

LEED™ and Sustainable Buildings The Contractors Role

LeChase Construction Services LLC



LEED™ Green Building Rating System

- Of the 7 pre-requisites and 69 available credits:
- The Contractor has decision making responsibilities for 23 credits
- The Contractor is responsible for calculations (cost spreadsheets) for 14 credits
- The Contractor is responsible for 30 submittals
- The Contractor is responsible for recordkeeping and tracking for 19 credits

Contractor “Credit” Responsibility

- Decision Making Responsibility:
 - SSPR1 – Construction Activity Pollution Prevention
 - SS5.1 – Site Development, Protect/Restore Habitat
 - SS7.1;7.2 – Heat island Effect
 - EAPR1 – Fundamental Commissioning
 - EA3 – Enhanced Commissioning
 - MR2.1; 2.2 – Construction Waste Management
 - MR3.1; 3.2 – Resource Reuse
 - MR4.1; 4.2 – Recycled Content
 - MR5.1; 5.2 – Regional Materials
 - MR6 – Renewable Materials
 - MR7 – Certified Wood
 - EQ3.1; 3.2 – Construction IAQ
 - ID1.1 – 1.4; 2 – Innovation in Design

Contractor “Credit” Responsibility

- Calculation (cost analysis) Responsibility
 - MR2.1; 2.2 – Construction Waste Management
 - MR3.1; 3.2 – Resource Reuse
 - MR4.1; 4.2 – Recycled Content
 - MR5.1; 5.2 – Regional Materials
 - MR6 – Renewable Materials
 - MR7 – Certified Wood
 - EQ4.1; 4.2; 4.3; 4.4 – Low Emitting Materials

Contractor “Credit” Responsibility

- Submittal Responsibility
 - SSPR1 – Construction Activity Pollution Control
 - SS5.1 – Site Development Protect/Restore Habitat
 - SS7.1; 7.2 – Heat Island Effect
 - EAPR1 – Fundamental Commissioning
 - EA3 – Enhanced Commissioning
 - EA5 – Measurement and Verification
 - EA6 – Green Power
 - MR1.1; 1.2; 1.3 – Building Reuse
 - MR2.1; 2.2 – Construction Waste Management
 - MR3.1; 3.2 – Resource Reuse
 - MR4.1; 4.2 – Recycled Content
 - MR5.1; 5.2 – Regional Materials
 - MR6 – Renewable Materials
 - MR7 – Certified Wood
 - EQ3.1; 3.2 – Construction IAQ
 - EQ4.1; 4.2; 4.3; 4.4 – Low Emitting Materials
 - ID1.1;1.2;1.3.1.4;2 – Innovation in Design

Contractor “Credit” Responsibility

- Record Keeping Responsibility
 - EAPR1 – Fundamental Commissioning
 - EA3 – Enhanced Commissioning
 - MR1.3 – Building Reuse; Interior
 - MR2.1; 2.2 – Construction Waste Management
 - MR3.1; 3.2 – Resource Reuse
 - MR4.1; 4.2 – Recycled Content
 - MR5.1; 5.2 – Regional Materials
 - MR6 – Renewable Materials
 - MR7 – Certified Wood
 - EQ3.1; 3.2 – Construction IAQ
 - EQ4.1; 4.2; 4.3; 4.4 – Low Emitting materials

MR2.1; 2.2 - Construction Waste Management

- Design to Prevent Waste
- Plan for Waste Prevention
- Use Construction Methods that prevent waste
- Practice Jobsite Waste Prevention Methods
- Purchase to Prevent Waste
- Salvage, Reuse, Recycle

Construction Waste Management

- Design to Prevent Waste
 - Design with standard sizes
 - Specify materials that can readily be disassembled at the end of useful life
 - Specify durable, non – toxic interior finishes
 - Design spaces to be flexible
 - Consider reusing materials

Construction Waste Management

- Plan for Waste Prevention
 - Target specific waste producing practices
 - Include waste prevention in waste management plan (Attachment C)
 - Communicate the waste management plan; at every meeting, post it and promote it (and the results)

Construction Waste Management

- Use Construction Methods that Prevent Waste
 - Wood Construction; use advanced framing techniques
 - Consider off site assembly of components

Construction Waste Management

- Practice Jobsite Waste Prevention Methods
 - Set up central cutting areas
 - Recycle concrete forms or choose reusable steel or fiberglass forms
 - Practice material storage and handling that prevents loss or damage

Construction Waste Management

- Purchase to Prevent Waste
 - Purchase salvaged, recycled or recycled content materials and equipment
 - Deliver only the required amount of material to the site
 - Use “JIT” ordering and delivery
 - Replace hazardous materials with non – hazardous to reduce packaging

Construction Waste Management

- Purchase to Prevent Waste (cont.)
 - Choose materials with little or no packaging
 - Have suppliers deliver materials with sturdy, returnable pallets and containers
 - Require vendors to buy back substandard, rejected or unused materials

Construction Waste Management

- Salvage, Reuse and Recycle
 - Develop waste management plan
 - Identify reusable or Salvageable materials
 - Select Salvage removal alternatives
 - Plan for recycling
 - Establish what materials can be recycled, what salvaged materials can be sold or donated to charities (503B)

See Attachment D

EQ3.1; 3.2 - Construction IAQ

- EQ3.1 – During Construction
 - Meet or exceed the recommended control measures of the “SMACNA IAQ Guidelines for Occupied Buildings Under Construction”
 - Protect On Site Stored Materials from Moisture Damage
 - If permanently installed AHU’s are used during Construction, install MERV 8 filtration media at all return air openings

EQ3.1 – Construction IAQ

- SMACNA Guideline
 - Seal all duct openings
 - Temporary filtration on all return openings (MREV 8)
 - Use only low emitting materials
 - Isolate work areas from clean or occupied areas by temporary partitions and/or negative pressurization
 - HOUSEKEEPING – DO IT!
 - Schedule contaminant generating activities to have minimum impact on IAQ
 - Use temporary ventilation units are required to maintain proper ventilation

EQ 3.2 – Construction IAQ – Before Occupancy

- Flush Out – provide 14,000 cfm of outdoor air per SF of building area while maintaining at least 60 deg.F and no greater than 60% rH
- Air Quality Testing – conduct baseline testing that demonstrates that contaminant concentrations are below acceptable levels
 - Particulate – 50mg (micrograms) per CM (0.00000011# per CF)
 - Carbon Monoxide – 9 parts per million and no greater than 2 parts per million above outdoor air
 - TVOC – 500mg per CM (0.0000011# per CF)
 - Formaldehyde – 50 parts per billion

Contractor's Role in LEED

- Questions

Other Sustainable Movements

- Labs21 – offshoot of LEED; will become LEED category in 2006
- Green Guide for Healthcare – includes operational activities. Project activities should become a LEED Category in 2007
- Green Building Initiative – focused on residential, NAHB based, should become a LEED category in 2006/2007
- ASHRAE Green Guide – focused on HVAC
- Talloiries Declaration – University Based Commitment to Sustainable Campuses

Contractor's Role in LEED

- References

- USGBC NC 2.2 Reference Manual www.usgbc.org
- SMACNA; IAQ Guidelines for Occupied Buildings Under Construction www.SMACNA.org
- New York State Energy Research and Development Authority www.nyserda.org
- US EPA “Federal Green Spec’s.” www.epa.gov
- WBDG “Construction Waste Management Database” www.wbdg.org
- ASHRAE “Engineering for Sustainability” www.engineeringforsustainability.org
- Washington State GSA, “Construction Waste Management” www.ga.wa.gov/EAS/CWM