Dissertation submitted in partial fulfilment of the requirements for the degree M. Arch. (Prof). All the work contained in this document is my own except where otherwise acknowledged.

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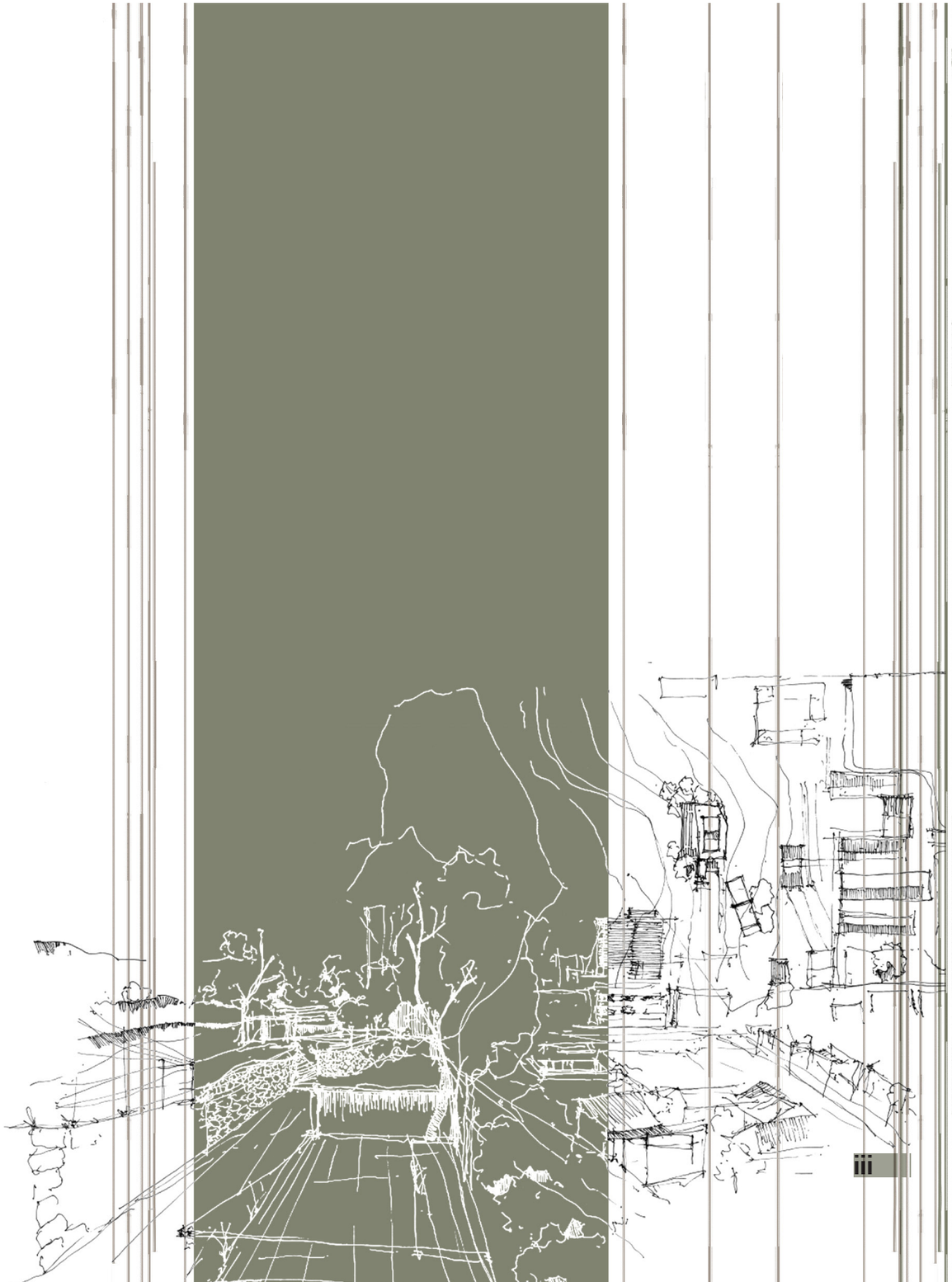
Preamble

This design dissertation investigates the causality that stems from a proverbial division in modern social, economic and contextual healthcare spaces in South Africa. The aim is toward addressing this division through the establishment and discourse of its respective 'peripheries'.

Particular relevance is appointed to the meaning of healthcare as a physical, social and economic space, through the analysis of scientific and philosophical research conducted with reference to classical and modern thinking, as well as looking at the phenomenological growth of primordial human beings and concurrent architecture. Through identifying how these concepts changed the fundamental aspects of healthcare, a question is posed toward the conceptualisation of a healing 'place' through a proposed design methodology.

The document then seeks to consummate the abstract notion of a healing place and concrete healthcare ideologies, in an effort to propose the synthesis of a Holistic Health Centre in an integrated South African context derived from these 'peripheries'.



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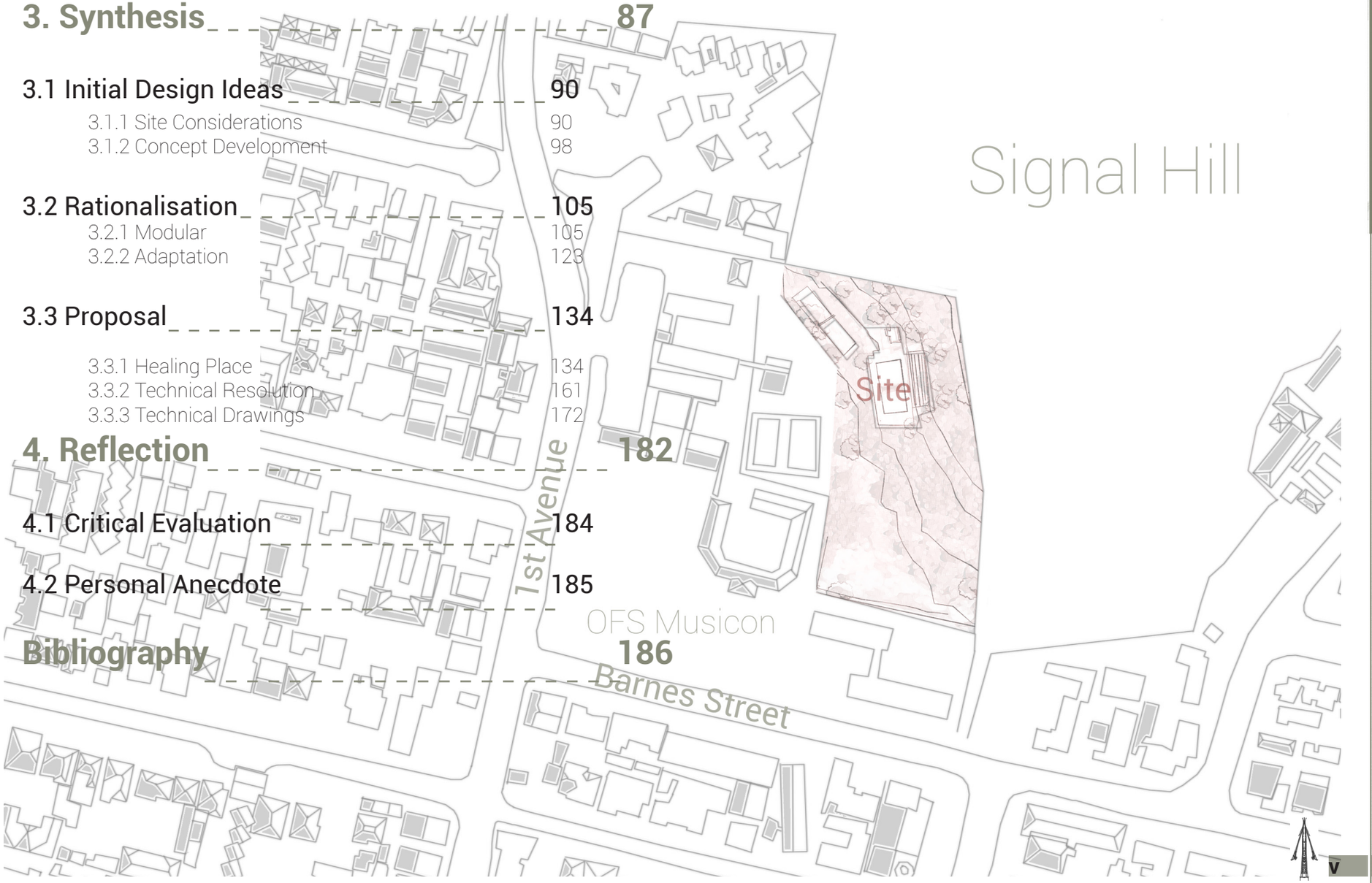


Introduction

The personal interest in the investigation of this design dissertation originated from a process of recollection. The idea stems from memories that reiterate a personal fascination with how healthcare seemed to affect families and individuals across many cultures and religions in a corporeal and spiritual sense.

A blind belief in statistical evidence and science has always presented itself as the most logical path to follow in terms of healthcare and healthcare practises. Personally, coming from a religious background and displaying a certain disdain for concepts like providence proved to be a daunting endeavour; finding solace in the fact that things happened randomly or chaotically seemed preferable.

This statistical personal belief has been tested throughout the past eight years when four out of the five members of my family were diagnosed with rare medical conditions. This was statistically so improbable that it rekindled a questioning and inquisitive nature that one often loses along the way.

An interest in healthcare architecture began in 2010 after losing a friend to HIV and AIDS related complications in Durban, KwaZulu-Natal. The public hospital responsible for treating her had an interesting spatial dynamic. It moved patients in a ward progressively closer to the attending doctor's office based on the seriousness of their condition.

This act ensured that the patients were well taken care of and reassured the patient's family and friends of this fact. Witnessing a close acquaintance being moved closer and closer to the doctor's door made one keenly aware of health directly related to space.

Exploring the differences in healthcare practices, treatments and architecture across social, economic and cultural environments, formed the outline of the investigation contained in this document. Through adding specific boundaries in terms of the scope of the investigation and personal experience, exploratory literary research and contextual understanding could begin to address certain questions related to these aspects.

This document is divided into four parts: **Problem Statements**, where the initial questions are posed; **Exploration and Grounding**, where the research moves toward answering these questions; **Synthesis**, which involves consolidating various answers; and **Reflection**, which pertains to evaluating the process. Throughout these parts regular references are made to the topographical, typographical, morphological and tectonic aspects of each, stipulating certain parameters.

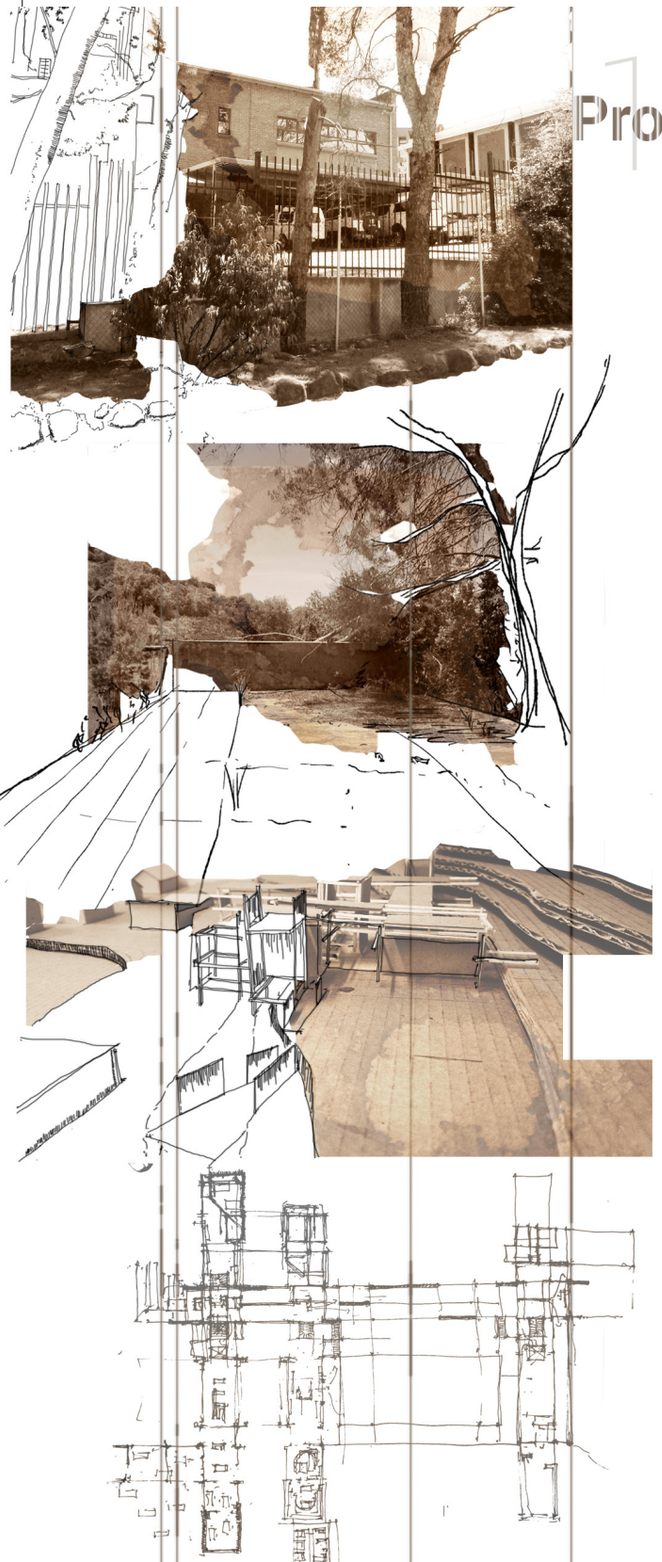
Some of these parameters suggest that an abstract division exists in healthcare and healthcare architecture. Whether the division exists between public and private healthcare sectors, traditional and orthodox medicinal practices or the architecture related to these, people tend to find their definition of healing in either extreme, often obscuring more integrated views.

The theoretical argument forms part of the morphological investigation in part two, or the Exploration and Grounding of the research. This argument will investigate aspects of human phenomenology, early architecture, healthcare architecture, the divisions or established peripheries in each as well as the concepts of healing space. Subsequently, a design methodology toward creating a healing place is presented.

This design dissertation moves toward addressing these established 'peripheries' through a Holistic Health Centre. It focuses on health improvement via integrated healthcare concepts and treatments, situated on a site between natural and urban landscapes against Signal Hill, Bloemfontein.

Glossary

Abstract context:	*Referring to a metaphysical context or non-physical context.*
Haptic:	*Bodily experience of a space through more than one sense.*
Haptic diversity:	*Planes consisting of a diverse range of haptic or sensual experiences.*
Healing place:	*Healing space that a user can identify with and orientate in.*
Healing space:	*Built environment that has a positive physiological and psychological effect on human beings.*
Healthcare:	*Organized provision of medical care to individuals or a community in the institutional and traditional sense.*
Healthcare architecture:	*The built environment hosting the organized provision of medical care to individuals or a community.*
Healthcare paradigm:	*A typical generally accepted model or pattern in healthcare fields.*
Holistic:	*Characterized by the belief that the parts of something are intimately interconnected and explicable only by reference to the whole.*
Holistic architecture:	*Built environments that are in harmony with their ecological contexts.*
Holistic health:	*characterized by the treatment of the whole person, taking into account mental and social factors, rather than just the symptoms of a disease.*
Institutional:	*Refers to architecture in the institutional environmental level.*
Integrated:	*Refers to the area of a specific field where the knowledge is equally gained from the extremes.*
Humans:	*Refers to the philosophical or phenomenological view of human beings.*
Morphology:	*How? Refers to the form giving of a particular concept or structure.*
Muthi:	*Southern African traditional medicine consisting out of various natural products.*
Oneiric house:	*Refers to a 'Dream' house in the phenomenological sense explained by Gaston Bachelard in The Poetics of Space (2014).*
Orthodox medicine:	*Allopathic medicine. It involves healthcare through drugs, radiation or invasive surgeries.*
Paradigm split:	*A division of a typical pattern or model to its extremes.*
Periphery:	*Term used in describing the extremes found in a paradigm split, of the various subjects. Periphery infers the infinite fading of knowledge toward the absolute integrated field.*
Place:	*Space within which a user can orientate and identify.*
Shelter:	*Physical elementary structures for protection against the elements.*
Sheltering:	*To hide or take refuge from the world through the habitation of a built environment.*
Space:	*Movement plane in a design (Herssens & Heylighen, 2012), or the area that a user cannot yet identify with or orientate in.*
Topology:	*Where? Refers to the physical context.*
Traditional medicine:	*Refers to indigenous medical practices and treatments including muthi.*
Typology:	*What? Concerns the type of architecture in terms of function.*
Vernacular:	*For the purposes of the argument, in this document it refers to the traditional architecture related to informal traditional medicine and medical practices.*



1

Problem Statements

2

Exploration and Grounding

Typo

Topo

Morph

Tec

Touchstone

Concept

Framework

Typo

Topo

Morph

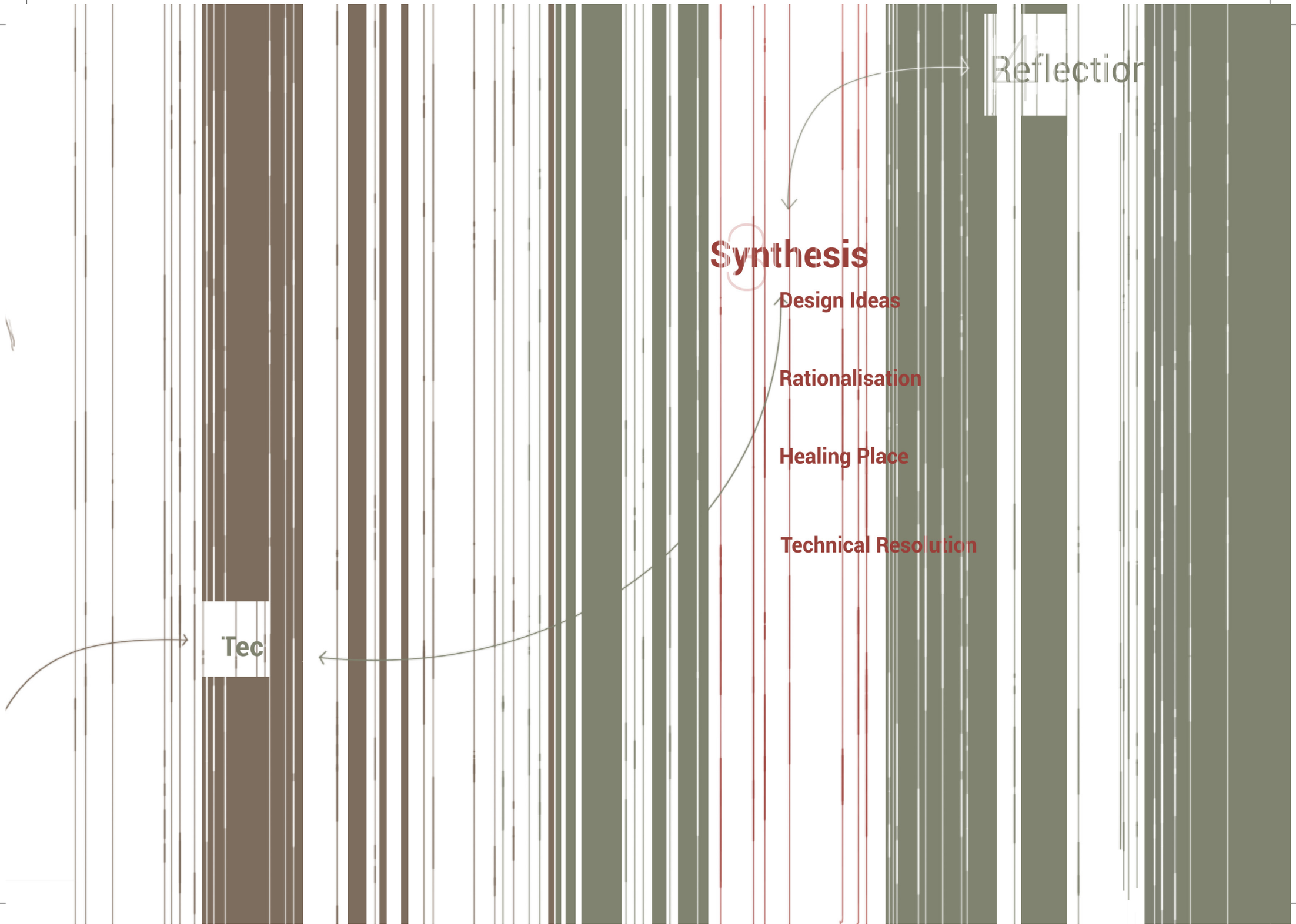
Human

Shelter

Healing Spaces

Paradigm Split

Healing Place


Reflection
Synthesis
Design Ideas
Rationalisation
Healing Place
Technical Resolution
Tec

Research Design

Exploratory Research Conducted

The information contained in this design dissertation was compiled through a multidisciplinary form of research:

Quantitative, qualitative, cognitive and technical research methods were utilised. To organise gathered information as clearly as possible, a pragmatic research methodology was used.

The research took the form of comparative studies, looking at the existing situations in the healthcare and healthcare architecture fields. Empirical studies related to the physical properties of the site, materials and environment were also used. Specific correlation studies were also performed in identifying what effect current healthcare typologies could have on social, economic and cultural levels.

Experimental research was conducted in the analysis and comparison of specific literary documents toward developing an argument aimed at the morphological nature of the architecture.

Where applicable, interviews, precedent and case studies were completed to substantiate certain questions and problems.

Grounding of Research

The information collected was then followed through to obtain the parameters set out in the initial research stage.
The arguments and conclusions made were continuously tested against these parameters, allowing a combination of exploratory and empirical findings to substantiate the arguments.

Identifying potential issues in the typological, topological and morphological contexts of any given subject, suggests that there should be problems in the first place. Problems recognised within healthcare and healthcare architecture, can appear to be so generalised that they are incorrectly identified as underlying problems when in reality, they only scratch the surface of a single aspect. Admitting that a selective approach to a particular aspect could yield a deeper understanding of that aspect as a whole may be an alternative method.

Problems like poverty, untrained professionals, overcrowded healthcare facilities and corruption are repeated perpetually in healthcare literary analyses. How to solve these problems presents an entirely different exercise, as it can be as complicated as it is obvious. The research aims in this dissertation are more inclined toward integrating certain aspects of healthcare, rather than remedying recurring problems.

1.1 Typology
1.1.1 Client Research and Requirements
1.1.2 Accommodation Problems
1.1.3 Division

1.2 Topology
1.2.1 Site Considerations
1.2.2 Problems in addressing abstract contexts
1.2.3 Division

1.3 Morphology
1.3.1 Toward an argument
1.3.2 Aim toward a unique morphological approach
1.3.3 Division

1.4 Tectonics

Problem Statements

1.1 Typology

1.1.1 Client Research and Requirements

Analysing healthcare and healthcare architecture in the typological sense suggests that a certain identity crisis exists within the South African context. Aginam (2007) mentioned in his article, Beyond Shamanism, that many African countries stagnate in their traditional medicinal practises, as well as in their initially gained Western expertise, refusing to follow global trends in healthcare.

Assuming that the same problem exists in South Africa would form a cornerstone for research toward finding a client who would seek to address it. Such a client would be based in healthcare and have new ideas as to where South African healthcare was headed, what relevance it had internationally and what it could mean for South African healthcare architecture. SASIM, the South African Society for Integrated Medicine, refer to these requirements in their mission and vision statement.

SASIM repeatedly mention a "paradigm shift in medicine", as they voice their concerns that a lack of integration in the South African healthcare sector could lead to medicinal practises that are increasingly bound within a narrow scope.

1.1.2 Accommodation

Problems identified regarding the programme of a potential healthcare facility are in line with the client research. The main issue was to identify which functions could constitute a new aspect of healthcare operation in South Africa without losing its relevance to the public and an operation that would avoid marginalisation and segregation.

Adherence to rational, functional programmes that advertise safety and professional care are imperative to healthcare design, with special considerations afforded to circulation and ideally, a connection to nature.

Although accommodation requirements for private and public healthcare facilities in South Africa could be similar, it certainly is not employed in the same way and thus produces different results (Barron & Roma-Reardon, 2008). More importantly, with regards to addressing the requirements of a client that mirrored the aspirations of an international holistic healthcare trend would involve the careful introduction of a new composition of healthcare functions into the South African context.

The aim was to investigate certain healthcare facilities around the world that satisfied the criteria of holistic health, as well as orthodox practises.

1.1.3 Division

The typological division in healthcare and healthcare architecture in South Africa became apparent after a basic interpretation of tangible evidence in statistics, case studies and literature analysis. There exists a social, economic and cultural segregation in private and public healthcare, traditional and orthodox medicine and practises as well as in the typological architecture related to these different practices.

These differences are plainly observable and in some cases quietly tolerating of each other, but it nevertheless constitutes a lack of integration in a field of knowledge that exists as the typological landscape of South African healthcare.

1.2 Topology



Google Map showing site location.

1.2.1 Site Considerations

The client and the type of healthcare facility suggests a holistic approach which finds its essence in the integration of healthcare practices, architecture and subsequently, the possibility of a new context for healthcare in South Africa. A prototypical healthcare facility justifies a very specific topological investigation. The investigation looked towards sites that have the potential to allow the integration of the surroundings in a sustainable manner in order to include social and economic interaction.

Engaging responsibly with the ecological environment becomes especially important as it would contain elements of urban and social connectivity, attachment to nature, natural resources and adherence to historical and modern architectural typologies.

1.2.2 Problems in addressing abstract contexts

The investigation into the site needs to be as empirical as possible, as the facility would require a new form of acceptance from the potential users and the existing built environment. Any misinterpretation of information regarding the natural or urban connectivity of the site would result in the abstraction of the site, where its function would become obscure to a certain type of user or segregated from one.

This could then only serve to undermine the feasibility of the project. For a client looking forward to a more substantiated position in South African healthcare, the feasibility of a project like this could prove invaluable.

1.2.3 Division

In the topological scene, addressing the division of the site becomes a discourse between the natural environment and the urban grid. The vast division between these two landscapes allows the potential user to disassociate with either one once entering a specific site.

In choosing a suitable site it became apparent that some form of liminality would have to be present in a quantifiable as well as cognitive sense, thus allowing the potential reintegration of these landscapes, which would be ideal for a potential healthcare facility, specifically because of its connectivity to the public but also its emergence with nature.



Westdene on the left and Signal Hill on the right. A connection with the city grid and a connection to nature.

1.3 Morphology

1.3.1 Toward an Argument

The literal interpretation of healing space could be described as an environment that offers emotional or psychological healing to its visitor. Depending on the person, this could be the calming effect of the ocean, the tranquillity of a forest or the powerful serenity of a mountain. It could even be a preferred urban environment that offers unique social connections. This suggests that healing spaces are subjective, offering each person something unique.

The morphological investigation is aimed toward healing spaces as a specific space that could have the same effect as the vistas mentioned. The objective was to bring some solidity to the notion of a healing space as having a psychological and physiological effect on the user. This warranted the pragmatic research of relevant literature to substantiate each of these.

1.3.2 Aim toward a unique morphological approach

Synthesising the different aspects of a healing space in its philosophical and scientific reasoning would present a possibility for a design methodology. This design methodology would have to move toward the construction of a healthcare 'place', as Bachelard would describe it, which would employ both the empirical and cognitive aspects investigated.

1.3.3 Division

The key areas that needed to be addressed had to be of a morphological nature. The divisions in the current healthcare built environment suggests that a new morphological approach would collect from the extremes of institutional and vernacular healthcare architecture what it needed, whilst addressing aspects that each lacked. Morphology avoiding a hybrid response to healthcare architecture.

The meaningful making of a healing place might not be justified by simply creating a hybrid form between vernacular and institutional healthcare architecture but by having elements of each present to be used when necessary. Through the concepts investigated in the literary argument, it would find a solution for a health place design model.

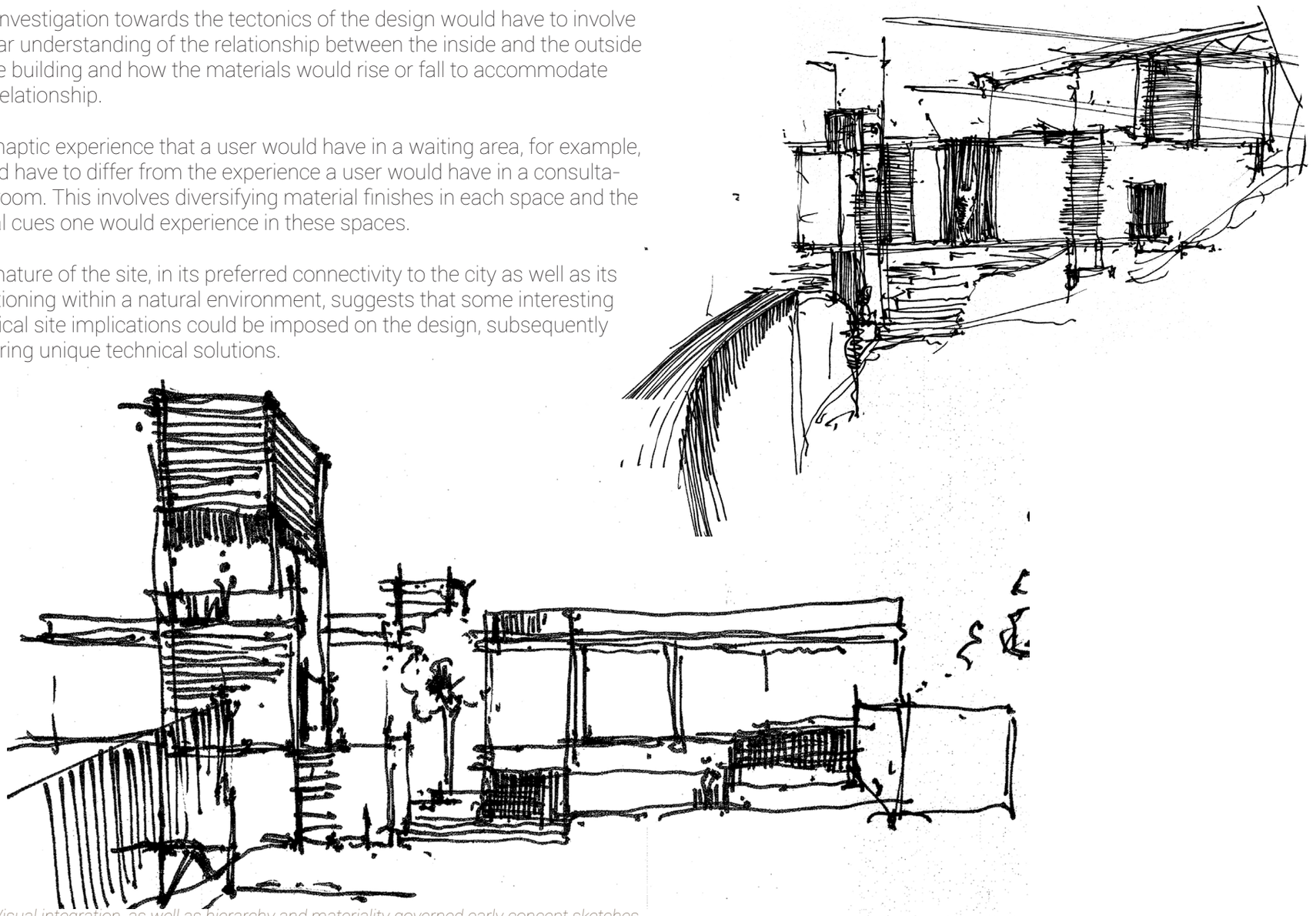
This health place design model, together with the abstract healthcare contexts that needs to be investigated in the typological sense, can begin to accommodate the client in a unique site and South African context.

1.4 Tectonics

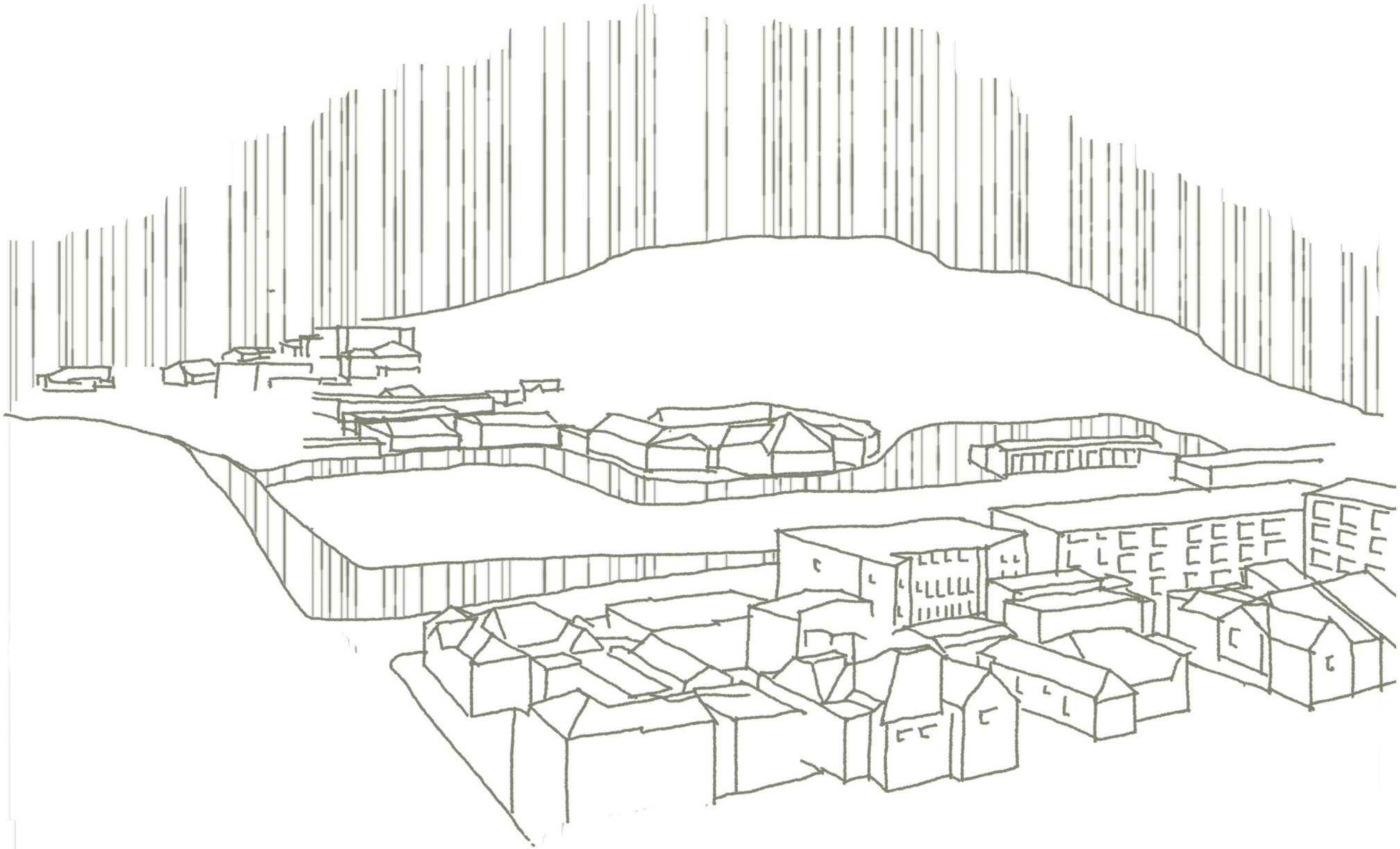
The investigation towards the tectonics of the design would have to involve a clear understanding of the relationship between the inside and the outside of the building and how the materials would rise or fall to accommodate this relationship.

The haptic experience that a user would have in a waiting area, for example, would have to differ from the experience a user would have in a consultation room. This involves diversifying material finishes in each space and the visual cues one would experience in these spaces.

The nature of the site, in its preferred connectivity to the city as well as its functioning within a natural environment, suggests that some interesting physical site implications could be imposed on the design, subsequently requiring unique technical solutions.



Visual integration, as well as hierarchy and materiality governed early concept sketches.



The problem statements set out in part one could now begin to guide the different research explorations in the topological, typological and morphological contexts. Much of the process of investigation involved trial and error as well as experimental concepts. The empirical data that needed to be collected could inform decisions directly, however, it needed to be continuously established in the cognitive research. This pragmatic back and forth referencing ensures that the theoretical discourse and the tectonics do not suggest different conclusions.

The establishment of certain questions in the initial problem statement could now be explored alongside a linear conceptual investigation, toward a technical resolution. This started with a Touchstone aimed toward finding the essence of the typological questions, moving through resulting concepts toward a conceptual framework. This formed the initial stages of grounding the research in the topological, typological and morphological contexts, with a literary argument finding detail in the tectonics of the design.

2.1 Touchstone
2.1.1 Key words

2.2 Concepts
2.2.1 Integration
2.2.2 The cave and the Tree
2.2.3 Periphery

2.3 Conceptual Framework
2.3.1 Toward morphological development
2.3.2 Updated glossary

2.4 Typology
2.4.1 Establishing Typological Peripheries
2.4.2 Client
2.4.3 Accommodation analysis
2.4.4 User Analysis

2.5 Topology
2.5.1 Establishing Topological Peripheries
2.5.2 Site in the Periphery
2.5.3 Quantitative Site Analysis
2.5.4 Qualitative Site Analysis

2.6 Morphology
2.4.1 Argument structure diagram
2.4.2 Literary Argument toward a Design Methodology

2.7 Tectonics

2 Exploration and Grounding

2.1 Touchstone

2.1.1 Key Words

The Touchstone was a physical representation of the essence of the investigation, in this case **holistic** healthcare. Investigating **holism** as a description of different areas of thought revealed many different interpretations across lifestyles, architecture and medicine.

To find the true essence of holism, the word itself and what it meant had to be looked at. Holism is described as the theory that parts of a whole are interconnected in such a way that they cannot exist independently of the whole (Gudmundsson, 2013). This could be the reason why holistic healthcare is such a lucrative concept to grasp, as we can already see how the different parts of holistic healthcare exist independently of traditional and orthodox medical treatment.

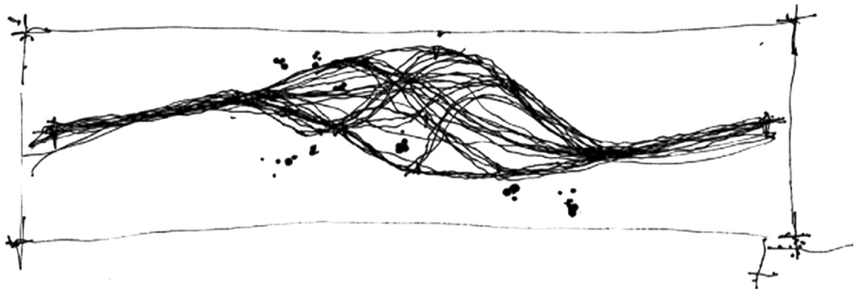
What holistic healthcare, architecture and lifestyle have in common is an integrated nature. **Integration** becomes the essence of holism, which in turn becomes the essence of a Holistic Health Centre.

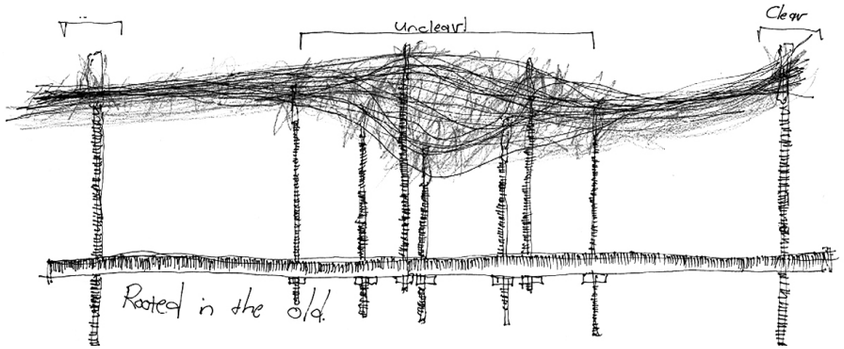
The idea of a **muscle** that contained different key areas of stress is a useful metaphor. Integration is not an instantaneous effect, but a process of push and pull, of tension and release over a specific time and within a specific context.

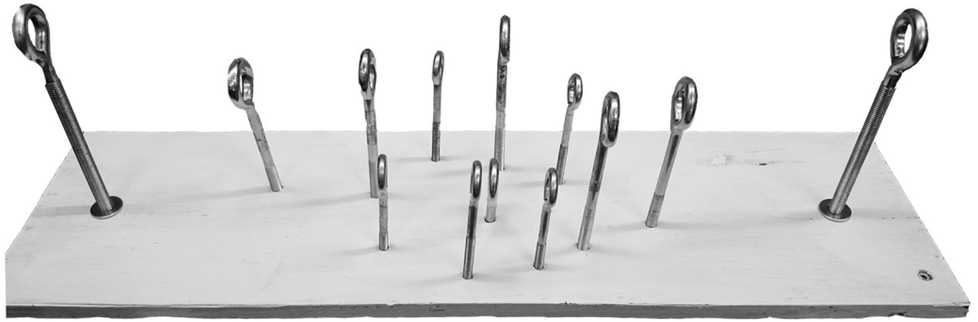
The white unblemished platform of the touchstone constituted the existing social, cultural and physical context, free of any effects on its paradigms. The different ring eye bolts represented the aspects of this unblemished context that could be manipulated.

With the manipulation of the different nodes, tension is created between the nodes and between the opposite **'peripheries'**, resulting in the physical change of the muscle eventually causing a recognisable change to the paradigms.

The Touchstone suggested that for a paradigm to change there needed to be an introduction of integration.







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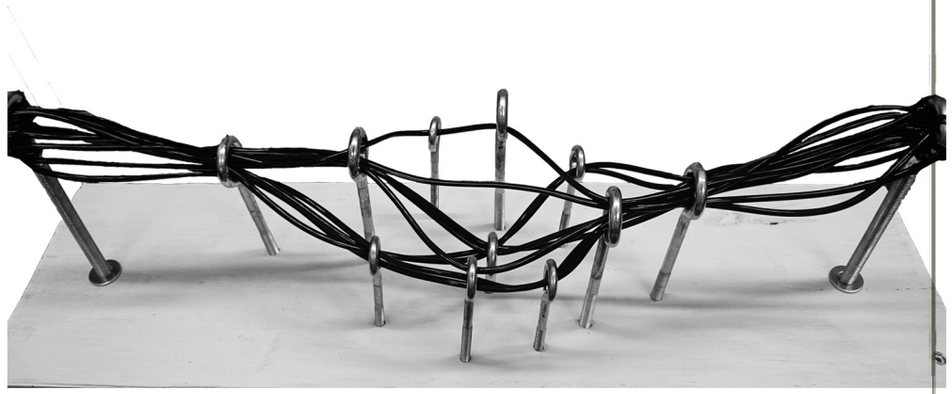

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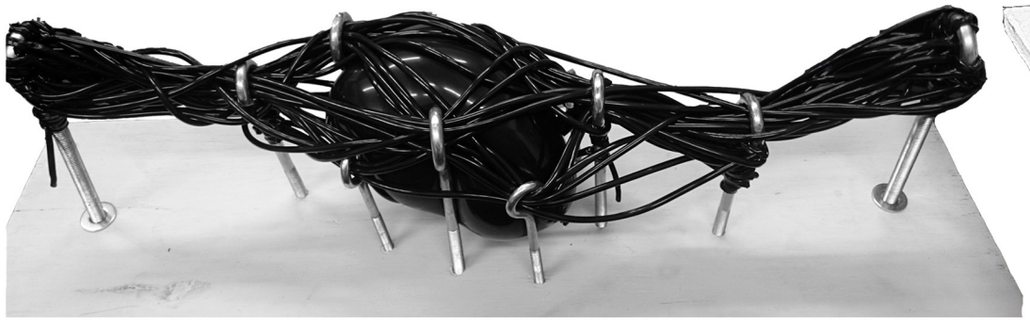

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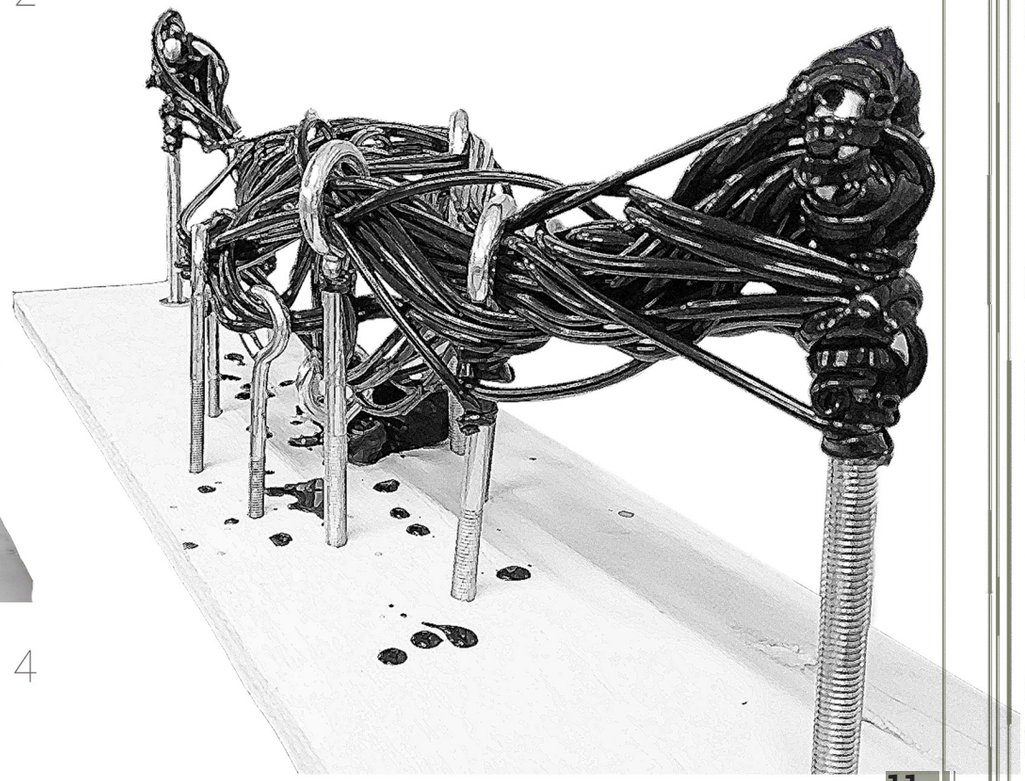

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Touchstone photos.

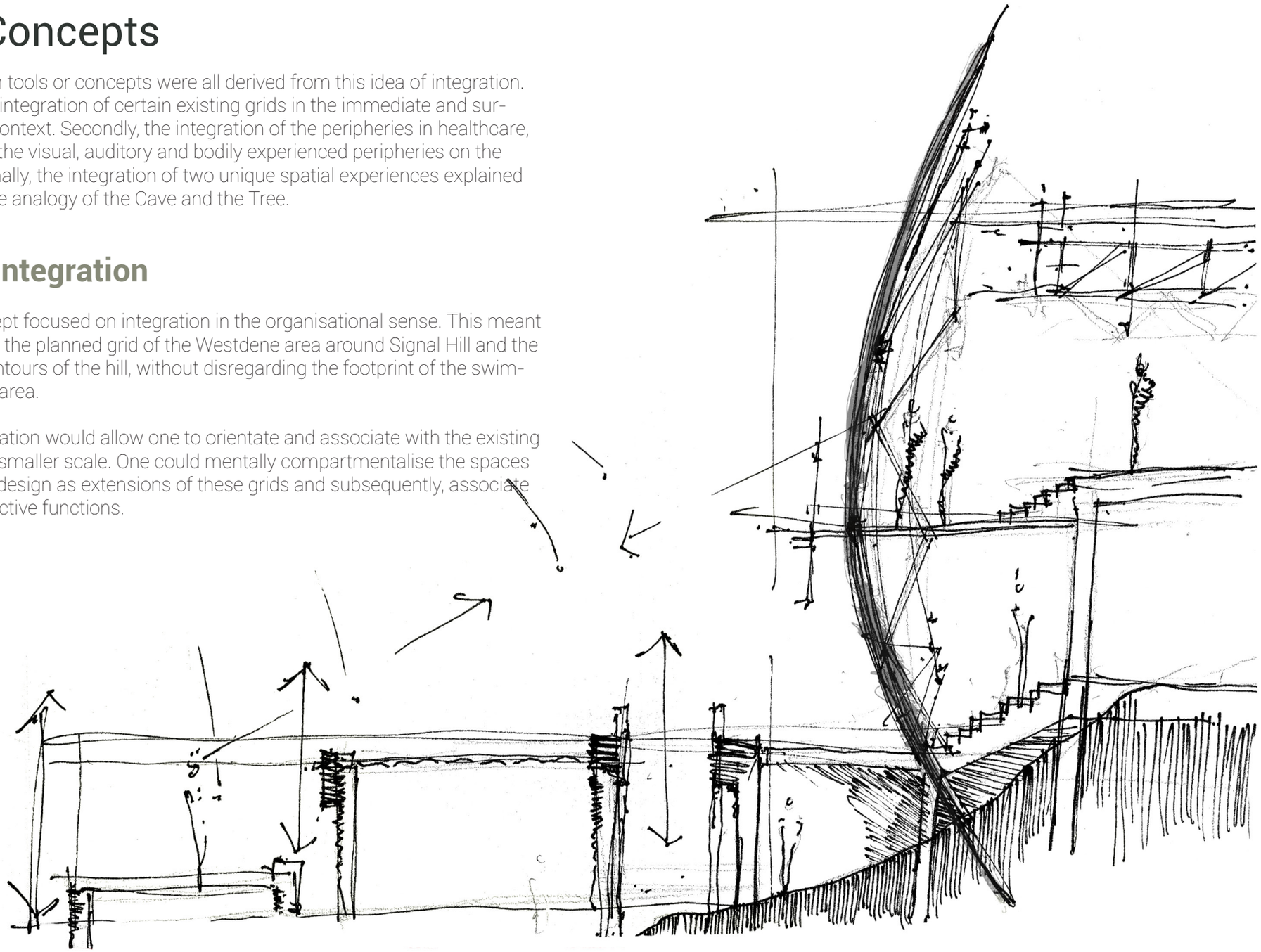
2.2 Concepts

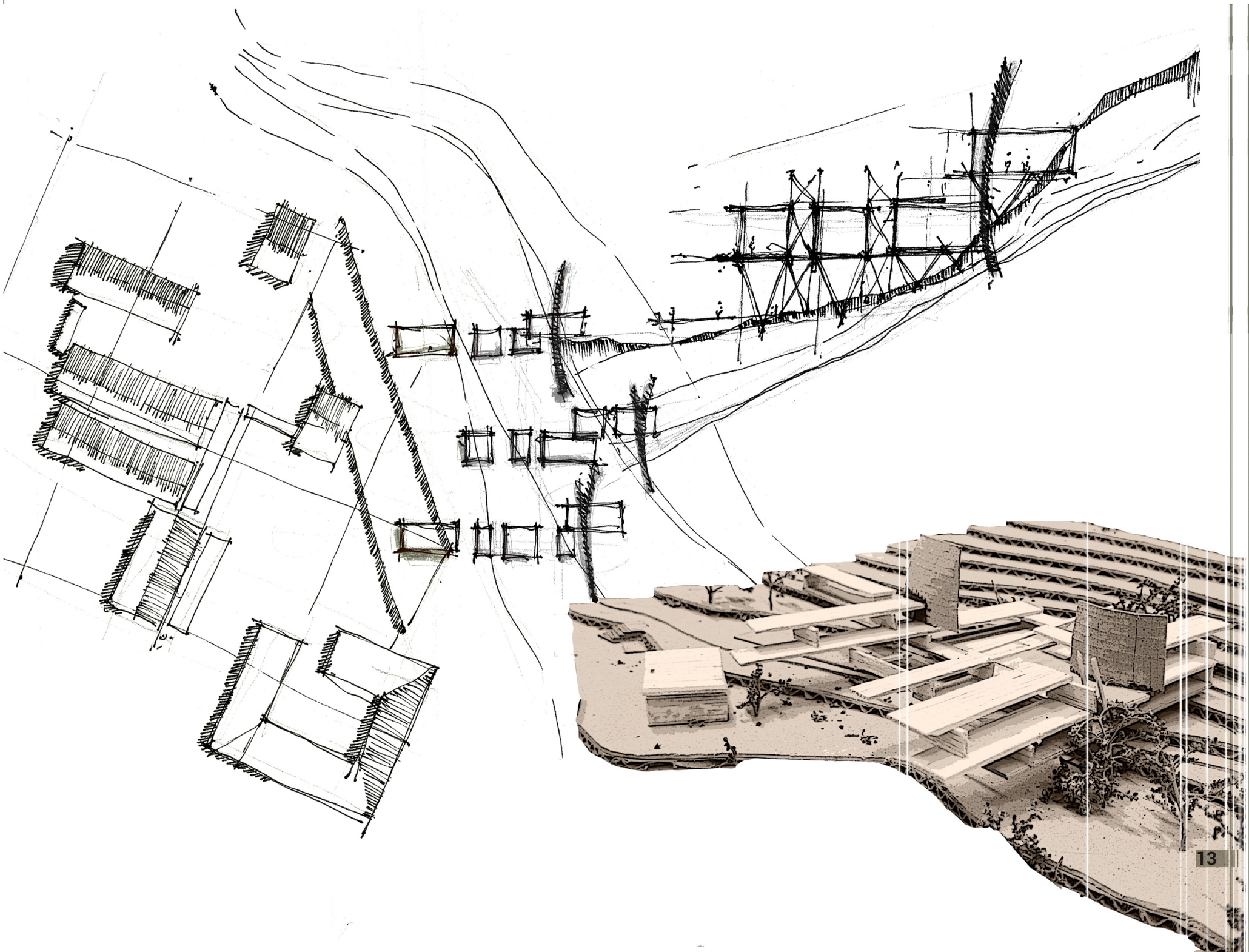
The design tools or concepts were all derived from this idea of integration. Firstly, the integration of certain existing grids in the immediate and surrounding context. Secondly, the integration of the peripheries in healthcare, as well as the visual, auditory and bodily experienced peripheries on the site and finally, the integration of two unique spatial experiences explained through the analogy of the Cave and the Tree.

2.2.1 Integration

This concept focused on integration in the organisational sense. This meant integrating the planned grid of the Westdene area around Signal Hill and the natural contours of the hill, without disregarding the footprint of the swimming pool area.

This integration would allow one to orientate and associate with the existing grids on a smaller scale. One could mentally compartmentalise the spaces within the design as extensions of these grids and subsequently, associate their respective functions.

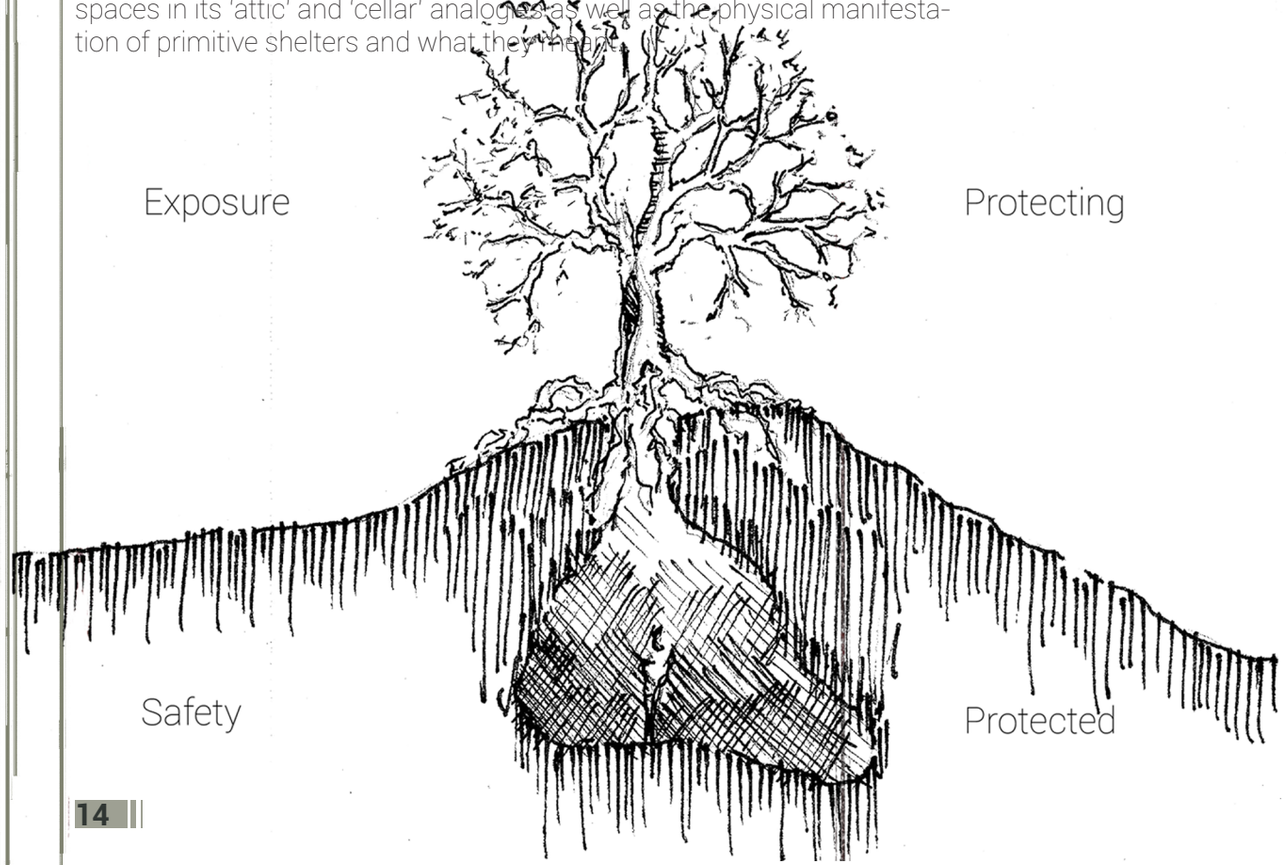


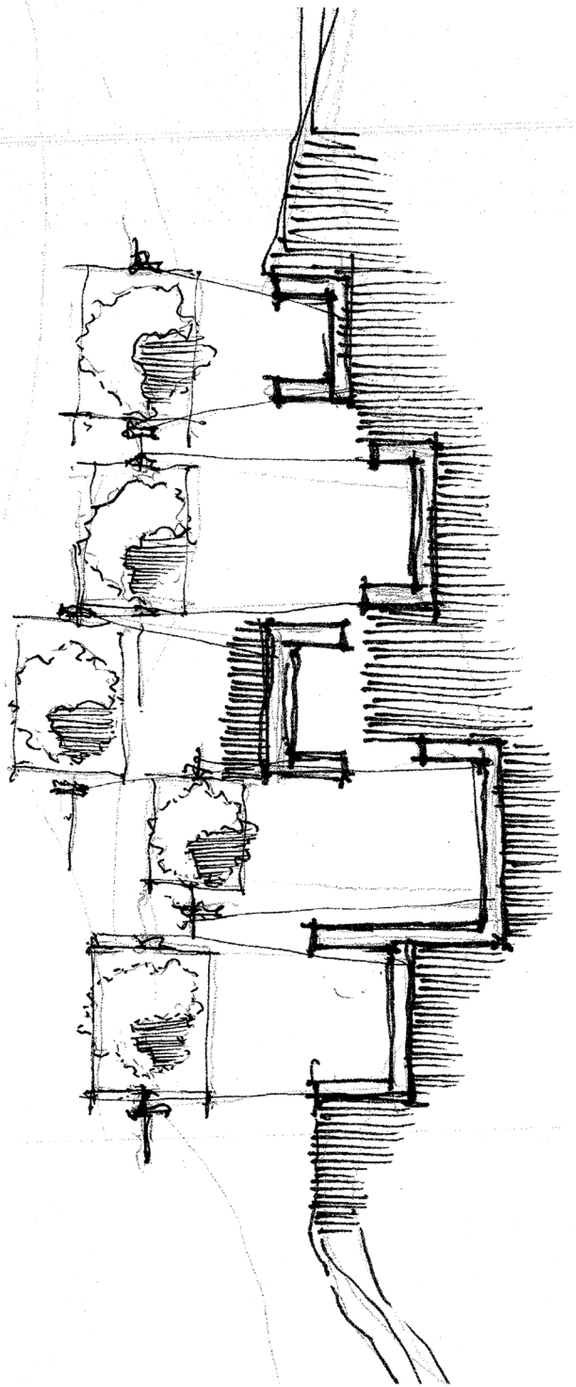


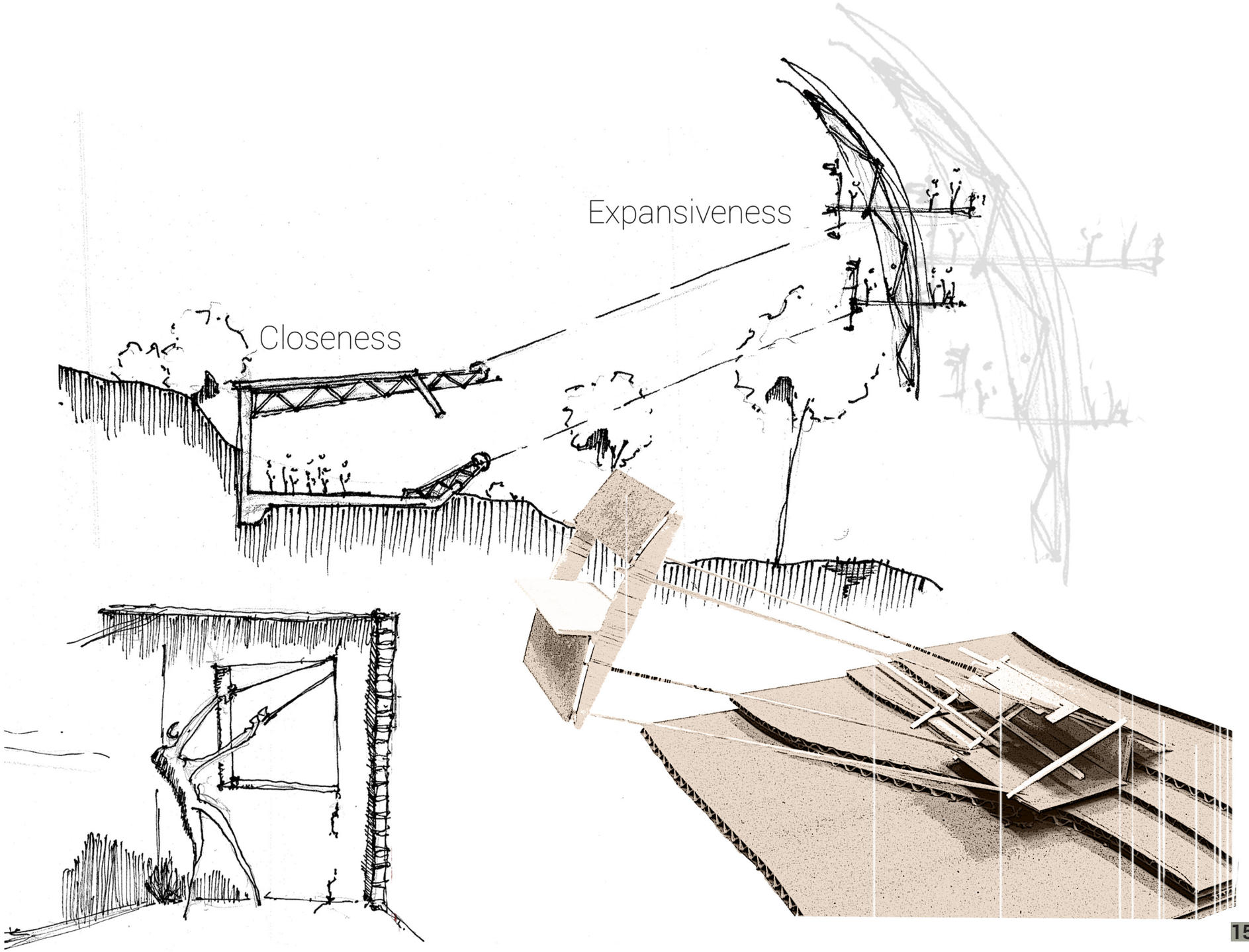
2.2.2 The Cave and the Tree

This concept was grounded in a philosophical literary investigation into primordial human needs. These needs could be described as the urge to be protected and covered, as within early cave shelters and the need to be free and to explore.

The concept explored the relationship these two opposing emotions had in a spatial sense. The Cave and the Tree concept became the origin of the investigation into Bachelard's Oneiric House (2014) that had synonymous spaces in its 'attic' and 'cellar' analogies as well as the physical manifestation of primitive shelters and what they meant.



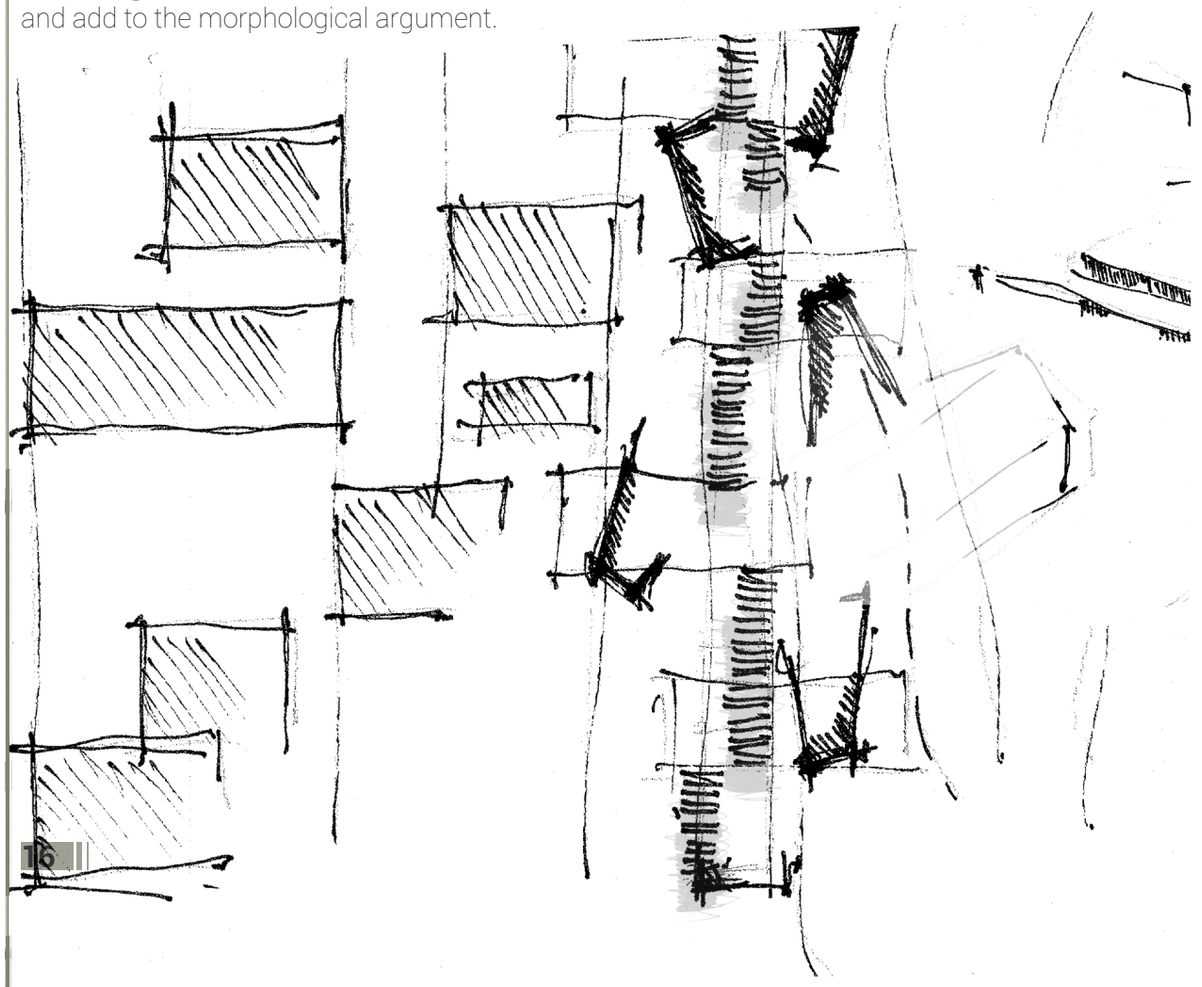



Expansiveness
Closeness

2.2.3 Peripheries

In this concept, the idea of periphery became a fluid one. Gathering from nature its views and tranquillity, from the urban environment its connectivity and dynamism. This also involved integrating the auditory, visual, bodily experienced and healthcare peripheries.

The integration of healthcare paradigms would also indicate a specific type of building or structure that could later inform the conceptual framework and add to the morphological argument.



Visual

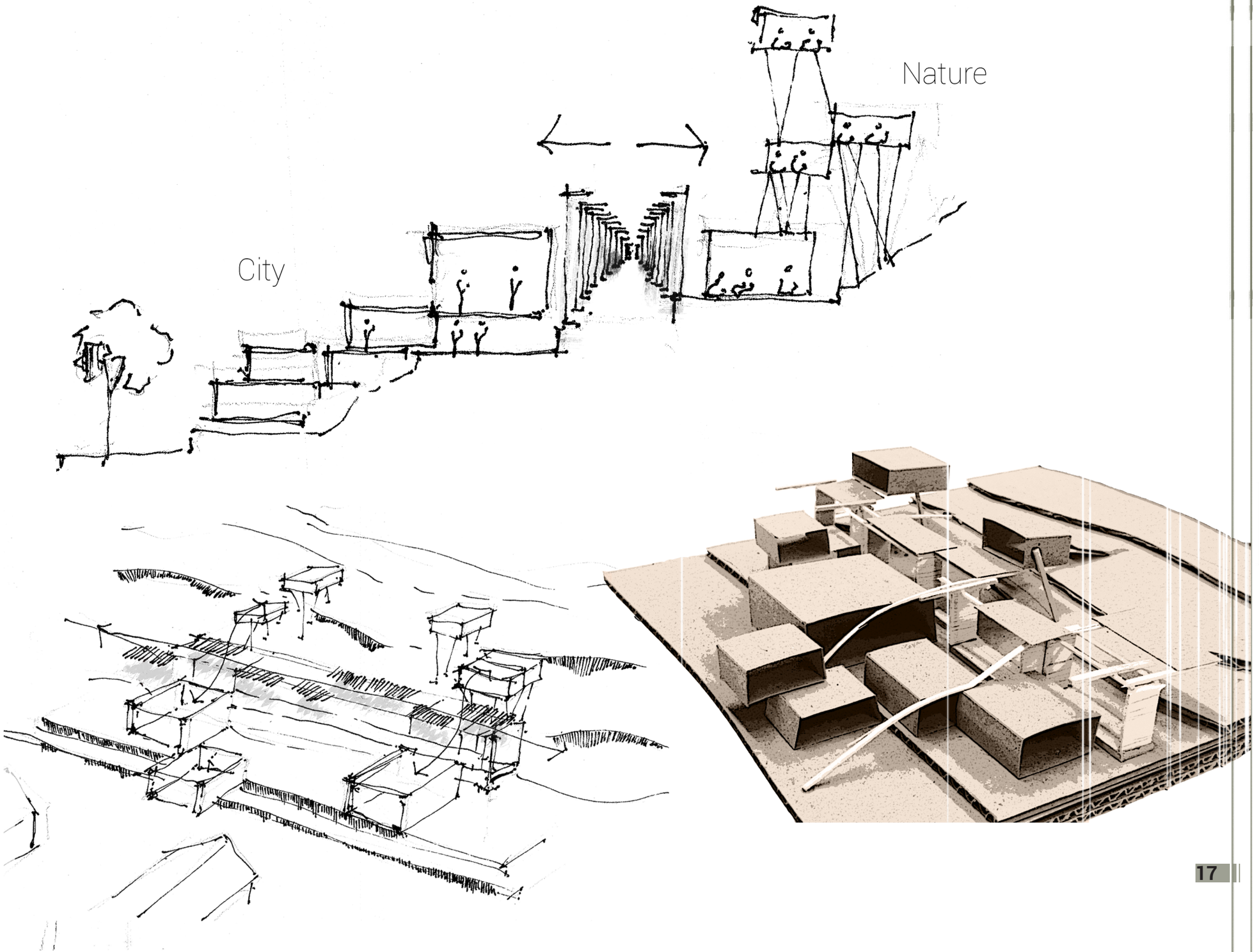


Auditory



Bodily




Nature
City

2.3 Conceptual Framework

2.3.1 Toward Morphological Development

Ironically, establishing a conceptual framework toward the product of the first conceptual development involved integrating the three concepts listed above.
During the research and exploration, they were adapted to be implemented more realistically into a design but remained fundamentally the same.

2.3.2 Updated Glossary

Integration: Becomes the subtext for the design discourse through all the contexts.

Cave and Tree: These spaces become the established places through the literary implementation of Bachelard's 'attic' and 'cellar' analogies, acting as subjective physical projections of our dream spaces.

Periphery: Becomes the description of elements that can be used from the divisions stipulated in the topological, typological and morphological contexts.

Homoeopathy: a system of complementary medicine where ailments are treated by minute doses of natural substances that in larger amounts would produce symptoms of the ailment.

Allopathy: An expression commonly used by homoeopaths to describe orthodox medicine practices.

2. 4 Typology

2.4.1 Establishing Typological Peripheries

The divisions set out as problem statements in the first part of this document can now be established as peripheries to specific fields of knowledge. In the typological context, these extremes are the vernacular architecture attributed to the world of traditional African medicine and the institutional architecture associated with modernism and orthodox Western medicine.

The following precedent and case studies explore the spatial, functional and haptic aspects of health clinics, locally and internationally, as well as residential and commercial structures that portray spatial qualities and/or unique design considerations.

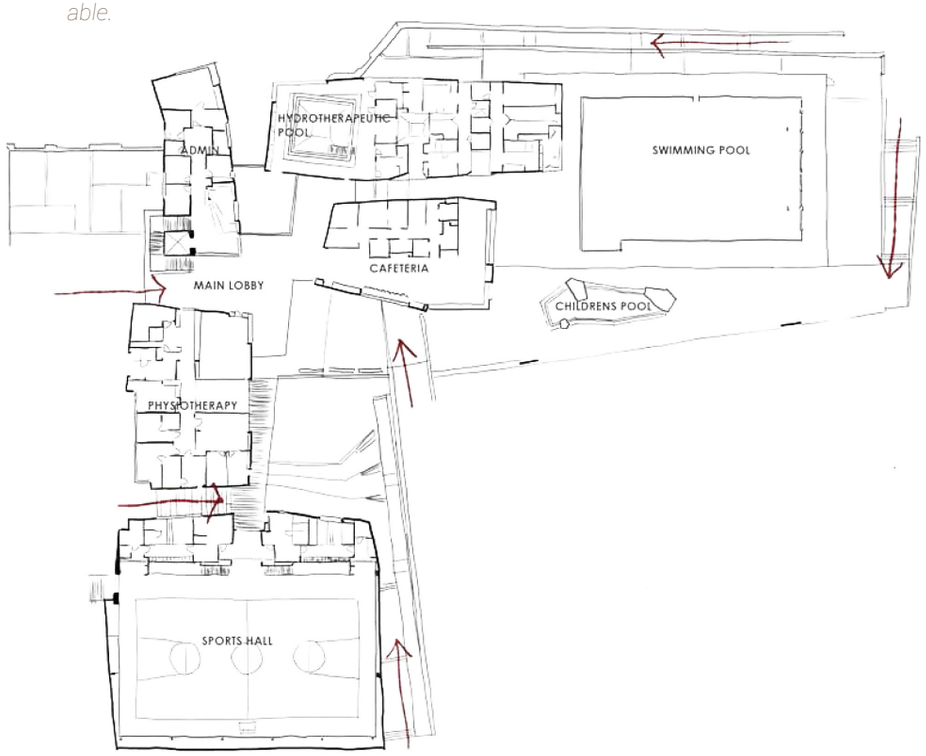
Precedent Studies: Health Clinics & Centres

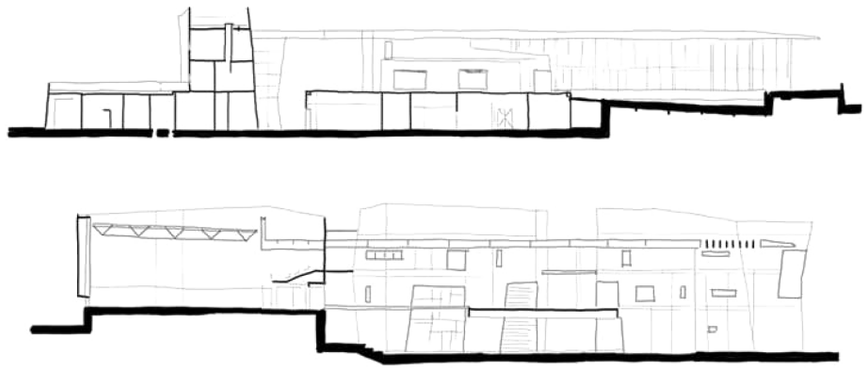
Bei-Halochem Rehabilitation Centre, Be'er Sheva, Israel.
Kimmel-Eshkolot Architects

This rehabilitation centre was specifically designed for elderly military veterans and functions more as a convalescence centre. Situated on the edge of the city in the desert, the spaces resemble large boulders strewn around intimate outside spaces.

Particularly interesting was the attention to exterior-interior connections as well as changes in scale and perspective. This centre was especially relevant in how it acted as mediation between the peripheries existing as the desert and the city.

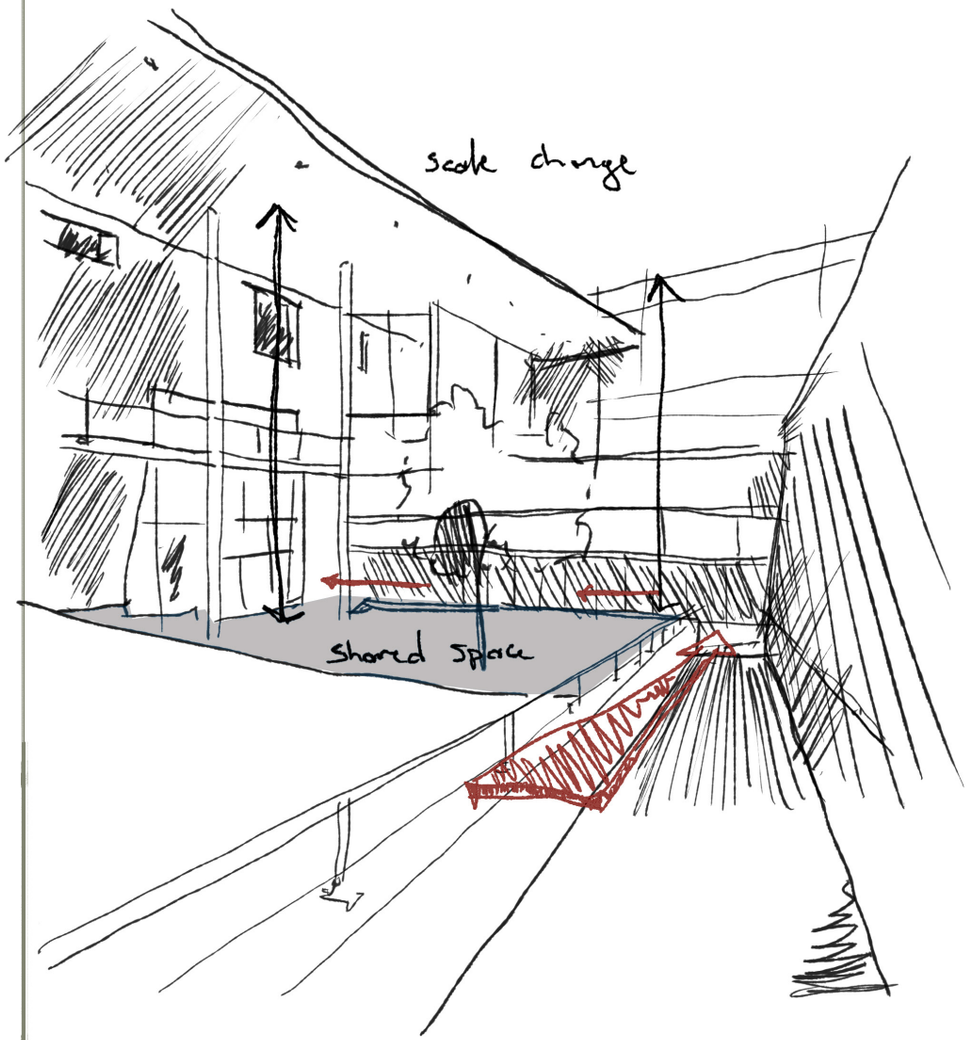
Multiple entrances integrate outside spaces and make the scale of the program manageable.

