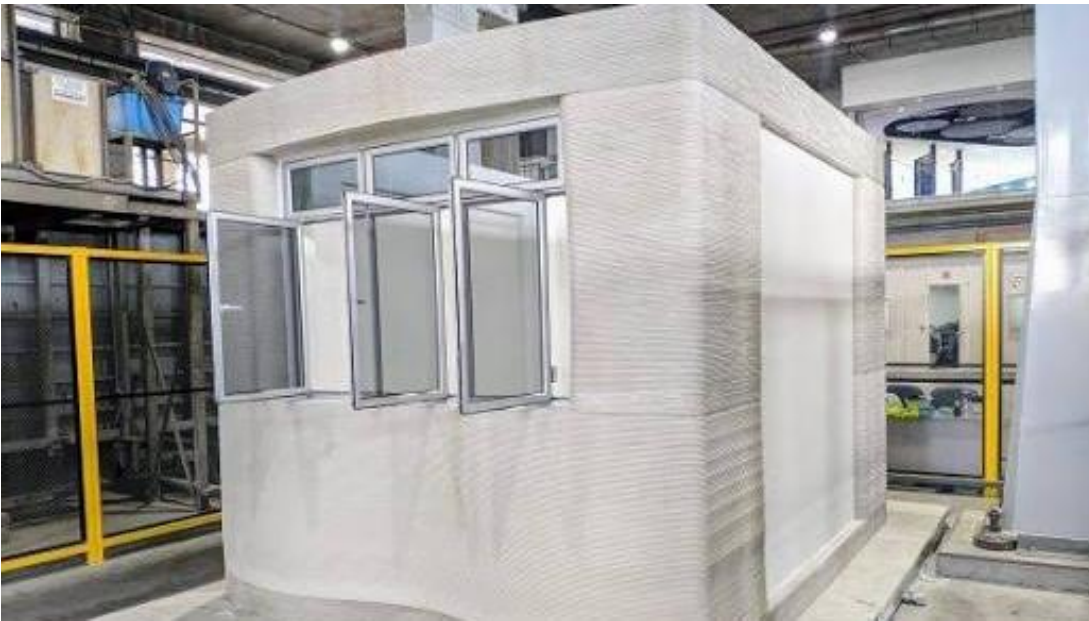


Digital kiosk Pods



Applications of 3DCP into Corridor Project

The design concept draws inspiration from familiar objects and visual traditions found throughout Ethiopia. Everyday elements such as **woven baskets**, **mesob patterns**, **coffee beans**, **jebena forms**, **traditional textiles** and **colourful weaving motifs** are reinterpreted as contemporary architectural details.

Rather than directly reproducing these objects, their **shapes, patterns, textures and proportions** are abstracted and translated into 3D printed concrete elements. These influences inform the design of **benches**, **planters** and **bus stop shades**, creating functional urban furniture with a distinctly Ethiopian identity.



04 — Proposed Designs

OUTDOOR BENCHES



CASA DI ARGILLA / CORRIDOR DEVELOPMENT IN ETHIOPIA

STREET FURNITURE BEAN BENCH

INSPIRED BY ETHIOPIAN COFFEE BEANS

1. INSPIRATION

Ethiopian coffee beans are a symbol of the country's heritage, community and hospitality.



2. FORM TRANSLATION



THE BEAN
A SIMPLE, RECOGNIZABLE
NATURAL FORM



EXTRACTING GEOMETRY
CAPTURING THE KEY CURVES
AND CENTRAL GROOVE



ABSTRACT FORM
SIMPLIFIED AND REFINED
FOR ERGONOMICS



FINAL FORM
TRANSLATED INTO A BENCH
FOR PUBLIC SPACES

3. DESIGN PRINCIPLES



ORGANIC & WELCOMING
Smooth, flowing shape
for a natural and inviting feel.



COMFORTABLE SEATING
Ergonomic curves for
social and individual use.



3D PRINTED CONCRETE
Layered texture highlights
the 3D printing process.





