home

portfolio

ataraxi

Project 1

Home

Set 13th February - 22nd May

Solo Project

The home project introduced me to the site of Laxton, a historical, remote village in the midlands. I set out to select an appropriate craftsperson for the site and create a home and workshop for them at one of 4 available sites. This project helped me discover traits of biophilic design and the importance of implementing the values of a client into their build.





Client 1 - Astronomer

Basic Profile

Name: Neil deGrasse Tyson
Age: 64
Career: Famous Astrophysicist, Author and Science Communicator
Education: Columbia University, Harvard College, University of Texas at Austin
Suitability for Laxton: A quiet, remote location is perfect for stargazing, making Laxton a clear option for the astronomer.

Inventory



Theories / calculations



Study the sky



Photography



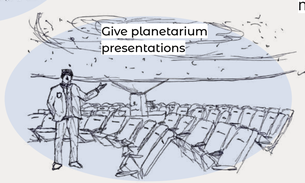
Discuss with peers



Analyse data



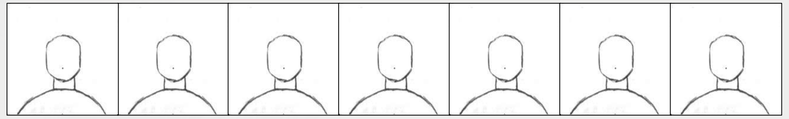
Give planetarium presentations



Mobile sky app



Collaborators



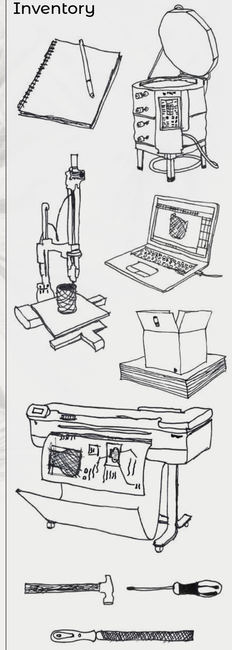
Government | Press | Aerospace Engineers | Lecturers | Technicians | Scientists | Investors

Client 2 - Sustainable Designer

Basic Profile

Name: Laurence Parent
Age: Unknown
Career: Multi-Disciplinary Designer and Maker
Education: Degree in Product Design with Professional Experience from University of Brighton
Suitability for Laxton: There are many natural areas present in Laxton, which gives the site great potential for this particular career path.

Inventory



Sketching ideas



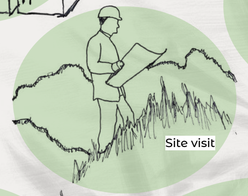
Packaging products



CAD at 'Living Desk'



Site visit



Cooking



Pub / bar social



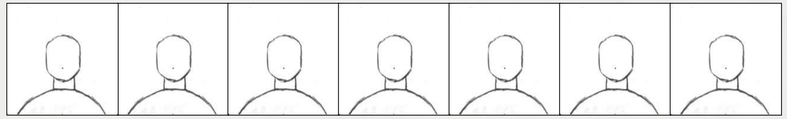
Preparing clay



Visiting exhibitions



Collaborators



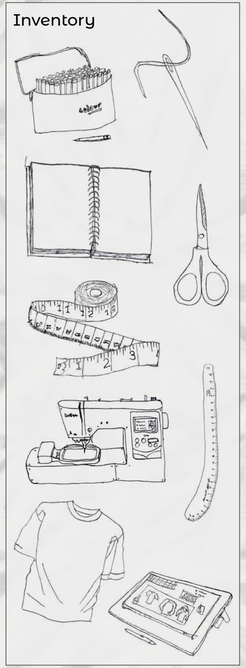
Civil Engineer | Architect | Environmentalist | Lecturers | Material Scientist | Client | Product Designer

Client 3 - Embroiderer

Basic Profile

Name: Yusuf Arif Yücel
Age: 24
Career: Embroidery Brand Managing Director – Derschutze GmbH
Education: Unknown
Suitability for Laxton: The site has a history of embroidery within the community, making the embroiderer a welcome addition to the village.

