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ARCHITECTURE

AMERICAN UNIV. OF SHARJAH

RE_CONSTRUCTING CURRICULUM:
HANDS-ON DESIGN-BUILD PEDAGOGY IN CONTEMPORARY ARCHITECTURAL EDUCATION

RE_CONSTRUCTING CURRICULUM EXAMINES THE LINK BETWEEN DESIGN AND MAKING IN CONTEMPORARY ARCHITECTURAL EDUCATION. ALTERNATIVE PEDAGOGICAL MODELS THAT PRIVILEGE FULL-SCALE, HANDS-ON DESIGN COMBINE NEW TOOLS AND TRADITIONAL CRAFT TO PROMOTE DIRECT ENGAGEMENT WITH THE EMPIRICAL LESSONS OF CONSTRUCTION TECHNOLOGY.

BOTH ANALOG (DESIGN-BUILD, FURNITURE DESIGN, ETC) AND DIGITAL (CNC EQUIPMENT, PROTOTYPING, AND 3D PRINTING) FABRICATION PROCESSES ARE CURRENTLY BEING EXPLOITED TO FUNDAMENTALLY ALTER THE NATURE OF LEARNING AND, ULTIMATELY, THE PROFESSION.

SPECIFIC EXAMPLES FOCUSED ON SIGNIFICANT ACADEMIC PROGRAMS IN THE UNITED STATES AND AWARD-WINNING, ACADEMIC DESIGN-BUILD PROJECTS LED BY FACULTY PROVIDE VISUAL STIMULUS AND ANIMATE THE TALK. THE PROJECTS LED BY AUS FACULTY INCLUDE STUDENT DESIGN-BUILD WORK THAT HAS WON STATE AND REGIONAL AIA AWARDS IN THE US AS WELL AS THE NEW DIGITAL FABRICATION LAB AT AUS AND THE STUDENT FURNITURE DESIGN PROJECTS THAT WERE RECENTLY EXHIBITED AT THE MILAN FURNITURE FAIR.

THE PEDAGOGY BEHIND THIS INITIATIVE SEEKS TO REUNITE THE CRAFT OF MAKING WITH THE ACT OF DESIGN/DRAWING SUCH THAT STUDENTS, (OUR FUTURE PRACTITIONERS), DEVELOP A FULL SET OF SKILLS IN PREPARATION FOR THE COMPLEXITIES OF THE CONTEMPORARY OFFICE AND JOB SITE.