RIFT VALLEY SEATING SYSTEM

REST • GATHER • CONNECT

A continuous, sculptural seating landscape inspired by Ethiopia's layered highlands. Designed for public spaces, this modular 3D-printed concrete system creates flexible seating, integrated planters, and varied levels for rest, study, and social interaction.

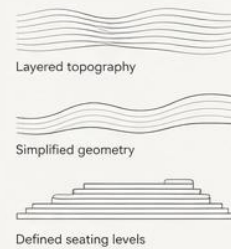


1. DESIGN INSPIRATION



Inspired by Ethiopia's Rift Valley, with its layered contours, flowing landforms, and natural terraces.

2. FORM DEVELOPMENT

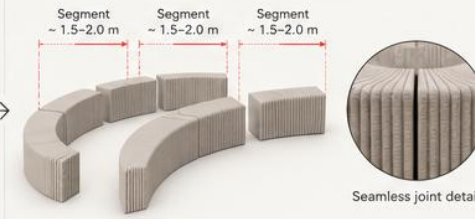


3. 3D FORM CONCEPT



A continuous, flowing form with integrated seating levels and planter zones, developed for vertical 3D printing and modular assembly.

4. MODULAR SEGMENTS (VERTICAL PRINTING)



Divided into printable vertical segments with seamless joints for site assembly.

5. SECTION (VERTICAL PROFILE)



All layers follow the same vertical profile for 3D printing, with integrated levels.



01 CONTINUOUS CURVE
A fluid seating landscape for parks, schools, universities, and public spaces.



02 INTEGRATED PLANTERS
Planter zones within the seating form bring greenery into the space.



03 VARIED SEATING LEVELS
Different heights for sitting, lounging, studying, and social interaction.



04 SEAMLESS ASSEMBLY
Vertical printable segments with refined, minimal gaps.

KEY FEATURES

- Designed for vertical 3D printing
- Modular segments with seamless joints
- Multiple seating levels
- Integrated planters and greenery
- Durable, low-maintenance, weather-resistant
- Ideal for schools, universities, parks, and public spaces



HIGHLAND CURVE

3D-PRINTED CONCRETE BENCH

REST • FLOW • CONNECT

A flowing park bench inspired by highland contours. Layered concrete follows a continuous curve, linking comfortable seating with a planted landscape edge.

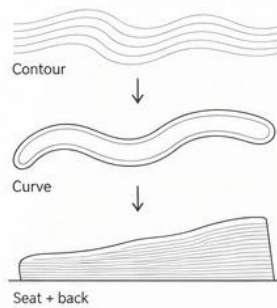


1. DESIGN INSPIRATION



Highland contours → flowing seating edge.

2. FORM DEVELOPMENT



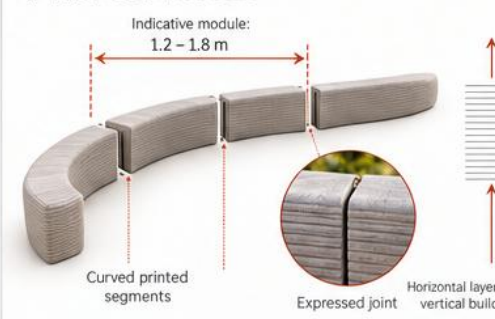
Seat + back

3. 3D FORM CONCEPT



Continuous seat with a tapering backrest.

4. PROPOSED MODULES

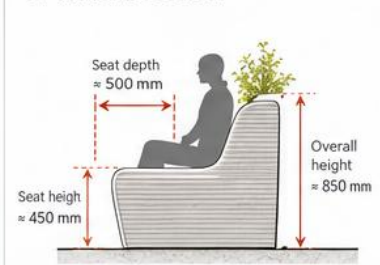


Curved printed segments

Expressed joint

Horizontal layers / vertical build

5. TYPICAL SECTION



Indicative dimensions.



