

Portland State University

PDXScholar

---

Homelessness Research & Action Collaborative Publications and Presentations Homelessness Research & Action Collaborative

---

2019

## Useful Waste

Rebecca Taylor  
*Portland State University*

Follow this and additional works at: [https://pdxscholar.library.pdx.edu/hrac\\_pub](https://pdxscholar.library.pdx.edu/hrac_pub)



Part of the [Social Welfare Commons](#), and the [Urban Studies Commons](#)

Let us know how access to this document benefits you.

---

### Citation Details

Taylor, Rebecca, "Useful Waste" (2019). *Homelessness Research & Action Collaborative Publications and Presentations*. 11.

[https://pdxscholar.library.pdx.edu/hrac\\_pub/11](https://pdxscholar.library.pdx.edu/hrac_pub/11)

This Student Research is brought to you for free and open access. It has been accepted for inclusion in Homelessness Research & Action Collaborative Publications and Presentations by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: [pdxscholar@pdx.edu](mailto:pdxscholar@pdx.edu).

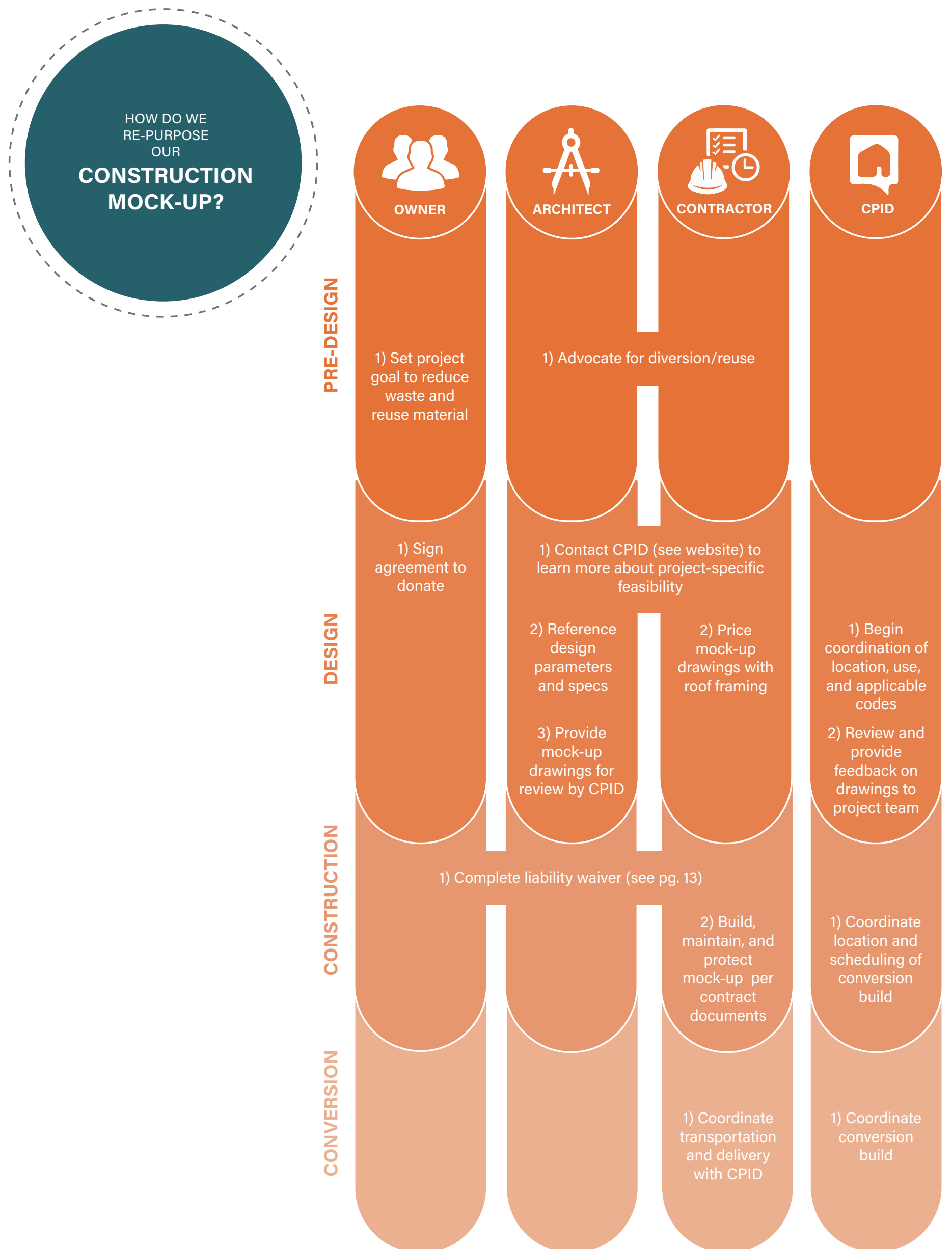
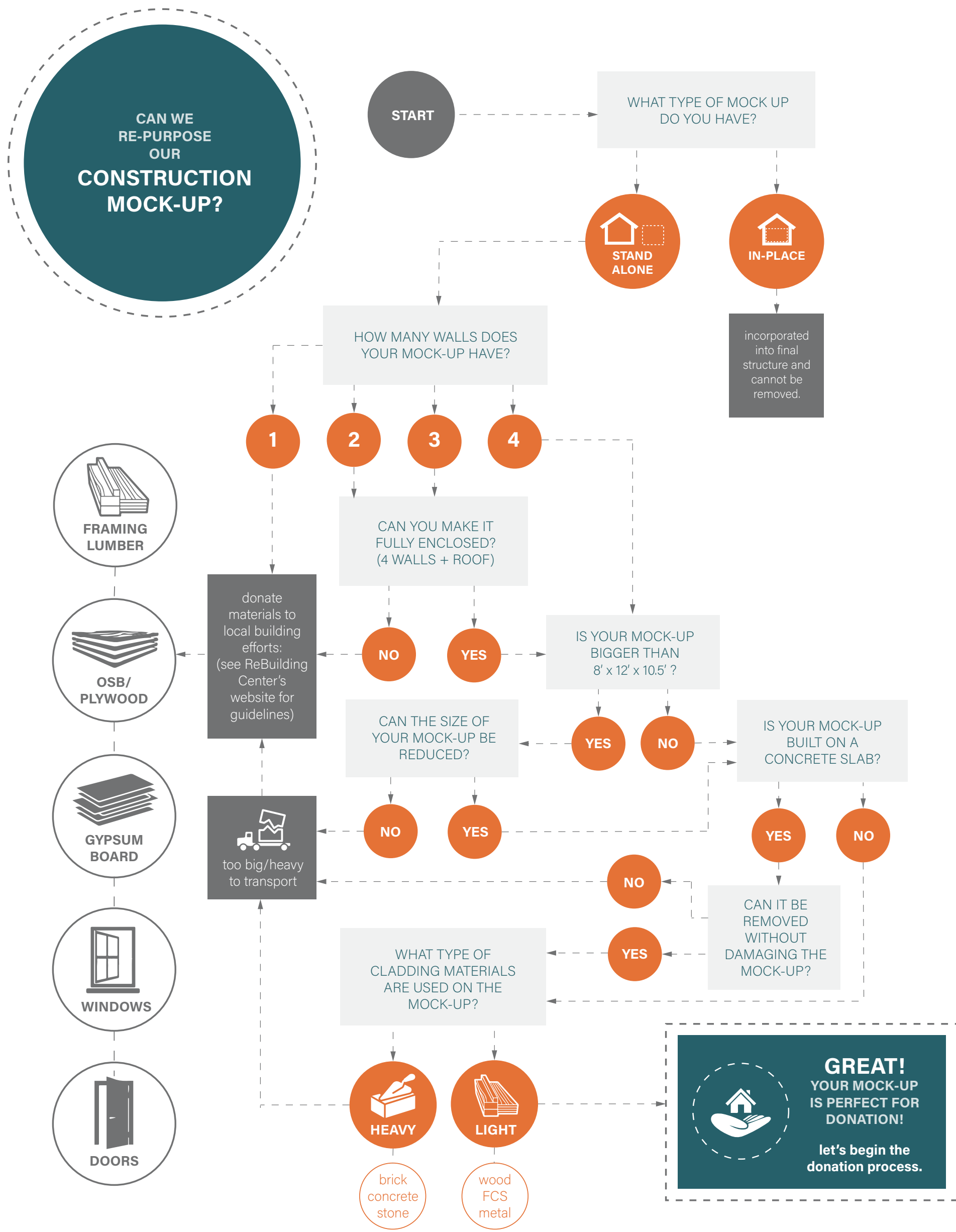
# USEFUL WASTE

