USEFUL WASTE

PROJECT BACKGROUND:
Mock-ups play an integral role in the construction process by demonstrating and establishing quality procedures for building systems, sequencing, and installation. Both the contractor and the architect use the mock-up evaluation to perform quality assurance, understand material compatibility, and demonstrate design aesthetics. However, with construction allowances ranging from $5,000 to $20,000+, mock-ups are high-cost structures that traditionally serve a singular construction need over a short time period. Since mock-ups are seen as temporary structures, they typically end up in a landfill after their use has been served on the construction site.

PROJECT DESCRIPTION:
Over the course of 3 years, the CFDO team has been developing and advocating for the Useful Waste Initiative, which is a proposal for an alternative enduring sustainable way of thinking about construction waste. The Useful Waste Initiative encourages material donation and aims to involve even on waste management during the design and construction process. It guides the process to repurpose and utilize an unutilized material resource - exterior envelope construction mock-ups. This initiative aims to continuously integrate a more sustainable process into the existing construction practices. While encouraging new methods that extend the life of building materials, it also provides the opportunity to contribute to and support efforts to address pressing social needs within local communities.

THE FIRST CASE-STUDY: 4TH & MONTGOMERY

THE STORY BEHIND THE BUILD
As a commercial project in an urban area, the eight-story mixed-use building brings together Portland State University, Oregon Health and Science University, Portland Community College and the City of Portland. The building is to foster collaboration between all partners focused on enhancing sustainable and responsible development in Portland.

The project team integrated a green design and allowed a communicational coordination amongst the various parties. The delivery team worked together to determine the right materials and technologies to improve the value to the project. The local partners were tasked with cutting the cost and creating a sustainable design. The Architect noted that if the mock-up was not intended for donation, the mock-up would have been larger, measuring at 16 feet tall to be an exact representation of the building.

The mock-up had been stored in an outdoor storage area for several months. During this time, the architects and engineers worked with the contractor to ensure the donation of the mock-up.

PROJECT TIMELINE

- Aug 2018: PFID signs agreement for material donation
- Sep - Oct 2018: Schematic Design
  - Project team sets goals to reduce waste and contacts CPID
  - Owner signs agreement to donate
- Nov - Feb 2019: Design Development
  - Contract document sets with mock-up designs sent to contractor for pricing
  - SRG sends mock-up designs to CFDO for review
- April - June 2019: Construction
  - Project team files out liability waiver
  - Mock-up build
  - Contractor maintains and protects mock-up
  - CFDO locks coordinates location and scheduling of conversion build
- July 2019: Conversion
  - Contractor coordinates transportation and delivery of mock-up from site to new location
  - CFDO coordinates conversion build

THE CONVERSION

THE POTENTIAL USES

- Mock-up to be cut into pieces and used for various purposes.
- Potential uses include:
  - Furniture
  - Exterior walls
  - Interior walls
  - Roofing
  - Outdoor stage
  - Bus stop
  - Pedestrian island
  - Signage
  - Pedestrian/bicycle shelters

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