LEED for Neighborhood Development
What is the LEED System?

Leadership in Energy and Environmental Design

A leading-edge system for certifying the greenest performing buildings and neighborhoods in the world.
Four Levels of LEED

- Prerequisites required
- Credits earn points
- Points determine level
Categories of LEED Ratings

- LEED for New Construction
- LEED for Commercial Interiors
- LEED for Existing Buildings
- LEED for Core & Shell
- LEED for Homes
- LEED for Neighborhood Development

NEW PROGRAMS

- Healthcare Laboratories
- Retail
- Multi-building Campuses
- Multi-family Residential
LEED For Neighborhood Development is a partnership of:

NRDC

U.S. Green Building Council

Congress for the New Urbanism
LEED for Neighborhood Development is a rating system that combines elements of smart growth, urbanism, and green building into the first national standard for neighborhood design.
Why do we need LEED for Neighborhood Development?

- Nationally, we are developing land twice as fast as population is growing
- Vehicle use in America has more than doubled since 1970 (offsetting all fuel economy gains)
- Most development does not happen one building at a time
There are **three categories** of prerequisites and credits in the rating system. 

- **Smart Location and Linkage**
- **Neighborhood Pattern and Design**
- **Green Construction and Technology**
LEED for Neighborhood Development Pilot Program

- Nearly 240 projects from 39 states and 6 countries
- Projects range from 0.17 acres to over 12,000 acres
- Pilot projects total over 66,800 acres
- Infill and appropriate development of undeveloped land
- Whole, multiple, or fractions of a neighborhood
Development Timeline for Rating System

- 2007: Pilot Program launches
- 2008: Revisions to rating system
  Public comment periods held
- 2009: Full post-pilot rating system ballot and launch
Lessons Learned (thus far)
Frequency of Evocative Code Words in Pilot Names

- Village: 25
- Center: 15
- Park: 10
- Green: 7
- Place: 5
- Waterfront: 4
- Station: 3
- Metro: 2
- Crossing: 2
- Commons: 2
- Landing: 1
Pilot Projects by Land Area

<table>
<thead>
<tr>
<th>Acres</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td></td>
</tr>
<tr>
<td>2-5</td>
<td></td>
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<tr>
<td>5-10</td>
<td></td>
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<tr>
<td>10-20</td>
<td></td>
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<tr>
<td>20-40</td>
<td></td>
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<tr>
<td>40-100</td>
<td></td>
</tr>
<tr>
<td>100-500</td>
<td></td>
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<tr>
<td>500-1000</td>
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</tr>
<tr>
<td>1000-2000</td>
<td></td>
</tr>
<tr>
<td>2000+</td>
<td></td>
</tr>
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</table>
## Comparison of U.S. Pilot Locations to All Zip Codes & Urban Areas
(176 projects using the 2000 census)

