WINNER
Cricket Shelter and Farm
For the exhibition “Survival Architecture and the Art of Resilience,” organized by the Oakland, Calif., nonprofit Art Works for Change, Mitchell Joachim, ASSOC. AIA, envisioned a structure that would provide not only shelter, but also a source of sustenance that could endure climate change and natural disasters. The food source? Crickets, whose protein-rich bodies require little water and energy to grow. “They’re good for you and good for the planet,” says Joachim, the co-founder of Brooklyn, N.Y.–based Terreform ONE and an associate professor of practice at New York University.

Ultimately, Terreform ONE’s prototype cricket shelter and farm is less about providing emergency relief, and more about experimenting with food culture and ecology through architecture. Currently cricket protein is ground up in energy bars that “taste like wood,” Joachim says. He suggests that the insect could be integrated into refined dining culture and cuisine, similar to how sushi took off in the U.S. in the 1980s. And crickets can—and should—be grown and harvested locally, he says, to match the farm-to-table values of today’s eco-conscious gourmets.

Crickets have long been farmed in several countries, Joachim says, but the standard practices are unsanitary because they do not effectively screen out carcasses, baby crickets, feces, and dirt. In contrast, Terreform ONE’s carefully considered design allows handlers to maintain hygienic conditions and to harvest living adult specimens only.

The 144-square-foot structure comprises 224 interconnected modules set within a vault of 16 CNC-milled wood ribs. Each module consists of a 5-gallon plastic container lined with a nylon mesh sac and equipped with a ventilated door, a shading louver, and “mobility tubes” that lead to other modules. These 0.5-inch-diameter PVC tubes are lined with soft nylon mesh. Cocoon-like “sex pods” affixed to the outside of the shelter make mating a potential spectacle. Once the baby crickets, or nymphs, are strong enough, they can hop freely into the main farm via the tubes.

“This is a brilliant architectural proposition combining science, cuisine, and construction—all
executed with a sense of humor,” said juror Elizabeth Whittaker.

Crowning the shelter are 25 spiky quills, made of pipe cowls attached to 4-foot-long fins of plastic and coated masonite, that draw air and heat out via the stack effect, and amplify the sound of the crickets’ chirping. Sculpturally, the quills nod to Constantin Brâncuși’s *Bird in Space* and John Hejduk’s *The House of the Suicide*, and reflect the designer’s desire to “do something fabulous,” Joachim says.

Details like these led Whittaker to call the project “a combination of the elegant and the grotesque.” Juror Doug Stockman added, “It sort of reminds me of the scene in *The Martian* (2015) when he’s trying to grow the potatoes.”

The shelter and farm will be exhibited at the Appleton Museum of Art in Ocala, Fla., from Sept. 10 to Nov. 13. The first harvest, overseen by Robyn Shapiro of Seek Food, was used to make an infused vodka. Next on the menu? Cricket-flour bonbons with fruit and nuts. —G.S.
Jury

Mic Patterson is founding principal of Los Angeles–based Design Tectonics, a consultancy that focuses on innovative façade technology applications and research. He was formerly the vice president of strategic development at Enclos. Patterson is a Ph.D. candidate in the University of Southern California School of Architecture with a focus on sustainable façade renovation practices.

Douglas Stockman, AIA, is a founding principal at El Dorado in Kansas City, Mo. He also serves on the Kansas State University College of Architecture, Planning, and Design Dean’s Advisory Council, and is chair of the Downtown Council of Kansas City. Stockman received a B.Arch. from Kansas State University.

Elizabeth Whittaker, AIA, is founder and principal of Merge Architects in Boston. In 2015, she was a recipient of the AIA Young Architects Award and the Emerging Voices award from the Architectural League of New York. Whittaker received an M.Arch. from the Harvard Graduate School of Design, where she is an assistant professor in the practice of architecture.

