



INVASIVE MATTERS PBC

material innovation through ecological restoration



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INVASIVE MATTERS

(adjective): tending to spread prolifically and undesirably or harmfully (verb): to be of importance (noun): physical substance in general

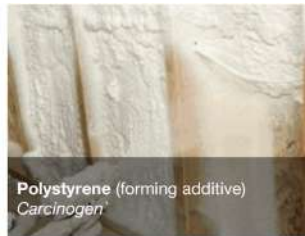
Invasive Matters PBC advances a climate-adaptive, circular manufacturing model by transforming invasive plant biomass into high-performance, non-toxic bio-materials for design and construction. The project integrates rigorous ecological protocols for invasive species removal with regenerative native-planting restoration to simultaneously mitigate invasive species impacts and strengthen ecosystem resilience. By diverting biomass waste streams and reducing reliance on extractive, carbon-intensive materials, Invasive Matters establishes a scalable pathway for sustainable industrial design rooted in ecological health and long-term environmental stewardship.



Los Angeles Wild Fires | 2025

“The spread of invasive plants, has dramatically increased the spread of wildfire...It is now well established that there is a feedback mechanism between invasive species and fire.”

-(USDA, National Invasive Species Information Center)



Polystyrene (forming additive)
Carcinogen



Formaldehyde (preservative),
Expedites the gluing process -
Curing agent
Asthmagen, Carcinogen



Arsenic (biocide), Wood Treatment -
Pesticide
Reproductive, Toxicant



Phthalates (plasticizer)
Endocrine Disruptor



Bisphenol A (BPA) (plasticizer)
Endocrine Disruptor



Polybrominated diphenyl ethers (PBDE) (flame retardants)
Endocrine Disruptor, Reproductive





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13 CLIMATE ACTION



SDG #13 Support

Invasive Matters Public Benefit Corporation (PBC) is addressing SDG goal #13 primarily through Carbon Removal. By removing invasive plant biomass we are utilizing the stored carbon in plants within new building materials. Additionally, we are planting fast-growing, high biomass-yielding native plantings that will allow more carbon removal from the atmosphere.

We are also aiding in emissions reduction, by reducing reliance on unsustainable, extractive resources in current building materials market.

Our system solution provides layers of resilience to mitigate climactic damaging effects, such as increased erosion or runoff due to the mono-culture that invasive species create.

Additional Supporting SDGs

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



#9

Sustainably sourced and harvested materials that support ecological restoration. The materials are non-toxic and abide by healthiest standards for ecological and human health.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



#12

Reducing reliance on unsustainable, toxic materials. The materials are 100% biodegradable at end of life, and in fact will enhance the health of future plants it may support.

15 LIFE ON LAND



#15

Supporting diversity on land (and water) by allowing room for and encouraging other native species to be restored and thrive to create more diverse and resilient ecosystems.

We begin with **ABUNDANCE**— abundance of biomass, of ecological imbalance, of possibilities...

This work supports that invasive plant species, often treated as waste or threat, can become the foundation for a climate-adaptive, circular manufacturing model.

Through their removal, we cultivate both materials and ecosystems, pairing regenerative design with restoration of regenerative landscapes.

WHY

Across the world, invasive species are accelerating ecological collapse— fueling wildfire risk, degrading soils, damaging infrastructure, and displacing biodiversity. At the same time, our buildings are still constructed from toxic, extractive materials that harm both the planet and species health.

We are living in a moment where the environmental crisis and the materials crisis are actually the same problem. And that means they require a linked solution.

INVASIVE MATTERS

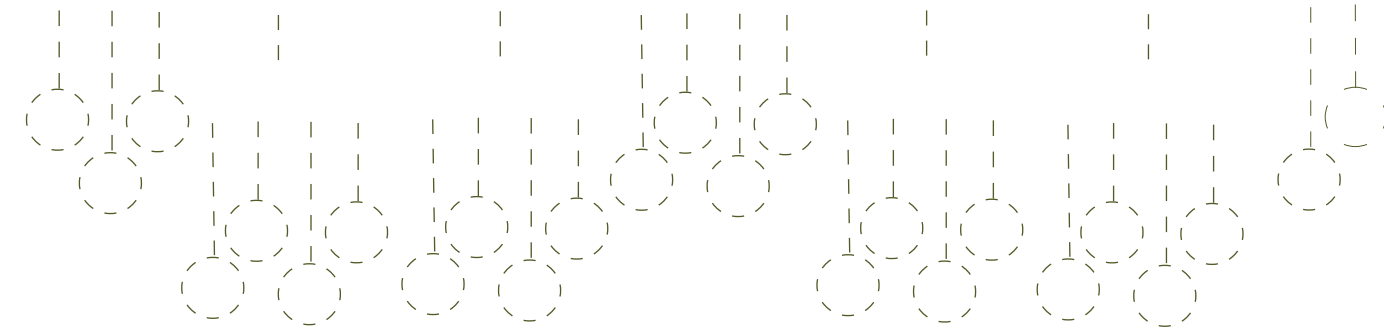
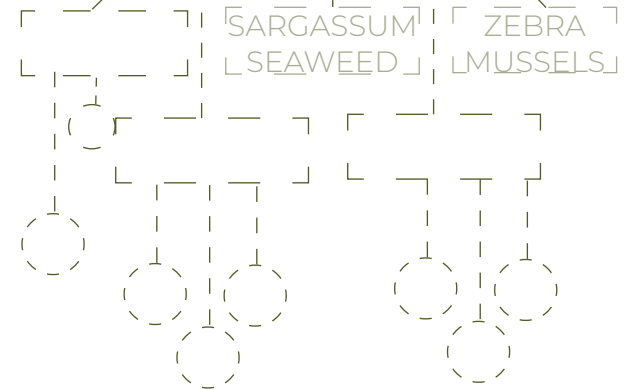
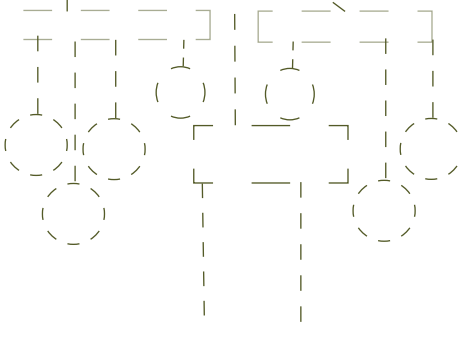
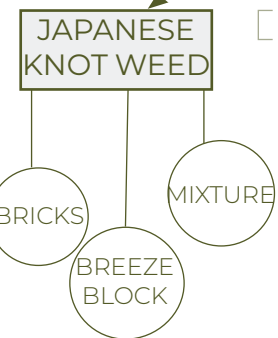
NATIVE MATTERS

TERRESTRIAL

AQUATIC

AQUATIC

TERRESTRIAL



PRODUCT

provide the **PRODUCT** of healthy, non-toxic, bio-based building materials created from invasive plant biomass.

