NATURE PRINT®

IMMERSIVE ENVIRONMENTS for the discovery, synthesis and commercialization of (SECRET & INVISIBLE SCENTS, Tokyo)

Instructor: PETER TESTA

NATURE PRINT®, a molecular technology used by the burgeoning perfume industry to extract and reconstruct the delicacy and complexity of fragrant sources in nature offers both a metaphor and technique for this semesters’ design studio. While nature itself is increasingly engineered Architecture understood as a synthetic activity continues to find inspiration in natural processes. With the breakdown of complex ecologies and consequent increasing value attributed to organic materials, the preservation and development of new biotopes is a pressing reality. In a global context of climate change and environmental degradation the program for the manufacture and consumption of exotic scents may appear superfluous yet the studio proposes that the $20B a year perfume industry offers an intriguing real-world platform for an ecosystems approach to architecture. The challenge is to merge science and natural phenomena to create new levels of environmental performance and multi-sensory experiences without leading to a naturalistic reduction.

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OUTLINE PROJECT BRIEF

Two related projects will be sequentially developed during the semester:

**Project One:** “SECRET & INVISIBLE” PAVILION

The concept design for a temporary pavilion will introduce aesthetic potentials, material properties and environmental phenomena that may be extracted and reapplied to the larger semester’s project. The Pavilion will include biotopes, growing and extraction chambers, as well as intimate spaces for personalization of scents. Projects will focus on envelope morphologies in response to shifting parameters of heat, light, moisture, sound and the structural properties of materials with an over arching goal of approaching the envelope as a series of air conditions.

**Project Two:** IMMERSIVE ENVIRONMENTS

The project brief calls for nested environments and biotopes equivalent in size to an eight story structure on a dense urban site in Tokyo. The program carries within it conflicting and contradictory drives including particular climatologic and sentient requirements for humans and non-humans. Growing chambers for plant materials require a range of light and humidity from desert to tropical rainforest, laboratory spaces requires clean room level control, while commercialization chambers are modulated to serve human needs without external contamination. Spaces for maintenance and preservation require total darkness and unpopulated temperatures. Like a hornets nest this complex organism provides the architect with a laboratory for new climate control techniques and buffers. Studio projects will rethink the mid-rise from the exterior membrane inwards to the mechanical and structural systems. Design research will focus on surface patterning and life supports folded into many successive envelops with particular attention to ambiance, environment, and atmosphere. The project is to be understood as an ecosystem, a complex assemblage of materials, networks, systems, and ecologies, all competing and influencing each other.

**Prerequisites:** 3D modeling skills and an interest in computational geometry, advanced materials, and engineering. The studio will support Rhino and Maya. Introductory tutorials using open source plug-ins and scripts will be offered during the semester. The use of a wide range of design techniques is encouraged across digital and analog processes and physical models.

INSTRUCTOR PROFILE

**PETER TESTA** is Principal of the Los Angeles based architecture and product design firm Testa & Weiser Inc., and Founding Director of the Emergent Design Group (EDG) at the Massachusetts Institute of Technology. Testa’s work is known for its synthesis of composite materials, computational geometry, and advanced engineering. He is internationally recognized for his ground breaking woven and composite structures including Carbon Tower (2002) and Strand (2007). His firm is collaborating with a wide range of companies in the global construction industry to develop next generation building systems and architecture. He is the recipient of numerous awards including the National Endowment for the Arts Design Arts Award. Prior to establishing his own firm he was Principal in Charge of several significant buildings and urban projects with the Pritzker Prize winning architect Álvaro Siza. He has held academic and research positions at Harvard University GSD, Columbia University GSAP, and the Massachusetts Institute of Technology. Since 2004 he has been a member of the Graduate Design Faculty at SCI-Arc. His work is exhibited at major museums and regularly featured in the international art and design press. Current exhibitions include “Skin & Bones: Parallel Practices in Fashion and Architecture at Somerset House Embankment Gallery in London, and the 2008 Beijing Architecture Biennale. The New York Times, BBC, and Times of London recently profiled his firm as an innovation leader redefining the art of building in the 21st century.

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