LANDSCAPE RUIN

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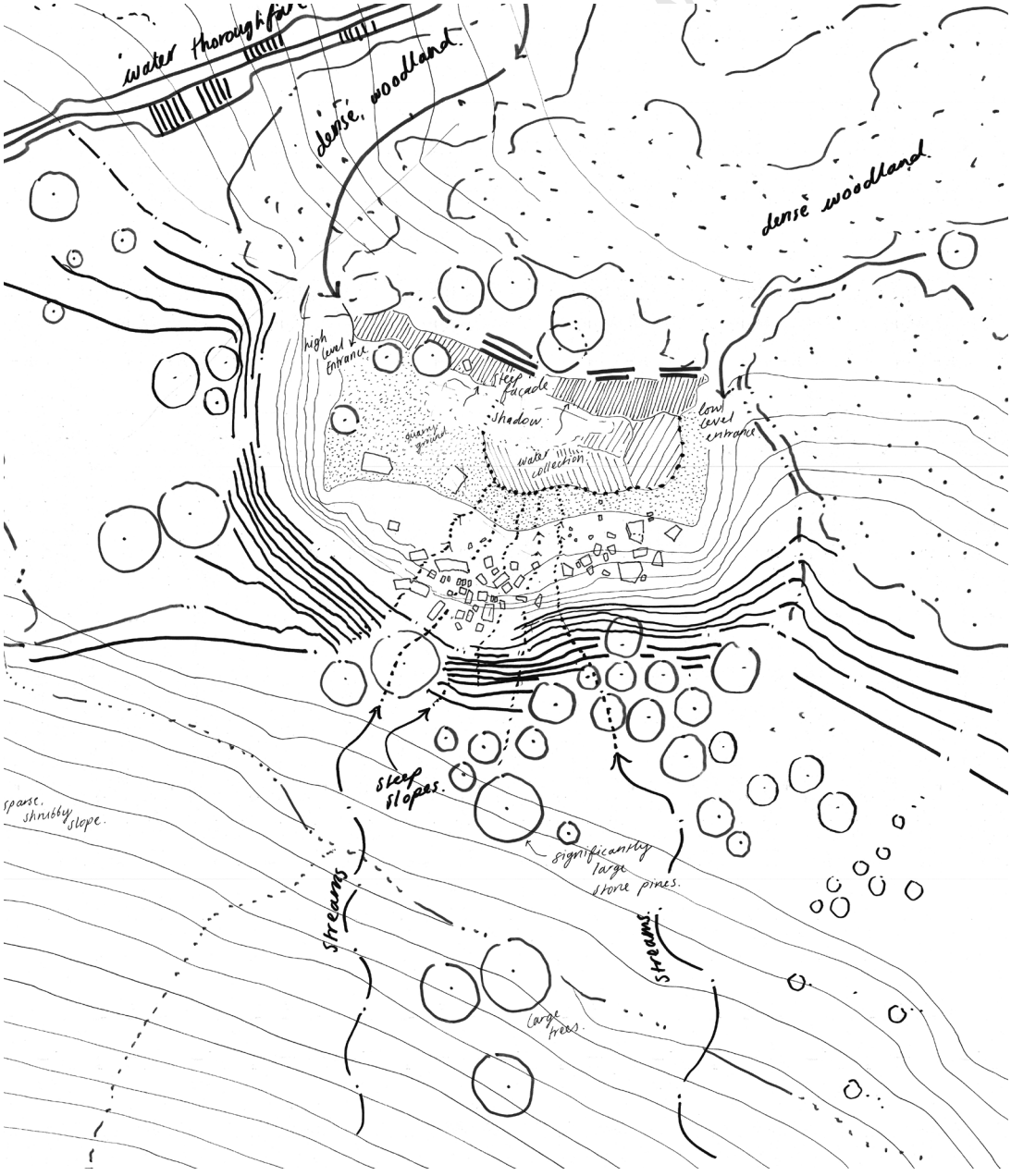
GROUNDMASS EXCAVATION AT HIGGOVALE QUARRY



SARAH THOMAS
2017

LANDSCAPE RUIN:
Groundmass Excavation at Higgovale Quarry

Sarah Thomas
THMSAR005

Submitted in partial fulfillment of the Master of Landscape Architecture Degree

120 Credits

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PROJECT SUMMARY

My dissertation investigates the relationship between landscape, memory and history, with an emphasis on the experience of landscape as a record keeping device.

I wish to explore the issue of underutilized or undervalued public spaces in Cape Town, my case study being the Higgovale Quarry. The perception of quarries as abandoned and not easily accessible (and therefore unsafe) is an assumption I would like to challenge in my research.

Based on my study, which investigates architectural ruins and the idea of ‘ruin value’ being inherent in landscape, I would like to frame the Higgovale Quarry as a kind of urban ruin.

Through a historical and ecological analysis of the site, I hope to establish a way of transforming the quarry and its surrounds into a safe, accessible and captivating public space.

STUDY

ABSTRACT

My study consists of an inquiry into archaeology and palaeontology, and the relationship of ‘the dig’ to landscape. I focus on the idea that digging or excavating is a process that can reveal ancient landscapes and suggest new narratives.

My research revolves around ruin discourse, and the idea that a ‘dig’ is a sort of ruin in reverse. I began thinking about the criteria that define a ruin and applying them to landscapes.

The study culminated in the idea of the landscape being a kind of ruin itself; the experience of a ruin, or *ruinenlust*, isn’t only about a structure that has been dragged down into the ground over time- it’s also about light, temperature, plants, views – all the elements that make up our experience of landscape.

I set about trying to turn this study into a project – how do I design the idea that all landscapes are ruins? The ideas I had explored of excavation, and especially the image of the ‘grid’ of excavation as an imposition over the landscape, led me to the Higgovale Quarry site.


RUIN
LAND-
SCAPE

RUIN IN LANDSCAPE
RUINS, DIGS AND THE AESTHETICS OF EXCAVATION: LANDSCAPE AS ECOLOGICAL RUIN

//

‘The ruin includes the human - made and the nature - made and it has its own time, place, space and life’

- Hetzler, 1988

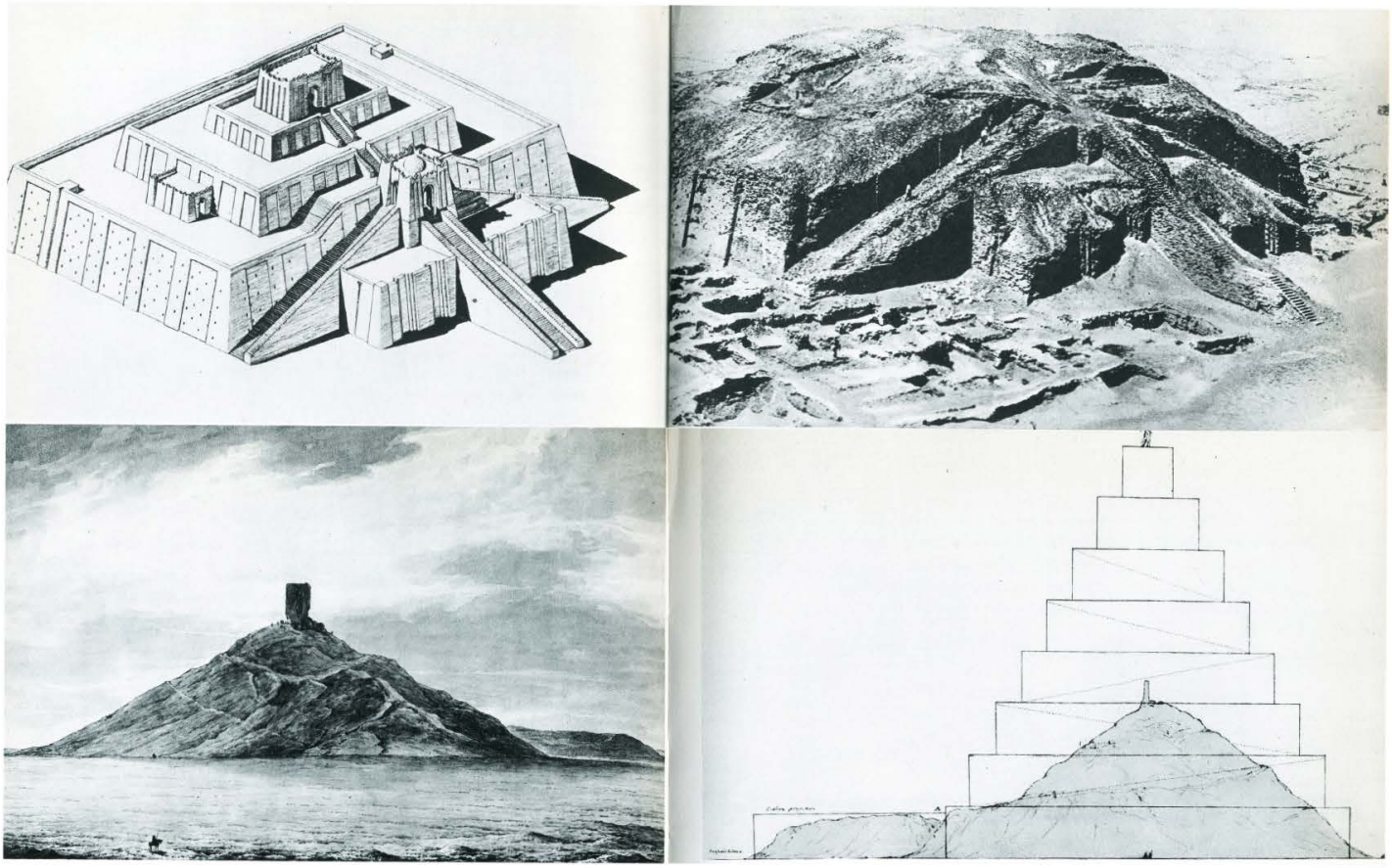
‘Architecture is the only art in which the great struggle between the will of the spirit and the necessity of nature issues in to real peace, in which the soul in its upward striving and nature in its gravity are held in balance’

- Georg Simmel, ‘The Ruin’, 1911

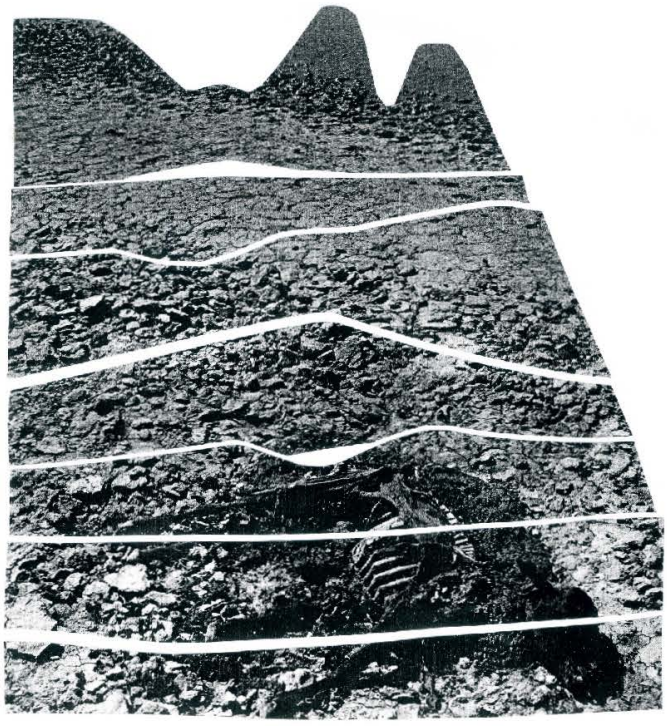
STUDY

The focal point of this study is the way in which something (object, building or landscape) becomes a ruin, or comes to be viewed as a ruin. My point of departure was the idea that a building that has fallen into ruin becomes a kind of landscape – its vertical, tectonic state is broken apart and transformed into a horizontal ground plane of various disassociated objects, a kind of tableau of fractured elements referencing what it was once.

The dichotomy between the man-made and the nature-made underpins ruin discourse, and I will investigate these relationships in order to reveal a landscape architectural attitude towards the process of ruination.



Sketches and artists' impressions of the Tower of Babel



RUIN -

‘RUINENLUST’

(ruin lust) – a German term coined by Rose Macaulay
in her study entitled ‘Pleasure of Ruins’.

‘The greatest glory of a building is not in its stones, nor in its gold. Its glory is in its Age, and in that deep sense of voicefulness, of stern watching, of mysterious sympathy, nay, even of approval or condemnation, which we feel in walls that have long been washed by the passing waves of humanity.”

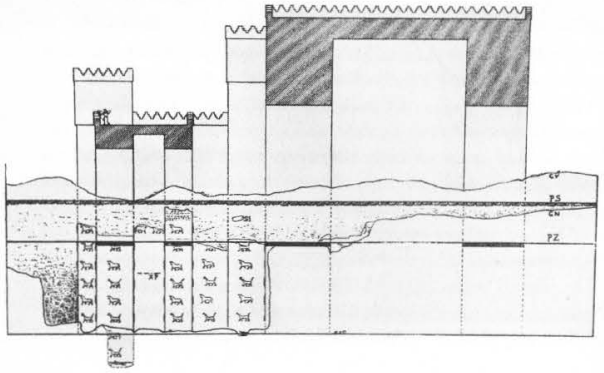
John Ruskin, ‘The Lamp of Memory’ in ‘The Seven Lamps of Architecture ‘(1849)

‘But ruination is also a process or an action, not only an image or a graphic device’
Dillon, 2014

Brian Dillon states that when we picture ruins, we conjure images of discreet objects in a landscape. Though these objects may be fractured or degraded, they exist as motifs in relation to their surroundings. He compares ‘genuine’ ruins to the ‘fake ruins’ of the 18th century, follies and landscape objects intended to invoke the past. The ruin is a thing to project ones desires onto, it is a simulacrum of the idea of the past.

Dillon argues that ruination should be viewed as a process. The idea that time ‘reclaims‘ human-made structures implies an all-consuming nature, an unstoppable process of erosion and decay and impermanence. Through the transformation of a building or structure into a ruin, we are able to see time physically manifest itself.

Nebuchadnezzar's Babel rises out of the earth.



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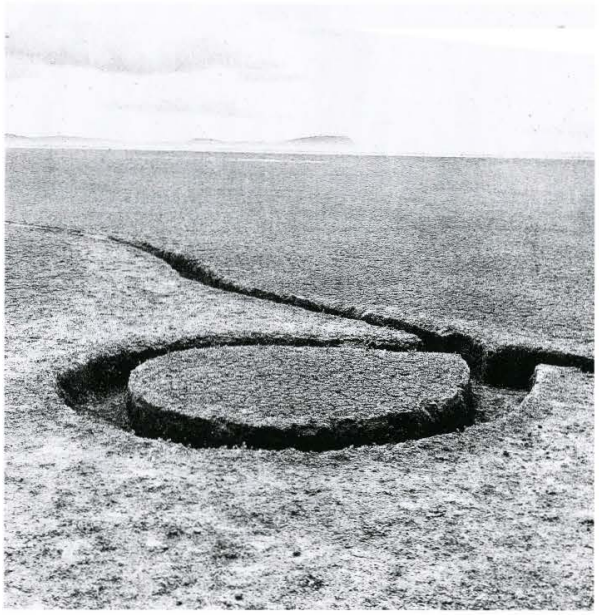
Top:
'Babel Rises out of the earth'

Right: Michael Heizer - 'Isolated Mass' 1968



LANDSCAPE + RUIN

EXCAVATION + TEMPORAL MAPPING OF THE LANDSCAPE: FINDING RUIN VALUE IN LANDSCAPE

Ruin Time: built form becomes landscape
Ruin Beauty: the result of ruin time

In his paper entitled 'Causality: Ruin Time and Ruins, Florence Hetzler describes the entire landscape as aspects of a ruin: light, temperature, animals and people form part of the ruin. The ruin becomes a landscape. The ruin speaks about past, present and future.

