

# LEED PROJECT SUBMITTAL TIPS: SCHOOLS 2009

The following document is a collection of informal tips from LEED reviewers based on guidance that has been provided to project teams in review comments. Not all of the tips provided will be applicable to all projects. The tips do not change the credit or submittal requirements, however, some of the supporting documentation referenced in the tips can be helpful for the review. Following the tips does not ensure that a prerequisite or credit will be earned; but it may help to make the review processes smoother.

The content is applicable at the time of publication (12/23/11) and utilizes all publically available resources published by USGBC including, but not limited to, LEED Rating Systems, Reference Guides, LEED Online Forms (LEED 2009 Forms version 3), LEED Interpretations, addenda, errata, supplemental LEED guidance documents & memos such as District & Campus Thermal Energy Treatment. As such, the content of this document may be superseded by subsequent updates to USGBC publications, addenda, errata, and LEED Interpretations. Project teams are responsible for being familiar with all published LEED documents and meeting the requirements of documents published prior to the project's registration date.

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### General Documents

**Often portions of the general documents (Project Information Forms in LOv3) are missing. These are required documents and when omitted from the application can lead to review delays or credits receiving only one round of review.**

- ☐ Site plan with LEED project boundary; with the same LEED project boundary shown across the SS credits.
- ☐ Floor plans of all floors.
- ☐ Interior elevations or photographs.
- ☐ Exterior building elevations.
- ☐ Descriptive project narrative.

### General Credit Checklist

**Crosschecks should be made by the project team to avoid delay in the award of credits due to these discrepancies.**

- ☐ Inconsistent site and building area numbers in the Project Information Form section and across various credits.
- ☐ Inconsistent FTE and visitor numbers across credits, Include average, peak, and transient occupants.
- ☐ Floor plans should be verified to be certain that the most recent is uploaded. Frequently room name discrepancies exist throughout applications.

### ALL Forms

- ☐ Don't forget to verify that the correct signatory has signed all Project Information, Prerequisite and Credit Forms as necessary.

### Final Reviews

**When resubmitting for a final review, ensure that all the appropriate documentation has been provided.**

- ☐ Upload a narrative that clearly addresses each of the items listed in the Technical Advice from the preliminary review. If a suitable upload button does not exist within the Credit Form, use the Special Circumstance section of the form.
- ☐ Include any direct correspondence you may have had with USGBC/GBCI (i.e., technical customer service response, conference call minutes, email exchange with GBCI reviewer, etc.) regarding credit-specific issues.

### SSp1 Construction Activity Pollution Prevention

- ☐ Remember to provide a copy of the project's erosion and sedimentation control plan or drawing that includes measures for the prevention of air pollution, topsoil/soil loss, and sedimentation of storm sewers or receiving streams.
- ☐ Be sure to include at least one of the following supporting documents:
  1. The builder or general contractor declaration that periodic inspection occurred throughout the construction process and provides documentation demonstrating that the ESC plan was carried out appropriately,
  2. Date-stamped photos which show the implemented measures and any corrective action that was taken.
  3. Narrative describing the ESC plan implementation.

### Local Standards and Codes Compliance Path

- ☐ Don't forget to provide a narrative describing the implemented erosion and sedimentation control measures, and specific documentation demonstrating that the local standard is equal to or more stringent than the referenced NPDES program.

### SSc1 Site Selection

- ☐ For international projects, be sure to include a narrative describing any special circumstances and/or how the project meets the intent of the credit if there are conflicts with the credit requirements.

### SSc2 Development Density and Community Connectivity

- ☐ Remember to include a site vicinity plan with the required density boundary OR one half mile radius and the drawing scale.

#### Option 1 - Development Density

- ☐ For the total neighborhood property area, don't forget to include all buildable land within the density radius.

#### Option 2 - Community Connectivity

- ☐ Remember to highlight the residential district with a minimum density of ten units per acre on the map.
- ☐ Be sure that the ten neighborhood services are available to the general public and not restricted to only building/campus occupants.

### SSc3 Brownfield Redevelopment

- ☐ Don't forget to provide a narrative describing the site contamination and remediation efforts; including the extent of the contamination, standard used, and specific remediation measures.
- ☐ Be sure to provide documentation confirming that the remediation efforts undertaken by the project team have been completed (letter from the environmental consultant, certificate of completion, no further action letter, etc.).

### **Option 1 - Determined Contaminated by Means of an ASTM E1903-97 Phase II Environmental Site Assessment or a Local Voluntary Cleanup Program.**

- ❑ Remember to provide an executive summary of the Phase II ESA or local voluntary cleanup program (response action plan, remedial action work plan, etc.) documenting the site contamination.

### **Option 2 - The Site is Defined as a Brownfield by a Local, State or Federal Government Agency.**

- ❑ Remember to provide documentation from the local, state or federal government agency declaring the project site a brownfield (resolution, memorandum, letter, listing from EPA Superfund website, etc.).

### **SSc4.1 Alternative Transportation: Public Transportation Access**

- ❑ On the site plan, with a scale, be sure to highlight the pedestrian route from the main entrance of the project to the existing rail or bus line.

#### **Option 1 - Commuter Rail Station Proximity**

- ❑ When documenting a rail line that is planned and funded, be sure to provide verification (such as a newspaper article stating funding party, a letter signed by funding party or board resolution).

#### **Option 2 - Bus Stop Proximity**

- ❑ Remember that the project must be served by at least two bus lines within one quarter mile of the project site. One bus line going in two directions does not meet the credit requirements.

### **SSc4.2 Alternative Transportation: Bicycle Storage and Changing Rooms**

- ❑ Be sure that occupancy numbers are consistent with other SS and WE credits.
- ❑ Remember that bicycle storage and shower facilities must be exclusive to occupants for the project, or a sufficient quantity must be provided for all occupants using the amenities.
- ❑ If shower/changing facilities are located in another building, be sure that the building allows project occupants full access to the facilities during the same hours as the project building.

### **SSc4.3 Alternative Transportation: Low-Emitting and Fuel-Efficient Vehicles**

- ❑ If the project is located on a campus, and includes additional parking outside of the LEED project boundary, be sure to verify whether or not new parking was created or if existing parking is assigned to the project elsewhere on the campus.
- ❑ Be sure to assign preferred parking to those parking spaces that are closest to the main entrance of the project, exclusive of spaces designated for handicapped persons, or confirm that parking passes are provided at a discounted price.

#### **Option 1 - Preferred or Discounted Parking**

- ❑ Don't forget to provide the section of the employee handbook, brochure, or other literature that communicates the discounted parking to building users.

### Option 2 - Alternative Fuel Fueling Stations

- ☐ Remember to provide a site drawing highlighting the correct number of refueling/charging stations.
- ☐ Don't forget to confirm the fuel type, number of stations, and fueling capacity for each station for an 8-hour period.

### Option 3 - Low Emitting and Fuel Efficient Vehicles

- ☐ Be sure that occupancy numbers are consistent with other SS and WE credits.
- ☐ Don't forget to confirm the quantity, make, model, and manufacturer of the low-emitting/fuel-efficient vehicles; and confirm that selected vehicles qualify as either zero emission vehicles or they received a score of 40 or more in the ACEEE annual vehicle rating guide.

