

10 Tips for Performing Plumbing Work on a LEED Project

Presented for: Mechanical Contractors Association
MCAA
of America



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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



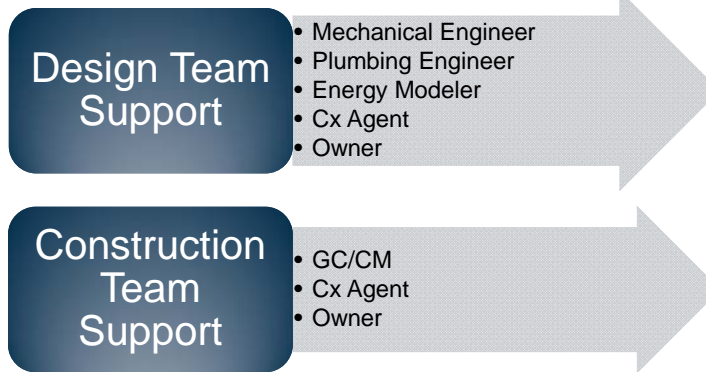
6692 SOUTH CHEROKEE STREET LITTLETON COLORADO 80120 P303 325-5945

#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



#3 Know the LEED Tools

- Reference Guides



- Scorecard

- LEED Online

- LEED Credit Forms
- Supporting attachments like equipment cut sheets, MSDS, etc.

Materials & Resources	
Prereq 1	Storage & Collection of Recyclables
Credit 1.1	Building Reuse, Maintain Existing Value
Credit 1.2	Building Reuse, Maintain 50% of Value
Credit 2	Construction Waste Management
Credit 3	Materials Reuse

LEED-NC v3.0 Preliminary Project Checklist		Points	Prerequisites	Requirements	Notes
Sustainable Sites		26 Points	1	1	1
Y	Prereq 1 Construction Activity Pollution Prevention	Required			
	Credit 1 Site Selection				
	Credit 2 Development Density & Community Connectivity				
	Credit 3 Brownfield Redevelopment				
	Credit 4.1 Alternative Transportation, Public Transportation Access				
	Credit 4.2 Alternative Transportation, Bicycle Storage & Changing Rooms				
	Credit 4.3 Alternative Transportation, Low-Emitting and Fuel-Efficient Vehicles				
	Credit 4.4 Alternative Transportation, Parking Capacity				
	Credit 5.1 Site Development, Protect or Restore Habitat				
	Credit 5.2 Site Development, Maximize Open Space				
	Credit 6.1 Stormwater Design, Quantity Control				
	Credit 6.2 Stormwater Design, Quality Control				
	Credit 7.1 Heat Island Effect, Non-Roof				
	Credit 7.2 Heat Island Effect, Roof				
	Credit 8 Light Pollution Reduction				
Water Efficiency		10 Points	1	1	1
Y	Prereq 1 Water Use Reduction, 20% Reduction	Required			
	Credit 1 Water Efficient Landscaping	2 to 3			
	Credit 2 Innovative Wastewater Technologies	2 to 3			
	Credit 3 Water Use Reduction	2 to 3			
Energy & Atmosphere		35 Points	1	1	1
Y	Prereq 1 Fundamental Commissioning of the Building Energy Systems	Required			
	Prereq 2 Minimum Energy Performance	Required			
	Prereq 3 Fundamental Refrigerant Management	Required			
	Credit 1 Optimize Energy Performance	1 to 19			
	Credit 2 On-Site Renewable Energy	1 to 7			
	Credit 3 Enhanced Commissioning	2 to 3			
	Credit 4 Enhanced Refrigerant Management	2 to 3			
	Credit 5 Measurement & Verification	2 to 3			
	Credit 6 Green Power	2 to 3			

LEED-Online v3 (LOv3)



LEED[®] ONLINE

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E-mail: Password:

Remember E-mail

[Forgot Password?](#)

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

Register New Account
 LEED Online Demo
 System Requirements
 Help

What's New

LEED 2009 Addenda
 LEED 2009
 Form Updates
 Legal Update

Learn More

USGBC
 GBCI
 LEED Rating Systems
 Courses & Training

Other Links

Contact Us
 LEED Online v2
 LEEDUser- 3rd party tool

LEED 2009 for New Construction and Major Renovations

WE PREREQUISITE 1: WATER USE REDUCTION

20% REDUCTION

Project # 100008723 Devita World Headquarters
All tabs and updates are required unless otherwise noted.