INVASIVE PLANT SPECIE: JAPANESE KNOTWEED

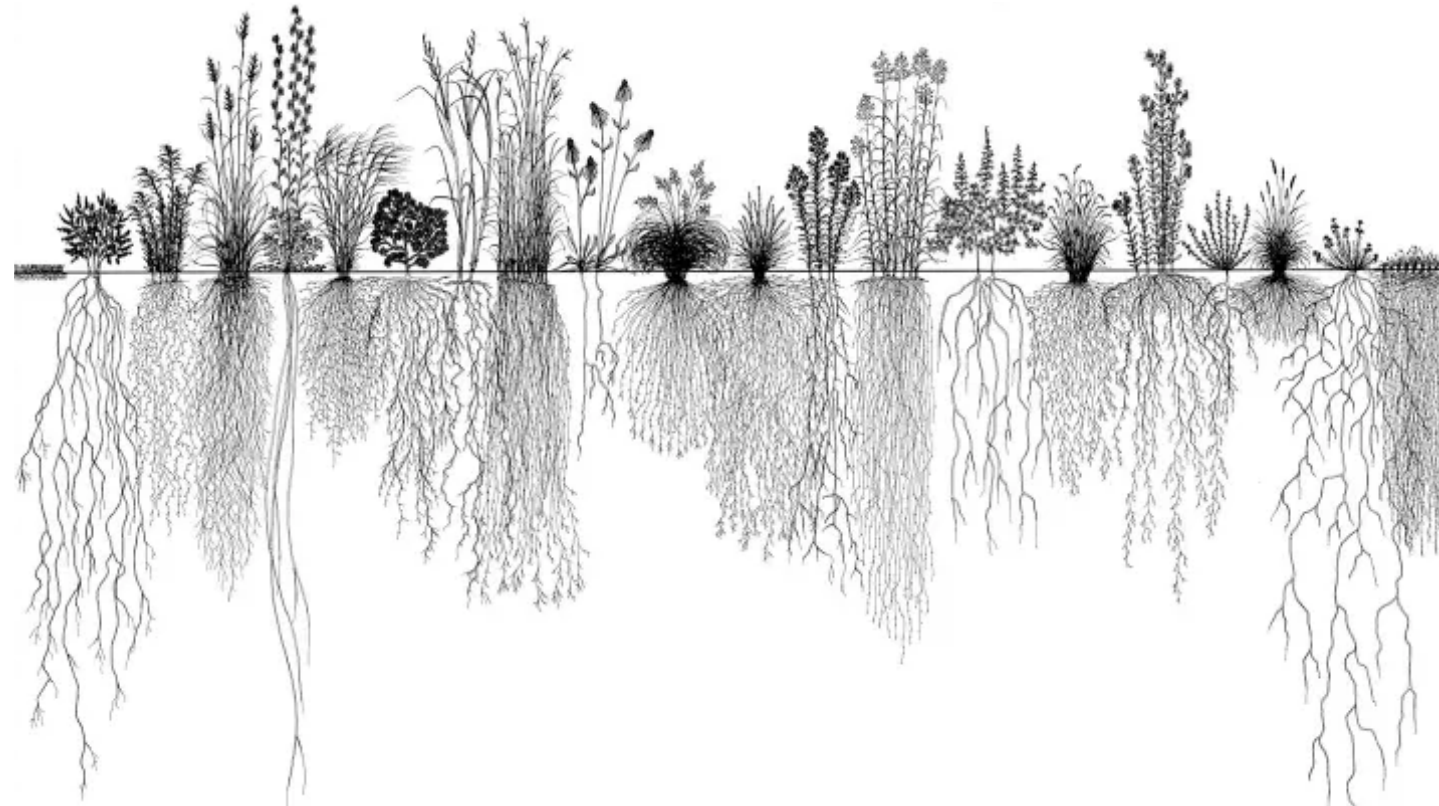


- B2B distribution of modular bio-composite panels for interior and exterior grade, breezeblocks, modular building units, tiles, and other architectural components
- Integration with existing building systems and construction methods
- Green building suppliers and distributors
- Future expansion into 3D-printable composites and biodegradable plastics derived from aquatic invasive species

As ecological services scale, our biomass input increases, enabling cost-efficient manufacturing and a competitive price point. This dual-stream model fosters a circular, climate-adaptive economy, where ecological restoration serves as the foundation for material innovation, ensuring meaningful impact at ecological and human health scales.

SERVICE

provide **SERVICE** of invasive species removal, cultivating native plantings in impacted zones and removing toxicity in product supply chains.

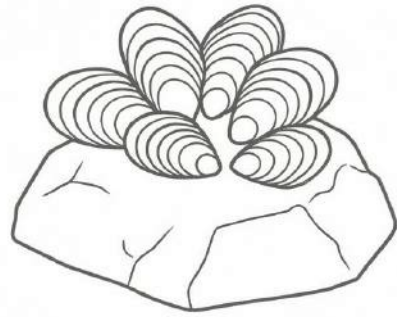


- Contracted invasive-species removal using certified, soil-safe, chemical-free protocols
- Site assessments, ecological mapping, and removal strategy development
- Regenerative restoration services, including the planting of fast-growing, high-biomass-yielding native species that help rebuild soil health, increase biodiversity, and close the carbon loop
- Partnerships with public agencies seeking climate-adaptive land management solutions

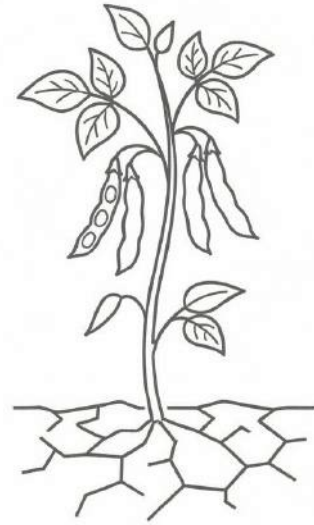
This service model not only generates direct revenue but also supplies our manufacturing pipeline with responsibly harvested invasive biomass—creating a vertically integrated system where ecological restoration feeds material production.



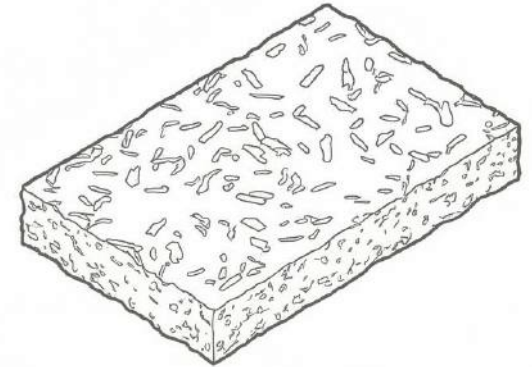
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=



Invasive Plant Biomass
(*Japanese Knotweed*)

Calcium Carbonate

Bio-based Binder
(*Ag byproduct, arid land*)

Healthy Building
Product Unit

Naturally Derived
From IM ecological restoration service

Naturally Derived
Ideally from Invasive Specie of
Zebra Mussels

Naturally Derived
Proprietary Binding Agent

Low / No VOC Unit
Density variability option per application



JPK Linea | Beige Honed | Mason

4" x 6" x 1/2"

beige | ash | white | sage | sea

select options

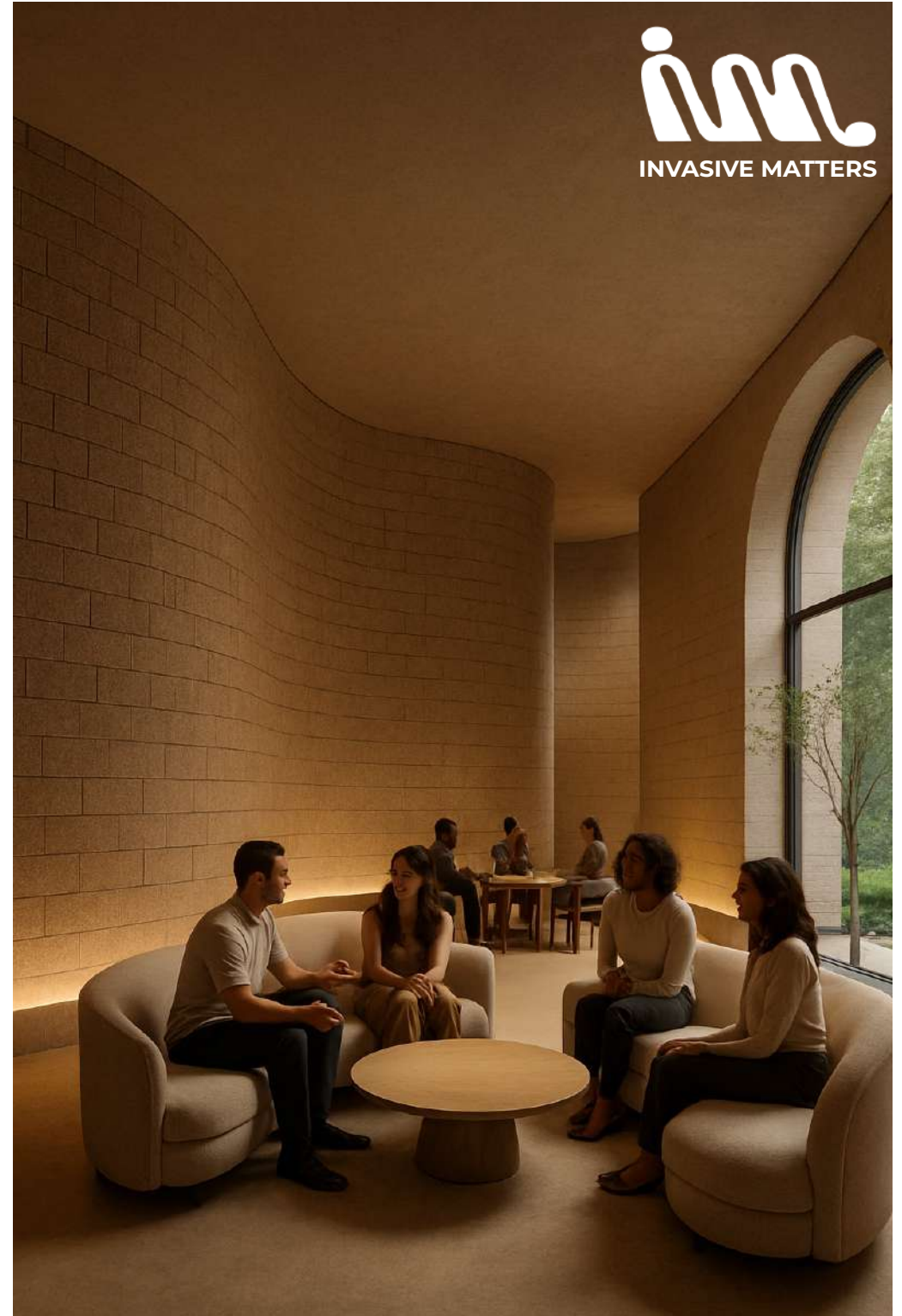


buy sample

Sample \$3/piece

full tile order

Tile Order \$10/SqFt







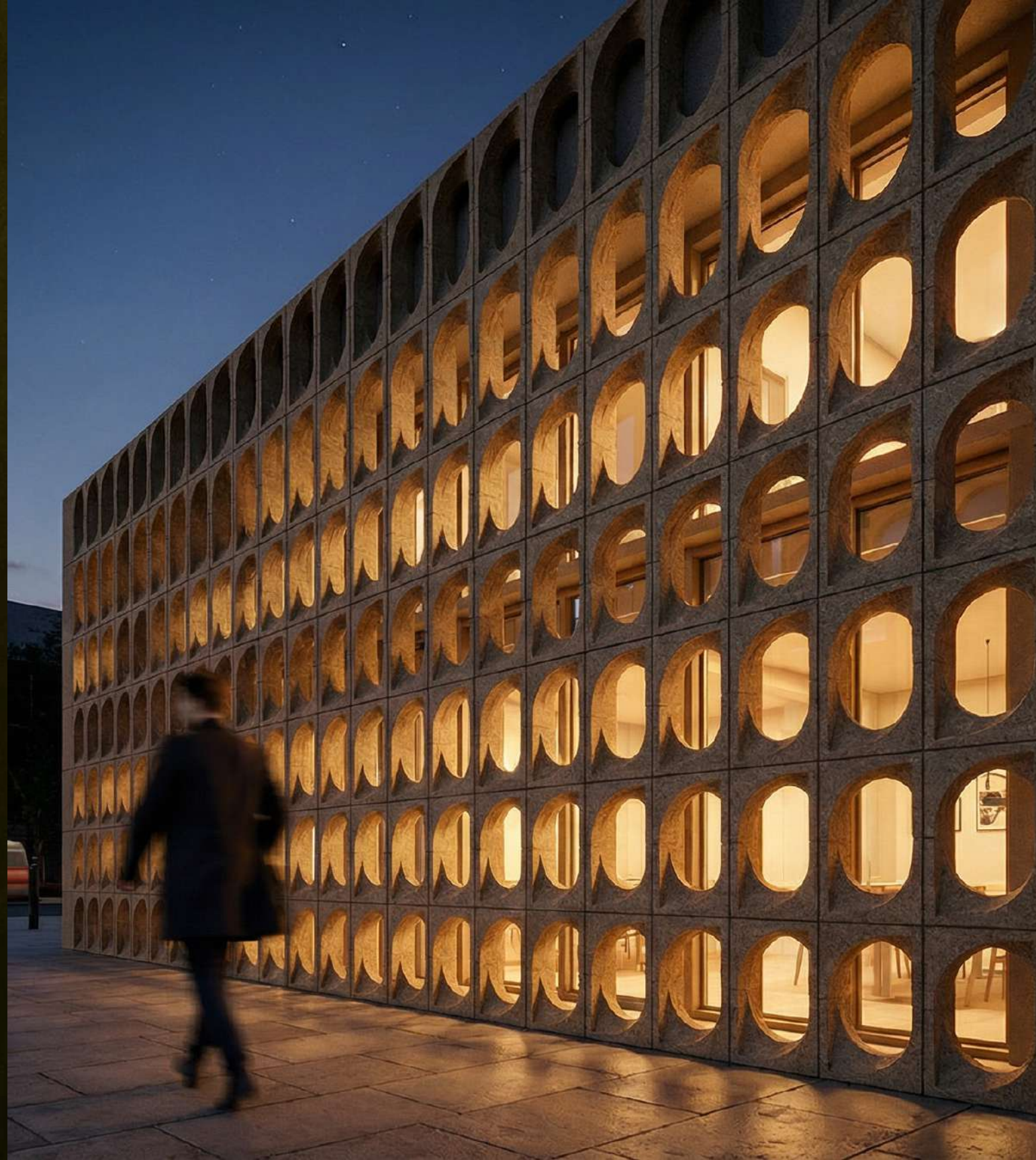
JPK Linea | Breeze

7 - 1/2" x 7 - 1/2" x 1 - 3/4"

