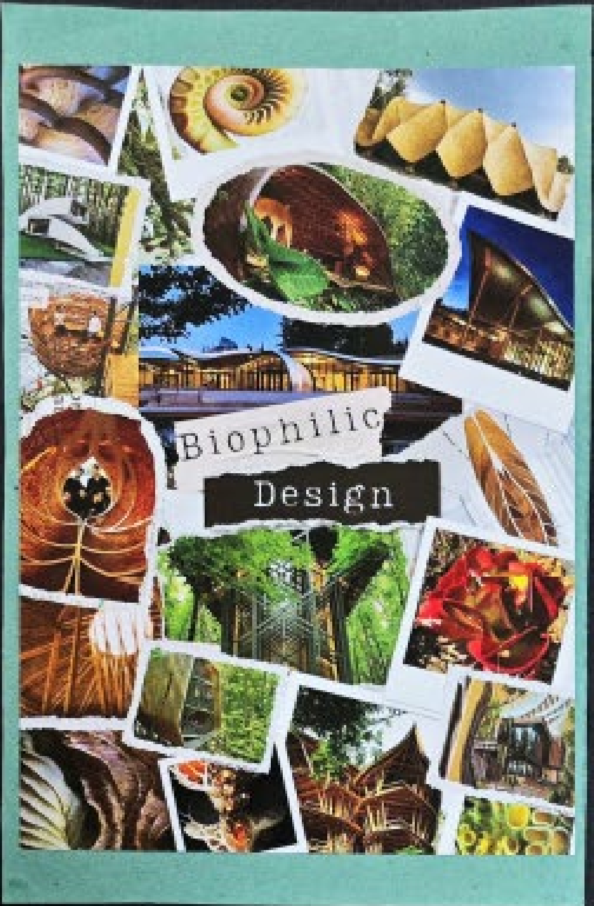
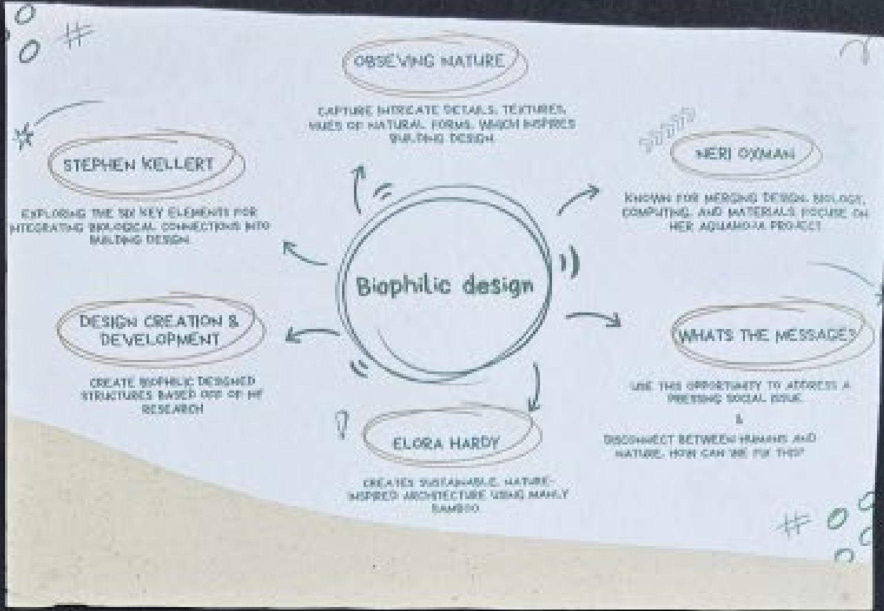




Primary photography

Biophilic Design:

Reimagining Spaces Through Human-Nature Connection

Biophilic Design - Project Brief

SCOPE

For this personal investigation project, the topic that I intend to explore is biophilic architecture and interior design, which is inspired by the power of nature, informing innovative and sustainable building solutions, that empower human and nature connections.

Throughout this project I aim to explore how the natural environment can create design concepts. However, I don't just want to create visually stunning spaces and artworks, I also want to use this project as an opportunity to address a pressing social issue.

KEY INFLUENCES

During my investigation I will research and explore the works of Stephen Kellert, Neri Oxman and Elora Hardy, which are my main inspirations. By understanding each of these designers, my aim is to further understand Biophilic Design.

Stephen Kellert: Biophilic designer, architect and professor of Social Ecology who developed the six elements of Biophilic design which are essential to understanding the biological connections that need to be integrated into building design.

Neri Oxman: Neri Oxman is renowned for her groundbreaking artistic research that merges design, biology, computing, and materials engineering. I am specifically interested in her project Aguahoja.

Elora Hardy: Founded the company IBUKU, where she works with traditional Balinese craftsmen, and modern engineers to create sustainable, nature inspired architecture designs. Their goal is to develop spaces in which people can live in an authentic relationship with nature.

KEY RESEARCH

I intend to read books to understand biophilic design and the connections between nature and humans, specifically: ***Biophilic Design by Stephen Kellert.*** Then using ***The Neri Oxman Material Ecology Catalogue Neri Oxman and Bob Mystique*** I also intend to visit structures in Bali to make observations by taking primary photography. I will Visit Green Planet in Dubai and other places I have yet to discover.

Colour pencil drawing: Capturing the rich hues of The Pigs Ear Cotyledon

Octupus Aloe-indigenous plant

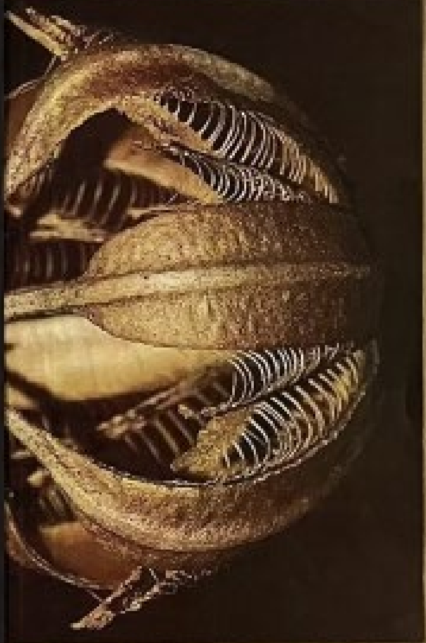
INTENTIONS AND OUTCOMES

To initiate my project, I'll start by immersing myself in nature, making observational drawings of indigenous plants and other organic forms in different mediums. This connects me to the pure source of inspiration, tapping into organic forms, textures, and patterns. As my project progresses, I will then study organic forms used to inspire building design and create unique design structures. Through natural form, I will evoke a sense of grounded stability, fostering a sense of balance and connection to the earth.

In South Africa, I saw the contrast between the breathtaking natural landscapes and the struggles of communities living in makeshift tin-roofed homes. My work could impact this situation by transforming the landscape to its natural glory. I envision creating a biophilic designed structure that not only celebrates nature but also harmonizes human existence with nature and provides a safe and nurturing space for communities in need.

Structure of Project: Observe natural forms -> Study designers/their works and how they relate to nature -> Create artworks informed by research -> Design & structure or 3D maquette based on research.

Observing Natural Forms



These fungi—mushroom natural forms—were the perfect subject for my first study. I went bold and ambitious, showcasing how I could capture intricate details. I have always enjoyed using charcoal pencils and I plan to continue using it in my project as I was pleased with this piece's outcome. Charcoal pencils have the ability to express depth through dark tones, which is a big factor for why I chose it as a medium. I also used charcoal powder for smooth areas and a kneaded and electric eraser to make highlights stand out.

Next to the fungi is a succulent plant called, Graptopetalum Paraguayense, drawn in chalk pastels, which beautifully captured its muted hues. I took this photograph in South Africa for exploration, alongside plants from the previous board. I found the movement in this piece inspiring, adding compositional interest and easily envisioning this form inspiring building designs.

Rhythmic flow Ballpoint Pen Drawing

The Essay

Observing Nature

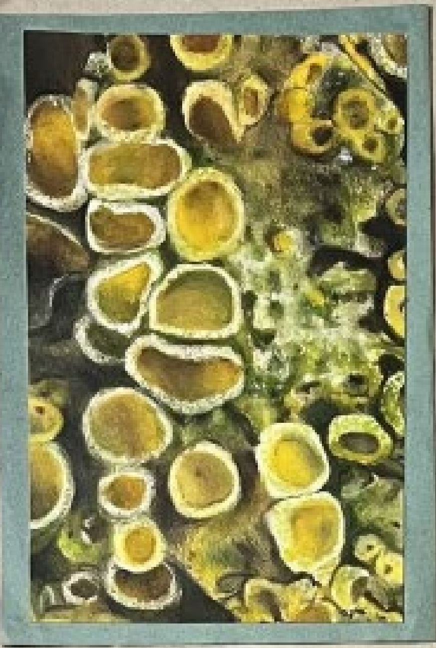
For this personal investigation project, the topic that I chose to explore is one that I am deeply passionate about. Raised and born in South Africa, I was constantly inspired by the uniquely beautiful indigenous plants and landscapes and the way the traditional rural African huts harmoniously mixed with their surroundings. This led me to the theme of my project, "Biophilic architecture and interior design." This deliberate interest focuses on translating an understanding of the crucial ideals to affiliate with natural systems and processes—known as biophilia—by integrating these elements into the built environment.

By exploring and illustrating the beauty and complexity of organic forms, I aim to use these natural patterns to inspire building designs. A key influence in my work is Stephen Kellert, whose book has helped me understand the first dimension of biophilic design—organic, or naturalistic. Two dimensions are further divided into several elements, the first of which I am exploring is the concept of natural shapes and forms. These are patterns derived from nature that can be integrated into building design, evoking a connection between the natural world and humanity.

Throughout my project, I will delve into the dimensions of biophilic design, which are split into six key elements and attributes.

