

*the challenge:*

Establish the New Jersey School of Architecture as a recognized national leader by 2008.

*the progress:*

NJSOA continues to be a leader in CAD design and has established the FABLAB to allow incorporation of CAM and rapid prototyping. Curriculum revisions are underway and a new degree program in industrial design, approved by the NJIT Board of Trustees, is awaiting state approval. The school's research program has been growing steadily – funding has doubled since 2000.



# excellence by design

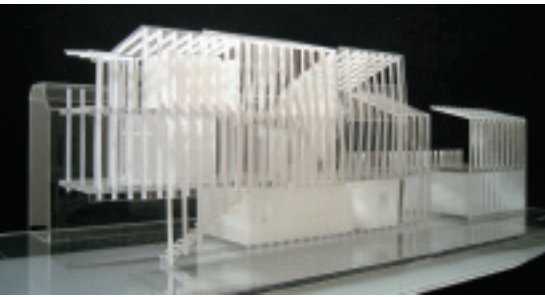
## Imagination Made Tangible

Aspiring designers at NJSOA are no longer limited to two dimensional expressions of their ideas on paper or on a computer screen. With the opening of the FABLAB, students can now translate designs into precise 3D prototypes, parts or models. The fabrication process allows them to study and evaluate their design intentions while learning to integrate their work more closely with that of the construction industry.

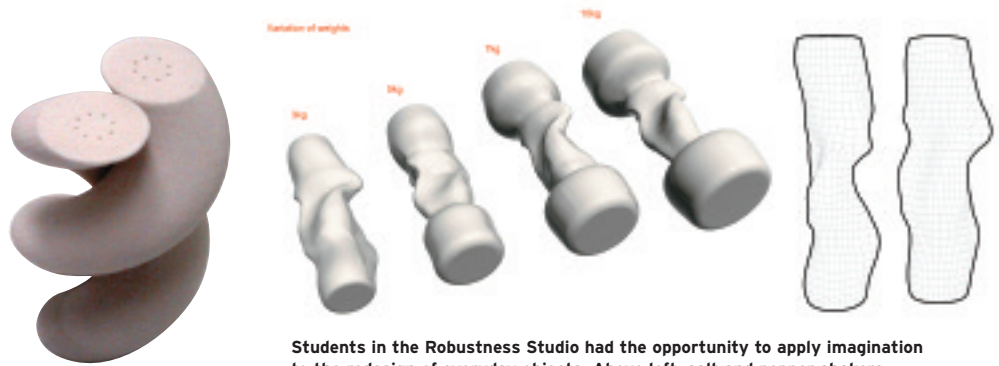
Under the direction of Assistant Professor Richard Garber (above), the FABLAB is equipped with a range of computer numerically controlled (CNC) hardware — laser cutters for acrylic and heavy paper, 3D printers that build objects from layers of plaster, and a CNC Router that can mill such materials as wood, foam and metals. These machines work in concert with special 3D design software

such as Autodesk Rev-It and Rhinoceros to convert digital designs into three-dimensional constructs. The systems will also support the school's planned degree program in industrial design, which will teach students to track from concept and design, through to manufacturing and the everyday use of products in a wide range of fields from medical products to office furnishing. Rapid prototyping of products or parts is a critical component of the program. It all comes together in Garber's Robustness Studio, where students get hands-on experience with the equipment while learning to study physical form and materiality as an extension of their digital work.

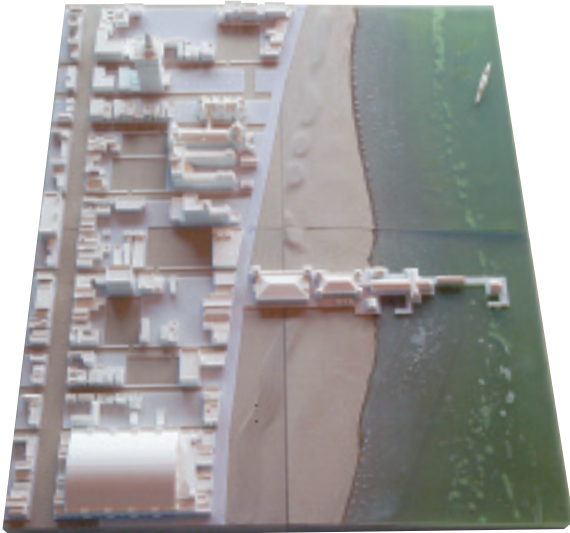
Above, Garber displays a detailed model made with the 3D printer.



Computer rendering and laser-cut acrylic model of a Bradley Beach home designed by Garber's firm, GRO (Garber Robertson Office), were selected for exhibition at the 2004 ACADIA Conference, "FABRICATION," which explored how computers and computer numerically controlled (CNC) hardware are changing architecture.



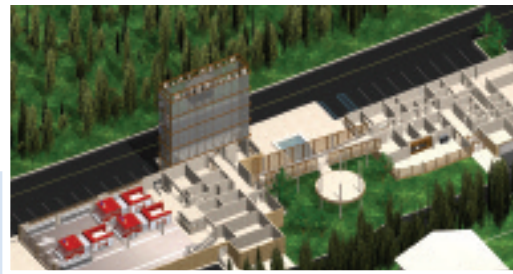
Students in the Robustness Studio had the opportunity to apply imagination to the redesign of everyday objects. Above left, salt and pepper shakers reconceived by Michelle Altamura '05, while (right) Daisy Kim '05 applied ergonomics to improve on hand weights.



Garber and students John Murphy '05 and Chris Chan '05 used the FABLAB's laser cutter, CNC Router and 3D printer to build a model of Atlantic City circa 1952 that was exhibited in Rotterdam this May at the 2nd International Architecture Biennale.

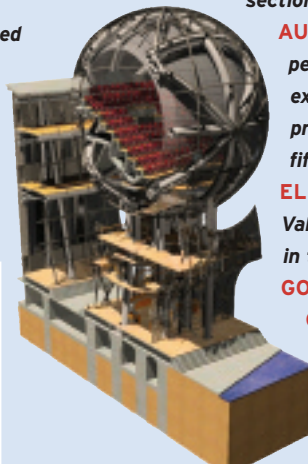


Students in Richard Garber's Robustness Studio worked as a team to design and build a display installation in the school's loft for the final exhibition of their studio projects. Above, John Palazzo presents his work for judges. The installation was designed using 3D software and built in the school's woodshop.



Students from the New Jersey School of Architecture once again took top honors for digital design in the student section of the building division of the 2004

**AUTODESK INNOVATION AWARDS** competition. Judging criteria included design excellence, innovation, and technical proficiency. First place award went to fifth year undergraduate student **ELLIOT GLASSMAN** for his proposed River Vale Public Safety Complex (above) created in the design studio of Professor **GLENN GOLDMAN**. Graduate student **HECTOR CAMPS** (left) won honorable mention for his project, a proposed addition to the Uffizi Gallery created in the design studio of Professor **M. STEPHEN ZDEPSKI**.



## In Other Projects

**STUDENTS IN NJIT'S MASTER'S PROGRAM IN INFRASTRUCTURE PLANNING** are helping Paterson officials to redesign and revitalize their city. Led by Professor **TONY SANTOS**, the team studied nine neighborhoods, looking at factors such as planning principles, design, transportation issues and how to bring an identity to the city (below). Their recommendations were presented to the Paterson City Council.