Inventory



Gain inspiration



Test new manufacturing methods



Meeting with employees



Engage with community



Business operation / management



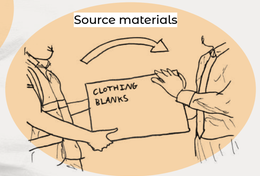
Sketch designs



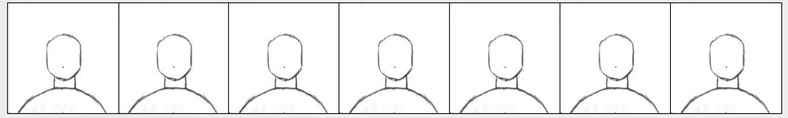
Package products



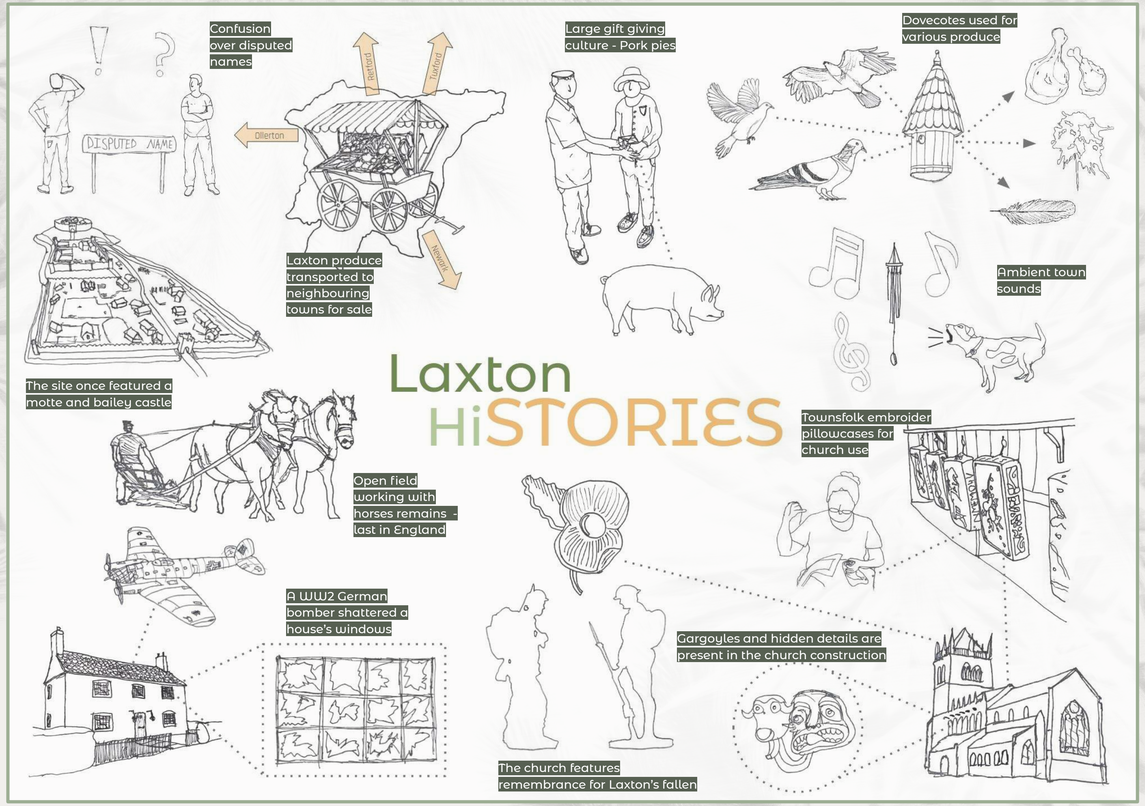
Source materials



Collaborators



Laxton's Hidden Layers



Site Options

Site 1 - Town Center

Axonometric

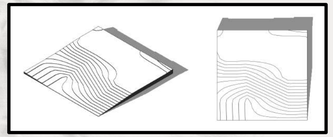


Section



Plan





Landmarks:
- Near local inn 'Dovecote Inn'
- Many neighbours
- Near church

Topography:
- Gradual incline towards North

Access:
- Along main road and up narrow lane

Site 2 - Bottom Farm

Axonometric

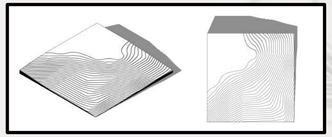


Section



Plan





Landmarks:
- Large tree in center of plot
- Next to church / graveyard
- Many neighbours

Topography:
- Gradual incline towards North-West

Access:
- Private road alongside neighbouring properties

Site Options

Site 3 - Castle Grounds

Axonometric

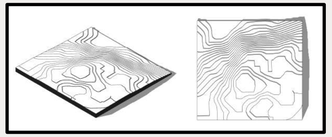


Section



Plan





Landmarks:
- Site is on historical castle grounds

Topography:
- Extremely varied - on the site of an old motte and bailey castle

Access:
- Small gravel road from the South

Site 4 - Farm Fields

Axonometric

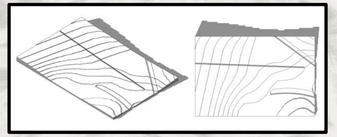


Section



Plan





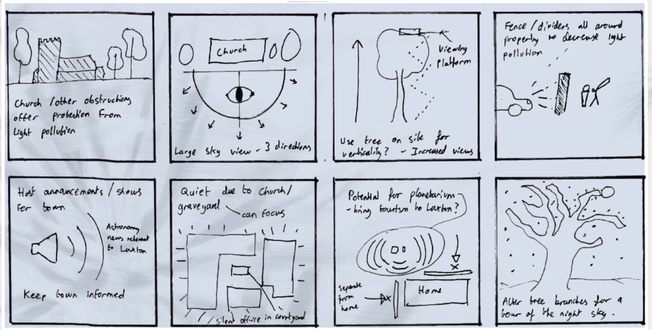
Landmarks:
- Stream runs through site
- Surrounded by farm fields

Topography:
- Gradual minor incline, dip in center

Access:
- Existing roads from nearby farms

Site Analysis - Astronomer

Site 2



Site 3



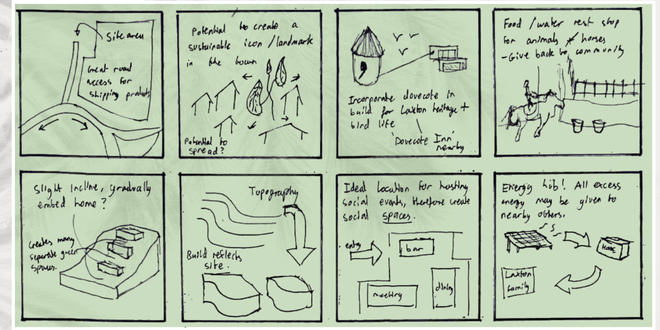
Site 4



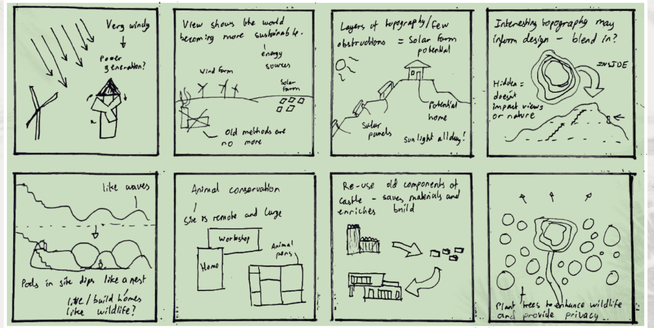
Site Analysis - Sustainable Designer

Selection Reasoning
I found the relation between this character and site to be the strongest and has the most potential. This is due to how the site features interesting natural features such as the stream and topography which will allow the building to be embedded in the site and connect with nature seamlessly.