### Option 4 - Vehicle Sharing Program

- ☐ Be sure that occupancy numbers are consistent with other SS and WE credits.
- ☐ Don't forget to confirm the quantity, make, model and manufacturer of the low-emitting/fuel-efficient vehicles; and confirm that selected vehicles qualify as either zero emission vehicles or they received a score of 40 or more in the ACEEE annual vehicle rating guide.
- ☐ Remember to provide sharing program documentation that includes a description of the program, how it is administered, an estimate of the number of customers served per vehicle, and the vehicle-sharing contract demonstrating an agreement of at least 2 years.
- ☐ In addition to showing preferred parking be sure that the site plan highlights the walking path from the low-emitting/fuel-efficient vehicle parking area to the project site, and notes the distance between parking area and project building.

### SSc4.4 Alternative Transportation: Parking Capacity

- ☐ If the project is located on a campus, and includes additional parking outside of the LEED project boundary, be sure to verify whether or not new parking was created, or if existing parking is assigned to the project elsewhere on the campus.
- ☐ Be sure to assign preferred parking to those parking spaces that are closest to the main entrance of the project, exclusive of spaces designated for handicapped persons, or that parking passes are provided at a discounted price.
- ☐ Remember to provide example(s) of signage details.
- ☐ Be sure that occupancy numbers are consistent with other SS and WE credits.
- ☐ Don't forget to provide the section of the employee handbook, brochure, or other literature that communicates the discounted parking, or the shared vehicle infrastructure, and support programs to building users.
- ☐ Be sure to provide the number of parking spaces or residential parking spaces required per local code or ordinance to demonstrate that the parking does not exceed the minimum local zoning requirements.
- ☐ Don't forget to provide the total vehicle parking capacity and highlight the correct number of preferred parking spaces designated for car/vanpools, and any shared vehicle use infrastructure, on the site plan.

### SSc5.1 Site Development-Protect or Restore Habitat

#### Greenfield Sites

- ☐ Remember to provide site drawings highlighting the site disturbance boundaries.

#### Previously Developed Sites

- ☐ Be sure that the site drawing and calculations indicate the site area that is restored with native/adaptive plantings.
- ☐ If the project is using native/adaptive vegetated roof surfaces toward credit calculations, be sure that the requirements for SSc2 Development Density & Connectivity have been met.

### SSc5.2 Site Development-Maximize Open Space

- ☐ If the project is using native/adaptive vegetated roof surfaces, or pedestrian oriented hardscape, toward credit calculations, be sure that the requirements for SSc2 Development Density & Connectivity have been met and at least 25% of the project's open space is vegetated.  
  
If the project includes wetlands or naturally designated ponds in the calculations, remember that the side slope gradients must average 1:4 or less and be vegetated.
- ☐ Remember to provide a scaled site plan (and/or roof plan, if applicable) showing the LEED project boundary, highlighting all open space and/or pedestrian-oriented hardscape areas. Be sure that the LEED project boundary is consistent across credits.

### SSc6.1 Stormwater Design-Quantity Control

- ☐ Remember to provide stormwater calculation results in the Credit Form for stormwater rate and quantity.

#### Case 1 - Existing Imperviousness is 50% or Less/Option 2 - Stream Channel Protection

- ☐ Don't forget to provide a narrative describing the project's site conditions, measures taken, and controls implemented to prevent excessive stream velocities and associated erosion.

### SSc6.2 Stormwater Design-Quantity Control

- ☐ Don't forget to include a description of the project's BMPs and/or structural controls, the TSS removal rate for each control, and the percent of annual rainfall treated.
- ☐ Remember that TSS removal rate must come from an approved source including state or local sources, national sources, in-field performance testing, or manufacturer's specification.

### SSc7.1 Heat Island Effect-Nonroof

#### Option 1 - Site Hardscape

- ☐ Remember to include a scaled site plan showing that the extent of paved or shaded nonroof areas is at least 50% of the site hardscape. The plan must highlight the building footprint, the location of specific paving materials, landscape shading, and species characteristics, as well as open grid areas.

#### Option 2 - Parking Under Cover

- ☐ Don't forget to highlight covered parking spaces on the site plan and provide documentation that shows that the roofing material has a SRI value of at least 29.

#### **SSc7.2 Heat Island Effect-Roof**

- ☐ Remember to include a roof plan that highlights the SRI compliant roof or the green/vegetated roof system.
- ☐ Don't forget to provide manufacturer documentation verifying SRI values or emissivity and reflectivity values for each roofing material.

#### **SSc8 Light Pollution Reduction**

- ☐ Be sure to provide documentation detailing the sequence of operation for interior lighting.

##### **Interior Lighting - Option 1 - Reduced Input Power**

- ☐ Remember to provide plans/drawings showing the location of automatic controls.

##### **Exterior Lighting (Exterior lighting devices are present in the LEED project boundary)**

- ☐ Remember to fill the Lighting Power Density and Site Lumen Calculation tables out completely, and confirm that they match the supporting documentation.
- ☐ Be sure to include an exterior photometric site plan showing the LEED project boundary, and point-by-point foot candle levels at the boundary and 10 feet beyond the boundary for LZ2 and 15 feet beyond the boundary for LZ3 and LZ4.
- ☐ Exterior lighting should be consistent with EAc1.

### WEp1 Water Use Reduction - 20% Reduction

- ☐ Be sure that occupancy numbers are consistent with other SS and WE credits.
- ☐ Remember to fill the Fixture Groups Definition table and Flush and/or Flow Fixture Data tables in correctly and confirm that they match the [Water Use Reduction Additional Guidance](#) document.
- ☐ Ensure that a standard 50/50 female to male ratio is used and that a detailed narrative is provided if the ratio is different. Please note that current or historic staffing levels are not an acceptable rationale for deviating from the standard 50/50 ratio. The calculations require a 50/50 ratio unless project conditions exist which would affect the gender ratio for the lifetime of the building (like a male dormitory) and would warrant a different ratio.
- ☐ Remember that a fixture and fitting schedule highlighting flush and flow rates for all applicable plumbing fixtures and fittings must be uploaded.

### WEc1 Water Efficient Landscaping

- ☐ Remember to provide a site plan showing the landscaped areas within the LEED project boundary.
- ☐ While irrigated area (square feet) can be different, be sure that the total landscaped areas (square feet) in the baseline and design cases are the same.
- ☐ Remember to set the species factor (ks), density factor (kd) and irrigation efficiency (IE) to average values in the baseline case, while the baseline & design calculations use the same microclimate factor (Kmc) and evapotranspiration rate (Eto) values.
- ☐ If project conditions do not allow for vegetation be sure to include planter, vegetated roof, and/or courtyard landscape area calculations (square feet).
- ☐ If no permanent irrigation is installed, don't forget to provide information regarding temporary irrigation strategies that will be used during initial plant establishment.

### WEc2 Innovative Wastewater Technologies

- ☐ Be sure that the occupancy numbers are consistent with other SS and WE credits.
- ☐ Ensure that a standard 50/50 female to male ratio is used and that a detailed narrative is provided if the ratio is different. Please note that current or historic staffing levels are not an acceptable rationale for deviating from the standard 50/50 ratio. The calculations require a 50/50 ratio unless project conditions exist which would affect the gender ratio for the lifetime of the building (like a male dormitory) and would warrant a different ratio.

