Stabilization and Interim Community Use of 23 North Smallwood

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Introduction

This project proposes a stabilization and interim use strategy for 23 North Smallwood Street, a vacant rowhome in Baltimore, MD. The goal is to stabilize the remaining structure while enabling safe, temporary community use. This work is conducted in collaboration with the Community Law Center (CLC) and Fayette Street Outreach (FSO). The Community Law Center serves as a legal partner to neighborhoods and nonprofits, supporting land acquisition and promoting long-term, community-controlled development to prevent displacement. Fayette Street Outreach provides programs and resources that foster a safer, healthier, and more connected community. The proposed design focuses on temporary stabilization measures that preserve the existing façade and improve structural safety, while creating a usable space for community activities. This approach allows the site to remain active and beneficial as our clients work toward securing the resources needed for full redevelopment of the rowhome.

Objectives

- Develop a structural system to safely support and stabilize the existing façade.
- Maintain the original building fabric while enabling temporary, non-invasive interventions.
- All stabilization elements must remain inside the existing structure footprint.
- Create an outdoor gathering platform for community programs and services.
- Design for an approximate 10-year temporary use period.
- Design a footing system that transfers loads to the soil while resisting uplift and eccentricity from the shoring system.

Methods

Condition Assessment:
Conducted a detailed evaluation of the existing façade to determine structural integrity, identify areas of deterioration (e.g., missing masonry, cracking, foundation distress), and assess feasibility of stabilization.

Structural Analysis & Modeling:
Developed a simplified structural model to analyze load paths, including dead, wind, snow, and uplift forces acting on the façade and stabilization system.

Code-Based Design:
All components were sized and checked in accordance with established building codes and design standards.

Current Condition: Front facade, rear walls, building footprint

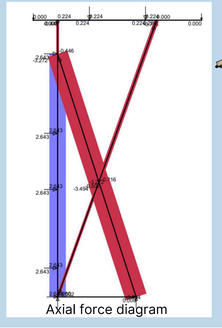
Proposed Design

Temporary Shoring:

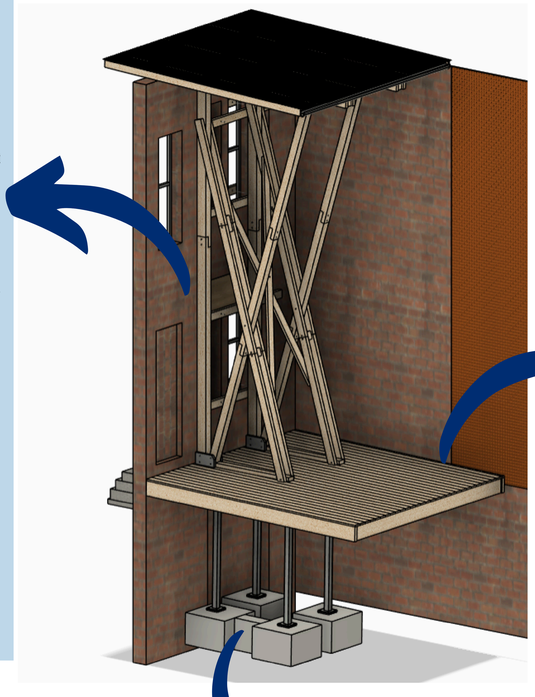
Stabilization Strategy:
Internal raker shoring system supports the existing façade without encroaching on the sidewalk or street, with a partial roof to reduce weather exposure and extend system lifespan.

Material Selection:
Constructed from white oak, a naturally durable and rot-resistant hardwood suitable for exterior exposure
Wood was selected to enable community-led construction, as it can be cut, assembled, and installed using standard tools and basic skills.

Reusable Modular Design:
Uniform 5 ft member spacing allows the shoring system to be easily deconstructed, transported, and adapted to stabilize other Baltimore rowhomes (typically 11–15 ft wide).



Axial force diagram

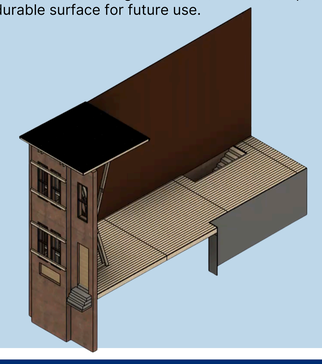


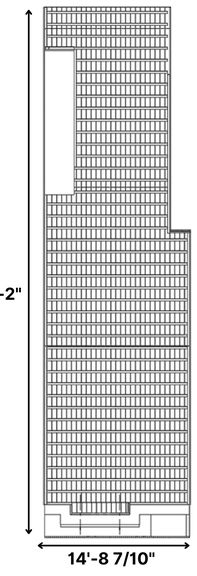
First Floor Design and Foundation Wall Re-build:

New Floor System (100 psf Capacity):
- Designed to support community use loads while also acting as a structural platform for the shoring system.
- Exterior decking used to protect structural joists from weathering and long-term deterioration.

Member Selection:
Douglas Fir joists used for their high strength and stiffness, allowing adequate span capacity under combined dead, live, and environmental loads.

Foundation Reconstruction:
Missing rear foundation wall rebuilt as a strip footing to provide continuous load path and adequate bearing support for the new floor system. A new 4 in. reinforced slab-on-grade is proposed to replace the deteriorated original basement floor and provide a safe and durable surface for future use.



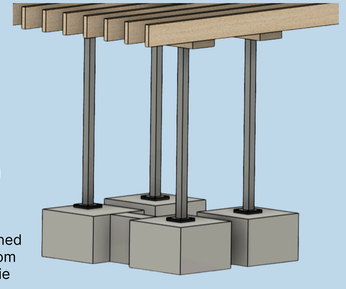


Footings and Anchorage:

Wood Beam:
6 in x 8 in Douglas Fir No. 1 wood beams were placed above the steel posts because of their high strength, stiffness, and availability. These members support the facade bracing while transferring loads to the systems below.

Anchorage:
Steel HSS posts were connected with base plates and anchor rods embedded into the concrete. This system transfers lateral and uplift forces safely from the shoring frame into the footings.

Footings:
3 ft x 3 ft x 2 ft reinforced concrete footings were designed to resist soil bearing, uplift, and overturning reactions from the shoring system. One footing required a strap beam tie due to eccentricity.



Fun Fact:

The Princess Tree (*Paulownia tomentosa*), is an invasive species introduced to the U.S. in the 1800s and is now commonly found throughout Baltimore. Its fast growing roots can penetrate cracks and joints, accelerating deterioration of façades and foundations.

Training Program & Funding Opportunities

Given limited funding, this project leverages community engagement as a core strategy to reduce construction costs while empowering residents to actively participate in the building process.

Workforce Training Programs:
Provide hands-on training in carpentry, site safety, and construction basics, enabling community members to safely participate in building while creating pathways to local trade careers.
- The Home Depot - Built from Scratch
- Carpenters Training Institute
- OSHA 10-Hour Construction Training Course

Funding Opportunities:
Seek local grants and community-focused funding sources to support this project.
- Community Catalyst Grants Program (Baltimore DHCD)
- AbellFoundation – Small Grants Process
- LoveYour Block
- GoldsekerFoundation – RebuildMetro