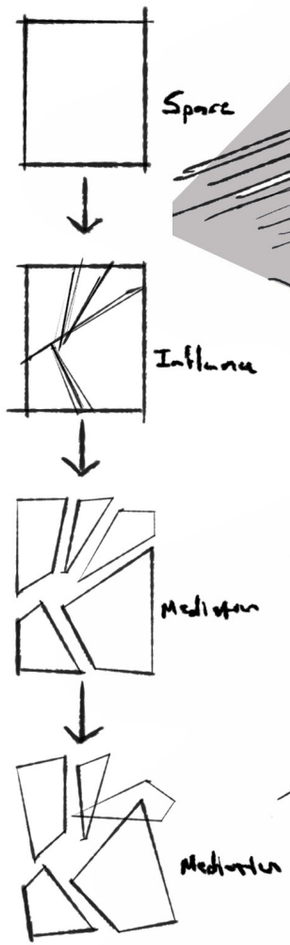


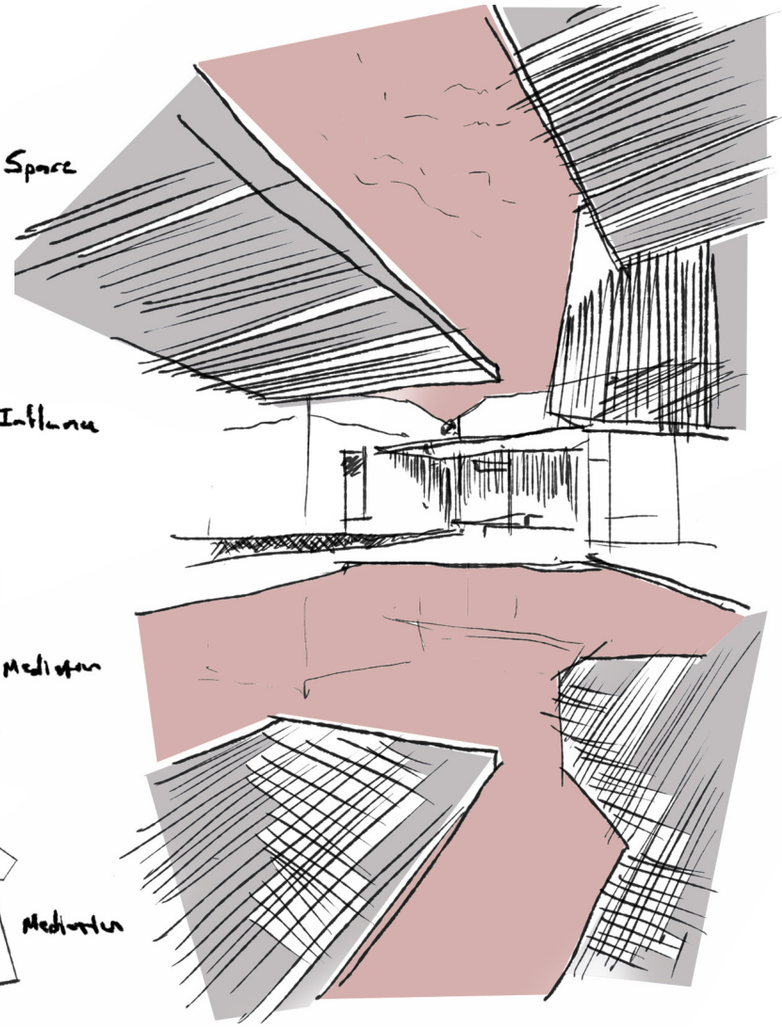


In the sections one can see how the design used hierarchy in its towers to draw visitors to adjacent entrances.

This analysis indicates how the design was influenced by the context visually. The mediation could then continue until a balance was satisfied between function and aesthetics.







Special attention was given to connecting spaces with nature allowing visitors a sense of arrival into a sanctuary without severing the visual authenticity of the context.

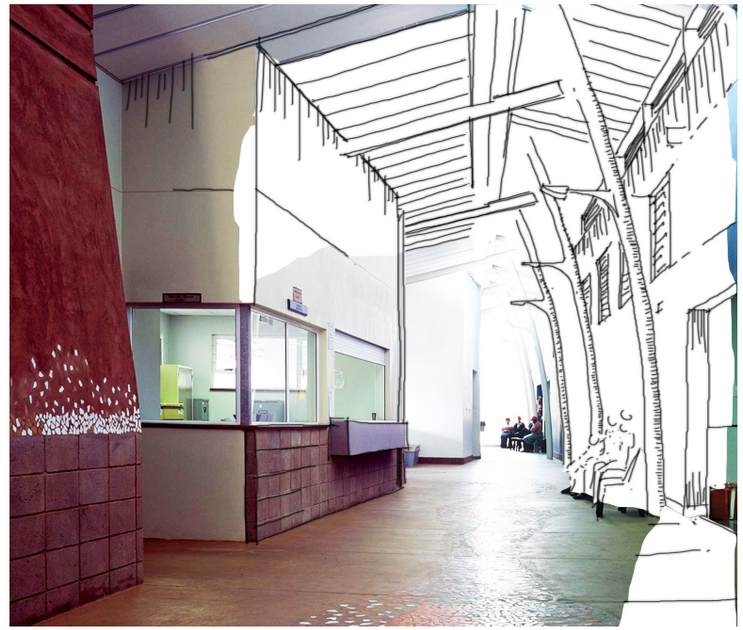
Umkhumbane Community Health Centre, Cato Manor, KwaZulu-Natal.

Robert Johnson Architect in Association With ZAI Consultants.

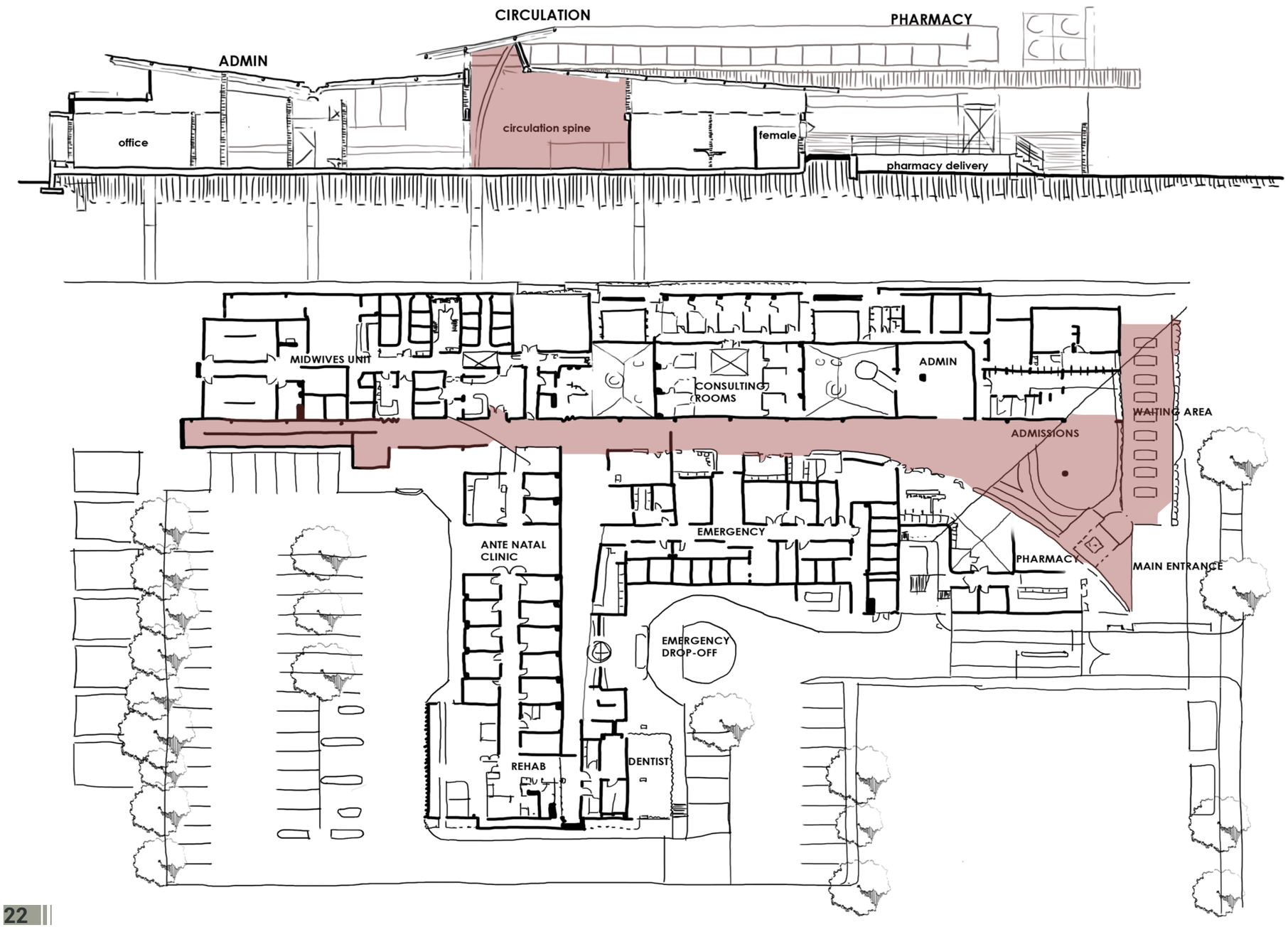
Emphasis was placed on the orientation of a user through a health clinic. The functional spaces were situated around a double volume spine that allowed natural light and ventilation to filter through to the deeper spaces.

The circulation and waiting areas became the driving factor for the clinic. A rational program layout could still function separately where needed, but the spaces are always connected to the spine, and subsequently, to natural light, ventilation and to some extent, the outside.

Many design decisions were based on changing the way healthcare facilities looked. Exposing interior spaces to light and textures and finding alternative, contextually driven aesthetics to healthcare architecture.





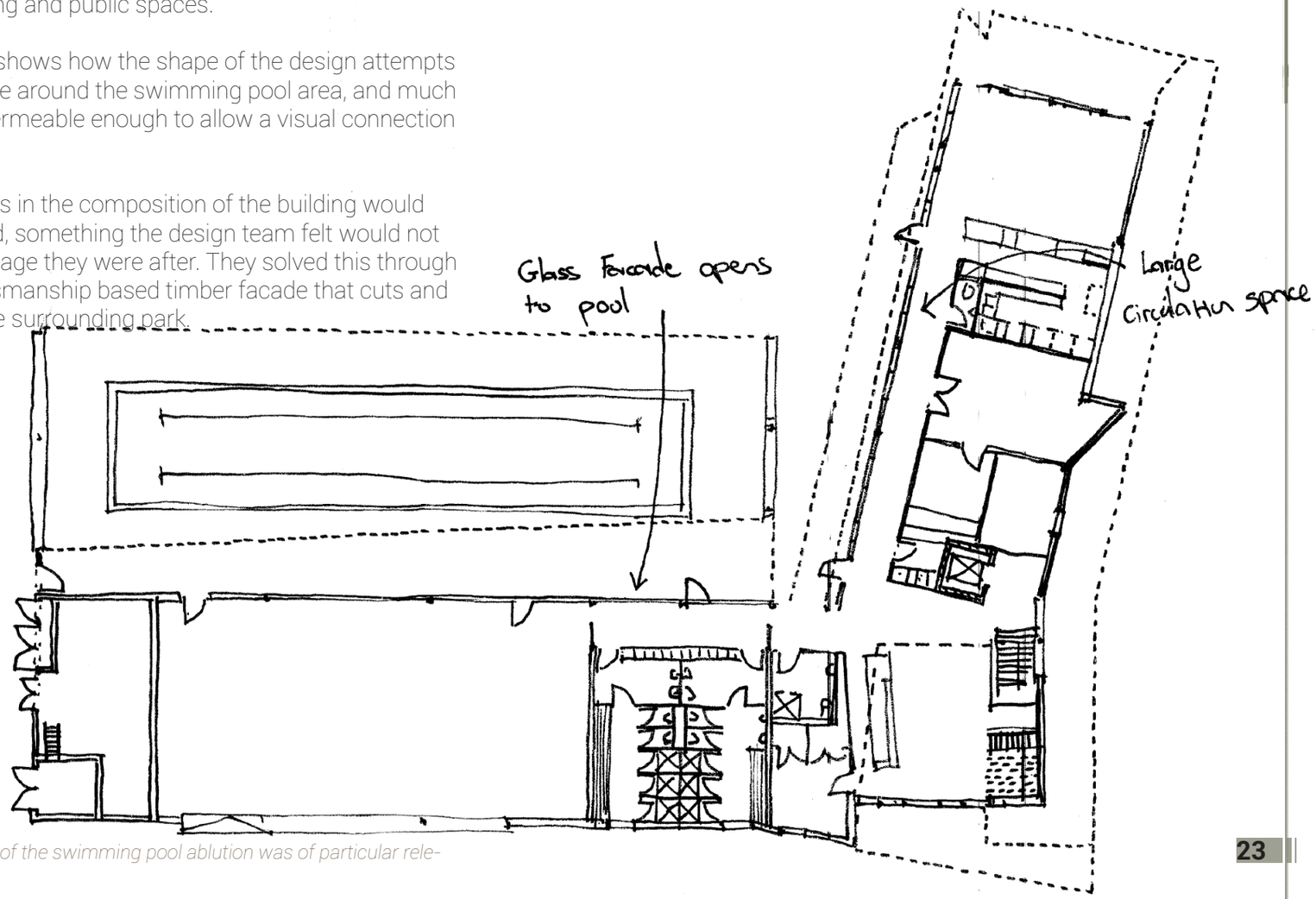

CIRCULATION
PHARMACY
ADMIN
office
circulation spine
female
pharmacy delivery
MIDWIVES UNIT
CONSULTING ROOMS
ADMIN
WAITING AREA
ADMISSIONS
ANTE NATAL CLINIC
EMERGENCY
PHARMACY
MAIN ENTRANCE
EMERGENCY DROP-OFF
REHAB
DENTIST

Saltwater Coast Lifestyle Centre, Point Cook, Australia.
NH Architecture

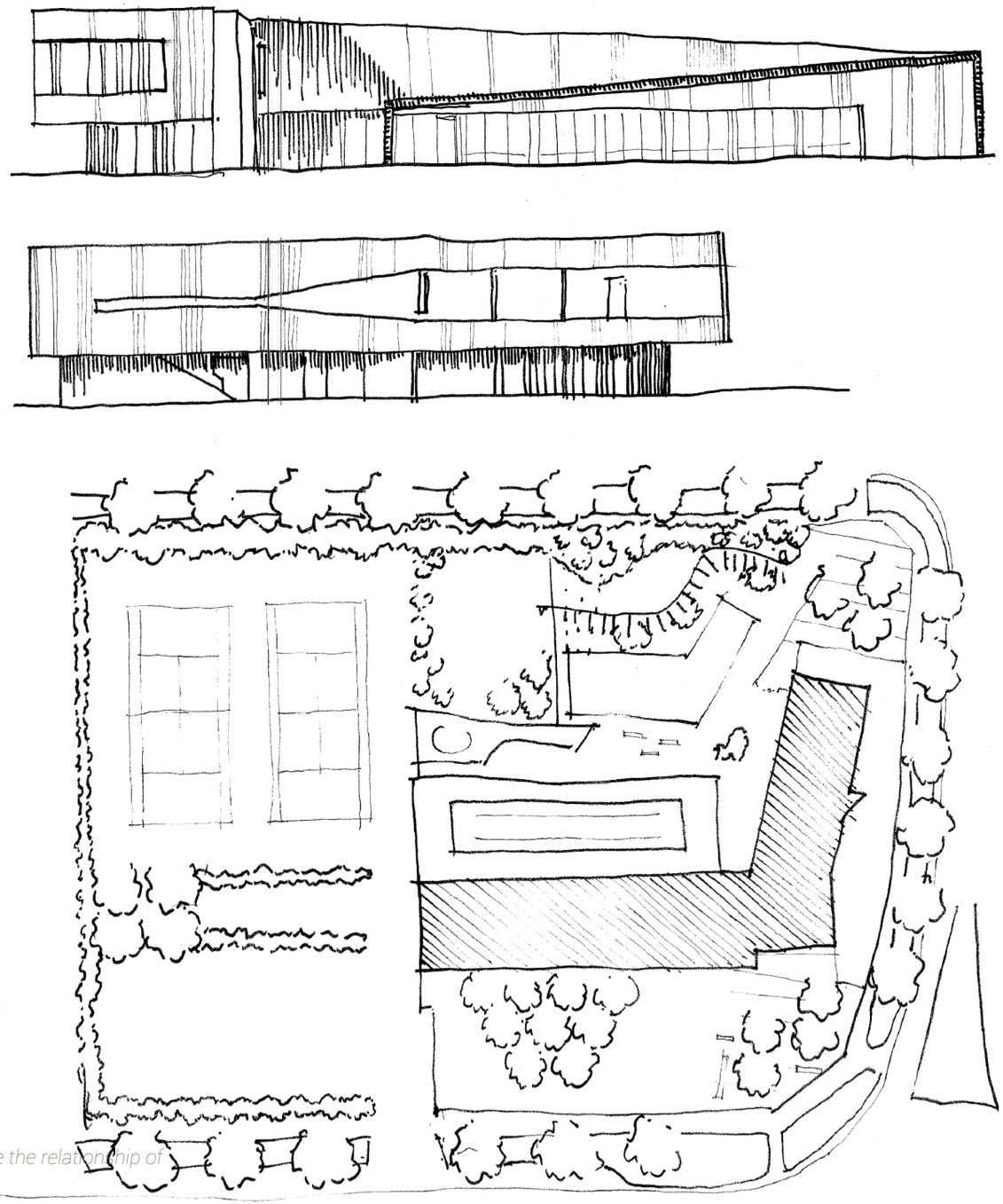
The primary design challenge in this project was to reconcile the suburban fast paced lifestyle with the sensitive natural environment. They achieved this largely through landscaping and public spaces.

The plan and site plan clearly shows how the shape of the design attempts to create a courtyard like space around the swimming pool area, and much of these facing façades are permeable enough to allow a visual connection with the outside spaces.

The strong geometrical shapes in the composition of the building would normally appear hard and cold, something the design team felt would not speak the 'health space' language they were after. They solved this through the implementation of a craftsmanship based timber facade that cuts and opens to strategic views of the surrounding park.



The proximity and dimensions of the swimming pool ablution was of particular relevance here.



On the site plan one can clearly see the relationship of the building with its surroundings.

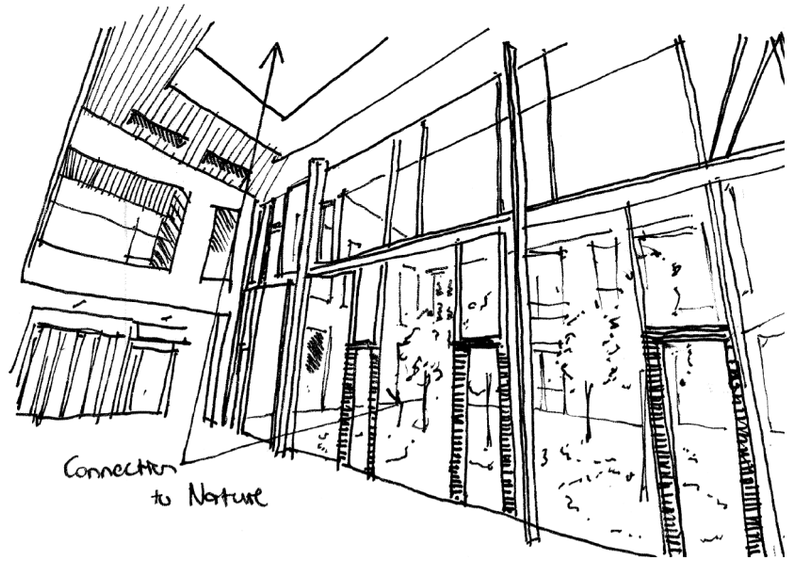
Wester Hailes Healthy Living Centre, Edinburgh, Scotland.

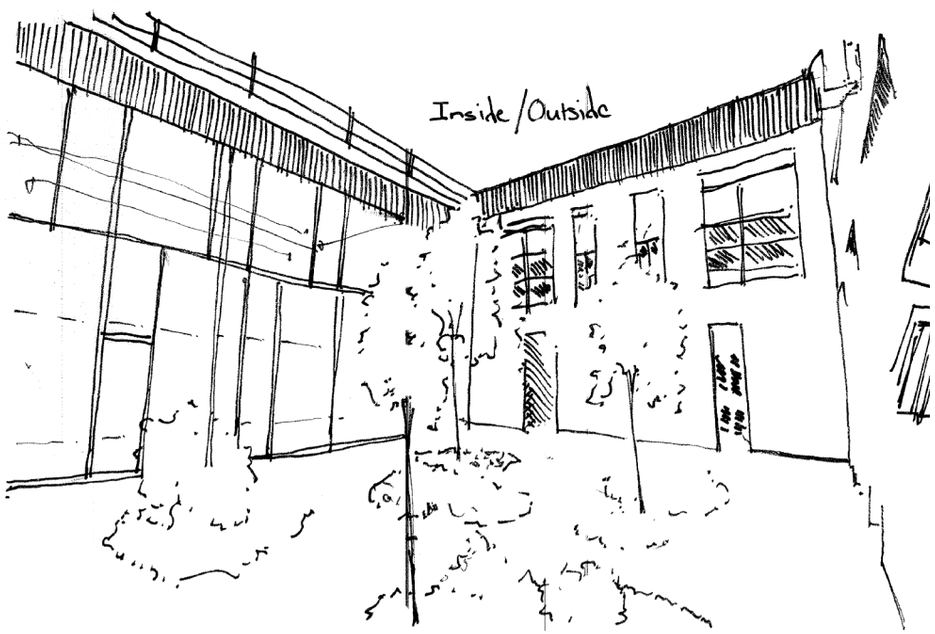
jmarchitects

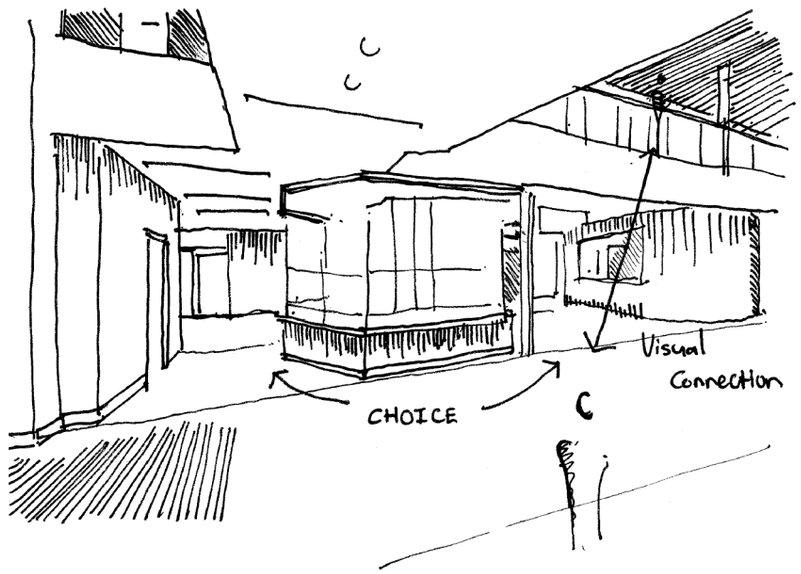
The Edinburgh City Council was the client for this project and their requirement description left little doubt that holistic health could serve a community on a larger scale.

Not only in the functions of the centre, but also in the integrated nature of the working spaces. Special attention was afforded to creating comfortable working environments and open expansive services.

The concepts of visual and mental connections between different spaces and of freedom of choice in health clinics are prominent in this design. These aspects continue to form part of studies into how the spaces we are in affect us in certain ways (Sternberg, 2009).





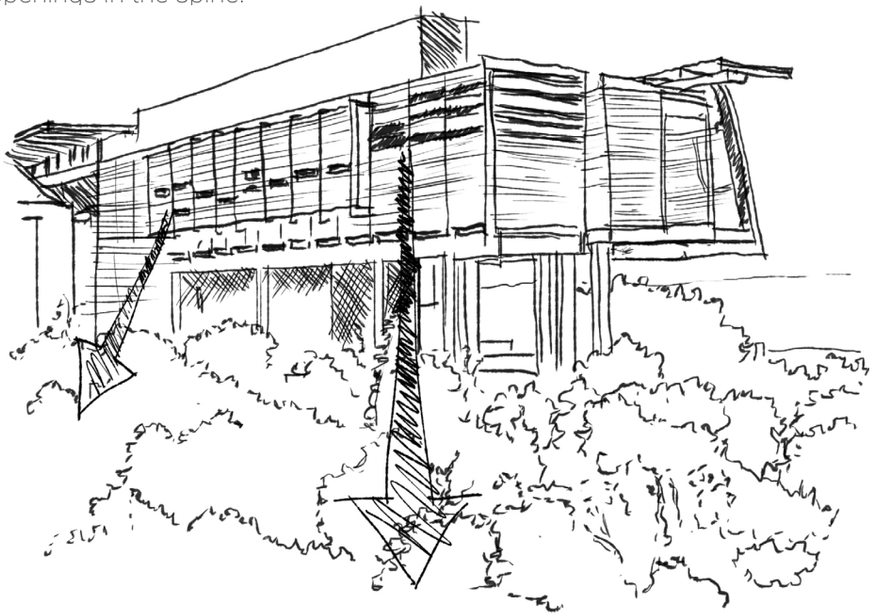


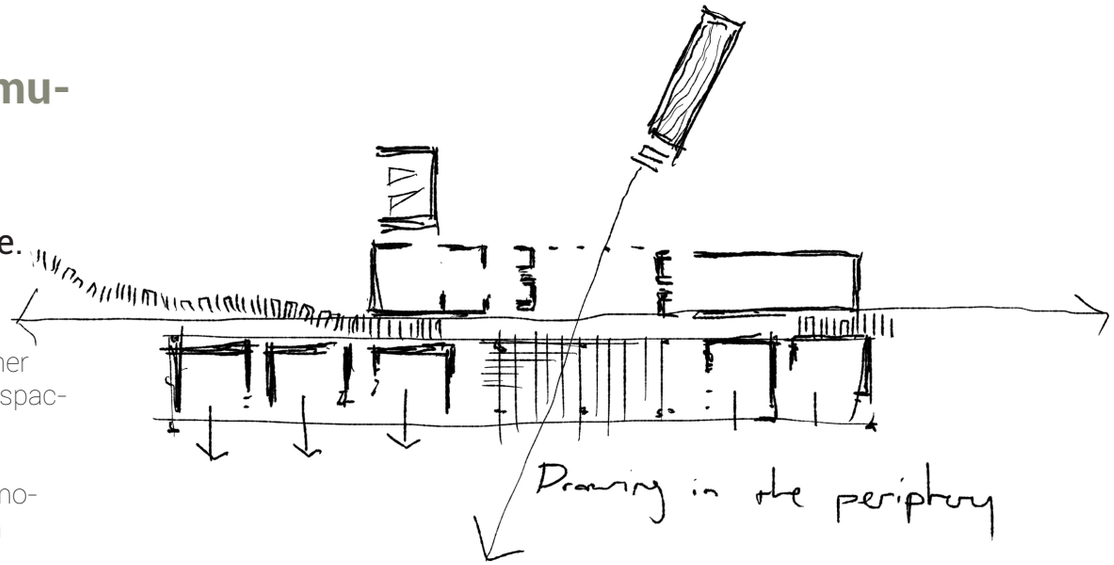
Precedent Studies: Residential and Community Projects

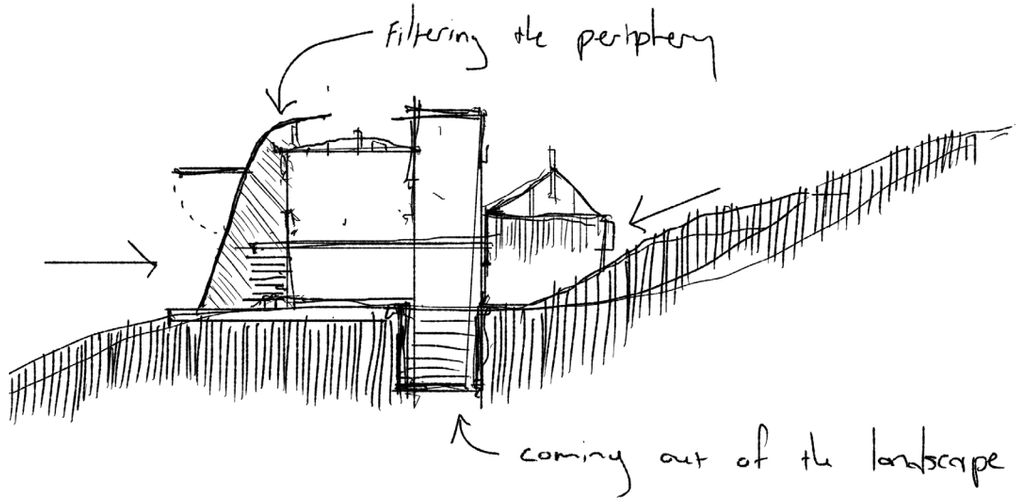
Namma Beach House, Plettenberg Bay, Western Cape.
OMS Design Workshop

The design for this residence allows the integration of spaces with either the view of the beach, or the natural rolling hills, by arranging the lived spaces around a central circulation spine.

The language on each side of the structure changes subtly to accommodate the view. The peripheries are then allowed to be drawn in through openings in the spine.





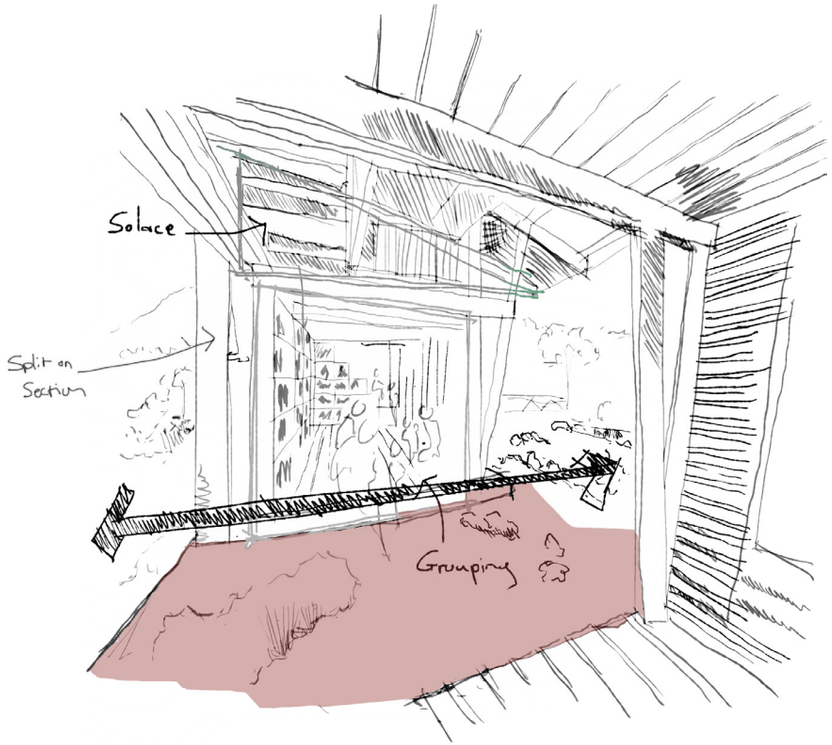


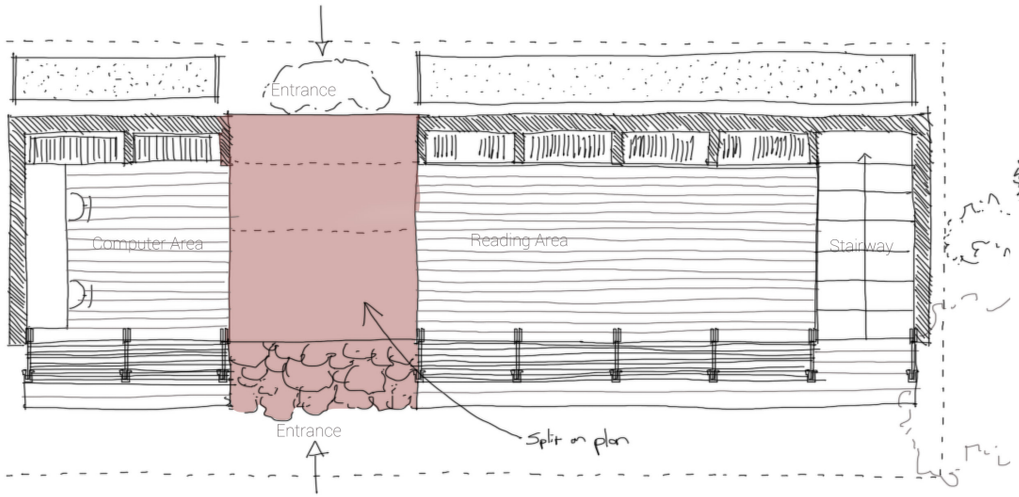
Community Library, Ban Tha Song Yang, Thailand.
Rintala Eggertsson Architects and TYIN tegnestue Architects

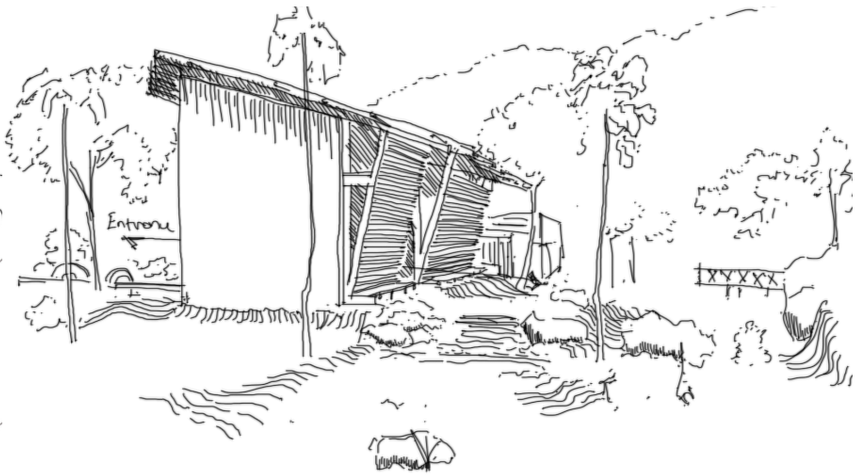
This library formed part of a series of community structures planned for the Ban Tha Song Yang school children in an effort to improve learning and ablution facilities.

The library is divided on plan and section to allow a diversification of a simple structure into rich spatial experience. On plan, the entrance area divides the library into a reading and computer room and on section, a stair case that also acts as seating and storage divides the library into group areas, and 'attic' like spaces for solace.

This could also relate to the Cave and Tree concept, but in a way that suggests togetherness or privacy in its spaces.







2.4.2 Client

The investigation into a suitable client for the endeavours listed in this document required a certain commitment toward integration and an aspiration to meet international standards.

SASIM, The South African Society of Integrative Medicine, started in 2001 as a sub-section of SAMA, the South African Medical Association. The South African government is unique in how it has addressed the medical relationship with practitioners of integrative or complementary medical practises. They created a Statutory Register for the different disciplines listed in the Allied or Complementary Medicine field.

SASIM's goal in South Africa is to introduce the sceptical South African user to the world of integrative medicine; a system that recognises the unique and holistic nature of human beings and responds through complementary, alternative and orthodox medicinal practices to promote health, not just cure disease.

2.4.3 Accommodation Analysis

The precedents analysed in the process of compiling an accommodation list focused on three main aspects: The integration of functions normally attributed to the peripheries of homeopathy and allopathy; the functional programming of healthcare facilities focused on safety, circulation and user comfort; and the division of functions into the two aspects of treatment and therapy. This was for functional reasons and orientated around mind, body and spirit.

The client requirements suggested a range of holistic healing therapies as well as primary care functions, like doctor's rooms and psychology. A single health centre could not accommodate all of these different functions so it was important to find which functions would be best served as an example of a clinic that allowed the integration of medicines and medicinal practises.

Case and precedent studies were used as a programmatic tool to identify which functions to include in the design. Functions were compiled into categories of relevance and familiarity within the healthcare environment in Westdene and what was lacking in current healthcare facilities.

Functions that the general population are familiar with would include physiotherapy, therapy and consultation rooms. After familiarity has been established it allows the inclusion of functions like Halo (Salt) Therapy, Yoga and Movement Therapy that would normally be segregated architecturally and socially. Integrating concepts like the Cave and the Tree would suggest certain functions in specific positions on the site, as well as the morphological approach to realising the spaces they would serve.

Furthermore, each function would have its own sense of arrival, which includes reception and waiting areas. Functions would be positioned within the program to accommodate working hours, frequency of patients, level of acceptable noise output and relevance of connection to nature as well as spatial dynamics.

Special focus was attributed to addressing certain dogmas within healthcare planning and program layouts; like dark and narrow circulation and cramped or uncomfortable waiting areas.

Case Studies

Sandown Village Medcare Centre, Pinetown, KwaZulu-Natal

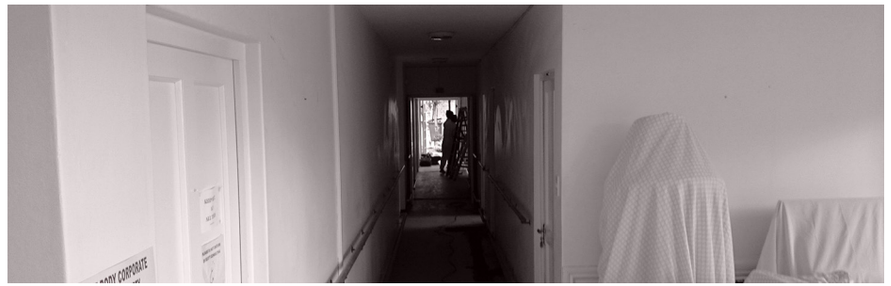
Sandown Village is set around a series of pre-constructed dams and ponds that follow a descending slope with the Medcare Centre at its apex. The centre serves the senior citizens that occupy the residential units spaced around these dams and ponds.

The clinic is being upgraded to allow more patients with better comfort; however the existing structure struggles to accommodate certain health care practises with its narrow, dark circulation, limited access and cramped gathering areas.

Special attention was afforded to the recreational facilities around the clinic, which becomes an important aspect of the healing process, as well as to outside spaces around the ponds.

Relevant functions in the accommodation list that were studied included the cafeteria, waiting rooms, physical examination rooms, recreational spaces, security rooms and dining hall.









Botha's Hill Rehabilitation Centre, Botha's Hill, KwaZulu-Natal.

An interview with one of the attending doctors, Dr Shaun Martin, revealed some practical considerations focused on improving the time and quality of patient recovery in a rehabilitation clinic.

According to Dr Martin, patients struggle to rehabilitate if the rehabilitation centre has the look and feel of a rehabilitation centre. Further research into healthcare design revealed that this 'look and feel' was exactly that, Health Centres designed according to clinical rationality to the point of cold precision.

Beyond a centre having a more residential or homely feel, he mentioned two key aspects to a successful health clinic; visibility and flexibility. Patients and staff should have visibility of each other as well as outside spaces and spaces of particular relevance.

Furthermore, a centre should have a certain amount of flexibility in its functions, façades and spatial configurations to accommodate for different needs across a time frame. If a health centre could adapt to context specific situations it would greatly improve the recovery rate and health of patients.









Accommodation List

Ground Floor Level

Primary	Secondary	Tertiary	m²
South Wing Circulation			192,29
	Foyer and Lounge		
	Admissions Desk		
	Ablution	*Male WC*	12,19
		Female WC	
Centre Admin Storage			30,42
Waiting Lounge			101,07
	Summer Lounge		
	Winter Lounge		
Security Office			16,1
Main Storage			47,05
	Cold Storage		
	Dry Storage		
Consultation Wing			170,19
	Reception Storage		
	Waiting Area		
	Family Doctor's Room		
	Doctor's Room 1		
	Doctor's Room 2		
Health Café			115,39
	Reception		
	Storage		
	Dining Room		
Kitchen			78,95
	Cold Storage		
	Washing Area		
	Kitchen Mangers Office		
Counseling Wing			88,4
	Reception and Waiting Area		
	Group Therapy Room		
	Therapy Room 1		
	Therapy Room 2		
	Meditation Space		
Public Ablution			13.8
	Male WC		
	Female WC		
	Disabled WC		
North Wing Circulation			127,86
	Foyer and Lounge		
	Admissions Desk		

Primary	Secondary	Tertiary	m²
Physiotherapy			172,94
	Reception Storage		
	Waiting Area		
	Gym		
	Physiotherapist Room 1		
	Physiotherapist Room 2		
Waiting Lounge 2			111.85
	Summer Lounge		
	Winter Lounge		
Halotherapy			120,01
	Reception		
	Dressing and Locker Room		
	Waiting Area		
	Salt Room		
	Exterior Meditation Space		
Health Stop			89,77
	Dry Storage		
	Registration Office		
	Staff Cafeteria		
Public Ablution			13.8
	Male WC		
	Female WC		
	Disabled WC		

Basement Level

Staff Locker Room			11,8
Maintenance Room			18,17
Plant Room			22,07
Medical Waste Storage			11,73
Swimming Pool Ablution			141,29
	Male Locker and Shower Room 4x Showers		
	Female Locker and Shower Room 4x Showers		
Boiler Room			22,71
	Boiler Room 1		
	Boiler Room 2		

Primary	Secondary	Tertiary	m²
Hydrotherapy	*Reception* *Waiting Area* *Storage* *4x Dressing Room* *Hydrotherapeutic Pool Room*		*129,72*
First Floor Level			
Office Cafeteria			*28,79*
Roof Terrace			*52,38*
Ablution	*Male WC* *Female WC*		*12,19*
Office	*Board Room* *Manager Office* *Manager Admin* *Office Space*		*93,07*
Yoga Room	*Storage*		*73,18*
		Total m² *circulation 30%* *Total m²* *Structure 25%* *Total Built m²*	**1979,3** *593,79* **2573,09** *643,27* **3216,36**

Primary	Secondary	Tertiary	m²
Exterior Development			
Swimming Pool Area	*Storage* *Life Guard Tower*		*674,4*
Southern Courtyard			*326,77*
Northern Courtyard			*318,75*
Parking	*52x Public Parking* *16x Staff Parking*		*2357,1*
		Total m² *circulation 30%* *Total Built Exterior m²*	**3677,02** *1103,11* **4780,13**

2.4.4 User Analysis

Staff

Office Manager	1
Manager Secretary	1
Doctors	3
Therapists	3
Cafeteria Workers	4
Cleaners	2
Receptionists	6
Administrators	2
Kitchen Staff	4
Kitchen Manager	1
Physiotherapists	2
Halotherapy Instructor	1
Yoga Instructor	1
Social Worker	1
Garden Maintenance	2
Lifeguard	1
Technical Maintenance	2
Total Staff	37

Visitors

The analysis of the precedents regarding the accommodation indicated that a unique combination of healthcare services would function as a holistic health improvement centre, through treatment and therapy.

A primary care outpatient facility with enough variation in its functions to include a broad range of different types of users.

A large variation in potential users ensures that the centre would remain relevant through different periods of time in the life of the community. The investigation revealed the possibility of four types of users:

-People in need of primary healthcare treatment and/or therapy.

-Recreational Visitors seeking a place to relax and spend leisurely time.

-Active users relying on the facility as a departure or arrival point along the Signal Hill hiking, running and biking trails.

-Students seeking to register for field expeditions in the surrounding areas to help those in need, in a personal capacity or as part of mandatory community service within their respective departments.

2.5 Topology

2.5.1 Establishing Topological Peripheries

The peripheries of the natural and urban landscape could offer interesting opportunities to the project. Connecting to the city becomes just as important in a medical clinic as the connection with nature, so finding a suitable site involved a context that included elements of both topological peripheries.

2.5.2 Site in the Periphery

The site is located behind O F S Musicon, on the corner of 1st Avenue and Barnes Street, against the South-Western slope of Signal Hill, Bloemfontein. It delivers the natural beauty of the hill, views of the surrounding city and is located on the derelict swimming pool area of President Brandt School that moved in 1986.

The school's population halved each year for three years preceding its closure. Investigations into this proved that, because of the general degeneration of the Bloemfontein CBD at that time, there was an influx of small businesses into the broader Westdene residential area which in turn saw the migration of families to other residential areas with other schools.

After the closure of the school, the local municipality bought the grounds and opened the drama, movement and music school that occupies the old school buildings, along with additional offices added to the existing structures. Because of the absence of regular funding, much of the site has fallen into disrepair and the beautiful, natural site that used to be the school swimming pool area has been completely forgotten and neglected, in some places even barred off visually and physically.

Establishing this as the site for the project would offer users the unique aspect of visiting a healthcare clinic situated in nature but still easily connected to the city. A holistic architectural approach suggests a structure that exists in harmony with its surroundings. The presence of a health clinic in this ecological context would catalyse a rejuvenation of O F S Musicon as well as integrating Signal Hill, which has been progressively segregated from the community because of crime and the increasing growth of businesses around it that require extensive security.

Due to the unique nature of the site, it was also necessary to approach it from a sensitive and sustainable angle, preserving the natural environment on site. A second aspect was the restoration of the swimming pool area. Morphologically, this would also include ideas of touching the site lightly, to preserve the presence of its history and its tranquillity.



2.5.3 Quantitative Site Analysis

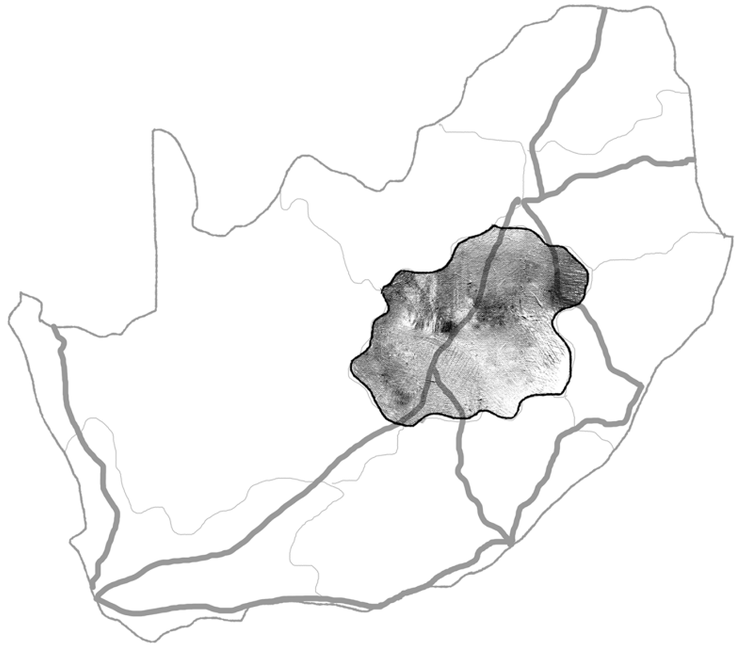
The quantitative site analysis involved the empirical collection of data on site, with special considerations made for wind directions and sun angles as it is on the South-Western slope of the hill.

Connections on site were also an important aspect of the analysis as this would identify entry points, parking and quiet zones and begin to suggest the movement of a user from the urban setting toward the hill.

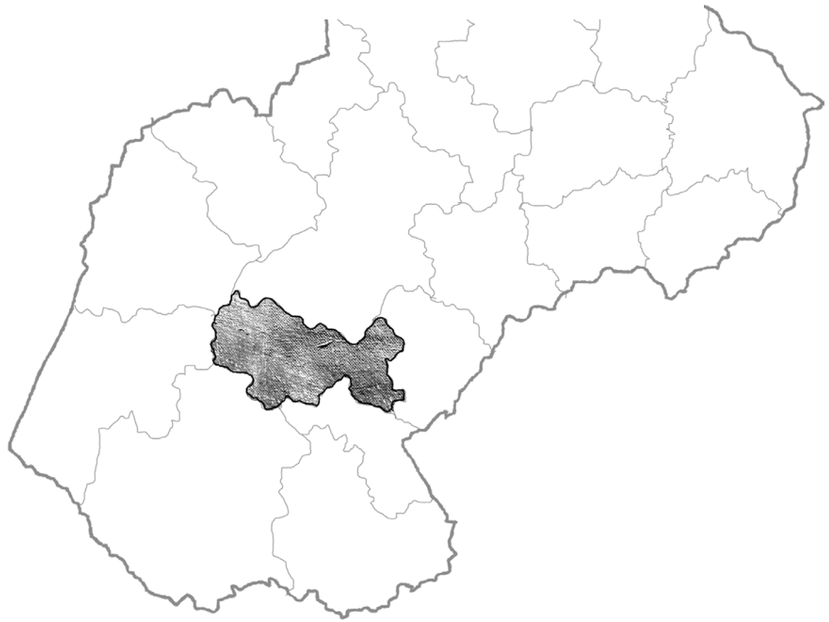
Regarding connections on site, the importance of the boundaries that form the links between these connections needed to be identified and analysed. This included physical boundaries like fencing or constructed terraces, abstract boundaries like steep slopes, visual boundaries like tree lines or structures and mental boundaries like the apex of the hill.

The slope of the hill became an important empirical study in its rise and the different levels a visitor passes through from the street level, through O F S Musicon toward the hill.





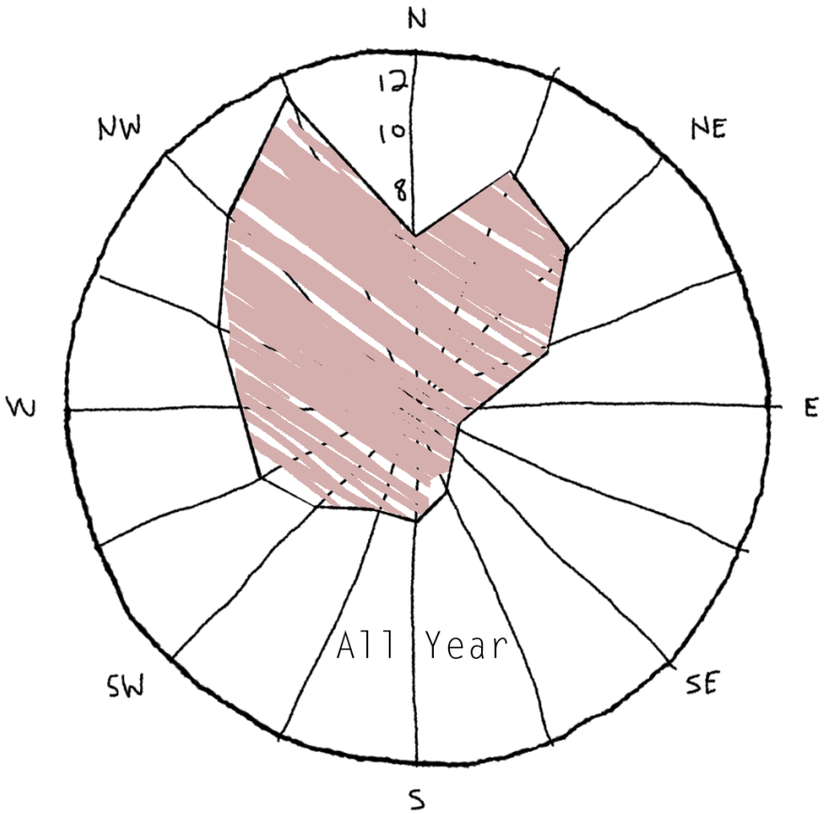
South Africa, Free State. Site falls within **Climate Zone 2, Cold interior.**

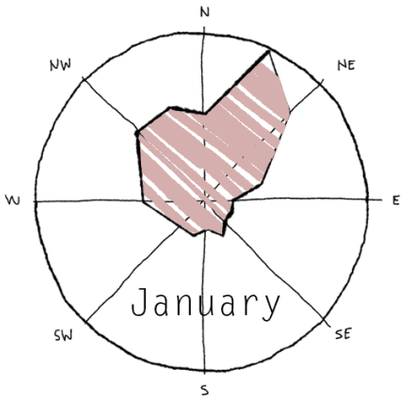


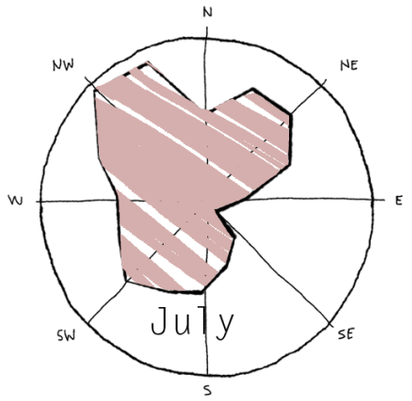
Free State, Mangaung.

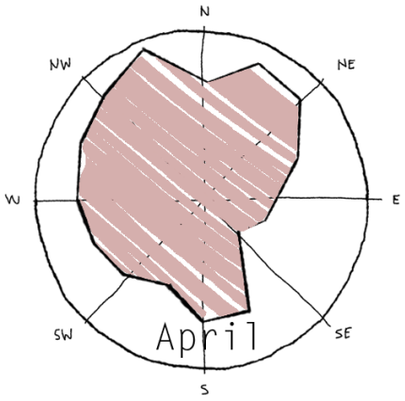


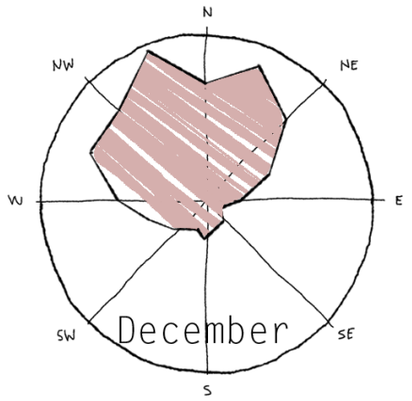
Bloemfontein, Signal Hill. The highlighted areas indicate green spaces within Bloemfontein. The revitalisation of green spaces forms part of the Bloemfontein Development plan.









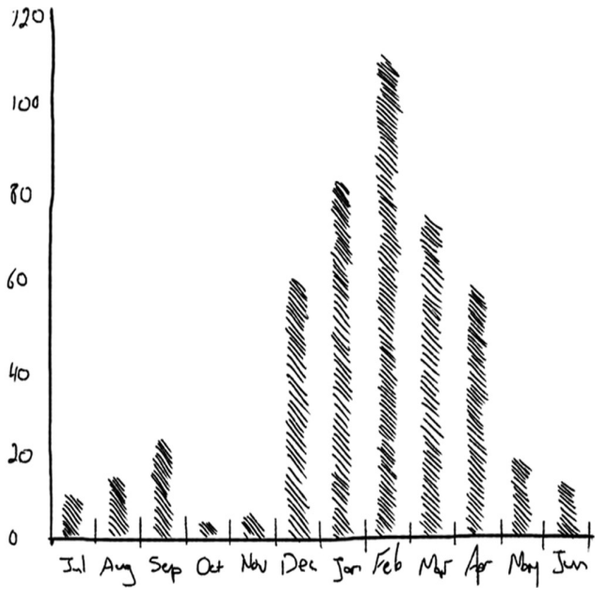


For most of the year the predominant wind direction in Bloemfontein comes from the North-Western angle.

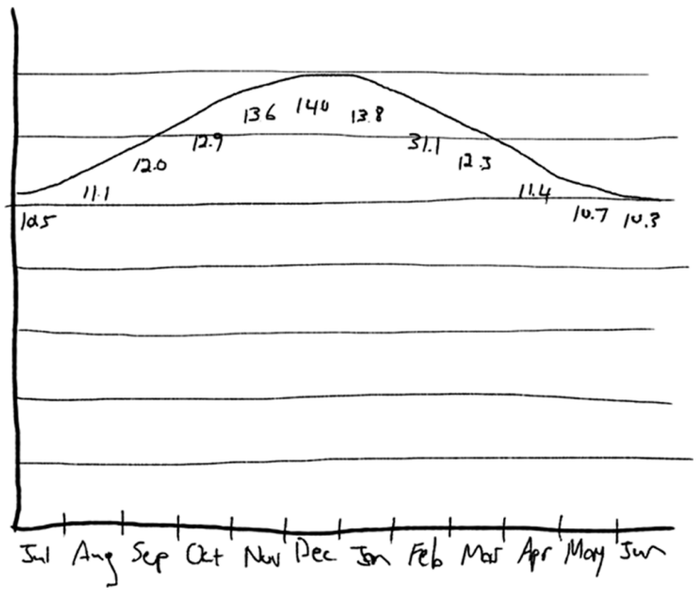
A site analysis of the hill indicated that this could be the reason why most of the permanent shelter spots for the homeless are located on the South-Eastern side of the hill, behind a rocky outcrop.

This semi-permanent habitation of the South-Eastern slope has resulted in safety and health issues. Subsequently, the Signal Hill access points on the Southern and Eastern sides have been closed.

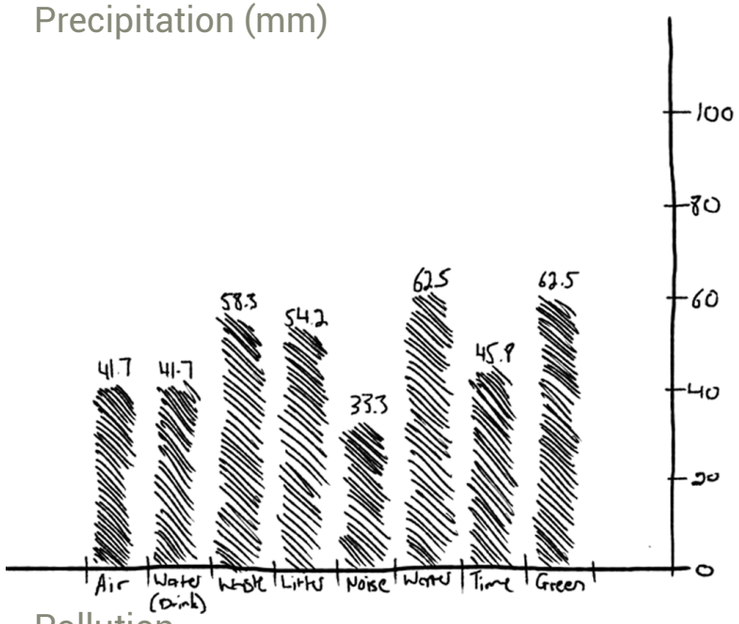
This manifests as an amputation of a part of the hill that normally formed part of the hiking and running trails, as well as rest points with views of the city.



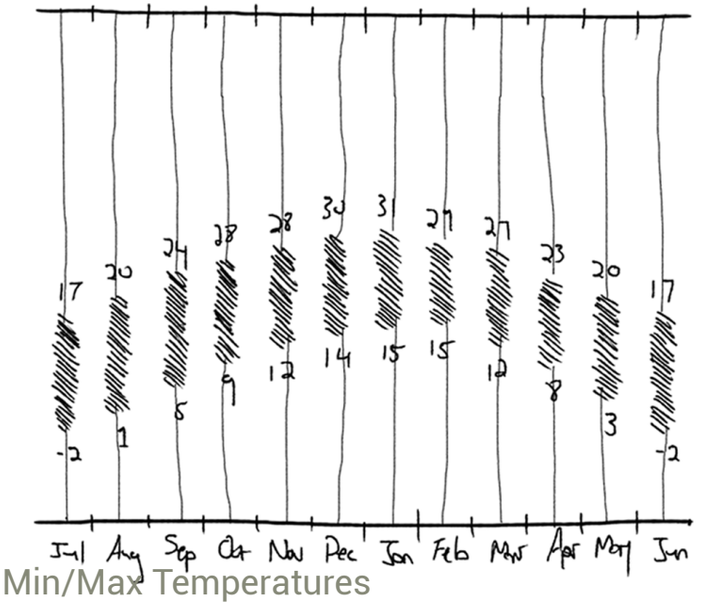
Precipitation (mm)



Daylight Hours



Pollution



Min/Max Temperatures

Graphs showing climatic and environmental statistical research of the context surrounding Signal Hill.

Land Use



Residential

Light Commercial

Mixed Use Offices

Green Spaces

OFS Musicon (Municipal Function)

Site

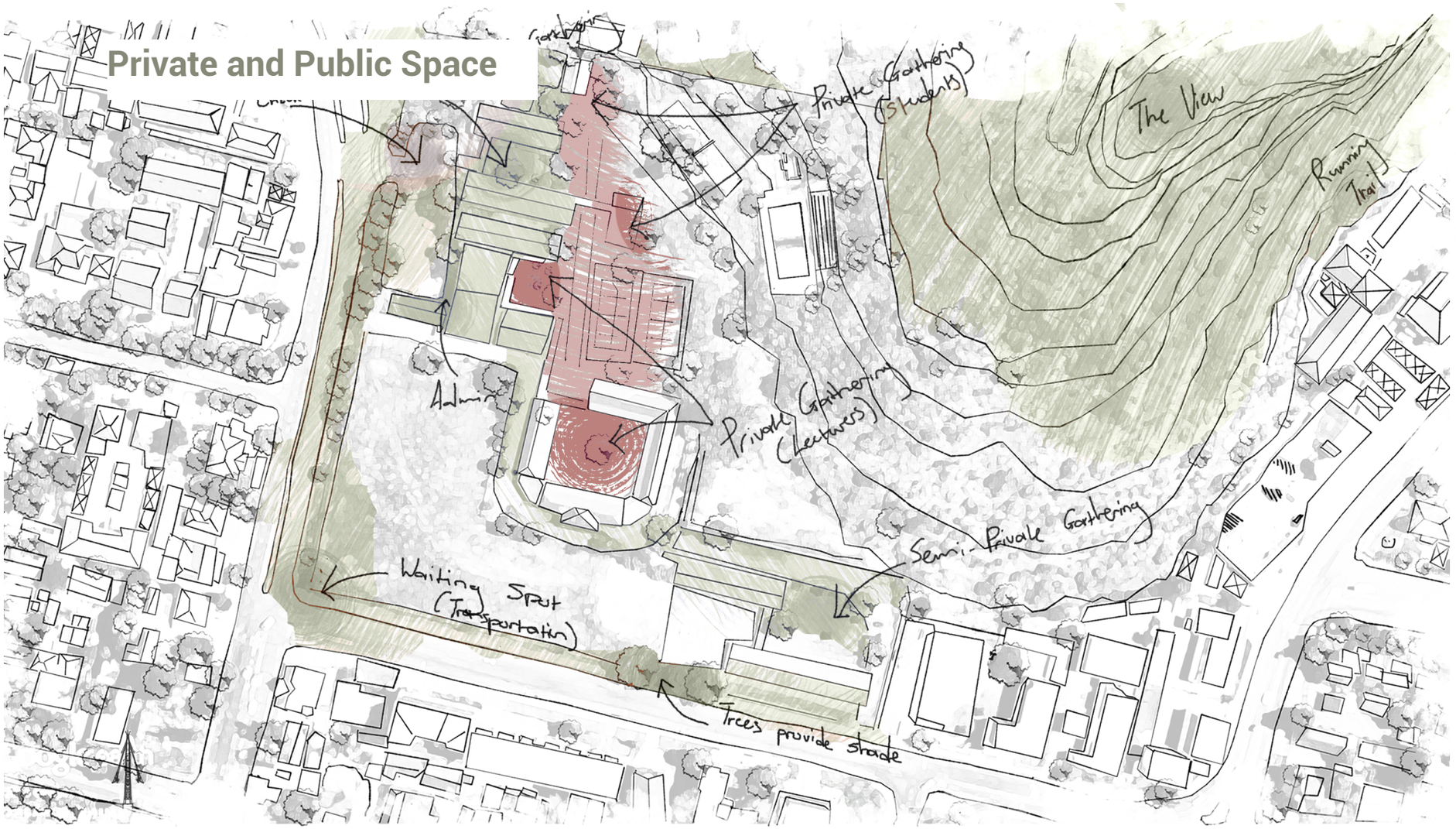
Paths and Access



Main Traffic Sec. Traffic Musicon Access As Indicated

The analysis of the traffic flow suggested situating the access to the site off the main traffic circulation for safety and comfort.

Private and Public Space



The private space nodes are indicative of how the school users gather in smaller groups along the site.

Boundaries



Physical Boundaries

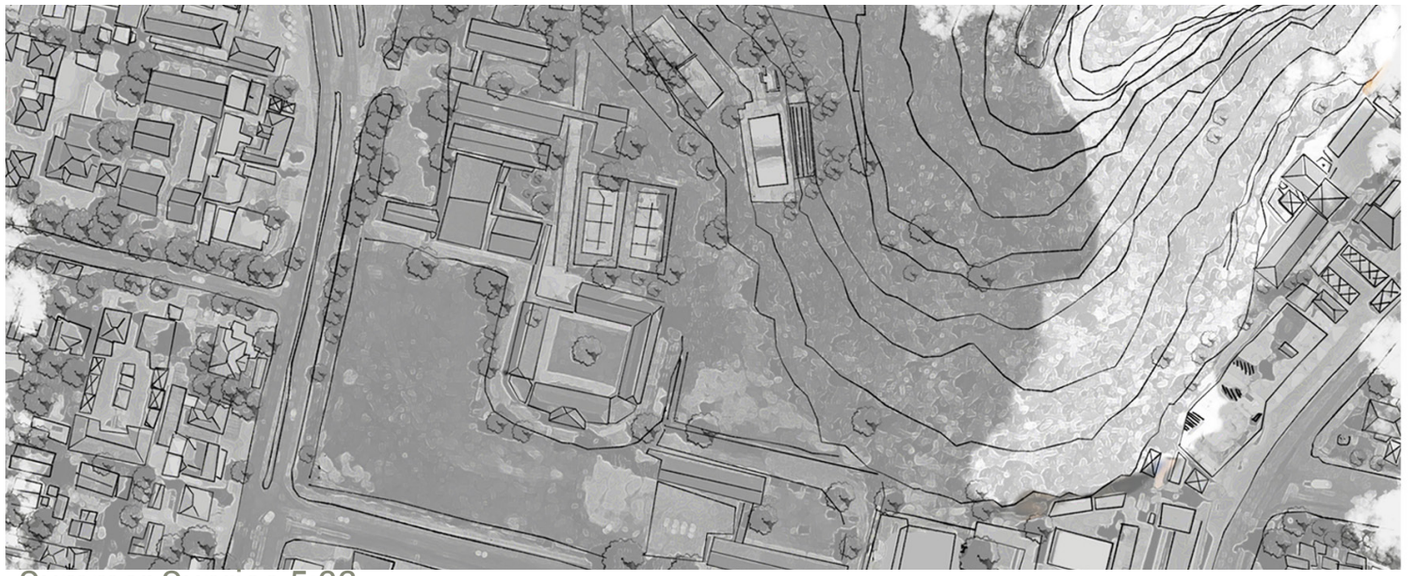
Abstract Boundaries

Visual Boundaries

Mental Boundaries

As Indicated

This analysis does not include the permanent fencing erected by the businesses around the Southern and Eastern slopes of the hill, effectively denying public space to the community.



Summer Sunrise 5:23

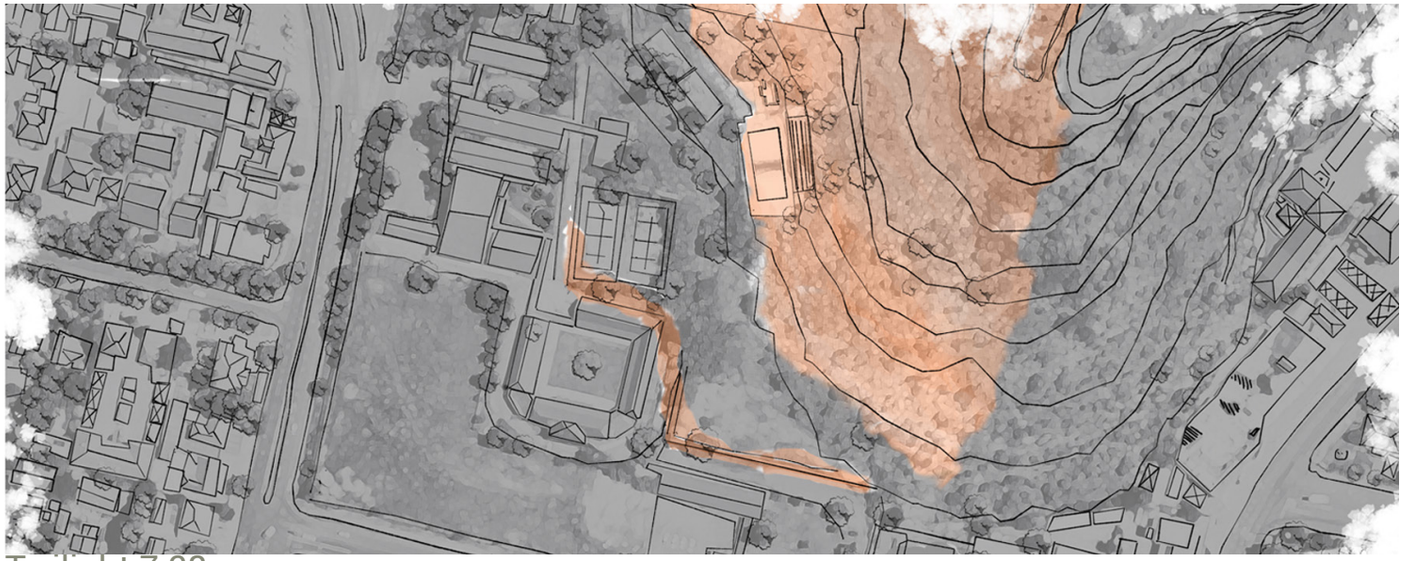


Site Fully Drenched 7:28

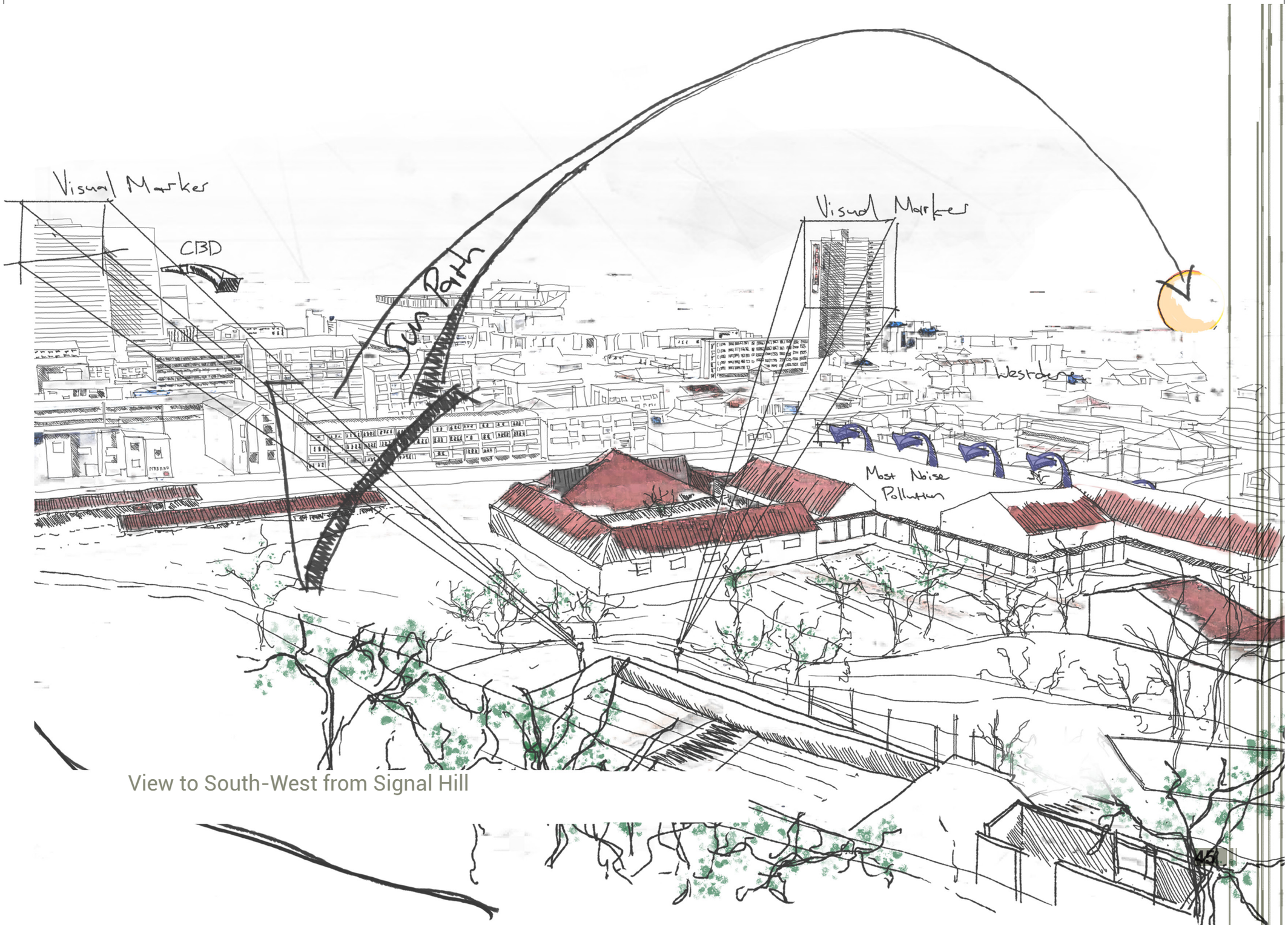
Sun and Shadow analysis of the site.



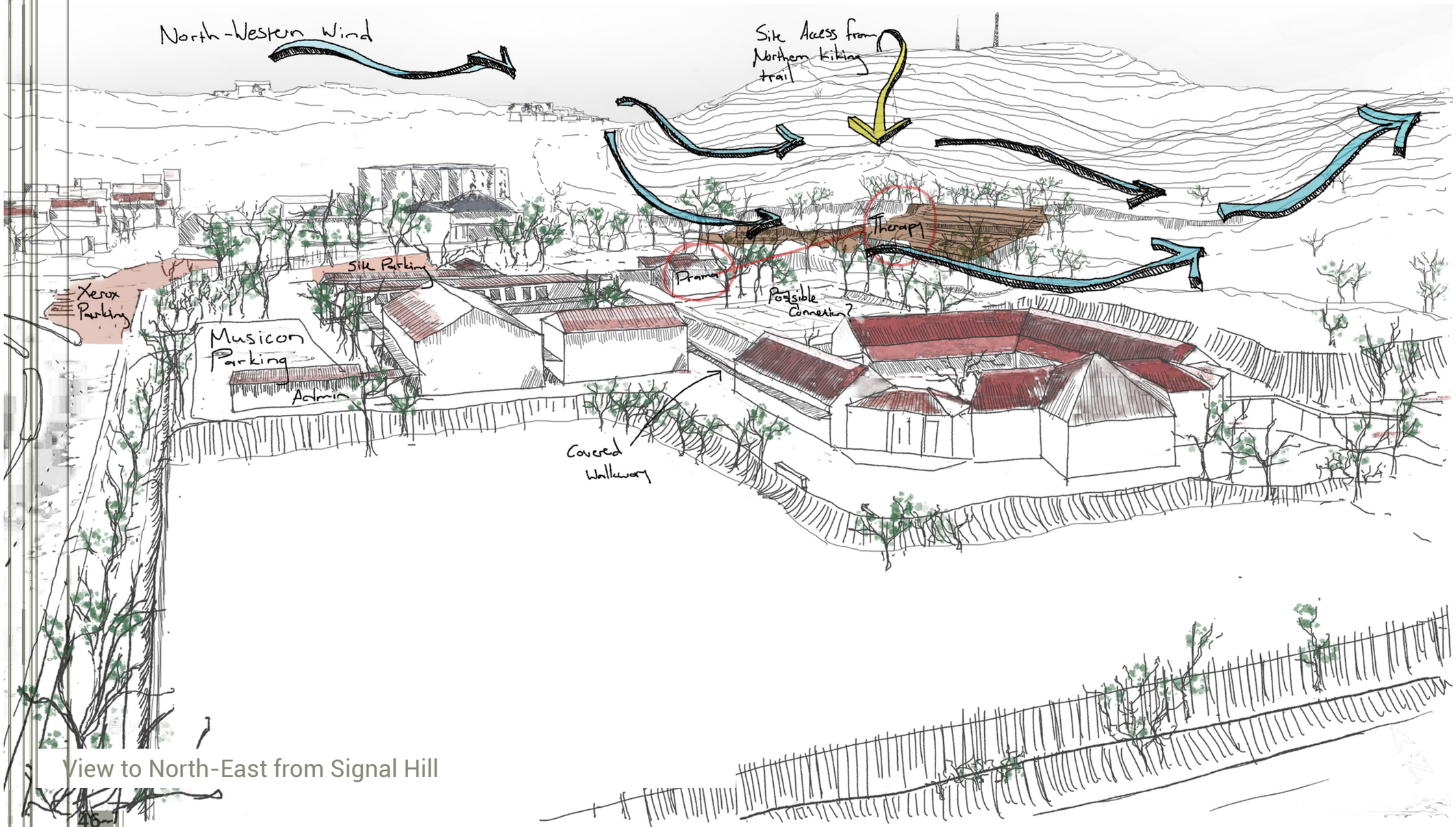
Temperature Decreases
6:16



Twilight 7:28



View to South-West from Signal Hill



View to North-East from Signal Hill



Analysis of Signal Hill. Special attention was given to locating and plotting homeless temporary shelters on the Southern slope as well as constructed fencing around the site.