#### Option 1 - Use of Water Conserving Fixtures/ Reduce Potable Water for Sewage Conveyance by 50%

- ☐ Remember to provide plumbing drawings and calculations that illustrate nonpotable water systems.

#### Option 2- Treating Wastewater On-Site

- ☐ Don't forget to provide plumbing drawings and diagrams detailing the on-site water treatment system, and infiltration and reuse capabilities.
- ☐ Be sure to list the wastewater treatment source and quantity details in the Wastewater Treatment table.

**WEc3 Water Use Reduction**

- ☐ This credit is dependent upon completion of WEp1 credit documentation.

### EAp1 Fundamental Commissioning of Building Energy Systems

- ❑ If the project is equal to, or greater than, 50,000 square feet, be sure that per EAp1 requirements, the project engages a commissioning team that does not include individuals directly responsible for project design or construction management. Refer to the document titled, "[Who Can Be the Commissioning Authority](#)" on USGBC's website for further guidance.
- ❑ Remember to provide an executive summary of the commissioning report including a list of the commissioned systems (and by whom), a summary of issues corrected, and a list of major/unresolved outstanding issues.
- ❑ If an executive summary of the commissioning report is not complete, be sure to provide a signed contract describing the scope and timing of commissioning services and sample prefunctional checklists and functional checklists for at least two of the commissioned systems.
- ❑ Don't forget to include the following systems in the commissioning activities: heating, ventilating, air conditioning and refrigeration (HVAC) systems, lighting controls (including day lighting), domestic hot water systems, renewable energy systems (PV, wind, solar, etc.).

### EAp2 Minimum Energy Performance

#### Option 1: Performance Rating Method

- ❑ Be sure that the total building area reported in the form is consistent with other credits.

#### Option 1: Performance Rating Method (Envelope)

- ❑ Be sure that the form contains all information regarding the descriptions for the baseline and proposed case construction assemblies of walls and roofs (e.g. steel-framed R-13 [U-0.124]); and that the proposed case U-values are consistent with the various wall and roof construction assemblies listed in Appendix A of ASHRAE 90.1.

Title 24: Don't forget that in addition to U-values for baseline and proposed construction assemblies, a description of each assembly (e.g., steel-framed R-11 [U-0.224]) should be provided and the u-values indicated should comply with the appropriate table(s) in the Joint Appendix IV.

- ❑ Don't forget to model the baseline case exterior wall, roof, floor/slab constructions and reflective roof as required by ASHRAE 90.1 Table G3.1-5 and Table 5.5; and be sure that the baseline case slab-on-grade is modeled with an F-factor of 0.73.

Title 24: Be sure that the slab-on-grade areas have been included in the energy model; and confirm that the building footprint area indicated on the PERF-1 report accurately reflects the actual slab-on-grade areas.

- Be sure that the window U-values used for the proposed case account for the impact of the window frames on the whole window assembly and that the baseline fenestration SHGC meets the requirements of Table G3.1-5(c). Additionally, be sure manual shading devices have not been modeled in the baseline or the proposed case as required by ASHRAE 90.1-2004 Table G3.1-5(Baseline)(c) and (Proposed)(d); and that automatic shading devices in the proposed case have been modeled as noted in ASHRAE 90.1-2004 Table G3.1-5 (Proposed) (d).

Title 24: Don't forget to indicate in the form where the Non-residential ACM Manual Table NI-1 has been applied.

- Don't forget, in a retrofit project, that the existing envelope conditions for the baseline case should be modeled per the requirements of ASHRAE 90.1 Table G3.1-5(f).
- Be sure to model infiltration rates identically between the baseline and proposed Case.
- Don't forget to report the baseline building results for all four cardinal orientations as required by Table G3.1-5(a).

### Option 1: Performance Rating Method (Interior Lighting)

- Be sure to model additional lighting in the baseline case using only the standard allowances provided for the space-by-space method or indicate the specific exception that applies to the lighting. If using the exception, don't forget to model the additional lighting identically in the baseline and proposed case.
- Remember to check that the baseline model lighting equivalent full load hours (determined by dividing the total annual lighting consumption by the total lighting power); and confirm the model contains all the mandatory controls of ASHRAE 90.1 Section 9: Lighting.
- Don't forget, that if modeling occupancy sensors or day lighting controls in the proposed case, to include occupancy sensors in the baseline case according to ASHRAE 90.1-9.4.1.2 and model day lighting controls per ASHRAE Table G3.1-6(f).
- Be sure that the interior lighting demand reported in form for the baseline and proposed case does not exceed the Baseline lighting power allowance for the Baseline Case and the Proposed lighting power reported in the form.

### Option 1: Performance Rating Method (Exterior Lighting)

- Don't forget to note the following when modeling exterior lighting:
  - Exterior lighting power should be consistent with SSc8.
  - Be sure not to claim a lighting power allowance in the Baseline model for surfaces that are not provided with lighting in the actual design and do not accidentally double count for different exterior surfaces.
  - Report lighting power separately for tradable and non-tradable surface lighting power in the Baseline and Proposed Case.
  - No credit is taken in the Proposed design case for lighting reductions on non-tradable surfaces.

Title 24: Don't forget to use the OLTG Title-24 compliance forms to determine the outside lighting kW. Separate this value into tradable and non-tradable surfaces, model non-tradable surfaces identically in the baseline and proposed case, and calculate the annual energy consumption by multiplying the outside lighting power (in kilowatts), by the annual equivalent full load hours of exterior lighting operation.

### Option 1: Performance Rating Method (HVAC)

- Be sure that all conditioned areas have been modeled as heated and cooled according to ASHRAE 90.1 Table G3.1-1 and note the following:
  - Secondary HVAC systems should only be included in the baseline case if Section G3.1.1 exceptions are applicable.
  - If modeling two sources of heating for the baseline case, ASHRAE 90.1 Exception G3.1.1 (a) must be applicable.
  - If the energy simulation software automatically calculates the baseline, that it does so in accordance with ASHRAE 90.1.

Title 24: The baseline mechanical system(s) indicated in the form and included in the baseline energy model should be consistent with the system mapping from N2-10.

- Don't forget to only include pumps in the baseline model if the baseline case HVAC system type includes an HVAC circulation loop.

