Greening

Mushroom Magic for Our Cities

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Co-funded by
the European Union

You think of mushrooms as a little topping for pizza or an umbrella-shaped decoration in the garden, right? But what if the humble fungi could help us revitalize our urban landscapes?

An innovative new project called Urban MYCOskin is tapping into the extraordinary potential of mushroom roots - known as mycelium - to create sustainable building materials that can transform waste into wonder. At the heart of this effort is mycelium's remarkable ability to bind together and decompose organic matter like agricultural byproducts and textile scraps. The hair-like mycelium filaments act as a natural glue through a low-energy manufacturing process, turning these waste streams into sturdy yet lightweight construction panels.

The mycelium panels made from this process are not only sustainable but also biodegradable at the end of their life cycle, re-entering the cycle of nature. During their growth, the mushroom materials capture carbon dioxide from the atmosphere, giving Urban MYCOskin an eco-friendly edge over conventional building supplies. But the benefits don't stop there. The project team has ingeniously designed public structures like shade canopies and benches that integrate green spaces and water management right into the architecture itself. Grooved mycelium panels can redirect rainwater to nourish plants and mitigate urban heat island effects with cool, shaded microclimates.

Urban MYCOskin was developed by the students Natalia Piórecka, Rita Morais and Jennifer Levy during the MArch of Bio-Integrated Design at The Bartlett School of Architecture, University College of London. Early prototypes were developed to test the architectural system and to validate the supporting scientific research. Next steps involved scaling up the prototypes and testing them in hot spots like Lisbon's Praça Martim Moniz, to transform what was once a bare concrete plaza into a lush, appealing community space. As Urban MYCOskin and similar ventures look to scale up, they offer a

tantalizing vision for cities of the future - ones grown largely from waste, cooled by living greenery, and designed in harmony with the amazing properties of nature's recyclers: mushrooms. Who knew such an unassuming organism could help craft sustainable urban solutions?

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This story is part of the Special Feature on the New Bauhaus Awards 2024.
Find out more at the New Bauhaus website: Urban_MYCOskin: Rethinking waste through mycelium-based materiality