2.5.4 Qualitative Site Analysis

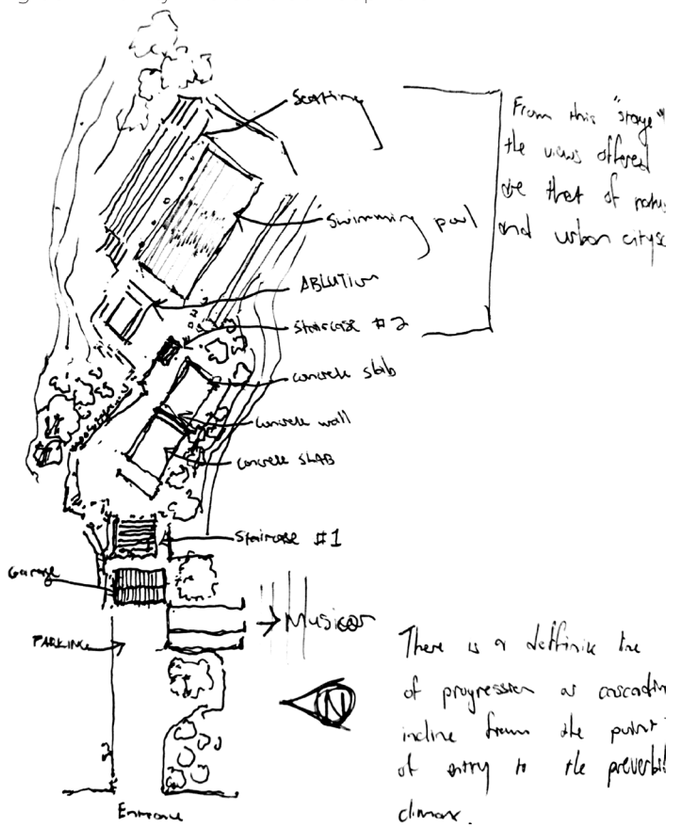
The qualitative site analysis revolved around establishing the site as a vista, relying specifically on the views, history and current existence of the site and the hill in general. It was important to understand how the views from within the structure would change whilst going through toward different functions and specifically which functions would sit harmoniously in which part of the site. Placing something like the Salt Therapy function against the hill toward the North-Eastern part of the site would be ideal, as it is the farthest away from the noise of the street and close to the hill, like a cave. Salt therapy involves the inhalation of naturally healing cave salts in a dark and relaxed setting.

These are the types of decisions that could be made through looking at what the site had to offer in its quality of different spaces as well as its practicality. Careful consideration also had to be given to the old swimming pool and surrounding terraces. They remain there as a reminder of a time that has passed, as a reminder of change. The healthcare facility would involve a change in paradigms as well, so the two are relatable and identifiable, meaning that the history of the space constitutes a 'place' which needs to be carefully addressed.

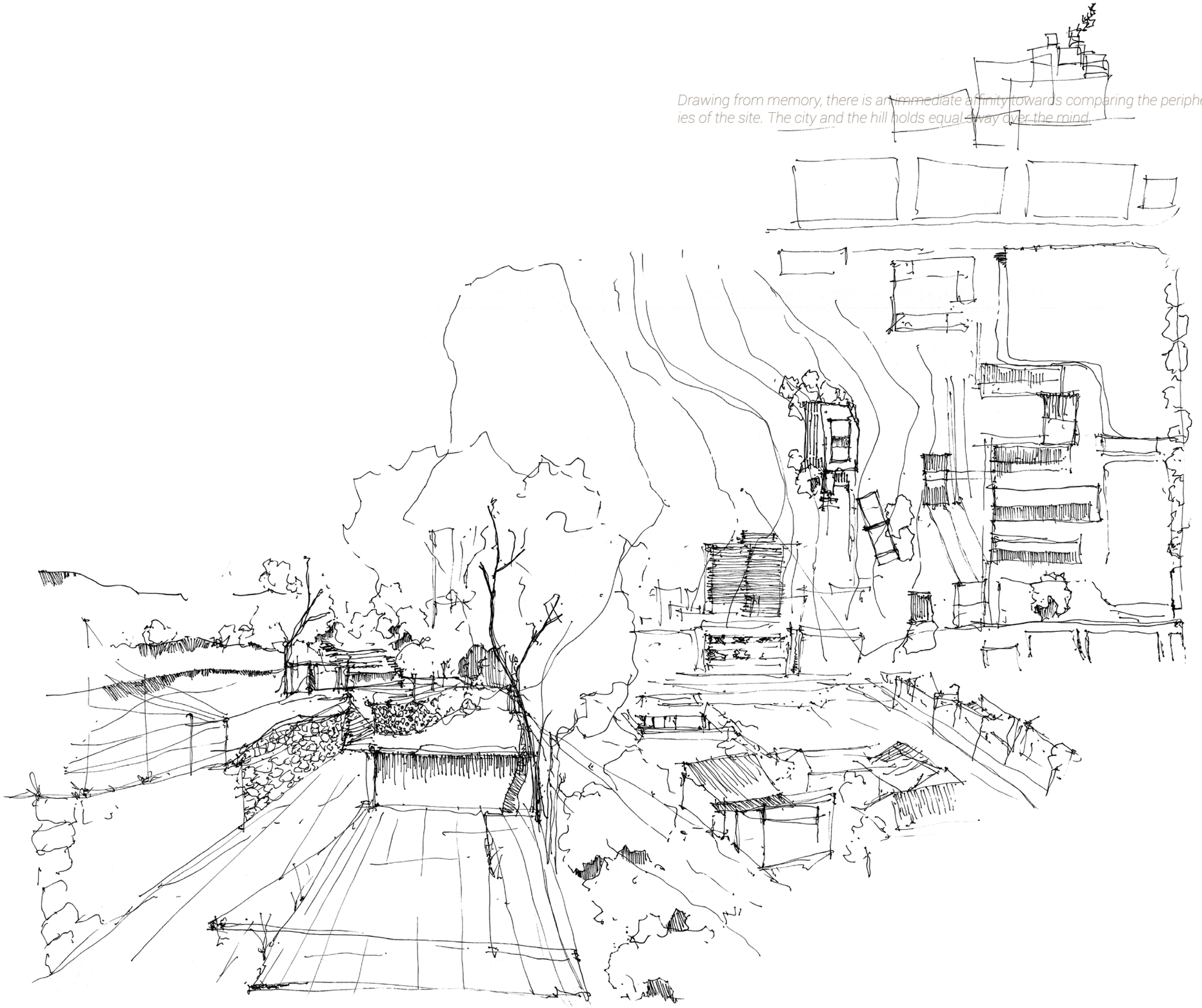
Lastly, Signal Hill was investigated in a phenomenological sense; where it was, where it is now and where it is going. In that sense the qualitative research involved looking at how Signal Hill changed over its recent history, from a favourite natural destination in the city like Naval Hill and the Botanical Gardens, to a place mostly segregated from the surroundings through fencing and imposing structures. A lack of upkeep has left a lot of the hiking, running and biking trails in a poor state and there is a general safety concern on Signal Hill.

Two entry points to the hill have been sealed off recently because of the increased presence of homeless people seeking refuge on the hill. Their semi-permanent camping locations were also plotted out and indicated their tendency to occupy the South-Eastern slope, away from the prevailing wind.

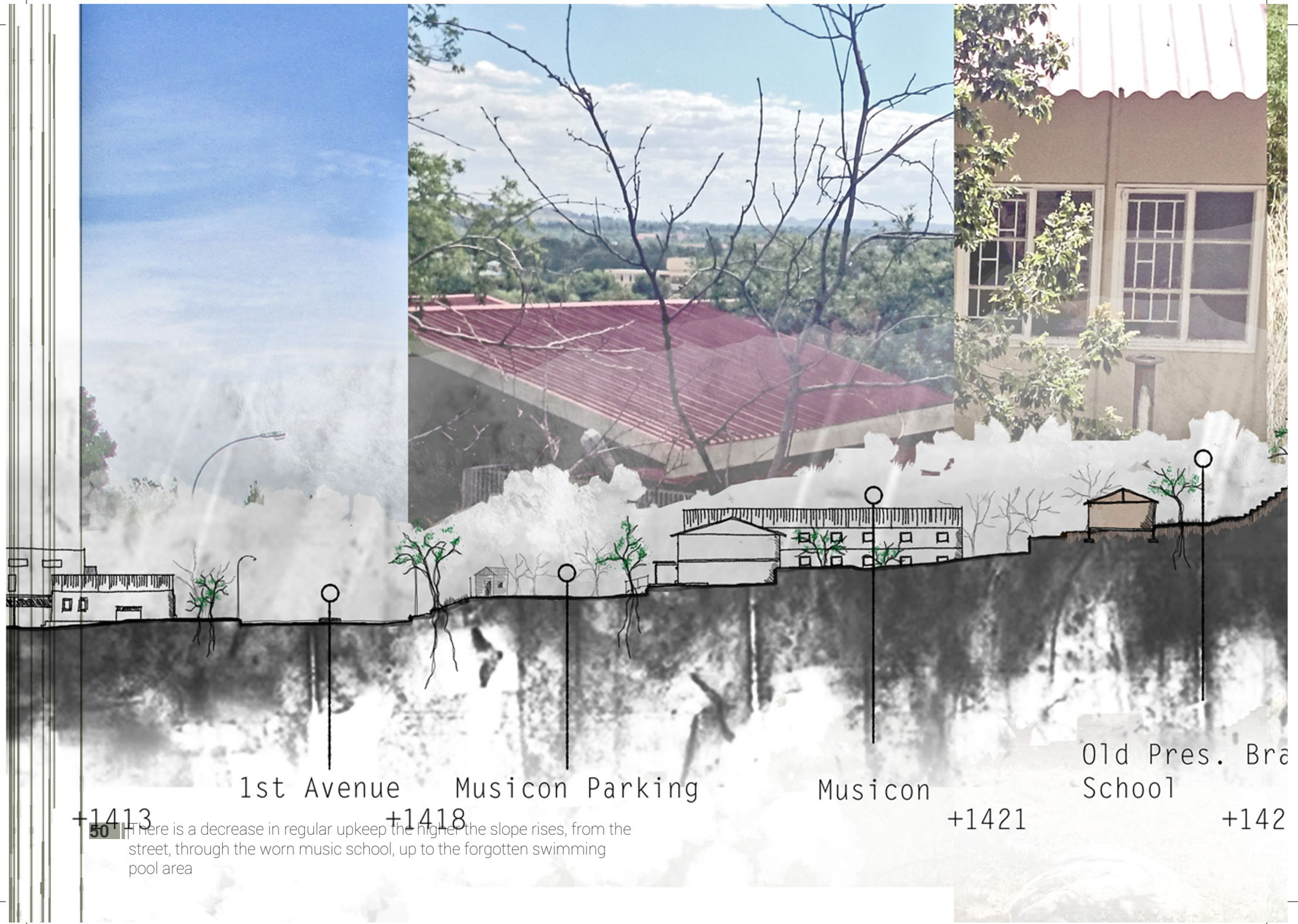
Through the introduction of a responsible integrated healthcare centre, the hope would be that it becomes part of the municipal endeavour to rejuvenate green spaces in urban areas, to consolidate some of the safety problems on the hill and to re-introduce the natural beauty of the hill to the surrounding community in a safe atmosphere.



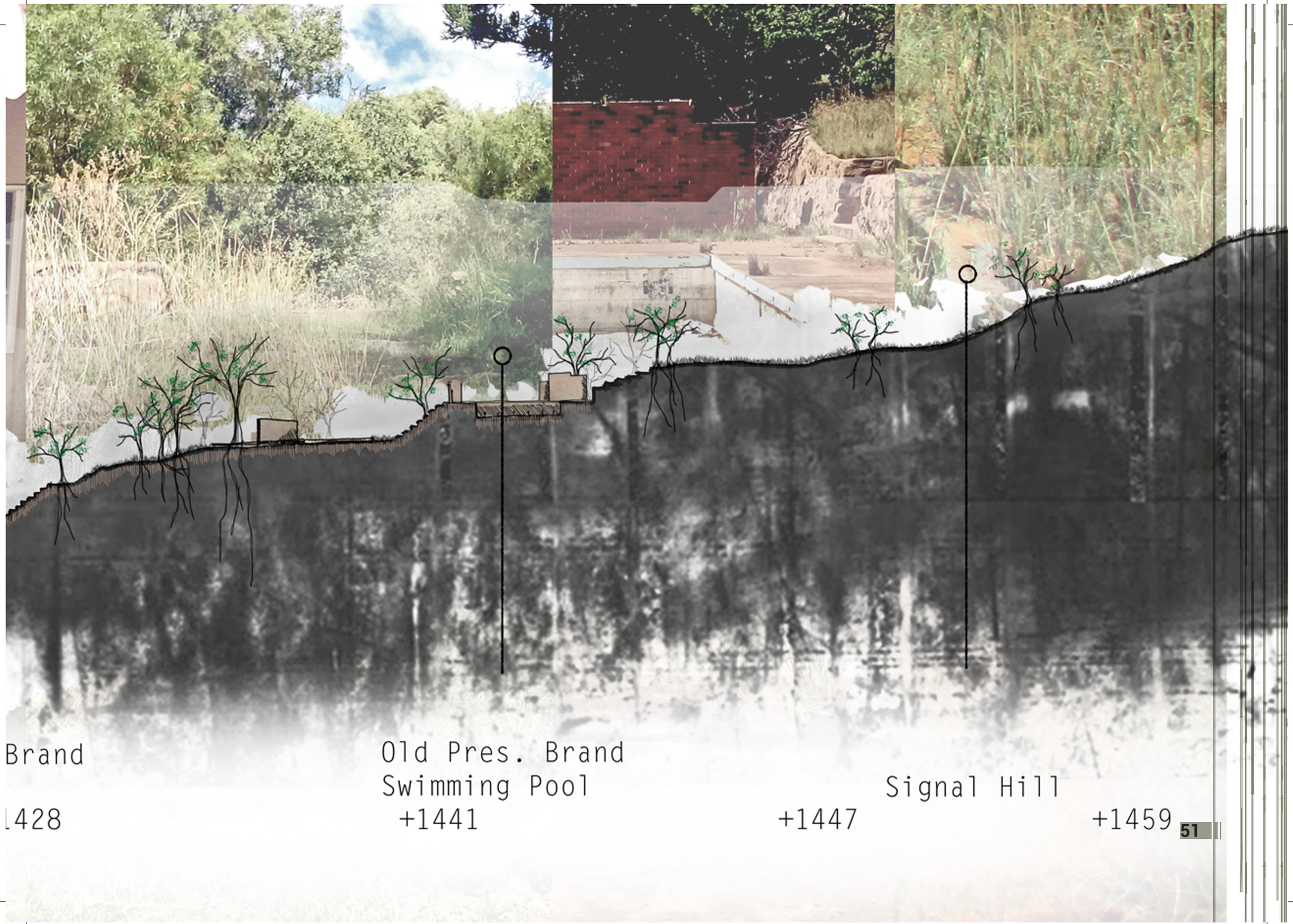
The illustration is the first cognitive drawing of the site completed during the site visit. Emphasis was placed on the idea of progression from the city toward the hill, and of the views one could find along the way.

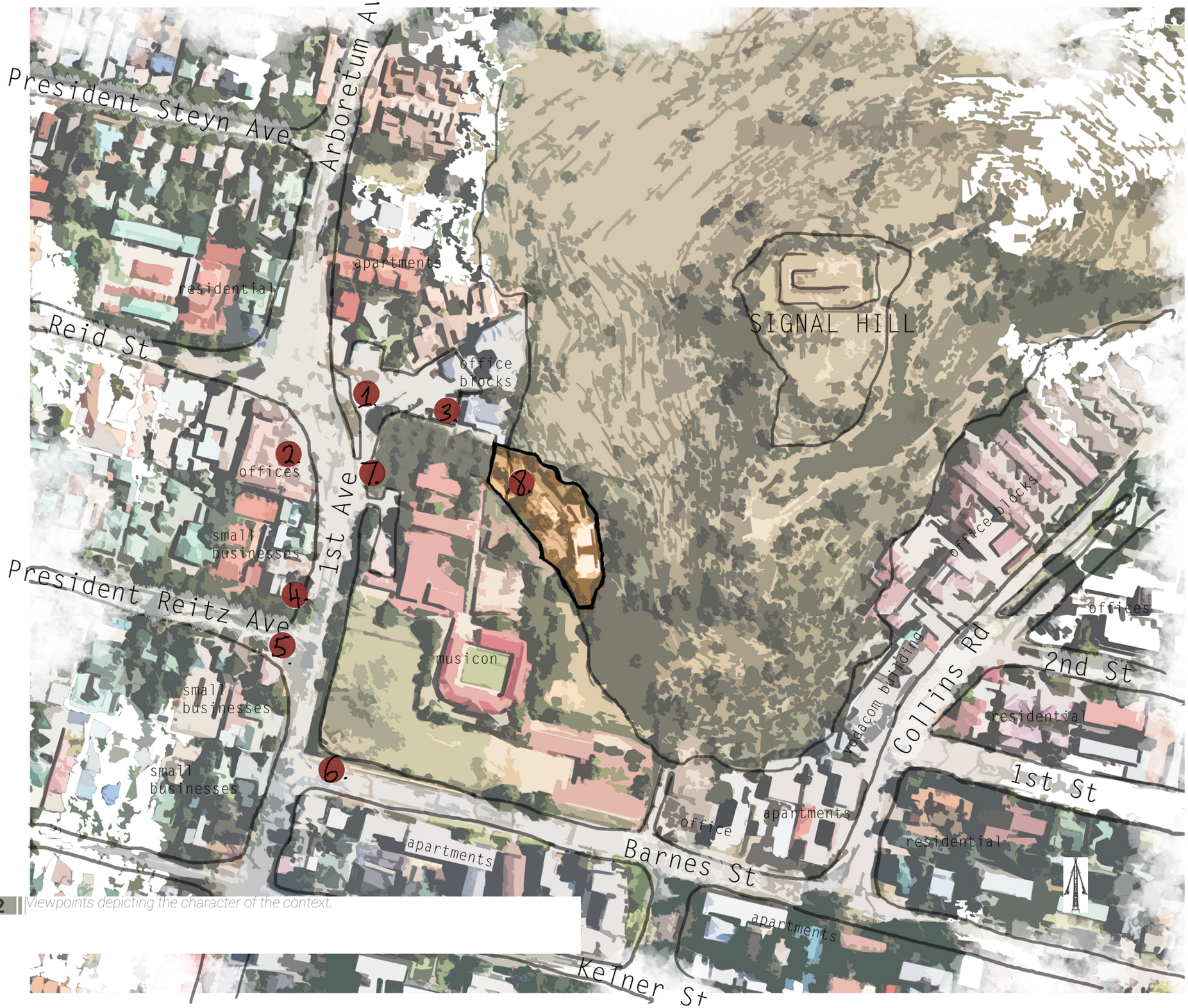


Drawing from memory, there is an immediate affinity towards comparing the peripheries of the site. The city and the hill holds equal sway over the mind.



There is a decrease in regular upkeep the higher the slope rises, from the street, through the worn music school, up to the forgotten swimming pool area


Brand
428
Old Pres. Brand
Swimming Pool
+1441
+1447
Signal Hill
+1459



52 Viewpoints depicting the character of the context.

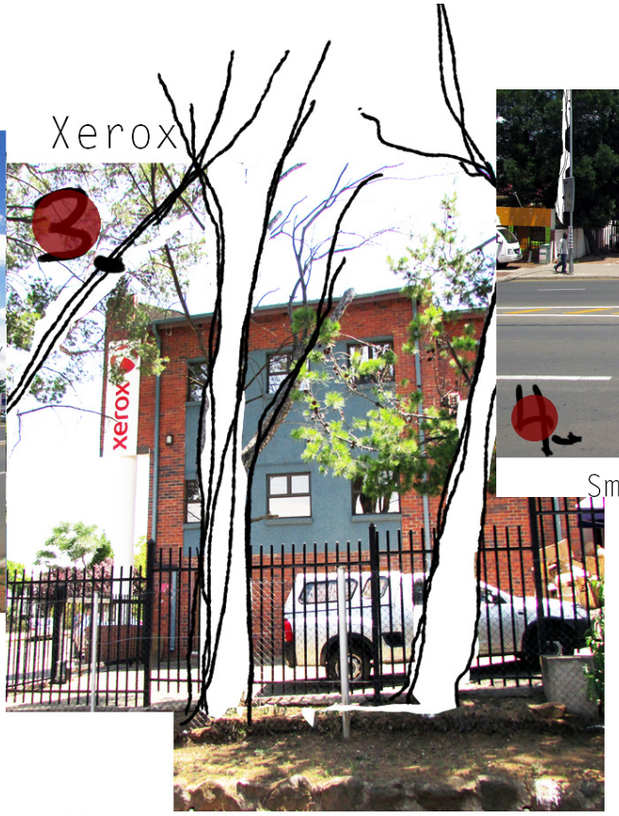
Parking at Xerox



Small businesses



Xerox



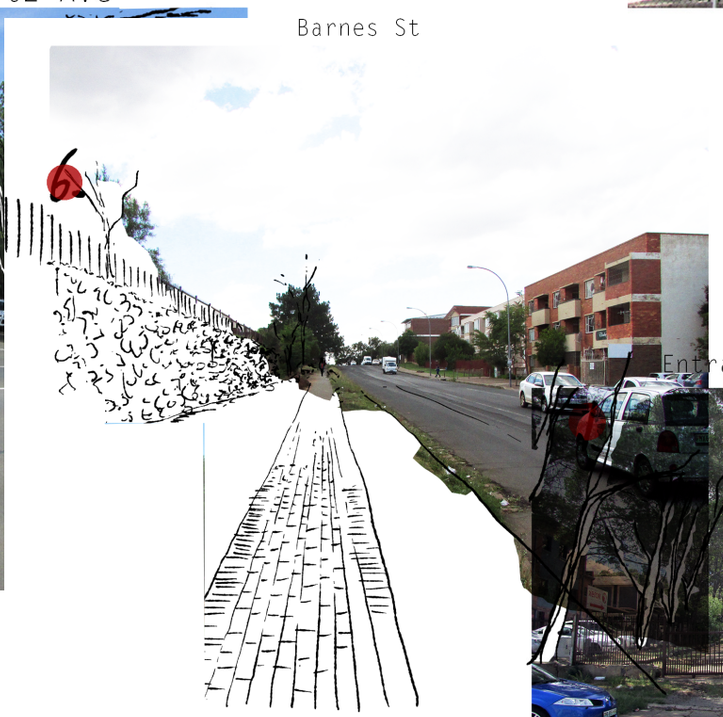


Small Businesses

President Reitz Ave

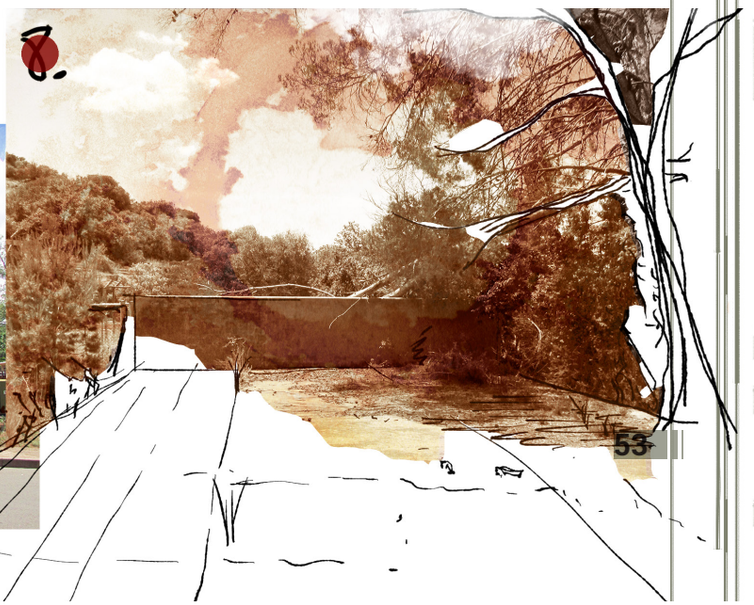


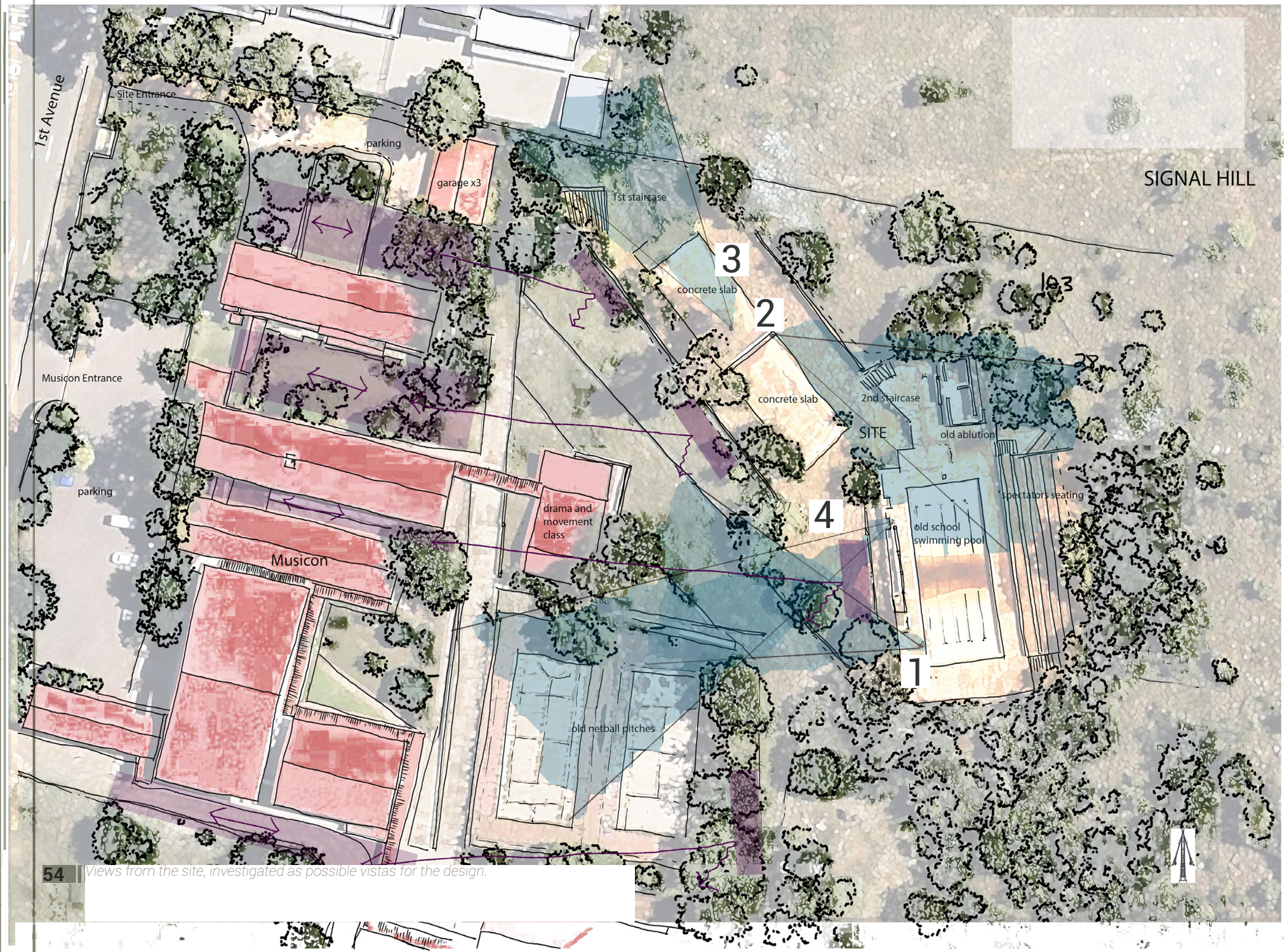
Barnes St



Entrance to Site







Views from the site, investigated as possible vistas for the design.



1



2



3



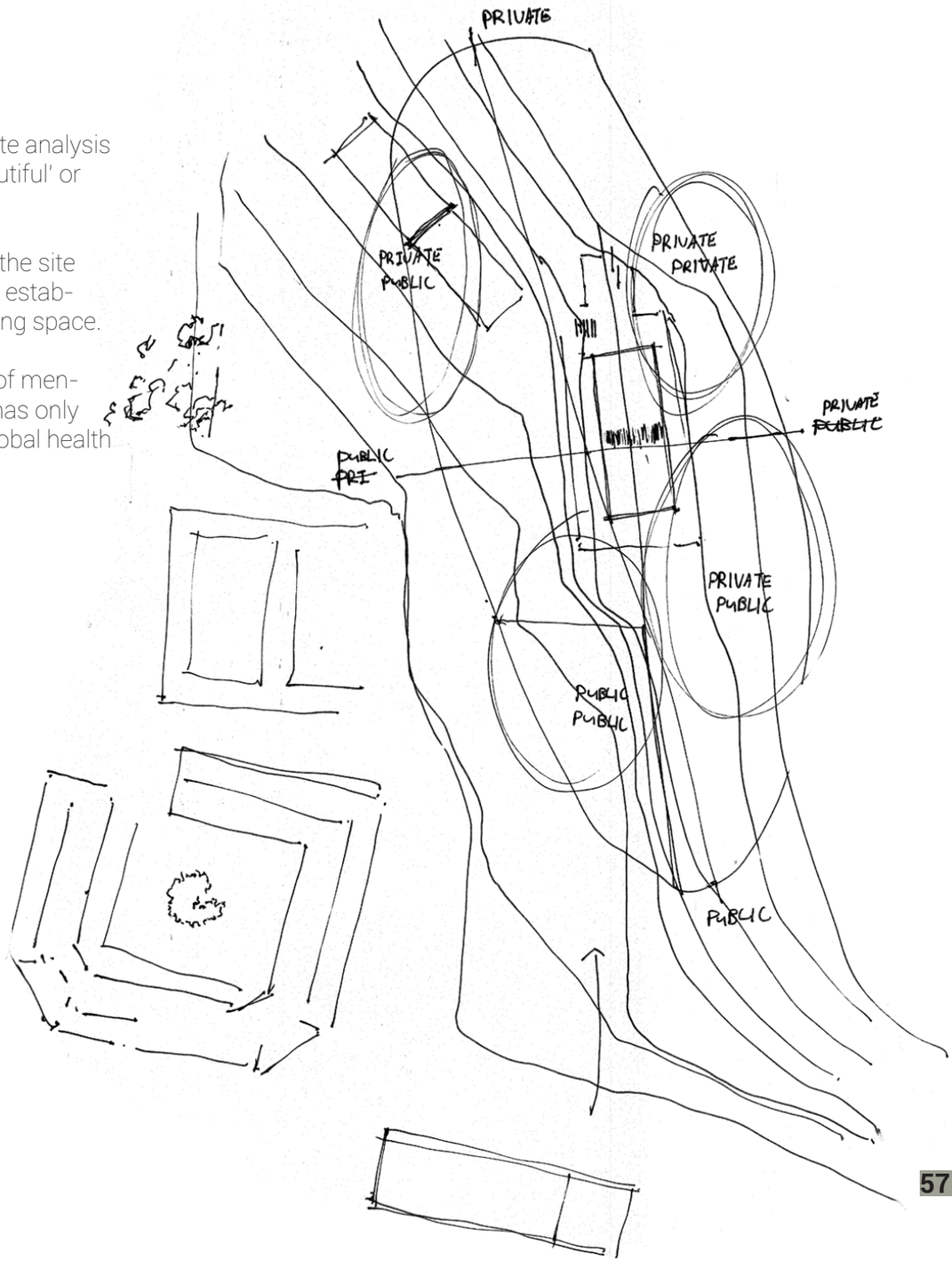
4

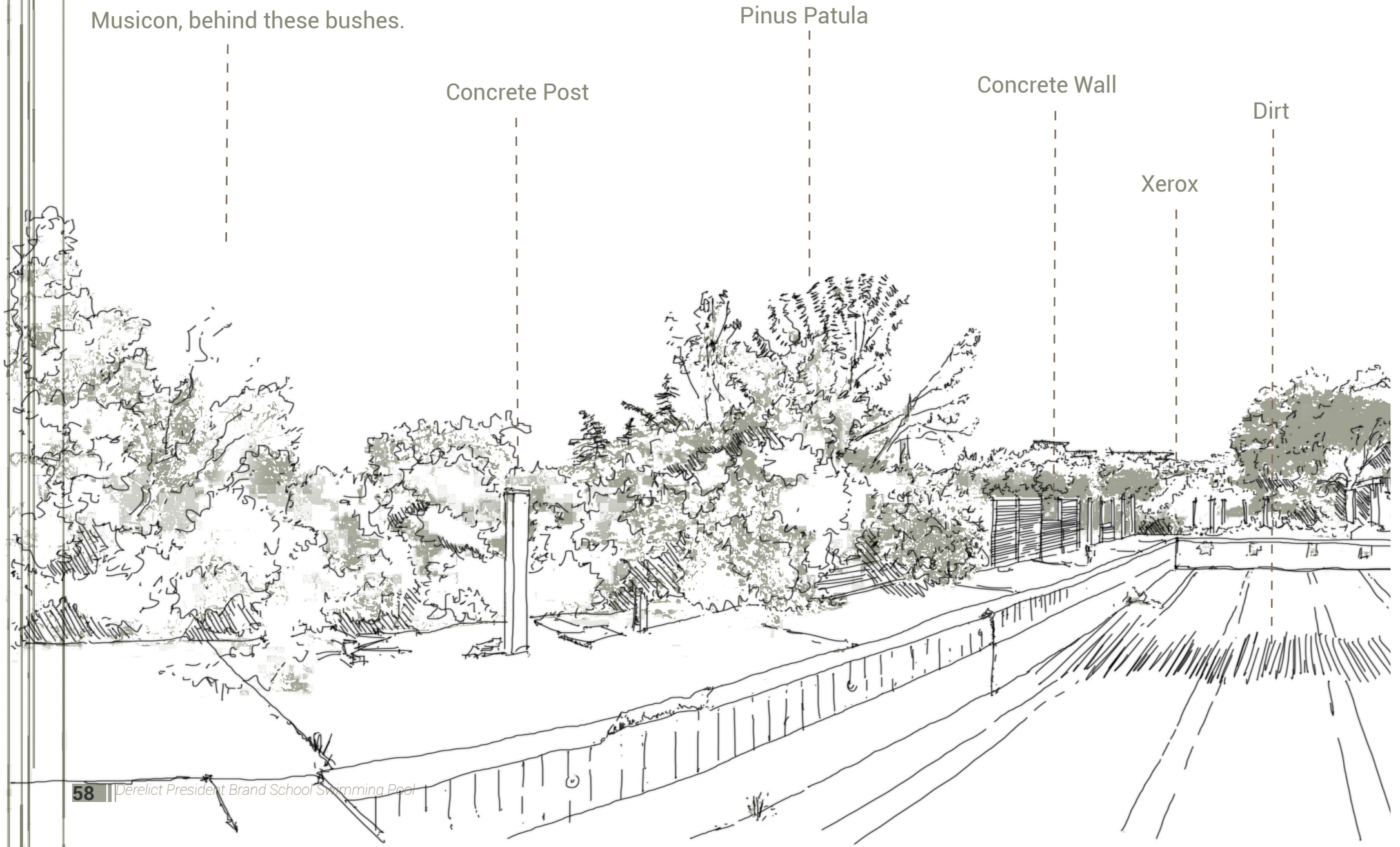
With the idea of a holistic health centre in mind, the qualitative site analysis focused keenly on views on the site that can be considered 'beautiful' or 'peaceful'.

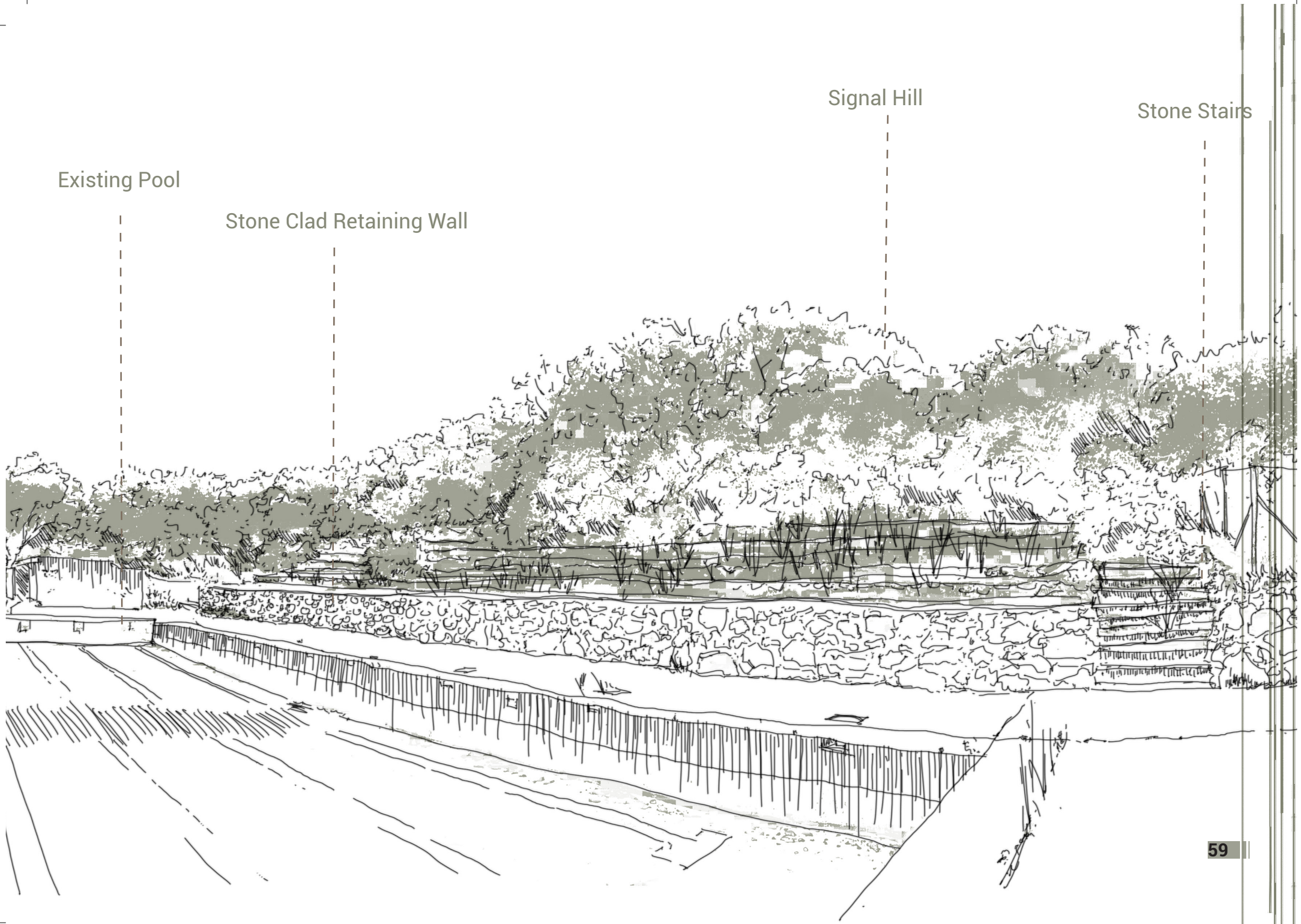
These views, together with an awareness of how the activity on the site could potentially change with the introduction of a health centre, established a foundation for the morphological investigation into healing space.

That is, space that could potentially be transformed into places of mental and physical healing. Healing place as a concrete possibility has only recently been substantiated to the extent that it could affect a global health trend. It manifests more frequently as holistic health centres.



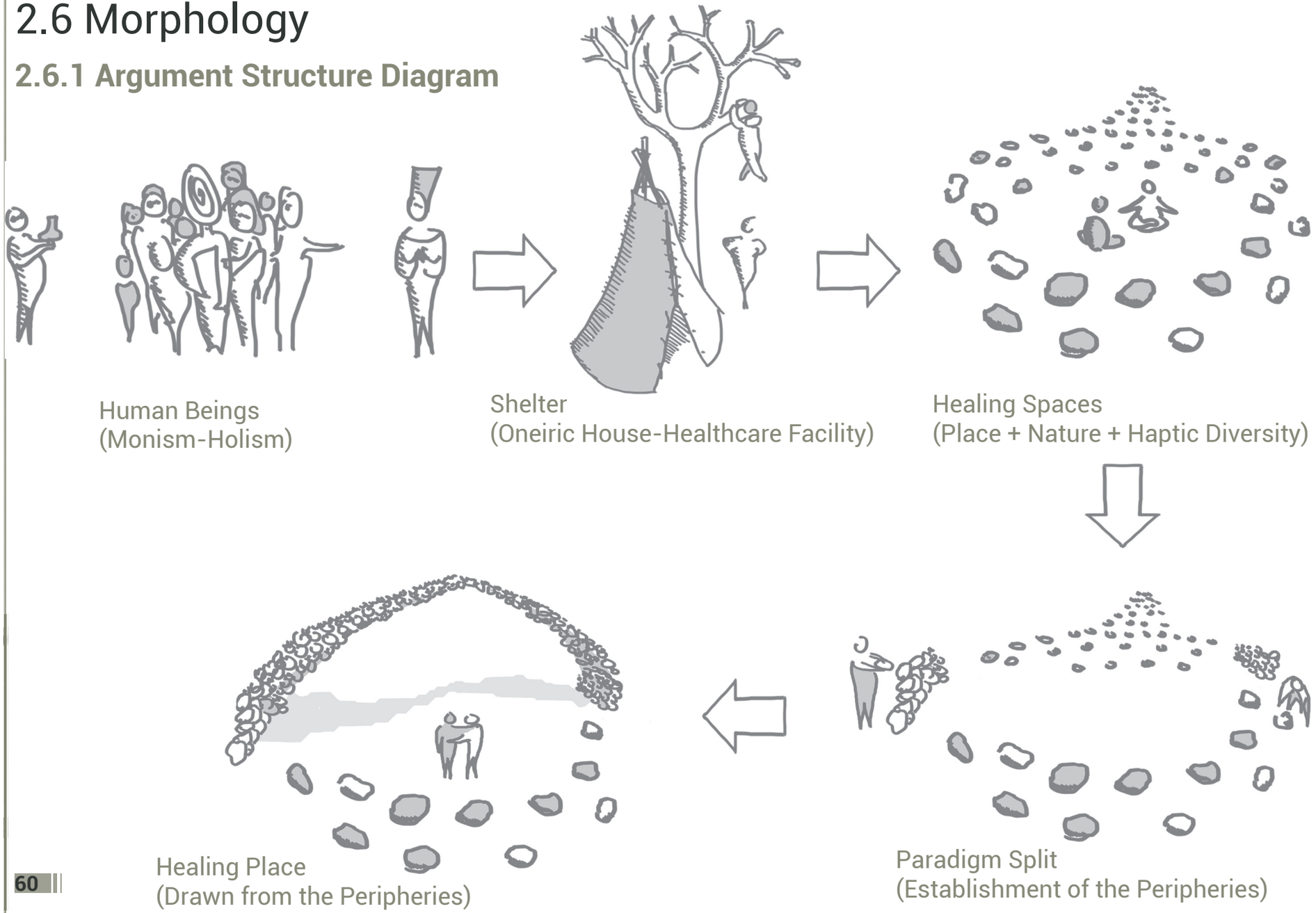



Musicon, behind these bushes.
Concrete Post
Pinus Patula
Concrete Wall
Xerox
Dirt


Existing Pool
Stone Clad Retaining Wall
Signal Hill
Stone Stairs

2.6 Morphology

2.6.1 Argument Structure Diagram



2.6.2 Literary Argument toward a Design Methodology

Introduction

This argument focused on a health space design model that would function in the liminal context of currently accepted healthcare paradigms. The proposal of such a model required the stipulation of a time line, orientated around the development of the concrete human experience in the world, our connection with nature and how this could translate into abstract places of healing.

Through mirroring the concepts of human phenomenology and early architectural development, one can see constant fluctuations between the variants of classical philosophy and modern scientific thinking. Just as 'place making' followed paradigms with reference to context; the study on the nature of human beings has followed a parabolic curve from monism through dualism to holism (Davis-Floyd & St. John, 1998). These fluctuations between science and philosophy are repeated along this vast time line across social, architectural and healthcare fields. Our development as social beings and our periodical spurts of knowledge growth has always had a direct influence on the built environment and healthcare architecture faced the same influences (Sternberg, 2009).

Understanding the ambiguous nature of healthcare spaces in the international and South African context today, required the clarification of certain preceding concepts. Some of these concepts included how human beings began organising space and developed relationships with certain types of spaces that could be considered 'healing'; why these spaces looked and felt the way they did (Sternberg, 2009); how these spaces were manufactured as healthcare spaces and how the constant fluctuations between science and non-science resulted in a paradigm split in healthcare and healthcare architecture (Davis-Floyd & St. John, 1998).

The paradigm split at its core is simply a mystification of the integrated content of a certain school of thought. For example, medicine is an integrated science of diagnostics, treatment and prevention of disease through various healthcare practises and treatments. However, our progressive social interpretation of medicine leans toward roughly dividing it into the two extremes of traditional and orthodox medicine and even though each extreme involves a diverse range of therapies and treatments respectively, either one lacks something of the other. The integrated concept of medicine then becomes a foreign notion. In medical academia, the difference between the two is often seen as a gradually changing continuum, rather than an abstract polarity (Saks, 2003), but the fact that there is uncertainty around the integrated content, or middle ground, is undeniable.

The polarities present in the subjects of healthcare and healthcare architecture can be described as the peripheries of their collective schools of thought because they exist at the extremes of the integrated vision of each subject. However, these 'peripheries' have become the most recognisable areas of knowledge, suggesting that the integrated or middle ground has become the obscure part where the public and respective professionals struggle to find definition (Saks, 2003). The conclusion will be that it is in this context that healing as 'place' needs to be investigated. This obscure middle ground needs to be uncloaked to allow for a more integrated, holistic health (care) system and consequently, a more integrated 'place' of healing.

Human Beings and Shelter

Our early conscious development regarding health and what health means can be attributed to concepts first investigated by the Ancient Greeks between 300 BC and 400 AD. This marked the first attempts at understanding illness as a fault in bodily functioning and not as a result of dark or evil spirits as was the generally accepted belief before. It was understood that the mind and body existed as a singular entity and that illness constituted a crisis in the being as a whole. This monistic view was first challenged by Plato, who advocated the dualistic nature of human beings. In his 'Affinity Argument' he explained that the human soul (mind) is indestructible and precedes birth as well as succeeds bodily death (Philosophyonline.co.uk), thus suggesting the notion that we are in fact *not* our bodies.

After the collapse of the Roman Empire near the end of the fifth century, the dualistic view of human beings digressed once more to a monistic one as religion assumed the role of explaining illnesses as ethereal manipulation or punishment from God. The churches lead all collection and containment of knowledge concerning this and the mind and body was once again seen as a single entity. During the scientific revolution, Descartes announced that the mind and body was separate but integrated entities (Gudmundsson, 2013). This was not an entirely new concept but not far off with what would be considered a holistic view today.

However, the medical field experienced a shift from the organic view of the human body and mind to a mechanical one; and yet continued research and development in medical sciences indicate the probability that a more holistic or integrated view of body and mind is required to obtain optimal health (Davis-Floyd & St. John, 1998). The progression from monism to dualism concerning healthcare was just the initial steps to holism. A human is an ambiguous, complex being and we reiterated this through history with how we developed the spaces around us (Sternberg, 2009).

According to Guenther and Vittori (2008), human beings need structures for protection, physical embodiments of social and cultural values and as projections of our spiritual and emotional needs. This entertains the notion that we need structures for more than just survival, that people can find some spaces more appealing than others. Human being's affinity for certain spaces are based in the roots of our primordial social constructs, suggesting that our social development ran parallel with our spatial development. In the Vitruvian explanations on the origin of architecture, he refers to the 'first assembly of mankind', explaining that at some point during our early history we developed the means to communicate with each other, to gather together and to coordinate in order to reach common goals. We sought to protect ourselves against the elements and did so through the search for and construction of shelters (Kahn, 1973).



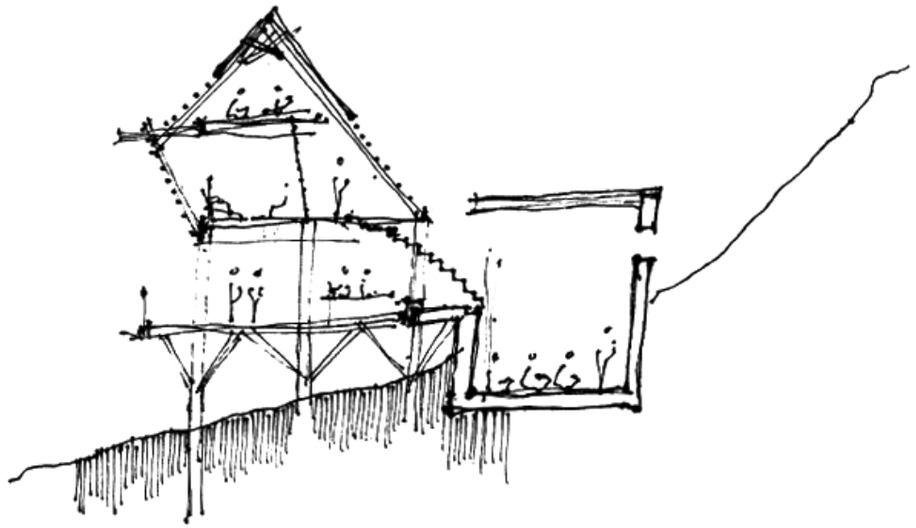
Sketch showing the ascent from darker, warmer spaces to an expansiveness.

The gathering of materials, cultivating of certain spaces and construction of shelters constitute our earliest attempts at dwelling in the landscape (Gaál-Szabó, 2013). People sought, or dug out caves in mountainous areas and fashioned 'nests' under trees (Kahn, 1973). Whatever the composition, early structures were conscious fabrications of our instinct for survival, but more interestingly, of our need for more than just survival. Even in the earliest forms of shelters where protection from the elements would have been adequate, we can see tendencies to accommodate functions attributed with spirituality and ritual. Although technology had its limiting effects on early structures, it can be gathered that our early ancestors sought to create comfortable, safe and warm spaces, as well as daring, exploratory spaces, justifying basic human needs that did not relate directly to physical survival. Humans have a need to be covered and protected, as in a motherly embrace, just as we have a need to expand and explore.

These basic unconscious needs persist today and although the agricultural and industrial revolutions have changed the way in which we can satisfy these needs, we still construct 'shelters' to separate and at the same time connect us to the world (Kahn, 1973). Bachelard (2014) tells us that "well-being takes us back to the primitiveness of the refuge" and through this he explains that to take refuge, or to withdraw into safety and warmth is part of the human psyche. He uses an example of space as simple as a bird's nest, which he admits is an elementary image with which to attach human meaning, to the more complex notion of a house as its own universe. These spaces hold our fragile and sometimes stubborn conscious projections and because we can orientate and identify with our own universes, it becomes 'place' (Gaál-Szabó, 2013).

Bachelard (2014) used the concept of the Oneiric (Dream) House to explain how we use our imagination, or 'the image' to augment reality or project our consciousness. When the house (place) is composed out of attic and cellar spaces and these spaces are connected through nooks and hallways, we fill these spaces with the areas of our subconscious that relate to it.

The 'attic' space contains our rationality and eagerness to be free, whilst the 'cellar' acts as the irrational, darker mind (Bachelard, 2014). The place becomes recognisable to the extent that it can be described as an extension of ourselves. This extension of ourselves, from shelter to house, acts in a symbiotic relationship, each causing change in the other. Bachelard (2014), explained it as a 'being' that changes space and vice versa. Does it not make sense then, that a person should find physical and psychological healing if the space they inhabit exists as a 'place' of healing?



Concept sketch of a structure containing both the 'Attic' and "Cellar' spaces, and how an obscure connection between them solidifies their separateness.

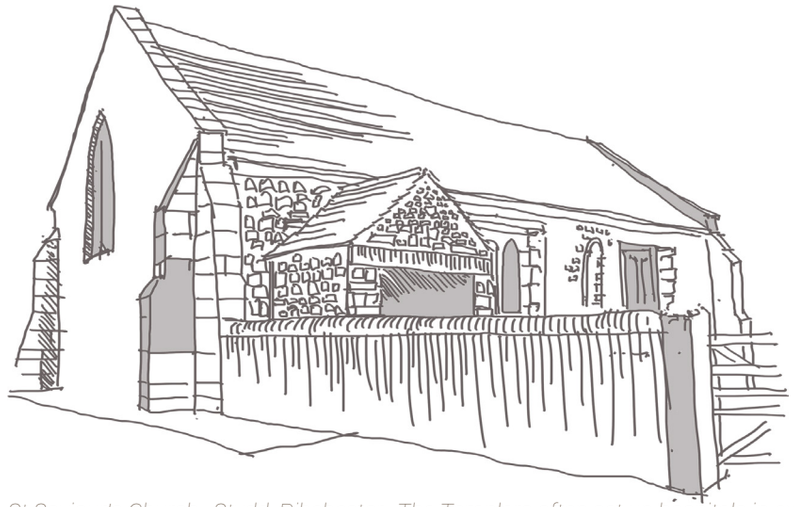
Healing Spaces

Healing spaces do not necessarily refer to healthcare spaces as history has often proven that these two spaces can be different and even in total contrast. It makes logical sense that these two spaces should be synonymous with each other but unfortunately the principles that govern each developed differently and subsequently leaves them in a certain division (Sternberg, 2009). Whereas healing spaces have always been closely related to nature and human spirituality, healthcare architecture has followed the ascent to clinical rationality; from romanticism to dehumanising modernistic architecture and from rustic intimacy to the technologically advanced (Sternberg, 2009).

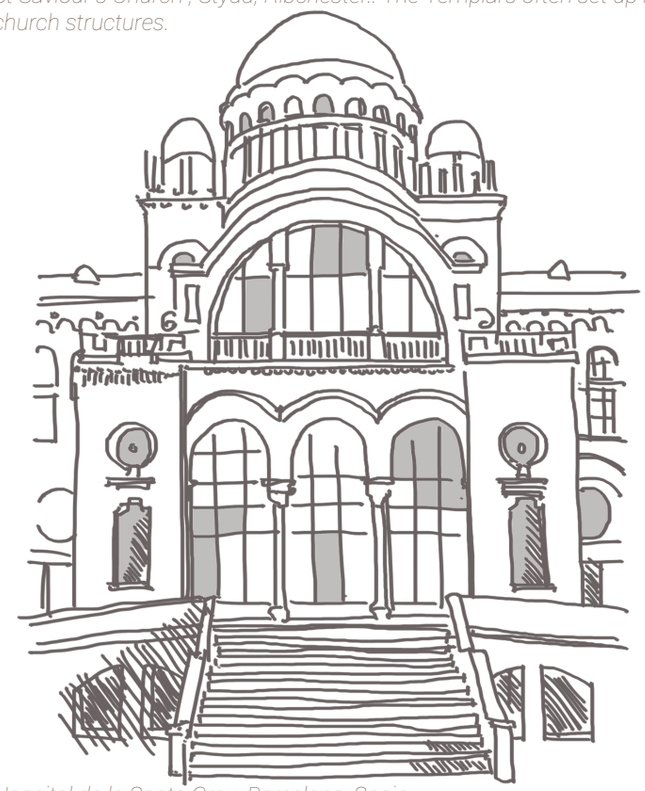
It is not uncommon to hear people convey their fear or loathing of modern day hospitals. From the first hospitals built by Templars along pilgrimage routes, to modern day technologically advanced clinics, the contrast between a healing space and a hospital have become quite substantial. During the 19th century, before the staggering technological advances, hospitals were designed to maximise the use of sunlight and ventilation out of practical necessity. No powerful electrical fixtures and air conditioning systems were available, subsequently; operating, waiting and general hospitals rooms would have large windows, skylights and even solariums where patients could rest in diffused sunlight (Sternberg, 2009).



Dreadnought Hospital, Greenwich. Notice the large windows and fireplace.



St Saviour's Church , Stydd, Ribchester.. The Templars often set up hospitals in existing church structures.



Hospital de la Santa Creu, Barcelona, Spain.

In 1984 Dr Roger Ulrich conducted research into the effects that a visual connection of nature could have on the recovery of patients as opposed to those who had a view of the hospital interior. The findings were in line with what one would expect, patients who had access to more natural light and a view of nature recovered faster (Sternberg, 2009). Physical, as well as visual connections with nature, proved to be imperative in holistic healthcare design, as was indicated by further research. The idea that the built environment could affect health could not be substantiated by science until the late twentieth-century when connections between the brain and the nervous system were proven to be an important physical aspect of maintaining health.

The spaces we are in, as well as the objects within those spaces, have an actual physiological effect on our health, whether beneficial or detrimental, through our nervous system (Sternberg, 2009). Hospitals continuously adapted to advances in spatial arrangement, with emphasis on controlling infection through isolation and accommodating more advanced diagnostic equipment. This resulted in healthcare architecture that seemed to cater for machinery and profit, unintentionally crippling the comfort and well-being of patients (Davis-Floyd & St. John, 1998). The continuous functional improvements of healthcare architecture has separated it from the more complex notion of healthcare architecture as healing spaces, removing it even farther from the preferred vision of having a holistic 'place' of healing.

The definition of 'place' is an important one in the aspect of healthcare architecture. In their empirical research on haptic design, Herssens and Heylighen (2012) explained that space becomes 'place' when a subject becomes familiar with it. Similar to how other phenomenologists like Norberg-Schulz explained orientation and identification as necessary aspects to constitute 'place' (Gaál-Szabó, 2013). Herssens and Heylighen (2012) go further in saying that space is the movement in a design and the spaces we come to rest in become the 'places'. They advocate the notions of choice and action as participation in a design through coming in contact with its surfaces and ironically, this freedom of choice plays an integral part in the success of healthcare design (Oh, 2002). In straightforward terms, Herssens and Heylighen (2012) discuss the importance of having a consciously diverse haptic design where all the senses are engaged and that the differences in the way we experience these spaces dictate our encompassing experience of the space as a whole.

The cold nature of 'technocratic' (Gudmundsson, 2013) healthcare architecture emphasises the need to employ some of the above mentioned design concepts. Can these concepts be translated into a specific set of design principles focused on creating a 'place' that promotes healing? This argument investigated the possibility of a collaboration of the following three key characteristics in healing spaces namely: the sense of 'place', a connection to nature, and haptic diversity, as a proposed health 'place' design model.

Place: The sense of 'place' as a key characteristic of a healing space is derived from the Oneiric House (Bachelard, 2014) and how this familiarity within a space and especially how our physical reflection of consciousness within that space, promotes health. We find solace in the primitiveness of the refuge, or in this case, the 'place'. This would result in a more relaxed state of being leading to a better functioning immune system and subsequently improved health (Sternberg, 2009).

Nature: The benefits that physical and visual connections with nature offer patients have been scientifically proven through the collaboration of architects and neurologists (Sternberg, 2009). These remain fleeting connections, as we cannot renounce our affinity for sheltering from raw nature, or dwelling in a 'place' separate from nature, just as we cannot deny our instinct to revel in nature (Jiven & Larkham, 2003). This is indicative of our yearning for diverse haptic experiences of life, in different circumstances.

Haptic Diversity: Assuming that the space can be identified with as 'place' (Jiven & Larkham, 2003) and that a tangible connection with nature exists, it still needs depth in its haptic diversity for a user to truly orientate, function and find safety in the space (Herssens & Heylighen, 2012). This is further explained as a composition of 'planes' realised by the designer which serve as surfaces with which a user can choose to interact. Movement planes, focused on surfaces and spaces associated with dynamic circulation; Resting planes, referring to spaces within a design where users can be still and take refuge; and finally Guidance planes, that exist out of a combination of the two (Herssens & Heylighen, 2012).

This argument stipulates these as the core components required in the design of healing places, albeit as a conceptual idea of 'place' in an ideal world. Before it can be articulated as architecture it needs to relate to the physical and metaphysical context of South African healthcare context. The development of healthcare in South Africa has had a many similar advances and challenges as our international counterparts, with the exception that our political, social and economic dynamics make for a more unique problem and thus requires a more integrated approach. Our healthcare architecture and -practice paradigms have individually experienced the perpetual split into its polar extremes of knowledge. The unfocused space that remains after the paradigm split in these fields become the conceptual context within which the above mentioned healing space design tools would have to work as a proposed 'Healing Place' design model.

Connection to Nature





HEALING PLACE



Place

Haptic Diversity

Paradigm Split

South African healthcare has had many renowned endeavours like the Pholela Healthcare Centre and the development of community orientated primary care (Barron & Roma-Reardon, 2008), as well as some daunting challenges like the HIV and AIDS crisis and continued shortages of trained medical staff. For the purpose of this argument, the information will pertain to the relevant elements present in the apparent paradigm split that exists in a much simpler way than our internationally transparent healthcare problems and activities. The division exists in a social, economic and cultural sense with reference to traditional and orthodox medicine and practises, the private and public healthcare sectors, the architecture associated with these areas and the natural and urban landscapes.

Presenting these extremes as 'peripheries' served to avoid the nuisance of comparing entire subjects only to their respective stereotypes. A periphery is not a finite part of the vision. It fades from the centre toward the extremes, suggesting that these extremes do in fact have isolated examples that contain the integrated knowledge of the field as a whole.



Traditional versus Orthodox:

The Pholela Health Centre model conceptualised in the early 1940s marked one of the earliest attempts in South Africa to address primary healthcare in a community orientated holistic way (Barron & Roma-Reardon, 2008). Finding a way to address health issues in a community through collaboration, interpersonal relationships and treatment without exclusively eradicating symptoms marks the cornerstone principles of a holistic healthcare approach. These were the initial concepts to the ideals of 'health to all' and community based healthcare (Barron & Roma-Reardon, 2008).

As South Africa struggled to grasp and attend to the many healthcare issues through the political, social and economic transitions, a division in the healthcare paradigm became more pronounced and apparent. Aginam (2007) described what scholars refer to as 'medical pluralism', the phenomenon in a society related to the omnipresent reliance on traditional medicine and practises alongside the development and use of Western orthodox medicine. This 'medical pluralism' is attributed to the multicultural nature of South Africa, meaning that different cultures and religions approach health and healing differently.

This substantiates the notion that healthcare in South Africa is experienced in these two extremes. Traditional medical practises received praise for its supposedly holistic approach as opposed to its impersonal Western counterpart, but it has become evident that both these extremes, in their respective activities, lack integrative or holistic medical approaches (Aginam, 2007).

The dissociative nature of Western orthodox medical practises has become just as marring to the reputation of South African healthcare as sensational stories about muthi acquisition and animal cruelty has had on traditional medical practises. These two extremes form the isolated peripheries in the medical field of vision.



Traditional Medicine



Orthodox Medicine

Private versus Public:

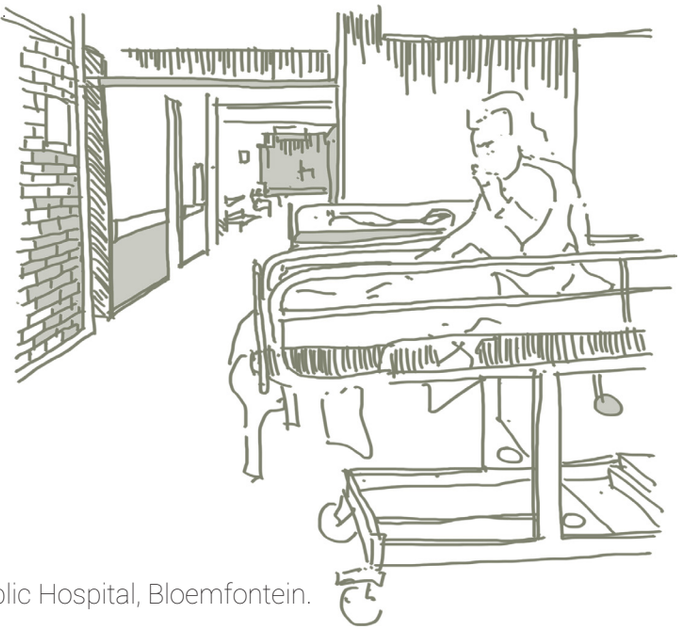
In the broader sense, the main reason for the vast differences between the public and private healthcare sectors is the aspect of trust, or rather, the lack thereof (Edmeston & Francis, 2012).

There exists a general mistrust in the public health sector for many reasons but it comes down to its inability to cater for the South African public because of its under managed and under resourced nature. This is especially alarming when considering that it comprises of approximately eighty percent of our healthcare system (Edmeston & Francis, 2012). It is not farfetched then to imagine that there is a crippling mistrust in the very foundation of South African Healthcare.

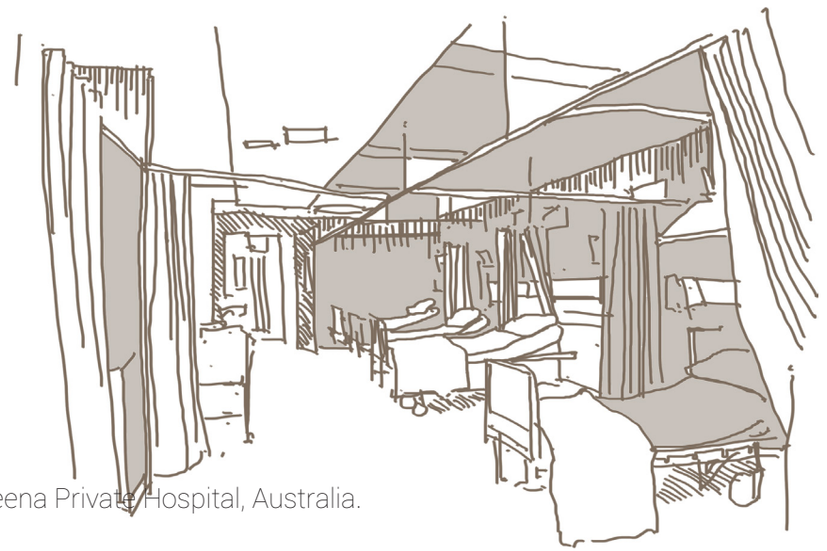
The private healthcare sector in South Africa suffers from the international dogma of being irrationally expensive and thus only catering to the elite or upper class citizen (Edmeston & Francis, 2012). This engenders enough similarities with the apartheid regime, like social and economic segregation, to warrant an inherent distrust from the majority of the population. The only difference being that the segregation is not part of a government mandate but because of the impractical reality that every South African could afford this type of healthcare, thus acting as a segregation in itself.

Unfortunately, the resultant mistrust and continued isolation of these two established peripheries are also simultaneously their dividing catalysts. People that can afford private healthcare out of their own pockets or through third party medical schemes, further the lack of price competition in this sector, resulting in increased costs (Edmeston & Francis, 2012). Whereas people making use of public healthcare have to deal with the sectors' ever dwindling expertise and resources. It becomes a question of effectively distributing resources between these sectors to begin to address the economic factors.

To begin to integrate these two peripheries requires addressing the split through the introduction of a singular idea of holism that could catalyse the re-integration.



Pelonomi Public Hospital, Bloemfontein.



Kareena Private Hospital, Australia.

Vernacular versus Institutional

For the purpose of the argument, vernacular architecture will refer to the informal and rural spaces often associated with traditional healers and muthi shops and 'institutional' refers to the previously described 'technocratic', cold and harsh environments of modernistic hospitals and healthcare institutions.

If these peripheries of a singular architectural vision fall in line with the rest of the argument it would suggest that the 'Healing Place' design model should, together with its principles, accommodate an architecture that draws from these peripheries, instead of trying to meet in the absolute middle. In that sense, a design that takes enough from the architectural extremes concerned in healthcare to constitute an integrated 'place'.

Where the 'Healing Place' design methodology can be seen as a morphological exercise; drawing from the vernacular and institutional levels in healthcare architecture is undoubtedly a typological one. However, the investigation of these two extremes, just as with traditional and orthodox medicine and private and public healthcare, only play a part in the proposal of a conceptual context within which the design model can work. That being said, it still requires some practical considerations as to what either periphery lacks. What could institutional healthcare architecture use that the vernacular architecture of traditional healthcare can offer and why does the traditional medicine healthcare vernacular lack the clinical precision and rationality present at the institutional level?

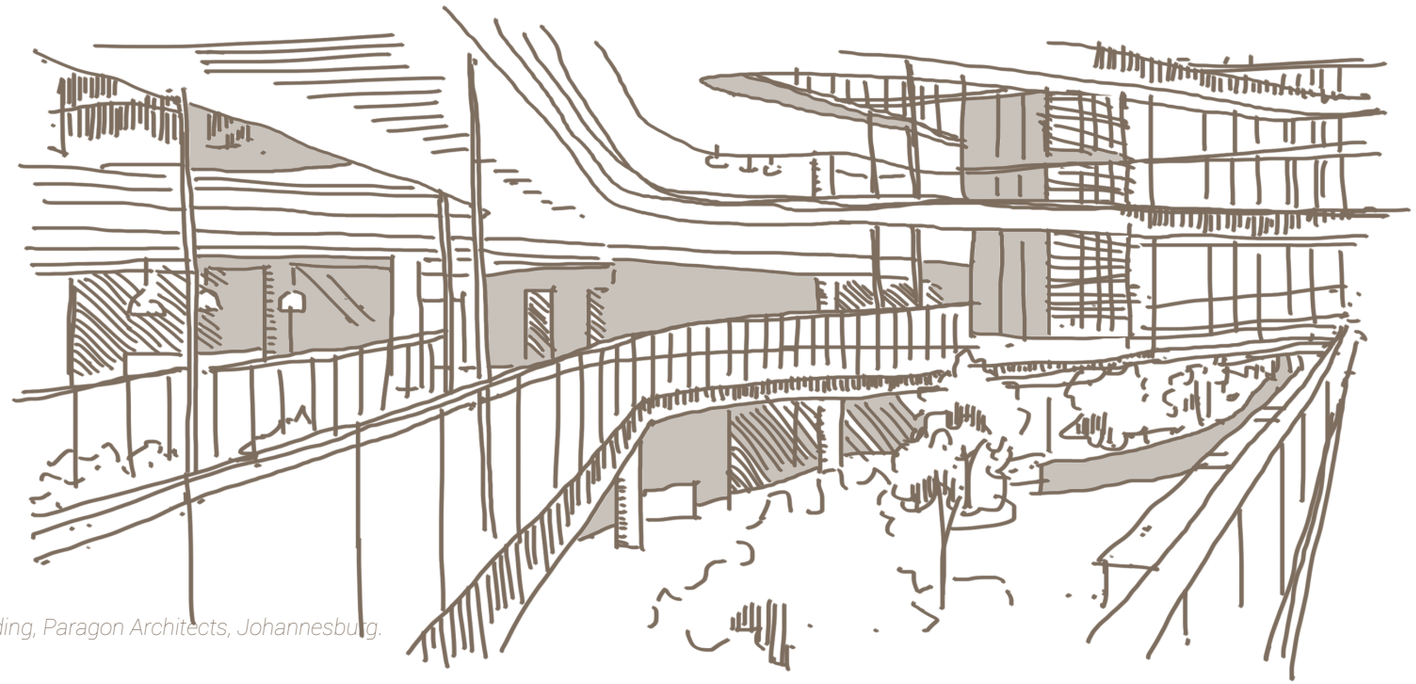
An example of vernacular South African healthcare architecture is the Mai Mai Market in the central business district of Johannesburg. It is submerged in the natural, raw mysticism or magic associated with South African traditional healing (Aginam, 2007). Consisting out of four rows of stalls grouped tightly together that house muthi shops, traditional healer rooms etc. Vivid colours, noises, smells and smoke in this confined space offers a visitor an almost dreamlike experience. It is described as a 'hidden world' where the ill can come for treatment and guidance(Joburg.org.za).

Here, healthcare becomes something akin to a bargaining process amongst members of a tribe. Although the Mai Mai Market is viewed as a well maintained, culturally rich space, it still shares the negative ideologies associated with traditional medicine and its architecture. It lacks science (rationality), organisation and safety, or at least, the illusion of safety.

On the institutional level of healthcare architecture in South Africa, specifically the modernistic level described by Sternberg (2009), aspects like rational design, precision and safety are present. However, most of these institutions, even if successful as businesses, fall short in other qualities that can be drawn from the opposite periphery, i.e. from spaces like the Mai Mai Market. Qualities like interpersonal relationships between the public and healthcare professionals, the idea of mysticism as the spiritual aspect of health recovery, a connection to nature and of course, most importantly, the concept of 'place' through its haptic diversity and identification.



Mai Mai Market, Johannesburg.



115 West Street Building, Paragon Architects, Johannesburg.

Natural versus Urban Landscapes

Sternberg (2009) explains how the benefits of nature to the sickly were initially discovered by accident through observation and not through structured research. Before the invention of antibiotics, the treatment process concerning patients with, for example, tuberculosis was mostly based on diet, rest and meditation. Hospitals would send these patients to more secluded clinics to prevent the spread of infection and these isolated clinics were often in nature.

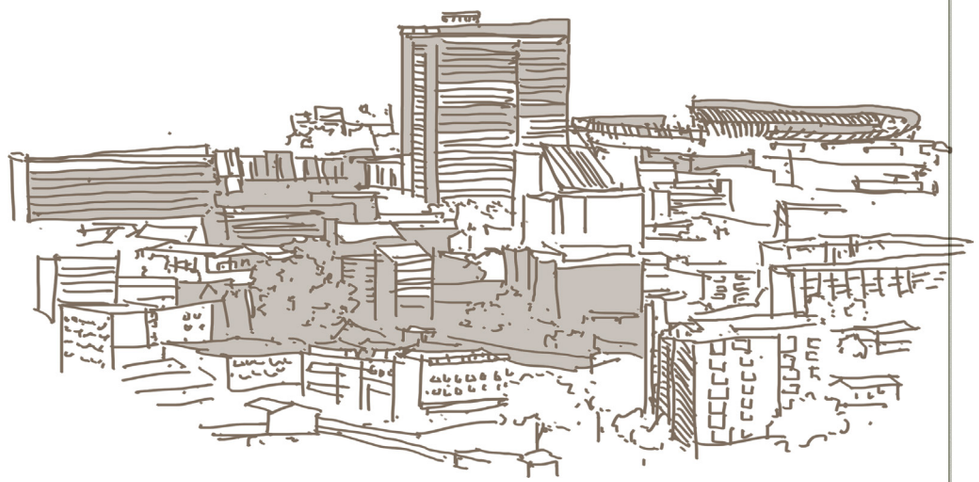
The realisation dawned on the medical academic world that patients in these areas were experiencing an increased rate of health recovery that could not be attributed to fresh air alone. The tranquillity of these spaces proved to be a major contributing factor (Sternberg, 2009). Modern scientific research confirmed these effects.

A natural landscape would seem to be the most ideal context for a healthcare facility. In some cases this exists in reality as a functional example, as in some rehabilitation and convalescence centres, but it is largely dependent on the nature of the centre and the available care. Inpatient and outpatient centres have different requirements and although a connection to nature is always warranted, some of the requirements may include urban connectivity and ease of access. The case studies conducted in the broader Durban periphery revealed that it is not necessarily the lack of nature around urban areas that dictate the locale, but the need for a centralised connectivity like that of the Mai Mai Market.

The presences of healthcare facilities in both these peripheries are justified and many successfully integrate the two through some form of compromise. A hospital may be placed just off a highway, to connect it to the city through a fast circulatory vein whilst still being 'outside' the city and in nature. Other compromises include healthcare facilities that integrate these two peripheries through artificial nature and as far as possible, man-made nature in an urban setting. The idea is not to have the integrated product as a hybrid of the two landscapes, but rather a landscape that draws from each periphery what is most beneficial to a healthcare facility; the connection to 'real' nature, the illusion of isolation, the connectivity of a city.



Natural Landscape: Eastern Free State.



Urban Landscape. Bloemfontein.

Healing Place (Construed from the Peripheries)

The establishment of these peripheries indicate the fragility and obscurity of the in-between and how the area where these peripheries become integrated could serve as the typological, morphological and topological context within which the argument can explore the Healing Place Design Model.

Morphological Investigation (how)

The design model aims to address the morphological aspect of the argument, through its suggestion of a collaboration between 'place', in the Bachelard (2014) sense of the word as well as 'place' through haptically diverse planes (Herssens & Heylighen, 2012) and the physical, spiritual and sensual connection to nature (Sternberg, 2009). This argument proposes that the implementation of these aspects could help in synthesising and evaluating theoretical and empirical parameters that constitutes a space as healing.

Practically it would involve creating these 'attic' and 'cellar' spaces that reflect human consciousness (Bachelard, 2014). Allowing the freedom of choice and movement in the design through the circulation. To selectively accept what the surroundings have to offer, for example light, ventilation, views and connections (Sternberg, 2009) and finally to evolve a depth in its haptic diversity through the movement, resting and guiding planes as well as the materiality and ambience of these surfaces (Herssens & Heylighen, 2012).

Typological investigation (what)

This in essence serves a conceptual context that the morphological investigation can occupy. The context consists of the in-between of the following peripheries: Private and public healthcare, traditional and orthodox medical sectors and most importantly relating to type, vernacular and institutional healthcare architecture. This in turn serves as a proposed typological model. A model manifested not as a clinical and harsh hospital, just as it is not manifested as an abstract traditional healing 'village' but an integration of the aspects that made those extremes feasible in the first place.

Topological investigation (where)

The integration of the two peripheries explained as the natural and urban landscape constitutes the proposed prototypical context within which the morphological and typological models can synthesise. In direct terms this would involve the integration of the site by drawing in only what is beneficial from the peripheries. For example the tranquillity, isolation and visual connection of the natural landscape and the connectivity, opportunity and relevance of the city.

