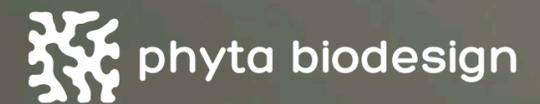




fauna eco-receptive
facade system



DISCLAIMER:

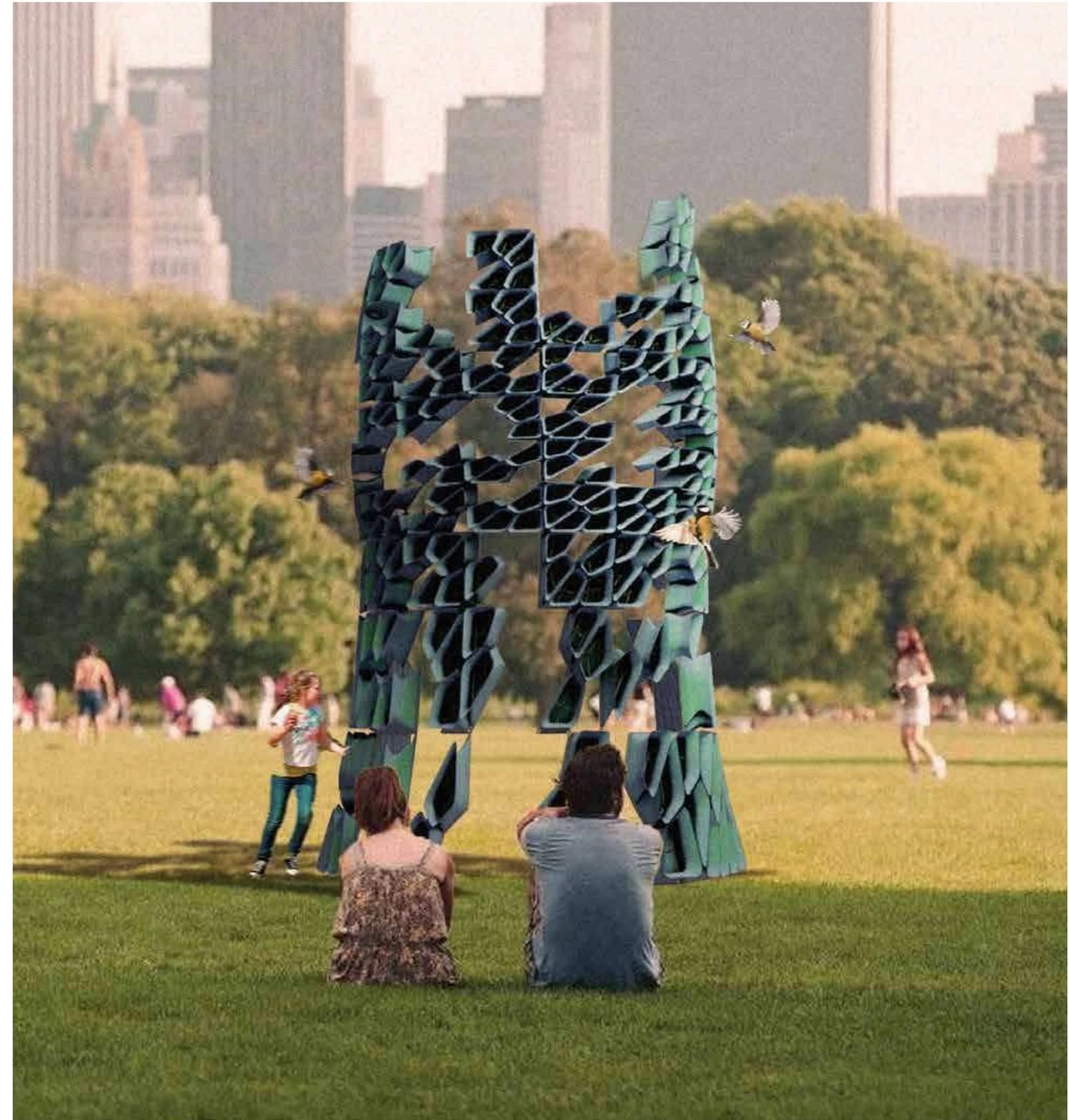
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fauna