Inspired by original photography

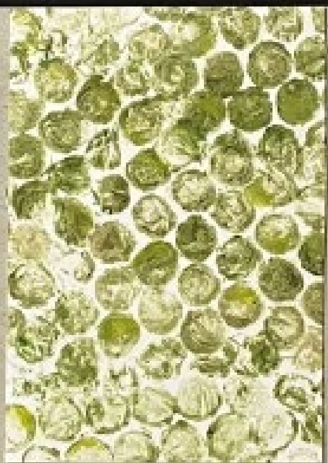
Observing Natural Forms

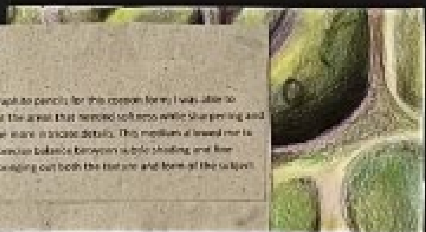


Texture

This succulent plant called, Pachyphytum Machucae 'Baby Finger,' was drawn in ballpoint pen, providing a striking contrast to the brightly colored aquatic plant. I employed a technique called hatching, using very fine cross-hatching and cross-contouring to create tonal and shading effects that enhanced the form of the plant.

For the aquatic sea coral, I used oil paints, which is definitely one of my favorite mediums. I love the texture it brings to the piece and the rich, vibrant hues. The colors blend seamlessly, allowing for subtle variations and depth. I've also incorporated recyclable paper as a border for this painting, adding visual interest and tying into the theme of sustainable themes that will come later in my project.

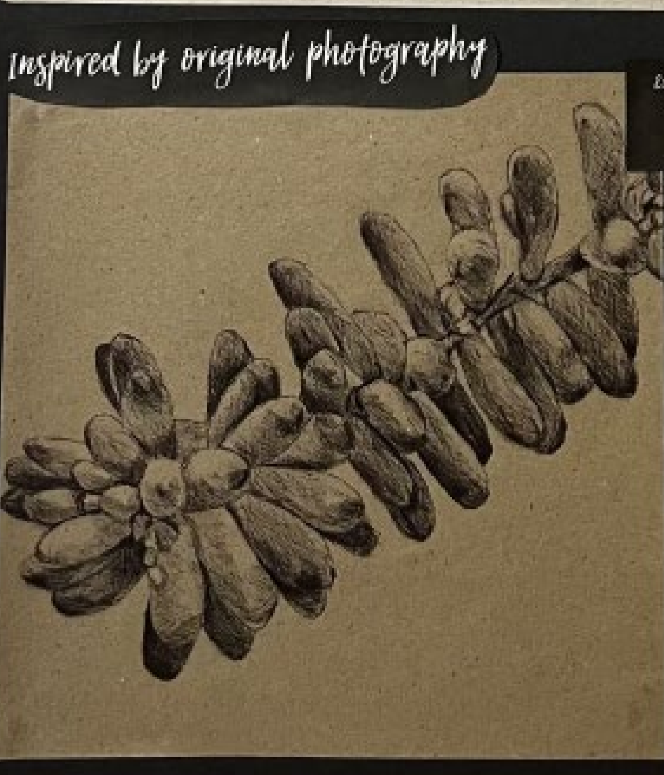


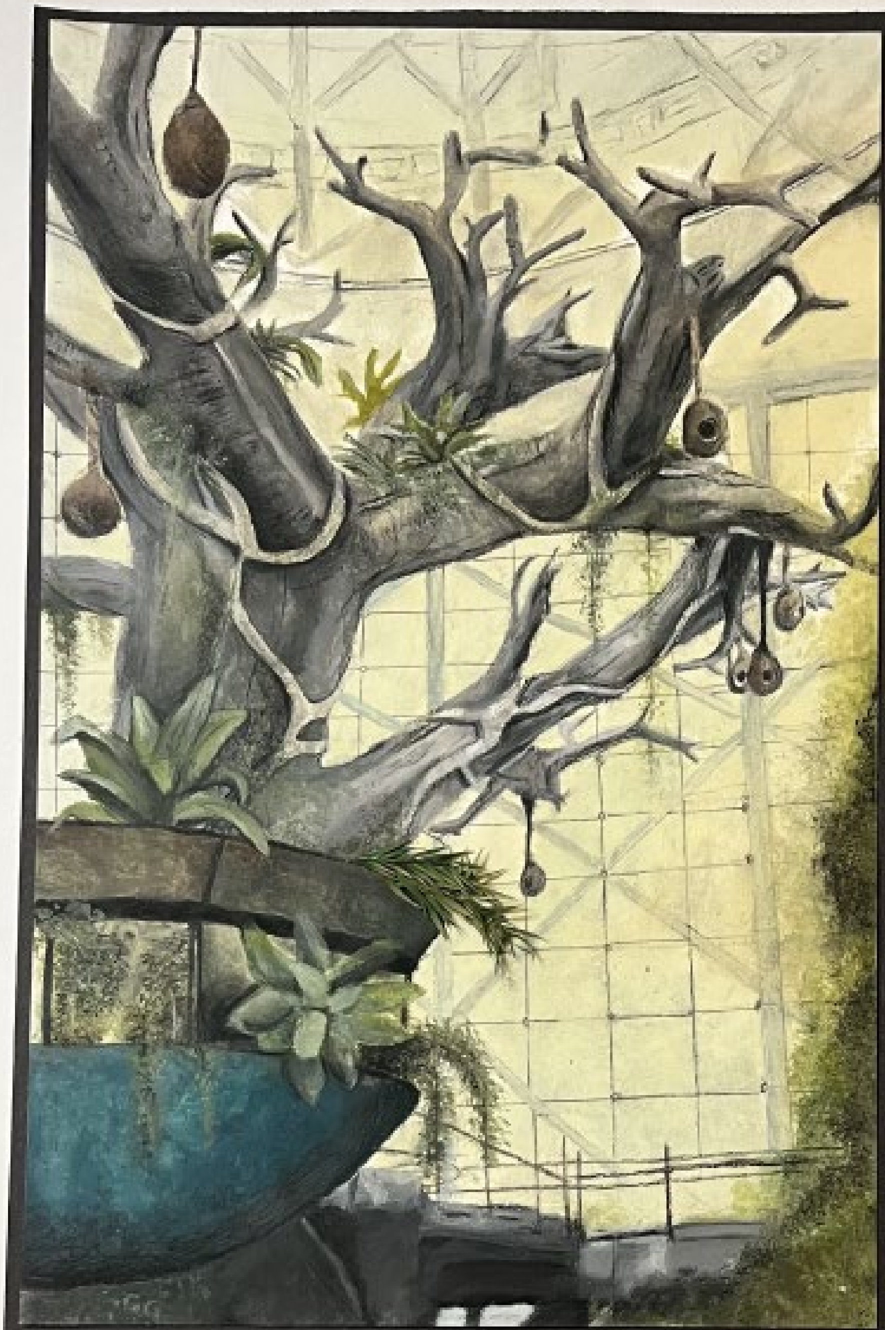


By using graphite pencils for this cocoon form I was able to smooth out the areas that needed softness while sharpening and defining the more intricate details. This medium allowed me to achieve a precise balance between subtle shading and fine detailing, bringing out both the texture and form of the subject.

Inspired by original photography

Exploring organic patterns with acrylic paint and bubble wrap





A Biophilic Design Approach

Introducing nature into man-made spaces:

Primary photography

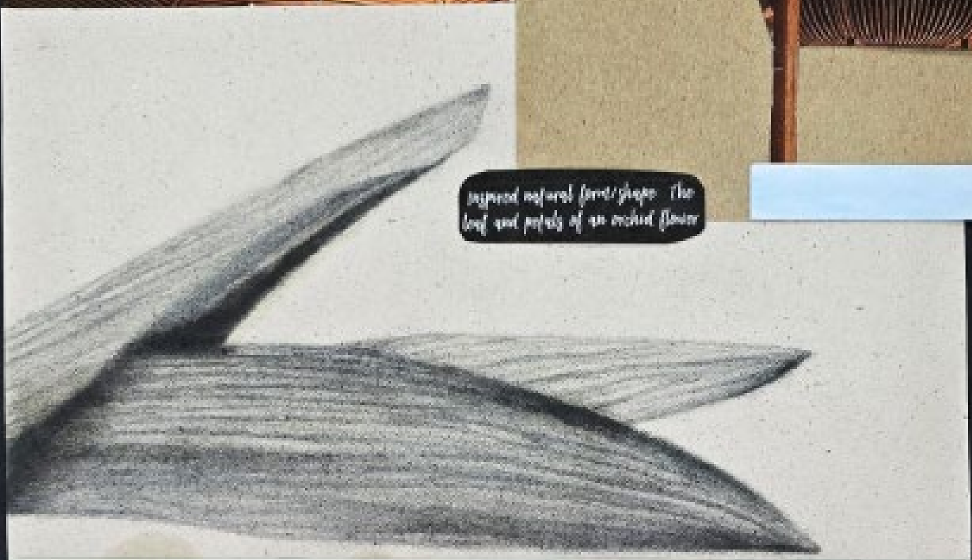
Integration of Organic Forms into Man-Made Spaces:
Real-Life Examples from Dubai

Before researching designers and how they incorporate natural forms into building design, I decided to explore my immediate surroundings in Dubai. I visited Green Planet, an indoor representation of a real rainforest. Upon entering, I felt an immediate connection to nature, despite being steps away from the city's bustling atmosphere. The sound of the waterfall and birds, along with the sight of diverse plant species, brought a sense of calm and serenity.

As I ascended the spiral staircase wrapped around the massive central tree, the greenery enveloped me, reflecting the importance of plants in biophilic design, as emphasized by Stephen Kellert. Plants, essential for human survival, provide comfort when incorporated into built environments. Spaces like Green Planet enhance our connection to ecology and enrich human experience.

Sunlight streamed through the glass windows, warming my face, further demonstrating the benefits of natural light in design. As diurnal creatures, humans rely on natural light to feel secure and balanced, a key element in creating spaces that nurture well-being, as noted by Stephen Kellert.

Sea World Abu Dhabi



inspired natural form/shape. The leaf and petals of an orchid flower

Stephen Kellert's influence on the VanDusen Botanical Garden Visitor Centre

Biophilic Design in Architecture: Stephen Kellert's Principles and Theories Shaping the VanDusen Botanical Garden Visitor Centre

The VanDusen Botanical Garden Visitor Centre is a prime example of how a building can significantly enhance human-nature interaction.

To create buildings that harmoniously integrate with their surroundings, we can look back to one of Stephen Kellert's design elements: Natural Shapes and Forms. The design of this building was inspired by the White Bog Orchid, with a vegetated roof resembling the petals of the flower and flowing walls that mimic the orchid's leaf, cascading down to the ground. Kellert's theory under this category emphasizes that nature rarely features straight lines or sharp angles. By incorporating curved shapes that flow organically across the architecture, the building represents nature's movement, resisting the hard edges typically found in modern designs.

