10 Tips for Performing Plumbing Work on a LEED Project

Presented for: Courtney France, LEED AP
France Sustainable Solutions
Littleton, Colorado
courtney@francesustainable.com

Preface for Today’s 10 Tips…

✓ You may or may not be a LEED Accredited Professional
✓ You have been awarded a LEED Project (in other words, you’re already on a LEED job)
✓ You’re working with Designers, Owners, & Builders

☐ You need to know what your role is on a LEED job
☐ You need to know what to ‘bring to the table’
☐ You need to know the requirements to meet the goals on a green building project
AGENDA

1. Identify Green Metrics & Contract Requirements
2. Confirm Roles & Responsibilities
3. Know the LEED Tools
4. Plan for LEED Schedule Milestones

Understand Plumbing Options & Limitations for:

5. Site Credits
6. Water Credits
7. Energy Credits
8. Materials Credits
9. Indoor Environmental Quality Credits
10. Innovation & Pilot Credits

#1 Determine the Green Requirements

- Which Green Metric?
  - LEEDv2 or v3
    - Project registration date
    - RFP/RFQ may differ from current status

- What Certification Level or Standard?
  - LEED Certification vs. 'Certifiable' vs. Green Globes vs. City Mandate
  - Certification Level (Certified, Silver, Gold, Platinum)

- Identify LEED requirements in the RFP/Specs/CD’s and Bid Packages
  - Staff or Workforce Credentials
  - Submittal Forms
  - Links to Retainage
  - Additional Services or Third Party requirements
#2 Confirm Roles & Responsibilities

- Design Team
- Construction Team
- Commissioning (Cx) Agent
- Owner/Developer/Client

### Design Team Support
- Mechanical Engineer
- Plumbing Engineer
- Energy Modeler
- Cx Agent
- Owner

### Construction Team Support
- GC/CM
- Cx Agent
- Owner

#3 Know the LEED Tools

- Reference Guides
- Scorecard
- LEED Online
  - LEED Credit Forms
  - Supporting attachments like equipment cut sheets, MSDS, etc.
LEED-Online v3 (LOv3)

Energy Savings...

According to the U.S. Department of Energy, buildings use 39% of the energy and 74% of the electricity produced each year in the United States.

Get Started
What's New
Learn More
Other Links

Credit Forms

LEED 2009 for New Construction and Major Renovations

WE PREREQUISITE 1: WATER USE REDUCTION 30% REDUCTION

Table 1: Daily Water Use

<table>
<thead>
<tr>
<th>Water Source</th>
<th>Daily Use (gallons)</th>
<th>Percent of Total Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater</td>
<td>300</td>
<td>60%</td>
</tr>
<tr>
<td>Reclaimed</td>
<td>100</td>
<td>20%</td>
</tr>
<tr>
<td>Greywater</td>
<td>50</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2: Water Use by Group

<table>
<thead>
<tr>
<th>Group</th>
<th>Daily Use (gallons)</th>
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</table>

LOv3 Credit Forms
#4 Plan for the LEED Schedule Milestones

- **Due Dates for Submittals**
  - Design Phase LEED Submittals
  - Construction Phase LEED Submittals

- **Cx Dates**
  - Field Verification
  - Contractor Submittal Reviews
  - Train Operating Staff
  - Re-Commissioning (10 months after substantial completion)

- **For Existing Buildings LEED O&M – Performance Period Meters (Water & Energy)**

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#5 Understand Plumbing Options & Limitations for Site Credits

**Be Prepared to:**
- Participate in LEED Design Meetings & support Plumbing Engineer & Civil Engineer
- CONSTRUCTION ACTIVITY POLLUTION PREVENTION (SSp1)
  - If plumbing scope ties in, participate in Civil Engineer design meetings regarding perimeter drain systems or parking oil interceptors
- BICYCLE STORAGE & CHANGING ROOMS (SSc4.2)
  - Install showers and provide showerhead flow rate cut sheets
- STORMWATER MANAGEMENT (SSc6.1 & SSc6.2)
  - If plumbing scope ties in, participate in Civil Engineer design meetings regarding vegetated roofs or rainwater capture and reuse

**Special Considerations:**
- Vegetated Roofs – Design may require MCA Contractor's input on drainage, potential recapture and reuse strategies, and even greywater irrigation sources from the building.
- If adding showers to the project, don't forget the energy impact for water heating. Offer possible DHW energy savings options, if available.
#6 Understand Plumbing Options & Limitations for Water Credits

**Be Prepared to:**
- Participate in LEED Design Meetings & support Plumbing Engineer & Landscape Architect
- **WATER EFFICIENT LANDSCAPING (WEc1)**
  - Provide Water Filtration System Cut Sheets for greywater or captured rainwater systems
  - Provide Non-potable water utility drawings
- **INNOVATIVE WASTEWATER TECHNOLOGIES (WEc2)**
  - Provide flow & flush fixture cut sheets
  - Provide greywater or captured rainwater system drawings
- **WATER USE REDUCTION (WEp1 & WEc3)**
  - Support or complete EPAct/UPC water use calculations
  - Provide flow & flush fixture cut sheets
- **PROCESS WATER USE REDUCTION (LEED-Schools WEc4)**
  - Provide equipment cut sheets (dishwasher, ice machine, food steamer, pre-rinse spray valve, etc.)