THRESHOLD ATTEMPTED

Points Attempted: 0

ALL OPTIONS

The Table Daily Occupancy below is a linked submittal from PI Form 3. Occupant and Usage Data to be used for reference only. PI Form 3 must be completed before values will display in WE. Prerequisite 1. These values should inform, but not necessarily parallel, the numbers entered in the Table: Fixture Groups Definition.

Table WP1-1. Daily Occupancy

FTE	Average Transients (Student/ Visitor)	Average Retail Customers	Residents	Total
930	30	0	0	960

Fixture Groups Introduction:
This table allows for project occupants to be organized in a way that best represents future usage patterns in the project. Occupants can be grouped together or separated into sub-groups at the option of the project team. The usage groups defined must be derived from daily occupancy data for the project building. Accordingly, all project occupants, as recorded in the Daily Occupancy table from PI Form 3, Occupant and Usage Data must be represented in the Table: Fixture Groups Definition below. All residential occupants should be represented separately from non-residential occupants. Refer to the additional guidance document in the Credit Resources section.

Table WP1-2. Fixture Groups Definition

Group Name	Annual Days of Operation	FTE	Transients (Student/ Visitor)	Retail Customers	Residents	% Female	% Male
Devita Total	200	930	30	0	0	50	50

Briefly describe the results in the Table: Fixture Groups Definition. Explain the methodology used to define each fixture group, as well as the derivation of data in each row. Additionally, provide a detailed explanation if the default gender ratio is not used.

WC-1: every water closet installed within the project is a high efficiency toilet. Water closets labeled per EPA standards, 1.28 gpf. We used the fixture type in order to achieve the best water savings for the project. Refer to attached file: Devita_plumbing schedule.pdf
U-1: every urinal installed within the project is a high efficiency urinal, 0.8 gpf. Refer to attached file: Devita_plumbing schedule.pdf
U-1: in both female and male restrooms, all urinals will be supplied with a 375 gpm aerator and electronic sensor activation. Refer to attached file: Devita_plumbing schedule.pdf
SH-1: Showers provided on the first floor will be a low-flow fixture of 1.5 gpm. Refer to attached file: Devita_plumbing schedule.pdf
S-1: Breakroom sinks provided by GFI and will be 1.5 gpm aerator. Refer to attached file: Devita_plumbing schedule.pdf. Fixtures listed S-1 through S-4 are all breakroom sinks and are denoted on the template as S-1.
S-2: Kitchen Sink on the 4th floor provided by Kitchen Consultant, Eagle Group Electronic Hand Sink with Battery-powered faucet, and will be specified as 1.5 gpm. Please refer to attached file: S-2_eagle group hand sink faucet cut sheet.pdf. The very last page of document will be the specifications for the hand sink.

Table WP1-3. Flush Fixture Data

Enter flush fixture data for each fixture group defined in the Table: Fixture Groups Definition.

Note: Click "Calculate" (found next to the Add and Delete) buttons to calculate the values in the table. "Calculate" must be run after any or all data is entered in the table to obtain the values in the summary section: Baseline Flush Rate, IPG/PC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups	Flush Rate (GPF)	Annual Water Consumption (KGA)
Devita Total	936	1,028.86
Devita Total	936	852.42
Percent reduction of water use in flush fixtures (%)		
		36

Table WP1-4. Flow Fixture Data

Enter flow fixture data for each fixture group defined in the Table: Fixture Groups Definition.