<table>
<thead>
<tr>
<th>Census Item</th>
<th>Pilot Zip Codes</th>
<th>All Zip Codes</th>
<th>Pilots As a % of All Zips</th>
<th>All Urban Areas</th>
<th>Pilots As a % of All Urban Areas</th>
<th>Potential Climate Change Benefits (a)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban area location (b)</td>
<td>90.9%</td>
<td>77.6%</td>
<td>117</td>
<td>100.0%</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Rural location</td>
<td>9.1%</td>
<td>22.4%</td>
<td>41</td>
<td>0.0%</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Persons/sq.mi.</td>
<td>5,890</td>
<td>1,221</td>
<td>482</td>
<td>2.666</td>
<td>222</td>
<td>✓</td>
</tr>
<tr>
<td>Minority</td>
<td>36.1%</td>
<td>30.9%</td>
<td>117</td>
<td>29.8%</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>Median household income</td>
<td>$44,484</td>
<td>$41,994</td>
<td>106</td>
<td>$44,840</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>Households below poverty</td>
<td>15.7%</td>
<td>12.4%</td>
<td>127</td>
<td>12.9%</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td><strong>Work Commute</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive alone</td>
<td>64.3%</td>
<td>75.7%</td>
<td>85</td>
<td>74.3%</td>
<td>87</td>
<td>✓</td>
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<tr>
<td>Carpool</td>
<td>12.1%</td>
<td>12.2%</td>
<td>99</td>
<td>11.9%</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>Public transportation</td>
<td>11.7%</td>
<td>4.7%</td>
<td>249</td>
<td>6.6%</td>
<td>177</td>
<td>✓</td>
</tr>
<tr>
<td>Cycle/walk</td>
<td>7.5%</td>
<td>3.4%</td>
<td>221</td>
<td>3.5%</td>
<td>214</td>
<td>✓</td>
</tr>
<tr>
<td>Work at home</td>
<td>3.7%</td>
<td>3.3%</td>
<td>112</td>
<td>2.9%</td>
<td>128</td>
<td></td>
</tr>
<tr>
<td>Mean travel time to work (min.) (c)</td>
<td>25.3</td>
<td>25.5</td>
<td>99</td>
<td>25.1</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td><strong>Housing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person/household</td>
<td>2.65</td>
<td>2.59</td>
<td>102</td>
<td>2.62</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>Owner occupied units</td>
<td>50.1%</td>
<td>66.2%</td>
<td>76</td>
<td>61.5%</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Renter occupied units</td>
<td>49.9%</td>
<td>33.8%</td>
<td>148</td>
<td>38.5%</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>SF units</td>
<td>52.6%</td>
<td>65.8%</td>
<td>80</td>
<td>55.3%</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>MF 2-4 units</td>
<td>13.5%</td>
<td>9.1%</td>
<td>149</td>
<td>9.1%</td>
<td>148</td>
<td>✓</td>
</tr>
<tr>
<td>MF 5-19 units</td>
<td>12.9%</td>
<td>8.7%</td>
<td>148</td>
<td>9.5%</td>
<td>136</td>
<td>✓</td>
</tr>
<tr>
<td>MF 20+ units</td>
<td>17.9%</td>
<td>8.6%</td>
<td>208</td>
<td>10.0%</td>
<td>179</td>
<td>✓</td>
</tr>
<tr>
<td>Median structure age (years)</td>
<td>42</td>
<td>27</td>
<td>156</td>
<td>39</td>
<td>108</td>
<td></td>
</tr>
</tbody>
</table>

(a) Areas with population of 50,000 or more.

(b) Reduced incremental energy demand and greenhouse emissions per capita from ND projects in higher-density, multimodal surroundings.

(c) Mean travel time to work includes waiting for public transportation and picking up carpool passengers.

Source: Criterion Planners, Census Bureau, and USGBC
Real Estate’s Latest Movement

Build Green, Make Green

The Greening of America’s Campus

It’s Easy Being Green
The Costs of LEED and/or Green
...it depends

- LEED: certification fees & documentation
- Figuring out how to be green
- Actually doing green
In conclusion…

- Keep it up; transit *is* green
- Demand green; they’re already expecting you to
- Don’t let these places go to waste; if you don’t TO the Ds, who will?
Q & A

(for more details see www.ugbc.org/leed/nd)
Design for a
LIVABLE DOWNTOWN
A Guide for Downtown Los Angeles

Community Redevelopment Agency / LA
LA City Planning, Urban Design Studio
Patricia Smith, ASLA, AICP

Presented by
Lisa Padilla, AIA, LEED® AP
Principal, Cityworks Design
Los Angeles DESIGN FOR A LIVABLE DOWNTOWN

Area of Guidelines
Development Climate
Los Angeles DESIGN FOR A LIVABLE DOWNTOWN

**Transportation Network**

- **Rapid Bus**
- **DASH bus**
- **Metro Red Line subway**
- **Metro Blue Line LRT**
- **Metro Expo Line LRT** *Under construction*
Sustainable Design at all scales

Neighborhood Design

- Housing: Diversity types, Proximity to jobs, Close to amenities
- Schools & Parks: Adequate & accessible
- Transit: Options for mobility, Sound transit network
- Public Realm: Great streets, Civic amenities
- Shops: Range of choices
- Jobs: Range of opportunities

Building Design

- Site Design: Solar orientation, Density & parking, Transportation alternatives, Open space
- Water Efficiency: Water efficient landscape, Use reduction, Wastewater technologies
- Energy Performance: Optimized systems, Commissioning, Renewable sources, Green power
- Materials Resource: Reuse of building or materials, Recycled content, Regional material sources
- Indoor Environment: Low emitting materials, Thermal comfort, Daylight & views, Construction management
Focus of the Design Guide

