Integrating Safety and Health into Green Construction Rating Systems

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Green rating systems play a key role.....
.....but do they address S&H?
Strategy discussions

Incremental Path
Develop S&H Pilot Credits:
✓ Add language to enhance existing credits that involve specific hazards.
✓ Develop new stand-alone S&H credits.
✓ Position for adoption into LEED.

Comprehensive Path
Develop dedicated S&H Best Practices rating system that could either stand alone or be integrated into LEED.

Partner with S&H professionals, owners, and construction firms to pilot new credits and systems
Focus areas

✓ Construction phases
✓ Maintenance work over the lifecycle of the building
✓ DID NOT focus on occupant issues

“From a maintenance standpoint, I would have made the lights more accessible. Right now, if a light goes out in the theater we have to call in the electricians, and they practically have to build a scaffold to get to it.”

Manager, Central Los Angeles High School No. 9
http://www.metropolismag.com/story/20110720/starchitecture-high
Step 1) Evaluate LEED New Construction credits for safety and health potential

- **Positive:** likely activities, if coupled with additional safety design and planning measures, could act to **REDUCE** construction (C) and maintenance (M) worker exposures and risks. **7 credits**

- **Negative:** likely activities, if NOT coupled with additional safety design and planning measures, could act to **INCREASE** C & M worker exposures and risks. **11 credits**

- **Neutral:** While safety hazards cannot be ruled out, the likely activities appear less likely to either increase or reduce C & M worker exposures and risks, regardless of safety design and planning measures. **38 credits** (+1 both positive and negative)
Step 2) Identify specific credits for safety enhancement

Indoor Environmental Quality (IEQ):
- Credit 8.1 & 8.2 Daylight and Views
- Credit 3.1 & 4.1 Construction IAQ Mgmt Plan /Low emitting materials

Materials & Resources (M&R):
- Credit 2 Construction Waste Management
- Credit 1.1 & 1.2 Building Re-use

Sustainable Sites (SS):
- Credit 7.2 Heat Island Effect-Roofs
Step 3) Develop enhanced credits and reference guide materials

For Credits:
✓ Insert language --- match current level of detail
✓ Describe what needs to be done (not how to do it).
✓ Emphasize design and planning steps.

For Reference Guides (Used to communicate key details)
✓ Insert new information in appropriate sections
  (e.g. Benefits and Issues to Consider, Implementation, Documentation Guidance, Operations and Maintenance, Resources)
✓ Provide options
✓ Provide photos and examples
Credit 7.2: Heat Island Effect—Roof  1 Point

Intent: To reduce heat islands to minimize impacts on microclimates and human and wildlife habitats.

Requirements

OPTION 1  Use roofing materials with a solar reflectance index (SRI) equal to or greater than the values in the table below for a minimum of 75% of the roof surface.

OPTION 2  Install a vegetated roof that covers at least 50% of the roof area.

OPTION 3  Use a combination of the above options
Credit 7.2: Heat Island Effect—Roof 1 Point

Requirements

OPTION 1 Use roofing materials with a solar reflectance index (SRI) equal to or greater than the values in the table below for a minimum of 75% of the roof surface. Develop and implement a safe roof plan to prevent falls and other hazards involved with construction and maintenance of high-albedo roofs.

OPTION 2 Install a vegetated roof that covers at least 50% of the roof area. Develop and implement a safe roof plan to prevent falls and other hazards involved with vegetated roof installation and maintenance.
Credit 7.2: REFERENCE GUIDE

1. Benefits and Issues to Consider (New H&S Issues section)

....Vegetated roofs primarily present fall hazards to construction workers building the roof; landscaping workers installing the vegetation; and landscaping or maintenance workers providing Periodic care for vegetated roofs.

.....Reflective surface roofs may present visual, heat, and fall hazards to construction workers building them and to maintenance workers performing periodic washing to maintain solar reflective index levels.
Credit 7.2: REFERENCE GUIDE

4) Implementation (New S&H section)

Elements of a Safe Roof Plan.
1. Structural Integrity.
2. Fall prevention / protection. (5 options listed)
3. Safe access (2 options listed)
4. Unique building hazards (Glare, heat stress, toxics, and electrical hazards)

7) Documentation Guidance

Include description of safe roof plan design features and documentation on implementation. Describe provisions for safe maintenance of vegetative and high albedo roofs over the building lifecycle.
Partnering with ASSE Construction Practice Specialty Group

✓ Pilot test the draft pilot credits by using them on actual construction projects

✓ Provide feedback on how well they worked and how to improve them

✓ Eventually support their use on LEED jobs

✓ Also pilot test the comprehensive SCSH rating system – see web address on following page
Comprehensive S&H rating system from Oregon State University Partners

http://sustainablesafetyandhealth.org/
Thanks!

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