Inside, the undulating ceilings and curved walls create a multi-dimensional experience that connects visitors to the natural forms of the surrounding garden. These flowing lines guide people toward the building's light-filled center while extending into the landscape beyond.

Transcription Reflections:

For my first transcription, I illustrated an Orchid leaf in graphite, inspired by The Alphabet of Plants by Karl Blossfeldt. The soft graphite allowed for clear, defined lines. For the VanDusen Visitor Centre, I used mixed media: starting with a watercolor wash, then color pencils, and an oil paint technique from my Green Planet piece. This approach captured the building's movement, warm wood tones, and moody lighting, bringing the piece to life.

Concept Development Process

Cardboard model: Initial Structure

Digital Integration: Cardboard Structure in Forest Setting

Material Application: Adding Wood and Concrete texture to Final Design

Digital exploration with Photopea

Creating my own Biophilic structure inspired by the VanDusen Building: The Plumeria Forest Hideout

Experimentation Leaf Print

Elora Hardy's Green School Focusing on Well-being Through Biophilic Design


Colour Pencil Drawing Showcasing Organic Tones


Heart of School Central Campus


Children Engaging with Nature


Green School Structure model


Textured Bamboo Charcoal pencil Drawing

I will explore the Green School in Bali, founded by Elora's father, John Hardy. She collaborated with him on this project, where well-being and connection to nature are prioritised over grades. The school is designed without walls, immersing students in nature's thriving ecosystem to inspire and nurture them. The goal is to develop a deep relationship with the earth; hands in the soil and feet in the mud foster a therapeutic, earth-centered learning atmosphere.

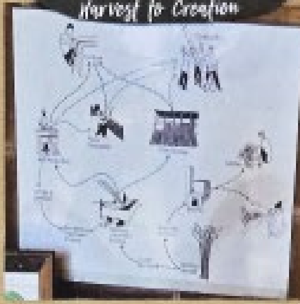
The campus was designed to grow with nature, harmonizing the building with its surroundings. It's said that this 'living campus' allows students to learn through all senses, tuning their bodies and minds to the earth as they move through space. Biophilic design enhances focus, health and productivity, creating a learning environment where students thrive amidst nature.


Inspired by Organic Seashell Form Oil Painting

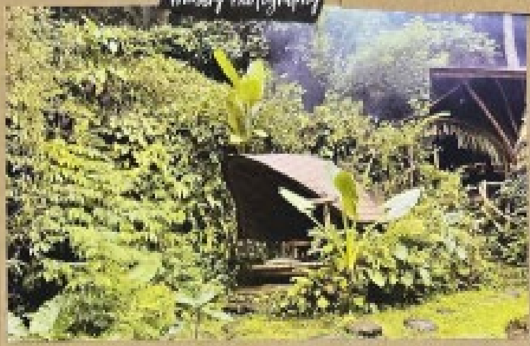

Interior Design Bamboo Carved Tables & Chairs

Bamboo Pure: Bamboo Construction and Factory

Where the Magic Begins: From Harvest to Creation

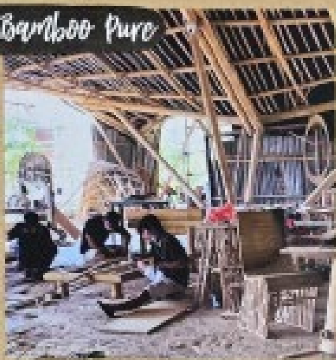


Primary Photography



Coming from a background where my parents work in the corporate and IT industry—constantly behind screens and consumed by deadlines, I've seen how this lifestyle fosters stress and disconnection. Our family trip to Bali reawakened a sense of calm and connection for my family, reinforcing the principles of biophilic design. This experience affirmed how nature impacts mental and emotional well-being and motivates me to create spaces that go beyond functionality to restore balance and nurture the human-nature connection, much like my earlier leaf-inspired structure.

Guide at Bamboo Pure



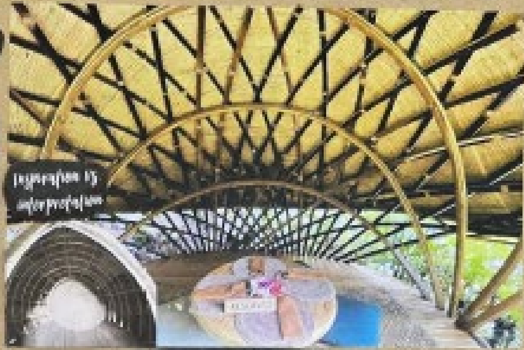
After Treatment ← Before Treatment

My Architectural Design, Inspired by IBUKU's River Warung

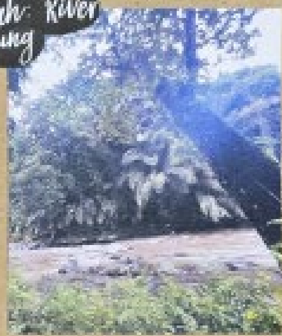
Process emulation:

Exploring Green School and Sharma Springs inspired me to apply similar concepts to my own design, which will be showcased in the next two boards of my project, integrating architectural and interior spaces into one cohesive design. On the previous board, I shared a photo of myself at Sharma Springs, where I experienced the immersive beauty of Bali's biophilic elements firsthand. Being surrounded by rain-soaked greenery and feeling the earth underfoot deepened my understanding of how these environments foster a profound connection to nature.

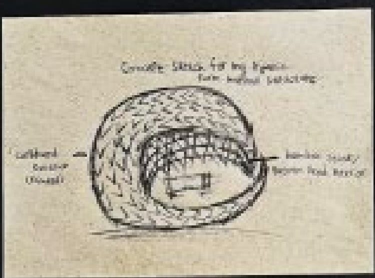
Inspiration vs interpretation



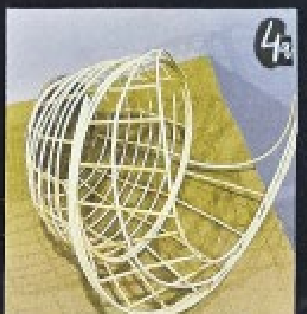
Bambu Indah: River Warung



Initial Concept Sketches

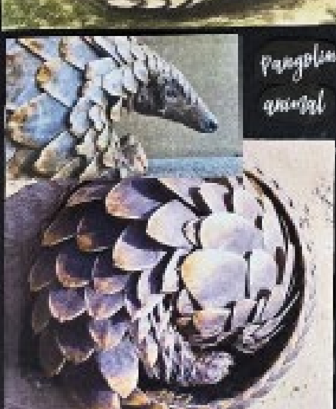


Process Development



Primary Photography

Pangolin animal



Ukhokho Lwesambane: A Safari Spa Sanctuary

On the top left of this board are photos from my visit to Pure Bamboo in Bali. This company collaborates with skilled craftsmen and IBUKU to treat bamboo for construction and build structural elements for IBUKU's projects. The bamboo is treated to ensure durability before being transported to building sites. As Elora Hardy says, "Treat it properly, design it carefully, and a bamboo structure can last a lifetime." Balinese architecture reflects the philosophy of 'Tri Hita Karana'—'Three Causes of Well-being,' emphasizing harmony with God, others, and nature. This philosophy is evident in structures like the pods at Bambu Indah resort, built close to the ground to foster a sense of grounding, physically and spiritually—while their organic bamboo forms blend seamlessly into the natural environment. Similarly, the 'subak' rice terraces follow the land's natural contours, balancing human needs with the surrounding ecosystem.

For my design, I drew inspiration from the Green School's seashell-curved forms and the arched pods I visited at Bambu Indah in Bali, described by Elora Hardy as "like a highly intelligent bird's nest." To start incorporating my South African roots, I based the design on the protective, curled form of the pangolin, symbolizing comfort and security. As a child, I was always fascinated by pangolins—their unique, scale-covered bodies and their ability to curl into a protective ball captivated me. This admiration made them the perfect inspiration for my structure. Using bamboo for the framework and flexible rattan reed for the curved elements, I shaped the structure to echo the pangolin's organic silhouette. The scales were crafted from carefully painted paper cards, meticulously cut and elevated with bamboo rods to create depth and dimension. Envisioned as a safari spa, 'Ukhokho Lwesambane' (Zulu for Pangolin Cocoon) uses South African materials like thatch, wood, and stone, blending harmoniously with its surroundings while embracing biophilic principles. This design reflects both a connection to nature and a sense of personal nostalgia, making it deeply meaningful to me.

Architectural and Interior Design

Interior Design

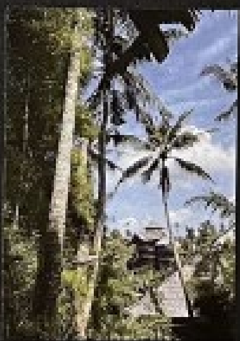
Sketches of IBUKU's Buildings

My Inspired Sketches of Sharma Springs Interior Spaces

Interior Design: Sharma Springs in Bali

To further develop this project, I decided to explore how biophilic design influences interior spaces, focusing on Elora Hardy's Sharma Springs in Green Village. Situated across the sacred Ayung River, this six-story bamboo villa—the tallest in Bali, represents sustainable living. Its design, inspired by lotus flower petals, is supported by a central tower and an inner tower. Each room features a unique theme, with bamboo furniture showcasing organic shapes and patterns that complement the decor, seamlessly blending natural beauty with functionality. The entire structure, including the interior, is built primarily from bamboo.

Guests enter the main house from the 4th floor through a stunning 15-meter tubular bamboo entrance, surrounded by a private permaculture garden and pool. The open lounge and kitchen, designed without walls, immediately connect you to nature. A private office on the 5th floor offers breathtaking valley views, creating a calming workspace. To unwind, descend the bamboo stairs to one of four en-suite double bedrooms, designed to rejuvenate you in this natural sanctuary.



Me

Transcription Reflections:

To begin, I illustrated Sharma Springs' outdoor lounge seating area, featuring a curved couch resembling a yin-yang-inspired organic shape. This space, with its bamboo wooden floors, overhanging light fixtures, and curved bamboo railing, was sourced from Elora Hardy's book 'Bali Mystique', where I explored her interior spaces to better understand her designs. The couch's organic form blends seamlessly into the natural surroundings. I used graphite pencils for this greyscale drawing to emphasize values and forms, adding variety and demonstrating versatility in my mediums.

