Myanmar Key Takeaways from TDD

Regulatory
- Building Code
- Building Act
- Subsidy Program
- Building Confirmation
- Law Enforcement
- Building Capacity
- Implementation Mechanism

Seismic
- Vulnerability Map
- Macro Hazard Zoning
- Micro Seismic Geotechnical Zoning
- Risk Score
- Risk & Cost Analysis
- Seismic Design

Disaster Preparedness
- Redundancy of Information
- Preparedness counter Measure
- Disaster waste management
- J Alert & L Alert
- CSO Prevention Measure
- Prototype Buildings
- Awareness Program
Myanmar Accomplishments Needed

Through our program, we are aiming to improve the resilience and safety of the built environment in Yangon.

What We Need to Do Now:
- Strengthen & Modernize the Building Regulatory Framework
  - Build capacity of EDB to understand and address drivers of risk
  - Develop a regional-level approach for (i) rules and regulation and (ii) enforcement
- Ensure seismic resilience of critical public facilities
  - Retrofit critical buildings with high occupancy (e.g., markets, schools, hospitals)
  - Preserve and protect Cultural Heritage value
  - Assess vulnerability of critical lifelines (e.g., water supply network)

Related Next Steps Needed:
- Develop options for reducing the risk in the existing private building stock
- Develop a seismic vulnerability map & Risk and Cost Analysis
## Myanmar - Actions to be Taken

Engineering Department (Buildings) - EDB and the Yangon City Development Committee (YCDC) have a busy year ahead!

<table>
<thead>
<tr>
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<th>Short (0-6 months)</th>
<th>Medium (7-12 months)</th>
<th>Long (12+ months)</th>
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</thead>
<tbody>
<tr>
<td><strong>Water Supply Network</strong></td>
<td>Preliminary risk assessment of water supply network and water reservoir intake structure</td>
<td>Detailed risk assessment and design of retrofit of water supply system</td>
<td>Retrofit pumping stations, air compressor stations, and water supply infra</td>
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<tr>
<td><strong>Building Infra</strong></td>
<td>Building Regulatory Capacity Assessment</td>
<td>Detailed design of retrofit solutions for priority public facilities (e.g. markets)</td>
<td>Retrofit priority public facilities (e.g. markets)</td>
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<td>Deploy Database or other Software Solution to enhance permit review and enforcement (e.g., building database, plan archive)</td>
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<td>Implement Action/ Investment plan to strengthen/modernize building regulatory framework</td>
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<td>Assessment of seismic vulnerability of residential and public buildings (collaboration with Myanmar Engineering Society – MES)</td>
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<td>Develop and pilot retrofit guidelines for existing unsafe apartment buildings</td>
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Barrier/Challenge of Implementation of Plan

- **Experience with Technology Implementation**
  - Working with Development Partners (DPs) to support, but still tough!

- **Financial Constraints**
  - Work with TA and Credit from World Bank and DPs

- **Limited HR and Capacity**
  - Training and Capacity Development

- **Poor Regulatory Enforcement**

- **Poor Coordination (e.g., Gov, Education, NGOs, DPs)**
  
- **Lack of Experience with DPs**
  - That’s why we’re here!


To be enhanced by the Actions to be Taken (last slide) – Role Clarification and Empowerment
Myanmar Support Needed

The World Bank is supporting YCDC through the US$117 million Myanmar Southeast Asia DRM project and GFDRR/ DRM Hub is supporting with a Resilient Urban Infrastructure TA grant. More support will be needed to take on this challenge.

**Knowledge Products:**

**Building Regulation:**
- Sample TOR for base isolation
- Guidance/lessons from retrofitting incentive program in Kobe

**Water Supply**

**DRM Hub through this TDD:**
- Enhance partnership with World Bank and JICA for future operations
- Connect/partner with Kobe City, Japanese ministries, and universities (e.g., Kyoto U, Kobe U, tech institutes) to train EDB staff on structural analysis, geo-seismic engineering, practical lessons on enforcement from Japan (e.g., Kenchikushi, confirmation vs. approval)
Thank You