CARIBBEAN BUILDING CODE

Global Earthquake Modelling Workshop
Trinidad and Tobago
May 3rd, 2011

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Trinidad and Tobago Bureau of Standards
PRESENTATION OUTLINE

- Objectives
  - Describe Caribbean Building Code Project
  - Opportunities to participate

- Outline
  - Project background
  - Project structure
  - Development of Application Documents
  - Opportunities to participate
**What is a Building Code**

A **building code**, is a set of rules that specify the minimum acceptable level of safety for constructed objects such as buildings.

The main purpose of building codes are to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures.
FIRST BUILDING CODE

Hammurabi, Ancient Babylonian ruler from 1792 - 1750 BC

If a builder builds a house for someone, and does not construct it properly, and the house which he built falls in and kills its owner, then the builder shall be put to death.
THE RESULT

No pyramids in Babylon!!
Any Progress since 1750 BC?

Now we have
- Wide choice of materials
- Improved engineering materials
- Professional engineers
- Computer modeling tools

And yet we have 840,000 killed by earthquakes since 1990.
AVOIDING BUILDING COLLAPSE

- Haiti: 230,000 killed, 117% of GDP in damage
- Caribbean in seismically active area
- Large number of historical earthquakes recorded
- Chile: 400 killed, 15% of GDP in damage

Industry Challenges
- Inconsistent building material quality
- Limited building codes/enforcement
- Large informal building sector
CARIBBEAN BUILDING CODE PROJECT

- GEM project will determine and communicate earthquake risk

- The Building Code Project will bridge the gap between earthquake risk information and safer buildings
  - Building Code
  - Training
  - Enforcement
OBJECTIVE

The project objective is

“The production of an updated and comprehensive set of regional building standards and the expansion of their use in the Caribbean, thereby facilitating the safe and economical design of buildings in the Region.”
**Benefits of Caribbean Building Code**

- Harmonized requirements
- Common platform for training and CPD
- Facilitates updating of the code
- Promote intra-regional trade in construction services
- Help to standardize basic construction materials
PROJECT BACKGROUND

- In 2004 a meeting of key construction industry stakeholders agreed upon
  - The need for a Caribbean Building Code
  - A methodology for developing new CBC
  - the International Building Code as the base document with the development of companion regional Caribbean Application Documents
- Project funded by Caribbean Development Bank
- Implemented by CROSQ
CDB – Caribbean Development Bank
Regional financial institution focused on
• contributing to harmonious growth and economic development,
• promoting economic cooperation and
• integration with special attention to the less developed members of the Region

CROSQ - CARICOM Regional Organization for Standards and Quality
Regional Standards Institution responsible for developing the Regional Quality Infrastructure by
• Harmonize and coordinate standards development
• Increase regional and international trade
• promote sustainable production of goods and services
• Enhance social and economic development
• Support the CSME
PROJECT - OUTPUTS

- Caribbean Application Document to the International Building Code
  - Based on national/regional deviations to the IBC
  - Seismic Hazard Maps
  - Rainfall Intensity Duration Curves

- Training of professionals in the use of the CADs

- Development of Code Enforcement Capability
PROJECT PARTNERS

CROSQ members (15 national standards bureaus)

Caribbean Council of Engineering Associations
Association of Commonwealth Societies in the Caribbean (ACSAC)
Caribbean Disaster Emergency Management Agency (CDEMA)
University of the West Indies (UWI)
**PROJECT STRUCTURE**

- **Steering Committee**
  - **Regional Technical Committee**
  - **CROSQ Project Unit**
    - **NTSC - TT**
    - **NTSC – J’ca**
    - **NTSC – B’dos**
    - **NTSC - Grenada**
    - **NTSC Guyana**
## Roles

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<thead>
<tr>
<th>Body</th>
<th>Role and function</th>
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<tbody>
<tr>
<td>CROSQ</td>
<td>Administration and project management support</td>
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<tr>
<td>RSC</td>
<td>Regional Steering Committee&lt;br&gt;Sets Policy direction for the project.</td>
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<tr>
<td>RTC</td>
<td>Regional Technical Committee&lt;br&gt;Manage the CAD development process.</td>
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<tr>
<td>Consultant</td>
<td>Preparation of CADs and response to comments</td>
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<tr>
<td>NTSC</td>
<td>National Technical Sub Committee&lt;br&gt;National organisations to review the draft CADs to ensure that local situations are taken into consideration.</td>
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## Countries Covered

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<tr>
<th>COUNTRY</th>
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20 Regional Member States Covered (15 CROSQ, 16 CDB)
What will the Code look like

Caribbean Code

International Building Code

Caribbean Application Document
- Companion document to IBC
- Harmonized Regional modifications to the IBC
DEVELOPING CADs

- Prepare Draft CADs
- Comment on Draft CADs
- Hazard Maps
  Seismic, Rainfall, Flood

Caribbean Application Document
  to be used with IBC 2009
HAZARD MAPS

- Seismic
  - Maps to be compliant with the IBC
  - Proposal to use the existing Eastern Caribbean Maps prepared by the EU Center

- Rainfall intensity duration frequency curves
  - Completed for six MS

- Flood Hazard maps
  - Not needed for the code
  - Completed for 6 MS
  - Regional workshop in Mar 2010 to present findings
DEVELOPMENT OF CARIBBEAN APPLICATION DOCUMENTS

- **Consultant**
  - Produce Draft CAD
  - Revise Draft CAD in response to 1st comments
- **Prof Assoc**
  - Peer Review Draft CAD
- **NSB**
  - NSB promotes Draft CADs seeking comments
  - NTSC finalizes national comment on Draft CAD
- **CROSQ**
  - Finalize & Edit CADs
  - Propose to COTED for Adoption
OPPORTUNITIES FOR INVOLVEMENT

- Code development
  - 24 Code Specialists needed
  - Broad range of expertise needed (structural to energy efficiency)
  - Prospective Code Consultants should contact their NSBs or CROSQ
DEVELOPMENT OF CARIBBEAN APPLICATION DOCUMENTS

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Prof Assoc
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NSB
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CROSQ
OPPORTUNITIES FOR INVOLVEMENT

- Draft CADs will be available for comment
  - Peer review by the professional bodies
  - Comment National Technical Committees

- National Technical Committees
  - Responsible for coordinating MS inputs and comments to the CADs
  - NTSCs established in all MS
  - Need for specific subject area working groups
  - Contact NSBs or CROSQ if interested
Will the Code Get Anywhere?

- Tragic experience in Haiti is a recent memory
- Increased public awareness of the effect of natural hazards
- Existing Agency responsible for developing and maintaining the Code
- Legal Mechanism exists requiring adoption of the Code within CARICOM
WHAT CAN YOU DO

- Become a code consultant
- Comment on the Application Documents
- Support training activities (new and existing engineers)
- Encourage professional societies to require Continuous Professional Development of seismic design.
- Lobby your government to adopt and enforce the code
REMEMBER THE HAMMURABI CODE

Would you be willing to stake your life on the Quality of your work?
Thank you for your time and attention

Any Questions?
CONTACT INFORMATION

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