensures a contrast in experience when the visitor moves in the development as opposed to moving in the natural landscape.

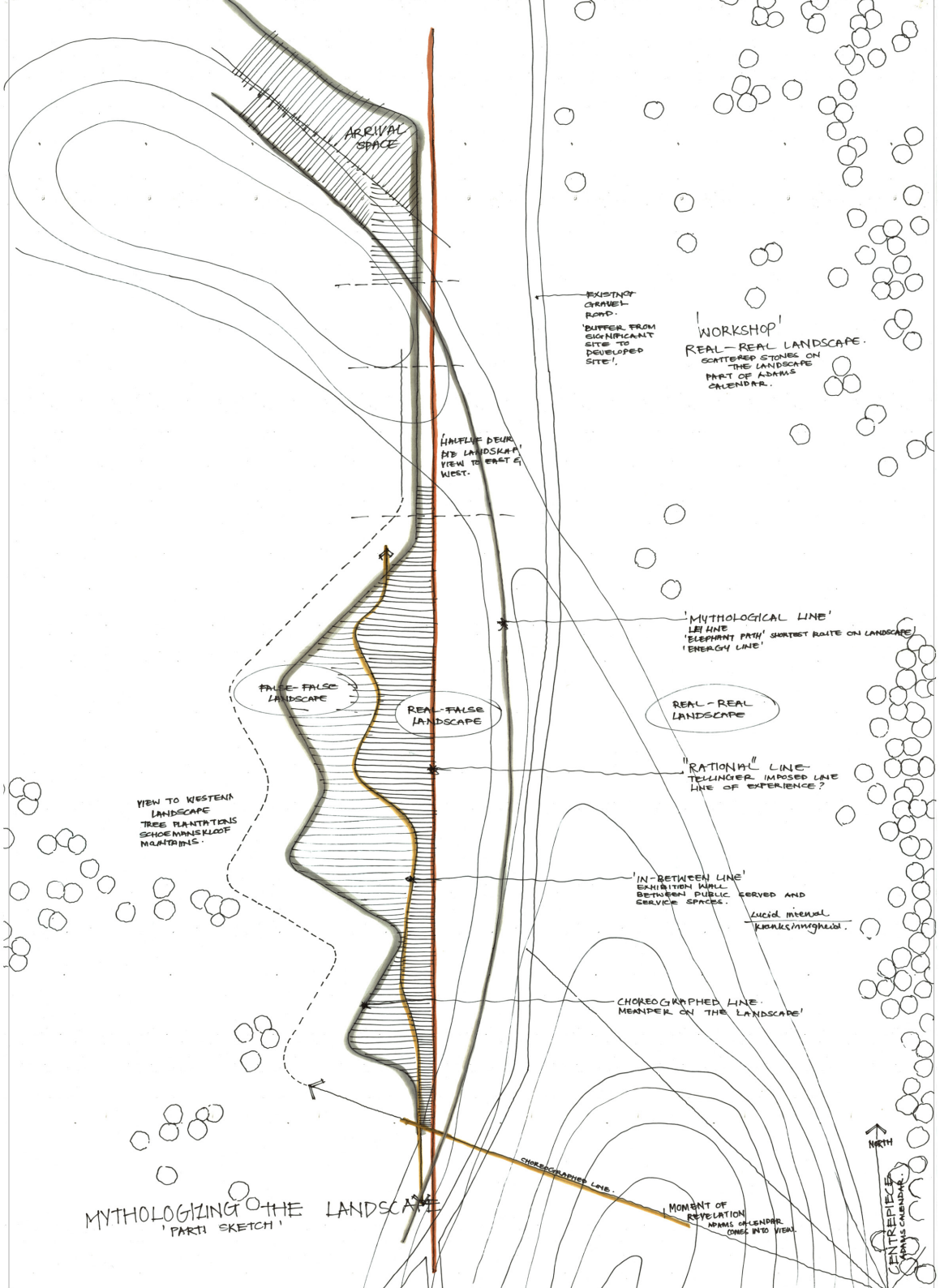
INITIAL DESIGN SKETCHES

These sketches are a mere exploration of spaces in the overlapping of the concepts. They served in getting a clear idea of balance, scale and where different lines of meaning might develop. Circular spaces of gathering are proposed, where the experience of time is blurred and the visitor is encouraged to linger longer. This is also a referral to the circular character of the calendar and the mathematical way in which it is lain out.

62.overlapping of landscape and narratives, Experience of the place.
Author 2019



63.initial design sketches. the overlapping of concepts, the landscape and mythological lines. Author , 2019



OUT OF THE MYTHOLOGIZATION OF THE LANDSCAPE

The site of Adam's Calendar as a 'place' of meaning, is mythologised through the different narratives and overlapping of lines which becomes part of the Genius Loci of the site. In the parti sketch, a mythologization is made of the different lines found woven into the spirit of the place and interpreted to form an amalgamation of ideas and theories, all deeply connected with the visual surroundings.

This sketch serves as a guiding principle in the design development, where the work of architecture is located in the interplay between these ideas.

Different 'lines' are chosen which is symbolic of the different narratives:

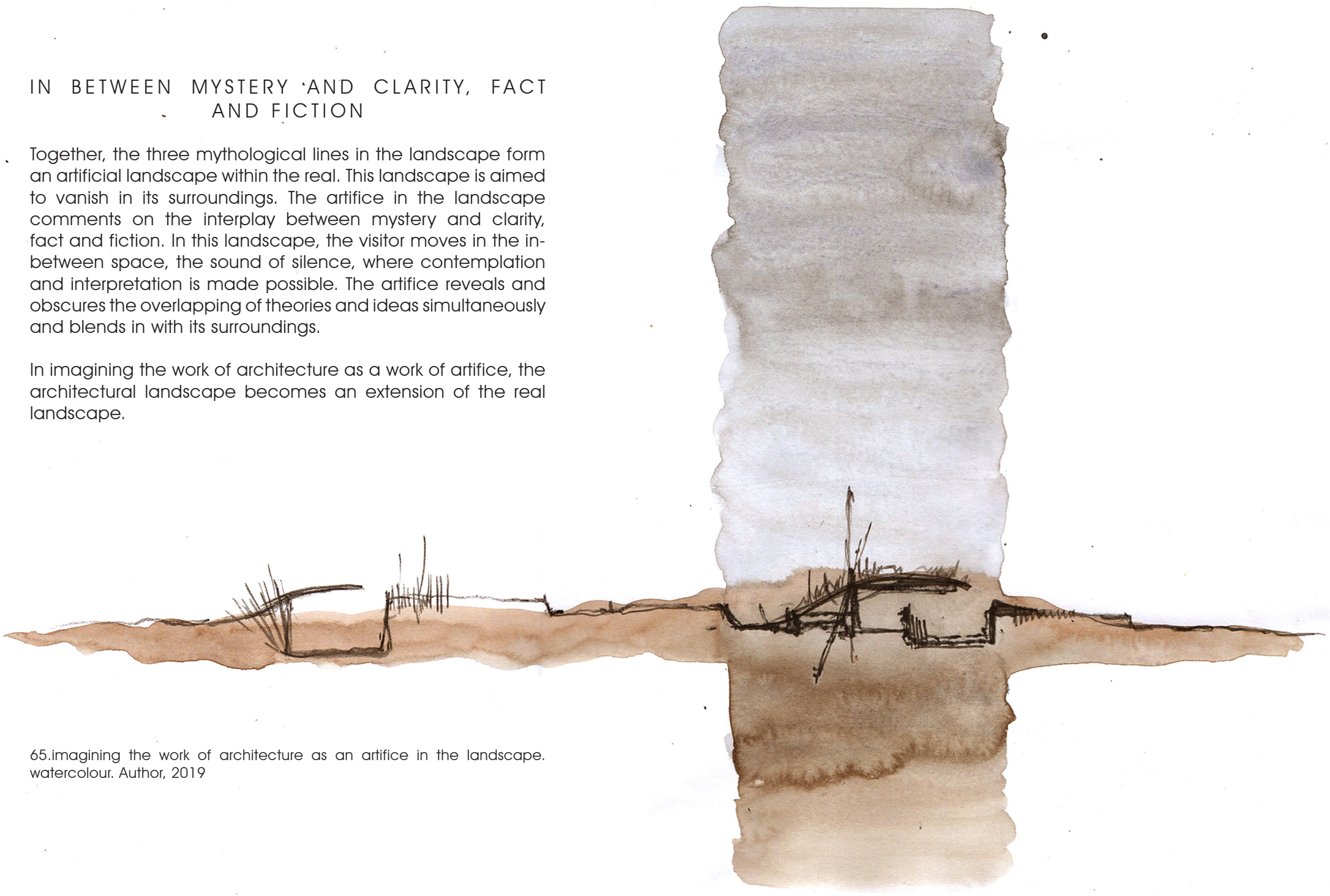
- The 'rational' line is an imposed line of discovery, inspired by the theories of Tellinger which is imposed on Adam's Calendar. This line forms the 'spine' of the development, as well as the building edge where it meets the landscape.
- The 'in-between' line forms the exhibition wall and the blurring between served and service spaces.
- The 'choreographed line' is the line depicting the meandering on the landscape and will form the edge of the building, on the western façade. This is also the line which guides the visitor to the calendar in the landscape and thus becomes and extension of the built architecture in the landscape.

64.parti sketch. Author, 2019

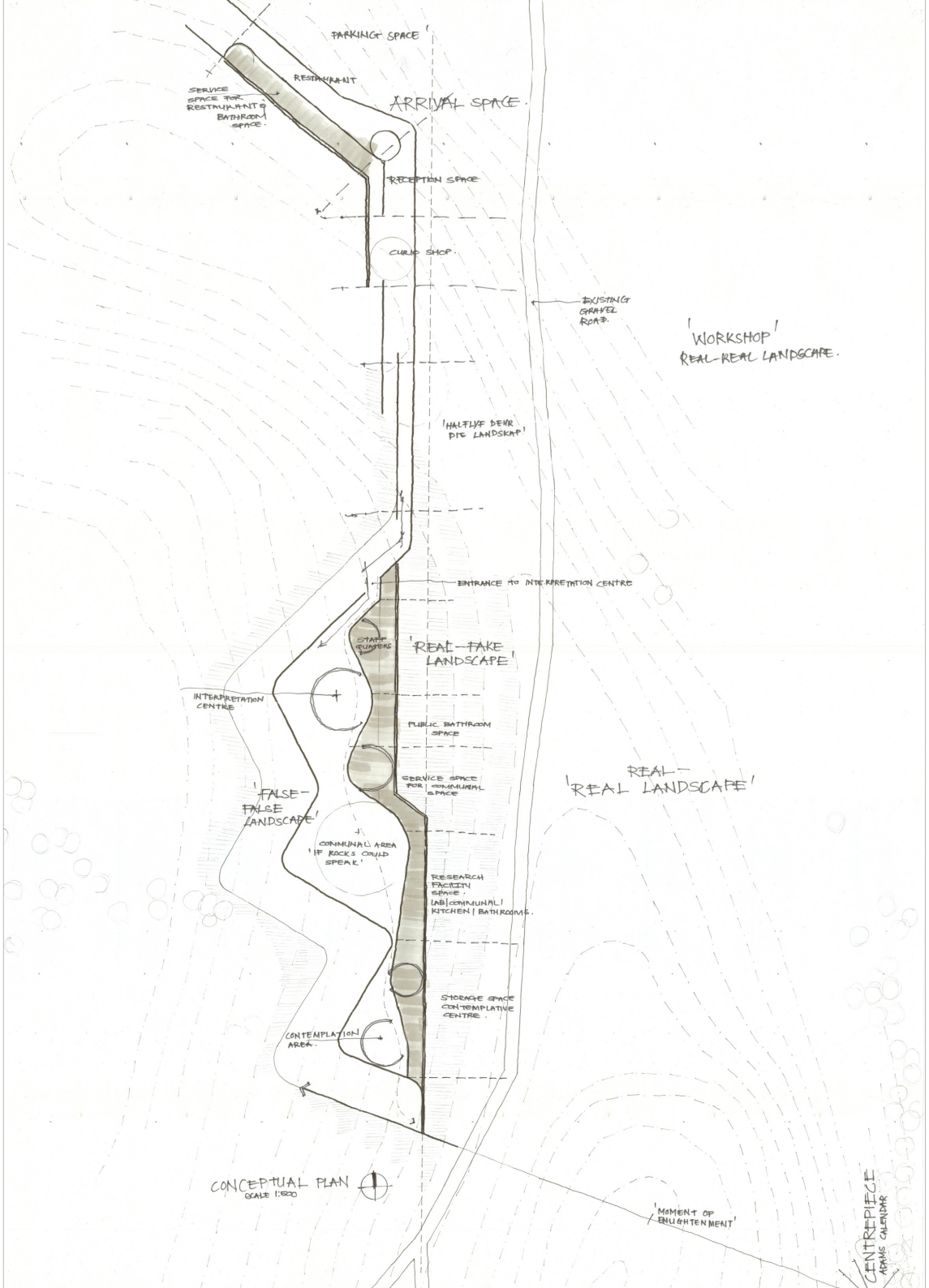
IN BETWEEN MYSTERY AND CLARITY, FACT AND FICTION

Together, the three mythological lines in the landscape form an artificial landscape within the real. This landscape is aimed to vanish in its surroundings. The artifice in the landscape comments on the interplay between mystery and clarity, fact and fiction. In this landscape, the visitor moves in the in-between space, the sound of silence, where contemplation and interpretation is made possible. The artifice reveals and obscures the overlapping of theories and ideas simultaneously and blends in with its surroundings.

In imagining the work of architecture as a work of artifice, the architectural landscape becomes an extension of the real landscape.



65.imagining the work of architecture as an artifice in the landscape. watercolour. Author, 2019



THE WORK OF ARTIFICE IN THE LANDSCAPE

All three concepts are present in artifice, as explored in the theoretical discourse. The design response towards these ideas is explained as follows:

Linearity explores the imposed and insincere ideas and thoughts which surrounds Adam's Calendar and is shown as the straight line from north to south in the parti sketch. Out of the conceptual interpretation, this line of direction is also the line in which the visitor discovers the different areas of the contested site. This line is called the line of discovery and exhibition line.

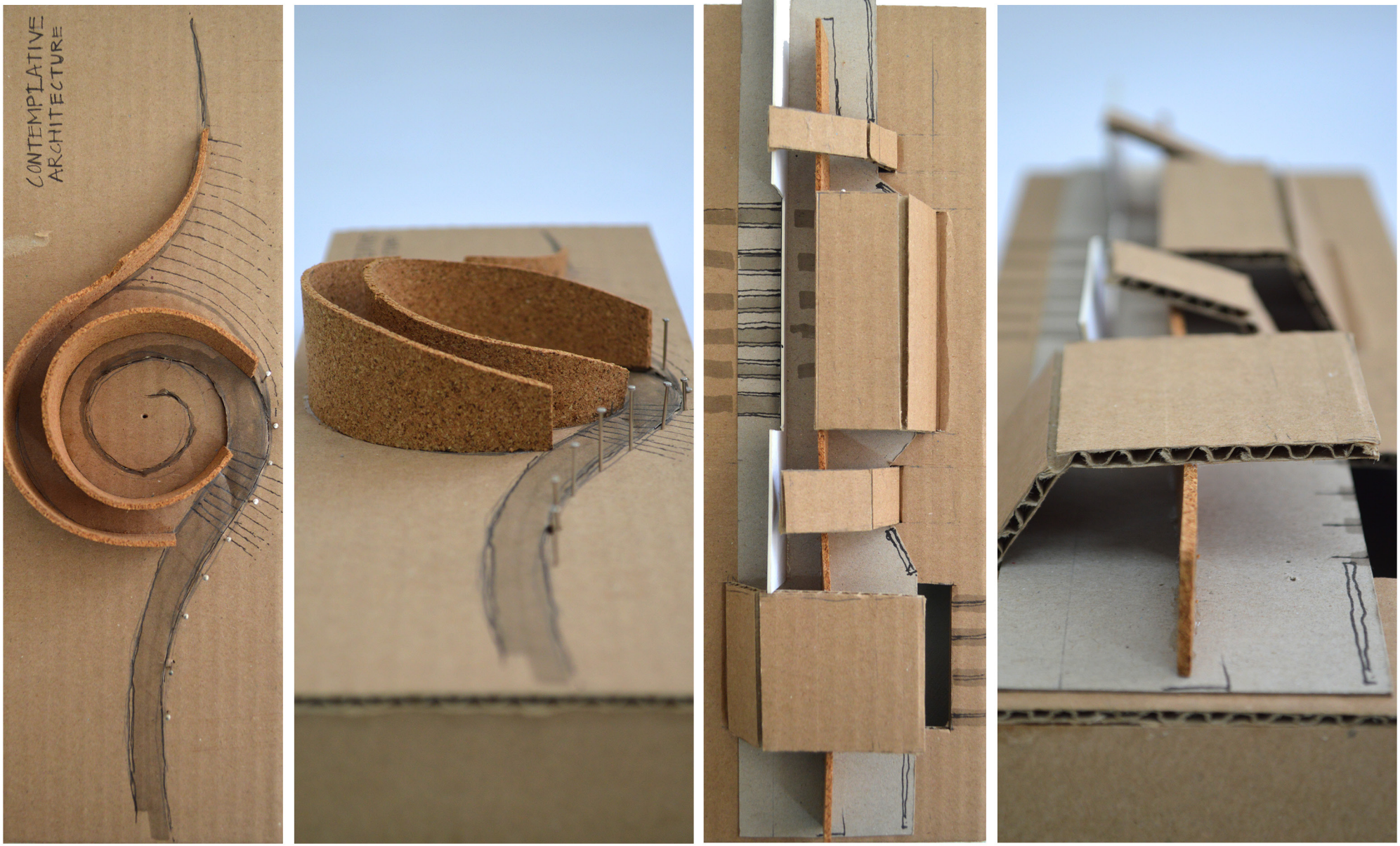
Connectivity is the way in which the different narratives and elements of the place are intricately woven into the landscape. All of the elements are to be seen as a whole, in order to understand the context of Adam's Calendar. These lines are also the artful stratagem of the work of architecture and the design to bring all the ideas and narratives together.

Segmentation is the way in which the line of discovery is divided, like a calendar, into segments or functions. The exhibition line moves through a series of different spaces from arrival, to half-body in the landscape, to thrown into the landscape where there are spaces in interpretation, gathering and contemplation, to emerging back into the open landscape to reveal the centrepiece to the visitor.

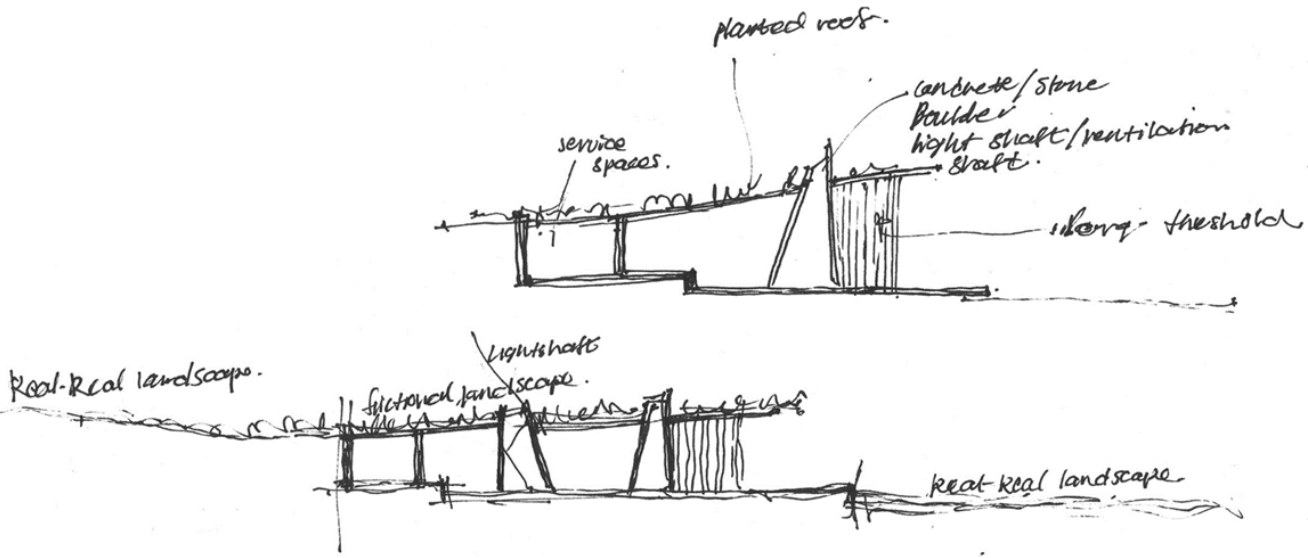
The conceptual sketch explores ways in which the mythologised lines can become architectural space. the visitor is lead into a semi enclosed arrival space which moves along the exhibition line and again into the landscape. Where the visitor walks in the landscape, the path is below the landscape surface, again flirting with the thought of being in the in-between space, an artful skill. Gradually sinking lower into the landscape, the visitor moves into the interpretation centre and into the architectural space of artifice. Here contemplation and interpretation is encouraged, along with 'moments of vision' where the visitor is vertically led into the landscape for orientation purposes within the blurred landscape.

Upon exiting the interpretation centre, the visitor moves on the path of choreographed discovery. With Adam's Calendar still out of sight, the visitor moves over the hill to encounter the final 'moment of revelation' when Adam's Calendar comes into view. From there on the visitor is guided back to the arrival space on a meandering footpath through the untouched landscape

66.Conceptual design sketch. Author, 2019



67.initial explorative models, Author, 2019



A DESIGN RESPONSE: INTERPRETATION CENTRE FOR THE RUINS OF ADAM'S CALENDAR

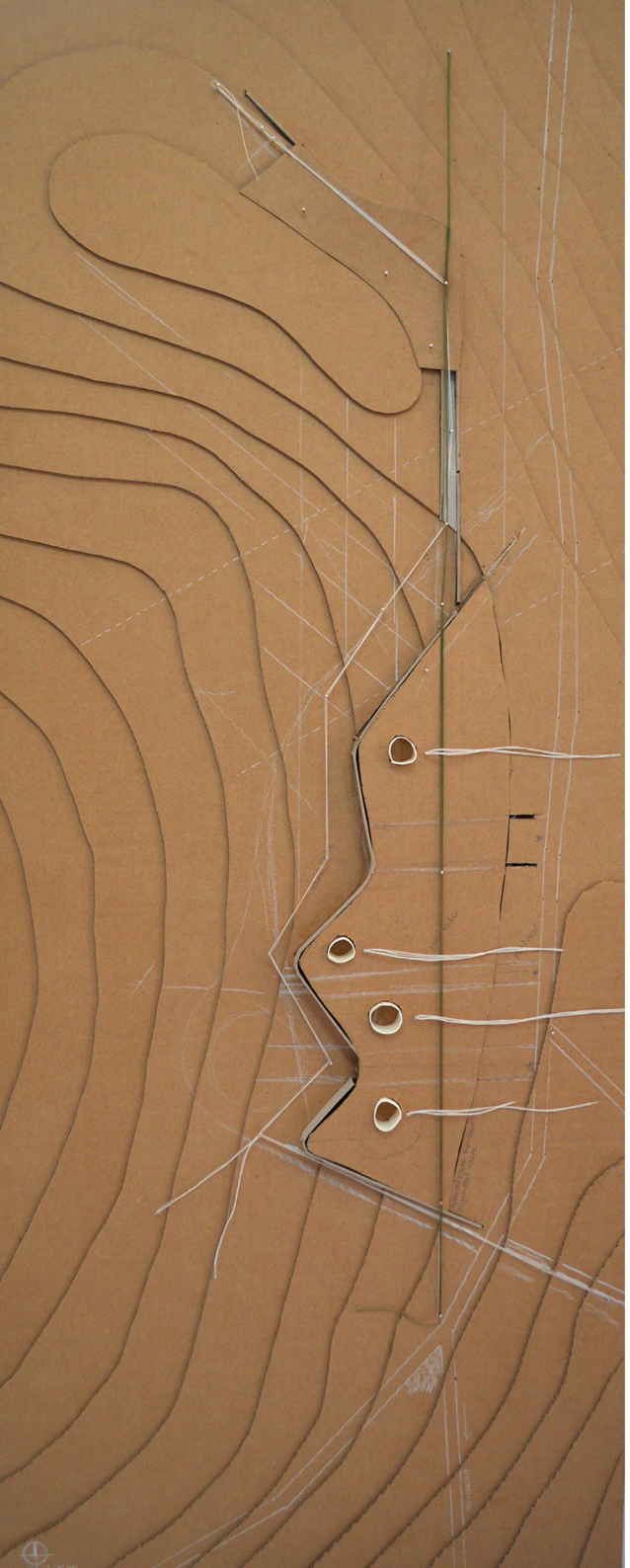
The following phase explores the design through from conceptual models to the design resolution in locality site plan, floor plan, elevations, morphed sections and perspectives.

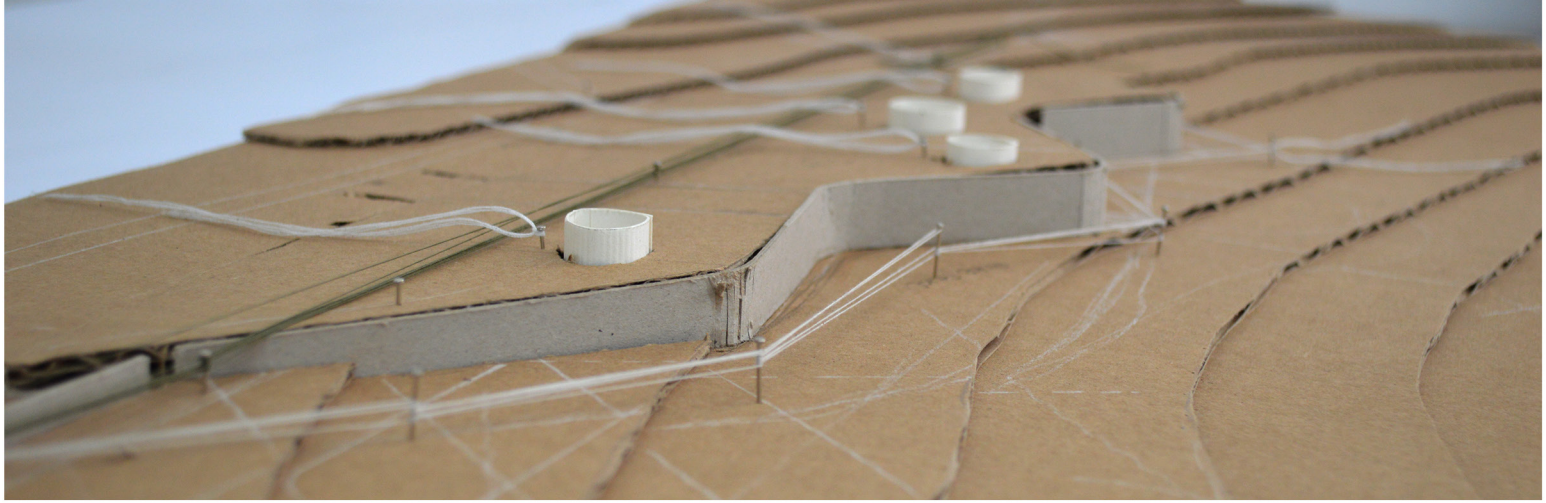
CONCEPT MODEL 1

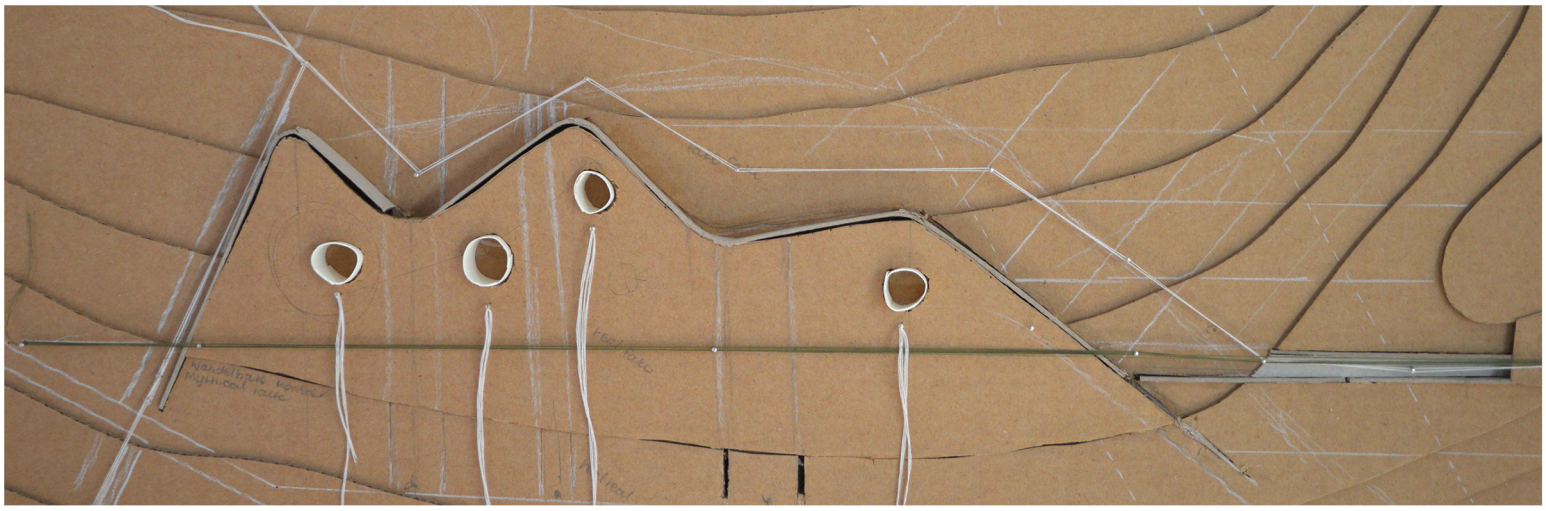
The conceptual model explores the way in which the proposed development serves as an extension of the landscape. Scale, edges and exhibition spaces are explored three dimensionally. With the mythological 'lines' on the landscape visible on the conceptual model the work of architecture sits in between the 'blurred' boundaries of space. The first thoughts on structure is also shown in this exploration as the primary structural elements on which the roof might rest is given the functions of different exhibition spaces. The concept of artifice becomes apparent in this sense as the trick of blurring functionality and experience, similar to the 'in-between' line explained in the parti sketch.

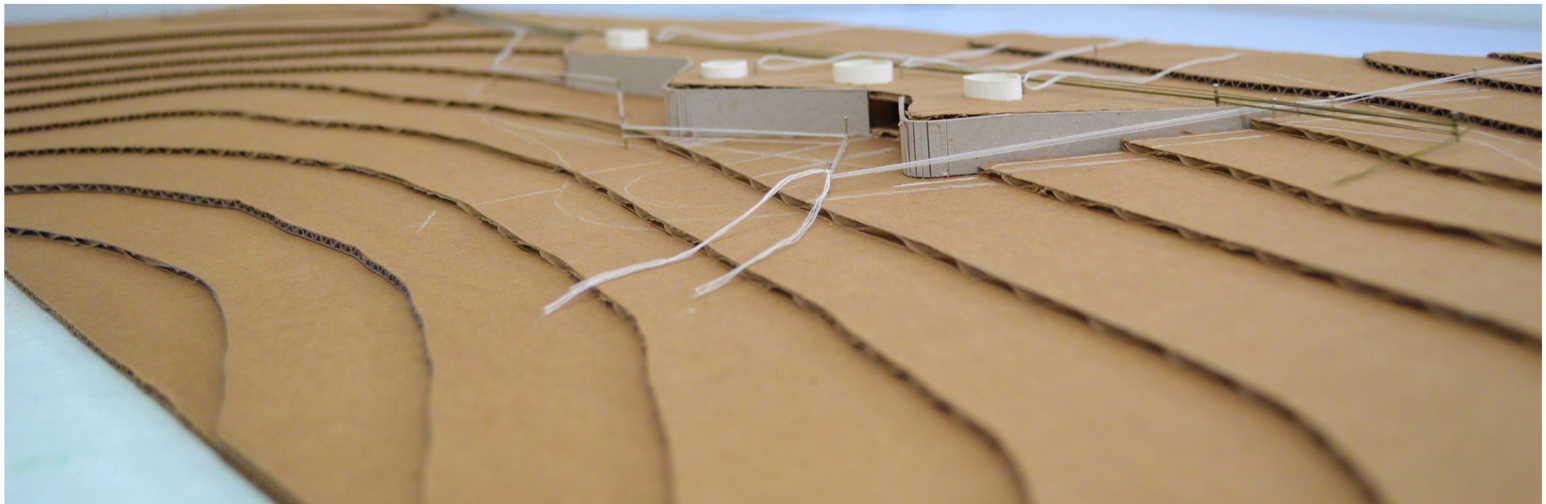
The conceptual sketches explore the ideas of the structure and the roof in section and how structure can become exhibition.