Site 1



Site 3



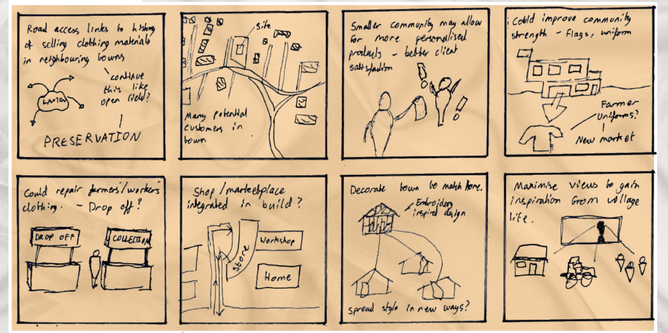
Site 4



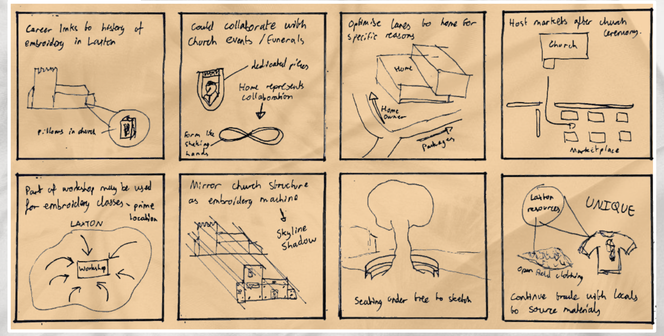
Selected Site and Character

Site Analysis - Embroiderer

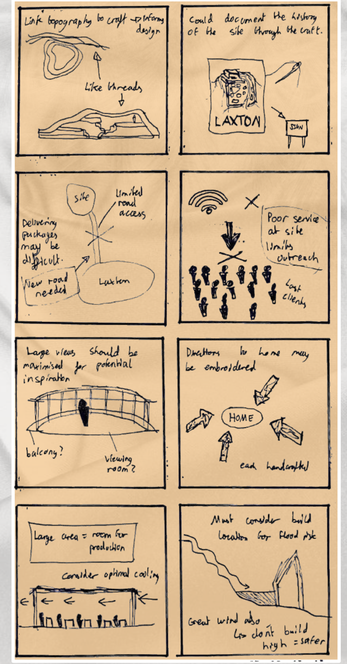
Site 1



Site 2



Site 3



Abstract Site Experience Model

Architecture



TWO WORLDS

Nature









During the site visit, I collected a range of materials which I found to later construct abstract site experience models. These enable me to further understand the feelings evoked from the sites as well as the materiality present. Additionally, I collected water from the stream on site 4 and later poured this over the model for a greater depiction.

As I was constructing the model, I found myself building 2 separate worlds, these being architecture and nature. This is because there is a clear divide between them present at the site, leading me to question why it is this way. What if we were able to connect architecture and nature instead of separating them?

Concept

Concept Idea

Nature and man have been straying further from each other by the day and I deem to rebuild that connection within architecture. Whilst they may be two separate entities, I would like to experiment merging them into one.

This theme is present in my site experience model, where 2 separate worlds are present. I yearn for a way to join these worlds in architectural harmony.

Drawing



I feel that the best way to represent the concept of joining architecture and nature was to show how they may be intertwined with one another. Consequently, I created a drawing which has 2 inputs and 1 output achieved by them being intertwined.



Version 1



Time

Version 2



Physical Model Adaptation

Model

I wanted my concept model to represent the way in which my concept drawing could be physically achieved and potentially later learn from to integrate architecturally.

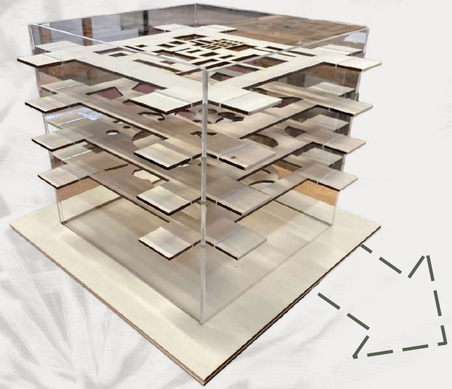
I began by representing humanity with a gas mask, as this is a brutal and literal representation of the pollution and destruction brought by man. Gradually, nature returns and takes over, just as what may occur if we no longer maintained nature.

Whilst this first idea resulted in a beautiful final piece, I found that it lacked depth. Therefore I set out to create a second iteration of the concept, which could aid me in my understanding of nature and how it can be implemented in design.

My next design features many layered components with varying shapes removed from each segment, enclosed in a clear box. As time goes on, the plants will gradually grow and adapt to their complex environment and I may study nature's navigation.

I believe this will be truly beneficial in understanding how I may further intertwine nature and man, bringing me closer to my goal of rebuilding the connection within my own build.







Once the physical model was assembled, I set out to integrate nature into it. This may be done by adding soil to the bottom and planting seeds. These would be maintained and watered, until nature takes over the model.

I have represented this process with intertwining ivy which navigates the complex area, allowing me to visually understand the process of intertwining nature and architecture.

Top



Front

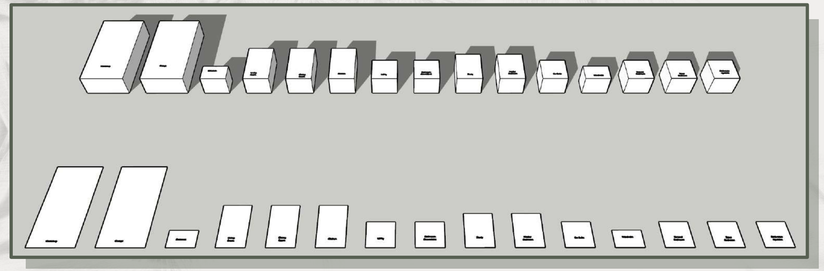


Upon closer examination, it is evident that the combination of these two worlds leads to a truly intricate and interesting result. I would like to take the aesthetic of these spaces and bring them into my design as this greatly links to my concept and selected character.





Volumetric Study

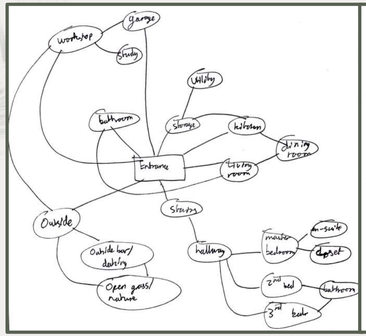


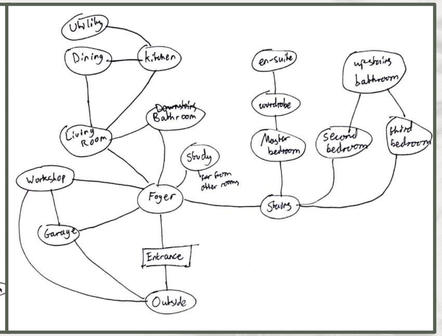
Catalogue of Spaces

I created an inventory of spaces to include in the home along with their respective sizes. The sizes are subject to change yet it gave me a good starting point for understanding how they may be arranged in scale.

Each space had its respective goals which I desired for them to achieve. I continuously referred to these goals throughout the project to ensure I did not lose sight of what was important.

