LEED PROJECT SUBMITTAL TIPS: SCHOOLS 2007

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 Submittal Templates, 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 As such, the content of this document may be superseded by subsequent updates to USGBC publications, addenda, errata, and LEED Interpretations.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 INFORMATION

General Documents

Often portions of the general documents (Documents Tab in LOv2) 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

Cross checks 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 documents 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.

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.
- ☐ 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.

SUSTAINABLE SITES

SSp1 Construction Activity Pollution Prevention

- ☐ Remember to include 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.

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 that the referenced NPDES program.

SSp2 Environmental Site Assessment

- ☐ Remember that the required narrative must discuss the ASTM Phase I and/or and Phase II Environmental Site Assessments completed for the project.
- ☐ If alternative documentation is provided, be sure it meets the requirements of an ASTM Phase I and/or Phase II Environmental Site Assessment (ESA). The activities conducted must be equivalent to a Phase I or II ESA in the rigor required for their execution.

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

- ☐ Remember that this credit is pending demonstrated compliance of SSp2 Environmental Site Assessment.
- ☐ Don't forget to provide a narrative describing the site contamination and remediation efforts; include the extent of the contamination, standard used, and specific remediation measures.

SS c4.1 Alternative Transportation: Public Transportation Access

- ☐ On the site plan, be sure to highlight the pedestrian route from the main entrance of the project to the existing rail or bus line.
- ☐ Don't forget to identify/highlight on the site plans/drawings the dedicated walking or biking lanes to the transit lines that extend from the school building, at least to the end of the school property, in two or more directions without any barriers.

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.

Option 3 - Attendance Boundary/ Pedestrian Access

- ☐ Be sure to provide a site vicinity plan, with scale, showing the school's locations of the dedicated walk/bike lanes.
- ☐ Remember to provide a copy of the school attendance boundary policy.

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.
- ☐ Don't forget to provide a site plan identifying the location of the bicycle racks and/or storage facilities, the shower/changing facilities, and at least two bike paths extending to end of the school property in different directions. Remember that the bicycle paths must be sized sufficiently to allow for two-way traffic for both pedestrians and bicycles.

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.

Provision for Low-Emitting/ Fuel-Efficient Vehicles

- ☐ Remember to provide a statement signed by the school owner explaining how the alternative fuel plan meets the credit requirements.

Preferred Parking for Low Emitting and Fuel Efficient Vehicles

- ☐ 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.
- ☐ Don't forget to provide project drawings showing the location(s) of the preferred spaces and drop-off areas for low-emitting/fuel-efficient vehicles.

SUSTAINABLE SITES

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.
- ☐ Don't forget to provide a narrative describing the means by which the preferred spaces are designated as reserved solely for car/vanpool vehicles.

Option 3 - No Local Zoning Requirements

- ☐ Remember to provide documentation showing the project team's assumptions used to determine the 25% total reduction for vehicle parking capacity relative to the applicable standard listed in the 2003 Institute of Transportation Engineers (ITE) "Parking Generation" study.

SSc5.1 Site Development-Protect or Restore Habitat

- ☐ Don't forget to include a narrative describing the project's approach.

Greenfield Sites

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

Previously Developed Sites

- ☐ Be sure that the site drawing and calculations confirm 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 must be vegetated.
- ☐ Remember to provide a scaled site plan (and/or roof plan, if applicable) showing the LEED project boundary and highlighting all open space and/or pedestrian-oriented hardscape areas. Be sure the LEED project boundary is consistent across credits.
- ☐ Don't forget to include area calculations (square feet) indicating the open space required by local zoning codes, building footprint, or the project site area and the vegetated open space within the LEED project boundary.

SSc6.1 Stormwater Design-Quantity Control

- ☐ Remember to provide stormwater calculation results in the Submittal Template for stormwater rate and quantity.