**Special Considerations:**
- Confirm applicable flow & flush fixtures for water use reduction calculations (Janitor’s closet sinks or faucets do not count)
- Municipal provided non-potable water (‘purple pipe’) availability varies
- Greywater reuse systems may encounter code compliance restrictions
- Educate owners/operators on waterless fixture maintenance requirements
- LEED-Schools Process Water Use Reduction credit prohibits garbage disposals
- Innovation point for 10% water use reduction for process water loads
- Be prepared to provide cost benefit analysis to Contractor and Team regarding onsite treated wastewater systems

#7 Understand Plumbing Options & Limitations for Energy Credits

**Be Prepared to:**
- Participate in LEED Design Meetings & support Engineering Team
- Collaborate with Cx Agent
- **COMMISSIONING (EAp1 & EAc3)**
  - Participate in Field Verification tests with Cx Agent
  - Provide equipment submittals for Cx review
- **MEASUREMENT & VERIFICATION (EAc5)**
  - Provide Water Metering/Controls Cut Sheets or Product Data

**Special Considerations:**
- Tenant Submetering for LEED C&S (EAc5.2)
- Process water equipment links to energy savings (EnergyStar kitchen equipment, etc.)
- Solar hot water systems gaining interest – understand how to apply and coordinate with this scope
#8 Understand Plumbing Options & Limitations for *Material* Credits

**Be Prepared to:**
- Comply with GC’s onsite CWM Plan
- Clarify exclusion of your scope for MR credits to ‘beginner LEED teams’
- **WASTE MANAGEMENT (MRc2)**
  - Submit weight receipts for materials recycled at shop or returned for reuse

**Special Considerations:**
- Even though excluded by LEED, consider transportation impacts associated with product sourcing & supply
- If any wood in your scope (i.e. blocking/backing/roof curbs/etc.), verify if wood needs to be FSC Certified (MRc7)

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#9 Understand Plumbing Options & Limitations for *IEQ* Credits

**Be Prepared to:**
- **CONSTRUCTION IAQ MANAGEMENT (IEQc3.1)**
  - Comply with GC’s onsite IAQ Plan
- **LOW-EMITTING MATERIALS (IEQc4.1, 4.2, & 4.4)**
  - Provide Cut Sheets for onsite applied Low-VOC Adhesives, Sealants, Paints & Coatings
  - Provide Cut Sheets for Urea-Formaldehyde Free Composite Wood products

**Special Considerations:**
- Minimum Acoustical Performance prerequisite in LEED-Schools (IEQp3)
- Beware that VOC limits still apply even when building is not ‘dried-in’ (IEQc4)
- Special ruling – Sticker adhesives/pipe labelling adhesives do not apply to low VOC requirements (IEQc4)
- Addenda – Eliminated specific plumbing/drainage requirements for IEQc5. Use local code reference instead.
#10 Understand Plumbing Options & Limitations for *Innovation* & *Pilot* Credits

**Be Prepared to:**
- Participate in LEED Design meetings
- Support Design Engineer to brainstorm ideas & strategies
- Verify feasibility of innovative strategies or pilot credit approaches

**Special Considerations:**
- Regional Priority credits may increase value of your scope’s LEED points
- Process energy load savings applicable here
- More opportunities for special use building types like Labs, Healthcare, Datacenters, etc.

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**Pilot Credit Library**

[www.usgbc.org](http://www.usgbc.org) > LEED > LEED Resources > LEED Pilot Credit Library

- LEED 2012 potential credits
- Cross reference list before applying
- Examples include:
  - Sustainable Wastewater Management
  - Cooling Tower Makeup Water
  - Appliance and Process Water Use Reduction
  - Water Metering & Reporting
#10 1/2 Market your Award

- Follow up with D/B Team re: Final Award
- Paper Certificate of Award (Hall of Fame at your office)
- Add to Company Qualifications, Website, Project Experience List, & Personal Staff Resumes
- Project Case Study
  - Local USGBC Chapter Newsletter
  - Association & Membership Posts
  - Site Pictures with Plaque
  - GBCI Directory & Case Study
- Follow up with Client/Owner & Team re: O&M services & possible EB LEED Certification

Questions?
Thank you for your time!

Courtney France, LEED AP BD+C
courtney@francesustainable.com