COURSE DESCRIPTION

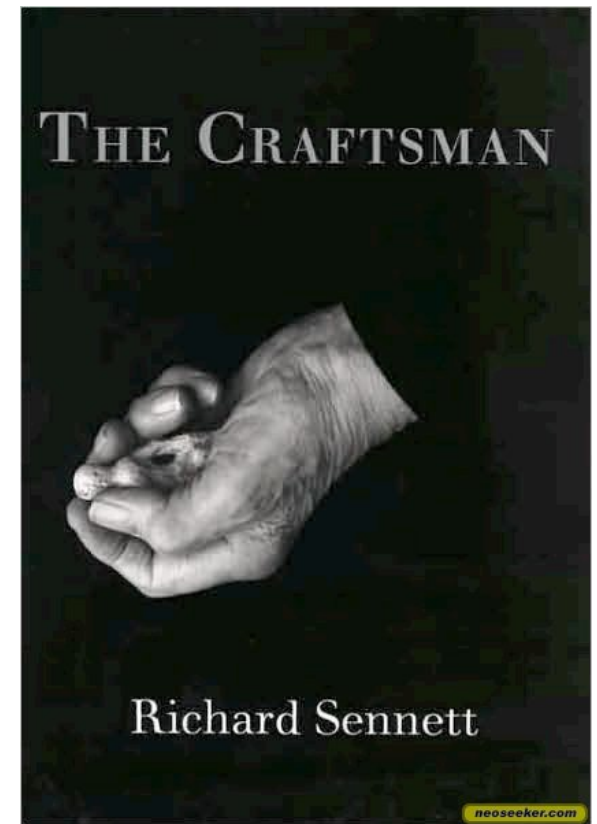
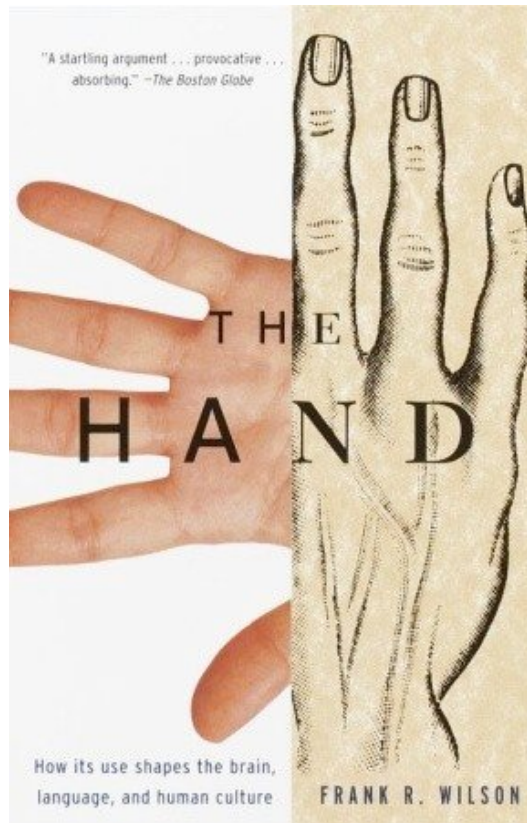
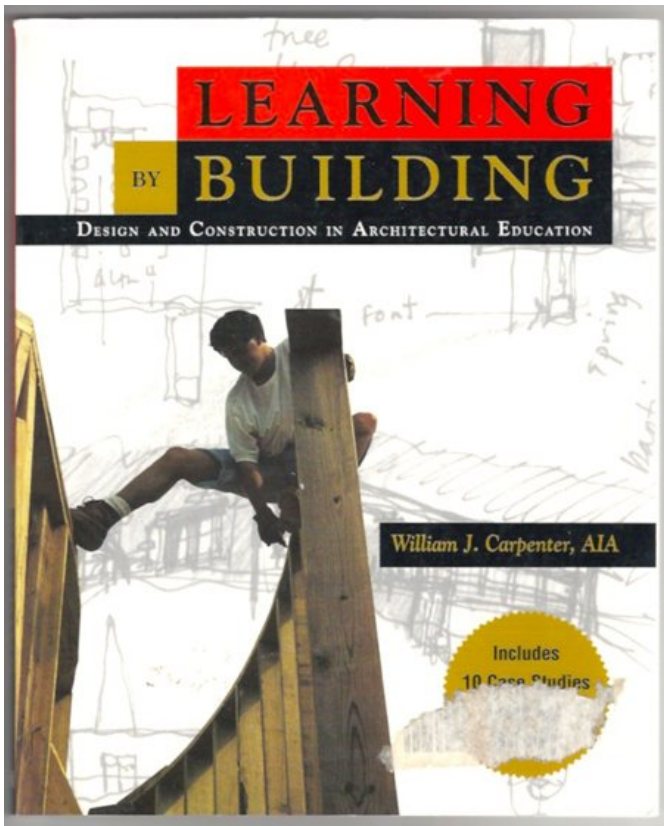
RE_CONSTRUCTING CURRICULUM



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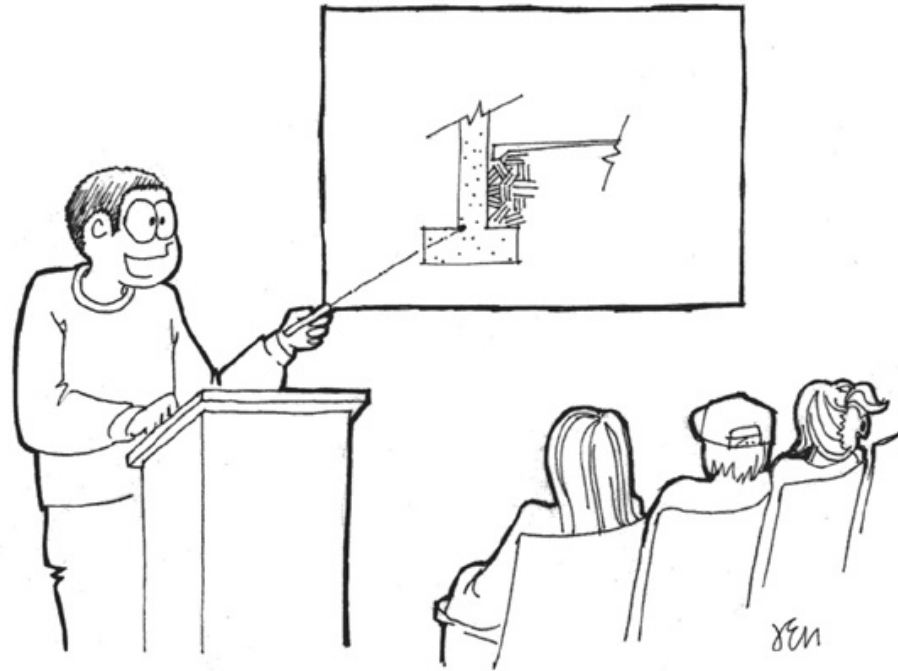
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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.”