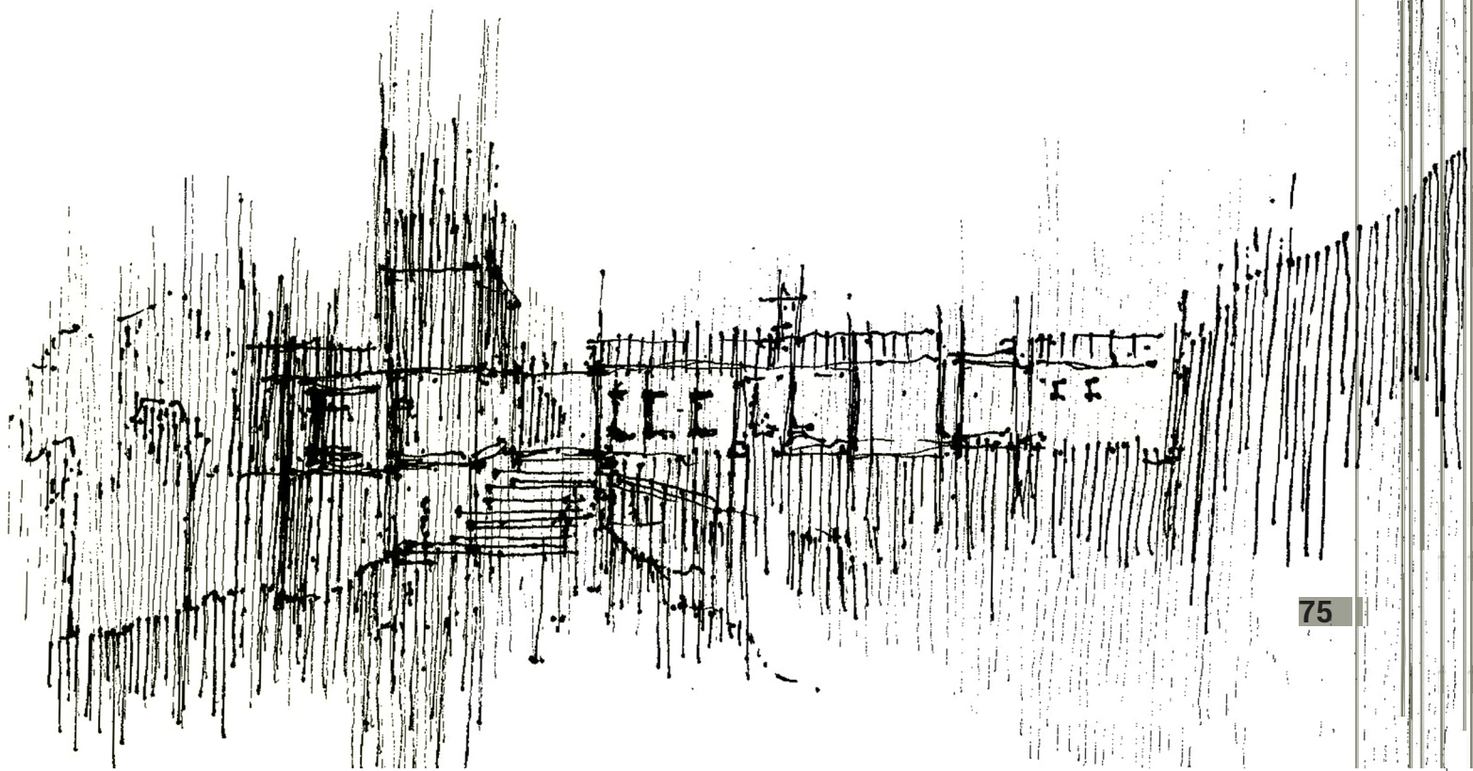
Conclusion

The conceptual time line constructed in this argument investigated the evolution of the human experience as an existential one and as a phenomenological study of humans dwelling in 'place' (Jiven & Larkham, 2003). This had a tangible influence on how humans theorised health and healthcare parallel to the development of how humans perceived and constructed the built environment.

The combination of this allowed the rhetorical questioning of what it means to be in a place of healing and how this relates directly or indirectly to healthcare architecture. This included the references to the specific theoretic concepts that structured healthcare space as 'place' and concurrently, how the fluctuations between scientific and philosophical thinking oscillated the healthcare paradigm enough to constitute two extremes.

This reality of extremes then translates into the established peripheries visible in South African healthcare and healthcare architecture, defining a context. The morphological, typological and topological investigations stipulated in this argument together form an overseeing framework toward the synthesis of a Holistic Health Centre against Signal Hill, Bloemfontein. The synthesis of this can act as a catalyst for the immediate and future social constructs. It would allow the paradigms in the healthcare field to find some recognition in its integrated middle that has become so disjointed.

The ability of healthcare architecture in South Africa to become holistic in its physical as well as methodological nature alone could serve as a pilot project for the proposed client, SASIM (South African Society for Integrated Medicine) in their efforts to see SAMA (South African Medical Association) on track with the international trend (Gudmundsson, 2013) toward holistic health, holistic living and holistic architecture.



2.7 Tectonics

2.7.1 Technical Design Development

Certain practical implications were imposed by the site. Its East-West orientation, slope and existing constructed terraces formed some of the unique contextual aspects.

Along with the development of the Health Place Design Model,The technical design considerations were extensively impacted by these unique contextual aspects.

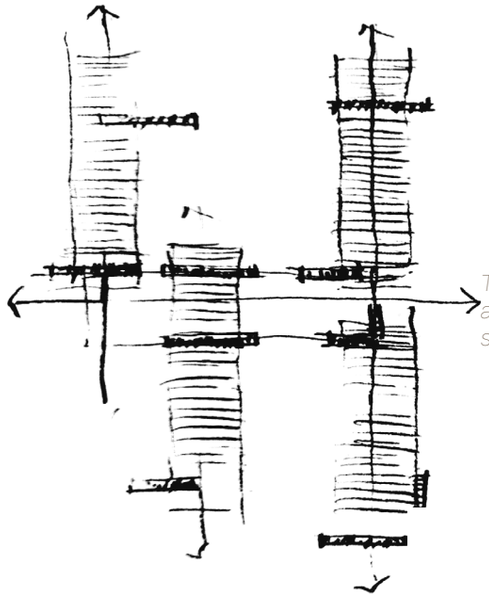
Sub-Structure

The first of which being the nature of the slope of the hill and how it is intercepted by varying retaining walls that form terraces. These terraces served as platforms for school sport activities and have fallen into disrepair since the school moved in 1986.

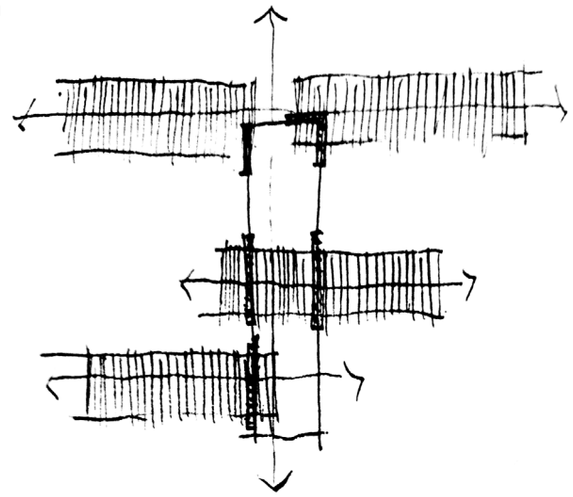


76 *The thin red lines indicate retaining walls of up to 1.5 meters. The thick red line indicates the main retaining wall of 2.8 meters.*

The particular consideration was how to approach the 2.8m fall that exists in the middle of the design because of one of these terraces. A technical resolution for how the superstructure would deal with, and eventually meet the sub-structure across this fall became a key focus.



The idea of implementing heavier elements as load bearing structures that could house services, freeing up the rest of the facade

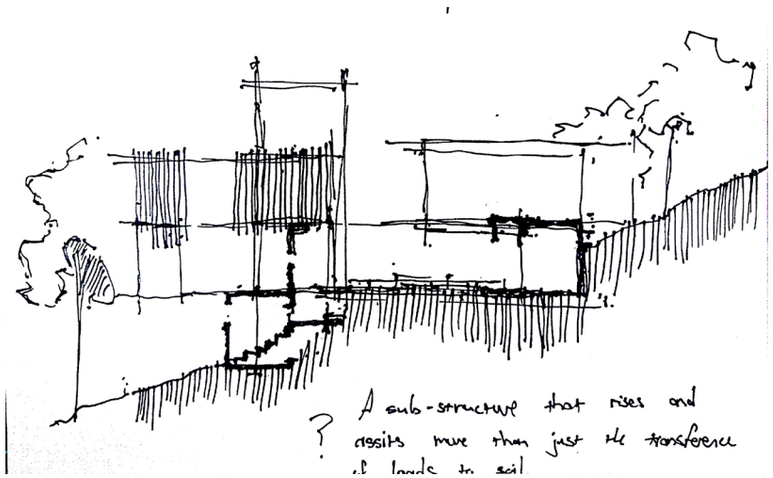


Using the Existing

Another unique consideration was the material use and ways to free up the movement of façades to accommodate the nature of a holistic health centre. Connection to nature, natural light, comfort and functionality are all necessary elements in a healing space. Questions as to the structural support elements versus the infill elements became a debate in the design. This idea allowed further investigation into the potential use of existing built elements on the site.

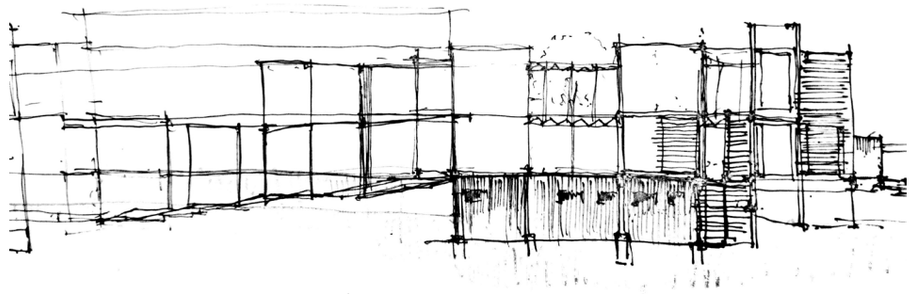
The stereotomic structure could be developed out of the existing concrete slabs and retaining walls of the old swimming pool, coupled with the new swimming ablution and separate service spaces cast out of concrete that serve as footings.

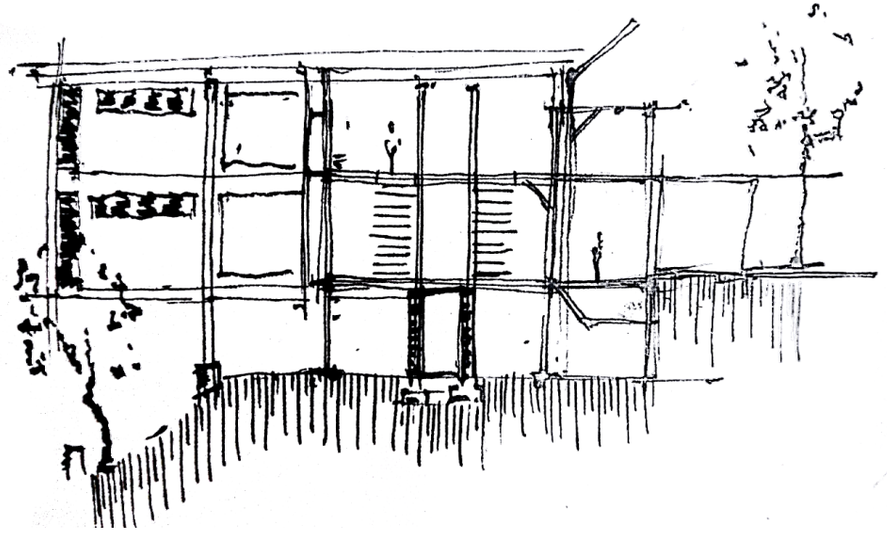
The 'Cave and Tree' spaces could then also be accommodated through the relationship between the heavier sub-structure and lighter super-structure.



With the retaining walls and concrete services, the design could potentially stretch out across the slope.

Sub-Structure that rises up and becomes the footing for a lighter structure, as well as contain space that could house a function like the ablution.



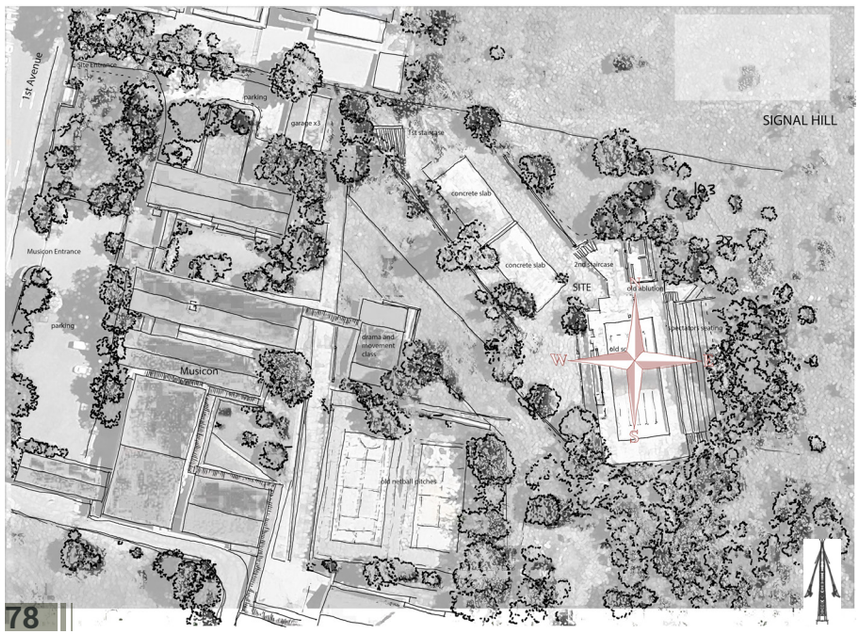


Orientation

Adapting to the old footprint of the swimming pool area, as well as the existing terraces, meant exposing a larger face of the program to a West-East orientation.

This is less than ideal, especially when considering that the interior and exterior spaces in a health care clinic needs to have a considerable level of comfort. The idea of having some protection against the sun, and as a means of connecting different spaces that satisfy a North-South orientation, suggested something akin to a wall or a shield.

The concept of having a circulatory spine, connecting the different functions as well as shielding certain spaces and outside areas was introduced. This would then also help in allowing different scales of the design to meet along the spine.

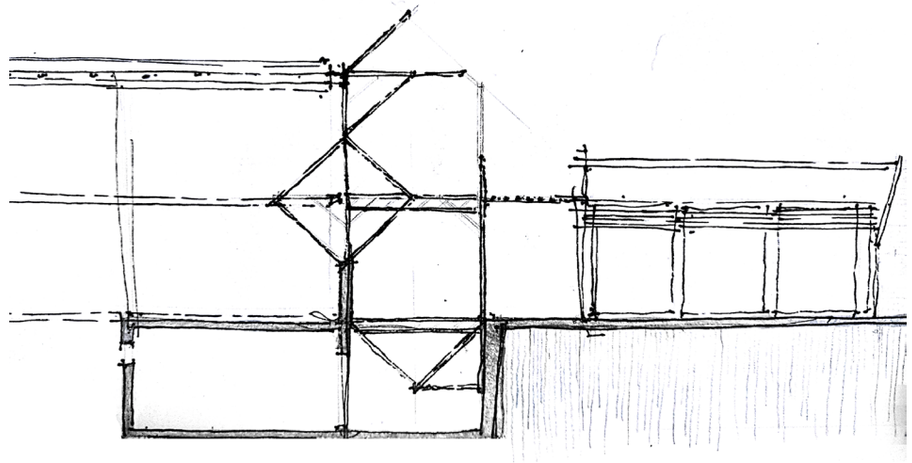


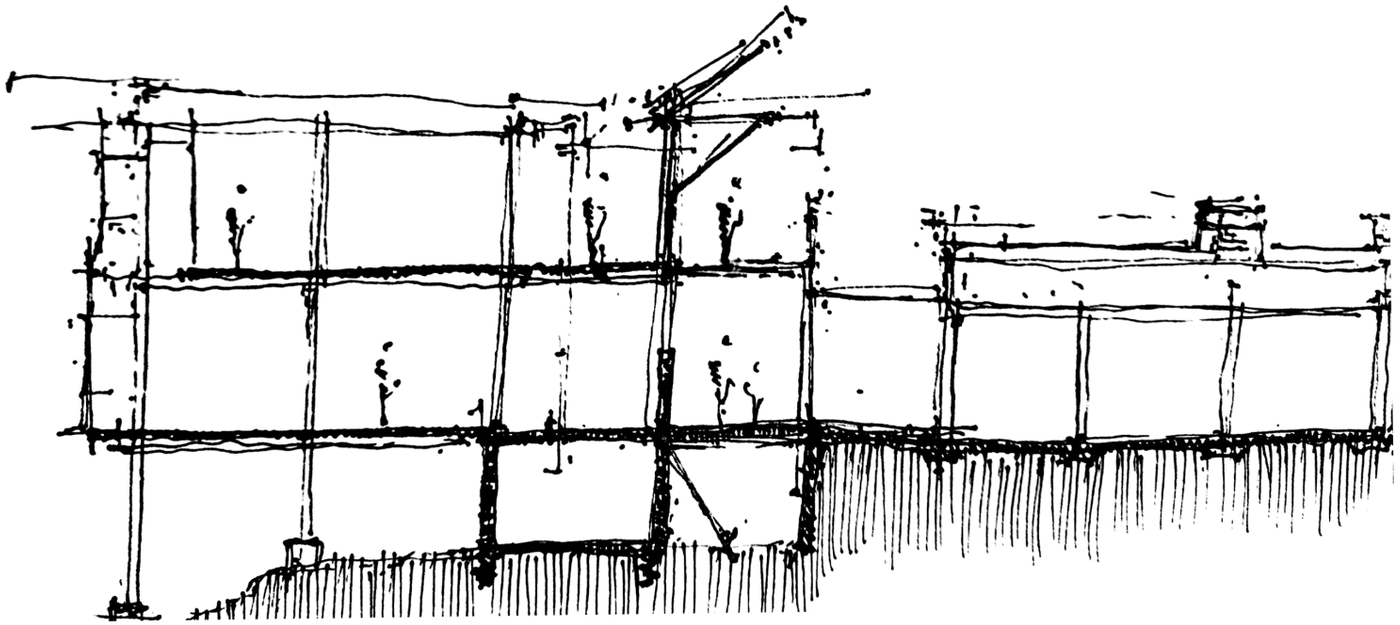
The spine would serve as the primary circulation across the site, with all the secondary circulatory routes feeding out of it to reach the different functions.

The context contains a hybrid typology. Along with the increasing development of modern institutional buildings in the broader Westdene area to accommodate the influx of businesses, lies a dormant dogma of residential structures in the late Victorian or Farmhouse styles.

The discussed Health Place Design Model investigates these styles as the peripheries of vernacular and institutional characters of the context, and the spine could serve as the meeting point where the peripheries could meet.

The different scales of the building could meet along the spine.





Using portal frames to construct the spine along the different functions would ensure some visual transparency and a broader, better lit and ventilated circulation system.

Africa Centre for Health and Population Studies, Somkhele, A2074 Rd, Mtubatuba.

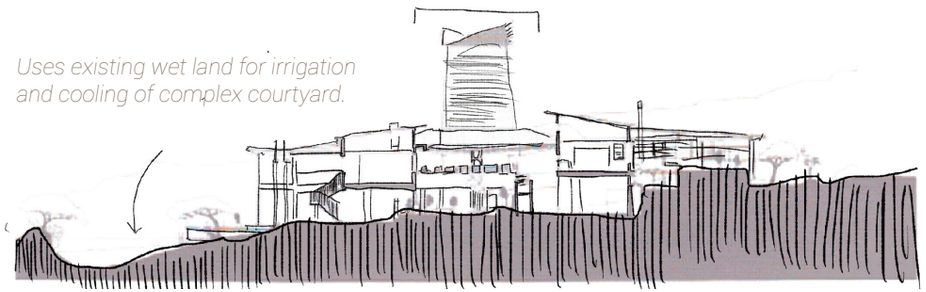
East Coast Architects

This centre used the abstract features on the site to accommodate its indigenous herb gardens and outside spaces. Its flexibility in the organisation of spaces to accommodate large groups and smaller cells make it a useful gathering space for learning about health and health care.

The centre's connection to the outside and its grouping around a central tower make it of particular significance for the practical investigation on how spaces can function separately, and when needed, as a unified system.

Space orientated around the tower.

Uses existing wet land for irrigation and cooling of complex courtyard.



Village like layout to create cohesiveness between different departments.

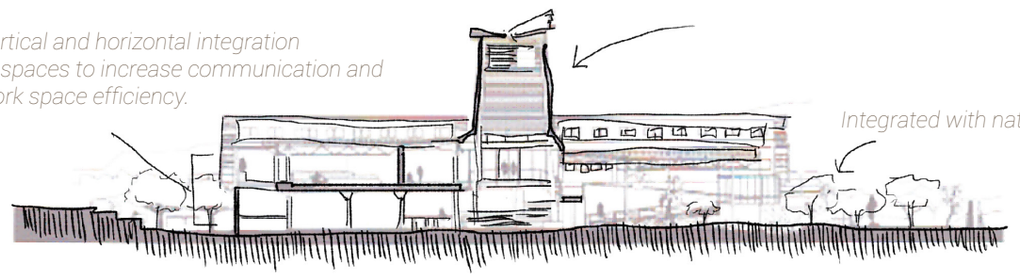


Main work space areas orientated for optimal working conditions.

Tower doubles as a water tower to increase the water pressure to surrounding areas as well as cooling the building.

Vertical and horizontal integration of spaces to increase communication and work space efficiency.

Integrated with nature.



Establishment for Dependant Elderly, Carvin, France.
Parallele Architects

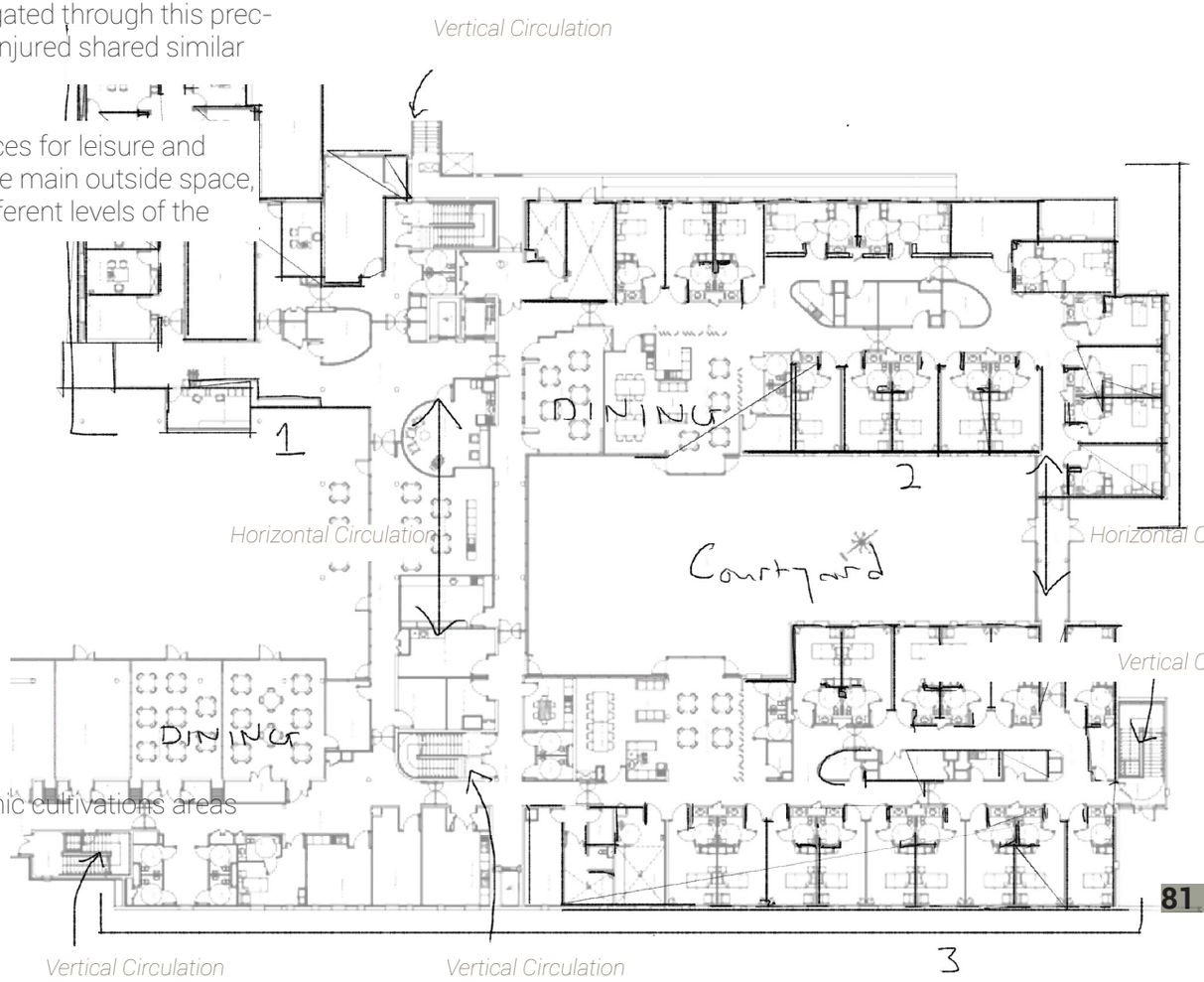
The project's vision for the community was to integrate the lives of the users with the activities of the city. Connectivity between patients and the outside world had very positive effects on their overall physical and mental well-being.

The proximity of spaces and circulation was investigated through this precedent, keeping in mind that the elderly and sickly or injured shared similar needs in movement and comfort.

Further development went into creating garden spaces for leisure and relaxation on a human scale. The courtyard being the main outside space, with additional constructed terraces on the three different levels of the design.

Program:

Reception
Ablution
Inpatient Rooms (larger than average ICU)
Nurse Stations
Offices for senior personnel
Recreational Therapy and Rehabilitation Gym
Dining Room
Family Multi-purpose Room / Family Room
Examination Rooms
Research Laboratories
Temporary Living Unit
Auditorium
Storage
Outbuildings to support the gardens and homeopathic cultivations areas



Materiality

Part of the creating haptic diversity in the design involved creating movement, resting and guidance planes that could connect to each other and help a visitor orientate quickly.

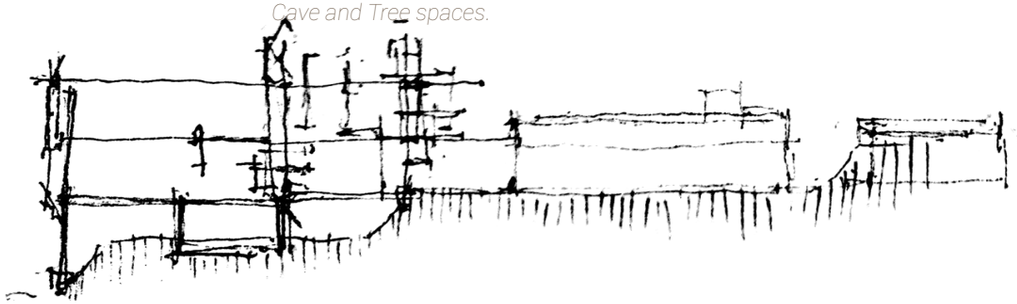
Faster orientation means faster familiarity and subsequently a more relaxed state of mind, which in turn leads to better health. In order to achieve this meant investigating the materiality and composition of interior and exterior spaces. Relating the way a user should feel or react in a certain space, with the materials they would come into contact with all formed part of the creation of healing place.

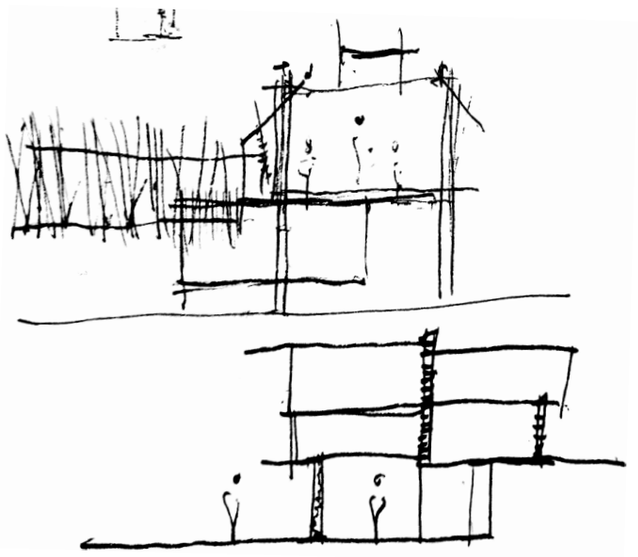
Coupled with practical considerations like circulation and climate control, this investigation involved certain detailing of connections and spatial configurations. Outside circulation meant that interior spaces, especially waiting or relaxing areas, could enjoy a slower pace. This, however, required the design of covered outside circulation, and in the core areas, circulation that could be changed to inside circulation if the weather warranted it.

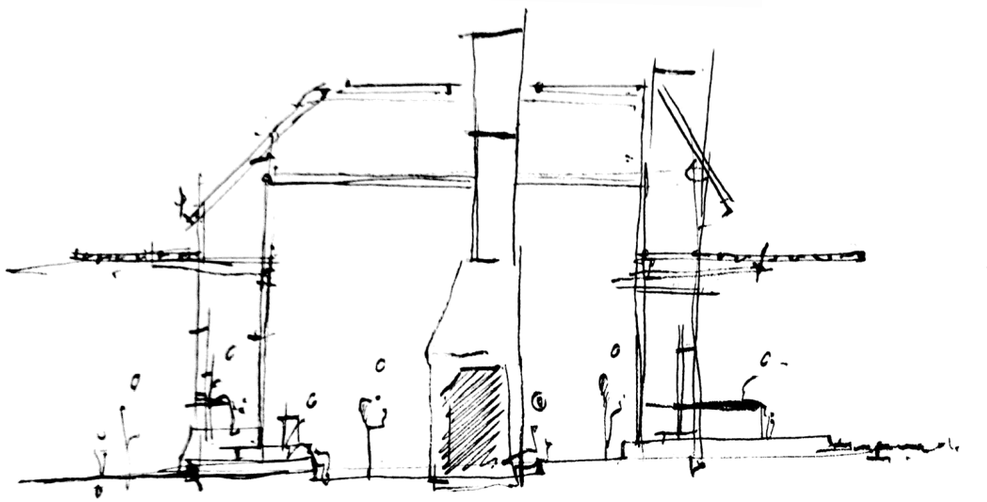
With the concept of the Cave and the Tree, or the 'attic' and 'cellar' spaces in mind, the materials could begin to mirror the character that these spaces were to portray on the interior as well as the exterior.

Early concept sketches show some deliberate level changes and contextual typologies combining to create unique spaces of healing. For example, the resting areas, or 'shelters', needed to accommodate a sense of homecoming. Not in a typological sense, as that would be a subjective feeling, but in the spiritual warmth one can expect when visiting a place that you feel at home in.

Cave and Tree spaces.



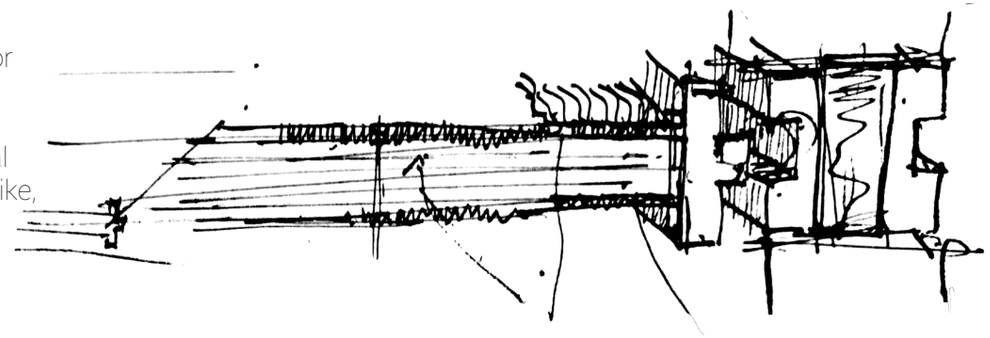




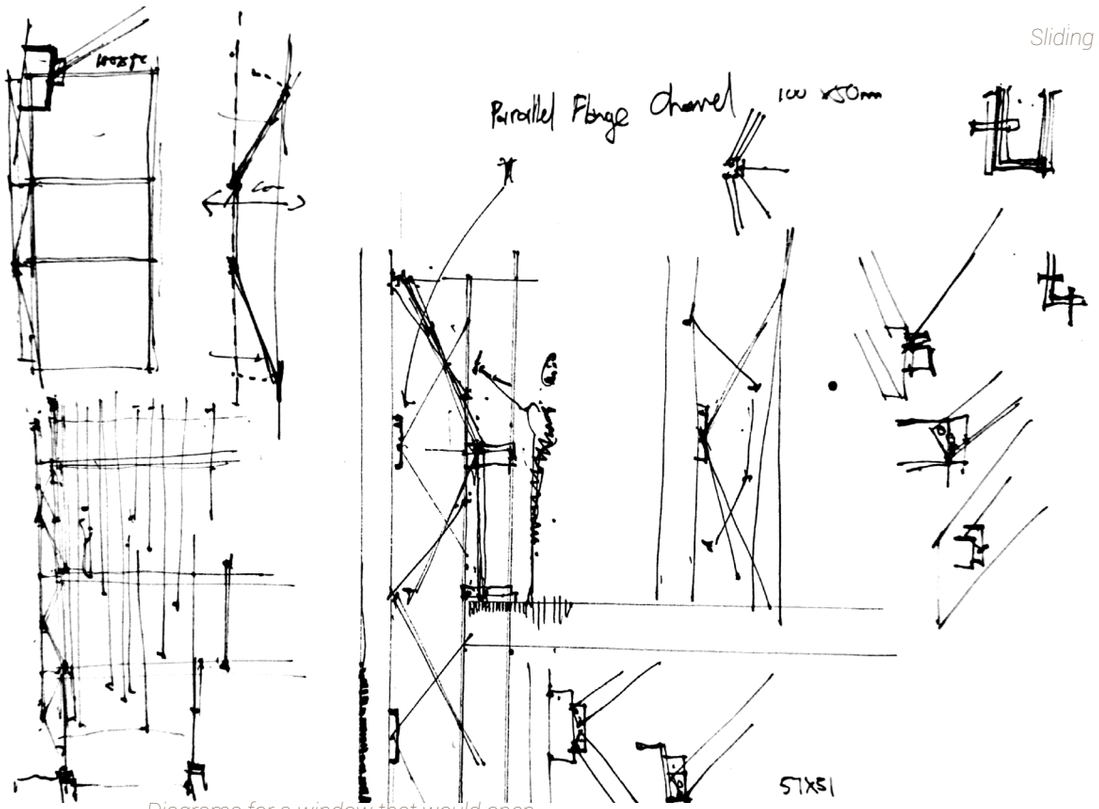
Concept sketches show spaces that become more intricate with level changes and façades that open up to expand the usable space.

Some of the early detail concept sketches revolved around interactive elements that would allow a user to change the space into an interior or exterior space respectively.

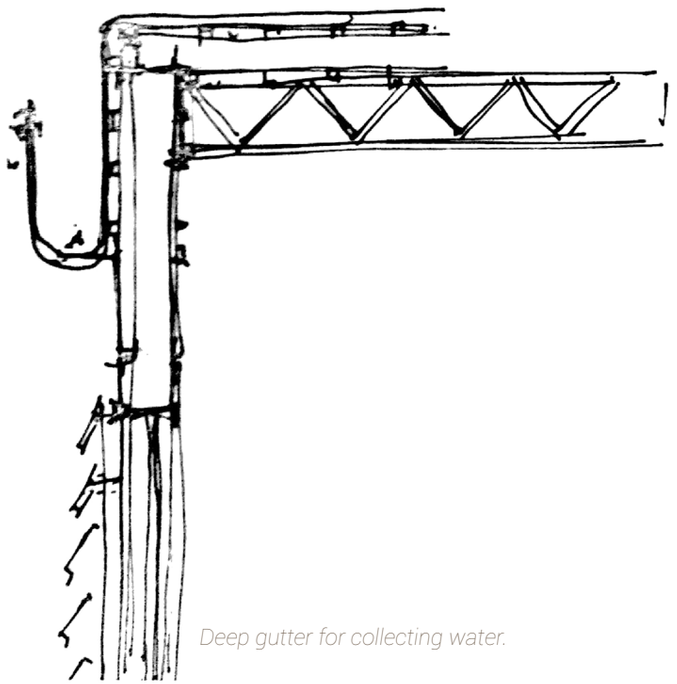
Some of the decisions regarding materials were made after conceptual drawings of what the inside and outside spaces could potentially look like, and how they would relate.



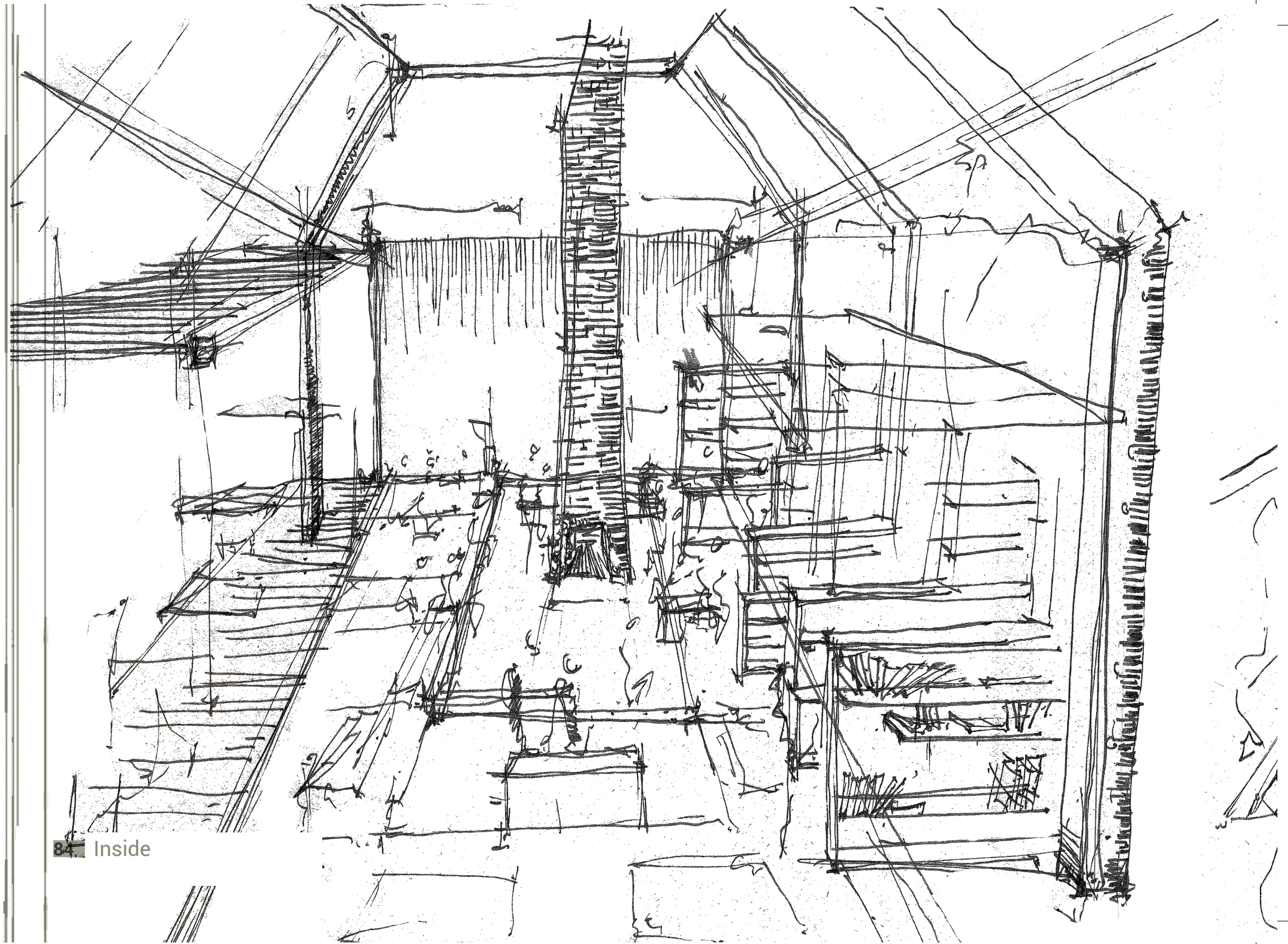
Sliding roof sheet detail concept sketch.

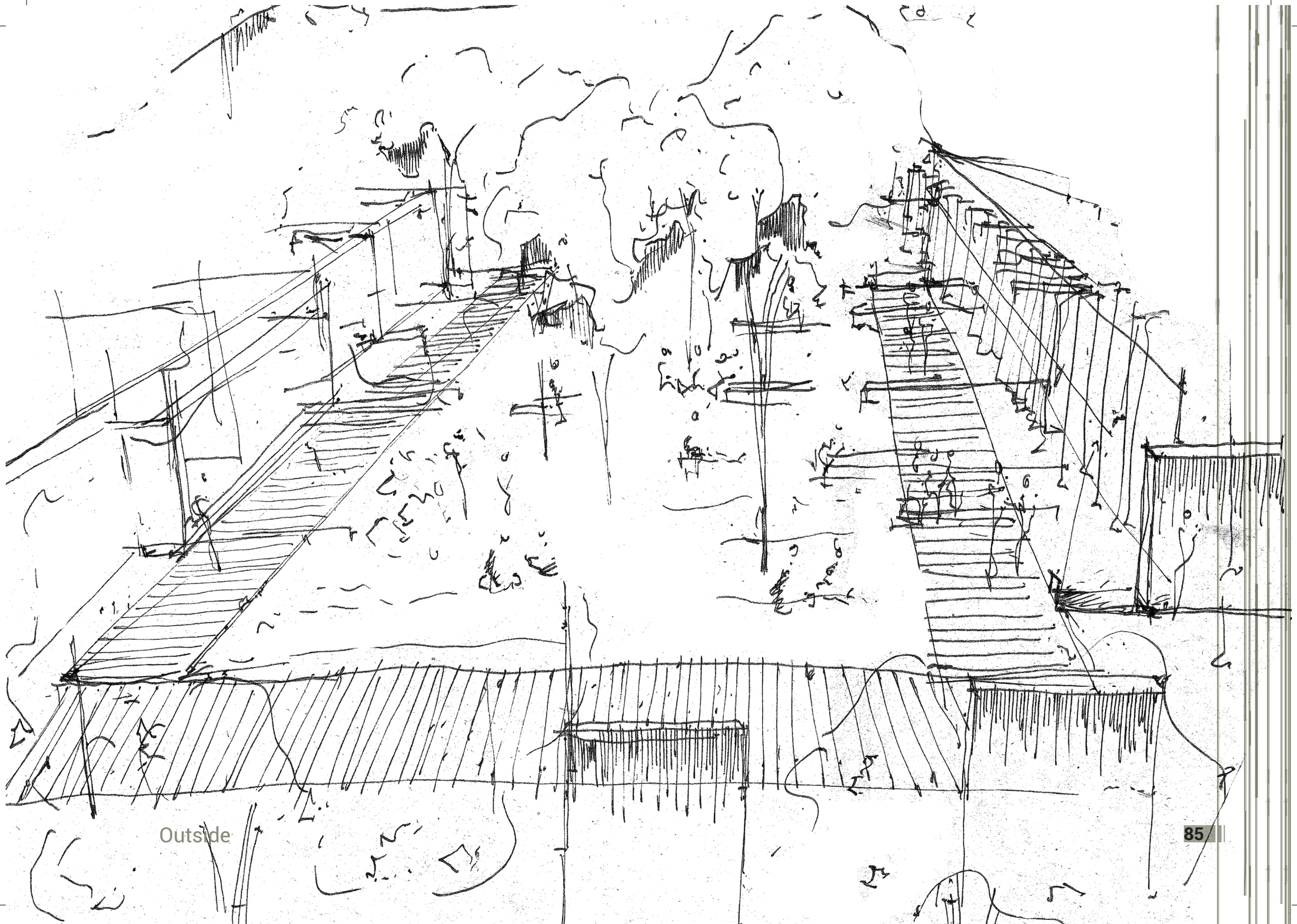


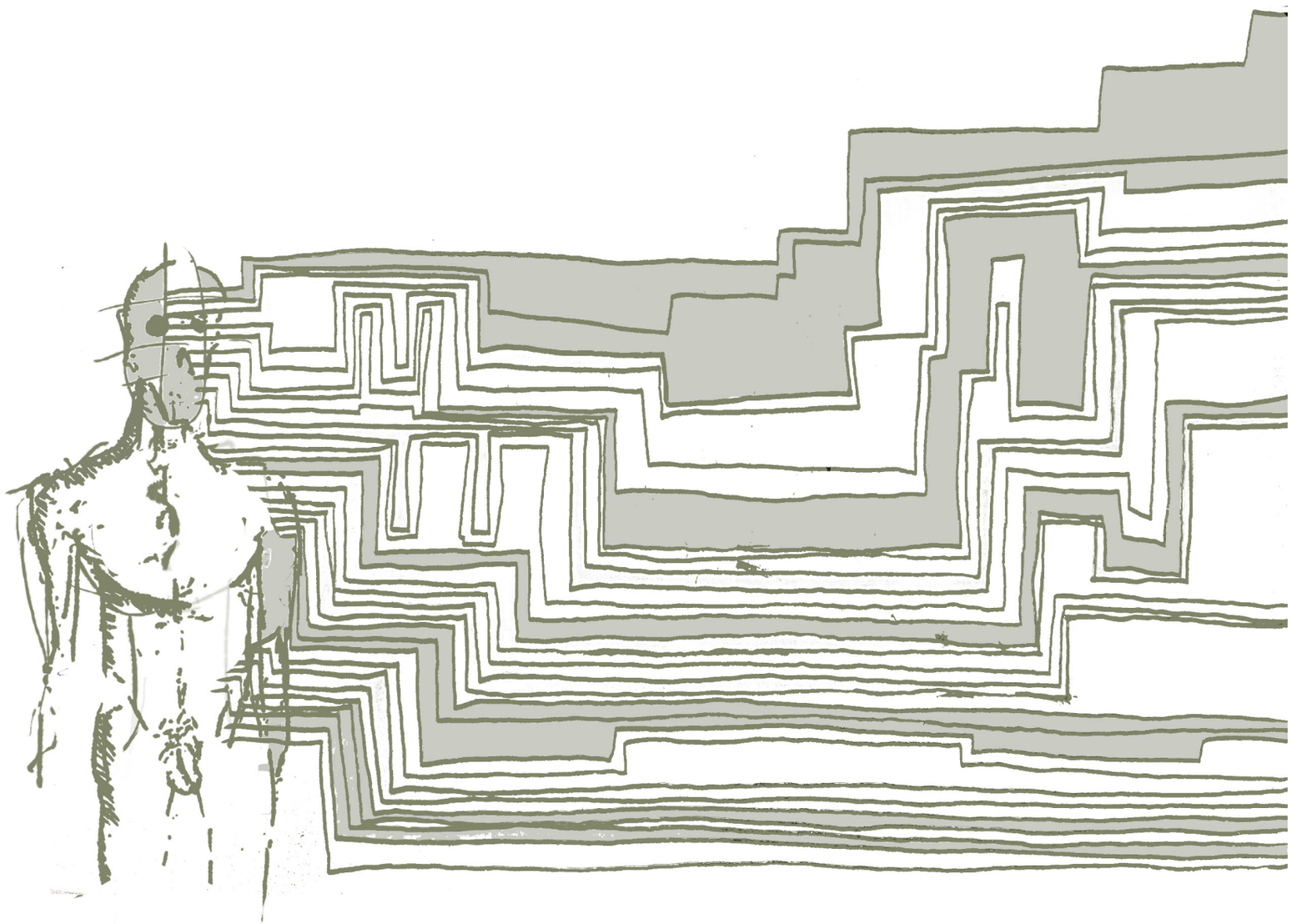
Diagrams for a window that would open behind a louvre system.



Deep gutter for collecting water.







In part one certain aims were established for the dissertation. These aims were not based on a desired outcome or solution, but the exploration of possibilities. These possibilities were related to healthcare and healthcare design in South Africa in terms of what we know, or more accurately, the two spherical extremes of what we know, and what an integration of these aspects could surmount to.

This involved the empirical analysis of local and international health care facilities and trends, as well as a literary analysis specifically focussed on the measurable effect that architecture has on people, and by extension, health. Sternberg (2009) wrote about how health is not a static state of being that only deteriorates with age or neglect, but that health is a constant dynamic effort undertaken by the mind and body, fighting against entropy.

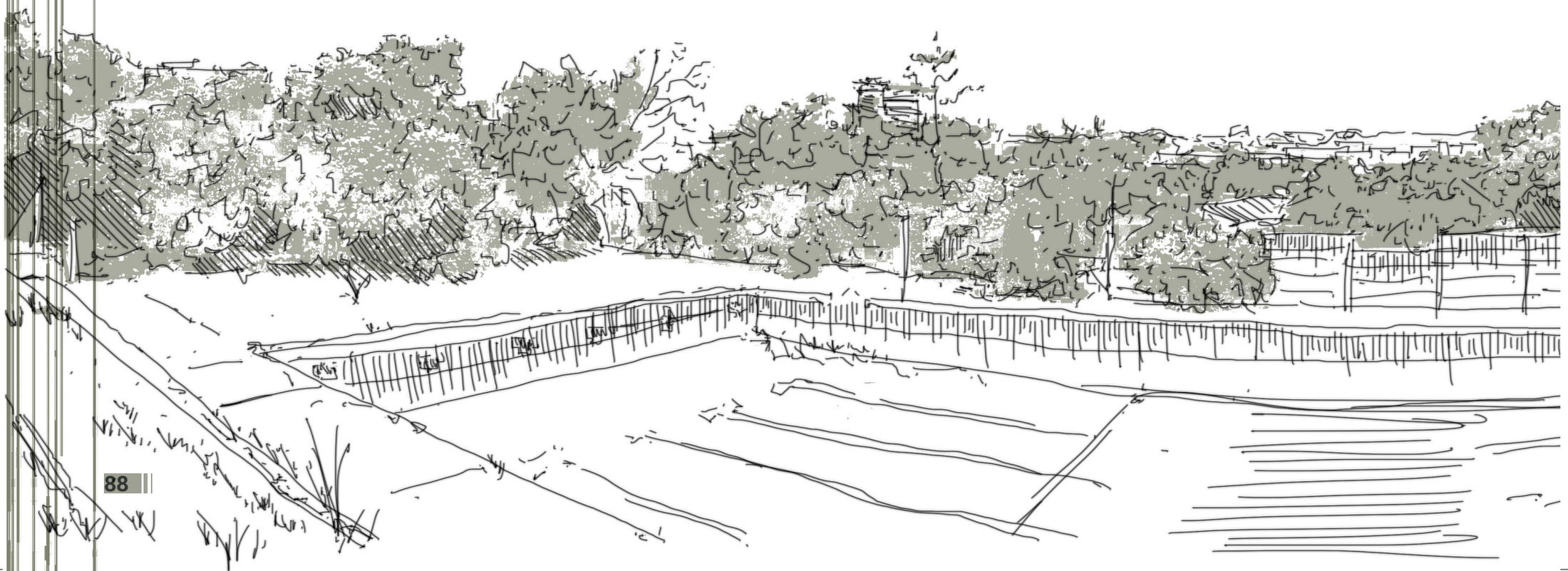
In part two, an investigation into the extremes of health care and health care architecture are contextualised as the peripheries of a single vision. The establishment of these peripheries act as a metaphorical landscape within which a designer could experiment. The analysis of the literary work involved an argument toward the proposal of a health place design model that could serve as the experiment in this metaphorical context. This constituted the project's design methodology.

The site investigation, design methodology and literary research were conducted concurrently, and informed each other throughout the design process. Part three contains the initial design ideas most concerned with the site, the practical considerations, its development into a design proposal and finally, the synthesis of the above mentioned aspects into a Holistic Health Centre.

3.1 Initial Design Ideas
3.1.1 Site Considerations
3.1.2 Concept Development

3.2 Rationalisation
3.2.1 Modular
3.2.2 Adaptation

3.3 Design Synthesis
3.3.1 Healing Place
3.3.2 Technical Resolution
3.3.3 Technical Drawings (Apendix)





3.1 Initial Design Ideas

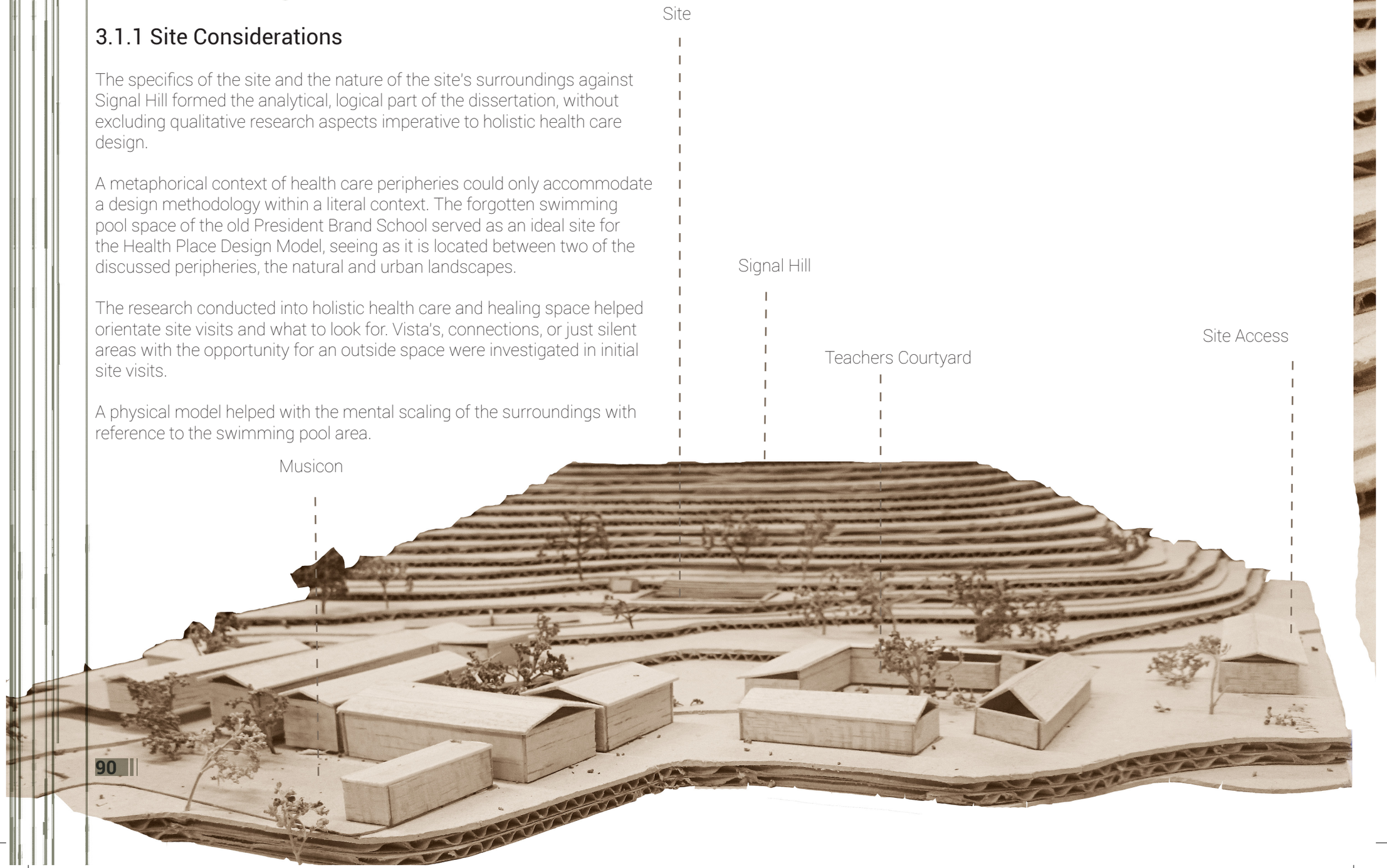
3.1.1 Site Considerations

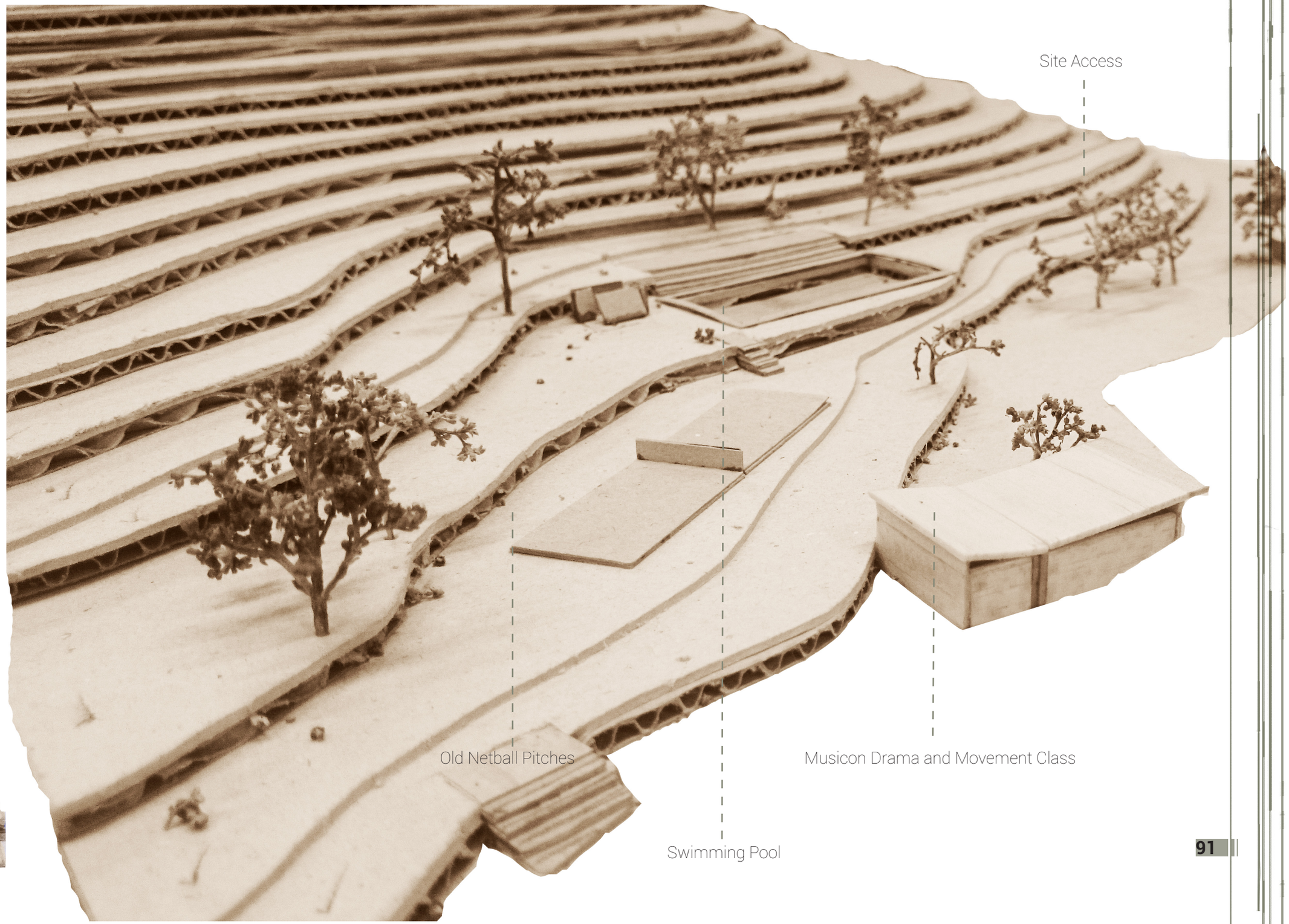
The specifics of the site and the nature of the site's surroundings against Signal Hill formed the analytical, logical part of the dissertation, without excluding qualitative research aspects imperative to holistic health care design.

A metaphorical context of health care peripheries could only accommodate a design methodology within a literal context. The forgotten swimming pool space of the old President Brand School served as an ideal site for the Health Place Design Model, seeing as it is located between two of the discussed peripheries, the natural and urban landscapes.

The research conducted into holistic health care and healing space helped orientate site visits and what to look for. Vista's, connections, or just silent areas with the opportunity for an outside space were investigated in initial site visits.

A physical model helped with the mental scaling of the surroundings with reference to the swimming pool area.

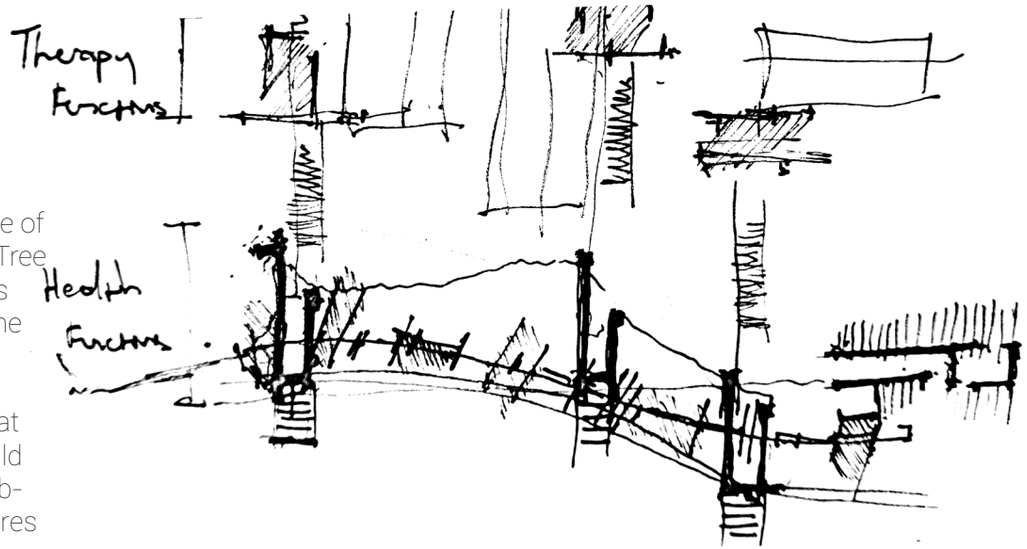


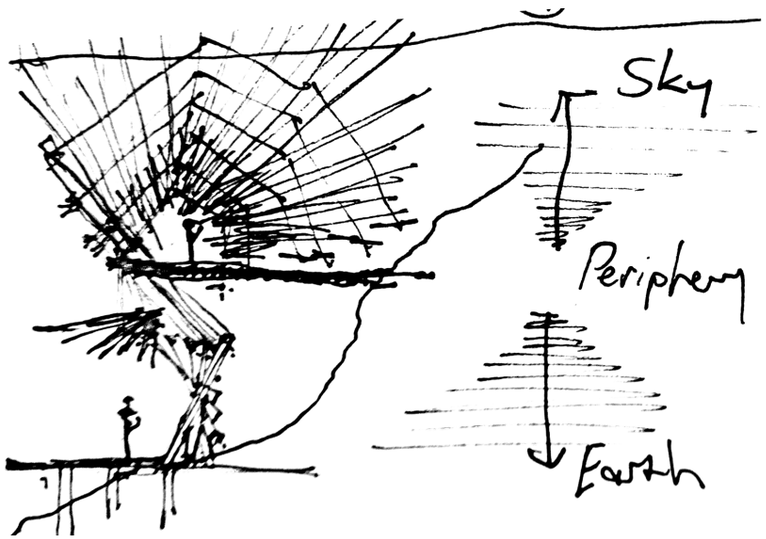

Site Access
Old Netball Pitches
Swimming Pool
Musicon Drama and Movement Class

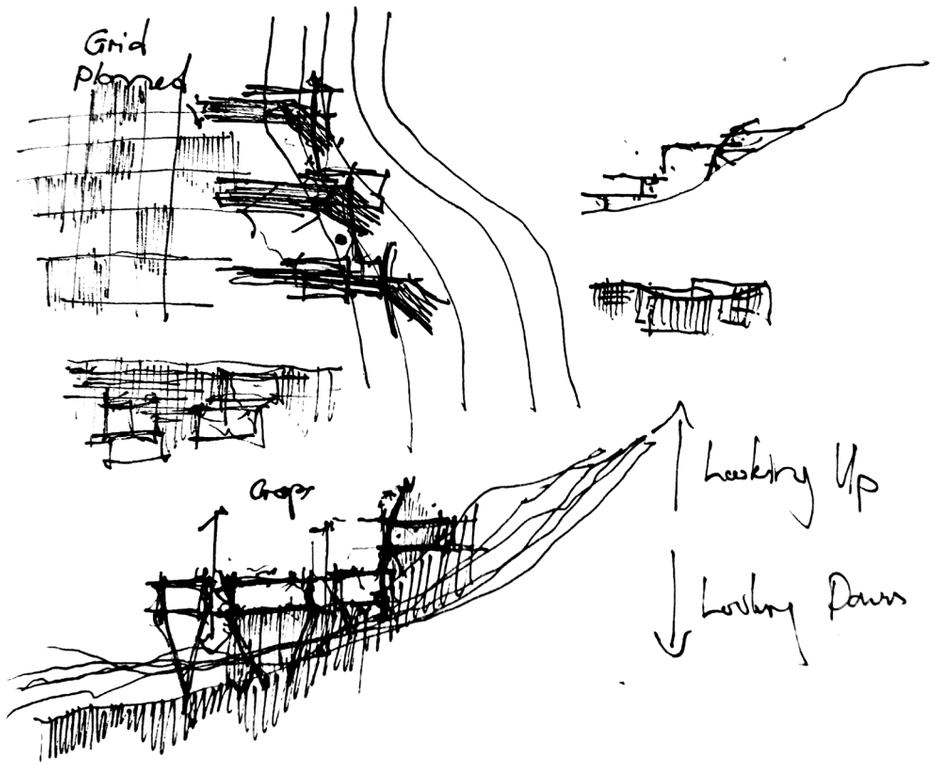
Slope

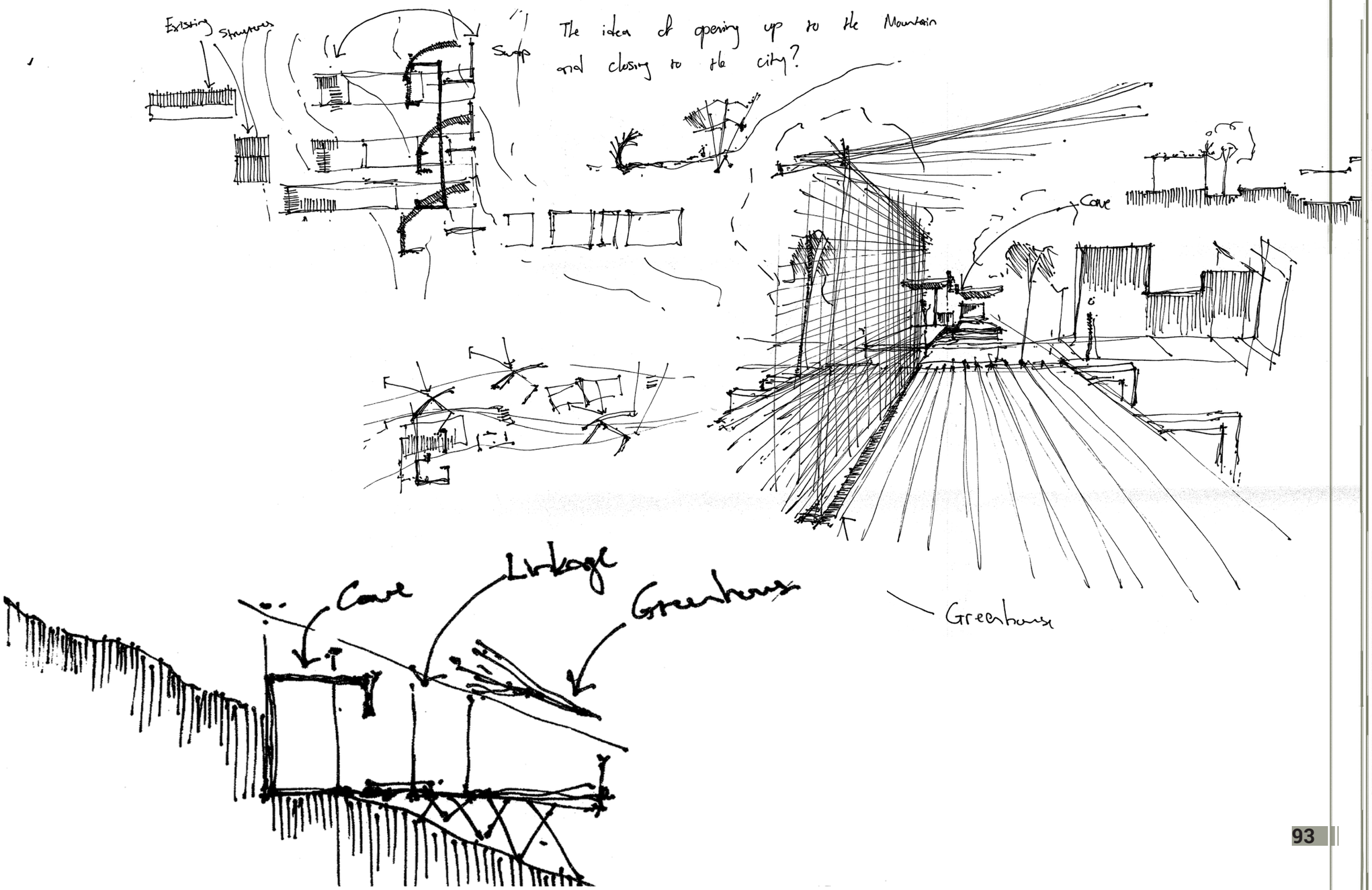
Initial ideas concerning the slope of the hill was to use it to the advantage of the functions stipulated in the program analysis. With the Cave and the Tree analogy in mind, certain functions could be attributed to cave like spaces that would cut into the hill, whilst tree like spaces would rise out above the slope.

The slope also meant that one would perceive the grid of the city and that of the old swimming pool simultaneously, so a mediation of the two could be possible. The early concept sketches also started addressing the problem of the orientation of the site, with many wall-like or shielding structures facing west.







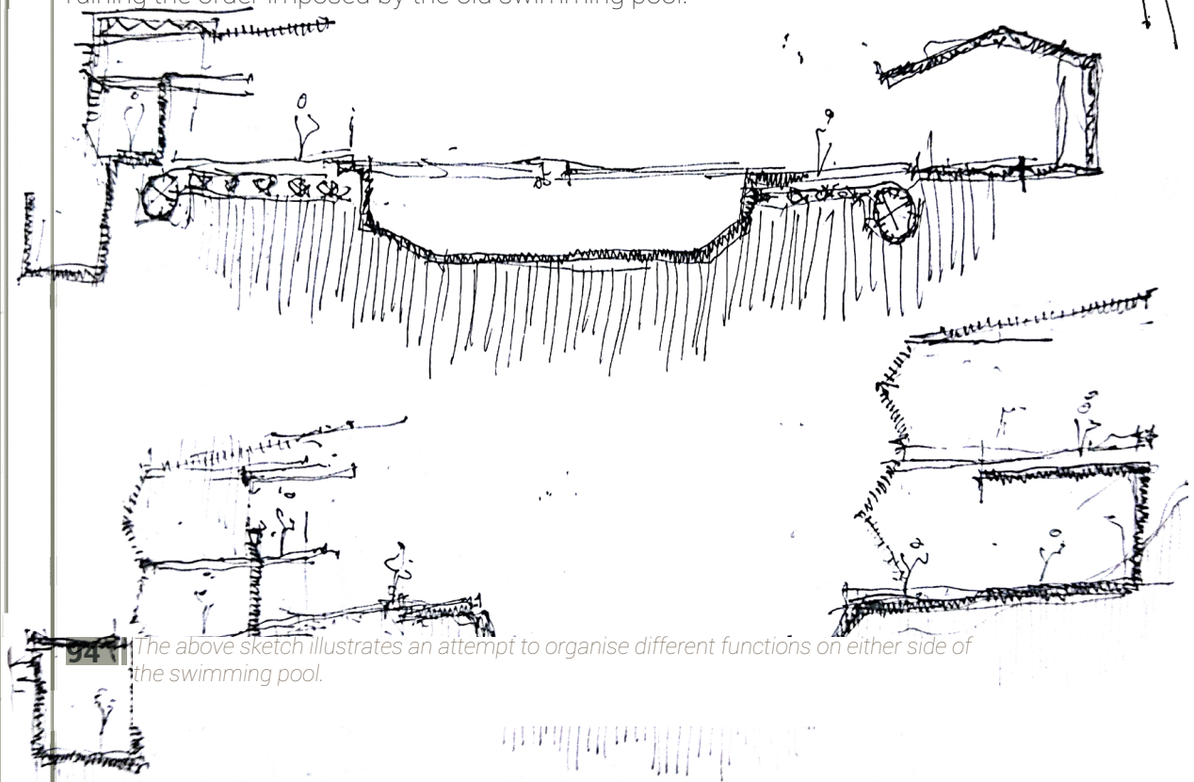

Existing
Structures
Ramp
The idea of opening up to the Mountain
and closing to the city?
Cave
Greenhouse
Cave
Linkage
Greenhouse

Circulation

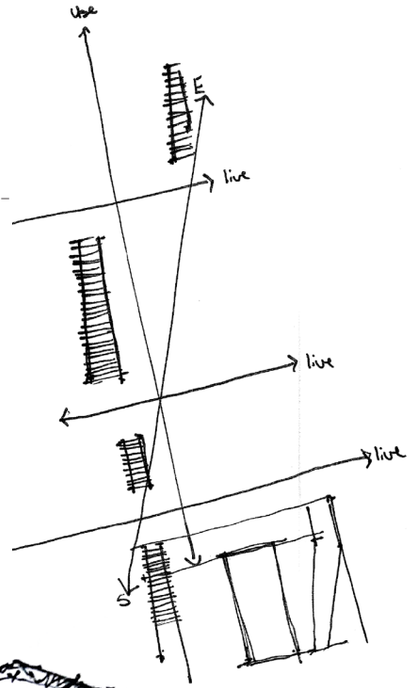
With the site orientated west, it became clear that spatial arrangement of functions on the site would be crucial. Following the contours of signal hill, as well as the footprint of the old swimming pool area meant that the program would be spaced linearly.

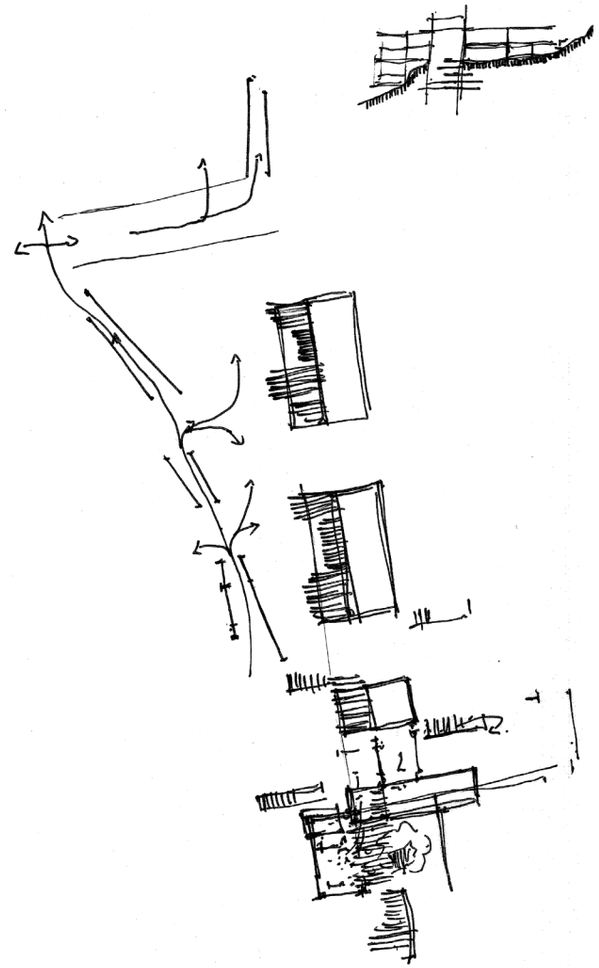
This would mean that the largest face of the design would be orientated East-West, which was less than ideal. These concept sketches show how the decision was made to break the program apart into different, correctly orientated spaces that would contain the served spaces, whilst the circulation and services would connect these spaces along a spine.

The challenge then was to thread this circulation spine through the spaces in a way that would still make sense to the Cave and Tree analogy, and without ruining the order imposed by the old swimming pool.

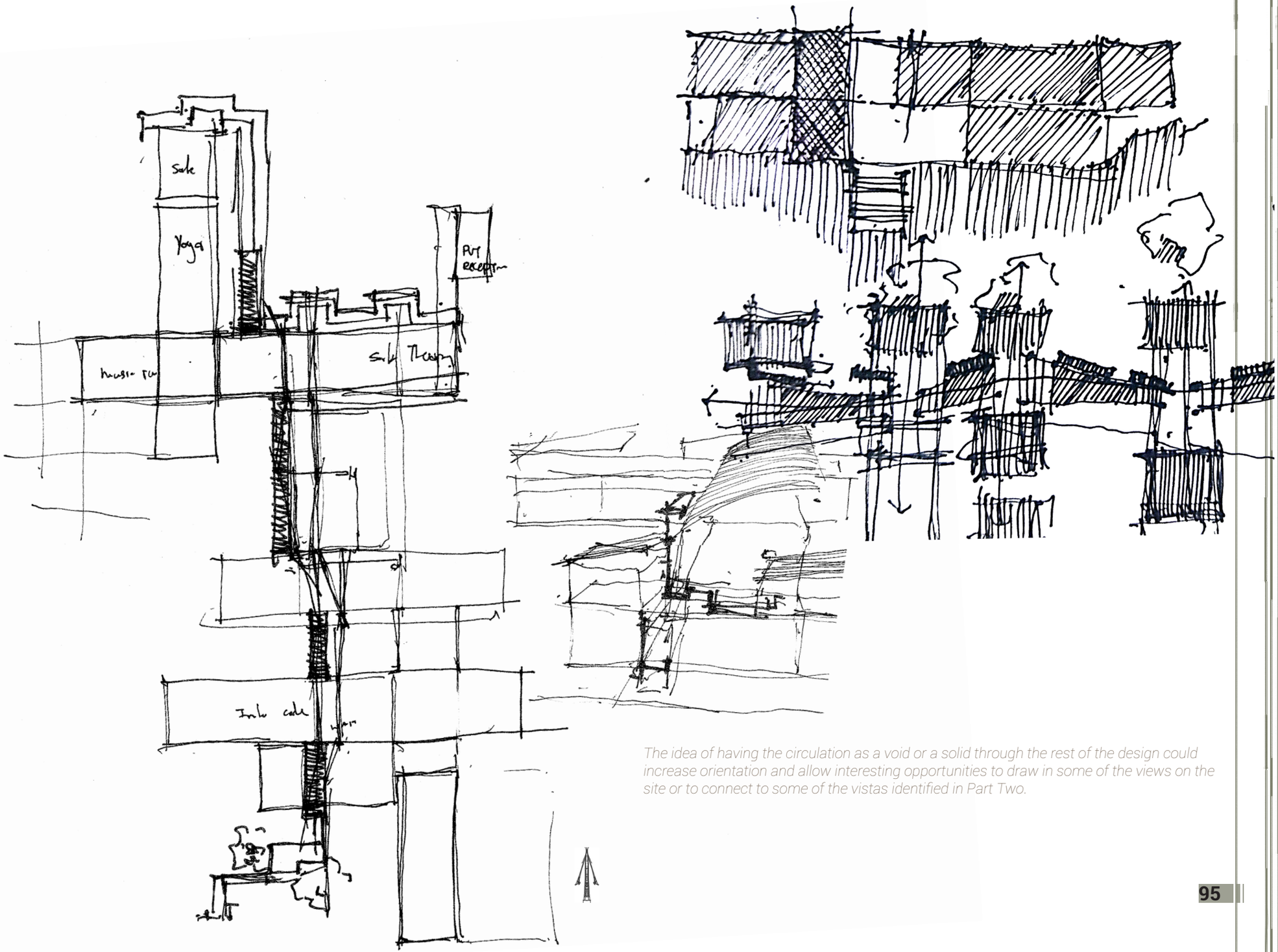


The above sketch illustrates an attempt to organise different functions on either side of the swimming pool.





Functions could be separated by certain spaces aimed at relaxation or resting. The orientation between different health care activities should not be too complicated.



The idea of having the circulation as a void or a solid through the rest of the design could increase orientation and allow interesting opportunities to draw in some of the views on the site or to connect to some of the vistas identified in Part Two.