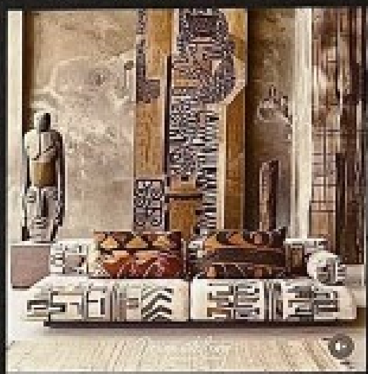
What struck me was how nothing in these spaces were perfectly straight or right-angled. Even the building's railing curved naturally, reflecting the true craftsmanship of these structures. This aligns with the Japanese concept of "Wabi-Sabi," which celebrates imperfection and authenticity. To reflect this, I created freehand sketches without rulers, using a fine liner to embrace imperfections, and watercolors for soft, luminous effects. Architects often sketch to refine their designs before construction, and Elora Hardy's background in fine arts and experience designing prints for Donna Karan influences her process. She has shared that her team starts with hand-drawn sketches and simple mockups, a crucial step in creating her imaginative, nature-integrated bamboo structures.

African Interior Design

Initial Concept Sketch: The Foundation of my Design

For the main focus of this part of the project I used Photopea, a powerful photo editing program that I had successfully incorporated earlier in my project. I found it to be an excellent tool for visualising how the interior space would come to life, allowing me to carefully integrate real-life materials and textures into my design. To enhance accuracy, I utilised tools like the Polygonal to cut out precise shapes, ensuring every element fit seamlessly into the space. For example, when incorporating the thatch roof, I sourced a high-quality image online, adjusted its opacity to overlay it onto my initial sketch, and used it as a guide to shape it perfectly. By inverting selections, I could refine the cutout process, ensuring that textures, colours, and materials aligned with my vision.

This meticulous process required patience and precision, as I carefully adjusted tones and materials to maintain authenticity and harmony in the design. Seeing my initial sketch evolve into a fully realized digital concept was very rewarding. Working in Photopea not only sharpened my technical abilities but also allowed me to push my creativity further, transforming an idea into something authentic and immersive.



Digital Design Process using Photopea

Process emulation: My Interior Design

I chose to respond to Dora Hardy's interior spaces by designing an interior that captures a similar mood while integrating African aesthetics. Envisioned as the heart of Ukhozi Lesizandlalo, this space embraces rich textures, colours, and indigenous artistry. The domed interior, reminiscent of traditional African huts, fosters warmth, protection, and intimacy—ideal for a spa retreat. A thatch roof supported by reclaimed wooden poles ensures natural ventilation while focusing on African building traditions. The curved bench, inspired by communal seating in African homes, wraps around the space, while smooth, character-aged wooden floors add a tactile connection to the earth. A large pivoting wooden door, framed in woven rope, reflects African craftsmanship, influenced by intricate basket-weaving techniques. Hand-carved African masks and wooden ottomans showcase cultural symbols, deepening the space's heritage and storytelling. A smooth wooden-framed spa bed, inspired by nature's organic forms, grounds the room, complemented by beige sheets for a neutral base, with bold blankets and pillows in deep reds, warm oranges, and geometric tribal patterns drawn from African mud cloth and Kente fabric. Handwoven Kuba cloth and sisal fibre pillows add texture, while clay pots with hand-painted African motifs that have native plants within, like Strelitzia (Bird of Paradise) and succulents, reinforcing the natural ambiance. The large glass opening door floods the space with natural light, strengthening the connection between the spa and the surrounding landscape. By blending sustainable materials, cultural craftsmanship, and organic forms, this space becomes more than just a retreat—it is a sanctuary where guests feel deeply rooted in nature and African tradition.

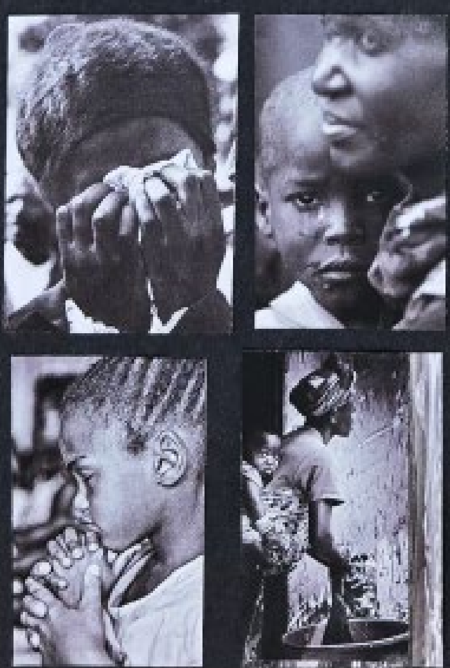
Final Design Outcome: Bringing the Vision to life

Primary Photography: South African Thatch Roof Inspiring my Digital Design

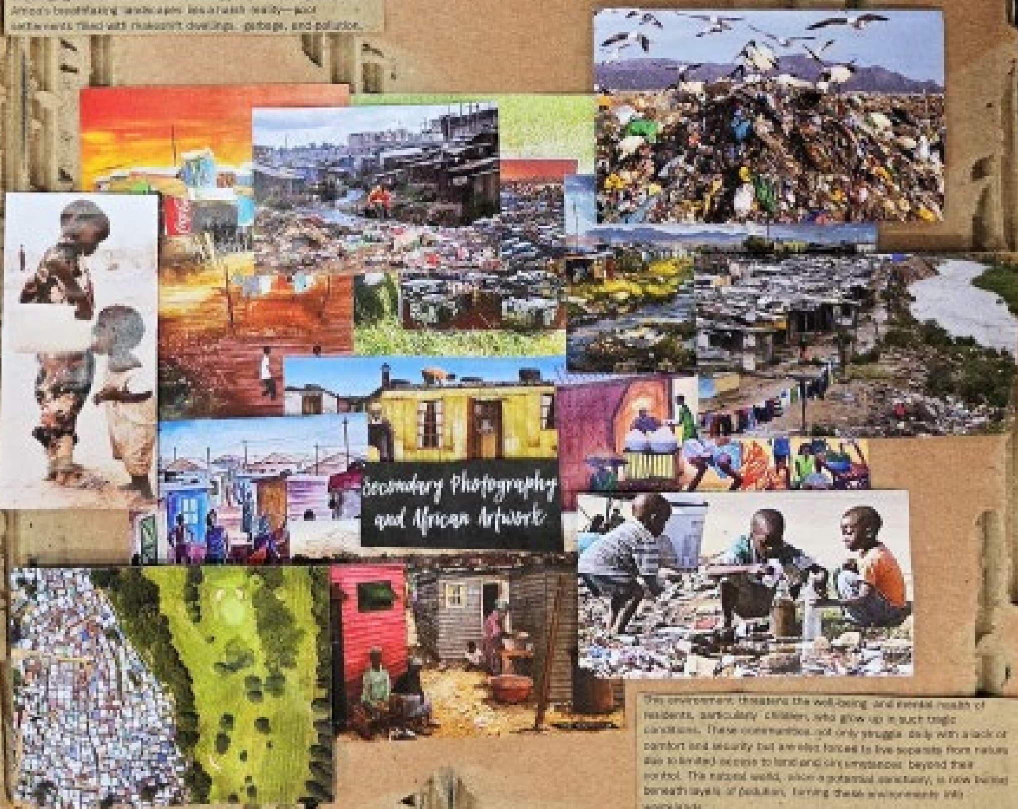
Bridging the Divide: Highlighting the Separation Between People and Nature

Oil painting and Colour Pencil Study Depth, Texture and Dimension

My vision is to bridge the divide between people and nature by creating a sustainable structure and envisioning it to be part of a self-free, nature-inspired community hub built from natural materials. This space would go beyond just providing shelter and security, offering residents an opportunity to reconnect with the environment in a way that enhances their well-being. By reintroducing greenery into these areas, the design aims to restore the land while reconnecting communities to the natural world, fostering a deeper bond with the environment from which humanity once evolved. Here, I have included images that illustrate the stark separation between urban and rural areas, where urban spaces often integrate green environments, while rural settlements lack this connection. These visuals highlight the imbalance in access to nature, reinforcing the need for biophilic design solutions in underserved communities. I will further develop this concept in the upcoming segments of my project.

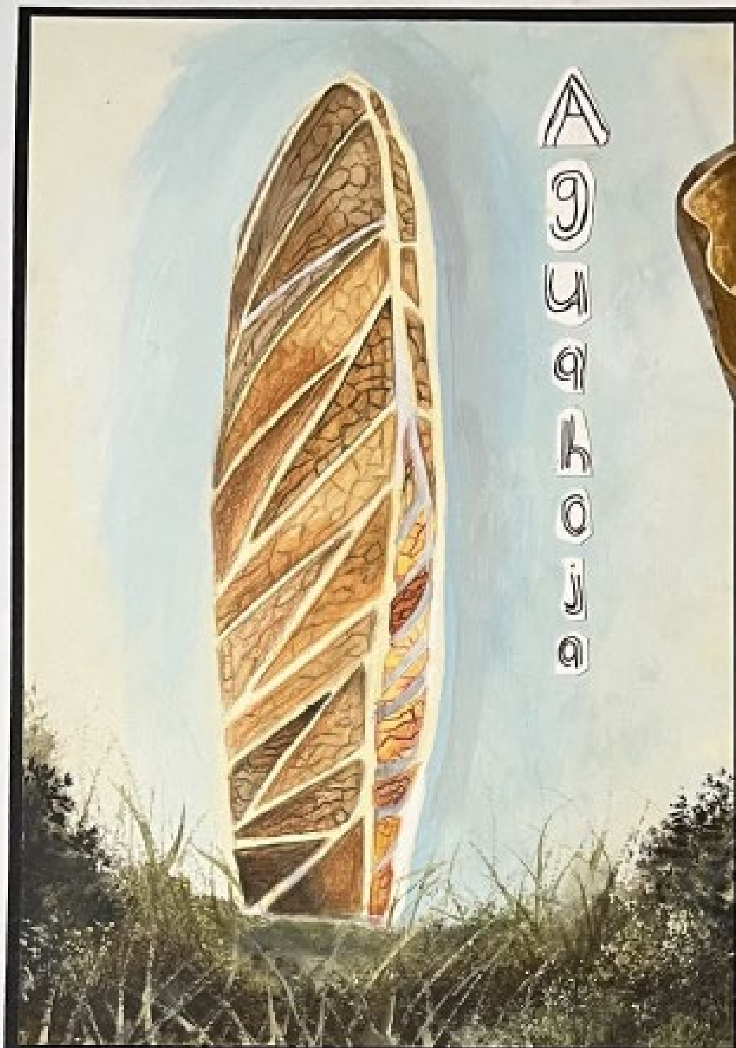


For the continuation of my project, African themes and design inspirations, lead me towards a different outcome. Previously, I showcased the architecture and interior of [illegible] Lwesizwe, which reflects African design and biophilic principles. Now, I want to shift my focus to exploring the realities of African lifestyles and the challenging environments in which many people live. Beyond South Africa's breathtaking landscapes lies a harsh reality—poor settlements filled with makeshift dwellings, garbage, and pollution.