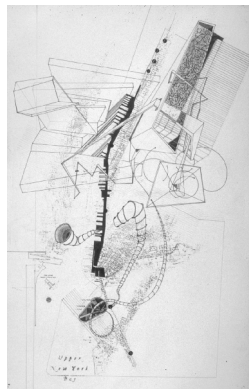
LEARNING OBJECTIVES

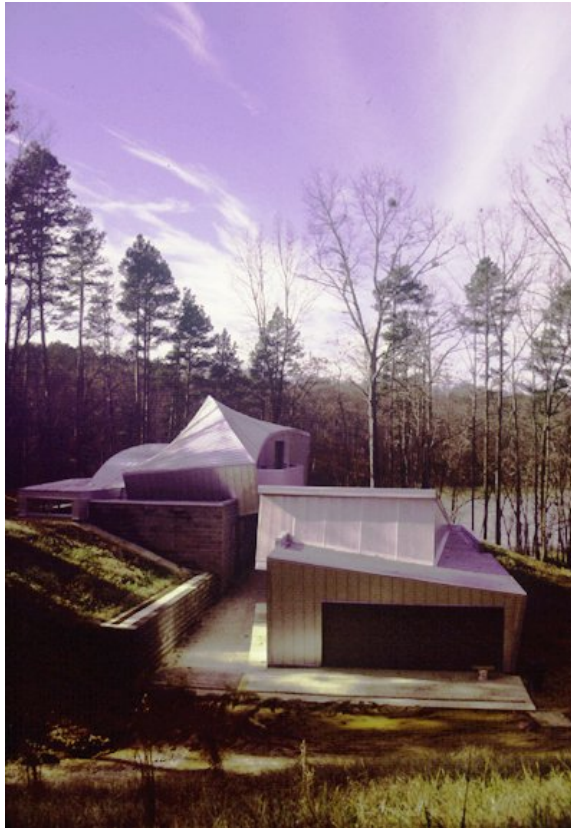
- O1: UNDERSTAND THE POTENTIAL IMPACT OF HANDS-ON LEARNING IN ACADEMIC PROGRAMS
- O2: IDENTIFY THE PEDAGOGICAL AND LOGISTICAL CHALLENGES ASSOCIATED WITH IMPLEMENTING HANDS-ON LEARNING
- O3: LEARN THE COMMON TOOLS, EQUIPMENT, AND RESOURCES REQUIRED FOR DESIGN-BUILD PROGRAMS THAT RELY ON ANALOG AND DIGITAL FABRICATION
- O4: APPRECIATE THE NEW SKILL SETS AND ABILITIES FAMILIAR TO MANY RECENT GRADUATES



ZZzzz..

