Located near Highway 43 in Wembley, Alberta, the Philip J. Currie Dinosaur Museum celebrates one of the world’s richest dinosaur-bone beds, Pipestone Creek. The prehistoric remains and the region’s hilly topography helped inform Toronto-based Teeple Architects’ design of the triangulated structure and its timber skeleton—a pivoted A-frame in which as many as six structural members can converge at one joint.

Tying those members together requires elaborate custom connections, for which the firm initially planned to use steel. Then it determined that laminating CNC-milled Douglas fir plywood would be less complex, expensive, and difficult to craft, says principal Stephen Teeple. Wood would also preserve the aesthetic of the building, which was constructed with beetle-kill pine timber.

Working with Vancouver, British Columbia–based engineering firm Fast + Epp, the architects used Rhinoceros to model and then deconstruct the nodes into manageable 2D pieces for milling. The largest nodes, at more than 59 inches tall and 94 inches wide, stack together approximately 180 plies.

Using the plug-in Grasshopper, Fast + Epp virtually inserted stainless steel screws, as long as 47 inches, through the modeled nodes as rebar. Similar to a strut-and-tie system, the screws allow the nodes to handle both compression and tension loads, which the firm confirmed through physical mock-ups.

The 3D models also helped Delta, British Columbia–based StructureCraft Builders ensure quality during fabrication. Six-inch-long wooden dowels were inserted into holes drilled into each ply, positioning it within the node stack. Screws were then drilled where the models indicated. “It was a natural flow from the model to production,” Teeple says.

“Even though it’s a simple project, it was quite innovative in terms of thinking about a joint,” juror Joyce Hwang said. Juror Steven Rainville liked that the firm also found a new use for waste material. “It’s showing the industry that you can change the paradigm.”—J.J.
French architect **Marc Fornes** is the principal and founder of TheVeryMany in New York, as well as a self-described connoisseur of computer science. His work focuses on investigating design through codes and computational protocols. He received a master of architecture and urbanism from the Architectural Association School of Architecture in London.

**Joyce Hwang, AIA**, is an associate professor of architecture at the University at Buffalo, the State University of New York, and the director of Arts of the Prairie, a research and practice firm in Buffalo, N.Y., that confronts contemporary ecological conditions through creative means. She received an M.Arch. from Princeton University and a B.Arch. from Cornell University.

**Steven Rainville, AIA**, is a principal at Seattle-based Olson Kundig Architects, which he joined in 1996. He is also the director of the firm’s R&D department as well as the founder of Mind Mine, the firm’s forum for crowd-sourced ideas that break down boundaries between industries. He received his B.Arch from Washington State University.

**Pulp Pavilion, page 104**

*Client*: Coachella Valley Music and Arts Festival

*Design Firm and Fabricator*: Ball-Nogues Studio, Los Angeles; Gaston Nogues, Benjamin Ball, ASSOC. AIA (project leads/designers); Rafael Sampaio Rocha (project manager); Ricardo Garcia, John Gunn, Fernando Marroquin, Rafael Sampaio Rocha, Forster Rudolph, Corie Saxman, Nicole Semenova, Ethan Schwartz (onsite project team); Andrew Fastman, AIA, Michael Anthony Fontana, Cory Hill, James Jones, Mora Nabi, Jacob Patapoff, Allison Porterfield (support)

*Lighting Programming*: F. Myles Sciutto

*Structural Engineer*: Nous Engineering

*Omar Garza*

*Funding*: Commission from Goldenvoice

**Size**: 1,300 square feet

**Pure Tension Pavilion, page 108**

*Client*: Volvo Car Italia

*Design Firm*: Synthesis Design + Architecture, Los Angeles; Alvin Huang, AIA (principal); Filipa Valente, Chia-ching Yang, Behnaz Farahi, Yueming Zhou

*Structural Engineer*: BuroHappold Engineering

*Electrical Engineer*: Ascent Solar

**Bar Raval, page 110**

*Client*: Grant van Gameren, Mike Webster, and Robin Goodfellow

*Design Firm*: Partisans, Toronto; Alexander Josephson, Pooya Baktash, Jonathan Friedman, INTL. ASSOC. AIA, Ivan Vasylyv, Ariel Cooke