Progression

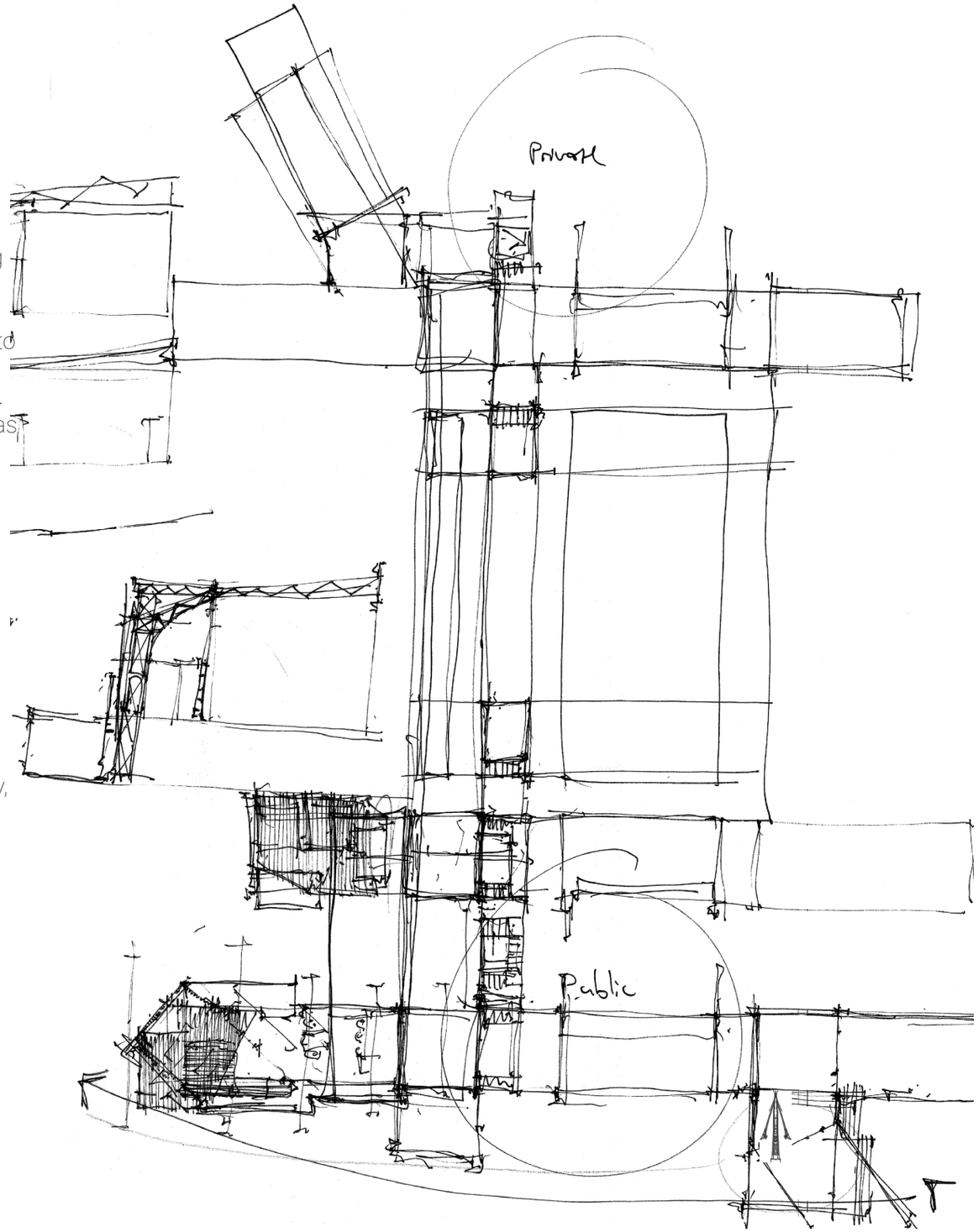
Two other aspects that were of particular importance during the initial circulation design sketches were the 'where' and 'what' aspects of laying out the functions.

For practical as well as conceptual reasons, it made sense that a visitor to the centre, upon entering the circulation spine, would follow a pilgrimage like progression from the urban landscape toward the natural landscape. This was indicative of a process of healing, or beginning to heal, as well as the practical considerations of noise and movement.

It made sense to place health care activities concerned with relaxing the body and mind, closer to the hill, and those activities that would see the most visitors closer to the urban connection or site access.

This progression from public to private would then be justified through the functions one could meet along the way. Some of the early concept sketches explore the possibility of wrapping the circulation around the swimming pool in order to keep spaces within intimate proximity to the core of the site.

These spaces were then further divided into spaces that served the body, and spaces that served the mind.

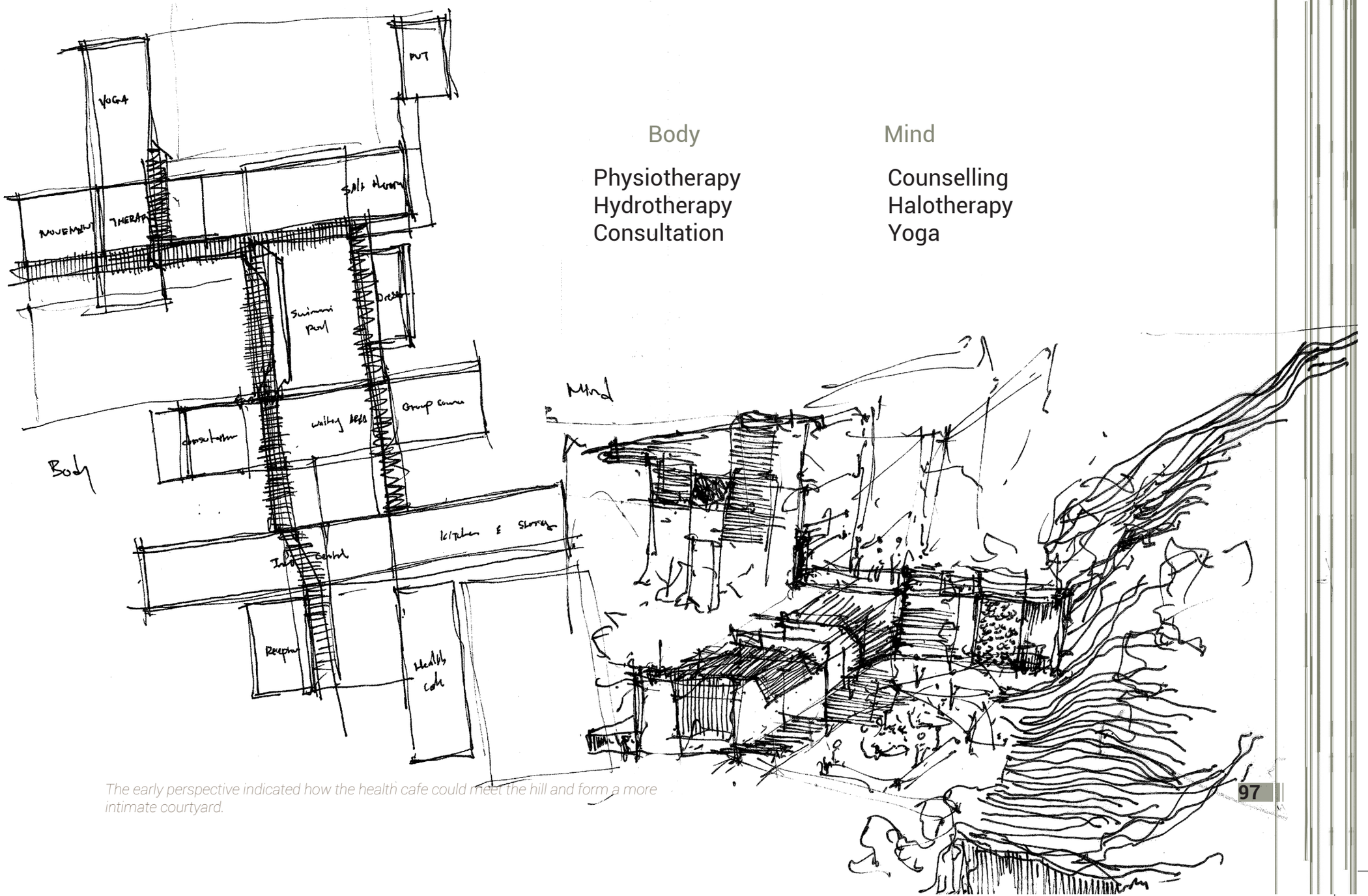


Body

Physiotherapy
Hydrotherapy
Consultation

Mind

Counselling
Halotherapy
Yoga



The early perspective indicated how the health cafe could meet the hill and form a more intimate courtyard.

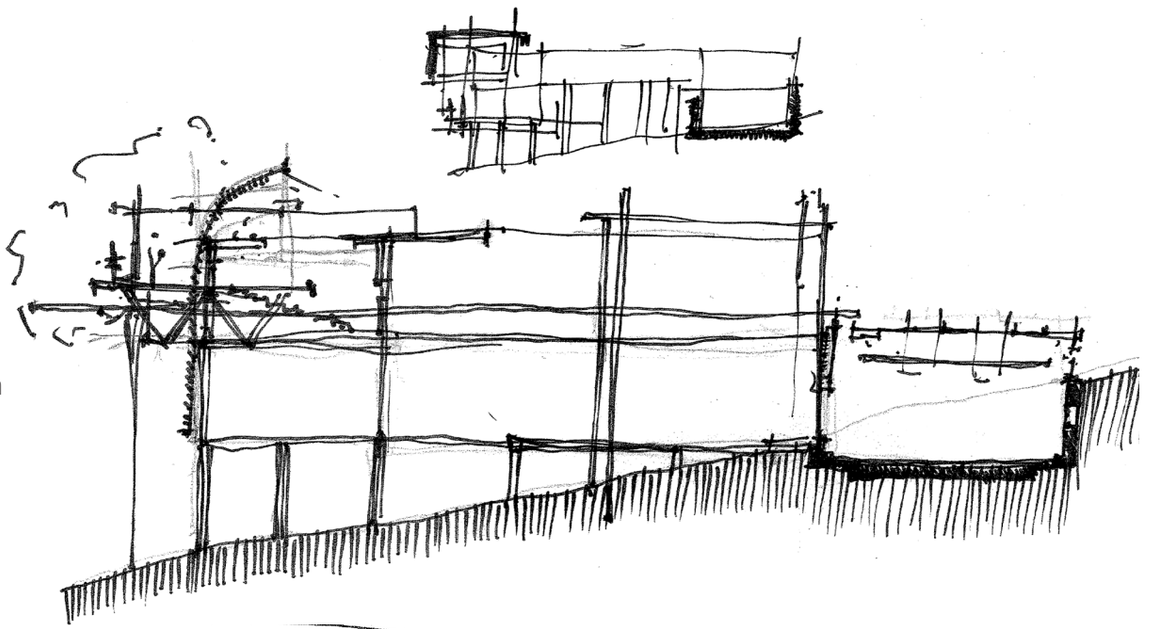
3.1.2 Concept Development

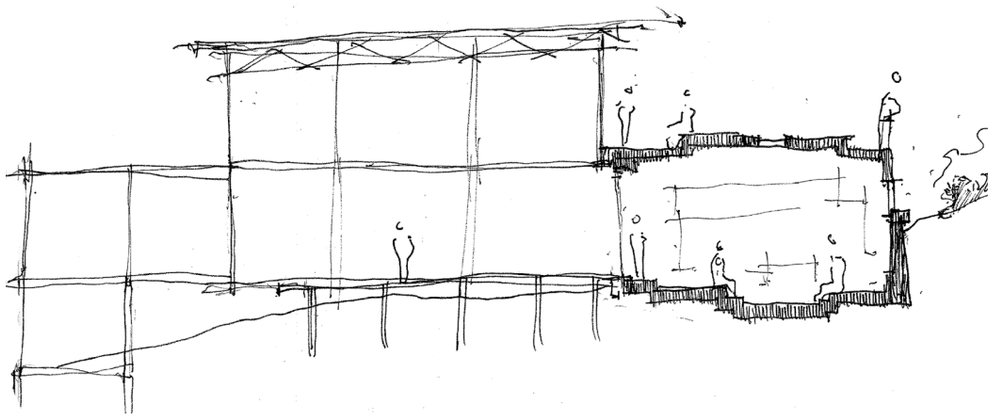
The three concepts discussed in Part Two could now be adapted with the site considerations and other practical aspects. The integration of the Musicon grid layout and the swimming pool footprint; the integration of the peripheries discussed and the implementation of the Cave and Tree spaces were all continuously tested against the development of a design.

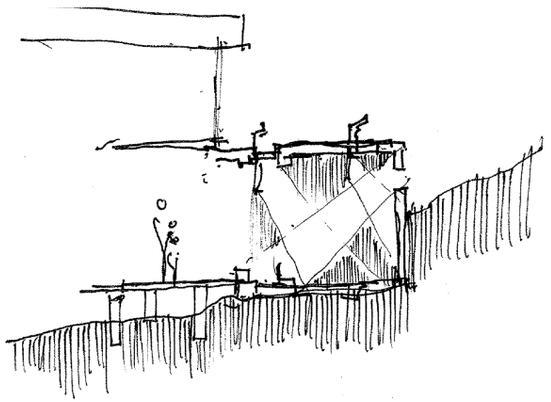
Further development at this stage was mostly focused on creating interior and exterior spaces in harmony with each other and most importantly, with the circulation and swimming pool area.

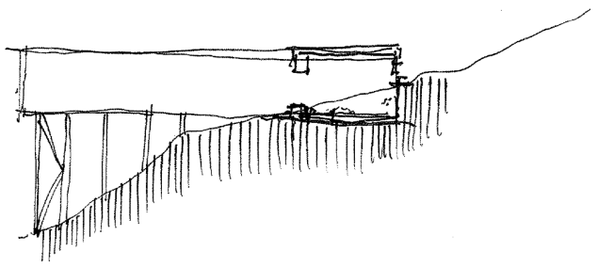
This, together with the conceptualisation of the Cave and Tree spaces formed the content of the first concept development proposal. Special sensitivity was shown when manipulating the scale of the design and the space it would occupy on the site.

Tree spaces would reach out over the slope of the hill, with lighter materials.

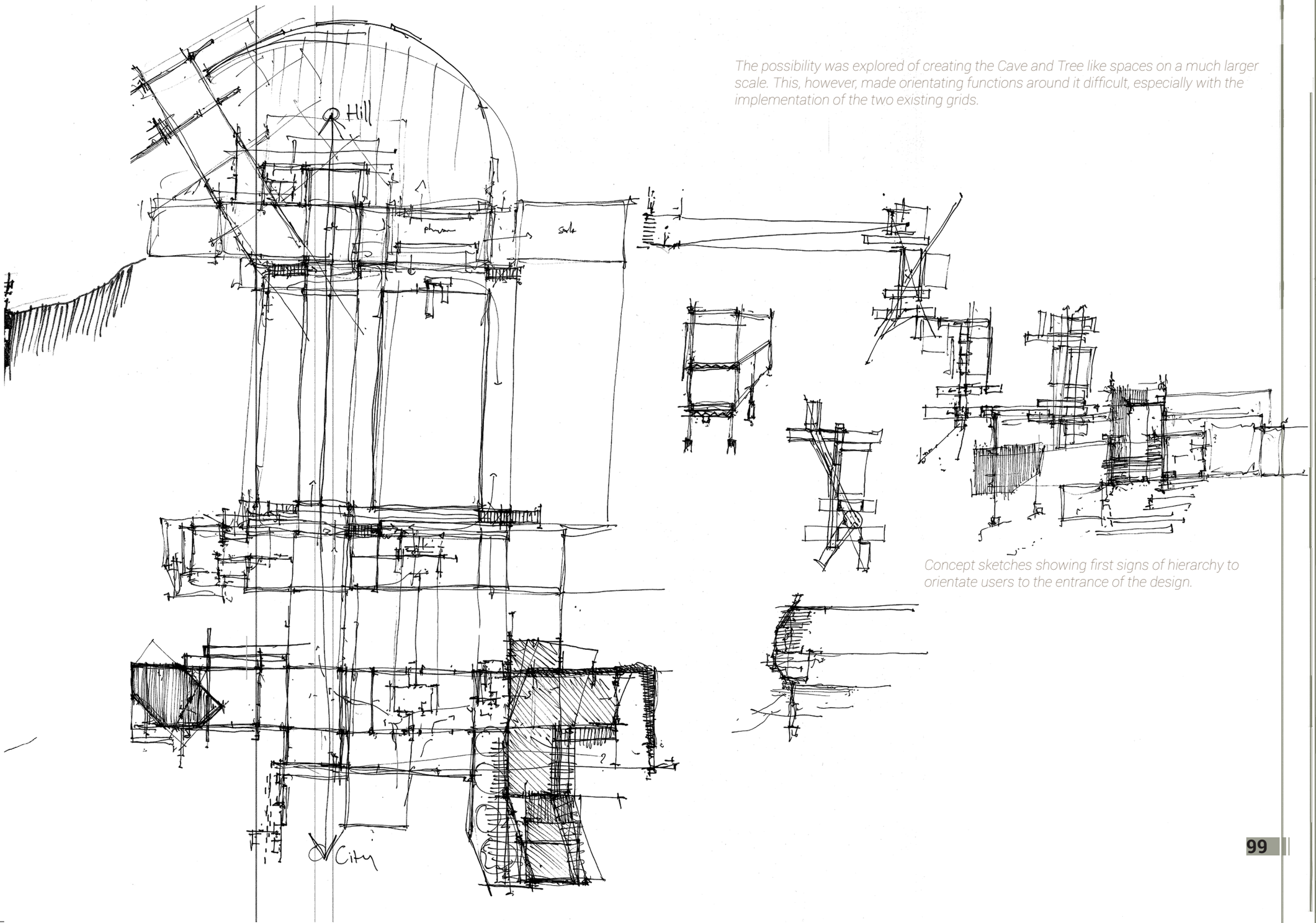






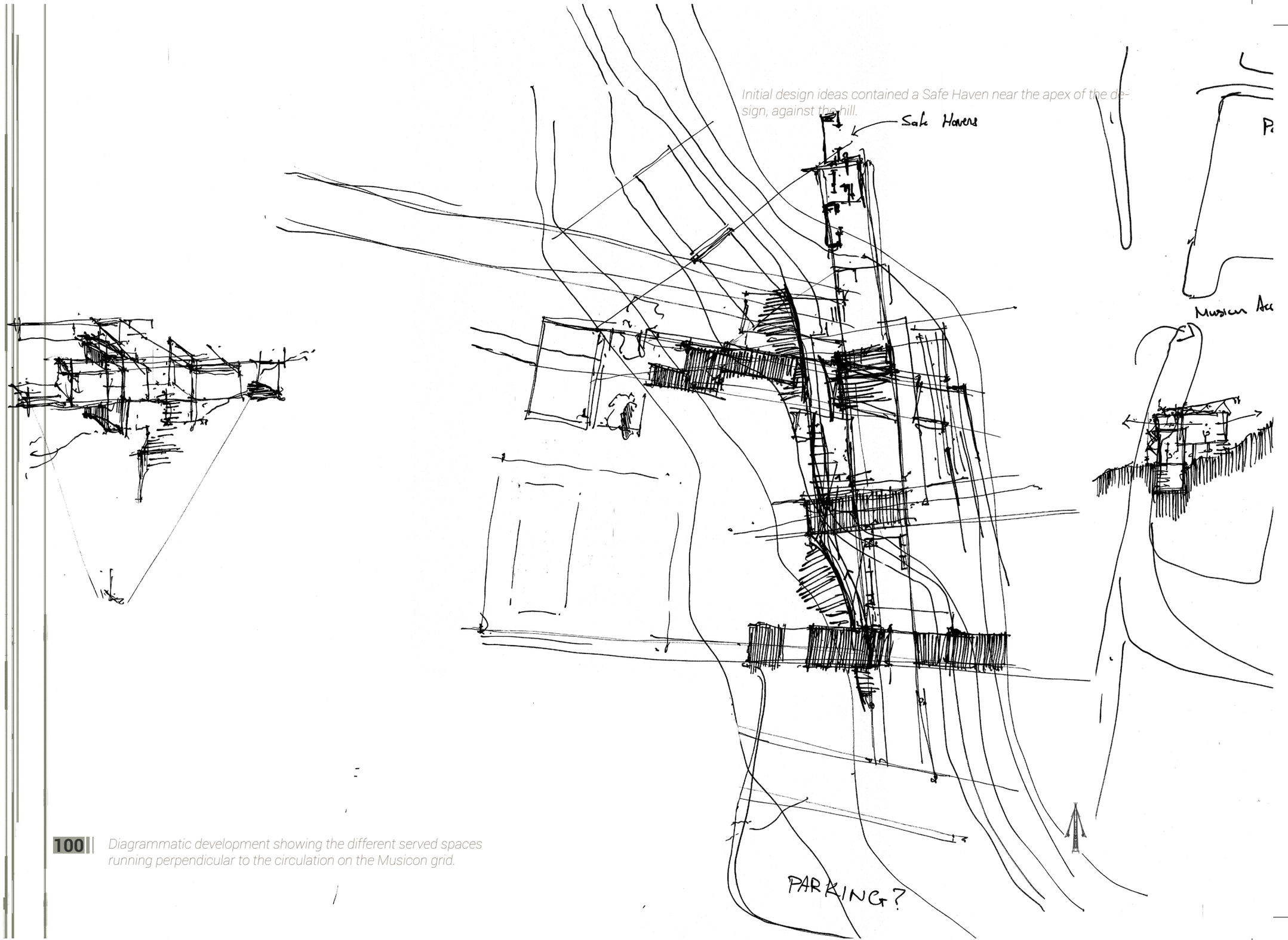


Concept sketches depicting further development of Cave and Tree spaces. Cave spaces would cut into the hill and consist of heavier materials.



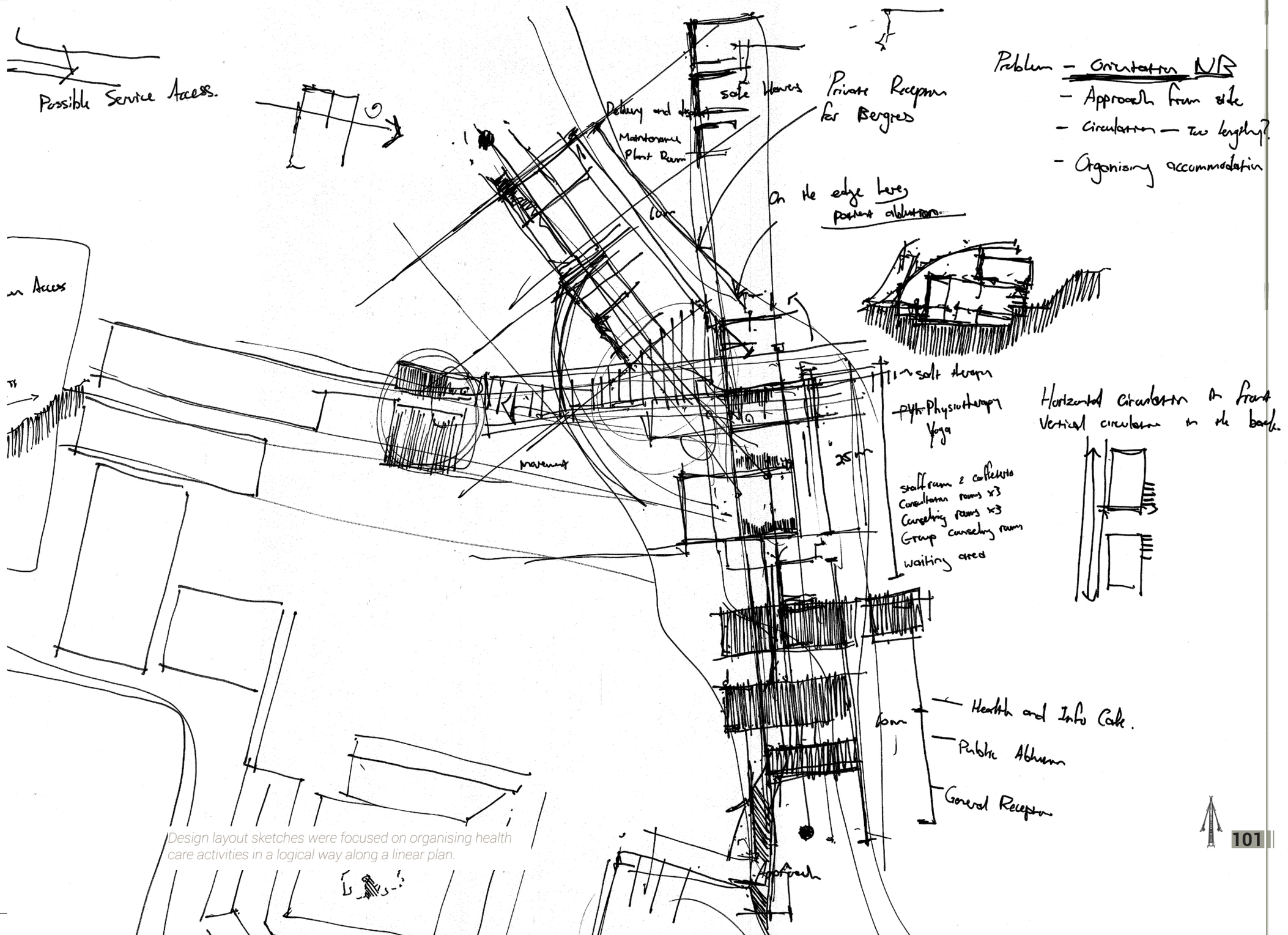
The possibility was explored of creating the Cave and Tree like spaces on a much larger scale. This, however, made orientating functions around it difficult, especially with the implementation of the two existing grids.

Concept sketches showing first signs of hierarchy to orientate users to the entrance of the design.

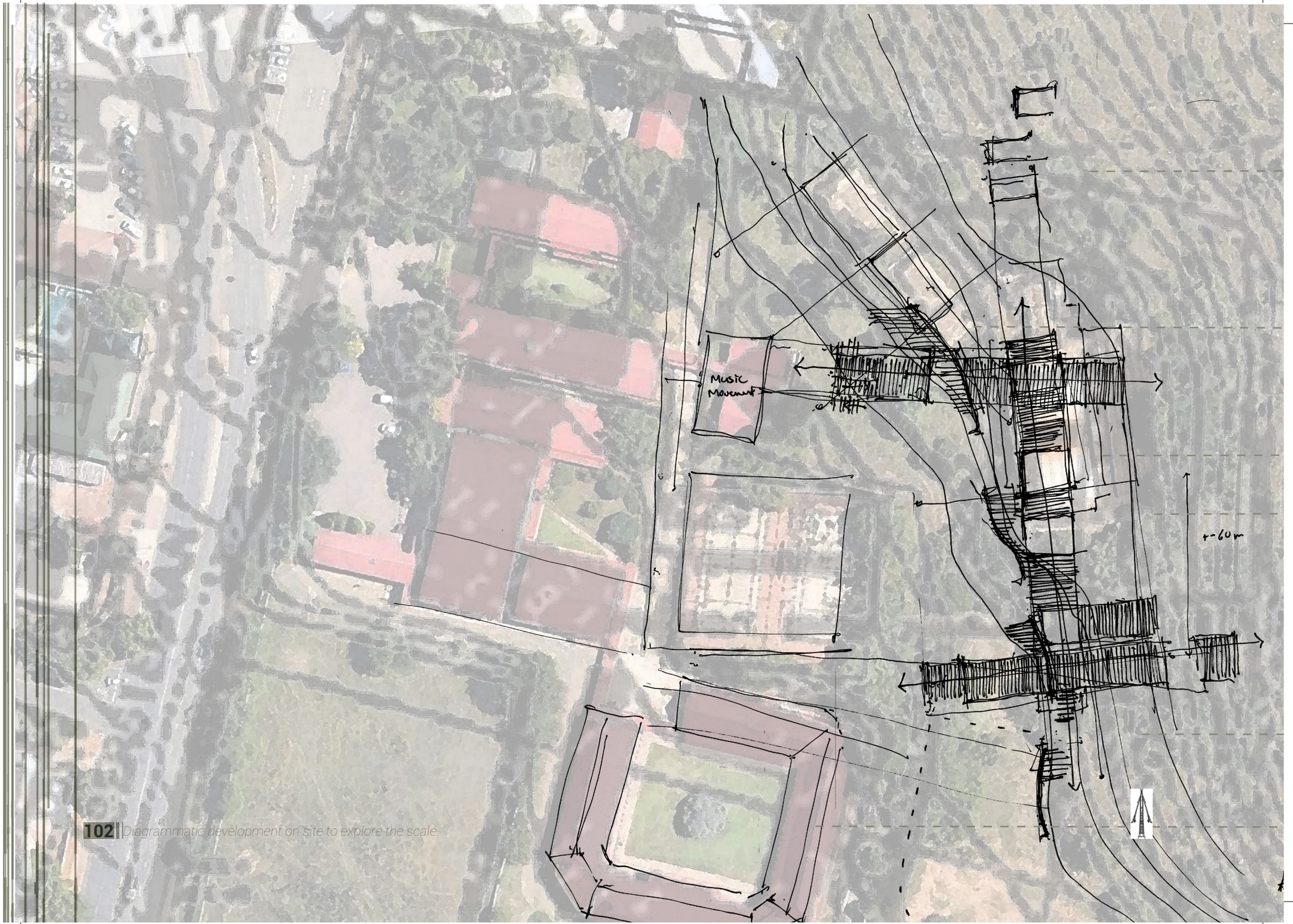


Initial design ideas contained a Safe Haven near the apex of the design, against the hill.

Diagrammatic development showing the different served spaces running perpendicular to the circulation on the Musicon grid.



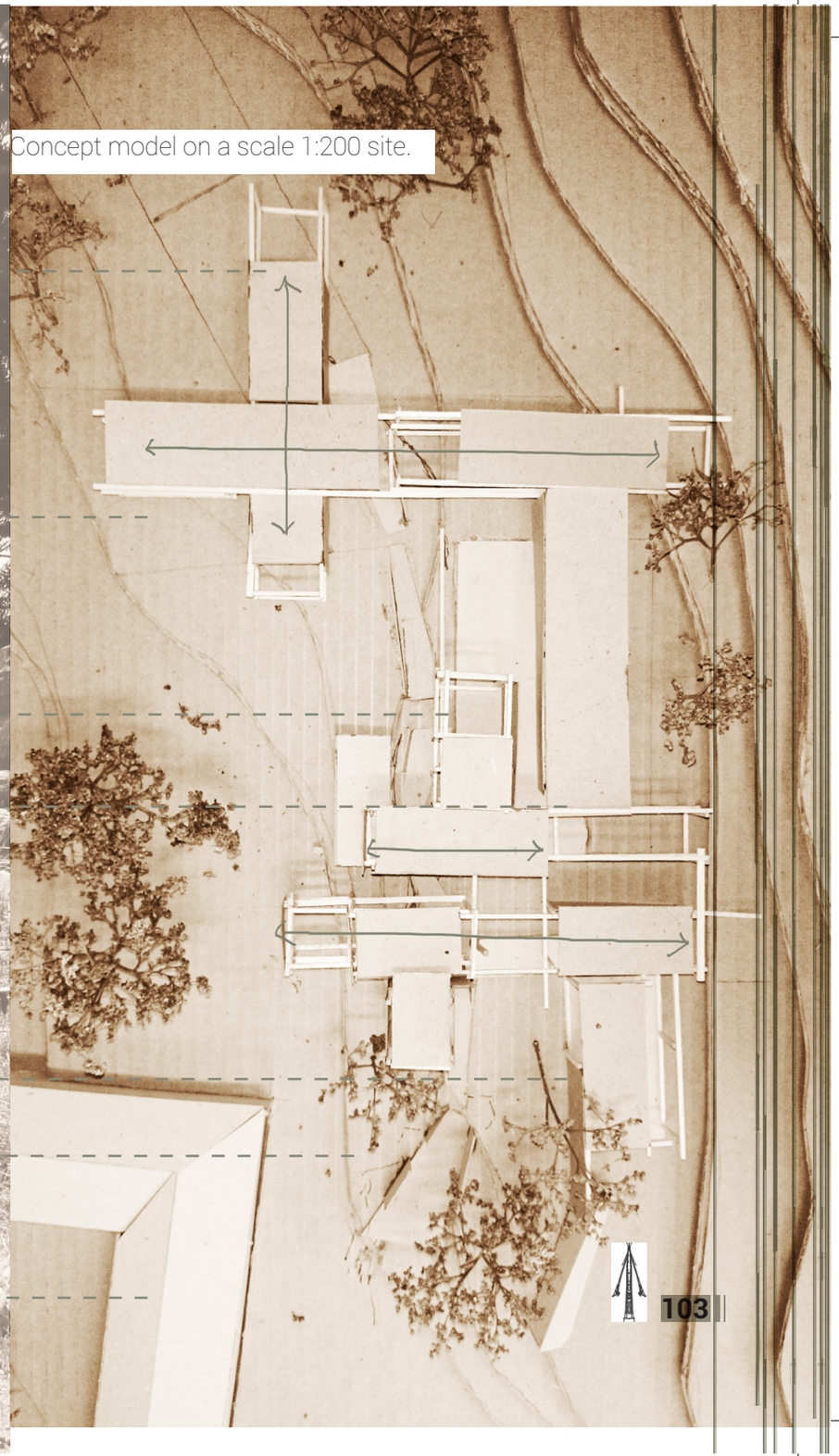
Design layout sketches were focused on organising health care activities in a logical way along a linear plan.



 Diagrammatic development on site to explore the scale.

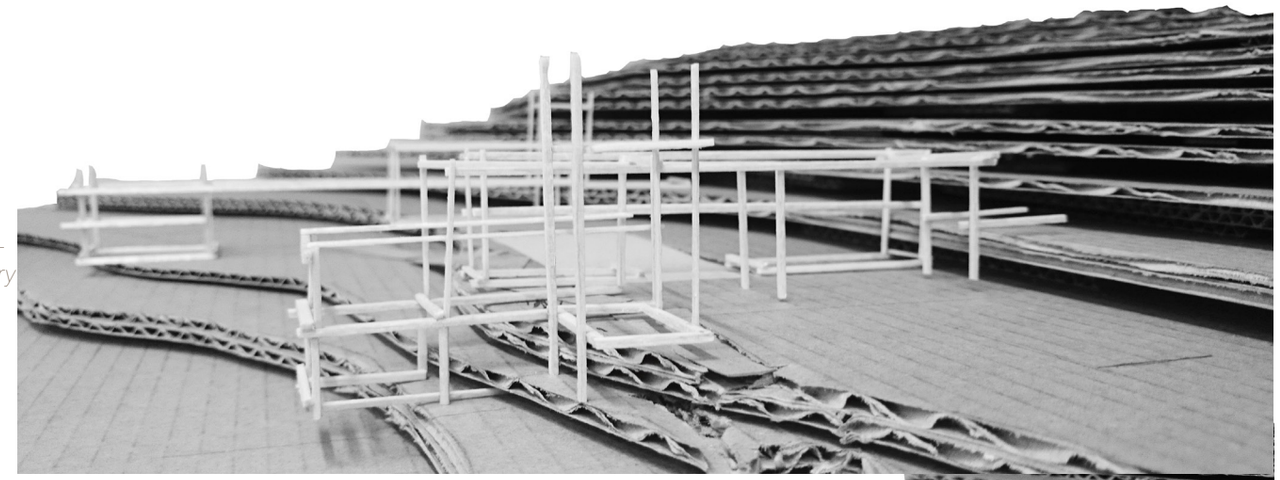






Concept model on a scale 1:200 site.

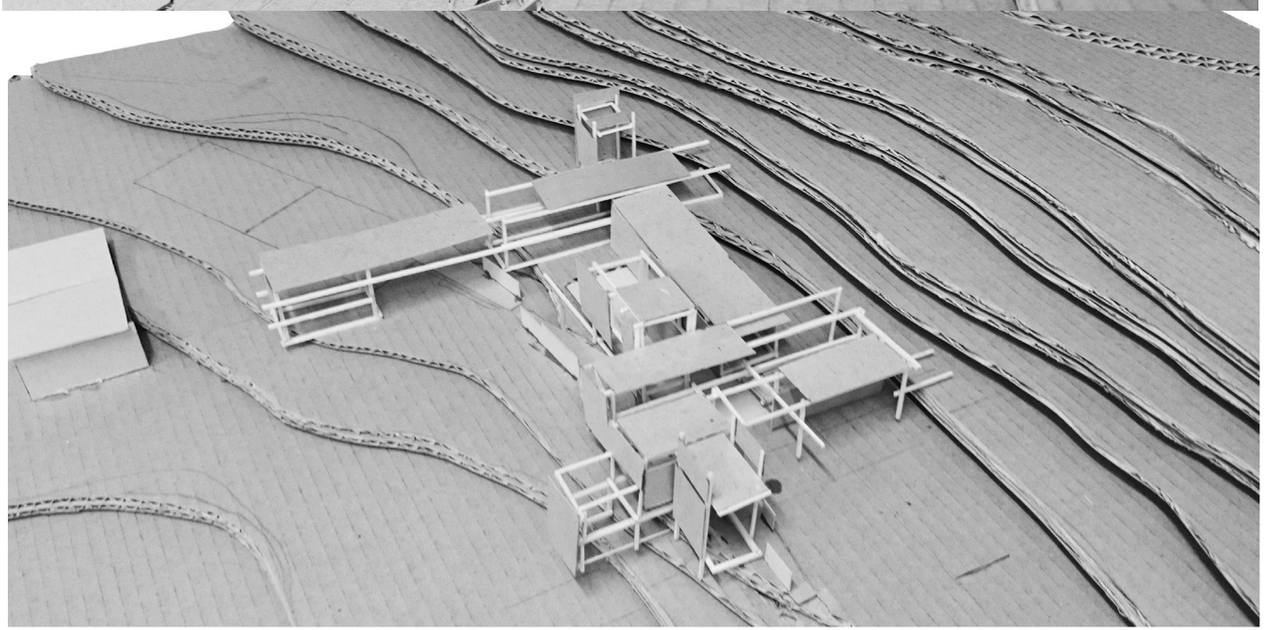
Structural exploration on site. An important aspect of this exercise was finding the spaces on site that would have to either cut away, or rise up and carry the structure.



As the voids are being filled in to accommodate certain views or against harsh sun conditions one can begin to see a central opening that moves past the swimming pool. This could develop further into open courtyards and eventually a route out into the hill.



The axis from 'city' to 'nature' or from public to private was created through two nodes in the form of towers. These towers would not overshadow any of the spaces or compete with Signal Hill, but would simply orientate the circulation spine, pulling it across the swimming pool.



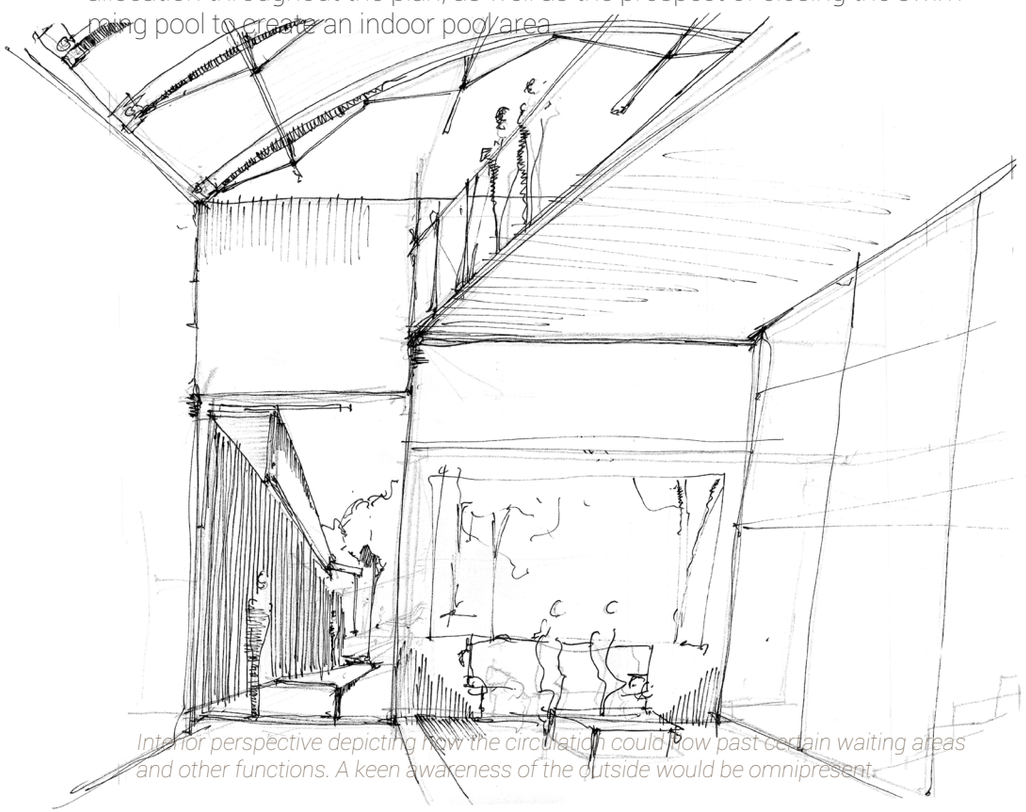
3.2 Rationalisation

3.2.1 Modular

After the conclusion of the initial conceptual development a modular system was introduced to further satisfy the grid and the circulation problems.

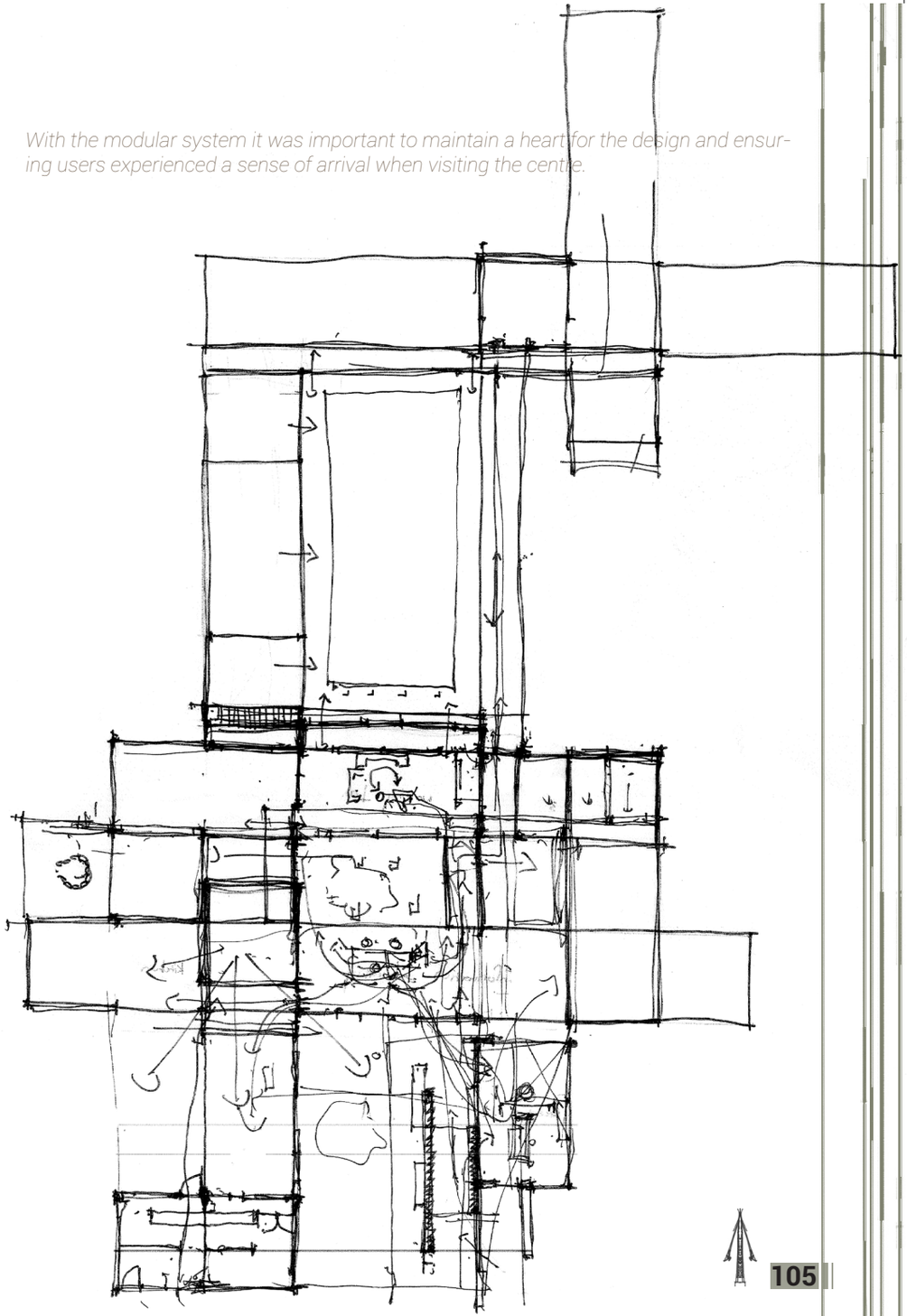
The plan was organised around a five by five meter grid, based on the old swimming pool, and outside spaces were subsequently delegated into fragments of these.

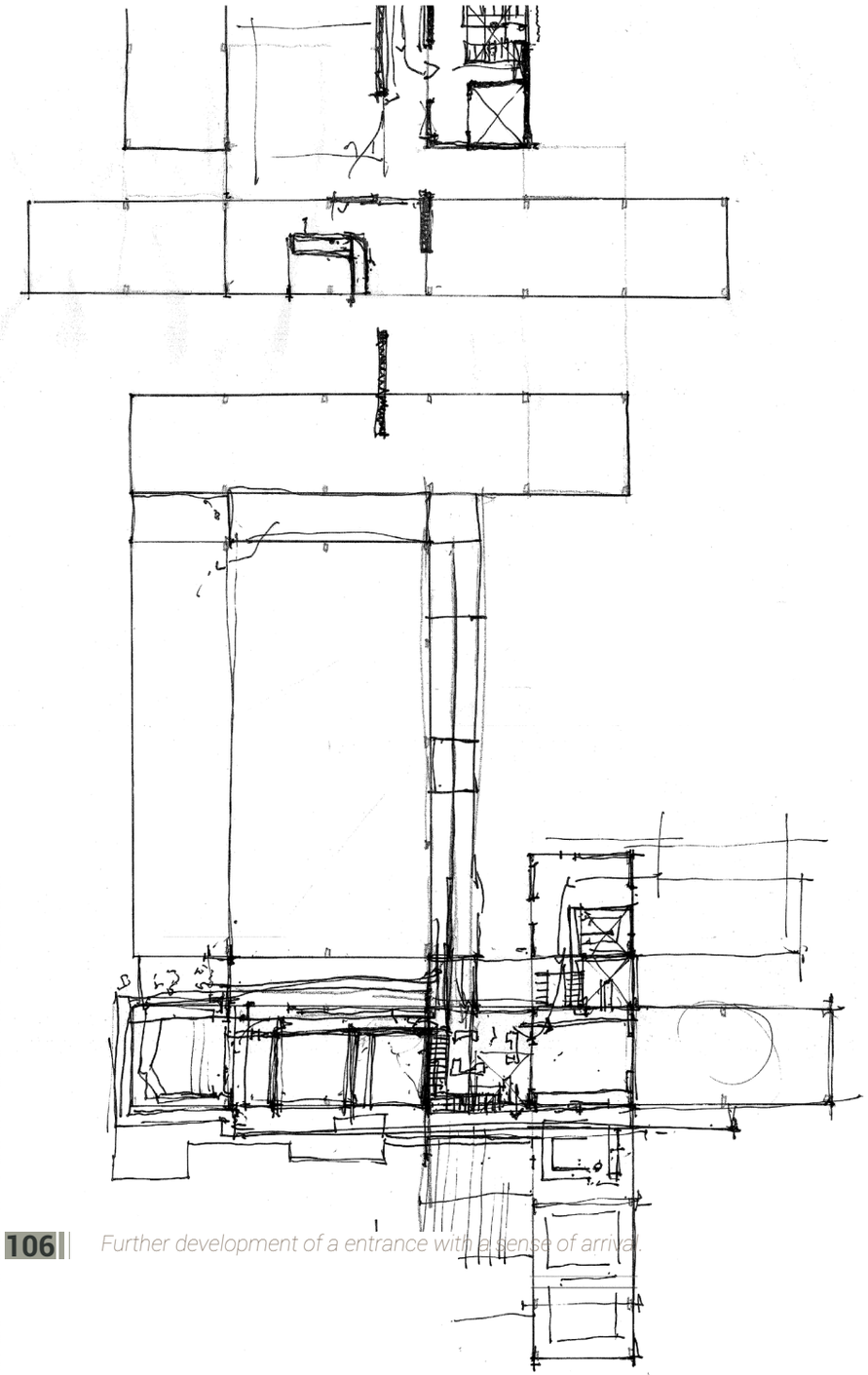
Some key conceptual aspects were somewhat disregarded at this stage to accommodate the growing complexity of the plan and the relationships between the different functions. Particular emphasis were placed on service allocation throughout the plan, as well as the prospect of closing the swimming pool to create an indoor pool area.



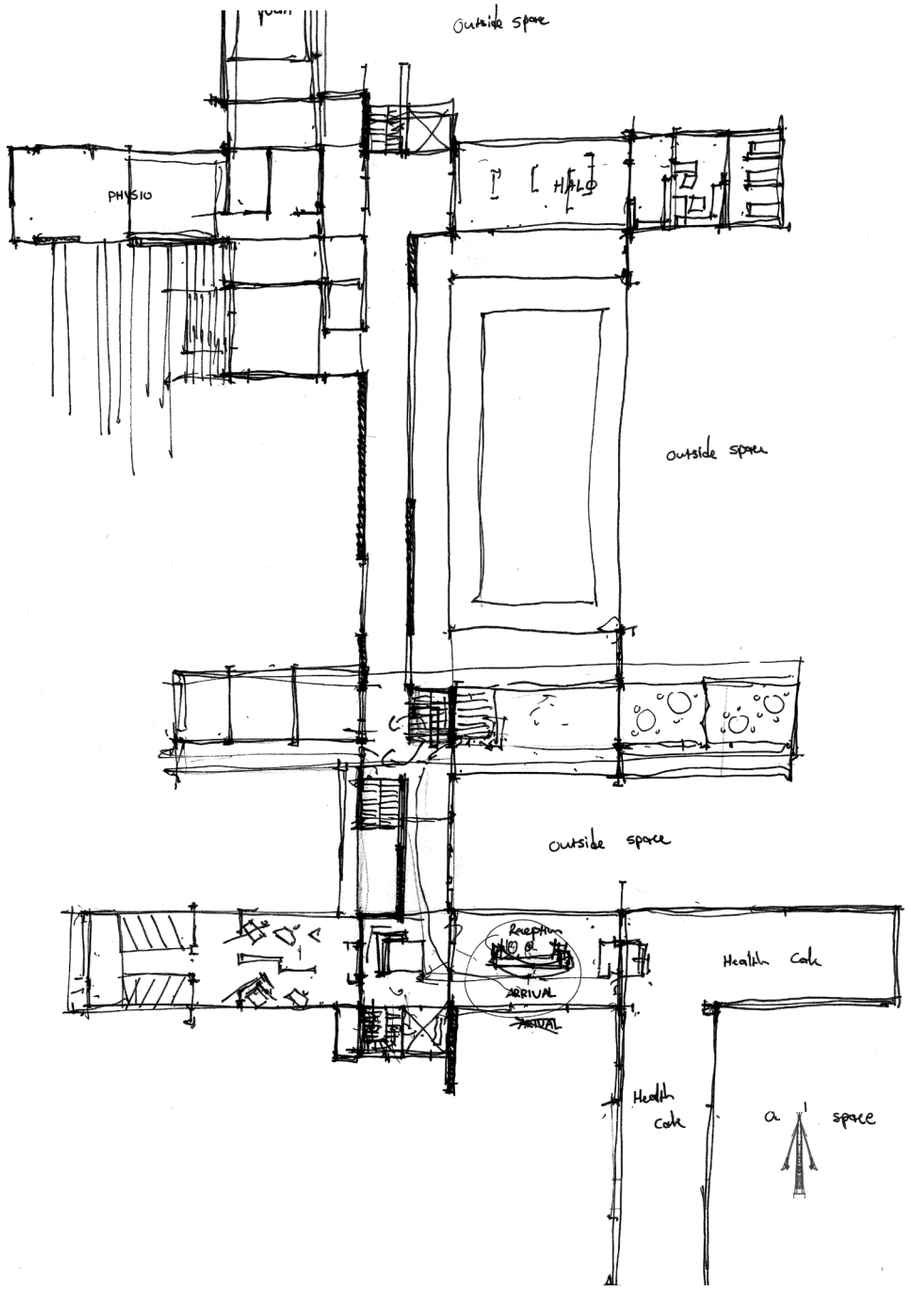
Interior perspective depicting how the circulation could flow past certain waiting areas and other functions. A keen awareness of the outside would be omnipresent.

With the modular system it was important to maintain a heart for the design and ensuring users experienced a sense of arrival when visiting the centre.

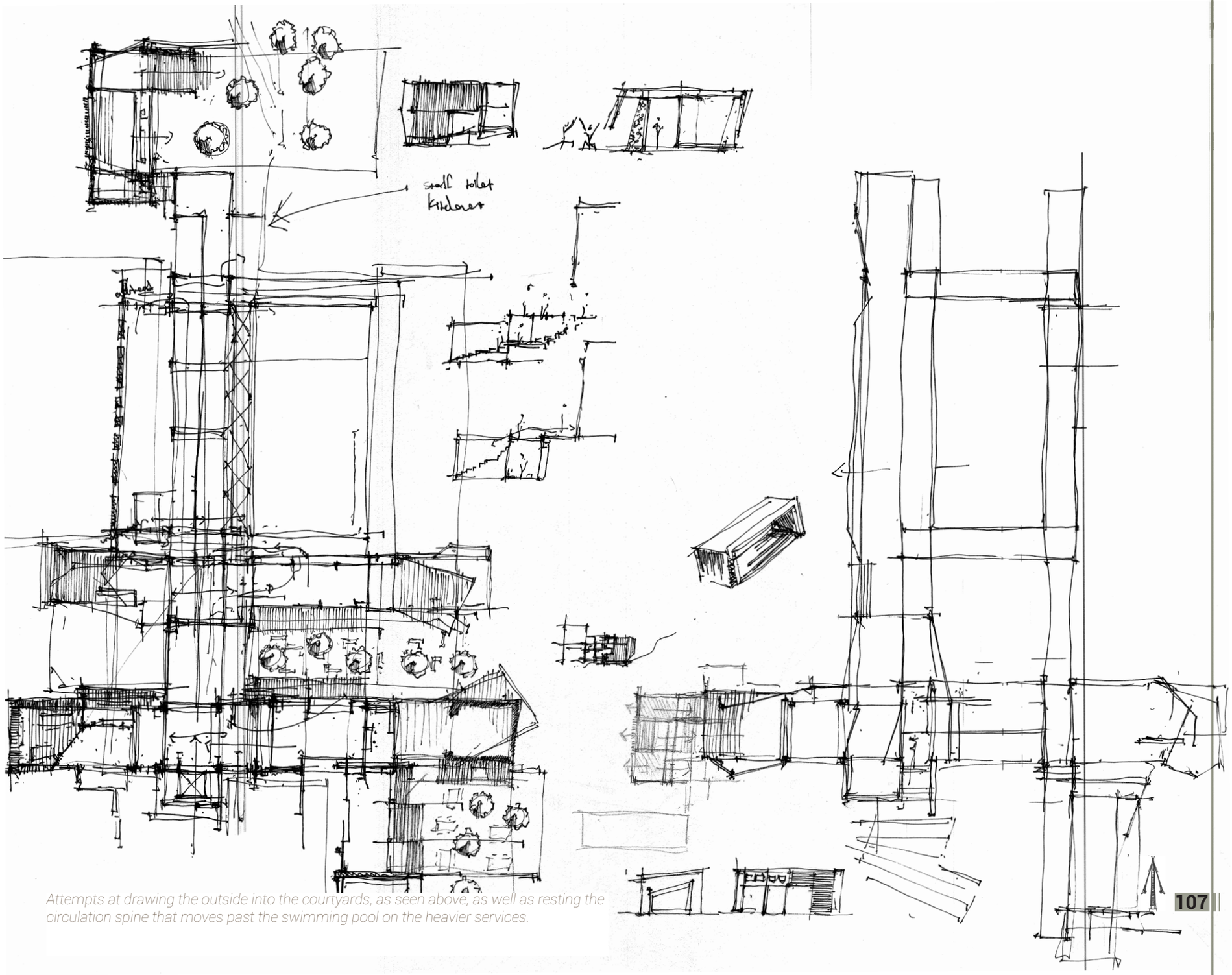




Increased attention given to circulation planning, as well as what the circulation would physically manifest as in the design. The idea of having solid and open areas within the circulation was explored.

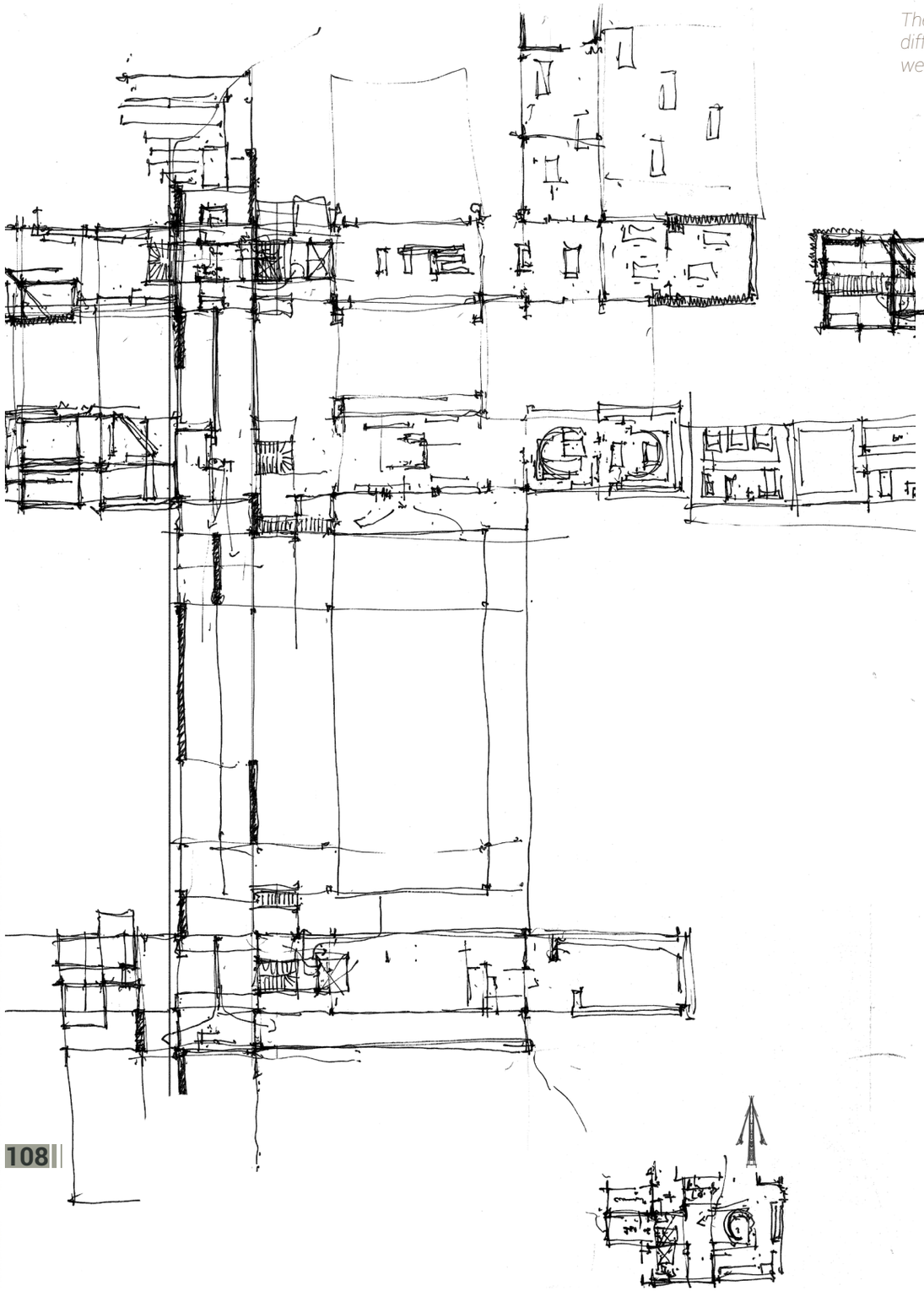


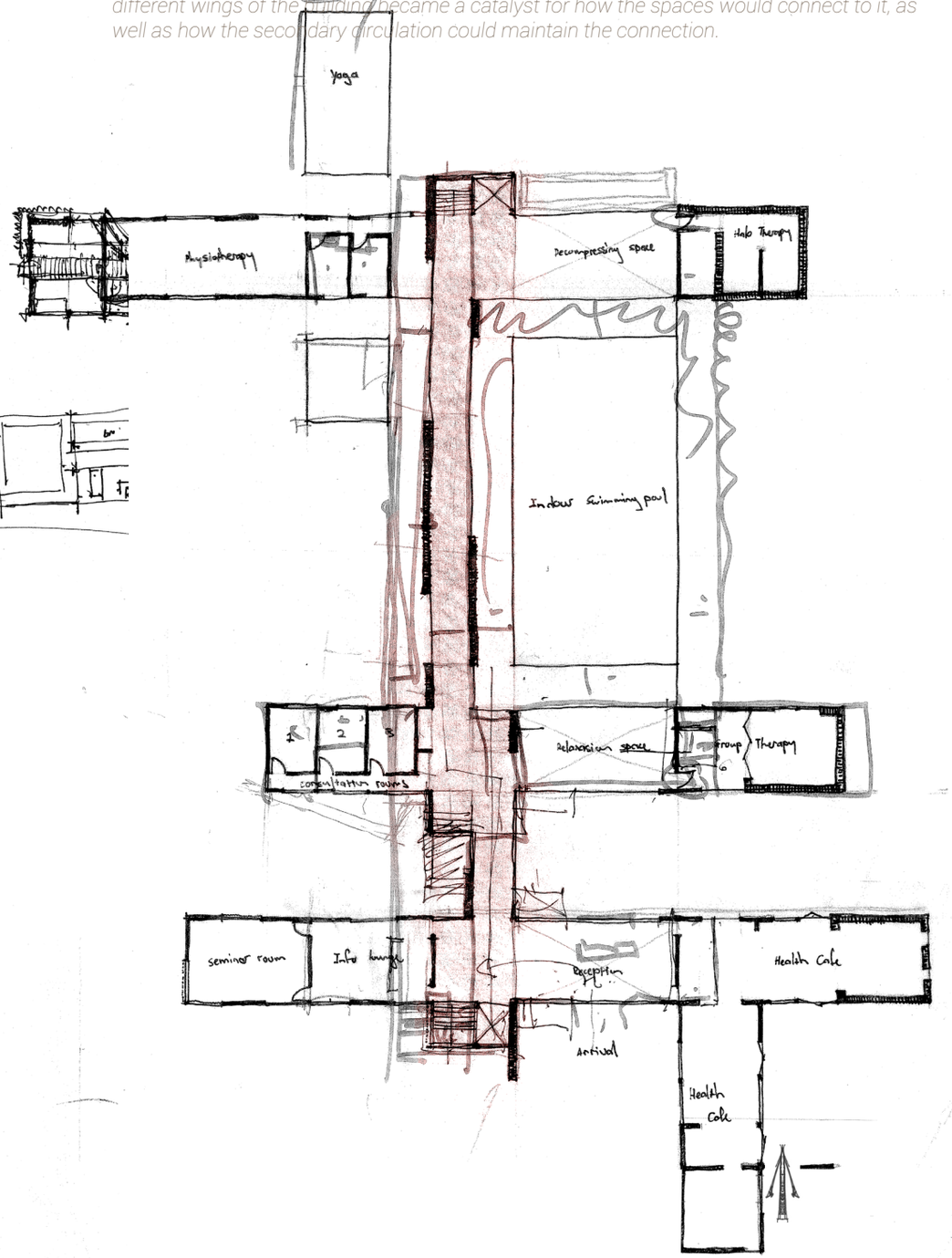
Further development of a entrance with a sense of arrival.



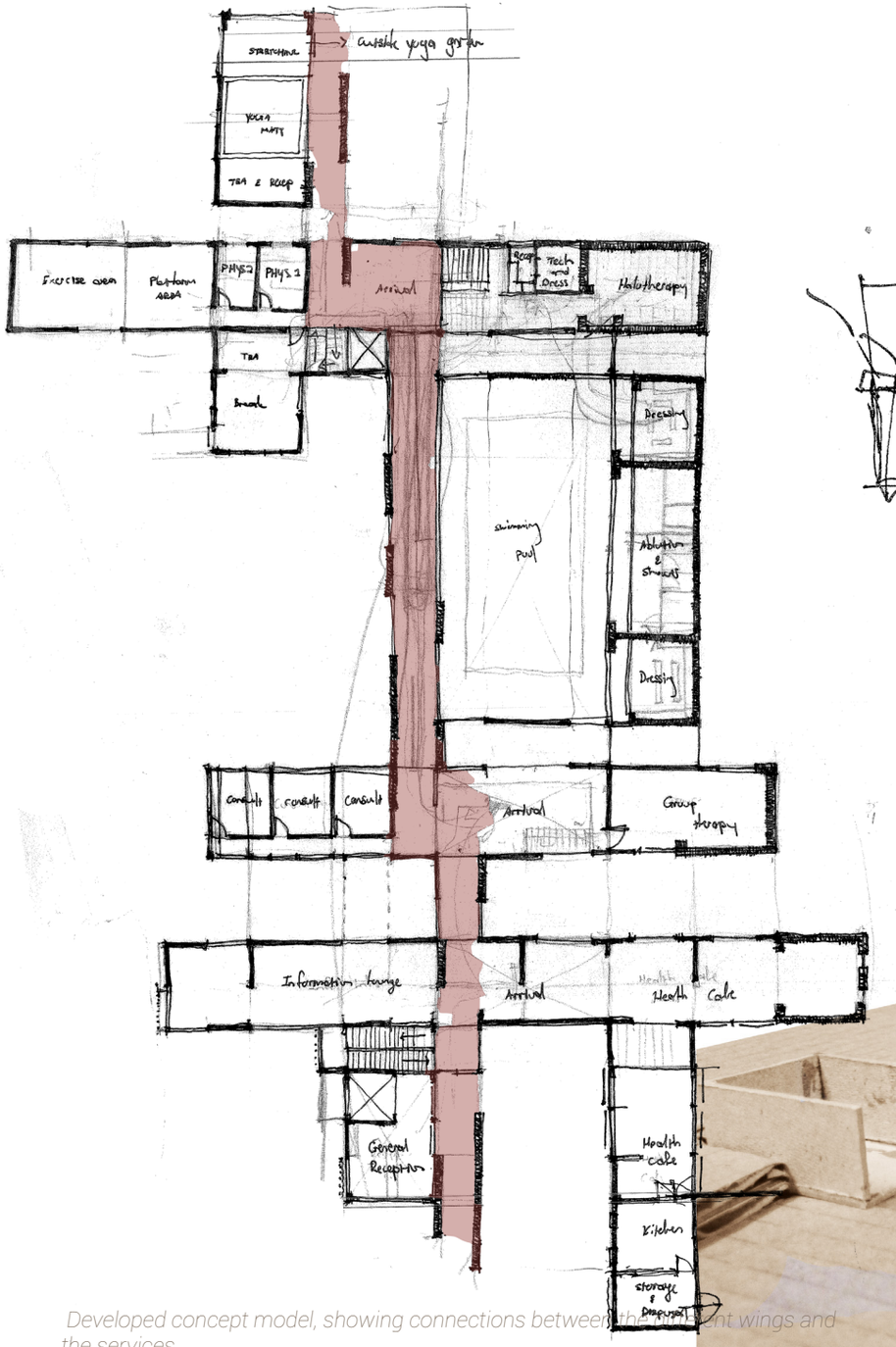
Attempts at drawing the outside into the courtyards, as seen above, as well as resting the circulation spine that moves past the swimming pool on the heavier services.

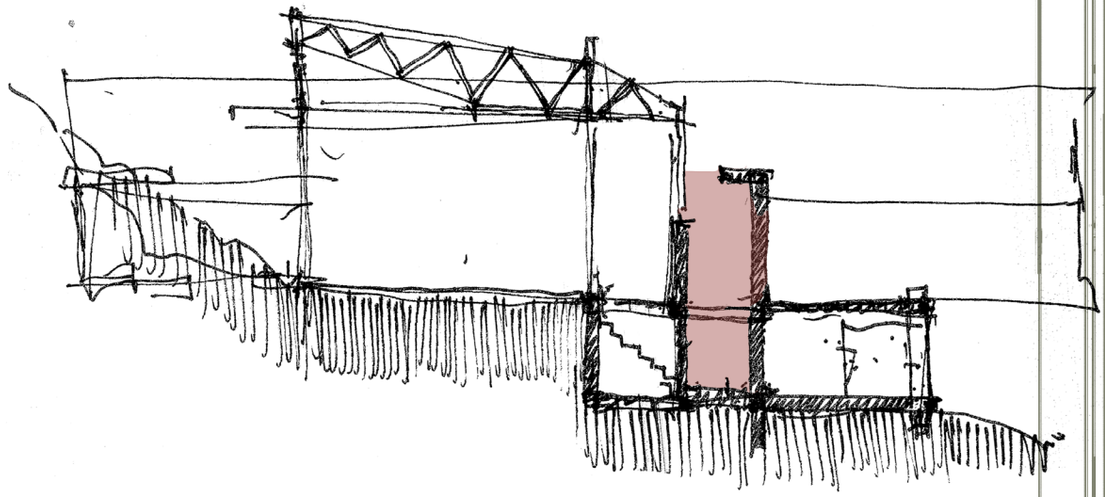
The concept sketches below show how the development of the circulation between the different wings of the building became a catalyst for how the spaces would connect to it, as well as how the secondary circulation could maintain the connection.

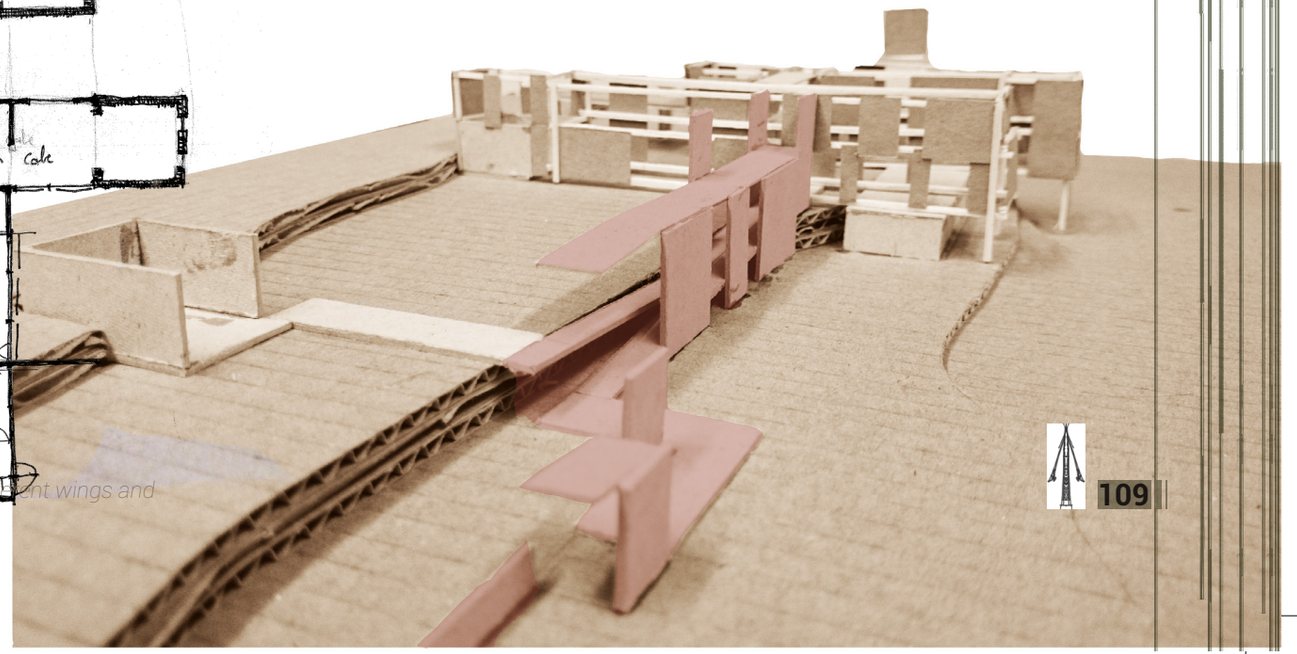




On plan and on section, the circulation spine became the mediator of scale and functions, of where one could go and where the design allowed the site some privacy.

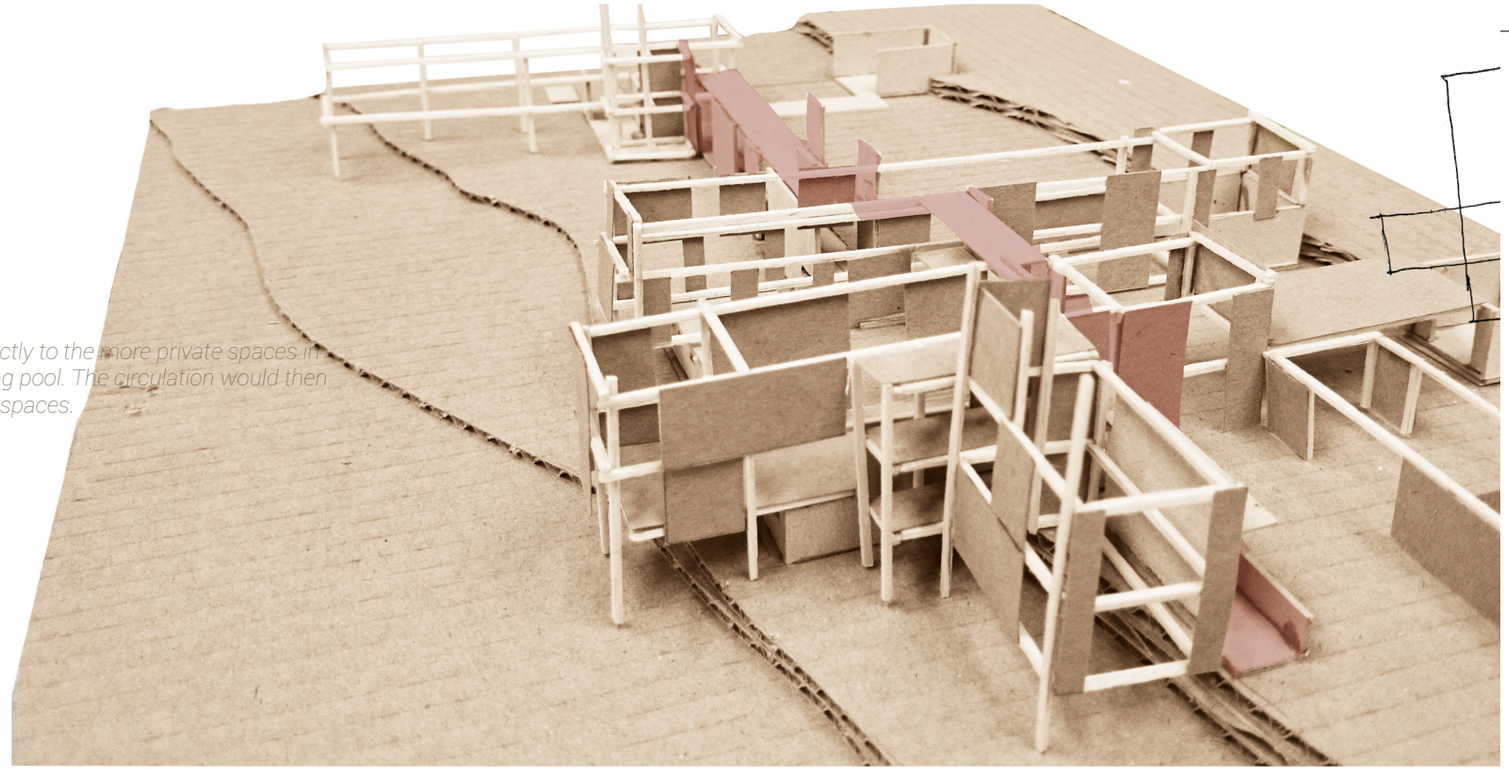


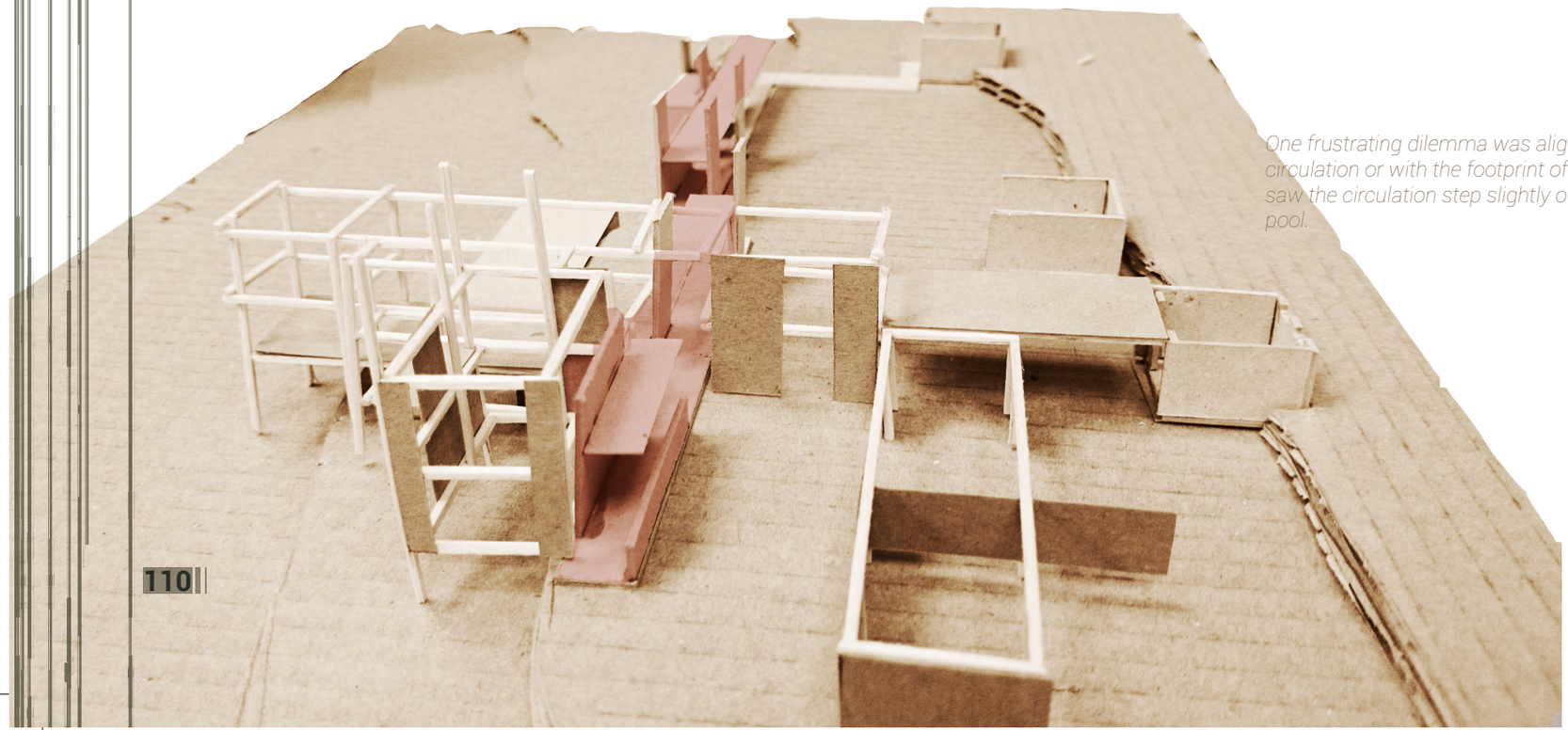




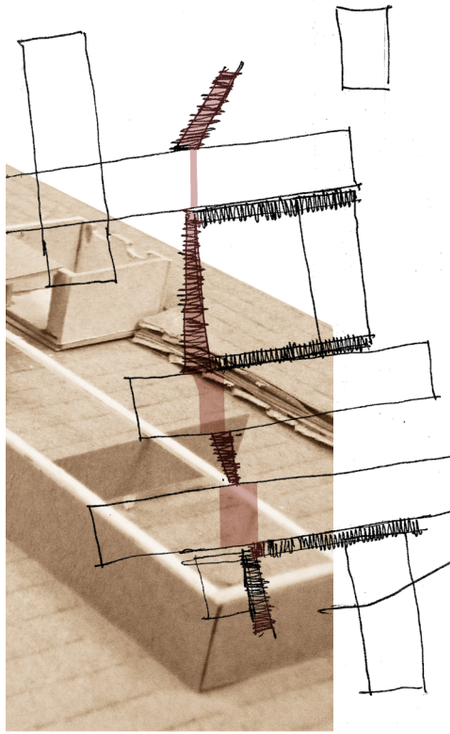
Developed concept model, showing connections between the different wings and the services.