TRADITIONAL
TECHNOLOGY COURSE





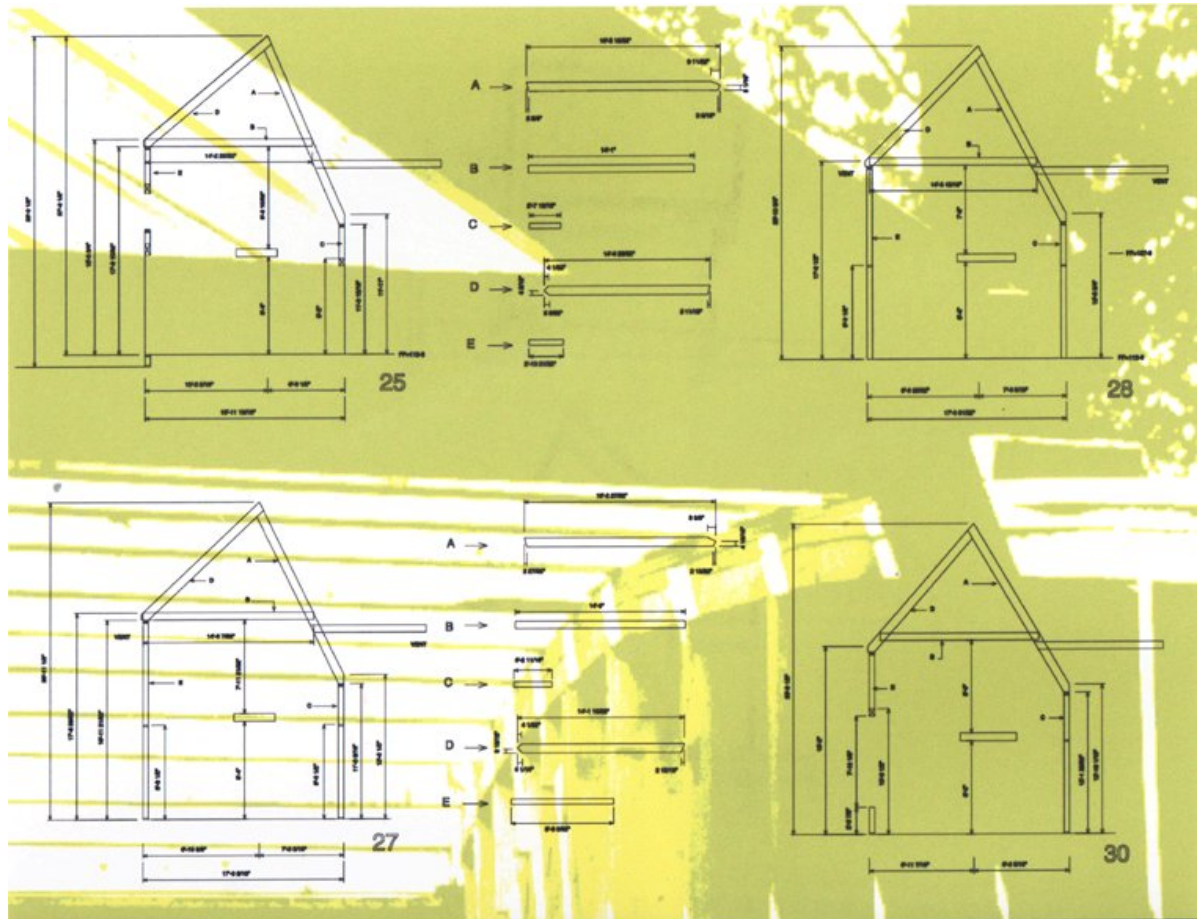
THE HOME
1995-1999

TOCCOA, GEORGIA



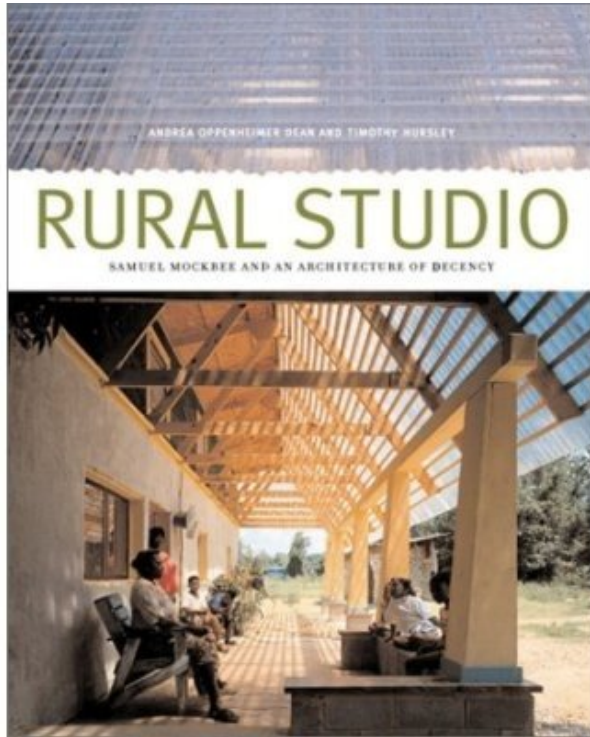
IMMERSIVE PRACTICE

CONTINGENT DEXTERITY, EXPERIMENTAL INTELLIGENCE, NON-LINEAR THINKING
COLLABORATIVE, INTER-DISCIPLINARY

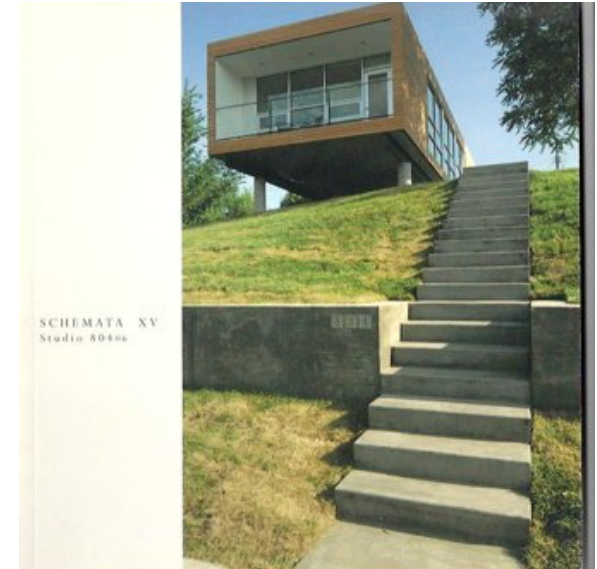
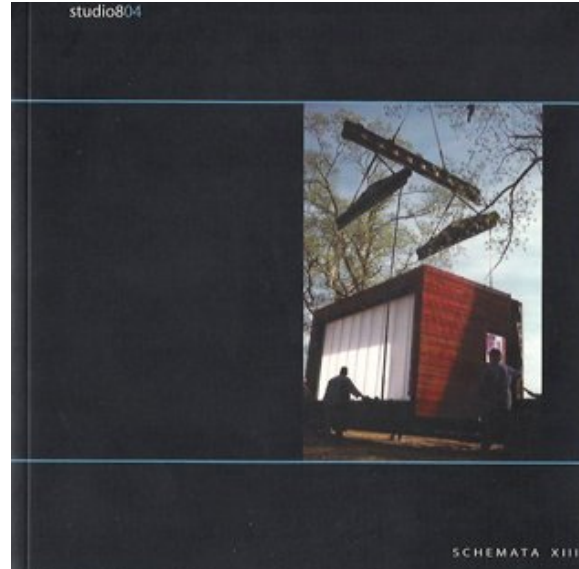
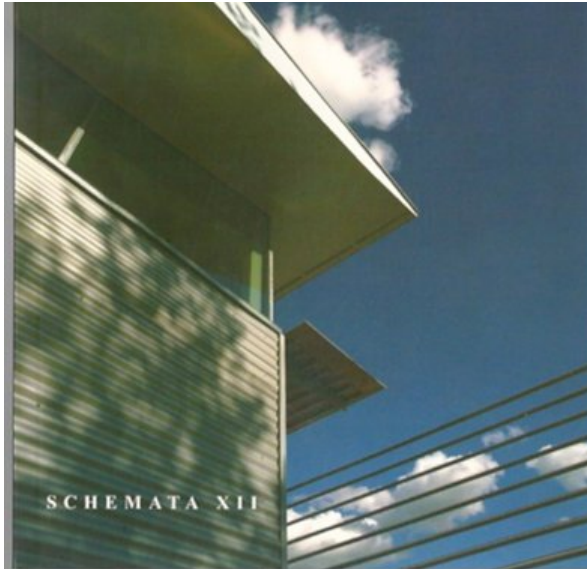


