Building Green in San Francisco

California Commissioning Collaborative
January 15, 2009

Rich Chien LEED AP, CGBP
Private Sector Green Building Coordinator
SF Environment
(415) 355-3761
40% of ozone depletion

30% of municipal solid waste

40% of raw materials use

70% of electricity use
Climate Action Plan
For San Francisco
Local Actions to Reduce Greenhouse Gas Emissions

San Francisco Department of the Environment • San Francisco Public Utilities Commission
September 2004
San Francisco Greenhouse Gas Emissions
(eCO₂)
1990

1990 Baseline Greenhouse Gas Emissions. Total = 9.1 million tons eCO₂ per year.
Sources: PG&E, Hetch Hetchy Water and Power, CA. Dept of Transportation, MTC, Muni, BART.
SF Environment Green Building

Policy
Incentives
Technical Assistance
Outreach

Municipal  Commercial  Residential

U.S. Green Building Council Member
Energy Star
GreenPoint Rated
A better environment from the inside out.
# Private Sector Initiatives

<table>
<thead>
<tr>
<th>Policy</th>
<th>Incentives</th>
<th>Technical Support</th>
<th>Outreach and Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Resolutions                                                          • Priority Permitting (LEED Gold+)                                          • Citywide Blanket for GB Consultants                                           • Training</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>• DBI Code Advisory Committee                                         • Streamlined Solar Permit                                                   • Pre-development Consultation                                                   • Build It Green</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• RECO (energy conservation)                                          • Free Energy Audits and Retrofits                                            • AccessGreen (materials directory)                                               • USGBC/LEED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• SF Green Building Code                                              • Green Business Program                                                     • Resource Referrals                                                              • Community Presentations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Existing Commercial Buildings EE Task Force                         • SF Business Times green building insert                                      • Free Green Building Guidelines                                                 • Green Building Tours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Regional + State Coordination</td>
<td></td>
<td></td>
<td>• Greenbuild, West Coast Green, ACI, ASHRAE and other conferences</td>
</tr>
</tbody>
</table>
Government Initiatives

Municipal Green Building Ordinance

- 1999 Municipal Green Building Ordinance
- Chapter 7 of Environment Code (9/04)
  - Requires that new municipal buildings and significant renovation projects of 5,000 sq. ft. or more must be LEED Silver or better
  - Interdepartmental (REB) Task Force
  - 10 Pilot Projects
California Academy of Sciences

20% energy cost savings

40% potable water use reduction

100% stormwater capture and reuse

Image courtesy: ARUP
Laguna Honda Hospital

30% energy cost savings

75% of demolition debris recycled

100% of residents have operable windows with natural daylight and ventilation
Plaza Apartments

30% energy cost savings

20% water use savings

100% Transitional affordable housing with on site social services
Priority Permit Process (LEED Gold)

Environmental Review and Building Permit

Current Timeframe

0 - 6 - 9 months

Proposed Timeframe

0 - 1 month
Green Buildings in San Francisco

Map created by M. Landman Communications + Consulting (www.MLandman.com). You can use this map to take yourself on a self-guided (virtual or actual) tour of green buildings in San Francisco. PLEASE NOTE: 1) If you would like to visit any buildings or spaces that are privately owned or that might have restricted access, contact the building owner or manager's office in advance to request permission and arrange for a tour. 2) The degree of "greenness" varies among the buildings marked on this map. 3) This map does not include every green building in San Francisco, and many other green buildings are currently in design or under construction.

COLOR KEY: Buildings that are marked with green pointers are LEED certified buildings. For info on LEED, go to www.USGBC.org. For a list of green buildings in the greater Bay Area or LEED certified buildings in Northern California, please go to www.MLandman.com.

San Francisco Ferry Building and Pier 1

On the Embarcadero at the end of Market Street
Architect: SMWM
Project Info
Get directions: To here - From here
Search nearby

Miriam Landman, www.mlandman.com
Task Force Focus

- Commercial and Residential New Construction

Composition

- Owners
- Developers
- Financial
- Architects
- Engineers
- Contractors

Emphasized

- Predictability
- Substantive requirements
- Design Flexibility
What is a Green Building?