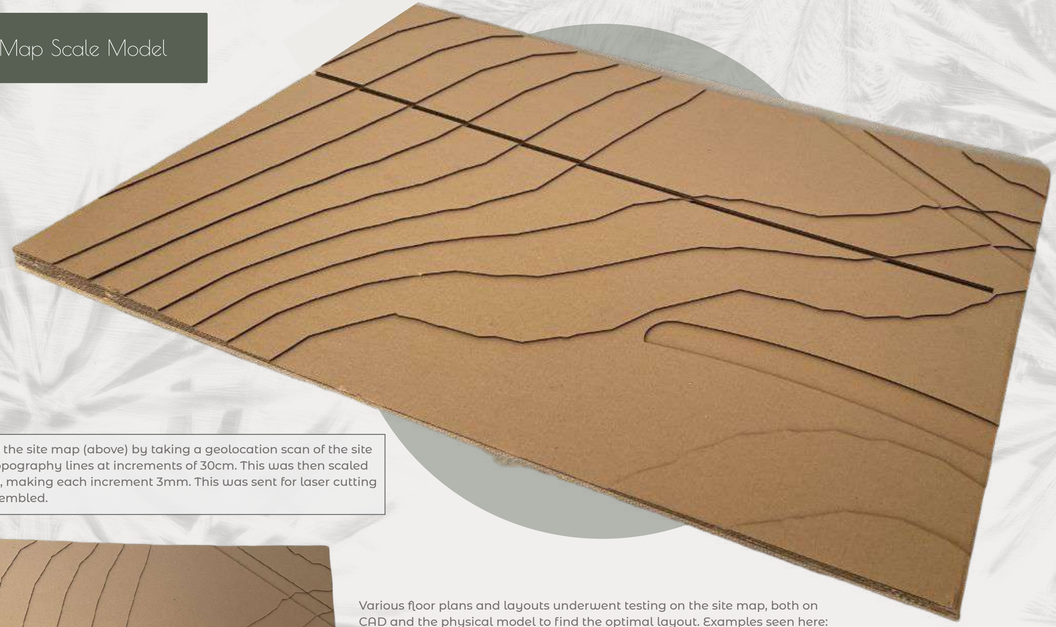
Spatial Organisation



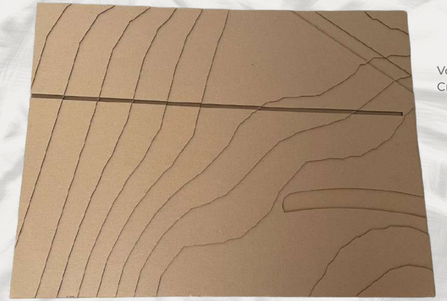


Spatial organisation diagrams help inform the layout of the design, as it helps me understand the importance of connections between particular spaces. The diagrams on the left may be referred to when studying the final floor plans and the connection is clearly visible.

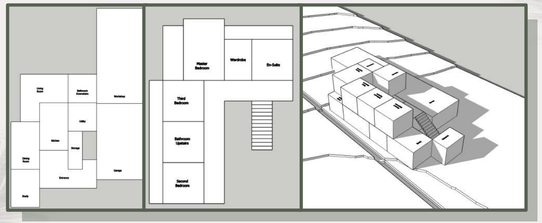
Site Map Scale Model



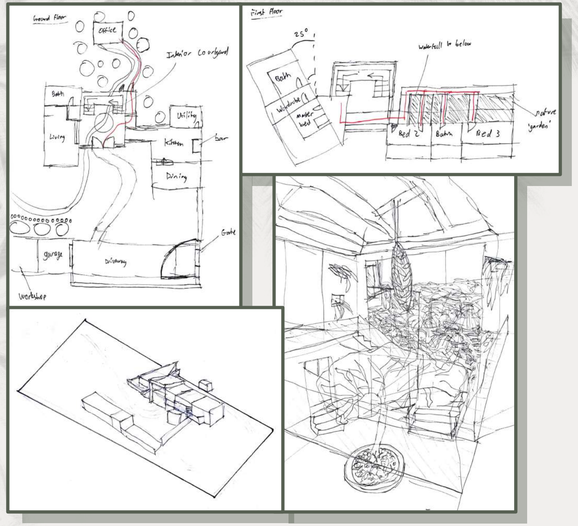
I constructed the site map (above) by taking a geolocation scan of the site and taking topography lines at increments of 30cm. This was then scaled down to 1:100, making each increment 3mm. This was sent for laser cutting and later assembled.

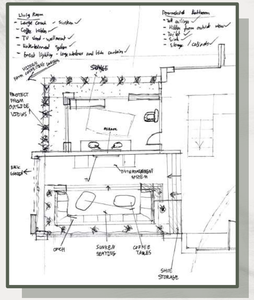


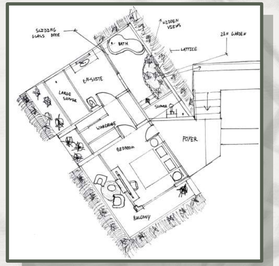
Various floor plans and layouts underwent testing on the site map, both on CAD and the physical model to find the optimal layout. Examples seen here:

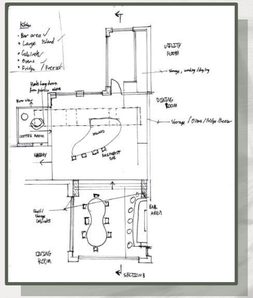


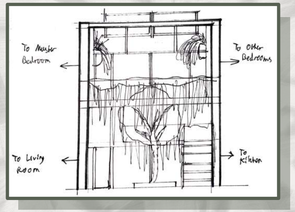
Layout and Design Refinement

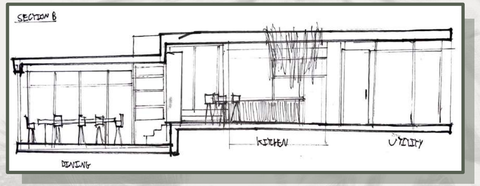












Through countless iterations, it was possible to see the strengths and weaknesses of various different designs. Ultimately I arrived at the floor plans seen on the right. These saw future changes for the final design, yet remain similar.

Key Principles

Rebuild the connection between architecture and nature.

How?

