

Standing TALL

This year's Steel Design Student Competition challenged students to design onward and upward, with a focus on tall buildings.

ELEVEN STUDENT DESIGN PROJECTS

have been honored in the 16th annual Steel Design Student Competition for the 2015–2016 academic year. Administered by the Association of Collegiate Schools of Architecture and sponsored by AISC, the competition encourages architecture students from across North America to explore the use of steel in structural design. A total of \$14,000 in cash prizes was awarded to the winning students and their faculty sponsors.

Students competed individually and in teams in two separate categories that required steel to be used as the primary structural material and with special emphasis placed on innovation in steel design. The Tall Buildings category challenged students to find alternative design approaches for tall buildings and create high-rise buildings inspired by the cultural, physical and environmental aspects of place while embracing new technologies. In the Open Category, students were given the flexibility to select a site and building program.

The jurors for the Tall Building category were: Antony Wood, Council on Tall Buildings & Urban Habitat; Jon Magnusson, Magnusson Klemencic; and Gail Borthwick, Gensler. The jurors for the Open Category were Doris Sung, University of Southern California; Lee-Su Huang, University of Florida; and Elizabeth O'Donnell, The Cooper Union.

Two hundred and forty projects from 745 students were entered in this year's competition, and 78 faculty members served as student advisers. In total, 44 universities from across North America took part. To learn more about the competition, as well as view more images of each project, visit www.aisc.org/studentdesign. Here are this year's winners.

WINNERS – Category I – Tall Buildings



"This winning submission is programmatically ambitious, but believable and extremely well resolved."

▲ First Place: VERTICALI

Student: Mario Ramos

Faculty Sponsor: Peter Stapleton Raab

School: Texas Tech University

VertiCali is a beacon of edible light, exposing its green contents to promote local food growth, healthy lifestyles and sustainable communities. It vegetates the urban core and connects downtown Los Angeles and East L.A. by creating a central food hub in the Arts District. Steel's strength allows outward undulation in the tower form to maximize solar exposure, and the trusses use a rigid frame system to isolate the lower structure from the surrounding ground while allowing an expressive and playful surface for the community gardens and elevated landscape over the rail lines that require a minimum clearance.

▼ **Second Place: DIAGROUP TOWER**

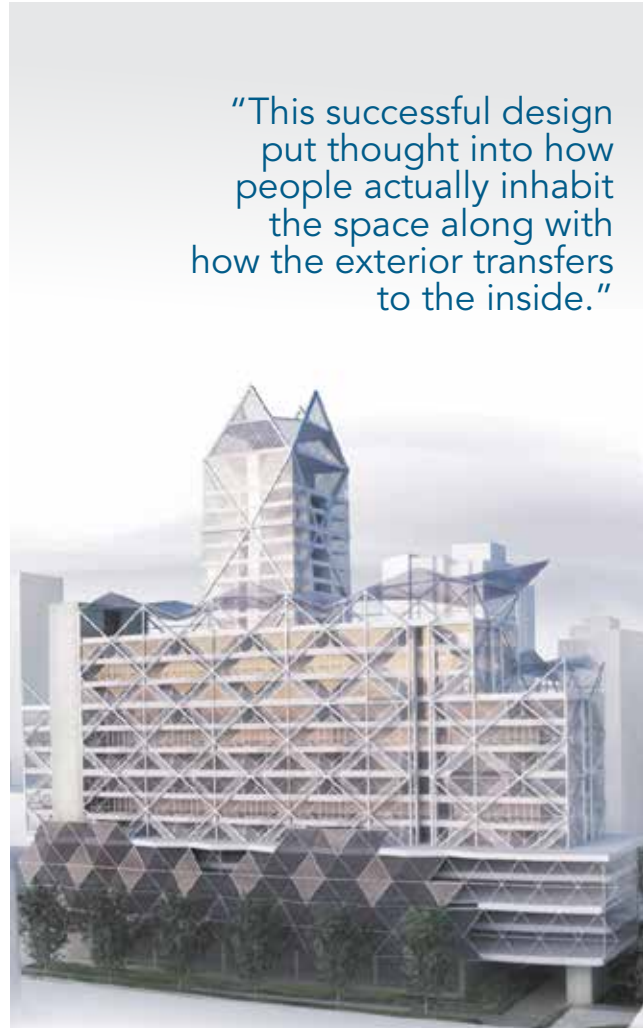
Students: Scott Proudfoot, Mengdie Zhang,
Sarah Donaldson and Gabriela Chorobik