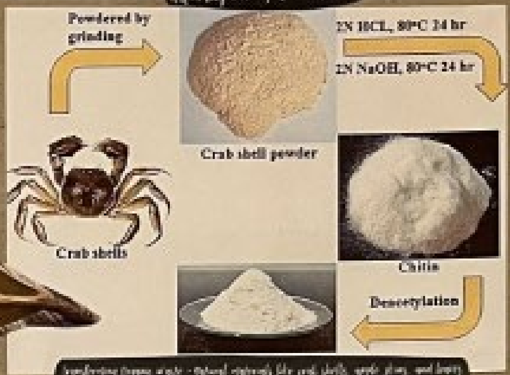
Secondary Photography and African Artwork

This environment threatens the well-being and mental health of residents, particularly children, who grow up in such tragic conditions. These communities not only struggle daily with a lack of comfort and security but are also forced to live separate from nature due to limited access to land and circumstances beyond their control. The natural world, once a potential sanctuary, is now buried beneath layers of pollution, turning these environments into wastelands.



3D Printing with Living materials: The making of Aguahoja

Naturally Decomposed materials



Transforming Organic waste - Natural materials like crab shells, apple skins, and leaves are ground into powder, extracting biopolymers like chitin and cellulose

Creating bio-ink - The extracted biopolymers are turned into liquid gels, forming a natural, biodegradable ink with varying properties for printing

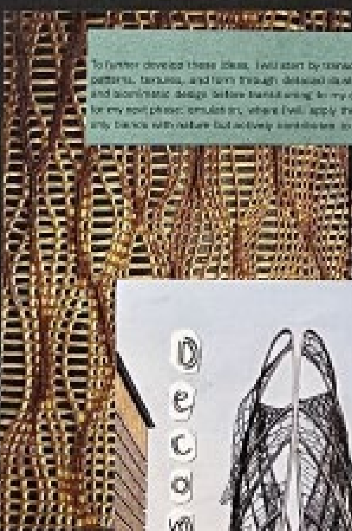
Transcription Reflections

To address the environmental issues caused by pollution in South Africa's poor settlements, I turned to my final designer, Neri Oxman and her Aguahoja project as a source of inspiration. Her work explores how materials can be designed not just to integrate with nature but to actively restore it. Aguahoja is a biodegradable pavilion created from biopolymers like cellulose, chitin, and pectin—materials found in plants and crustaceans. This project showcases "programmed decay", where structures are designed to decompose and return nutrients to the earth, mimicking the natural cycle of life.

Instead of producing waste, these materials fuel new growth—a principle that aligns perfectly with the vision for my project. By exploring Aguahoja, I aim to understand how biopolymer-based structures could be applied in real-world scenarios, potentially helping to clean up pollution while maintaining a connection to nature. The project's fusion of digital fabrication and organic matter is an ideal example of biophilic design, where technology works in harmony with natural ecosystems rather than against them.

3D Printing the Structure - Robotic printer extrudes the bio-ink in precise patterns, forming Aguahoja's intricate, nature-responsive structures, designed to biodegrade over time

To further develop these ideas, I will start by transcribing Aguahoja's materials and structure, closely studying its patterns, textures, and form through detailed illustrations. This will allow me to reflect on its biodegradable properties and biomimetic design before transitioning to my own experimentation. This approach will help me lay the foundation for my next phase: emulation, where I will apply these learnings to create my own biodegradable structure that not only blends with nature but actively contributes to environmental restoration.



Understanding this process was enhanced by insights from the Neri Oxman Material Ecology Catalogue by Neri Oxman]

Neri Oxman

Bioplastic

As mentioned previously, South African townships face daily struggles. Surrounded by landfills and pollution, this contributing to poor living conditions and environmental degradation. This bioplastic experiment serves as a small-scale exploration of a potential solution, envisioning fungi-based biopolymer structures that could consume plastic waste and accelerate its breakdown. Since this remains a conceptual idea, I created bioplastic, a flexible, biodegradable natural material without synthetic additives— simulating the potential of this process and experiment with sustainable, regenerative materials firsthand. Using glycerin, gelatin powder, white vinegar, and water, I meticulously adjusted the ratios until achieving a material that was both stretchable and durable, allowing it to take form over a structure while maintaining strength, mimicking the qualities of a 3D-printed organic membrane. To reinforce its biophilic connection, I incorporated dried leaves, petals, orange peels, loose tea, organic chili flakes and turmeric, enhancing its texture, hue, and biodegradability. Just as Aguahoja was designed to decay and return to the earth, I envisioned future temporary structures that could not only actively eliminate plastic waste in townships but also regenerate the environment, fostering new growth and reconnecting communities with nature. This project highlights how material innovation and biophilic design can transform our approach to sustainability and environmental restoration.

material Exploration

1. Most Rigid – Structured & Firm

Citrus & floral bioplastic: Orange peel, dried leaves and petals for enhanced texture, biodegradability and a natural aesthetic

3. Elastic & malleable

Textured imprint bioplastic: Dried leaves embedded with an organic imprint pattern for added surface texture and depth

Primary photography

3 Most Flexible – Conforms to Structure

2. Textured – Saturated & Layered

Spiced tea-infused bioplastic: Loose tea, organic chili flakes, and turmeric creating a vibrant hue, rich texture, and natural variation

Process Evolution:

I explored bioplastic filaments as part of my material experimentation, inspired by Neri Oxman's Aguahoja. Just as Oxman used biodegradable materials like chitosan and cellulose to create a 3D-printed structure designed to decay, I envisioned a similar idea—one that could be 3D-printed using Pestalotiopsis microspora, a fungus that scientists have discovered can break down plastic into organic matter, even in oxygen-deprived environments like landfills. Ongoing research has shown that this fungus can consume polyurethane plastics, one of the most common types of plastic waste, converting it into harmless biomass. This discovery presents a groundbreaking approach to plastic pollution—one that aligns with my vision of biophilic structures that not only integrate with nature but actively restore it.

Indwe Ya Ubuntu:

The Blue Crane of Humanity

The Blue Crane

Process Evolution

Process Emulation:

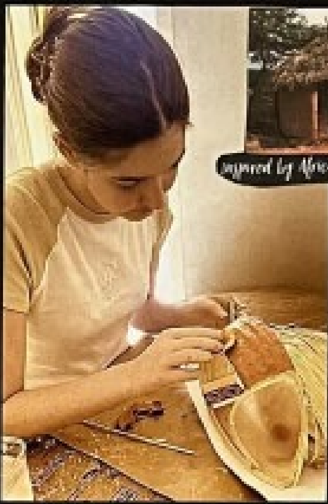
Building on my previous board inspired by Neri Oxman's Aguahoja, I began shifting from conceptual material experimentation to a more practical solution. While bioplastics sparked the idea of pollution clean-up in townships, I realised they are better suited as temporary, regenerative elements that work alongside permanent housing. This led to a more grounded architectural and material outcome, inspired by Elora Hardy's natural aesthetic and Stephen Kellert's biophilic principles, but reimagined into original designs rooted in South African identity. The outcome proposes of two key structures, each deeply inspired by the nation's natural symbols and cultural identity and directly responds to the emotional and environmental challenges faced by underserved communities in South Africa. It is crafted not only to exist in harmony with their environment but to actively uplift the lives of those within them.

Architectural Form & Intent

The name Indwe ya Ubuntu in isiZulu, translates to The Blue Crane of Humanity, combining two powerful South African symbols: the national bird, the Blue Crane (Indwe), and the philosophy of Ubuntu—a belief in our shared humanity, interconnection, and mutual care. This name captures the spirit and soul of the structure. Ubuntu is about recognising that our individual wellbeing is tied to the wellbeing of others, and this idea guided every aspect of the design. The crane, a symbol of grace, protection, and upliftment, inspired the form—its outward, wing-like structures mimicking the bird in mid-flight, open to the sky and filled with light. The concept of openness and freedom translates symbolically and functionally into the architecture, deepening the connection to nature—light, air, and greenery.

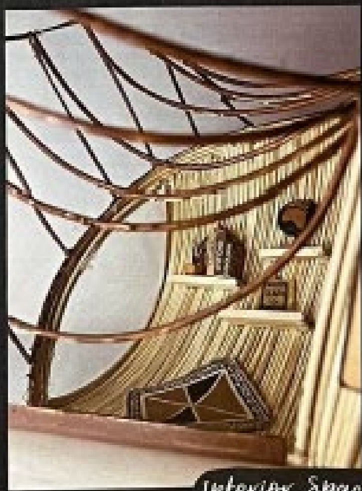
Primary photography

Grounded in Tradition African Clay as Craft



Inspired by African Clay Huts

The model, which I built entirely by hand, acts as a biophilic community learning hub—one that invites people of all ages to read, learn, and grow, while also reconnecting with the natural world. I used natural, tactile materials such as rattan reed, clay, woven yarn, and handmade furniture to reflect South African craft traditions and a deep connection to land and culture. The vibrant hand-painted clay finishes, and earthy tones were carefully chosen to reflect African identity, while the open layout and curved walls foster a sense of movement, warmth, and inclusion. But beyond aesthetics, the structure is rooted in biophilic values. It offers a healing contrast to the polluted, neglected spaces it hopes to replace. Here, people can breathe fresh air, feel sunlight, and observe plants growing—learning not only through books, but through nature itself. Educational elements like crop-growing knowledge are subtly integrated to teach how nature, when treated with care, gives back. This mindset shift is essential, reminding people that wellbeing is nurtured through connection: to community, to place, and to the Earth, like the philosophy of Tri Hita Karana, mentioned previously. Though small in scale, this model represents a larger vision, one of regeneration, empowerment, and hope. Every decision, from the materials to the form, was made with care and intention. Creating this space was incredibly rewarding and reminded me of the joy and possibility that come with designing for people and planet.



