

EXECUTIVE SUMMARY

COUNCIL OF ARCHITECTURE AND URBANISM OF BRAZIL (CAU/BR)
NATIONAL COUNCIL FOR SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT (CNPQ)

[REFORMA NA PALMA DA MÃO]

Handy Home Improvements delivers practical strategies for a healthier, more resilient home

TECHNICAL ASSISTANCE



TECHNICAL ASSISTANCE FOR
SOCIAL HOUSING (ATHIS)

WEB APP + BOOKLETS



MOBILE-FIRST

HEALTHY HOME



FUNCTION & COMFORT

RESILIENCE



RESIST · ADAPT · TRANSFORM

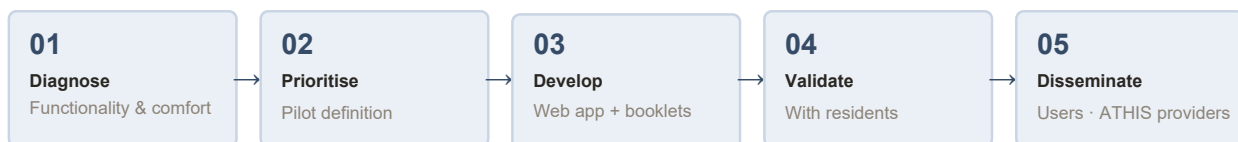
OVERVIEW

Handy Home Improvements delivers practical strategies that help residents turn their social housing (PMCMV) into healthier, safer and more resilient homes. Created in response to the COVID-19 pandemic and grounded in evidence-based technical assistance (ATHIS), it tackles everyday problems of functionality and thermal comfort, translating technical knowledge into clear, accessible guidance. Developed and tested in Uberlândia (bioclimatic zone 4), it is available as a mobile web app and as virtual and physical booklets. It is a pilot study within the Resilient House research, sponsored by CAU/MG.

OBJECTIVES

- 01 Diagnose functionality and thermal-comfort problems in PMCMV housing in Uberlândia.
- 02 Prioritise issues and design a pilot of practical renovation solutions.
- 03 Deliver guidance as a web app and virtual/physical booklets (cartilhas).
- 04 Test and validate the material with participating residents.
- 05 Disseminate to users, service providers and architects in bioclimatic zone 4.

METHODOLOGY — PROCESS



RESEARCH TEAM

01

Coordination

Profa. Dra. Simone B. Villa

02

Post-doc / Doctoral

Dra. Karen C. R. Bortoli
Lamonise V. Oliveira

04

Master's (MSc)

Architecture, Urbanism and
Design (FAUeD)

06

Scientific Initiation

Architecture / Design /
Computer Science

THE RESEARCH GAP

Brazilian social housing lacks assessment methods and design guidelines for resilience-oriented interventions. Post-Occupation Evaluation findings are rarely turned into accessible strategies that residents and professionals can apply, especially in single-family housing. Handy Home Improvements addresses this gap by translating evaluation evidence into easy-to-use renovation strategies, delivered as a mobile web app and virtual/physical booklets for residents, service providers and architects.

KEY FACTS

FUNDING

Council of Architecture and Urbanism of Brazil (CAU/BR)

NATURE

Innovation Stimulus Project (R&D)

PARTNERS

UFU · CAU/BR · CNPQ · FAPEMIG

ETHICS

CEP / UFU - CAAE: 56716422.4.0000.5152

FIELD

Shopping Park - Uberlândia/MG

CONTACT

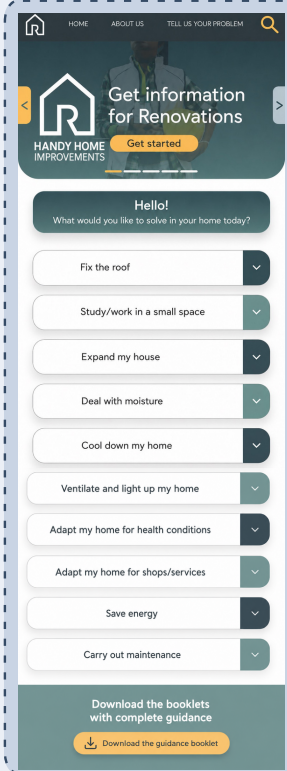
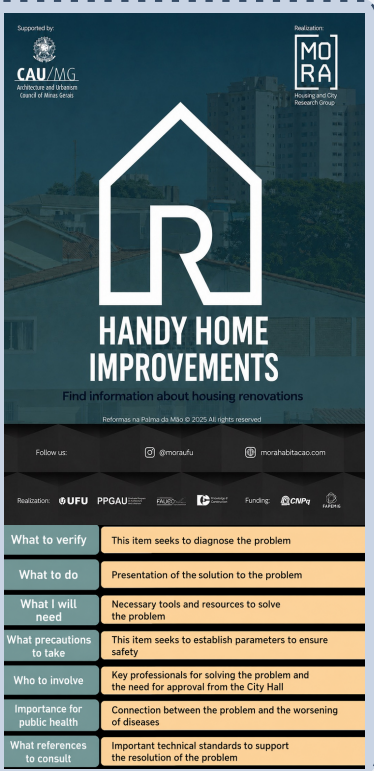
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THE PRODUCTS

Handy Home Improvements

WEBAPP + BOOKLETS · ATHIS

A mobile-first web application complemented by virtual and physical booklets, designed to guide residents step by step through resilient home renovations. For each improvement, it clarifies what to check, what precautions to take, who to hire, what materials and resources will be needed, and the estimated cost, turning technical knowledge into clear, practical decisions. The content covers the most common renovation needs in social housing, including roofing, damp and moisture, home expansion, thermal comfort and ventilation, helping families plan safer, healthier and longer-lasting improvements.



MAIN RESULTS

The project delivered the Handy Home Improvements web app and its virtual/physical booklets: a practical toolkit that translates Post-Occupancy Evaluation evidence into accessible renovation strategies for social housing. Organized around clear guiding questions and priority themes (roofing, damp, expansion, thermal comfort and ventilation), it tells residents what to check, what care to take, whom to hire, what is needed and the cost. The material was developed and validated through social housing case studies in Uberlândia (bioclimatic zone 4), generating technical guidance and evidence to support healthier, safer and more resilient home improvements for residents, service providers and architects.

KEY PUBLICATIONS

Design & Tec.
Design & Tecnologia | 2024

Handy home improvements: a prototype web application for technical assistance in social housing

Villa et al. · Design & Tech 2024

Presents a prototype web application designed to provide technical assistance for social housing residents, supporting decision-making and guiding home improvement interventions.

Buildings
MDPI | 2025

Technical Assistance, Social Practices, and Resilience in Social Housing: an overview

Valadão & Villa · Buildings 2025

Provides a comprehensive review of the scientific literature on technical assistance, social practices, and resilience, highlighting their role in improving the quality and adaptability of social housing.

TECHNICAL INFORMATION

APPROACH	Evidence-based Technical Assistance for Social Housing (ATHIS)
INSTRUMENTS	Web app · Virtual / physical booklets
PLATAFORM	HTML · CSS · PHP
DATABASE	MongoDB

CONTRIBUTIONS

- Social** — Qualified technical assistance for low-income families.
- Policy** — Healthier homes (comfort, ventilation, damp).
- Capacity** — Safer, more durable home improvements.

SUSTAINABLE DEVELOPMENT GOALS



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