CONTINGENT
DETAILING





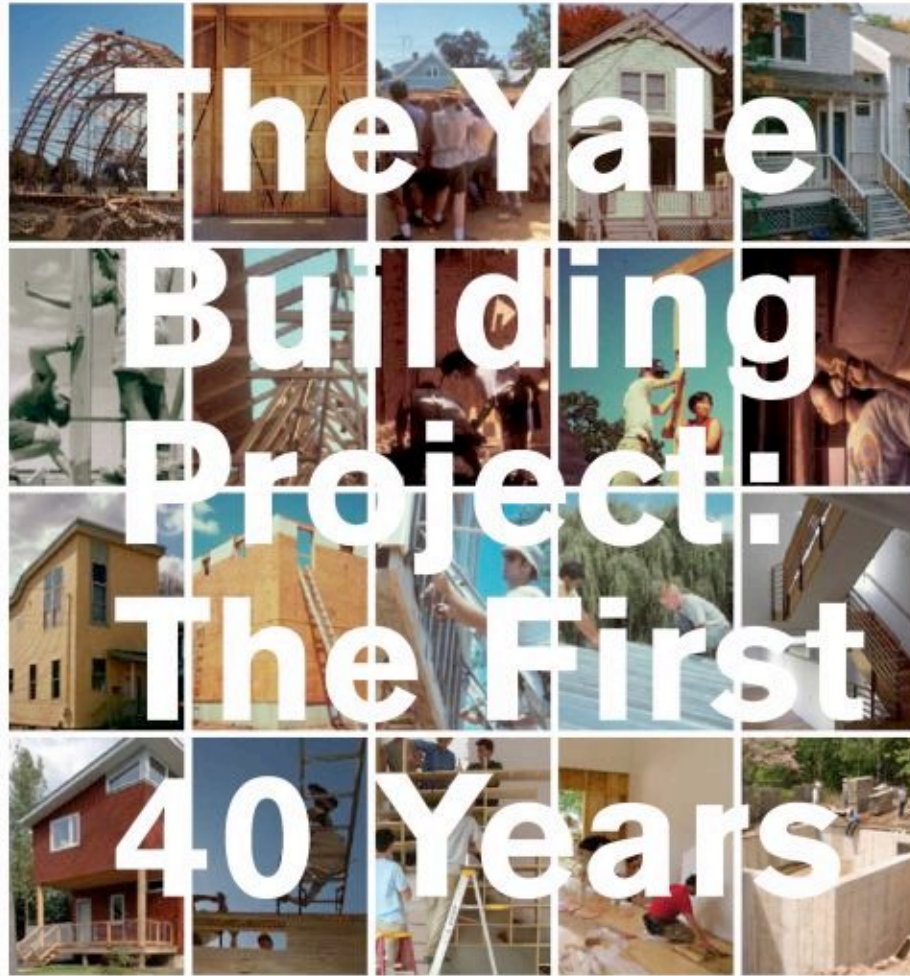
RURAL STUDIO
AUBURN UNIVERSITY



STUDIO 804
UNIV. OF KANSAS

"...19 students leave the fantasy world of traditional design studio to design and build their first real project".

