



Swatches of microbial cellulose developed by UT graduate students Amy McDonnold and Amy Witte.

thinkEDIBLE

by Brett Koenig Greig

Last April, more than a thousand people gathered at thinkEAST, a 24-acre former petrochemical storage site in East Austin, for a weekend-long community forum called Living Charrette. The program, which included performances, installations, workshops, and classes, was organized as part of an annual hybrid arts festival through Fusebox, a local creative organization. The goal

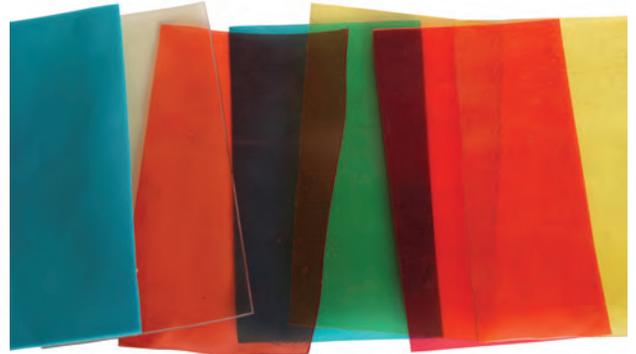
for the Living Charrette was to test, explore, and prototype strategies for the redevelopment of the thinkEAST site. A centerpiece of the weekend was the Edible Materials Lab, an exhibition curated by Igor Siddiqui, an assistant professor at UT Austin's School of Architecture, and Jen Wong, director of the school's University Co-op Materials Lab.

Though the connection between architecture and food may at first appear tenuous, Wong and Siddiqui believe otherwise — especially given the complex, consumption-related relation-

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1 Agarplastic Structure

Structural shells, produced from algae-based plastic, developed by Zach Walter and Gisella Allen.

2 Bioplastic Sheet

Gelatin-based plastic sheets made by Heather Sutherland and Yingqian Zhuang.

3 Bioplastic Foam

Aerated bioplastic produces a flexible foam material, as discovered by Heather Sutherland and Yingqian Zhuang.

4 Bacterial Cellulose

Ornamental, lace-like textile constructed from layers of fermented cellulose, by Amy McDonnold and Amy Witte.

5 Coffee Board

A mixture of coffee grounds and bioresin, produced by David Thompson and Diane Collins, results in an exceptionally strong material that can be cast or machined.

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IMAGES COURTESY IGOR SIDDIQUI.

ships between food, buildings, and people. “We started with this idea of food, and very quickly in engaging with food, you encounter the issue of waste,” says Siddiqui.

The concept for the Edible Materials Lab emerged from Siddiqui’s own research on biodegradable plastics and other sustainable, made-from-scratch materials. The program explored the relationship between food and design through the framework of material creation and experimentation, and it sought to provoke public engagement. “The goal for us,” says Siddiqui, “was to ... generate a conversation with the public about where materials come from, where they’re going, and how we can reimagine the ways production and materials come together.” Content for the Edible Materials Lab included workshops with nationally recognized practitioners, food and drink tastings, and a hands-on display of materials. Half were selections from the UT Materials Lab’s extensive library, while the other half were created by UT students in an innovative, multi-disciplinary studio course that Siddiqui taught last spring. For the course, students developed custom materials from edible substances. For the thinkEAST program, they produced physical samples and objects that demonstrated the capabilities of their experimental materials, which included pliable concrete, fibrous foam, salt masonry, algae-based plastics, and more.

One of the most eye-catching (and olfactory-stimulating) displays focused on the potential uses of SCOBY (symbiotic culture of bacteria and yeast), which is the starter for fermented beverages like kombucha (a tea) and kefir (similar to yogurt). Graduate students Amy McDonnold and Amy Witte also offered a presentation on their investigation into SCOBY’s behavior. In its liquid state, the material begins to form a mat of cellulose fibers spun by yeast and bacterial microbes during fermentation. During the drying process, it takes on characteristics of the materials around it; when exposed to metals, it oxidizes. It is also self-fusing: If cheesecloth is laid over SCOBY while the substance is still wet, the fabric is incorporated as a reinforcing mesh. Throughout the semester, McDonnold and Witte worked with large sheets of SCOBY, which became affectionately known as “kombucha leather.” For the Edible Materials Lab exhibit, they produced a tessellation of dried SCOBY triangles that fused to create a drapeable, translucent textile. While SCOBY’s practical applications for the built environment are still under



investigation, British fashion designer Suzanne Lee has demonstrated real-world uses in her project BioCouture, which includes wearable garments made using SCOBY.

As a researcher and educator, Siddiqui seeks to find new ways of shaping what we thought we already knew. “Design thinking has the capacity to influence policy, industrial production, education, artistic practice, patterns of consumption, waste management, and many other facets of contemporary life,” he says. The Edible Materials Lab was an experimental collaboration that generated thought-provoking results. The exhibition — and the studio work that informed it — served to demonstrate that a reconsideration of food, and food waste, has the potential to change the way materials are produced, used, and, perhaps most importantly, disposed of.

Brett Koenig Greig is an Austin-based architect.

Top *The Edible Materials Lab, which took place in April at the Austin arts festival thinkEAST, sought to provoke discussion about innovative approaches to sustainability.*
Above *A large 8' x 16' display table served as a centerpiece of the exhibition.*