Option 1b - Existing Imperviousness is Less Than or Equal to 50%

- ☐ 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 the 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- High Reflectance Paving / Shading / Open Grid Paving

- ☐ 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- Covered Parking

- ☐ Don't forget to highlight covered parking spaces on the site plan and provide documentation that shows 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 the total area of installed SRI compliant roofing material and/or the total area of the installed green/vegetated roof system.
- ☐ Be sure that the appropriate calculations are included to demonstrate compliance with LEED Interpretation 2218, which addresses weighted SRI values where multiple roof materials are installed.

SSc8 Light Pollution Reduction

- ☐ 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 provide interior lighting plans showing exterior building surfaces and site lighting plans documenting the type and location of installed fixtures.
- ☐ Don't forget to provide a narrative explaining the light trespass analysis undertaken for the project.
- ☐ When providing a photometric plan, remember to clearly show 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.

SUSTAINABLE SITES

SSc9 Site Master Plan

- ☐ Be sure to earn at least four out of the seven designated credits using the traditional calculation methods. For the four selected credits, please reference the base credit information noted in this document
- ☐ Don't forget to provide a copy of the site master plan showing current and future phases of development and construction, including any parking, paving, and utilities.
- ☐ Remember that projects that have no future development planned are not eligible for this credit.

SSc10 Joint Use of Facilities

- ☐ Don't forget to include a floor plan showing doors or security gates, separate entry, and restroom facilities for joint use spaces; and be sure that the site plan shows direct pedestrian access to the joint-use spaces.
- ☐ Be sure to provide a description of the means by which the school is sharing facilities with the surrounding community.

Option 1 - School-Owned Facilities; Spaces Within the School are Accessible to and Available for use by the General Public

- ☐ Remember to provide at least three spaces that have been identified for use by the general public.

Option 2 - Community Contracts are in place for Dedicated use Spaces

- ☐ Be sure to identify that at least two facilities will be dedicated-use spaces for community or other organizations.

Option 3 - Community Owned Spaces Accessible to Students

- ☐ Be sure to identify at least two spaces, owned by other organizations/agencies, that are accessible to students.

WATER EEFICIENCY

WEc1 Water Efficient Landscaping

- ☐ Remember to provide a site plan showing the landscaped areas within the LEED project boundary.
- ☐ Don't forget the narrative describing the landscaping and irrigation design strategies. If no permanent irrigation is installed, be sure to provide information regarding temporary irrigation strategies that will be used during initial plan establishment.
- ☐ 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.

WEc2 Innovative Wastewater Technologies

- ☐ Be sure that occupancy numbers are consistent with other SS and WE credits.
- ☐ Don't forget to provide a narrative describing the potable water reduction strategies including information regarding non-potable water usage OR on-site use of treated wastewater.
- ☐ Remember to use fixture usage rates that match the standard calculation methodology provided in the Reference Guide.
- ☐ 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 the total non-potable water supply calculations (gallons) available for project use that is consistent with other WE credits non-potable water usage.

Option 2- Treating Wastewater On-site

- ☐ Remember to upload plumbing drawings and diagrams detailing the on-site water treatment system and infiltration and reuse capabilities.

WEc3 Water Use Reduction

- ☐ Be sure that 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.
- ☐ Be sure to correctly indicate the percent of males expected to use the restrooms with urinals.
- ☐ If non-potable water supply (gallons) is available for sewage conveyance, be sure to provide calculations (gallons) that are consistent with other WE credits non-potable water usage and a narrative describing the potable water reduction strategies including information regarding non-potable water usage.

WATER EFFICIENCY

WEc4 Process Water Use Reduction

- ☐ Remember that this credit does not allow refrigeration equipment using once-through cooling with potable water or garbage disposals to be installed in the project building or associated grounds.
- ☐ Be sure to include at least four process water use items in the credit calculations.
- ☐ Don't forget to provide supporting documentation showing a 20% reduction in water use from a benchmark or industry standard for equipment types not listed in the Reference Guide.

ENERGY & ATMOSPHERE

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 "Who Can Be the Commissioning Authority" on USGBC's website for further guidance.
- ☐ Don't forget to provide a narrative describing the commissioning process, the systems commissioned and the results of the commissioning process.
- ☐ 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

- ☐ Please see the supplemental guidance in EAc1 for this prerequisite.