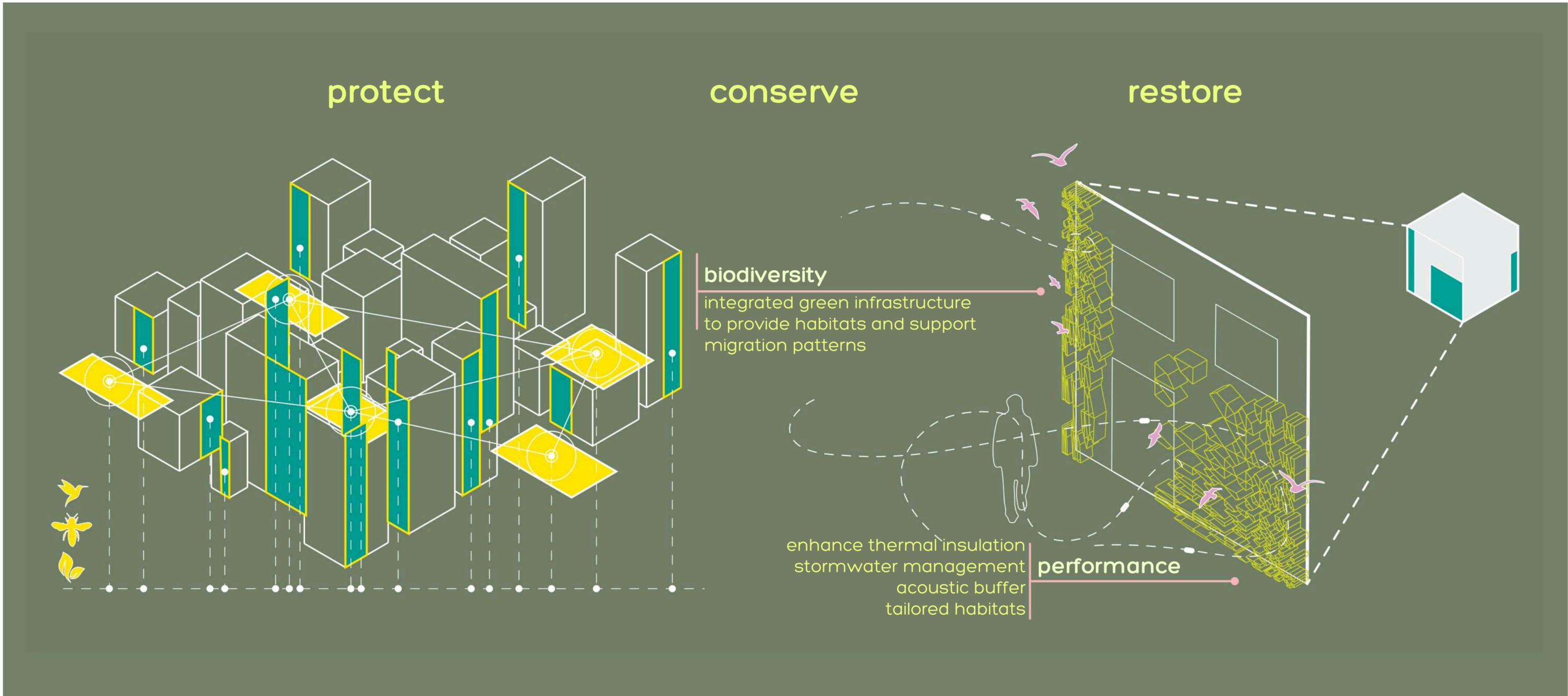
Architectural envelopes such as facades and roofs make up to 40-50% of flat surfaces in high-density cities like London. Since 1930s London has lost 98% of its wildflower meadows and 50% of bird species due to urbanization. Whereas traditional building materials produce over 39% of global CO2 emissions causing rapid depletion of natural ecosystems.

How can we utilize architectural surfaces to promote biodiversity while reducing embodied carbon emissions?

Fauna is an innovative system of 3D printed blocks that can transform flat, impervious building walls and roofs into biodiverse habitats to host local flora and fauna. The system provides a new paradigm for architectural envelopes using advance computational design to digital fabrication workflow enabling mass customization on an architectural scale.







Architecturally integrated green infrastructure

With our multi-scaled approach we aim to embed ecosystems with in architectural facades. On a building scale our systems hosts plants, habitats and micro species (algae/moss). Whereas on an urban scale these systems create an interconnected ecosystem that bridges disconnected migratory patterns for endangered species

BUILDING FACADES

An architectural interface, seamlessly connecting nature capital (biodiversity) with nature credits, creating a tangible and tradable environmental asset.

ECOLOGICAL ANALYSIS

Our system uses data collection, AI-powered analysis, and computational design to create optimized habitats tailored to site specific ecosystems ensuring maximum impact and building performance.

MAPPING BIODIVERSITY

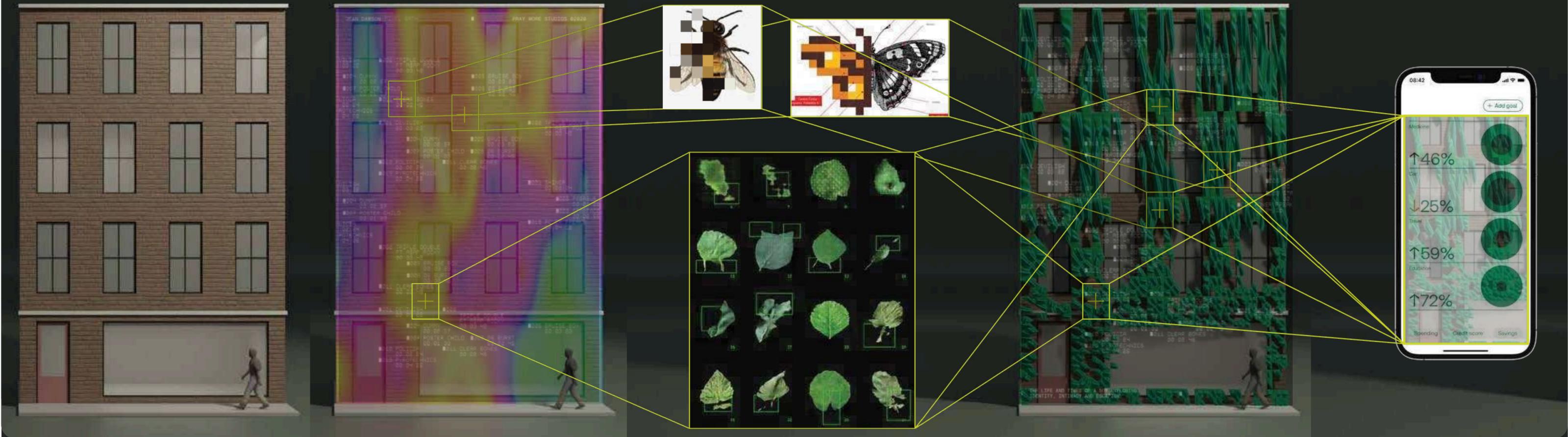
Unlike standard greenwalls, our solution maximizes biodiversity, enhance ecosystem services and contribute carbon sequestration

