With All the Trimmings...The Crafting of Leftovers

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STRATEGY

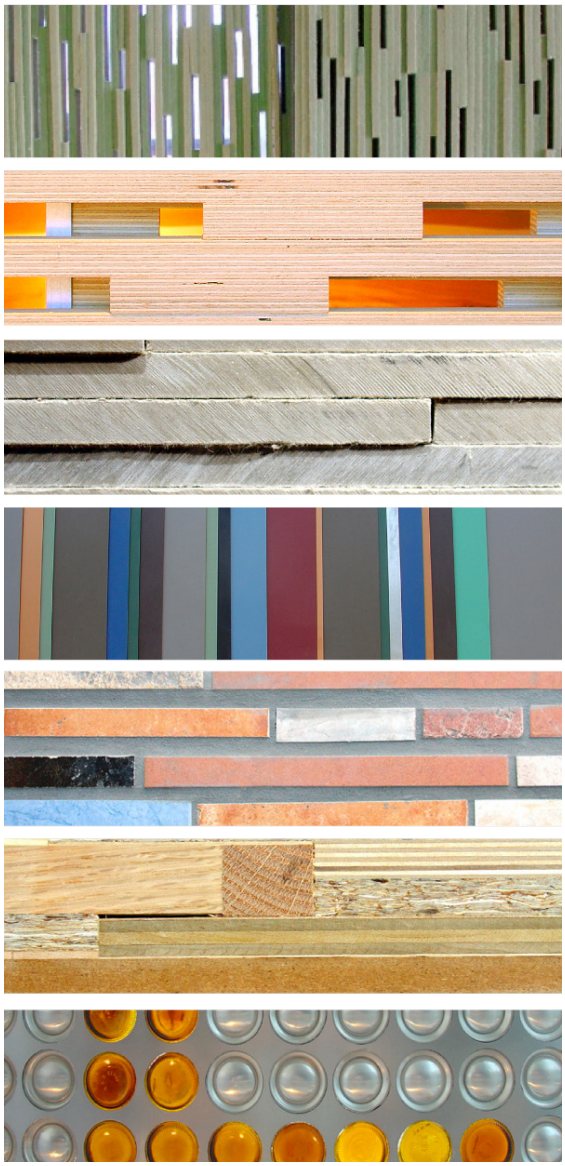
This submission presents a catalogue of details, moments from a number of self-built projects that illustrate strategies for utilizing what is "leftover" in architectural constructions. As construction waste continues to impact landfills, and the economy continues to crumble, this research addresses the scraps of material that are usually tossed in the trash bin. Much like the quote above, these leftovers, or trimmings, provide the raw material for a variety of reconstituted

architectural surfaces. The projects shown here employ techniques that re-value scrap material, addressing sustainable thinking within a strategic framework for design rather than through prescriptive specifications.

Ordinary materials such as plywood, scrap framing lumber, tile, sheet metal, homasote, and cement fiber-board are transformed into luxurious, even decadent surfaces through a lengthy process of re-fabricating and re-assembly. The design and construction of these projects were simultaneous, creating a "feedback loop" of learning–through-making that is predicated on both haptic and intellectual engagement with the materials and techniques of construction. This approach challenges the conventional use of the materials, considering limits and constraints as opportunities.

TACTICS

In order to accommodate the erratic and unpredictable sizes of the scrap material, the trimmings are



cut and reduced to a smaller, uniform module, often simply the result of the smallest scrap size. This process of re-formatting illuminates latent qualities that were previously concealed; such as the horizontal stratification of baltic birch plywood, the suede-like consistency of cut homasote, and the saw marks left on the edges of cement fiber board. The pieces are then re-assembled in a matrix that addresses the particulars of the project, for example, light or acoustical attenuation, smoothness, air flow, opacity, translucency, etc., resulting in an aesthetic that accommodates both individual craft and collective coherence.