Considerations must be made for various aspects of the environment. These considerations must be integrated throughout the home. Nature should be allowed to come inside and potentially engulf parts of the home. Furthermore, recreating the sensory experience of nature in a home may be truly effective, therefore different natural zones may be found across the home.

Static architecture must become 'living' architecture.

How?

Architectural features remain static and unchanged in the vast majority of structures. This could be eliminated by integrated changing factors into design, such as nature. This will allow the property to change over time, blend in with its environment, and counteract the staticity of current architecture..

Cater to and integrate wildlife into the design. It should be welcomed.

How?

The home should not be separated from the outside world, therefore there should be no wall surrounding the property. This will enable wildlife to roam freely. Dedicated areas should be included for wildlife, such as nesting areas for birds which are already in the neighbouring fields. This makes the house part of, (if not its own), ecosystem.

Select an appropriate design style.

How?

Upon researching various design styles, it is evident I should opt for the biophilic approach as this coincides with many of the values of myself and my client. Therefore, by adopting the biophilia hypothesis, my structure should reap the benefits such as with mental health.

Let nature inside. Do not shut it out.

How?

The site features a stream. This may be redirected to be integrated within the design. It may run through the home and act as a strong natural feature. Furthermore, gardens may be featured inside, alongside green walls and many planters.

Embed architecture in nature and embed nature in architecture.

How?

Utilise topography to have the home be relatively low. This will help conceal it in the environment. Furthermore, covering the home in natural elements will help embed it further in the natural landscape. Nature embedded in the architecture could be achieved by having much nature inside. This will help blur the lines between where architecture starts and nature ends, as these should form one.

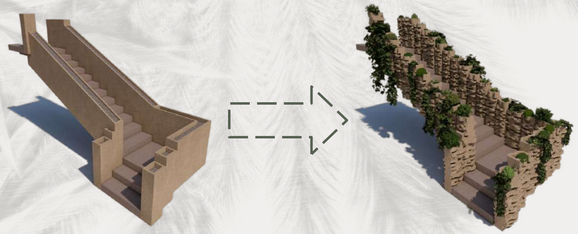
Biophilic Mood Board

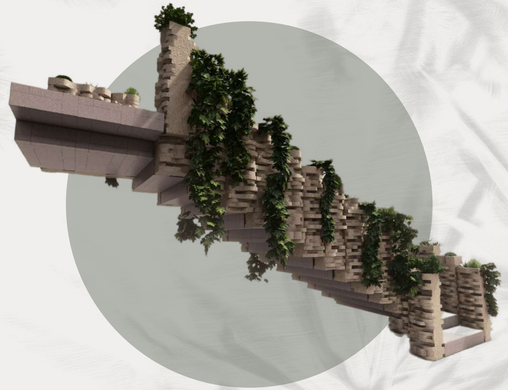
Taking the biophilic approach to the home enables me to explore existing property which do the same. Therefore, I constructed a mood board to investigate the ways in which the style is achieved.

Key takeaways from this task are that angular architectural forms with planters above them lead to a beautiful contrast between the two worlds. Despite this contrast, the result holds great aesthetic qualities which I desire to feature in my home project.

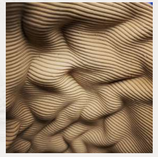


Craft Detail





The original staircase was of very basic construction, yet I decided to allow the work of my selected craftsperson to influence the design. Therefore, I studied their recent work and analysed the forms created. These complex ceramic forms have been represented for the boundaries of the staircase, with planters atop them to further integrate nature in the design for a truly beautiful output. Additionally, the colour of the stairs and many sections of the home have been influenced by ceramics and their textures.







Credit - Lawrence Parent's Instagram posts:
https://www.instagram.com/lawrence.parent/

Inventory of New Building Techniques

Natural Immersion
In order to design with nature at the heart of the home, I found it particularly useful to immerse myself in nature. This was done by walking to local natural areas to generate ideas influenced directly from nature, as well as sketch these ideas. I find this to be similar to my client in some ways, as he discusses the importance of greenery in a workspace, as seen in his 'living desk' (see image on right). This led me to place the workshop and office in areas surrounded by nature.



Credit: Lawrence Parent's Living Blocks YouTube Video
https://www.youtube.com/watch?v=wd_2kZZDR34&t=61s

Discoveries from nature exploration to be implemented in design:

We must pay back nature - when we build homes, they often take away from nature and do not recover what they give back. We must change this and give back to nature, perhaps even more so than if the building was never there. Links to Singaporean Green Building Regulations. Singapore is also a great insight into how we can rebuild natures shapes - supertrees.

Irregularity - Many buildings are so alike, yet nature is so irregular. There may be the same components each time, yet they have different placement, allowing each area to be unique and unpredictable, unlike most buildings

Roofs - Cloud shape layers on ceilings. Also trees which dangle down at varying lengths.

Replication - Reinvent natural forms in my build such as leaves, wood, etc

Hallways / pathways - Traversing natural spaces is often very interesting and differ greatly from the linear and angular paths found in buildings / man made spaces. We should make transitions between spaces interesting

Nature finds a way - irregular paths are formed as nature has interesting and persistent methods of growing.

Floors - Often very complex in nature, with many irregularities and textures. These textures may be represented in the flooring inside the home perhaps in engravings.

Looking closer - analysing collected materials from site with microscope to see the construction of natural forms on a microscopic level. May also show me the organisms living in the stream and I could represent them in my building somewhere.

Nature's views - Landscapes have many layers to them, unlike walls in buildings which are often a flat surface. Can we represent these natural landscapes in buildings?

Surfaces - Very rarely smooth in nature, often varying textures / shapes

Sounds - Vast array of different sounds in nature - birds, wind, ambience, water, etc - Homes lack this. Can i make each area have its own sound? I could also use the sound of the stream and amplify it throughout the house.

Wildlife - Integrate references to them in the design and even construct areas dedicated to them. This allows the house to aid the ecosystem and bring more life. This links to the birds nesting in the field nearby.

As it gets darker, nature's silhouettes become more significant. A clear example of this is the trees which are outlined on a sky background. Integrate these into building at night? Could also be used for interesting lighting fittings.

Layers of nature battle to reach the most sunlight, leading to complex layers

Staticity of structures is extremely noticeable when compared with the constant movement of nature in the wind. How can I make my structure move like nature does?