68.Initial sectional exploration, Author. 2019
69.Concept model 1. Author, 2019









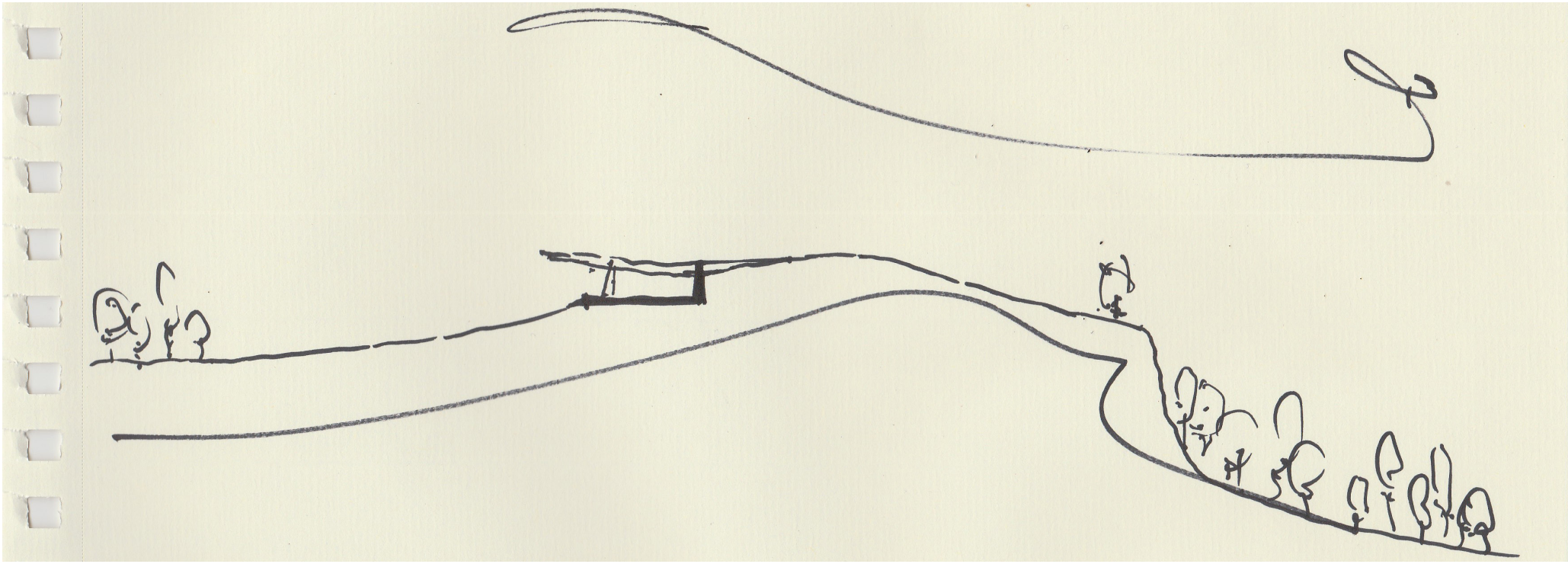
A DESIGN RESPONSE: INTERPRETATION CENTRE FOR THE RUINS OF ADAM'S CALENDAR

CONCEPT MODEL 2

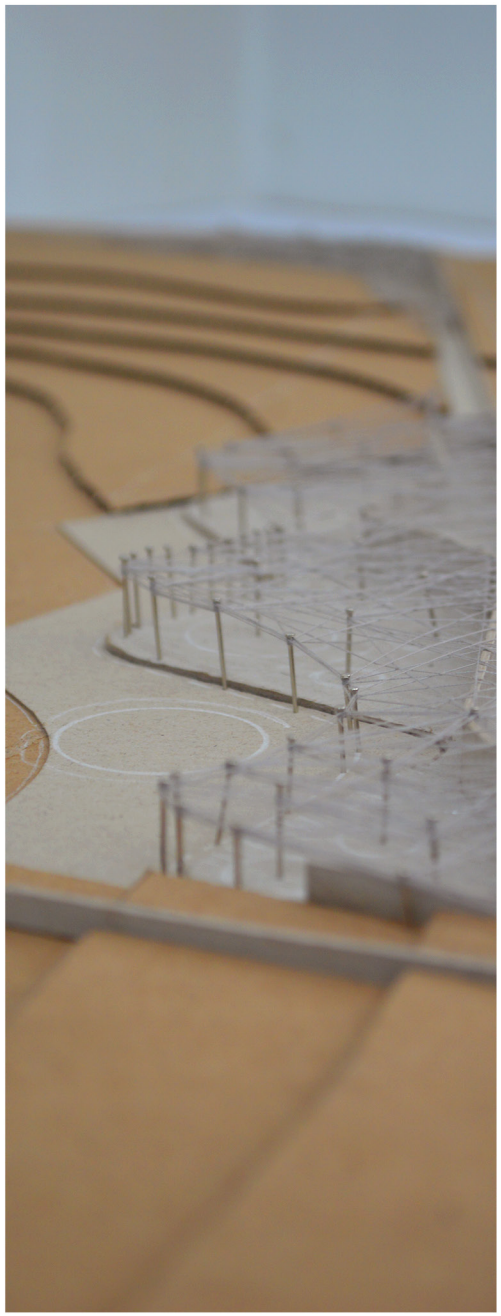
The conceptual model explores the massing of the functions within the proposed development, the layout of the different exhibition spaces and how the structure is 'woven' into the natural landscape. It also explores the possibility of undulation in the roof as an extension of the larger contextual character – rolling hills and mountains of the Barberton Valley.

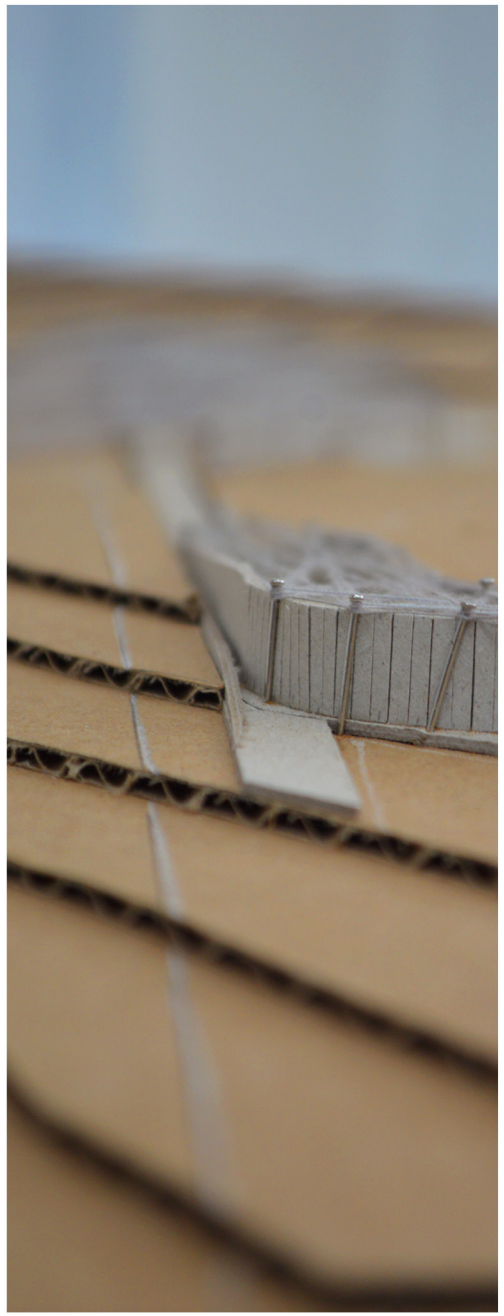
The idea of a 'woven' landscape lends ideas of the materiality of the structure. If it is woven in the landscape, and the character of the landscape is captured in the stones of Adam's Calendar, then it seems logical to make use of stone and the natural landscape in construction materials.

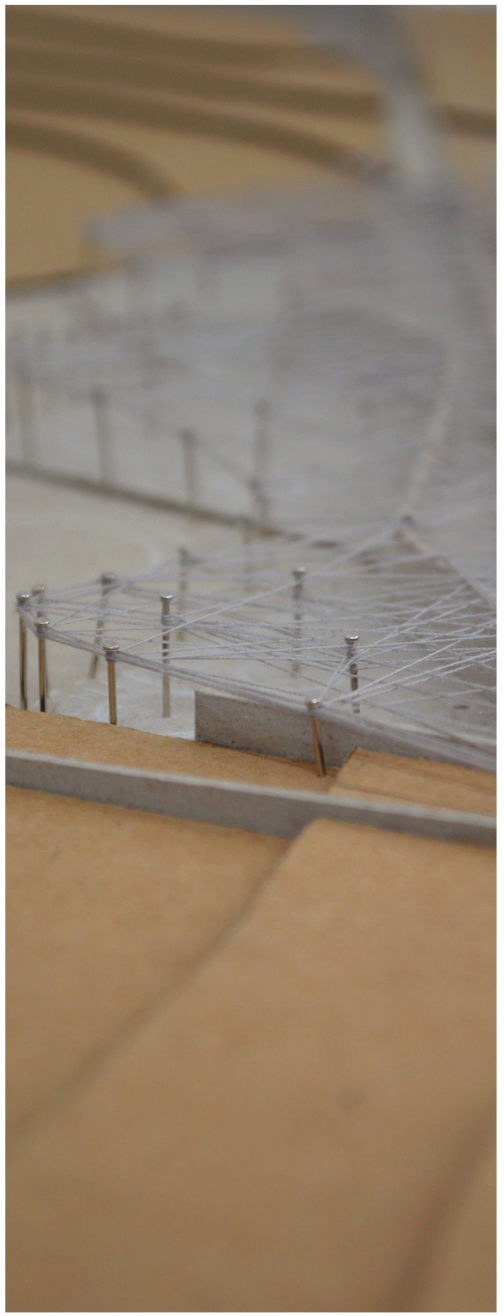
70.Conceptual sketch, an extension of the landscape. Author, 2019
71.Concept model 2: Author, 2019





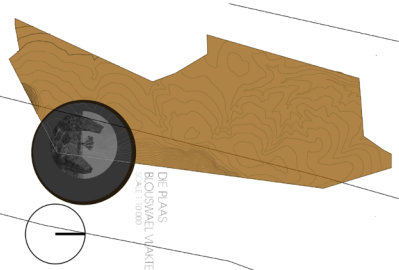


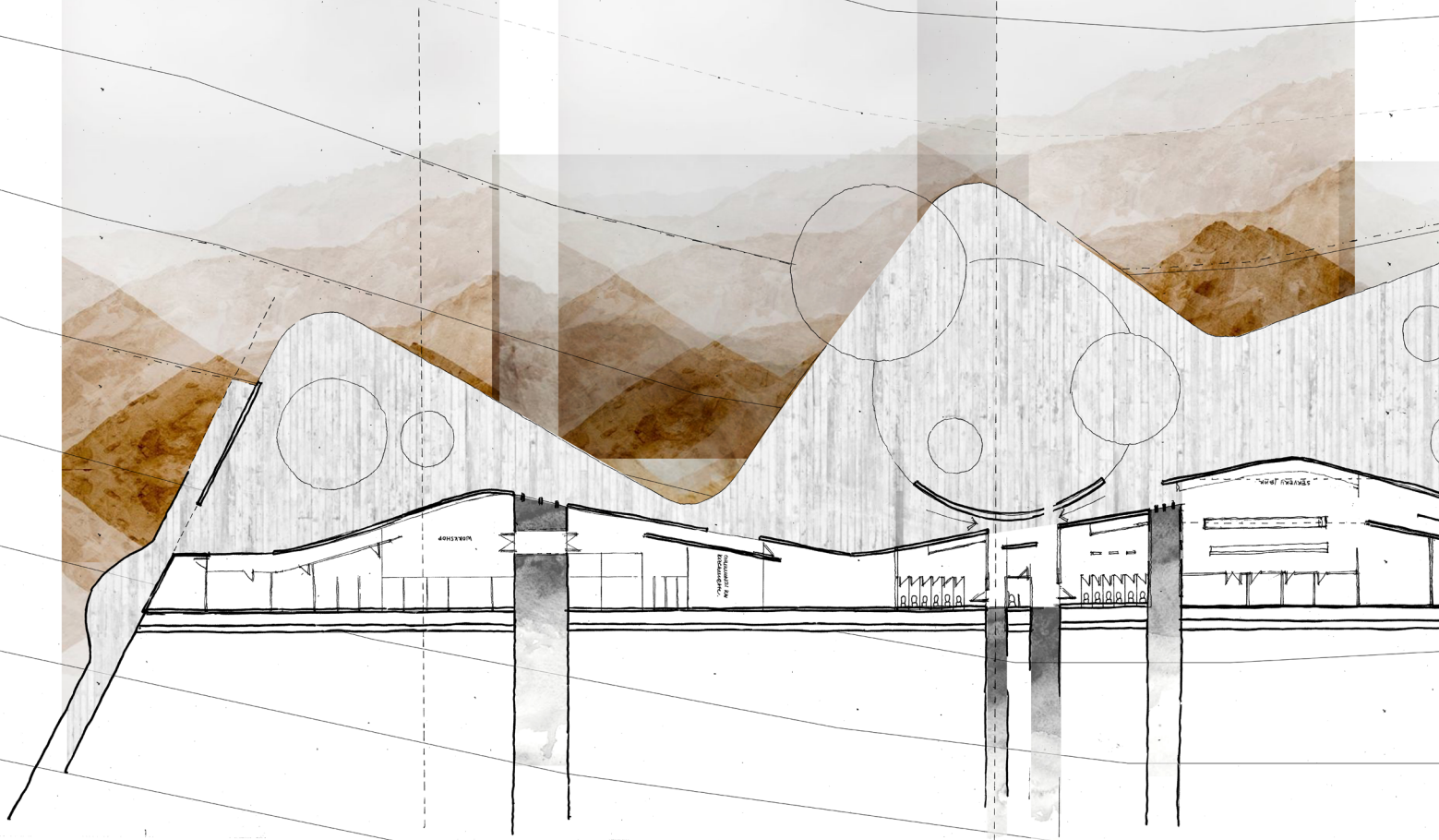


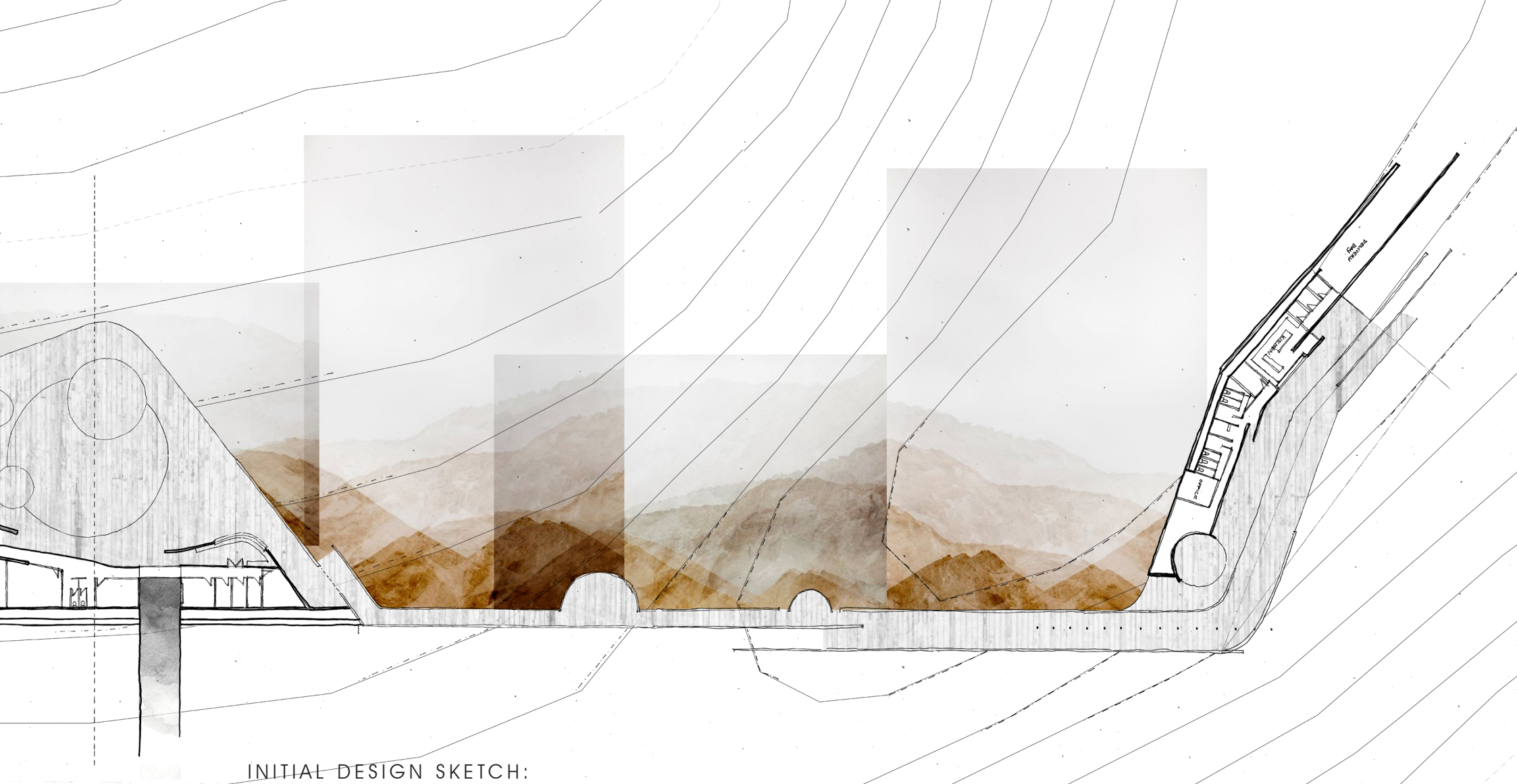


INTERPRETATION CENTRE FOR ADAMS CALENDAR

SITE PLAN : SCALE 1:200

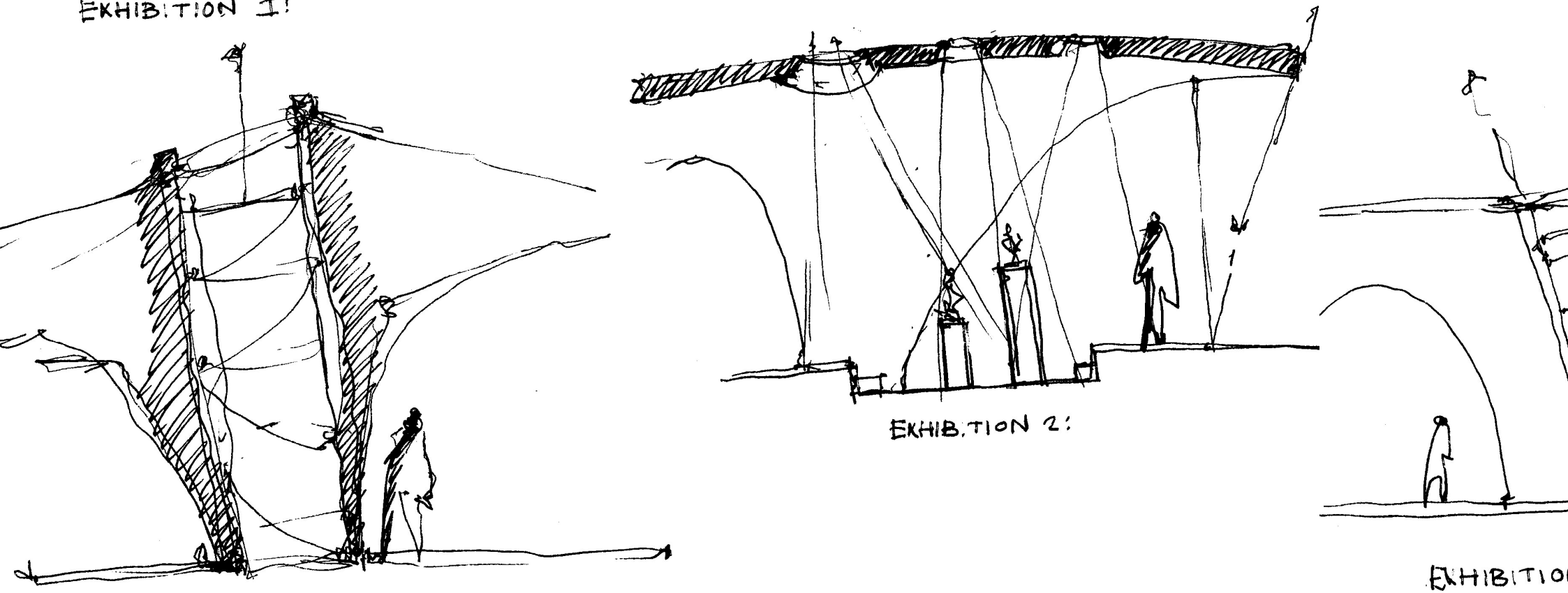






INITIAL DESIGN SKETCH:
THE FLOOR PLAN OF THE ARRIVAL SPACE AND THE INTERPRETATION CENTRE. THE OVERLAPPING OF THE CONCEPTUAL AND MYTHOLOGICAL LINES ON THE LANDSCAPE. THE EXHIBITION AS AN ONGOING TIMELINE OF DISCOVERY IN THE LANDSCAPE. CIRCULAR EXHIBITION SPACES ARE AN INDICATION THAT THERE IS NO DEFINITE START OR ENDING TO A NARRATIVE, BUT ONLY A MOMENT OF VISION WITHIN THE PLACE

72.Initial design sketch. Author, 2019



THE INTERPRETATION CENTRE AS THE TOOL FOR UNDERSTANDING.

On arrival at the building, the visitor enters the curio shop and information centre. Here the visitor receives a guide map to orientate herself in the landscape. The arrival space faces northeast and across to the workshop. Here the choreographed journey begins, where the visitor is led into an open walkway, which is sunken a meter deep into the landscape. The artful trick is to create the experience of being inside an in-between space in the landscape.

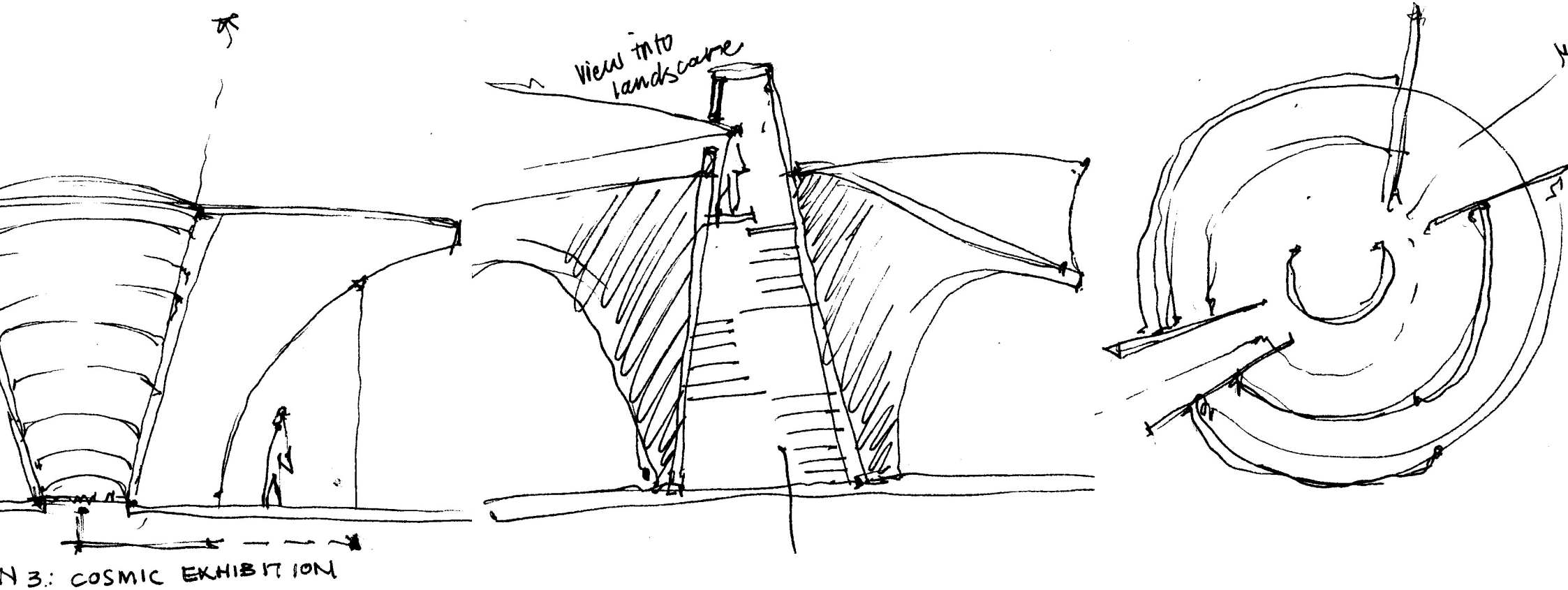
The open walkway gradually slopes to the main entrance of the interpretation centre, which is designed to pull the visitor around a corner, revealing an open reception area. From here on the exhibition route guides the visitor through different exhibits which voice and showcase the different theories and narratives surrounding Adam's Calendar.

Exhibition 1: Stones that speak

In this exhibition area, information about the stones of the Workshop and Adam's Calendar is showcased. The exhibition surrounds a spiral staircase where the visitor is guided to the roof of the interpretation centre to view the landscape.

Exhibition 2: African myths and legends.

South African visionaries and narratives are voiced in this exhibition space. A small light shaft in the roof grow larger towards the ground. Artefacts which tell the stories of the Queen of Sheba, working elephants and other African legends are displayed in the centre of this space.



Exhibition 3: Cosmic exhibit

The cosmic exhibition is open to the elements above, with a large circular opening in the roof. In this exhibition area the visitor is encouraged to look up at the sky without any visual on the surrounding landscape. Stories of the celestial bodies and their possible significance in Adam's Calendar are revealed. A blackwater pool in the centre of the exhibition space reflects the heavens during night and day revealing different images to the visitor over the span of a year.

Exhibition 4: Celestial beings

An exhibition space filled with mysteries and mythical ideas. In this space the Annunaki narrative and the presence of cosmic beings in the ancient times are explored. The visitor is vertically elevated with a ramp to a meter below the landscape. The visitor can therefore only partially view the surroundings, which is directed towards the calendar over the hill.

Exhibition 5: Sounds of silence

A labyrinth-like space designed to encourage the visitor to meander and evoke contemplation and meditation, as the visitor walks in the space.

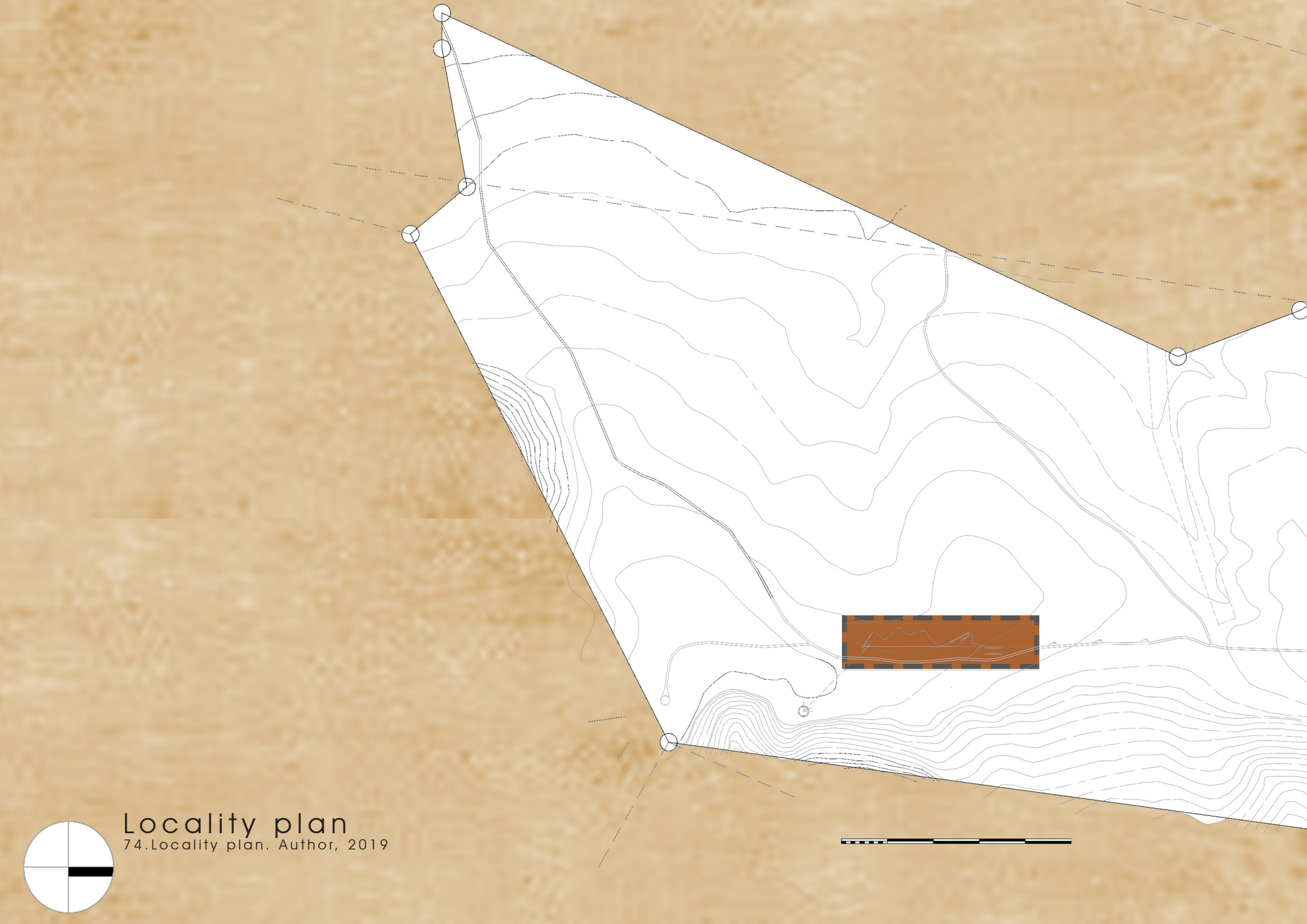
Exhibition 6: Art exhibition

A larger space for non-permanent art exhibitions and explorations from different people over the world. A space where the different perspectives on the ancient past, it mysteries and how Adam's Calendar flirts with these ideas, are voiced.

Exhibition 7: Interpretation exhibition

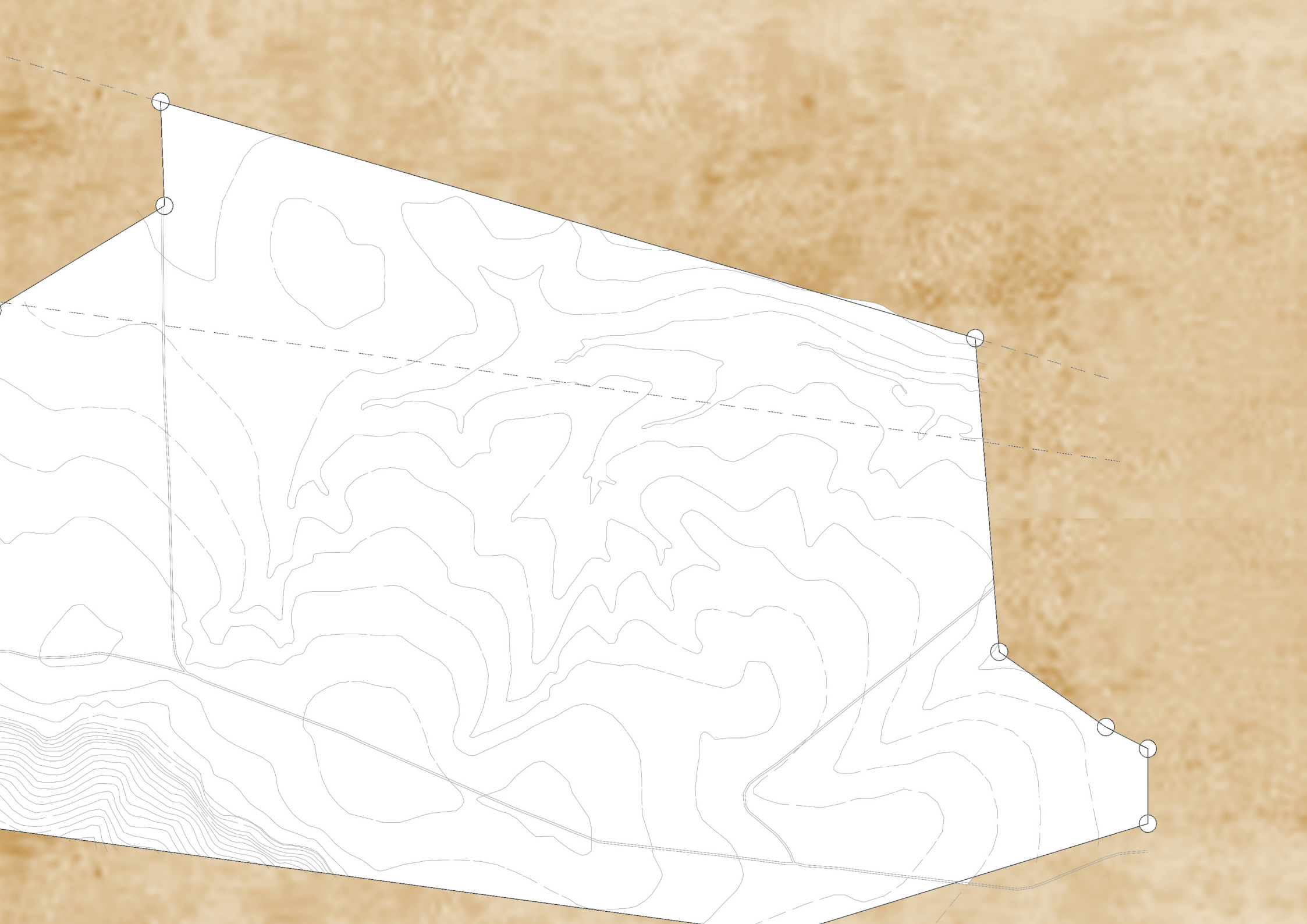
The last space is meant to become space of calmness and contemplation. Completely cut off from the surrounding landscape, the visitor is left to meditate on all the ideas and narratives before emerging from the artifice into the landscape towards the centrepiece.

