Greening-up Construction Specifications

Writing Sustainable Design and LEED Construction Specifications

Albuquerque Chapter
Presentation Sponsor

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Learning Objectives

- Gain an understanding of the role of specifications in sustainable design documentation.
- Learn specific applications of sustainable design provisions in the specifications.
- Learn about how construction Drawings support LEED specification requirements.
- Understand some of the essential contractual implications of practicing sustainable design and designing projects that are intended to become LEED Certified.

Discussion Outline

Specifications

- Administrative and Procedural Provisions
- Temporary Facilities
- Product Specifications

Key Concept

- The "Division 01 Concept"

Discussion Outline

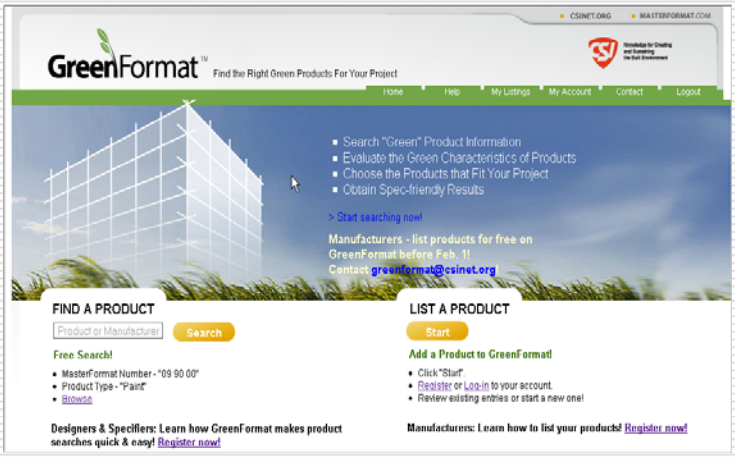
A/E Contract

- Contractual Implications

LEED Rating System Choice

- Effect on specification references

GreenFormat



Some Important Distinctions…

- ARCOM (Masterspec)
  - Publication: "Specifying LEED Requirements" (2nd Edition)
    - Sample text for Sections impacted by LEED requirements.
    - Establishes and documents widely accepted industry procedures by virtue of the widely accepted use of this master system for 25+ years.
    - "e-SPECS" is the electronic "data base" version using Masterspec as the text content.

Some Important Distinctions…

- Building Systems Design (SpecLink)
  - Employs Division 01 Concept
    - Includes all detailed product and procedural requirements for LEED in Division 01.
    - Complies more closely with *MasterFormat* 2004 for Division 01 Section numbering and LEED requirements locations.
    - Electronic data base system in wide and growing use for over 20 years.

Some Important Distinctions…

- Comparisons
  - ARCOM Masterspec
    - LEED product requirements are collected in Section 01 8113 (incorrect according to MF 04 – Facility Performance Req'ts).
    - Does not have Temporary Erosion and Sedimentation Control Section in Division 01.
    - Does not have distinct LEED certification procedures Section – information dispersed throughout Division 01.
  - BSD SpecLink
    - LEED product requirements are specified in Section 01 6000 as product requirements
    - Includes distinct Sections for LEED Credit Summary (Scorecard), Certification Procedures, and LEED Submittal Forms.

Administrative Provisions

- **Section 01 3514** – LEED Credit Summary
  - Basic definitions.
  - LEED Certification basis and certification level goal.
  - Summary of credit objectives under each category.
    - Designated as “required”, “preferred”, “not required”, “undecided/possible”, etc.
    - Brief description of the strategies and design features that are included to achieve the credit.

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Administrative Provisions

- **Section 01 3515** – LEED Requirements or LEED Certification Procedures
  - Basic definitions.
  - Outline of LEED credits goals and minimum requirements.
  - Identification of mandatory documentation and submittal requirements of the Contractor.
    - Action Plans, Reports, Submittals (for back-up documentation), Certification Letters.

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Administrative Provisions

- Section **01 3516** – LEED Submittal Forms
  - Basic definitions.
  - Listing of forms for use by the Contractor.
  - Administrative and submittal procedures.

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Administrative Provisions

- **Section 01 2000** – Price and Payment Procedures
  - Requirement to include LEED Submittals on a monthly basis with pay applications.
  - This is an optional requirement.

Administrative Provisions

- **Section 01 3000** – Administrative Requirements
  - Project Meetings: Requirements LEED/ Sustainability Meetings.
  - Progress Photographs: Requirements for LEED/ Sustainability IAQ Control Documentation (Optional??).

Administrative Provisions

- **Section 01 7800** – Closeout Submittals
  - Requirements for separate LEED/Sustainability closeout submittals.
  - LEED Log Binder:
    - Waste Management Plan.
    - Salvaged, refurbished, reused materials log.
    - Recycled materials content log/data.
    - Regional materials log/data.
    - FSC wood products log/data.
    - IAQ Management Plan.
    - Other requirements as needed.

Administrative Provisions

- **Section 01 7900** – Demonstration and Training
  - These requirements are DIFFERENT than commissioning.
  - Requirements for submittals and commissioning authority involvement.

Administrative Provisions

- **Section 01 9000** – General Commissioning Requirements
  - Commissioning requirements applicable to ALL Sections – avoid duplication.
    - This Section does NOT belong in Division 15/23!
  - Submittal requirements.
  - Commissioning plan, start-up plans, pre-function checklists, test procedures, etc.
  - This Section specifies the Contractor's responsibilities in support of the Commissioning Authority regarding systems commissioning.