Precedent Study



Credit: Lawrence Parent's Living Blocks
https://lawrenceparent.com/living-blocks

Lawrence Parent has created a remarkable product known as 'Living Blocks.' These blocks act as a miniature ecosystem to house plant and bug life within a man-made construction. I believe that it may act as a stepping stone towards combining nature and artificial construction. This, by extension, may be used within architecture.

Having contacted the client to discuss whether they are structurally sound enough for structural elements, it appears that they would be better suited for the likes of cladding. In his words, 'I imagine them used as modular features rather than covering huge areas.' Therefore, it is worth exploring this as an option, however traditional living walls may be more optimal for my design.

Design Reveal

The final design has been revealed below with axonometric views at the scale of 1:500. Using the biophilic approach in conjunction with my inventory of building techniques, I reached the final structure, as pictured. The entrance acts as a void, which integrates the stream, allowing its sound to resonate throughout the home. The layout may be studied in the coming pages through the plans, sections and elevations. **all pages scaled at A3**

SCALE BAR 1:500 0 10000 mm


View 1


View 2

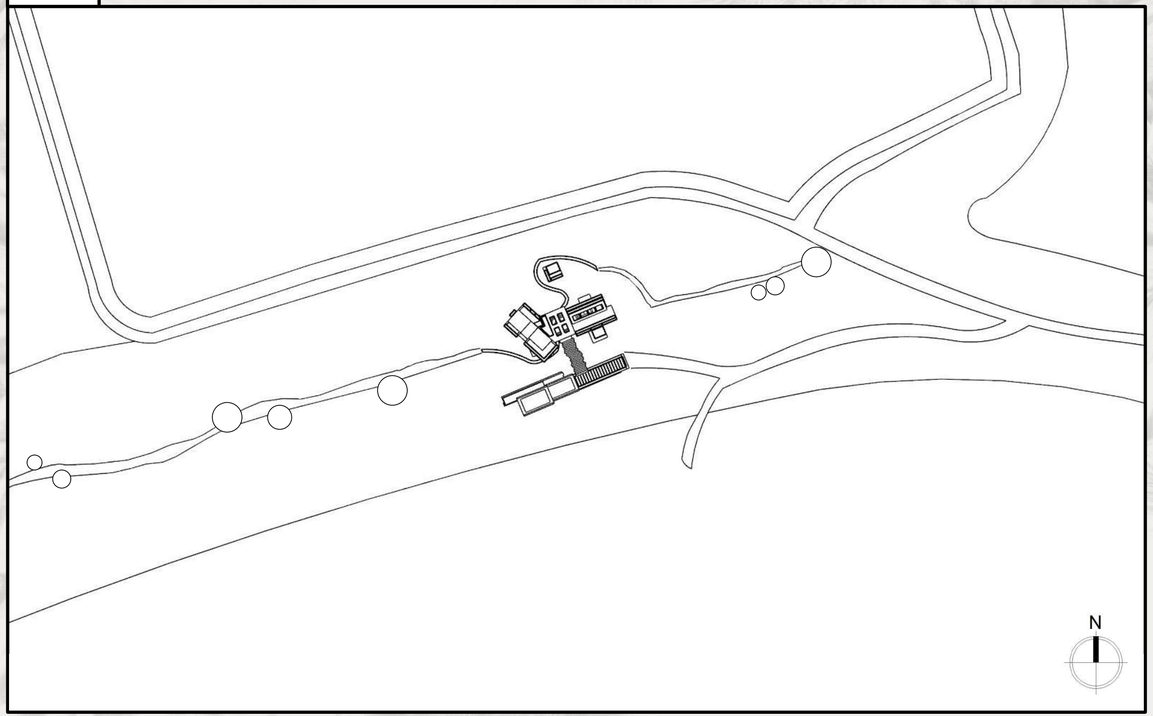

View 3


View 4

Technical Drawings

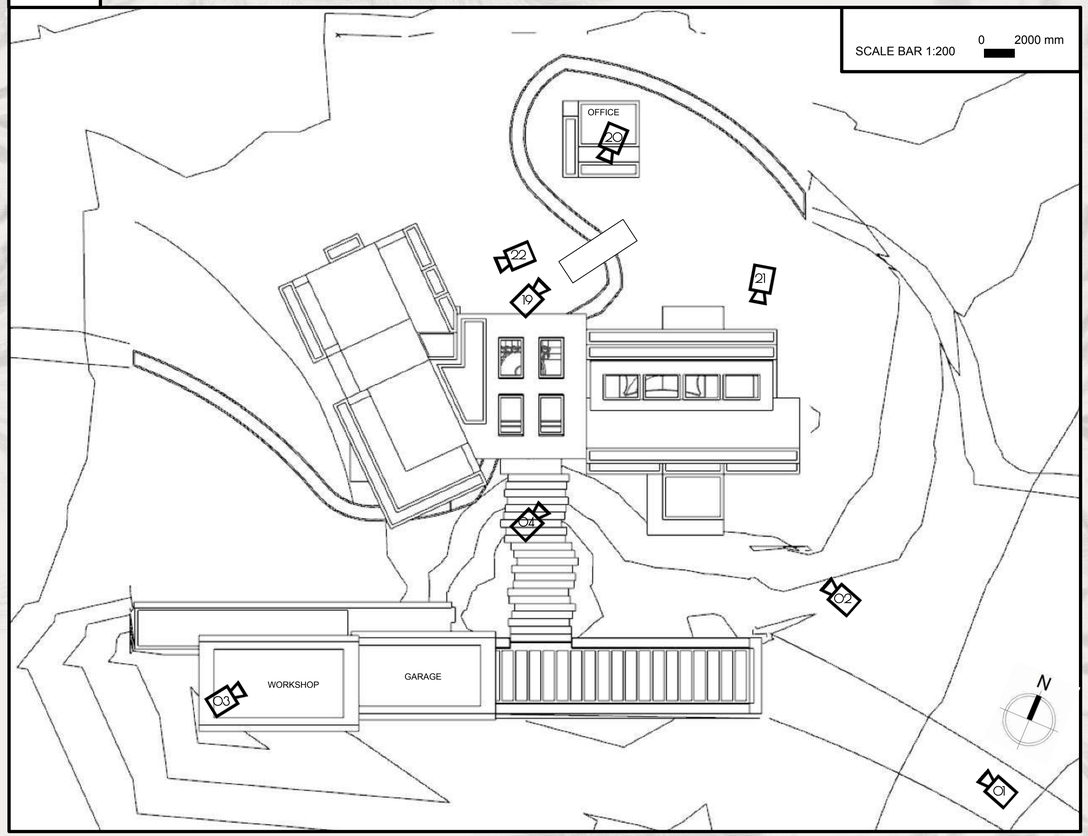
SCALE BAR 1:1000 0 10000 mm

SITE PLAN

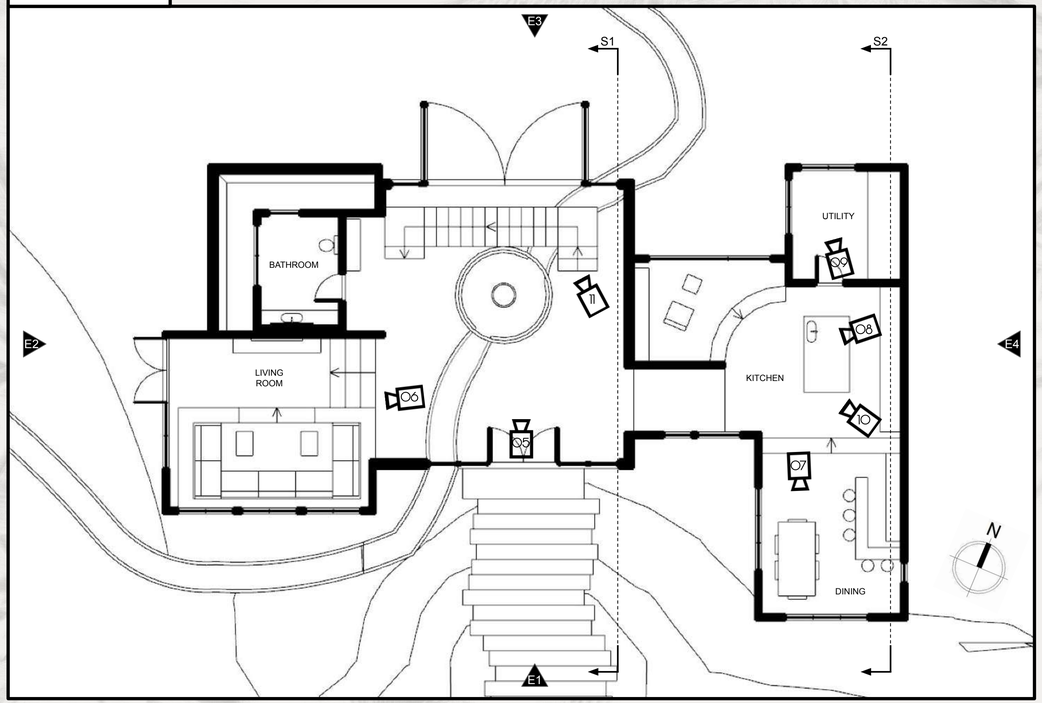


SITE PLAN

SCALE BAR 1:200 0 2000 mm

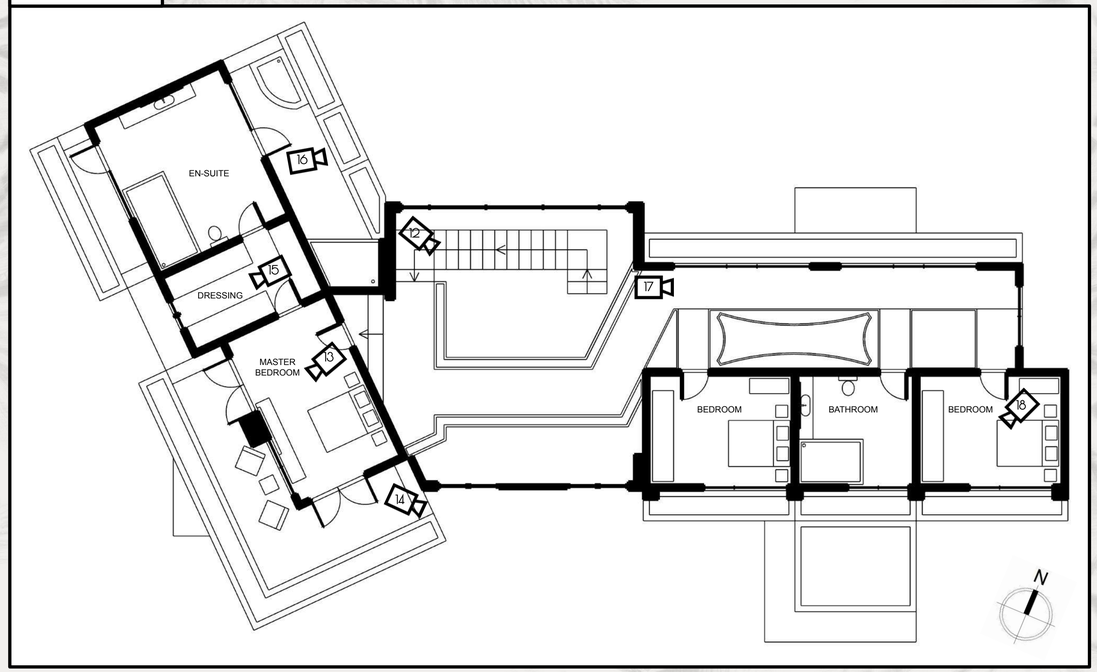


GROUND FLOOR PLAN



SCALE BAR 1:100 0 1000 mm

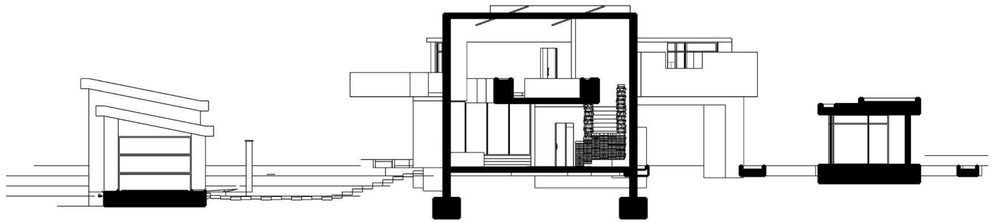
FIRST FLOOR PLAN



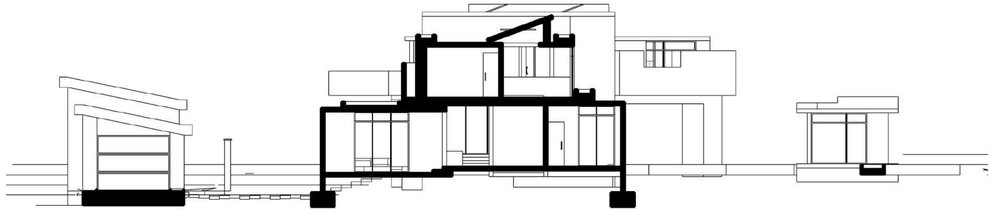
SCALE BAR 1:100 0 1000 mm

SECTIONS

SECTION 1



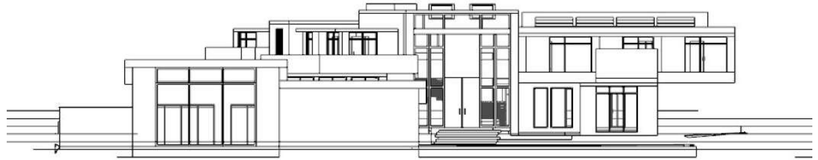
SECTION 2



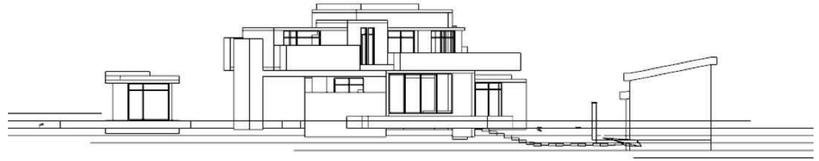
SCALE BAR 1:150 0 1000 mm

ELEVATIONS

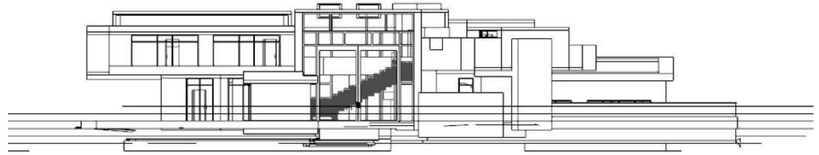
ELEVATION 1



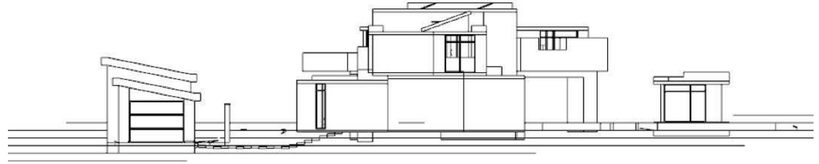
ELEVATION 2



ELEVATION 3



ELEVATION 4



SCALE BAR 1:200 0 2000 mm

Storyboard