Lindsey Erickson, Student



YALE BUILDING PROJECT

YALE 2008 BUILDING PROJECT

yale
school of
architecture

[home](#)

[sponsors](#) ▼

[design process](#) ▼

[past projects](#)

[photos](#) ▼

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CONSTRUCTION PROCESS





COLLEGIAL CRITIQUE

CRITIQUE= VOCATIONAL, ANTI-INTELLECTUAL, UN-CRITICAL, LINEAR, SERVICE VS. LEARNING, + SCRIPTED



INTEGRATED CURRICULUM

UNIVERSITY OF ARIZONA

1ST YEAR: INTRODUCTORY COURSEWORK

2ND YEAR: BUILDING TECH= MASONRY + WOOD MODULE

3RD YEAR: BUILDING TECH= STEEL MODULE

4TH YEAR: **DESIGN-BUILD ATELIER**
BUILDING TECH= CONCRETE ARCH

5TH YEAR: **DESIGN-BUILD ATELIER**
ETHICS + PRACTICE DETAIL

GRADUATE: EMERGING MATERIAL TECHNOLOGIES LAB

SEMINAR/SUPPORT COURSES: FURNITURE DESIGN



ATELIER FORMAT

UNIVERSITY OF ARIZONA

THE SUBJECT IS AFFORDABLE, LOW-E, LOW-WATER USE HOUSES. THE DESIGN HAPPENS THE YEAR BEFORE AND FACULTY WORK WITH SMALL GROUP OF STUDENTS WHO EITHER GET PAID TO DEVELOP DESIGNS AND DRAW CDS OR GET CREDIT.

PERMITS HAPPEN DURING THE SUMMER (THIS IS THE IDEALIZED DESCRIPTION, MIND YOU) AND THE CONSTRUCTION BEGINS IN THE FALL SEMESTER WITH THE FIFTH YEAR CLASS. STUDENTS FILL IN ALL THE GENERIC DETAILS IN THE SET WITH THEIR OWN DESIGNS. THEY PUT A LOT OF WORK INTO THRESHOLDS - DOORS, WINDOWS AND SLIDING WALL PANELS, ETC. ALSO THEY DESIGN AND BEGIN TO FABRICATE CABINETS, CONCRETE COUNTERTOPS, AND OTHER BUILT-INS.

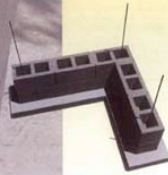
THE SPRING SEMESTER TAKES A FOURTH YEAR STUDIO THROUGH THE COMPLETION OF THE HOUSE. THEY HAVE FINISH WORK DESIGN - HOW FINISH MATERIALS COME TOGETHER AND HOW JOINTS ARE EXPRESSED. THEY ALSO DESIGN AND IMPLEMENT THE LANDSCAPE ELEMENTS.

Adding Courses

Each successive course alternated in pattern from the one below it. The same rules and concerns that we established for the first course remained consistent as we worked upwards.



The trickiest part about this project was getting the mortar to stick to the vertical ends of each block. Just when we thought we were ready to place another brick the mortar on one side would tend to flop right off.



Page 7

Placing the anchor bolts

We poured concrete to fill in the top course of the wall, permanently securing anchor bolts. these bolts are used to attach the sill plate to the wall.



Whoa, I hope that bolt is straight.



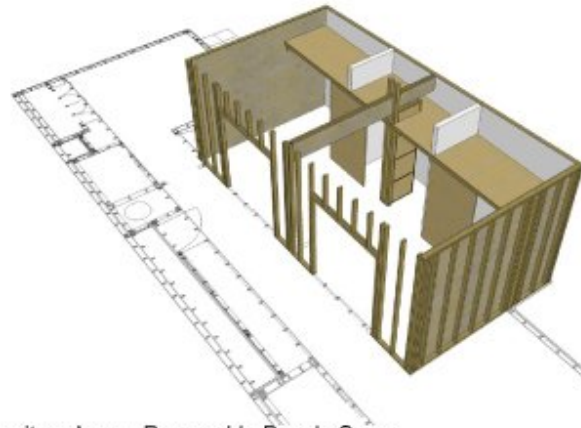
The pouring of the bond beam was a delicate process.

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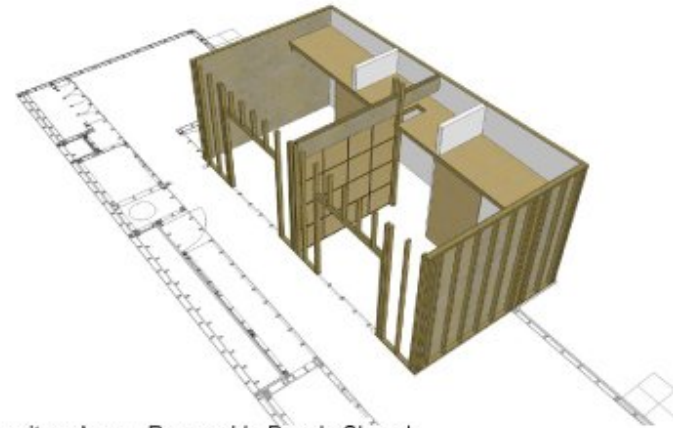
HANDS-ON

