

From tree bark and crustacean shells to silkworm webs and human breath, nature has had a singular impact on Neri Oxman’s innovative design and production processes. Over the course of her twenty-year career, Oxman has developed not only new ways of thinking about materials, objects, buildings, and construction methods, but also new frameworks for interdisciplinary—and even interspecies—collaborations.

A designer, architect, and founding director of The Mediated Matter Group at the MIT Media Lab in Cambridge, Massachusetts, Oxman coined the term “material ecology” to describe an emerging field in which humans, automated processes, and nature unite to produce objects and structures that are designed as if grown, with no assembly required. Integrating advanced 3D-printing techniques with in-depth research of natural phenomena, material ecology incorporates biology, engineering, materials science, and computer science.

The seven projects on display are “demos” for a library of materials and processes that might someday be available to all architects and designers, offering visions of a future in which buildings are capable of responding to variations in light and temperature, and objects age and decay organically, returning to nature once they have served their purpose. Each project is accompanied by documentation of its development—including videos, test samples, and prototypes of works in progress—in order to highlight the creation process over the end product. The projects fall into two categories: extrusions, or materials that have been extruded by an animal or a machine, and infusions, 3D-printed objects that have been engineered to be infused with organic substances, such as melanin or bacteria.

While the objects shown in these galleries are arresting in themselves, taken as a group they constitute a revolutionary philosophy of designing, making—and even unmaking—the world around us.

Organized by Paola Antonelli, Senior Curator, Department of Architecture and Design, and Director, Research and Development, and Anna Burckhardt, Curatorial Assistant, Department of Architecture and Design.



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Neri Oxman and curator Paola Antonelli talk about the first time they met. Enter 122 on MoMA Audio or moma.org/a122 on your phone.

 122 English only