The numbered cameras depicted in the plan views correspond to the perspective images seen in the storyboard. These images have been taken at eye-level, allowing the viewer to understand how these spaces would appear when explored, by using my rendering techniques.


01


02


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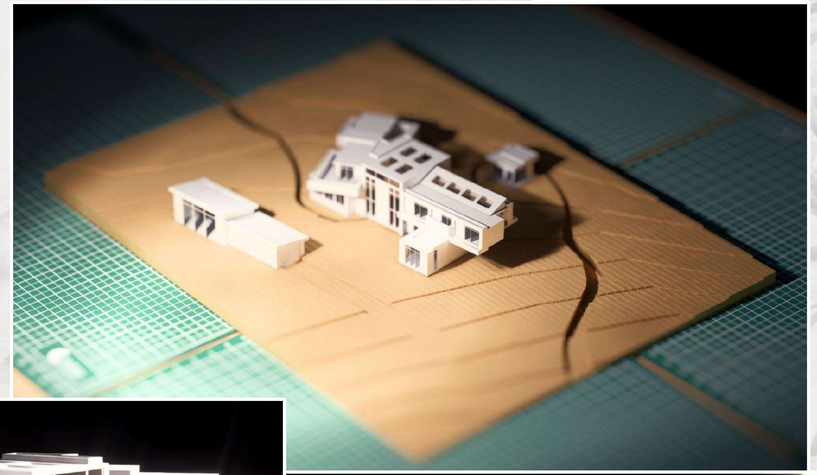
Physical Model

In order to create the physical model, I had to simplify aspects of the 3D model to prepare it for 3D printing. By separating the home into many components, the printing was possible and the model has been assembled.

In terms of the site, I utilised layers of corrugated cardboard to represent the irregular terrain and topography layers. These sheets had been laser cut and then assembled by hand.

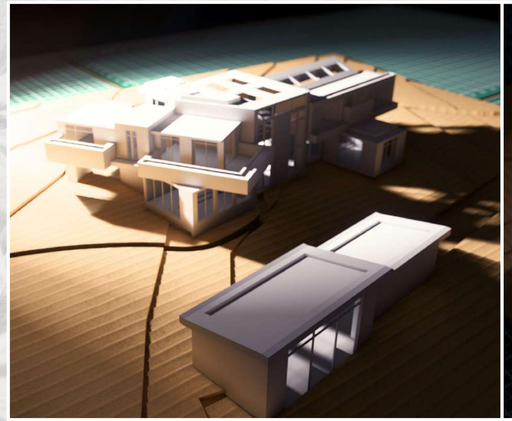
I experimented with lighting from various angles, despite the sun path as a means of displaying the model, for greater imagery.

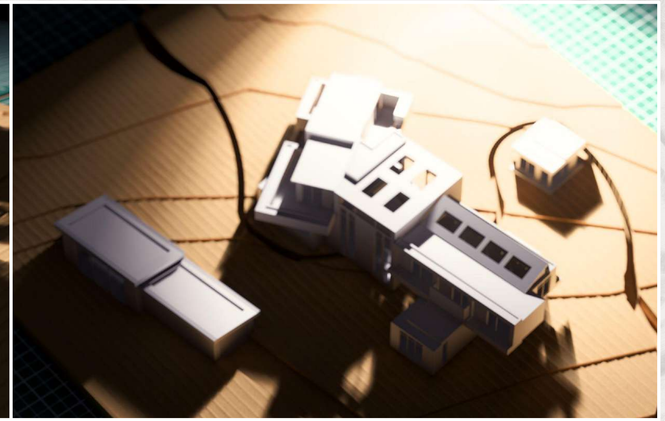
Model constructed at a scale of 1:200













home

portfolio

ataraxi