

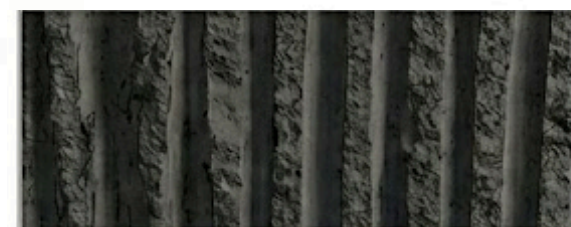
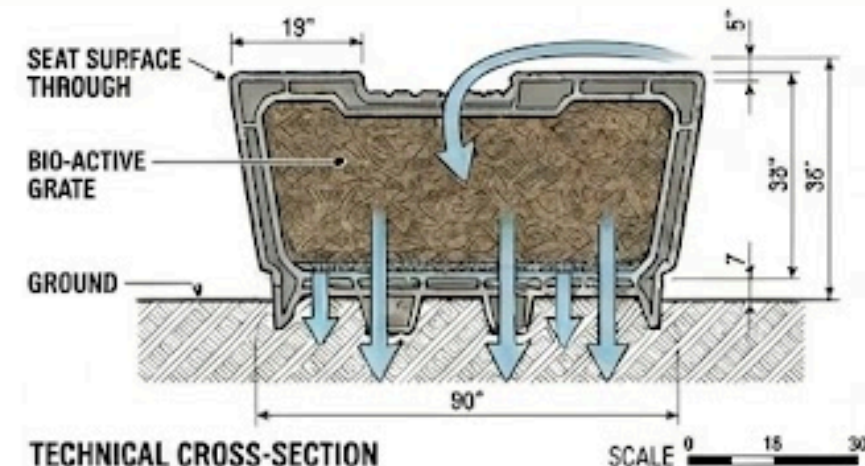
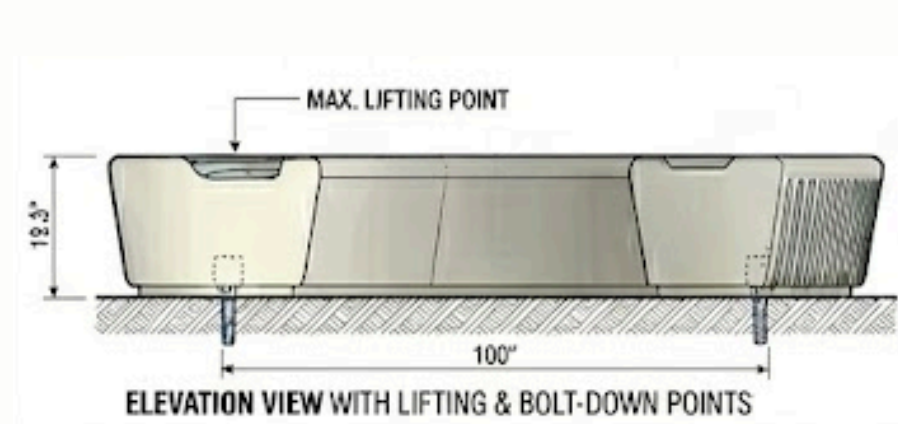
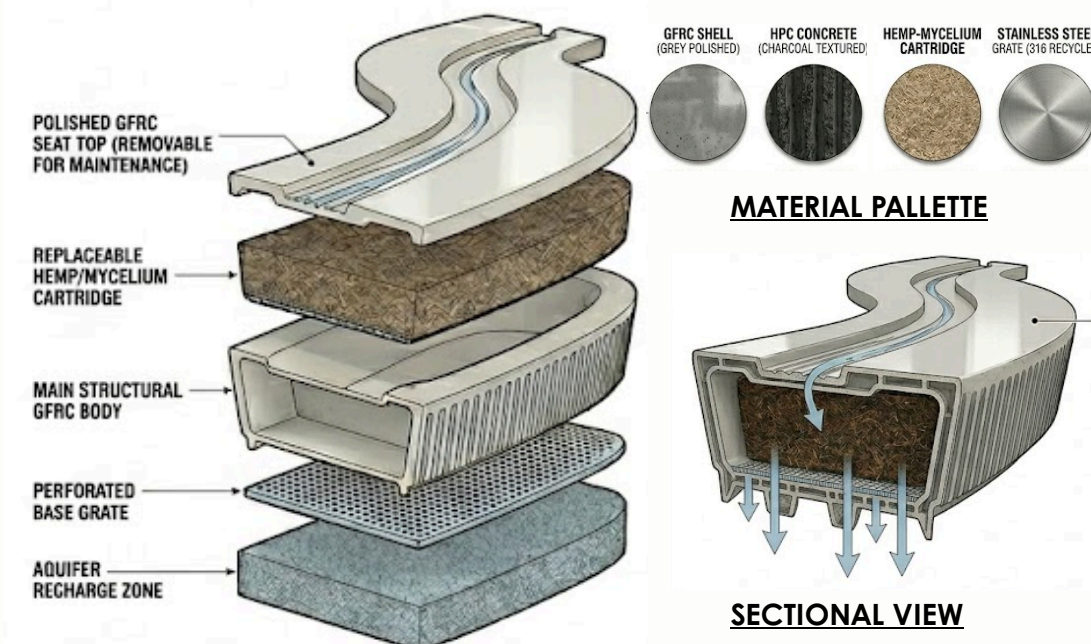
THE AQUIFER SPORE-LOOM: A BIO-REACTIVE SEATING ECOSYSTEM

