

Goal of Approach:

Design and demonstration of the implementation of appropriate interventions to reinforce an emergency shelter to intensified wind speeds from hurricanes and outfitting this building (renewable energy, water storage) to facilitate functioning during and after a hurricane, as appropriate

Input provided by:

Sustainable Development and Environment Division
Ministry of Sustainable Development, Energy, Science and Technology
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SAINT LUCIA

Main elements of the implementation strategy

Part of the vision of the Government for the demonstration site entails enhancing the usefulness of the building as an emergency shelter during natural disasters, noting also, that water and electricity shortages are commonplace during and following a hurricane and other natural disasters. This vision includes the establishment of the following:

- Water storage (both potable water from the authorised water utility company and rainwater harvesting).
- Water conservation, through the use of low-flush toilets, low water flow taps.
- Enhanced structural integrity through the installation of hurricane straps and impact resistant window.
- Installation of a ramp to facilitate the physically challenged entering the building.
- Natural ventilation, through the installation of dormers to obviate the need for air-conditioning.
- Generation of electricity using photovoltaic (PV) technology (solar electricity).

The use of photovoltaic technology is an adaptation response to enhance the usefulness of the demonstration site in the aftermath of a hurricane or other natural disaster, with accompanying climate change mitigation benefits.

Stakeholders and Partners include:

Ministry of Sustainable Development, Energy, Science and Technology; Ministry of Social Transformation, Local Government and Community Empowerment; Ministry of Physical Development, Housing and Urban Renewal; Ministry of Infrastructure, Ports, Services and Transport; Community Leaders; Consultant Engineer; Contractor; Photo-Voltaic (PV) Supplier; Caribbean Renewable Energy, Development Programme (CREDP)

This Project is consistent with Saint Lucia's:

- National Energy Policy , 2010
- National Emergency Management Plan, 2009
- National Water Policy, 2004
- Sustainable Energy Plan, 2001
- Organization of Eastern Caribbean States (OECS) Building Code

Targeted beneficiaries

- Availability of an emergency shelter that embodies engineering guidelines, centred on the ability to withstand wind speeds greater than Category 3 Hurricane, as anticipated from climate change;
- Design specifications may be incorporated into Building Code
- Enhanced awareness and application of new design hurricane wind speed standards by engineers and architects, building contractors, insurers and others, with the expectation of adaptive replication
- Continuity in provision of service during and post-disaster
- Protection of vulnerable or affected community residents during and post extreme weather/climate events
- A safe source of water during and after a disaster
- Increased sustainability of the building and its functions (building used by community for many activities aside from disaster functions)

Any significant lessons learned

- ...Need for a close working relationship (a regular presence) between climate change/environmental expert, engineer, architect and contractor to ensure that the retrofitting is done according to the initial plan
- ...The need to build into the design, some flexibility to facilitate expansion and add-ons, as funding becomes available
- ...Some of the 'old ways' of adapting that are less common today are sometimes the best ways to adapt (e.g. rainwater harvesting, natural ventilation via dormers)

Resource requirements

- Data on winds speeds specific to the country or area , as applicable
- Engineering guidelines that correspond to the data on wind speeds
- Expertise in wind speeds, photo-voltaic installation, green architecture, engineering
- All of the above are dependent on adequate financing

Potential for replication or scaling-up

Significant potential for replication in community centres, health centres, hospitals and schools around the island

Any additional information

The ultimate goal of the Project that gives due recognition of the anticipated impacts of climate change, specifically, increased severity of hurricanes, is the institution of revised design hurricane wind speed standards to facilitate enhanced designing, construction and retrofitting in Saint Lucia, for public and commercial buildings in the first instance