73.series of sketches exploring the exhibition spaces. Author, 2019



Locality plan

74.Locality plan. Author, 2019



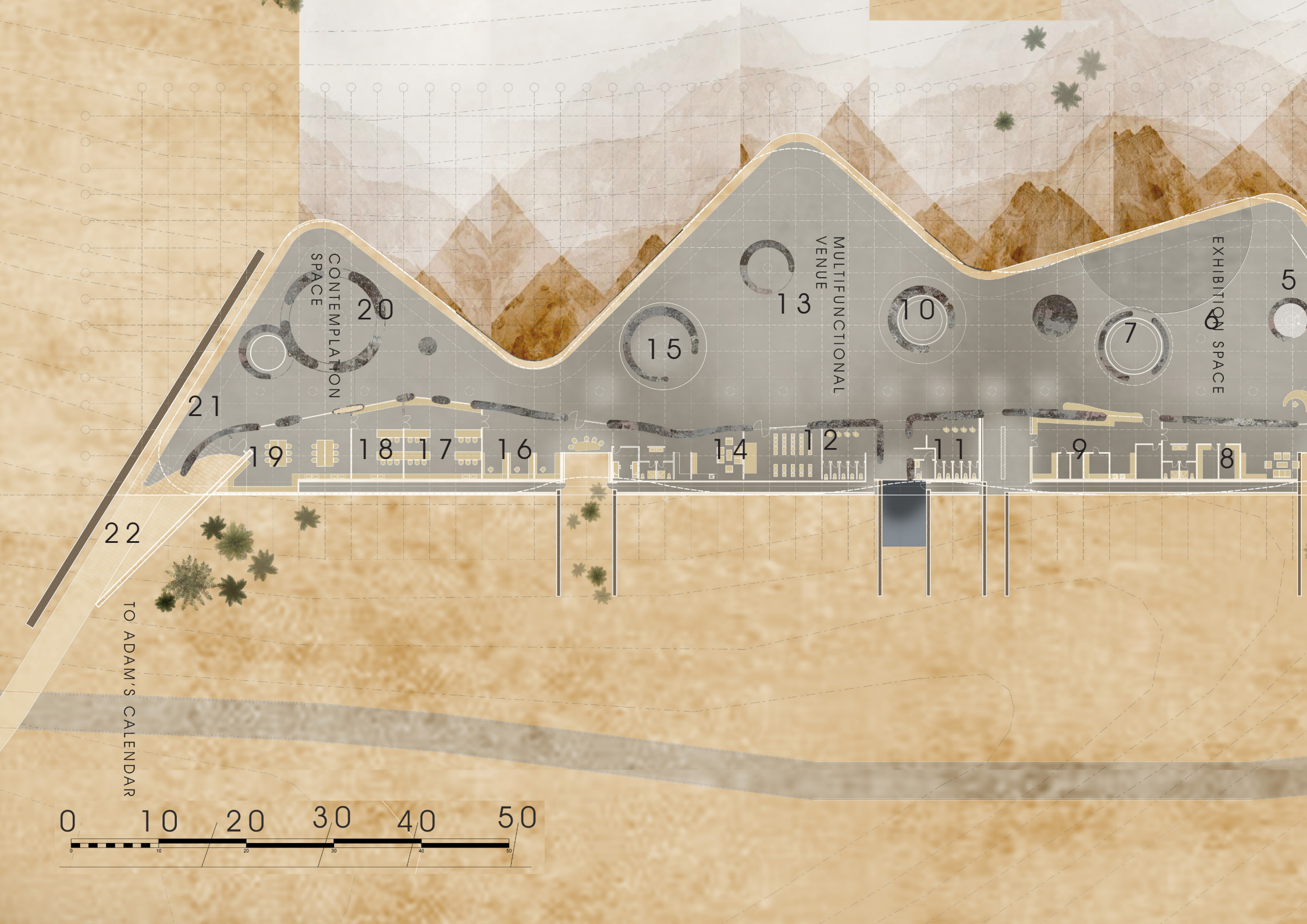

5
INTERPRETATION CENTRE
6
WALKWAY TOWARDS ARRIVAL SPACE
10
7
TOWARDS ADAM'S CALENDAR
0 10 20 30 40 50
8
9
VIEWPOINT OF ADAM'S CALENDA
TOWARDS BARBERTON VALLEY
11
TOWARDS ESCARPMENT VIEWPOINT



SITE PLAN

1. PARKING
2. WALKWAY TO ARRIVAL SPACE
3. THE WORKSHOP
4. ARRIVAL SPACE
5. THROWN INTO THE LANDSCAPE
6. INTERPRETATION AND RESEARCH
7. TO THE CENTREPIECE
8. MOMENT OF REVELATION
9. ADAM'S CALENDAR
10. MEANDER BACK TO THE ARRIVAL SPACE
11. EXIT ROUTE DOWN THE ESCARPMENT TO BARBERTON

75.site plan. Author, 2019

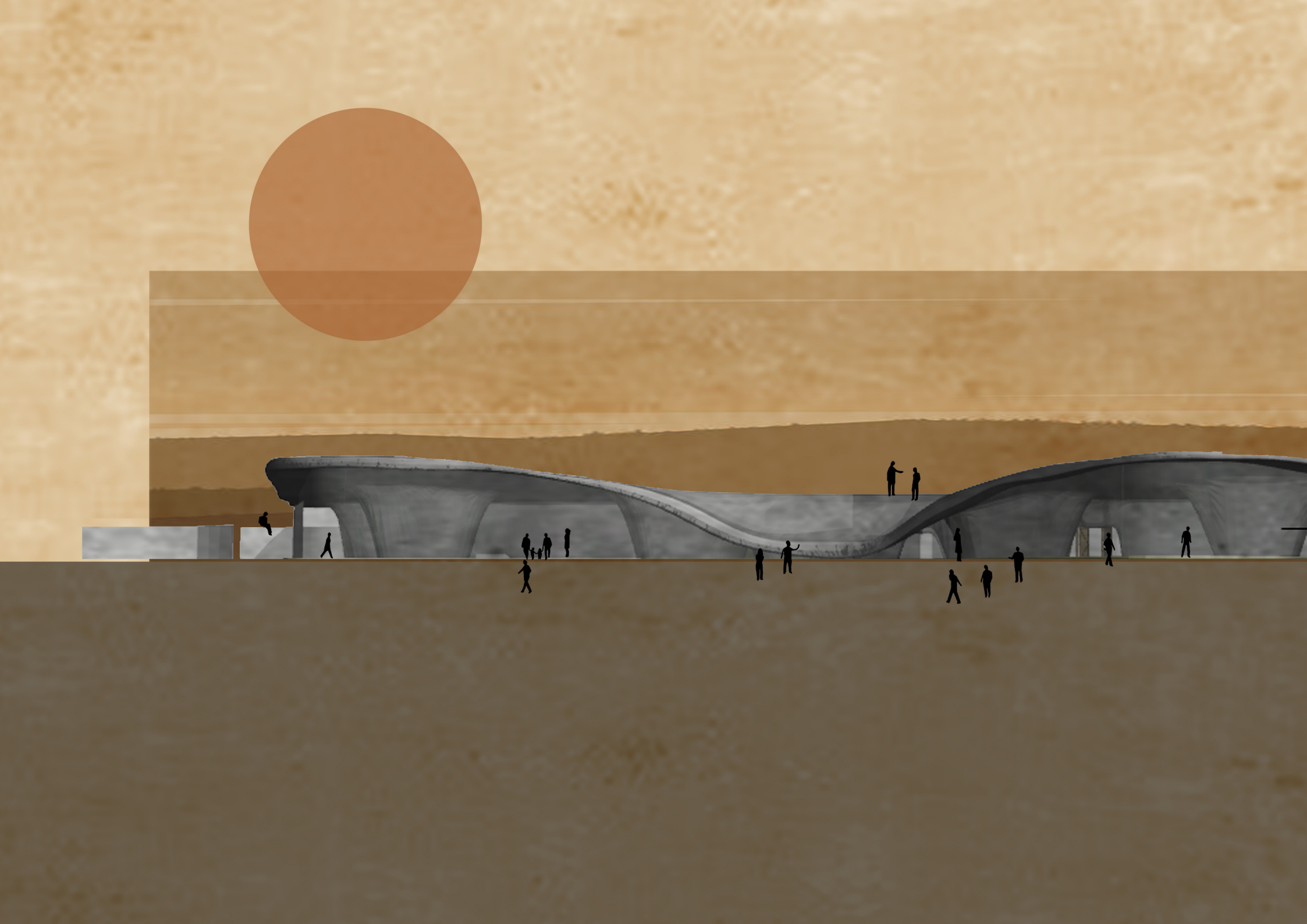

CONTEMPLATION SPACE
MULTIFUNCTIONAL VENUE
EXHIBITION SPACE
TO ADAM'S CALENDAR
20
13
10
7
5
15
21
19
18
17
16
14
12
11
9
8
22
0
10
20
30
40
50



FLOOR PLAN

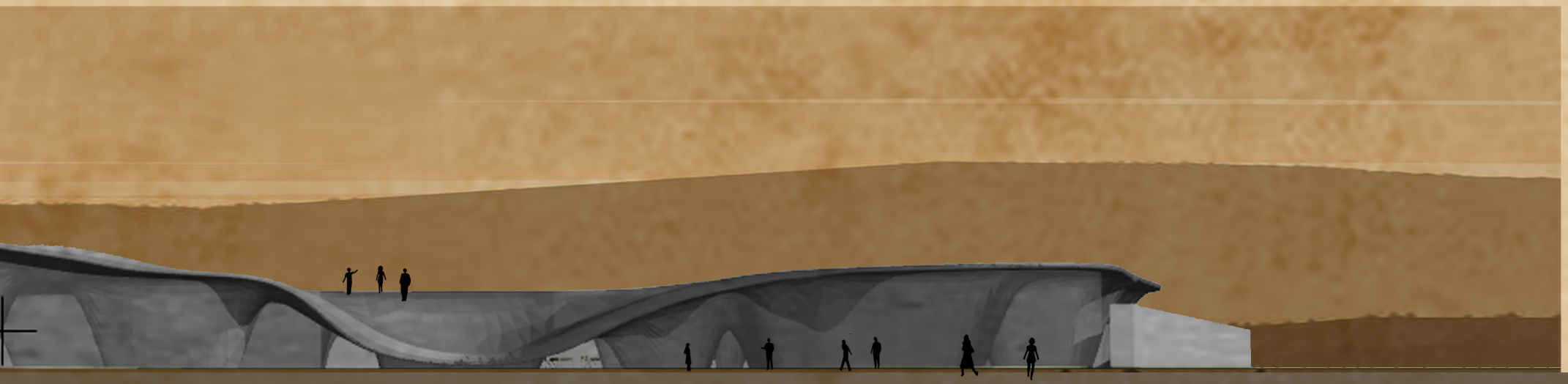
1. ARRIVAL SPACE
2. THROWN INTO THE LANDSCAPE
3. ENTRANCE TO INTERPRETATION CENTRE
4. RECEPTION
5. EXHIBITION 1: STONES THAT SPEAK
6. EXHIBITION 2: AFRICAN MYTHS AND LEGENDS
7. EXHIBITION 3: COSMIC EXHIBITION
8. STAFF QUATERS
9. KITCHEN
10. EXHIBITION 4: CELESTIAL
11. PUBLIC TOILETS
12. SEMINAR ROOM
13. MULTIFUNCTIONAL VENUE SPACE
14. COMMUNAL SPACE RESEARCH FACILITY
15. EXHIBITION5: SOUNDS OF SILENCE
16. COMPUTER LAB
17. WORKSHOP
18. METAL LAB
19. SOIL LAB
20. EXHIBITION6: NON-PERMANENT ART
21. EXHIBITION7: CONTEMPLATION SPACE
22. THROWN INTO THE LANDSCAPE: TOWARDS ADAM'S CALENDAR

76.Floor plan, Author, 2019

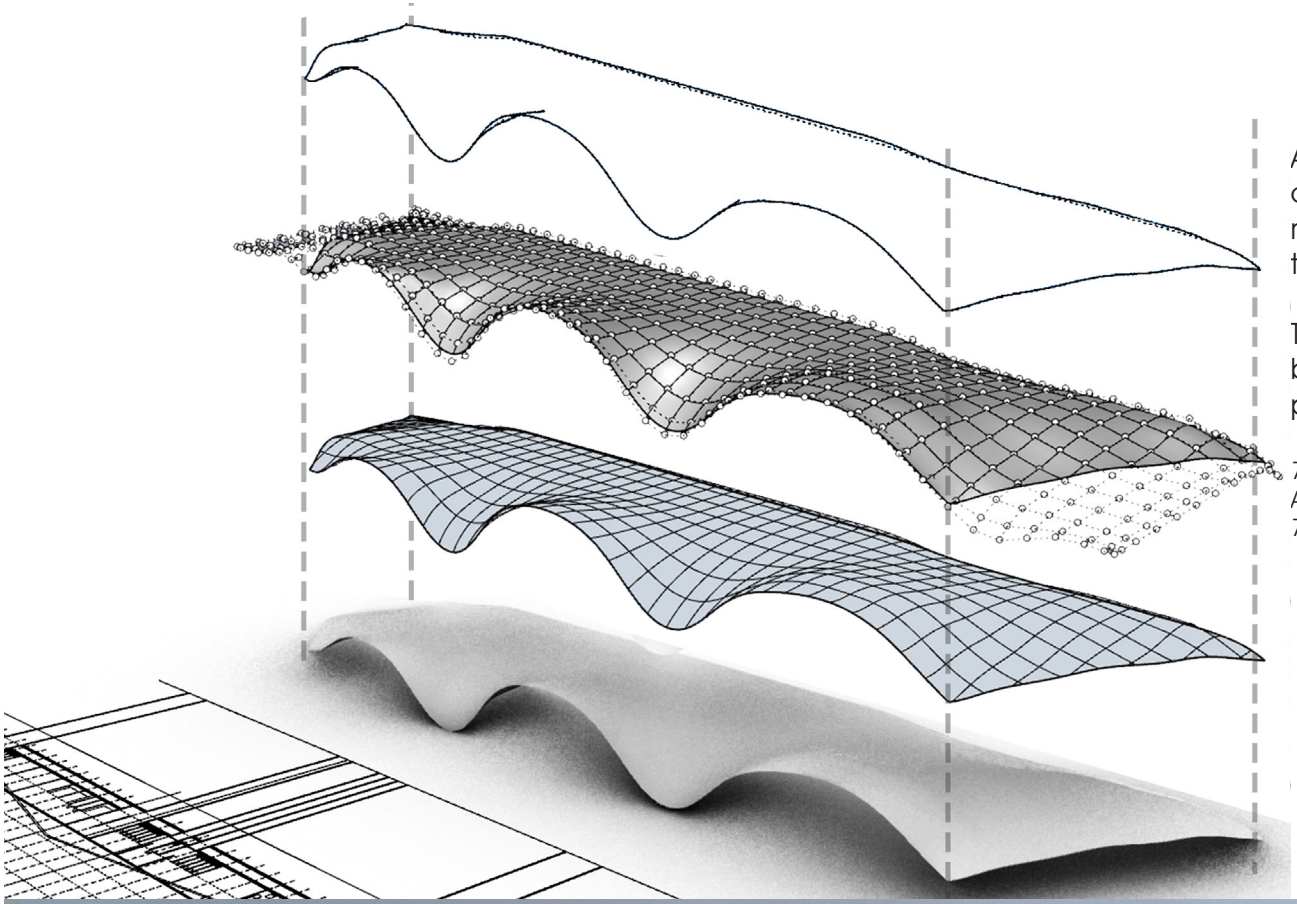


WESTERN ELEVATION

77.Western elevation, Author, 2019



A STRUCTURE OF LANDSCAPE
explorative model

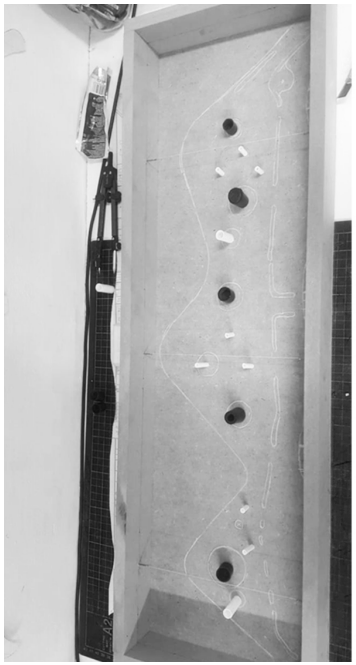


As explored in the precedent study of Ensemble studio on structures of landscape, there is the possibility to make use of alternative construction techniques in order to sculpt the proposed development out of landscape.

The artifice as ingenuity, an artful skill, is explored in the blurring between roof and floor during the construction process. (see technical discourse)

78. Extrapolation of the design development of the undulating roof. Author, 2019
79. Explorative model 2 from above. Author, 2019





[1] SETTING OUT THE HEIGHTS AND LINES OF THE STRUCTURE



[2] MORPHING THE NEGATIVE SPACE OF THE BUILDING BENEATH



[3] SMOOTHING THE SURFACE AND DETAILING

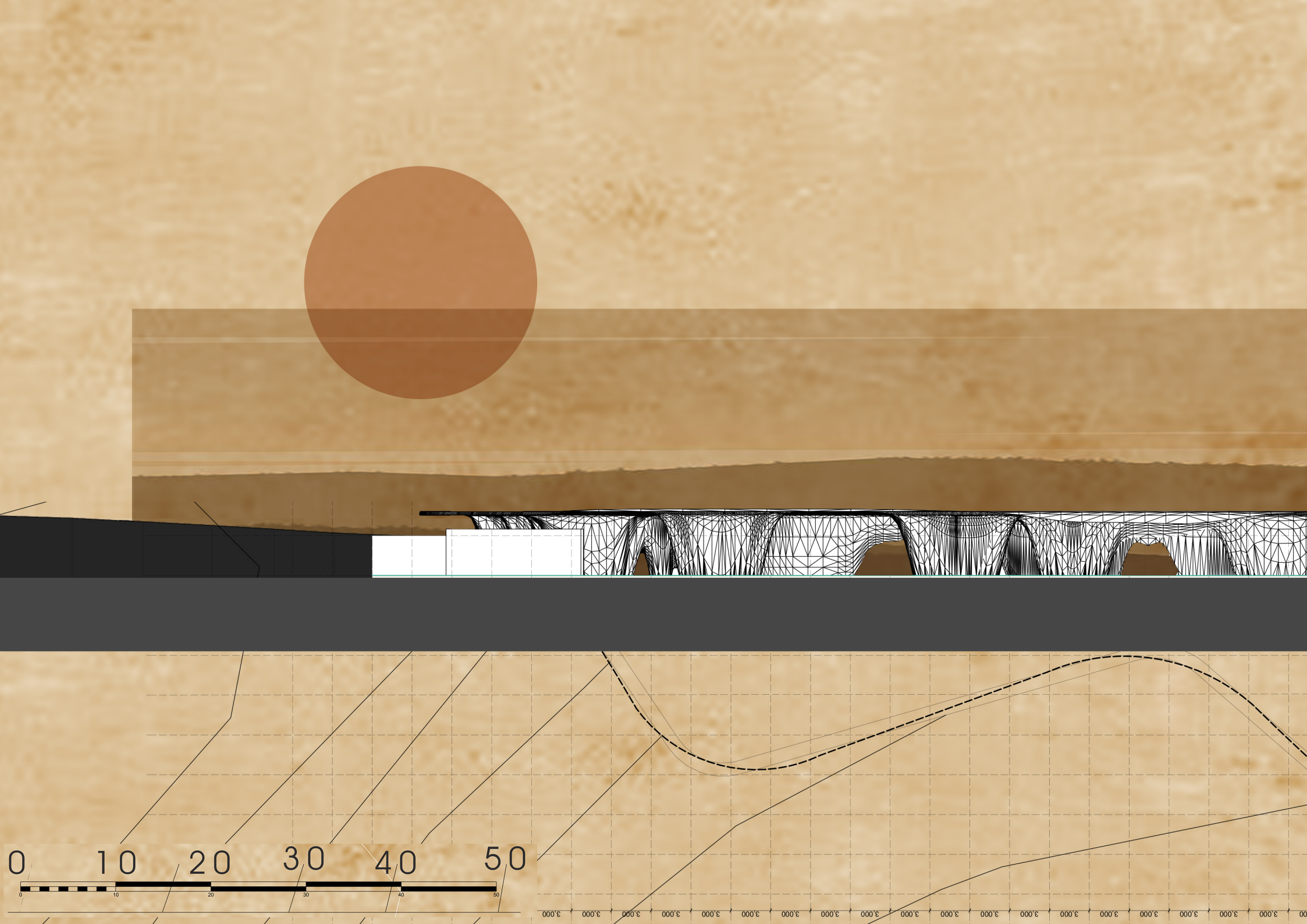


[4] SHAFT DESIGN AND THE EXHIBITION SPACES WITHIN



[5] AFTER REINFORCEMENT AND DAMP PROOF MEMBRANE HAS BEEN INSTALLED, THE ROOF IS POURED ONTO THE NEGATIVE SPACE

80. PHOTOGRAPHIC ANALYSIS OF SCULTPTING THE MODEL, Author, 2019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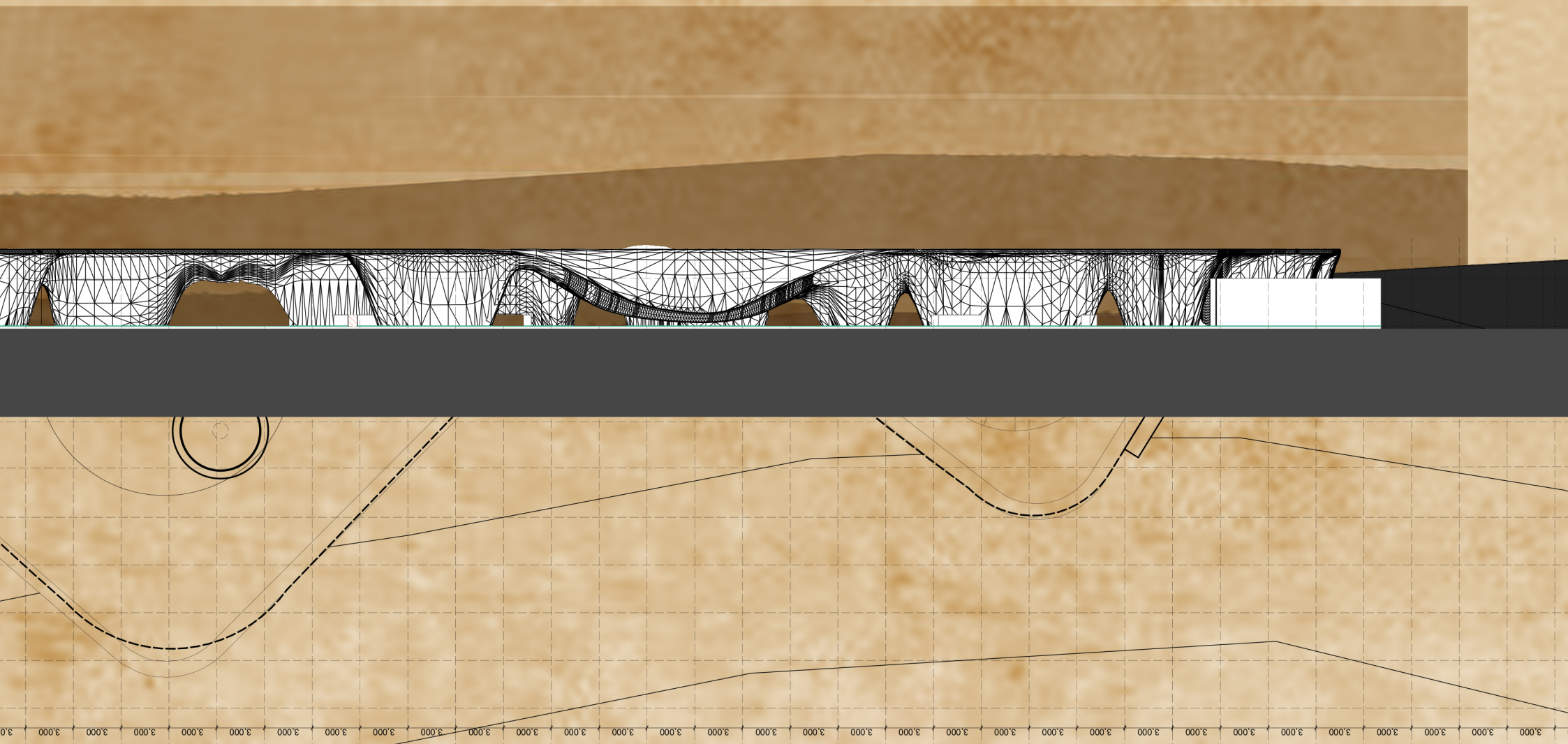
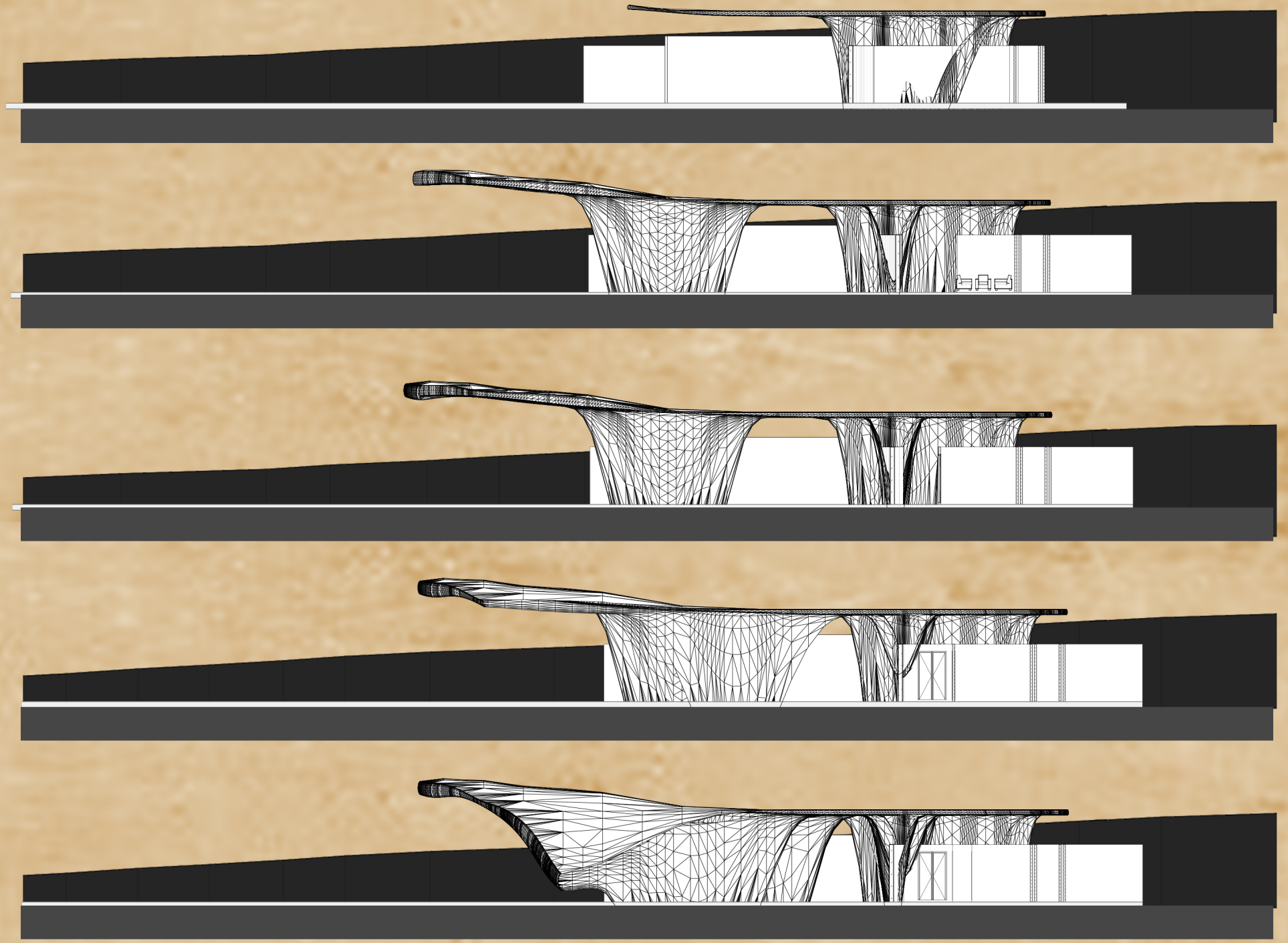
LONG SECTION

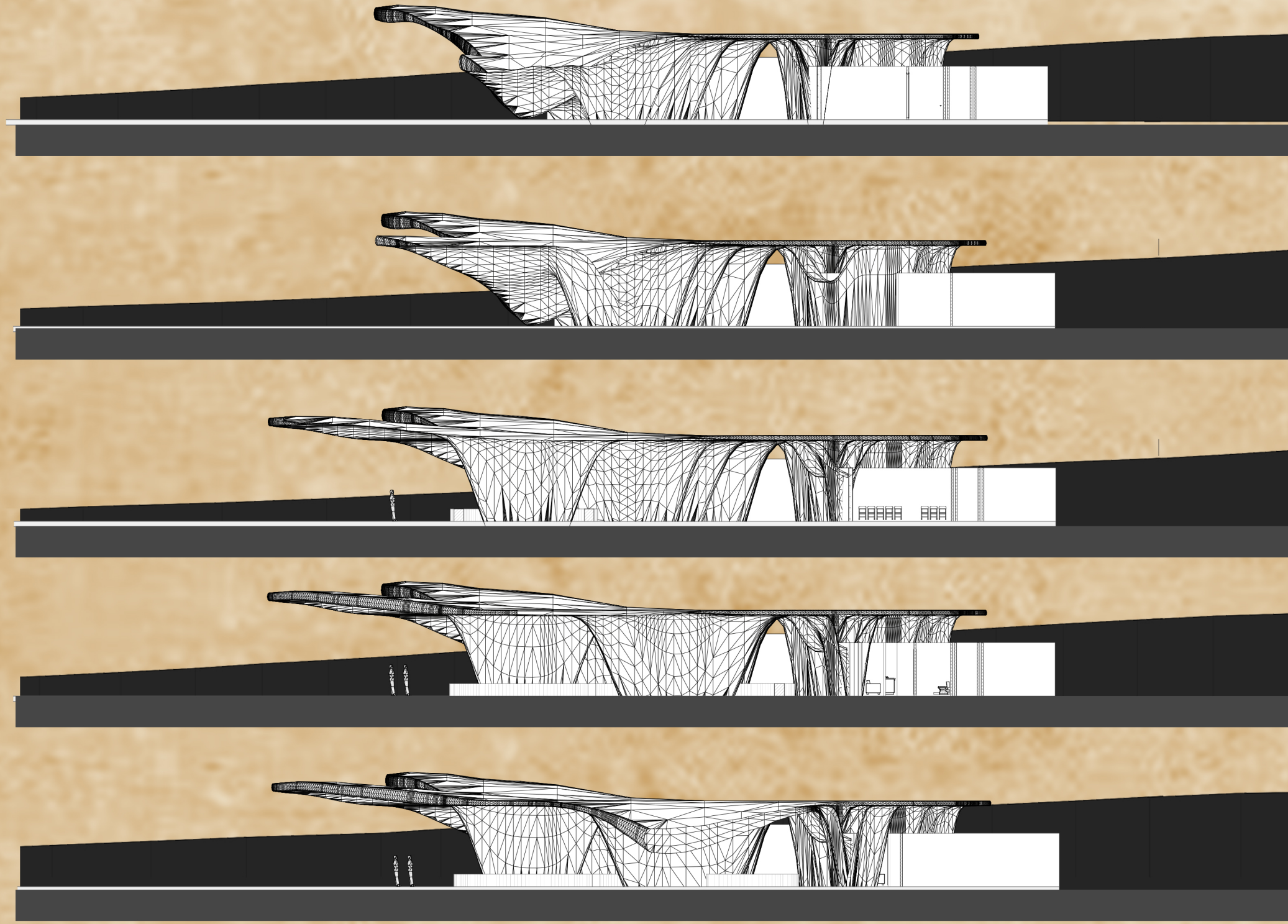
81. section, author, 2019



A SERIES OF SHORT SECTIONS

82. section. AUTHOR, 2019





EXTERIOR PERSPECTIVE



CONCLUSION

To conclude, there are many different elements to a site, which gives it the 'spirit of the place'. Where both *spatial* and *atmosphere* are present in the place, as well as time as the dimension of constancy and change and thus makes space and atmosphere parts of a living reality which, at any moment, is given as a particular place and fundamentally as a *Genius Loci* (Norberg-Schulz, 1979: 32).

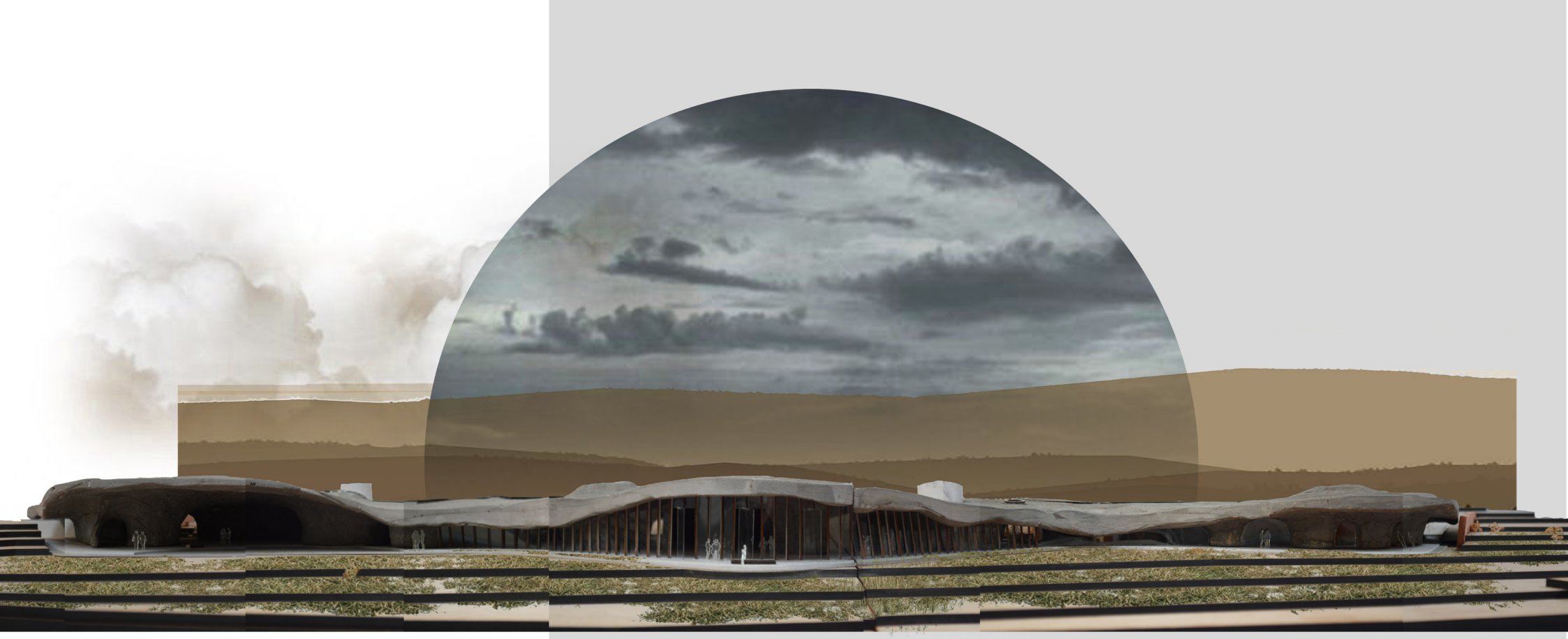
The work of artifice is the tool for preserving all the different narratives of heritage, enriching the experience of our cultures through means of design. "In the work of art man praises existence…" (Norberg-Schulz 1980:185). In the work of artifice, humankind may praise its existence.

