Mobile Craft Module

ADAM MARCUS
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The Mobile Craft Module proposes an architecture of deployable structures that can be reconfigured to serve a variety of functions. The twin modules can be arranged in multiple ways to facilitate exhibition space, event space, and work space, and they nest together to become secure at night.

The modules were designed and built by a team of thirteen students in eight weeks. The project served as the anchor pavilion for California College of the Arts (CCA) during the Market Street Prototyping Festival, a three-day event in San Francisco that explored new ideas for designing public space. Throughout the festival, the modules hosted a series of exhibitions and events showcasing work by students and faculty. Following the festival, the project returned to the school to serve as mobile workstations on the school's outdoor maker space. The intent is for the modules to provide an infrastructure for the construction of future design-build projects undertaken by students and faculty.

Each module is open on one side, providing access to the modular shelving and work surfaces on the interior. The reconfigurable plug-in shelving system includes removable caps, which double as stools once they are removed from the module. The structural frame is fabricated from welded steel tube, with angle iron members welded to the corners to serve as protective edges for the cladding. The cladding is fabricated from western red cedar boards, each of which is cut to size. A robotically-cut pattern carved into the cedar boards consists of abstract shapes that merge together to spell CCA's name as one moves around the module.

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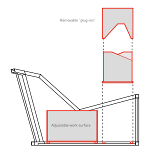
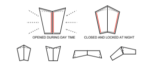
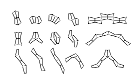


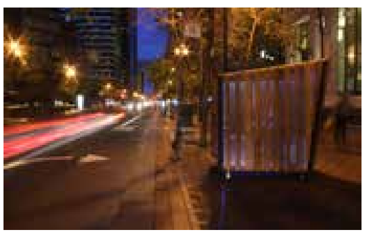
The module is open on one side, providing access to a system of removable, functional "plug-ins." The open-source design of the mounting structure allows for future users to build their own plug-ins.

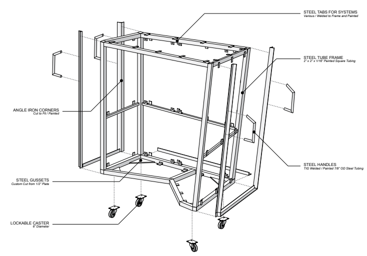


Scenario 1: Market Street Prototyping Festival
The mirrored geometry of the twin modules allows them to nest together in a variety of ways. During the day time, the modules face outwards to engage people on the sidewalk; at night, they face inward to lock and provide a secure enclosure during the Festival's off-hours.



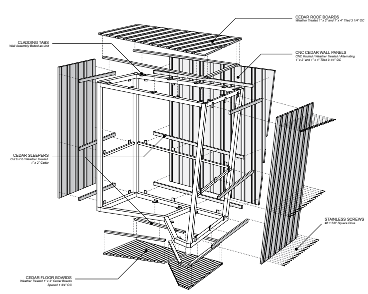
Scenario 2: CCA Back Lot
After the festival, the modules returned permanently to the school, where they serve as mobile workstations to support large-scale design/build projects.

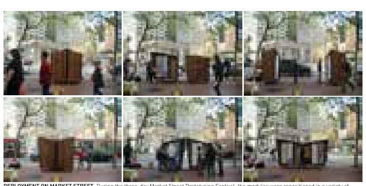




STRUCTURAL FRAME. The module's frame is constructed from welded tube steel. The students performed all custom fabrication and welding. The module's trapezoidal shape in both plan and section added a high degree of complexity to the fabrication process. Students produced shop drawings for each steel part, full-scale jigs for the welding process, and custom templates for the complex mitered corners.

DUAL PROGRAMS. The modules' planar and sectional geometry allows for a variety of spatial configurations that afford a high degree of programmatic flexibility.
Top: modules deployed during San Francisco's Market Street Prototyping Festival; Bottom: modules deployed as mobile workstations at school's outdoor maker space.