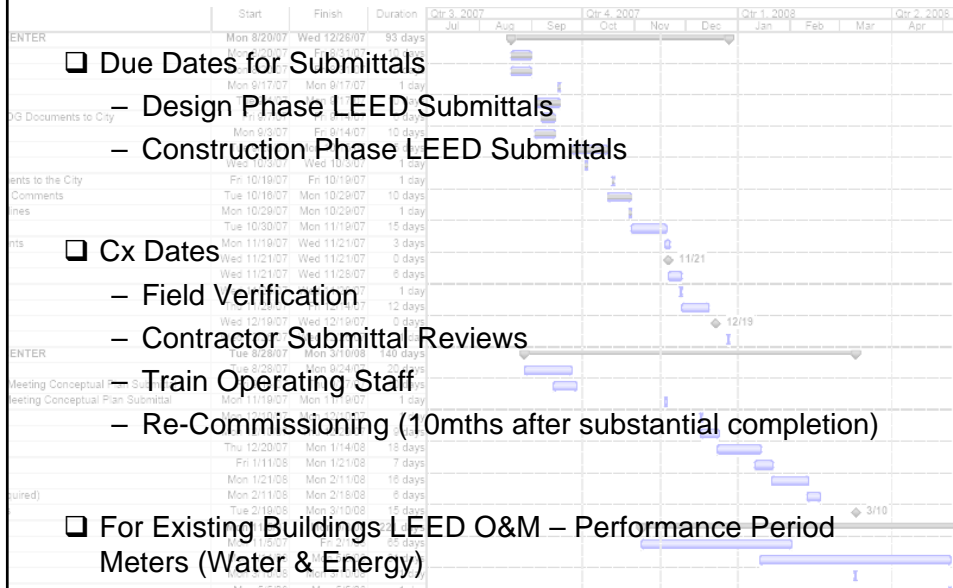
Note: Click "Calculate" (found next to the Add and Delete) buttons to calculate the values in the table. "Calculate" must be run after any or all data is entered in the table to obtain the values in the summary section: Baseline Flush Rate, IPG/PC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

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Prerequisite 1: Water Use Reduction - 20% Reduction

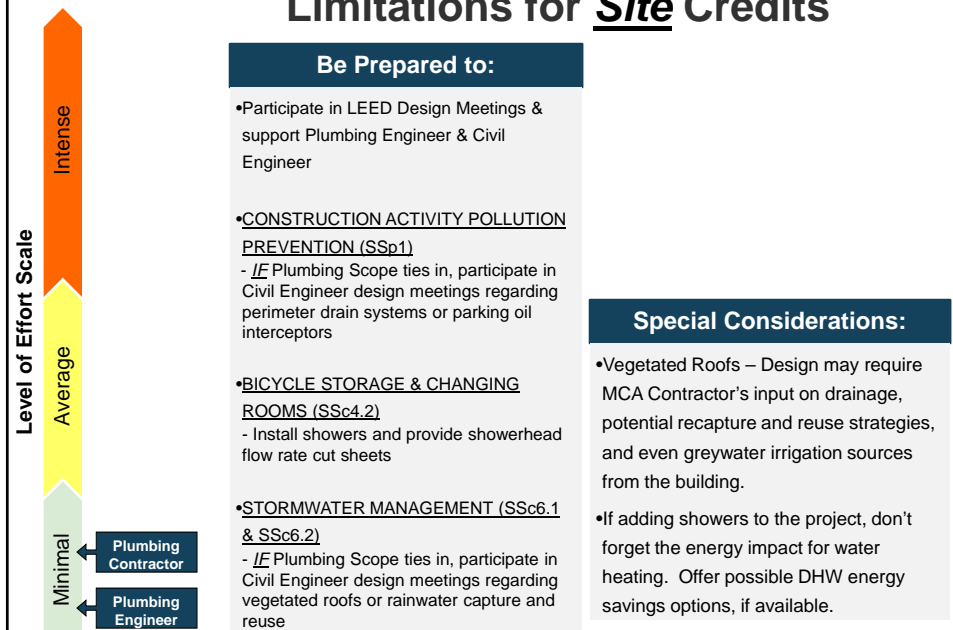
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LOv3 Credit Forms