INTRO TO MATERIALS +
METHODS OF CONSTRUCTION

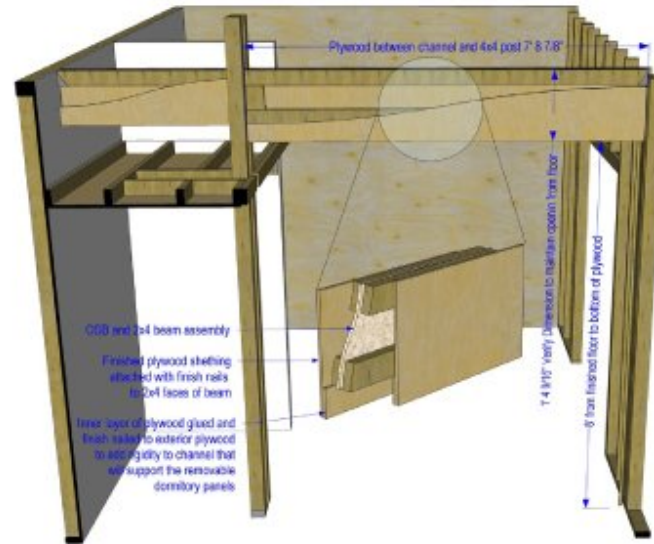
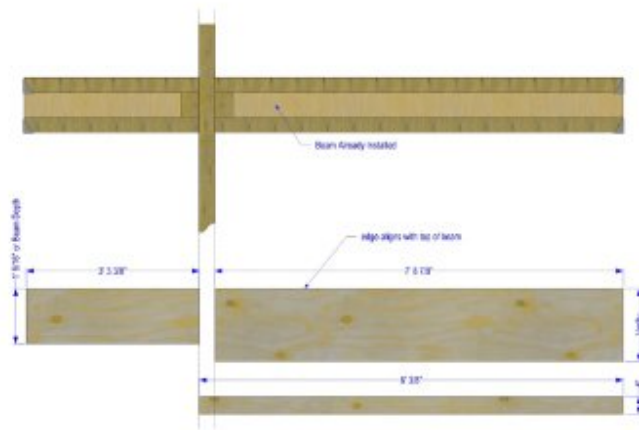
UNIVERSITY OF ARIZONA



Dormitory Axon - Removable Panels Open



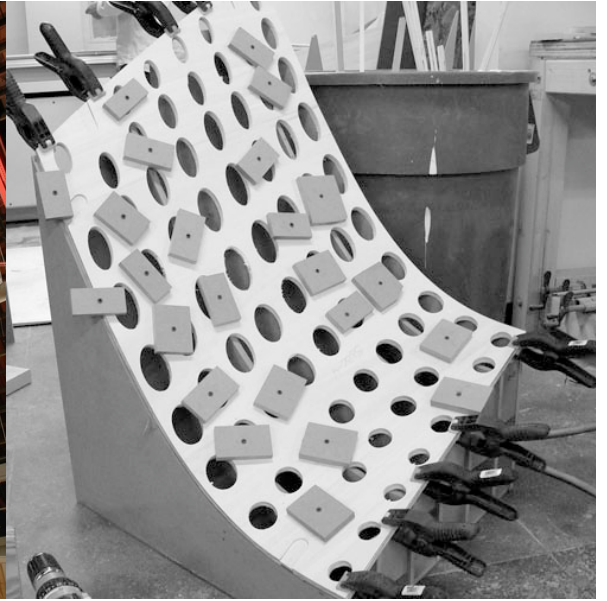
Dormitory Axon - Removable Panels Closed



Dormitory Beam - removable panel alignment track

3-D CONSTRUCTION DOCUMENTS

UNIVERSITY OF ARIZONA



DIGITAL FABRICATION

CATHOLIC UNIVERSITY OF
AMERICA

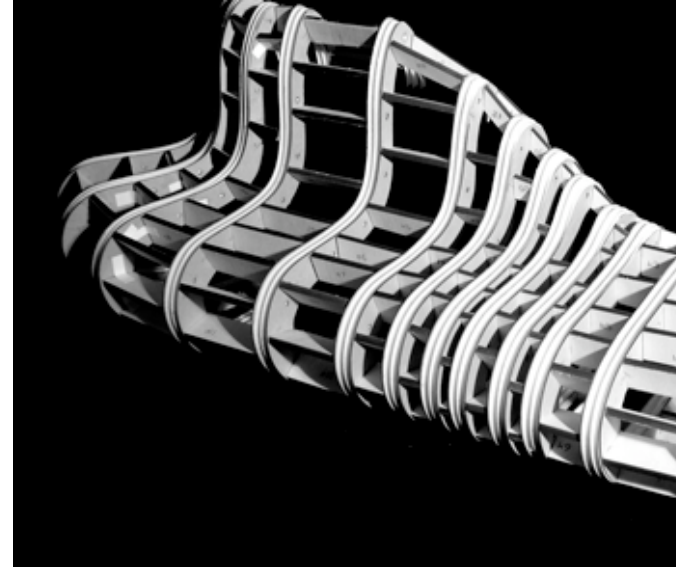
1ST YEAR:

