

EXECUTIVE SUMMARY

NATIONAL COUNCIL FOR SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT (CNPQ)

RES_TEC

Resilience in the Built Environment and Social Technology through Digital Post-Occupancy Evaluation (POE) and Social Housing Technical Assistance (ATHIS) Instruments

RESILIENCE



BUILT ENVIRONMENT

SOCIAL TECHNOLOGY



DIGITAL POE + ATHIS

ATHIS



TECHNICAL ASSISTANCE

WEB PLATFORM



REFORMA V2

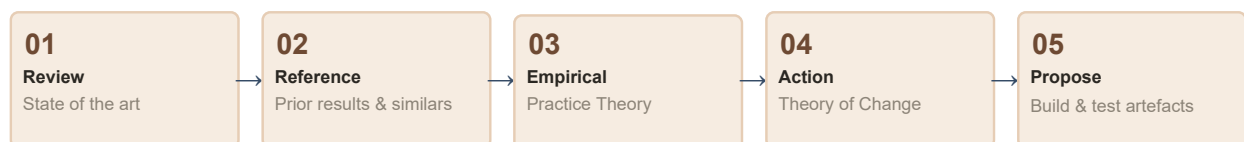
OVERVIEW

RES_TEC investigates how Social Technology can deliver web-based post-occupancy evaluation (POE) and technical assistance (ATHIS) instruments to promote resilience in social housing (HIS). Continuing the Casa Resiliente research, it enhances and validates two artefacts: (i) a set of resilience-evaluation instruments and (ii) a collaborative guiding platform of resilient design strategies for ATHIS agents. Grounded in Design Science Research with a gender-protagonism lens and aims to strengthen ATHIS and the resilience of social housing nationwide.

OBJECTIVES

- Investigate how Social Technology can deliver digital POE and ATHIS instruments for resilience in HIS.
- Enhance and validate the resilience-evaluation instruments and the guiding platform.
- Characterise the target public via Practice Theory and User-Centred Design.
- Address female protagonism in HIS and in the practice of ATHIS.
- Evaluate ATHIS implementation in mid-sized Minas Gerais municipalities and Academic Residencies.

METHODOLOGY — PROCESS



RESEARCH TEAM

01

Coordination

Profa. Dra. Simone B. Villa

01

Post-doc

Lucianne C. Garcia

03

Doctorate

Architecture, Urbanism and Design (FAUeD)

03

Master's (MSc)

Architecture, Urbanism and Design (FAUeD)

THE RESEARCH GAP

Web-based POE and ATHIS tools are still rare in Brazilian social housing, leaving post-occupancy evidence disconnected from everyday renovation and design decisions. Resilience-evaluation methods rarely reach those who act on the housing, especially with attention to female protagonism in single-family social housing. RES_TEC addresses this gap by turning POE evidence into Social Technology: digital APO and ATHIS instruments and a guiding platform of resilient design strategies for ATHIS agents.

KEY FACTS

FUNDING

National Council for Scientific and Technological Development

NATURE

Innovation Stimulus Project (R&D)

PARTNERS

UFU · CNPq

ETHICS

To be submitted to the Research Ethics Committee (CEP)

FIELD

Pequis and Monte Hebron - Uberlândia/MG

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THE PRODUCTS



POE IMPACT

What is the gender of the person primarily responsible for this household?

☒ Female

☐ Male

☐ Prefer not to say

3 of 11



About your living room:

Is your living room small?

Does not apply | Does not | Slightly | Moderate | Very noticeable

Do you have difficulty fitting furniture or equipment that you need in your living room?

Does not apply | Does not | Slightly | Moderate | Very noticeable

1 of 12



About heavy rain:

Do you notice water droplets in your home?

Does not apply | Does not | Slightly | Moderate | Very noticeable

Do you notice leaks in your home?

Does not apply | Does not | Slightly | Moderate | Very noticeable

Does rainwater enter your home?

Does not apply | Does not | Slightly | Moderate | Very noticeable

Do floodwaters enter your home during the rainy season?

Does not apply | Does not | Slightly | Moderate | Very noticeable

1 of 5

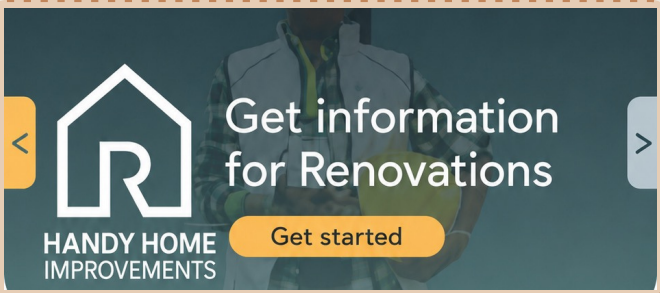
POE IMPACT

WEBAPP · POST-OCCUPANCY EVALUATION

A web-based POE instrument that measures the real impact of living in social housing. Built on the resilience attributes of the built environment, it turns residents' experience into structured, comparable data, revealing which improvements matter most.



SCAN TO OPEN



HANDY HOME IMPROVEMENTS

Get information for Renovations

Get started

REFORMA 2.0

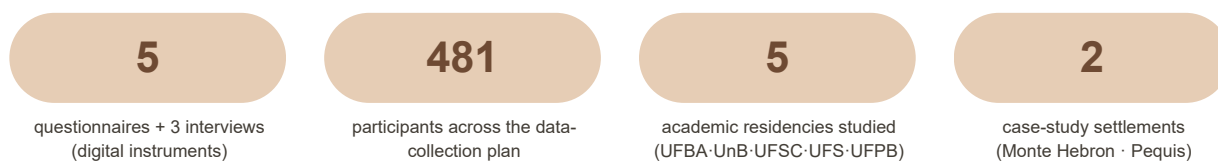
WEBAPP · ATHIS

A guiding web app that turns evaluation evidence into accessible renovation strategies: what to check, what care to take, whom to hire and the cost. The enhanced second version, refined through usability testing with residents.



SCAN TO OPEN

MAIN RESULTS



Designed as Social Technology, the instruments and platform are validated through a case study in Uberlândia (Monte Hebron and Pequis), academic residencies and mid-sized Minas Gerais municipalities — strengthening ATHIS (Law 11.888/2008) and resilience in social housing.

DATA-COLLECTION PLAN

Five questionnaires (impact · construction systems · female autonomy · ATHIS perceptions · POE for MCMV women), three ATHIS interviews, two co-production workshops and usability testing — 481 participants across residents, academic-residency students and municipal ATHIS managers.

TECHNICAL INFORMATION

APPROACH	Design Science + Practice Theory
INSTRUMENTS	Questionnaires · interviews · workshops
PLATFORM	REFORMA na Palma da Mão (v2)
FOCUS	Resilience · ATHIS · gender
SYSTEM	Digital POE System (MORA - FACOM / UFU)

CONTRIBUTIONS

Social — Female protagonism in HIS and ATHIS.

Policy — Strengthens ATHIS (Law 11.888/2008).

Capacity — Digital POE instruments for resilient housing.

SUSTAINABLE DEVELOPMENT GOALS



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