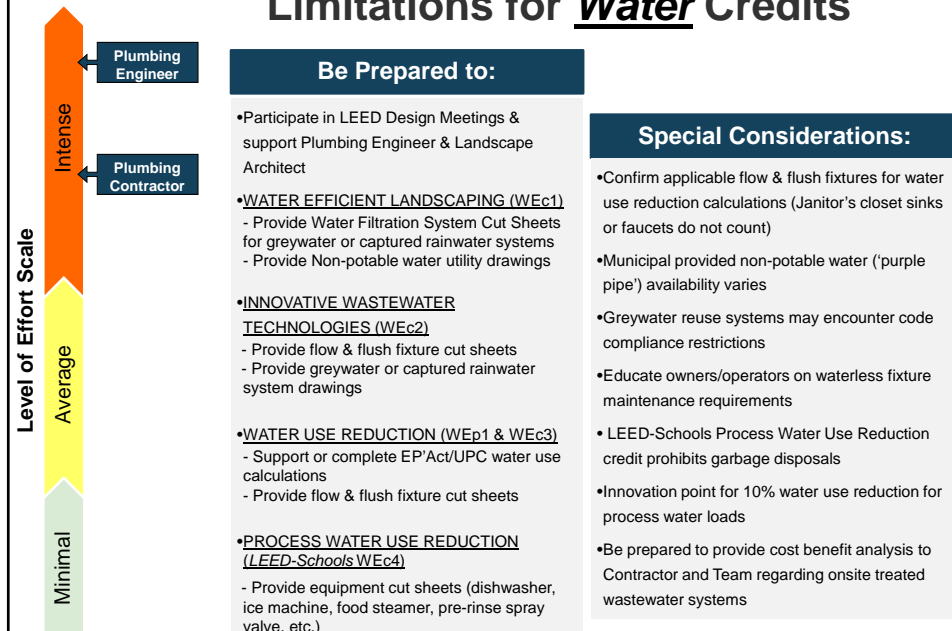
#4 Plan for the LEED Schedule Milestones



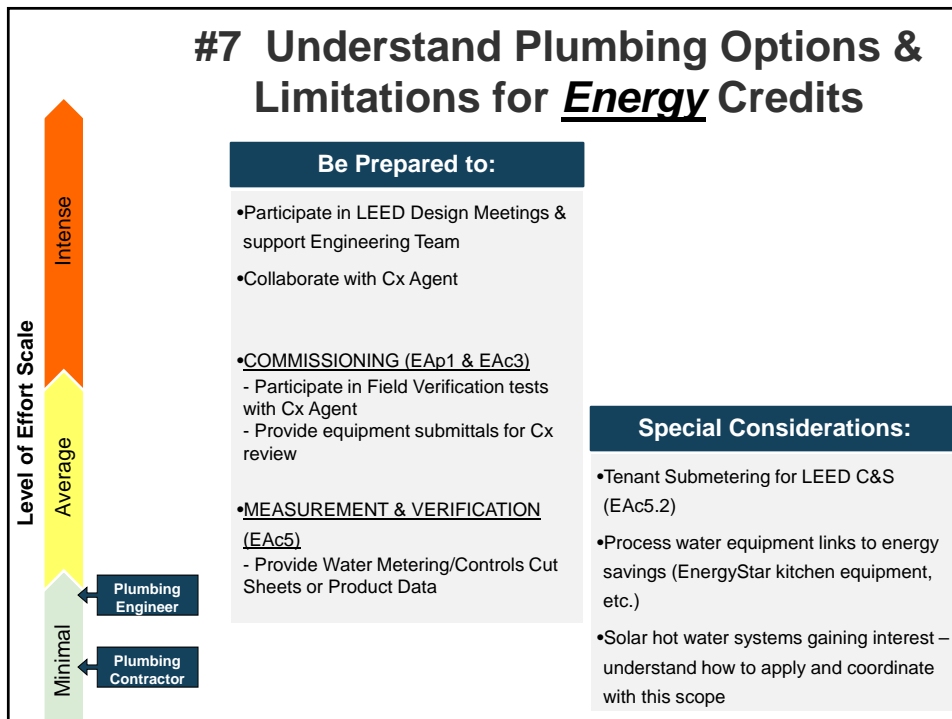
#5 Understand Plumbing Options & Limitations for Site Credits