Interior Space & Experience

The golden tone reflects warmth, hope, and shared joy — echoing the spirit of Ubuntu.

Protea of Ubuntu - The Joy of life

A Sunrise of Shared Humanity

Initial Concept Sketch

Protea ya Ubuntu – Intokozo Yempilo

(Protea of Ubuntu – The Joy of Life), this name celebrates the resilience, renewal, and joy that comes from living in harmony with nature and community,exactly what the Protea pavilion stands for. For the second structure and final phase of this project, I created an illustration rather than a physical model to demonstrate versatility in my design skills—bringing the journey of this project full circle. Inspired by South Africa's national flower, the Protea, this pavilion sits alongside my earlier Blue Crane-inspired community learning structure, representing rebirth, adaptability, and natural beauty. Each individual living space is formed from a petal-like structure (the rooftop), and as the community grows, more structures can be built—forming a modular, expandable village.

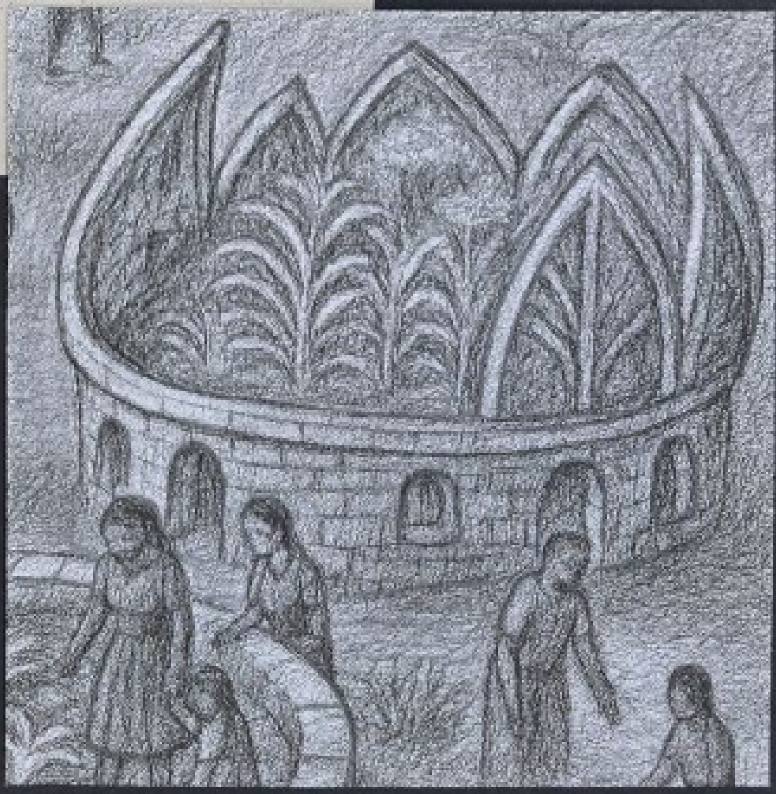
At the heart of this "flower" lies the communal garden: a circular, open space used for permaculture farming (sunflowers, corn, lilies), symbolizing nourishment, growth, and unity. The structure features compressed earth blocks, natural clay, and vegetated spaces that cool the space, purify the air, and reconnect residents with the environment. It embodies the Ubuntu philosophy: *"I am because we are."*

This housing solution is not just about shelter; it's about building connections and co-existence with nature. Together, the Blue Crane Learning Space and the Protea Pavilion form a biophilic village—a transformation from polluted, neglected settlements to places of beauty, purpose, and hope. Special features include water catchment systems built into the Protea petals, communal storytelling areas, and natural materials that root the design in South African heritage while ensuring sustainability. *From waste to wonder. From surviving to thriving.*

Conclusion: My Journey Through Biophilic Design

This project has taken me on a journey through nature, humanity, and design—deeply inspired by the philosophies of Nek Osman, Elora Hardy, and Stephen Kellert. They helped me see design not just as structures, but as living systems that heal, connect, and serve. Each phase, from the leaf-inspired spa and pangolin retreat to the bioplastic fungi structure, and finally the Protea and Blue Crane hubs—explored a different purpose. Whether it was wellbeing, protection, regeneration, or community, every design aimed to bring people closer to nature in meaningful ways. Together, they form a complete story of transformation—showing how design can restore dignity, empower communities, and reconnect us to the earth. Biophilic design isn't just about nature—it's about shaping a better future where both people and the planet can thrive.

Warmth, Joy, and Community



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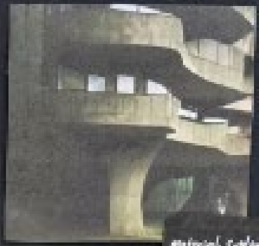
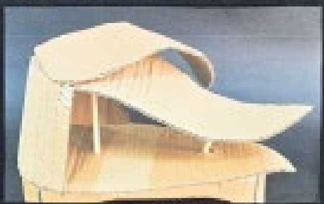
Photos and text located under "flaps" on boards.



Material Exploration: Organic Brutalism vs Modern architecture

Primary photography



Plumeria leaf shaping architecture design

Board 6

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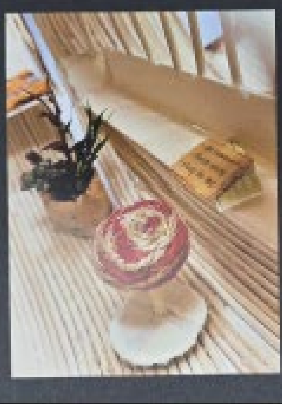
Board 16

"Revolving Glass Door"

Board 9



Board 15

[redacted]

BOARD 1

PROJECT BRIEF

SCOPE

For this personal investigation project, the topic that I intend to explore is biophilic architecture and interior design, which is inspired by the power of nature, informing innovative and sustainable building solutions, that empower human and nature connections.

Throughout this project I aim to explore how the natural environment can create design concepts. However, I don't just want to create visually stunning spaces and artworks, I also want to use this project as an opportunity to address a pressing social issue.

KEY INFLUENCES

During my investigation I will research and explore the works of Stephen Kellert, Neri Oxman and Elora Hardy, which are my main inspirations. By researching each of these designers, my aim is to further understand Biophilic design.

Stephen Kellert: Biophilic designer, architect and professor of Social Ecology who developed the six elements of Biophilic design which are essential to understanding the biological connections that need to be integrated into building design.

Neri Oxman: Neri Oxman is renowned for her groundbreaking artistic approach that merges design, biology, computing, and materials engineering. I am specifically interested in her project Aguahoja.

Elora Hardy: Founded the company IBUKU, where she works with traditional Balinese craftsmen, and modern engineers to create sustainable nature inspired architecture designs. Their goal is to develop spaces in which people can live in an authentic relationship with nature.

KEY RESEARCH

intend to read books to understand biophilic design and the connections between nature and humans, specifically Biophilic Design by Stephen Kellert. Then using The Neri Oxman Material Ecology Catalogue Neri Oxman and Bali Mystique I also intend to visit structures in Bali to make observations by taking primary photography. I will Visit Green Planet in Dubai and other places I have yet to discover.

INTENTIONS AND OUTCOMES

To initiate my project, I' start by immersing myself in nature, making observational drawings of indigenous plants and other organic forms in different mediums. This connects me to the pure source of inspiration, tapping into organic forms, textures, and patterns. As my project progresses, I will then study organic forms used to inspire building design and create unique design structures. Through natural hues, I will evoke a sense of grounded stability, fostering a sense of balance and connection to the earth.

In South Africa, I saw the contrast between the breathtaking natural landscapes and the struggles of communities living in makeshift tin-roofed homes. My work could impact this situation by transforming the landscape to its natural glory. envision creating a biophilic designed structure that not only celebrates nature but also harmonizes human existence with nature and provides a safe and nurturing space for communities in need.

Structure of Project: Observe natural forms -> Study designers\their works and how they relate to nature -> Create artworks informed by research->

Design a structure or 3D sculpture based on research.

BOARD 2

Observing Nature

For this personal investigation project, the topic that I intend to explore is one that I am deeply passionate about. Raised and born in South Africa, I was constantly inspired by the uniquely beautiful indigenous plants and landscapes and the way the traditional rural African huts harmoniously coexist with their surroundings. This led me' to the theme of my project, "biophilic architecture and interior design." This deliberate attempt focuses on translating an understanding of the crucial desire to affiliate with natural systems and processes, known as biophilia-by integrating these elements into the built environment.

By capturing and illustrating the beauty and complexity of organic forms, I aim to use these natural patterns to inspire building designs. A key influence in my work is Stephen Kellert, whose book has helped me understand the first dimension of biophilic design--organic or naturalistic. Two dimensions are further divided into several elements, the first of which I am exploring is the concept of natural shapes and forms. These are patterns derived from nature that can be integrated into building design, evoking a connection between the natural world and humanity:

Throughout my project, I will delve into the dimensions of biophilic design, which are split into six key elements and attributes.

These fungi -mushroom natural forms were the perfect subject for my first study. I went bold and ambitious, showcasing how I could capture intricate details. I have always enjoyed using charcoal pencils and I plan to continue using it in my project as I was pleased with this piece's outcome. Charcoal pencils have the ability to express depth. Through dark tones which is a big factor for why I chose it as a medium. I also used charcoal powder for smooth areas and a kneaded and electric eraser to make highlights stand out.

Next to the fungi is a succulent plant called, Graptopetalum Paraguayans, drawn in chalk pastels, which beautifully captured its muted hues. I took this photograph in South Africa for exploration, alongside plants from the previous board. I found the movement in this piece inspiring, adding compositional interest and easily envisioning this form inspiring building designs.

BOARD 3

This succulent plant called, Pachyphytum Machucae 'Baby Finger,' was drawn in ballpoint pen, providing a striking contrast to the brightly colored aquatic plant! I employed a technique called hatching, using very fine cross-hatching and cross-contouring to create tonal and shading effects that enhanced the form of the plant.