9 - 1/2" x 9 - 1/2" x 3 - 1/2"

CUSTOM LARGE FORMAT

NATURAL FINISH



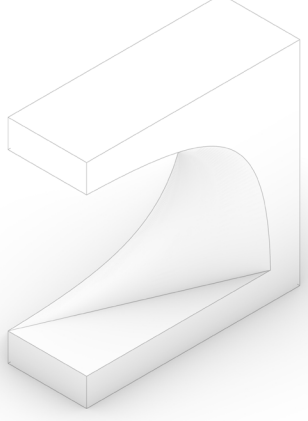
EXTERIOR: 9 - 1/2" x 9 - 1/2" x 3 - 1/2"

INTERIOR: 7 - 1/2" x 7 - 1/2" x 1 - 3/4"

A - MORTAR



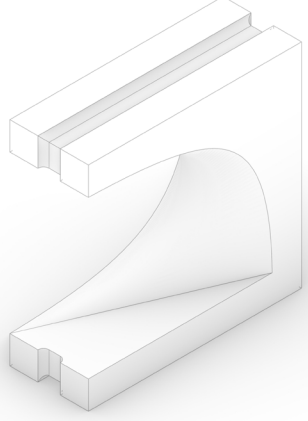
B - MORTAR



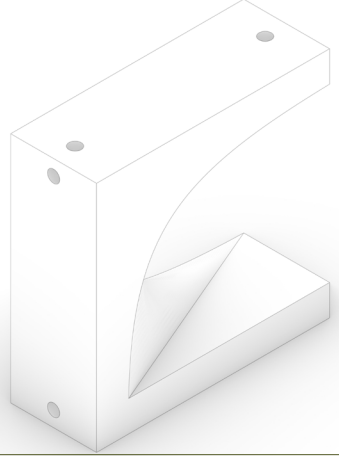
A - #4 REBAR



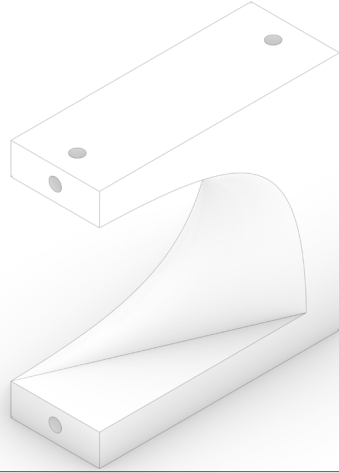
B - #4 REBAR



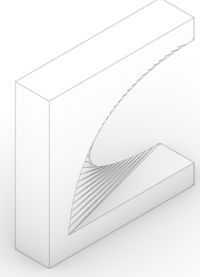
A - 1/2" DOWEL



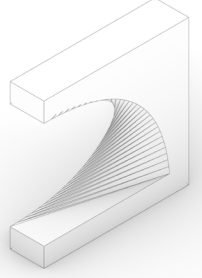
B - 1/2" DOWEL



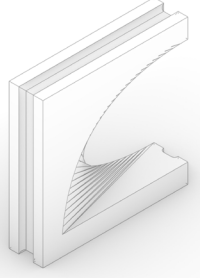
A - MORTAR



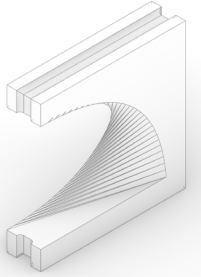
B - MORTAR



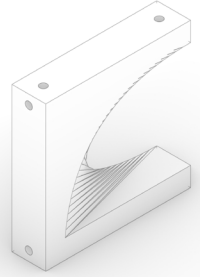
A - #3 REBAR



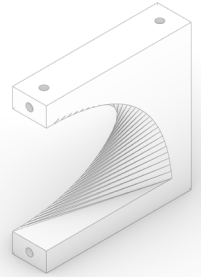
B - #3 REBAR



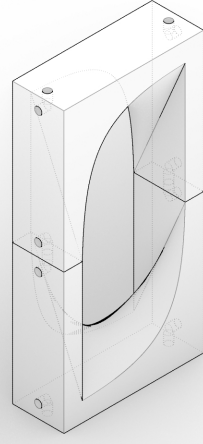
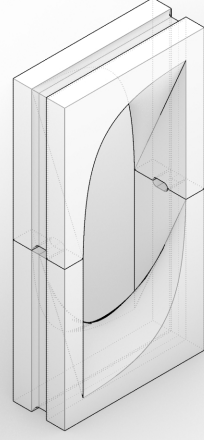
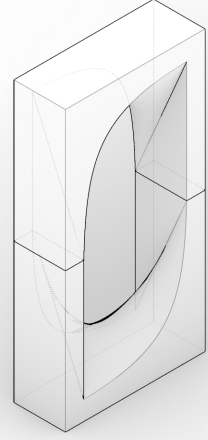
A - 1/4" DOWEL



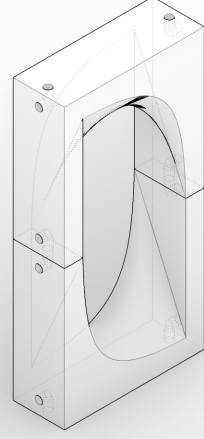
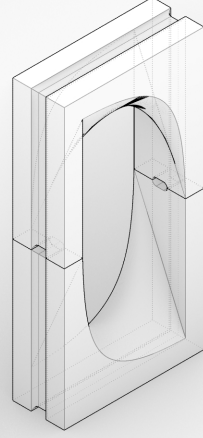
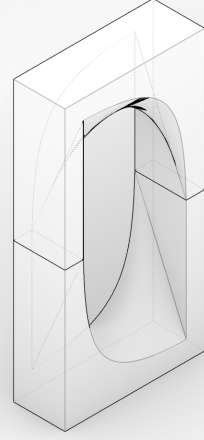
B - 1/4" DOWEL



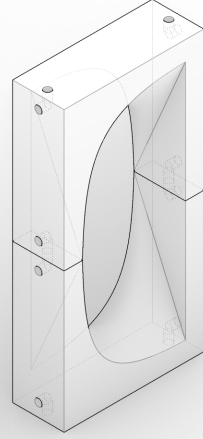
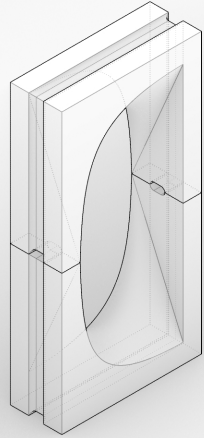
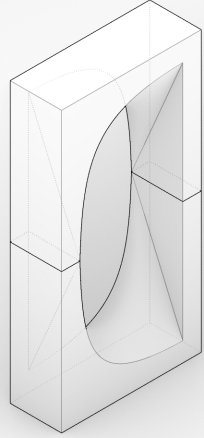
AA