83. perspective 1, author, 2019

INTERIOR PERSPECTIVE

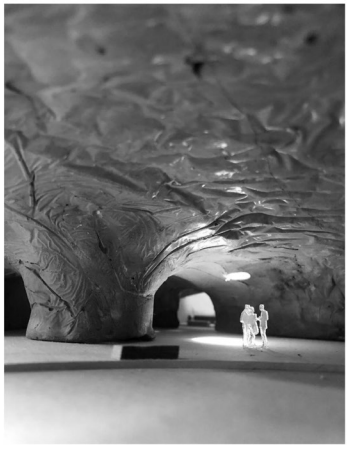


84. perspective 2. Author, 2019



ELEVATION

INTERPRETATION | GATHERING| CONTEMPLATION









GATHERING

VENUE | COMMUNAL SPACE | COMMUNITY



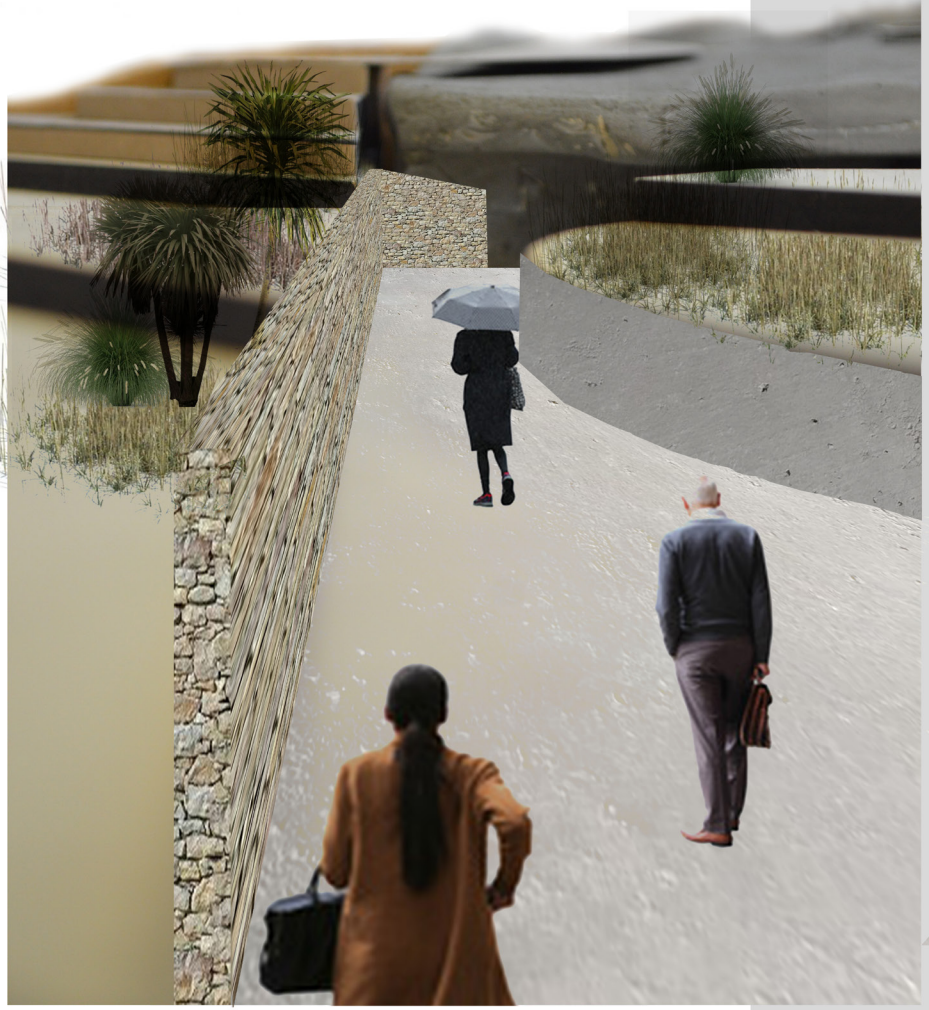
SECTION A-A

IMMERSED WITHIN THE LANDSCAPE



SECTION B-B

IMMERSED WITHIN THE LANDSCAPE





LANDSCAPE

ROUTES | PAUSE SPACE | EXPERIENCE



UNDULATION

COMMUNAL SPACE | EXHIBITION SPACE | LANDSCAPE



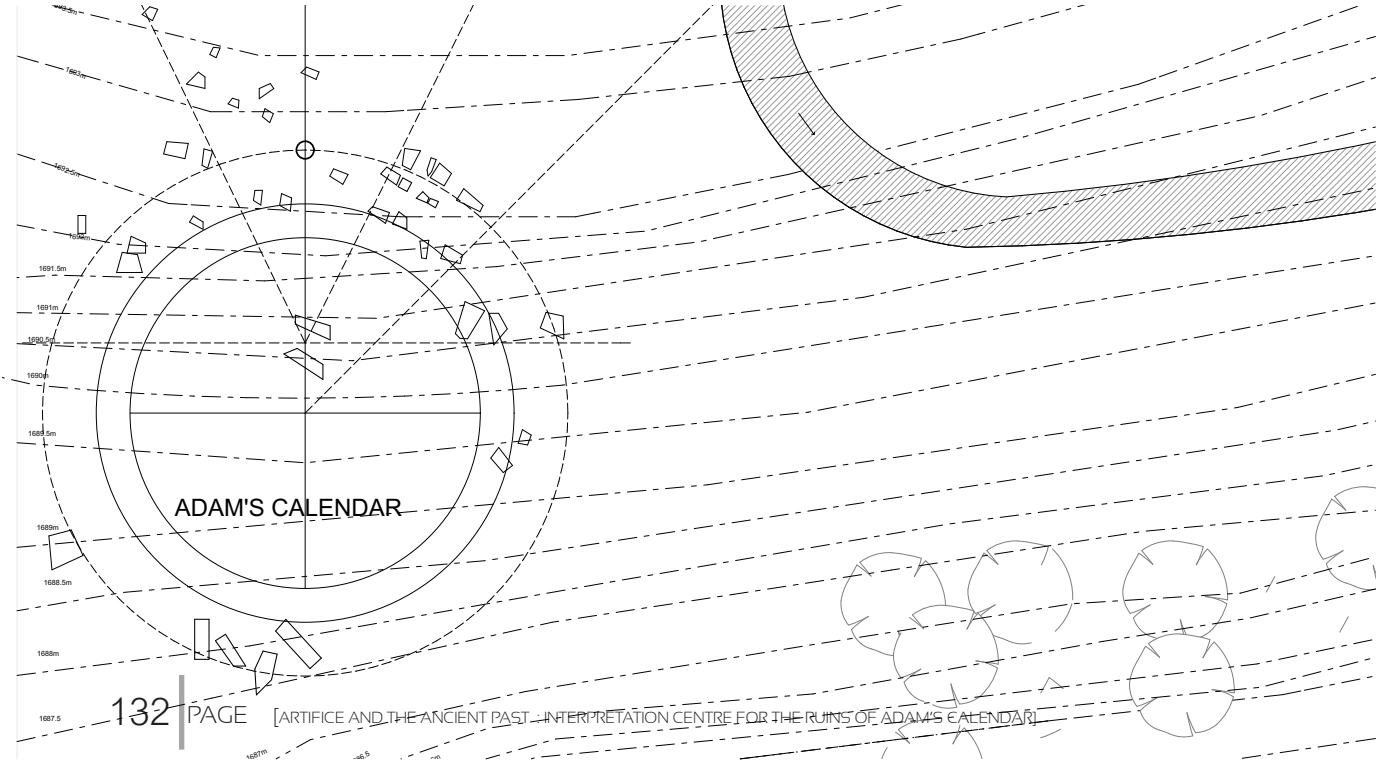
7

CHAPTER

7 | TECHNICAL INVESTIGATION

[1] ENVIRONMENT
[2] THE PROBLEM
[3] USER
[4] STRUCTURAL PRECEDENT 1
[5] STRUCTURAL PRECEDENT 2
[6] THE RESPONSE
[7] STRUCTURAL SYSTEM AND MATERIALITY
[8] BUILDING SERVICES
[9] DETAILING
[10] CONCLUSION
[11] CONSTRUCTION DRAWINGS

In the same way that the design flirts with the fine line between fact and fiction, the structural approach explored alternative structural approaches and how such techniques could simultaneously celebrate our relationship with the natural environment, while undermining our perceptions. In which ways may sophisticated construction techniques be used in subversive architecture? In the modern tradition there is a strong emphasis on 'honest construction' and the 'clarity of the structural system', but in this case the theoretical stance and design approach focussed the attention of the designer on that which is hidden or obscured. The following section includes precedent studies which reveal some aspects of this approach and tries to show how novel techniques (and the creative combination of established methods] contributed to the technical resolution of a design immersed in the interplay between fact and fiction.

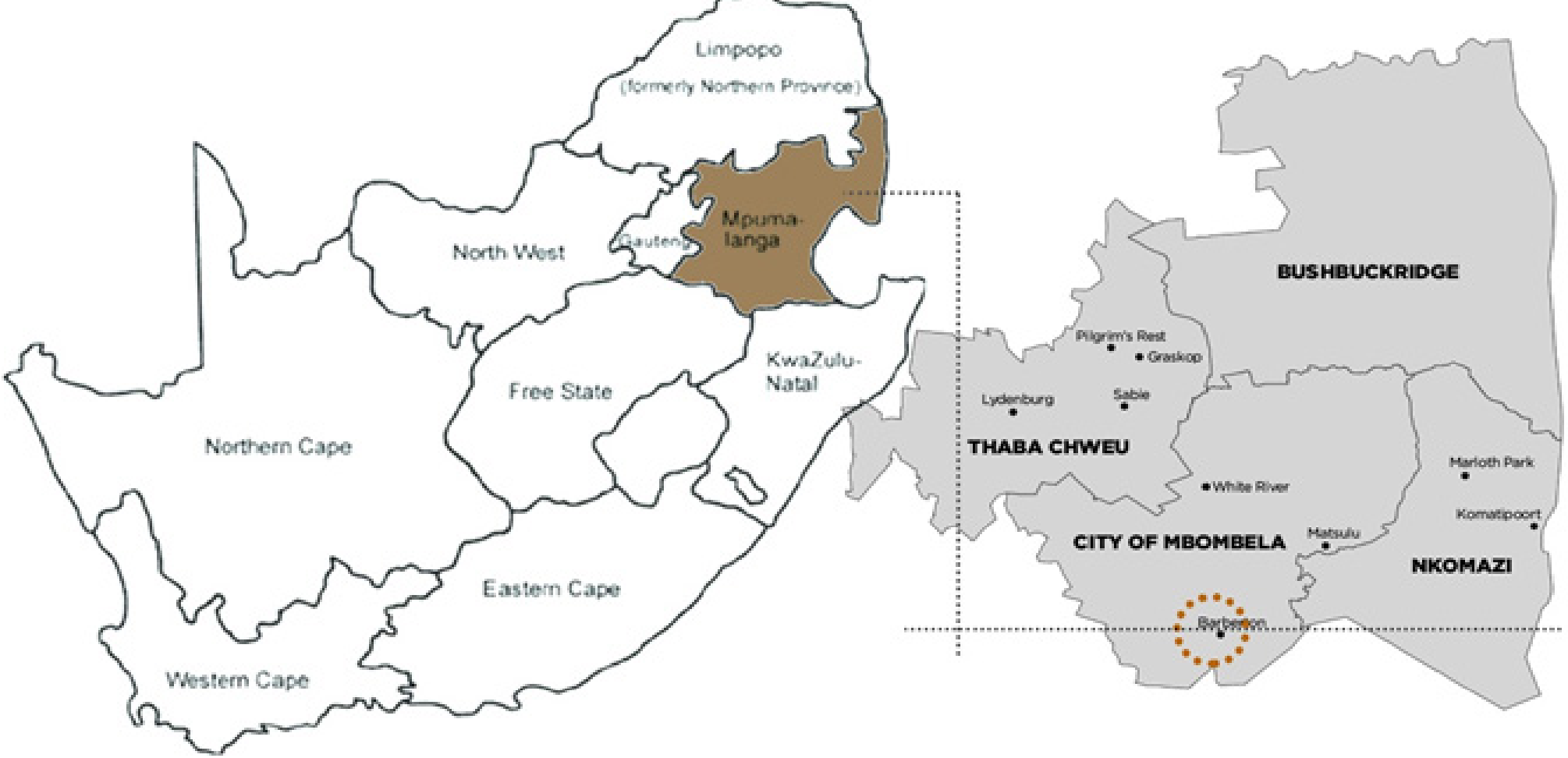


FACTORS THAT INFLUENCE THE LOCATION OF THE PROPOSED DEVELOPMENT

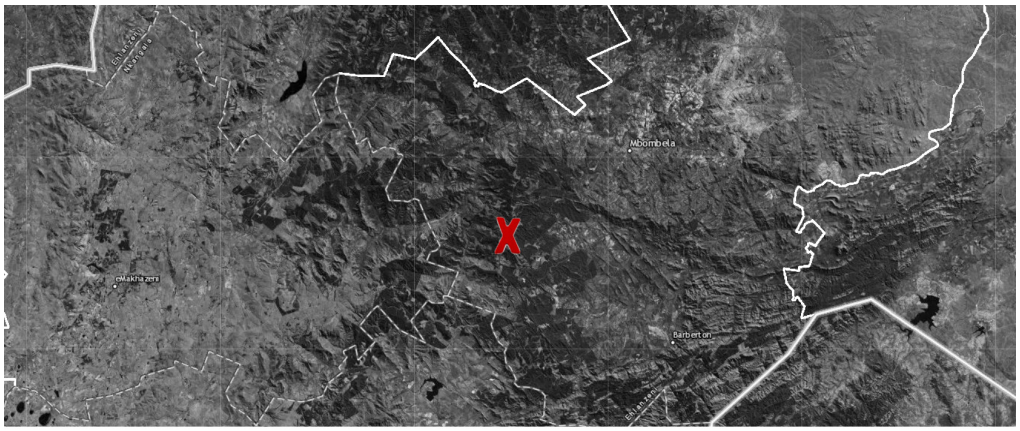
All aspects of this study stem out of the different meanings or interpretations, which are drawn from the possible significant ancient site, called Adam's Calendar. The absurdly shaped and seemingly intentionally placed stones, which are scattered along the escarpment overlooking the Barberton valley, are the source of all inspiration in the design, structural and technical decisions.

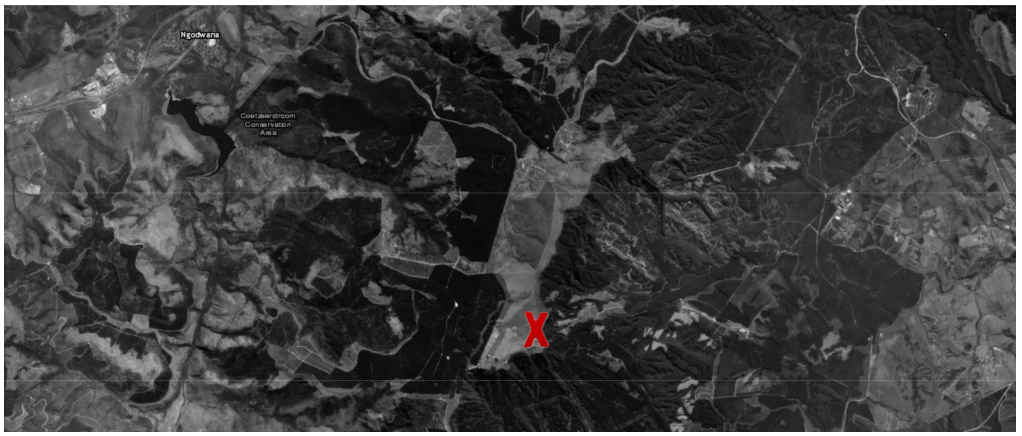
The site for the proposed development has essentially been influenced by the location of Adam's Calendar. Located in close proximity to the contested site, the proposed development will have to comply with all possible regulations which surrounds the site and the Blue Swallow Reserve (the farm Blouswaelvlakte). Access routes, the views of and from Adam's Calendar, the landscape and the 'general' exhibition route towards the calendar, have direct influences on the proposed site. It is close enough to the tourist town, Kaapsehoop and adjacent to the contested site of Adam's Calendar. The client stated over a telephonic interview, that the possibility for a research facility and interpretation centre close to the site is of utmost importance, to conserve and legitimise the Calendar on the escarpment (Heine, 2019).

Site co-ordinates:
25°37' 54.33" S and 30°45' 34.84" E
Elevation above sea level at:
1690m - 1700m
The site on the farm Blouswaelvlakte No 562-JT



85. Location of Kaapsehoop in the city of Mbombela and where it sits in South Africa. Author, 2019
86&87. The location of the contested site in the larger context and the Blue Swallow Reserve. Author. 2019





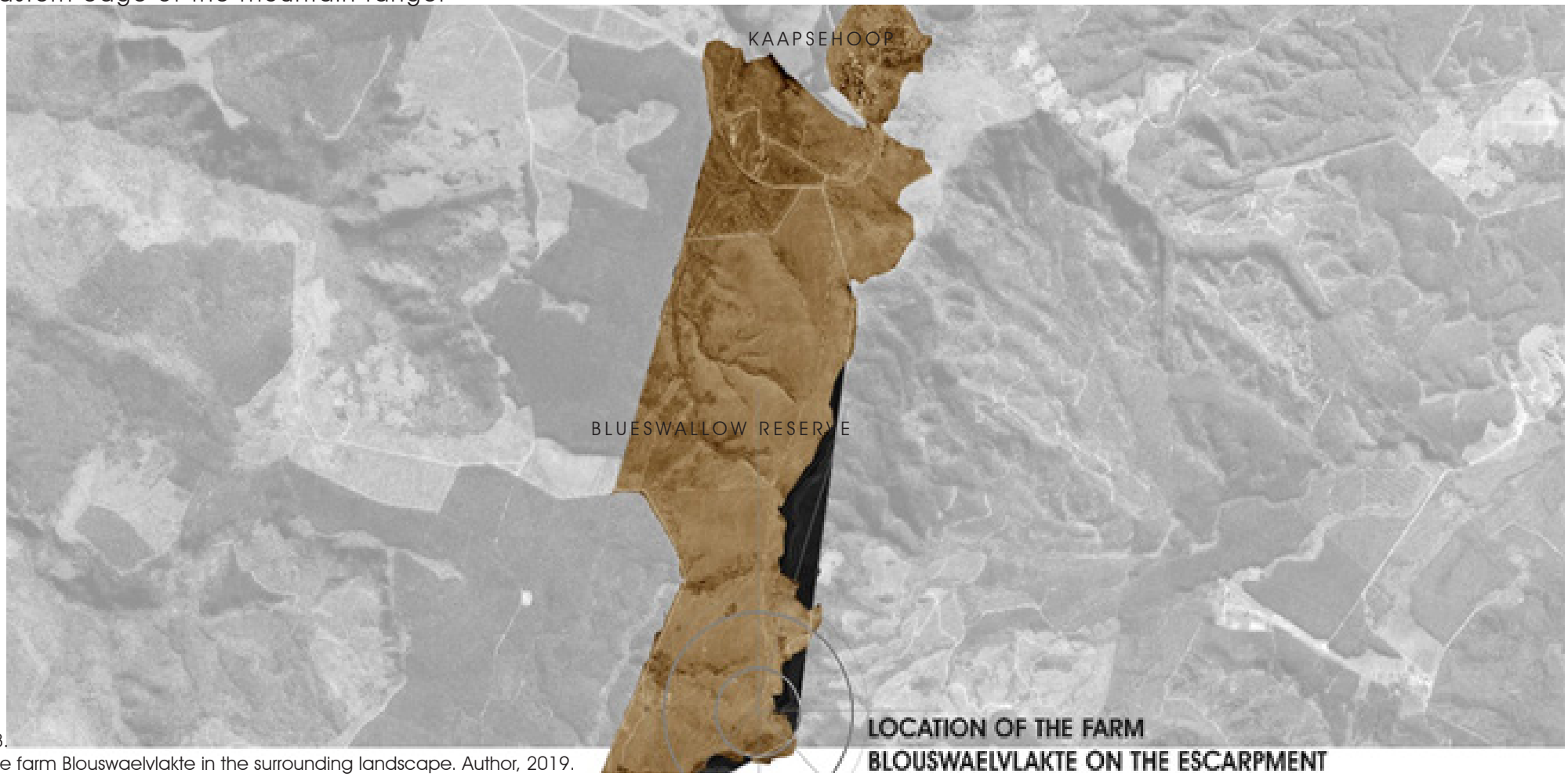
MACRO CONTEXT

The farm Blouswaelvlakte is situated within the Mbombela Municipal district, Nelspruit, Mpumalanga Province. The Mbombela Municipal district is divided into three distinct physiographic regions, which is based on the north-south orientation of the Drakensberg mountain range: the Highveld, the Escarpment and the Lowveld. The City of Mbombela lies on the eastern edge of the mountain range.

The topography ranges from mountainous areas in the western and southern parts, to gently sloping areas in the eastern pasts as well as in the south. The area falls from a height of approximately 1 700m above sea level in the south-western part of the region, to 350m above sea level in the north-eastern part, (Mbombela Development Framework, 2011/2012: 67)

MICRO CONTEXT

The selected site is untouched and is separated from Adam's calendar by the two-track gravel road. A gentle slope towards the west ensures the hiddenness of the proposed development from the significant site. The landscape is vast with magnificent views in all directions.



88.
The farm Blouswaelvlakte in the surrounding landscape. Author, 2019.

CADASTRAL INFORMATION

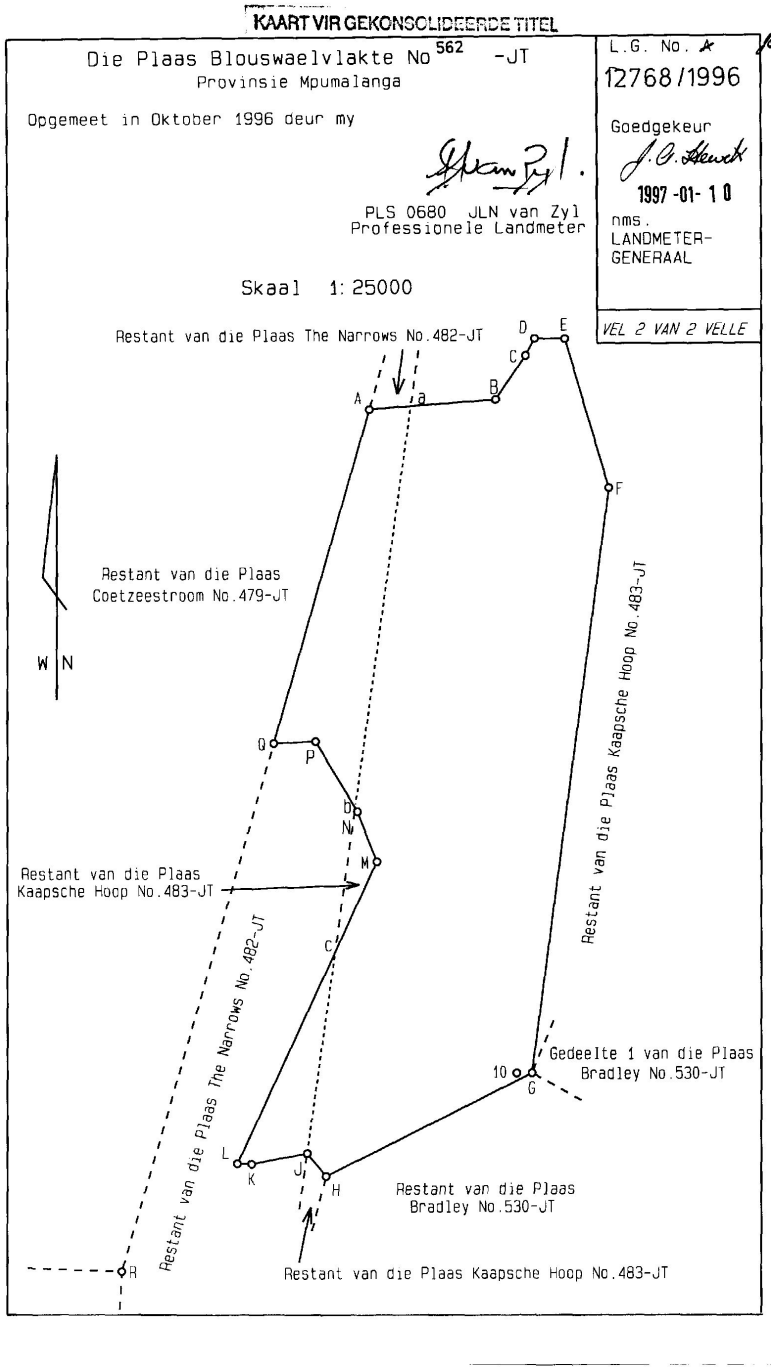
Cadastral information refers to site specific information, which creates the framework in which the proposed development is designed. The regulations, boundaries and geographical influences consist of legislation to the physical condition of the site.

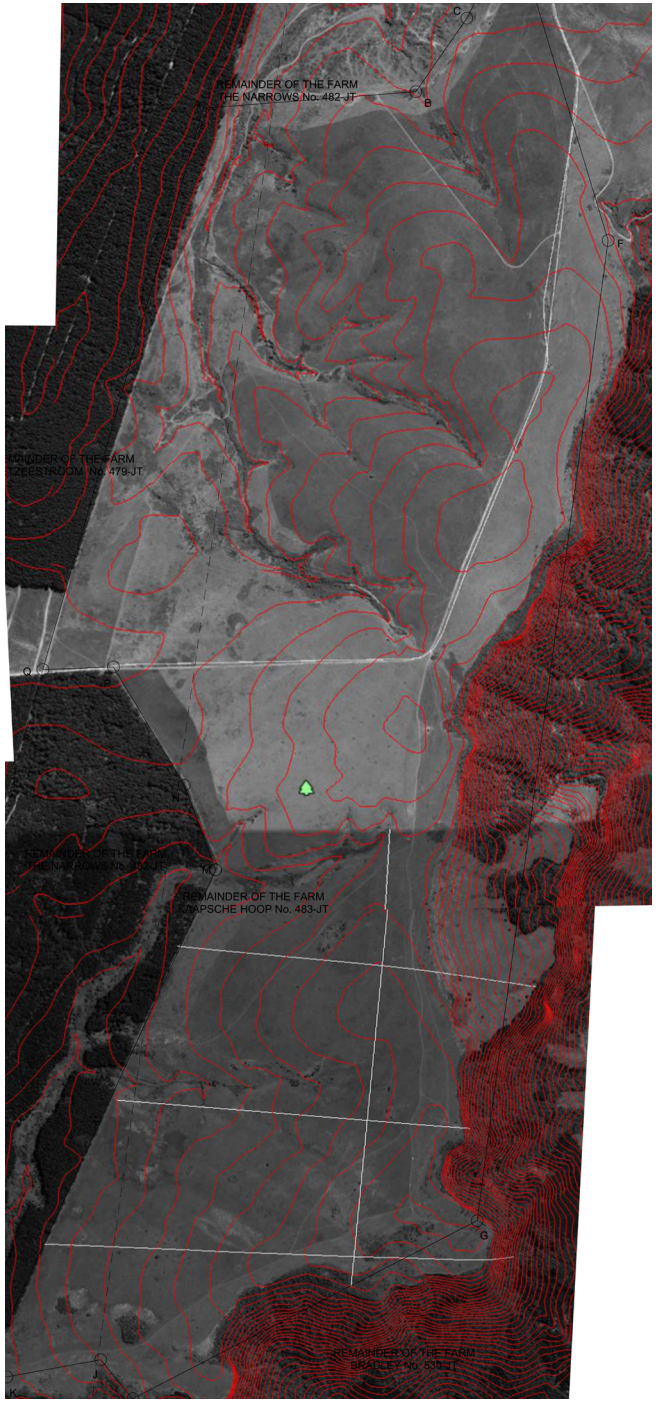
SITE INFORMATION

The selected site is a farm portion as follows:
SG Diagram no 12768/1996
Figure: The original farm SG Diagram shows all sub-divisions of the farm Blouswaelvlakte, including section 3: Die Plaas Kaapsche Hoop, whereon the proposed site is situated.

89. SG. Diagram no 12768/1996 (Surveyor General)
90. The Farm Blouswaelvlakte with GIS contours, Google Earth. Adapted by Author. 2019

SITE INFORMATION	
Erf number	562-JT
Home farm name Description of corner beacons	Die Plaas Blouswaelvlakte A.B.C.F.J.K.L.M.N.P.Q: Iron rod
	D, E: Light steel corner fence post
	G: Hole in sandstone boulder
	H: 30mm Iron bar in concrete beacon
Property area	518 8735 Ha





TOPOGRAPHICAL INFORMATION

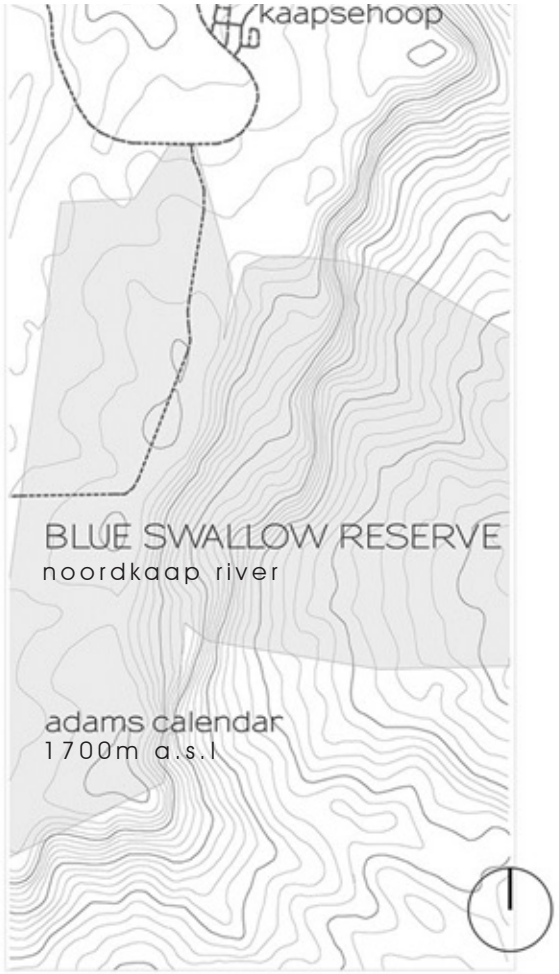
The slope analysis, as received from the National Department of Agriculture, Forestry and Fisheries, presents areas with slopes which vary between smaller than 2% (level to very gentle slopes) and bigger than 20% (steep slopes) (Mbombela Development Framework, 2011/2012: 67).

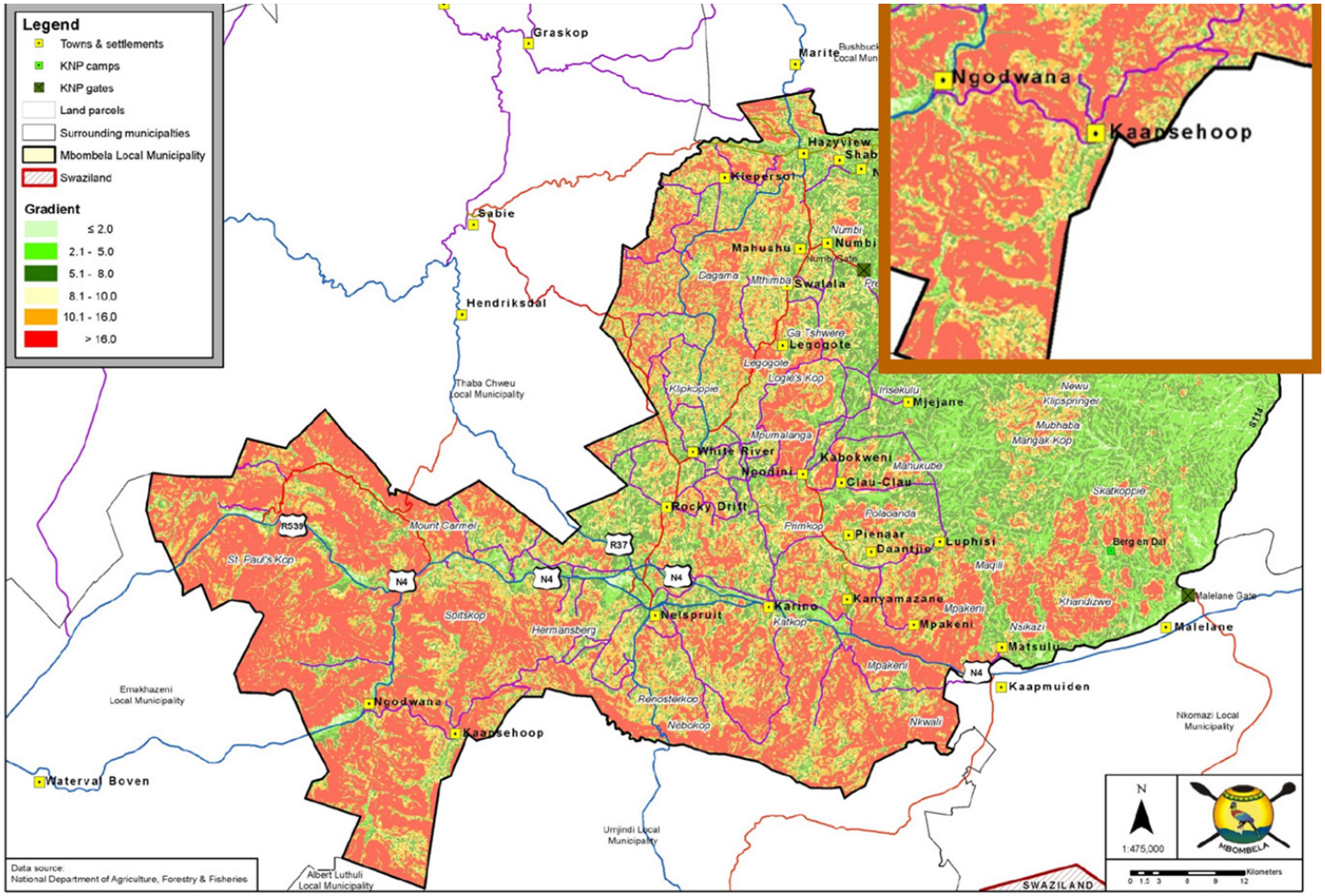
Figure 92 shows a map of the larger context topographical slope analysis of Mbombela. Kaapsehoop is marked in the South-western area of the map.

Where the proposed development is situated, the area consists of a gentle slope. However, a steep 50-meter cliff is just a few metres away, which opens the site to a great view of the surrounding mountains. The building therefore reacts on the broader context, a vast landscape of mountains and hills in the Baberton Valley and Komatiland forestry farms.

91. The site location above sea level. Access routes and the Noordkaap river. Adam's Calendar Located on the escarpment. Author, 2019.

