Adaptive Use and Sustainable Design: Three Perspectives

Ecobuild America

December 11, 2008
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• Stephen Hulse, Operations Manager
  – Struever Bros. Eccles & Rouse
• Fran Weld, Dir. Sustainability & Preservation
  – Struever Bros. Eccles & Rouse
**SUSTAINABILITY**
envisions the enduring prosperity of all living things.

**SUSTAINABLE DESIGN**
asks how communities, buildings, and products can contribute to this vision.

Or

**SUSTAINABILITY**
Meeting society’s current needs without compromising the ability of future generations to meet their needs
U.S. Building Impacts:

- 12% water use
- 39% CO₂ emissions
- 65% waste output
- 71% electricity consumption
Economic Benefits

- Over a 30 year life cycle of a commercial building, Design and Construction (D&C) Costs account for just 2% of total cost.
- Operations and Maintenance (O&M) costs account for 6% of total costs.
- Personnel costs account for 92% of costs.

Source: Center for Building Performance at Carnegie Mellon University
Social Sustainability

With each generation... they are less civic-minded

Generational Trends in Civic Engagement

National Election Studies
General Social Survey
Bowling Alone

Voted
Reads Newspaper
"Most People Can be Trusted"
Attends Church regularly
Member of a group

Year of Birth
1920 1940 1950 1960 1970
Social Sustainability

...has value.
Social Equity – Environmental Justice

Environmental Concerns vs. Percentage in Poverty

Source: US Environmental Protection Agency
Social Equity – Economic Justice

Economic Diversity

Source: Baltimore Neighborhood Indicators Alliance

Median Household Income

Less than 21K
From 21K to 24K
From 24K to 28K
From 28K to 32K
From 32K to 37K
From 37K to 42K
43K or greater
0 or missing data

MARKS, THOMAS ARCHITECTS

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Social Equity - Environmental Labor Movement

Steel Mill - China

Metal Smelter - Russia
The next generation’s perspective will increase green building.

- 89% choose brands aligned with social cause
- 74% listen to brands aligned with social cause
- 69% shop for brands aligned with social cause
- 66% recommend brands aligned with social cause
Traditional Relationships

Owner

Architect

Contractor
Ideal Relationships

Owner

Architect

Contractor
The Architect’s Perspective
The Owner’s Perspective
The Contractor’s Perspective

Architect → Contractor ← Owner

MARKS, THOMAS ARCHITECTS

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The Integrated Design Approach
How to Make This Happen

Previously:

• Modify traditional contractual documents
  • A101™ – Owner/Contractor Agreement
  • B101™ – Owner/Architect Agreement

Now:

• C195™–2008 Standard Form of Single Purpose Entity Agreement for Integrated Project Delivery
Fenway Park
Boston, MA
Fenway Park – Boston, MA
Fenway Park – Boston, MA
Fenway Park – Boston, MA
Fenway Park – Boston, MA
Fenway Park – Boston, MA
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“The Land of Pleasant Living”
Brewer's Hill – Baltimore, MD

The Land of - Not so Pleasant Living

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Starting the Design/Green Process - Brainstorming

• How can Smartcodes be incorporated?
• How can the existing strengths of the Building be used?
• How to facilitate the Green Process?
Subcontractor Complaints!