For the aquatic sea coral, I used oil paints, which is definitely one of my favorite mediums. I love the texture it brings to the piece and the rich, vibrant hues. The colors blend seamlessly, allowing for subtle variations and depth. I've also incorporated recyclable paper as a border for this painting, adding visual interest and tying into the theme of sustainable themes that will come later in my project.

By using graphite pencils for this cocoon form; I was able to smooth out the areas that needed softness while sharpening and defining the more intricate details. This medium allowed me to achieve a precise balance between subtle shading and fine detailing, bringing out both the texture and form of the subject.

BOARD 4

Integration of Organic Forms into Man-Made Spaces:
Real-Life Examples from Dubai

Before researching designers and how they incorporate natural forms into building design, I decided to explore my immediate surroundings in Dubai. I visited Green Planet, an indoor representation of a real rainforest. Upon entering, I felt an immediate connection to nature, despite being steps away from the city's bustling atmosphere.

The sound of the waterfall and birds, along with the sight of diverse plant species, brought a sense of calm and serenity.

As I ascended the spiral staircase wrapped around the massive central tree, the greenery enveloped me, reflecting the importance of plants in biophilic design, as emphasized by Stephen Kellert. Plants, essential for human survival, provide comfort when incorporated into built environments. Spaces like Green Planet enhance our connection to ecology and enrich human experience.

Sunlight streamed through the glass windows, warming my face, further demonstrating the benefits of natural light in design. As diurnal creatures, humans rely on natural light to feel secure and balanced, a key element in creating spaces that nurture well-being, as noted by Stephen Kellert.

BOARD 5

Biophilic Design in Architecture: Stephen Kellert's Principles and Theories Shaping the VanDusen Botanical Garden Visitor Centre

The VanDusen Botanical Garden Visitor Centre is a prime example of how a building can significantly enhance human-nature interaction (1).

To create buildings that harmoniously integrate with their surroundings, we can look back to one of Stephen Kellert's design elements: Natural Shapes and Forms (2). The design of this building was inspired by the White Bog Orchid, with a vegetated roof resembling the petals of the flower and flowing walls that mimic the orchid's leaf, cascading down to the ground. Kellert's theory under this category emphasizes that nature rarely features straight lines or sharp angles. By incorporating curved shapes that flow organically across the architecture, the building represents nature's movement, resisting the hard edges typically found in modern designs.

Inside, the undulating ceilings and curved walls create a multi-dimensional experience that connects visitors to the natural forms of the surrounding garden. These flowing lines guide people toward the building's light-filled centre while extending into the landscape beyond.

Transcription Reflections:

For my first transcription, I illustrated an Orchid leaf in graphite, inspired by The Alphabet of Plants by Karl Blossfeldt. The soft graphite allowed for clear, defined lines. For the VanDusen Visitor Centre, I used mixed media: starting with a watercolor wash, then colour pencils, and an oil paint technique from my Green Planet piece. This approach captured the building's movement, warm wood tones, and moody lighting, bringing the piece to life.

BOARD 6

Process emulation: Nature inspired design

Exploring the VanDusen Botanical Garden Visitor Centre, inspired by an orchid leaf, led me to apply a similar concept in my own structure. After photographing various leaves, I chose the Plumeria due to its smooth, slightly corrugated texture and flowing curves, perfect for the roof design, reflecting the harmony and fluidity of nature, which are great Biophilic design characteristics.

I created a model using cardboard, scoring it for flexibility, which helped me move from 2D art to 3D sculpting. Using Photopea, a photo editing program, I visualized a forest hideout where hikers can birdwatch and stay connected to nature, enhancing well-being even indoors.

The final artwork, with colored pencils and oil paints, captures the mood of timber and concrete textures. The design features flowing water, wooden floors, and a retractable roof that opens to let in fresh air and sunlight, aligning with Stephen design element as its mentioned that natural light both physically and psychologically enhance peoples, health and productivity.

Revealing structural elements brings honesty to design-Organic Brutalism celebrates this by exposing materials like concrete with wood grain molds for example, aligning with biophilic principles and organic shapes. Modern architecture's has rigid angles and glass-covered concrete, this unrefined approach feels more natural and fits in with the surrounding atmosphere, as seen in my structure.

BOARD 7

I will explore the Green School in Bali (3), founded by Elora's father, John Hardy. She collaborated with him on this project, where well-being and connection to nature are prioritized over grades. The school is designed without walls, immersing students in nature's thriving ecosystem to inspire and nurture them. The goal is to develop a deep relationship with the earth; hands in the soil and feet in the mud foster a therapeutic, earth-centered learning atmosphere.

The campus was designed to grow with nature, harmonizing the building with its surroundings. It's said that this living campus allows students to learn through all senses, tuning their bodies and minds to the earth as they move through space. Biophilic design enhances focus, health and productivity, creating a learning environment where students thrive amidst nature.

BOARD 8

Interior Design: Sharma Springs in Bali

To further develop this project, I decided to explore how biophilic design influences interior spaces, focusing on Elora Hardy's Sharma Springs in Green Village (4). Situated across the sacred Ayung River, this six-story bamboo villa-the tallest in Bali, represents sustainable living. Its design, inspired by lotus flower petals, is supported by a central tower and an inner tower. Each room features a unique theme, with bamboo furniture showcasing organic shapes and patterns that complement the decor, seamlessly blending natural beauty with functionality. The entire structure, including the interior, is built primarily from bamboo.

Guests enter the main house from the 4th floor through a stunning 15-meter tubular bamboo entrance, surrounded by a private permaculture garden and pool. The open lounge and kitchen, designed without walls, immediately connect you to nature. A private office on the 5th floor offers breathtaking valley views, creating a calming workspace. To unwind, descend the bamboo stairs to one of four en-suite double bedrooms, designed to rejuvenate you in this natural sanctuary.

Transcription Reflections:

To begin, I illustrated Sharma Springs' outdoor lounge seating area, featuring a curved couch resembling a yin-vang inspired organic shape. This space, with its bamboo wooden floors, overhanging light fixtures, and curved bamboo railing, was sourced from Elora Hardy's book Bali Mystique', where lexplored her interior spaces to better understand her designs. The couch's organic form blends seamlessly into the natural surroundings. Iused graphite pencils for this grayscale drawing to emphasize values and forms, adding variety and demonstrating versatility in my mediums.

What struck me was how nothing in these spaces were perfectly straight or right -angled. Even the building's railing curved haturally, reflecting the true craftsmanship of these structures. This aligns with the Japanese concept of "Wabi-Sabi," which celebrates imperfection and authenticity. To reflect this, I created freehand sketches without rulers, using a fine liner to embrace imperfections and watercolors for soft, luminous effects. Architects often sketch to refine their designs before construction, and Elora Hardy's background in fine arts and experience designing prints for Donna Karan influences her process. She has shared that her team starts with hand-drawn sketches and simple mockups, a crucial step in creating her imaginative, nature-integrated bamboo structures.

BOARD 9

Process emulation:

Exploring Green School and Sharma Springs inspired me to apply similar concepts to my own designs, which will be showcased in the next two boards of my project, integrating architectural and interior spaces into one cohesive design. On the previous board, I shared a photo of myself at Sharma Springs, where I experienced the immersive beauty of Bali's biophilic elements firsthand. Being surrounded by rain-soaked greenery and feeling the earth underfoot deepened my understanding of how these environments foster a profound connection to nature.

On the top left of this board are photos from my visit to Pure Bamboo in Bali. This company collaborates with skilled craftsmen and IBUKU to treat bamboo for construction and build structural elements for IBUKU's projects. The bamboo is treated to ensure durability before being transported to building sites. As Elora Hardy says, "Treat it properly, design it carefully, and a bamboo structure can last a lifetime." Balinese architecture reflects the philosophy of 'Tri Hita Karana'- Three Causes of Well-being,' emphasizing harmony with God, others, and nature (8). This philosophy is evident in structures like the pods at Bambu Indah resort (6), built close to the ground to foster a sense of grounding, physically and spiritually-while their organic bamboo forms blend seamlessly into the natural environment. Similarly, the 'subak' rice terraces follow the land's natural contours, balancing human needs with the surrounding ecosystem.

For my design, I drew inspiration from the Green School's seashell-curved forms and the arched pods I visited at Bambu Indah in Bali, described by Elora Hardy as "like a highly intelligent bird's nest." To start incorporating my South African roots, I based the design on the protective, curled form of the pangolin, symbolizing comfort and security. As a child, I was always fascinated by pangolins -their unique, scale-covered bodies and their ability to curl into a protective ball captivated me. This admiration made them the perfect inspiration for my structure. Using bamboo for the framework and flexible rattan reed for the curved elements, I shaped the structure to echo the pangolin's organic silhouette. The scales were crafted from carefully painted paper cards, meticulously cut and elevated with bamboo rods to create depth and dimension.

Envisioned as a safari spa, 'Ukhoko Lwesambane' (Zulu for Pangolin Cocoon) uses South African materials like thatch, wood, and stone, blending harmoniously with its surroundings while embracing biophilic principles. This design reflects both a connection to nature and a sense of personal nostalgia, making it deeply meaningful to me.

Coming from a background where my parents work in the corporate and IT industry constantly behind screens and consumed by deadlines, I've seen how this lifestyle fosters stress and disconnection. Our family trip to Bali reawakened a sense of calm and connection for my family, reinforcing the principles of biophilic design. This experience affirmed how nature impacts mental and emotional well-being and motivates me to create spaces that go beyond functionality to restore balance and nurture the human-nature connection, much like my earlier leaf-inspired structure.