CEDAR ROOF BOARDS
Weather Treated 1" x 2" and 1" x 4" Tiled 3 1/4" OC
CLADDING TABS
Wall Assembly Bolted as Unit
CNC CEDAR WALL PANELS
CNC Routed / Weather Treated / Alternating
1" x 2" and 1" x 4" Tiled 3 1/4" OC
STAINLESS SCREWS
#8 1 5/8" Square Drive
CEDAR FLOOR BOARDS
Weather Treated 1" x 2" Cedar Boards
Spaced 1 3/4" OC

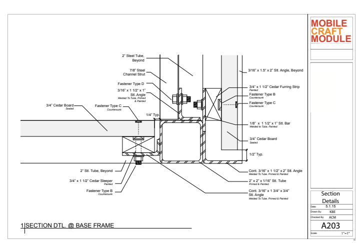


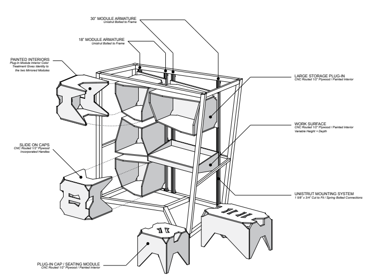
DEPLOYMENT ON MARKET STREET. During the three-day Market Street Prototyping Festival, the modules were repositioned in a variety of ways to both exhibit student work and host a series of events. The periodic reconfiguration of the mobile modules became a kind of spectacle in and of itself; public passersby greatly enjoyed seeing the students reposition the rolling modules into new forms.

PROGRAMMATIC FLEXIBILITY. During the Market Street Prototyping Festival, the modules hosted a number of events, showcasing CCA faculty and student research. These include a live demo of robotic fabrication equipment, a "flash" symposium on urban metabolism, and a thesis student Pecha Kucha.

WOOD CLADDING. The module's cladding is constructed from custom-fabricated western red cedar boards. The boards are mounted to horizontal wood furring strips, which are fastened back to the steel frame. A CNC router was used to carve a custom pattern into the cedar boards, which produces multiple readings depending on proximity. From up close, the pattern appears to be entirely abstract collection of shapes, while from far away it spells the school's name as it wraps around the module.

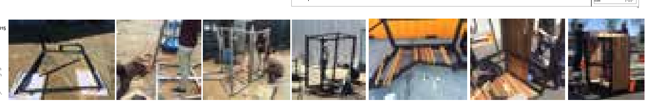
DETAIL AND ASSEMBLY. The project was designed and fabricated entirely by students. The process incorporated 1:1 mockups and drawing full-scale details from the outset, as away to foreground issues of assembly, alignment, and tolerance in the construction process.




30" MODULE ARMATURE
Unistrut Bolted to Frame
18" MODULE ARMATURE
Unistrut Bolted to Frame
PAINTED INTERIORS
Plug-In Module Interior Color Treatment Gives Identity to the two Mirrored Modules
LARGE STORAGE PLUG-IN
CNC Routed 1/2" Plywood / Painted Interior
UNISTRUT MOUNTING SYSTEM
1 5/8" x 3/4" Cut to Fit / Spring Bolted Connections
PLUG-IN CAP / SEATING MODULE
CNC Routed 1/2" Plywood / Painted Interior

Prototyping Mobility
Advanced Architecture Studio, Spring 2015
California College of the Arts

Instructor: Adam Marcus
Students / Design & Fabrication Team: Barry Atiabet, Keith Edwards, Joshua Evans, Tien Yi Hsieh, Ludmila Ilieva, Reynaldo Kambey, Thomas Monroy, Ryan Montgomery, Mark Nicholson, Chien Lien Pan, Murhaf Salameh, Adithi Satish, Jin Shen
Photography: Prototyping Mobility studio, Joseph Chang, Jeffrey Maeshiro



MODULAR PLUG-INS. Mounted to the frame on the interior of the module is a standardized strut system that can host a variety of modular "plug-ins." These include shelves, work surfaces, and removable stools that double as caps for the shelving. The system is design to allow future users of the module to design and built custom plug-ins to best suit their needs.