- ❑ When modeling fans, be sure to note the following:
  - The sum of the supply, return, exhaust and relief fans for each baseline case HVAC system should be set equal to the power calculated in G3.1.2.9, where CFM refers to the supply cfm for each HVAC system. The baseline case fan power should be calculated using only the supply fan CFM. This calculated fan power can then be distributed among supply, return, exhaust, and relief fans as necessary, such that the total fan power does not exceed that calculated using only the supply fan CFM.
  - The baseline fan power has been calculated correctly in simulation software with automated baseline calculated in accordance with ASHRAE 90.1 Section G3.1.2.9.
  - The baseline case fan air flow rates must be sized based on a 20 deg. F supply-air-to-room-air temperature difference for each baseline system in accordance with ASHRAE 90.1 Section G3.1.2.8 and the proposed case air flow rates should be modeled as designed.
  - Check the baseline model fan equivalent full load hours (determined by dividing the total annual fan consumption by the total fan power). The HVAC systems modeled should reflect all mandatory controls from ASHRAE 90.1 Section 6 and the anticipated schedule of operation for the building.
  - The interior fan demand reported for the baseline case and the proposed case does not exceed the baseline fan power allowance for the baseline case and the proposed fan power reported in the form.
- ❑ Be sure that the baseline equipment capacities are based on sizing runs, and oversized by 25% for heating and 15% for cooling in accordance with ASHRAE 90.1 Section G3.1.2.2 and that the proposed case equipment capacities are modeled as designed.
- ❑ Don't forget that the proposed case unitary efficiencies should be modeled at ARI-rated conditions, and that the part-load performance curves should appropriately reflect the part-load performance of the installed equipment at the temperature range that the system is anticipated to operate at.
- ❑ Don't forget to model the fan energy and components separately to determine the baseline equipment cooling efficiencies in accordance with ASHRAE 90.1 Section G3.1.2.1.
- ❑ Be sure to model each thermal block in the baseline case with a single packaged single zone system (System Types #1-4) as required by ASHRAE 90.1 Table G3.1-7.
- ❑ Be sure packaged rooftop heat pumps in the baseline model have been modeled according to ASHRAE Section G3.1.3.1.
- ❑ Be sure that the quantity and type of chillers and/or boilers modeled in the baseline case complies with ASHRAE 90.1 Section G3.1.3.7 and G3.1.3.2 respectively.
- ❑ Don't forget to model reset controls in the baseline case as required by ASHRAE 90.1 Sections G3.1.3.9, G3.1.3.4, G3.1.3.11, and G3.1.3.12 respectively, and include them in form.
- ❑ Be sure to model the hot/chilled/condenser water loop and pump parameters in the baseline system in accordance with ASHRAE 90.1 G3.1.3.3, G3.1.3.5, G3.1.3.9, G1.3.10, and G3.1.3.11 and the proposed systems as designed.

- ❑ Don't forget, when modeling demand control ventilation to note the following:
  - Model the baseline case in accordance with ASHRAE 90.1 Section 6.4.3.8.
  - Model minimum outside air rates identically in the baseline and proposed case for all zones not having demand control ventilation in the proposed case.
  - If demand control ventilation credit is taken in the proposed case, the baseline case should be modeled using minimum ASHRAE 62.1 rates and the proposed case minimum rates should be modeled as designed.
- ❑ Don't forget to model all outdoor air systems in both the baseline and proposed case with zero outside air flow when fans are cycled on to meet unoccupied setback temperatures unless health or safety regulations mandate an alternate minimum flow during unoccupied periods (in which case, the unoccupied outside air rates should be modeled identically in the baseline and proposed case).
- ❑ Don't forget to model exhaust air energy recovery in the baseline case per ASHRAE 90.1 Section G3.1.2.10 and indicate the bypass mechanism used to bypass the energy recovery during mild conditions if energy recovery is modeled for credit in the proposed case.
- ❑ Be sure to include sufficient information in the form regarding VAV terminal units so it can be verified if the units have been modeled in accordance with ASHRAE 90.1 Sections G3.1.3.13 and G3.1.3.14.

#### Option 1: Performance Rating Method (Service Water Heating)

- ❑ Don't forget, when modeling service water heating to note the following:
  - Include the baseline and proposed case service water heating inputs, including the heating storage capacity, and the energy factor or recovery efficiency and standby losses, in the form and be sure the baseline case inputs conform to the minimum values required in ASHRAE 90.1 Table 7.8 for the corresponding system type.
  - Model the baseline and proposed case service water heating volume identically between the baseline and proposed case.
  - Model the storage heating fuel in accordance with ASHRAE 90.1 Table G3.1-11.
  - Provide sufficient information to justify the service water heating savings. If taking credit for low-flow fixtures, provide backup water heating calculations showing the fixtures consistent with those reported in WEc3, estimations of the percentage hot water versus cold water flow, delta T of the DHW system, and the anticipated hot water temperatures at the fixtures.

#### Option 1: Performance Rating Method (Process Energy)

- ❑ Be sure that if process energy accounts for less than 25% of the baseline energy cost for the building, to provide narrative justification for the low process cost. The narrative justification could include the process energy densities (watts per square foot) as well as the schedule assigned to the process loads.
- ❑ Don't forget that the unregulated receptacle and process energy baseline building cost should reflect the actual process loads in the appropriate spaces as required by ASHRAE 90.1-2004 Table G3.1.1(a) and be indicated in the form.

**Option 1: Performance Rating Method (Exceptional Calculation Method - General)**

- ❑ Be sure, if using an exception calculation, to include a narrative that describes all baseline and proposed case assumptions included for this measure, and the calculation methodology used to determine the projected savings. The narrative and energy savings should be reported separately from the other efficiency measures in the form. The baseline case description should verify that the efficiency measure is not standard practice for a similar newly constructed facility by referencing a recently published document, utility incentive program that incentivizes the equipment installed, or by documenting systems used to perform the same function in other newly constructed facilities. Savings associated with the proposed case measure should also be justified with published or monitored data.
  - If using demand control ventilation in a parking garage, sufficient information must be provided to justify all baseline and proposed case assumptions used for the calculation of savings including the baseline ventilation rates, the proposed ventilation rates, the baseline fan power, the proposed fan power, and the baseline and proposed operating schedules. Please note that the baseline fan volume should not exceed the minimum required ASHRAE 62.1 parking ventilation rates of 0.75 cfm / square foot.

**Option 1: Performance Rating Method (ENERGY STAR Score)**

- ❑ Don't forget to include the ENERGY STAR Target Finder Score in the form. The "Design" Score is often confused with the Target Finder "Target Rating". Be sure that if a very low Target Finder Score is provided, there is basis for the low score.

**Option 1: Performance Rating Method (Simulation Outputs)**

- ❑ Be sure that the energy and cost savings reported have been substantiated based on the energy inputs and outputs reported in the form.

**Option 1: Performance Rating Method (Unmet Load Hours)**

- ❑ Be sure the number of unmet load hours reported is in accordance with ASHRAE 90.1 Section G3.1.2.2.

**Option 1: Performance Rating Method (District Energy System)**

- ❑ When the project includes a district energy system (DES), be sure to follow the guidance of the document "[Treatment of District or Campus Thermal Energy in LEED V2 and LEED 2009 – Design & Construction](#)" (DES v2) dated August 10, 2010.
- ❑ Title 24: If a project has heating hot water, steam, or chilled water that crosses the LEED project boundary (in or out), then the project most likely is a DES system and therefore may be required to follow GBCI's DES Guidance.

**Option 2: Prescriptive Compliance Path - Advanced Buildings Core Performance Guide**

- ❑ Be sure that the project building qualifies for the compliance path. It must not exceed the 100,000 square feet limit or be a healthcare, warehouse, or laboratory project.
- ❑ Don't forget to include a compliance checklist showing that each CPG provision has been satisfied, and a side-by-side comparison of efficiency for each guide criteria versus the building design.