Credits

Cricket Shelter: Modular Edible Insect Farm, page 112
Design Firm: Terreform ONE, Brooklyn, N.Y. · Mitchell Joachim, ASSOC. AIA, (co-founder and primary investigator); jachen xu, lissette olivares, cheto castellano, ivan fuenzelba, sung moon, kamila varela, yucel guven, chloe byrne, miguel lantigua-inoa, aia, alex colard, melanie fessel, maria aiolova, assoc. aia, vivian kuan (project management); felipe molina, matthew tarpley (research assistants)
Consultant: seek food · robyn shapiro fabricators: shandor hassan, christian hamrick funding: art works for change; terreform ONE photography: mitchell joachim, matthew tarpley special thanks: david stewart, christian hubert, heather lord, scott pobiner, new lab, brooklyn navy yard, gmd shipyard, new york university gallatin school of individualized study

BayArc: A Tidal Responsive Barrier, page 116
Design Firm: skidmore, owings & merrill, san francisco · craig hartman, FAIA (concept and interdisciplinary leader); mark schwettmann, aia, alex cruz, ross findly, david kwon (project team)
Project Adviser: moffatt & nichol drawings: skidmore, owings & merrill structural engineer: mark sarkisian, eric long, david shock, geoffrey brunn marine engineering concept: moffatt & nichol · dilip trivedi, richard donnhelm

The Tower at PNC Plaza, page 118
Design Firm: gensler, san francisco · doug gensler, aia (principal-in-charge); hao ko, aia (principal and architectural design director); benedict trepel, aia (principal and technical director); l. adkins, aia (project manager); anastasia huggins, aia, david hall, gunwook nam, alison wilkinson, aia, daniel nauman, aia, jorge barrero, aia, ethel macleod, eugene lee, joe chisholm, brent van gunten, aia, len sciarrino, philip kafer, aia, joel mccullough, aia, rich peake, mariana vaida, jessica yin, yooju no (project team)
renderer: space matrix · tangram 3DS construction manager: p. dick lighting designer: fisher marantz stone structural and M/E/P engineer: biurohappold sustainability consultant: paladino & co. photography: connie zhou photography

LELU Exit Sign, page 122
Client: architectural safety components Design Firm: interloop—architecture, houston · mark wamble, dawn finley, aia (design principals); eric hughes, peter nueesig, jack mussett (project team)
Project Adviser: architectural safety components · sam youdal consultant: martin co. · john martin fabricators: more fabrication · kerry krumbeck; professionalized products and services · jerry huang; southwest electronic energy group · alex marin; aondizing graphics of houston · linda sayers special thanks: underwriters laboratories · abdul ahad (investigating engineer)

Tally, page 124
Design Firm: xian timberlake, philadelphia · roderick bates, stephanie carlisle, billie faircloth, aia, elizabeth friedlander, aia, ryan welch (project team)
development partners: autodesk; thinkstep (previously PE international)
project team: autodesk · jonathan rawe; thinkstep · heather gaddoniex, nick santero, maggie wildnauer special thanks: emma stewart, jacky liang structural engineer: nyc engineering · matt melnyk consultant: demilec fabricator: machinco life-cycle assessment: department of civil and environmental engineering, school of engineering, stanford university prototype: built at southern california institute of architecture (SCI-Arc), as part of the SCI-Arc Gallery Series drawings, renderings, and photography: courtesy Patrick Tighe architecture special thanks: SCI-Arc team

Spray-On House, page 132
Design Firm: patrick Tighe architecture, los angeles · patrick Tighe, FAIA, zachary teixeria, eveлина sausina, assoc. aia, risa tsutsumi, bran arlin (project team)
Vegas Altas Congress Center and Auditorium, page 134
Client: Junta de Extremadura
Design Firm: Pancorbo + de Villar + Chacón + Martín Robles, Madrid - Luis Pancorbo, Jose de Villar, Carlos Chacón, Inés Martín Robles (project team)
Drawings and Lighting Designer: Luis Pancorbo, Jose de Villar, Carlos Chacón, Inés Martín Robles
Structural Engineer: Mecanismo - Juan Rey, Pablo Vegas, Jacinto Ruiz Carmona
Electrical and Facilities Engineering: Urgulo Ingenieros - Rafael Urgulo, Sergio Rodriguez
Acoustics: Arau Acústica - Higini Arau
Models: Gilberto Ruiz
Construction: Placonsa - Eloy Montero; Julio Oreja (site manager)
Ropes Installation: Cotesa; Lastra & Zorrilla
Funding: Junta de Extremadura
Cost: €10,505,187 ($11.7 million, approx.)
Photography: Jesús Granada (building); Ignacio Bisbal Grandal (model)