'Nature has made it her own, time has worn off all traces of the rule, it has blunted the sharp edges of the chisel and broken the regularity of opposing parts'
- William Gilpin, 1782

'The ideas ruins evoke in me are grand. Everything comes to nothing, everything perishes, everything passes, only the world remains, only time endures'
- Denis Diderot, 1767

'The ruin orders itself into the surrounding landscape without a break'
- George Simmel

Dillon speaks about the 'battle between architecture and nature' - 'The ruin has a dialectical relationship with landscape, and further with nature itself, with an idea of nature and its decaying or burgeoning reality…as the structure decays, nature begins to take the upper hand, exercising its ''brute, downward dragging, corroding, crumbling power" (Simmel, 1911).

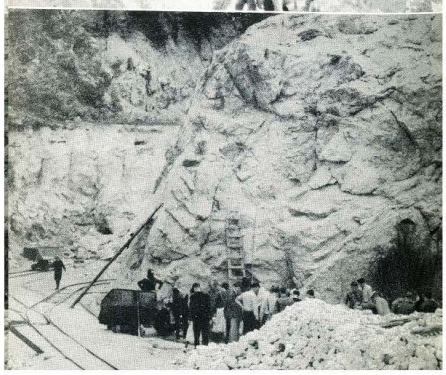
‘What though of the natural world itself? Is that not also subject to a type of ruination, whether by organic, geological or entirely artificial forces?’
– Dillon

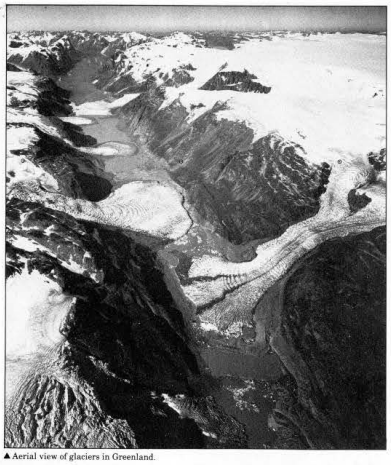
‘Romance and poetry, ivy, lichen and wallflowers need ruin to make them grow‘

- Nathaniel Hawthorne, ‘The Marble Faun‘ 1859

Dillon speaks about the Romantic view of desolate landscapes invoking the sublime. The slow degradation and simultaneous renewal of landscape caused by geological processes is likened to the fall of great cities or structures – the potential for the sublime lies not in the corrosive effects of nature but in the corrosion of nature itself.

In his essay entitled ‘A Tour of the Monuments of Passaic, New Jersey’ (1967), Robert Smithson talks about his idea of ‘ruins in reverse’: ‘all the new construction that would eventually be built, the opposite of the romantic ruin because the buildings don’t fall into ruin after they are built, but rather rise into ruin before they are built’. This idea relates to the concept of ‘ruin value’, in which buildings are designed to become lasting ruins. Based on my research, predesignating something as a ruin undermines ruin time, disrupting the highly complex set of processes that need to be allowed to take place in order to produce the aesthetic phenomenon of the ruin.





▲ Aerial view of glaciers in Greenland.

▲ Modern ice wedge filling a crack in sands in the Canadian Arctic.

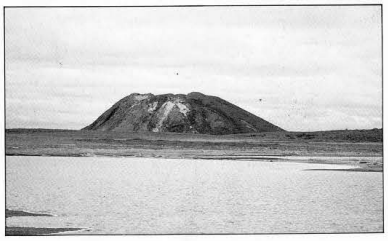
▲ Fossil pingos in Norfolk, England are evidence of past tundra conditions.

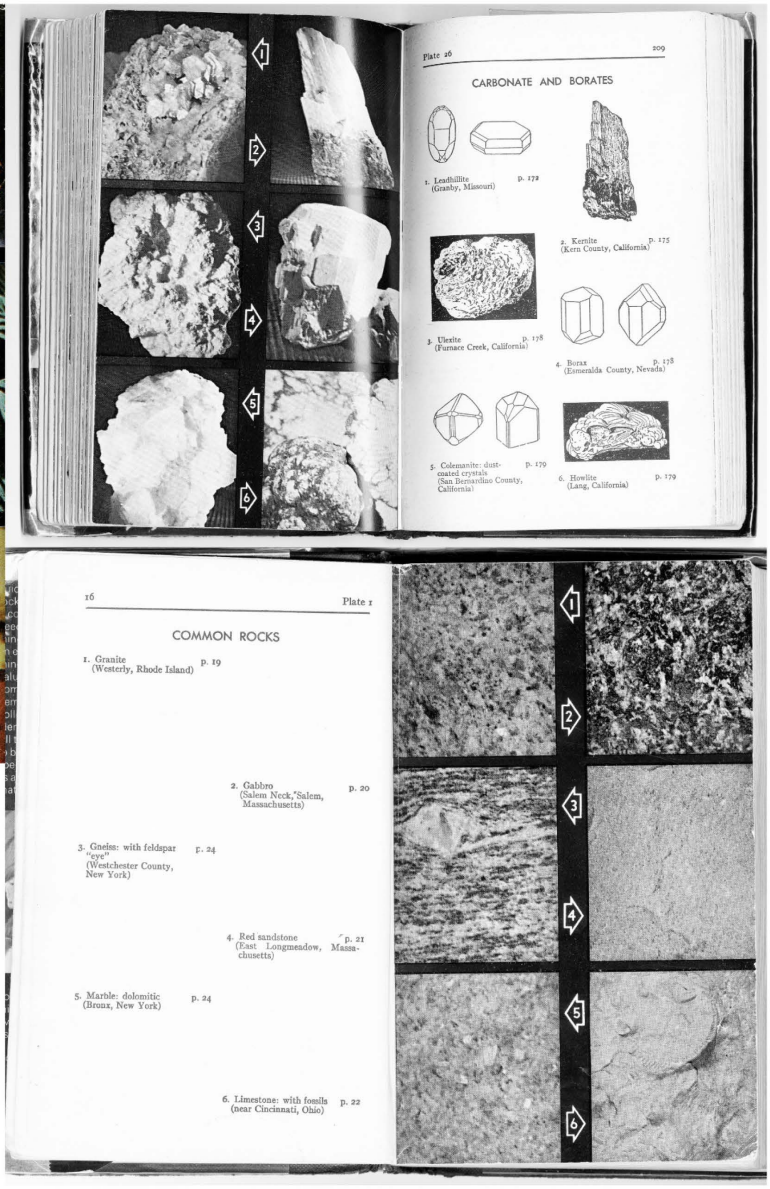
▲ Ice-wedge cast Norfolk, England. The darker sediment has filled in a fracture, which contained an ice wedge.

▶ A modern pingo in the Canadian Arctic which has formed because the frozen underlying sediments expand and push upwards.

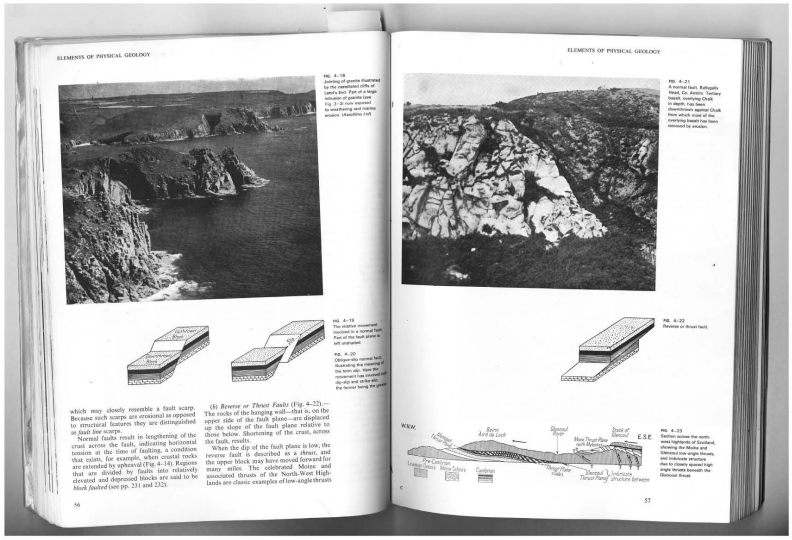
▲ These disturbed sediments in Norfolk, England are the result of alternate freezing and thawing in tundra conditions.

▲ Fractured Chalk from East Anglia, which is the only evidence of the first ice age in Britain.





Rocks + Minerals:
Geological scale,
both temporal and physical.



TIME IN IMMEDIATE FORM

‘Chemical change belongs to the beauty and liveliness of stone: it is the natural carving that records Time in immediate form within the pattern and colour of surface’

- Adrian Stokes, ‘The Stones of Rimini’ 1934

‘in the case of devastation, the human made and the nature made do not have the unity brought about by ruin time‘

- Hetzler, 1988

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THE DIG

’brute, downward dragging, corroding, crumbling power’

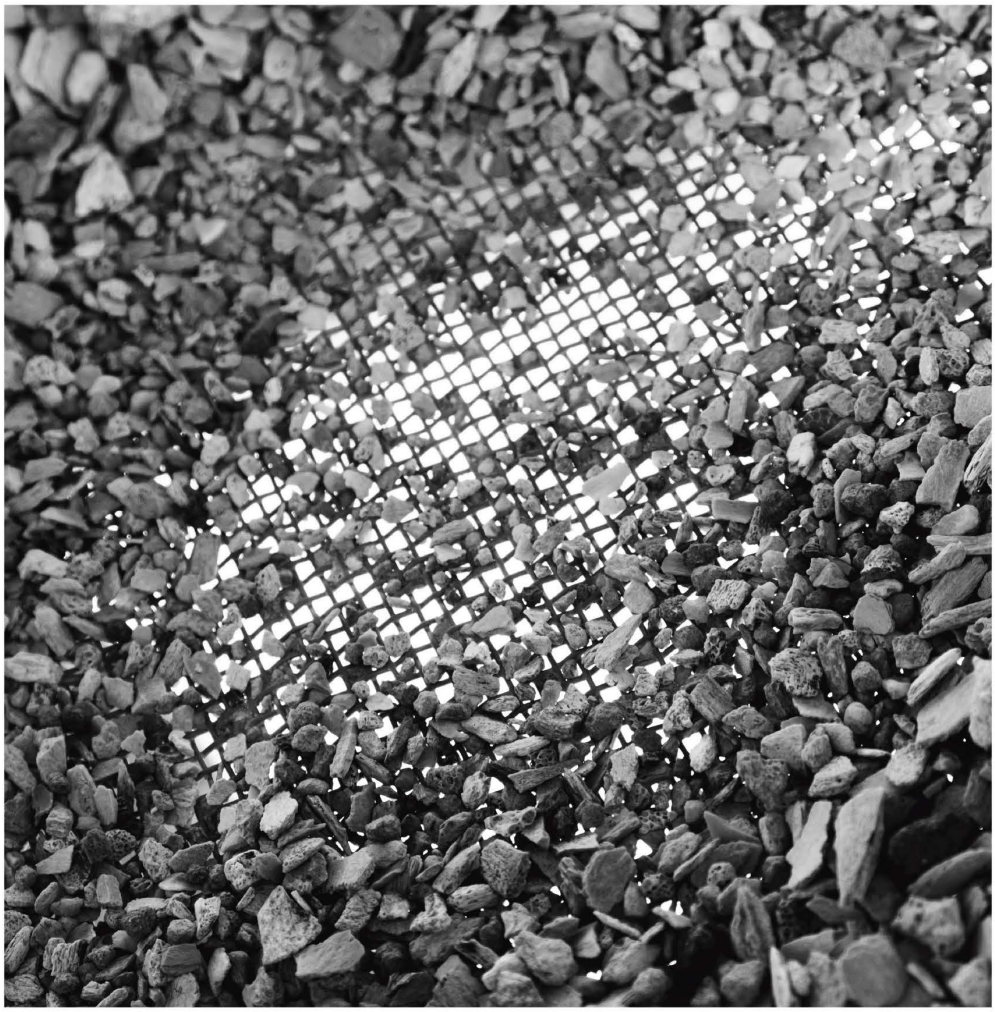
Paleontology lies on the border between biology and geology. It involves the study of fossils in order to gain knowledge about pre-historical landscapes and ecological systems. The projection of a pre-historical landscape that emerges from the discipline forms the basis for my concept of the ‘landscape ruin’.

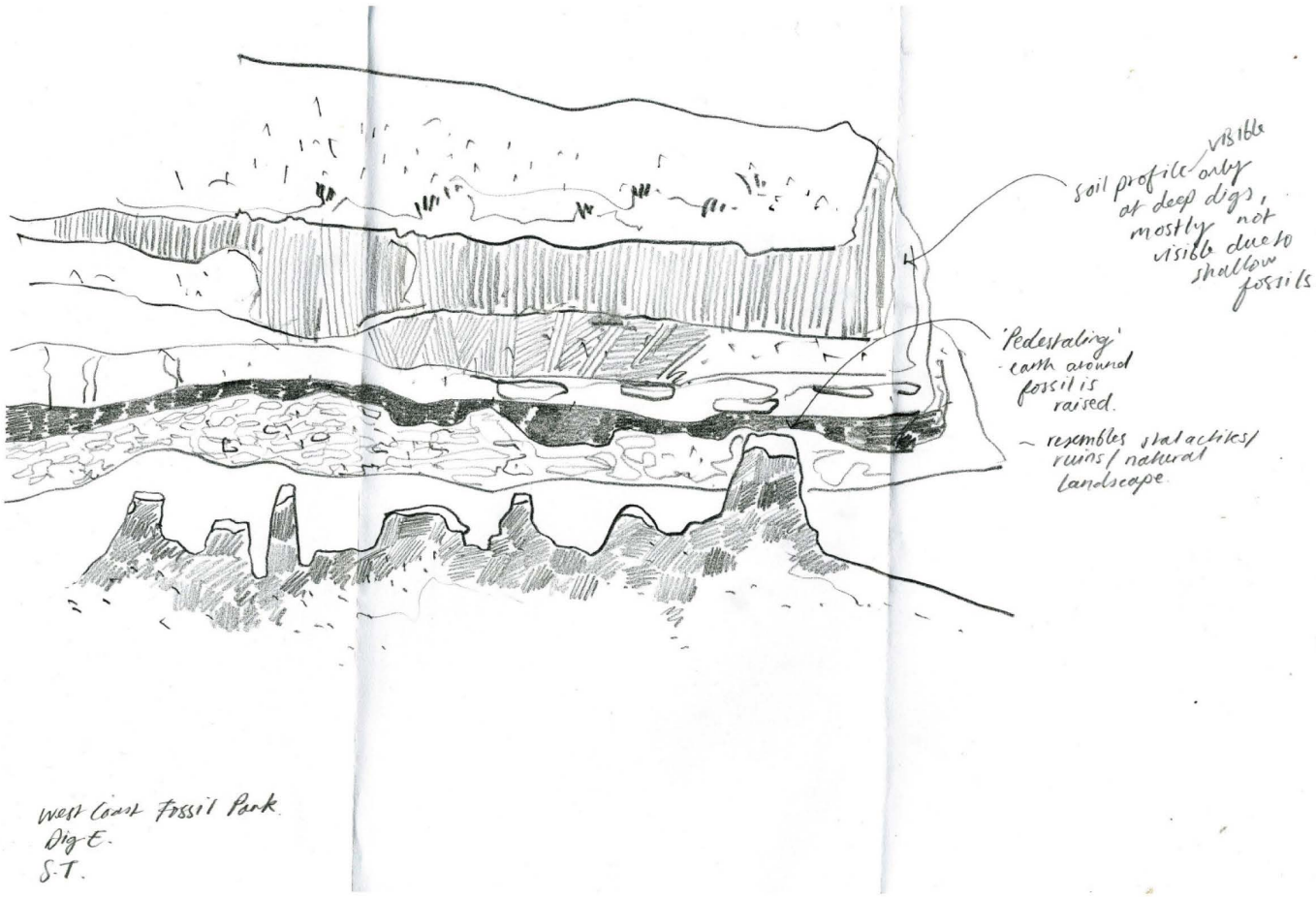
The process of excavating for fossils engages multiple scales, both temporal and physical scale. Geological time scale underpins the classification of fossils. The physical scale of fossils ranges from miscroscopic crustaceans and pollens to amphibian bones and large mammalian skeletons.