## 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 structure to perform tests for performance quality, 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 2 years, the CPID team has been developing and advocating for the Useful Waste Initiative, which is a proposal for an alternative and more sustainable way of thinking about construction waste. The Useful Waste Initiative encourages material diversion and aims to reframe views on waste management during the design and construction process. It guides the process to repurpose and utilize an overlooked material resource - exterior envelope construction mock-ups. This initiative aims to intentionally 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.



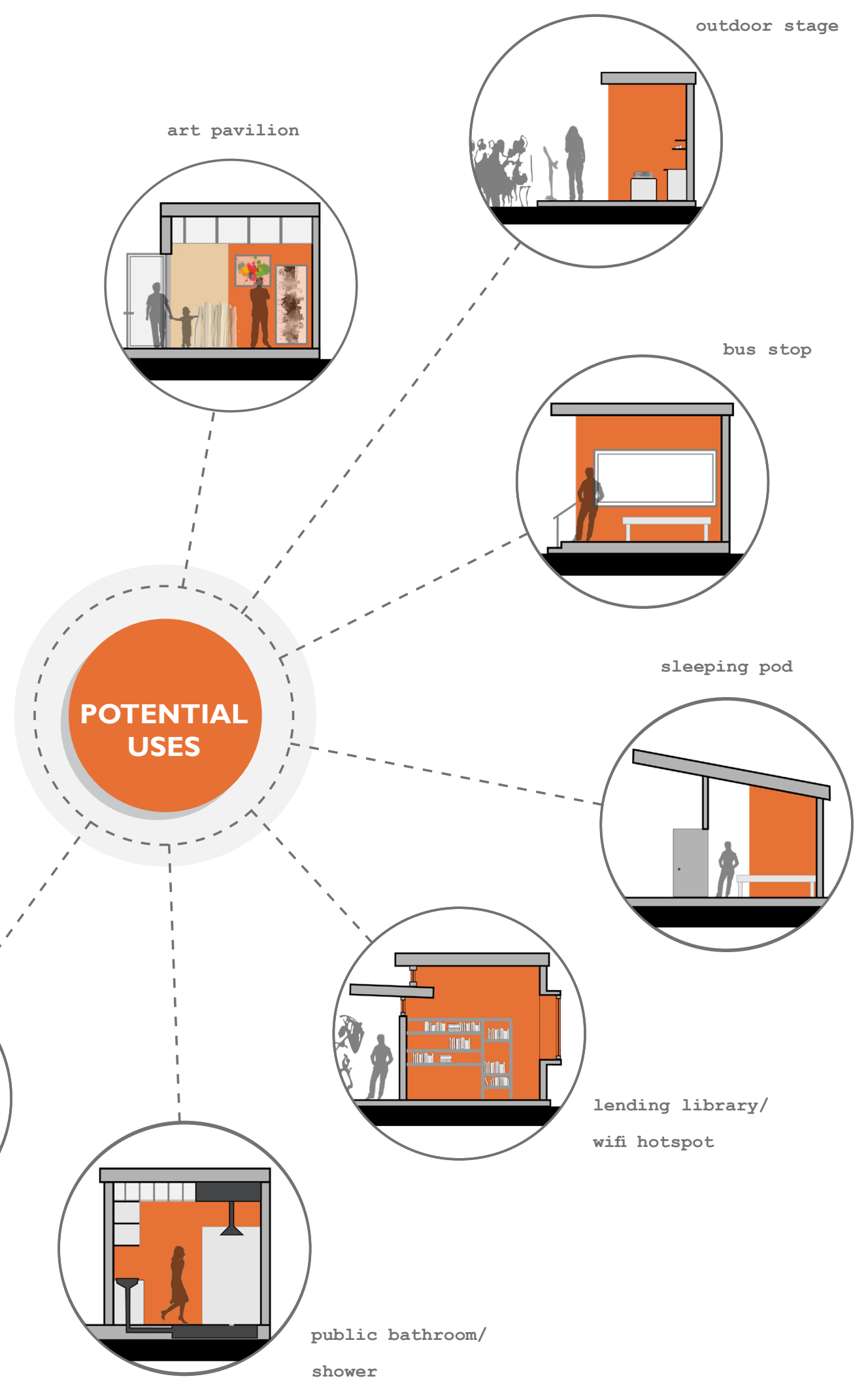
## THE FIRST CASE-STUDY: 4TH & MONTGOMERY

### THE STORY BEHIND THE BUILD:

As a commercial project in an urban area, this eight-story shared office building brings together Portland State University, Oregon Health and Science University, Portland Community College and the City of Portland. The building aims to foster collaboration between all partners focused on enhancing sustainable and responsible development in Portland.

This project used Integrated Project Delivery, which allowed close communication and coordination among the full project team. This delivery style benefited both the project and mockup, supported the team to work through complex details, and it facilitated personal relationships to build which aided the effort to divert the mock-up.

The mock-up had intensive QA/QC review to ensure the mockup met the visual and performance criteria necessary for the project. The mockup represents the full height window of the primary building with a metal panel angle that matches the building geometry. The Architect noted that if the mockup was not intended for donation, the mockup would have been larger, measuring at 16 feet tall to be an exact representation of the building.



## TIMELINE

### AUG 2018 PREDESIGN

- SRG advocates for material diversion

### SEP - OCT 2018 SCHEMATIC DESIGN

- Project team sets goal to reduce waste and contacts CPID
- Owner signs agreement to donate

### NOV - FEB 2019 DESIGN DEVELOPMENT

- Contract document set with mock-up dwgs sent to contractor for pricing
- SRG sends mock-up dwgs to CPID for review

### APRIL - JUNE 2019 CONSTRUCTION

- Project team fills out liability waiver
- Mock-up built
- Contractor maintains and protects mock-up
- CPID team coordinates location and scheduling of conversion build

### JULY 2019 CONVERSION

- Contractor coordinates transportation and delivery of mock-up from site to new location
- CPID coordinates conversion build