### EAp3 Fundamental Refrigerant Management

- ☐ If a phase-out plan is in place, don't forget to provide a narrative describing the CFC phase-out plan, including dates and refrigerant quantities as a percentage of the overall project equipment.

### EAc1 Optimize Energy Performance

- ☐ Please see the supplemental guidance in EAp2 for this credit.

### EAc2 On-Site Renewable Energy

- ☐ Remember to provide a narrative describing the on-site renewable energy production system(s).
- ☐ Be sure to include the renewable energy source, its backup energy type, its annual energy generated, its rated capacity, and its renewable energy cost.
- ☐ Don't forget to include a narrative describing the installed renewable energy system, the calculation methodology used to estimate the annual renewable energy generated on-site, and indication that all factors that influence the performance.

#### Using Energy Cost from US Department of Energy (DOE) Commercial Buildings Energy Consumption Survey (CBECS)

- ☐ Be sure to complete the Renewable Energy Source Summary and the MEI and Renewable Energy Cost tables.

### EAc3 Enhanced Commissioning

- ☐ Be sure that the commissioning authority is not a member of the design or construction team. Refer to the document titled, "[Who Can Be the Commissioning Authority](#)" on USGBC's website for further guidance.
- ☐ Remember to provide the commissioning agent's systems manual, which provides operations staff with the information needed to understand and optimally operate the commissioned systems.
- ☐ Don't forget to include the contract between the owner and the CxA, ensuring CxA involvement post-construction.

### EAc4 Enhanced Refrigerant Management

- ☐ If special circumstances exist, don't forget to provide a narrative describing the circumstances or calculations demonstrating credit compliance.
- ☐ Be sure to use a refrigerant leakage rate of 2% and an end-of-life refrigerant loss of 10%. No other values will be accepted.

### EAc5 Measurement and Verification

- ☐ Be sure that the monitoring and verification (M&V) plan clearly indicates the chosen option and compliance measures and cover a period of no less than one year of post-construction occupancy.
- ☐ If the project team has committed to share whole-building energy and water use data, remember to select "Option 1. Energy and Water Data Release Form" in MPR #6 in PI Form 1: Minimum Program Requirements.

- ❑ If special circumstances exist, don't forget to provide a narrative describing the circumstances or calculations in developing the M&V plan.

#### **EAc6 Green Power**

- ❑ Be sure that the green power purchased equals 35% of the electric energy consumption as reported in EAc1, and is documented by utility bills or is calculated based on DOE's Commercial Buildings Energy Consumption database.
- ❑ Remember to provide a copy of a contract to purchase off-site renewable energy for a minimum of 2 years.
- ❑ If green power has been purchased on a centralized basis, be sure that the same power is not credited to another LEED project.

### MRp1 Storage and Collection of Recyclables

- ☐ Be sure that storage is available for all the required materials and a floor plan highlighting the recycling storage areas in the project has been uploaded.
- ☐ Don't forget to include in the narrative the size of the recycling area, accessibility, expected volume, and collection frequency.

### MRc1.1 Building Reuse-Maintain Existing Walls, Floors and Roof

#### The Project Does not Include Additions

- ☐ Remember to include square footage values of existing and reused areas of structural/envelope elements.

#### The Project Includes an Existing Building With One or More Additions

- ☐ Be sure to include square footage values of any new additions.

### MRc1.2 Building Reuse-Maintain Interior Nonstructural Elements

#### The Project Does not Include Additions

- ☐ Remember to include square footage values of any existing and reused areas of interior nonstructural elements.

#### The Project Includes an Existing Building With One or More Additions

- ☐ Be sure to include square footage values of any new additions.

### MRc2 Construction Waste Management

- ☐ Be sure that excavated soil and land clearing debris are not included in calculations.
- ☐ If the credit submittal includes commingled waste, remember to provide supporting documentation for project specific diversion rates OR the average annual diversion rate of the sorting facility. Please see LEED Interpretations 1631 and 3000 for more information on how to document comingled waste.
- ☐ Don't forget to provide the construction waste management plan identifying the diversion goals of the project, relevant construction debris and materials diverted, implementation protocols, and responsible parties for implementing the plan.

### MRc3 Materials Reuse

- ☐ Be sure that the material costs used in this credit are consistent with the material costs used in other MR credits.
- ☐ Remember to include only building materials that have been salvaged, refurbished or reused.
- ☐ Don't forget to include a tabulation of each salvaged/reused material used on the project, including a description of the material, the source/vendor for the material, and the material cost.
- ☐ If furniture is included in materials calculations be sure that it is included consistently across MR Credits 3-7.
- ☐ Remember to upload cut sheets for 20% of the materials.

### MRc4 Recycled Content

- ☐ Remember that only materials in CSI MasterFormat 2004 03–10, 31 (Section 31.60.00 Foundations) and 32 (Sections 32.10.00 Paving, 32.30.00 Site Improvements, and 32.90.00 Planting) are included in the credit calculations.
- ☐ Be sure that on-site reused materials such as crushed brick are not listed in this credit and instead are included in MRc2.
- ☐ If furniture is included in materials calculations be that sure it is included consistently across MR Credits 3-7.
- ☐ Be sure that the pre-consumer and post-consumer recycled content of the materials listed in the credit have been reported correctly in the Form when compared to the supporting documentation.
- ☐ Remember to upload cut sheets for 20% of the materials.

### MRc5 Regional Materials

- ☐ Remember that only materials in CSI MasterFormat 2004 03–10, 31 (Section 31.60.00 Foundations) and 32 (Sections 32.10.00 Paving, 32.30.00 Site Improvements, and 32.90.00 Planting) are included in the credit calculations.
- ☐ Be sure that on-site reused materials such as crushed brick are not listed in this credit and instead are included in MRc2.
- ☐ If furniture is included in materials calculations be sure that it is included consistently across MR Credits 3-7.
- ☐ If products listed in the form have the same manufacturing and extraction distances or are listed as 100% regional, be sure to include documentation to support the Form inputs.
- ☐ Remember to upload cut sheets for 20% of the materials.

### MRc6 Rapidly Renewable Materials

- ☐ Remember that only building materials and products that are made from plants that are typically harvested within a ten year cycle or shorter, qualify as rapidly renewable materials.
- ☐ In the form be sure to include the following: the product name for each tracked material; material manufacturer; total product cost for each tracked material; and percentage of product, by weight, for each material that meets the rapidly renewable criteria.
- ☐ If furniture is included in materials calculations be that sure it is included consistently across MR Credits 3-7.
- ☐ Remember that only materials in CSI MasterFormat 2004 03–10, 31 (Section 31.60.00 Foundations) and 32 (Sections 32.10.00 Paving, 32.30.00 Site Improvements, and 32.90.00 Planting) should be included in the credit calculations.
- ☐ Remember to upload cut sheets for 20% of the materials.