- Sidewalks & setbacks
- Massing & streetwall
- Ground floor treatment
- Parking & access
- On-site open space
- Architecture & LEED
Los Angeles DESIGN FOR A LIVABLE DOWNTOWN

Sidewalks & Setbacks
Massing & Streetwall
Ground Floor Treatment
Parking & Access

Vehicular Entries & Curb Cuts

1. Access to parking/service/loading shall be from the alley, and shared wherever feasible

2. Curb cuts & parking/loading access into buildings shall be minimum width required by LADOT

3. Parking & loading access shall be a minimum of 25’ from entrances, paseos, or outdoor gathering areas

Drop-off Zones

1. Drop-offs shall be provided along the curb line

2. Drop-offs can be inset where no curbside parking exists and where sidewalk widths can be maintained
Los Angeles DESIGN FOR A LIVABLE DOWNTOWN

On-Site Open Space
Los Angeles DESIGN FOR A LIVABLE DOWNTOWN

Architecture & LEED
Los Angeles DESIGN FOR A LIVABLE DOWNTOWN

Scales of TOD
Los Angeles DESIGN FOR A LIVABLE DOWNTOWN

Collaboration
No Excuses!
Make Sure Your TOD is Green

Darin Smith
Economic & Planning Systems, Inc.

Rail~Volution 2007
Overview

1. What are Green Development standards?

2. How do Green Development standards affect project economics?

3. How can public agencies ensure that their TOD projects are Green?

But first . . .
Why Does Green Building Matter?

It serves same goals as transit!

30,000 Cars’ CO₂ offset by all U.S. LEED-certified buildings today (USGBC)

80,000 Cars’ greenhouse emissions offset if every US home had just 1 “green” light bulb (EnergyStar.gov)
What Do Green Standards Involve?

• Building site and location
  – including transit-oriented elements

• Construction materials and waste

• Water and energy efficiency

• Indoor atmosphere and air quality

• Education/community input
Many Green Building Programs

• LEED: Leadership in Energy and Environmental Design (USGBC)

• Model Green Home Building Program (NAHB)
  – Adapted by 24+ regional builder associations
  – Examples: CA, Hawaii, Atlanta, Little Rock

• State and Local Programs
  – Examples: NJ, Scottsdale, Arlington Co., Austin

• Nonprofit Programs
  – FL Green Home Standard, VT Building Greener, etc.
Isn’t Green Building Much More Costly?

NO!

• 1400 global real estate and professionals estimated 17% development cost premium (WBCSD)

• Only 13% of respondents had direct green building experience

• Actual cost premiums are much lower
### Project Economics - Office

<table>
<thead>
<tr>
<th>Study</th>
<th>Certified</th>
<th>Silver</th>
<th>Gold</th>
<th>Platinum</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of CA Study</td>
<td>0.7%</td>
<td>2.1%</td>
<td>1.8%</td>
<td>6.5%</td>
</tr>
<tr>
<td>GSA Courthouse Study</td>
<td>-0.4% - 1.0%</td>
<td>1.0% - 4.4%</td>
<td>1.4% - 8.1%</td>
<td>n/a</td>
</tr>
<tr>
<td>Davis Langdon Consulting Study</td>
<td>n/a</td>
<td>1.0%</td>
<td>2.7%</td>
<td>7.8%</td>
</tr>
<tr>
<td>ULI Green Office Buildings Survey</td>
<td>0.7%</td>
<td>1.9%</td>
<td>2.2%</td>
<td>6.8%</td>
</tr>
</tbody>
</table>
## Project Economics - Residential

### Costs and Savings for Green Homes

<table>
<thead>
<tr>
<th>Study</th>
<th>Cost Premium per Square Foot</th>
<th>Percent of Total Cost</th>
<th>Est. Monthly Utility Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terramor, Ladera Ranch CA</td>
<td>$2.82 - $11.40</td>
<td>n/a</td>
<td>$8</td>
</tr>
<tr>
<td>McStain Homes, Colorado</td>
<td>$3.58</td>
<td>2.6%</td>
<td>$10</td>
</tr>
<tr>
<td>Park View Senior Apartments, MD</td>
<td>$1.68</td>
<td>2.6%</td>
<td>$11.50</td>
</tr>
<tr>
<td>Typical CA Green Builder Home</td>
<td>$1.20 - $2.94</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Some Features Do NOT Add Costs

• Location choices
  – Transit adjacency, proximity to work/shopping

• Design choices
  – Building orientation to conserve energy
  – Use of local materials

• Features with costs = “non-green” equivalents
  – High-efficiency toilets, low-VOC paint, etc.

