



E2E EXPO: INNOVATIVE HOUSING SOLUTIONS FOR POST-QUAKE HAITI

600,000
HOUSING DEFICIT



PROBLEM: Haitian families have still no viable roadmap to enable reconstruction of resilient homes in the wake of the 2010 Earthquake, as their traditional masonry construction has proven too expensive to safely re-implement, leaving them indefinitely confined to transitory shelters.

SOLUTION: Formulate an integrated process that empowers Haitian entrepreneurs to deliver affordable, dignified, engineered housing within the local informal economy through innovative housing systems that navigate engineering and non-engineering constraints.

Design iteration with local engineers (Haiti)



Discussing housing concept (Haiti)



Cage Fabrication (US)



Cage Fabrication (Haiti)



Panel Casting (US)



Panel Casting (Haiti)



Formwork Erection (US)



Formwork Erection (Haiti)

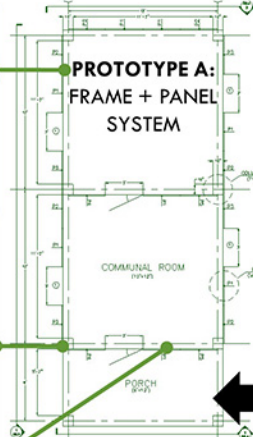
INNOVATION EXCHANGE: US OPS (R & D + Structural Prototyping) ↔ HAITI OPS (Feasibility/Constructability + Finishes)



Placing Reinforcement

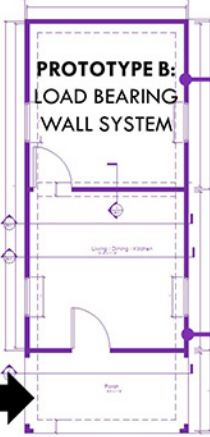


Reinforcement Preparation



PROTOTYPE A:
FRAME + PANEL SYSTEM

EXPO OBJECTIVE: Through partnerships between faculty, undergraduate students, licensed engineers, allied construction professionals, and their Haitian counterparts, vet the constructability, feasibility and scalability of two reinforced concrete housing typologies for post-quake Haiti using full-scale prototypes.



PROTOTYPE B:
LOAD BEARING WALL SYSTEM



Rebar Placement



Formwork Erection



Panel Installation



Panel R+D



Panel Mix Design



Panel Fabrication



Rebar Inspection



Prototypes Under Construction (Webcam)

PROJECT PHASES: CONCEPTUAL DESIGN → CONCEPT REFINEMENT → MATERIAL TESTING → STRUCTURAL DESIGN → STRUCTURAL DRAWINGS → FABRICATION → CONSTRUCTION SEQUENCING → SITE PLANNING → PERMITTING → BUDGETING → PROCUREMENT → PROJECT MANAGEMENT → CONSTRUCTION

DISCIPLINES: Civil Engineering: Structural • Civil Engineering: Materials • Civil Engineering: Geotechnical • Civil Engineering: Construction Management • Mechanical Engineering • Electrical Engineering • Architecture • Political Science • Development Studies • Liberal Studies • Marketing • Social Entrepreneurship