Green Design for Preservation and Revitalization

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California State Historic Preservation Officer
California Downtown Association
2008 Annual Conference
Santa Rosa, California
October 1-3, 2008
“Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.”

WHAT IS SUSTAINABILITY?
Sustainable Preservation Coalition

Working together on integration of preservation values into the revised version of LEED.
Does your state have an Executive Order or legislation including improved energy efficiency standards or LEED certification for existing state-owned buildings?

Is your office aware of sustainable mandates by your state and local jurisdictional authorities that adversely affect historic preservation?
Green Legislation by State (2008)
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<tr>
<th>Cities in red are Main Street Communities</th>
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<td><strong>CALIFORNIA LOCAL GOVERNMENT MEMBERS OF USGBC in March 2007</strong></td>
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<td>County of San Mateo Department of Building Inspection</td>
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<td>Port of San Diego</td>
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<td>SF Bay Area Rapid Transit District</td>
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CALIFORNIA LOCAL GOVERNMENT MEMBERS OF USGBC added by March 2008

- City of Salinas
- City and County of San Francisco
- City of Lodi
- City of Rocklin
- City of Seaside
- City of Thousand Oaks
- Consumnes Community Services District
- Barona Band of Mission Indians
- Central Contra Costa Sanitary District
- Centre City Development Corporation
- Los Angeles Convention Center
- Los Angeles World Airports
- Monterey Regional Waste Management District
- Ontario Redevelopment Agency
- Palm Desert Redevelopment Agency

37% increase in one year

Cities in green are Certified Local Governments

Cities in red are Main Street Communities
WHY ARE HISTORIC & EXISTING BUILDINGS IMPORTANT?

BUILDINGS ACCOUNT FOR ALMOST HALF OF GREENHOUSE GAS EMISSIONS IN THE UNITED STATES
MAKE THE CASE FOR PRESERVATION AS INHERENTLY SUSTAINABLE DEVELOPMENT & CRUCIAL TO CONTROLLING CLIMATE CHANGE
GOALS - PROMOTE

1. Building Reuse
2. Reinvestment in Older & Historic Communities
3. Retrofit the Existing Building Stock
REINVEST IN OLDER & HISTORIC COMMUNITIES
1. Preserves Embodied Energy & Avoids 
2. Reduces Demand for New Infrastructure
GREEN THE EXISTING BUILDING STOCK

1. Traditional Historic Buildings were built to last
2. Many are already Energy Efficient
Levels of LEED Ratings

Green Buildings worldwide are certified with a voluntary, consensus-based USGBC has four levels of LEED.
Average Savings of Green Buildings

- **Energy Savings**: 30%
- **Carbon Savings**: 35%
- **Water Use Savings**: 30-50%
- **Waste Cost Savings**: 50-90%

Source: Capital E
LEED for new construction buildings as of 07/06

Distribution by geography

- 200+
- 100-199
- 50-99
- 20-49
- 1-19

United States map showing distribution of LEED-certified new construction buildings by state and number of buildings.
Energy Performance of LEED® for New Construction Buildings

These buildings use more energy than the code baseline!
Green Building Guidelines

for the Rehabilitation of Historic & Non-Historic Buildings

DRAFT as of 4/18/02
Green remodeling reduces net CO2e emissions, while constructing new homes (whether green or conventional) increases net CO2e emissions. Given that 70% of homes in the state were built before 1980, the opportunity for true emissions reduction is enormous in the home remodeling sector.

“Green remodeling reduces net CO2e emissions, while constructing new homes (whether green or conventional) increases net CO2e emissions. Given that 70% of homes in the state were built before 1980, the opportunity for true emissions reduction is enormous in the home remodeling sector.”

“But even though more savings per home are available to the new home sector, total emissions actually increase with each new home. When a new home is built that doesn’t replace an existing building, there is inevitably a net increase in GHG emissions because the construction has added another building to the state’s building stock.”

“While about 200,000 new homes are built each year, the existing housing stock makes up over 13 million homes .”
Impact of selected parameters on CO₂ emissions

Based on four case studies in report.