• Process choices
  – Recycling construction debris
  – Public information displays
Some Features DO Add Costs

- Features w/higher costs and long-term payoff
  - solar panels
  - wind turbines
  - tankless water heaters
  - energy-efficient appliances

- Features with social/environmental benefits but little/no operational cost benefit
  - sustainably harvested wood
  - stormwater mitigation

- Mid-stream design changes!
Lifecycle Costs

NPV of All Building Costs Over Time for 90K SF Office
(Construction, Design, Operation, TI, Replacement)
Source: Packard Foundation Los Altos Project

Market
LEED Certified
LEED Silver
LEED Gold
LEED Platinum
Living Building

Building Category

Million

$0
$10
$20
$30
$40
$50
$60
$70

30 Years
60 Years
There IS a Green Housing Market

97,000 green-certified homes built in US since 1990s (NAHB)

52% of Terramor buyers willing to pay up-front premium > added costs of green features (Schweitzer)

1/3 of US homebuyers say primary criteria for next home purchase are:
  – protecting the environment,
  – saving energy costs, or
  – improving health (RCLCo.)
<table>
<thead>
<tr>
<th>There IS a Green Commercial Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>896 Million Sq.Ft. of space registered with LEED in 2007</td>
</tr>
<tr>
<td>2.8X Increase in registered sq. ft. since 2005 (CBRE)</td>
</tr>
<tr>
<td>6.6% Higher return on investment for green buildings than standard (McGraw-Hill)</td>
</tr>
</tbody>
</table>
How Can Agencies Promote Green TOD?

• Building Regulations

• Incentives

• Development Solicitation and Negotiations
Green Building Requirements

Governments can require green standards for:

- **Government buildings**
  - State of CA
  - Sarasota Co, FL
  - Seattle
  - Many More

- **Private projects receiving public assistance**
  - Portland Development Commission requires projects with $300K+ assistance to meet green standards

- **All private development (usually with size limits)**
  - Washington, DC
  - Sebastopol, CA
  - Frisco, TX
  - Boulder, CO
  - West Hollywood, CA
Green Building Incentive Programs

• Expedited Plan Review and/or Reduced Fees
  Scottsdale, AZ  Gainesville, FL  Sarasota County, FL

• Density Bonus
  Arlington County (VA) allows 0.15 – 0.35 FAR

• Competitive Grants to Developers
  Portland (OR) has $425K/yr. “Green Investment Fund”

• Cash Incentives to Tenants
  Miami/Dade County provides cash per job in green buildings
Development Negotiations

MUELLER
Austin TX

- 4500+ housing units
- 3.2M sq. ft. comm’l
- New Urbanist infill proposed for rail
- All projects must meet LEED or Austin Energy’s Green Building Program
Development Negotiations

SEAHOLM POWER PLANT, Austin TX

- Condos, office, hotel, retail on City land Downtown
- Adjacent to planned commuter rail and streetcar
- LEED certification required for office, hotel, condos
Development Negotiations

CAPITAL EXPRESSWAY JOINT DEVELOPMENT
San Jose CA

• SCVTA issued RFP for surplus site
  – No Green Building requirements

• Multiple offers for mixed-use development

• Staff negotiated development and business terms

• Board tabled solicitation to set green requirements
  – So, no picture for you
Keys to Green TOD Solicitation

- Incorporate green standards into RFPs
- Emphasize that TODs have a head start
  - Location, linkages, compactness
- Suggest other low or no cost features
  - Xeriscaping, low-flow plumbing, reduced parking, community and tenant education
- Offer educational support to aid development proposals and process
  - Financial and technical resources
Green TOD Is:

- Consistent with goals of transit
- Not that hard
- Not that expensive
- Not that risky
- Bound to happen, so do it now