I am using the concept of a dig site as a framework for revealing new ways of relating to landscape. By distilling the process of excavation and comparing the dig site to the concept of a ruin, I hope to prove that there is autonomous ruin value in landscape.

If fossils are evidence of landscape processes (the preservation of matter through geological layering), they can be seen as ecological artefacts, and their context (the dig) can be seen as a kind of ecological ruin.

The way a dig site emerges and develops can be seen as a kind of inversion of how a ruin comes to exist. The ruin decomposes, while the dig actualises its findings and increases in clarity and purpose as time passes.





West Coast Fossil Park.
Dig E.
S.T.

DIG METHODOLOGY

SIFTING

The process of layering and sifting evokes multiple landscape histories. The dig investigates landscape remnants at all scales, from geological morphology to microscopic life. The concept of sifting implies various approaches and points of focus in a dig, engaging in multiple narratives and time frames simultaneously.

PEDASTALING:

ISOLATING AN ARTEFACT BY EXCAVATING AROUND IT - CREATING MONOLITHIC PEDESTALS.

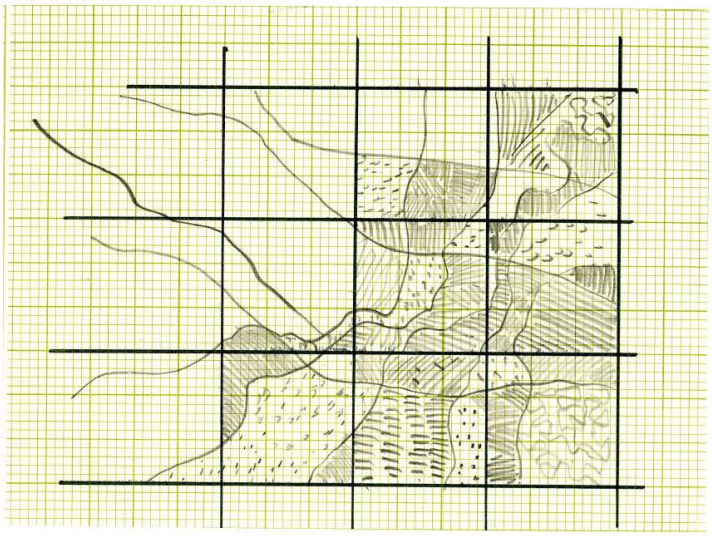
Pedastiling signifies an inversion of the process of collapse implied in a ruin. The act of carving and sculpting plinths into the landscape reveals hierarchy and difference. The tectonic imposition of monolithic forms into the landscape is a kind of inversion of ‘ruin time’, giving the dig an aesthetic quality not unlike that of a ruin, except with rearranged processes.

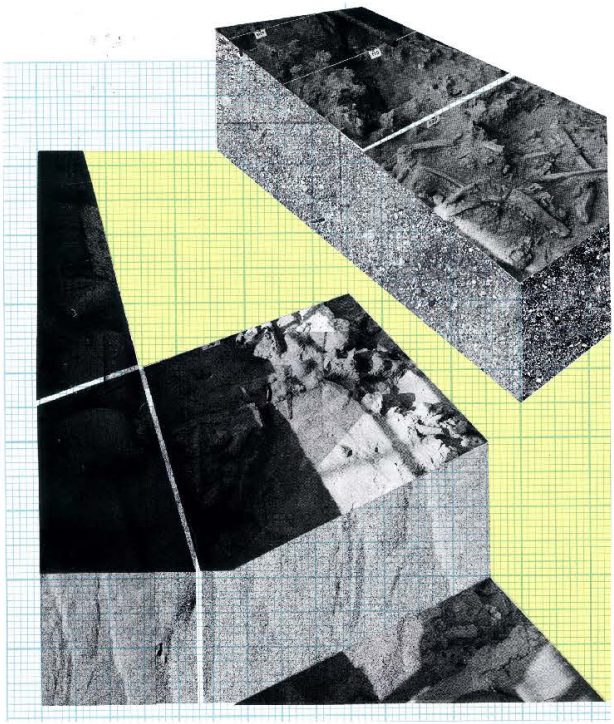
GRIDDING

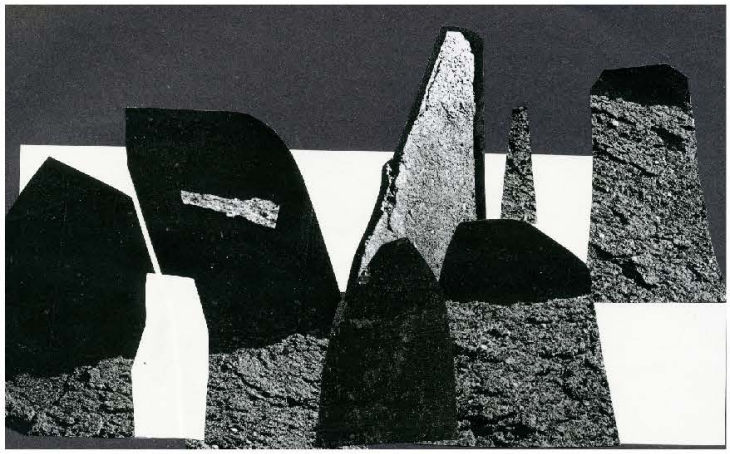
The dig site is divided into square meters, and vertical excavation or digging happens in 10cm thick layers. All square meter areas and 10cm thick layers are numbered and coded. The

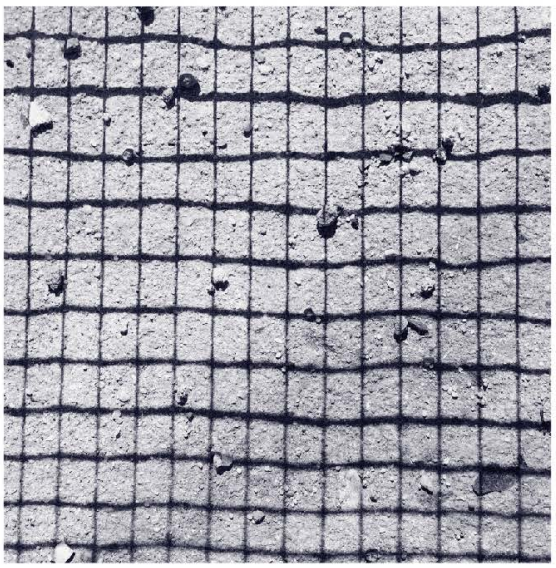
The 1x1m squared grid placed over the dig site influences the way we view it as a landscape. The grid imposes geometry and rhythm onto ‘formlessness’, the chaos or devastation of a paleontological excavation site is divided both horizontally and vertically. This rational treatment of the dig offsets its aesthetic quality.

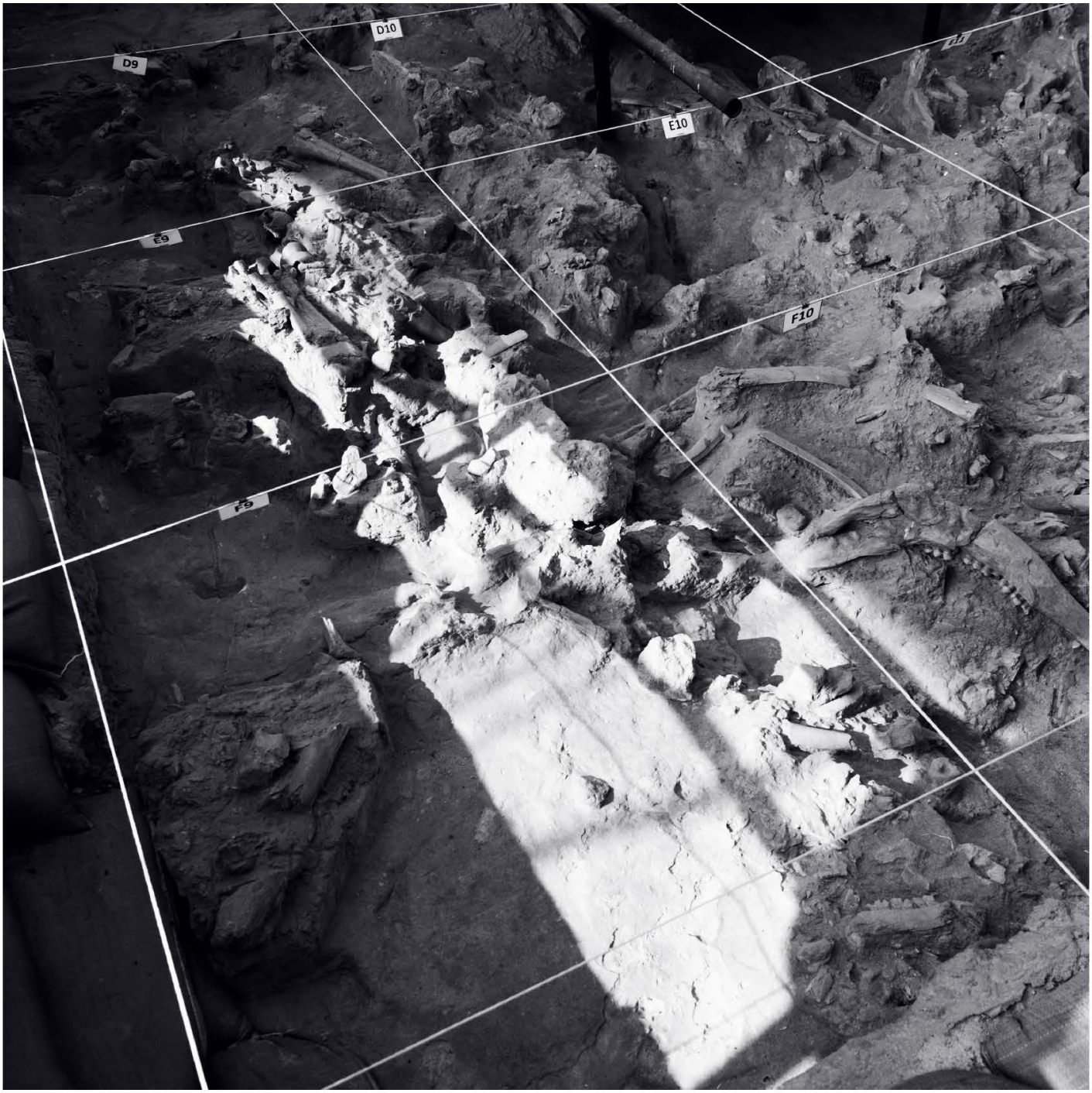
The application of a grid, both physically and conceptually, is a key aspect of framing, or revealing, landscape as ruin. The grid represents our attempt to control and understand nature – it is a framing device for viewing landscapes according to different criteria.







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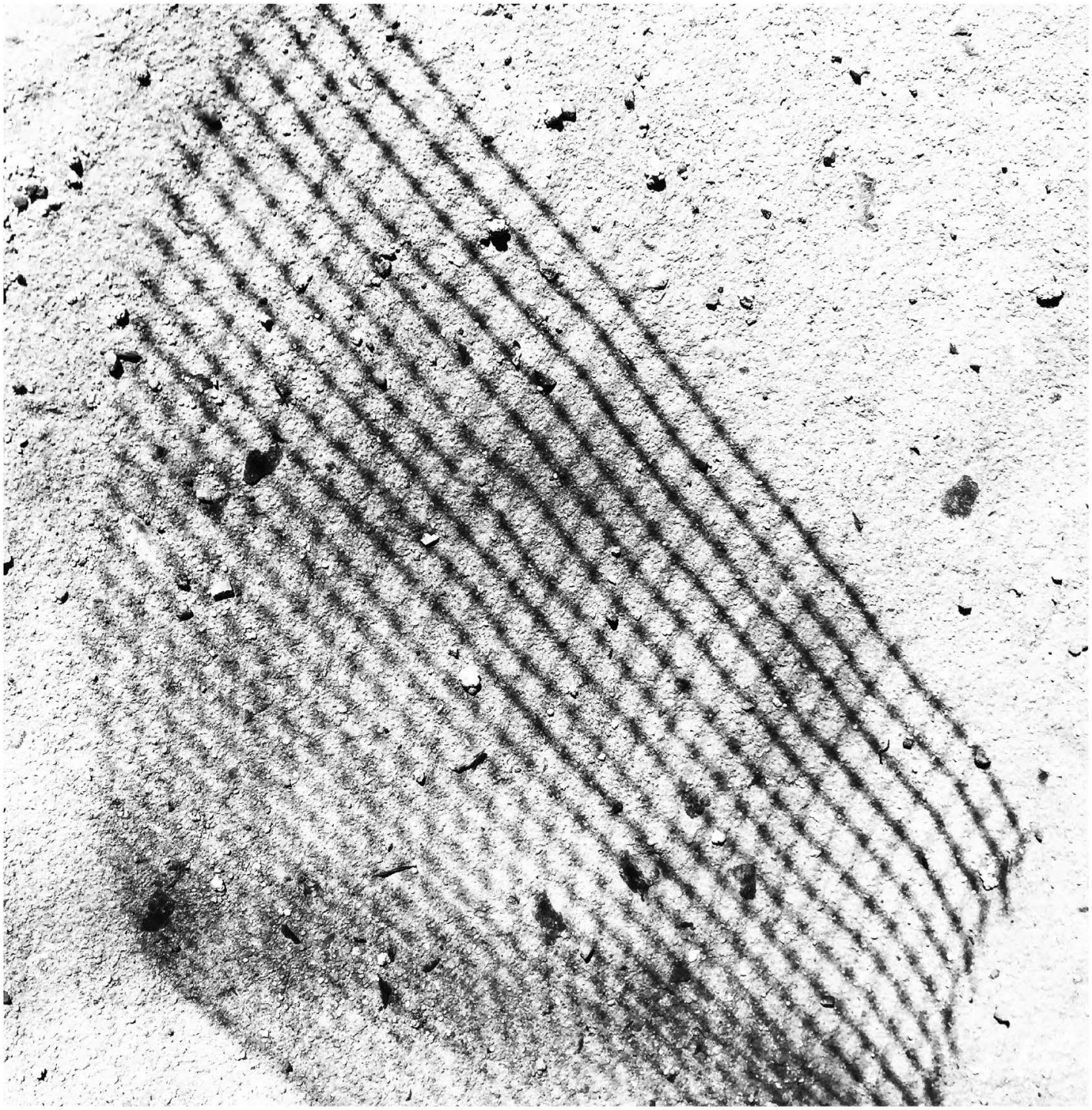


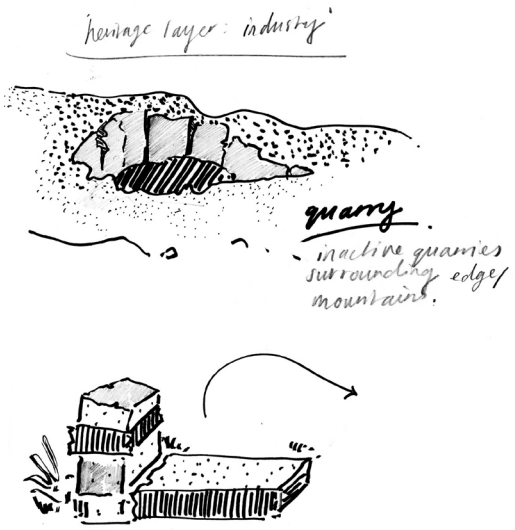
DISSERTATION

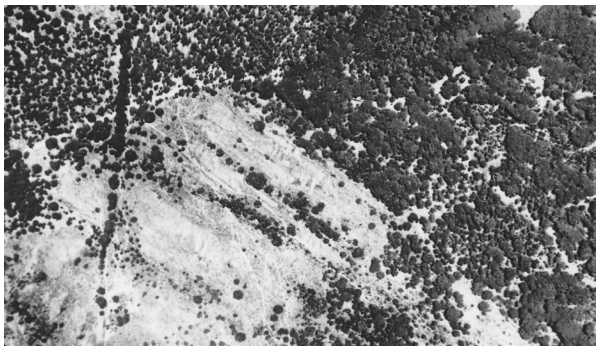
ABSTRACT

My dissertation consists of a design proposal for an extension of the Higgovale Quarry. By framing the Higgovale Quarry as a valuable geological and spatial resource, or a ruin with inherent cultural and historical value, I have preserved it in my scheme, intervening only on the granite slopes above. Using quarrying techniques as a space making device, my intervention aims to create dynamic, non-prescriptive public space on the slopes of table mountain. No additional material is used, and all quarried granite is re-purposed and used as building material. My analysis of the geometry of the quarry as well as the natural landscape surrounding it sets up a ‘grid’ which informs my intervention.

