

# Commercial Buildings Consortium: Partnering on Comm'l Building Challenges & Opportunities



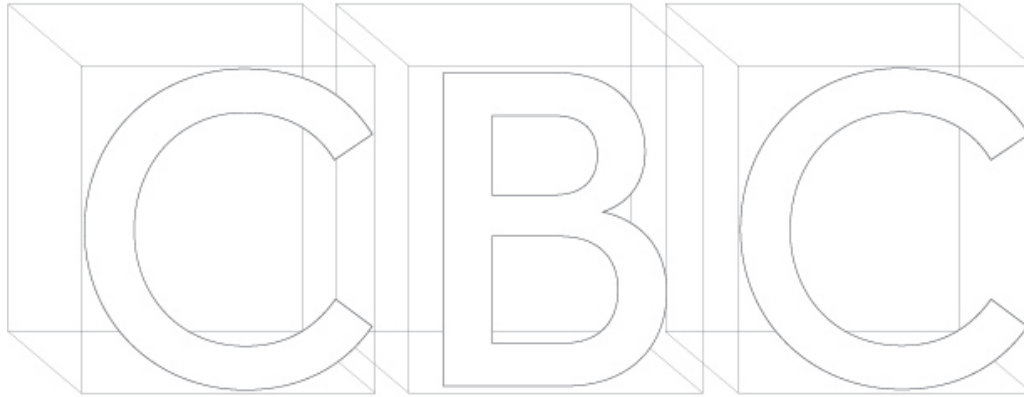
**HVAC, Refrigeration, and Controls  
Supplier Summit**  
Las Vegas, Nevada  
February 3, 2011

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National Association of State Energy  
Officials



- 56 State & Territory Energy Offices and 7 Regions
- State Energy Offices and technology deployment
- State policies and programs
- Public buildings represent 1/5 of all commercial floor space; 28% of commercial sector site energy
- Program Secretariat for the CBC

ZERO ENERGY  
COMMERCIAL BUILDINGS CONSORTIUM



# CBC Background and Overview

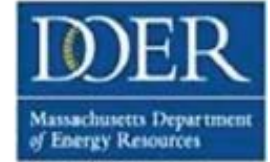
- Components and systems integration
- Performance assurance and feedback
- Lack of information
- Highly diverse sector (climate, size, etc.)
- Perceived risk
- Split incentives
- Financing and valuation
- Insufficient workforce capacity
- Weak Codes & Compliance

- Broad industry representation includes:
  - Design professionals
  - Development, construction, financial and real estate industries
  - Building owners and operators
  - Academic and research organizations
  - Building code agencies and organizations
  - High-performance green building organizations
  - Indoor air quality and intelligent buildings experts
  - Utility energy efficiency programs
  - Manufacturers and providers of equipment and techniques
  - Public transportation experts
  - Nongovernmental energy efficiency organizations

# CBC Leadership: Steering Committee Members

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy



National Institute of  
BUILDING SCIENCES



Urban Land  
Institute



- Work with industry stakeholders to characterize barriers and challenges and recommend solutions
- Coordinate with industry to act on those recommendations
- **Ultimate Goal**—Accelerate market transition to net-zero energy commercial buildings

## Technologies & Practices

- Building Envelope
- Mechanical Systems and Controls
- Lighting/Daylighting and Controls
- Process, IT, and Misc. Equipment
- CHP, Multi-Building Systems & Grid Integration

## Market & Policy

- Codes and Standards
- Integrated Design and Building Delivery
- Benchmarking and Performance Assurance
- Voluntary Programs
- Financing & Appraisal
- Owner/Tenant Issues
- Workforce Development



# CBC Report Highlights

- Deployment of Existing Technologies
- System Integration and Sensors & Controls
- Integrated Design and Energy Modeling Tools
- Shifting beyond design & construction into O&M and “unregulated loads”
- Research and Development
- Case Studies
- Multi-building Systems
- Codes & Standards
- Finance & Valuation
- Workforce Development

## Research & Development

- Establish a “test bed” for new technologies
- Carry out rigorous studies and post-occupancy evaluations to evaluate occupant impact

## Develop and Disseminate Case Studies

- Best-in-class design and construction details, cost-benefit analyses
- Segmented by climate, building type, and new construction or retrofit

## Multi-Building Systems & Community



## Multi-Building Systems

### Multi-Building Systems



## Finance and Valuation

- Communicate value of EE to finance community
- Increase dialogue between private capital and utilities and policy-makers
- Need to shift EE investments from operations budgets (1-3 yrs) to capital budgets (15+ yrs)
- Establish revolving loan funds for public sector financing

## Owners and Tenants

- Corporate leadership and commitment can be real drivers.
- Encourage major owners and tenants to agree on standard energy-efficient lease provisions
- Seize opportunities at time of transaction

## Workforce Development

- Trainers will not train workers for jobs that do not exist
- Need to clearly define requisite skills, career paths, and job placement opportunities
- Target efforts and education towards the FIRE community to help create and sustain market demand
- Starting with clearly defined paths to zero energy, build consensus around workforce requirements
- Identify & spread best practices (K-12, university, technical)



# Conclusion & Future Opportunities

- Deeper dives into specific topics
  - Efforts to increase fuller commercialization of underutilized technologies
  - Integrated design
  - Energy-efficient leasing provisions
  - Consensus criteria for workforce requirements
- Increasing reach of CBEA activities
- Document and promote success stories
  - Case studies and measured performance
- Others??

- Membership is open to everyone
- Active Members:
  - Participate in one or more working groups
  - Contribute best practices and case studies
  - Review reports
  - Represent the Consortium at industry events
- Corresponding Members:
  - Receive Consortium communications and activity updates

- Contact Diana Lin (dlin@naseo.org) for general inquiries about the CBC.
- Contact Abi Kallushi (akallushi@ase.org) for more information on membership.
- JOIN TODAY:
  - \*\* Visit us at [www.zeroenergycbc.org](http://www.zeroenergycbc.org) \*\*