2ND YEAR:

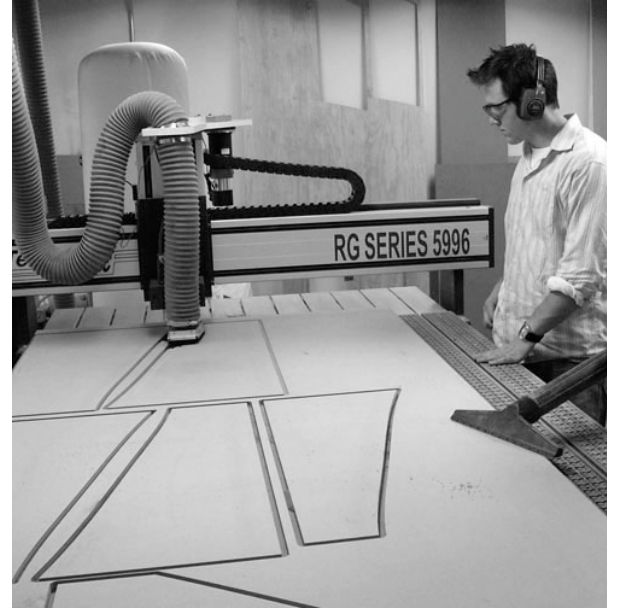
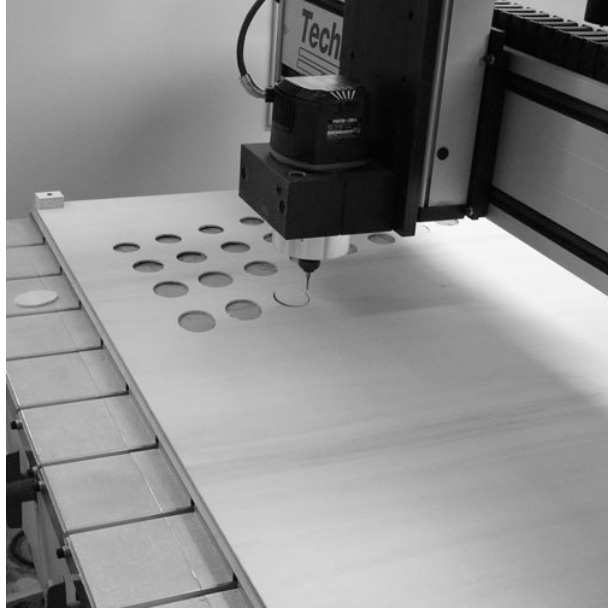
3RD YEAR: FURNITURE DESIGN

4TH YEAR: DIGITAL FABRICATION

GRADUATE: DESIGN TECHNOLOGIES CONCENTRATION



PROTOTYPING



CNC 3-AXIS ROUTER



TECTONIC LANDSCAPES

THE TECTONIC LANDSCAPES INITIATIVE FOCUSES ON SMALL, UNREMARKABLE, AND OFTEN FORGOTTEN PLACES ADJACENT TO THE LIVES OF UNDER-SERVED PEOPLE. LOCATED IN THE BOUNDARY BETWEEN ARCHITECTURE AND LANDSCAPE THE PROJECTS SEEK TO CREATE EXPERIENTIAL DELIGHT OUT OF SMALL-SCALE DESIGN OPPORTUNITIES. THROUGH THE ADAPTIVE RE-USE AND RECYCLING OF LEFTOVER URBAN SPACES THE RESULTING PROJECTS AUGMENT AND ENHANCE EXISTING BUILDING INFRASTRUCTURES WITH NEW, PRIMARILY OUTDOOR, SPACES THAT PROVIDE PRAGMATIC FUNCTIONS, PROMOTE PLAY, AND EXHIBIT A SOCIAL AND ENVIRONMENTAL CONSCIENCE. THE UNDERLYING PEDAGOGY EXPLORES THE POTENTIAL FOR SUBVERTING DISTINCTIONS BETWEEN LANDSCAPE ARCHITECTURE AND ARCHITECTURE IN ORDER TO PRIVILEGE A MORE COMPREHENSIVE INTRODUCTION TO THE SPATIAL AND MATERIAL FUNDAMENTALS THAT TRANSCEND DISCIPLINARY BOUNDARIES.

FORMWORK
1999-2000
UNIVERSITY OF NEW MEXICO





2004-2006 TRAILERWRAP



UNIVERSITY OF COLORADO