Embodied energy is difficult to model and is still under development.
DENSITY

Places like Boulder are town-centered, transit and pedestrian oriented, have a greater mix of housing, commercial and retail uses and preserve open spaces.
A State Approach: Sustainability Best Practices

- Keep sustainable goals within preservation visible
  - on SHPO website
  - in newsletters
  - at staff meetings
  - at other state agency meetings
  - with elected representatives
LEED ND (Neighborhood Development)
The LEED for Neighborhood Development Rating System integrates the principles of smart growth, urbanism and green building into the first national system for design.
WASHINGTON, DC
Green Building Act of 2006
Requires LEED compliance with municipal and private projects over 50,000 sq ft.
SPRAWL
Historic preservation reduces sprawl.
LEED ND - a collaboration among USGBC, the Congress for the New Urbanism and the Natural Resources Defense Council.
HISTORIC REHABILITATION TAX CREDITS
THE CHRISTMAN BUILDING
Lansing, MI
The first dual LEED Platinum Project AND Tax Credit Project
WHAT IS LIFE CYCLE ANALYSIS?
A methodology for assessing the environmental performance.
Off-Site Energy Options

SMUD solar shares

A State Approach: Sustainability Best Practices

- Develop State Guidelines
  - New Mexico Guidelines

How-To Guide to LEED® Certification for New Mexico Buildings
DURABILITY
Identify the relative durability of various materials, systems and assemblies and reward buildings whose components are more durable.
RECO – Berkeley
Residential Energy Conservation Ordinance

- Adopted in 1985 with the intent of increasing the energy and water efficiency in existing Berkeley residences. This long-standing goal contributes to the Berkeley Climate Action goal of reducing Berkeley's overall greenhouse gas emissions by 80% by the year 2050.

- **When does RECO apply?** RECO applies to all homes, residential areas of mixed-use buildings, tenants-in-common, condominiums, multi-family properties, live-work spaces and boarding houses

- **Renovation:** All homes or apartment buildings undergoing renovations with a combined permit value of $50,000 or more **must** demonstrate compliance with RECO requirements

- **Sale or Transfer of Property:** All homes or apartment buildings, sold or transferred **must** demonstrate compliance with RECO requirements by being inspected and filing "Form A - Certificate of RECO Compliance" with the City of Berkeley.
SOCIAL CAPITAL
Recognize the importance of “social capital” associated with historic buildings and neighborhoods.
A State Approach: Sustainability Best Practices

• Develop model Local Standards
  – Wabash Valley Chapter 6
  – Fresno Green Guidelines

• Understand locally adopted Codes
  – 2006 International Existing Building Code (IEBC)
  – 2007 California State Historical Building Code
  – Locally adopted Ordinances
A State Approach: Sustainability Best Practices

- Become a resource in your state for technical information achieving sustainable goals within preservation
CALIFORNIA REPUBLIC

GO GREEN
A State Approach: Sustainability Best Practices

• Stay current on sustainable mandates in the form of Executive Orders, legislation and Codes in your state.
  – Flag language that adversely affects historic preservation
  – Suggest language inclusive of historic preservation:
    • “Waivers granted if the building is on the National Register of Historic Places or eligible for listing in the NR of HP, or the State Register…”
    • “Certified Historic Structures obtaining energy conservation retrofitting shall also conform to the Secretary of the Interior’s Standards for Historic Preservation…”

• Develop or encourage development and adoption of model green ordinances that are preservation inclusive
LEED ND

Changes to the Pilot version coming out for final review this fall, with the final version ready for 2009.
LEED ND - GIB Credit 5

To achieve this point, the project must not demolish any historic building or portion of a historic building within the project boundary, unless approval for such action is granted by the local historic preservation review board.
NCSHPO Green Preservation Survey

Do you have a LEED AP (accredited Professional) on staff?

If no, does your office plan to add a LEED AP within the next two years?
NCSHPO Green Preservation Survey

Has your state adopted the IEBC or other alternative code for historic buildings?

- Yes: 68.1%
- No: 31.9%

Does your state and/or local code authorities exempt historic buildings from energy efficiency requirements?

- Yes: 31.6%
- No: 68.2%

Source: Survey Monkey Survey   2/27/2008
CHICAGO, IL
The Green Permit line up
The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria.

WHAT IS LEED® AND THE US GREEN BUILDING COUNCIL?
LEED Projects Nationally

LEED historic sites

LEED historic sites on N.R.

Source: USGBC LEED Project List – PUBLIC (2-1-08).xlsx
NCSHPO Green Preservation Survey

Has a conflict ever arisen between preservation and sustainability goals in a Section 106, Tax Credit, or other review?

- Yes: 22.4%
- No: 77.6%

Does your office web site link or refer to sustainable preservation issues?

- Yes: 30.6%
- No: 69.4%
Amendment to adhere solar panels to new construction: