PRESS RELEASE

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Snail-Inspired Design Wins Biomimicry Student Design Challenge

Using the desert snail as inspiration for their design, a team of students from the Art Institute of Isfahan in Iran took the top honor in the third annual Biomimicry Student Design Challenge, organized by the Biomimicry 3.8 Institute. The team, consisting of master's level and undergraduate students in architecture and business, conceived of a building that makes use of self-shading, surface reflection, and insulation to create a livable habitat rather than relying on air conditioning.

"The students from Isfahan created my favorite visual. When I look at this building, I want to see it in real life—want to visit it, spend a noon, night, and early morning in it—I can almost feel its shade and cool breeze," said Janine Benyus, Biomimicry 3.8 Institute co-founder and design challenge judge. "While being completely modern in its sensibility, it is also incredibly 'fitting' to its place. I can give this form the highest compliment by saying that it looks like it belongs in the desert. And indeed, it does, given that its inspiration comes from an ancient organism."

"The team from Isfahan showed what is possible when we look to nature as a source of good ideas rather than a warehouse of goods," said Megan Schuknecht, director of university education at the Biomimicry 3.8 Institute. "In this case, the students found inspiration from the desert snail, which has learned not just how to survive but to thrive in an arid, hot climate. Their snail-inspired building design is functional, beautiful, and energy-efficient, and has the potential for great impact in their home country."

The team from the Art Institute of Isfahan will receive $5,000 for their first place design. They acknowledged their win with the following statement: "Winning this design challenge is overwhelmingly exciting. Biomimicry took our notion of nature to a higher level and structured our point of view and let us understand how to learn from nature in the path of design. We will surely look to it as a major resource of learning and designing."

Biomimicry 3.8 Institute staff and a panel of designers, scientists, engineers, and business leaders judged the design challenge proposals according to their understanding and application of biomimicry, solution creativity, potential for impact, presentation quality, team collaboration, and Life's Principles (design lessons from nature).

Abstracts from every design proposal that was submitted are available on www.biomimicrydesignchallenge.com.

"It has been a wonderful experience to see these young minds, informed and inspired by nature's multi-billion year old textbook, bring their innate intelligence, creativity, and exuberance to this competition," said Peter Boyer, artist and design challenge judge.

The second place award of $1,500 went to a team from the University of Latvia for a sunlight-induced shading system that mimics how flowers and stomata open and close. The

third place prize of $750 went to a team from the KTH Royal Institute of Technology in Stockholm, Sweden. They designed click-on facade panels that can insulate existing buildings using snow.

Also, a team from the Oslo and Akershus University College of Applied Sciences was awarded an Autodesk Sustainability Workshop Award of $500 for their use of videos and related resources on the Autodesk Sustainability Workshop website to minimize the environmental impact of their design, which was an energy-saving hand-drying device. The winning entry from the Art University of Isfahan also used Autodesk software, conducting thermal analyses on their design using Ecotect Analysis.

The design competition launched in September 2011 and attracted 50 entries from teams located in 14 US states and 10 countries. In addition to Iran, international entries came from Canada, India, Norway, Sweden, Latvia, Italy, the United Kingdom, and Turkey.

The challenge guidelines stated that biomimicry must be used to design a solution that results in more efficient energy utilization and ultimately reduces greenhouse gas emissions, ideally in the students' local environment. The main criteria were that the solution must be biomimetic and feasible, and the teams must evaluate their designs using Life's Principles. Students were also highly encouraged to work in interdisciplinary teams.

"We wanted students from different academic backgrounds to work together because biomimicry takes an interdisciplinary approach to innovative, sustainable design. Biologists can explain how organisms employ specific survival strategies, but other disciplines, such as chemists, engineers, designers, architects, and business leaders are critical to moving the biological strategy from concept to research to development to marketing. That collaborative experience is invaluable for students who want to practice biomimicry in the workplace," said Schuknecht.

The Biomimicry Student Design Challenge received funding from the Merck Family Fund and Autodesk.

The Biomimicry 3.8 Institute is a not-for-profit organization founded in 2006 to promote the study and imitation of nature's remarkably efficient designs, and to bring together teachers, students, scientists, engineers, architects, and innovators who can use natural models to create sustainable technologies. The Biomimicry 3.8 Institute promotes learning from and then emulating natural forms, processes, and ecosystems to create more sustainable and healthier human technologies and designs.

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