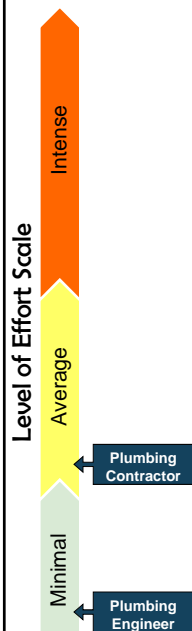
#6 Understand Plumbing Options & Limitations for Water Credits



#7 Understand Plumbing Options & Limitations for Energy Credits



#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

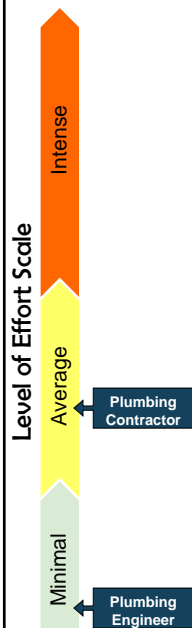


Special Considerations:

- 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)



#9 Understand Plumbing Options & Limitations for IEQ Credits



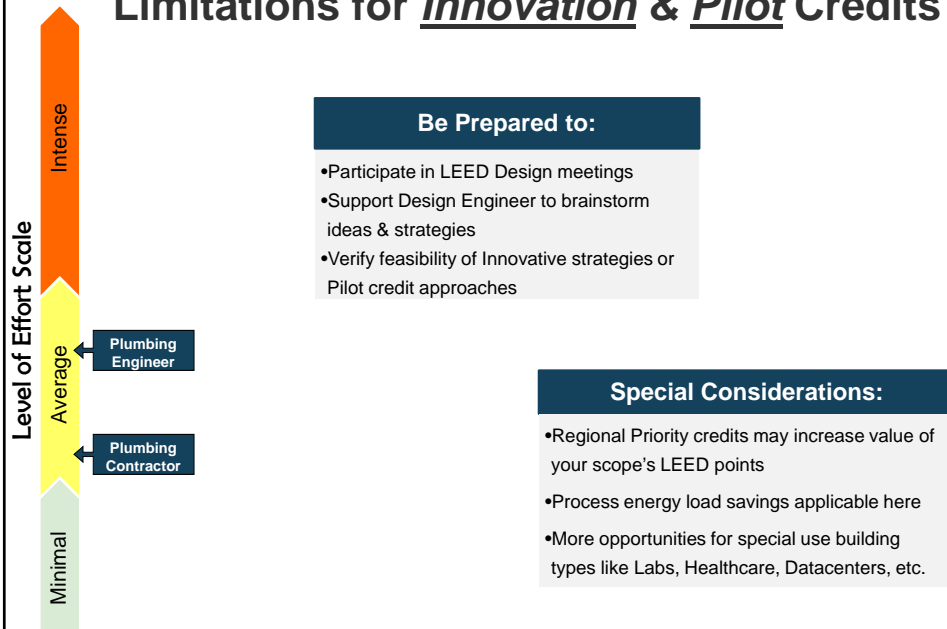
Be Prepared to:

- 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 labeling 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



Pilot Credit Library

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



operate build green,
everyone profits

Questions?
Thank you for your time!



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