01 CONTINUOUS CURVE
A flowing edge for public space.



02 PLANTED BORDER
Greenery follows the rear edge.



03 LAYERED CONCRETE
Visible horizontal print courses.



04 MODULAR ASSEMBLY
Proposed segments with controlled joints

DESIGN INTENT

-  Sculpted seat and back
-  Rounded ends
-  Landscape integration
-  Segmented fabrication



GARDEN COMMONS

MODULAR 3D-PRINTED CONCRETE SEATING

SIT • PLANT • CONNECT

A family of rounded seating and planter modules creates small places to pause and gather. Layered concrete and lush planting bring a shared garden into the public realm.

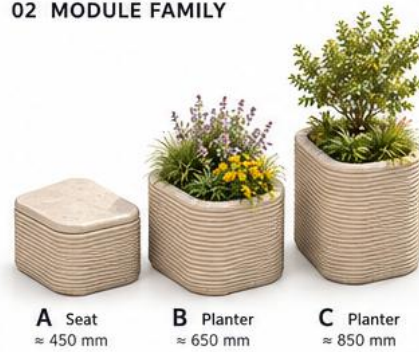


01 FORM DEVELOPMENT



One geometric family, complementary uses

02 MODULE FAMILY



Indicative heights

03 ARRANGEMENT OPTIONS



04 SEAT + PLANTER SECTION



Indicative section — support and drainage to be developed

05 PRINT + ASSEMBLE



Fabricate modules, then position on a prepared base



01 SOFT GEOMETRY

Rounded corners and smooth seat caps



02 PLANTED POCKETS

Grasses, flowers and compact shrubs



03 PRINTED TEXTURE

Visible horizontal concrete courses



04 SOCIAL CLUSTERS

Seats arranged around shared greenery



ADDIS URBAN FLOW

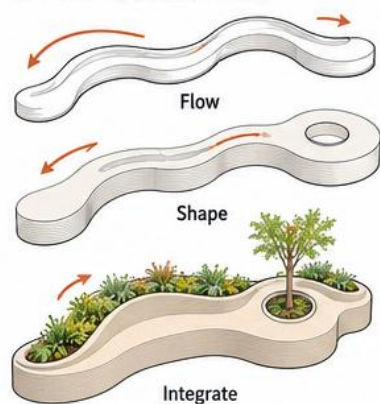
3D-PRINTED CONCRETE SEATING LANDSCAPE

REST • SHADE • CONNECT

A continuous seating landscape brings rest and greenery to the boulevard. Flowing concrete curves frame planted pockets and a tree opening, creating places to pause along the pedestrian route.



1. FORM DEVELOPMENT

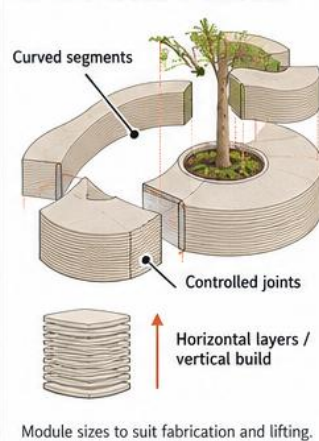


A continuous curve shaped around people and planting.

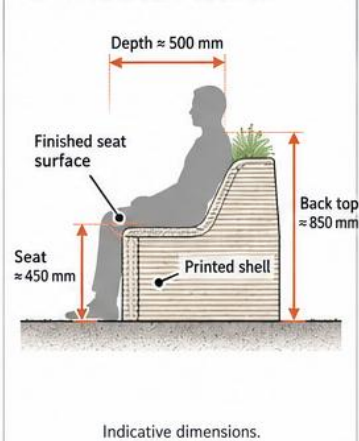
2. PLAN + LANDSCAPE



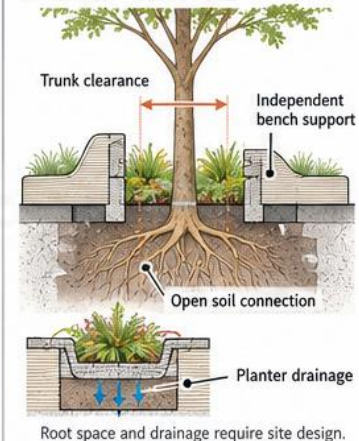
3. PROPOSED MODULES



4. TYPICAL SEAT SECTION



5. TREE + PLANTING



01 FLOWING SEAT

Rounded edges and a smooth seating surface.