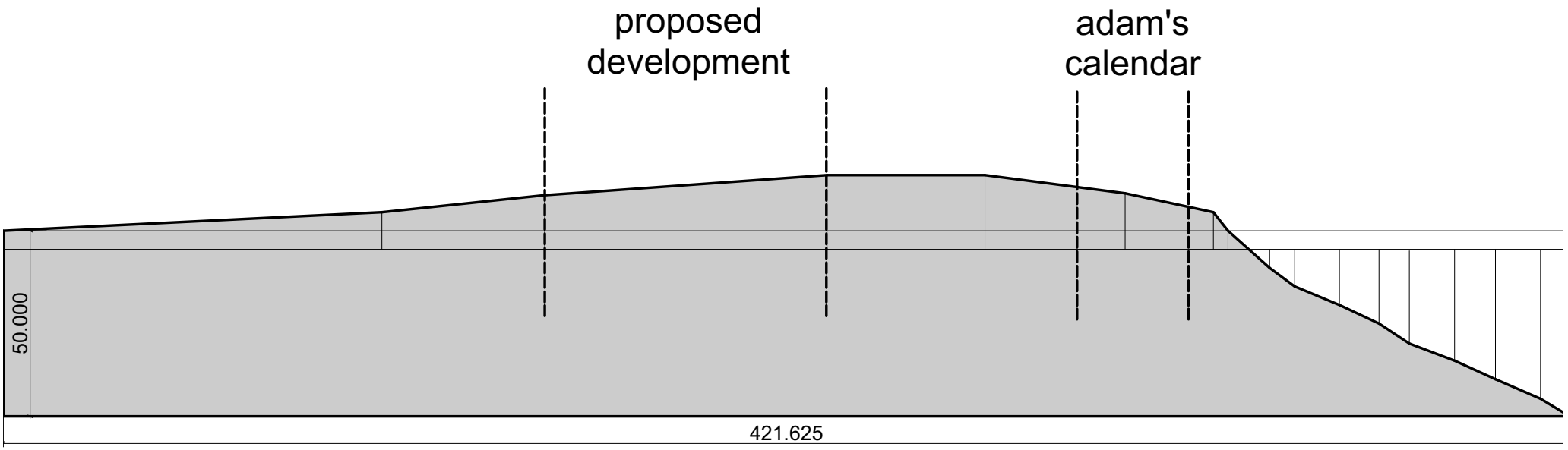
92. Topographical slope analysis of the larger context (Mbombela Development Framework, 2011/2012)







93. Slope analysis through the proposed site, showing the gentle slope of the plateau. Author. 2019
94. Slope analysis through site showing the area for the proposed development to Adam's Calendar and the escarpment. Author. 2019



HERITAGE AND CONSERVATION STATUS

Adam's Calendar is protected as part of the Blue Swallow reserve. Blue Swallows are rare birds which nests in the area surrounding Kaapsehoop and have been part of the biodiversity of the escarpment.

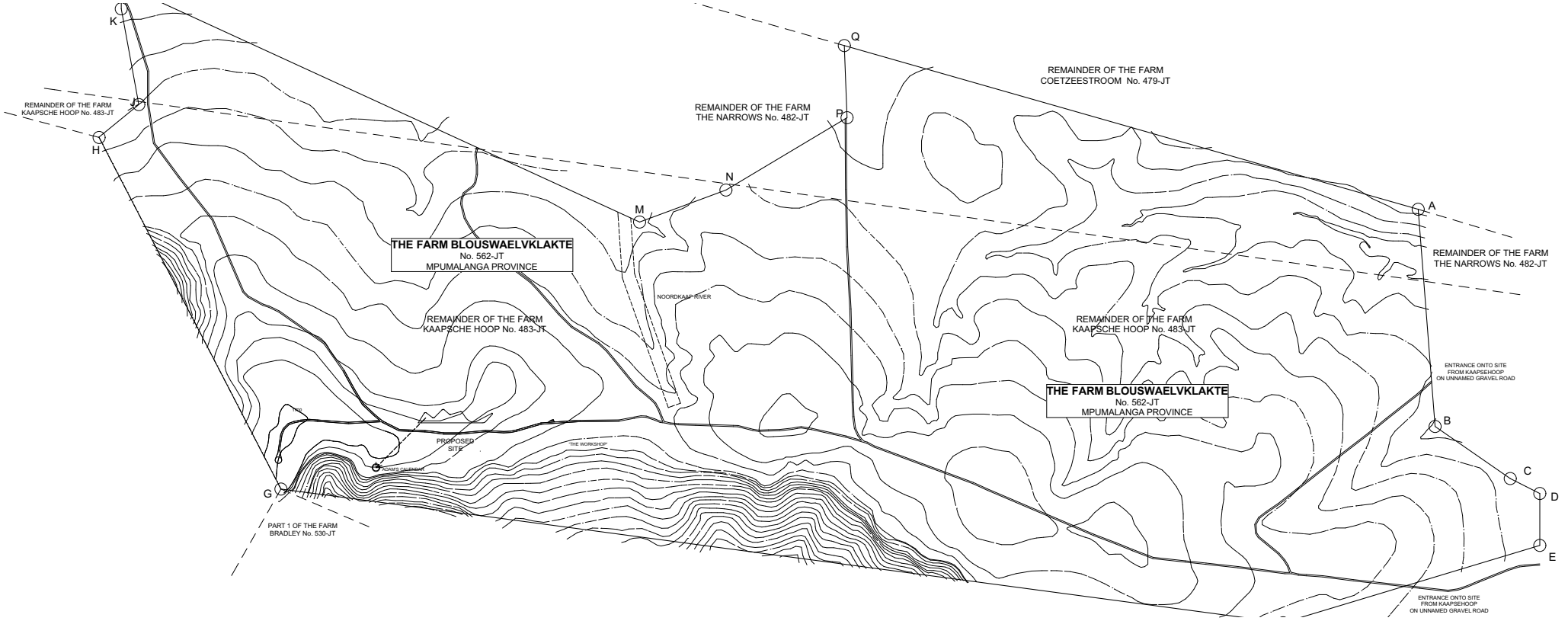
The farm Blouswaelvlakte is registered as a conservation area for the Blue Swallows and will have regulations and boundaries to comply with. The proposed development aims to sensitively react to the context with regards to conservation strategies and low impact design.

The Blaauboschkraal ruins of the Mpumalanga escarpment, are speculated to be the remains of an historical African civilisation, which is scattered along the Mpumalanga escarpment. The Forgotten World ((P. Delius, 2016) explores the different ruins and their significance to African history. These ruins are part of the provincial heritage site: The Blaauboschkraal Stone Ruins and Adam's Calendar are both protected as part of these ruins.

In developing the proposed interpretation centre and research facility, awareness as well as an income can be raised, in order to conserve the Blue Swallow Reserve and the Blaauboschkraal Stone Ruins accordingly.

According to the National Environmental Management: Protected Areas Act 57 of 2003 (NEMPA), all formerly proclaimed protected areas, on both state and private land, should comply with the regulations. These areas are all managed for biodiversity conservation and sustainable use. Such uses include: commercial nature-based tourism, education and limited production and harvesting of wild resources, especially game animals. (National Environmental Management: Protected Areas Act 57 of 2003 (NEMPA))

95. The locality plan of the Blue swallow reserve. Author. 2019



DEVELOPMENTAL RIGHTS

This IBA is a formally declared forest nature reserve (National Forests Act, 1998, Act No. 84 of 1998 as amended) and heritage site. The site is currently managed by DAFF, but there are plans to transfer the area to Komatiland, as part of the current lease. When transferred, the area should still be managed as a nature reserve.

National Environmental Management Act, 1998 (Act 107 of 1998)

NEMA makes provision for the formulation of Environmental Implementation Plans, which are the vehicles for implementing the NEMA principles to which municipalities are legally obliged to conform. This act also provides for the listing of activities which require certain environmental impact assessment procedures to be complied with, before implementation. This act is of particular note for the activities of settlement planning and land use management.

National Environmental Management: Biodiversity Act (Act 10 of 2004)

The National Environmental Management: Biodiversity Act (Act 10 of 2004) provides for the management and conservation of biodiversity on a national and bio-regional scale. Once a bio-regional plan is published, municipal IDPs and SDF's need to take these into consideration.

Environmental Conservation Act, 1989 (Act 73 of 1989)

This act provides the procedures for permitting of landfill sites, by means of a permit obtained from Department of Water Affairs. The act provides for the control of pollution stemming from littering, waste disposal, noise and various activities.

ZONING

The proposed development of an interpretation centre, research facility and visitors centre, falls under the occupancy qualification A1, C1, C2 and F2 (SANS10400 A20 Table 1, 43). The multifunctional building consists of the following spaces, according to the occupancy qualification of SANS 10400:

1. Entertainment and public assembly areas "where persons gather to eat, drink, dance or participate in other recreation" (SANS10400 A20 Table 1, 43).

2. Exhibition spaces where goods are displayed for viewing by the public (SANS10400 A20 Table 1, 43)

3. An art gallery and archive space for the safekeep of different artefacts and works of art.

4. A small curio shop and information centre.

THE PROPOSED SITE SUB DIVISION

The Proposed development can possibly be subdivided and rezoned. For the site to be subdivided, the municipality would have to approve required documentation as consent to subdivide, along with the approval from the surrounding landowners. A land surveyor would have to survey the land to be subdivided and erect new beacons for the site. Because the land is registered as a reserve, the proposed development would have to comply will all the sustainability and conservation regulations, before the local authorities can give consent to the subdivision of the land.

The proposed development functions completely off the grid, because there are no municipal connections or services to be installed on the farm. The size of site on which the development and the contested site is located, is 13.75 ha. This will include Adam's Calendar, the Workshop and the existing gravel road on the farm. The development is hidden from the Calendar, with a view to the west while the Calendar consists of a view to the east. A riff of approximately 5-meters high, separates the two sites.

SITE SPECIFIC INFLUENCES

REGULATIONS AND GUIDELINES

As the site is located in a registered protected area, the development aims to comply with all the regulations of the National Environmental Management: Protected Areas Act 57 of 2003 (NEMPA). Different readings and interpretations of Adam's Calendar have resulted in confusion of whether the stones on the escarpment have any archaeological or geological significance. Archaeologists of the University of Witwatersrand have stated in a telephonic interview, that the stones are not connected to the Blaauboschkraal stone ruins of the Mpumalanga escarpment. (Schoeman, 2019)

MUNICIPAL SERVICES

There are currently no municipal services on the site. New connections will have to be approved by the conservation and heritage committee, but this is to be carefully selected, as the development aims to function in the most sustainable way possible. There will most probably be little or even no need for municipal connections. The town Kaapsehoop solely relies on electrical and water services from the municipality, sewage is treated by the use of septic tanks and French drains and these are managed by each owner.

CONSERVATION

A sustainable development aims to enhance the existing ecosystems and biodiversity of a given site. The proposed development is not only inspired by the landscape, but becomes part of the landscape, disrupting as little as possible though the use of the correct construction methods. The development not only sensitively reacts to the fauna and flora of the site, but also to the monolithic stones of the contested site of Adam's Calendar, as well as to the existing rituals of the visitors who come to the site every day.

The development and proposed buildings are permeable and open to the surrounding context. No gates or fences will separate the building from the landscape, as it is part of the discovery of the monolithic stones and Adam's Calendar. No indigenous trees are removed from the landscape, but instead more can be planted.

The proposed development respects the monolithic stones and treats it according to the National Heritage Resources Act and legislation.

THE PROBLEM

The design problem stood as such: how can a built structure serve as a work of artifice, in order to celebrate/obscure the interplay between mystery and clarity, fact and fiction, in contested sites, possibly linked to ancient significance (rituals). The development aims to serve as a space of contemplation and discovery, as well as a place of gathering within the mysteries surrounding Adam's Calendar.

The nature of the project and research question as an in-between space, asks for alternative methods of design and construction. Adam's Calendar and the landscape is the source from where all ideas and concepts are derived. It is therefore imperative to explore methods of construction which are celebrated and grown from the landscape and the monolithic stones' significance.

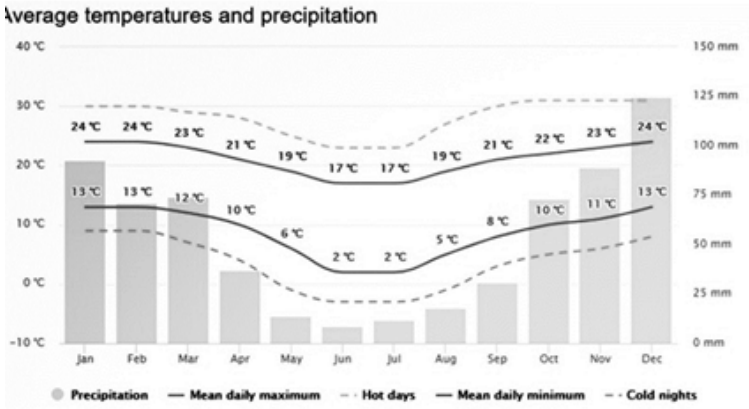
CLIMATE

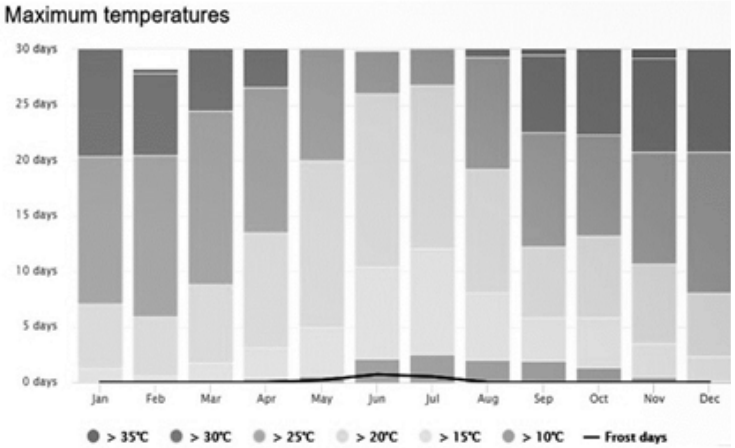
The climatic conditions of Kaapsehoop are characterised as a humid, subtropical climate, with mild winters and warm summers. (South African Weather Service) The average monthly minimum and maximum temperatures and precipitation for Kaapsehoop is provided in the figure below. The climatological information is based on monthly averages for a 30-year period from 1960 to 1990. (South African Weather Service) The highest rainfall in the area of Mbombela (800-1500mm per year) is recorded in Kaapsehoop, Ngodwana and White River surroundings. (South African Weather Service) The microclimate around the site of the development will differ slightly from the climate in Kaapsehoop, because of its location closer to the escarpment and exposure to the elements, while the town Kaapsehoop is sheltered between forestry and sandstone riffs.

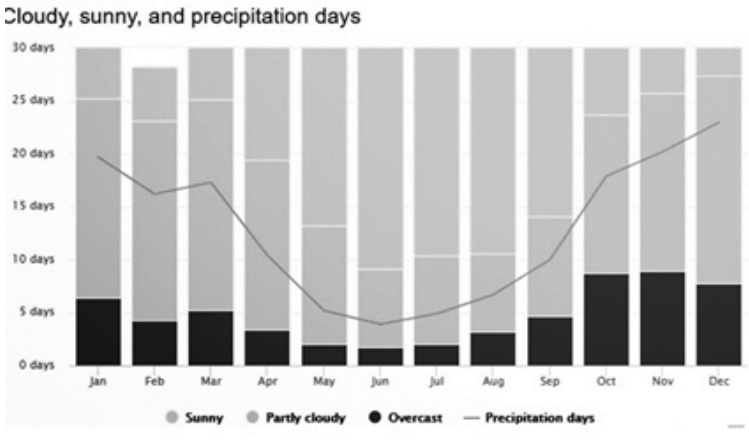
WIND

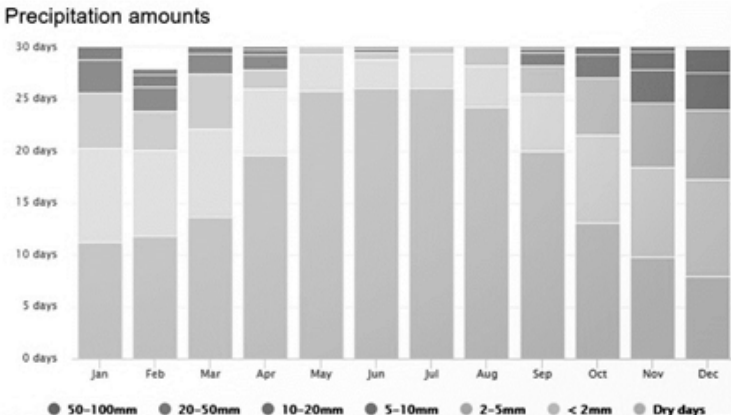
The average wind direction of Kaapsehoop is predominantly from WSW to ENE, with an average windspeed of between 12 and 19 knots (22.24 to 35.188 km per hour). This will impact the development directly, as it is located on the escarpment and completely exposed to the elements. There are clear indications of weathering in the stones on the escarpment. The proposed development is exposed to the same conditions as the stones, will show signs of weathering over the years, as it becomes part of its surroundings. Windy conditions are responded to in the way in which the building is sunken into the landscape, creating a shelter from the wind.

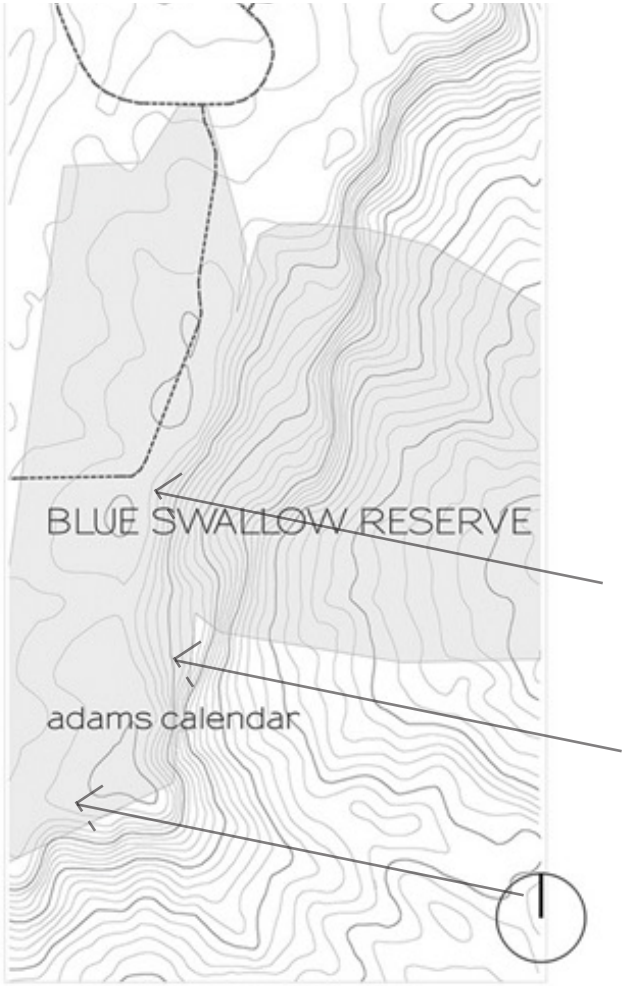
97. Climatic conditions. South african Weather Service.
98. Wind direction on the site. Author, 2019











VISUAL STATE OF SURROUNDINGS

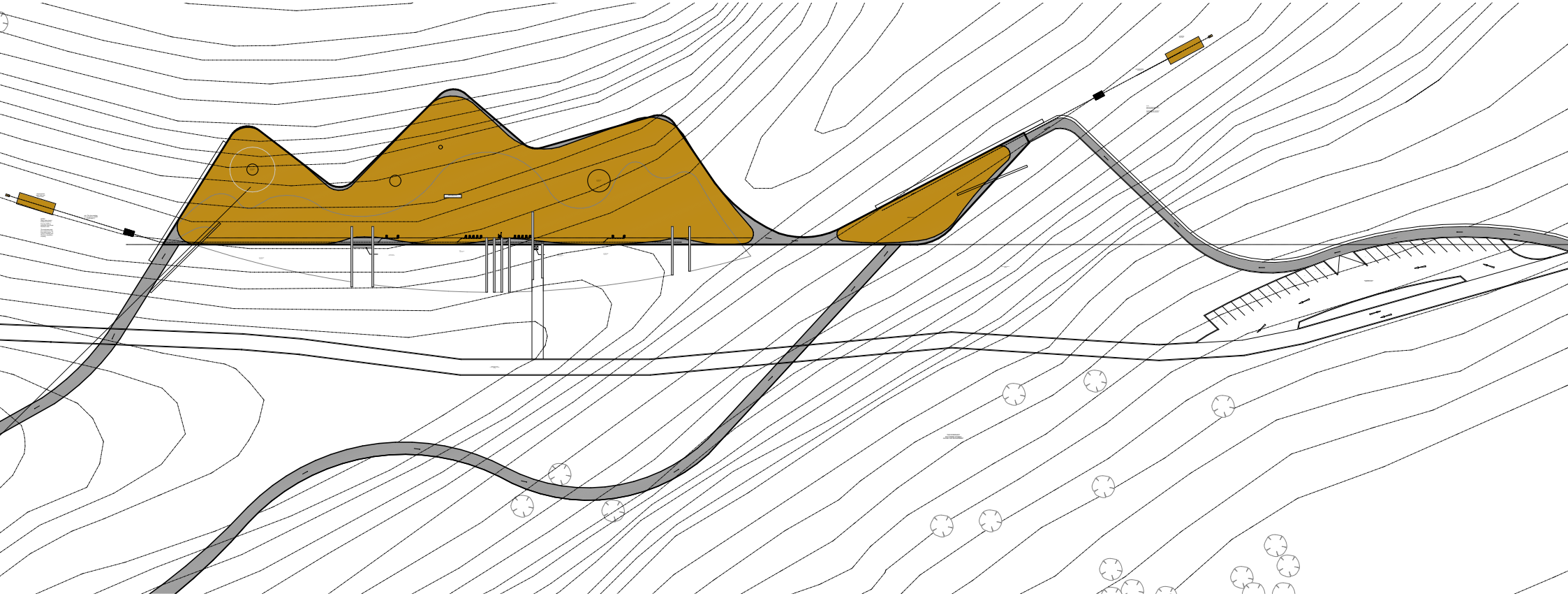
The site of the proposed development is characterised as rural, with no built structures or municipal services in the close vicinity. The farm is vast with a small number of large trees, but with a great diversity in grass and plant species. Lights of the towns and mines in the Barberton valley are the only signs of civilisation. Therefore, it is of utmost importance that the development does not influence the natural and untouched beauty of the surroundings in a negative way.

LANDFORMS

The profile of the land is a mixture of the steep escarpment on the eastern side of the site, in contrast to the rolling, gently sloping hills on the western side of the land. The surrounding context are topped with sandstone outcrops along the escarpment.

ACCESS ROADS

Currently there is only one access road to the site, which enters on the north of the farm and exists on the south. It is a gravel road which can easily be rehabilitated. Access on and through the site will have to be regulated and controlled in order to safeguard the environment and the monolithic stones on the escarpment.



98. site development plan of the proposed building. Author, 2019.

VEGETATION

The most dominant vegetation type of the surrounding context is the Northern escarpment quartize Sourveld. The Escarpment is characterised by the Northern Escarpment Dolomite Grasslands, Steenkamsberg Montane Grassland, Northern Escarpment Dolomite Grassland and Long Tom Pass Montane. The vegetation is fairly well preserved, with mainly sour grassland on the plateau and thicker, scrubby vegetation in the valleys and forest-edge.

A plantation of exotic trees surrounds the heritage site and may cause threats to the conservation of the Blue Swallow and the Kaapsehoop cycad, which are also found in the area. Other Biodiversity include Rain Frogs, Natal Ghost Frogs, Striped Harlequin Snake, Black-spotted Dwarf Gecko, Giant Legless Skink and Montane Dwarf Burrowing Skink. It is essential for the development not to threaten the conservation of the biodiversity on the escarpment, but to act as a tool to conserve and fund conservation in the area.

There are also an estimated 180 wild horses in the area (Louw, 2018). The horses have become a part of the Kaapsehoop community and rely on the natural vegetation of the area. (Refer to Site analysis, 51-53)

The design of the proposed development aims to accommodate all these indigenous plants and vegetation, as it is within the protected area of conservation. (Mbombela Development Framework, 2011/2012: 71)

The surrounding farms are mainly used for agroforestry; therefore, the proposed building sensitively reacts to the larger context as per height restrictions, as well as making sure that there is a buffer zone between the building and the borders, which complies to the health and safety regulations.

99.. THE VEGETATION OF THE SURROUNDING CONTEXT
AUTHOR. 2019



GEOTECHNICAL ANALYSIS
SOIL CONDITIONS

A large portion of Mbombela is underlain with the Granite Group, which covers most of the central, northern and eastern areas. Highly permeable and erodible, colluvial sands and residual soils overlay the granitic bedrock (Potassic Gneiss and Migmatite) in the Kanyamazane area. The western part has a variety of geology groups including Shale, Dolomite, Quartzite, Andesite, Ultramatic rocks and Gneiss. Dolomite rocks give rise to caustic features; the most notable in Mbombela is the 1.8km long Sudwala Caves. Hazyview is underlain by Granodiorite and Matsulu is underlain by Gneiss.

The surrounding area of the site consists of a combination of sedimentary and volcanic rocks, as well as intrusive rocks. (Mbombela Development Framework, 2011/2012: 71)

GEOLOGICAL MAPPING

From the Geological Map of the Republic of South Africa and the Kingdoms of Lesotho and Swaziland of 2014, the following information on the different soils, rocks and sediments were found.

Table 2 explores the location and types of soil found in the areas surrounding of Barberton, Kaapsehoop and the escarpment between them.

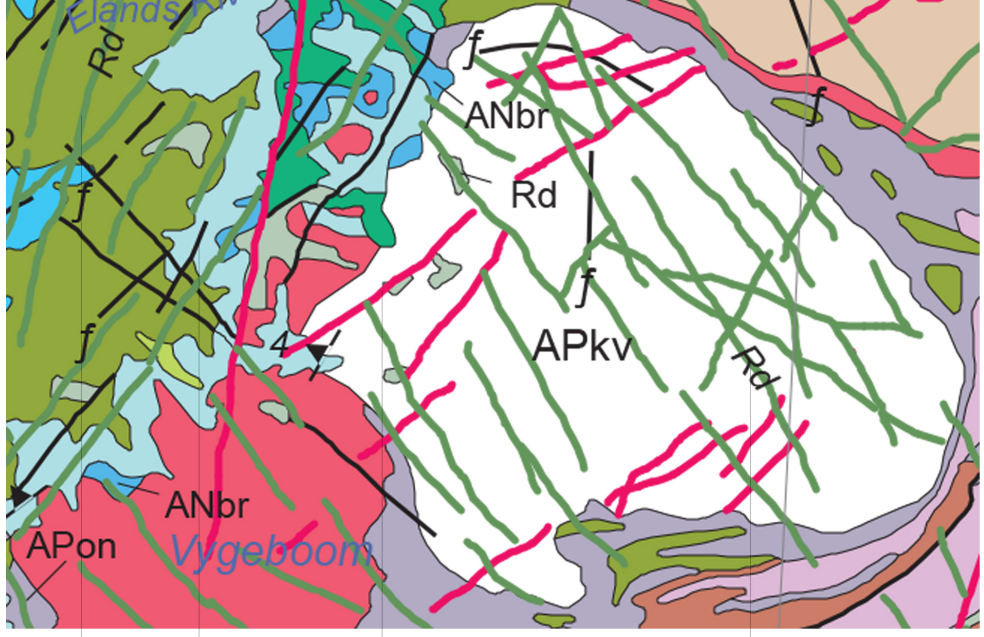
The site and immediate surroundings consist of a sandstone riff on the edge of the escarpment. Other types of surface rock include the Quartize, Schale and limestone as shown in figure 101.

It is speculated that the dolerite stones that make up the contested site has beenmoved from a quarry in the valley below to the escarpment. as the monolithic stones seem to be the only of their type and size on the escarpment.

Whether this statement is true or false is still unknown, but the geological analysis does show dolerite sills in close proximity to the blue swallow reserve.

100. Geological information table. Author, 2019
101. The analysis of the surrounding rocks and soil. Author 2019

GEOLOGICAL INFORMATION		
Sedimentary and Volcanic Rocks	no	Dominant Lithologies
	Vp	Quartize, Shale, Balsatic Andesite
	Zb	Volcanic rocks, arenite, mudrock
	Rgo	Quartzite, andesitic lava, tuff, shale
	V1	Dolomite, iron-formation, chert, quartzite (base)
Intrusive Rocks		
	Z4	Mpuluzi Granite, Gneiss, granite, granodiorite, tonalite, migmatite
	Zne	Other Swazian Granitoids, Porphyritic granodiorite/quartz monzonite
	J-d	Dolerite (Adams Calendar Monolithic Rocks)

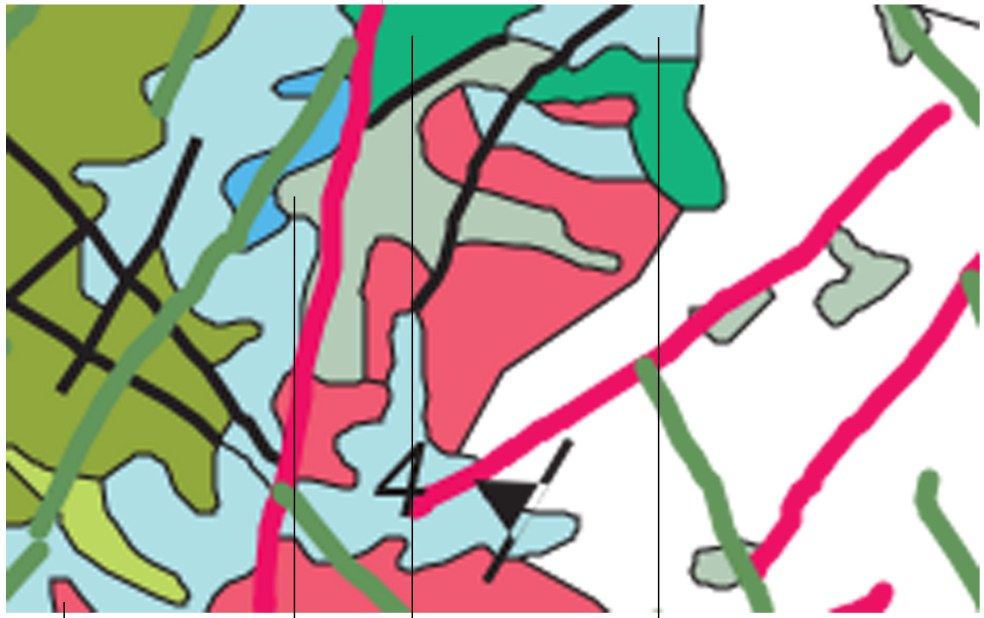


Qua rtzite, subordinate conglomerate and shale

Fault, observed

Dolerite, minor ultra basic rocks (dykes) (Jd)

Diabase, magnesium-rich tholeiite, melanorite dykes (Rd)



Tonalite-trondhjemite and granodiorite gneiss, migmatite with mafic and felsic xenoliths

Black magnetite gabbro

Acid, intermediate and basic, low-grade metavolcanic and metasedimentary rocks, recrystallised to varying degrees

Dolomite, stromaolitic, interbedded chert, minor carbonaceous shale, limestone and quartzite

SOCIO-ECONOMIC ENVIRONMENT

Kaapsehoop, the town closest to the proposed site, is a small tourist town with approximately 200 permanents inhabitants. The inhabitants make a living out of the tourists who visit the town for its mysteries, dining and beauty. Surrounding the town, the forestry farms house another small number of inhabitants and workers. The site is a 5km walk from the town, many trail runners and tourists make use of the trails along the escarpment and ultimately Adam's Calendar. The project aims to make the most of the tourism in the area and to make the users aware of the importance of the conservation of Adam's Calendar, the Blue Swallows and ultimately many other heritage sites of the Mpumalanga escarpment.

USER BEHAVIOUR AND REQUIREMENTS

USER-PROFILE

The majority of the user group comprises of tourists, spiritual groups and researches, most of which will come from all over the country. Locals already make use of the site for community and spiritual events. Tourists and spiritual groups visit the site for its mysteries and unanswered questions. Adam's Calendar forms part of a tour, which is lead by Michael Tellinger, a co-discoverer of the site, which brings many people to the site.

Researchers, both professional and amateur, are still to visit the site according to the discoverer, Johan Heine. (Heine, 2019) University students from many different courses, mainly archaeology and geology, visit and document the site and surroundings in attempt to understand the monolithic stones on the escarpment. Although there has been some research done, the discoverers Heine and Tellinger, believe that many more investigations should and will be done in the future.