The Higgovale quarry is a geological marvel, and its beauty and potential go unnoticed – it is a back-yard space at the edge of an affluent neighborhood, skirted with cul-de-sacs and relatively hard to get to. Locals walk their dogs there, teenagers use it as a place to escape the gaze of their parents, but generally its potential is not used to the maximum, and it is hard to remind people of a resource, an essentially public natural resource, without spoiling its unkept-ness, its incidental aesthetic quality.

My scheme is purposefully un-intrusive and non-prescriptive, it is a re-shuffling of a bit of the mountain, a healing space dedicated to memorializing the exploitation of Cape Town, as a city, as a resourceful natural area, and as a community. The place itself has no official name, it would hopefully be named by the people who use it. It is not triumphantly decolonial or politically charged, but it prompts at these themes and ideas in an attempt to invoke change, to make access where there hasn’t previously been any, to create a space that is historically meaningful and powerful without imposing a new, singular narrative on the landscape. Like the process of quarrying, the program of my intervention hopefully reveals itself through process and use, and with the help of time.





1926 aerial photograph

QUARRY AS RUIN

ECOLOGICAL, CULTURAL AND HISTORICAL RUIN VALUE

RELATIONSHIP TO RHODES MEMORIAL

The majority of the granite excavated from the Higgo Quarry was used to construct Rhodes Memorial. The quarry can be seen as a kind of scar, or an inversion of a monument. It can also be seen as a ruin, a testament or memorial to the hard labor of extracting stone for colonial displays of power. The relationship to Rhodes Memorial intensifies the Quarry's potential to be re-framed as a site of inclusivity and spatial justice.

TIME LINE:

Established in 1890 and closed during the early 1940s, the ‘Higgo Quarry’, run by the Higgo Brothers who came to the Cape as stone masons and building contractors from Cornwell in the mid 1800s, was excavated and the materials processed throughout the suburb now known as Higgovale. Constructing roads were built that led from the quarry directly to the Rhodes Memorial site on the Eastern slopes of table Mountain.

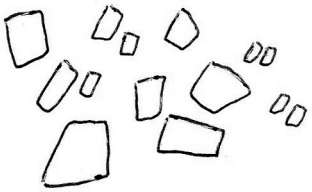
1890
The Higgo brothers open the quarry

1895
James Andrew Clift (of J.A Clift Marble and Granite Contractors) moved to Cape Town and began working at the Higgo Quarry in Kloof Neck

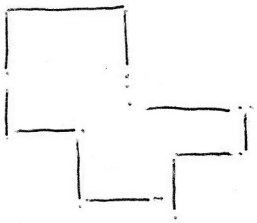
1912
Herbert Baker designed Rhodes memorial, which was completed on the 5th of July.

1940
Quarry closes after excess granite is used to build curbs and parts

RUIN INVENTORY

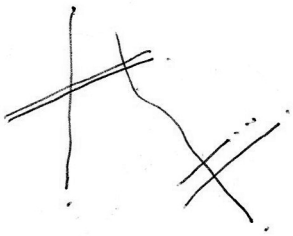


DIMENSION STONES



BUILDING FOOTPRINTS

LAYERED MOSSES



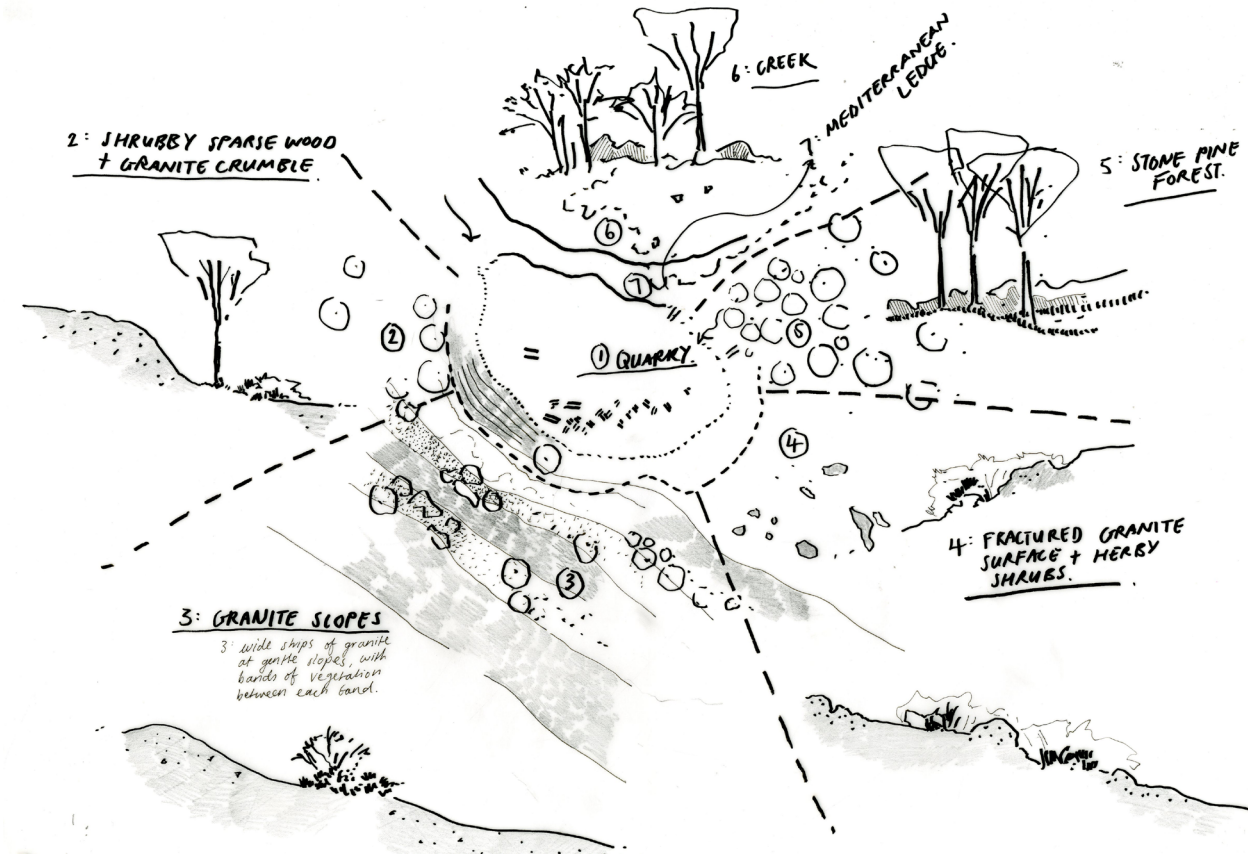
PATHS AND OLD CONSTRUCTION ROUTES

TOOL REMNANTS

CONTEMPORARY LAND ART INTERVENTIONS

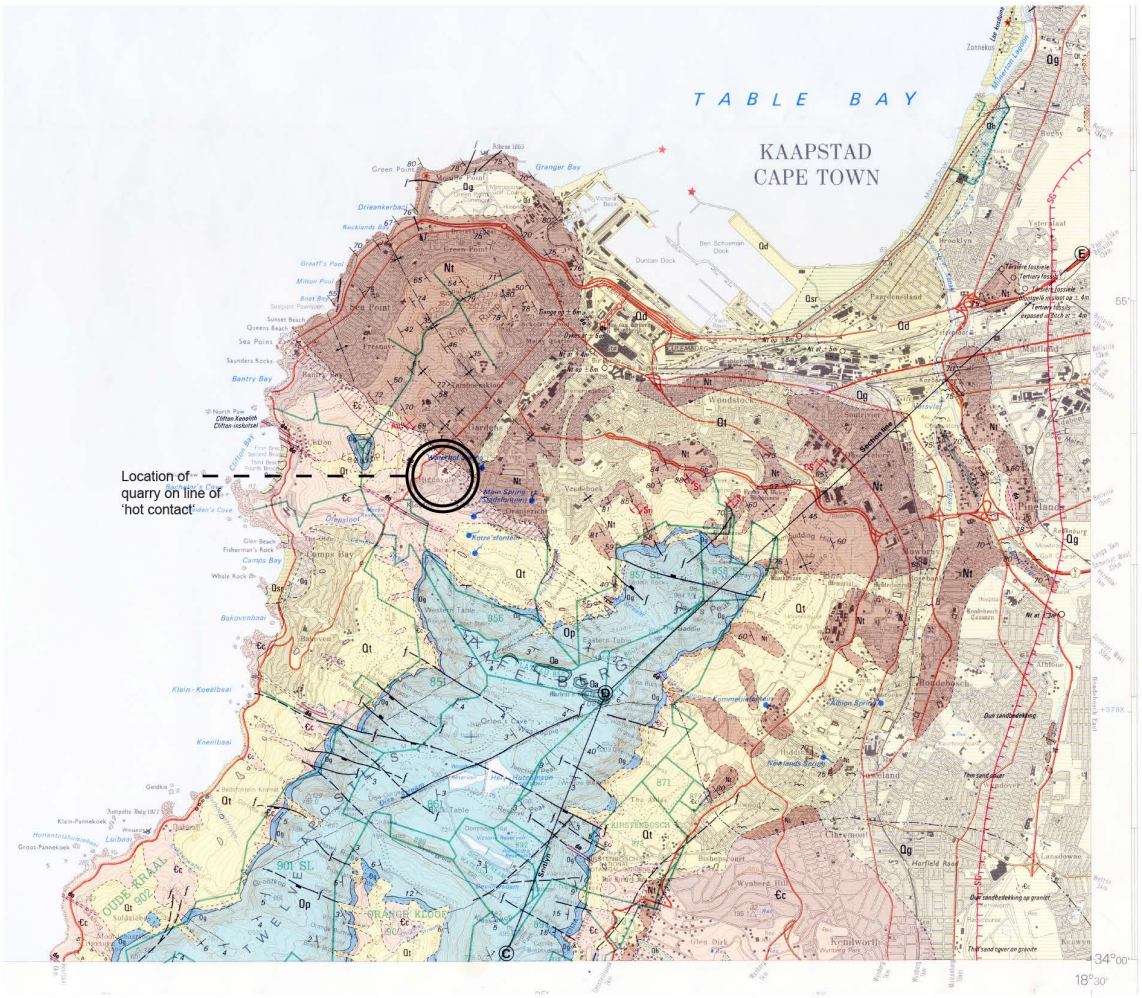
STONE PINES

SPATIAL ANALYSIS:
BEYOND THE QUARRY



Early landscape analysis diagrams identifying landscape types

GEOLOGY:
GRANITE / IGNEOUS ROCK



Geological map of Cape Town
kindly lent to me by John Compton

HOT MAGMA

Granite is an igneous rock, crystallised from liquid magma. It exists in large masses as opposed to sedimentary layers as a result of its cooling process. Over time, and as weathering and layering erode the granite, joints are formed.

The joints in granite are irregular but relatively small in scale. Surface layers weather at the joints and form boulders or 'corestones', but beneath the surface the joints in granite form a kind of grid that informs excavation points.

Grooves and fissures found in granite caused by natural weathering or 'exfoliation'

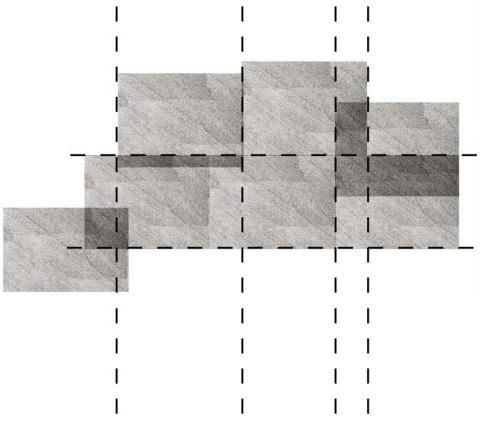
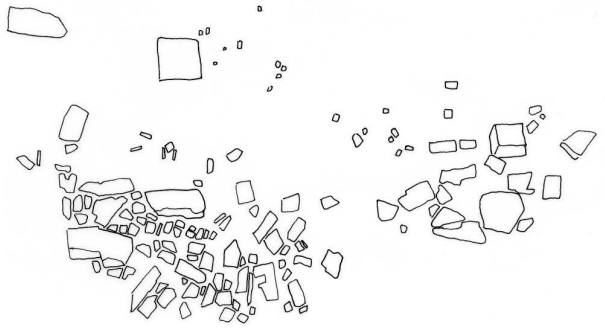
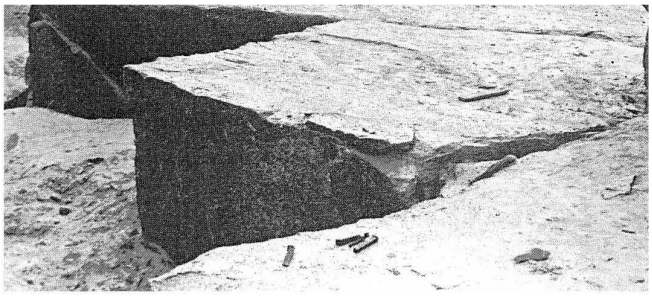


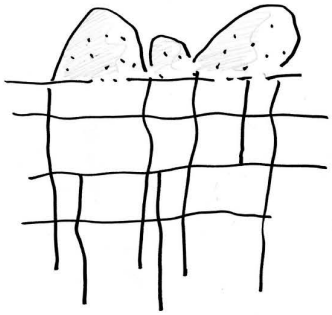
Diagram showing irregular joints / interpretation of excavation grid



EXTENDING THE QUARRY: ANALYSIS OF QUARRYING TECHNIQUES + SPACE



The well-spaced jointing of granite facilitates the removal of blocks or 'dimension stones' that are already suitable for building. The scale of the joints in granite relate to human scale - blocks are usually 1-2m x 3-4m.

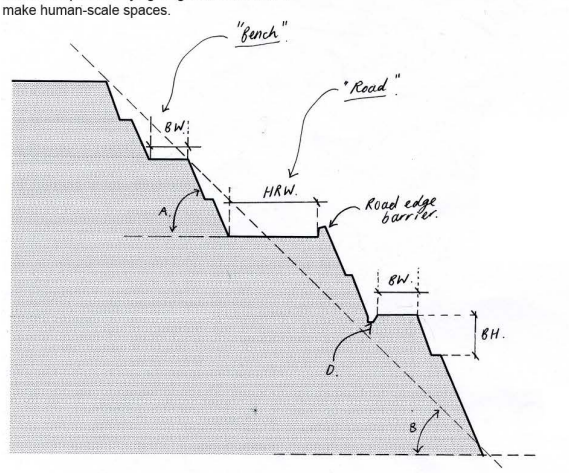


Joints in granite are not uniform and tend to be spaced far apart, The rounded boulders that can be seen above the surface are the outcome of a process called 'exfoliation'.