Faculty Sponsor: Terri Meyer Boake

School: University of Waterloo

Diagroup Tower brings a diverse mixed-use program to Toronto's housing projects district, with the goal of upgrading former low-income housing into a denser and more diverse neighborhood. A courtyard typology was selected to mirror the rhythm of the existing townhouses' public and semi-public spaces while still increasing density, and the rotating tower form is a nod to the maelstrom of growth Toronto is currently experiencing. The project employs a whole-site thermal circulation system in which cool water begins its journey hundreds of feet below street level in geothermal exchange wells that tap into nearby Lake Ontario. The podium acts as a thermal reservoir, with a methane-fueled cogeneration plan augmenting winter heating.

"This persuasive project came directly off the drawing board and is ready to be built. This building could only be built with structural steel."



"This successful design put thought into how people actually inhabit the space along with how the exterior transfers to the inside."

▲ **Third Place: TESSELLATE**

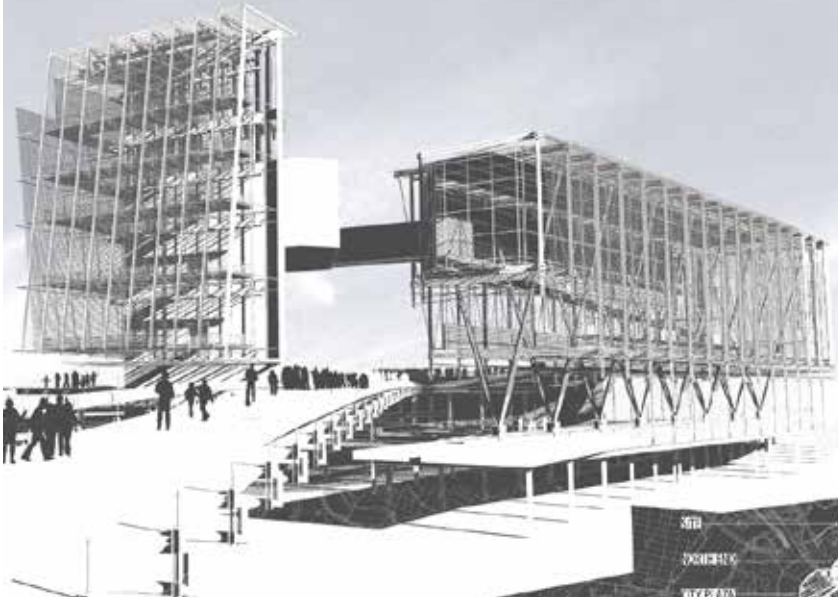
Student: Megan Stenftenagel

Faculty Sponsor: Robert J. Koester

School: Ball State University

Vancouver's Cultural and Linguistic Living-Learning Community brings social groups together in interdependence to celebrate the city's diversity. The project challenges the separation of different social groups with the concept of a tessellation, in which each independent part, brought together in an artful composition, makes the whole more complete. The building can accommodate approximately 500 students from around the globe, and a central atrium opens the ground level for public interaction with an art gallery to showcase student work. Outside the atrium, an open plaza, covered seating and park area enable food truck vendors and artisans to gather, promoting visitors and residents to further explore the art of different cultural groups.

“The steel design shows a hierarchy of structure with a large variety of details and a rich attitude.”



◀ **First Place: JUNCTURE**

Students: John Berger,
Sasha Francoeur

Faculty Sponsor: Robert Gillig

School: Boston Architectural College

This project activates underused waterfront airspace in Boston by extending a bridge across Commercial Street and into the North End. Through a series of steel acrobatics, three tectonically layered display spaces elevate themselves above the groundscape. As visitors rise up from the city via a steel pedestrian bridge, they are greeted with three layers of intervention: a column grid to reduce disturbance, a floated groundscape to activate the waterfront for the public and a diverse array of public display spaces clad in elegant steel systems composed of nuanced tectonic assemblies.

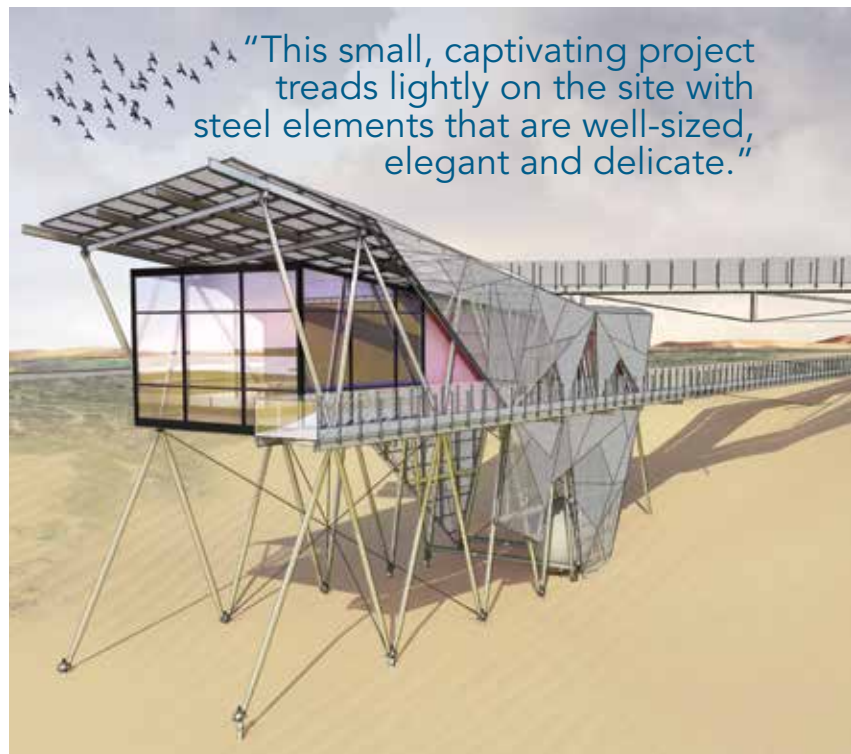
▶ **Second Place: THE NEST –
Guadalupe Nipomo Dunes Wildlife
Refuge Interpretive Center**