02 PLANTED BACKREST

Green pockets follow the rear curve.



03 TREE INTEGRATION

An open tree well connects to soil below.



04 PRINTED MODULES

Horizontal layers with defined assembly joints.

04 — Proposed Designs

PLANTERS



PATTERN PLANTER

INSPIRED BY ETHIOPIAN TRADITIONAL PATTERNS

1. INSPIRATION

Traditional Ethiopian patterns found in everyday tools, baskets and woven items.



2. FORM TRANSLATION



EXTRACTING PATTERN
IDENTIFYING KEY GEOMETRY
FROM TRADITIONAL PATTERNS



PATTERN SIMPLIFICATION
CLEANING AND ADAPTING
THE GEOMETRY



BASIC FORM
CREATING A FUNCTIONAL
PLANTER VOLUME



INTEGRATING PATTERN
APPLYING THE PATTERN
INTO THE FORM



3. DESIGN PRINCIPLES



ORGANIC FORM
Natural, flowing shape
inspired by local craft.



CULTURAL IDENTITY
Integrated Ethiopian
geometric patterns.



3D PRINTED CONCRETE
Layered texture highlights
the additive manufacturing
process.



04 — Proposed Designs

SCULPTURES



MONUMENT

ETHIOPIA OUTLINE

A NATIONAL LANDMARK

1. INSPIRATION

The monument takes its form from the outline of Ethiopia, celebrating the country's identity, unity and heritage.



MAP OUTLINE
The unique and recognizable shape of Ethiopia.

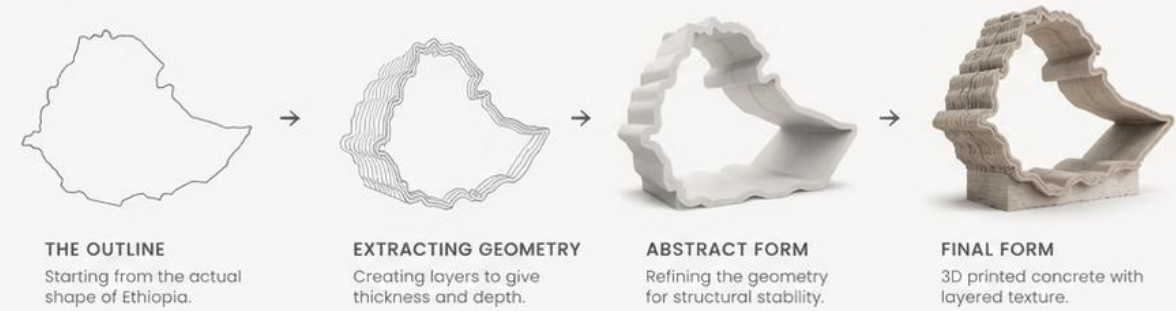


LANDSCAPE CHARACTER
Layered topography and natural terrain inform the layered texture.

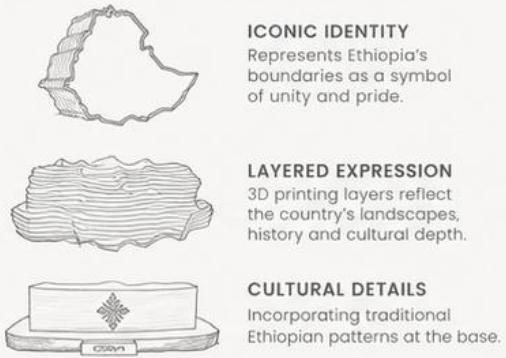


MATERIAL INSPIRATION
Layered form inspired by Ethiopia's geological and cultural landscapes.