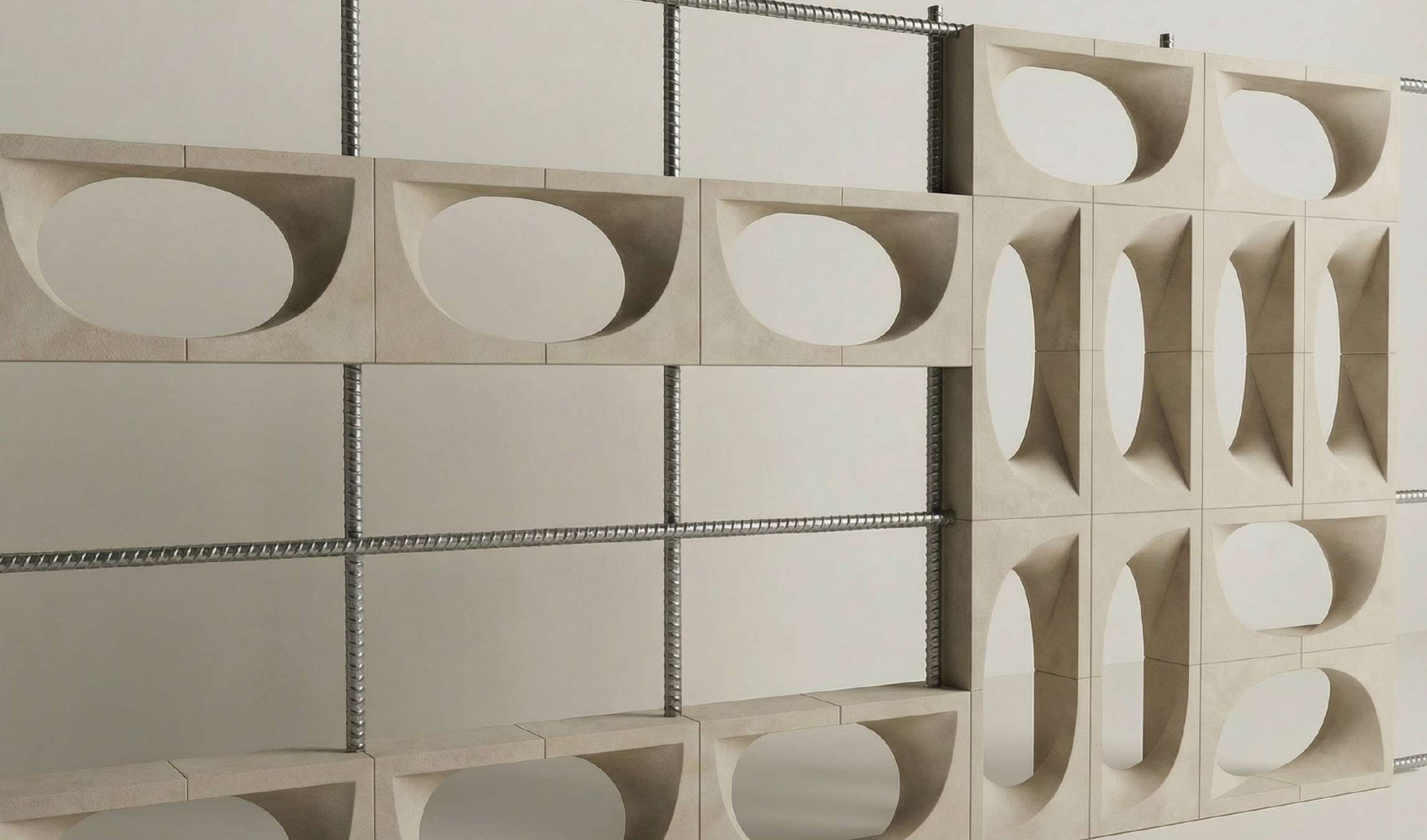


BB

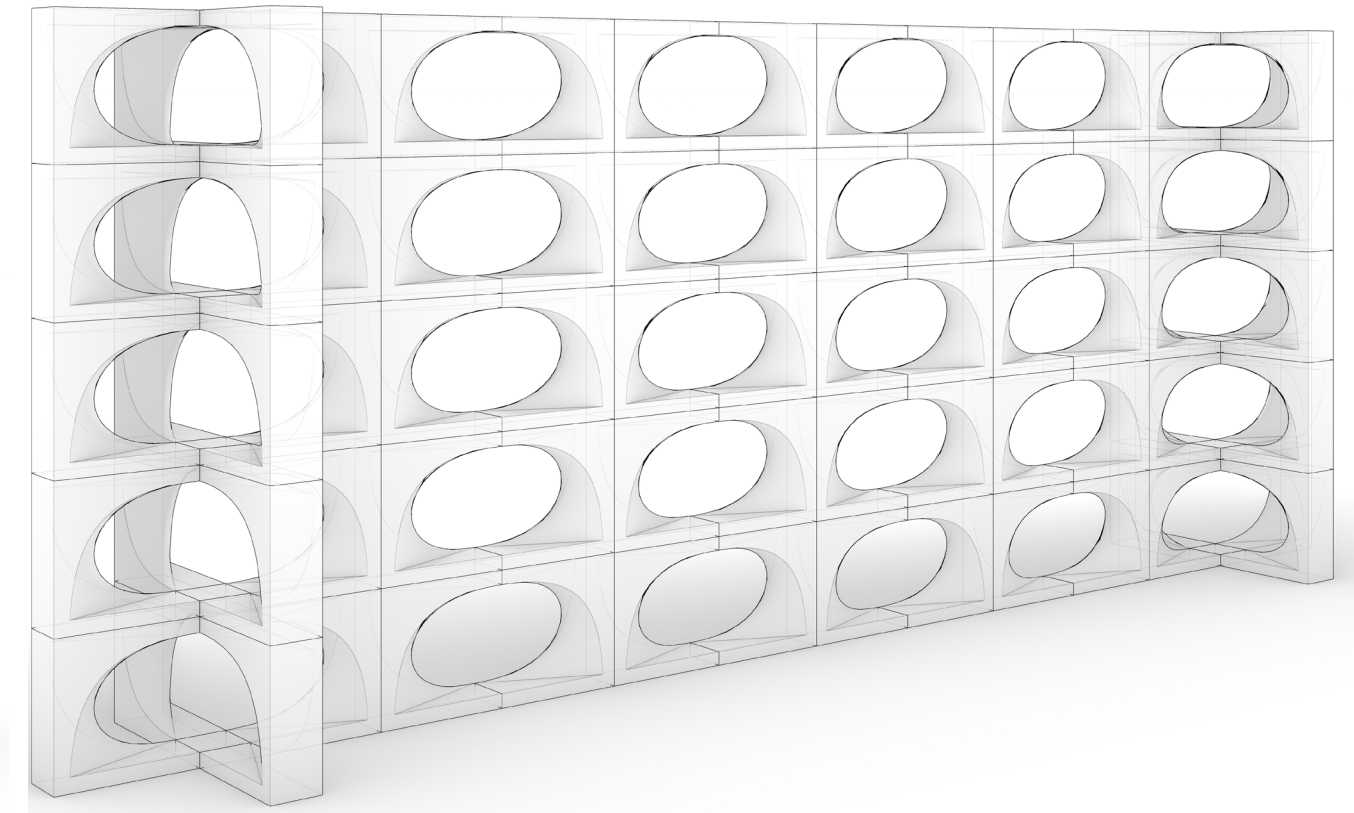
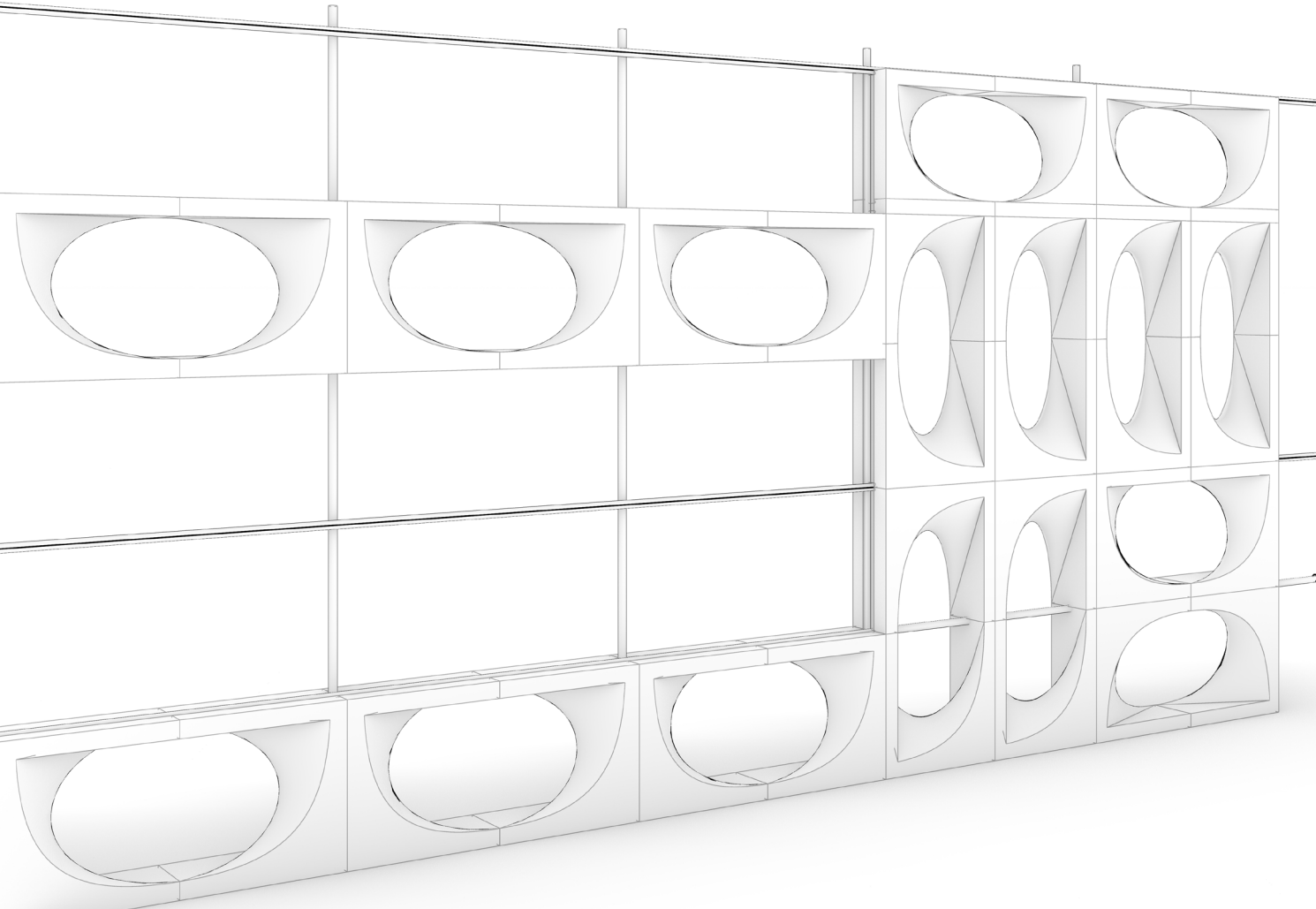
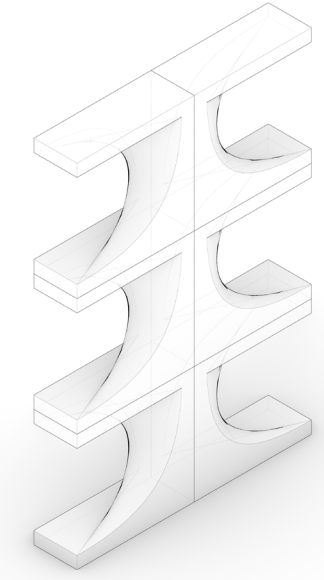