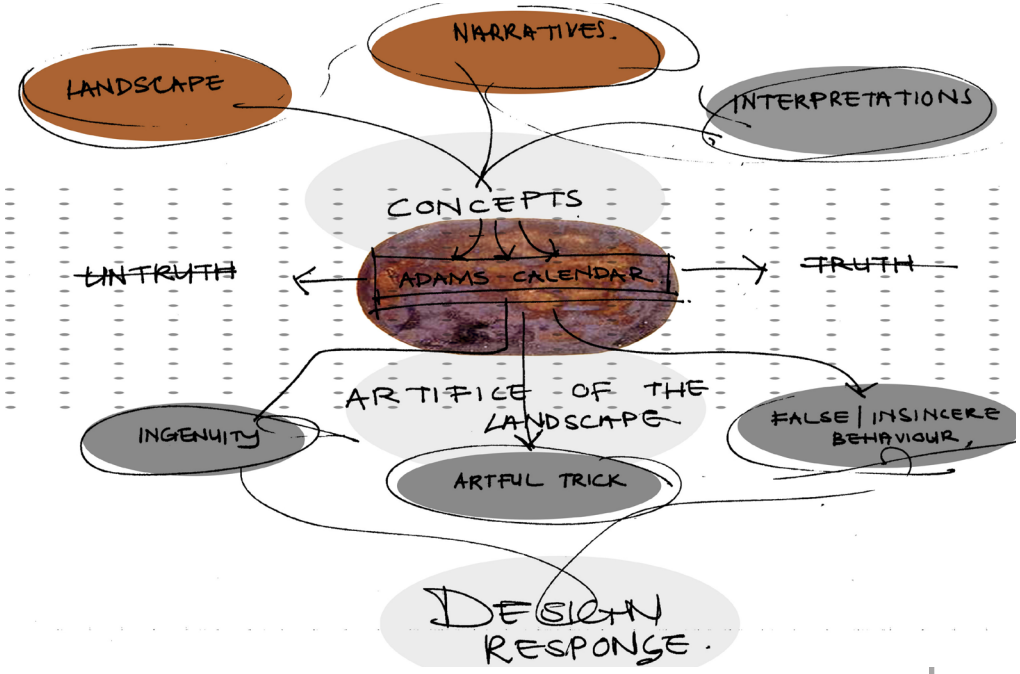
102. Conceptual approach to the programme: the overlapping of the users' narratives, Adam's Calendar and the design response. Author. 2019

The development comprises of three main functions: Interpretation, Gathering and Research. (Refer to accommodation list and client on page 56-59)

INTERPRETATION
- Information centre
- Interpretation route
- Exhibition spaces
- Curio shop
- Coffee shop
- Staff areas
- Office space
- Storage spaces

RESEARCH
- Seminar room
- Metal lab
- Soil lab
- Emergency room
- Workshop
- Communal space

GATHERING
- Multifunctional venue space
- Kitchen area



[4] STRUCTURAL PRECEDENT | Structures of landscape

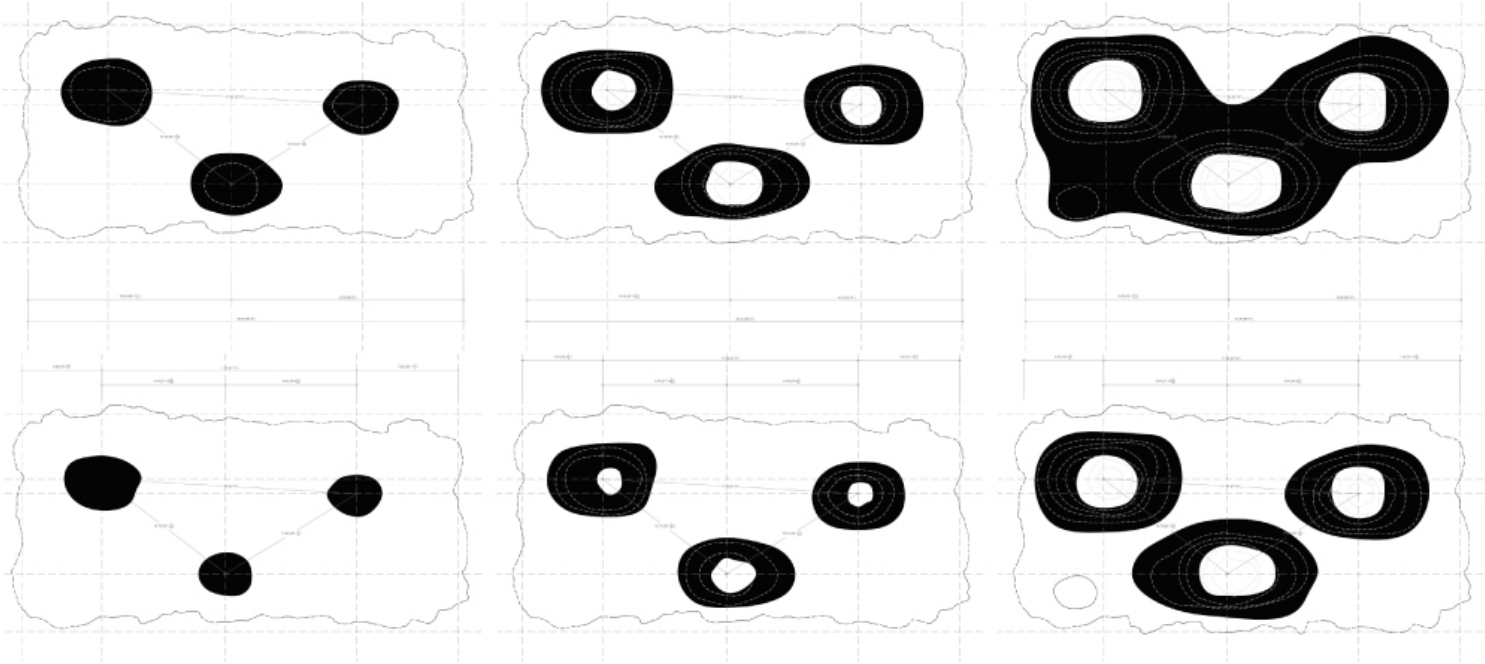
Ensemble studio constructed structures of landscape in the northern edge of the Yellowstone National Park, Montana, USA. It forms part of the Tippet Rise Art Centre, which is devoted to music and contemporary sculpture which is explored through a series of large-scale sculptural installations. These are the result of working with reinforced concrete, which essentially undergoes the same processes that natural stone does – sedimentation, erosion, meteorization, crystallization, compaction and metamorphism. These structures are marked by the formwork provided by pre-existing earth and rocks.

THE CONSTRUCTION PROCESS IS AS FOLLOWS:

- An artificial mountain is built on a flattened surface of the landscape, which will form the basis of the formwork for the structure.
- Holes are excavated in specific locations in the artificial mountain. These holes will form the primary and only support to the structure.
- Damp proof membranes and reinforcement are inserted on the mountain.
- The concrete is poured into the mountain and over the reinforcement.
- After the setting of the concrete, the artificial mountain below is excavated, resulting in a structure from the landscape, in the landscape.

LESSONS LEARNT:

- This is an alternative exploration, which can be much more cost effective in a mountainous area like Kaapsehoop where resources are difficult to find.
- The construction process is substantiated by the theoretical stance of an artifice and serves as a very authentic response to the landscape.
- The structure will evidently undergo a process of erosion like the stones of Adam's Calendar, which directly relates and reacts on the significance of the calendar and time as a thread connecting all the concepts of design



103. The floor plan of one of the structures in the landscape. Ensemble Studio. Online

104. The construction process photographed. The damp proof membrane and the reinforcement is shown. Ensemble Studio. Online

105. A series of structural and conceptual explorations in concrete. Ensemble studio. online







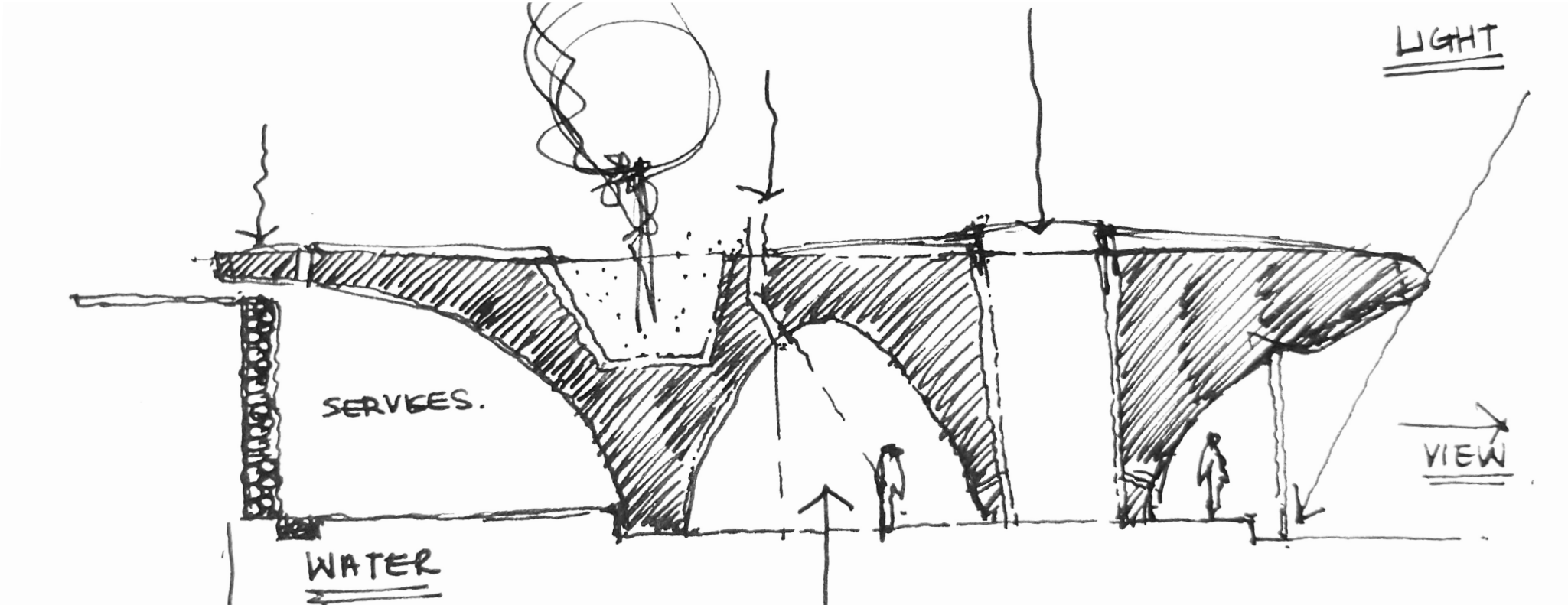
[5] STRUCTURAL PRECEDENT | Teshima Art Museum

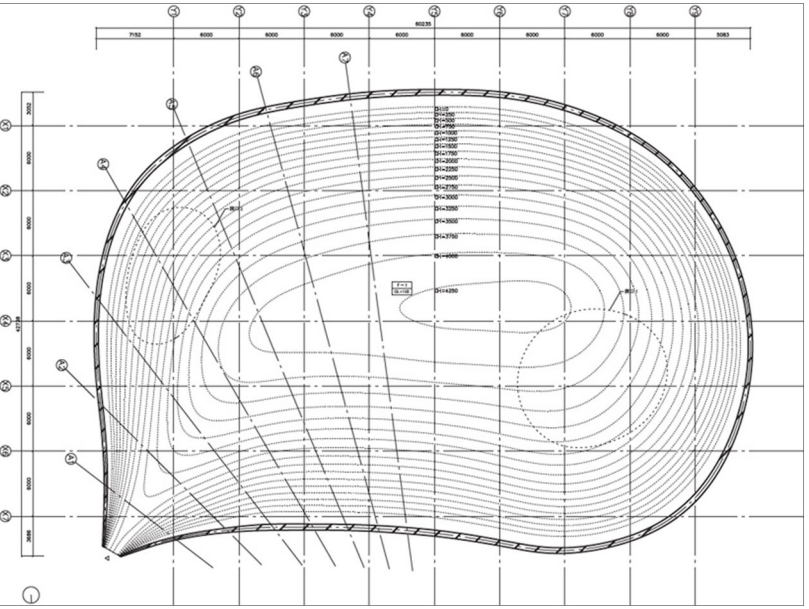
The Art Museum is constructed on a hill outside the town Takamatsu, in Japan. The open gallery space features a thick 25cm white concrete shell with two elliptical openings, which are open to the elements. The construction process is very similar to the process followed by Ensemble Studio and the result is just as exciting. A mountain of sand serves as the formwork of the dome-like structure. Waterproof membranes and reinforcement are installed on the mountain and a specific type of concrete is poured into the formwork. After excavation of the mountain below, a clean organic shell is revealed. This is then polished and sealed and serves as a sculpture housing art during art festivals. (Architectural review. Online.)

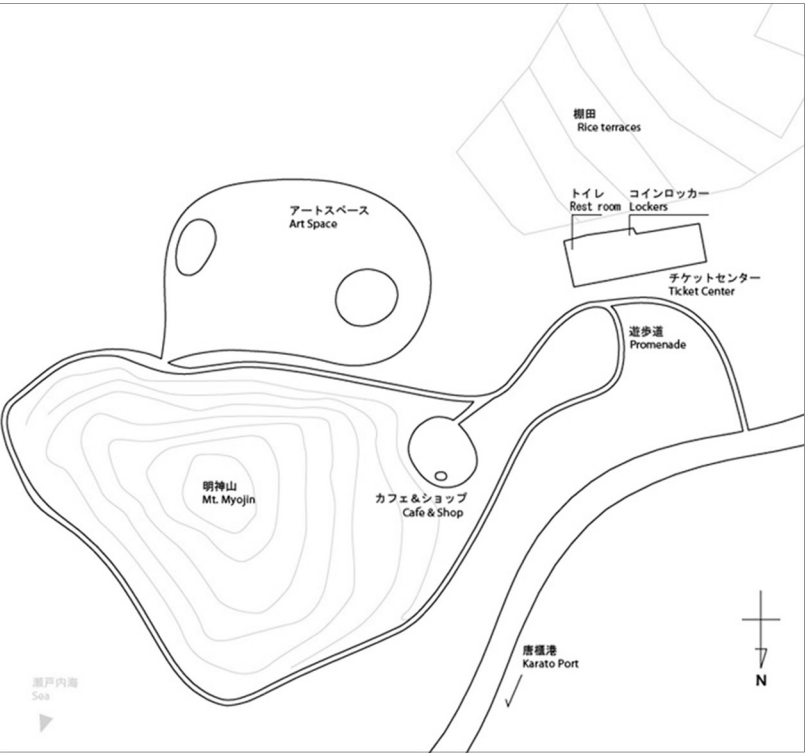
LESSONS LEARNT:

- Concrete types vary and it is important to choose the correct colour, mouldability, durability and density of the concrete, in order to create a pristine/ rough finish, depending on the needs of the design.
- Reinforcement of the structure is of utmost importance and if the structural philosophy is understood, then the design of an undulating structure will be much easier.
- Polishing and treatment of the concrete is very important and the correct methods should be used in order to find the wanted effect.
- Hard edges architectural items like windows, doors and handrails will be challenging to incorporate into the building, therefore alternative materials and construction methods should be considered.
- Finishes of the floor and the roof are very important in giving the sought-after impact to the visitor. A rough ceiling, in contrast to a finely finished and polished floor should be explored, before the final decisions are to be made.

106. (Below) Conceptual sketch of the proposed structure.
107. (Right) A collage of the construction process of the Theshima art museum. (online video)
108. The site development plans of the structure. The architectural review. online.





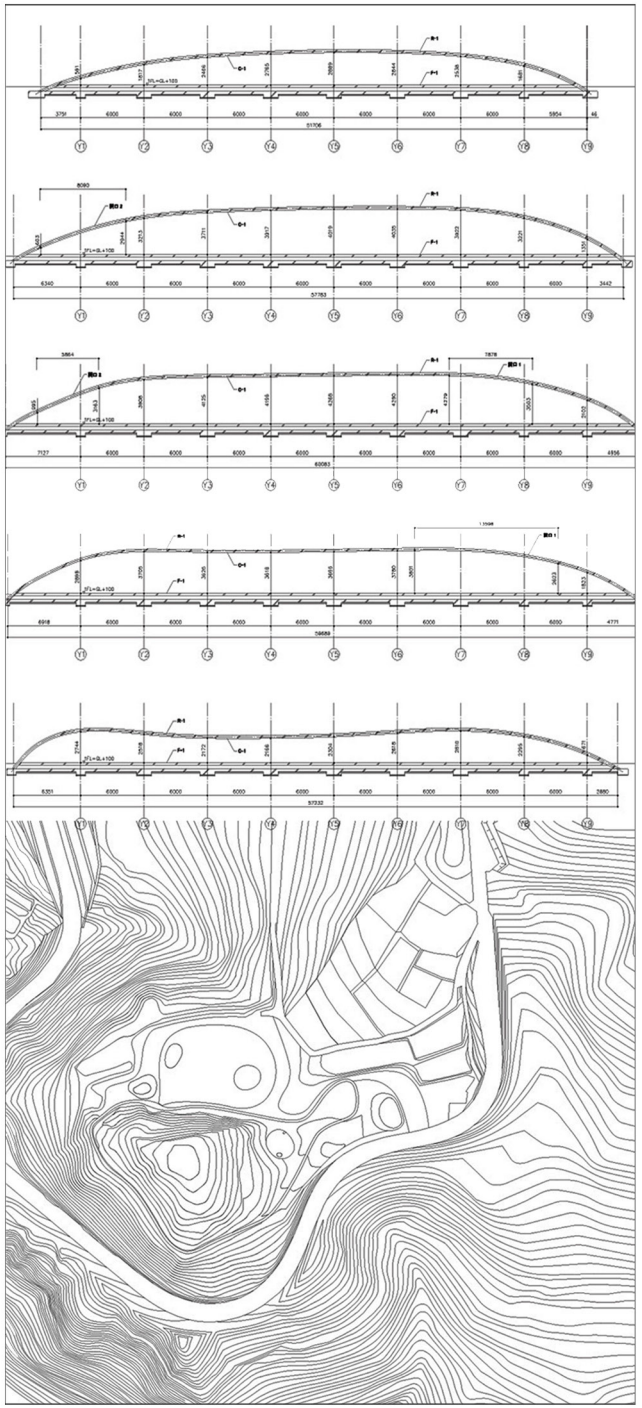

棚田
Rice terraces
トイレ
Rest room
コインロッカー
Lockers
アートスペース
Art Space
チケットセンター
Ticket Center
遊歩道
Promenade
明神山
Mt. Myojin
カフェ＆ショップ
Cafe & Shop
唐櫃港
Karato Port
瀬戸内海
Sea
N







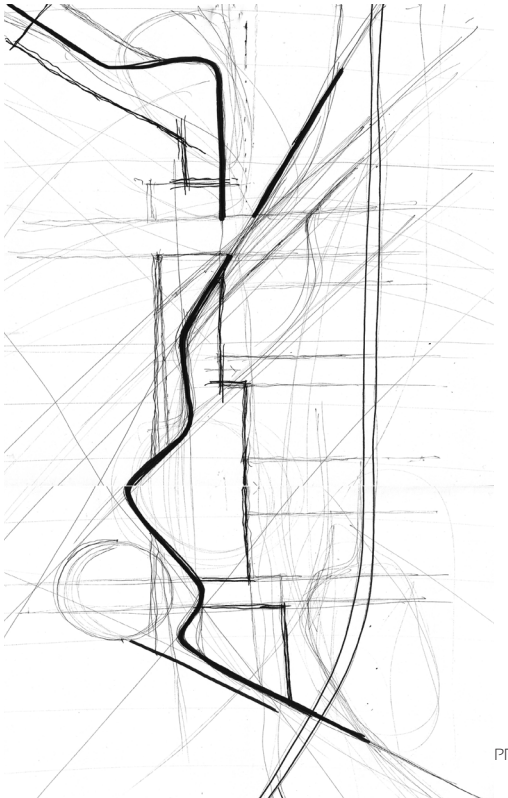




THE DESIGN RESPONSE

The parti sketch explores the different ley lines and mythological lines on the site. The complete exhibition route is choreographed along the site of the monolithic stone, which serves as the line of discovery. The landscape not only influences the design, but also forms part of the construction of the development. Making use of earth and sourced stones, an artificial hill is sculpted, where the roof and main structure is formed out of in situ concrete.

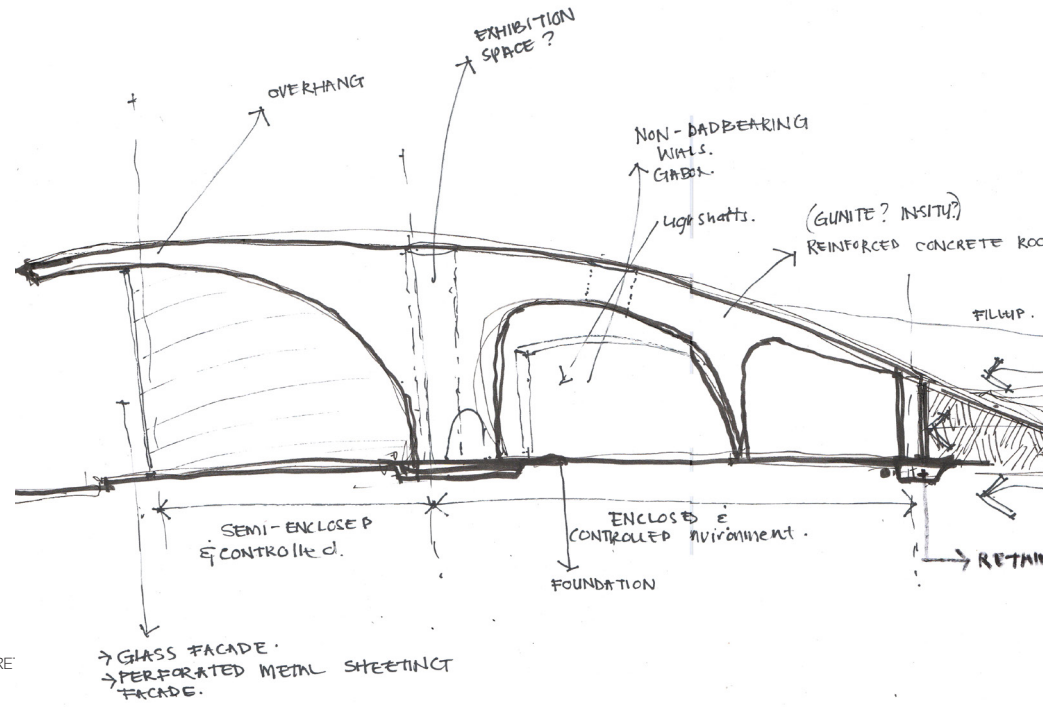
109. Mythologizing the landscape. Author.2019



FORM AND FUNCTION

The site and surrounding context lend ideas on the materiality of the proposed development. The use of stone and earth to construct the main structure, is derived from the theoretical approach of constructing an artifice in the landscape. Giving up control and allowing nature to follow its own logic, is a way in which the finishes and forms are closer to the landscape than to architecture. The potential lies where the structure is a sign of human habitation, instead of exploitation.

110. Conceptual sketch of the proposed development. Form and function and circulation. Author, 2019



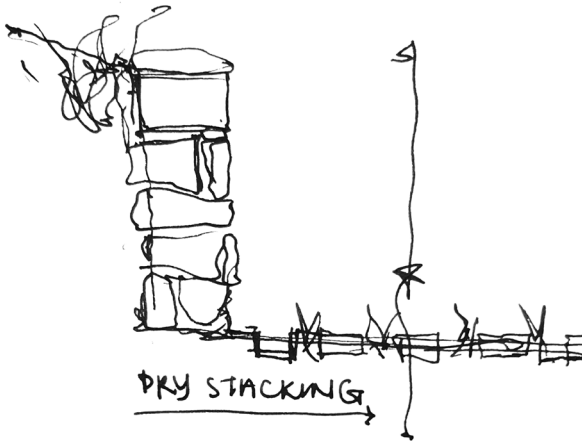
HORIZONTAL AND VERTICAL CIRCULATION

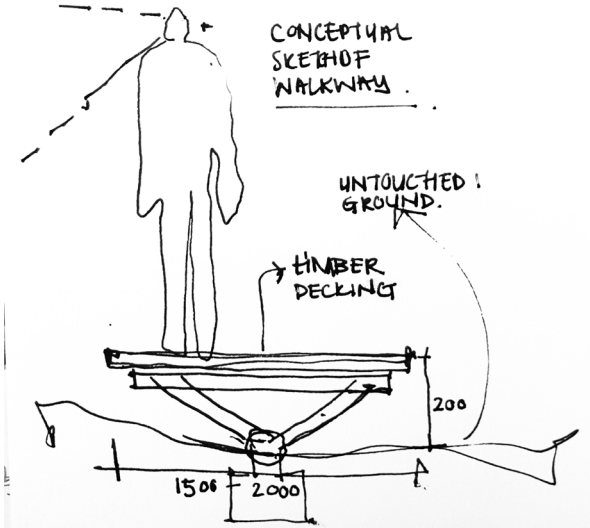
Horizontal circulation is choreographed as an exhibition route of discovery along the escarpment. A pathway leads the visitor from the arrival space into the landscape and then to the main building where most of the functions are housed. Therefrom the visitor is again lead into the landscape to the centre piece of Adam's Calendar. Vertical circulation is gradually done over the whole development. In certain exhibition spaces however, staircases and ramps lead the visitor vertically to viewpoints of the landscape. All ramps and staircases are constructed out of in situ concrete, which is polished and sealed.

SITE PLANNING AND LANDSCAPE DETAILING

The aim of the site planning is to have as little impact on the landscape as possible and for the structures to permeable to the vegetation and surrounding context.

111. Ideas of site planning and landscape detailing. Author. 2019

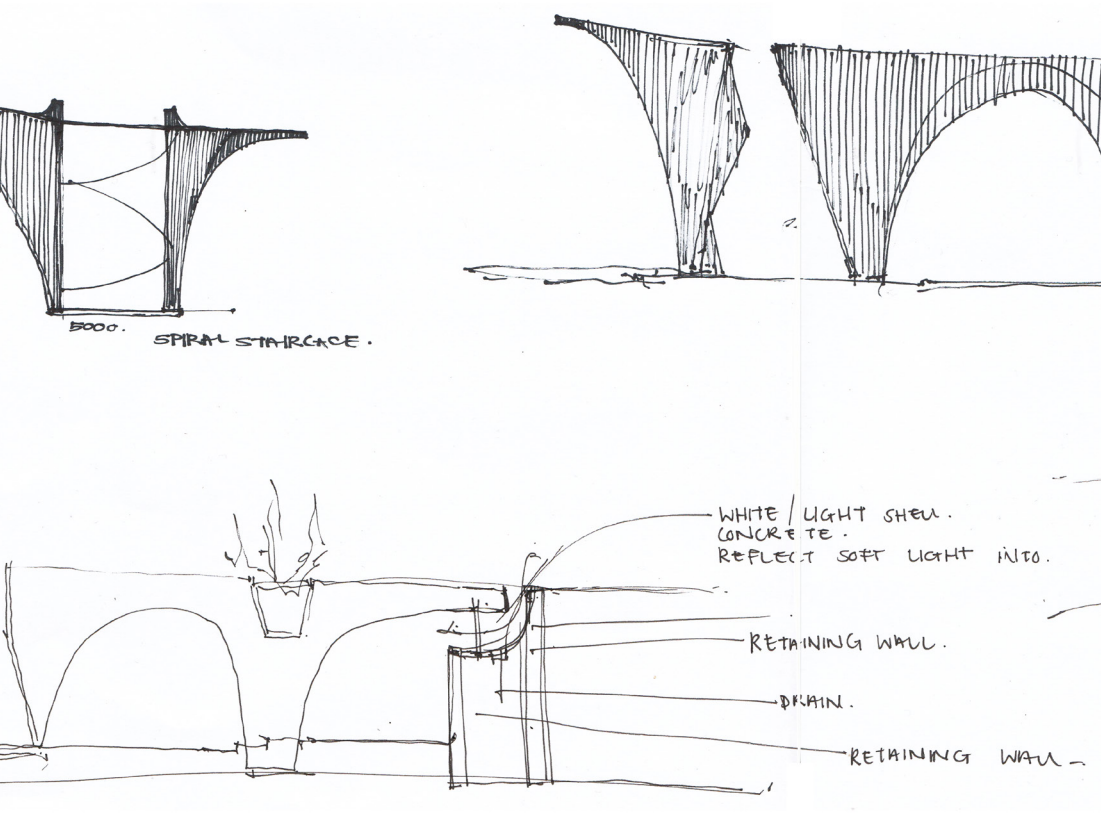


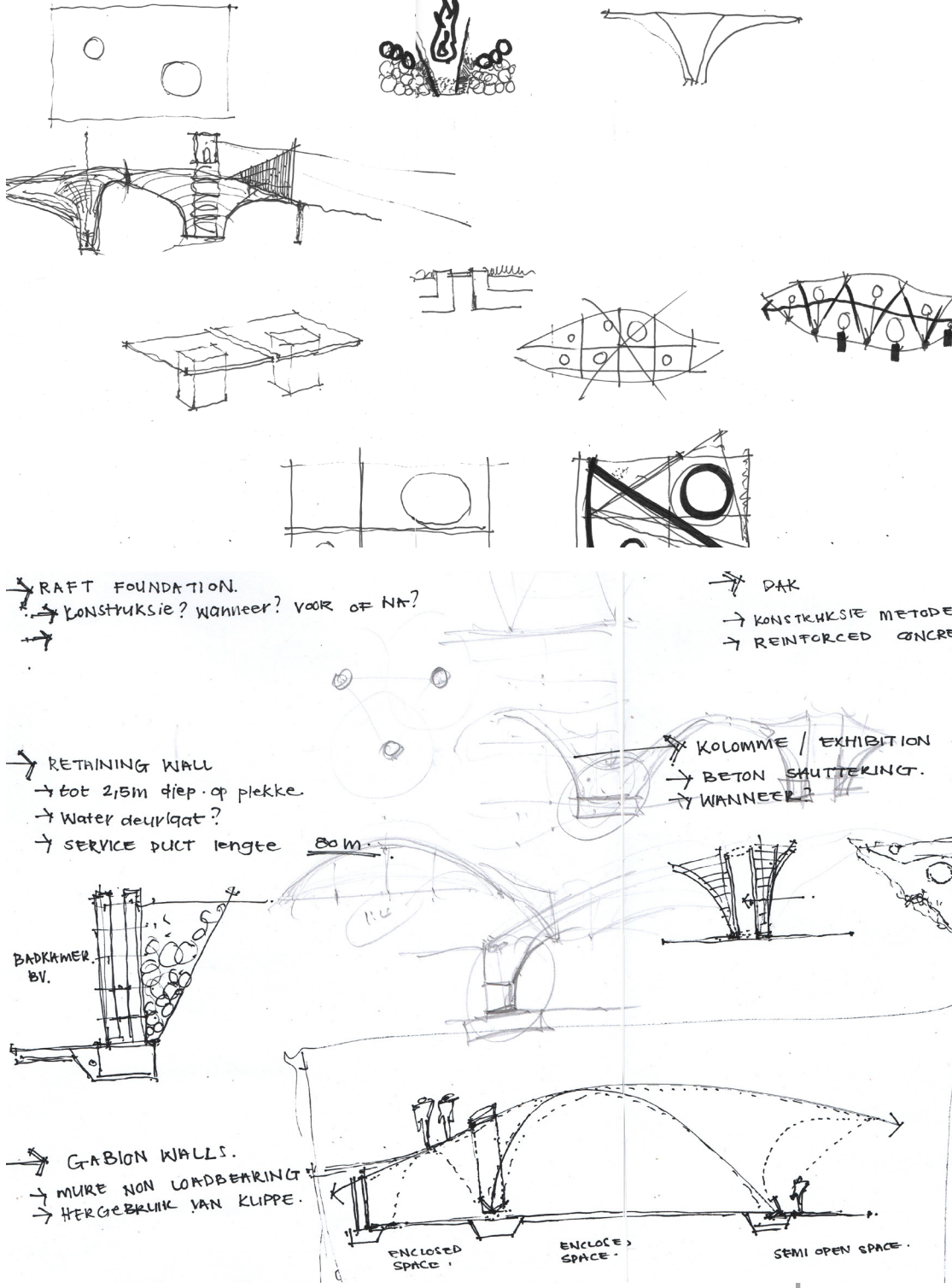


THINKING ABOUT STRUCTURE

The concrete shell is designed only to an extent of how the structure aims to function. But much of the structural resolution is handed over to the construction process on the site. Excavation and groundworks are done in advance. Thereafter, the setting out and plotting of the development is done and marked. The excavated and locally sources stones and eart (Not from the contested site of Adam's Calendar) are used to form and shape the negative space of the building. Lightshafts and plugs are installed, reinforcement and damp proof membranes are laid out on top of the morphed landscape. Concrete is poured and left for procuremtn process. Then the earth and stones are excavated and incorporated into their new purposes. Internal walls are built and finished are done.

112. A series of construction thought sketches of how the building will work. Author 2019





STRUCTURAL SYSTEM & MATERIALITY

STRUCTURES OF LANDSCAPE

Cutting and filling of the site is necessary for the structure to sit within the landscape and to completely morph into the earth as a structure of the landscape. The result will ultimately be for the earth to move onto the roof structure in no determined way whatsoever, allowing nature to follow its own course. The earth covered roof helps to keep the interior cool in the summer, creating a low-energy, zero-emissions ground-sourced heat pump, rather than making use of air conditioning.

THE ROOF | CONCRETE CONSTRUCTION

The main structural material of the building is concrete. It is the primary structure, as well as the roof shell all together in one element. In-situ concrete is brought to the site and poured into the mould which is formed with earth and landscape. The stones on the escarpment remain untouched, but in the valley below local stone can be outsourced and brought to the site.

Prefabricated timber 'plugs' form a shuttering which is inserted in the shaped holes in the morphed landscape and serves as the shuttering for the spaces that will become the separate exhibitions of the development. These shafts are part of the primary roof structure which undulates and reflects the surrounding context. Materials for the shuttering includes pressed timber sheets which can be removed after the pouring of the roof. Revealing a smooth finish to the interior of each exhibition space.

ENVELOPE | WALLS

The primary material used for the walls is a combination of precast & in-situ concrete, gabion walls and masonry walls

Precast and in-situ concrete walls are washed in a transparent glaze to create a brutalist and stripped experience in the exhibition spaces. ECHO, pre-stressed hollow-core retaining cavity walls separate the building from the earth on the eastern edge of the interpretation centre.

Masonry walls

Plastered face brick and mortar walls are to be built after the roof shell has been finished. These walls are used as partitioning between the different functions in the served spaces of the development and none will be load bearing as the roof structure will rest on its own footings and support.

Gabion walls

The surrounding landscape consists of many sandstone outcrops that have been incorporated in many of the buildings in Kaapsehoop. Reacting on this contextual design, locally sourced stones from the Barberton valley and surrounding context are to be incorporated in the construction of the 'morphed' landscape which serves as the mould to the roof structure. Thereafter the stone is to be used for dry stacking retaining walls and gabion walls in the landscape. The reuse of the materials in construction and design is part of the sustainability agenda – ensuring that the least possible is wasted.

ENVELOPE | FLOORS

The complete building rests on a treated concrete in-situ floor slab with a polished surface. Electrical installations to be inserted in the floor which will only be happen after the roof structure has been finished.

VENTILATION AND LIGHT SHAFTS

Ventilation is achieved with passive design strategies throughout the structure. Shafts that double as lighting and ventilation shafts are installed in each exhibition space as well as smaller shafts in the main corridor of the development. In the service functions of the development, shafts and openings to the landscape will ensure the natural flow of air from east to west through the building.

SCREENS AND FENESTRATION

Double glazed windows are to be installed to it into the undulation of the roof structure. The glass facades will bring in light and magnificent views, therefore, as little obstruction as possible is needed.

Perforated weathering steel screens become part of the detailing of the development. The material is flexible and can me formed and cut to fit into the exteremely odd shapes of the building. The entrance door to the development is a pivoting perforated screen door which adds drama and texture to the development.

113. Material Mood board. Author, 2019

INTERPRETATION CENTRE FOR ADAMS CALENDAR

SITE PLAN : SCALE 1:200



[8] BUILDING SERVICES

Designing a structure of landscape completely off the grid, presents many challenges when it comes to building services. But in this case, alternative design has become the norm as nothing about this development asks for normative design. Sustainability in every aspect of the desicion making is essential when the landscape and conservation demands it. The following options in terms of building services are available to the proposed development.