OPTIMIZED HABITATS

Advanced 3D printing is used to, fabricate modular systems that are highly adaptable, scalable, and aesthetically integrated with any building type.

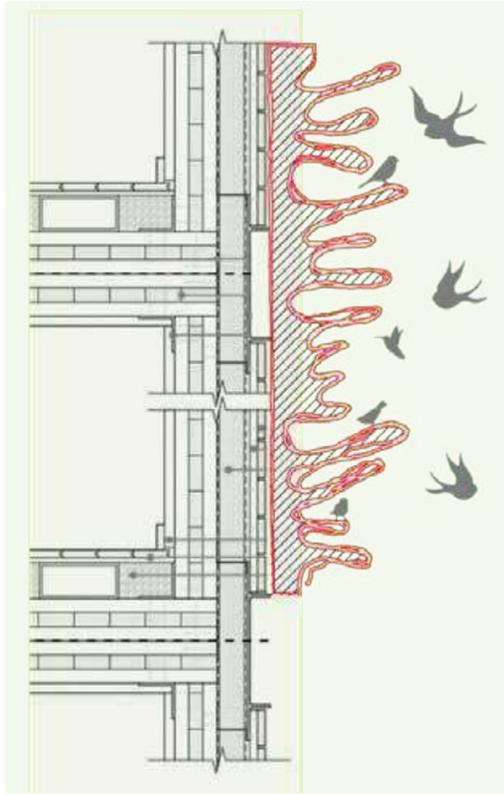
MONITORING

Real-time tracking, quantification, and transparent reporting of environmental impact. This simplifies BNG compliance and enhances stakeholder engagement.