BOARD 10

Process emulation: My Interior Design

I chose to respond to Elora Hardy's interior spaces by designing an interior that captures a similar mood while integrating African aesthetics. Envisioned as the heart of Ukhoko Lwesambane, this space embraces rich textures, colours, and indigenous artistry. The domed interior, reminiscent of traditional African huts, fosters warmth, protection, and intimacy ideal for a spa retreat. A thatch roof supported by reclaimed wooden poles ensures natural ventilation while focusing on African building traditions. The curved bench, inspired by communal seating in African homes, wraps around the space, while smooth, character-aged wooden floors add a tactile connection to the earth. A large pivoting wooden door, framed in woven rope, reflects African craftsmanship, influenced by intricate basket-weaving techniques. Hand-carved African masks and wooden ottomans showcase cultural symbols, deepening the space's heritage and storytelling. A smooth wooden-framed spa bed, inspired by nature's organic forms, grounds the room, complemented by beige sheets for a neutral base, with bold blankets and pillows in deep reds, warm oranges, and geometric tribal patterns drawn from African mud cloth and Kente fabric. Handwoven Kuba cloth and sisal fibre pillows add texture, while clay pots with hand-painted African motifs that have native plants within, like Strelitzia (Bird of Paradise) and succulents, reinforcing the natural ambiance. The large glass spinning door floods the space with natural light, strengthening the connection between the spa and the surrounding landscape. By blending sustainable materials, cultural craftsmanship, and organic forms, this space becomes more than just a retreat–it is a sanctuary where guests feel deeply rooted in nature and African tradition.

For the main focus of this part of the project I used Photopea, a powerful photo editing program that | had successfully incorporated earlier in my project.

I found it to be an excellent tool for visualizing how the interior space would come to life, allowing me to carefully integrate real-life materials and textures into my design. To achieve accuracy, I utilized tools like the Polygonal to cut out precise shapes, ensuring every element fit seamlessly into the space. For example, when incorporating the thatch roof, I sourced a high-quality image online, adjusted its opacity to overlay it onto my initial sketch, and used it as a guide to shape it perfectly. By inverting selections, I could refine the cutout process, ensuring that textures, colours, and materials aligned with my vision.

This meticulous process required patience and precision, as I carefully adjusted tones and materials to maintain authenticity and harmony in the design. Seeing my initial sketch evolve into a fully realized digital concept was very rewarding.

Working in Photopea not only sharpened my technical abilities but also allowed me to push my creativity further, transforming an idea into something authentic and immersive.

BOARD 11

My vision is to bridge the divide between people and nature by creating a sustainable structure and envisioning it to be part of a rent-free, nature-inspired community hub built from natural materials. This space would go beyond just providing shelter and security, offering residents an opportunity to reconnect with the environment in a way that enhances their well-being. By reintroducing greenery into these areas, the design aims to restore the land while reconnecting communities to the natural world, fostering a deeper bond with the environment from which humanity once evolved. Here, I have included image's that illustrate the stark separation between ürban and rural areas, where urban spaces often integrate green environments, while rural settlements lack this connection. These visuals highlight the imbalance in access to nature, reinforcing the need for biophilic design solutions in underserved communities. I will further develop this concept in the upcoming segments of my project.

For the continuation of my project, African themes and design inspirations, lead me towards a cohesive outcome. Previously, I showcased the architecture and interior of Ukhoko Lwesambane, which reflects African design and biophilic principles. Now, I want to shift my focus to exploring the realities of African lifestyles and the challenging environments in which many people live. Beyond South Africa's breathtaking landscapes lies a harsh reality-poor settlements filled with makeshift dwellings, garbage, and pollution.

This environment threatens the well-being and montal health of residents, partioularly children, who grow up in such tragic conditions These communities not only struggle dally with a lack of comfort and security but are atso forced to livo separato from nature due to limited access to land and circumstances beyond their control. The natural world, once a potential sanctuary, is now buried beneath layers of pollution, turning these environments lato wastelanda.

BOARD 12

Transcription Reflections:

To address the environmental issues caused by pollution in South Africa's poor settlements, turned to my final designer, Neri Oxman and her Aguahoja project as a source of inspiration (7). Her work explores how materials can be designed not just to integrate with nature but to actively restore it. Aguahoja is a biodegradable pavilion created from biopolymers like cellulose, chitin, and pectin materials found in plants and crustaceans. This project showcases "programmed decay", where structures are designed to decompose and return nutrients to the earth, mimicking the natural cycle of life.

Instead of producing waste, these materials fuel new growth~a principle that aligns perfectly with the vision for my project. By exploring Aguahoja, I aim to understand how biopolymer-based structures could be applied in real-world scenarios, potentially helping to clean up pollution while maintaining a connection to nature.

The project's fusion of digital fabrication and organic matter is an ideal example of biophilic design, Where technology works in harmony with natural ecosystems rather than against them. To further develop these ideas, I will start by transcribing Aguahoja's materials and structure, closely studying its patterns, textures, and form through detailed illustrations. This will allow me to reflect on its biodegradable properties and biomimetic design before transitioning to my own experimentation. This approach will help me lay the foundation for my next phase: emulation, where I will apply these learnings to create my own biodegradable structure that not only blends with nature but actively contributes to environmental restoration.

BOARD 13

Process Emulation:

I explored bioplastic materials as part of my material experimentation, inspired by Neri Oxman's Aguahoja. Just as Oxman used biodegradable materials like chitin and cellulose to create a 3D-printed structure designed to decay, I envisioned a similar idea one that could be 3D-printed using Pestalotiopsis microspora, a fungus that scientists have discovered can break down plastic into organic matter, even in oxygen-deprived environments like landfills (8).

Ongoing research has shown that this fungus can

consume polyurethane plastics, one of the most common types of plastic waste, converting it into harmless biomass. This discovery presents a groundbreaking approach to plastic pollution- one that aligns with my vision of biophilic structures that not only integrate with nature but actively restore it

As mentioned previousty, South African townships face daily struggles. Surrounded by landfills and pollution, this contributing to poor living conditions and environmental degradation. This bioplastic experiment servés as a small-scale exploration of a potential solution, envisioning fungi-based biopolymer structures that could consume plastic waste and accelerate its breakdown. Since this remains a conceptual idea, I created bioplastic, a flexible, biodegradable natural material without synthetic additives simulating the potential of this process and experiment with sustainable, regenerative materials firsthand. Using glycerin, gelatin powder, white vinegar, and water, I meticulously adjusted the ratios until achieving a material that was both stretchable and durable, allowing it to take form over a structure while maintaining strength, mimicking the qualities of a 3D-printed organic membrane.

To reinforce its biophilic connection, I incorporated dried leaves, petals, orange peels, loose tea, organic chili flakes and turmeric, enhancing its texture, hue, and biodegradability. Just as Aguahoja was designed to decay and retur to the earth, envisioned future temporary structures that could not only actively eliminate plastic waste in townships but also regenerate the environment, fostering new growth and reconnecting communities with nature. This project highlights how material innovation and biophilic design can transform our approach to. sustainability and environmental restoration.

BOARD 14

Process Emulation:

Building on my previous board inspired by Neri Oxman's Aguahoja, I began shifting from conceptual material experimentation to a more practical solution. While bioplastics sparked the idea of pollution clean-up in townships, I realized they are better suited as temporary, regenerative elements that work alongside permanent housing. This led to a more grounded architectural and Internal outcome, inspired by Elora Hardy's natural aesthetic and Stephen Kellert's biophilic principles, but reimagined into original designs rooted in South African identity. The outcome proposes of two key structures, each deeply inspired by the nation's natural symbols and cultural identity and directly responds to the emotional and environmental challenges faced by underserved communities in South Africa. It is crafted not only to exist in harmony with their environment but to actively uplift the lives of those within them.

The name Indwe ya Ubuntu in isiZulu, translates to The Blue Crane of Humanity, combining two powerful South African symbols: the national bird, the Blue Crane (Indwe), and the philosophy of Ubuntu- a belief in our shared humanity, interconnection, and mutual care (9) . This name captures the spirit and soul of the structure. Ubuntu is about recognising that our individual wellbeing is tied to the wellbeing of others, and this idea guided every aspect of the design. The crane, a symbol of grace, protection, and upliftment, inspired the form-its curved, wing-like structure mimicking the bird in mid-flight, open to the sky and filled with light. The concept of openness and freedom translates symbolically and functionally into the architecture, deepening the connection to nature, light, air, and greenery.

BOARD 15

The model, which I built entirely by hand, acts as a biophilic community learning hub one that invites people of all ages to read, learn, and grow, while also reconnecting with the natural world. I used natural, tactile materials such as rattan reed, clay, woven yarn, and handmade furniture to reflect South African craft traditions and a deep connection to land and culture.The vibrant hand-painted clay finishes, and earthy tones were carefully chosen to reflect African identity, while the open layout and curved walls foster a sense of movement, warmth, and inclusion. But beyond aesthetics, the structure is rooted in biophilic values, it offers a healing contrast to the polluted, neglected spaces it hopes to replace. Here, people can breathe fresh air, feel sunlight, and observe plants growing learning not only through books, but through nature itself.

Educational elements like crop-growing knowledge are subtly integrated to teach how nature, when treated with care, gives back. This mindset shift is essential, reminding people that wellbeing is nurtured through connection: to community, to place, and to the Earth, like the philosophy of Tri Hita Karana, mentioned previously. Though small in scale, this model represents a larger vision, one of regeneration, empowerment, and hope. Every decision, from the materials to the form, was made with care and intention. Creating this space was incredibly rewarding and reminded me of the joy and possibility that come with designing for people and planet.

BOARD 16

Protea ya Ubuntu - Intokozo Yempilo

(Protea of Ubuntu - The Joy of Life), this name celebrates the resilence, renewal, and joy that comes from living in harmony with nature and community, exactly what the Protea pavilion stands for. For the second structure and final phase of this project, I created an illustration rather than a physical model to demonstrate versatility in my design skills-bringing the journey of this project full circle.

Inspired by South Africa's national flower,

the Protea, this pavilion sits alongside my earlier Blue Crane-inspired community learning structure, representing rebirth, adaptability, and natural beauty. Each individual living space is formed from a petal-lke structure (the rooftop), and as the community grows, more structures can be built— forming a modular, expandable village.

At the heart of this "flower" lies the communal garden; a circular, open space used for permaculture farming (sunflowers, corn, lilies), symbolizing nourishment, growth, and unity. The structure features compressed earth blocks, natural clay, and vegetated spaces that cool the space, purify the air, and reconnect residents with the environment. It embodies the Ubuntu philosophy: "I am because we are."

This housing solution is not just about shelter; it's about building connections and co-existence with nature. Together, the Blue Crane Learning Space and the Protea Pavilion form a biophilic village—a transformation from polluted, neglected settlements to places of beauty, purpose, and hope. Special features include water catchment systems built into the Protea petals, communal storytelling areas, and natural materials that root the design in South African heritage while ensuring sustainability. From waste to wonder. From surviving to thriving.

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