Nanobiome Building Skin, page 136
Design Firm: Michael K Chen Architecture (MKCA), New York - Michael Chen, Justin Snider, Alan Tansey, Natasha Harper, Ele Chinn, Breden Caldwell, AIA, Julian Anderson, AIA (project team)
Drawings: MKCA
Landscape Architect: Local Office Landscape Architecture - Walter Meyer, Jennifer Bolstad, AIA, Jenny Hindelang
Conservation Consultant: State University of New York College of Environmental Science and Forestry, Department of Environmental and Forest Biology
Danilo Fernando (associate professor and graduate program director)
Façade and Structural Engineer: Buro Happold
General Contractor: IA Construction Management
Manufacturer: Boston Valley Terra Cotta
Photography: MKCA

Infundibuliforms: Kinetic Tensile Surface Environments, page 138
Design Firms: Matter Design, Boston - RVTR, Ann Arbor, Mich., and Toronto - University of Michigan
Primary Investigators: Wes McGee, Geoffrey Thün, Kathy Velikov
Design Research Associate: Daniel Tish
Fabrication Assistants: Asa Peller, Dustin Brugman, Andrew Kremers, Andrew Wald, Iram Moreno Pinon
Wireless Sensing Adviser: Jerome Lynch
Technical Partners: Buckeye Polymers; Industrial Fabricating Systems; Beckhoff
Funding: Taubman College of Architecture and Urban Planning; 2016 Research Through Making Program; University of Michigan Office of Research; Small Projects Grant
Photography: Peter Smith

Timber Waste Modular Unit (“TwMU”), page 140
Design Firm and Fabricator: IKD, Boston - Yugon Kim, Tomomi Itakura (leaders); Yuki Kawae, Steven Hien, Brendan Cassimir, David Morgan, Erin Kim, James Pan, Miguel Lorenzo Gumila (student research assistants)
Drawings: IKD
Funding: Heritage Museums & Gardens; Rhode Island School of Design
Photography: IKD
Special Thanks: Windy Hill Farm Sawmill

Grove, page 141
Client: Design Biennial Boston, Boston Society of Architects (BSA)
Design Firm and Fabricator: GLD Architecture, Brookline, Mass. - Joel Lamere, Cynthia Gunadi, Sophia Chesrow, Grigori Enikolopov, Zain Karsan, Dohyun Lee, Elizabeth Galvez (project team)
Drawings: GLD
Funding: Design Biennial Boston; GLD
Photography: Jane Messinger
Special Thanks: Rose F. Kennedy Greenway Conservancy, Boston Art Commission, Pinkcomma Gallery, BSA Space, Boston Mayor’s Office of New Urban Mechanics, David Cordero, Caitlin Mueller, Steven O. Anderson, John Skibo, Matt Wagers, Chris Dewart, Christopher Gunadi

Blooming Bamboo Home, page 142
Design Firm: H&P Architects, Hanoi, Vietnam - Doan Thanh Ha, Tran Ngoc Phuong, Chu Kim Thinh, Erimescu Patricia, Nguyen Van Manh, Nguyen Khanh Hoa, Nguyen Quynh Trang, Tran Quoc Thang, Pham Hong Son, Hoang Dinh Toan, Pham Quang Thang, Nguyen Hai Hue, Nguyen Khae Phuoc (project team)
Fabricator: H&P Architects
Photography: Doan Thanh Ha
Cost: $2,500
Special Thanks: Nguyen Tri Thanh