• “Too complicated.”
• “We’ve never had to do it like this before.”
• “We don’t have that in our price.”
• “It’s all Greek to me.”
This phase of the Brewer’s Hill / Natty Boh project is going to conform to the standards of the U. S. Green Building Council’s (USGBC) LEED (Leadership in Energy & Environmental Design) Version 2.0 requirements for Silver certification. To that end, the products and construction methodology used in this project are going to follow the LEED requirements. Your ability to maximize the LEED credit potential of this job will be strongly considered in the bid process. The Material Matrix and Construction Practice outlined below are applicable to all vendors/subcontractor’s in that provide materials or work on the site. This information is supplemental to section 01352 LEED REQUIREMENTS of the Natty Boh Project Manual Volume One.
<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>LEED CREDIT</th>
<th>SUB RESPONSIBILITY</th>
<th>POSSIBLE APPLICATIONS (INCLUDING THESE PRODUCTS, BUT NOT LIMITED TO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show material separate from other cost in your bid – applicable to all subs/vendors regardless of whether they are supplying LEED qualifying material or not</td>
<td>All credits</td>
<td>Break out material cost from labor and equipment in all bids for Dw. 2 - 12. This will also apply to subsequent proposals and change orders. Indicate what LEED credits below that you can comply with.</td>
<td>This enables us to computes the ratios of LEED qualifying material to total material</td>
</tr>
<tr>
<td><strong>INCLUDE ITEMS LISTED BELOW WITH SUBMITTALS</strong></td>
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</tr>
<tr>
<td>Resource Reuse – use min. 5% (MR 3.1) or 10% (MR 3.2) salvaged or refurbished materials</td>
<td>MR 3.1, MR 3.2</td>
<td>Provide receipt if item is purchased.</td>
<td>Structural beams and posts, tanks, brick, flooring, doors, cabinetry, steel stairs, steel ceilings, decorative items</td>
</tr>
<tr>
<td>Recycled Content - use min. 25% (MR 4.1) or 50% (MR 4.2) materials that have recycled content</td>
<td>MR 4.1, MR 4.2</td>
<td>Determine a cost for the material with recycled content. Provide a certification from the manufacturer verifying the percent and type of recycled content as outlined below. __% (by weight) of post-consumer content. __% (by weight) of post-industrial content.</td>
<td>Concrete, rebar, compost, steel, misc. metals, wheatboard, MDO, metal roofing, membrane roofing, gypsum board, glass, ceramic tile, acoustical ceiling panels, carpet systems, paint, toilet compartments, signage</td>
</tr>
<tr>
<td>Local Materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regionally Manufactured Materials – use min. 20% of total building materials that are manufactured (final assembly) within a 500 mile radius of building site</td>
<td>MR 5.1</td>
<td>Provide manufacturers statement declaring where product was made.</td>
<td>Dirt, compost, concrete, plants, steel and misc. metals, reclaimed products (wood, concrete), lumber, millwork, roofing, doors, windows, glass, gypsum board, ceramic tile, paint, caulk and sealants, accessories, signage, elevators, mechanical/plumbing fixtures and equipment, sprinkler pipe, electrical fixtures and devices</td>
</tr>
<tr>
<td>Regionally Extracted, Harvested or recovered Materials – of those regionally manufactured materials – use min. 50% that are extracted, harvested or recovered within 500 mile radius of building site</td>
<td>MR 5.2</td>
<td>Provide manufacturer’s statement declaring which components of the local product were procured from within a 500-mile radius of the building site.</td>
<td>Dirt, compost, concrete, plants, steel and misc. metals, reclaimed products (wood, concrete), lumber, millwork, roofing, doors, windows, glass, gypsum board, ceramic tile, paint, caulk and sealants, accessories, signage, elevators, mechanical/plumbing fixtures and equipment, sprinkler pipe, electrical fixtures and devices</td>
</tr>
<tr>
<td>Rapidly Renewable Materials - for min. 5% of total building materials</td>
<td>MR 6</td>
<td>Provide written documentation from the manufacturer declaring the rapidly renewable materials contained in the products.</td>
<td>Bamboo flooring, wheatgrass cabinetry, sunflower seed board, poplar OSB, wool carpet, linoleum flooring, cotton batt insulation</td>
</tr>
<tr>
<td>Certified Wood – use for min. 50% of wood-based materials</td>
<td>MR 7</td>
<td>Provide chain-of-custody documents from the manufacturer declaring conformance with Forest Stewardship Council (FSC) guidelines for certified wood building components.</td>
<td>Wood windows, structural and general framing, flooring, finishes, furnishings, and non-rented temporary construction items such as bracing, concrete form work and barriers.</td>
</tr>
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<tr>
<td>All adhesives and sealants used in the building must conform to these standards</td>
<td>EQ 4.1</td>
<td>Provide manufacturer’s MSDS that shows adhesives meet or exceed VOC limits of South Coast Air Quality Management District Rule #1168 AND all sealants used as a filler must meet or exceed Bay Area Quality Management District Reg. 8, Rule 51.</td>
<td>Paint, intumescent paint, industrial coatings</td>
</tr>
<tr>
<td>All paints and coatings used in the building must conform to these standards</td>
<td>EQ 4.2</td>
<td>Provide manufacturer’s MSDS that shows paints and coatings meet or exceed VOC and chemical component limits of Green Seal requirements.</td>
<td>Paint, carpet pad, cove base, adhesives,</td>
</tr>
<tr>
<td>All carpet systems used in the building must conform to these standards</td>
<td>EQ 4.3</td>
<td>Provide manufacturer’s cut sheet that shows carpet systems meet or exceed the Carpet and Rug Institute Green Label Indoor Air Quality Test Program.</td>
<td>Carpet pad, cove base, adhesives,</td>
</tr>
<tr>
<td>All composite wood and agrifiber products used in the building must conform to these standards</td>
<td>EQ 4.4</td>
<td>Provide manufacturer’s cut sheet that shows composite wood or agrifiber products have NO urea-formaldehyde resins.</td>
<td>MDF, MDO, plywood, wheatboard</td>
</tr>
</tbody>
</table>
CONSTRUCTION PRACTICE