RAINWATER HARVESTING

The concrete roof shell lend oppotrunities to harvest rainwater and direct it back to the landscape or even store for future use in the building. Large stormwater drains are necessary to ensure that the building does not flood during raining seasons. These systems ensure that the building functions as the landscape does while it sits within it.

GREY WATER COLLECTION

The grey water is to be treated and directed back to the gardens and surrounding landscape. This ensures that the drainage system is managed more efficitently and the development wastes mininal water.

SOLAR POWER PLANT

The solar power plant is an alternative way in generating enough electricity for the proposed development in order to function on its own. There is the possibility to either install a municipal electric connection, but because there are no limitations to the space on site, a solar plant can be installed.

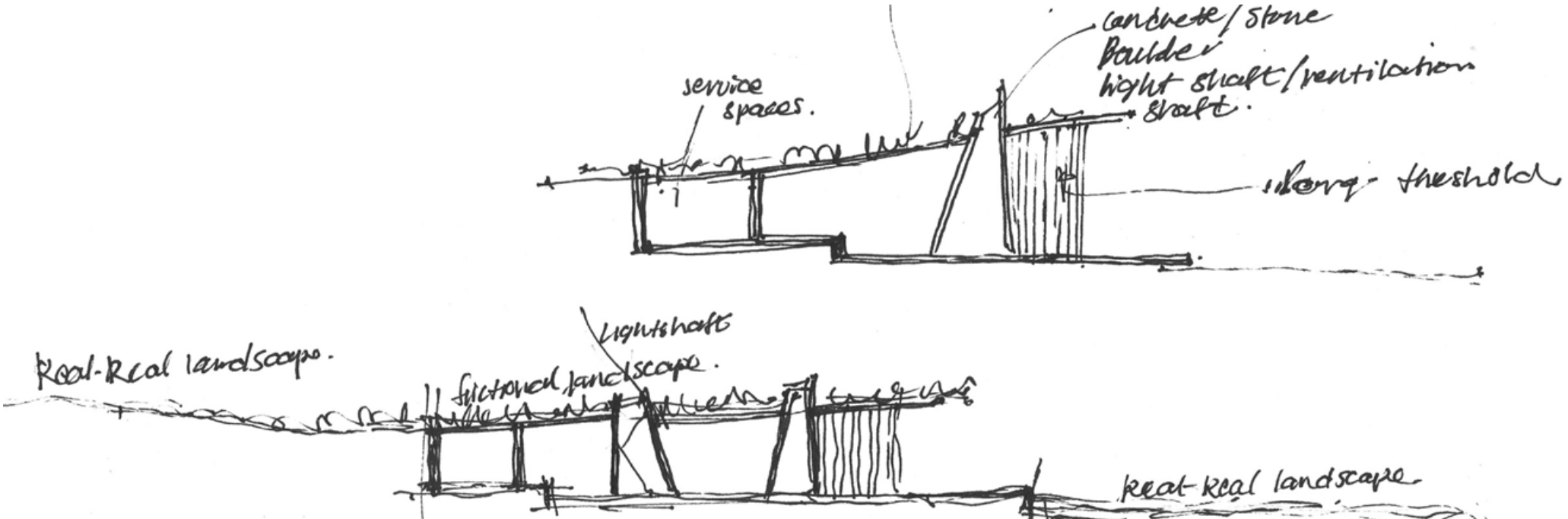
FRENCH DRAINS

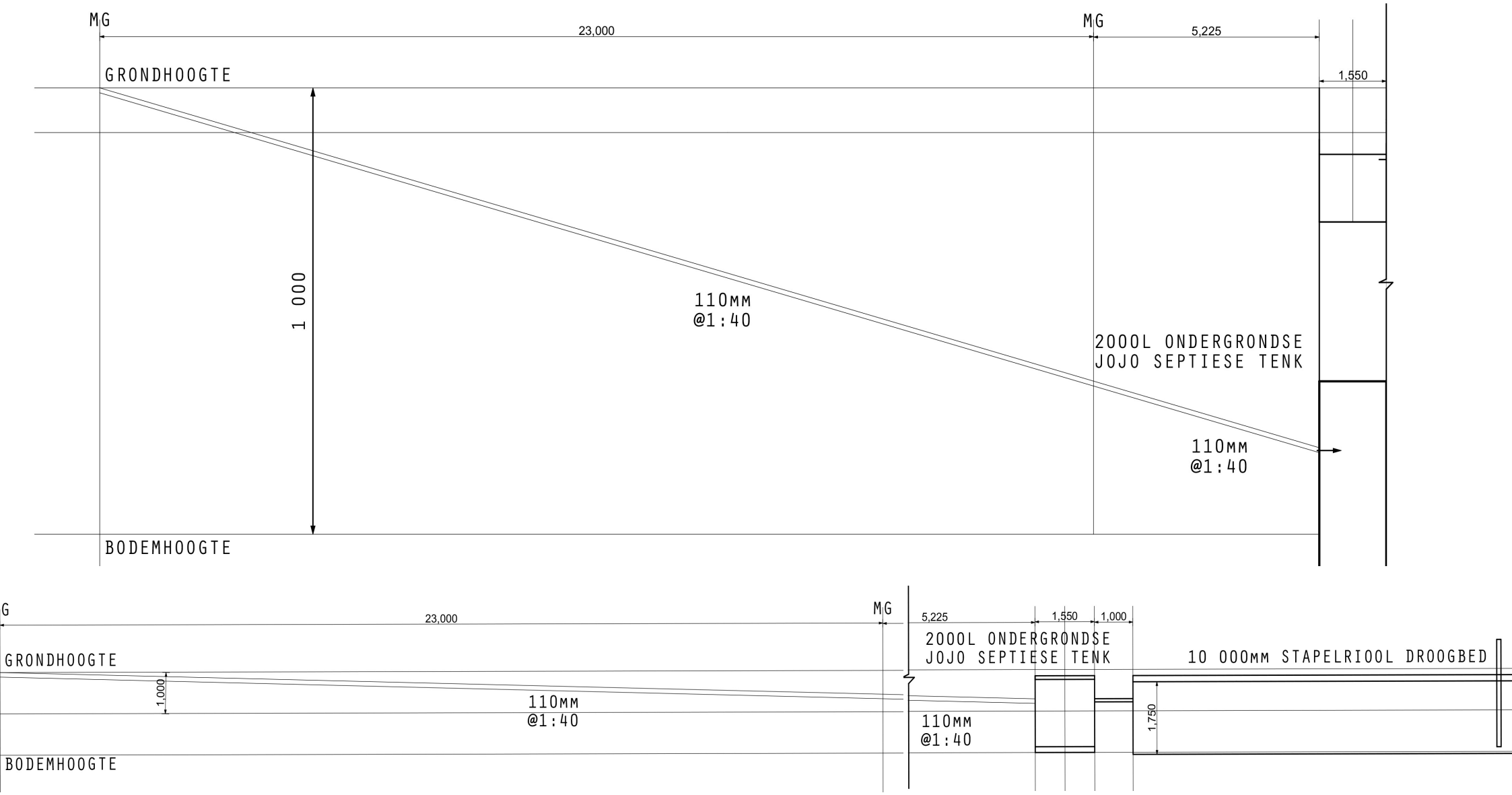
The building functions completely off the grid, managing its own sewage and refuse by making use of French drains and recycling.

There are no limits to the location of the French drain, as the site does not have limited space. However, the location of the French drain has to be chosen carefully, to ensure that the upper ground layers as well as the water table does not get contaminated or damaged.

The French drains specifications are to comply with SANS 10400 : Septic tanks should not be sited at least 7m from any buildings, and preferable down slope and downwind. The soakaway must be a minimum of 10m from watercourse, and 15 m from a building.

114. A conceptual sketch of how the building sits in the landscape. Lends ideas on oe services will be treated. Author, 2019





115. Analysis of a french drain and septic tank. Author, 2018

[9] DETAILING

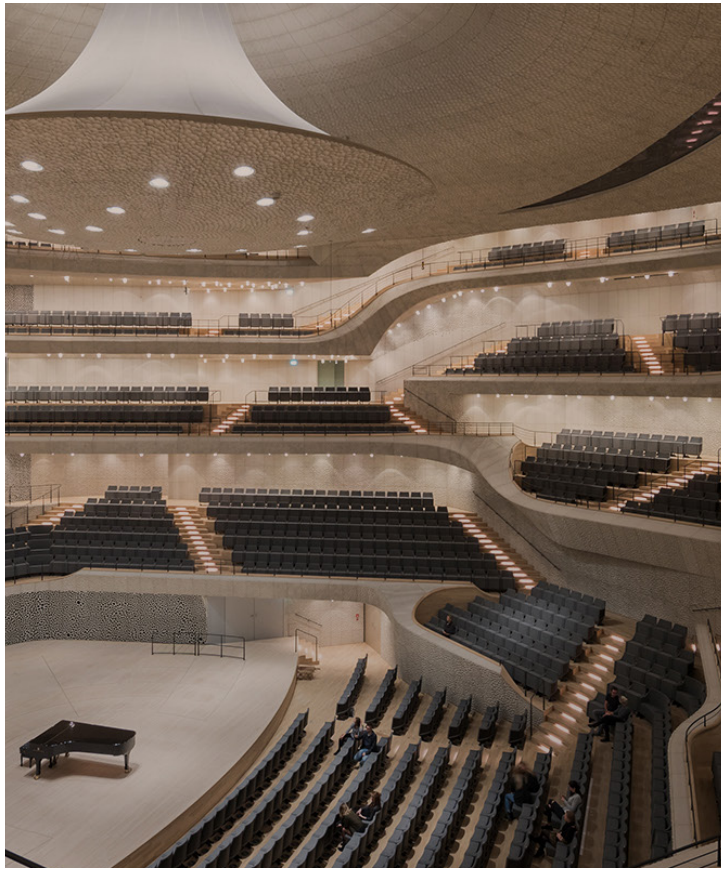
FINISHES

Even though the process of erecting the proposed structure may seem unrefined and risky, the finishes are still important to creating the desired result and experience. The contrast between the floor and the ceiling of the interior is part of the exhibition and should be executed with precision.

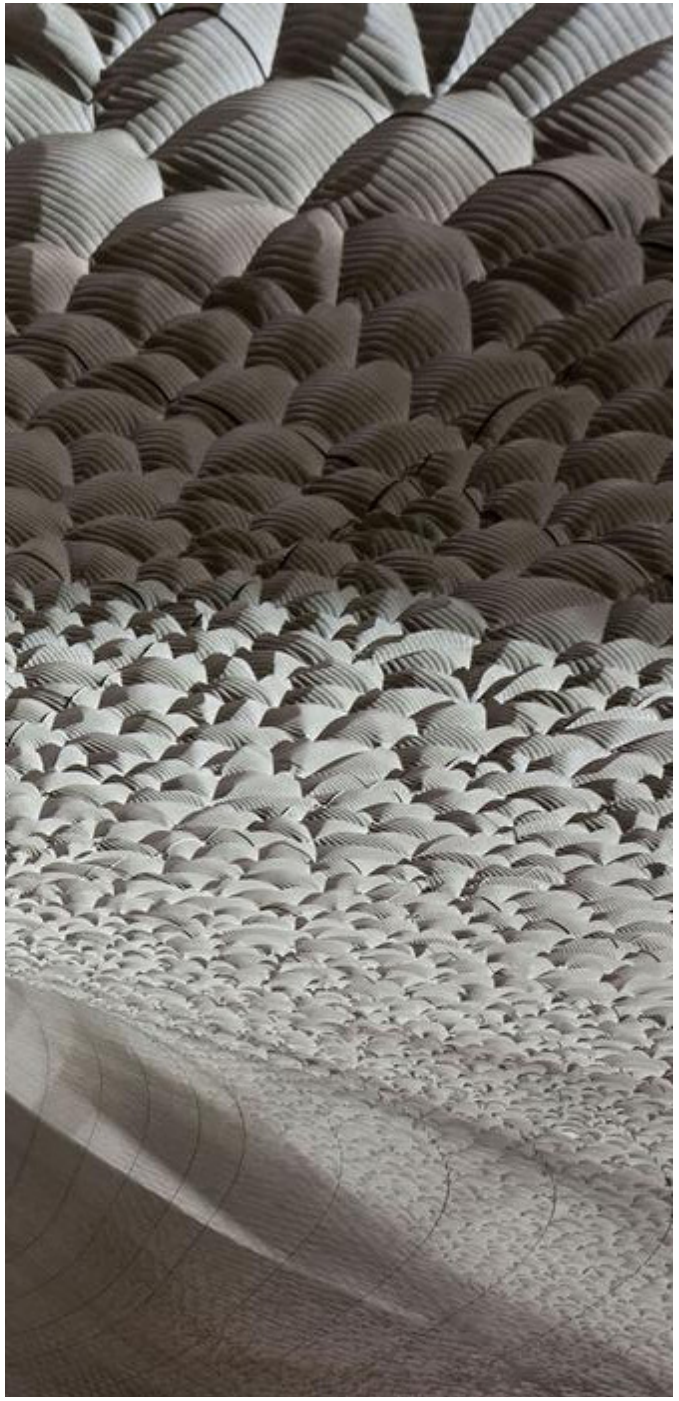
Precedent | Elbphilharmonie in Hamburg (Germany) by Herzog & De Meuron

The architects created a ceiling texture for the Great Hall which serves as a sound diffusing pattern. It "meant to reflect some of the design motives of the project as a whole"(https://architizer.com/blog/architectural-details-herzog-de-meuron-elbphilharmonie/).

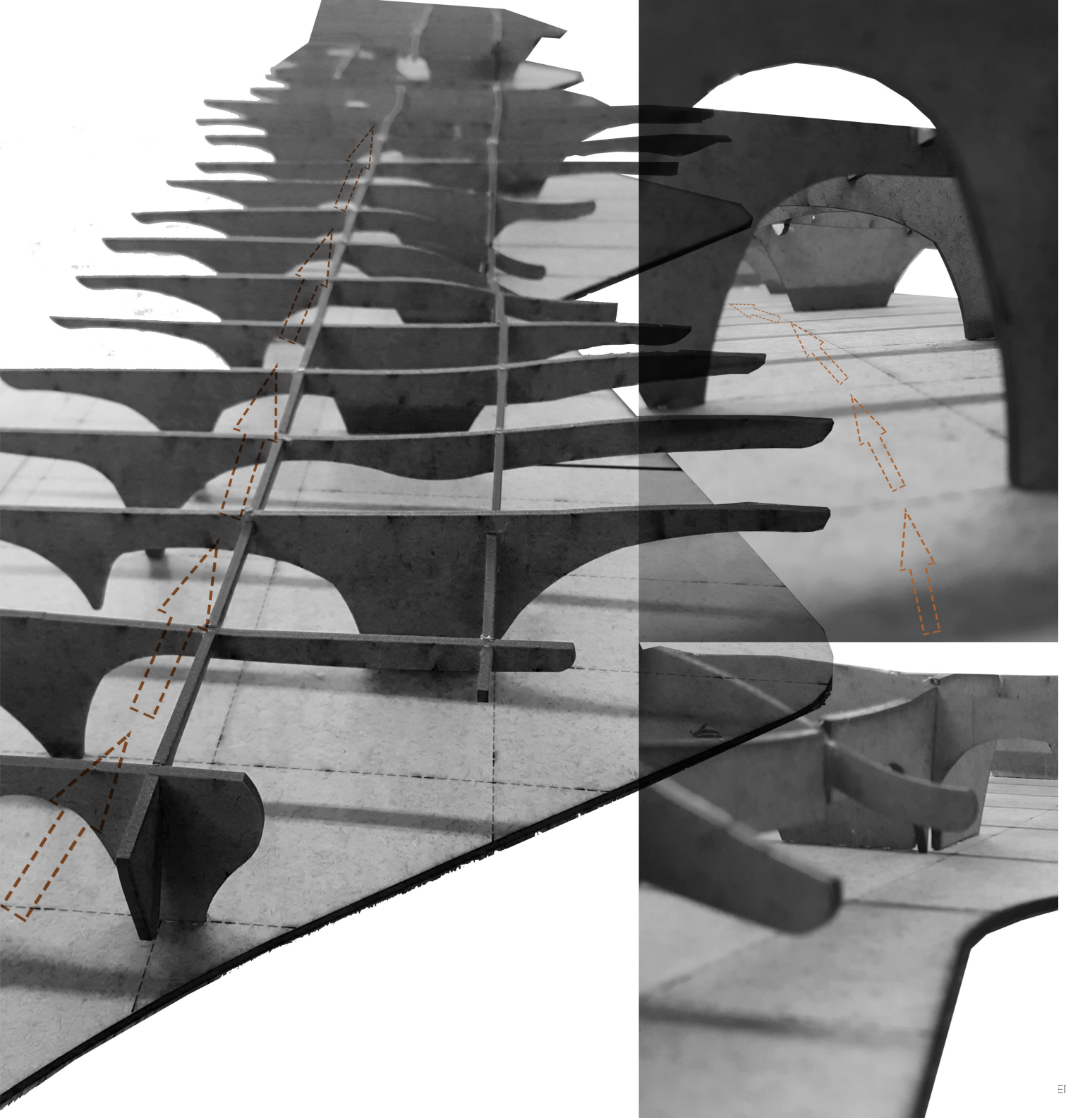
Alternative design in executing the desired effect includes making use of river stones that are placed on top of the landscape 'mould' during the construction process. This is to be carefully designed and placed by hand before the concrete shell is poured and morphed. After the procurement phase, when excavation takes place, the river stones are removed to leave the imprint of the stone on the ceiling of the roof structure.







116. The great hall and the textured ceiling. 0nline, 2019



SPATIAL EXPLORATION OF THE MODEL

The spatial exploration model shows the different short sections through the morphed roof structure on a specific moment. It lends ideas of scale and the massing of the concrete shell. The choreographed line of discovery moves through the main hallway and is also shown on the photo collage on the left.

117. Mixed medium collage of the spatial exploration model. Author. 2019

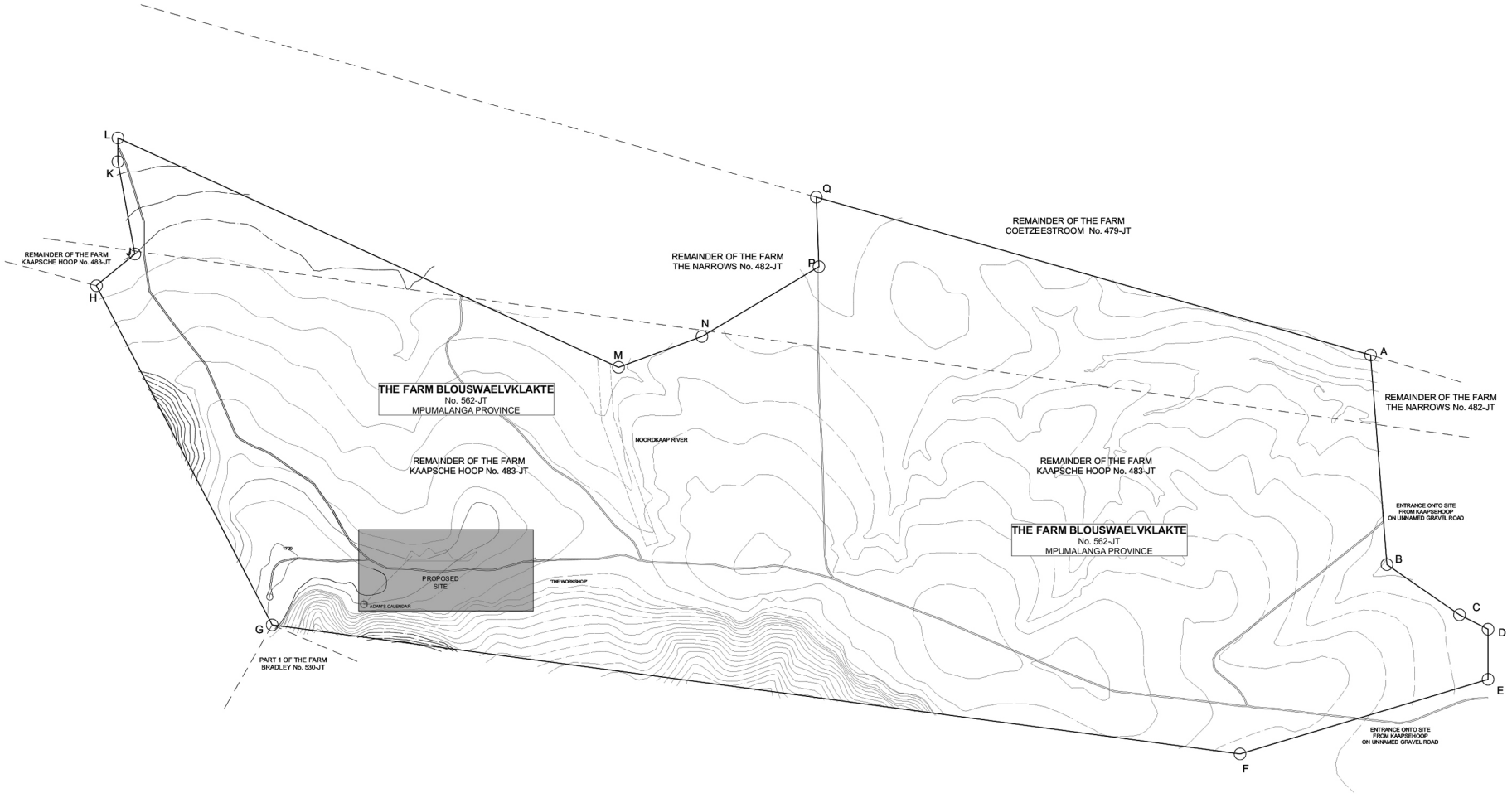
PARKING DETAILS

Standard 5m x 2m parking spaces will be allocated in a permeable paved area, which blends in with the landscape and serves as a sustainable response. The parking is limited to 40 spaces for normal vehicles and one larger space for a bus, in order to manage the amount of disturbance to nature.

[10] CONCLUSION

The focus of the proposed development is to create conditions which are domesticated, but does not remove from the beauty of the landscape. instead the proposal is about growth in architecture, giving form to structures within nature itself, giving up control and allowing the landscape to follow its own logic. Forms and finishes are therefore closer to architecture and potentially a sign of human habitation, instead of exploitation.

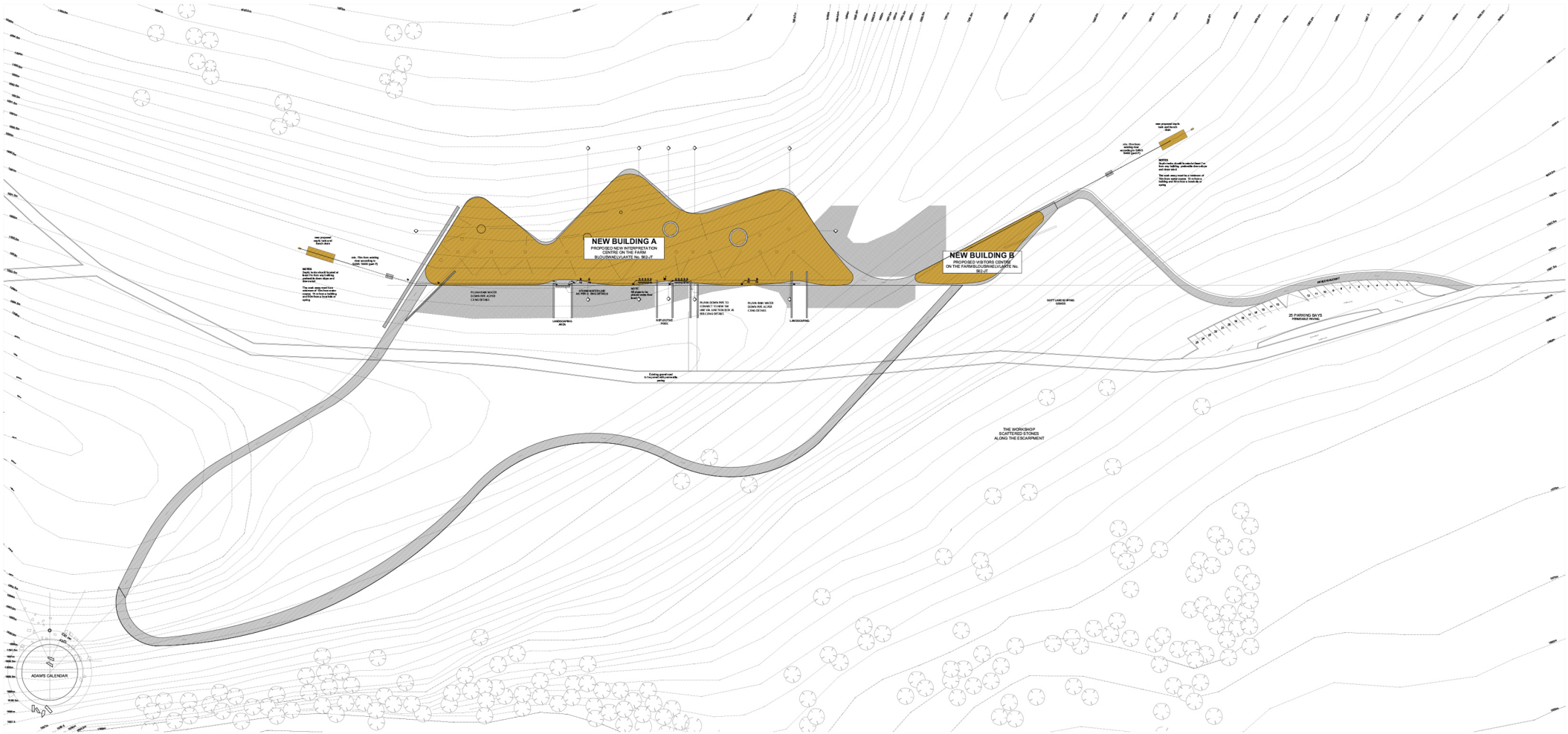
[11] CONSTRUCTION DRAWINGS



N

LOCALITY PLAN
SCALE 1 : 5000

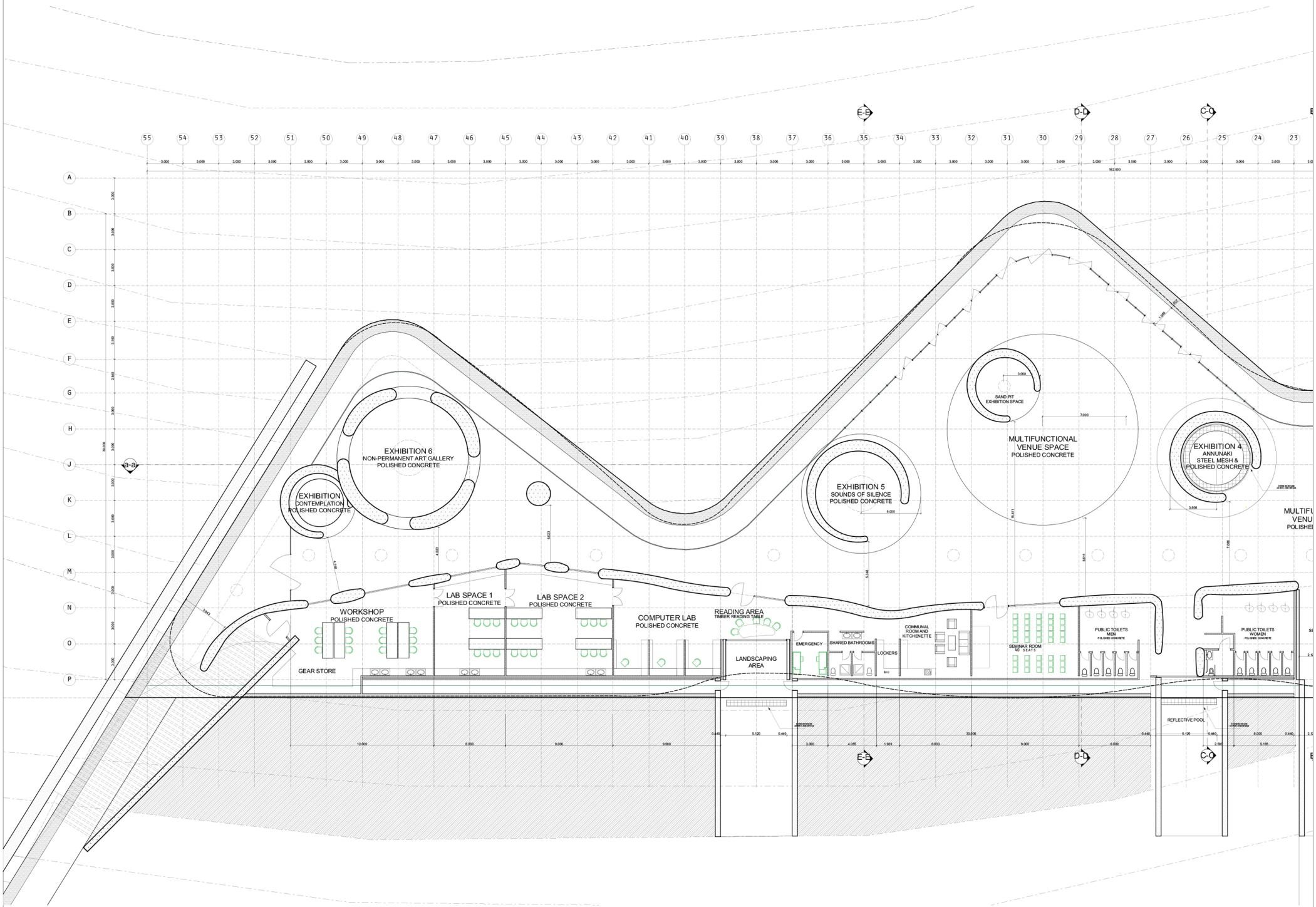
TECHNICAL DOCUMENTATION CONSTRUCTION **DEPARTMENT OF ARCHITECTURE UNIVERSITY OF THE FREE STATE**	PROJECT M.ARCH PROF DISSERTATION	BUILDING INTERPRETATION CENTRE FOR THE RUINS OF ADAM'S CALENDAR	DATE 2019/10/29	DRAWING NUMBER A100
			SCALE 1:5000	STUDENT NUMBER 2014021196
	LOCATION KAAPSEHOOP, MPUMALANGA	DRAWING TITLE LOCALITY PLAN	NAME MIEKE VAN DER WESTHUIZEN	



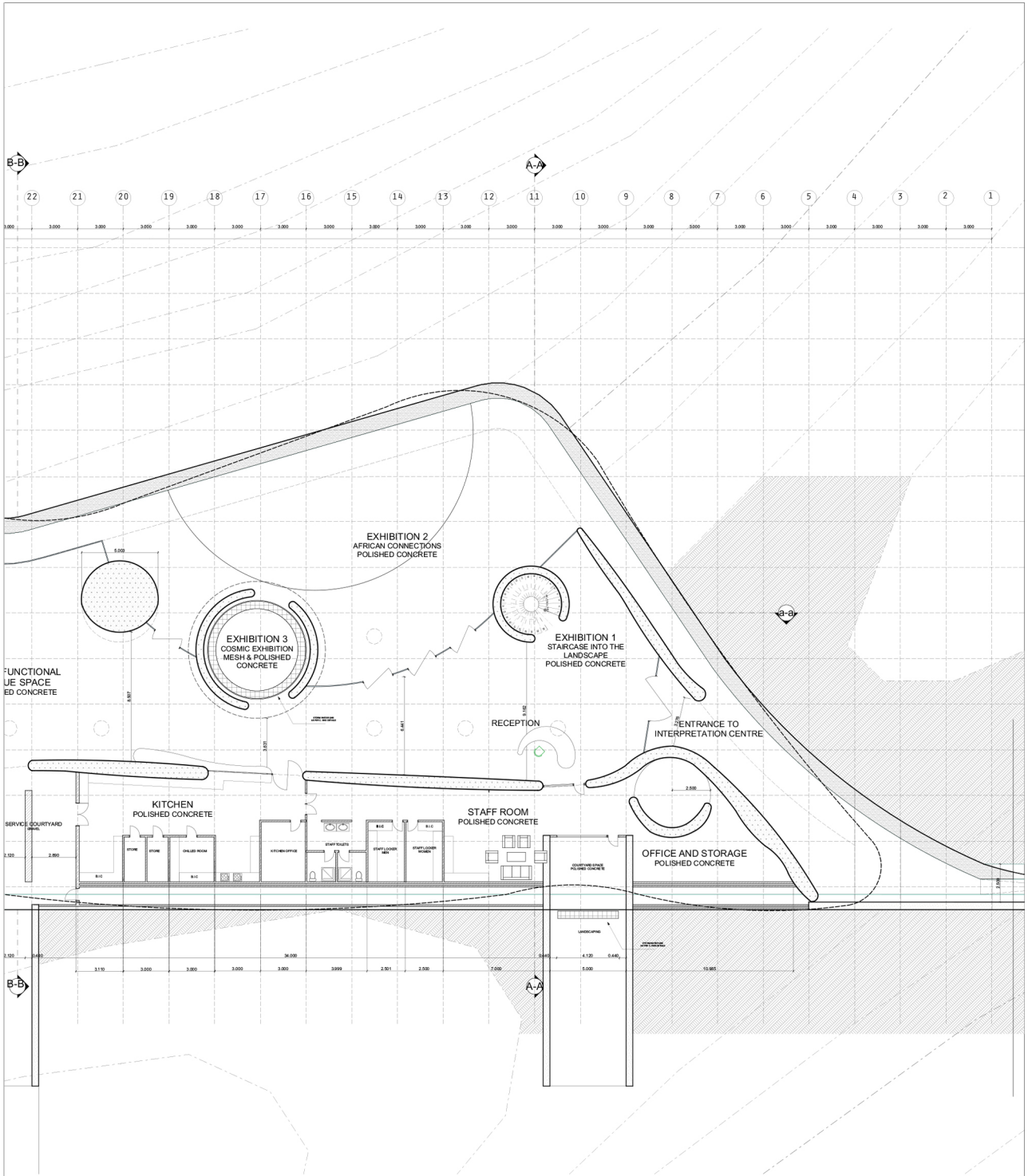
N

SITE DEVELOPMENT PLAN
SCALE 1 : 500

TECHNICAL DOCUMENTATION CONSTRUCTION **DEPARTMENT OF ARCHITECTURE UNIVERSITY OF THE FREE STATE**	PROJECT M.ARCH PROF DISSERTATION	BUILDING INTERPRETATION CENTRE FOR THE RUINS OF ADAM'S CALENDAR	DATE 2019/10/29	DRAWING NUMBER A102
			SCALE 1:500	STUDENT NUMBER 2014021196
	LOCATION KAAPSEHOOP, MPUMALANGA	DRAWING TITLE SITE DEVELOPMENT PLAN	NAME MIEKE VAN DER WESTHUIZEN	