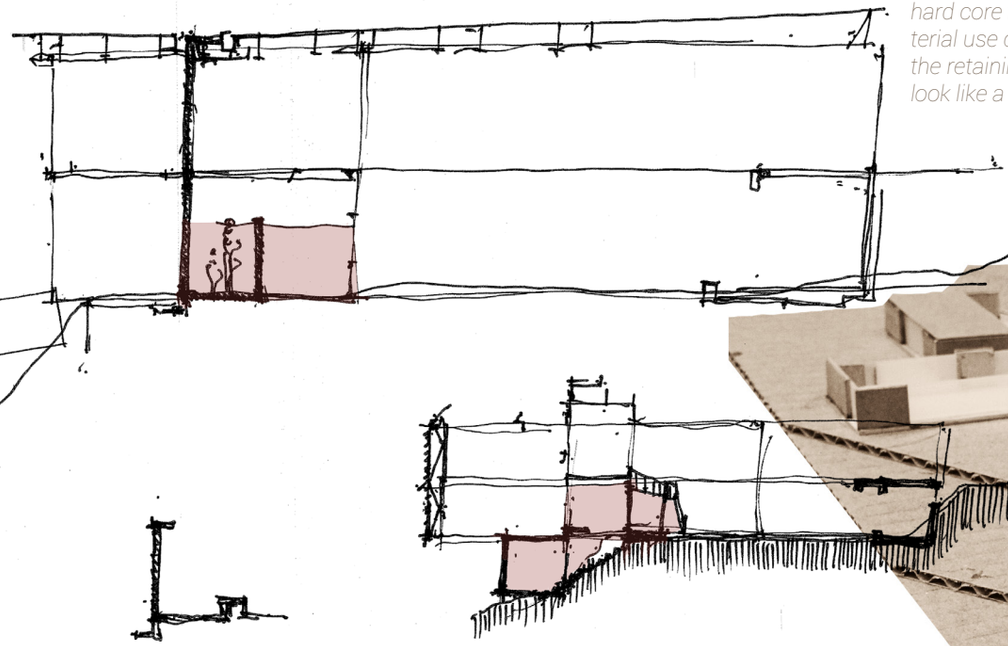
The circulation would flow away from the entrance directly to the more private spaces in the design, as well as taking the user past the swimming pool. The circulation would then also divide the design into its respective Cave and Tree spaces.





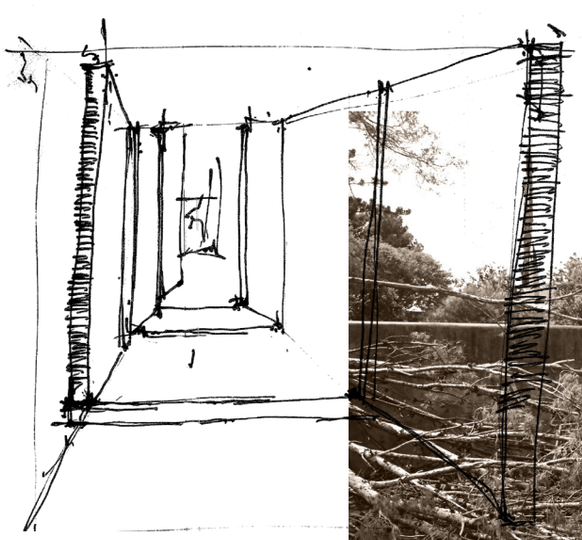
One frustrating dilemma was aligning the arrival of the user with the circulation or with the footprint of the swimming pool. This development saw the circulation step slightly off axis to move past the swimming pool.





The existing retaining walls on the site were built using concrete and hard core fill walls with stone cladding. The model shows how this material use could be applied to the service spaces below the largest rise of the retaining walls. This would mean that from Musicon, it would simply look like a continuation of the existing.

Perspective created by the circulatory spine.



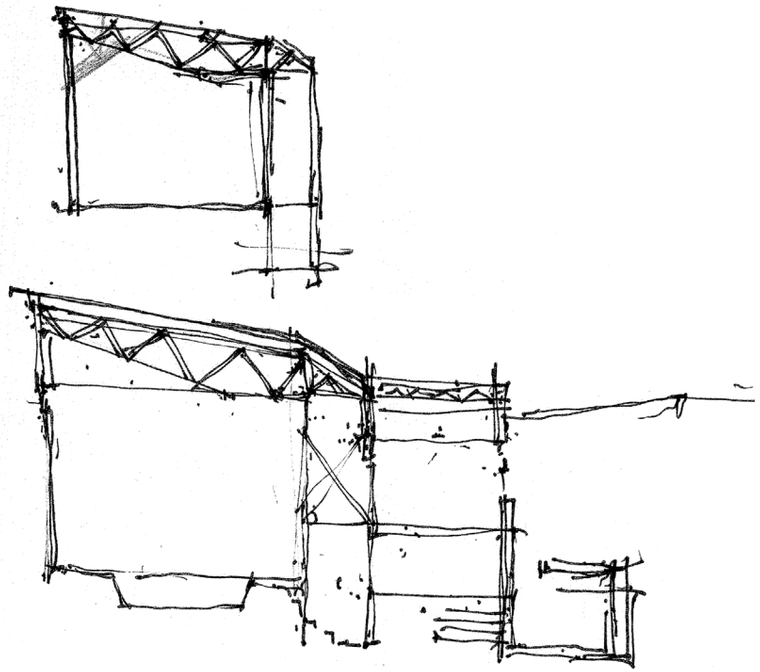


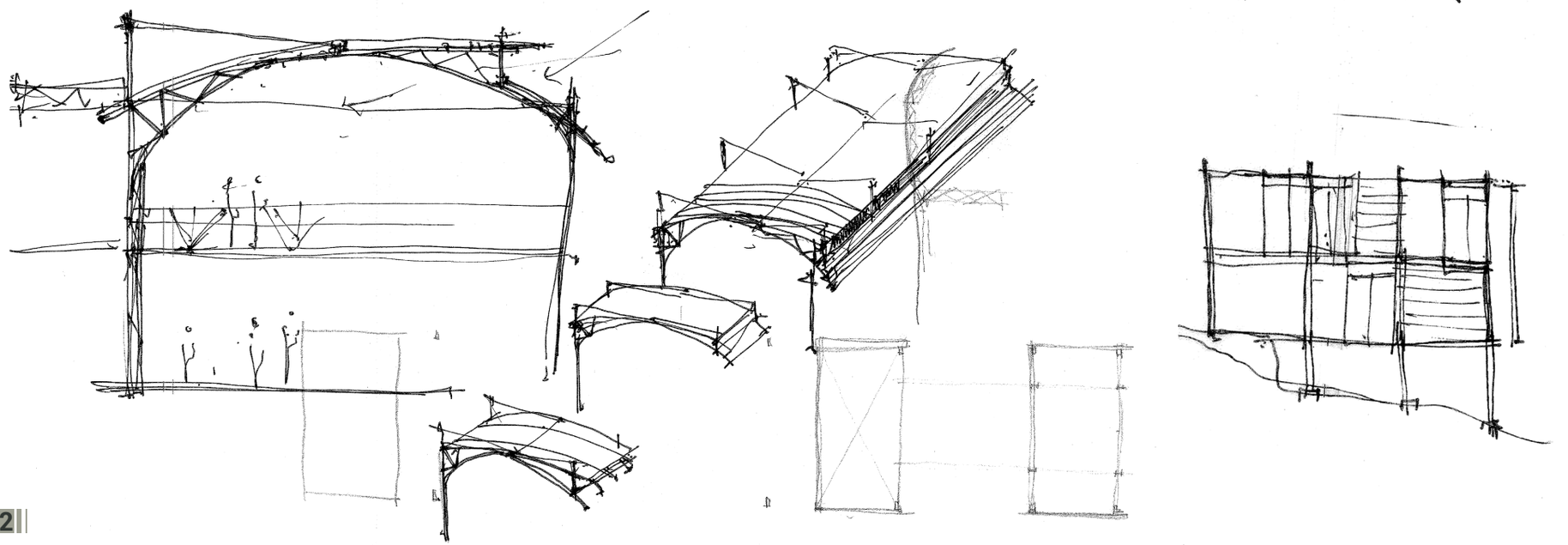
Site photo of retaining wall.

The strict adherence to the modular design, as well as the grid imposed by the old swimming pool footprint, saw that the interior and exterior spaces began mirroring the same ratios and scales.

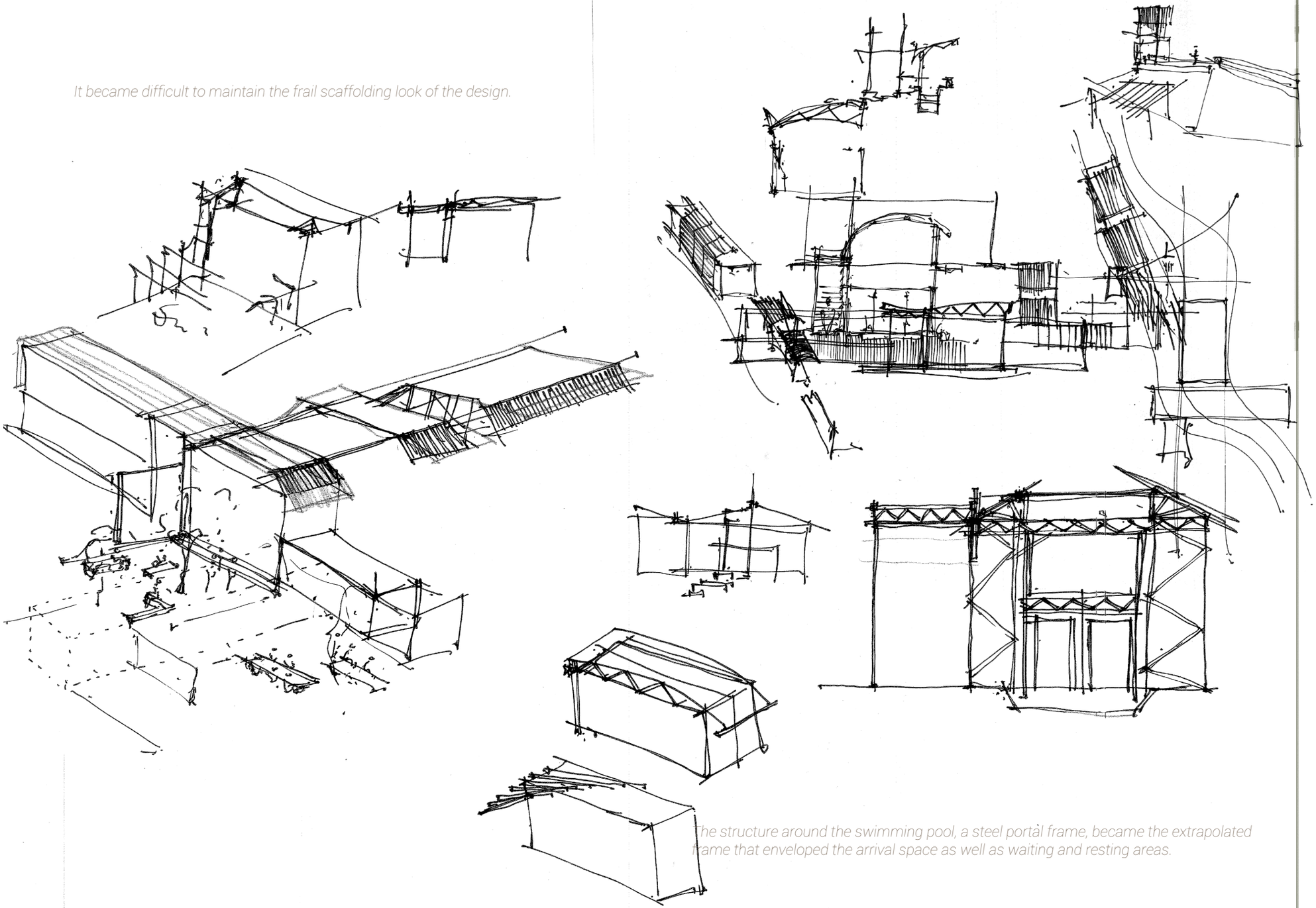
Soon the more public wing of the design and the more private spaces of the design were in close proximity, warranting an investigation as to the structures around the swimming pool. Initial concept sketches revolve around creating an interior swimming pool space that could then be used comfortably throughout the year.

This involved a structural exploration of a roof system that could cover this 10x24m swimming pool with enough space for its ablution, as well as allowing some visual connection to the hill.





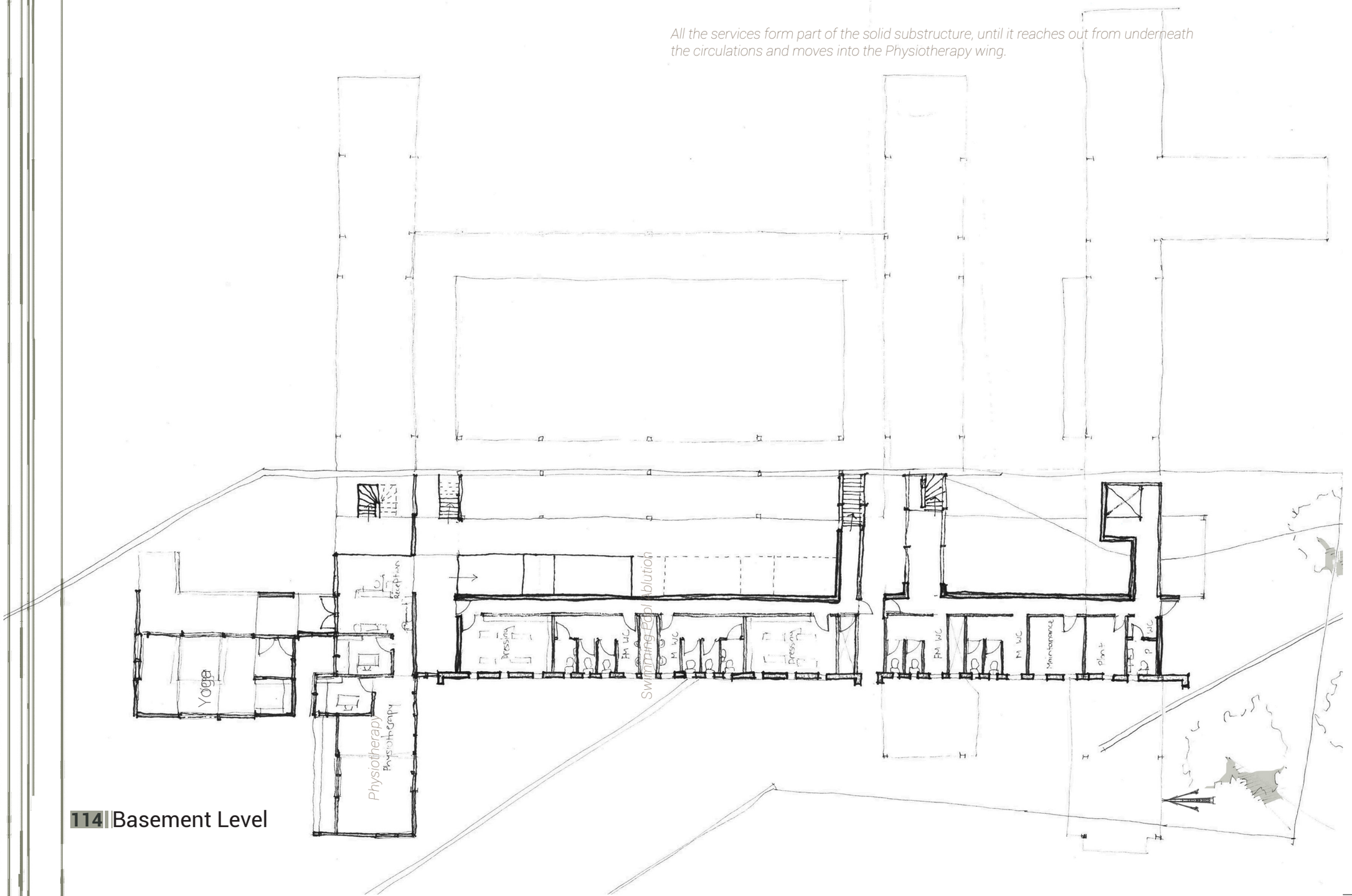
It became difficult to maintain the frail scaffolding look of the design.



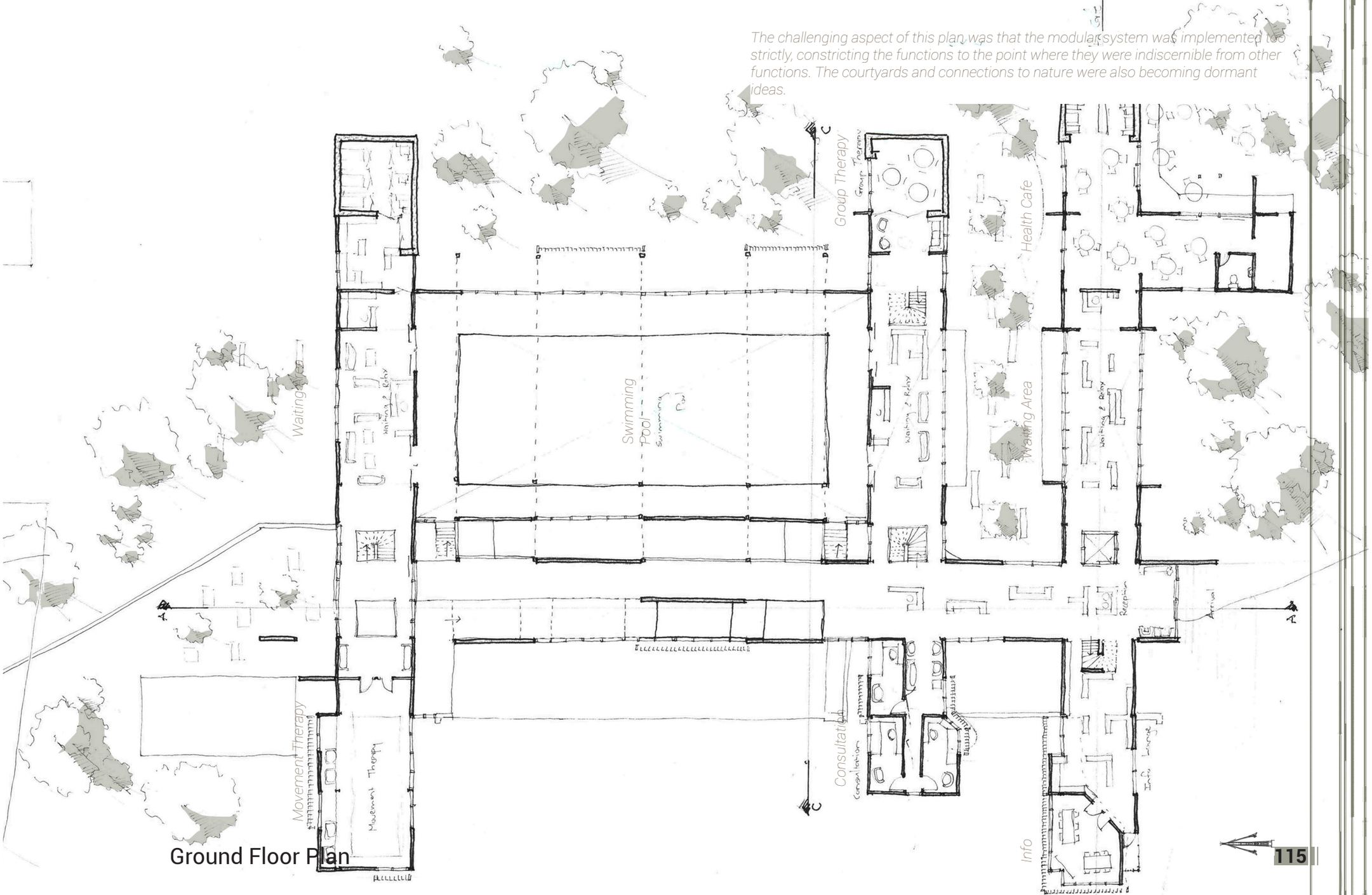
The structure around the swimming pool, a steel portal frame, became the extrapolated frame that enveloped the arrival space as well as waiting and resting areas.

With the decision to cover the swimming pool, the typology of the context could now be exercised exclusively on the series of roofs covering the different arrival spaces or rising up against the circulation spine.

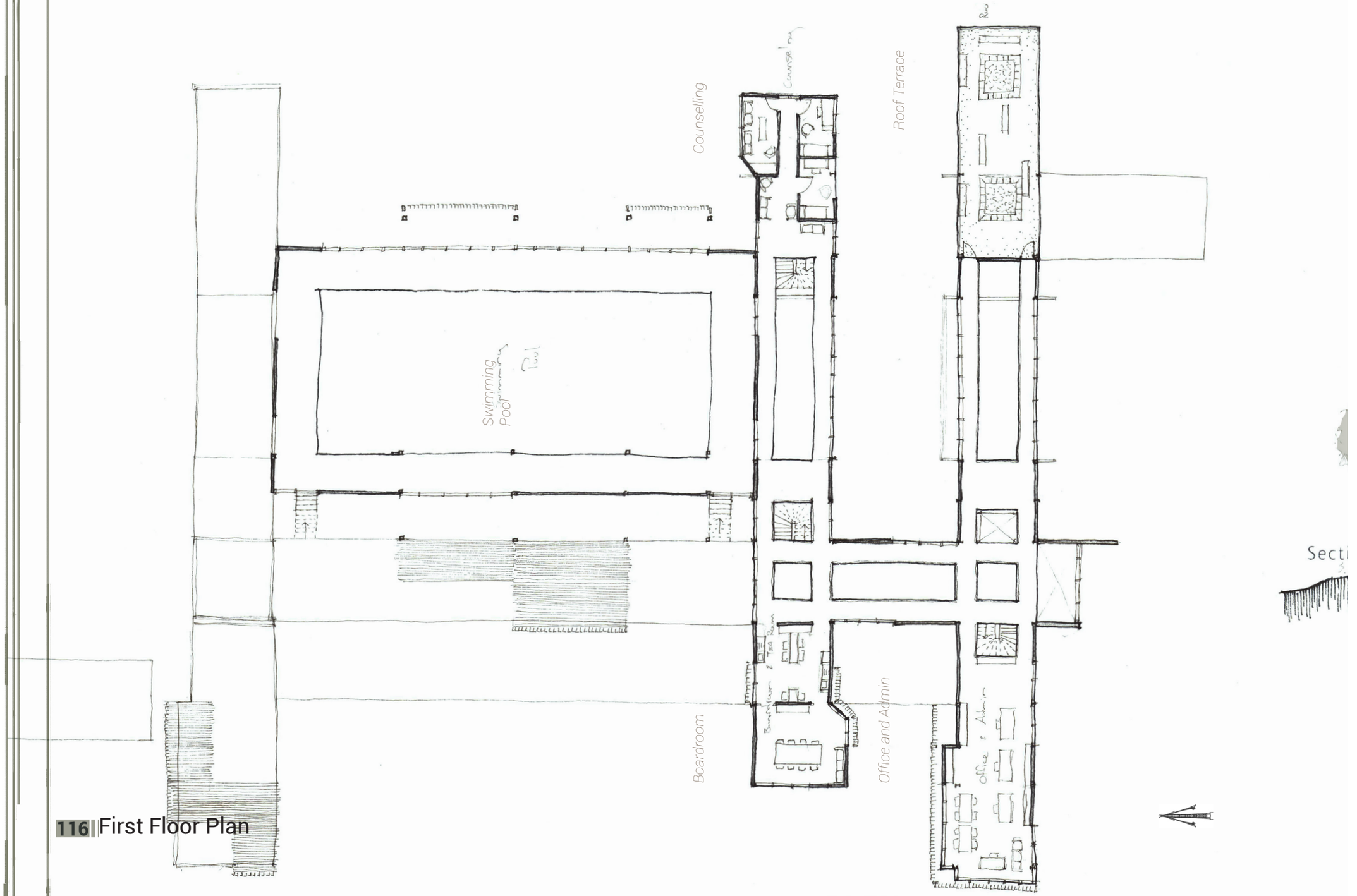
All the services form part of the solid substructure, until it reaches out from underneath the circulations and moves into the Physiotherapy wing.



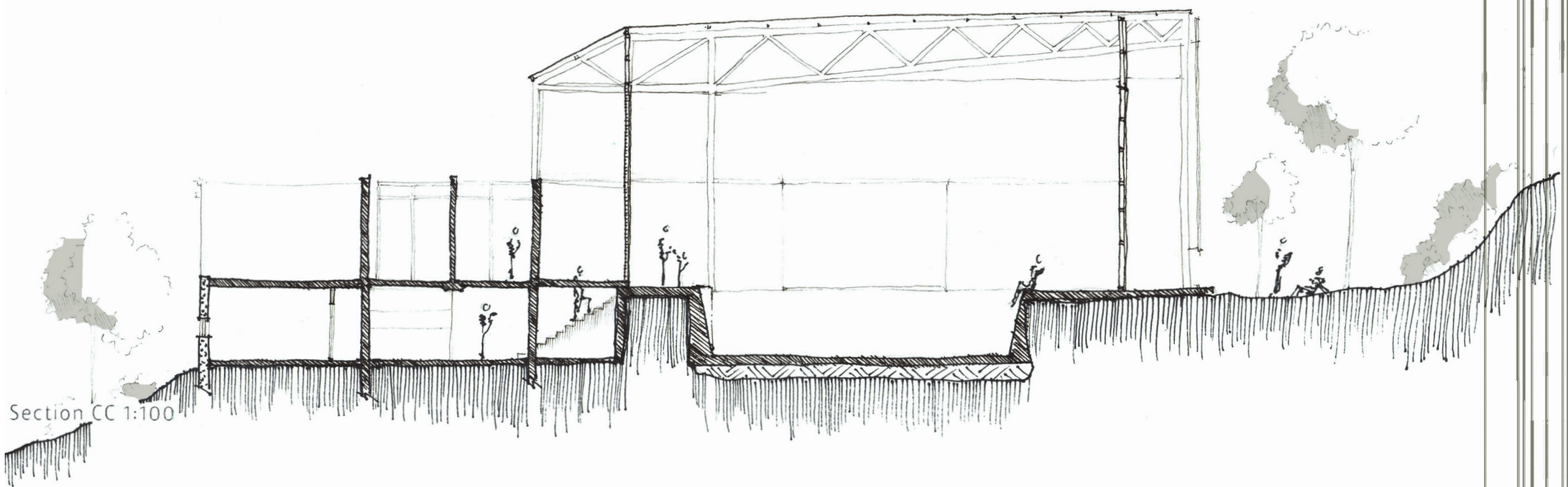
The challenging aspect of this plan was that the modular system was implemented too strictly, constricting the functions to the point where they were indiscernible from other functions. The courtyards and connections to nature were also becoming dormant ideas.



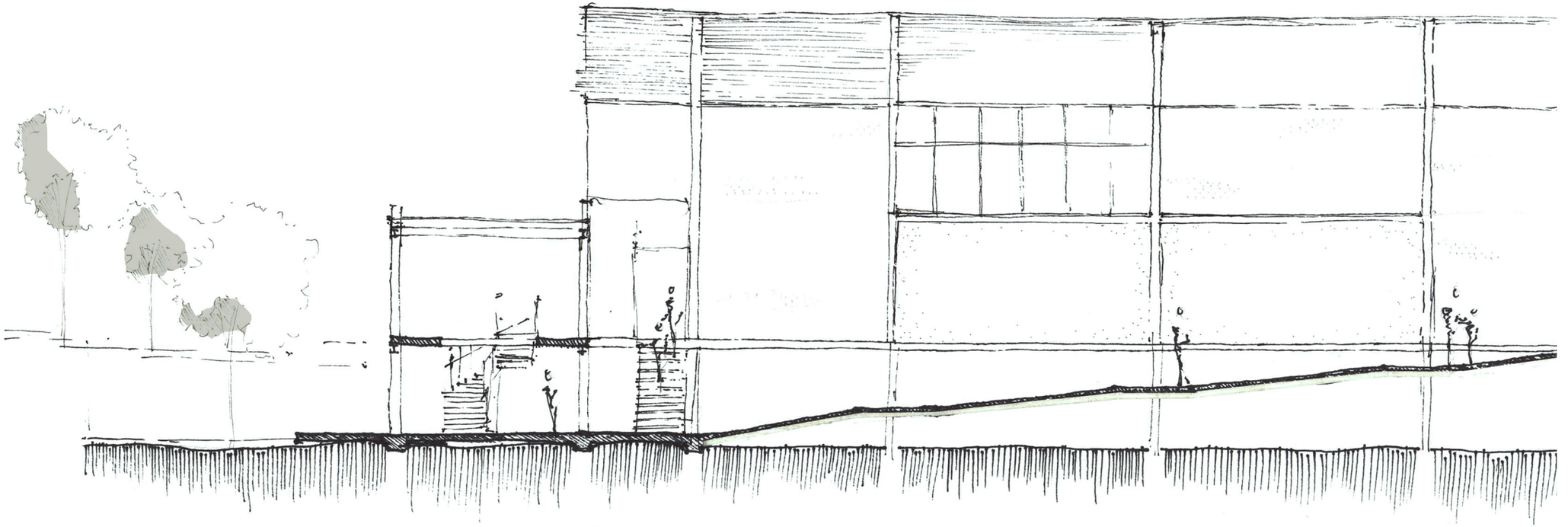
Ground Floor Plan



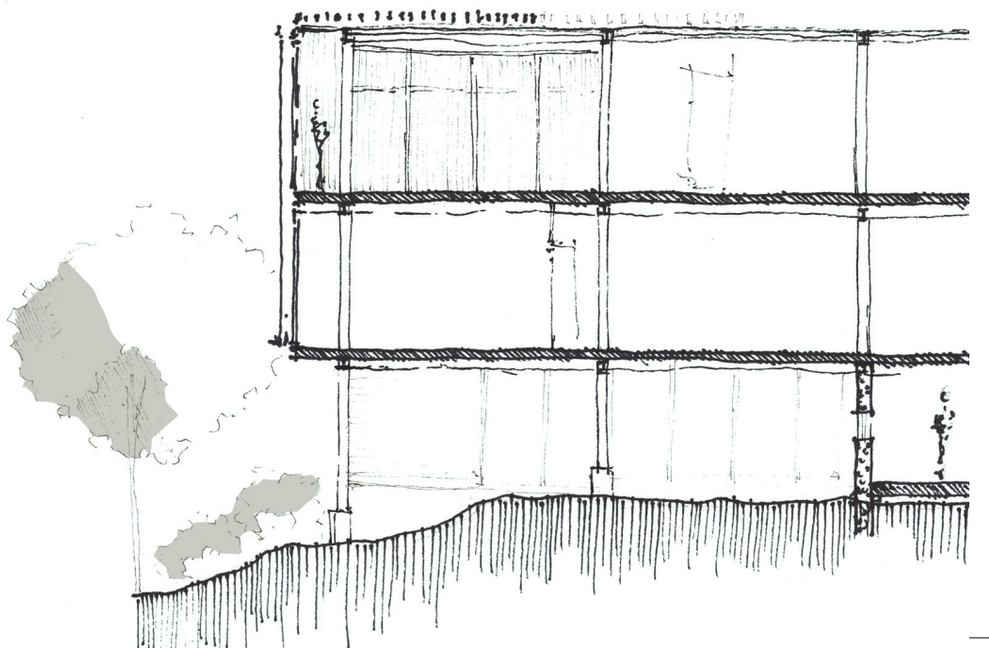
116 First Floor Plan

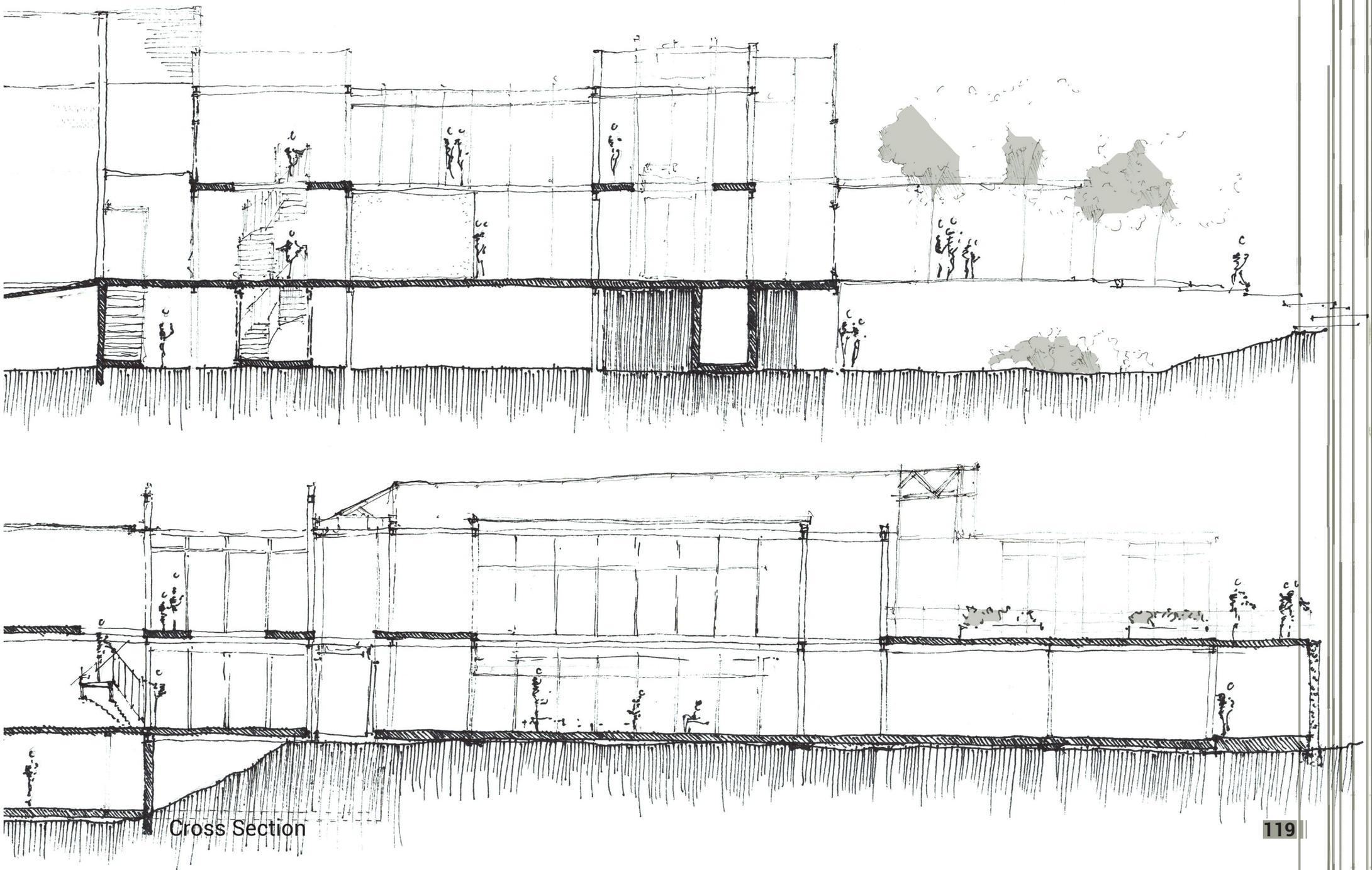


Swimming Pool Section

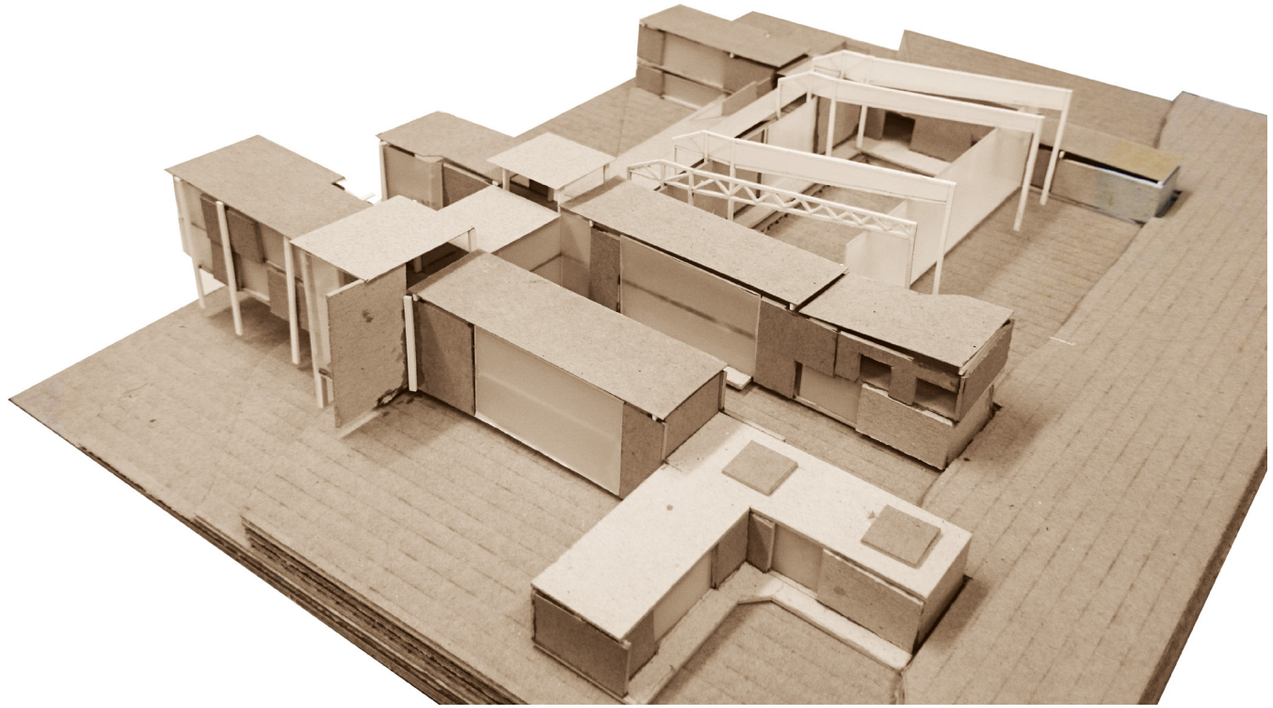


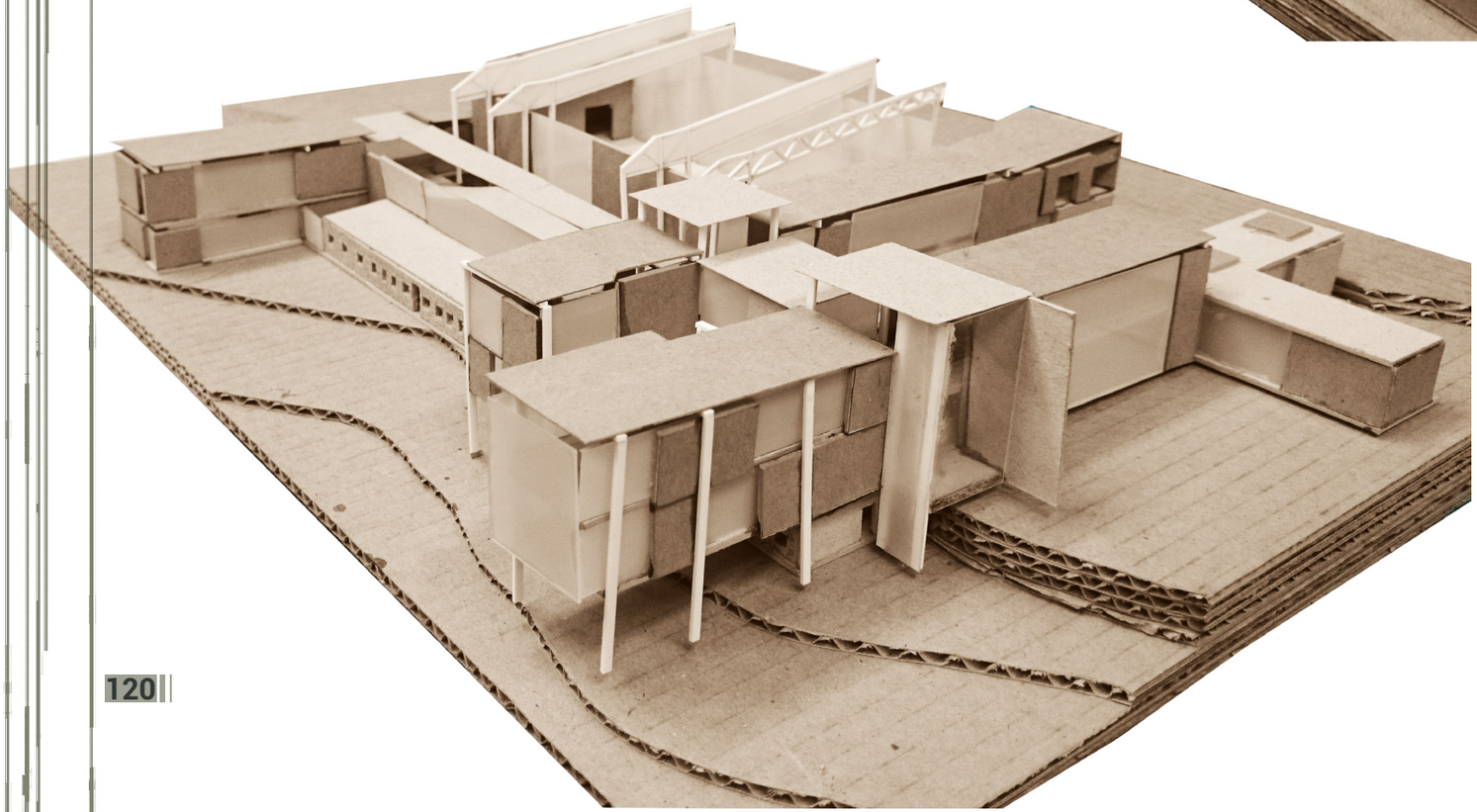
Longitudinal Section

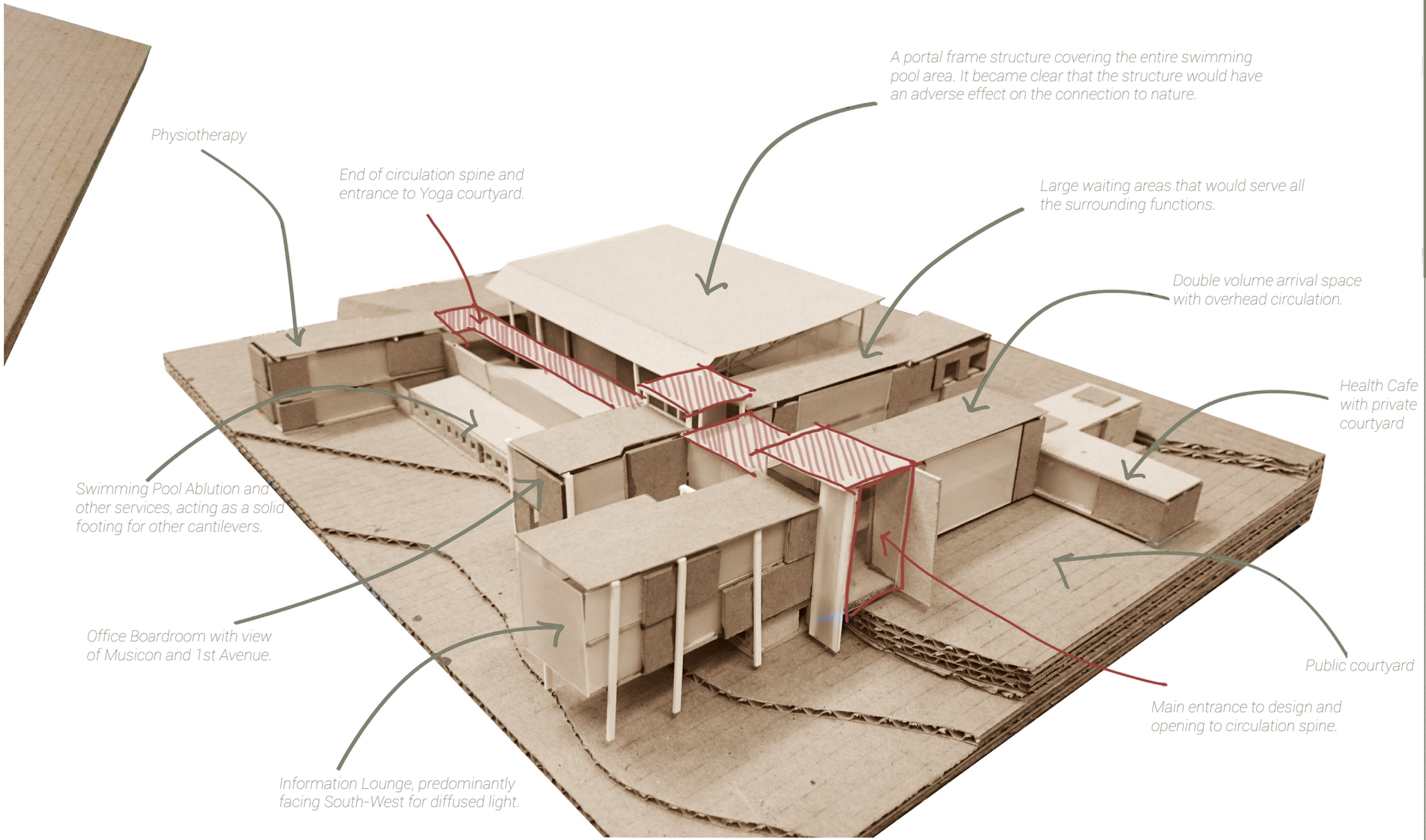


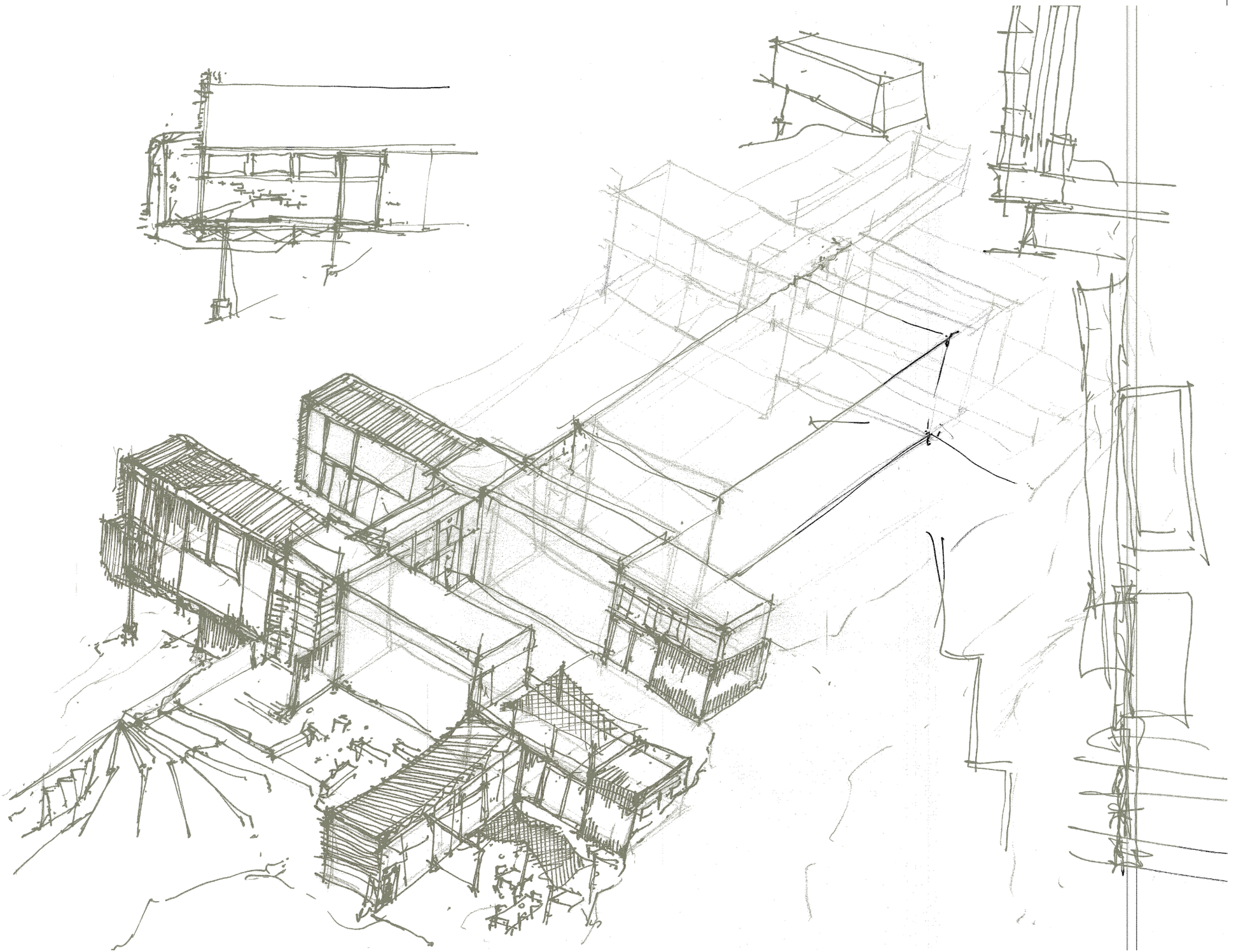


Cross Section






A portal frame structure covering the entire swimming pool area. It became clear that the structure would have an adverse effect on the connection to nature.
Physiotherapy
End of circulation spine and entrance to Yoga courtyard.
Large waiting areas that would serve all the surrounding functions.
Double volume arrival space with overhead circulation.
Health Cafe with private courtyard
Swimming Pool Ablution and other services, acting as a solid footing for other cantilevers.
Office Boardroom with view of Musicon and 1st Avenue.
Public courtyard
Main entrance to design and opening to circulation spine.
Information Lounge, predominantly facing South-West for diffused light.



3.2.2 Adaptation

At this point in the design process it became clear that some key aspects set out as morphological and typological aims were either too diluted with the attempt at rationalising the design, or completely absent.

The key areas of focus after the proposal of the modular design were:

- To free up the plan: The rigidity of the plan was smothering any attempts at a dialogue between inside and outside. One of the key aspects investigated as a necessity for a Healing Place, which was a connection to nature, was thus absent.

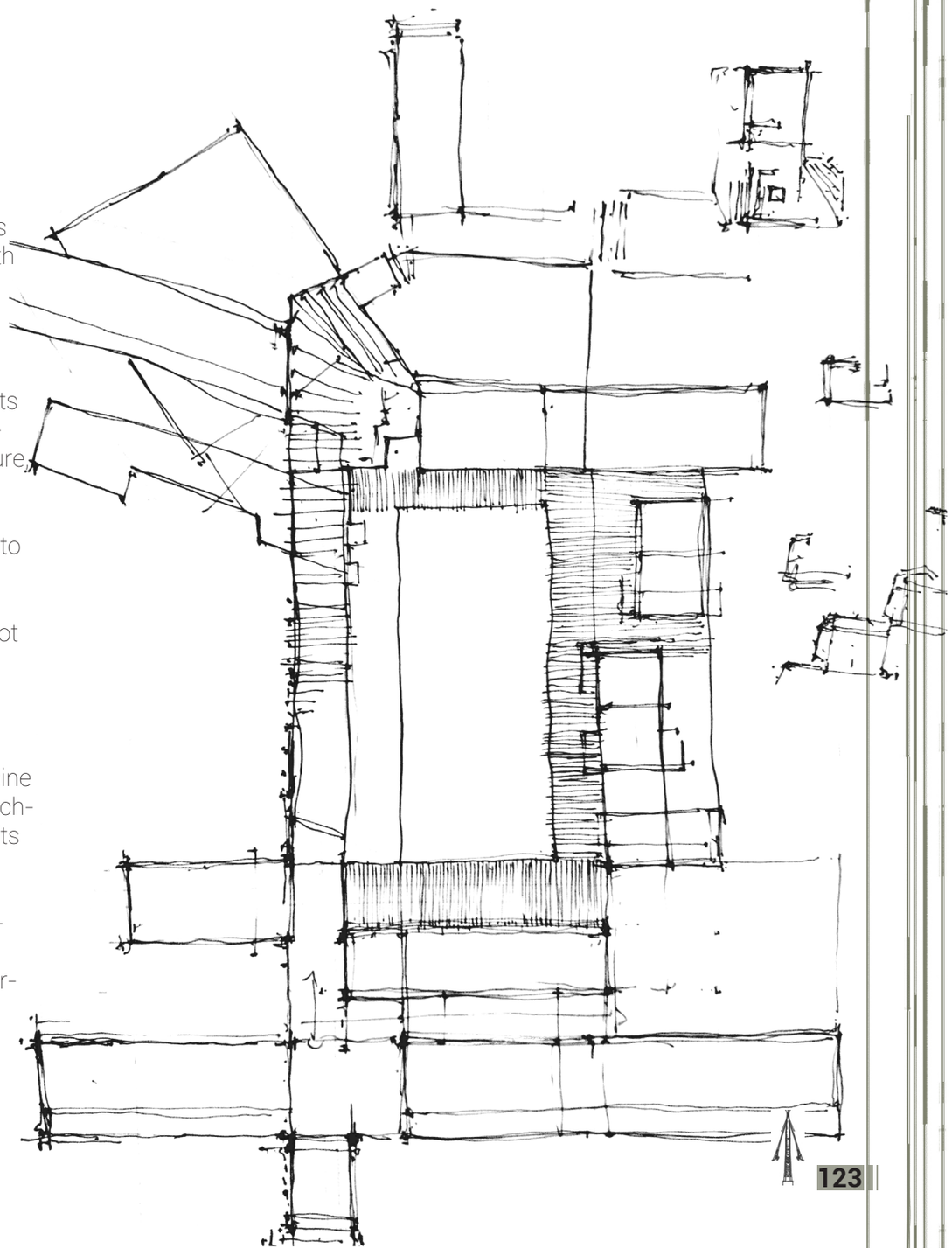
- To readdress the modular system and diversify the structural systems to break away from the monotonous design.

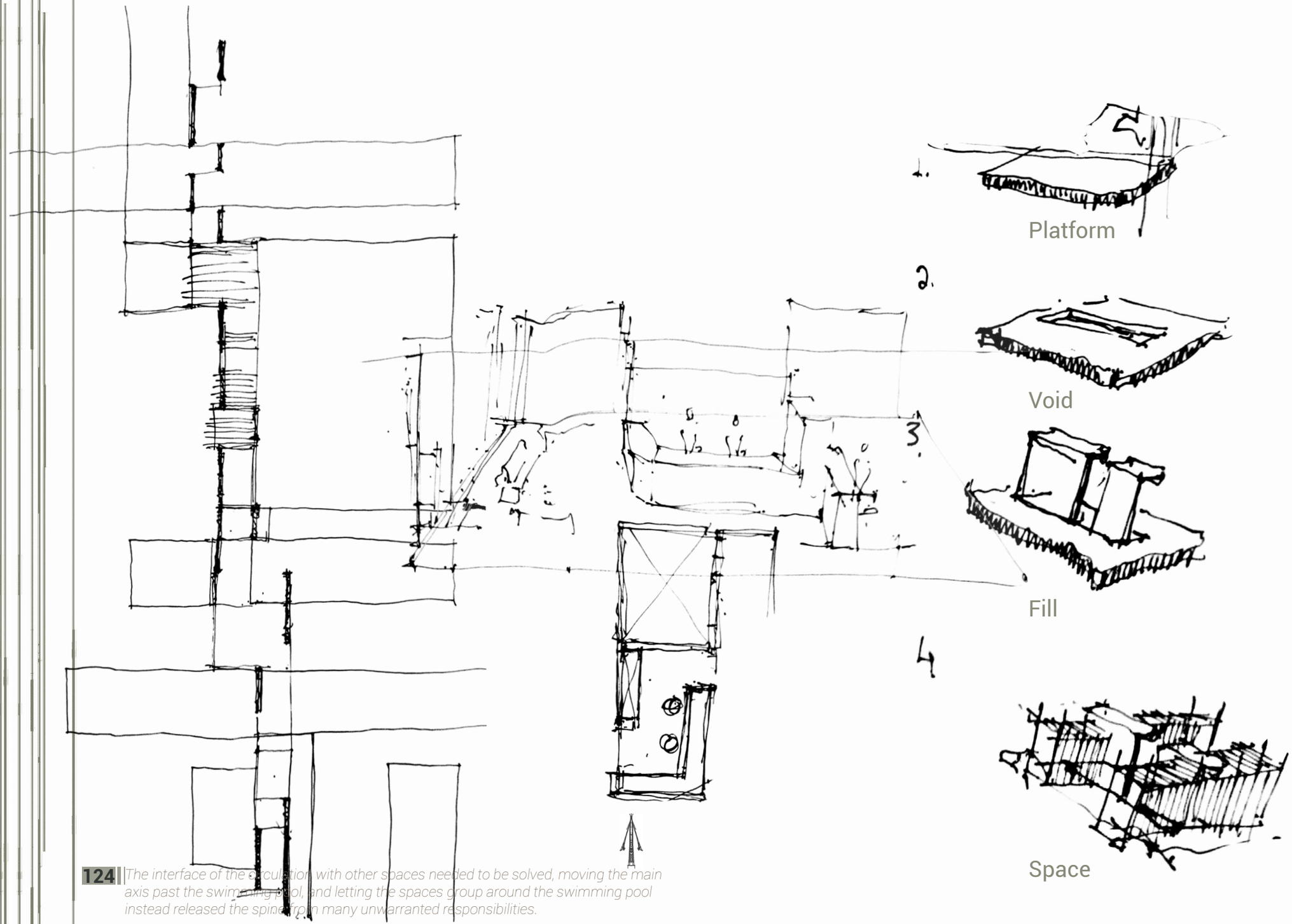
- To delegate more of the outside spaces into recognisable places and not simply allocate it through the footprint of the building.

- To let the functions determine the façades.

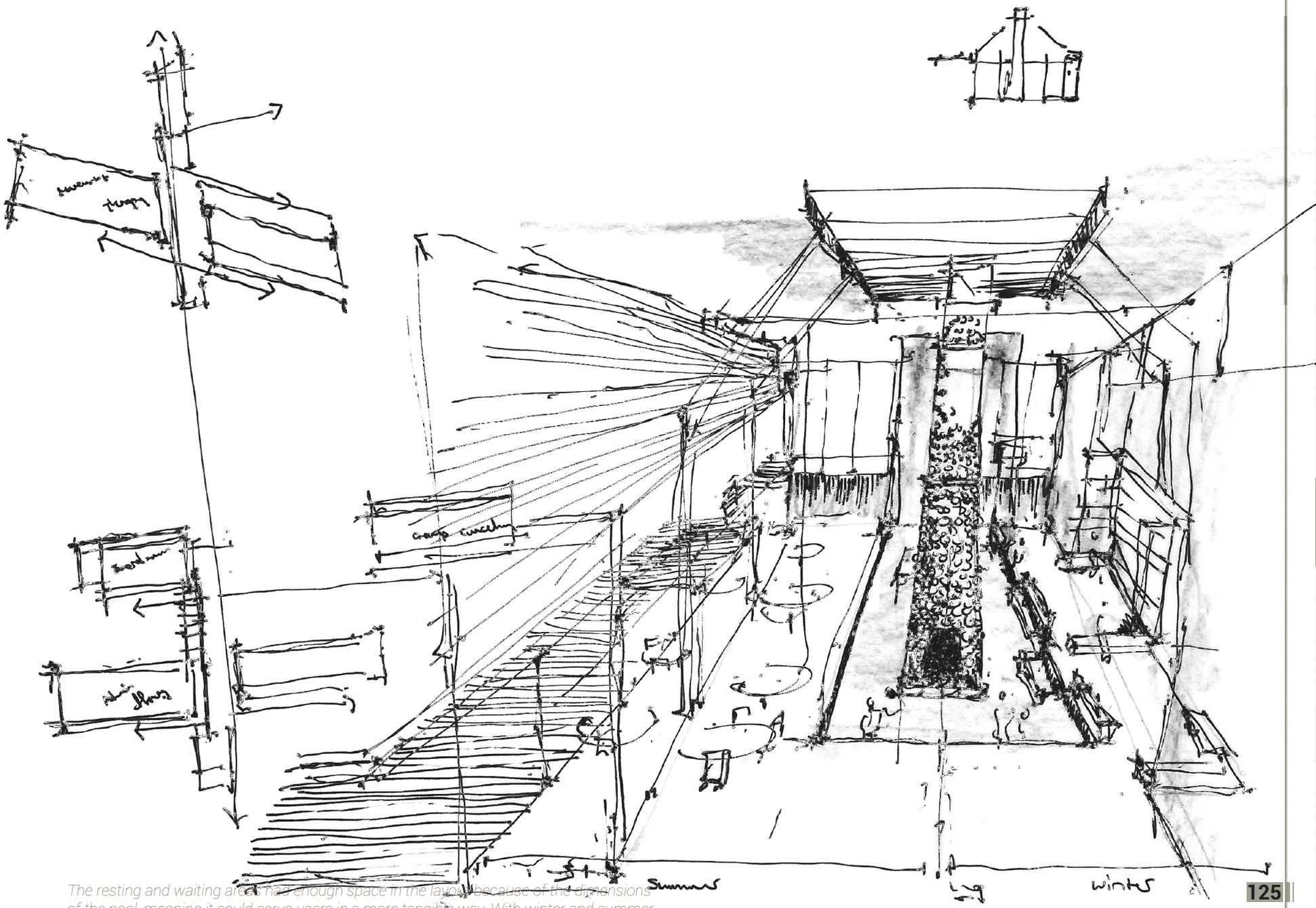
The connections between different functions, like the main circulation spine or secondary circulation pathways were readdressed. The following sketches show how the design re-established the existing peripheries through its connections to the outside and to the Musicon grid.

Further spatial development saw some emphasis return to creating haptically diverse spaces through the use of different materials, as well as technical development focussed on creating transparency between different functions.



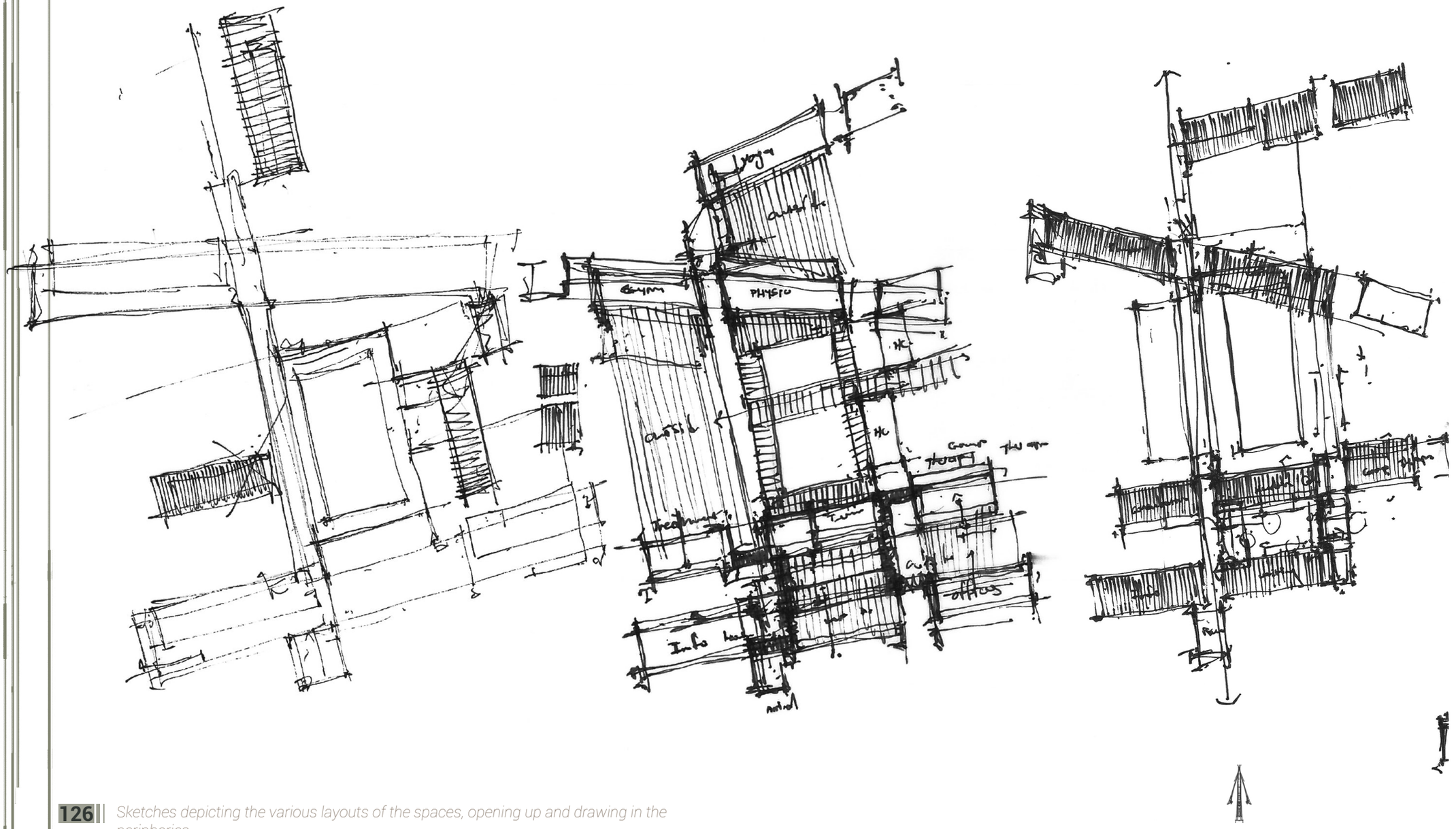


The interface of the circulation with other spaces needed to be solved, moving the main axis past the swimming pool, and letting the spaces group around the swimming pool instead released the spine from many unwarranted responsibilities.

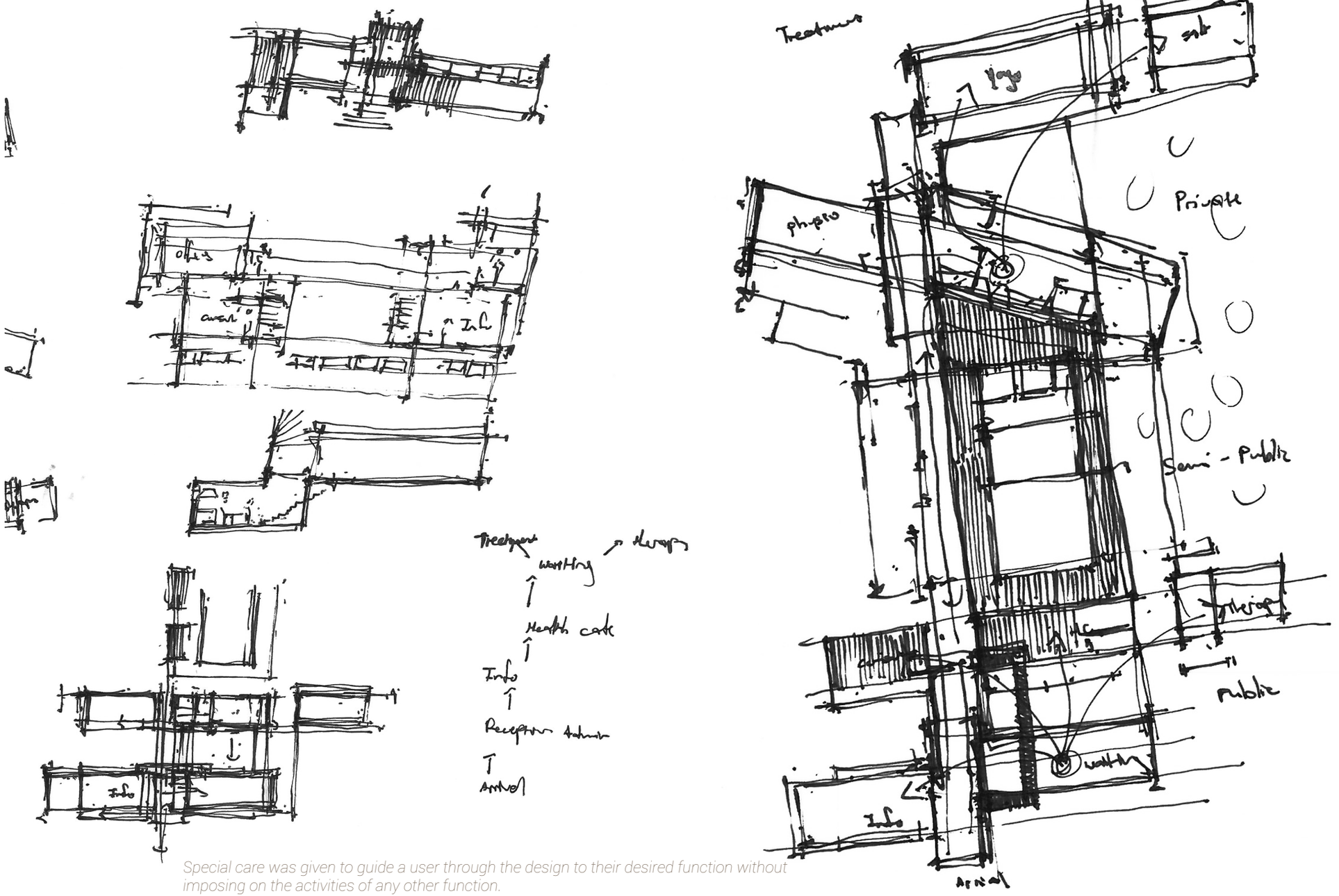


The resting and waiting area had enough space in the layout because of the dimensions of the pool, meaning it could serve users in a more tangible way. With winter and summer relaxation areas, users could simply visit the centre to rest, or wait, or join in any of the health care activities.

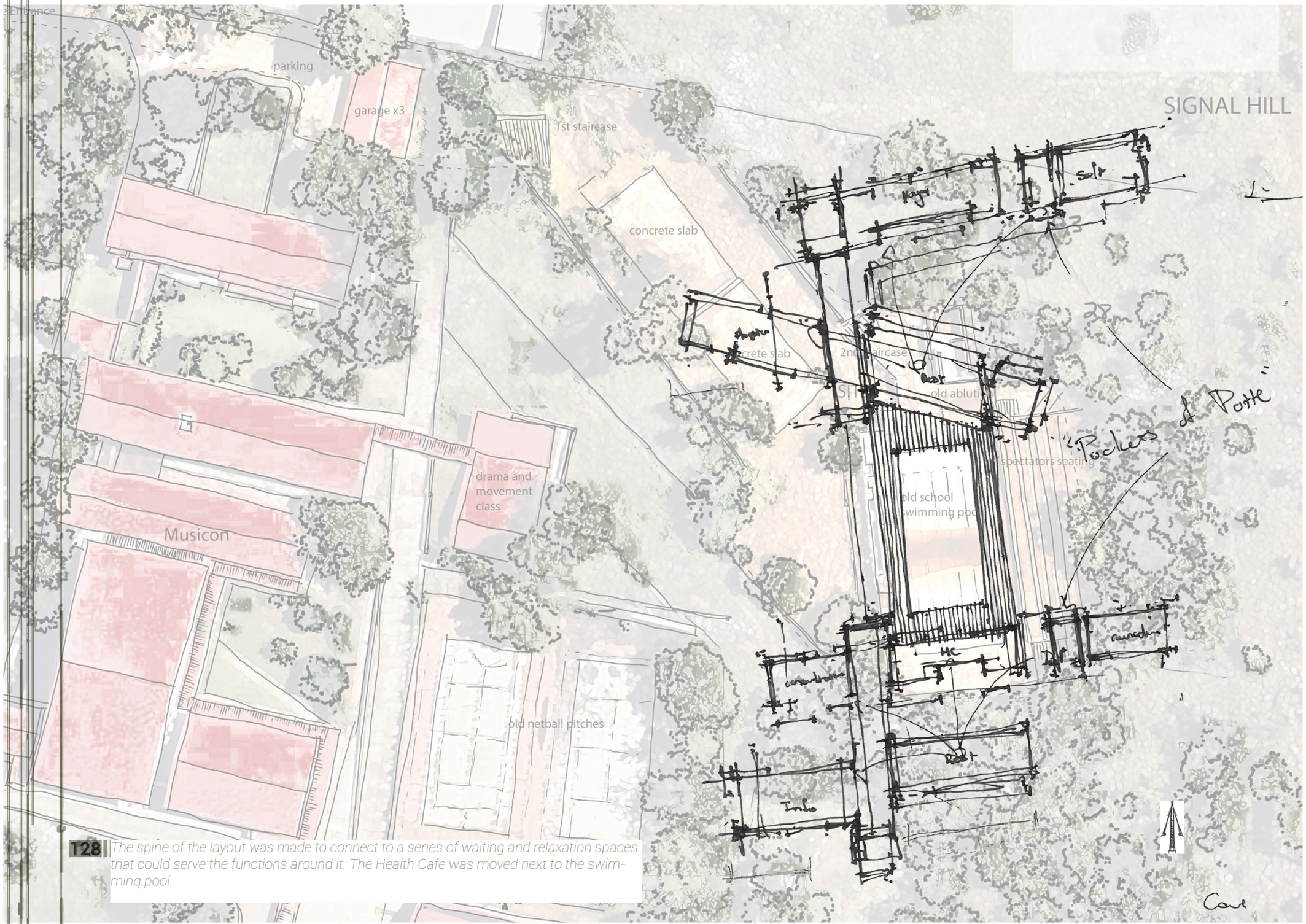
The idea of having the secondary circulation run adjacent to the functions, much like Musicon's circulation works, was explored here.



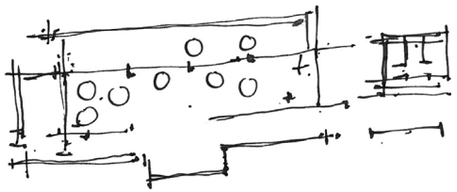
Sketches depicting the various layouts of the spaces, opening up and drawing in the peripheries.

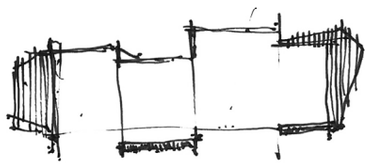


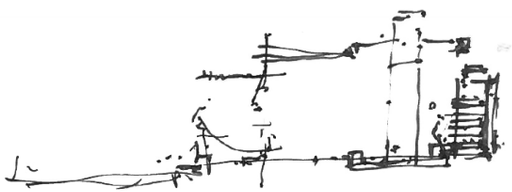
Special care was given to guide a user through the design to their desired function without imposing on the activities of any other function.

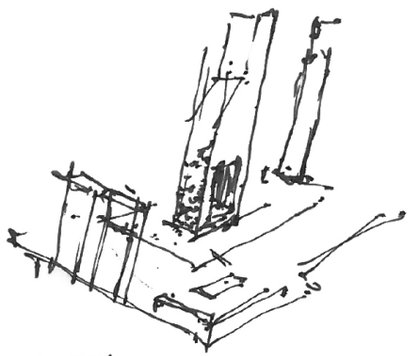


The spine of the layout was made to connect to a series of waiting and relaxation spaces that could serve the functions around it. The Health Cafe was moved next to the swimming pool.





