



Climate-Resilient, Multi-Purpose community shelter in Huế City, Vietnam

Overview

Phò Nam A village, Quảng Điền commune, located in the low-lying floodplain of Huế City, is a poor disaster-prone community where most households lack access to safe, well-equipped shelters during extreme events. To address these vulnerabilities, ISET-International (ISET), in close collaboration with local partners, supported a co-design and construction process to develop Hue's first multi-hazard community center that integrates resilience to floods, storms, and extreme heat. The two-storey facility serves both as an evacuation shelter during floods and storms and a public venue for community meetings, social activities, and training in normal times. The development process itself strengthened local capacity and awareness on climate-resilient design. This initiative serves as a demonstrative model of cost-effective, scalable climate-resilient community infrastructure that can be replicated in other vulnerable areas.

Our approach

ISET adopted a collaborative, community-centered approach by working closely with the city DRM agency, local authorities, universities, technical experts, and residents throughout the design, construction, and supervision processes. This ensures that the design was grounded in local needs while prioritizing multi-hazard resilience.

Building on a CRMC-informed concept note, the design process emphasized strengthened structural measures, climate-responsive features, and reliable backup systems, including solar power storage and rainwater harvesting. Cost-effectiveness and durability were prioritized to create a model that can be easily adapted and replicated by other communities facing similar risks.



Facts and figures



Cost of design = US\$2,000
Cost of construction and supervision (excluding community contribution): US\$48,000



Annual maintenance costs (by local government and community): US\$150



Time to implement design (including student design contest): 5 months

Time for construction: 3 months



Easy to replicate?

Yes, thanks to design, low cost and minimal maintenance requirements.

Photo: Design of the Climate-Resilient, Multi-Purpose community shelter in Huế City © TVB Construction Design and Interior Consulting Co., Ltd.

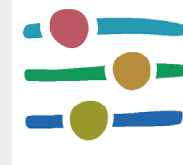
The gap

Across many low-lying rural areas of Central Vietnam, including Phò Nam A village of Quảng Điền commune, communities are increasingly exposed to severe and prolonged flooding, strong storms, and extreme heat as climate change intensifies. Yet the absence of accessible, disaster-resilient community infrastructure, especially safe flood and storm shelters and heat-resilient spaces, remains a critical gap that constrains local disaster preparedness and response.

In poor rural communities, most households rely on agriculture and live in single-storey houses with minimal protection from extreme weather. In Phò Nam A, T0 CRMC data shows that only about 1% of households have air conditioning and just 5% have insulation, leaving residents highly vulnerable during prolonged heatwaves. At the same time, there is no safe climate-resilient shelter within the community. Public buildings designated for evacuation are often distant, offer limited space, and are difficult to reach when floods or storms occur, while existing community centers are typically small, deteriorated, and lack the elevation, structural strength, and basic facilities needed to ensure safety. As a result, large segments of the population, especially the elderly, children, pregnant women, and people with disabilities, remain without accessible and reliable refuge during emergencies.