E-E
D-D
C-C
a-a
EXHIBITION 6
NON-PERMANENT ART GALLERY
POLISHED CONCRETE
EXHIBITION
CONTEMPLATION
POLISHED CONCRETE
EXHIBITION 5
SOUNDS OF SILENCE
POLISHED CONCRETE
SAND PIT
EXHIBITION SPACE
MULTIFUNCTIONAL
VENUE SPACE
POLISHED CONCRETE
EXHIBITION 4
ANNUNAKI
STEEL MESH &
POLISHED CONCRETE
WORKSHOP
POLISHED CONCRETE
LAB SPACE 1
POLISHED CONCRETE
LAB SPACE 2
POLISHED CONCRETE
COMPUTER LAB
POLISHED CONCRETE
READING AREA
TIMBER READING TABLE
LANDSCAPING
AREA
EMERGENCY
SHARED BATHROOMS
LOCKERS
COMMUNAL
ROOM AND
KITCHENETTE
SEMINAR ROOM
40 SEATS
PUBLIC TOILETS
MEN
POLISHED CONCRETE
PUBLIC TOILETS
WOMEN
POLISHED CONCRETE
GEAR STORE
REFLECTIVE POOL

FLOOR PLAN



FLOOR PLAN
SCALE 1 : 100

TECHNICAL DOCUMENTATION CONSTRUCTION **DEPARTMENT OF ARCHITECTURE UNIVERSITY OF THE FREE STATE**	PROJECT M.ARCH PROF DISSERTATION	BUILDING INTERPRETATION CENTRE FOR THE RUINS OF ADAM'S CALENDAR	DATE 2019/10/29	DRAWING NUMBER A103
			SCALE 1:100	STUDENT NUMBER 2014021196
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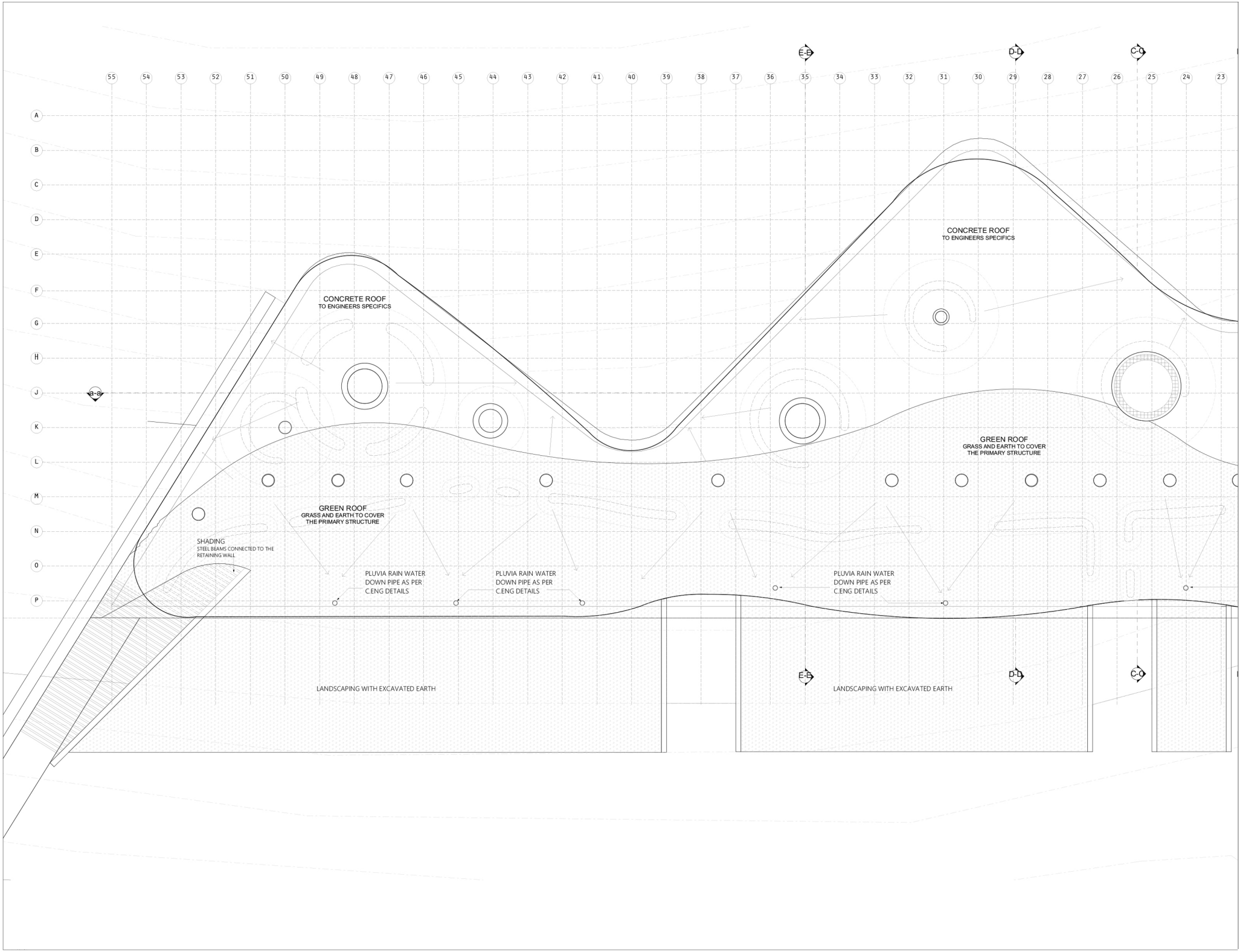
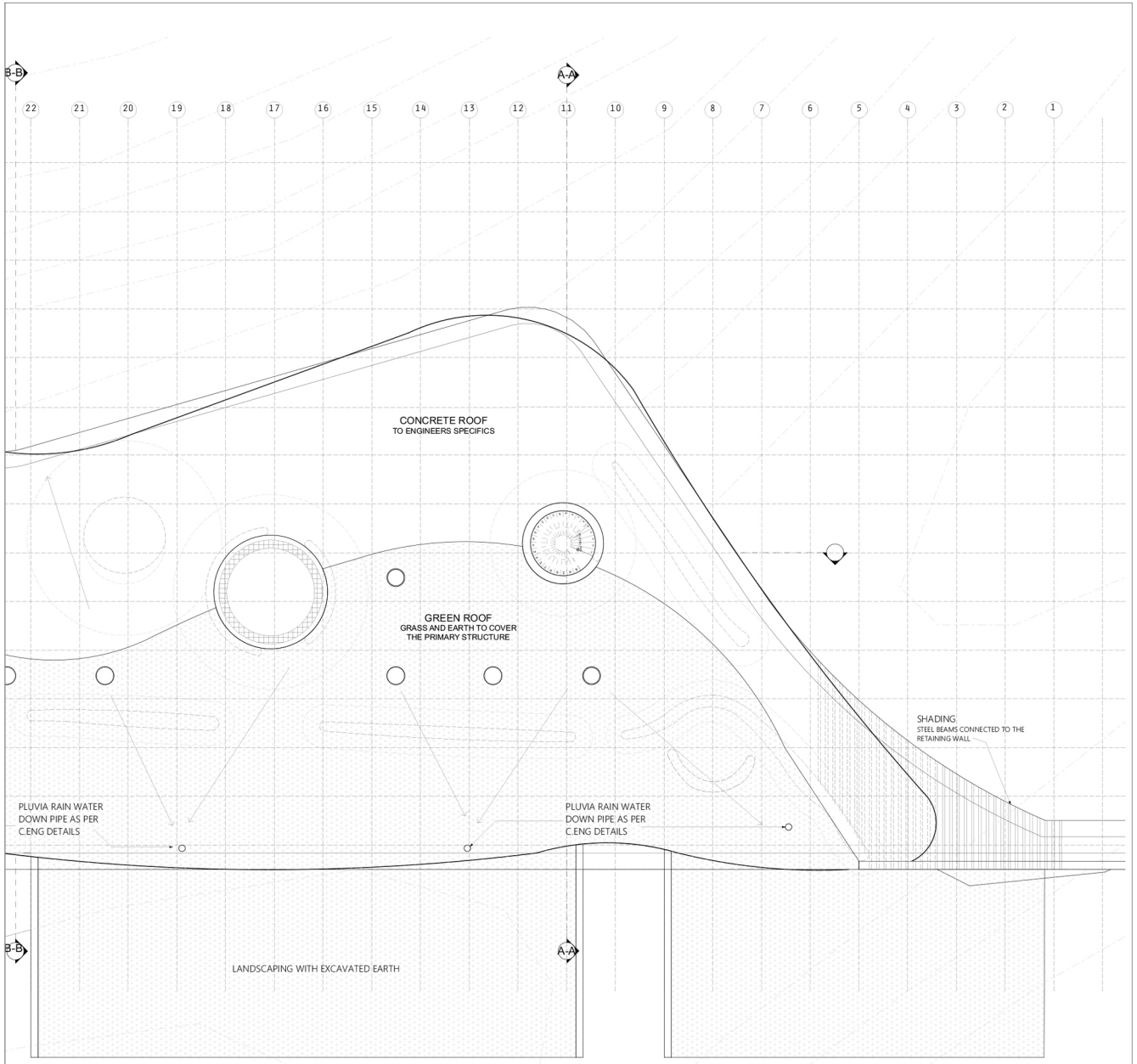

E-E
D-D
C-C
55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23
A
B
C
D
E
F
G
H
J
K
L
M
N
O
P
a-a
CONCRETE ROOF
TO ENGINEERS SPECIFICS
CONCRETE ROOF
TO ENGINEERS SPECIFICS
GREEN ROOF
GRASS AND EARTH TO COVER
THE PRIMARY STRUCTURE
GREEN ROOF
GRASS AND EARTH TO COVER
THE PRIMARY STRUCTURE
SHADING
STEEL BEAMS CONNECTED TO THE
RETAINING WALL
PLUVIA RAIN WATER
DOWN PIPE AS PER
C.ENG DETAILS
PLUVIA RAIN WATER
DOWN PIPE AS PER
C.ENG DETAILS
PLUVIA RAIN WATER
DOWN PIPE AS PER
C.ENG DETAILS
LANDSCAPING WITH EXCAVATED EARTH
LANDSCAPING WITH EXCAVATED EARTH
E-E
D-D
C-C

ROOF PLAN



N ROOF PLAN
SCALE 1 : 100

TECHNICAL DOCUMENTATION CONSTRUCTION **DEPARTMENT OF ARCHITECTURE UNIVERSITY OF THE FREE STATE**	PROJECT M.ARCH PROF DISSERTATION	BUILDING INTERPRETATION CENTRE FOR THE RUINS OF ADAM'S CALENDAR	DATE 2019/10/29	DRAWING NUMBER A105
			SCALE 1:100	STUDENT NUMBER 2014021196
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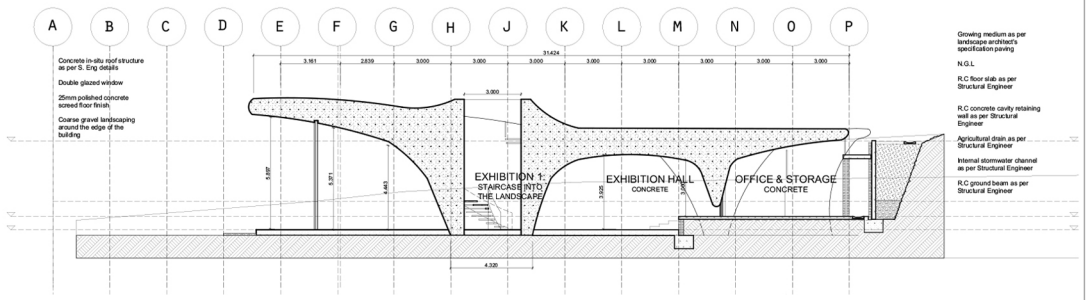
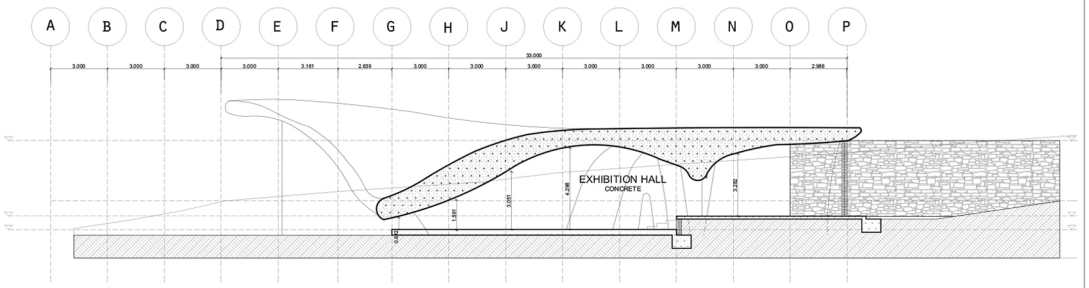


SECTION A-A
SCALE 1 : 100



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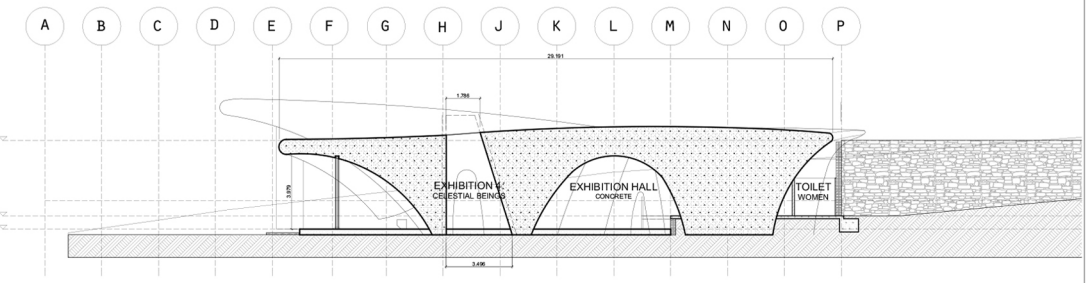
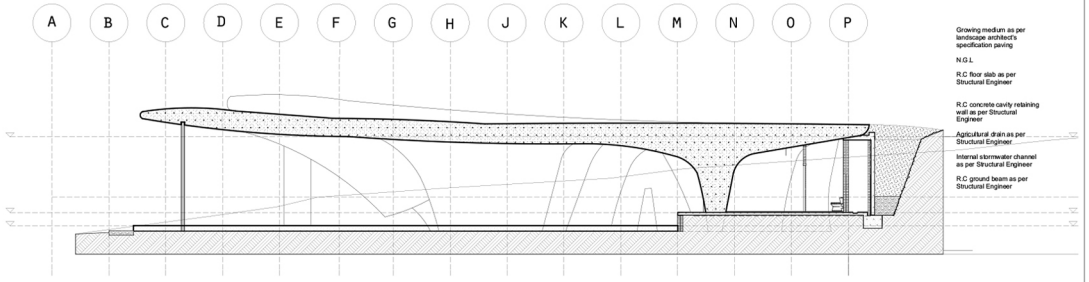
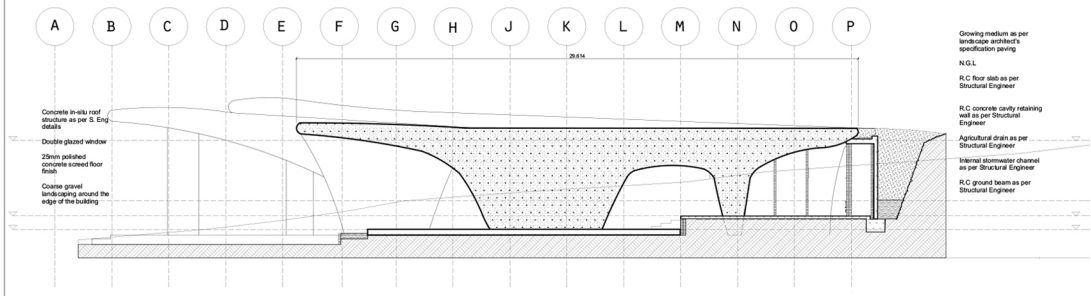


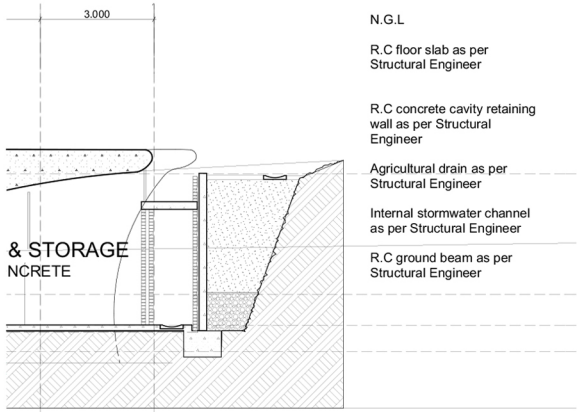
SECTION C-C
SCALE 1 : 100



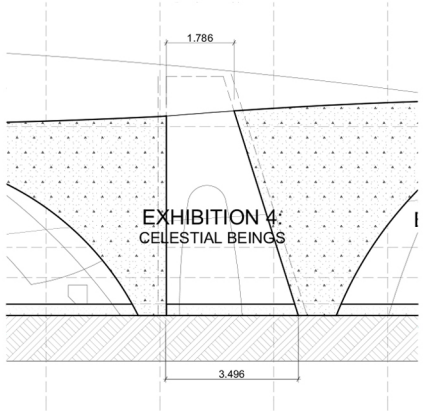
SECTION D-D
SCALE 1 : 100



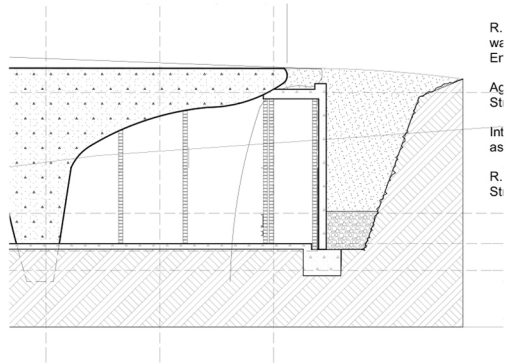
SECTION E-E
SCALE 1 : 100



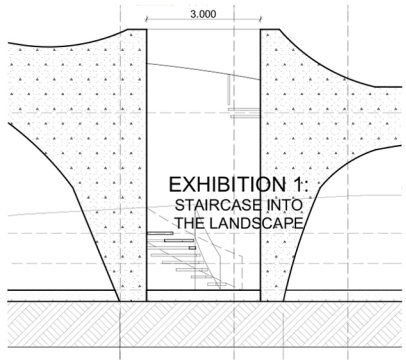
RETAINING WALL DETAIL
SCALE 1 : 50



EXHIBITION SPACE DETAIL
SCALE 1 : 50



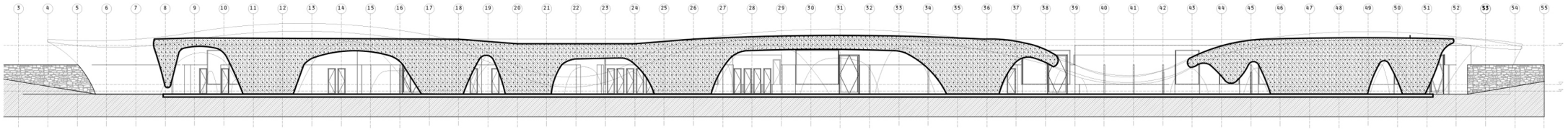
GREEN ROOF AND RETAINING WALL DETAIL
SCALE 1 : 50



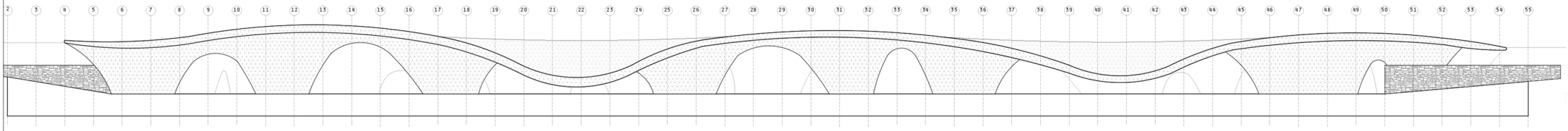
STAIRCASE DETAIL
SCALE 1 : 50

TECHNICAL DOCUMENTATION CONSTRUCTION **DEPARTMENT OF ARCHITECTURE UNIVERSITY OF THE FREE STATE**	PROJECT M.ARCH PROF DISSERTATION	BUILDING INTERPRETATION CENTRE FOR THE RUINS OF ADAM'S CALENDAR	DATE 2019/10/29	DRAWING NUMBER A201
			SCALE 1:100	STUDENT NUMBER 2014021196
	LOCATION KAAPSEHOOP, MPUMALANGA	DRAWING TITLE SECTIONS	NAME MIEKE VAN DER WESTHUIZEN	

TECHNICAL DOCUMENTATION CONSTRUCTION **DEPARTMENT OF ARCHITECTURE UNIVERSITY OF THE FREE STATE**	PROJECT M.ARCH PROF DISSERTATION	BUILDING INTERPRETATION CENTRE FOR THE RUINS OF ADAM'S CALENDAR	DATE 2019/10/29	DRAWING NUMBER A202
			SCALE 1:100 & 1:50	STUDENT NUMBER 2014021196
	LOCATION KAAPSEHOOP, MPUMALANGA	DRAWING TITLE SECTIONS & DETAILS	NAME MIEKE VAN DER WESTHUIZEN	



SECTION a-a - LONG SECTION (IN PROGRESS)
SCALE 1 : 200



WEST ELEVATION (IN PROGRESS)
INTERPRETATION CENTRE FOR THE RUINS OF ADAM'S CALENDAR
SCALE 1 : 200

TECHNICAL DOCUMENTATION CONSTRUCTION **DEPARTMENT OF ARCHITECTURE UNIVERSITY OF THE FREE STATE**	PROJECT M.ARCH PROF DISSERTATION	BUILDING INTERPRETATION CENTRE FOR THE RUINS OF ADAM'S CALENDAR	DATE 2019/10/29	DRAWING NUMBER A203
			SCALE 1:200	STUDENT NUMBER 2014021196
	LOCATION KAAPSEHOOP, MPUMALANGA	DRAWING TITLE SECTIONS & ELEVATION	NAME MIEKE VAN DER WESTHUIZEN	



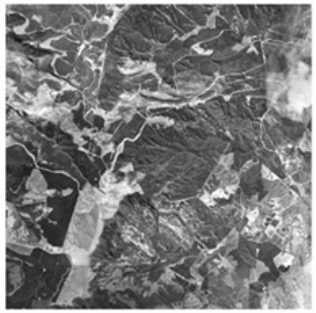
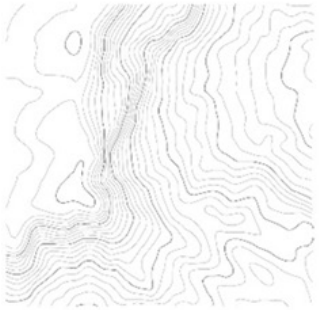
8

CHAPTER

8 | REFLECTION AND REVIEWS

[1] REFLECTION
[2] REVIEWS
[3] APPENDIX

This study not only explores how architecture should be interpreted and viewed from alternative perspectives, but also becomes an intimate process of viewing our own lives. By walking the tightrope between science and the fictional intangible world, I was constantly challenged to overcome my fear of the unknown and to step out of what I perceive of being secure and concrete. And by doing this, so much more complexities, beauty and ambiguities were revealed to me. The world is always more than it seems, and architecture should be prepared to morph into the new shapes that it proposes, to grow with it, change with it and to guide the dweller into a more spiritual awareness of place.



REFLECTION

[2] REVIEWS

INTERNAL REVIEW

In this crit session I wanted to address the idea of the exhibition routes along the design. It was important to give the examiners a clear idea of precedents and how the building will sit within the landscape. The ordering of spaces and rooms were also laid out in order to understand how the building will be accessed and the visitor will flow through the spaces.

Feedback by: Prof J.D Smit, Dr. H.A. Auret,. P Smit

EXTERNAL REVIEW

In this crit session I proposed the new developed explorations in terms of the construction technique of how the development will be built on site.

Feedback: Humphries Jooste
No big problems to the design, only some concerns about the materials and finishes to the design. How the interior spaces would feel and look is important and the fenestration.

Reaction to feedback
Agree with all the concerns of the examiners. Will focus on the finishes and the experience of the internal spaces for the final design review.

FINAL EXTERNAL REVIEW

In this crit session the final detailing and design resolution was presented to the external examiners. Final renderings and final model was shown and analysed.

Feedback: Nina Saunders, Gerhard Bosman, Hennie Botha.

Praise for the Interpretation Centre for the Ruins of Adam's Calendar:

Incredibly powerful design capturing the Genius Loci of the site. Being comfortable in a place where the outcome of the design resolution is unsure. Being brave and making site based decisions. Well put together set of drawings and renderings.

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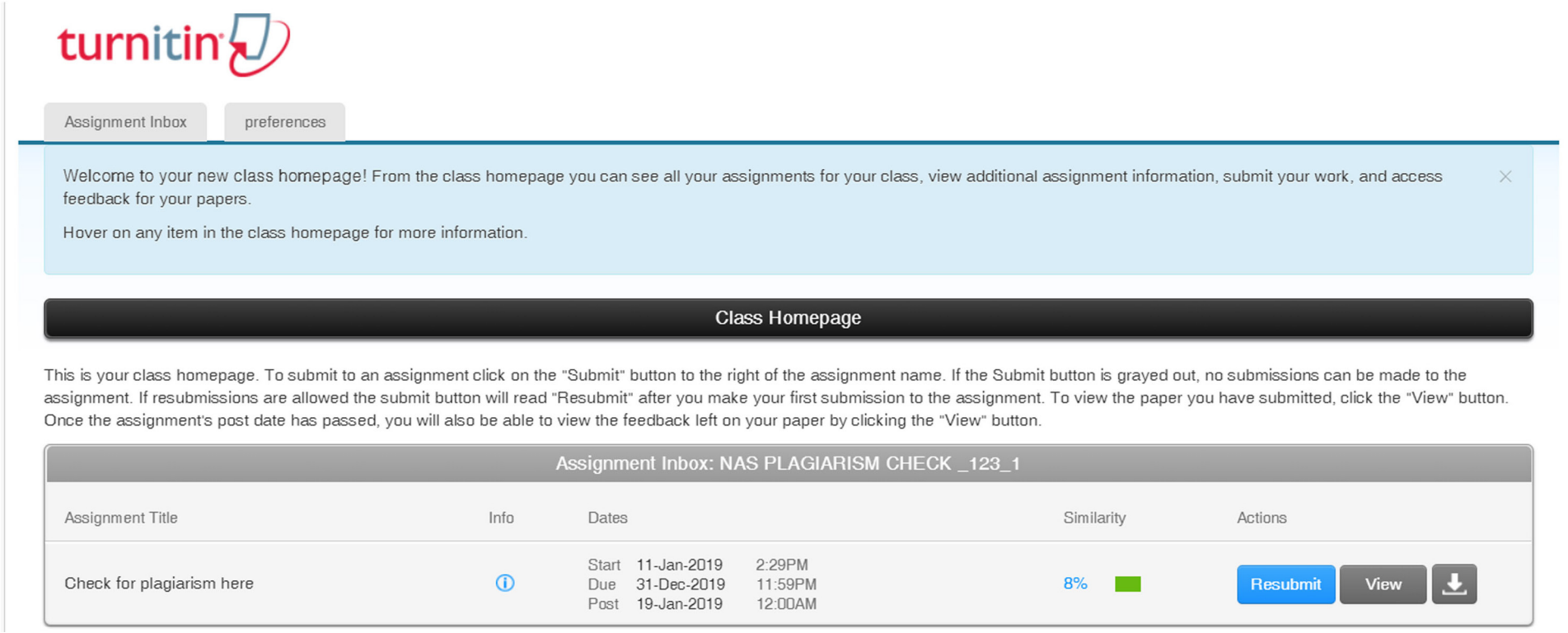
LIST OF REFERENCES

Artifice and the Ancient Past: An Interpretation Center for the Ruins of Adam's Calendar

ORIGINALITY REPORT

8%	6%	2%	6%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS



KAART VIR GEKONSOLIDEERDE TITEL

Die Plaas Blouswaelvlakte No 562 -JT

Provinsie Mpumalanga

Opgemeet in Oktober 1996 deur my

PLS 0680 JLN van Zyl
Professionele Landmeter

L.G. No. ★
12768/1996

Goedgekeur
1997-01-10
nms.
LANDMETER-
GENERAAL

VEL 2 VAN 2 VELLE

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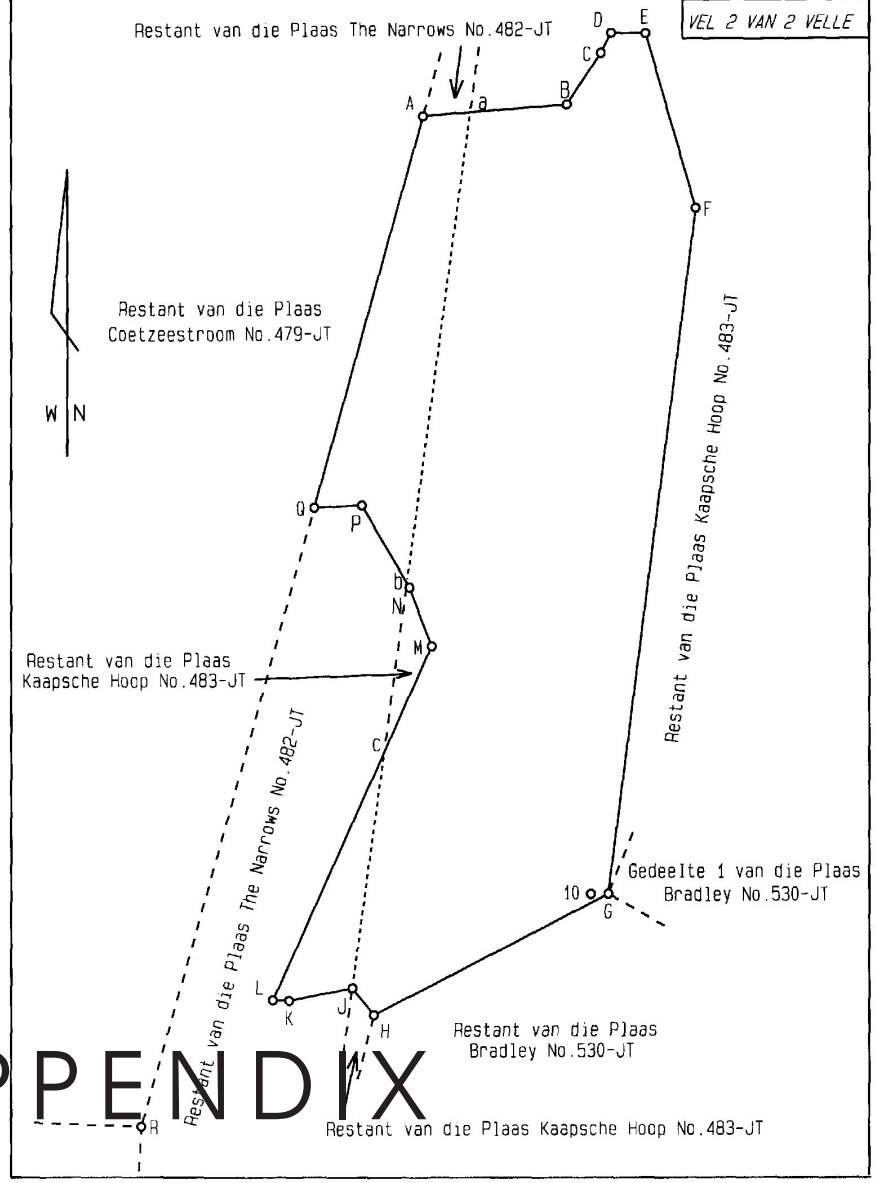

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nms. LANDMETER-GENERAAL

KAART VIR GEKONSOLIDEERDE TITEL

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BC	282,41	214 11 10	B	+ 24 200,63		+ 32 511,72
CD	102,37	208 48 20	C	+ 24 041,95		+ 32 278,10
DE	160,40	270 30 00	D	+ 23 992,62		+ 32 188,40
EF	828,40	343 39 48	E	+ 23 832,23		+ 32 189,80
FG	3123,21	7 30 59	F	+ 23 599,22		+ 32 984,75
GH	1223,79	63 30 31	G	+ 24 007,76		+ 36 081,12
HJ	159,04	140 34 10	H	+ 25 103,05		+ 36 627,01
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MN	284,52	158 45 10	M	+ 24 833,26		+ 34 960,57
NP	435,76	149 18 00	N	+ 24 936,37		+ 34 695,39
PQ	222,98	87 45 30	P	+ 25 158,84		+ 34 320,70
QA	1839,27	196 05 45	Q	+ 25 381,65		+ 34 329,42
	KONNEKSIEDATA					
QR	2915,00	16 05 45	R	+ 26 189,82		+ 37 130,15
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L.G. No. ★
12768/1996

Goedgekeur
1997-01-10
nms.
LANDMETER-
GENERAAL

VEL 1 VAN 2 VELLE

State Land

Beskrywing van bakens

A, B, C, F, J, K, L, M, N, P, Q : Ysterpaal
D, E : Ligte spoorstaafdraadhoekpaal
G : Gat in rots

H : 30mm Ysterpyp in betonbaken

KOMPONENTE:

(1) Die figuur A a b P Q stel voor Gedeelte 1 van die Plaas The Narrows No.482-JT.
Volgens Kaart No.A 12765/1996 Akte van Transport No.

(2) Die figuur a B C D E F G H J c M N b stel voor Gedeelte 3 van die Plaas Kaapsche Hoop No.483-JT
Volgens Kaart No.A 12767/1996 Akte van Transport No.

(3) Die figuur c J K L stel voor Gedeelte 2 van die Plaas The Narrows No.482-JT.
Volgens Kaart No.A 12766/1996 Akte van Transport No.

Die figuur
A B C D E F G H J K L M N P Q
stel voor 518,8735 hektaar grond, synde

Die Plaas Blouswaelvlakte No 562 -JT
en bevat (1) tot (3) hierbo
Provinsie Mpumalanga

Opgemeet in Oktober 1996 deur my

PLS 0680 JLN van Zyl
Professionele Landmeter

Hierdie kaart is geheg aan No. ged. t.g.v. Registrateur van Aktes	Die oorspronklike kaarte is soos hierbo aangetoon.	Lêer JT 562 M.S. 5811/1996 A.P. Komp. JT-6A JT-6D JTSJ-22 JTSD-44

APPENDIX

THIS IS NOT A THESIS