**LEED Rating System**  
U.S. Green Building Council

- Points define four certification levels
- More focus on commercial new & retrofit
  - 9000+ rated projects since 2000

**Green Point Rated System**  
Build It Green

- 50+ points to be ‘GreenPoint Rated’
- Focused on single/multi family residential
- Goal of 10,000 units rated by end of 2008
- Credible and Recommended by Northern California Homebuilder’s Association

Two complementary standards:

- Widely recognized and consensus-based
- Consistent and quantifiable rating criteria, ‘menu’ of options/choices
- Independent 3rd-party verification ensures standard of performance
## Green Building Requirements

<table>
<thead>
<tr>
<th></th>
<th>Current</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New Commercial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large</td>
<td></td>
<td>LEED Certified</td>
<td>LEED Silver</td>
<td></td>
<td>LEED Gold</td>
</tr>
<tr>
<td>$\geq$ 25k ft</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-Size</td>
<td></td>
<td>LEED checklist + Local Priority Measures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5k – 25k sq ft</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tenant Improvements</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Time Tenant</td>
<td></td>
<td>LEED Certified</td>
<td>LEED Silver</td>
<td></td>
<td>LEED Gold</td>
</tr>
<tr>
<td>&gt;25k sq ft</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Alteration</td>
<td></td>
<td>LEED Certified</td>
<td>LEED Silver</td>
<td></td>
<td>LEED Gold</td>
</tr>
<tr>
<td>&gt;25k sq ft</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>New Residential</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Rise</td>
<td></td>
<td>LEED Certified</td>
<td></td>
<td>LEED Silver</td>
<td></td>
</tr>
<tr>
<td>$\geq$ 75' height</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midsize</td>
<td></td>
<td>GreenPoints Checklist</td>
<td>25 GreenPoints</td>
<td>GreenPoint Rated</td>
<td>GreenPoint Rated - 75 Points</td>
</tr>
<tr>
<td>5+ units</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td></td>
<td>GreenPoints Checklist</td>
<td>25 GreenPoints</td>
<td>GreenPoint Rated</td>
<td>GreenPoint Rated - 75 Points</td>
</tr>
<tr>
<td>$\leq$4 units</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INSTRUCTIONS
This Green Building Submittal template is provided for your convenience. The layout of the Green Building Submittal may be adjusted as needed, but the submittal must include:

- Completed REQUIREMENTS section (at right)
- LEED checklist indicating the points that will be achieved and the locations each applicable credit is shown project documents, including plan set page & detail, or specification section name/number/location. Specifications are not submittal documents, but are subject to review.
- Completed VERIFICATION section (at right).

All information must be legible and conform to submittal size requirements.

The REQUIREMENTS and VERIFICATION sections of this submittal may be downloaded from: www.sfgov.org/dbi.

City and County of San Francisco
Green Building Requirements
LEED Rating System

REQUIREMENTS

<table>
<thead>
<tr>
<th>Block List</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRITY Occupancy</td>
<td></td>
</tr>
<tr>
<td>Gross Building Area</td>
<td></td>
</tr>
<tr>
<td>Project Code</td>
<td></td>
</tr>
<tr>
<td>New Construction</td>
<td></td>
</tr>
<tr>
<td>Major Alteration</td>
<td></td>
</tr>
<tr>
<td>New Large Commercial Interior</td>
<td></td>
</tr>
</tbody>
</table>

Summary of Green Building Requirements:

<table>
<thead>
<tr>
<th>Rating Requirement</th>
<th>LEED points</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEED certification level (includes prerequisites)</td>
<td>18</td>
</tr>
<tr>
<td>Supplemental Green Building Measures Required by Chapter 13C</td>
<td></td>
</tr>
</tbody>
</table>

Supplemental Green Building Measures Required by Chapter 13C:

- SFPLC Stormwater Design Guidelines
- Water Efficient Landscaping (LEED WE 1.1)
- Water Use Reduction (LEED WE 2.1)
- Water Use Reduction (LEED WE 2.2)
- Construction Waste Management – 75% Diversion (LEED MR 2.1)
- Fundamental Commissioning of Building Energy Systems (LEED EA 2.1)
- Enhanced Commissioning (LEED EA 3)
- Either: 25% of energy supplied by On-Site Renewable Energy OR Green Power (LEED EA 2.1) OR (LEED EA 3)
- Low Emissions Materials: Number of IEQ credits required: ___ (Choose from LEED IEQ 2.1, 2.2, 3.1, 3.2, 4.1, 4.2, and 4.3)

VERIFICATION

SELECT OPTION 1 OR OPTION 2:

Option 1:
Verification of compliance for this project will be provided by USGBC/USGBC certification under the LEED Rating System. No Green Building Compliance Professional of Record is required.

Verify Applicant – Sign & Date

OR

Option 2:
This project will not be LEED certified. The Green Building Compliance Professional of Record for this project is:

- Name: __________________________
- Firm: __________________________
- Architectural or Engineering Firm: __________________________

To the best of my knowledge, it is my professional opinion the green building requirements of the City of San Francisco will be met for the above referenced project. I have been advised by the project sponsor to review all submittal documents and assure that approved construction documents and construction property reflect the green building requirements of chapter 13C. I will verify the Department of Building Inspection if necessary to the best of my knowledge that the project will, for any reason, not substantially comply with these green building requirements.

To be completed by DBI: Multiple Signed
Chapter 13C Requirements Verified

Name & Date: __________________________

Notes:

- SFPLC Stormwater Design Guidelines
- Water Efficient Landscaping (LEED WE 1.1)
- Water Use Reduction (LEED WE 2.1)
- Water Use Reduction (LEED WE 2.2)
- Construction Waste Management – 75% Diversion (LEED MR 2.1)
- Fundamental Commissioning of Building Energy Systems (LEED EA 2.1)
- Enhanced Commissioning (LEED EA 3)

Either: 25% of energy supplied by On-Site Renewable Energy OR Green Power (LEED EA 2.1) OR (LEED EA 3)
- Low Emissions Materials: Number of IEQ credits required: ___ (Choose from LEED IEQ 2.1, 2.2, 3.1, 3.2, 4.1, 4.2, and 4.3)
LORAX – 22\textsuperscript{nd} St
GreenPoint Rated
Adobe Systems
LEED EB Platinum
## RealGreen Index 3rd Quarter 2008
**San Francisco - Oakland - Certified Projects**

The RealGreen Index (RGI) is a list of all LEED Certified office and retail buildings in the San Francisco and Oakland markets. The RGI is updated quarterly with timely information about LEED Certified office and retail space that is available for lease.

