

EARTHQUAKE RESISTANT ENGINEERING WORKSHOP

1. RELEVANT SECTORS AND / OR ACTORS

- Construction engineering
- Construction
- Architects
- Public or private contractors
- Engineering, technical studies (Code APE : 7112B)
- Analyses, trials and technical inspections (Code APE : 7120B)
- Continuing education (Code APE : 8559A)

2. BENEFICIARIES

Current community partners

- EGIS INDUSTRIES (engineering and design office)
- ANCO (building surveyor and training company)

Examples of targeted community and Caribbean groups

- HC Caraïbes Tel. 00 596 596 52 90 64 hc.caraibes@groupehc.com - Jean-Marc VERRIER
- French Association for Earthquake Resistant Engineering - Association Française du Génie Parasismique (AFPS)
- Office of Disaster Preparedness and Emergency Management - Ronald JACKSON
- Caribbean Regional Organization for Standards and Quality (CROSQ) Tel 246 622 7670
- Council of Caribbean Engineering Organizations (CCEO) Tel +1 868 662 6267
- Caribbean Accreditation Council for Engineering and Technology (CACET)
- Association of Professional Engineers of Trinidad and Tobago (APETT)
- HC Trinidad Ltd hc.trinidad@groupehc.com
- Jamaica Institution of Engineers (JIE)
- Institute of Structural Engineers Caribbean Division Tel + 876 873 74 02 shalzj@gmail.com
- Civil Engineering Caribbean Tel + 599 9 368066
- Consorcio GAW 1 809-566-5253

3. CONTEXT / TOPIC

Engineers, from all over the Caribbean, are always developing cyclone and earthquake resistant projects. However, recent conclusions from global conferences highlighted the gulf between the actual state of earthquake resistant engineering in the Caribbean, and the level required in terms of security and optimal cost efficiency. Given that the Caribbean region is susceptible to earthquakes, it is urgent to address these questions. This implies encouraging the development of earthquake resistant engineering through exploring themes such as:

Earthquake resistant norms and assessments

Within the framework of a Caribbean Development Bank and CROSQ project, the Caribbean Uniform Building Code (CUBiC) is in the process of being replaced. In addition, one of the reasons justifying the creation of CACET in 2009, was to collaborate with the accredited national and regional offices in order to standardize and share information and resources. With the transition from PS92 to the Eurocode 8, and following the example of their Caribbean counterparts, the engineers from the Buildings and Secondary Schools Office of the Martinican General Council participated in the AFPS work. With the help of local, specialised engineering and design offices, they contributed to the creation of earthquake resistant norms for private homes in the West Indies.

Earthquake resistant reinforcements

The Martinican General Council conducted an initial survey which measured the vulnerability level of each building, the foreseeable reinforcement means, the priorities and the necessary financial sums. Following this, the General Council's buildings and secondary schools' earthquake reinforcement plan was approved in 2009. The plan was presented in two phases: 1. the earthquake resistant reinforcement of the four secondary schools that suffered the most damage after the 2007 earthquake, and 2. the earthquake resistant, protective reinforcement of 60 department sites.

The Earthquake Resistant, Protective, Reinforcement Techniques are aimed at reducing or eliminating existing structures' weak areas by responding to price constraints, delays and implementation difficulties. Less costly

and technically easier to understand, these conditions allow contractors to reduce the risks of deterioration and collapse because the building's framework reacts better and the structure's resistance is improved.

4. OBJECTIVE

Support the development of earthquake resistant engineering through highlighting the experiences acquired, the lessons learned and facilitating collaboration and tests

5. APPROACH / STRATEGY

Reflecting upon the success and failures of different experiences is at the heart of the project and its implementation strategy. Indeed, the sharing of knowledge and experiences allows us to identify positive techniques and expertise in order to inform the different actors. It will be able to assist us in the development, updating and diffusion of procedures or plans, in the evolving regulations, the solicitation of scientific expertise.... This opening is even more important because it is vital to use, in the best way possible, the existing body of knowledge in order to improve responsiveness, product and service quality, capacity to innovate, etc.

Another central axis of the project is the online network. This collaborative space has for objective to initiate or reinforce the links between the multiple partners: decentralized departments, specialized agencies, ministries, specialists in the field, regions, associations, etc. Thus, a professional, Pan-Caribbean community will develop to create projects, assist and promote innovative and pertinent solutions. All of this will contribute to better natural risk prevention, management and handling.

6. EXPECTED RESULTS AND IMPACT

↳ The lessons learned from different experiences are communicated to the largest number of potential actors possible in order to improve overall knowledge. More specifically:

- positive points identified and highlighted
- Dysfunctional aspects cleared up and improvement axes proposed

↳ Position and analytical papers are written collectively and translated into French, English and Spanish, then put online so that all the cluster's members and partners can consult them. Concretely, examples of expected short/midterm results are:

- Joint trainings or programmes
- A common frame of reference from which to diagnose and create basic rules

↳ Caribbean professionals' skills in terms of risk management and prevention are reinforced, particularly the technical actors in the field

7. HOW TO BECOME INVOLVED IN THE PROJECT AND BECOME A PARTNER?

↳ Step 1: Sign up on the collaborative platform to become an active member of the workshop

↳ Step 2: Participate in the work remotely concerning the topic of common interest and submit proposals from which the intervention and operational programme framework will be established

↳ Step 3: Formalise the roles, actions and commitments to be implemented via charter membership and the signing of agreements, which promote quality partnerships under one or several of the following terms:

- Test sites are made available
- Appropriate processes, procedures, plans and material are furnished
- Human resources mobilized part time to participate in the work (for example, diagnostic elaboration, methodological studies of the site, implementation and follow-up studies of the work, etc.)
- Cash contribution
- Other (to be developed)