**MRc7 Certified Wood**

- ☐ Remember that valid FSC chain of custody numbers for each FSC certified wood product must be provided.
- ☐ Be sure that the products on the vendor invoices for all new wood products are separated on a line item basis. Invoices need to include the dollar value of each product as well as vendor's COC certificate numbers for all FSC certified wood..
- ☐ Be sure that the table includes the product name, vendor, product cost, wood component percentage, and FSC certified wood percentage of product shown on vendor invoice.
- ☐ If furniture is included in materials calculations be that sure it is included consistently across MR Credits 3-7.
- ☐ Remember to upload cut sheets for 100% of the materials.

### EQp1 Minimum Indoor Air Quality Performance

- ☐ Be sure to complete the form.

#### Mechanically Ventilated

- ☐ Remember that the calculations must be performed for the worst case conditions. Generally, worst case conditions are during heating mode.
- ☐ Be sure that the values used for zone air distribution effectiveness (Ez) are substantiated based on the type of system, and the mode of operation.
- ☐ Be sure that the total peak occupancy and square footage documented for this credit is reported consistently across all credits.
- ☐ Don't forget to include sufficient information to confirm that the critical zone has been correctly determined. Critical zones generally include conference rooms, training rooms, or other high density spaces with variable occupancy, though office spaces or other spaces may be the critical zone if the volume of air supplied to the space is limited.
- ☐ Don't forget that the ventilation efficiency (Ev) at the system level is based on the critical zone parameters.
- ☐ Be sure that the percentage of design airflow at the condition analyzed (Ds) was determined at both the zone and system level for the project.

### EQp2 Environmental Tobacco Smoke (ETS) Control

- ☐ Remember to provide evidence of signage communicating the interior and exterior smoking policy.
- ☐ Don't forget to provide a site plan showing the location of the designated outdoor smoking/nonsmoking areas and be sure any designated smoking areas are located at least 25 feet away from entries, outdoor air intakes and operable windows.

### EQp3 Minimum Acoustical Performance

#### Background Noise (Path 1 - ASHRAE Standard)

- ☐ Remember to provide the summary report from the simulations/ calculations based on 2007 HVAC Applications ASHRAE Handbook, Chapter 47 on Sound and Vibration Control, demonstrating a background noise level of 45 dBA or lower is met in classrooms and other core learning spaces.

#### Background Noise (Path 2 - ANSI Standard)

- ☐ Don't forget to include a description of the methodologies and acoustical design of the project building that will ensure compliance with ANSI Standard S12.60-2002 for a background noise level of 45 dBA in classrooms and other core learning spaces.

#### Reverberation Time, Case 1 - Classrooms/ Core Learning Areas Less Than 20,000 Cubic Feet (Option 1 - Minimum NRC)

- ☐ Be sure that the Absorptive Materials table is complete and that all core learning spaces have been included in the table.
- ☐ Don't forget to include manufacturer information (cutsheets) demonstrating the Noise Reduction Coefficient (NRC) for each of the materials.

**Reverberation Time, Case 1 - Classrooms/ Core Learning Areas Less Than 20,000 Cubic Feet (Option 2 - ANSI Standard S12.60-2002, Path 1 - ANSI Calculations)**

- ❑ Be sure that the ANSI Reverberation Time Table is complete and that all core learning spaces have been included in the table.

**Reverberation Time, Case 1 - Classrooms/ Core Learning Areas Less Than 20,000 Cubic Feet (Option 2 - ANSI Standard S12.60-2002, Path 2 - ANSI Measurements)**

- ❑ Remember that the measurement methodologies used to demonstrate compliance with the reverberation time requirement of 1.5 seconds or less should conform with those recommended in ANSI s12.60-2002 Section E4.3.
- ❑ Be sure to provide the report from the post-construction measurements based on ANSI s12.60-2002 Section E4.3 that confirms reverberation times of 0.60 seconds or less for all classrooms and other core learning spaces smaller than 20,000 cubic feet.

**Reverberation Time, Case 2 - Classrooms /Core Learning Areas Equal to or Greater Than 20,000 Cubic Feet (Path 1 - ANSI Calculations)**

- ❑ The ANSI Reverberation Time table is complete and that all core learning spaces have been included in the table.
- ❑ Don't forget to include manufacturer information (cutsheets) demonstrating the sound absorption coefficient for each of the materials.

**Reverberation Time, Case 2 - Classrooms /Core Learning Areas Equal to or Greater Than 20,000 Cubic Feet (Path 2 - ANSI Measurements)**

- ❑ Remember that the measurement methodologies used to demonstrate compliance with the reverberation time requirement of 1.5 seconds or less must conform to those recommended in ANSI s12.60-2002 Section E4.3.
- ❑ Be sure to provide the report from the post-construction measurements based on ANSI s12.60-2002 Section E4.3 that confirms reverberation times of 0.60 seconds or less for all classrooms and other core learning spaces smaller than 20,000 cubic feet.

**EQc1 Outdoor Air Delivery Monitoring**

- ❑ Remember to provide project drawings documenting the location and type of installed CO2 sensors. Be sure CO2 sensors are located in the breathing zone.
- ❑ Don't forget to fill out the Densely Occupied table, Outdoor Air Ventilation Rate table or Naturally Ventilated Spaces table.

**Mechanically Ventilated Spaces**

- ❑ **Densely occupied spaces:** Be sure that CO2 sensors are provided in occupied spaces (conference rooms, etc.) that appear to fall under the requirements for densely occupied spaces (greater than 25 people per 1,000 square feet).
- ❑ **Non-Densely occupied spaces:** Don't forget that ventilation systems serving non-densely occupied spaces must be provided with a direct measurement of outdoor airflow.

**Naturally Ventilated Spaces**

- ❑ Remember to upload a floor plan highlighting the location and size of naturally ventilated zones and associated windows, as well as the location and type of CO2 sensors.

**EQc2 Increased Ventilation****Mechanically Ventilated**

- ❑ Don't forget to include a detailed narrative describing the project's ventilation system, including the outside air intake volumes to demonstrate that the design exceeds the referenced standard by 30% at the zone level. Demonstration at the system level is insufficient. There is a new offline calculator, available as a credit resource, that calculates these required values automatically.

**Naturally Ventilated**

- ❑ Don't forget to include project documentation showing the design of the natural ventilation systems meets the recommendations set forth in the CIBSE Applications Manual 10: 2005.
- ❑ Be sure to include a detailed narrative describing the project's ventilation system, including the calculation methodology and model results used to demonstrate that the natural ventilation design for the project complies with the standards set by the CIBSE Method or Analytic Model.

**EQc3.1 Construction IAQ Management Plan During Construction**

- ❑ If Air Handling Units were operated during construction, be sure to verify that MERV 8 filtration was used and that filtration media was replaced prior to occupancy.
- ❑ Remember to include photographs and a narrative highlighting construction and pre-occupancy phase moisture protection methods for absorptive materials
- ❑ Be sure to upload a copy of the project's IAQ management plan that adequately addresses the IAQ management practices implemented during construction and preoccupancy phases.
- ❑ Don't forget that smoking is prohibited in the building and within 25 feet of building entrances once the building is enclosed.