Our solution

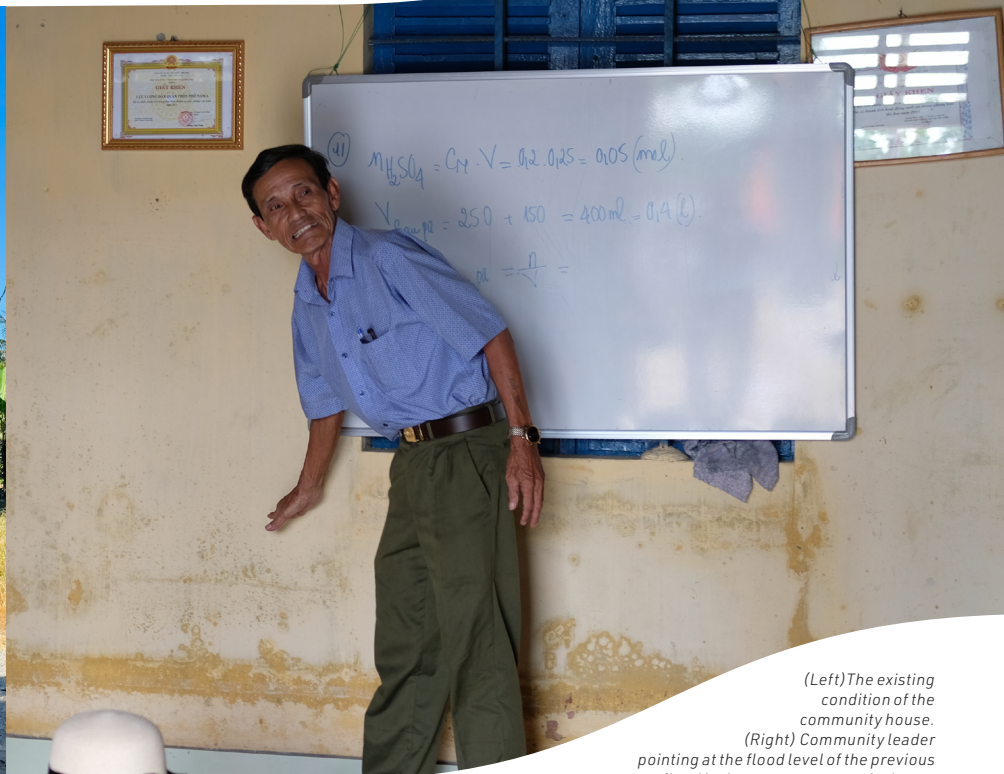
ISSET collaborated with the Water Resources and Climate Change Division of Hue City (DRM agency), commune authorities, and local communities to co-design and construct a climate-resilient, multi-purpose community center that offers safe shelter during floods, storms, and extreme heat, while serving as a venue for community meetings and social activities in normal times. A concept note describing local conditions and multi-hazard resilience requirements, based on the CRMC framework, was developed and used as the key input for a student design contest organized in collaboration with the Faculty of Architecture of Hue University of Sciences.



Climate Resilience Measurement for Communities (CRMC)

The Climate Resilience Measurement for Communities (CRMC) is a data-driven process, complemented by a web-based tool and mobile app, which helps communities to evaluate and measure how resilient they are to climate hazards. Using the results, they can identify and implement resilience-building interventions and run additional measurements to track improvements.

Find out more:
ZCRAlliance.org/crmc



(Left) The existing condition of the community house.
(Right) Community leader pointing at the flood level of the previous flood in the current community house
© Photo: Thanh Ngo, ISET Vietnam

The winning concept was selected through a two-round participatory review process involving ISET, the University, the DRM office, technical experts, commune leaders, and community representatives. This process ensured that the chosen design met both functional and resilience criteria while also building local capacity and fostering resilience thinking among future architects. The selected concept was then translated into a detailed technical design for construction and cost estimation.

The two-story reinforced concrete structure is designed to withstand storm wind loads, and flood depths exceeding historical records, and incorporate heat-resilient features, making it Hue's first community facility designed to address floods, storms, and extreme heat together. The open ground floor functions as a community hall, while the elevated upper floor provides safe shelter for up to 80 people. Key features include solar power backup, rainwater harvesting, natural ventilation, lighting, gender responsive and accessible sanitation facilities, inclusive and safe evacuation routes. Climate-adaptive features such as clay roof tiles, reflective wall paint, and shade trees help reduce indoor heat stress. The building also includes dedicated storage for emergency supplies, first aid kits, and response equipment.

Construction officially began in late September 2025 and is scheduled for completion by the year's end. Community contributions will support outdoor works such as the yard and gate, reinforcing shared ownership and sustainability.

How it increases resilience

Once operational, the center will provide protection, connection, and learning space for one of Hue's most climate-vulnerable communities, and strengthening their capacity to respond to floods, storms, and heatwaves.