CONCEPT STATEMENT

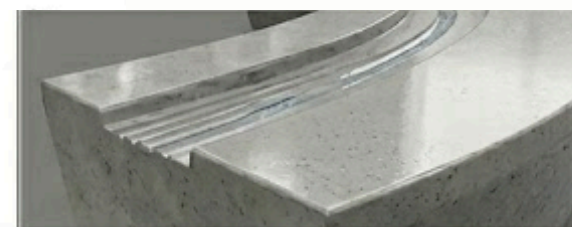
In the modern urban fabric, site furniture is often a missed opportunity, a static object in a dynamic environment. As cities grapple with the "Urban Heat Island" effect and the collapse of natural drainage, our shared landscapes require a new typology of infrastructure. The Aquifer Spore-Loom is a modular system that reimagines the precast bench as an active ecological filter. It is designed not just to occupy a site, but to heal its hydrology.

THE "LOOM" MECHANISM

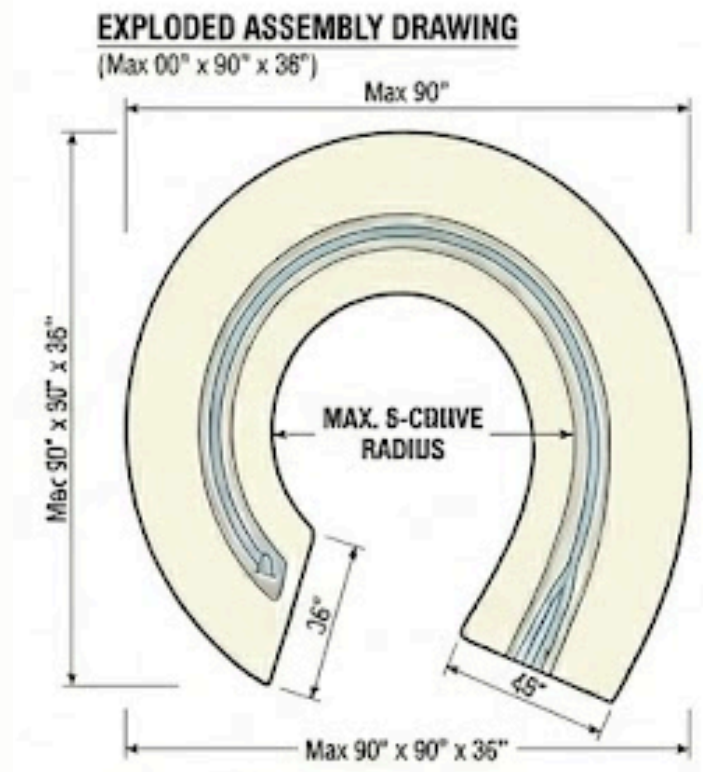
The design takes its name from the "woven" geometry of its surface. Using the high-tensile strength and precision of Glass Fiber Reinforced Concrete (GFRC), we have developed a seating surface etched with a series of sinuous micro-channels. These are not merely decorative; they are hydrologically engineered to capture surface runoff. Inspired by the "Khadin" systems of ancient desert planning, where every drop is steered toward a purpose, the Spore-Loom siphons rainwater away from the pavement and into a centralized, internal bio-active well.



FOSTERS MOSS AND SOLITARY POLLINATOR NESTING



HYDROPHOBIC MICRO-CHANNELS CAPTURE RUNOFF



RENDERING SHOWING HOW YOUR DESIGN FUNCTIONS IN AN URBAN ENVIRONMENT.

ECOLOGICAL PERFORMANCE

The unit contains a modular mycelium-based filtration system that cleans urban runoff by breaking down oils and heavy metals. A perforated base allows filtered water to recharge groundwater, reducing surface runoff and flood risk.

RESILIENCE THROUGH MATERIALITY

Low-carbon concrete minimizes embodied carbon and regulates micro-climate through thermal mass. Polished seating ensures durability, while textured ribs retain moisture, support moss growth, and create micro-habitats for pollinators.

IMPLEMENTATION

The Spore-Loom is a realistic, implementable solution. It is designed as a modular system that can be bolted down to existing slabs or integrated into new developments. It moves the conversation beyond "sustainable materials" and toward "regenerative systems," proving that even a public bench can be a powerful tool in the fight for climate resilience.