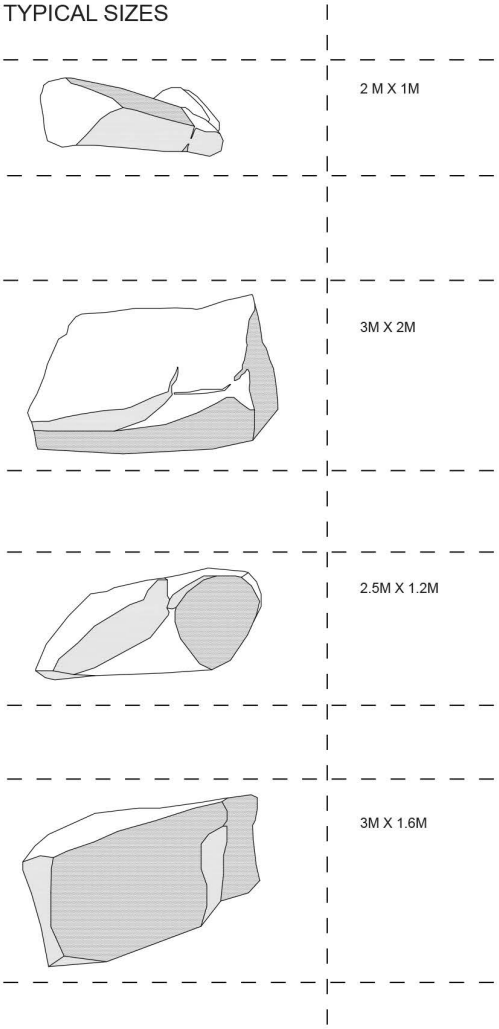
QUARRYING TECHNIQUES AS LANDSCAPE TOOLS:

BENCH, LEDGE, ROAD

Standard quarrying processes include the formation of benches and ledges that must be accessible via construction roads. This technique produces spaces that are almost inhabitable - my intervention uses this technique, modifying heights and widths to make human-scale spaces.

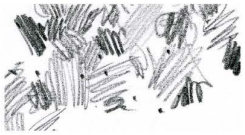


EXISTING DIMENSION STONES+ TYPICAL SIZES

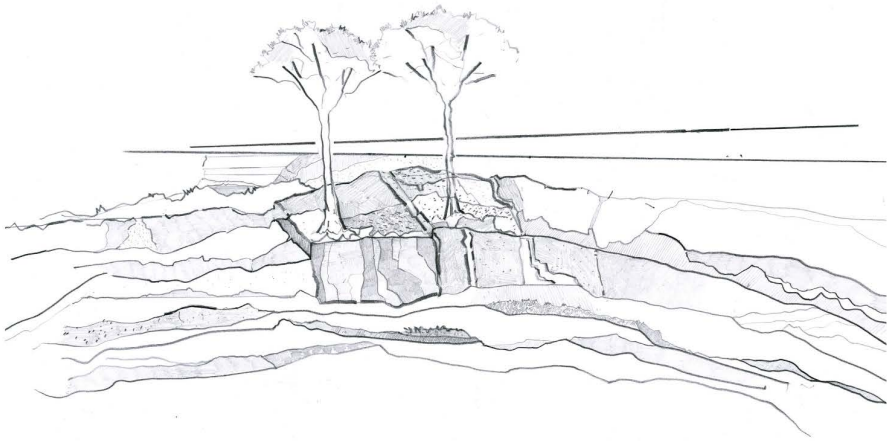


MOUNTAIN RUIN

EXPERIENCING THE QUARRY AS AN ECOLOGICAL PALIMPSEST / OBSERVING THE EFFECTS OF TIME



Texture studies of quarry ground

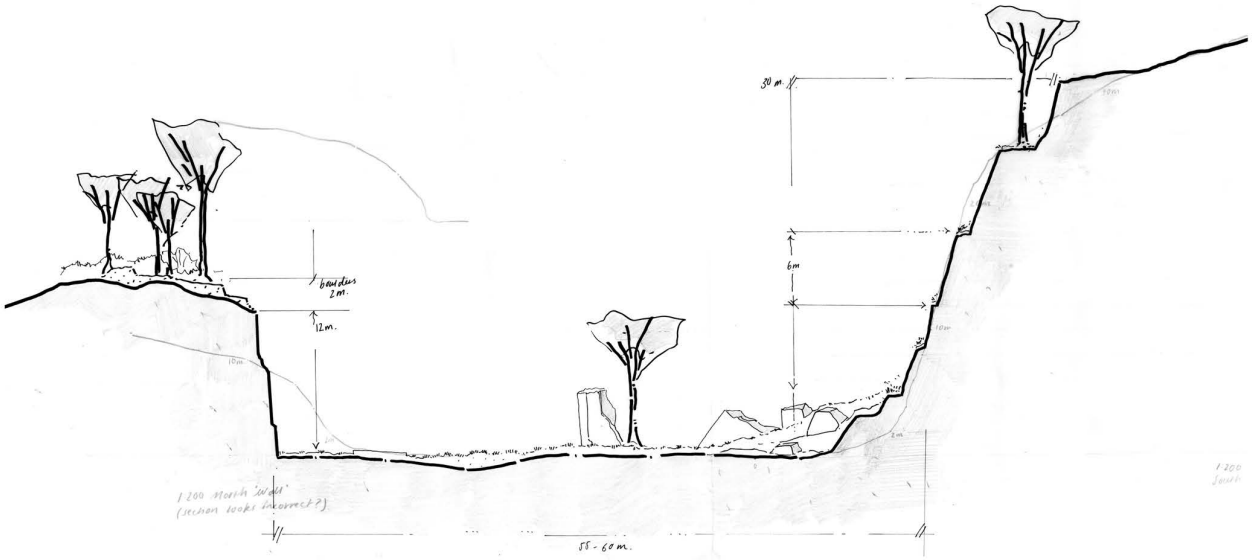


PRESERVING THE QUARRY AND ITS PROCESSES

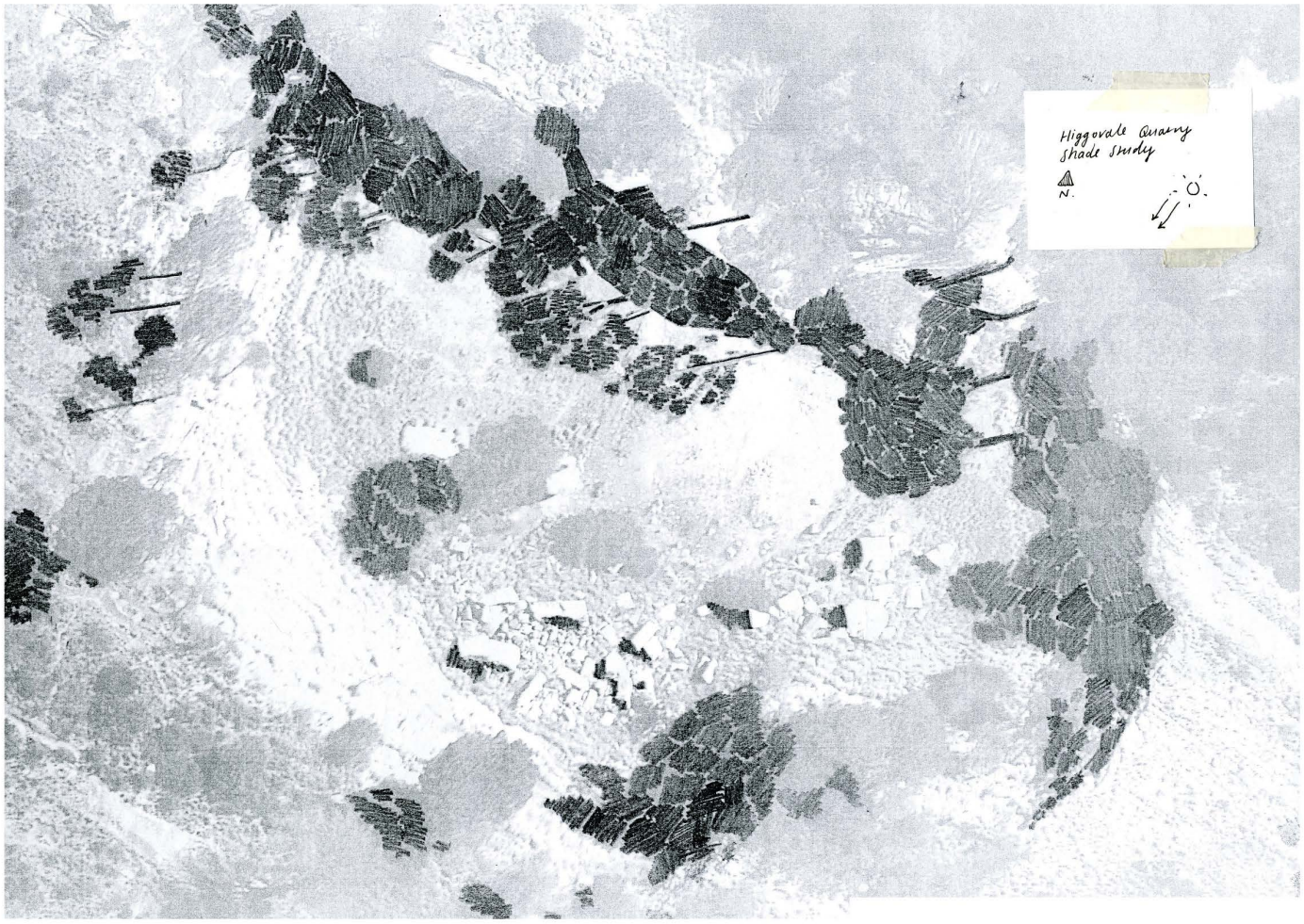
My intervention leaves the interior of the quarry untouched, preserving its patterns and processes and allowing it to continue to change.

The passing of time has given the quarry its unique quality, and its relative obscurity has allowed it to exist as a part of the mountain, with seasonal grasses and mosses covering its granite faces.

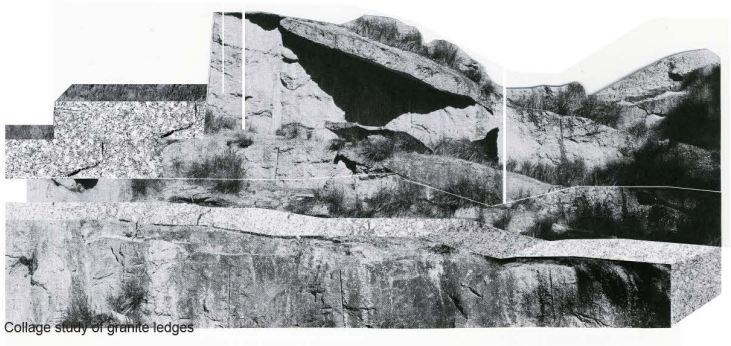
The decision to intervene on the granite slopes above the quarry is motivated by a deep appreciation of the quarry itself. By drawing people to its edge, but not necessarily making access to it easier, the quarry is treated like a kind of ruin, something precious to be observed and appreciated.



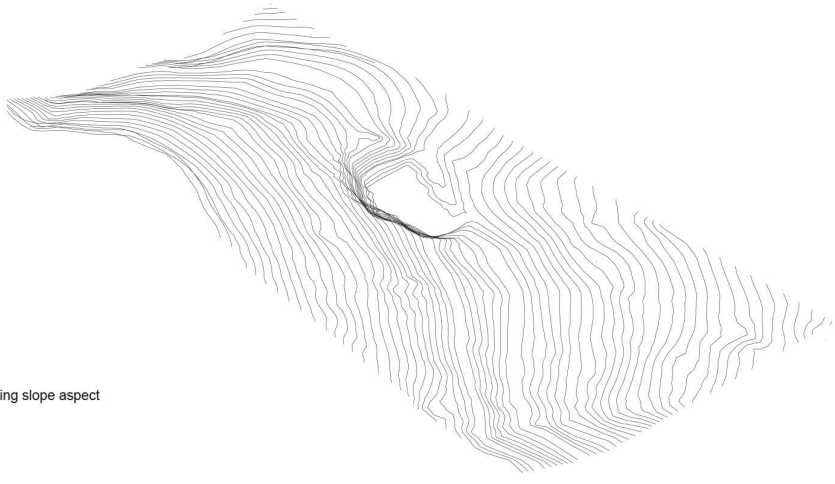
TYPICAL SECTION
1:200



Shade study



Collage study of granite ledges



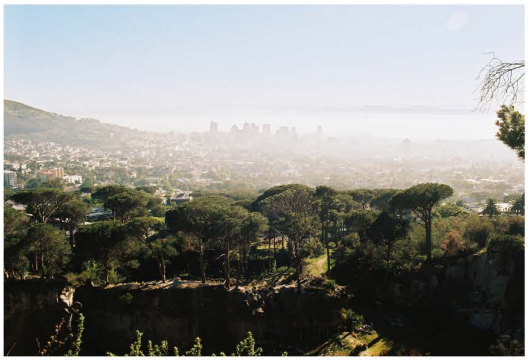
3D perspective showing slope aspect

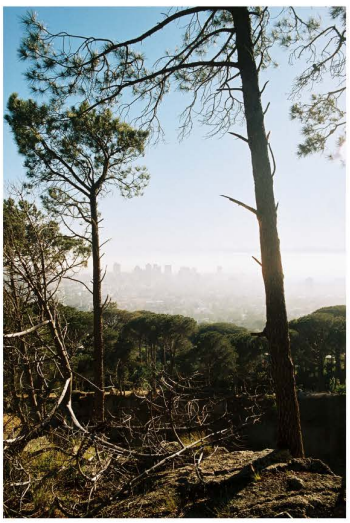
AXIAL VIEWS / GUIDES

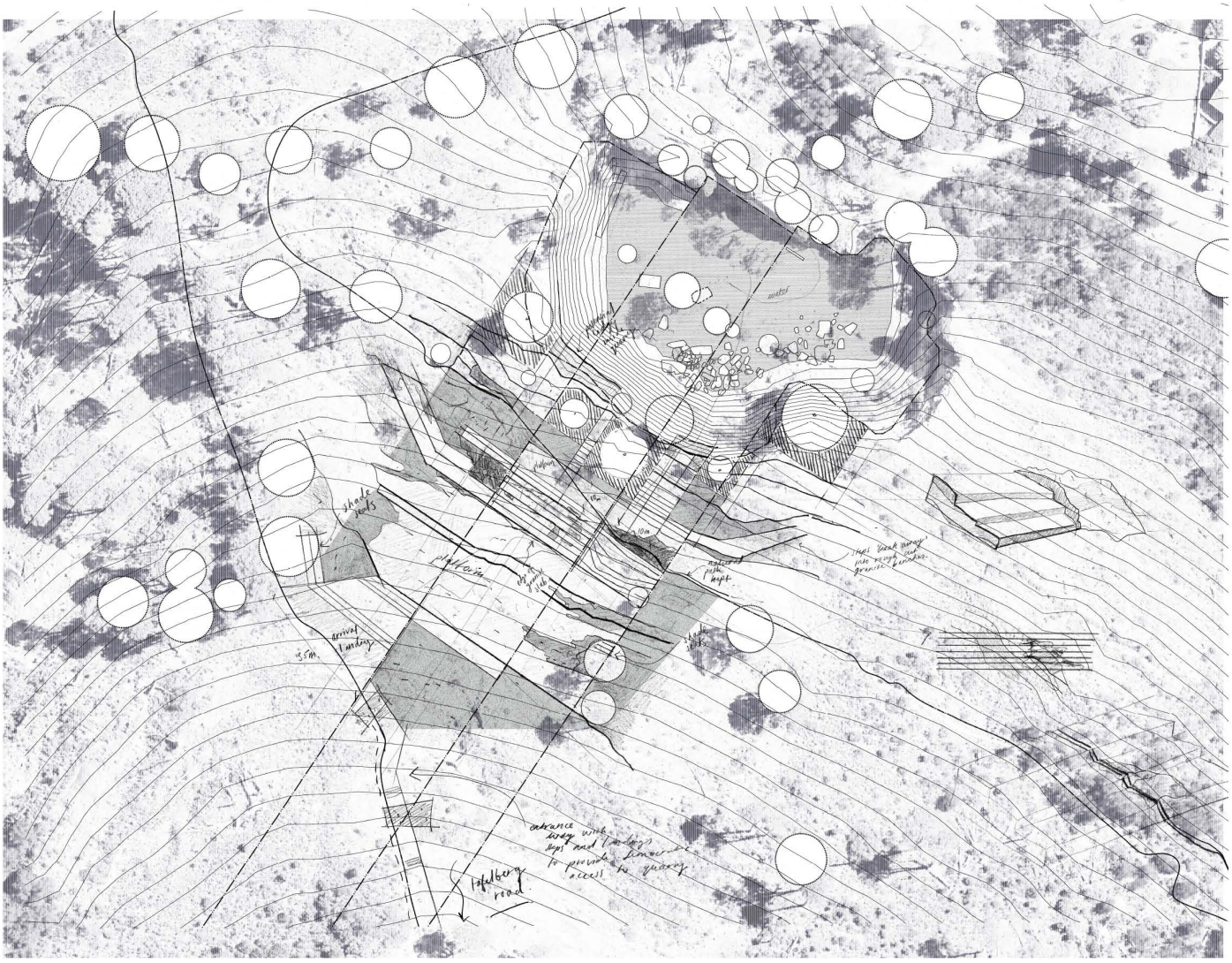
DESIGN DEVELOPMENT

VIEWS

The slope of the quarry tilts North-East, and terraces / cuts are positioned in order to expose either the quarry or views of the city.

