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Resilient social housings trails 1: urban sustentanability

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A série “Comunicação Técnica” compreende trabalhos elaborados por técnicos do IPT, apresentados em eventos, publicados em revistas especializadas ou quando seu conteúdo apresentar relevância pública. **PROIBIDO REPRODUÇÃO**

RESILIENT SOCIAL HOUSINGS TRAIL 1 – URBAN SUSTENTANABILITY

CCD Fapesp – Cidades Carbono Neutro



IPT

BUSINESS UNITS

BIONANOMANUFACTURING

Processes, Chemistry, PPEs, Biotech, Nanotech, Microfabrication

CITIES, INFRASTRUCTURE AND ENVIRONMENT

Territorial planning, Sustainability, Risks, Civil works

ENERGY

Generation, Infrastructure, Efficiency, Clean energy

TECHNOLOGICAL EDUCATION

Master's Degree, International MBA, Specialization

BUILDING AND HOUSING

Confort, Performance, Safety, Materials, Sustainability

ADVANCED MATERIALS

Metallic, Polymeric, Composite, Cellulosic, Corrosion

DIGITAL TRANSFORMATION

IoT, Embedded Systems, Intelligent Transport Systems, AI, Analytics

METROLOGICAL AND REGULATORY TECHNOLOGIES

Mechanics, Electrical, Flow Measurement, Aerodynamics, Chemistry



CONTEXT

- Challenge
 - Quantitative déficit – 6 millions housings
 - Cohabitation
 - Hight value of rent housing
 - Precarious housing



PROJECT GOALS

- ❑ Contributing to increase the resilience of precarious housing to extreme climate events.
- ❑ Considering social and extreme climate vulnerability.
- ❑ Considering emergence and transitional housing or shelter.
- ❑ Adequating an emergence and transitional shelter model to comply with climate resilience and users safety requirements.

Concepts:

Precarious housing:

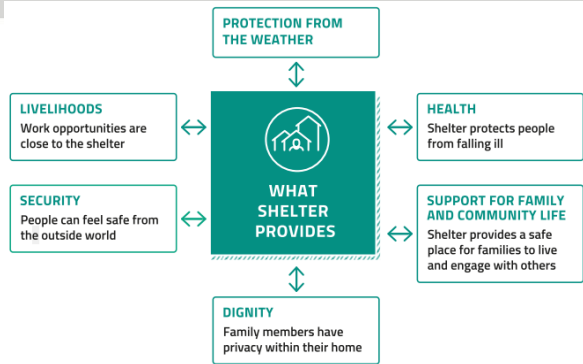
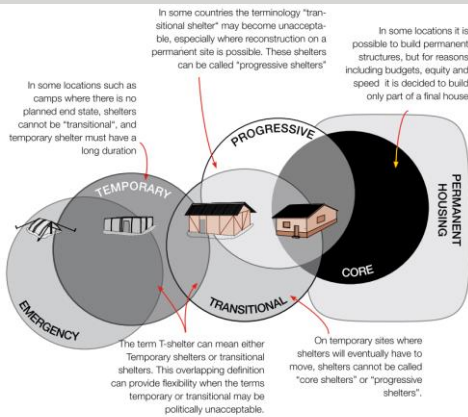
- rustic or improvised dwellings where is not possible to distinguish rooms or individualize spaces.
- generally lack access to basic services such as water supply, electricity, sanitation, or waste collection, resulting in a situation of extreme vulnerability (FJP, 2012)

Transitional shelter:

- Shelter used during the period between a natural disaster (or conflict), or extreme social vulnerability, and the implementation of a long-term solution (permanent housing)



TRANSITIONAL SHELTER



Source: SPHERE ASSOCIATION. **The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response**. Geneva: Sphere Association, 2018. vol. 1.

DELIVERABLES

- Guidelines for the adoption of quality emergency and transitional housing to replace precarious dwellings in urban settlements
- Physical and Digital Model of resilient emergency and transitional housing
- Scientific manuscripts published in national and international journals
- Disseminating the project's outcomes
- Meetings with public managers and communities to communicate the project's outcome



WORKING METHOD

BIBLIOGRAPHY REVIEW AND TOPIC DIAGNOSIS

- Review of national and international bibliographies and study cases ;
- Survey and analysis of technical reports and other materials produced by IPT on the subject;
- Technical visits to implemented cases;
- Selection of pilot areas.



DIAGNOSIS IN THE PILOT AREAS

- Assessment of the population's perception of the existing housing quality;
- Qualitative evaluation of the transitional housing model, considering safety, health, and durability requirements;
- Identification of geological risks in the pilot area and around the housing to be implemented;
- Assessment of residents' risk perception.

DEVELOPMENT OF SOLUTIONS

- Study of solutions that can be implemented in the pilot housing;
- Validation of the proposed solutions with the community.

PILOT IMPLEMENTATION

- Development of guidelines for implement resilient and emergent housing;
- Field application / pilot;
- Coordination actions with public authorities, CSOs, and communities



PARTNERS

- Teto Brasil NGO
- Abrainc -
- CDHU -
- Santos City Hall
- São José dos Campos City Hall



Thanks!

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REFLECTIONS

- CECREH: Reflecting on housing-related projects you have been involved with, what were the metrics used to evaluate the success of these initiatives? [extra: was there consensus across different groups with regards to what success means?.]
- IPT: In Brazil, the NBR 15575:2021 standard establishes performance requirements for residential buildings, including social housing. For transitional shelters, the recommended practice ABNT PR 1023:2025 provides specific guidelines and requirements. Then, both documents set requirements and evaluation methods. In addition to these standards, the housing market also considers quality indicators, such as user complaints and maintenance costs



REFLECTIONS

- CECREH: Affordability, energy-efficiency, and disaster resilience are housing challenges that often conflict with each other. Have you observed initiatives that successfully tackled more than one of these challenges at once?
- IPT: The debate on housing affordability is not new; however, the issues of climate resilience and energy efficiency are more recent. Then, we are not aware of projects that address all three requirements simultaneously. It is important to highlight that, in Brazil, sanitation and waste management are considered higher priorities than energy efficiency, since the country's predominantly warm climate.



REFLECTIONS

- CECREH: How can international collaboration advance innovative housing policies, technologies, and designs that reduce disaster risk while meeting other local community needs?
- IPT: Studying good and bad cases – benchmarking considering the both sides