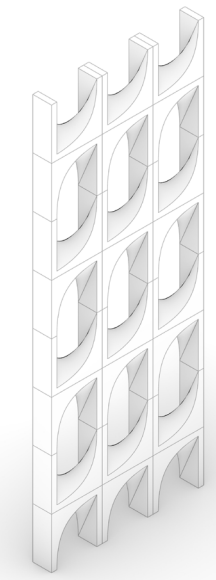
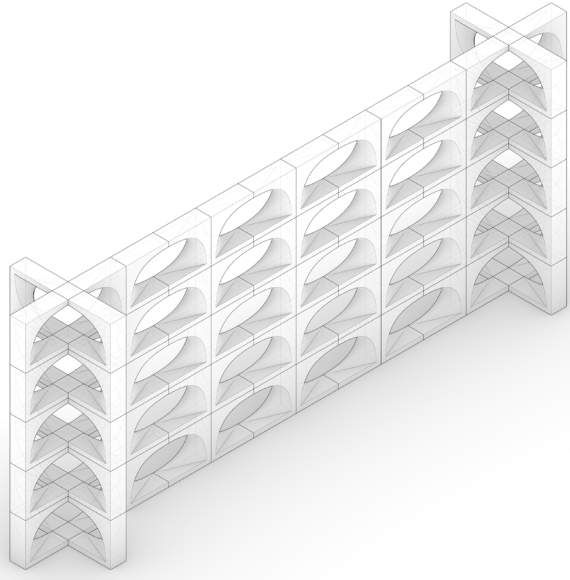


AB











JPK Linea | Beige Breeze

7 - 1/2" x 7 - 1/2" x 1 - 3/4"