<table>
<thead>
<tr>
<th>LEED Project Name (1)</th>
<th>Address</th>
<th>Floor(s)</th>
<th>City</th>
<th>Total Bldg Size (2)</th>
<th>LEED Project Size</th>
<th>LEED Ratio (3)</th>
<th>LEED Cert (4)</th>
<th>Certified Space Vacancy RSF</th>
<th>Asking Rent/ RSP/WR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacific Gas &amp; Electric</td>
<td>245 Market St</td>
<td>Entire Building</td>
<td>San Francisco</td>
<td>487,000</td>
<td>487,000</td>
<td>100%</td>
<td>Gold</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Swinerton Headquarters Office</td>
<td>260 Townsend St</td>
<td>Entire Building</td>
<td>San Francisco</td>
<td>66,045</td>
<td>66,045</td>
<td>100%</td>
<td>Gold</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Adobe Systems, Inc.</td>
<td>625 Townsend St</td>
<td>Entire Building</td>
<td>San Francisco</td>
<td>53,579</td>
<td>53,579</td>
<td>100%</td>
<td>Gold</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Adobe Systems, Inc. *</td>
<td>601 Townsend St</td>
<td>Entire Building</td>
<td>San Francisco</td>
<td>211,523</td>
<td>211,523</td>
<td>100%</td>
<td>Platinum</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Method</td>
<td>637 Commercial St</td>
<td>Entire Building</td>
<td>San Francisco</td>
<td>24,469</td>
<td>24,469</td>
<td>100%</td>
<td>Certified</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Allsteel/Gunlocke Showroom</td>
<td>4 Maritime Pkz</td>
<td>Entire Building</td>
<td>San Francisco</td>
<td>12,300</td>
<td>12,300</td>
<td>100%</td>
<td>Silver</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Unico Properties *</td>
<td>100 Pine St</td>
<td>Entire Building</td>
<td>San Francisco</td>
<td>402,535</td>
<td>402,535</td>
<td>100%</td>
<td>Certified</td>
<td>16,337 S 56,651 D</td>
<td>$36.00 Negotiable</td>
</tr>
<tr>
<td>Beverly Prior Architects *</td>
<td>222 Sutter St</td>
<td>9th Floor</td>
<td>San Francisco</td>
<td>108,691</td>
<td>14,039</td>
<td>13%</td>
<td>Gold</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Nixon Peabody LLP Law Offices</td>
<td>One Embarcadero Ctr</td>
<td>16th–19th Floors</td>
<td>San Francisco</td>
<td>767,137</td>
<td>80,697</td>
<td>11%</td>
<td>Certified</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### City Summary

<table>
<thead>
<tr>
<th>City</th>
<th>Total Bldg Size</th>
<th>LEED Project Size</th>
<th>LEED Ratio</th>
<th>Certified Space Vacancy RSF</th>
<th>Vacancy Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td>5,710,285</td>
<td>1,492,656</td>
<td>26.1%</td>
<td>72,088</td>
<td>4.9%</td>
</tr>
<tr>
<td>Oakland</td>
<td>529,995</td>
<td>498,429</td>
<td>94.0%</td>
<td>215,000</td>
<td>43.1%</td>
</tr>
<tr>
<td>Totals</td>
<td>6,240,280</td>
<td>1,991,085</td>
<td>31.9%</td>
<td>287,988</td>
<td>14.5%</td>
</tr>
</tbody>
</table>

Source: NAIBT
526 Arlington Street

My Solar Potential

- Roof Size: 893 sq. ft.
- Estimated solar PV potential: 1 - 2 kW
- Estimated electricity produced: 1825 - 3650 KWh/yr
- Estimated electricity savings: $301-$501 per year
- Estimated carbon savings: 1361.45 - 2722.9 lbs per year

Get Cost Estimates >>

Links

- Find a solar installer
- More information about installing solar

Disclaimer

*Map locations are approximate
Find out how we estimated your solar potential
Community • Thriving Ecosystems • Healthy Neighborhoods • Affordable Solutions • Global Responsibility • Integrated Design + Lasting Beauty • Public Participation and Transparency
SITE, SUN, AND WIND

- A new “sustainable” neighborhood
- Compact and walkable
- Design for microclimate
- Systems Approach:
  - Transportation
  - Open space, habitat
  - Energy efficiency, renewables
  - Hydrology, water conservation
  - Solid Waste

PROPOSED LAND USE PLAN

- 6,000 DU’s > 30% affordable (~1,800)
- 50% open space
- Minimized parking, relocated ferry dock + high-speed service, congestion pricing study underway
- Wetlands for stormwater treatment
- LEED-ND criteria, TI green building specifications
- Carbon Neutral Community
Visitacion Valley Redevelopment Area/ Schlage Lock Site
LEED-ND Pilot Project
Workforce Development and Green Jobs: Initiatives and Opportunities

• 2008 S.F. Solar Incentive (local firm bonus $)
• Green Building "Train the Trainer" Project
• Existing Buildings (retrofitting, operations standards, green cleaning; LEED-EB and Home Performance)
• Bayshore Green Home Improvement District
• Green Plumbers
• Deconstruction & Reuse @ Hunters Point
Thank You!