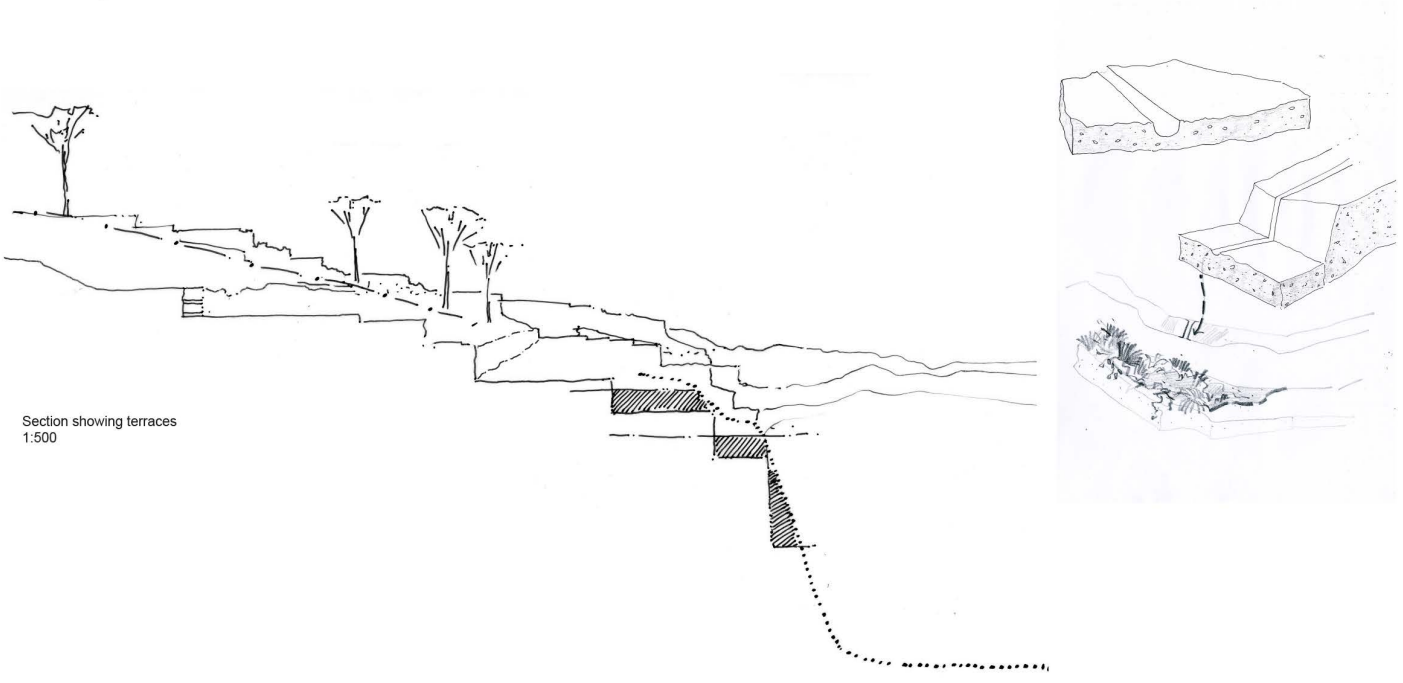






First draft plan

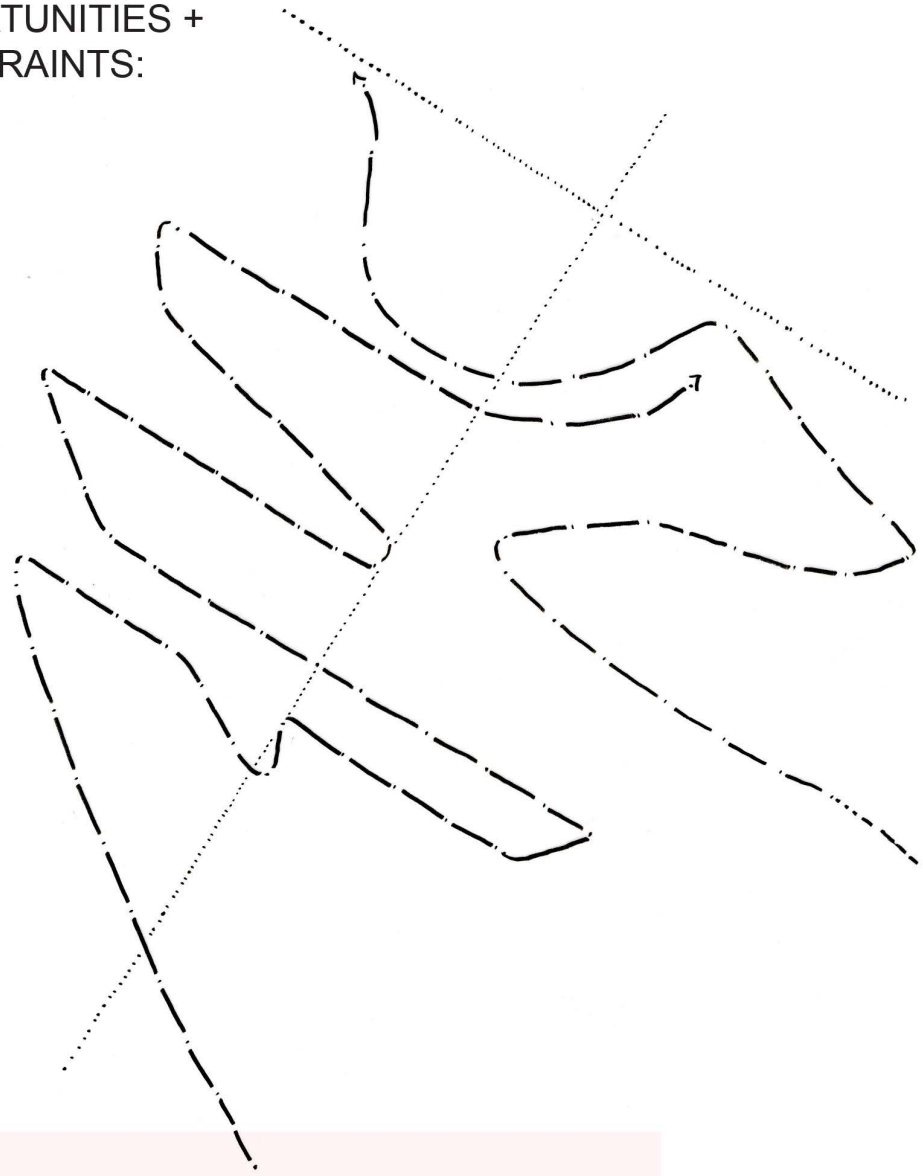
10m



Section showing terraces
1:500

ESTABLISHING NEW QUARRYING SCHEME / GRID

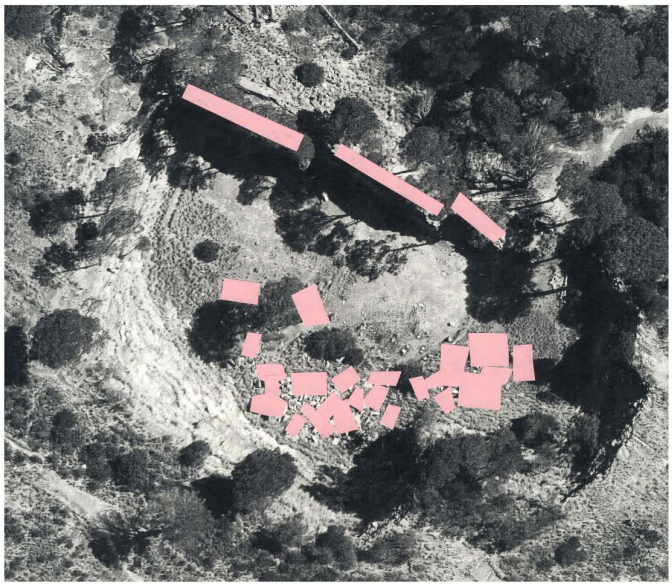
OPPORTUNITIES + CONSTRAINTS:



INITIAL SCHEMATIC
1:1000

READING THE ROCK

The initial schematic strategy followed the contours in a zig-zag down the granite slopes descending towards the quarry. The asymmetrical, site-responsive 'quarry path' came from a rejection of the symmetrical, neoclassical nature of Rhodes Memorial and its placement within the topography. Aerial photographs indicate a strong horizontal grain in the large expanses above the quarry, and these lines informed the initial design strategy.



EXISTING DIMENSION STONES AND CUT LINES

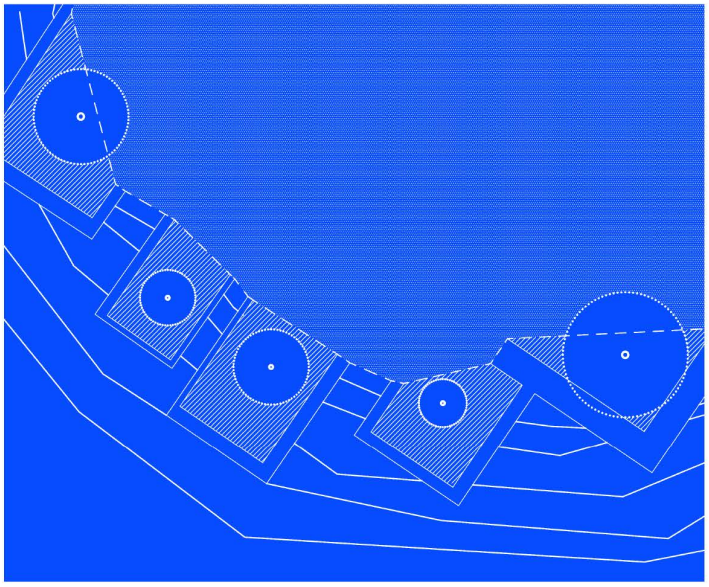
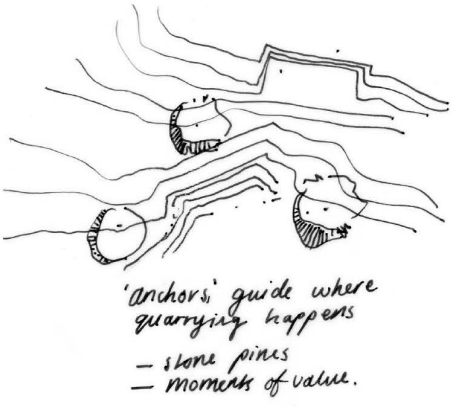
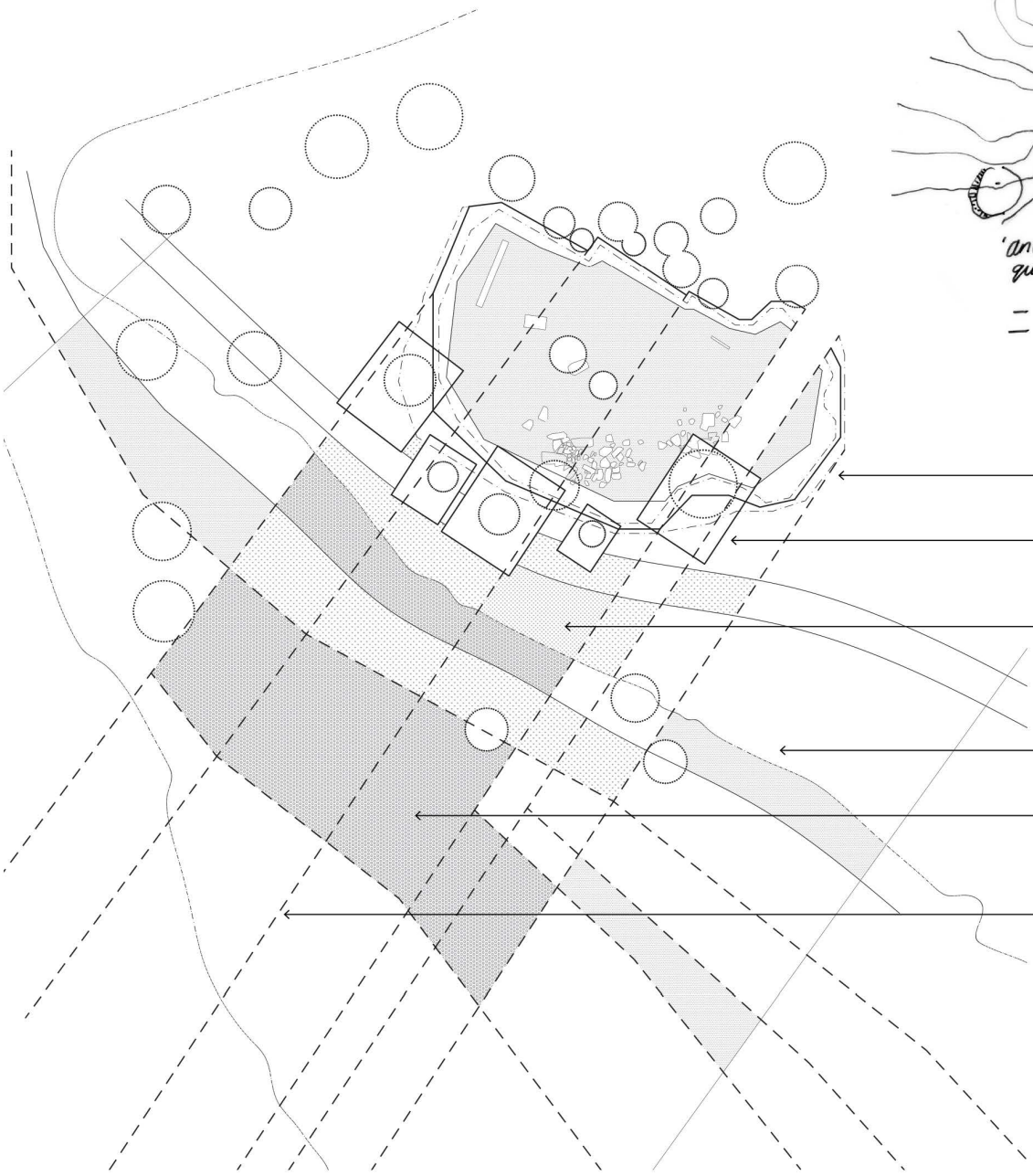


DIAGRAM SHOWING PLATFORMS PROTECTING STONE PINE ROOTS





Grid lines extending from major cut lines

Platforms surrounding the stone pines protect the root network from the quarrying process

Hatches show vegetation/granite distribution

Horizontal lines indicate direction of granite / landscape grain

Granite platform

Existing quarry cut lines and landscape grain produces new quarry grid

SCHEMATIC DIAGRAM

GEOLOGICAL DIRECTION AND SLOPE ACCESSIBILITY

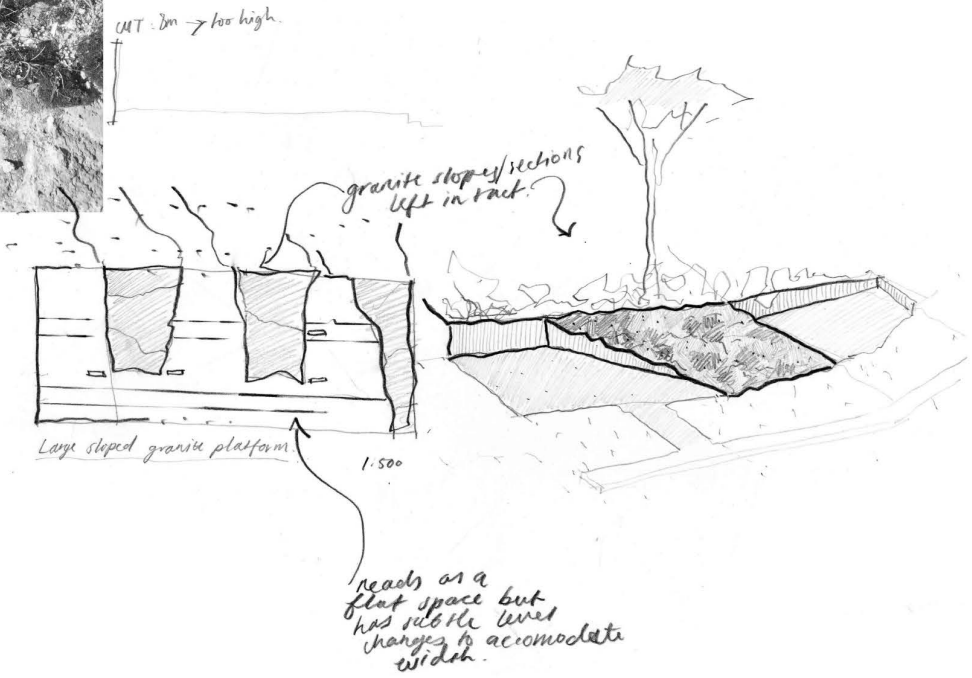
1:1000

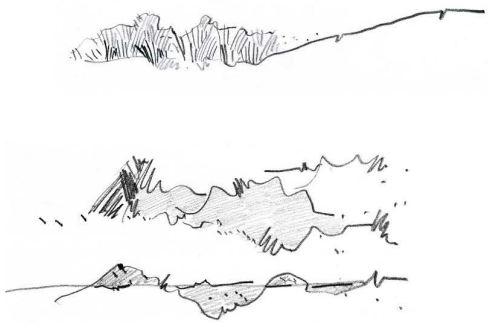
VEGETATION STRATEGY

THE INTERPLAY BETWEEN PLANTS AND GRANITE

No additional plant material will be added to the site. A search and rescue strategy would be implemented throughout the quarrying process, encouraging vegetation to colonise the newly cut crevices in the granite.