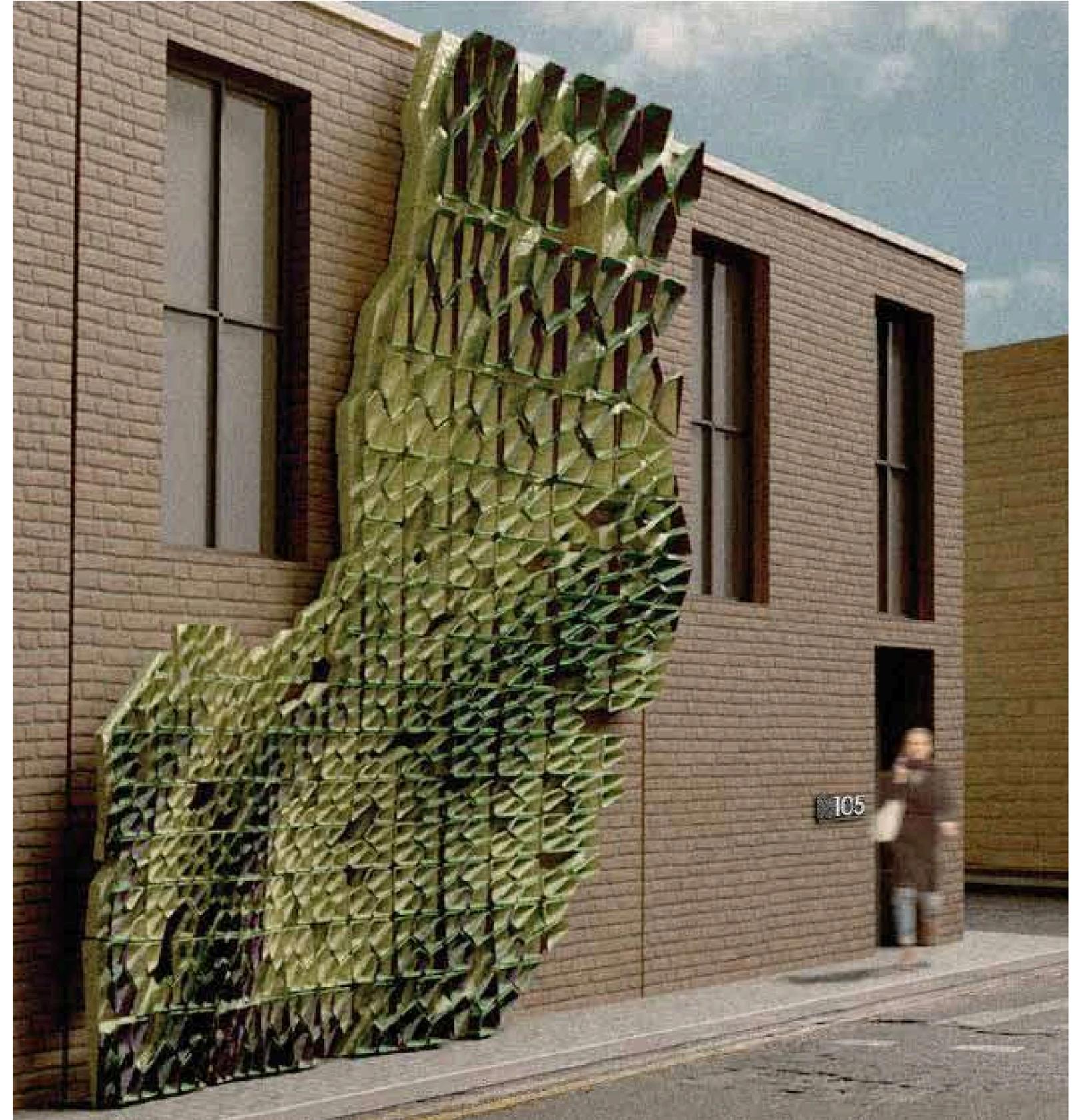
Generative Facade Specification

We achieved this through our proprietary digital and physical tools driven by digitizing biodiversity into data input for regenerative design.



Interspecies Approach

Rethinking inert walls as living façade systems to nurture diverse organisms within our buildings envelopes. Fauna system uses pockets, ridges, cavities and micro-textures to host micro and macro species. Flat walls transform into texturally rich, digitally fabricated habitats encouraging the survival of interconnected species.





Bio-receptivity

Ecologically receptive architectural systems promote bioremediation, a process that allows natural deposition of organisms like micro algae and moss. By allowing these organisms to proliferate, Fauna acts as a performative interface that can optimize thermal and water conditions within buildings envelopes naturally.



Biodiversity & Ecological Benefits

Targeted Habitat Engineering:

Unlike generic green walls, Fauna uses real-time data to 3D-print specific geometries (crevices, nesting pockets, and thermal mass) tailored to the life cycles of critically endangered urban species.

Ecological Connectivity:

By transforming inert facades into "stepping stones," the system helps mitigate urban fragmentation, allowing wildlife to migrate safely through dense city centers.

Microclimate Regulation:

The modular units provide essential shading and moisture retention, creating stable micro-habitats that protect urban fauna from the "Urban Heat Island" effect.

Data-Driven Conservation:

Integrated sensors turn the building into a "data collection site," closing the feedback loop by monitoring species arrival and health to inform future conservation strategies.

Support for Invertebrate:

The textured, eco-receptive surfaces promote the growth of mosses and lichen, providing the primary food sources and nesting materials required for urban insect populations to thrive.

Architectural & Technical Benefits

Circularity & Decentralized Fabrication:

By utilizing reclaimed local materials (such as London clay diverted from construction waste) and 3D printing, Fauna significantly reduces embodied carbon emissions associated with industrial manufacturing and long-distance logistics.

Passive Thermal & Acoustic Buffering:

The porous geometries act as an acoustic diffuser to mitigate urban noise pollution. Simultaneously, the high thermal mass of the ceramic modules provides a buffer against temperature fluctuations, reducing the building's operational energy load.

Integrated Rainwater Channeling:

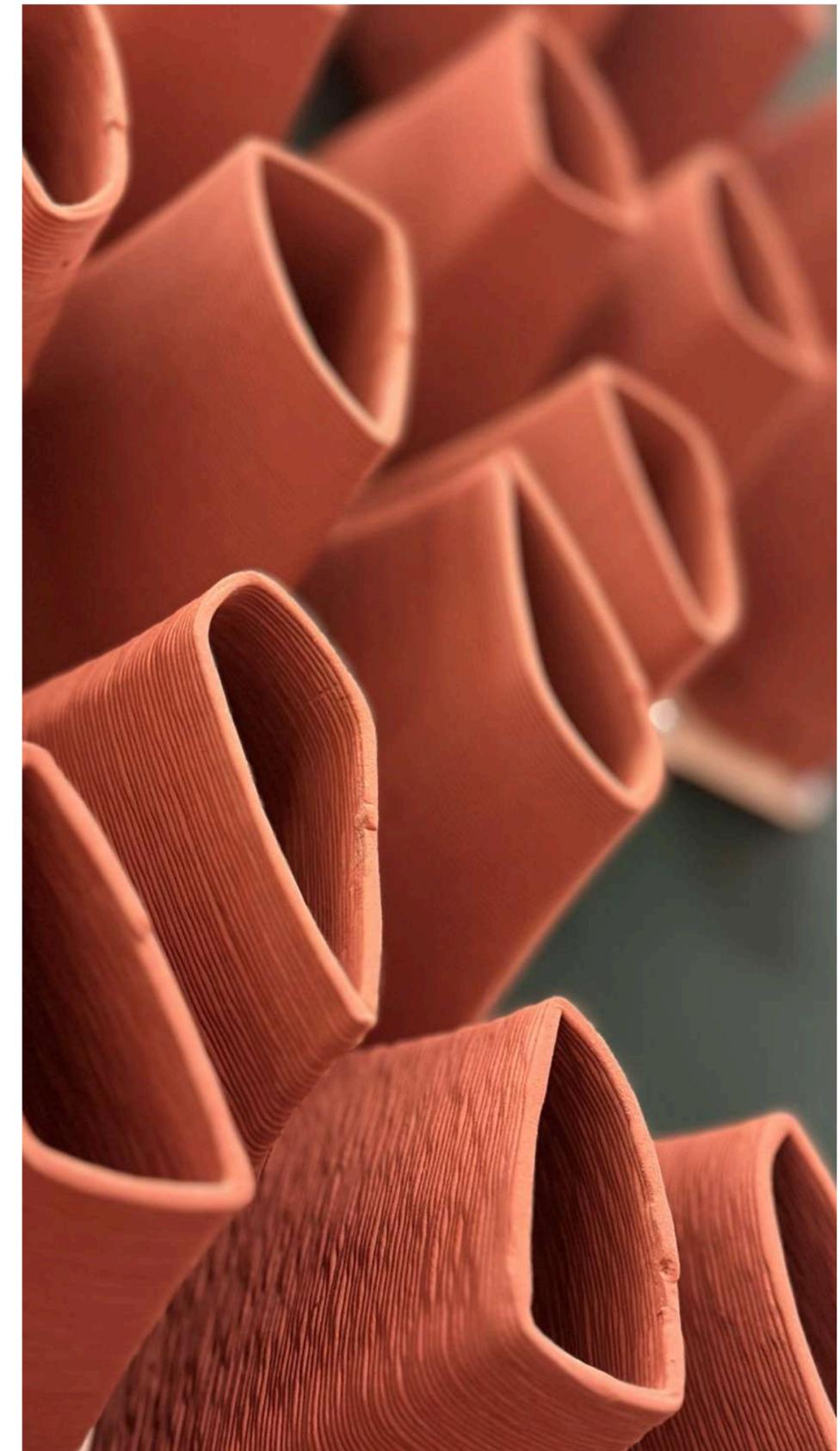
The design incorporates micro-valleys that intelligently capture and direct rainwater preventing uncontrolled runoff and erosion.