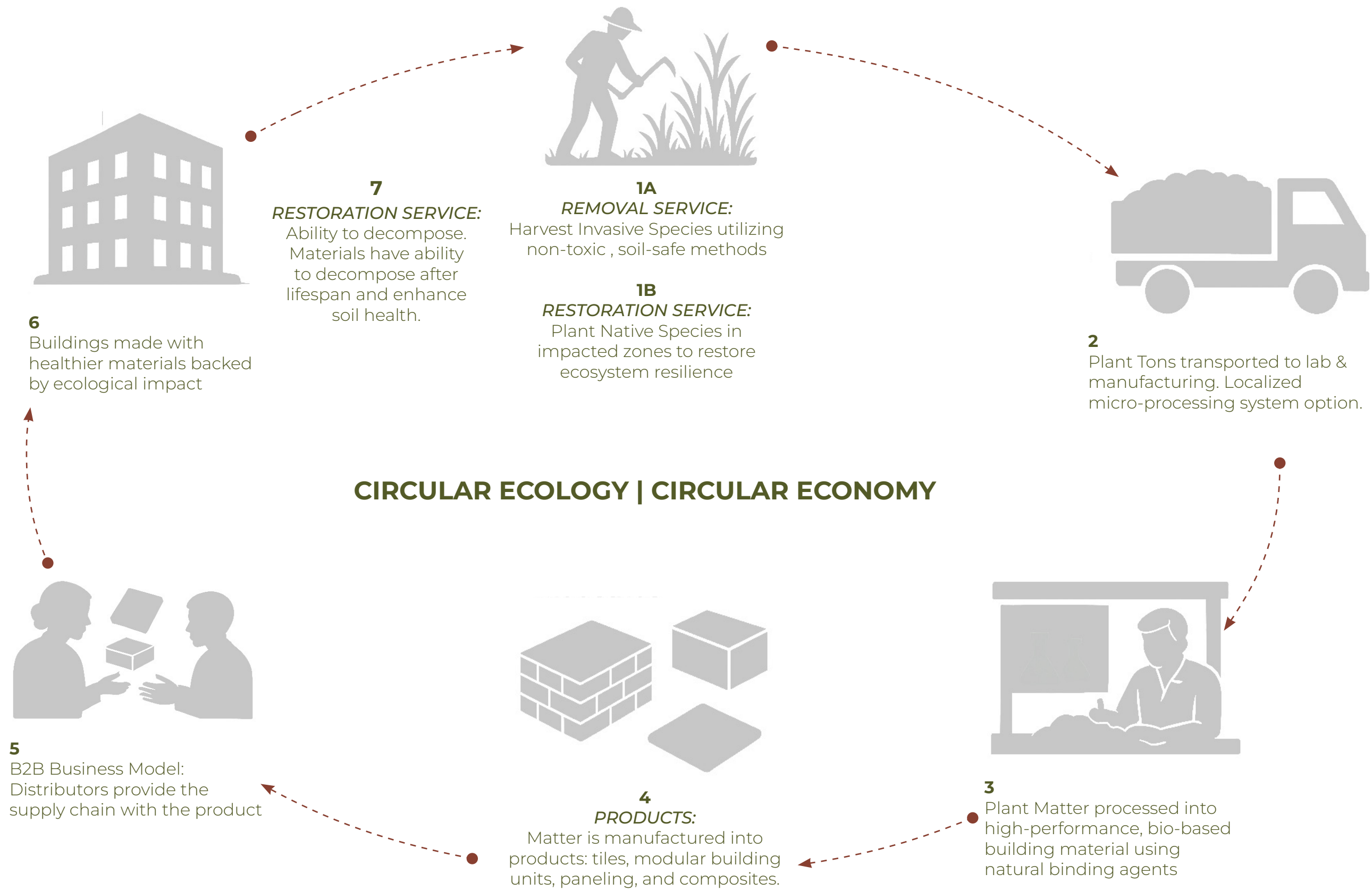
9 - 1/2" x 9 - 1/2" x 3 - 1/2"

beige | sage | terra | ash | white | sea









7
RESTORATION SERVICE:
 Ability to decompose. Materials have ability to decompose after lifespan and enhance soil health.

1A
REMOVAL SERVICE:
 Harvest Invasive Species utilizing non-toxic, soil-safe methods

1B
RESTORATION SERVICE:
 Plant Native Species in impacted zones to restore ecosystem resilience

2
 Plant Tons transported to lab & manufacturing. Localized micro-processing system option.

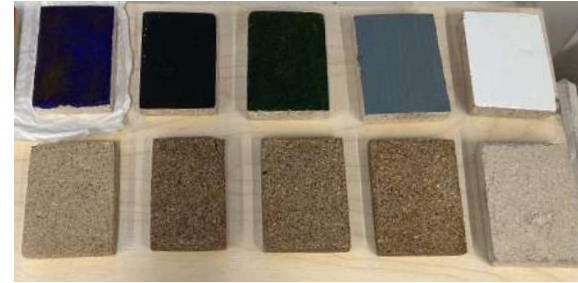
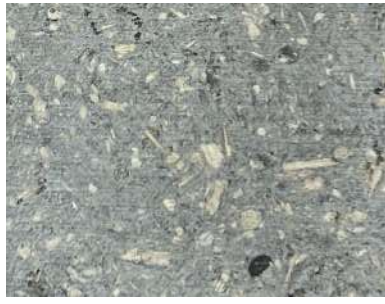
CIRCULAR ECOLOGY | CIRCULAR ECONOMY

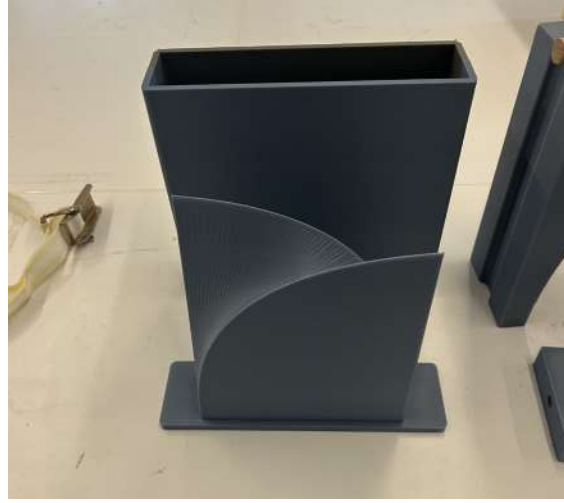
6
 Buildings made with healthier materials backed by ecological impact




5
 B2B Business Model: Distributors provide the supply chain with the product

4
PRODUCTS:
 Matter is manufactured into products: tiles, modular building units, paneling, and composites.

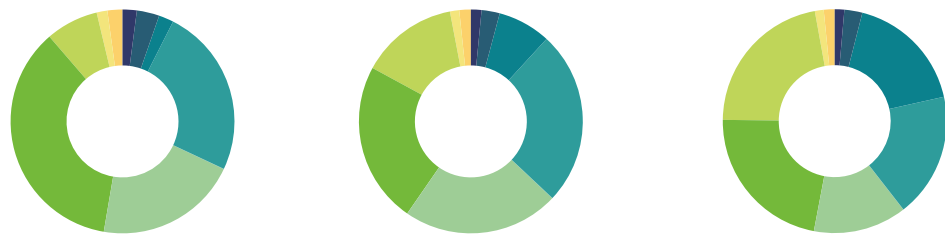
3
 Plant Matter processed into high-performance, bio-based building material using natural binding agents





Reference	Reference Concept - Brick	Japanese Knotweed - Ext Breeze Block	Japanese Knotweed - Unit
			
		85% performance improvement	74% performance improvement
	0.053 mPts per 1 year of use	7.7x10⁻³ mPts per 1 year of use	0.014 mPts per 1 year of use
	1 x 12 cubic inches of cladding material providing equivalent functional performance at the time of install 0.053 mPts Estimate	14 x 12 cubic inches of cladding material providing equivalent functional performance at the time of install 0.11 mPts Estimate	1 x 12 cubic inches of cladding material providing equivalent functional performance at the time of install 0.014 mPts Estimate

Sanitary ceramics, glazing and firing, manufacturing Carcinogenics Manufacturing	Sanitary ceramics, glazing and firing, manufacturing Global warming Manufacturing	Sanitary ceramics, glazing and firing, manufacturing Carcinogenics Manufacturing
----------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------