Existing vegetation covering / protruding through the granite on site

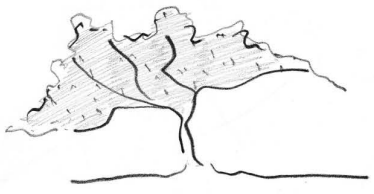




PLANTS AS A WEATHERING TOOL

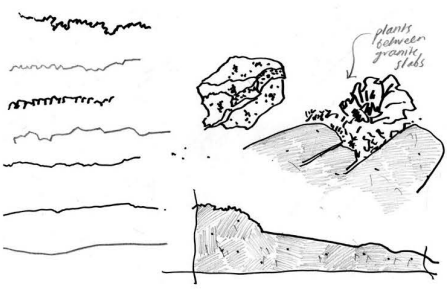
The effect plants have on granite is to weather and exfoliate it, creating a textural, tapestry-like landscape. Streams that flow down the mountain slopes gather above and within the quarry, supporting mosses and grasses that change seasonally.

The seasonality and change that occurs in the landscape is preserved throughout the scheme. The existing plant/rock relationships are only exaggerated by means of deeper/wider cuts in the rock for plants to colonise, as well as areas for water to gather.

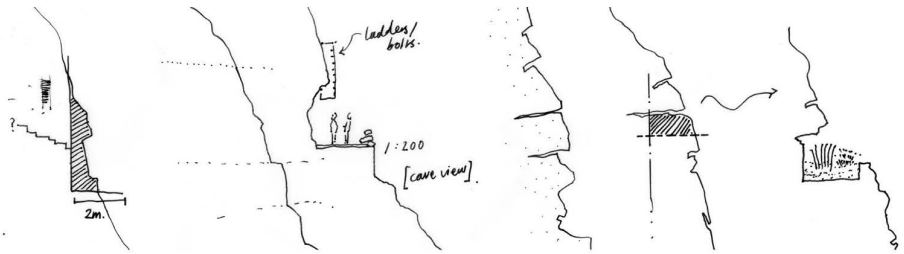


VEGETATION SKETCHES

EXFOLIATION +
PLANT COLONISATION

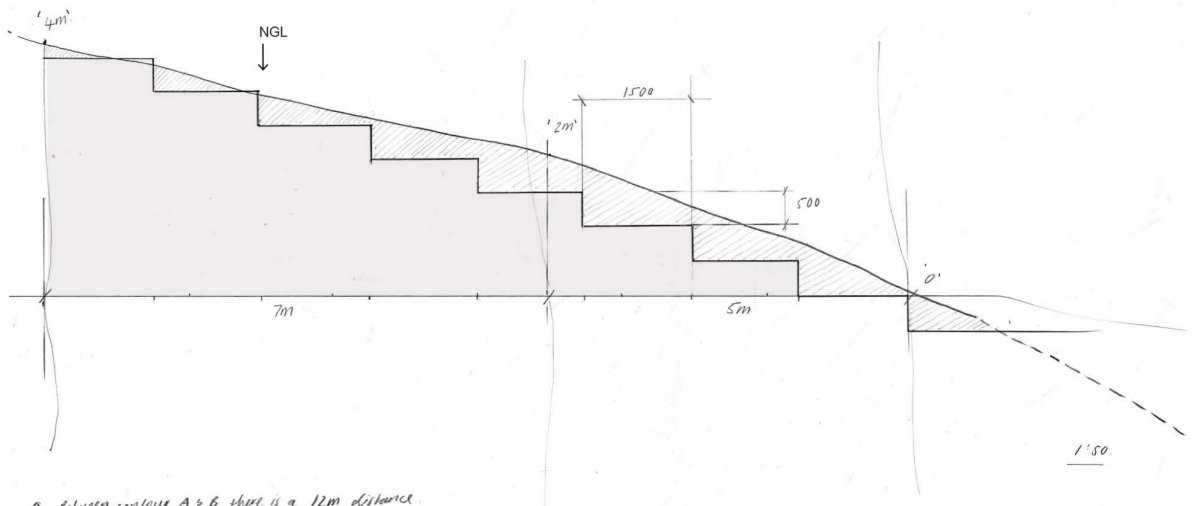


Vegetation and granite integration study



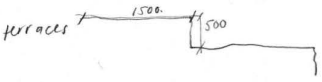
DESIGN:

STEPPING, LEDGING AND TERRACING

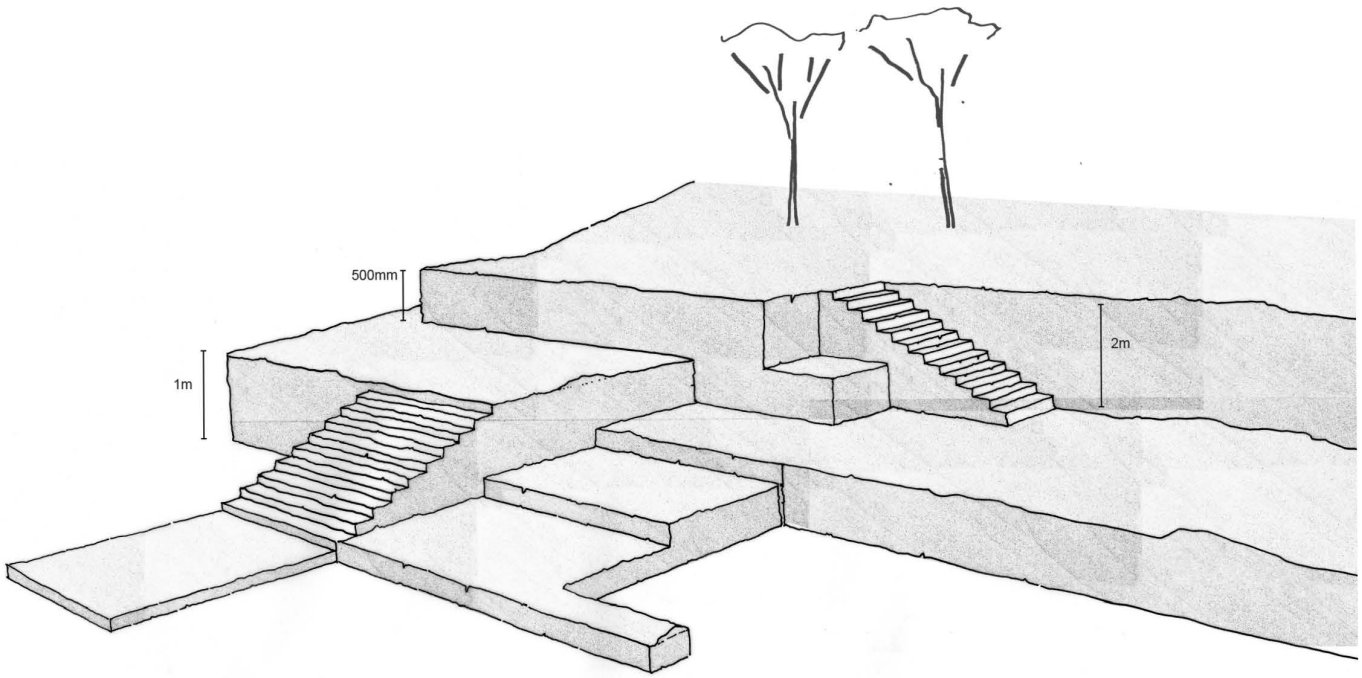


- Between contour A & B there is a 12m distance
- the height difference is 4m, so slope is 1:3.

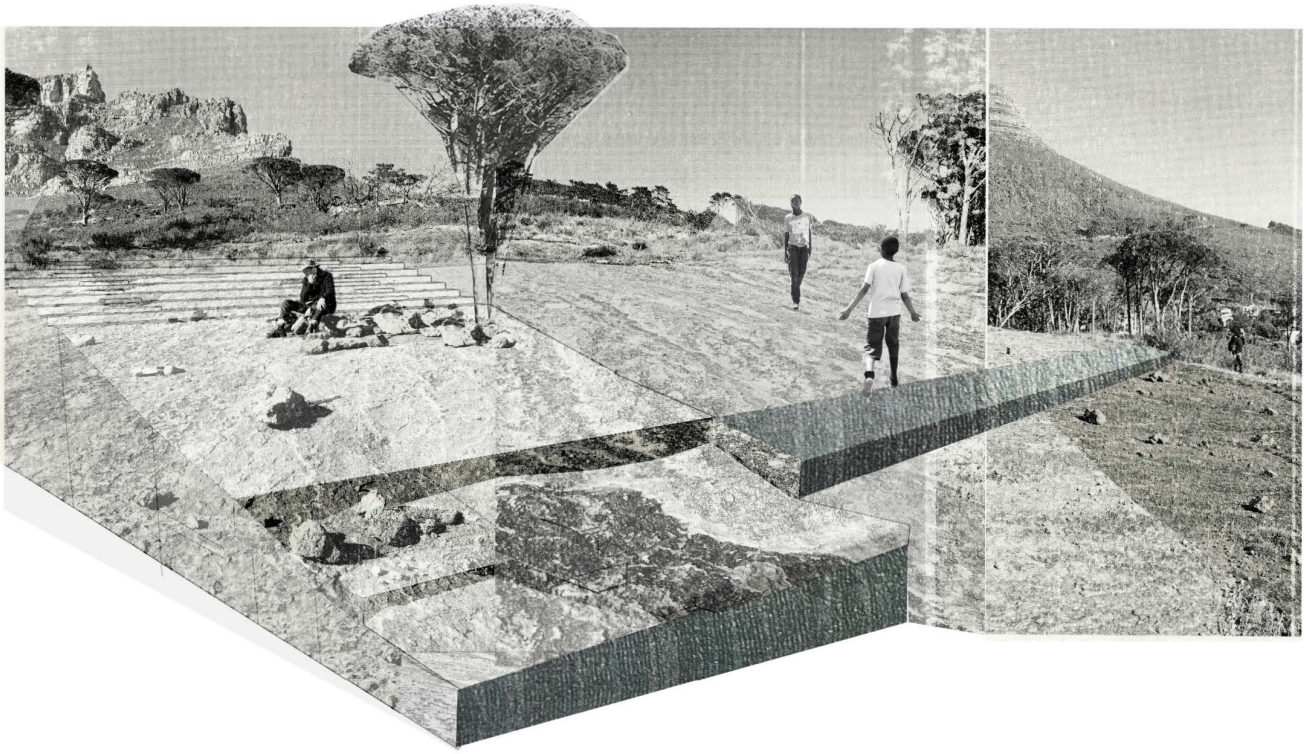
- Stone terraces

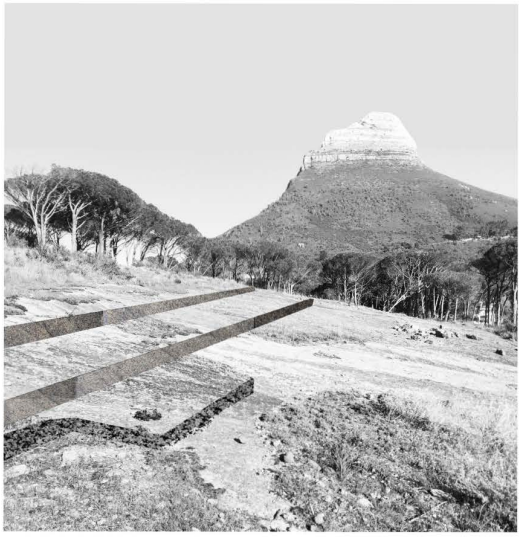


∴ slope 1:3
12m/1.5m = 8 steps.
4m/8 = 500
∴ risers are 500mm.