Administrative Provisions

- **Section 01 9114** – Commissioning Authority Responsibilities
  - Section can be included in the Project Manual for Contractor's information.
  - Commissioning Authority is usually under contract directly to the Owner.
    - Situation could be different under a design-build contract.
  - Section focuses more on the responsibilities and activities of the Commissioning Authority – supplements and supports Section 01 9000.

Questions?

Procedural Requirements

- **Section 01 6000** – Product Requirements
  - General product requirements (standard language).
  - General LEED-compliance product requirements (Division 01 principle).
  - Transportation, storage, handling, and protection requirements.
  - Product option and substitution limitations and procedural requirements.
  - Spare parts and maintenance materials requirements.

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Procedural Requirements

- **Section 01 7419** – Construction Waste Management and Control
  - Definitions
  - Goals
  - Submittals
  - Implementation
- This Section does NOT belong in Division 02/31.

Temporary Facilities

- **Section 01 5713** – Temporary Erosion and Sedimentation Control
  - Performance Requirements
  - Submittals
  - Materials
  - Preventive Measures
- This Section does NOT belong in Division 02/31.

Temporary Facilities

- **Section 01 5720** – Indoor Air Quality Controls/ Plan During Construction
  - Contaminants
  - Construction Operations
  - Source Control
  - Pathway Interruption
  - Housekeeping
- This Section does NOT belong in Division 15/23.

Product Specifications

- Work Results (Product) Sections
  - "Comply with [*enter descriptor*] product requirements specified in Section 01 6000."
  - Be sure that the product/system that you are specifying is, in fact, available in accordance with the specified product requirements – DO YOUR HOMEWORK!
  - Examples:

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Product Specifications

- Commissioning Requirements
  - Product Sections: "Comply with general commissioning requirements specified in Section 01 9000."
  - Commissioning Sections: Commissioning of "[_____]:"
    - Section 21 0800 – Fire Suppression
    - Section 22 0800 – Plumbing
    - Section 23 0800 – HVAC
    - Section 26 0800 – Electrical Systems
    - Section 27 0800 – Communications Systems
    - Section 28 0800 – Safety and Security

Questions?

Construction Drawings

- Drawing support should be minimal, and only applies to certain administrative, procedural, temporary facilities, and work scope items.
  - General and specific product requirements do NOT require Drawing support.
  - Inherent design characteristics address LEED compliance without the need for explicit Drawing language, etc.

Construction Drawings

- Drawing support may include:
  - Alternates.
  - Erosion and Sedimentation Control details.
  - Construction Waste Management – location of waste/recycling facilities.
  - Protection of habitat and excavation limits.
  - Construction IAQ details.

Contractual Implications

Issues to Consider:

- Owner-A/E Agreement
- A/E Agreement
- Contractor's Role and Expectations
- Owner's Role and Expectations
- A/E's Capabilities and Limitations

Owner/A-E Agreements

- Ensure the scope of additional services required by the design team are accurately described.
- Accurately define who the commissioning agent works for and how they are to be compensated.
- Ensure additional compensation is included to cover additional work required, including:
  - Materials research and specification enhancements
  - Preparation of documentation (drawings, forms, letters)
  - Energy modeling
  - Fees paid to USGBC
  - Fees for a LEED facilitator if A/E is not self-performing
- Ensure there are no guarantees given for achieving a given LEED Certification level.

A-E Agreements

- Ensure that all requirements in the O-A agreement are passed-through in the A-E agreement, including:
  - Materials research and specification enhancements.
  - Preparation of documentation (drawings, forms, letters).
  - Energy modeling (unless commissioning agent is contracted to perform).
- Commissioning Agent – important to include in their contract:
  - Basis of Design review.
  - Extended commissioning (when that credit is desirable).
  - Indoor air quality testing prior to occupancy.
  - Post occupancy survey of occupants.

Contractor's Role / Expectations

- Role: First line of defense against losing credits due to:
  - Compliance with specification requirements for:
    - Insufficient recycled content.
    - Insufficient amount of local/regional material purchases.
    - Out of tolerance VOC content.
  - Ineffective implementation of:
    - Construction waste recycling plan.
    - Indoor air quality during construction plan.
- Expectations: Documents are complete, coordinated, and contain specification information necessary to enforce compliance on it's subcontractors and suppliers.

Owner's Role

- Role:
  - Clearly define intent for level of certification desired.
  - Communicate intent to comply with Owner based credits (site selection, parking count, green power, organic landscape maintenance, green housekeeping, etc).
  - Include additional funds in project budget to cover A/E fees, GC fees, hard construction costs.

Owner's Expectations

- Expectations:
  - A/E will be knowledgeable about how to achieve credits and how to communicate requirements in the construction documents.
  - That project will achieve the stated goals.
  - That if project does not achieve stated goals, may be looking to recover perceived damages as a result of failure to achieve (suggest you enlist your E&O carrier for contract language to counteract such sentiment in the O-A contract).

A-E Capabilities and Limitations

- Capabilities:
  - Have a LEED AP on staff.
  - Research "green" products and systems.
  - Stay abreast of LEED CI's (credit interpretations) for alternative compliance paths.
- Limitations:
  - Cannot control performance of others.
  - Cannot guarantee performance to a certain LEED certification level.

LEED Rating System Choice

- Credits for LEED NC, CI, CS, Schools, and others change numbers from one to the other (alignment is on the way with LEED 2009…).
- Important to know which system is being used and customize the credit names/ numbers to each one (In Division 01 only!).
- Some important new developments:
  - LEED Reference Guide for Green Building Design and Construction – 2009 Edition: Consolidates NC, CS, and Schools (K-12) into a single Guide.

Questions?

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This concludes the credit portion of the program for The CSI CEN and The AIA CES.