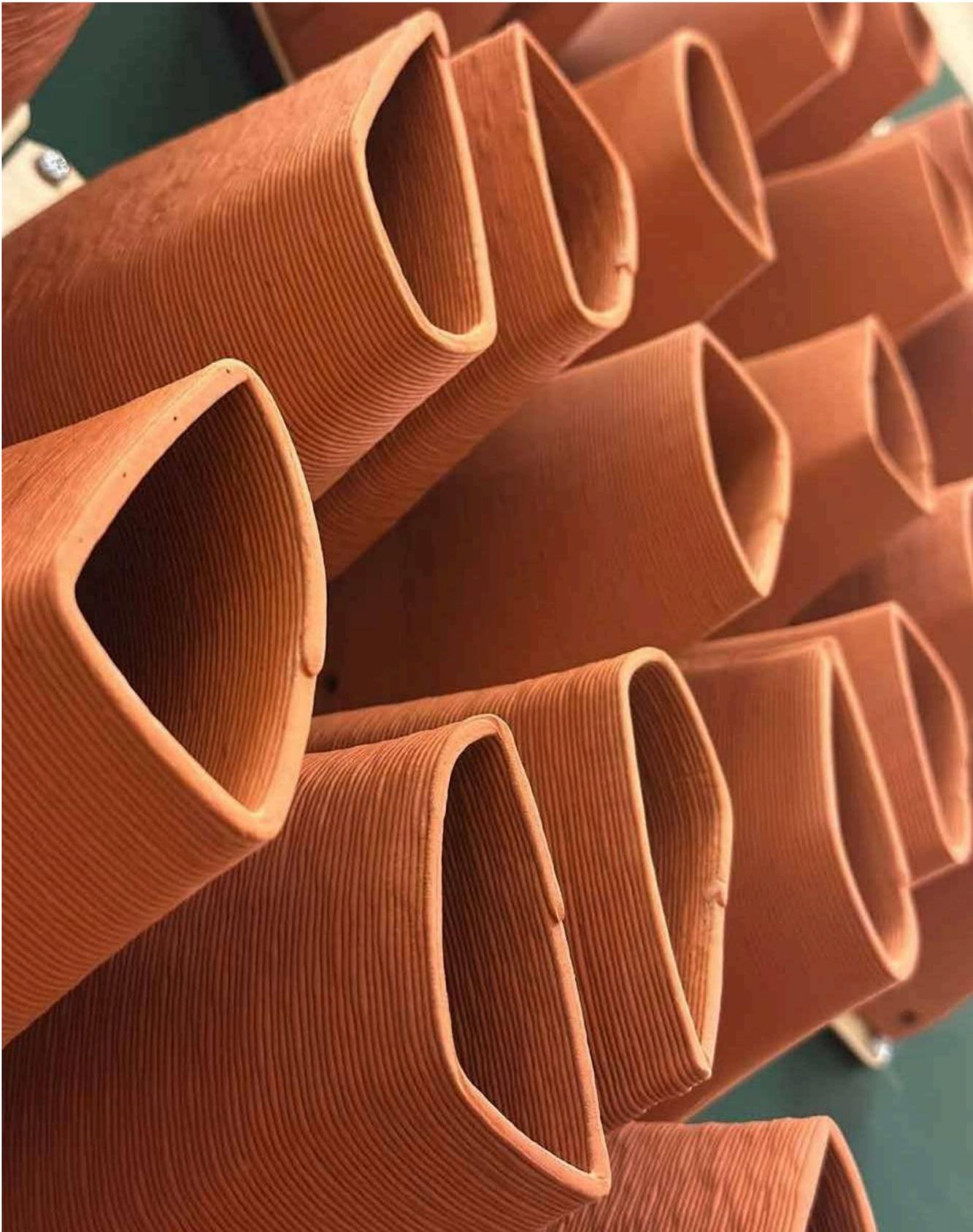
Aerodynamic Wind Breaks:

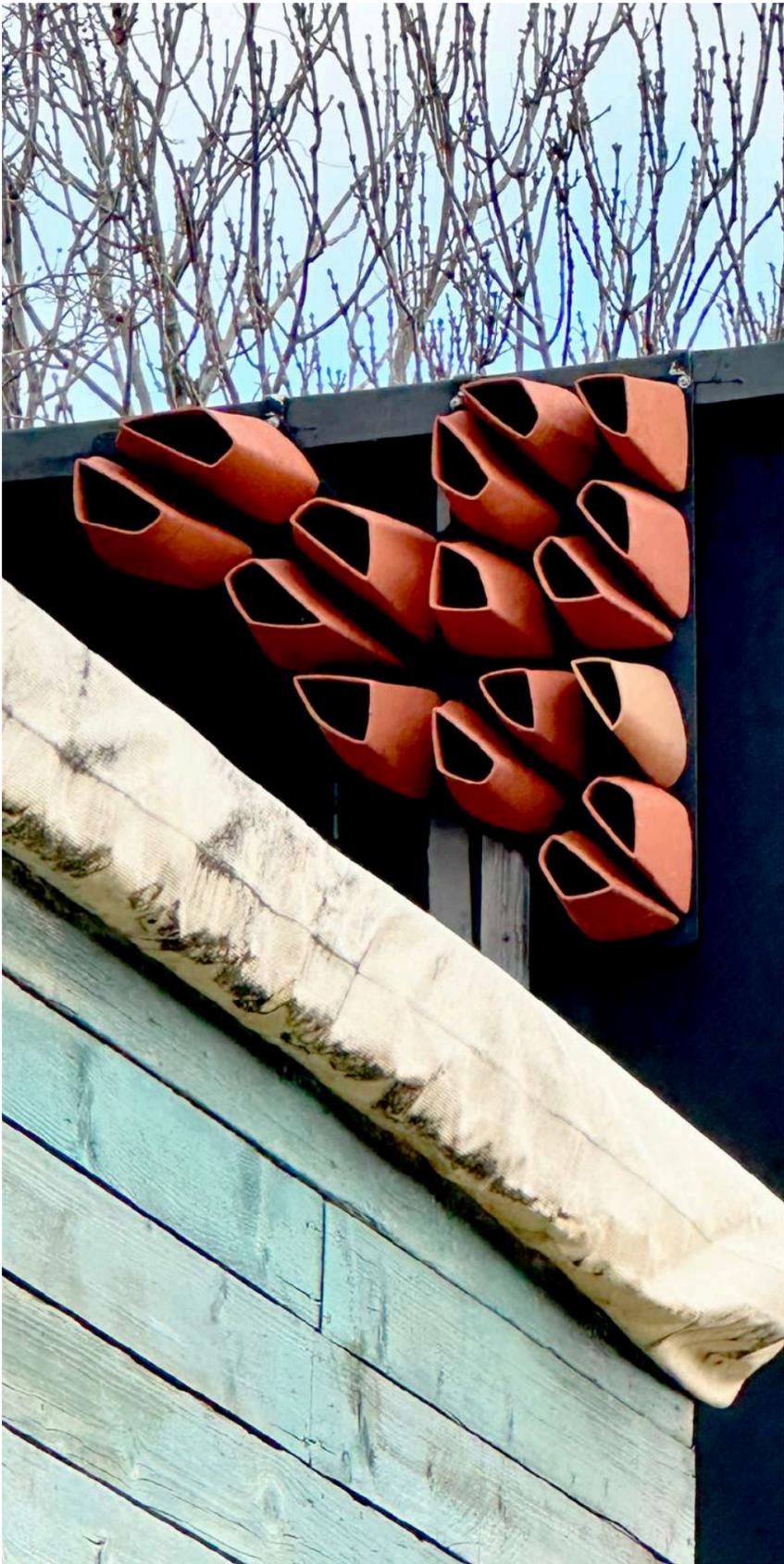
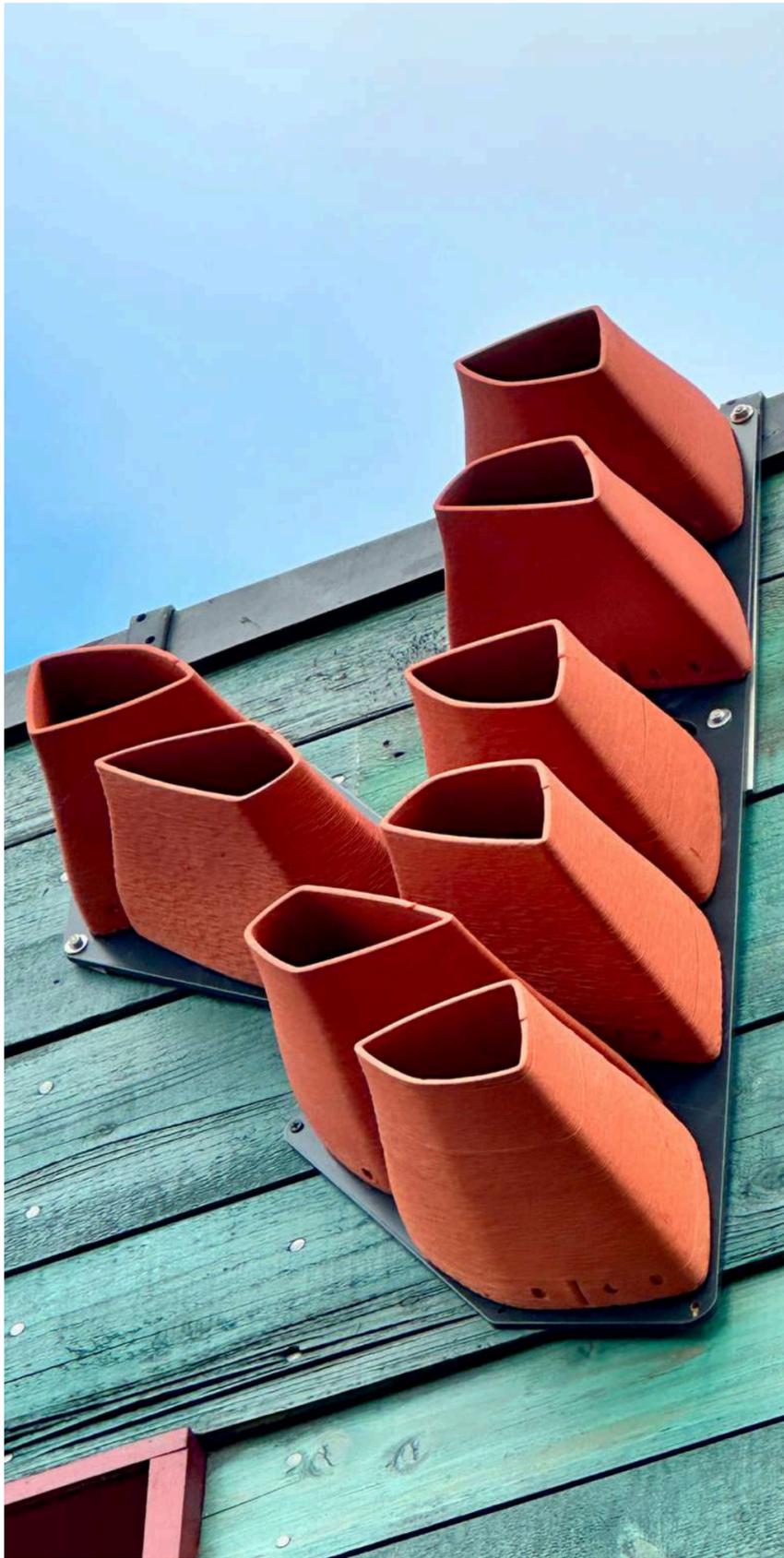
The variegated surface of the 3D-printed modules breaks up laminar wind flow and enhances the urban microclimate preventing the "wind tunnel" effect.