2. FORM TRANSLATION



3. DESIGN PRINCIPLES



04 — Proposed Designs

BUS STOP SHADES



BUS STATION

A BLEND OF 3D PRINTED CONCRETE AND MODERN ELEMENTS

1. INSPIRATION

The texture and horizontal layers take inspiration from Ethiopia's geological formations and natural terrain, reflecting strength, endurance and a connection to the landscape.



ETHIOPIAN HIGHLANDS

Layered rock formations shaped over time.



NATURAL LAYERS

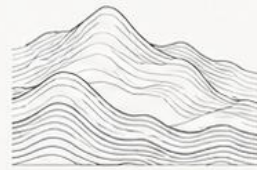
Continuous horizontal layers inspired the 3D printing texture.



INTEGRATED GRAPHICS

Carved patterns and markings inspired the integration of station name/number within the printed surface.

2. FORM TRANSLATION



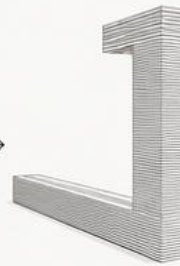
NATURAL GEOMETRY

Layered horizontal lines from Ethiopia's terrain.



PATTERN DEVELOPMENT

Simplifying the layers into a consistent texture.



3D PRINTED ELEMENTS

Base and column printed as one continuous form with layered texture.



INTEGRATING MODERN ELEMENTS

Combining 3D printed concrete with steel structure, ACP roof panels and acrylic/glass panels.



3. DESIGN PRINCIPLES



LOCAL IDENTITY

3D printed texture inspired by Ethiopian landscapes.



INTEGRATED SIGNAGE

Station name/number carved during 3D printing process.



MODERN & FUNCTIONAL

Steel frame, ACP roof, acrylic panels and advertising panel for a durable and user-friendly bus station.

4. MATERIAL BREAKDOWN



ACP ROOF PANELS

Lightweight and durable with integrated lighting.



ACRYLIC PANEL

Transparent and impact resistant (safer for public use).



STEEL FRAME

Main structural frame.



3D PRINTED CONCRETE COLUMN

Layered texture with integrated station name or number.



ADVERTISING PANEL

Backlit display for commercial content.



3D PRINTED CONCRETE BASE

Continuous form with layered texture.

04 — Proposed Designs

FOOD POD/KIOSK



FOOD POD / STREET KIOSK

INSPIRED BY ETHIOPIA'S NATURAL LANDSCAPES

1. INSPIRATION

The form takes inspiration from Ethiopia's layered landscapes and geological formations shaped by volcanic activity, creating smooth, rhythmic undulations in the terrain.



LAYERED LANDSCAPES

Natural terrain with rhythmic, organic undulations.



GEOLOGICAL FORMATIONS

Smooth layered patterns formed over time in Ethiopian highlands.



NATURAL RHYTHM

Continuous, flowing lines found in Ethiopia's mountainous regions.

2. FORM TRANSLATION



EXTRACTING GEOMETRY

Capturing the rhythmic layers and flowing lines from natural landscapes.



PATTERN DEVELOPMENT

Simplifying the form into a continuous, adaptable rhythm for architecture.



3D FORM EXPLORATION

Creating a functional form using the extracted geometry.



FINAL APPLICATION

3D printed panel applied to the kiosk counter, bringing the natural rhythm into an urban element.

3. DESIGN PRINCIPLES



ORGANIC RHYTHM

Smooth, flowing curves inspired by natural terrain.



LAYERED TEXTURE

Highlights the 3D printing process and reflects the geological inspiration.



MODULAR & FUNCTIONAL

Adaptable for different kiosk sizes and uses (food, retail, information).





BARBECUE POD

INSPIRED BY ETHIOPIA'S NATURAL LANDSCAPES

1. INSPIRATION

The organic form takes inspiration from Ethiopia's layered highlands and natural terrain, shaped by volcanic activity and erosion over time.



ETHIOPIAN HIGHLANDS

Layered terrain with smooth, natural undulations.



NATURAL LAYERS

Continuous, flowing lines formed over time.