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

Option 1: Performance Rating Method

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

Option 1: Performance Rating Method (Envelope)

- ☐ Be sure that the template 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 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 template 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)

- ☐ Don't forget to indicate the interior lighting power density calculation method, either space-by-space or building area, for the proposed and baseline case and use that method for the entire project.
- ☐ 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 the baseline model lighting equivalent full load hours (determined by dividing the total annual lighting consumption by the total lighting power); and confirm that 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 the interior lighting demand reported in the template 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 template.

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 per LEED-NCv2.2 EAc1 CIR dated 4/25/2007 (LEED Interpretations #5261).

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 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 template 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 template.
- ☐ 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 that 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 template.
- ☐ 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 template regarding VAV terminal units so that 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 template and be sure that 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 template.

ENERGY & ATMOSPHERE

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 template. 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 template. The "Design" Score is often confused with the Target Finder "Target Rating". Be sure that if a very low Target Finder Score is provided that 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 template.

Option 1: Performance Rating Method (Unmet Load Hours)

- ☐ Be sure that 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 note the following:
  - For a project registered before 05/28/2008, note that all New Construction, Schools, Core and Shell, and Commercial Interiors projects registered with the USGBC on or after 05/28/2008, and using district thermal energy, are required to follow the guidance of the document "Required Treatment of District Thermal Energy in LEED-NC version 2.2 and LEED for Schools, version 1.0" (DES v1) dated May 28, 2008. Optionally, in lieu of following the required version 1.0 guidance, the project team may choose 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.
  - If the project was registered prior to 05/28/2008, it is optional to use either of these guidance documents for this project. However, if this guidance is NOT used, and the project is receiving district heating or cooling, the district heating and cooling must be modeled in accordance with ASHRAE Appendix G requirements for modeling district thermal energy.

- ☐ Title 24: If a project has heating hot water, steam, or chilled water that crosses the LEED 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.

EAc2 On-Site Renewable Energy

Using Energy Cost Calculated in EAc1 Simulation

- ☐ Remember to include the Fuel / CHW / Steam costs as reported in EAc1 in the total regulated costs and that the energy costs and energy consumption reported in EAc2 match the values reported in EAc1.
- ☐ 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 and the calculation methodology used to estimate the annual renewable energy generated on-site, and indicate all factors that influence the performance.

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

- ☐ Be sure to include information in the narrative describing the on-site renewable energy source(s) used, the backup energy type for each source, the rated capacity for the source, the annual site energy generated, and the renewable energy cost from each source.

EAc3 Enhanced Commissioning

- ☐ Be sure that the commissioning authority is not a member of the design or construction team. Refer to document titled, Refer to "Who Can Be the Commissioning Authority" on USGBC's website for further guidance.
- ☐ Don't forget to provide a narrative describing the enhanced commissioning process employed on the project. Remember to include information that indicates all system deficiencies have been addressed and that the systems manual has been completed. If the systems manual is not complete, include information that indicates the outstanding sections of the manual and the anticipated schedule for completing these sections.

EAc4 Enhanced Refrigerant Management

- ☐ Remember not to use the values listed in Table 2 of the LEED-NC v2.2 Reference Guide EA Credit 4. Please note that these values are intended to represent the maximum refrigerant charge that would qualify each piece of equipment to meet the credit requirements, and the values are not intended to be used in lieu of the actual refrigerant charge for the as-designed equipment.
- ☐ Be sure to use a default leakage rate of 2%. Projects registered before April 30, 2009, can only apply reduced leakage rates to Trane equipment specifically referenced in LEED-NC v2.2 EAc4 CIR ruling dated 9/11/2006. All other projects, no matter when registered, must use the default leakage rate.
- ☐ If special circumstances exist, don't forget to provide a narrative describing the circumstances or calculations demonstrating credit compliance.

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. Include an itemized list of suggested components of a comprehensive monitoring and verification plan found in Section 3.2 of the IPMVP.
- ☐ For projects registered after May 28, 2008 and served by a District Energy System, be sure the M&V plan includes the upstream equipment from the District Energy System as per the "Required Treatment of District Thermal Energy in LEED-NC v2.2 and LEED for Schools" document.