Construction Waste Management (MR 2.1 and 2.2)

We will be recycling, salvaging, and reusing as much as possible. The intent is to divert waste from the landfill. The first step is to try to salvage or reuse material during the demolition process. During demolition and construction designated recycling bins will be on site. It is every subs responsibility to separate their waste and scraps and put them in the appropriate bin.
<table>
<thead>
<tr>
<th>When</th>
<th>Who</th>
<th>What</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bryan</td>
<td>Research invoices for any schedule of values (Div. 1-10)</td>
<td></td>
</tr>
<tr>
<td>Julia</td>
<td>Final reports from Brian Toeys. Construction photos from Brian Toeys.</td>
<td></td>
</tr>
<tr>
<td>Julia</td>
<td>Update Construction Management Plan</td>
<td></td>
</tr>
<tr>
<td>Julia</td>
<td>Call subs for material costs etc.</td>
<td></td>
</tr>
</tbody>
</table>
| Julia/Tenant Superintendent/PM/Steve | Tenant Coordination –  
1. Have them follow Construction Management Plan and other LEED procedures  
2. Input material costs and other criteria in log |
| Julia/Christine/Dan | Get MEP LEED checklists |
| Julia | Find a less expensive commissioning agent for tenant fit out |
| Julia | Get tenant fit out material costs and other LEED criteria |
| Butch | Roof Warranty info to Wells |
| Bryan | SS7.1: Reduce heat island  
• Highlight “high albedo” concrete surfaces on site (runs all the way to malt Mill)  
• Do area calc of concrete surfaces and whole site – conc. should be at least 30% of non-roof impervious surfaces  
• Get documentation that concrete meets 0.3 albedo reflectance |
• Green Roof

• Storm Water Management
Innovative Design

MARKS, THOMAS ARCHITECTS

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ZIPPY

YOU REMIND ME OF "ESKY," THAT BUG-EYED L'IL GUY FROM ESQUIRE MAGAZINE!

WELL, WE DID COME ALONG ABOUT TH' SAME TIME...TH' 1930s...BUT I SOLD BEER!

IT MUST'VE BEEN GREAT TO LIVE IN TH' 1930s...WHEN EVERYONE WAS BUG-EYED & MUSTACHIOED & BEER-DRINKING!

WELL, THAT WAS A LONG TIME AGO. NOW I'M BUSY SELLING CONDOS!

YOU MEAN I COULD LIVE IN THIS BUILDING & STARE OUT MY WINDOW EVERY DAY AT YOUR HUGE BUG-EYED & MUSTACHIOED KISER?

KINDA PUTS TH' EIFFEL TOWER & TH' TAJ MAHAL TO SHAME, DOESN'T IT?
Miller’s Court – Baltimore, MD
Miller’s Court – Baltimore, MD
Miller’s Court – Baltimore, MD
Miller’s Court - History
Miller’s Court - Site and Context
Miller’s Court - Previous Attempts

- Two previous developers
- Multiple schemes
- 90+ market rate residential units
- 60 parking spaces for “luxury” condos
Thinking Outside the Box

- Mixed-use Development
- Innovative Mechanical System
- Opportunities to Establish Community
- Shared Amenity Spaces
- Inner Court as “Urban Oasis”
- Community Engagement through Art
Miller’s Court - Design Concept
Miller’s Court – Baltimore, MD
Miller’s Court – Baltimore, MD
Miller’s Court – Baltimore, MD
Miller’s Court – Baltimore, MD
Transforming the Past to Preserve Our Future

It is not necessary to change.
Survival is not mandatory.

- W. Edwards Deming
Contact Information

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