Biophilic Aesthetic Value:

Fauna replaces "cold, soulless" flat surfaces with tactile, organic textures inspired by natural forms improving the mental well-being of residents by fostering a connection to nature.

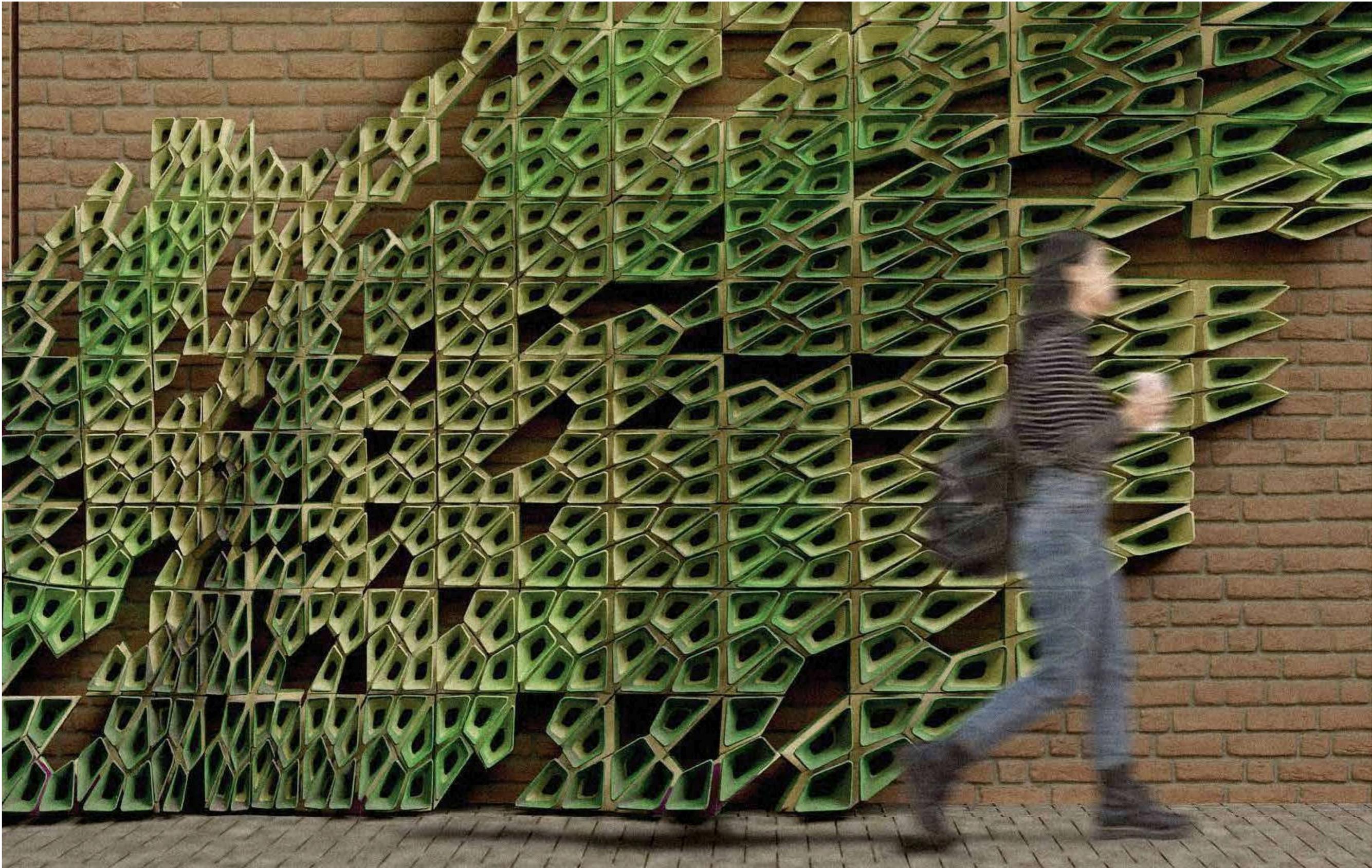


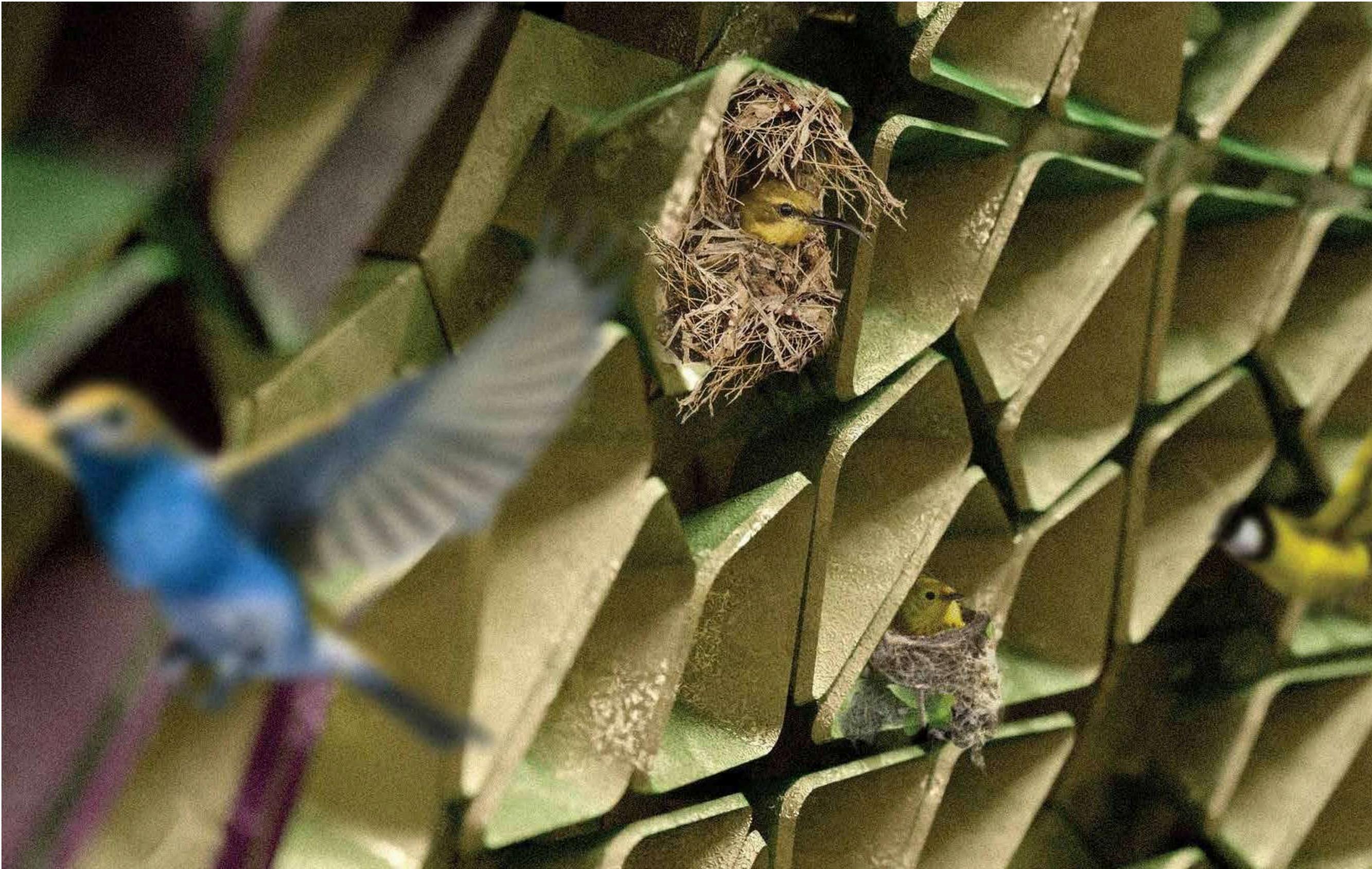
















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