

# Tooling Cardboard for Smart Reuse: A Digital and Analog Workflow for Upcycling Waste Corrugated Cardboard as a Building Material.

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**Abstract.** This paper is a description of a hybridized digital and analog workflow for reusing waste corrugated cardboard as a building material. The work explores a combination of digital design and analog fabrication tools to create a workflow that would help designers/builders to negotiate with the material variability of waste cardboard. The workflow discussed here was implemented for designing and fabricating a prototypical modular floor panel using different sheets of waste cardboard combined with repurposed wood. The implementation shows that combining digital and analog tools can create a novel approach to material reuse, and facilitate a design/fabrication culture of *smart* reuse that supports informal building and making at recycling collection centers in developing countries for housing alternatives.

**Keywords:** Smart Reuse, Waste Cardboard Architecture, Digital Analog Workflow, Parametric Design.