Student: Edern Audrain

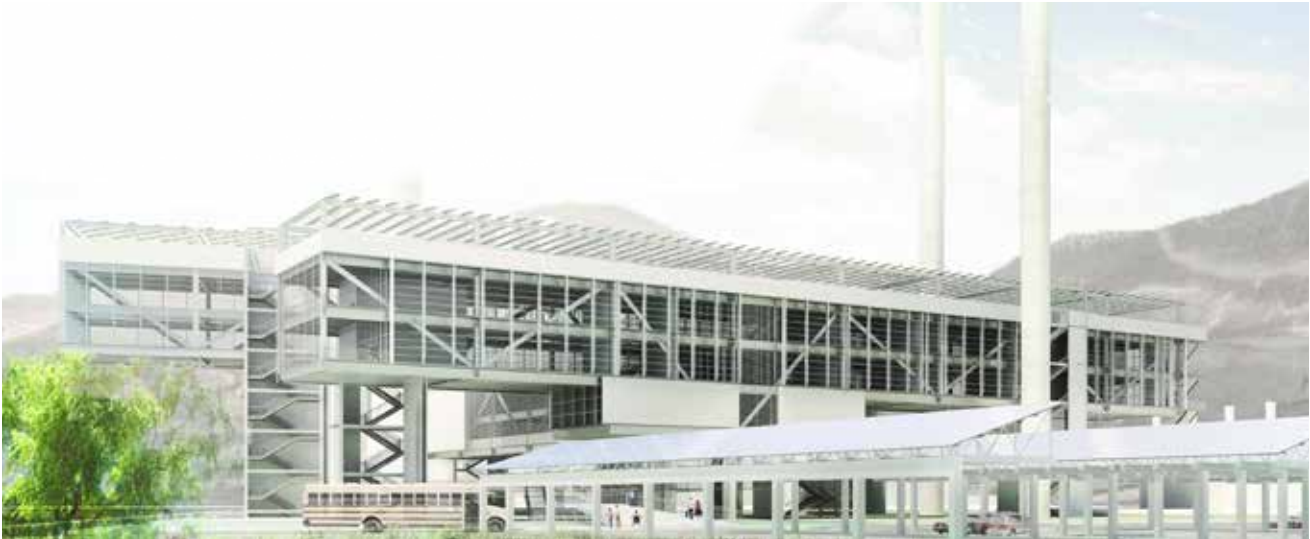
Faculty Sponsor: Jonathan Reich

School: California Polytechnic State University

The Guadalupe Nipomo Dunes Interpretive Center provides basic visitor information and facilities at the entrance to the dunes, as well as visitor access by means of a controlled walkway into the dunes that will not interfere with the seasonal sensitivities of the flora and fauna there. Intended to take advantage of the mild and very constant temperatures there, the building is equipped with triple-glazing and extra insulation and mainly serves to protect users from the wind and wind-driven sand. Steel was chosen for its efficient strength-to-weight ratio and its ability to minimize the on-site construction impact through carefully designed parts that can be installed piece by piece. Steel is also employed as the exterior cladding's sun/rain/sand screen and for the many building specialty elements (railings, fittings, etc.).



“This small, captivating project treads lightly on the site with steel elements that are well-sized, elegant and delicate.”



WINNERS – Category II – Open

“This ambitious project’s strength is in the articulation of a programmatic idea while using the delicate steel architecture design to stimulate the remediation of brownfields.”

▲ **Third Place: Productive | Accessible | Ecofriendly – BROWNFIELD REMEDIATION RESEARCH PARK**

Student: Jesus J. Alfonso Pagan

Faculty Sponsors: Luis Ayala-Rubio, Alberto Dueño Jordán, Jesús O. García Beauchamp, Carlos Quiñones-Maymí and Luis Alonso Conty

School: Pontifical Universidad Católica de Puerto Rico

The former PR#127 Industrial Park in Guayanilla and Peñuelas, Puerto Rico, hit its heyday the 1950s and 1960s but has since fallen into decay, with portions being dismantled and removed. As a symbol of the transformation from pollutant to purifier, the new facility for the Brownfield Remediation Research Park renders the silhouette of an inverted industrial archetype through long-span steel structures, all the while integrating itself into the industrial landscape through its high-tech aesthetic and the use of steel as the main structural material. This includes open-web girders that span from 80 ft to 120 ft, vertical and horizontal sunscreens, vertical trusses for curtain wall support and exterior steel grating elevated pathways that allow vegetation to grow below.

HONORABLE MENTIONS – Category I – Tall Buildings

VOIDED TOWER

Students: Janusz Ziobrowski, Karolina Rachwal and Yiwen Wu

Faculty Sponsor:

Kevin Stevens

School: University of Tennessee-Knoxville



HONORABLE MENTIONS – Category II – Open



INNOVATION INITIATION
within the Raymond
Creative Enterprise Zone

Student: Bridget Geissler

Faculty Sponsor: Nat Madson

School: University of Minnesota

IM//PORT L.A.

**Tri-Commerce Epicenter
for Los Angeles**

Students: Michael Chin and Alexander Kim

Faculty Sponsor:

Gerard Smulevich

School:

Woodbury
University



▲ **CREATURE**

Student: Xiaoyin Xie

Faculty Sponsor: Thomas Fowler

School: California Polytechnic State University

▼ **UNEARTH ARCHAEOLOGY RESEARCH CENTER**

Students: Trent Harrison and Andrew Lopez

Faculty Sponsor: Kevin J. Singh

School: Louisiana Tech University