ORGANIC GEOMETRY

Soft, curved landforms creating natural, welcoming spaces.

2. FORM TRANSLATION



EXTRACTING GEOMETRY

Identifying the flowing contours from the natural landscape.



PATTERN DEVELOPMENT

Simplifying the terrain into a continuous, adaptable rhythm.



3D FORM EXPLORATION

Applying the geometry to a functional layout.



FINAL FORM

3D printed structure with layered texture and integrated functional elements.

3. DESIGN PRINCIPLES



ORGANIC & WELCOMING

Flowing form creates a friendly, natural gathering space.



LAYERED TEXTURE

3D printing layers reflect the geological character of Ethiopia's landscapes.



FUNCTIONAL & FLEXIBLE

Adaptable for parks, public spaces and community areas.



04 — Proposed Designs

KIDS PLAYGROUND



THE RIFT VALLEY PLAYGROUND

PLAY • EXPLORE • CLIMB • GATHER

A landscape of play inspired by Ethiopia's Great Rift Valley — layered landforms, flowing contours, and carved valleys transformed into an interactive playground through 3D-printed concrete.

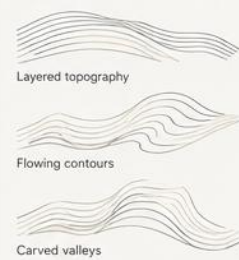


1. NATURAL INSPIRATION



Ethiopia's Great Rift Valley features layered geologies, flowing contours, and carved landscapes. These natural landforms inspire the playground's sculptural forms and spatial experiences.

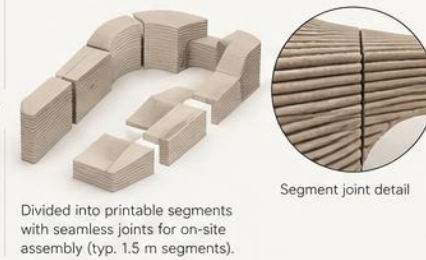
2. FORM EXPLORATION



3. 3D FORM DEVELOPMENT



4. MODULAR SEGMENTATION



5. PLAY ELEMENTS INTEGRATION



CLIMBING LANDSCAPES
Integrated climbing surfaces with playful forms and textures.



TUNNELS & CRAWL SPACES
Carved spaces for exploration and imaginative play.



INTEGRATED SLIDES
Smooth transitions from climbing to sliding within the same form.



STEPS & BALANCE
Varied heights and forms for active and creative play.



SEATING & GATHERING
Integrated seating for rest, social interaction, and supervision.



PLANTERS & GREENERY
Integrated planters bring nature into the play environment.

KEY FEATURES

- Single-piece or modular 3D-printed concrete elements
- Play, learn, and gather for all ages
- Durable, low-maintenance, weather-resistant
- Natural and playful forms inspired by Ethiopian landscape
- Ideal for schools, universities, parks, and public spaces

04 — Proposed Designs

BRIDGES



PEDESTRIAN BRIDGE

WAVE OF THE HIGHLANDS

INSPIRED BY ETHIOPIA'S NATURAL LANDSCAPES

A fluid, sculptural bridge that translates the layered landscapes of the Ethiopian Highlands into a contemporary 3D-printed infrastructure.

1. NATURAL INSPIRATION



SIMIEN MOUNTAINS

Undulating ridges, layered rock formations, and flowing contours.

2. LINES & GEOMETRY



Abstracting the natural topography into continuous wave geometry.

3. 3D FORM DEVELOPMENT



Translating the wave into 3D-printed panels with varying height and depth.

4. SEGMENTATION STRATEGY



Dividing the continuous form into ~1.5 m segments for on-site assembly.

5. FINAL BRIDGE DESIGN



Seamlessly joined segments create a continuous wave with natural flow.



SEGMENT JOINT DETAIL

Seamless vertical separation every ~1.5 m between 3D-printed panels.



HANDRAIL & LIGHTING INTEGRATION

Continuous handrail with integrated LED lighting for safety and ambiance.