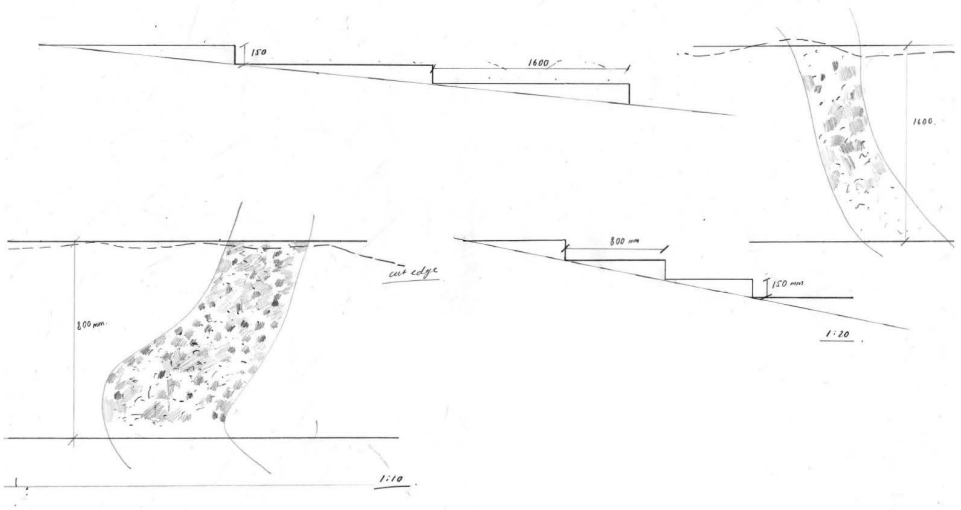
Perspective showing varying level changes for dynamic access



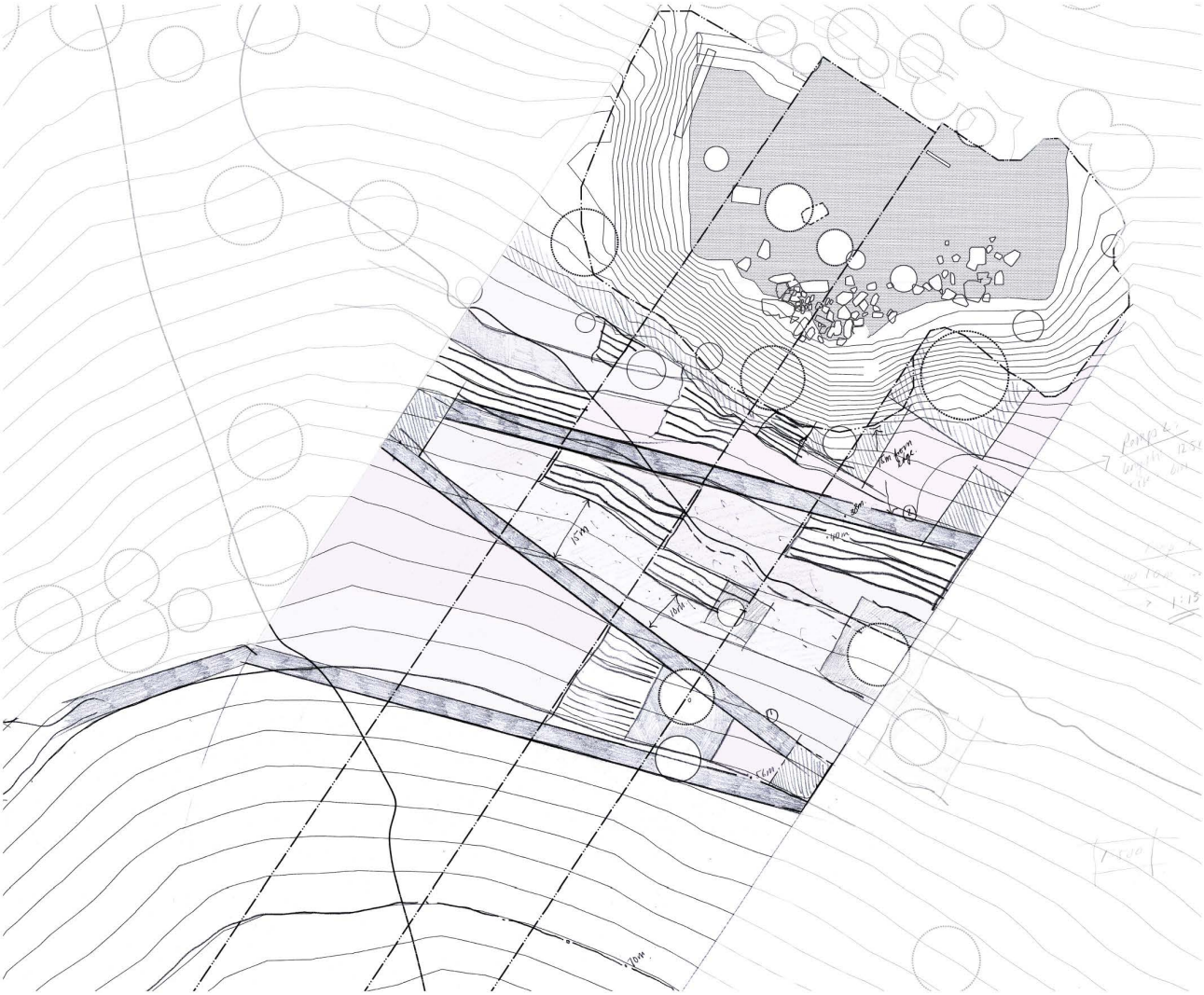


DYNAMIC ACCESS

New quarry cuts allow for climbing, stepping, sitting and perching. Granite cut during the construction process is used to fill / create elevation, using hand-stacking masonry methods, with irregularly sized stones creating stacked patterns in the landscape.

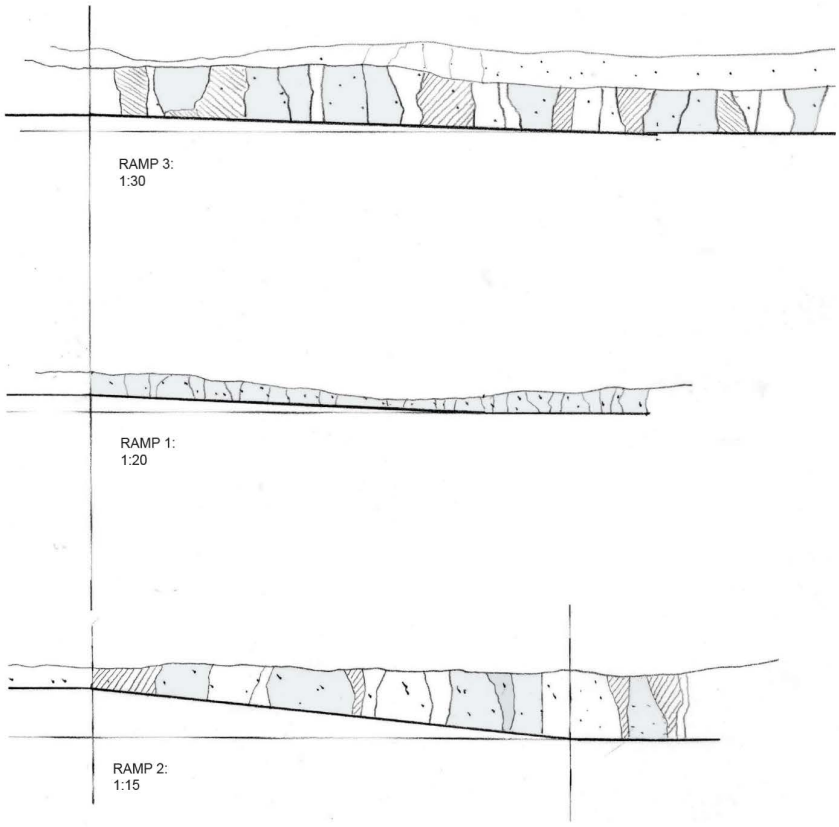


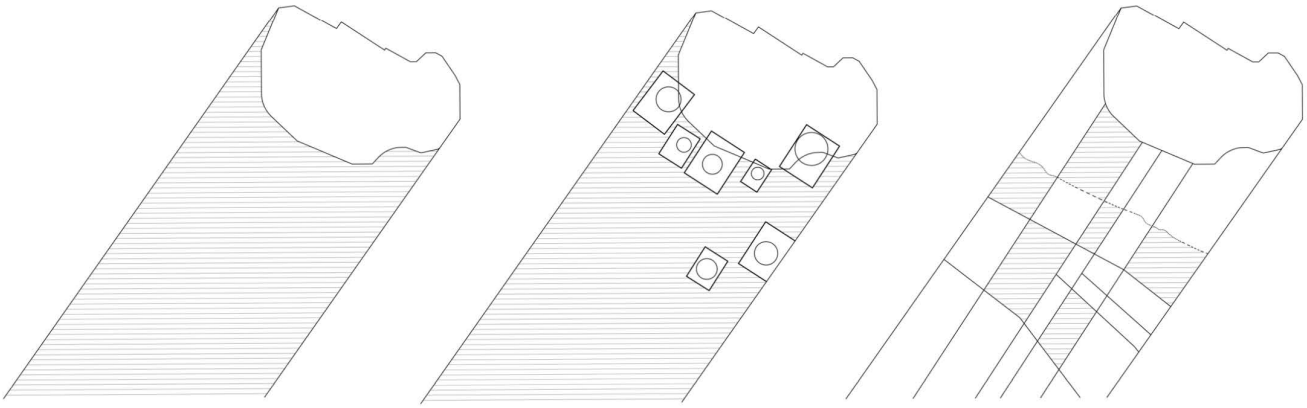
CONSTRUCTION +
ACCESS DIAGRAM



RAMP + ACCESS

CONSTRUCTION ROUTE AND UNIVERSAL ACCESS PATH

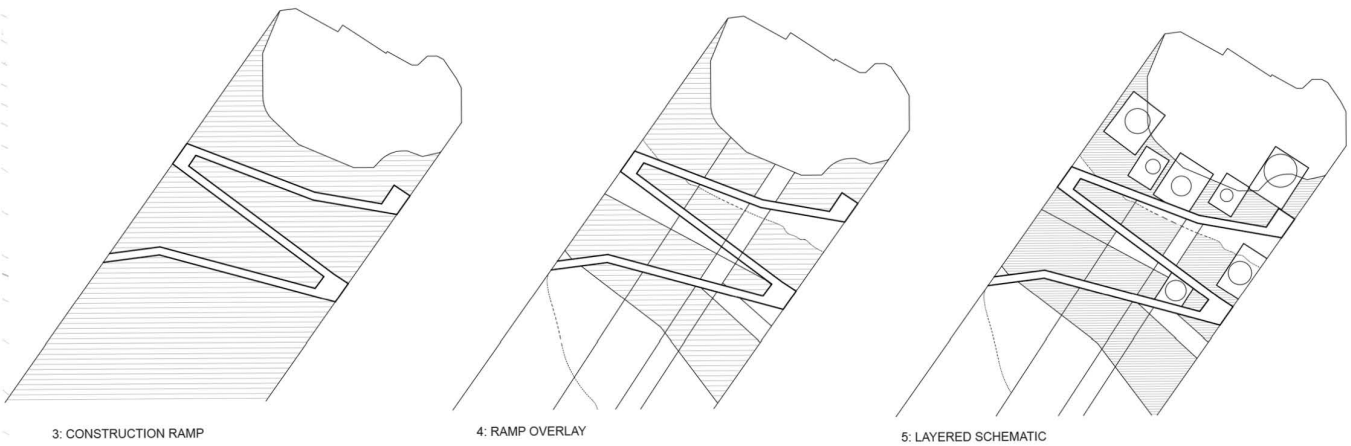




1: PROJECTION LINE UP SLOPE

2: TREE PLATFORMS

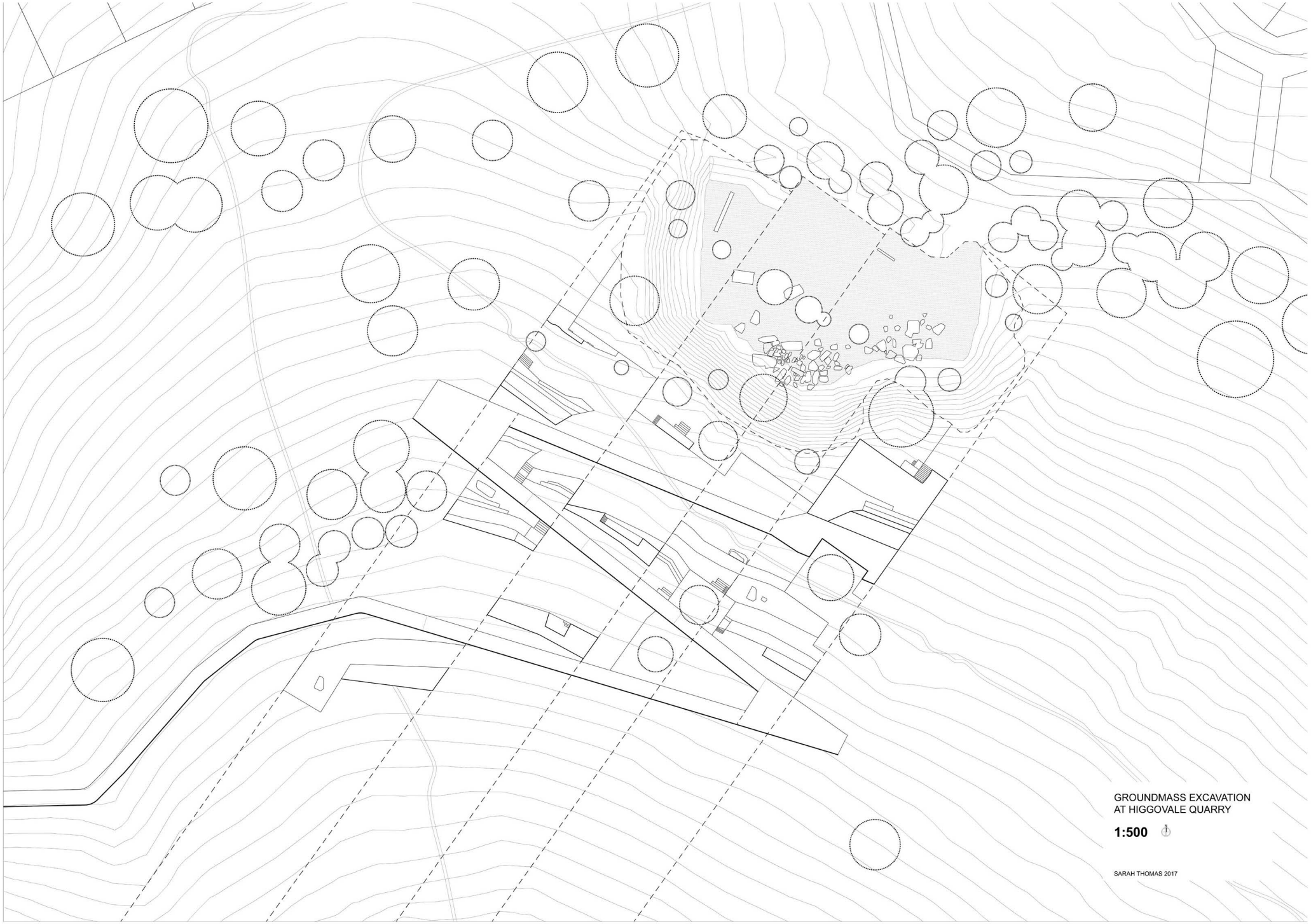
GRANITE GRAIN + VEGETATION GRID



3: CONSTRUCTION RAMP

4: RAMP OVERLAY

5: LAYERED SCHEMATIC


GROUNDMASS EXCAVATION
AT HIGGOVALE QUARRY
1:500
SARAH THOMAS 2017

APPENDIX

- Plagiarism declaration
- Ethics approval form

PLAGIARISM DECLARATION

1.I know that plagiarism is wrong. Plagiarism is to use another's work and pretend that it is one's own.

2. I have used the Harvard convention for citation and referencing. Each contribution to, and quotation in, this dissertation from the work(s) of other people has been attributed, and has been cited and referenced.

3. This dissertation is my own work.

4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.

Date: 22 January 2018

Signature: 

APPLICATION FORM

Please Note:
Any person planning to undertake research in the Faculty of Engineering and the Built Environment (EBE) at the University of Cape Town is required to complete this form **before** collecting or analysing data. The objective of submitting this application *prior* to embarking on research is to ensure that the highest ethical standards in research, conducted under the auspices of the EBE Faculty, are met. Please ensure that you have read, and understood the **EBE Ethics in Research Handbook** (available from the UCT EBE, Research Ethics website) prior to completing this application form: http://www.ebe.uct.ac.za/ebe/research/ethics1

APPLICANT'S DETAILS		
Name of principal researcher, student or external applicant		Click here to enter text. Sarah Thomas
Department		Click here to enter text. Architecture & Planning (EBE).
Preferred email address of applicant:		Click here to enter text. sarahthomasuwc@gmail.com
If Student	Your Degree: e.g., MSc, PhD, etc.	Click here to enter text. MLA
	Credit Value of Research: e.g., 60/120/180/360 etc.	Click here to enter text. 120.
	Name of Supervisor (if supervised):	Click here to enter text. Tarna Klitzner
If this is a researchcontract, indicate the source of funding/sponsorship		Click here to enter text. N/A
Project Title		Click here to enter text. Higgovale Quarry

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

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

SIGNED BY	Full name	Signature	Date
Principal Researcher/ Student/External applicant	Click here to enter text. Sarah Thomas	Signed	Click here to enter a date. 25/10/2017.

APPLICATION APPROVED BY	Full name		Date
Supervisor (where applicable)	TARNA Click here to enter text. KLITZNER		29.10.2017. Click here to enter a date.
HOD (or delegated nominee) Final authority for all applicants who have answered NO to all questions in Section1; and for all Undergraduateresearch (Including Honours).	PROF T. BERLANDA Click here to enter text.		30/10/17 Click here to enter a date.
Chair : Faculty EIR Committee For applicants other than undergraduate students who have answered YES to any of the above questions.			