Impact category	%	Impact category	%	Impact category	%
Ecological damage			Ecological damage		
Acidification	2.05	Acidification	1.53	Acidification	1.38
Ecotoxicity	3.26	Ecotoxicity	2.63	Ecotoxicity	2.6
Eutrophication	2.15	Eutrophication	7.66	Eutrophication	17.52
Global warming	24.5	Global warming	25.19	Global warming	17.97
Ozone depletion	0.04	Ozone depletion	0.04	Ozone depletion	0.02
Resource depletion			Resource depletion		
Fossil fuel depletion	20.68	Fossil fuel depletion	22.58	Fossil fuel depletion	13.49
Human health damage			Human health damage		
Carcinogenics	35.99	Carcinogenics	23.29	Carcinogenics	22.2
Non carcinogenics	7.61	Non carcinogenics	14.08	Non carcinogenics	21.96
Respiratory effects	1.55	Respiratory effects	1.35	Respiratory effects	1.28
Smog	2.17	Smog	1.66	Smog	1.57

Bricks are used as an interior and exterior building material. The energy usage in firing process releases significant CO₂, and the environmental damage from clay mining (soil erosion and habitat loss).

We use this as a base concept to show how the Knotweed material compares in its resource harvesting (use of abundance and agricultural byproducts with ability to grow in arid climates) material makeup, curing process, lightweight and through end of life ability to decompose and fertilize.

Functional unit: 12 cubic inches of cladding material providing equivalent functional performance at the time of install	Impacts / functional unit mPts/func unit	CO ₂ eq. kg / functional unit CO ₂ eq. kg/func unit	Performance improvement from reference mPts	Performance improvement from reference %	Units of svc delivered Svc. Units
--------------------------------------------------------------------------------------------------------------------------	---------------------------------------------	------------------------------------------------------------------------------	------------------------------------------------	---------------------------------------------	--------------------------------------

Reference



Reference Concept - Brick

Copy

Declare as: | Final

0.053

0.90

1

Lowest impact



Japanese Knotweed - Ext Breeze Block

Copy | Delete

Declare as: Reference | Final

7.7x10⁻³

0.13

+0.045

+85%

14



Japanese Knotweed - Unit

Copy | Delete

Declare as: Reference | Final

0.014

0.17

+0.039

+74%

1







Invasive Matters.

a material design company creating
products out of healthy bio-matter.

www.invasivematters.com

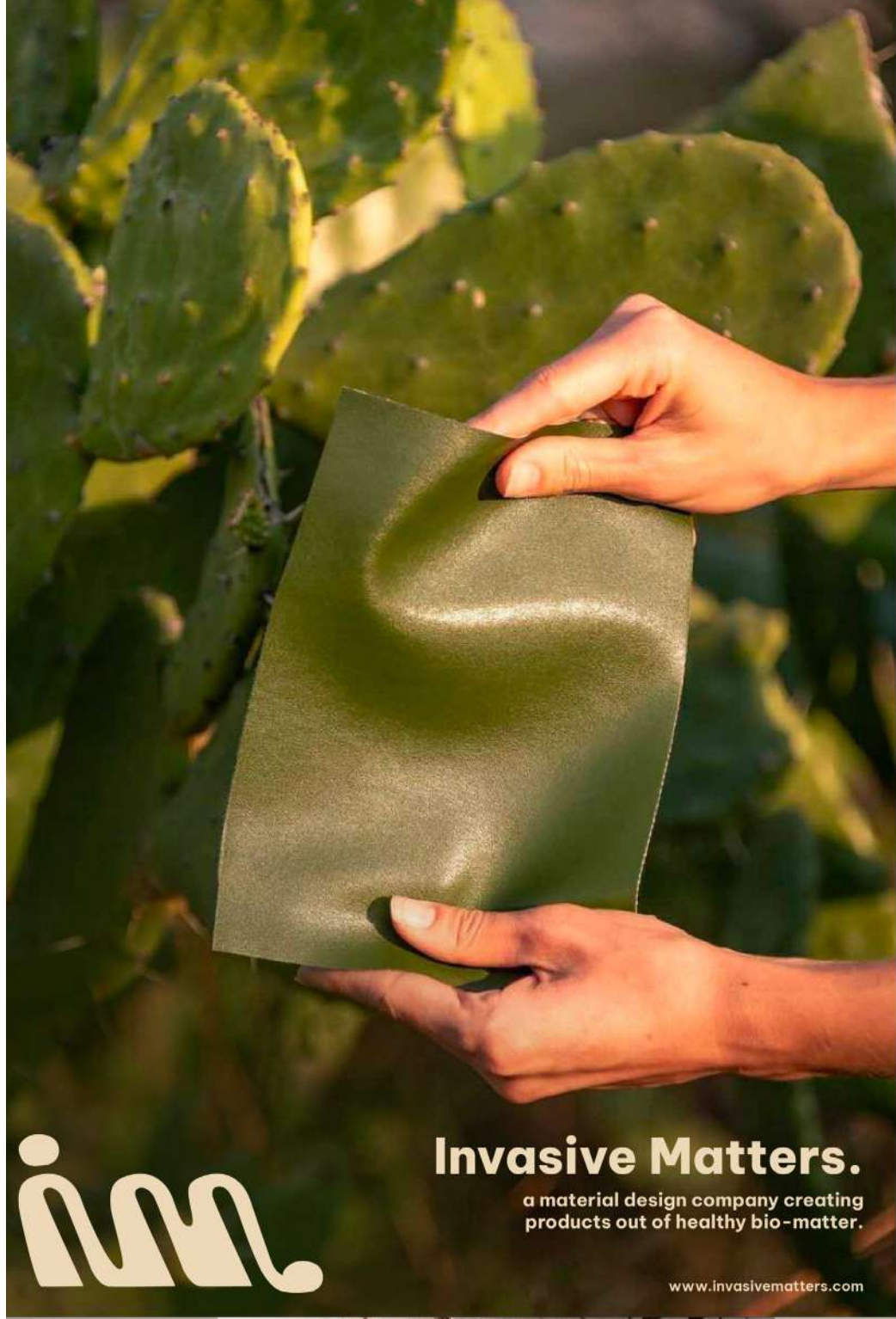


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1. Achieve ASTM-Certified Performance Benchmarks

- Identify relevant ASTM standards for structural, durability, fire, moisture, and VOC performance.
- Conduct third-party lab testing to validate material safety and performance.
- Refine formulations based on test results to meet or exceed minimum industry thresholds.

2. Refine Material Formulation & Surface Finish

- Optimize binder ratios, fiber distribution, and curing conditions for consistency.
- Develop a stable surface finish that is non-toxic, durable, and aesthetically adaptable.
- Finalize color, texture, and sealing options to meet architectural and interiors specifications.
- Conduct accelerated aging, abrasion, and UV-resistance tests to validate finish longevity.

3. Refine Construction System Integrations & Produce Market-Ready Prototypes

- Standardize component dimensions and connection details for compatibility with existing construction systems.
- Test integration with framing, substrates, and finishes through mockups and small-scale assemblies.
- Produce consistent prototype units with defined tolerances and installation guidelines for early adopters.
- Prepare technical documentation including spec sheets, installation instructions, and digital models (CAD/Revit).