**EQc3.2 Construction IAQ Management Plan Before Occupancy**

- ❑ Be sure to upload the IAQ management plan detailing IAQ management practices implemented during construction including post-construction IAQ management measures.
- ❑ Remember to include a narrative describing the flush-out process:
  1. For the pre-occupancy flush-out process, include data about the duration, temperature, and airflow of the building flush-out procedures.
  2. If early occupancy flush-out process is performed, be sure to include in the narrative specific data about the duration, temperature, and airflow of the building flush-out procedures.
  3. For the pre-occupancy IAQ testing process, include test date(s) and scope, sampling locations with respect to floor area, size, and ventilation system, and (as applicable) any corrective measures implemented or project-specific special considerations. If detected concentrations exceed the published maximum limits, be sure to provide the IAQ test report for the additional testing and provide a narrative indicating what measures were implemented prior to the 2nd test.

**Option 2- Air Quality Testing**

- ❑ Don't forget to include the IAQ test report indicating that tests were conducted for all of the required contaminants: formaldehyde, particulates (PM10), total volatile organic compounds (TVOC), 4-phenylcyclohexenene (4-PCH), and carbon monoxide (CO) and provide confirmation that detected concentrations did not exceed the published maximum limits. If detected concentrations exceed the published maximum limits, be sure to provide the IAQ test report for the additional testing and provide a narrative indicating what measures were implemented prior to the 2nd test.

**EQc4.1 Low-Emitting Materials-Adhesives and Sealants**

- ❑ Be sure to include all indoor adhesives and sealants used in the project. The following items are commonly included in this credit: general construction adhesives, flooring adhesives, fire-stopping sealants, caulking, duct sealants, plumbing adhesives, and cove base adhesives.
- ❑ Remember that all materials must comply with the CA Section 01350 Testing and Product Requirements and be sure to provide the Source of the Compliant Statement or Certification Program.
- ❑ Don't forget that only four points can be earned across IEQ Credits 4.1 through 4.6.

**EQc4.2 Low-Emitting Materials-Paints and Coatings**

- ❑ Remember that all materials must comply with the CA Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda and be sure to provide the Source of the Compliant Statement or Certification Program.
- ❑ Don't forget that only four points can be earned across IEQ Credits 4.1 through 4.6.

**EQc4.3 Low-Emitting Materials-Carpet Systems/Flooring Systems**

- ❑ Remember that all materials must comply with the CA Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda and be sure to provide the Source of the Compliant Statement or Certification Program.
- ❑ Don't forget that only four points can be earned across IEQ Credits 4.1 through 4.6.

**EQc4.4 Low-Emitting Materials-Composite Wood and Agrifiber Products**

- ❑ Remember that all materials must comply with the CA Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda and be sure to provide the Source of the Compliant Statement or Certification Program.
- ❑ Don't forget that only four points can be earned across IEQ Credits 4.1 through 4.6.

**EQc4.5 Low-Emitting Materials-Classroom Furniture and Furnishings**

- ❑ Be sure to provide manufacturer and test date information.
- ❑ Don't forget that only four points can be earned across IEQ Credits 4.1 through 4.6.
- ❑ Be sure to list all classroom furniture including all student and teacher desks, tables and seats that were manufactured, refurbished, or refinished within one year of occupancy.

**Method A/Option 1 - GREENGUARD Children and Schools Certified**

- ❑ Remember to provide a copy of the GREENGUARD Children & Schools product(s) certification, complete with start & end dates of the certification period.

**Method B/Option 2 - US EPA ETV Testing Compliance**

- ❑ Remember to provide the USEPA ETV testing details of the procedure, and the emission factors from the large-chamber testing showing the calculations used in determining the emission limits, complete with the air exchange rate. Be sure to include the test results and supporting calculations, dated and signed by an officer of the independent laboratory where the testing was conducted.

**Method C/Option 3 - BIFMA Testing Compliance**

- ❑ Remember to provide BIFMA testing details of the procedure, and the emission factors from the large-chamber testing showing the calculations used in determining the emission limits, complete with the air exchange rate. Be sure to include the test results and supporting calculations, dated and signed by an officer of the independent laboratory where the testing was conducted.

**EQc4.6 Low-Emitting Materials-Ceiling and Wall Systems**

- ❑ Remember that all gypsum board, insulation, acoustical ceiling systems and wall coverings installed in the building interior comply with the CA Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda and be sure to provide the Source of the Compliant Statement or Certification Program.
- ❑ Don't forget that only four points can be earned across IEQ Credits 4.1 through 4.6.

**EQc5 Indoor Chemical and Pollutant Control**

- ❑ Remember to include project drawings, highlighting the installed entryway systems location(s) and measurements, room separations, and required ventilation systems, and mechanical schedule(s) (or similar documentation) listing the MERV rating for all air handling units installed in the project.
- ❑ Be sure that chemical areas have been designed as separate rooms (deck-to-deck partitions or a hard lid ceiling), have self-closing doors with dedicated exhaust systems, and appropriate negative pressurization.

**EQc6.1 Controllability of Systems-Lighting**

- ❑ Don't forget to complete Individual Controls, Classroom Controls and/or Shared Multi-Occupant Controls tables; and that all administrative spaces, regularly occupied spaces and learning spaces have been included in the respective tables.
- ❑ The number of individual occupant spaces and multi-occupant spaces should be the same between IEQc6.1 and IEQc6.2.

**EQc6.2 Controllability of Systems-Thermal Comfort**

- ❑ Remember to upload representative drawings or floor plans identifying thermal comfort controls.
- ❑ Don't forget to complete the Thermal Comfort Controls table.

- ☐ Be sure that multi-occupant spaces only include conference rooms, classrooms, and other indoor spaces used as a place of congregation for presentations, training, etc.
- ☐ The number of individual occupant spaces and multi-occupant spaces should be the same between IEQc6.1 and IEQc6.2..

#### **EQc7.1 Thermal Comfort-Design**

- ☐ Be sure that the thermal comfort ranges listed in the Form table comply with the temperature ranges of ASHRAE 55-2004.
- ☐ Be sure that the summary narrative or documentation includes specific information regarding compliance with ASHRAE Standard 55-2004 such as metabolic rate, clothing insulation, air temperature, radiant temperature, indoor air speed, and humidity. Address local discomfort effects that may be present.
- ☐ Remember to upload a floor plan for the project building indicating the areas served by a combination of natural and mechanical ventilation or conditioning systems.
- ☐ Remember to provide a narrative or attestation statement confirming that natatorium spaces included in the project building and associated grounds comply with the "Typical Natatorium Design Conditions" defined in Chapter 4 (Places of Assembly) of the ASHRAE HVAC Applications Handbook, 2003 edition.

#### **Mechanically Conditioned**

- ☐ Don't forget to provide supporting documentation, such as PMV/PPD calculations, ASHRAE comfort tool results and/or a copy of Figure 5.2.1.1 of ASHRAE Standard 55 indicating that all design conditions fall within acceptable ranges.

#### **Naturally Conditioned**

- ☐ In the documentation inputs and results of calculations or simulations, be sure to include worst case design outdoor conditions and worst case predicted indoor conditions for each month. Show predicted worst case indoor conditions for each month on Figure 5.3 of ASHRAE Standard 55-2004.