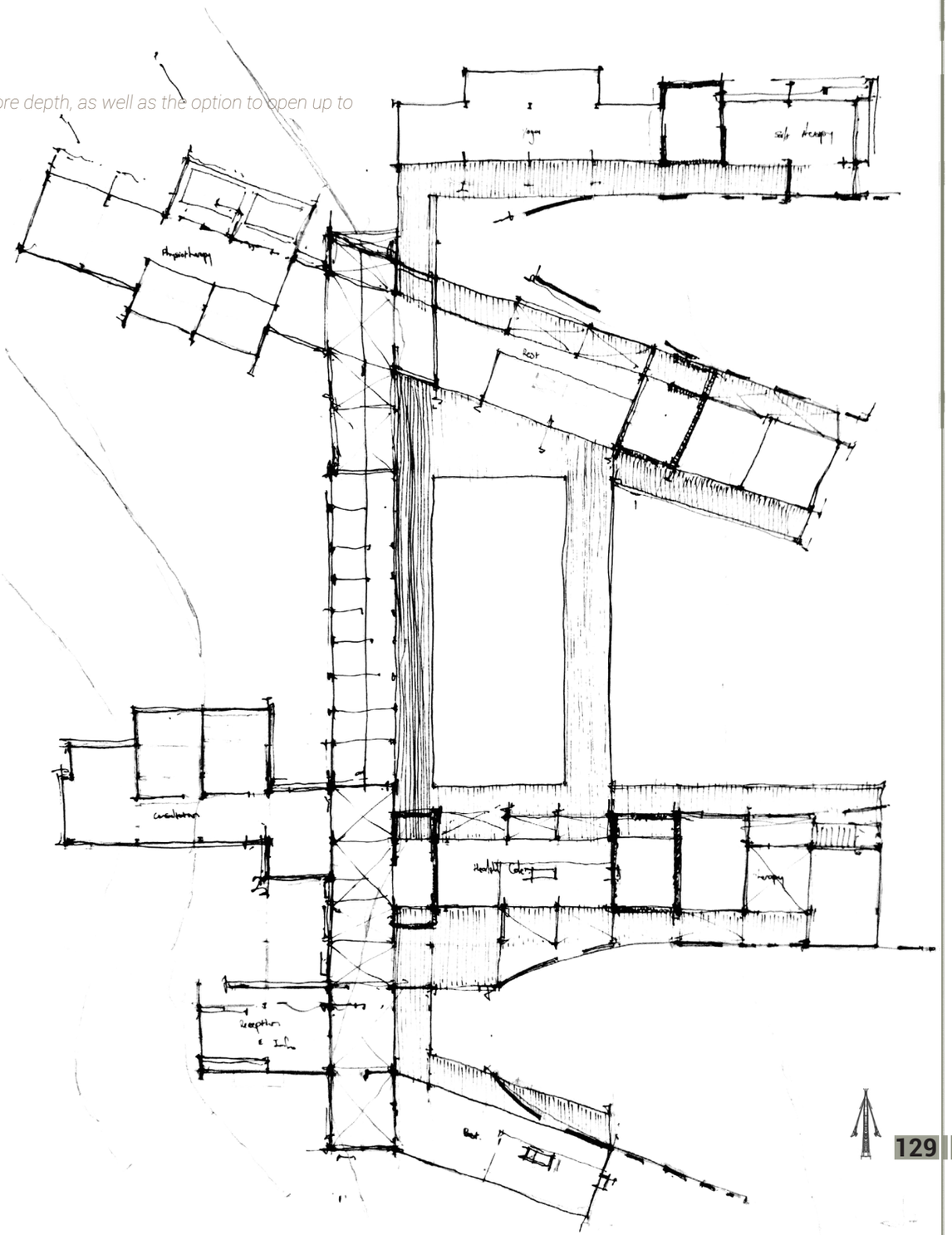


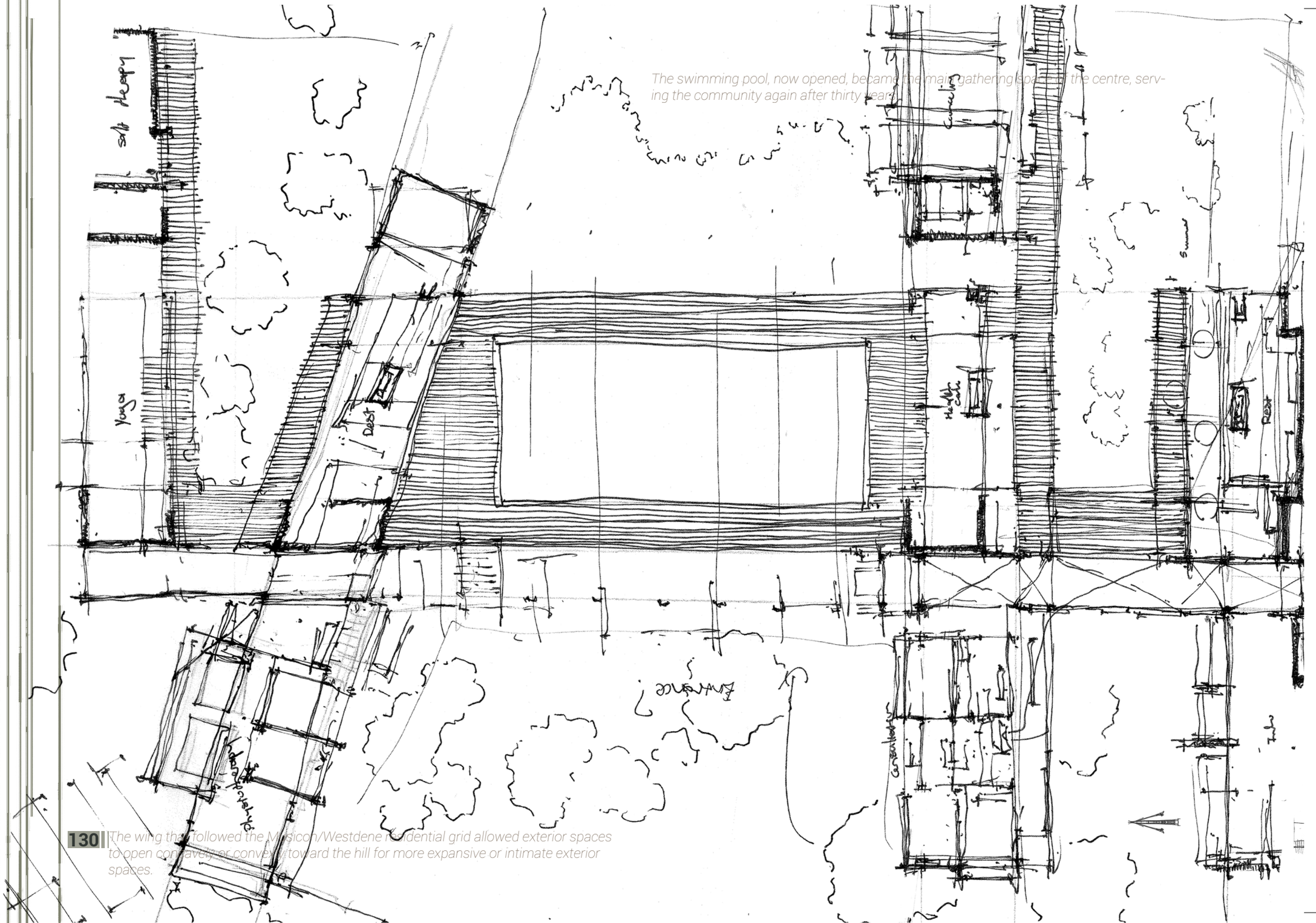




winter & summer function

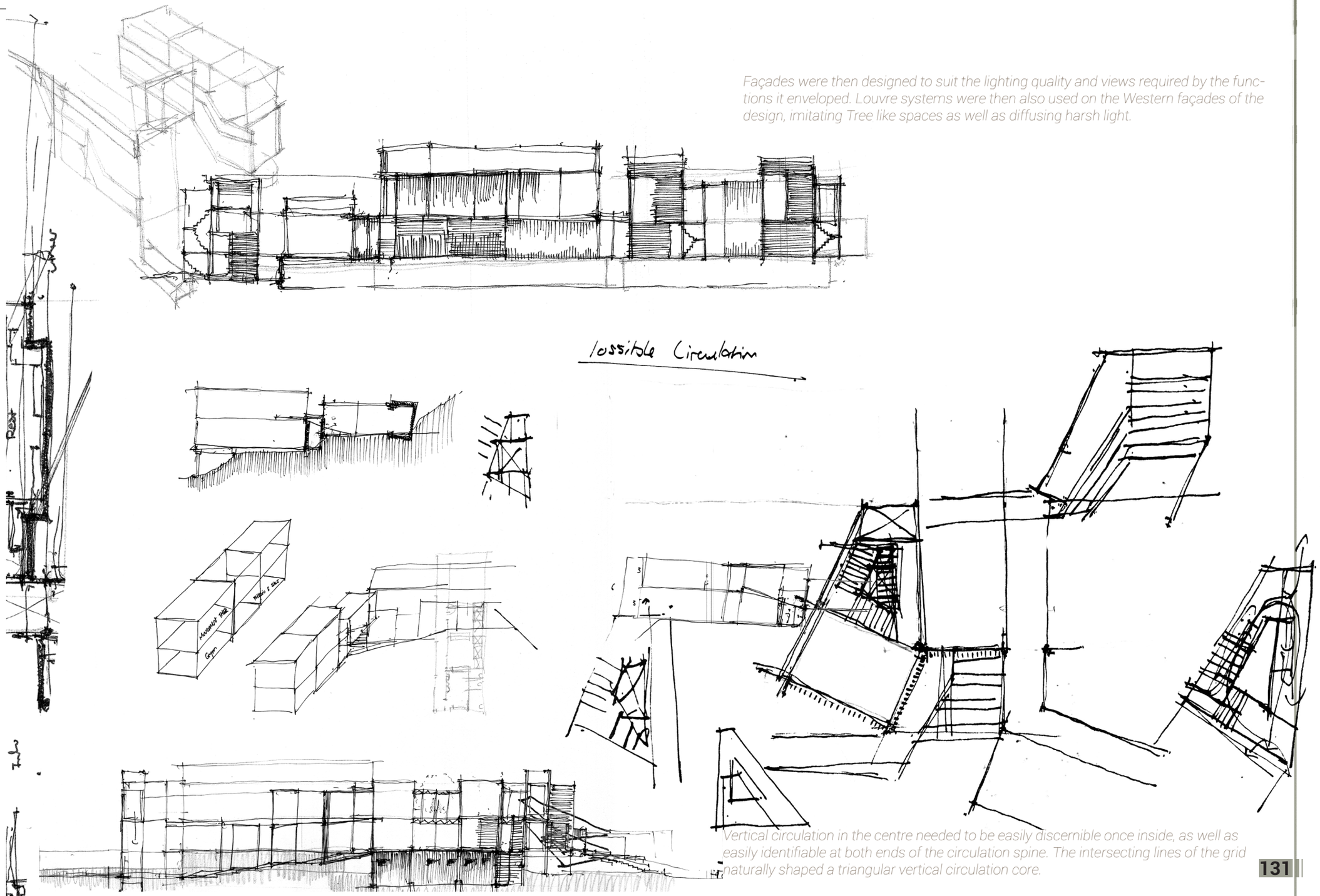
Spaces received more depth, as well as the option to open up to outside spaces.





The swimming pool, now opened, became the main gathering space of the centre, serving the community again after thirty years.

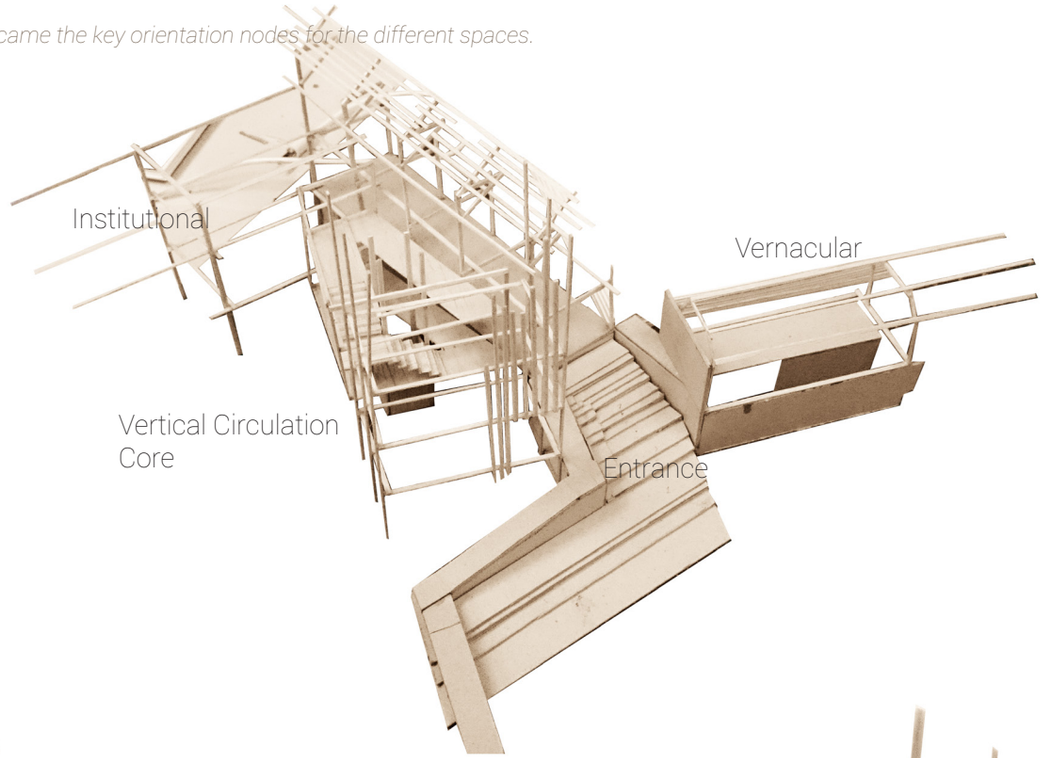
The wing that followed the Musicon/Westdene residential grid allowed exterior spaces to open concavely or convexly toward the hill for more expansive or intimate exterior spaces.

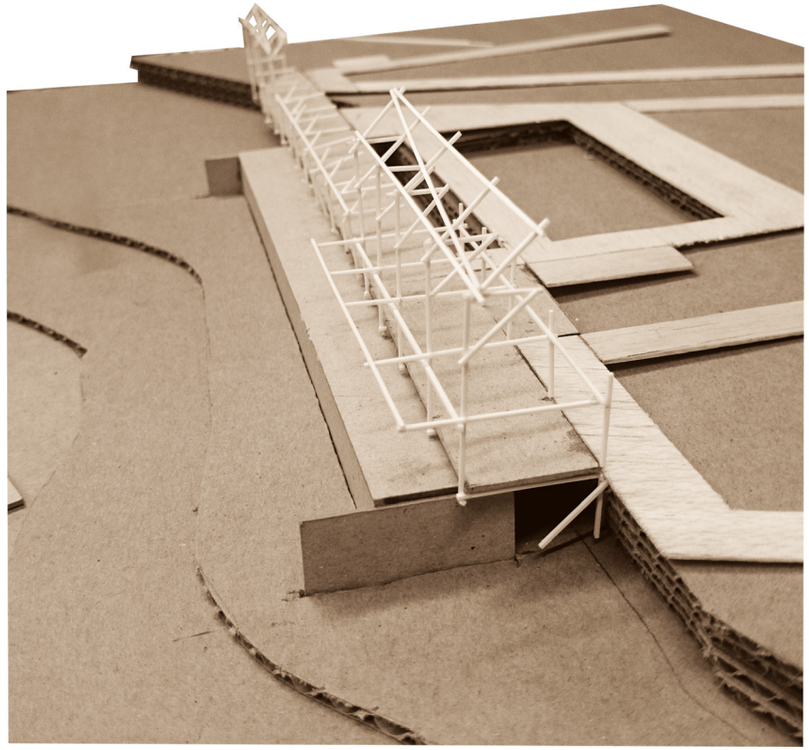


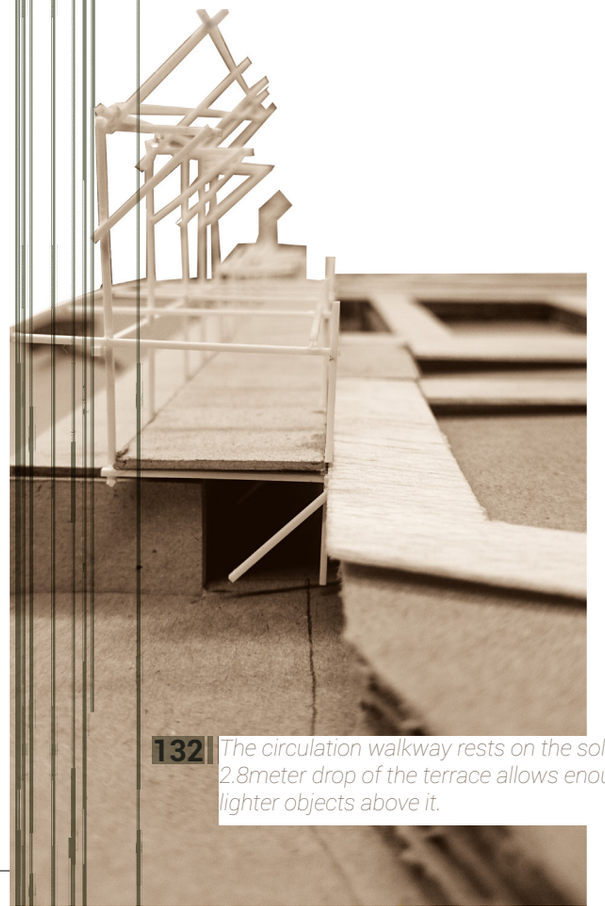
Façades were then designed to suit the lighting quality and views required by the functions it enveloped. Louvre systems were then also used on the Western façades of the design, imitating Tree like spaces as well as diffusing harsh light.

Vertical circulation in the centre needed to be easily discernible once inside, as well as easily identifiable at both ends of the circulation spine. The intersecting lines of the grid naturally shaped a triangular vertical circulation core.

The cores became the key orientation nodes for the different spaces.

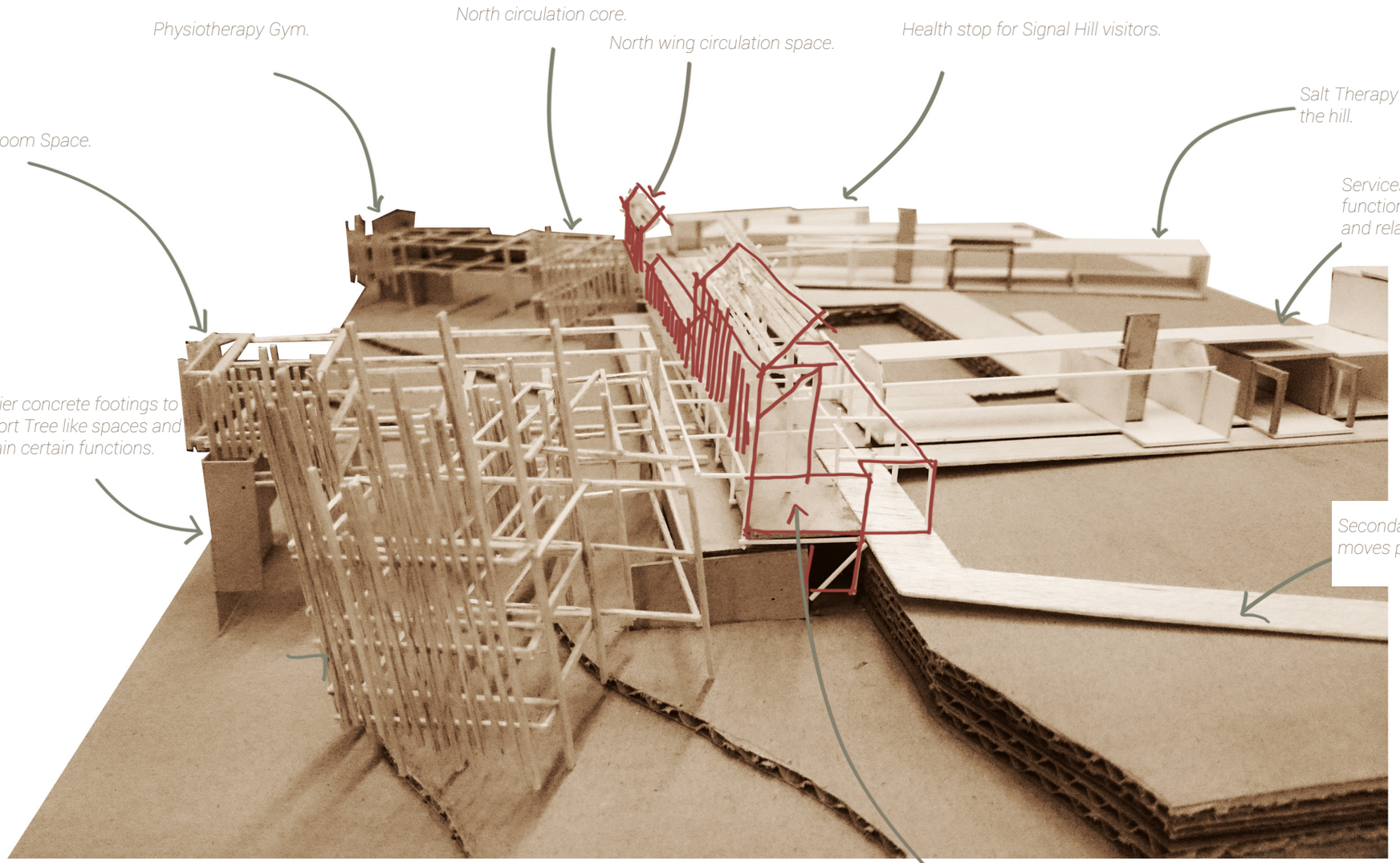






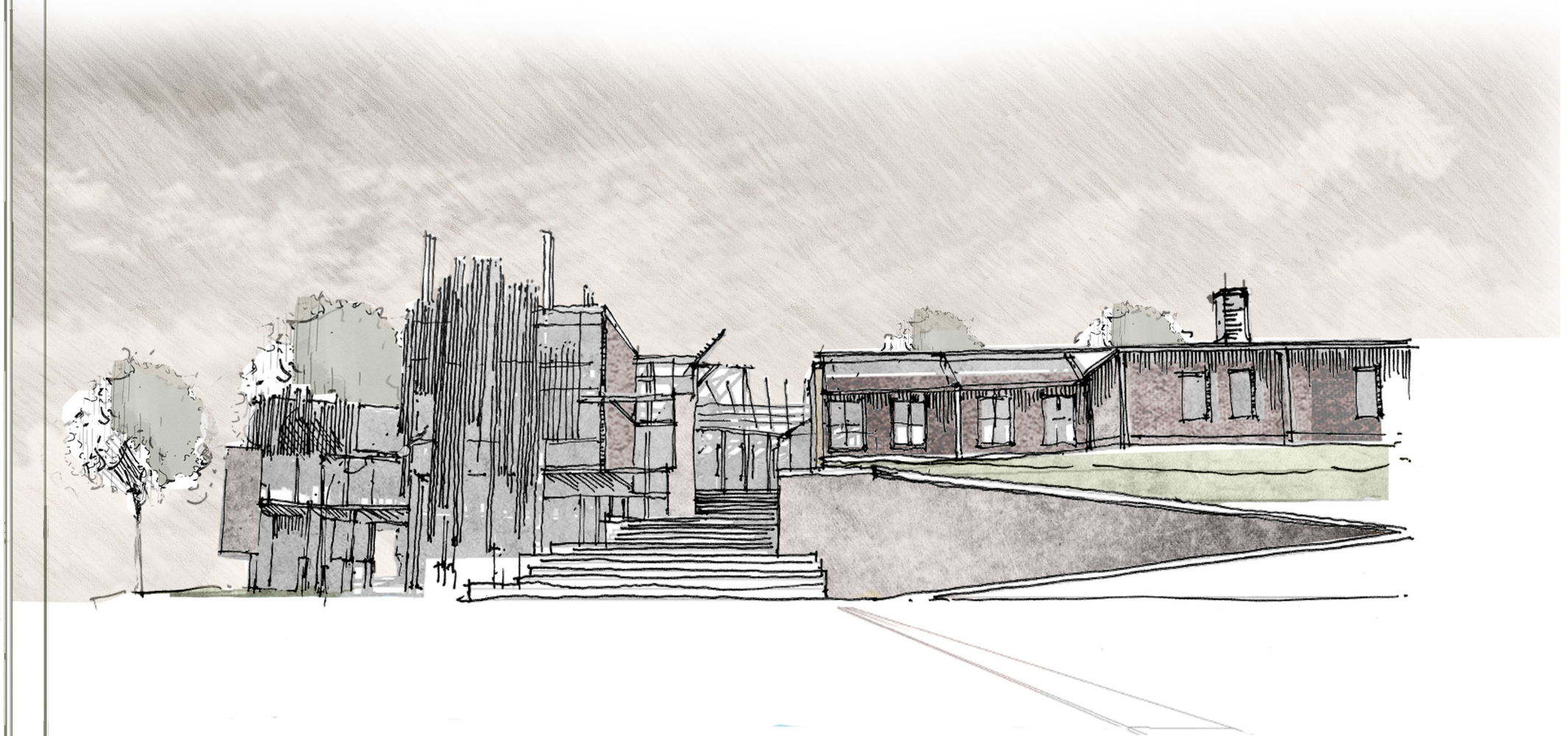


The circulation walkway rests on the solid ablution block on the level below. The 2.8meter drop of the terrace allows enough space for the basement level to carry lighter objects above it.

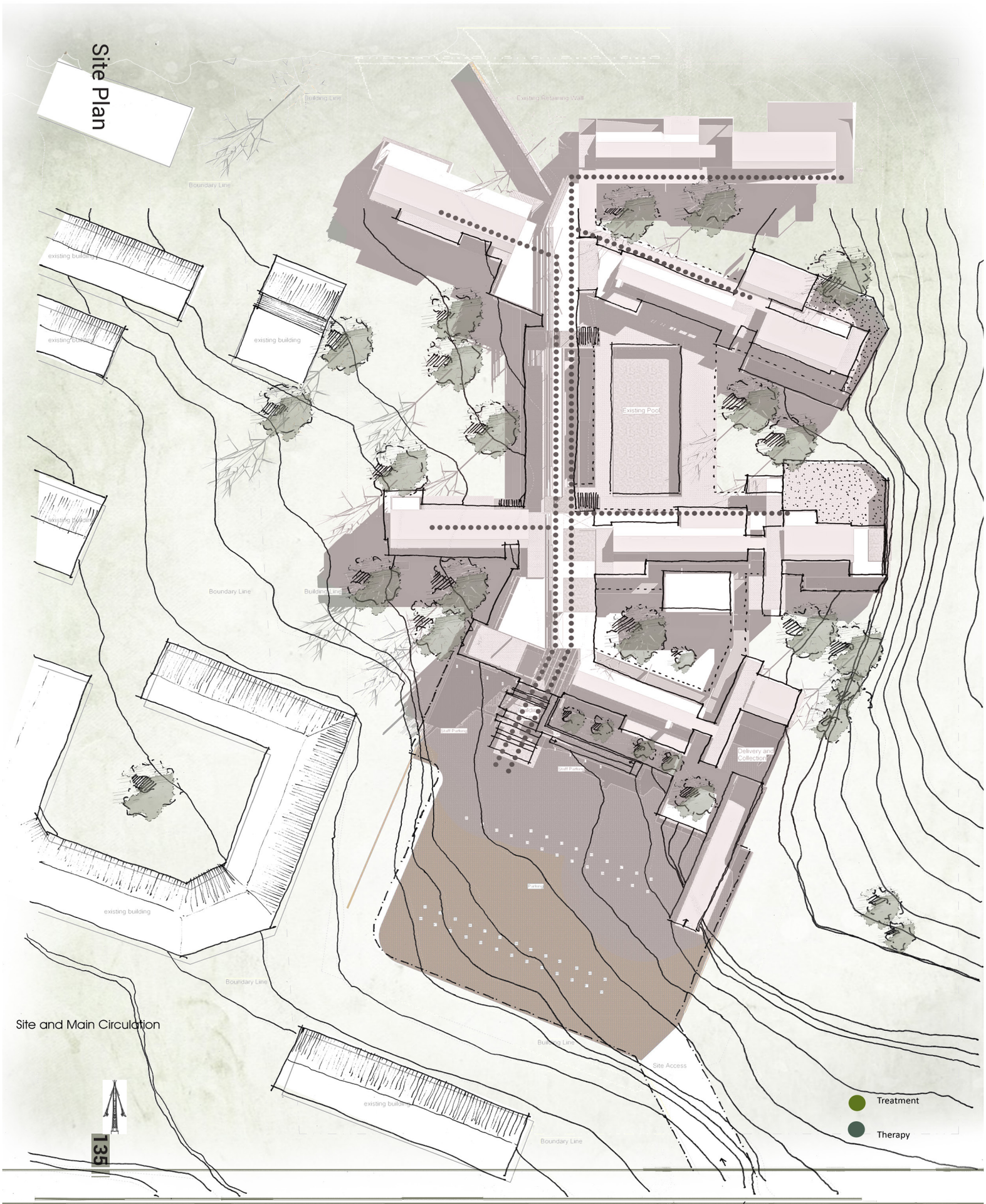

Physiotherapy Gym.
North circulation core.
North wing circulation space.
Health stop for Signal Hill visitors.
Boardroom Space.
Salt Therapy to cut into the hill.
Services used to split functions from waiting and relaxation areas.
Heavier concrete footings to support Tree like spaces and contain certain functions.
Secondary circulation that moves past functions.
The circulation spine is only covered at both ends of the swimming pool, effectively splitting the layout into two wings.

3.3 Proposal

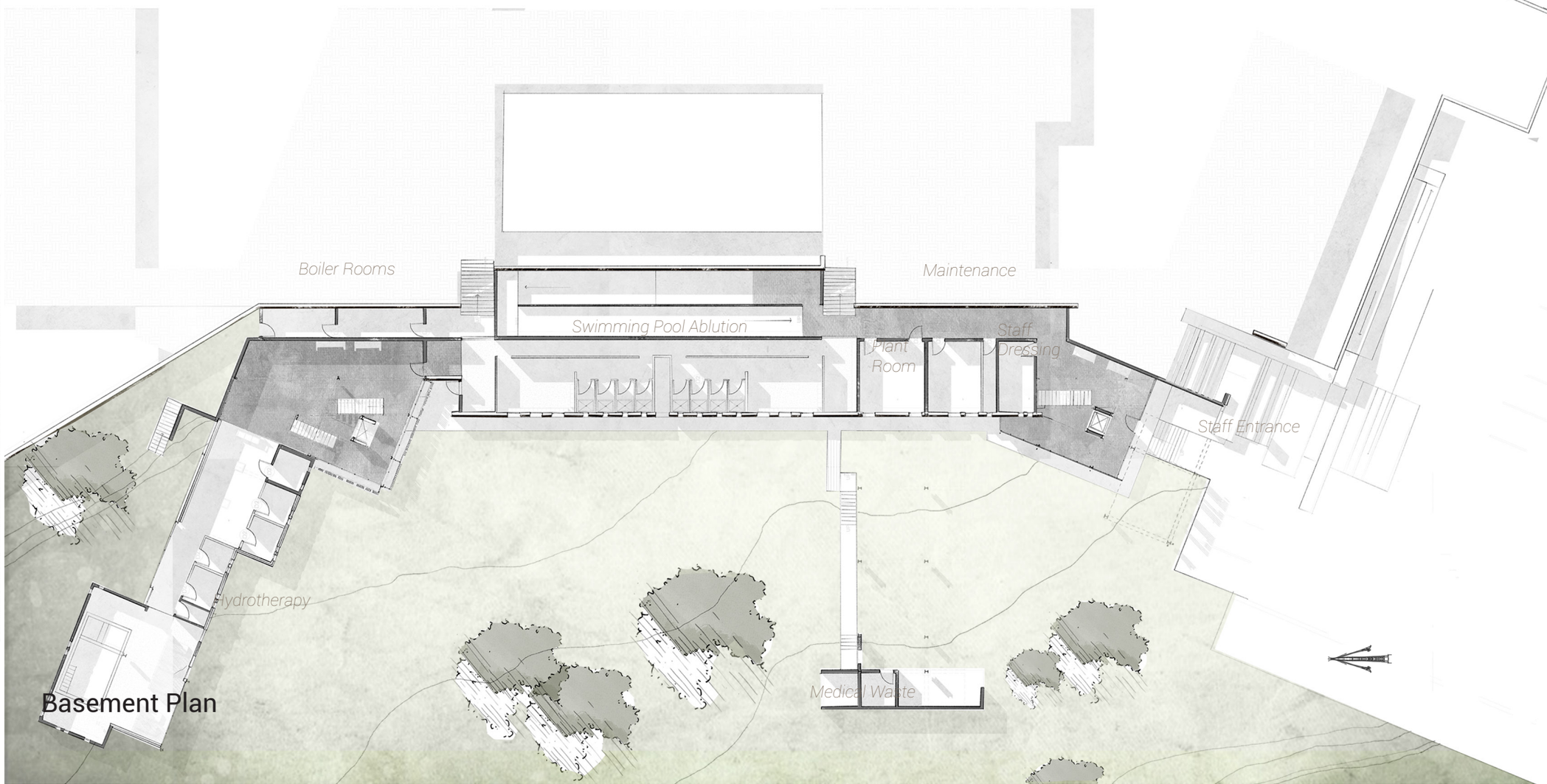
3.3.1 Healing Place



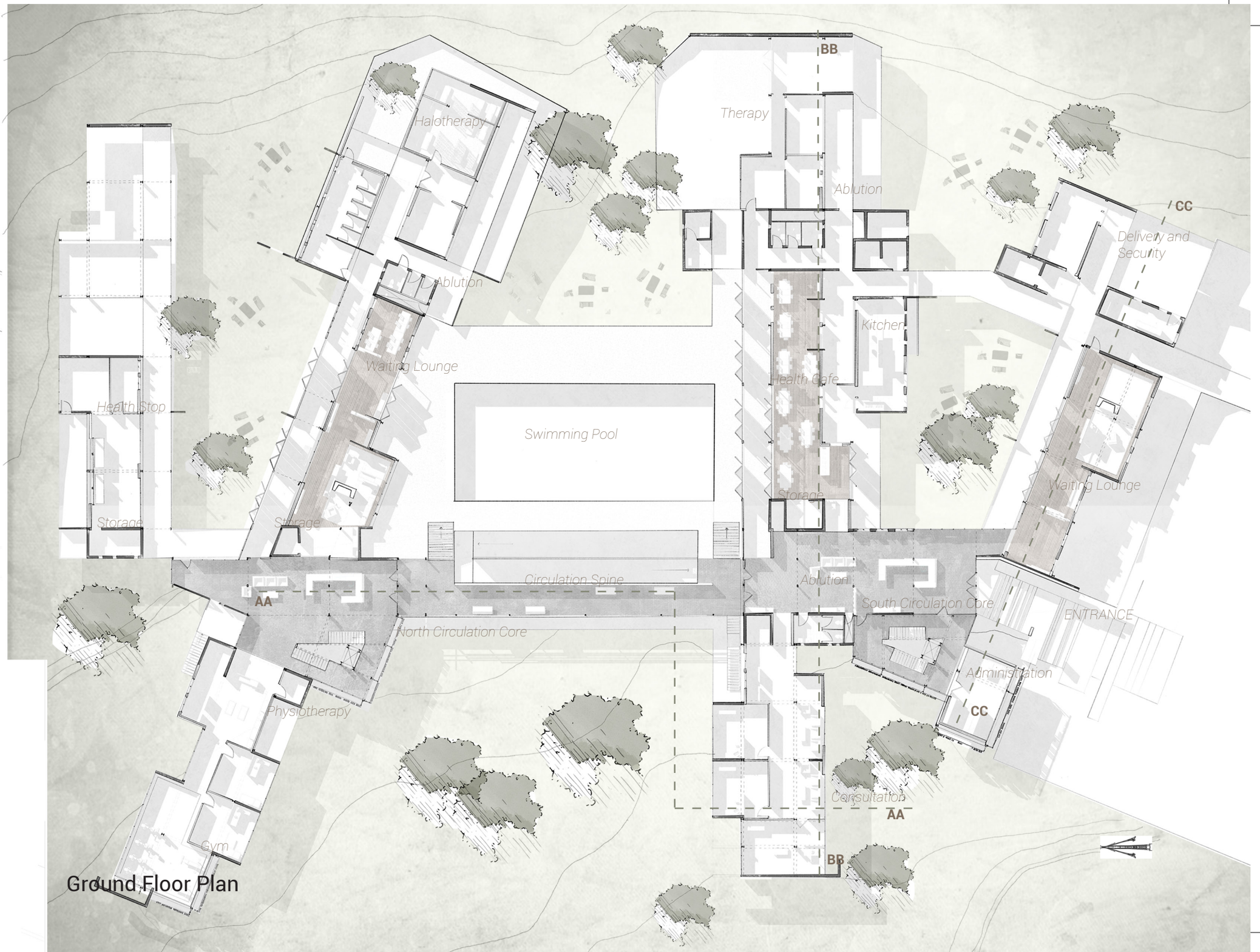
Site Plan



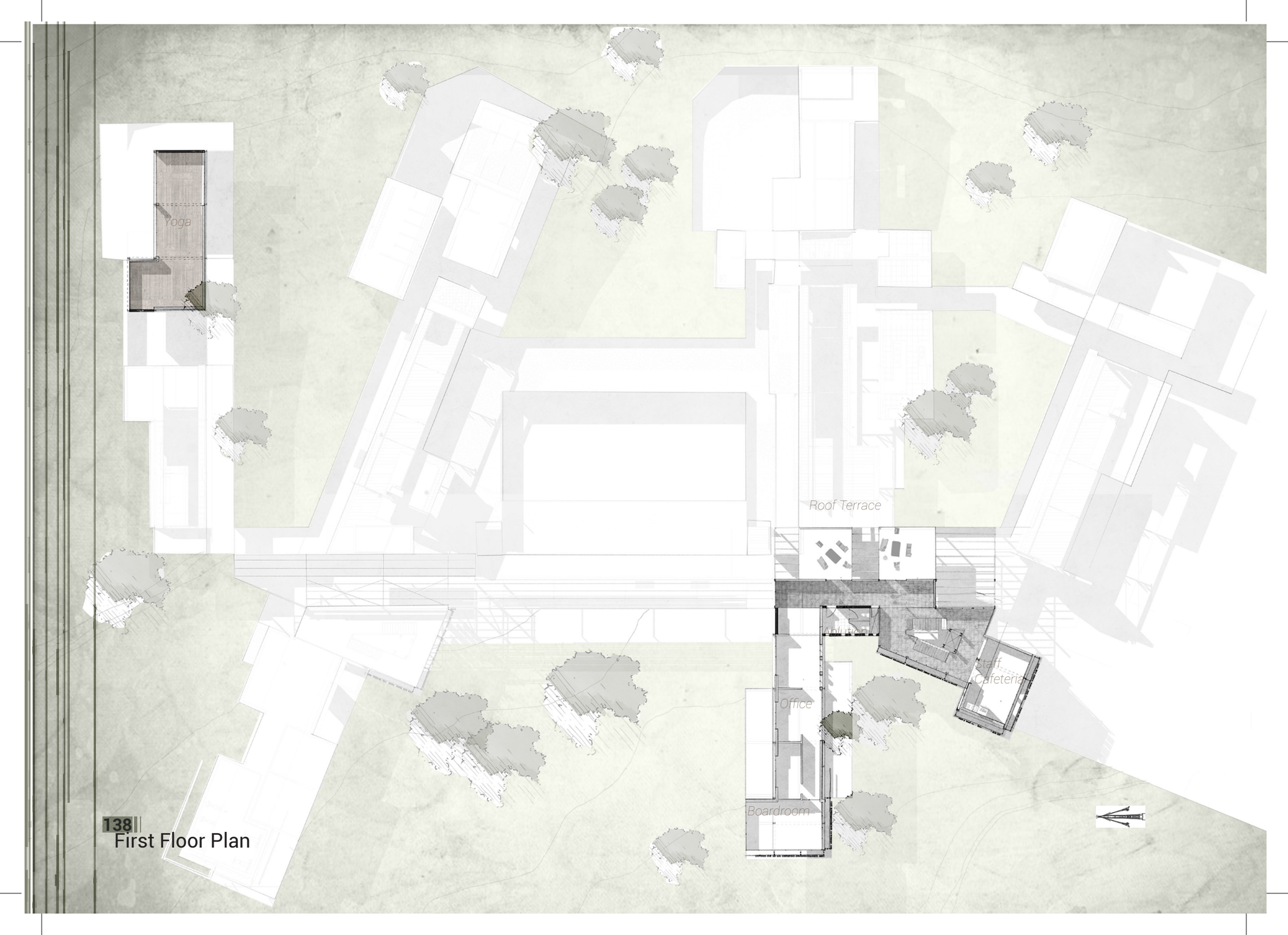
Site and Main Circulation



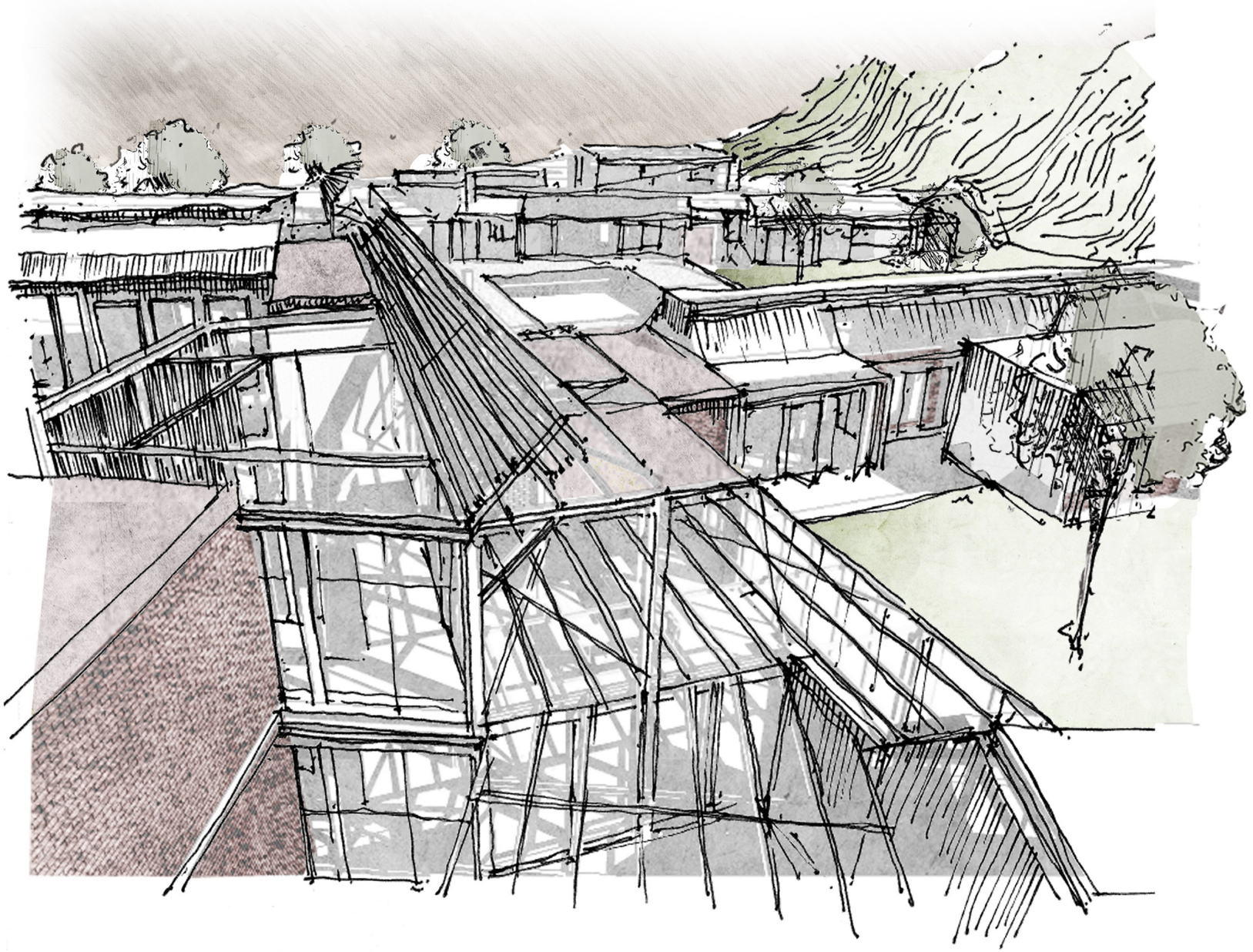
Basement Plan



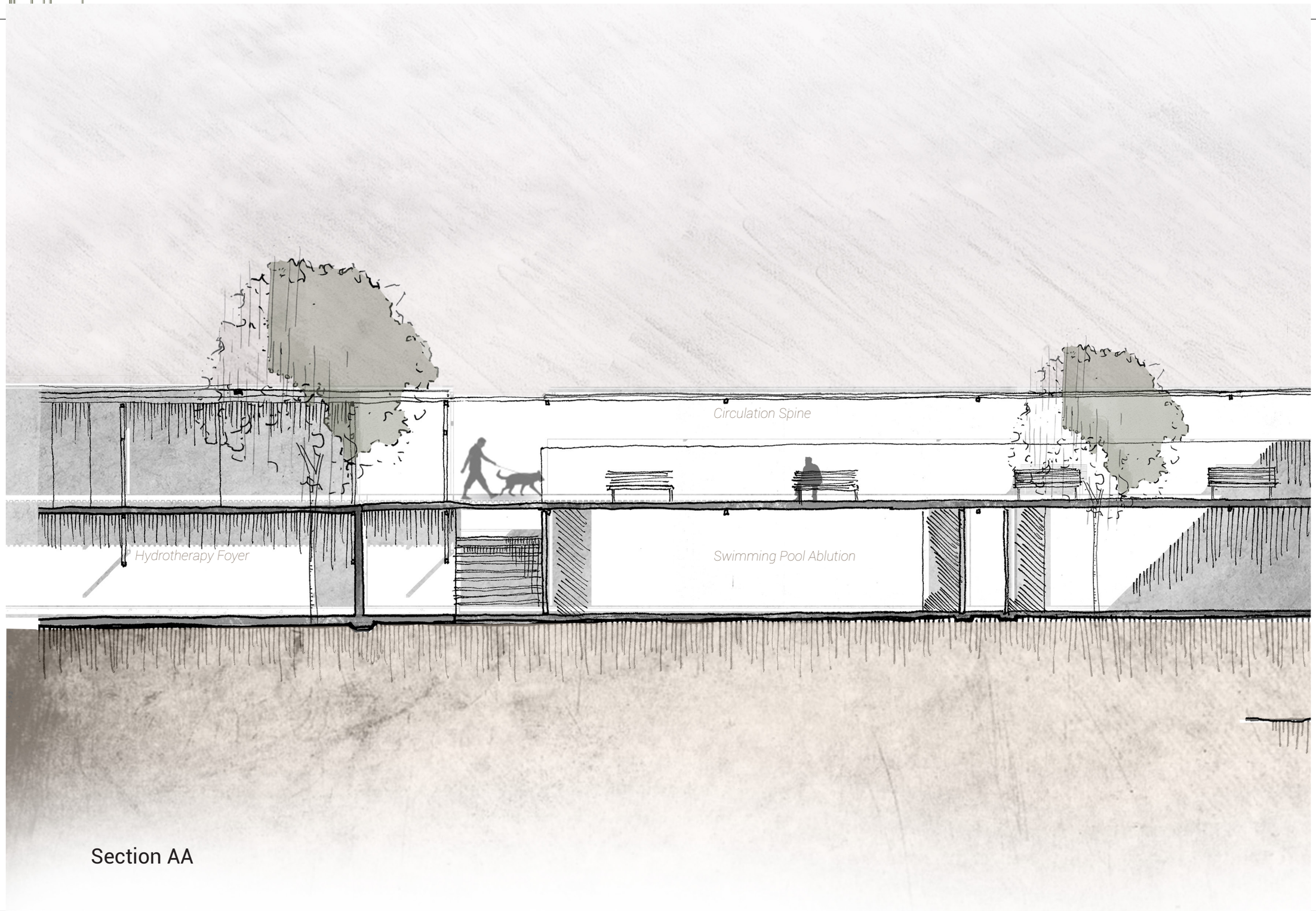
Ground Floor Plan



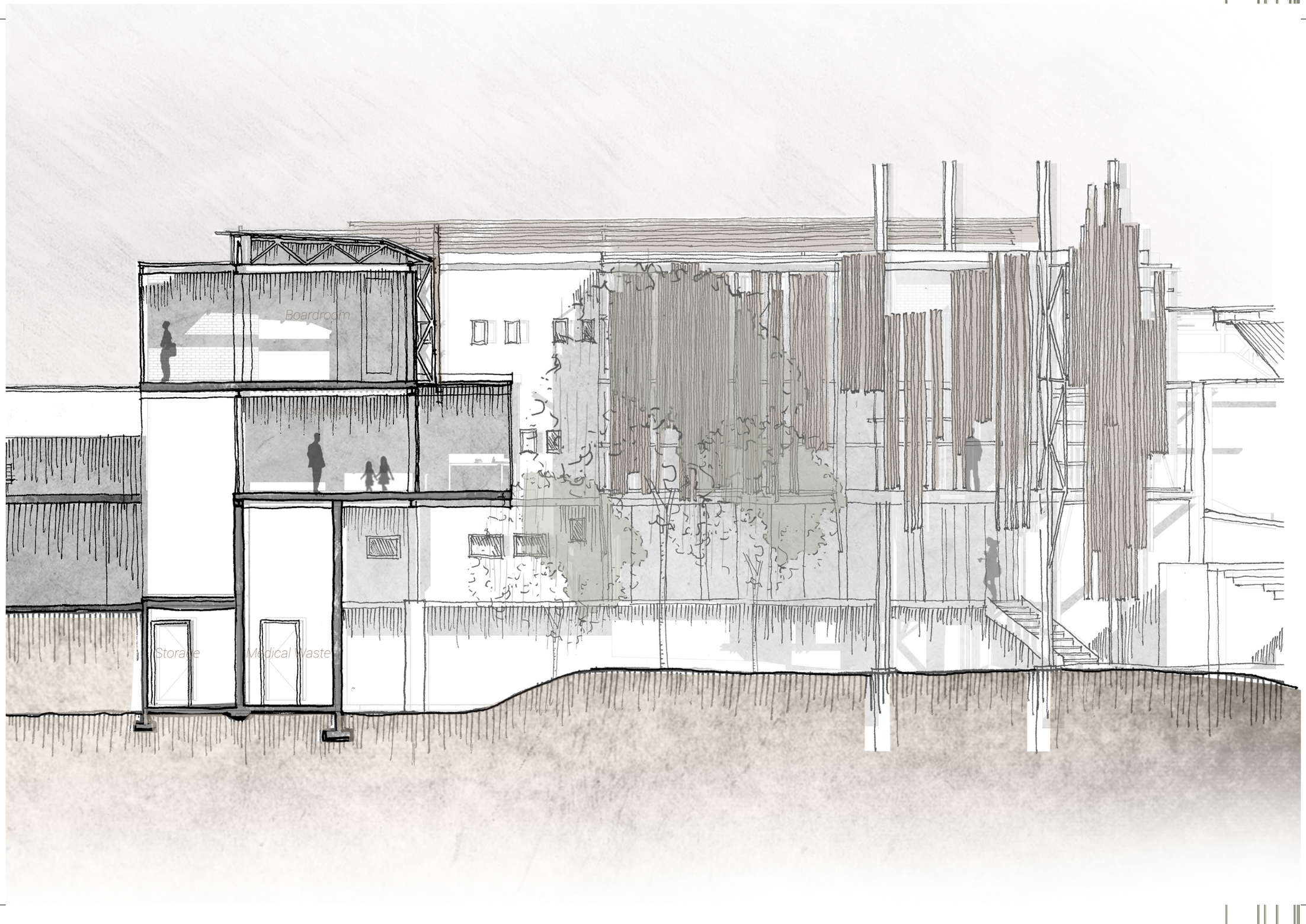
First Floor Plan

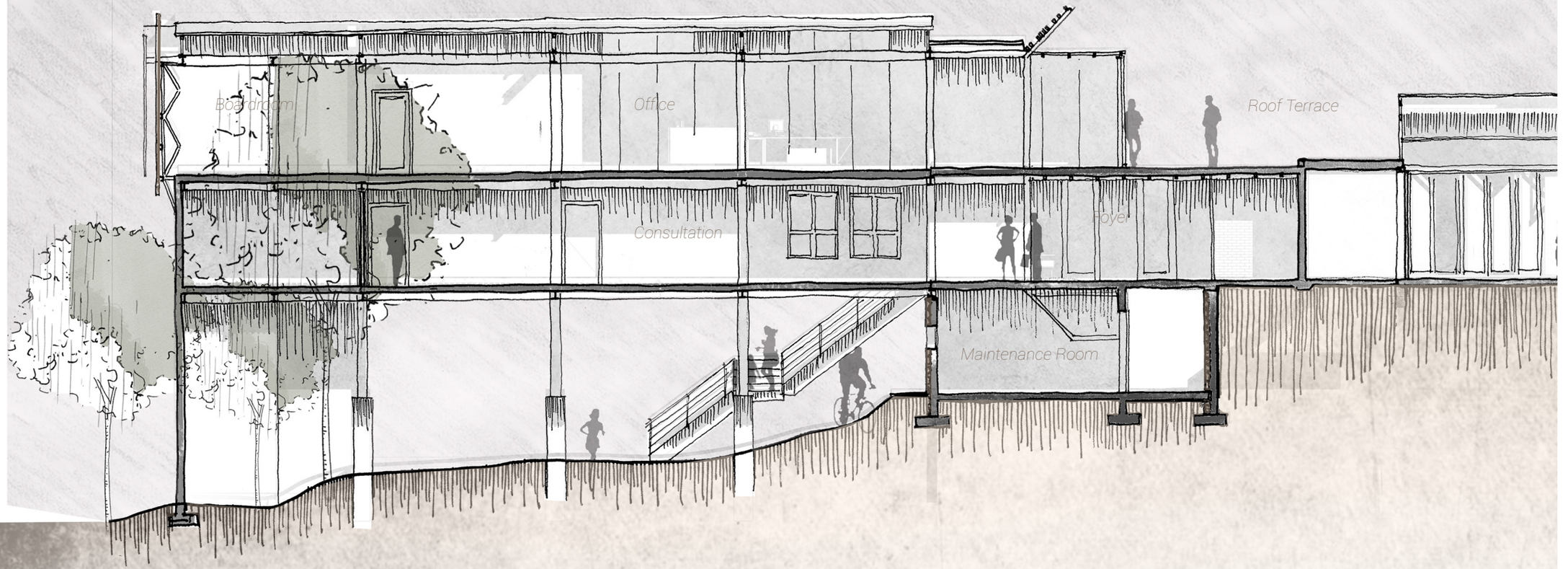


Circulation Spine


Circulation Spine
Hydrotherapy Foyer
Swimming Pool Ablution

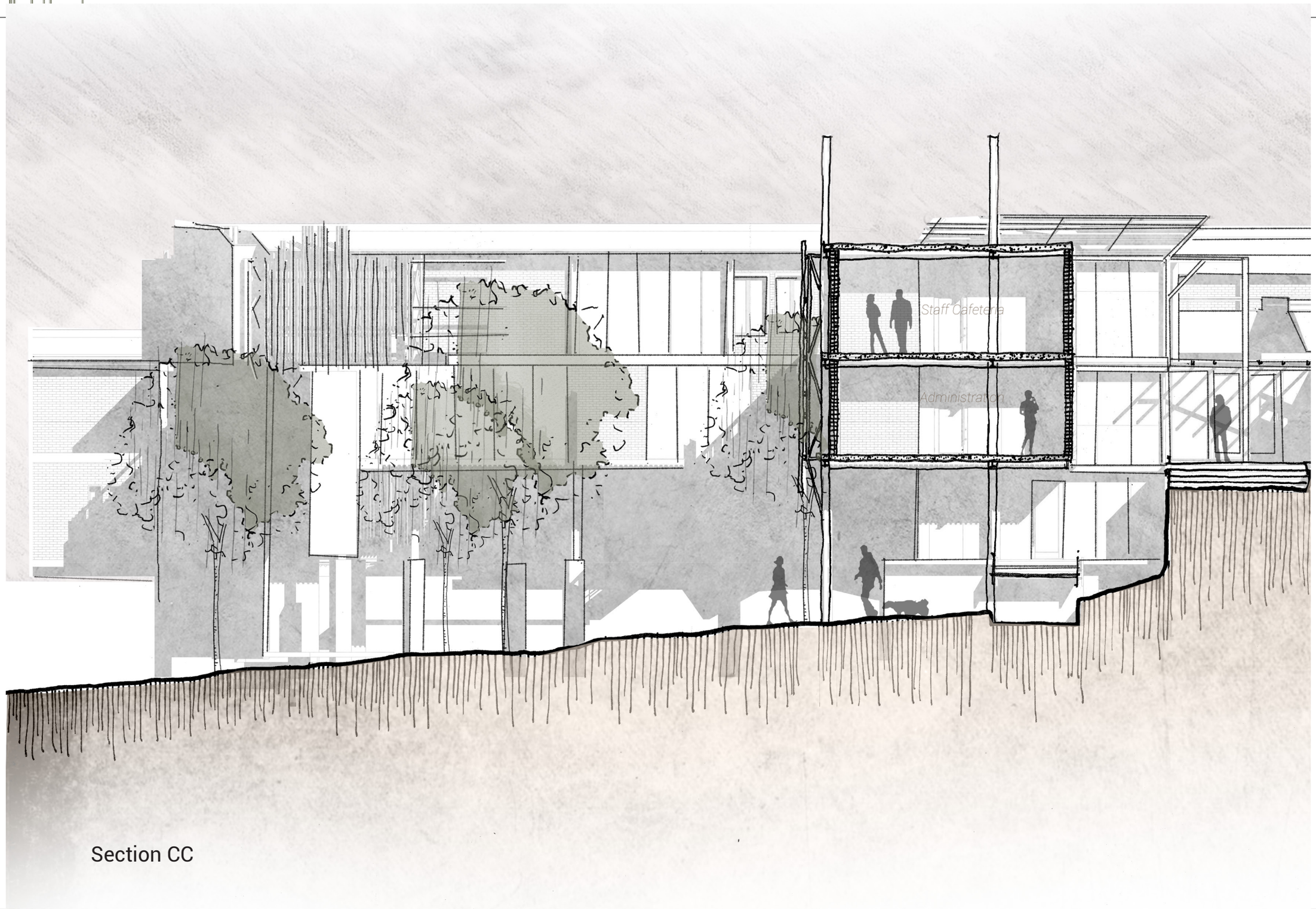
Section AA


Boardroom
Storage
Medical Waste

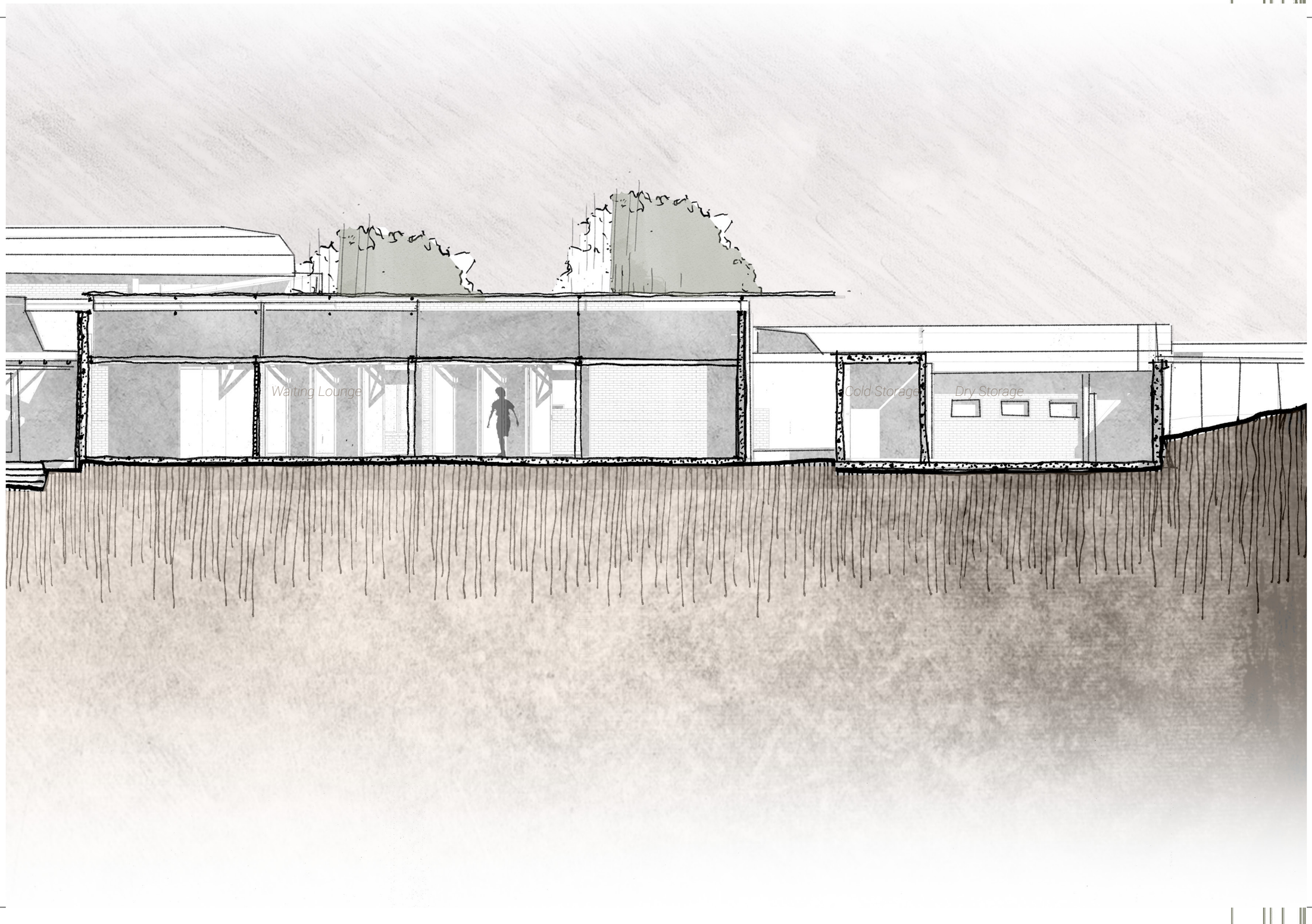

Boardroom
Office
Roof Terrace
Consultation
Foyer
Maintenance Room

Section BB


Health Cafe
Ablution
Therapy



Section CC


Waiting Lounge
Cold Storage
Dry Storage

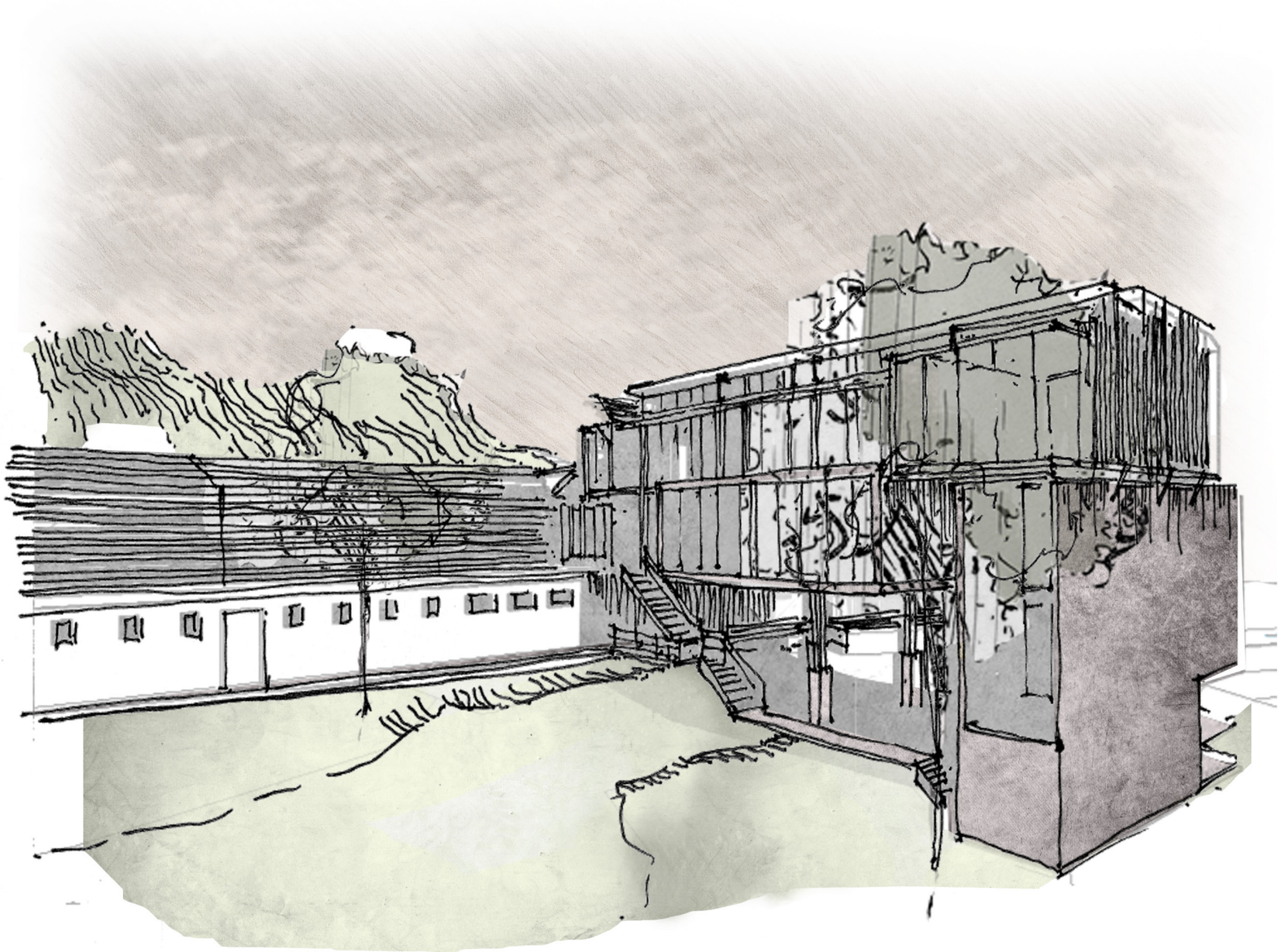


South Elevation

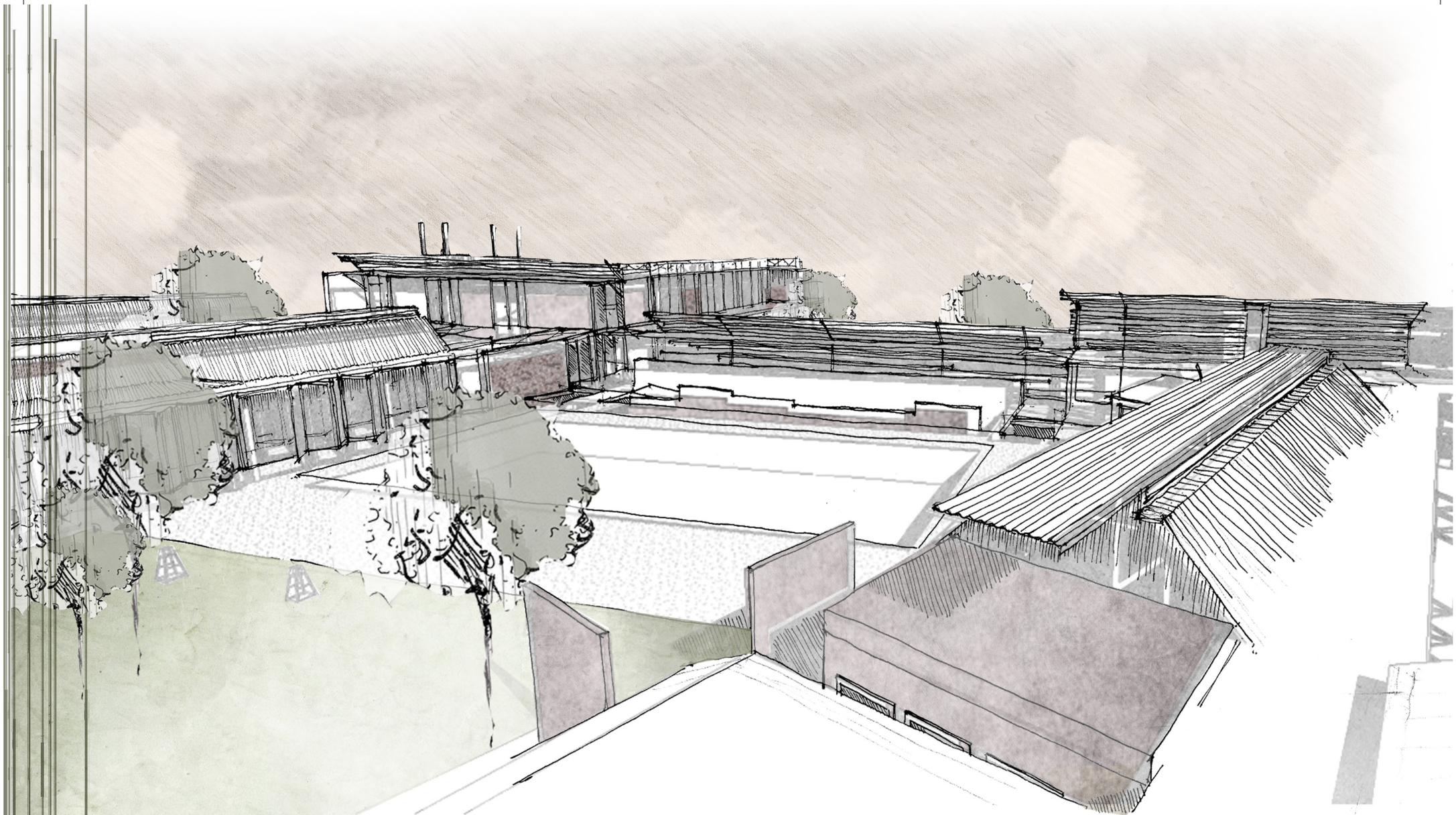




Bird's Eye View



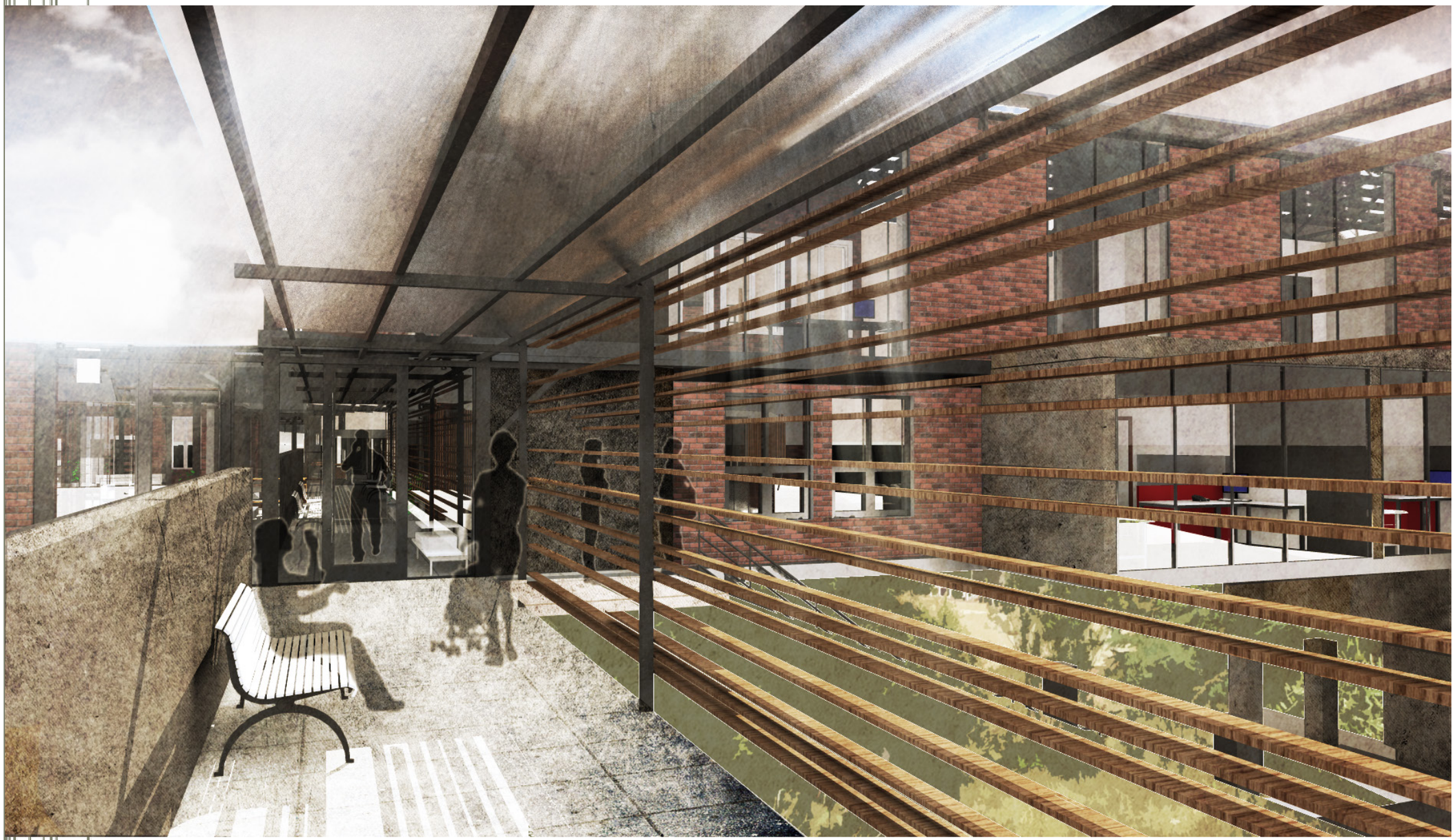
Consultation Wing



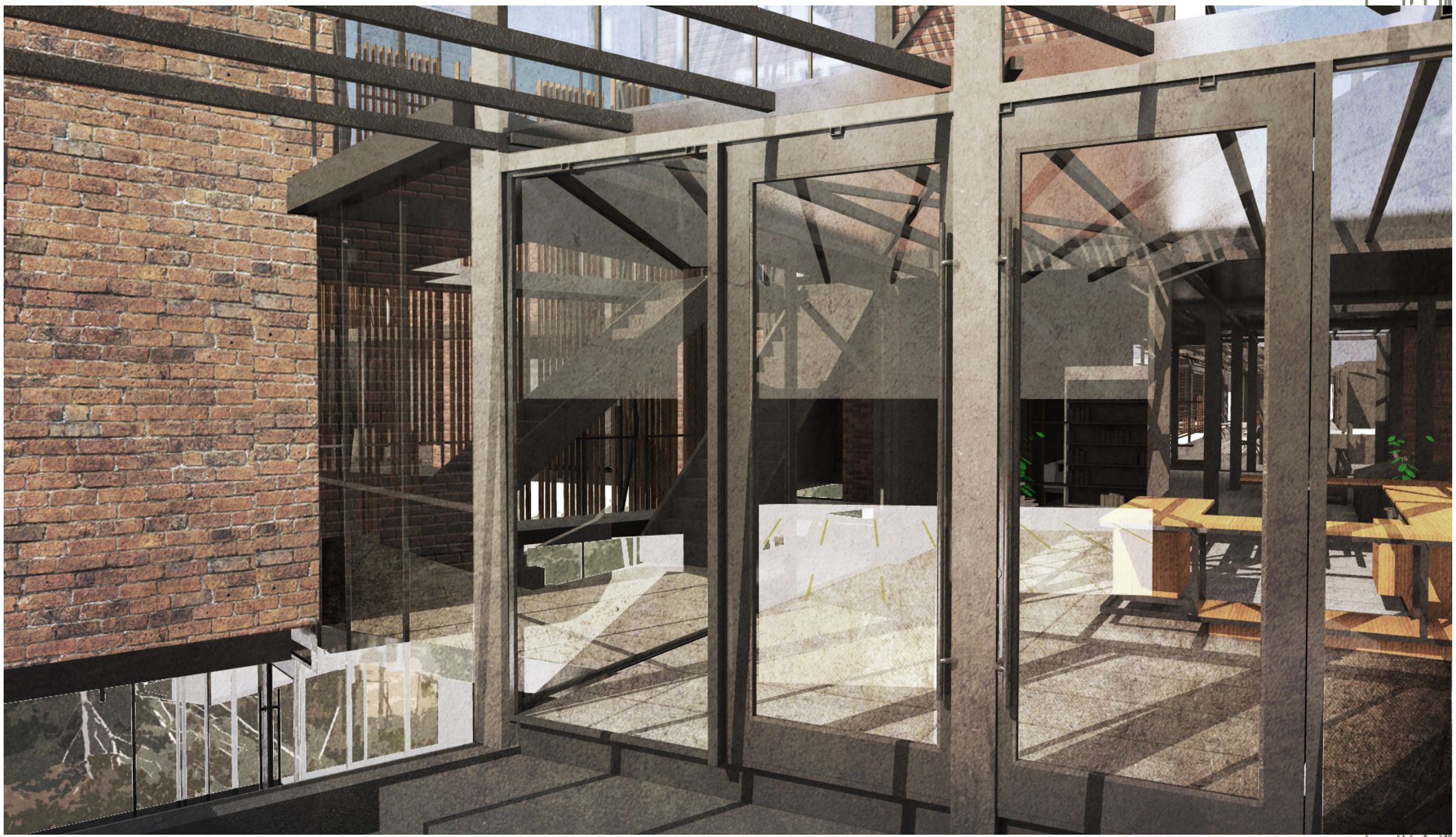
150
Swimming Pool Courtyard



Waiting Lounge



152
Circulation Spine South

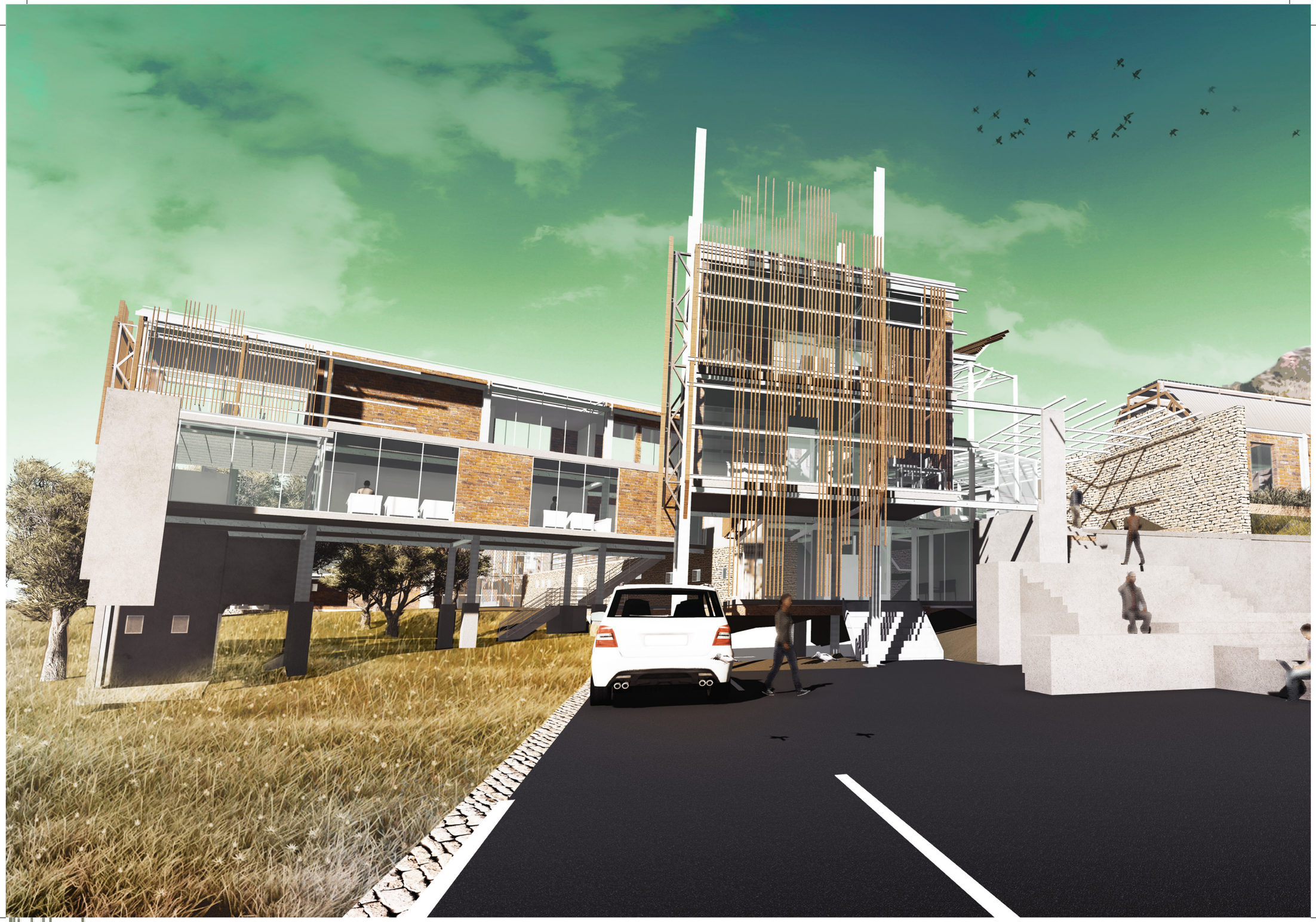


Entrance





Exterior Relaxation Space





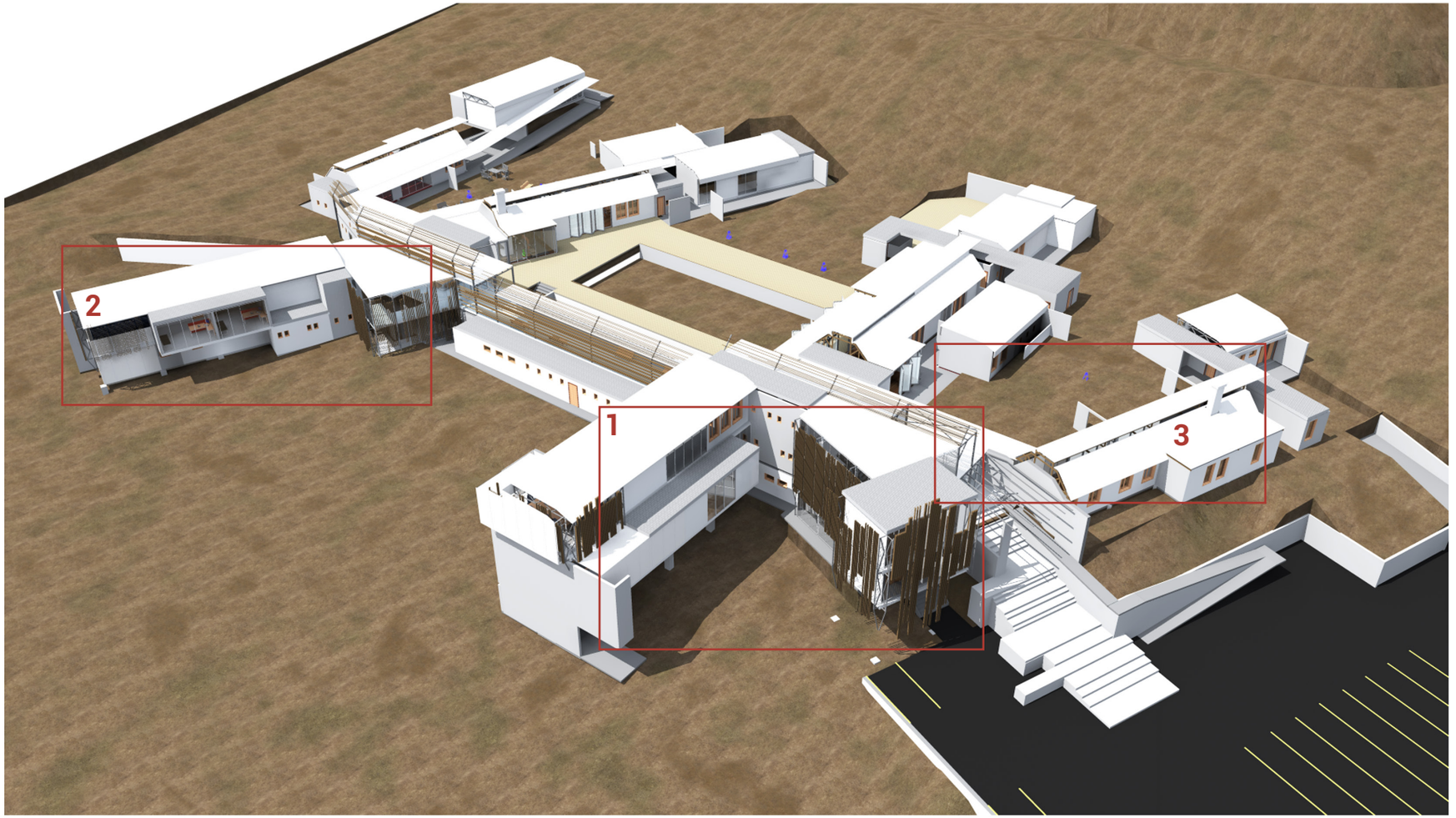








3.3.2 Technical Resolution





1

3D Section of Vertical Circulation Core and Consultation Wing.