UNDERSIDE VIEW

Precise segmentation with clean joints and continuous form.

VARIATIONS



01 GENTLE WAVE
Calm and elegant profile for urban parks.



02 DYNAMIC WAVE
Stronger movement inspired by mountain ridges.



03 BOLD WAVE
Expressive form for landmark locations.

DESIGN PRINCIPLES



NATURAL INSPIRATION
Derived from Ethiopian highland landscapes.



MODULAR CONSTRUCTION
~1.5 m 3D-printed segments.



STRUCTURAL INTEGRATION
Architectural 3D-printed panels with structural support.



PEDESTRIAN COMFORT
Integrated lighting and handrails.



SUSTAINABLE DESIGN
Local identity, durable and low-waste construction.

04 — Proposed Designs

OBSERVATORY DECK



OBSERVATORY DECK

INSPIRED BY ETHIOPIAN TRADITIONAL CIRCULAR STRUCTURES

1. INSPIRATION

The circular canopy takes inspiration from traditional Ethiopian circular structures such as tukul (vernacular houses) and woven baskets, known for their radial geometry and communal gathering spaces.



TRADITIONAL TUKUL

Circular form, central gathering space and radial roof structure.



ETHIOPIAN BASKET WEAVING

Radial pattern and natural geometry.



NATURAL MATERIALITY

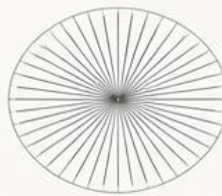
Timber and natural textures creating shade and comfort.

2. FORM TRANSLATION



CULTURAL GEOMETRY

Radial pattern from traditional Ethiopian crafts.



PATTERN ABSTRACTION

Simplifying the radial pattern into a contemporary form.



MODERN INTERPRETATION

Translating the pattern into a lightweight circular canopy.



FINAL FORM

Integrated shading element with 3D printed concrete deck and balustrade.

3. DESIGN PRINCIPLES



ICONIC CIRCULAR CANOPY

Inspired by Ethiopian vernacular architecture and basketry.



RADIAL PATTERN

Creates a distinctive identity, provides shade, and allows natural ventilation.



LAYERED 3D PRINTED FORM

Continuous horizontal layers reflect the geological landscape of Ethiopia.



04 — Proposed Designs

GARDEN WALLS



HONEYCOMB FLOW

MODULAR 3D-PRINTED CONCRETE WALL SYSTEM

A modular, nature-integrated boundary solution inspired by organic geometries. The honeycomb flow creates a porous, lightweight and visually dynamic wall using vertically 3D-printed concrete elements, ideal for public spaces, schools, parks and urban landscapes in Ethiopia.

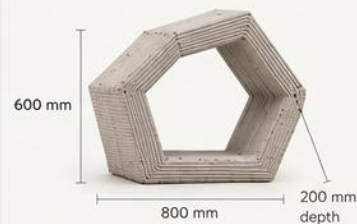


1. DESIGN INSPIRATION



Inspired by Ethiopia's highland landscapes and natural rock formations, translated into a contemporary, modular honeycomb geometry.

2. MODULE DESIGN



Typical 3D-printed module (vertical printing layers)

3. MODULE VARIATIONS



Multiple module variations for a flexible and natural composition.

4. ASSEMBLY METHOD



Modules are connected on site using mortar joints (10–20 mm), creating a continuous and stable wall.

5. ELEVATION VIEW



6. CONTEXT VIEWS



7. KEY FEATURES

-  Modular 3D-printed elements
-  Openings for greenery and light
-  Distinctive identity and aesthetic value
-  Durable and low maintenance
-  Suitable for public spaces, parks, schools, and boundary walls



HIGHLAND LIVING TERRACES

3D-PRINTED CONCRETE PLANTING SYSTEM

LAYER • PLANT • GROW

Wave-shaped planting pockets follow the slope in staggered rows. Layered concrete and cascading greenery create a textured landscape inspired by highland contours.

