High Performance Building Requirements for Sustainability

Energy Efficiency and Sustainability Criteria Plus
Increased Disaster Resistance and Improved Durability
High Performance Buildings

Scope

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
High Performance Buildings

Functional Resilience
High Performance Buildings

Functional Resilience
IBC Minimum Code + Sustainability + Resilience = High Performance
Innovative Approach

- Amends & Appends the IBC
- Mandatory Requirements
- Limited to Building Department Responsibility
- No Certification Fees
New Ordinance for Sustainable Buildings
Codes & Standards Home > Ordinance for Sustainable Buildings

High Performance Building Requirements for Sustainability

Click here to download High Performance Building Requirements for Sustainability, Version 1.5

As more and more states and municipalities are developing ordinances requiring "green" or "sustainable" buildings, the officials in charge of adopting the new rules are scrambling for appropriate codes language. To fill this void, the Portland Cement Association (PCA) has developed a sample ordinance, written in mandatory language, that amends and appends the International Code Council International Building Code to address high performance buildings.
Key Component - Service Life Plan

- Design Service Life
- Construction Material
- Maintenance Costs
Key Component - High Performance

Fire Safety

- Mandatory sprinklers
  - Except F-2 & S-2
- Structural fire resistance
  - Emphasis on I-1 & R
- Redundant fire safety

Sprinkler Trade-offs
Key Component - High Performance

Fire Safety

- Wildland-Urban Interface Code
Key Components – High Performance Structural

- Storm Shelters Standard - Mandatory

They work!!

Photo provided by Oklahoma Department of Emergency Management
Key Components – High Performance Structural

- Base Design Wind Pressure Increase 20% (5%)  
- Flood Resistance  
  - 3 Feet Above BFE  
  - No levees, dams
Key Components – Indoor Environment

- Sound Transmission
- RestrictVolatilOrganicCompounds
- IndoorAirQuality
  - Air filtering
  - Carbon dioxide detection
  - Recreational smoking
Key Components – High Performance

- Exceed IECC by 20%
Key Components – Indoor Environment

- Solar Reflectance Indices
  - Roofs
  - Walls

- Water Use Reduction
Key Components - Conservation

- Material Resource Requirements
  - Recycling
  - Construction waste
  - Material transport
  - Pollution prevention
- Site Development and Site Improvements
Key Benefits – Operations

- Be more energy efficient, exceeding the minimum building code requirements by at least 20%.
- Have lower operating costs
- Have lower maintenance costs
- Improve occupancy comfort and productivity through enhanced air quality, noise control, safety, security, and thermal comfort.
Key Benefits – Materials Resources

- Be constructed with materials that are sustainably harvested, extracted, processed and manufactured
- Minimize the contribution to pollution and landfills when disasters occur.
Key Benefits – Owners

- Qualify for lower insurance costs
- Have higher appreciation
- Attract quality and environmentally concerned occupants
- Appeal to investors
Key Benefits – Community

- Offer longevity and community acceptance
- Maintain a more consistent tax base
- Minimize the expenditure of community resources when disasters occur
- Provide improved fire protection and reduce the potential for conflagrations
Adoption

- Encourage Adoption of **High Performance Building** Requirements for Sustainability
  - All or In Part
  - Authorities Having Jurisdiction (AHJ)
    - State Governments
    - Local Municipalities
    - Federal Agencies
Applicability

- Government owned or funded buildings
- Buildings designated HP
- All buildings within the jurisdiction
Advocacy

- Encourage Adoption of High Performance Building Requirements for Sustainability
  - Needs advocacy
  - Needs to be promoted to like minded groups
Audiences

- Energy conservation interests
- Emergency management
- Environmental interests
- Fire services

Insurers and insurance commissioners
High Performance Buildings

Audiences

- AARP
- Elderly
- Charities
- Health and human services
- Elected Officials
- Municipal Planners
High Performance Buildings

Audiences
Benefits

- Better buildings
- Better environment
- Positively positions industry
- Adoptable language
- Technical support from PCA
- More opportunities for our industry and products
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