- Strengthens preparedness and rapid response: the onsite elevated, reinforced structure offers a safe and quickly accessible evacuation shelter, particularly for vulnerable groups such as the elderly, children, pregnant women, and people with disabilities.

Conditions for success

Q: Is this intervention appropriate for other communities?

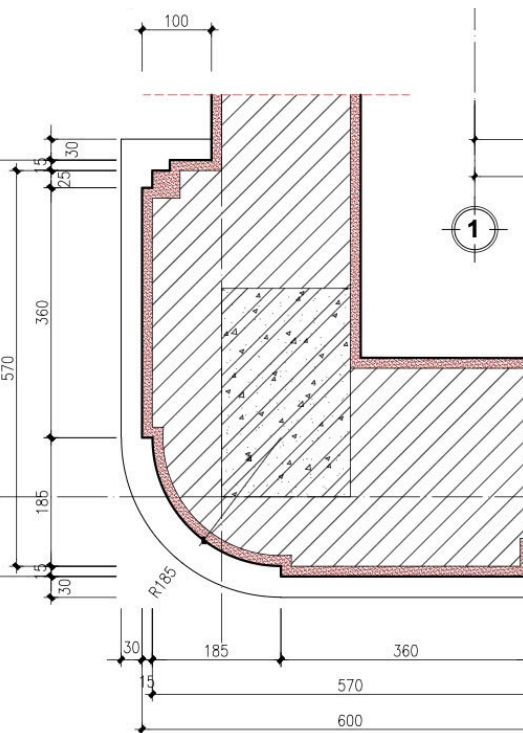
A: Yes, it is particularly suitable for low-income, disaster-prone communities that lack of safe, accessible, and multi-hazard-resilient community shelter.

Q: What conditions are needed for the interventions?

A: Strong local leadership and multi-stakeholder participation; suitable land availability; and the technical capacity and oversight needed to ensure safe, inclusive and multi-hazard-resilient design and construction.

Q: Was there anything special about the communities where interventions were effective?

A: Strong local government support and community ownership and commitment (including local contribution).



(Left) Curved corner design to lower wind pressure on building edges during storm © TVB Construction Design Ltd. (Right) The new shelter on inauguration day © Photo: Tho Nguyen, ISET Vietnam



(Left) Flood level of the previous flood in the new shelter.
(Right) Inside of the new shelter
© Photo: Tho Nguyen, ISET Vietnam

- Enhances resourcefulness and adaptive capacity: Climate-adaptive and sustainable features, including durable, low-maintenance materials, natural ventilation, reflective surfaces, shade trees, solar power backup with battery storage, and rainwater harvesting tanks, ensure safe, comfortable, and self-sufficient conditions during prolonged heatwaves or multi-day floods, reducing reliance on external support when electricity or water services are disrupted.
- Builds social capital and inclusiveness: As an accessible community space for meetings, awareness raising, and everyday social activities, the center fosters stronger community cohesion, trust, and mutual support as key elements for effective response and recovery.
- Provides a scalable, low-cost, multi-hazard model: Durable materials and low-maintenance needs make the approach replicable for other disaster-prone, low-income communities. The project’s experience in heat-resilient, multi-purpose design, together with the detailed technical drawings, also provides Hue with a practical reference model to guide future replication.

Get in touch

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The Institute for Social and Environmental Transition – International (ISET) is a non-governmental organization committed to building inclusive and transformative resilience in the face of natural resource, environmental, and social challenges, especially related to climate change, natural hazards, and urbanization. Officially operating in Vietnam since 2010, ISET has an intimate understanding of Vietnam’s institutional landscape and its strengths and challenges, and has proven expertise in working effectively across levels to bridge the still significant divide between science, policy, and implementation. ISET is working in Huế City and Gia Lai Province, both coastal areas in central Vietnam and Cần Thơ city in the Mekong Delta.