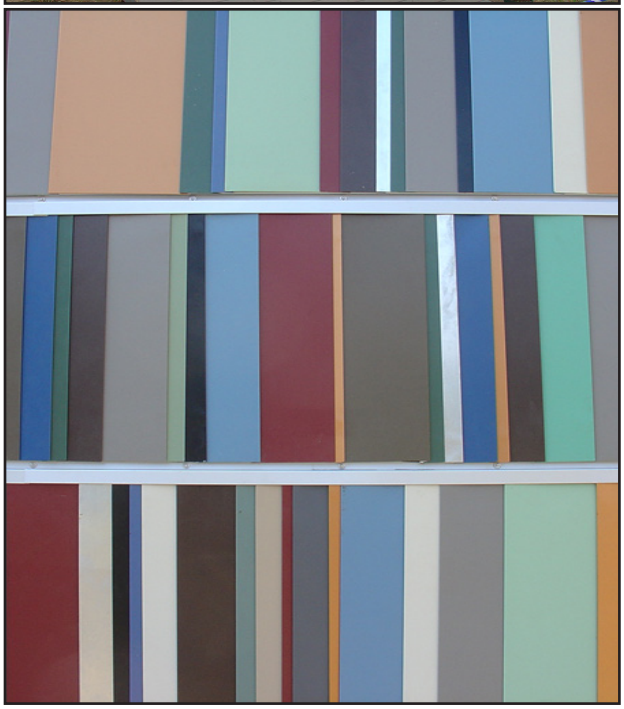
Students were engaged in all projects with the author, either in a design/build studio setting, (Venice Pizza and the Solar Decathlon projects), or in a fabrication capacity.

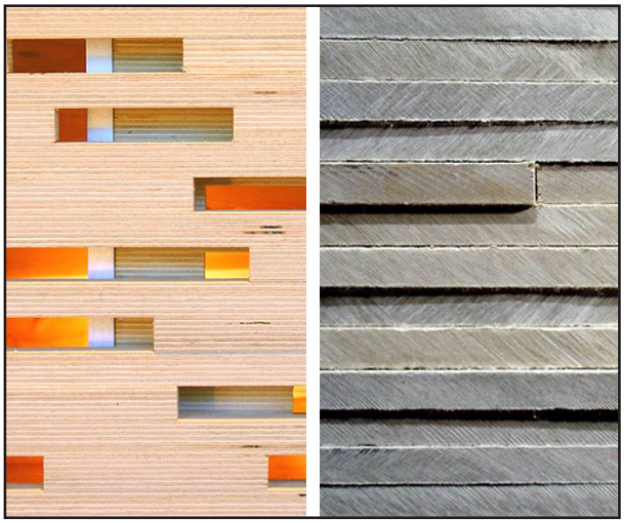
Project:
Lightborne Communications acoustical doors
Material:
Salvaged 1/2" homasote scraps.
Re-formatting operations:
Random sized homasote scraps ripped to 1" and 1 ½" strips.
Re-assembly operations:
3" screw connections through homasote with variable openings for light transmission from office to corridor. Acoustical profiling is provided through adjacent material thickness differences. Panels were assembled with one face smooth and one face profiled. Homasote was assembled on a custom jig and then mounted on a welded steel frame, which was then suspended from a concealed sliding door track (door), or attached to a custom bent steel header cap (fixed panel).

Project:

Solar Decathlon House
University of Cincinnati -2007
Rain-screen cladding.
Material:

Kynar-coated steel pieces leftover from roofing and siding material.





Re-formatting operations:

Random width pieces were cut down to 30” heights, and hemmed on two edges.

Re-assembly operations:

Edges were lock-seamed together with metal clips mounted on a plywood substrate. Random width scraps were composed in a 30” x 96” pre-fabricated panel and hung on a uni-strut sub-frame. Metal seam direction was alternated from panel to panel to create relief.

Project:

Loft addition

Material:

Salvaged ¾” baltic birch plywood scraps.
Leftover ¼” cement fiber-board scraps.

Re-formatting operations:

Plywood:
Random sized scrap material ripped to 1 ½” depths for stacked walls and ¾” depth for sliding door screens.

Cement fiber-board:
Random scrap material ripped to 1” depths.

Re-assembly operations:

Plywood:
Stacked with face-to-face nail gun and glue connections with exposed cut edges.
Openings in wall are for return air.
Openings in closet doors are for air circulation.

Cement fiber board:
Stacked with construction adhesive bonding.

Project:

Venice Pizza
University of Cincinnati
Design/Fabrication Studio

Material:

Salvaged wood
Remnant tile
Beer cans and bottles

Re-formatting operations:

Wall:
Random species and sized waste cellulose material cut to a uniform depth of 1 ½”.

Floor:
Random sized and colored tile and stone remnants ripped to 1” depths.

Sign:
Beer bottles and aluminum cans cut to re-use shaped bottom.

Re-assembly operations:

Wall:
Stacked with nail gun and glue connections. Assembled in 24” x 48” modules and then ripped on an industrial band-saw to produce a series of book-matched panels.

Floor:
Mortared and grouted in a linear pattern with a 1” common dimension to produce a multi-colored field condition.

Sign:
Shaped “lenses” were placed in a matrix of CNC milled m.d.f. to configure sign. Aluminum discs were used for the field, and the amber colored glass was used for the letters.