#### **EQc7.2 Thermal Comfort-Verification**

- ☐ Be sure to provide information in the narrative regarding the party/parties responsible for administering the survey including those responsible for setting up the survey, sending invitations, and collecting and analyzing survey results, and the proposed corrective action plan. Make sure to include follow-up questions in the survey and ensure the survey addresses all thermal comfort variables in ASHRAE 55-2004.
- ☐ Don't forget to provide a sample of the questionnaire developed for the survey.
- ☐ Remember that EQc7.2 cannot be awarded without the demonstrated achievement of EQc7.1.

#### **EQc8.1 Daylight and Views-Daylight**

- ☐ Be sure that the floor plans highlight regularly occupied space and daylit areas/zones and is consistent with regularly occupied spaces in IEQc8.2.
- ☐ Remember to provide the Supplemental Daylight and Views Calculation Spreadsheet and that the results have been correctly input into the credit form.

- Don't forget to incorporate appropriate daylight redirection and/or glare control devices to avoid high-contrast situations that could impede visual tasks.

#### **Classrooms and Other Regularly Occupied Spaces**

- Be sure to fill out the Daylighting Summary for Classroom Spaces and Daily Summary for Regularly Occupied Spaces tables.

#### **Option 1- Simulation**

- Remember to provide the daylight simulation model output showing it was performed correctly with the following requirements: 1. performed with clear sky conditions at 9:00 a.m. and 3:00 p.m. on September 21st, 2. performed using the project's geographic location, and 3. performed at 30 inches above the floor (or at appropriate desk / work height for the space) at 5 foot or less calculation interval.

#### **Option 2-Prescriptive**

- Be sure that the building sections or interior elevations show regularly occupied spaces and glazing elements used to achieve daylight levels.

#### **Option 3-Measurement**

- Be sure to provide project drawing(s) with the recorded daylight measurements conducted at 30 inches above the floor (or at appropriate desk/ work height for the space) on a maximum 10 foot interval.

### **EQc8.2 Daylight and Views-Views**

- Be sure that the floor plans highlight regularly occupied space and daylit areas/zones and are consistent with regularly occupied spaces in IEQc8.1.
- Be sure to provide copies of the applicable project drawings showing the line of sight from interior spaces through exterior windows in both plan and sectional views, indicating views are not through opaque walls, partitions, or doors.
- Remember to provide the Supplemental Daylight and Views Calculation Spreadsheet and confirm that the results have been correctly input into the credit form.

### **EQc9 Enhanced Acoustical Performance**

- Remember that this credit is pending demonstrated compliance of EQp3 Minimum Acoustical Performance.

#### **Background Noise (Path 1 - ASHRAE Standard)**

- Remember to provide the summary report from the simulations/ calculations based on 2007 HVAC Applications ASHRAE Handbook, Chapter 47 on Sound and Vibration Control demonstrating a background noise level of 40 dBA or lower is met in classrooms and other core learning spaces.

#### **Background Noise (Path 2 - ANSI Standard)**

- Don't forget a description of the methodologies and acoustical design of the project building that will ensure compliance with ANSI Standard S12.60-2002 for a background noise level of 40 dBA in classrooms and other core learning spaces.

### Sound Transmission Class

- ❑ Be sure the STC table is complete for space types and assembly material and that all core learning spaces have not been included in the table.
- ❑ Don't forget to provide floor plans or drawings highlighting the location and identification of core learning spaces that correspond to the spaces described in the Sound Transmission Class Requirements table.

### Sound Transmission Class (ANSI Calculations/ Specifications)

- ❑ Remember to provide construction details and/or other supporting documentation to demonstrate how the STC ratings listed are achieved.

### Sound Transmission Class (ANSI Measurements)

- ❑ Be sure to provide the report from the post-construction measurements based on ANSI s12.60-2002 Annex E5 that confirm the STC ratings listed in the table.

### EQc10 Mold Prevention

- ❑ Be sure to achieve one of the following three credits: IEQc3.1 Construction Indoor Air Quality Management Plan - During Construction, IEQc7.1 Thermal Comfort - Compliance, and/or IEQc7.2 Thermal Comfort - Verification.
- ❑ Remember to provide the method(s) used to limit space relative humidity to 60% or less during all load conditions, both occupied and unoccupied.
- ❑ Don't forget to demonstrate that the project team has developed and has committed to implementing the IAQ management plan based on the U.S. EPA document, Building Air Quality: A Guide for Building Owners and Facility Managers.

### IDc1 Innovation in Design

- ❑ Remember that Innovation and Design strategies must meet two basic criteria: 1. quantitative performance improvements (comparing a baseline and design case) and 2. a comprehensive strategy (more than one product or process); and the strategy must be significantly better than standard sustainable design practices.
- ❑ Be sure that the strategy is not already included in a LEED credit in the rating system that the project applied. Innovation in Design credits are not awarded when the strategy aids in the achievement of an existing LEED credit (even if the credit was not applied in the project)
- ❑ The following LEED EBOM credits are allowed in LEED Schools 2009 as ID credits: SSc2 Building Exterior and Hardscape Management Plan, SSc3 Integrated Pest Management (projects cannot earn both EBOM IEQ3.6 and SSc3), Erosion Control, and Landscape Management, WEc1.1 Water Performance Measurement-Whole building (project teams must meter the whole building AND one subsystem (irrigation, cooling tower, etc.) electronically and have automated daily readings), WEc4.1 Cooling Tower Water Management, MRp1 Sustainable Purchasing Policy, MRp2 Solid Waste Management Policy, IEQp3 Green Cleaning Policy/IEQc3 Green Cleaning Program, IEQc3.4 Sustainable Cleaning Equipment (all cleaning equipment purchased for initial occupancy must be included), and IEQc3.6 Green Cleaning-Indoor Integrated Pest Management (projects cannot earn both EBOM IEQ3.6 and SSc3). The LEED EBOM Submittal Template and all documentation that it requires must be provided (the performance period is not relevant).
- ❑ For Pilot Credit ID strategies, be sure to view more information on the [Pilot Credit Library](#).

### IDc1 Green Housekeeping

- ❑ Be sure the project has documented LEED 2009 EBOM IEQp3 Green Cleaning Policy/IEQc3 Green Cleaning Program. The LEED EBOM Credit Form and all documentation that it requires must be provided (the performance period is not relevant).

### IDc1 Public Education

- ❑ Remember that two components must be documented: the development of a manual, guideline, or case study (pdf of the hardcopy), the development of an outreach program (description / website print screens) or guided tour (a script and a tour stop description drawing), and / or electronic examples of the comprehensive signage program.

### IDc1 Transportation Management Plan

- ❑ Be sure to earn at least three SSc4 points and provide official documentation for at a least a five-year commitment to the programs, documentation for the number of employees that are initially provided program information, and documentation of the policies/procedures that ensure the same service for new employees. Please see LEED Interpretation 532 for more information.

### IDc2 LEED Accredited Professional

- ❑ Remember to provide the LEED AP certificate.

### IDc3 The School as a Teaching Tool

- ❑ Don't forget to provide a narrative describing the sustainable design attributes being integrated into the curriculum, including (at a minimum): evidence of collaboration between the administration and the design team, participating faculty, or community organization involved with curriculum development, coursework description, and confirmation the curriculum meets the state and/or local standards.