The Importance of Codes & Standards to Support the Building Industry

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“Sustainable Construction in Commercial Buildings through Building Codes and Standards”
Pan American Standards Commission (COPANT)
23 April 2013 – Saint Lucia
Sustainable Development

• “...meet the needs of the present without compromising the ability of future generations to meet their needs.”

Buildings Matter!

Total Energy Use

- Buildings: 41%
- Transportation: 31%
- Industry: 28%

Source: USEIA - 2012
What makes a building green?

- How does it impact the natural environment?
  - Climate change
  - Ozone destruction
  - Habitat destruction
  - Pollution of water, air & soil
  - Depletion of non-renewable natural resources

- How does it impact the occupants & society?
  - Health, safety, comfort
  - Purpose & Function
  - Cost

- Green buildings → LCA!
  - Minimize negative impacts → Eliminate negative impacts?
  - Maximize beneficial impacts
Green Buildings

- Indigenous cultures
  - Renewable resources
  - Designed for the local climate
- Meets LEED Credits
  - Near public everything
  - 100% water savings
  - 100% energy savings
  - 100% recycled content
- Does not meet Code!
Buildings Must Perform in Many Ways

• **Key Design Parameters**
  • Purpose / Function
  • Beauty / Aesthetics
  • Structural Integrity
  • Life Safety (fire)
  • Code Compliance
  • Cost
  • Energy
  • Durability
  • IEQ / Comfort & Health
  • Sustainable
Building Codes

- Regulatory requirements pertaining to the design & construction of buildings.
  - Established law, adopted by the AHJ
- Establish the rules for:
  - What buildings can be built
  - Where buildings can be built
  - Design of buildings
  - Construction methods
  - Materials that can be used
- Minimum requirements to protect health, safety, general welfare & affordability.
Building Codes

- “The worst building you can legally construct!”
- Buildings are complicated networks of interacting systems.
  - High performance buildings are less forgiving
  - Building codes do not look at how each system impacts every other system or function.
    - “Meets code” may not be good enough, but…
    - Lowest first cost usually wins
- Codes define basic conditions of acceptance
- Drives innovation but also resists change
- Codes rely on Standards to fill in details
Building Materials Standards

- Define the materials
  - What they are
  - What they are not
  - What they must do
  - What they must not do
  - How they are tested

- Level the playing field!
  - Metrics by which quality & performance can be judged
  - What’s not included is also important!
  - Standards convert proprietary products into commodities!
Building Materials Standards

- Used by the building code
  - Must comply
  - Drives market changes
- Not cited by the code
  - Use is optional
    - Many standards are not used directly by the codes but are needed by industry
Building Codes & Standards

- **Codes**
  - Establish what materials can & cannot be used
  - Create strong, market driven incentives & disincentives for innovation
  - Opportunities & risks exist where codes are silent

- **Standards**
  - Establish how products are compared
  - Good standards must be
    - Meaningful, and
    - Measurable
New Codes, Standards & Rating Systems for Green Buildings

- Needed for the future
- End greenwashing
- Standards alone are not sufficient
- Codes drive industry adoption
Thank you