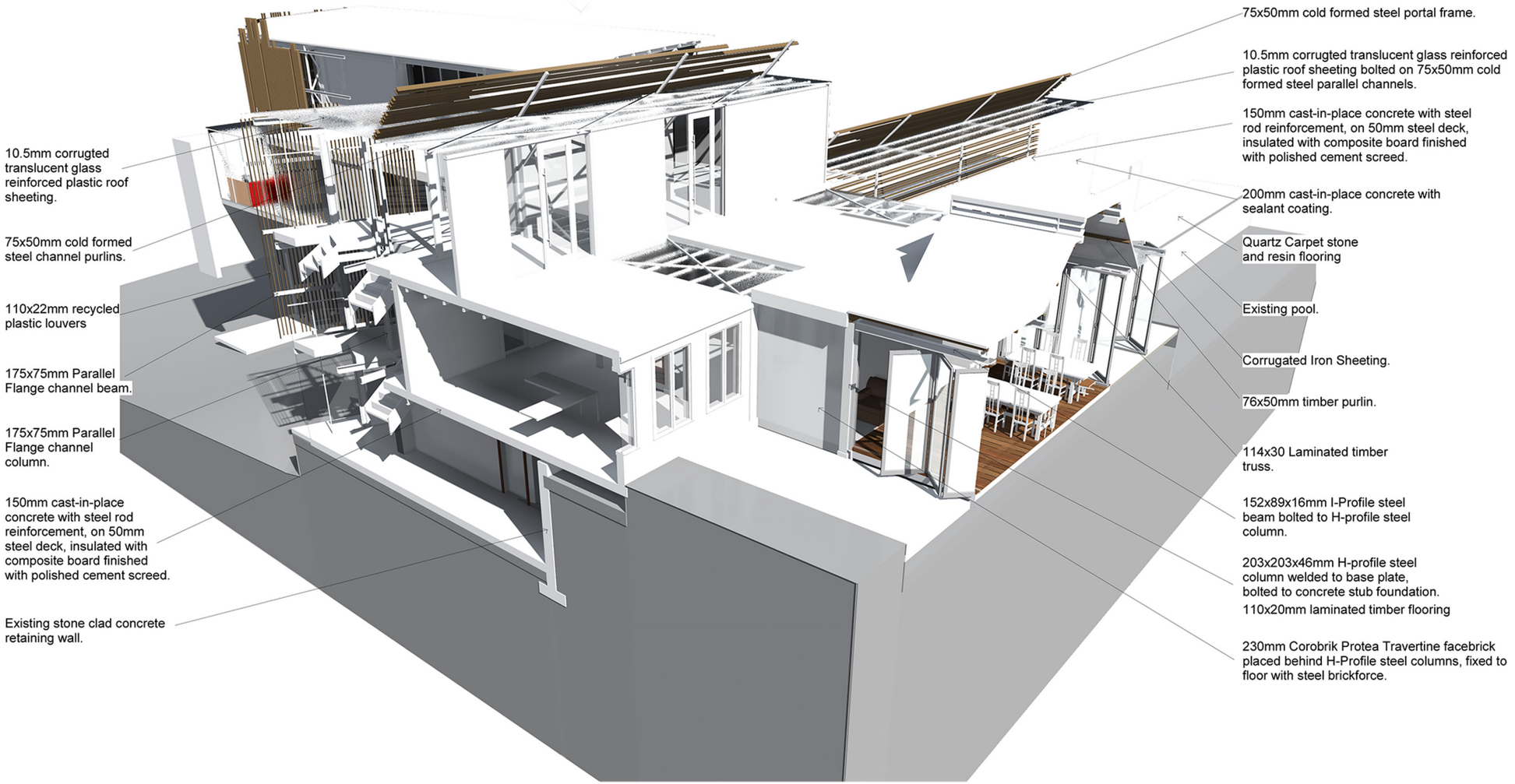
2

3D Section of Physiotherapy and Hydrotherapy Wing.



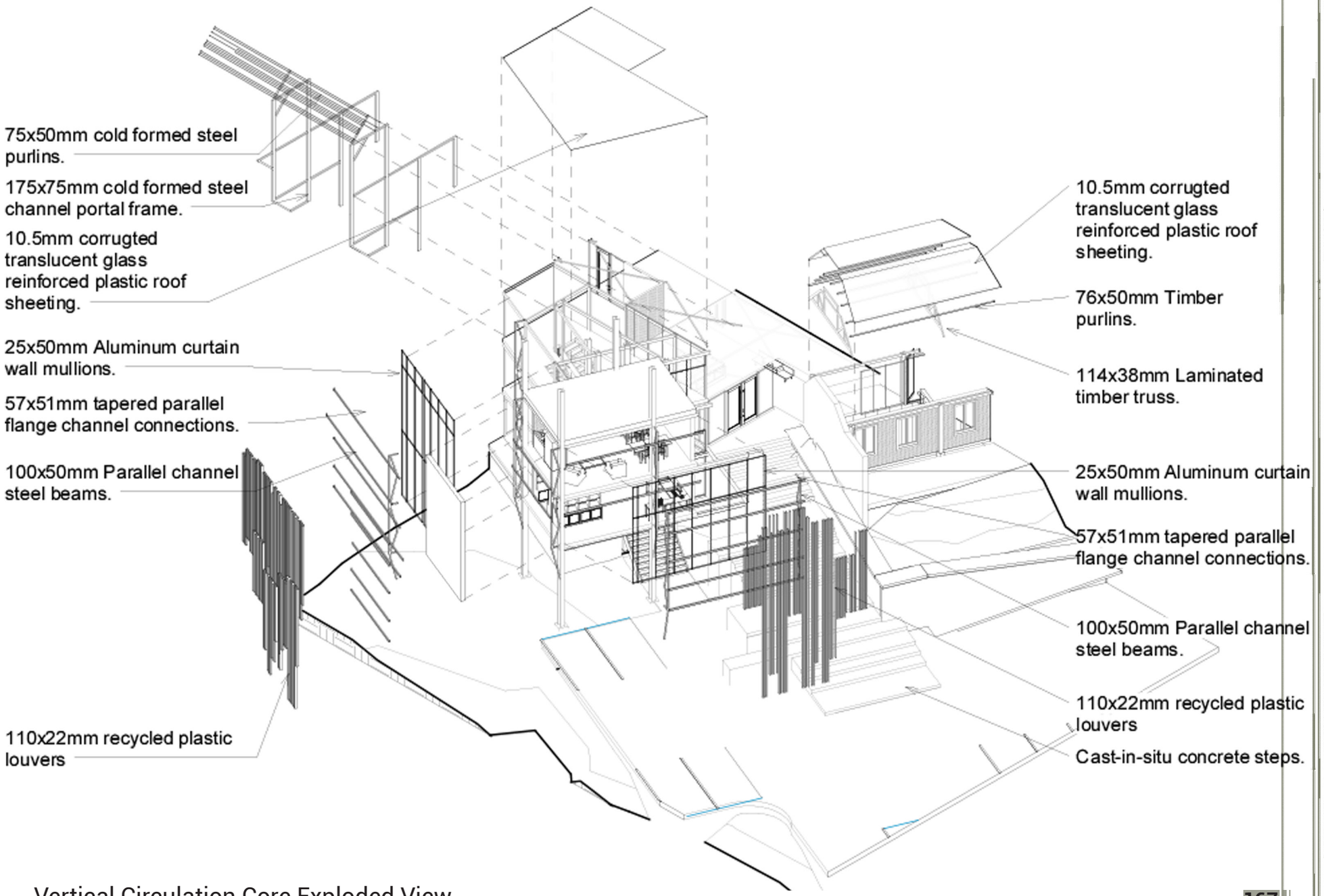
1

3D Section of Tower, Circulation and Consultation Wing.



3

3D Section with Material Descriptions.



Vertical Circulation Core Exploded View

Users seeking treatment:

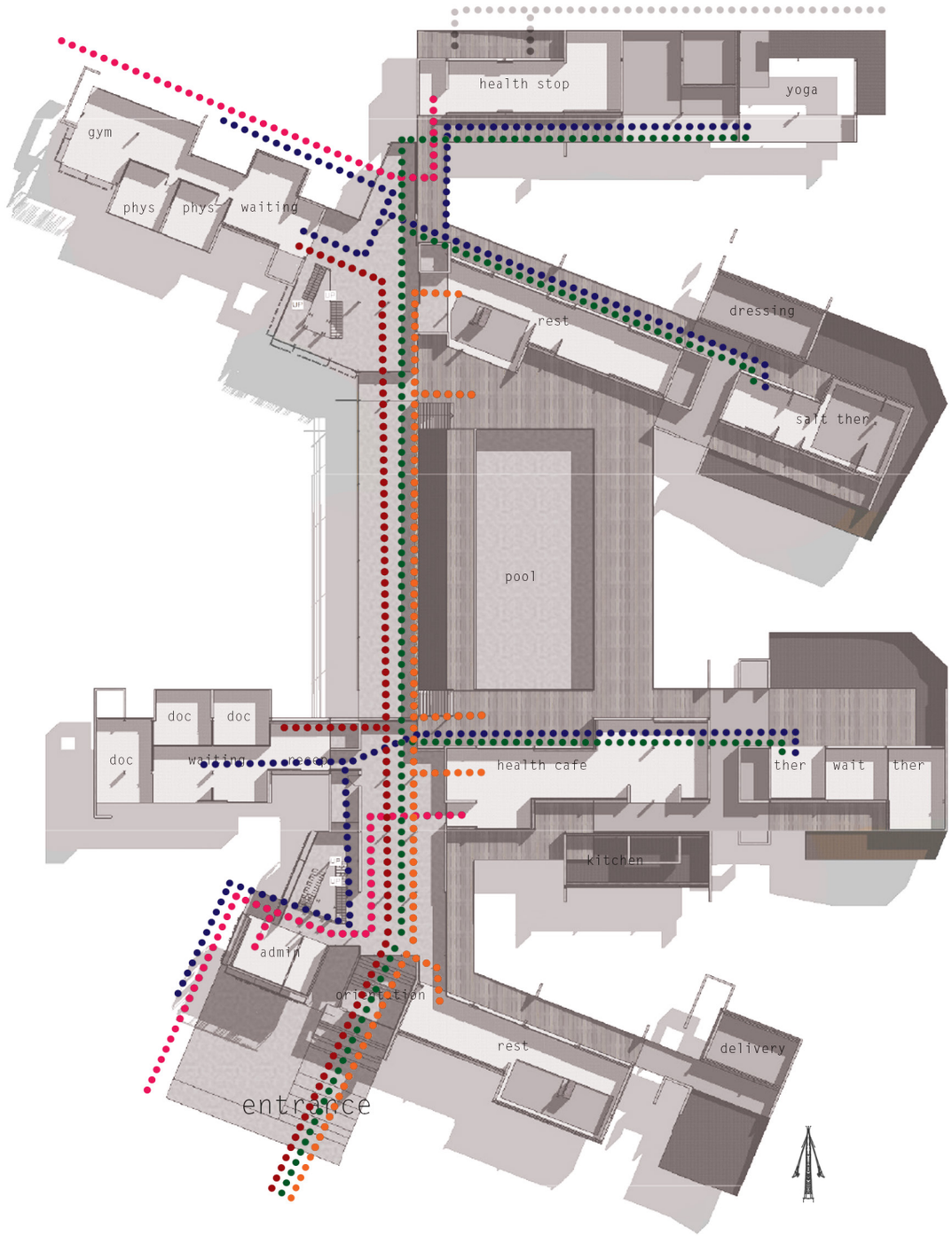
Users seeking therapy:

Users seeking relaxation:

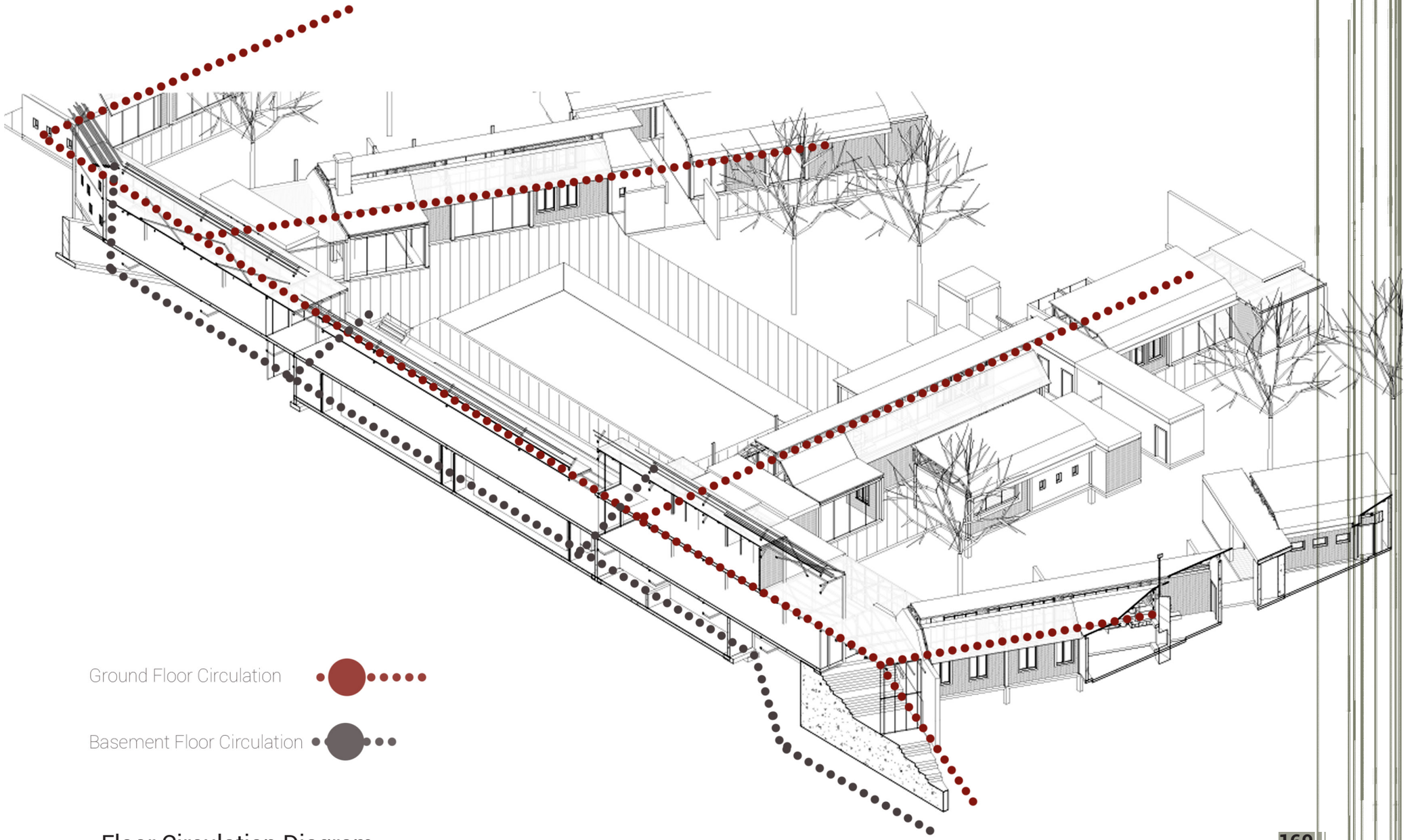
Professional Work Force:

Centre Administrative Work Force:

Signal Hill Users:



User Flow Diagram

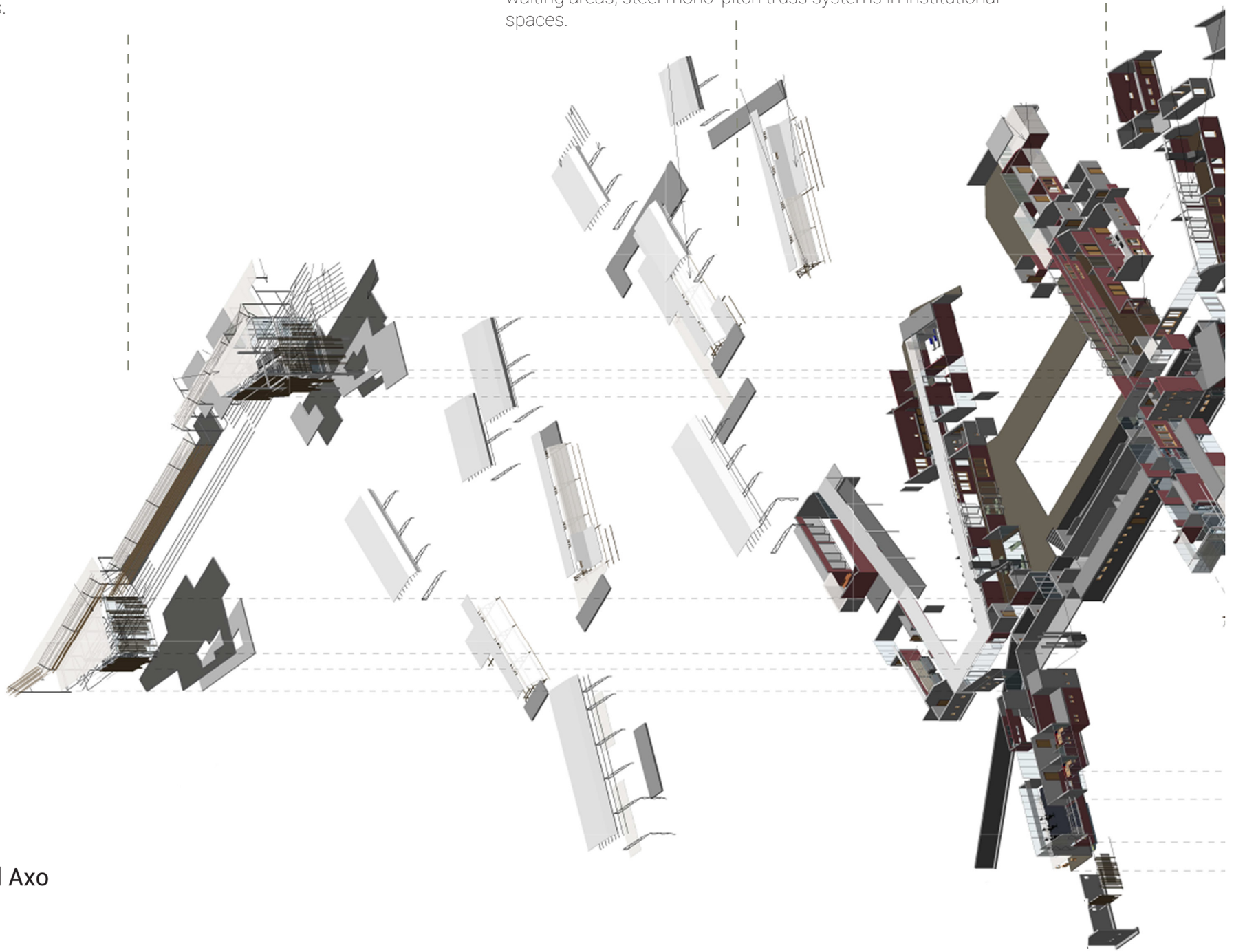


Floor Circulation Diagram

Circulation Spine: Two steel portal circulation spaces connected through a spine and two vertical circulation cores.

Roof System: Timber truss roof systems in resting and waiting areas, steel mono-pitch truss systems in institutional spaces.

Walls and Cladding: Masc
glazing infill.

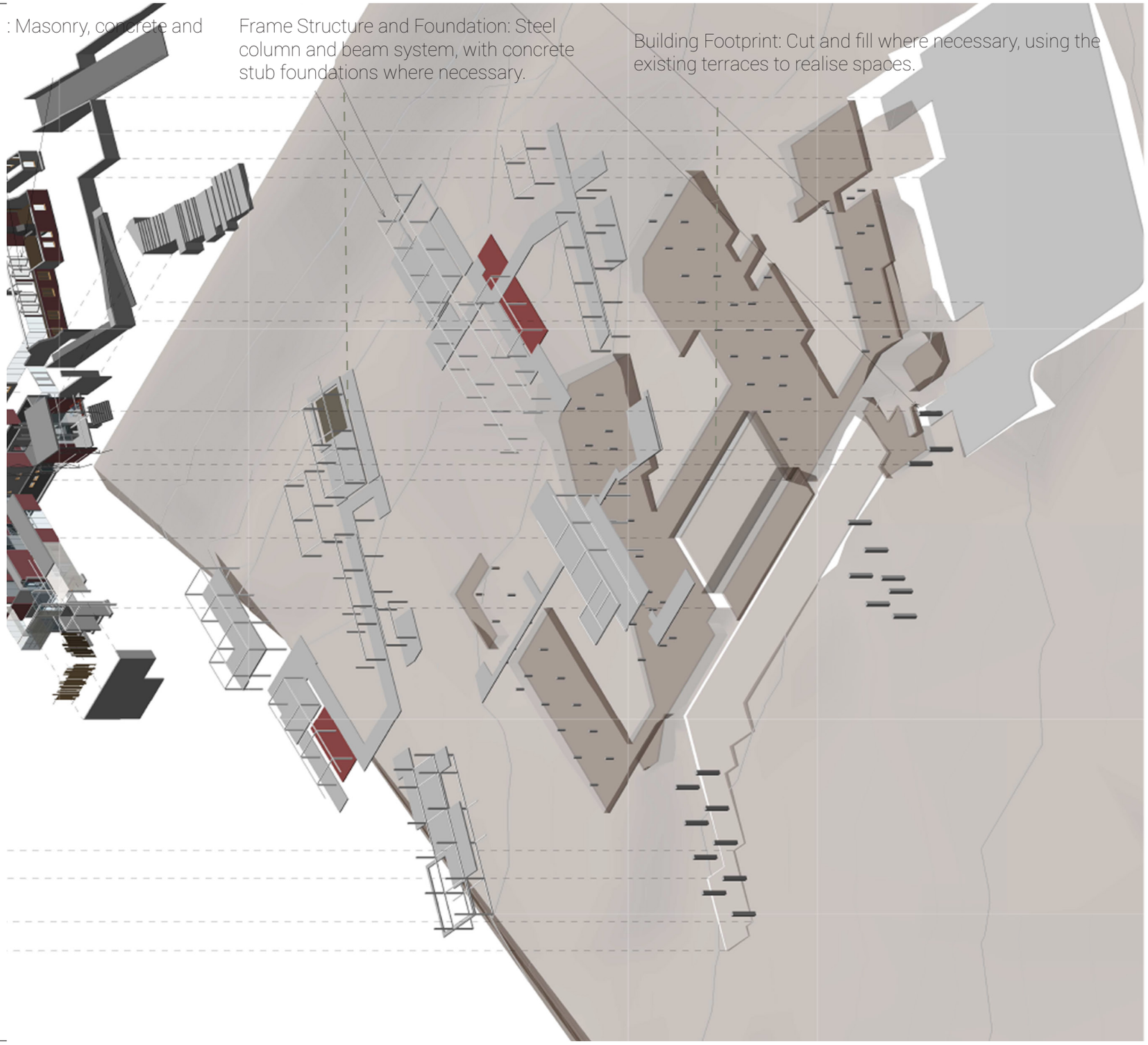


Exploded Axo

: Masonry, concrete and

Frame Structure and Foundation: Steel column and beam system, with concrete stub foundations where necessary.

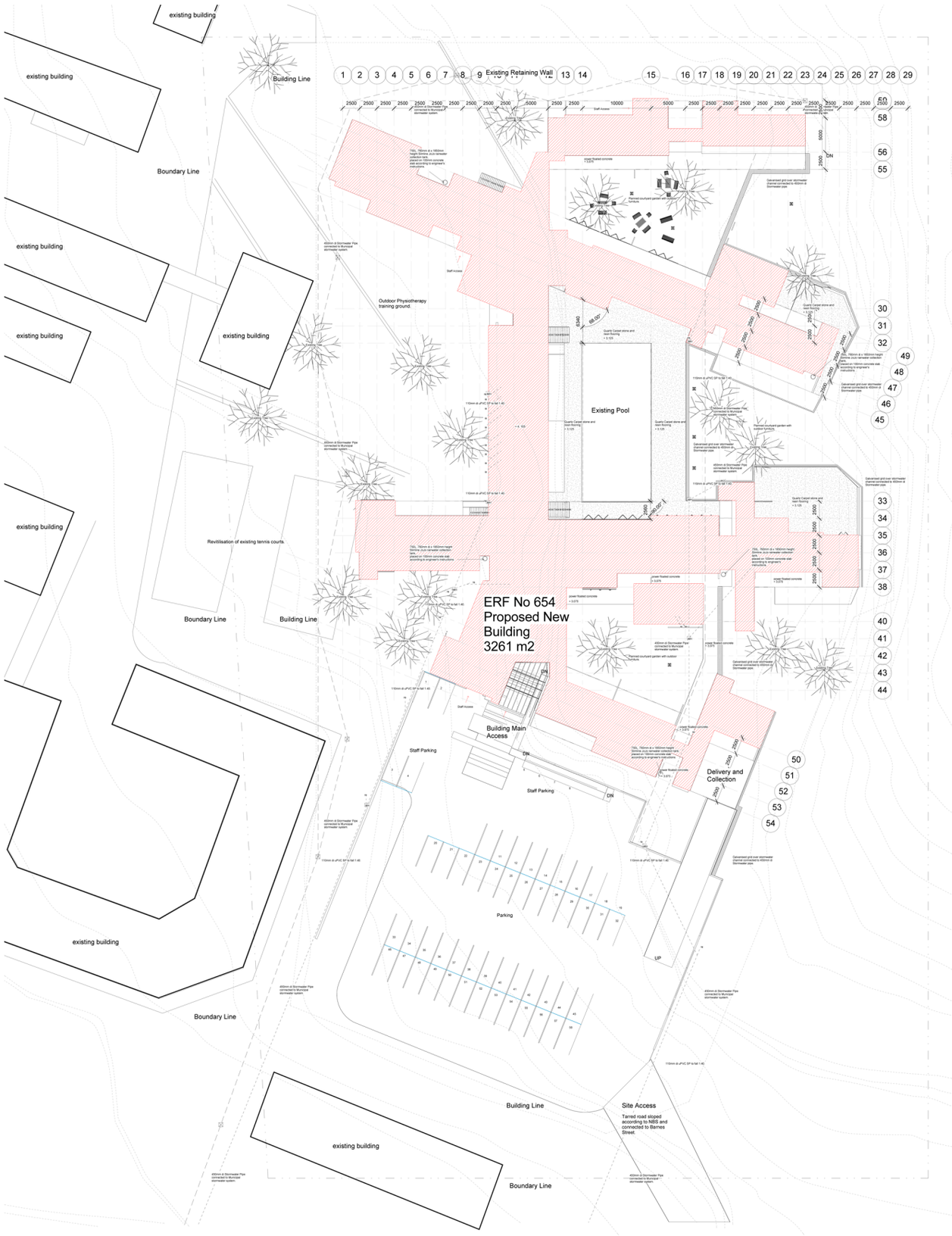
Building Footprint: Cut and fill where necessary, using the existing terraces to realise spaces.



3.3.3 Technical Drawings







Site Plan 1: 200

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Holistic Health Centre, Signal Hill

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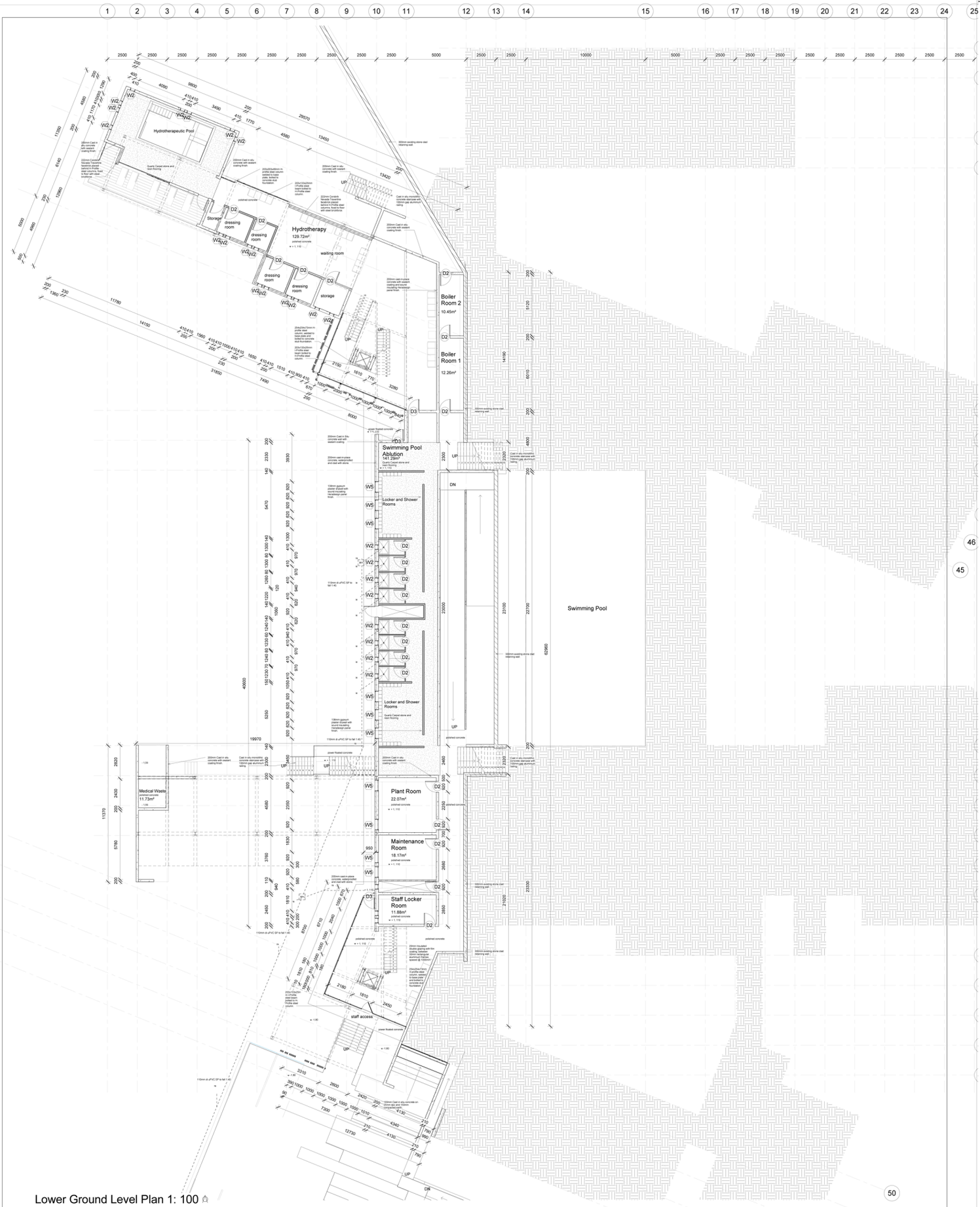
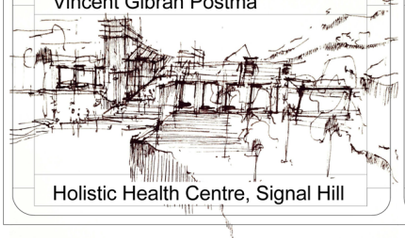
Site Plan.



Lower Ground Level Plan 1: 100

Vincent Gibran Postma



Holistic Health Centre, Signal Hill

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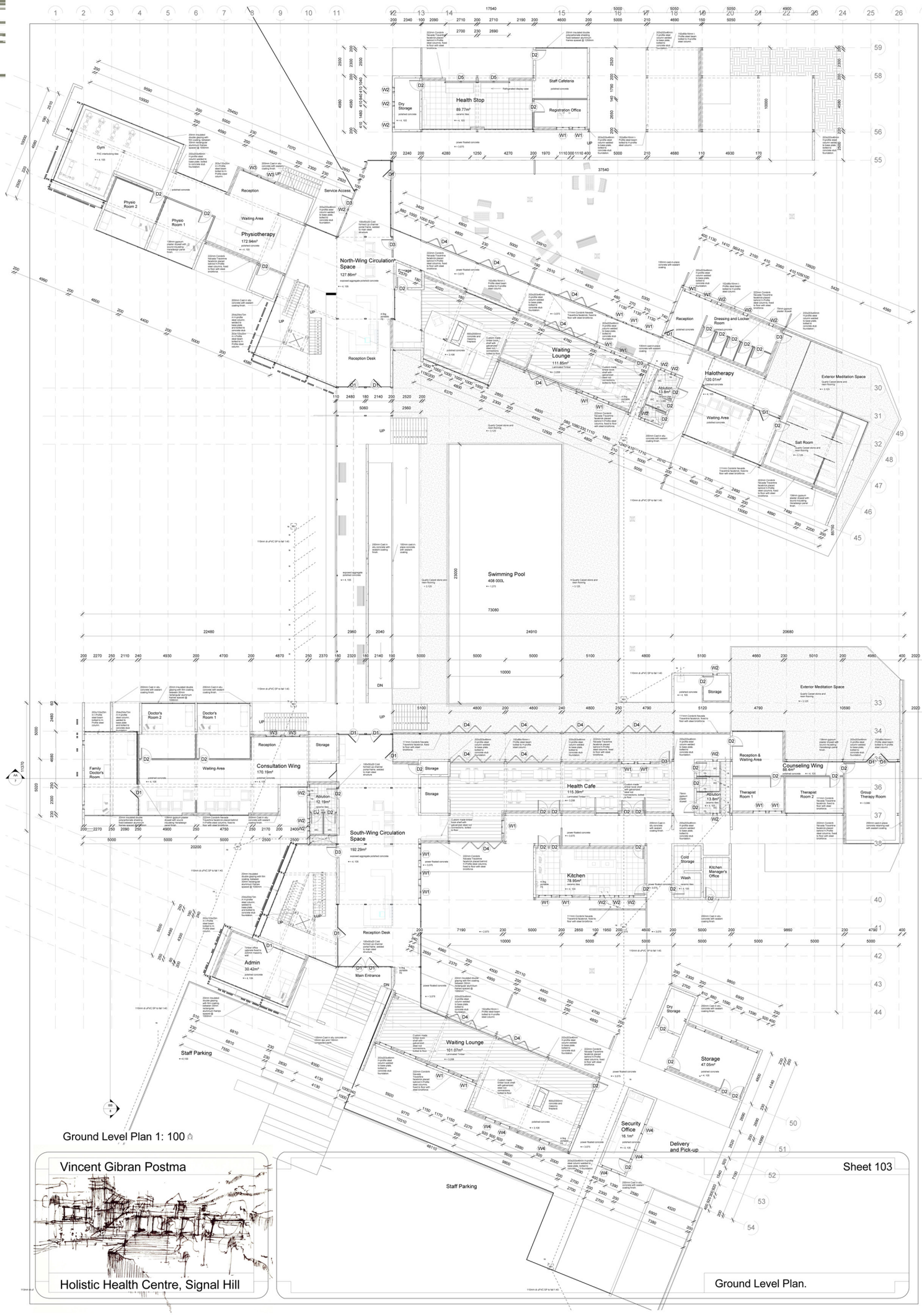
Lower Ground Level Plan.



Ground Level Plan 1: 100

Vincent Gibran Postma

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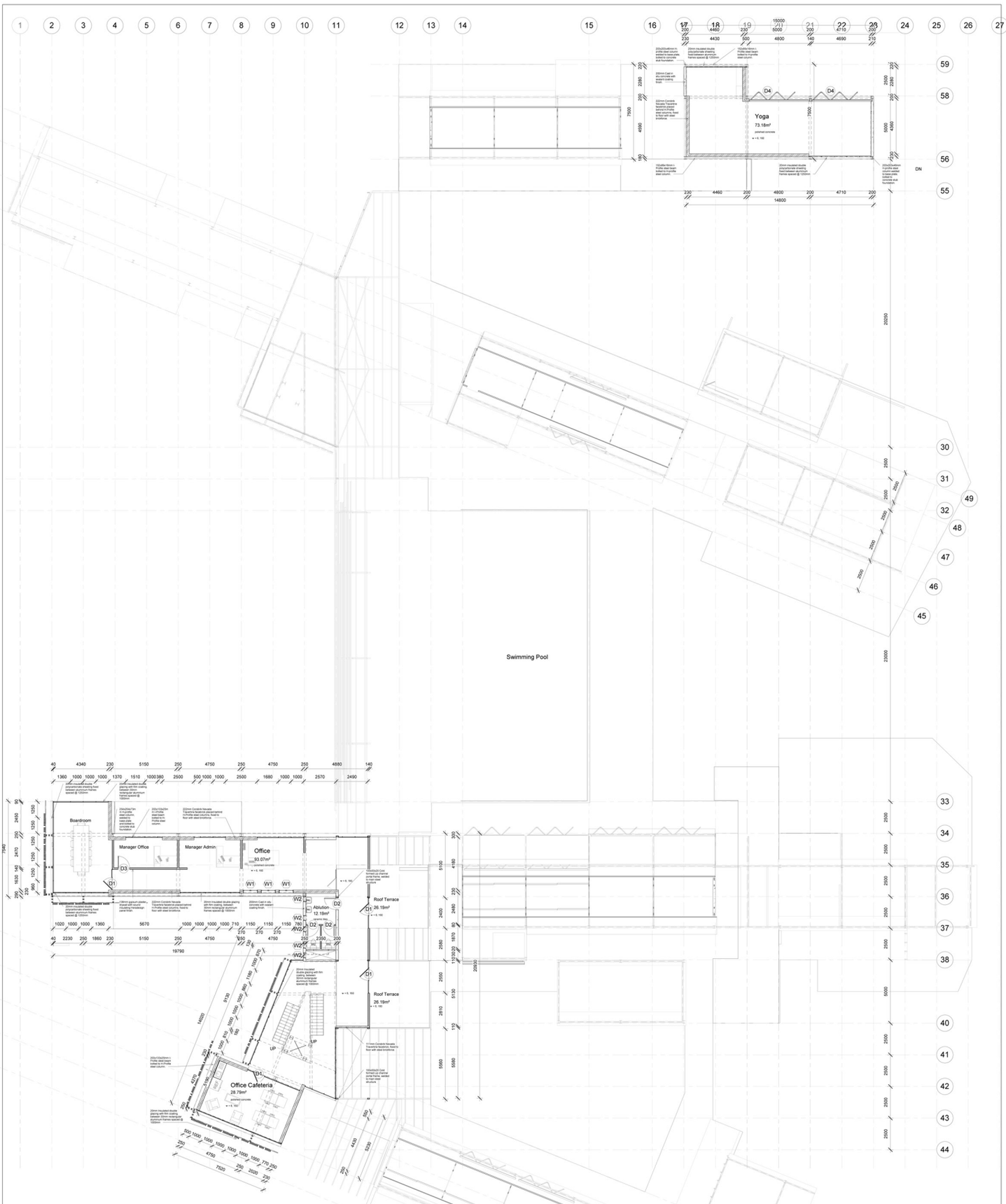
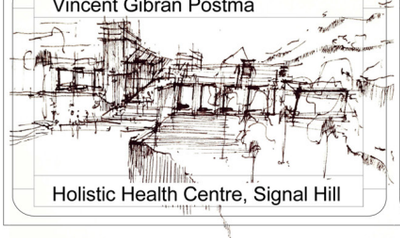
Holistic Health Centre, Signal Hill

Ground Level Plan.



First Level Plan 1: 100

Vincent Gibran Postma



Holistic Health Centre, Signal Hill

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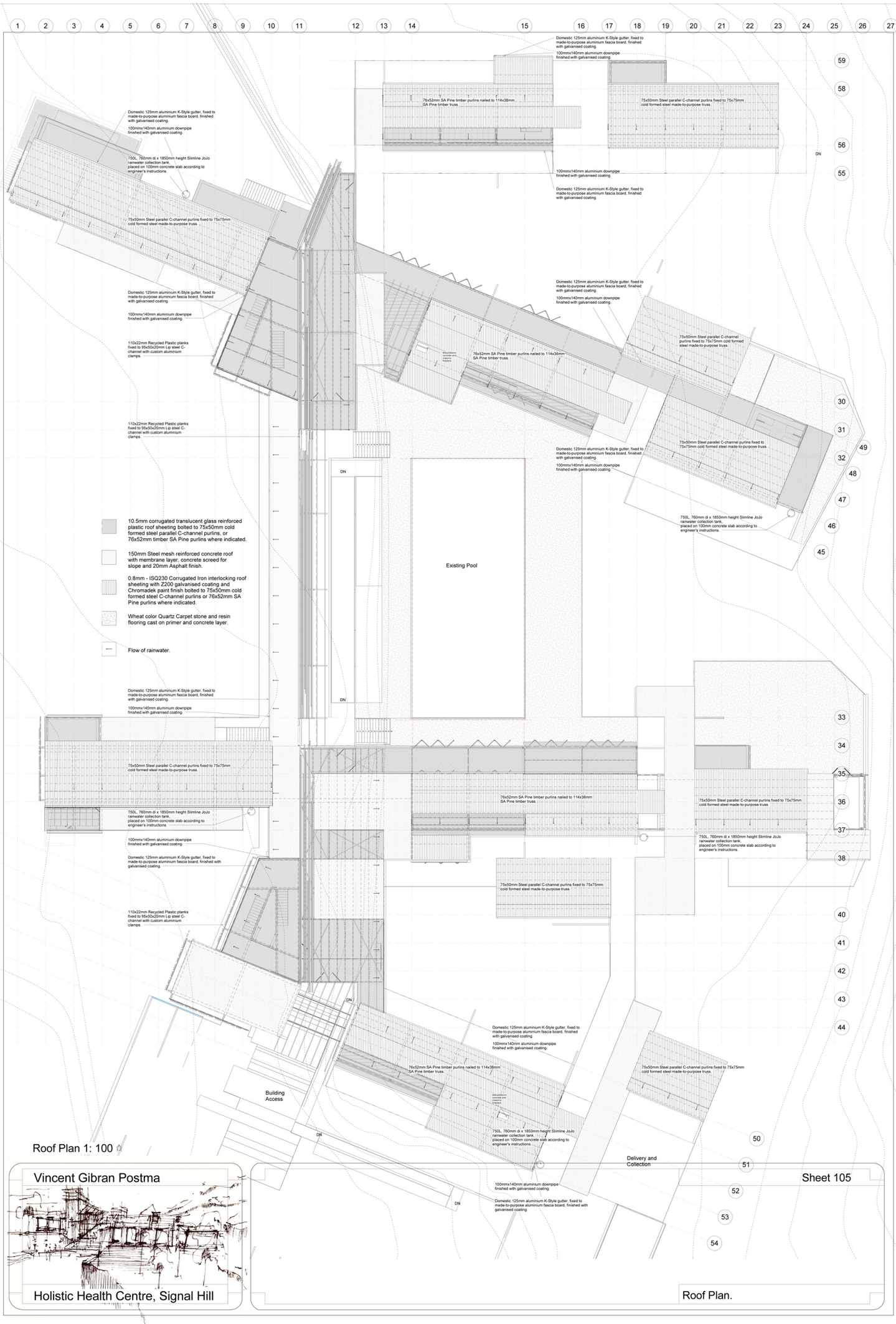
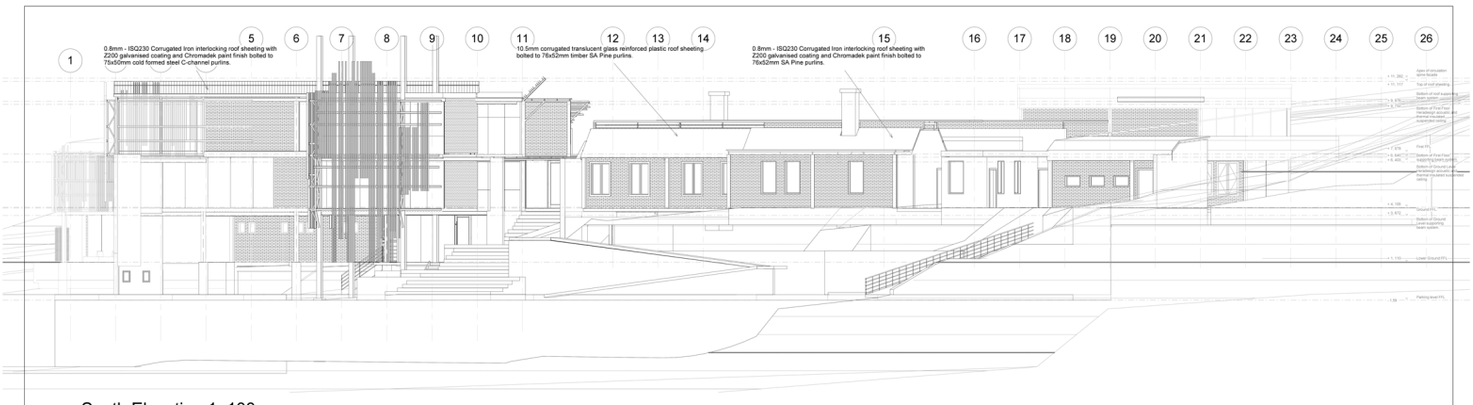
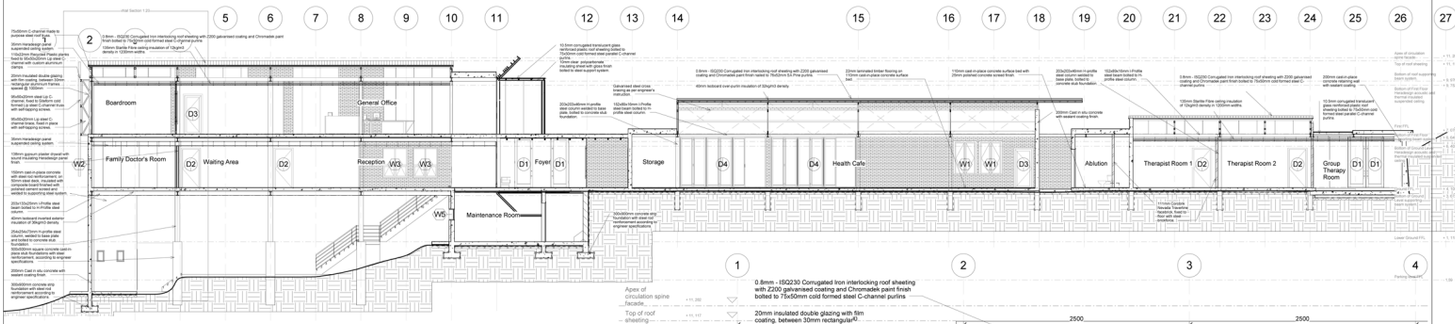
First Floor Level Plan.

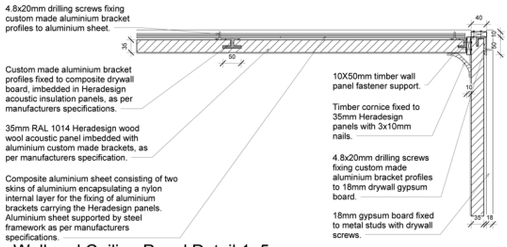

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Domestic 125mm aluminium K-Style gutter, fixed to made-to-purpose aluminium fascia board, finished with galvanised coating.
100mmx140mm aluminium downpipe finished with galvanised coating.
76x52mm SA Pine timber purlins nailed to 114x38mm SA Pine timber truss
75x50mm Steel parallel C-channel purlins fixed to 75x75mm cold formed steel made-to-purpose truss.
750L, 760mm di x 1850mm height Slimline JoJo rainwater collection tank, placed on 100mm concrete slab according to engineer's instructions.
110x22mm Recycled Plastic planks fixed to 95x50x20mm Lip steel C-channel with custom aluminium clamps.
Existing Pool
DN
10.5mm corrugated transluscent glass reinforced plastic roof sheeting bolted to 75x50mm cold formed steel parallel C-channel purlins, or 76x52mm timber SA Pine purlins where indicated.
150mm Steel mesh reinforced concrete roof with membrane layer, concrete screed for slope and 20mm Asphalt finish.
0.8mm - ISQ230 Corrugated Iron interlocking roof sheeting with Z200 galvanised coating and Chromadek paint finish bolted to 75x50mm cold formed steel C-channel purlins or 76x52mm SA Pine purlins where indicated.
Wheat color Quartz Carpet stone and resin flooring cast on primer and concrete layer.
Flow of rainwater.
Building Access
Delivery and Collection
Roof Plan 1: 100
Vincent Gibran Postma
Holistic Health Centre, Signal Hill
Sheet 105
Roof Plan.



South Elevation 1: 100

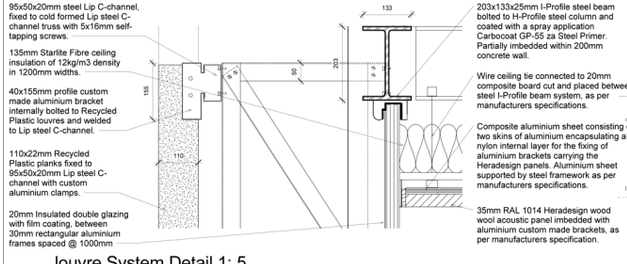


Section AA 1: 100

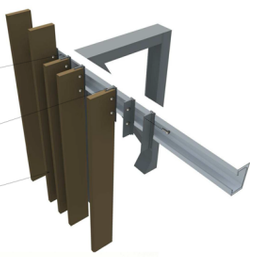


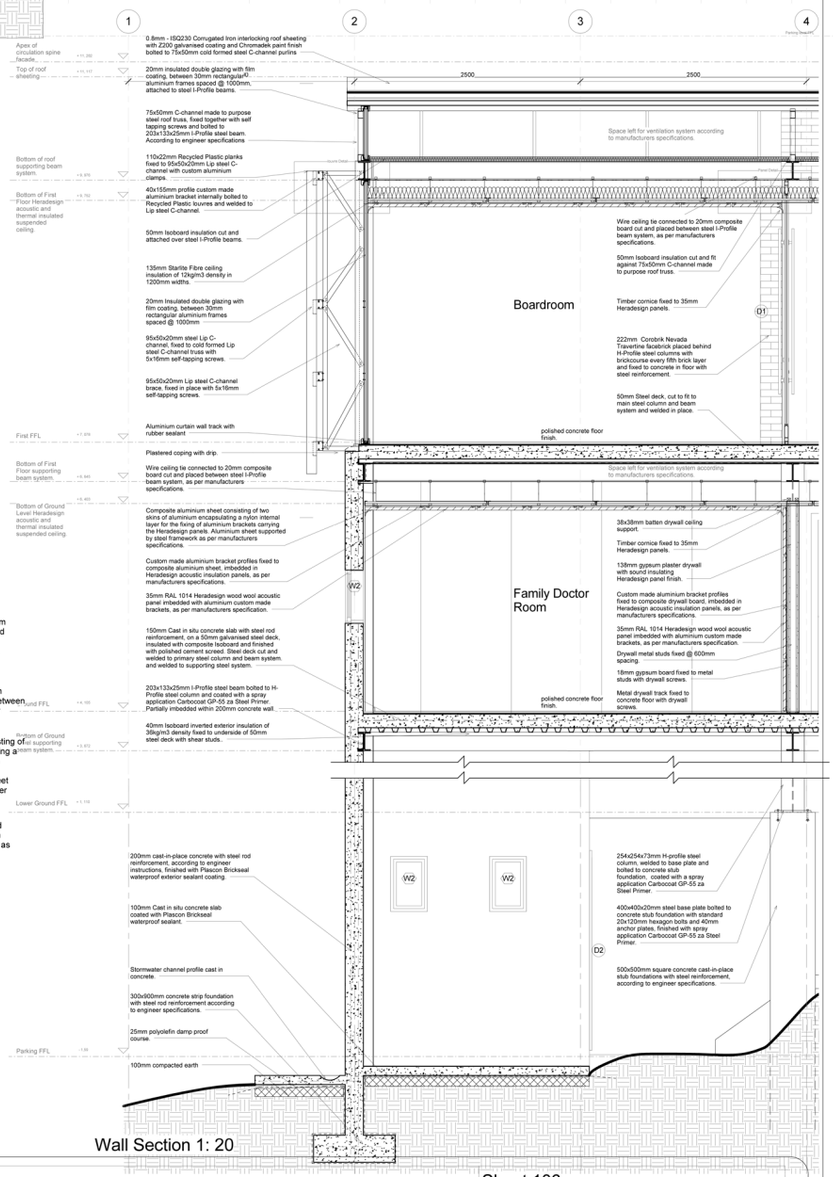
Wall and Ceiling Panel Detail 1: 5





louvre System Detail 1: 5





Wall Section 1: 20

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Holistic Health Centre, Signal Hill

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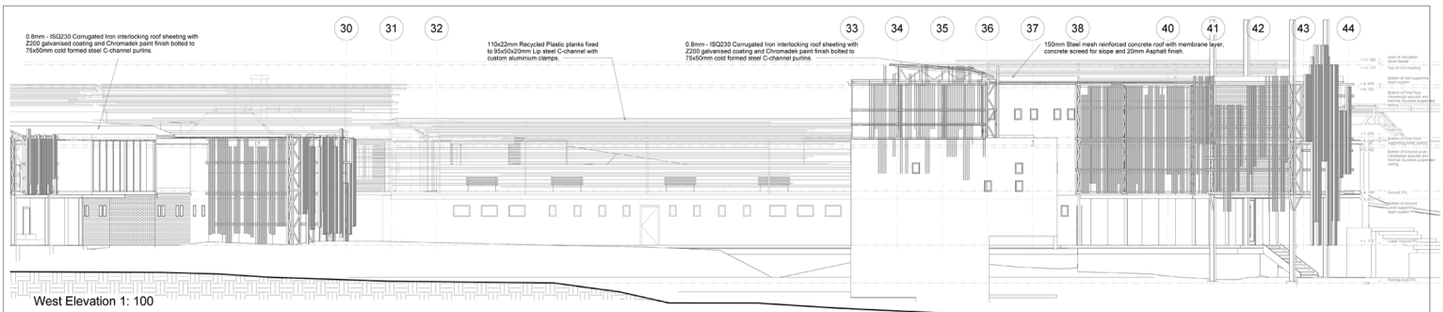
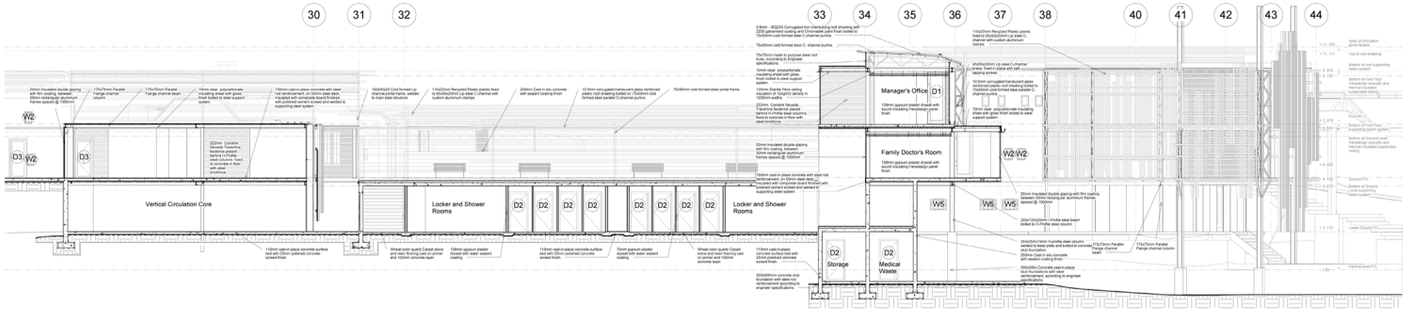
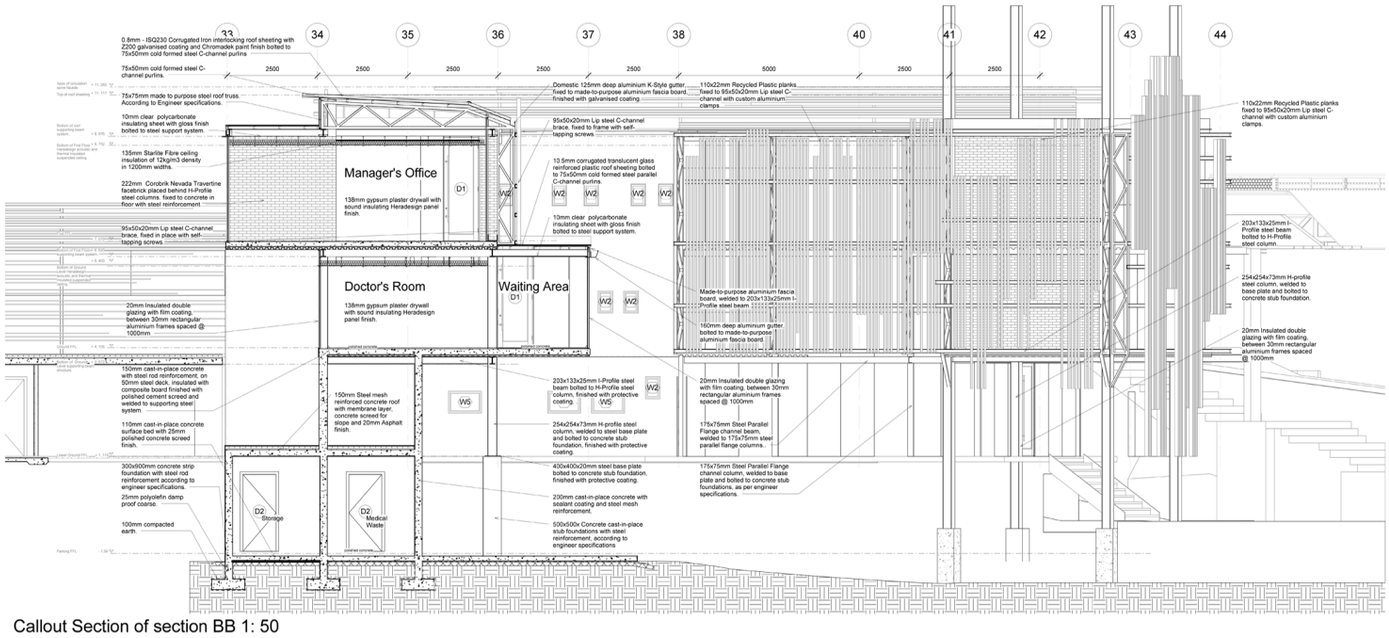
Elevation, Sections and Details.



West Elevation 1: 100



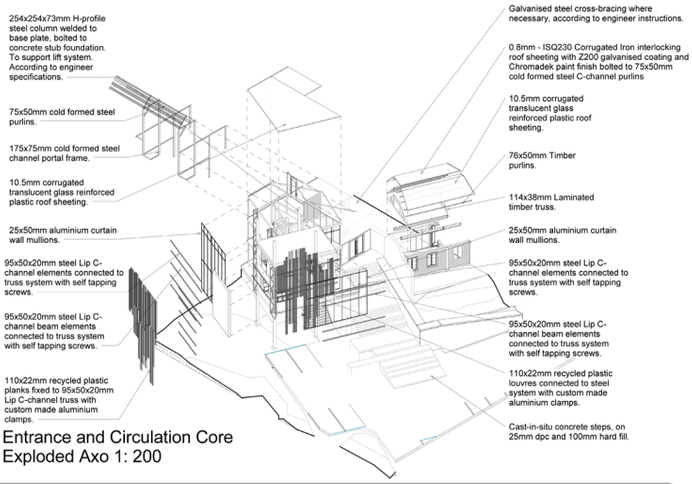
Section BB 1: 100



Callout Section of section BB 1: 50

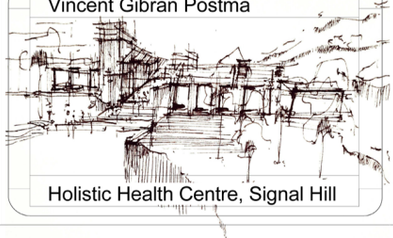


Stacking Door Detail



Entrance and Circulation Core
Exploded Axo 1: 200

Vincent Gibran Postma



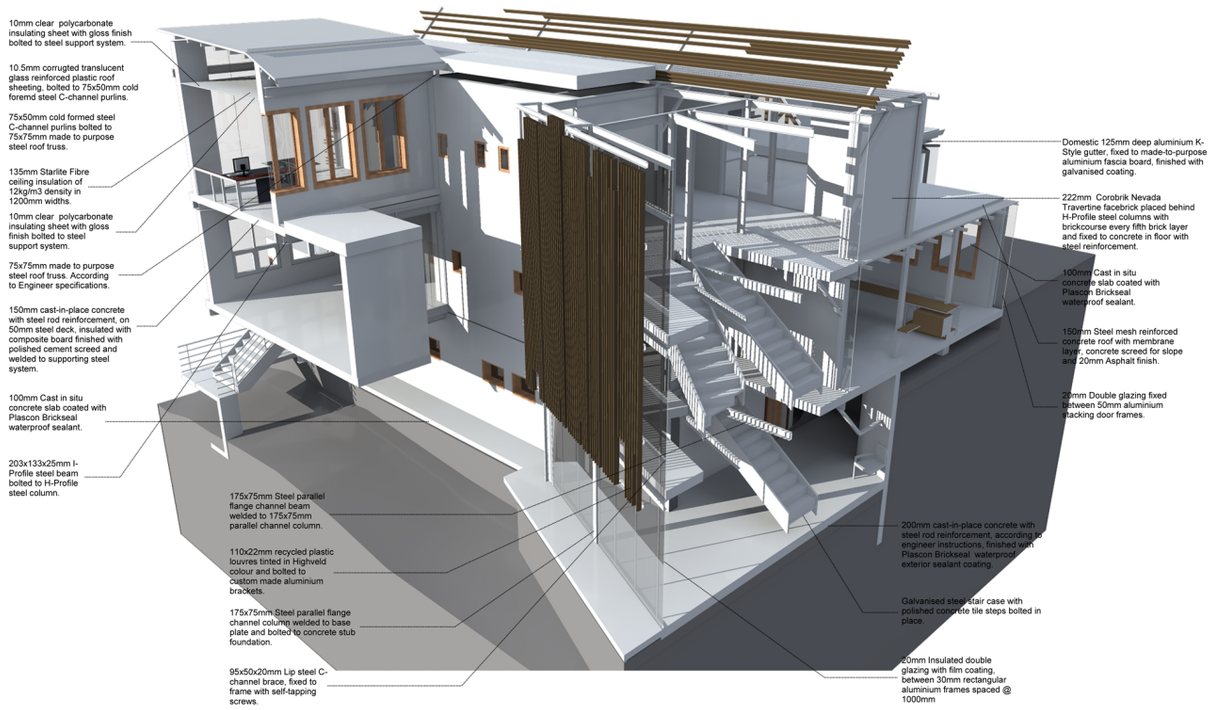
Holistic Health Centre, Signal Hill

Sheet 107

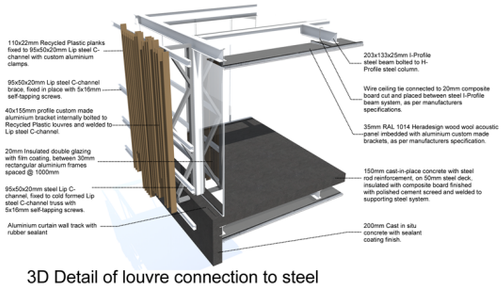
Elevation, Sections and Details.



3D Section through Health Cafe and Circulation Spine.



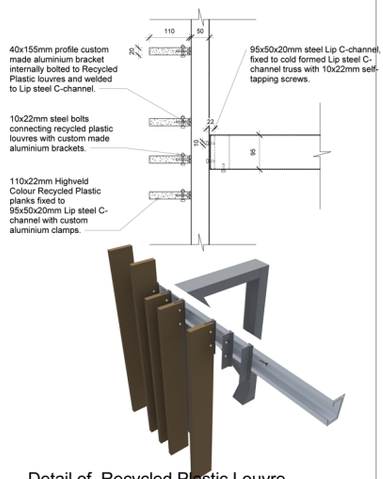
3D Section through Vertical Circulation Core and Consultation Wing.



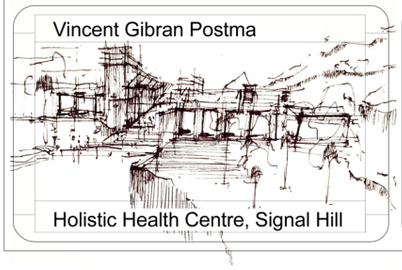
3D Detail of louvre connection to steel structure.



3D Detail of Consultation Wing wall, floor and roof connection.



Detail of Recycled Plastic Louvre system.

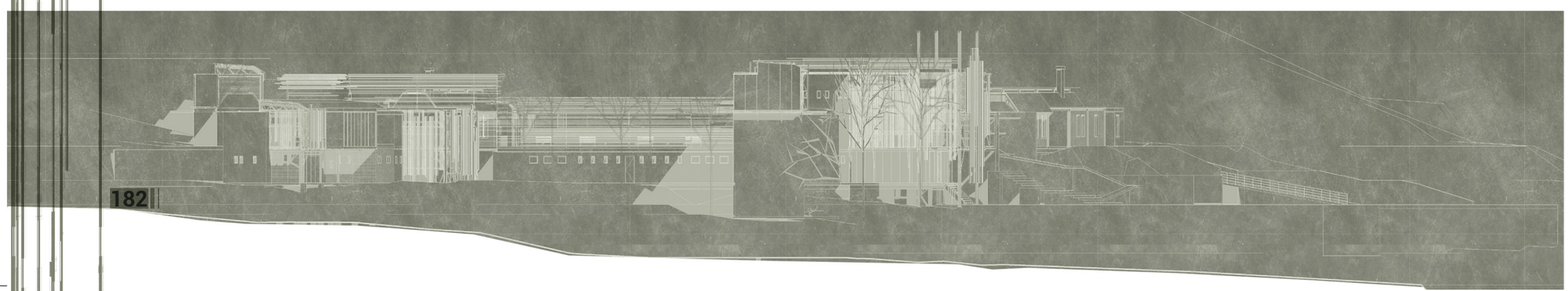


Vincent Gibran Postma

Holistic Health Centre, Signal Hill

Sheet 109

3D Sections and Details.



4.1 Critical Evaluation

4.2 Personal Anecdote

Reflection

4.1 Critical Evaluation

To avoid getting lost in the detail of every aspect of the project, this evaluation focused on the key elements discussed in the dissertation, which is the Typological, Topological and Morphological investigations.
The purpose of Part Four was not to evaluate the success or failure of the aims set out in Part One, but to explore how the aims could have been handled differently and how it could have changed eventual outcomes. Readdressing certain key problems investigated early in a project often leads to new and exciting answers. However fruitful this exercise proves, it is often overlooked due to time constraints.

Typography:

The nature of the client, SASIM, as well as the functions investigated through the various precedents and case studies indicated a very specific typological essence for the project. Although the integration of the various functions attributed to the different health care peripheries would ensure the centre retained an adaptable system, it became clear that the functions and the feel of the centre was for users seeking to maintain or improve health, not necessarily visit in an emergency.
This warranted further research into precedents concerned with health improvement or quality of life improvement centres, which could see interesting adaptions or changes to the programme layout as well as how the functions interact.

Topography:

In the topographical aims the challenge is set to find a space on the periphery of the city and nature, which the old President Brand swimming pool space is, but only as recently as 1986. It was then proposed that the project could form part of the local municipalities' plan to regenerate green spaces in and around Bloemfontein, starting with the reintroduction of the sport and exercise activity on Signal Hill which has only recently begun showing signs of life again, bar the South-Eastern slope.

The Health Stop function in the Northern wing was specifically designed for this purpose. A waypoint on Signal Hill, connecting the opposite slopes. The registration office in the Health Stop was intended as a launching point for pro-bono health care field work. The history of Westdene played a crucial role on the nature of the site and was investigated accordingly; however, a broader view of the city could potentially see connections with the centre and different key nodes along the route toward the CBD, which would warrant more urban connectivity.

Morphology:

Some of the comfort in the plan and the circulation could be attributed to its simplicity. The integration of the peripheries of the vernacular and institutional typologies that seem always to stare out at each other across 1st Avenue and other streets has led to an interesting meeting of their respective morphologies.
The question of material, colour and scale in this project could have many possible approaches and these questions become particularly interesting when trying to mediate the two peripheries mentioned in the morphological aims in Part One.

Through the literary argument, a design model was proposed for a Health Place. This included three aspects: haptic diversity, identifiable 'place' and a connection to nature. These aspects were pursued throughout the design process in the use of material, spatial experience and a visual and permeable connection to the outside. Although the argument is made that a connection to nature should only be allowed to a certain extent, further development in this aspect could lead to interesting inside-outside dynamics.

A connection to nature that reaches farther then the courtyard spaces or vista's captured in the interior views would perhaps have led to a different morphology altogether.

4.2 Personal Anecdote

Using 'Personal Anecdote' as the introduction to these few paragraphs could be viewed as risky or even downright irresponsible, especially when considering the possibility that the reader could be tired and in no mood for self-flattering confessions.

Rest assured, this is not a personal mission and vision statement. It contains a short account of my experience of the design process this year; what I found challenging, what I found interesting and what I found wanting. Recalling the experiences made more sense in the order they were experienced, rather than the lucidity of the experience, so here goes.

Choosing a site and analysing it turned out to be the most crucial part of the process. Having a site review as early as the end of January forced the class into a kind of 'Musical Chairs' mad scramble. This could either bless one with more time for actual analytical and design work, or force one into a perpetual site hunt. Finding the President Brand School swimming pool site came down to understanding what holistic health care meant, and why it even warranted existence in South Africa.

The touchstone proved more difficult, as this was my first attempt at a touchstone concerned with 'what', and not 'where'. It forced me to take apart holistic health care in order to find its essence and then physically build something that shared the same essence.

Even though this was a gruelling exercise in patients, the nature of holistic health and subsequently the Touchstone was Integration. This paved the way for the three concepts to aid the development of a design. These came easier, and it turned out to be the first drawings that could be interpreted on the site. The three concepts were The Cave and the Tree, the Integration of peripheries and the Integration of the Landscapes.

The concept development stage was an integration of these three concepts into what was the first design proposal with actual spaces and scale. Building this on a 1:200 site model was crucial to understanding how this could sit against the hill.

The next step of the process proved to be the most challenging. After the initial concept development and after studying the site for three months it felt like all the ingredients were present to actualize the proposal into a rational, functional design. This turned out to be a very successful attempt at jumping the gun, and resulted in some shabby design decisions in order to find the fastest solutions to programmatic problems.

In hindsight, this could possibly have happened because of the time limit conditioning undergone during the previous years of study. Reaching the end of a conceptual stage, if it could even have a definite end, normally meant that there was very little time left to produce something.
The process halted here and forced me to backtrack and find where I had gone astray and how I could remedy it. It was a simple case of just designing again, still figuring out problems along the way, but from a more relaxed perspective.

I would chance to say that the backtracking forced me to critically evaluate the project at an early enough stage to still change its course, but with the gained knowledge now substantiating decisions in later proposals. To be able to say, "Yes, I have tried that solution, but it didn't work for 'this 'or 'this' reason" was a real help when it came to finding new solutions without too much second -guessing.

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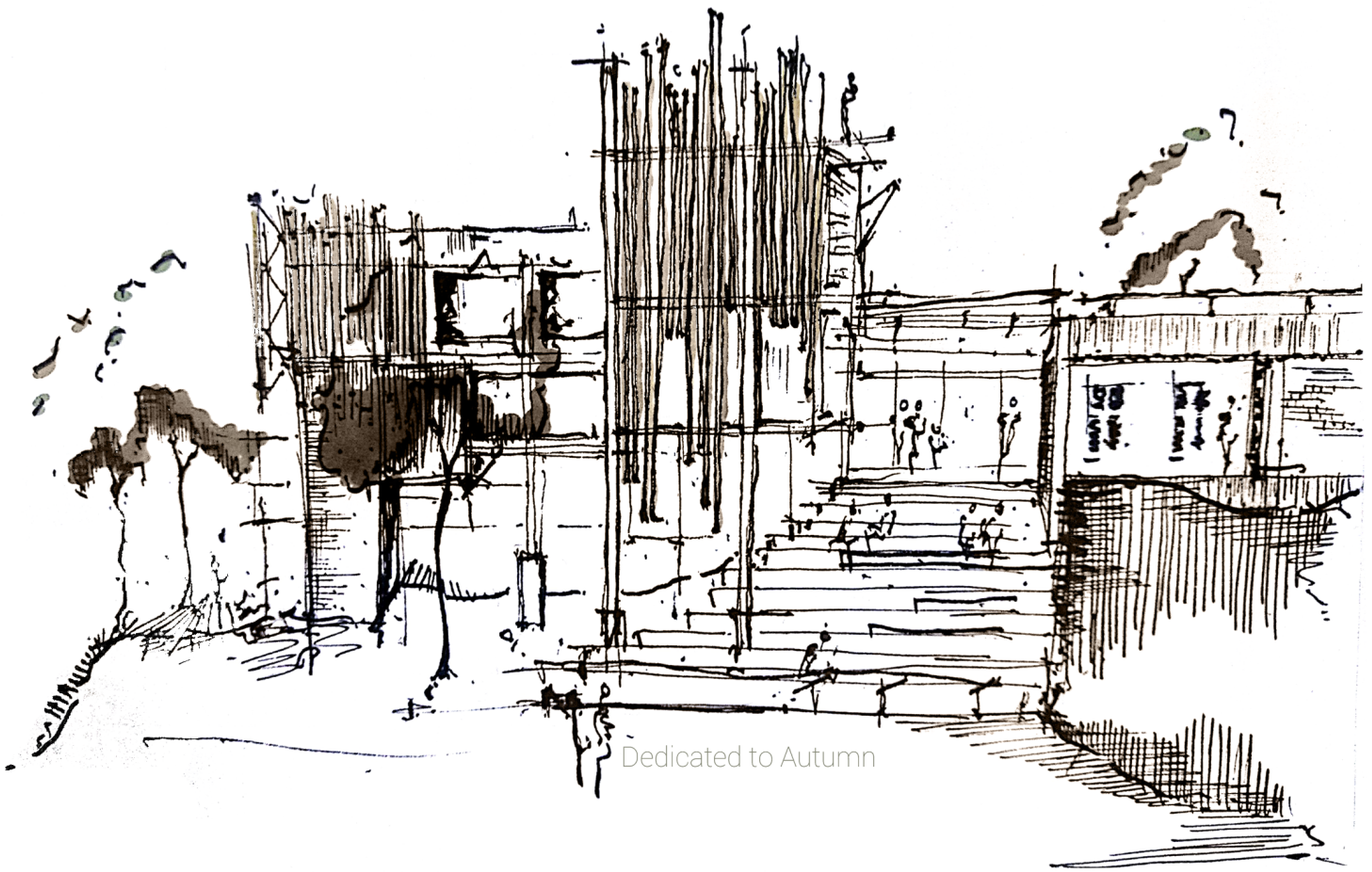
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