The International Building Code®
and
The Kingdom of Saudi Arabia
Challenges in Implementation of the International Building Code

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Saudi Aramco

- Saudi Aramco is a fully integrated, global petroleum and chemicals enterprise.
- A world-leader in hydrocarbons exploration, production, refining, distribution, shipping and marketing, and is the world’s top exporter of crude oil and natural gas liquids.
Saudi Aramco

• Large Community Infrastructure
  – Abqaiq
  – ‘Udhailiyah
  – Tanajib
  – Ras Tanura
  – Dhahran
  • Addition of 1000 houses, 13 apartment buildings, schools, recreation and performing arts center, retail, etc.
Saudi Aramco

- Megaprojects within the Kingdom
  - Jazan Economic City
  - Ajyal Community
  - Multiple Sports Stadiums
  - Dozens of Public Schools
  - University Campuses
    - KAUST
    - KAPSARC
Kingdom of Saudi Arabia

- Economy is very strong
- Large scale construction projects visible everywhere
Hazards Mitigations Challenges

• KSA Natural Hazards
  – Seismicity
    • Primarily SDC A
  – Wind
    • Average 3sec is 90 mph, highest around 110mph
Hazards Mitigations Challenges

• Environmental
  – Saudi Arabia is warm!
  – Cooling loads are high.
  – Population is growing.
    • Housing is claimed to consume 50% of energy.
    • Insulation and energy efficiency being promoted.
Mitigation via a Building Code

- Lessons learned from Hurricane Andrew.
- Effectively implemented building codes may be used for effective hazards mitigation.
Saudi Building Codes

• Saudi Aramco
  – SAES-M-100
  – 2009 International Building Code

• Saudi Arabia
  – Saudi Building Code
    • 2000 Royal Decree to form a committee
  – 2003 IBC is the basis
Building Code Implementation

• Implementation of the building code.

• Skilled building code professionals are in extremely short supply
  – Code compliance review
  – Inspections
  – Training of Saudi workforce

Saudi Aramco IBC Basics Workshop - 2014
Building Code Implementation

- Construction profession largely employs unskilled laborers.
  - Not considered a professional class as yet
  - Little formal knowledge of codes and standards
- Design firms have limited codes knowledge.
- LP engineers critical for ensuring safe construction.

Saudi Arabia’s First ICC Certified Professional
Building Materials Standards

- Industrial cities
- Populated with heavy industry
- Produce many basic products used for construction
Building Materials Standards

- Foam plastics example
- Locally manufactured plastics resins
- Products not labeled
  - Not traceable to a particular test
  - Limited local testing capability
- Limited knowledge of fire performance issues
Building Materials Standards

• Traditional and continued use of concrete building materials.
• Unusual uses of NEW materials with fire performance ramifications.
• Building safety education is needed.
Saudi Aramco Loss Prevention Code Implementation Strategy

**Task 1**

- Recruitment of qualified building safety professionals.
Task 2

- Provide training and mentoring for Saudi Engineers.
Saudi Aramco Loss Prevention Code Implementation Strategy

Task 3

• Raise professional credentials.
  – Certification
  – ICC Chapter in Saudi Arabia
  – Mandatory requirements for certified designers

Saudi ICC Certified Code Professionals
Saudi Aramco Loss Prevention Code Implementation Strategy

Task 4

- Raise building material quality.
  - Testing laboratory certification via IAS
  - Education
  - Directed Inspection Enforcement
Questions

• Thank you!

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