

Resiliency of the National Building Inventory: *Creating a Roadmap for the Future*

The University of Southern California · September 13-14, 2011

Workshop Sponsored by: U.S. Department of Homeland Security Science and Technology Directorate, Karagozian & Case, and the University of Southern California

Overview: The purpose of the workshop is to characterize the condition of the existing building inventory within the United States and to prepare a roadmap that will aid the public and private sectors in planning for impacts on the built environment due to demographic, economic, and societal trends. Two primary issues will be considered; changing demographics in the U.S. and the simultaneous aging and obsolescence of the building inventory. In addition, the capacity of the building inventory to support current and future urbanization trends is to be considered, with high performance and resiliency as key components of the discussion. The roadmap developed will describe how the aging building inventory will need to change to meet the evolving demands present in the modern world.

Workshop Moderator:

Thomas Coleman

Registration

Lobby

Welcome and Introductions

Joseph Valancius, K&C
Rich Little, USC

High Performance – Integrated Design Program

Mila Kennett, DHS

Keynote Address

Blaine Brownell

Topic TBD

Break

Session I: Demographic Changes in the U.S. and the Relationship to the Current Building Inventory

This session will focus on current and projected future societal demands on the building inventory as a result of population trends (age, migration, ethnicity, education, income, etc.). This session will address the capacity of the building inventory to meet these changing demands.

Presentation #1: Demographic Changes and Trends and Resulting Demands on the Building Inventory in the Continental United States

TBD

Presentation #2: The National Building Inventory: Nature and Issues

Chris Arnold

Presentation #3: End of Building Life Considerations, Built-In Obsolescence (structural, functional, economic), or Adaptability

Stephen Szoke

Lunch

Session II: Building Performance Issues

This session will discuss a) the relationship between aging and building performance; b) need for improved standards and guidelines to achieve adequate performance and decrease the rate buildings obsolescence; and c) risk and continuity of operation considerations.

Presentation #1: Mis-Defining High Performance: Risks to the National Building Inventory and the Building Aging Process and Impacts on Building Performance
Ujjval Vyas and Daniel Lemieux

Presentation #2: Performance Based Design
Earle Kennett

Presentation #3: Building Standards Needed for Resilient Communities
Chris Poland

Presentation #4: An Overview of Resilience Principles and their Relevance to Aging Buildings
Scott Jackson

Break

Session III: Case Studies

This session will present lessons learned from current applications and case studies.

Presentation #1: NYC weather related issues and impact on the built environment
George Deodatis

Presentation #2: Case Studies of Retrofits for Historic and Aging Buildings
Mikhael Ereksan

Presentation #3: Analytical and Creative Approach Toward Resilience: Evaluating Environmental, Functional and Financial Sustainability for High Performance Facilities; Case Study for a Laboratory Building
Jay Shoemaker

Break/Transition to Breakaway Sessions

Breakaway Sessions

1. Demographic changes in the U.S. and the relationship to the current building inventory
2. Building performance issues
3. Case studies and lessons learned

End of Regular Session

Moderators, co-moderators and group representatives meet to prepare for reporting to general assembly next morning

September 14, 2011

Welcome/Reporting from Previous Day

Session IV: Design Issues

This session will address design and retrofit issues as they relate to the aging building inventory and how this might impact societal demands resulting from demographics changes

Presentation #1: Mitigation and Resilience: Linking Engineering to Public Policy
David Bonowitz

Presentation #2: BIM and Existing Buildings
Bill East

Presentation #3: Demographic Trends and the Impact of Man Made and Natural Hazards
Phil Schneider

Presentation #4: Conflict between Building Hardening and Historic Preservation
Stephen Kelley

Presentation #5: Responding to Special Conditions of Existing Buildings:
Integrated, Incremental Retrofit for Vulnerable Existing Buildings
Fred Krimgold

Session V: Future Trends

This session will address future trends, solutions, and recommendations.

Presentation #1: UHPC Role in Retrofits: How Advanced Materials can Resolve Aging Building Inventory for Sustainable, Durable & Resilient Buildings for the 22nd Century
Vic Perry

Presentation #2: Integrated Retrofit: Fenestration + Lighting + HVAC
Paul LaBerge

Presentation #3: Role of Innovative Thinking: The Liquid Wall
Peter Arbour

Presentation #4: Multi-Benefit Integrated Structural Retrofit of Buildings and Building Components
Larry Bryant

Presentation #5: Comparative Study of Energy Performance of Different Glazing Systems
Ali Memari

Session VI: Panel Discussion

Private and public funding issues
Economics of building modernization

Panel Moderator: Mohammed Ettouney

Panel Participants: Mila Kennett
Chris Arnold
Chris Poland
Dan Lemieux
Phil Schneider

Breakaway Sessions

1. Design issues
2. Future trends
3. Investments and private / public funding

General Discussion and Resolutions

Adjourn

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