*Consultant and Fabricator*: Millworks Custom Manufacturing

*Special Thanks*: Klaudiusz Kociolek, Gregory Rybak, Nick Savage, CNC Software/Mastercam

**Size**: 1,100 square feet

**Co-Robotics and Construction, page 112**

*Design Firm*: Rust Belt Robotics Group, University at Buffalo, State University of New York (SUNY)

*OSCR-1 and OSCR-2 Team*: Ball State University; Mike Silver, Mahesh Daas, Josh Vermillion (faculty); Yevgen Monakhov, Jason Foley, Matthew Fullenkamp, ASSOC. AIA; William Zyek, Justin Krase, Michael Bolatto, Tyler Cox, ASSOC. AIA, Glenn Cramer, ASSOC. AIA, Robert Cichocki, Antone Sgro, Derek Anger, Tianxia Feng, Derek Newman, David Smith, Yao Xiao, Matthew Wolak, Thomas Friddle (students)

**Size**: 302,000 square feet

**Queen Richmond Centre West, page 113**

*Client and Funding*: Allied Properties REIT

*Design Firm*: Sweeney & Co Architects, Toronto

*Structural Engineer*: Stephenson Engineering

*Fabricators*: Cast Connex, Walters Group

*Construction Management*: Eastern Construction

*Technical Design*: Fast + Epp

*Mechanical Engineer and Lighting Designer*: Mulvey & Banani International

*Mechanical Engineer*: The Mitchell Partnership

*Special Thanks*: Michael Emary, Hugh Clark, John Stephenson, Jeffrey Stephenson, Carlos de Oliveira, Frank DeCaria, Renato Tacconelli, Tim Verhey

**Size**: 302,000 square feet

**Radical Railbanking, page 114**

*Design Team*: Master of None, Ann Arbor, Mich.; - McLain Clutter (project adviser); Seheek Kim (student research assistant)

*Funding*: University of Michigan Office of Research, funding for Artistic Productions and Performances, 2011; University of Michigan Taubman College of Architecture and Urban Planning

**Special Thanks*: Syracuse University School of Architecture - Mark Linder

**Bands, page 115**

*Client*: Samitaur Constructs; Frederick and Laurie Samitaur Smith

*Design Firm*: Eric Owen Moss Architects, Culver City, Calif.; - Eric Owen Moss, FAIA (architect); Dolan Daggett, Vanessa Jauregui, Nicholas Barger, Zarmine Nigohos, Sean Briski, Raul Garcia, Scott Nakao, Richard Yoo (project team)

*Structural Engineer*: Arup

**Size**: 183,000 square feet

**Philip J. Currie Dinosaur Museum, page 116**

*Client*: Philip J. Currie Dinosaur Museum

*Design Firm*: Teeple Architects, Toronto; Stephen Teeple, Martin Baron, Mark Baechler, Will Elsworth, Lang Cheng, Carla Pareja, Gloria Perez

*Architect of Record*: Architecture | Tkalcic Bengert

*Structural Engineer*: Fast + Epp

*Mechanical Engineer*: Hemisphere Engineering

*Electrical and Civil Engineer*: AECOM

*Exhibit Consultant*: Reichel Petach Landscape Architects; Scalfitt-Miller-Murray

*LEED Consultant*: Enemoval Engineering (now part of MMM Group)

*Contractor*: PCL Construction Management

*Fabricators*: StructureCraft Builders in collaboration with Fast + Epp

**Size**: 42,000 square feet

**Breathe Brick, page 117**

*Design Firm*: Both Landscape and Architecture, Charlottesville, Va.; - Carmen Trudell (primary investigator)

*Collaborators*: California Polytechnic State University, San Luis Obispo (Cal Poly); Tracy Thatcher (consultant); Natacha Schnider, Kate Hajash, Cameron Venancio, Justin Wragg, Jennifer Thompson, Michelle Kolb (student research assistants); Rensselaer Polytechnic Institute - Kaleri Knapp, Kyleen Hoover (student research assistants)

*Funding*: Cal Poly College of Architecture and Environmental Design’s Planning, Design and Construction Institute