

AA Visiting School at the
California College of the Arts
San Francisco

12–21 July 2010

BIODYNAMIC STRUCTURES



**AA SAN FRANCISCO
GLOBAL SCHOOL
BIODYNAMIC STRUCTURES**
Monday 12 – Wednesday 21 July 2010

Biodynamics is the study of the force and energy of dynamic processes on living organisms. Through simple mechanisms embedded within the material logic of natural systems, specific stimuli can activate a particular response. This response occurs in carnivorous plants such as the Venus fly-trap, which uses turgor pressure to trap small insects in order to feed, and worms, which by contracting differently oriented muscles, achieve movement.

This 10-day intensive workshop, co-taught by the faculty of the Emergent Technologies and Design Programme at the AA and the Faculty of Architecture and MEDIAlab at California College of the Arts, will explore active systems in nature, investigating biomimetic principles in order to design and fabricate a prototype that responds to environmental stimuli.

Students will work in teams to research specific biological systems, extracting logics of organisation, geometry, structure and mathematics. Advanced analysis tools will be introduced in order to apply this information to the design of both passive and

active responsive architectural systems. The application of robotics, sensors and actuators will be employed for the activation of the material system investigation.

Students will have full access to the CCA's Digital Fabrication Lab to test computational models. At the conclusion of the workshop, each team will prototype an active system through parametric and associative modelling that performs structurally and successfully responds to at least one environmental stimulus.

The workshop is directed by Michael Weinstock; with workshop tutors Christina Doumptoti, Evan Greenberg and Konstantinos Karatzas from the AA's EmTech programme and Jason K Johnson and Andrew Kudless from the CCA. Invited lecturers and critics include George Jeronimidis, Lisa Iwamoto and Craig Scott.

CCA San Francisco is the hub for design innovation and experimental architecture in the Bay Area. Its downtown campus is located in a 120m-long former bus depot and is home to a world-class fabrication and digital design facility adjacent to its studio spaces. The facility includes a CNC routing lab, industrial laser-cutters, 3D printer, extensive metal and wood shops; as well as labs dedicated to textiles, electronics, visualisation and programming.

Applications

The early deadline for applications is 11 June 2010. The late deadline (£50 surcharge) is 30 June 2010. Application forms and additional information are available online at: www.aaschool.ac.uk/sanfrancisco and applications can be submitted to: visitingsschool@aaschool.ac.uk

Eligibility

The workshop is open to current architecture and engineering students at both undergraduate and graduate level, recent graduates, and others from design-oriented fields interested in the study and implementation of natural biological systems into architecture. All applicants should also submit a CV.

Software Requirements

All students are required to supply their own laptops with the following software:

- Adobe Creative Suite
- Rhino (SR5 or later)
- Grasshopper (build 0.6.0057) www.grasshopper3d.com
- Firefly www.liftarchitects.com/journal/2010/3/11/firefly-beta-release.html
- Arduino www.arduino.cc
- Arduino Starter Kit www.aaroneiche.com/2009/06/29/arduino-starter-rundown

Accommodation & Costs

Accommodation during the workshop is not provided, but a limited number of rooms at a nearby affordable hotel have been reserved. The AA Global School requires a fee of £500 per participant (£550 for late applicants) which includes a £50 Visiting Student Membership, made payable to the AA School of Architecture. Fees do not include flights or accommodation.

More Information

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