Option D: Calibrated Simulation (Savings Estimation Method 2)

- ☐ Remember to include:
  - How the baseline and as-built models have been calibrated, describe weather data used for the calibration simulations, and what the calibration results were. Refer to Section 3.2 and 4.5 of IPMVP Volume III for guidance.
  - How the inputs of the calibrated model are determined including the inputs for schedules. Be sure to provide further evidence that whole building metering alone is sufficient to develop the Baseline, and that no submetering or datalogging is required (in most cases, at least some submetering or datalogging is necessary in order to appropriately identify operating schedules, and to verify that the other building energy model inputs (such as lighting power density, HVAC fan operation, etc.) accurately represent the as-built operation.
  - Monitoring and verification period (dates, triggers, etc.), and the means of collecting data and frequency of data collection.
  - Acceptable range(s) of error (generally there is a different range allowable for both monthly and annual data)
  - Parties responsible for completing the monitoring and verification.
  - Corrective action plan that will be applied if monitoring and verification determines that the building does not perform as anticipated.
  - Means for ongoing accountability.

ENERGY & ATMOSPHERE

Option B: Energy Conservation Measure Isolation

- ☐ Be sure to provide a justification narrative describing why Option B of the IPMVP is appropriate for this project. Additionally, explain how the affect of interactive ECMs will be accounted for. Refer to Section 4.3 of the IPMVP for information regarding the applicability of Option B.
- ☐ 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 reported in EAc1, and is documented by utility bills or is calculated based on DOE's Commercial Buildings Energy Consumption database.
- ☐ Don't forget to provide a narrative describing how the green power OR green tags were purchased.
- ☐ 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 the credit submittal demonstrates that storage is available for all the required materials (cardboard, paper, plastic, glass, and metals).

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

- ☐ Remember to include square footage values of any new additions and existing and reused areas of structural/envelope elements.
- ☐ Be sure to include square footage values of any new additions.

MRc1.2 Building Reuse-Maintain Interior Nonstructural Elements

- ☐ Remember to include square footage values of reused interior nonstructural elements.
- ☐ Be sure to include square footage values of any new additions.

MRc2 Construction Waste Management

- ☐ Be sure 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 a narrative describing the project's construction waste management 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 provide a narrative describing the materials reuse strategy, including information about the reused/salvaged materials.
- ☐ If furniture is included in materials calculations be sure that it is included consistently across MR Credits 3-7.

MRc4 Recycled Content

- ☐ Be sure that the material costs used in this credit are consistent with the material costs used in other MR credits.
- ☐ Remember that only materials in CSI MasterFormat 1995 Divisions 2 through 10 should be 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.
- ☐ Be sure that the pre-consumer and post-consumer recycled content of the materials listed in the credit have been reported correctly in the template when compared to the supporting documentation.

MRc5 Regional Materials

- ☐ Be sure that the material costs used in this credit are consistent with the material costs used in other MR credits.
- ☐ Remember that only materials in CSI MasterFormat 1995 Divisions 2 through 10 should be 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 template have the same manufacturing and extraction distances, or are listed as 100% regional, be sure to include documentation to support the template inputs.

MRc6 Rapidly Renewable Materials

- ☐ Be sure that the material costs used in this credit are consistent with the material costs used in other MR credits.
- ☐ 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.
- ☐ If furniture is included in materials calculations be sure that it is included consistently across MR Credits 3-7.

MRc7 Certified Wood

- ☐ Be sure that the cost of wood-based components used in this credit is consistent with the material cost information in other MR credits.
- ☐ Remember that valid FSC chain of custody numbers for each FSC certified wood product must be provided.
- ☐ For projects registered after 4/7/2008, be sure that vendor invoices for all new wood products are provided and the materials 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.
- ☐ If furniture is included in materials calculations, be sure that it is included consistently across MR Credits 3-7.

INDOOR ENVIRONMENTAL QUALITY

EQp1 Minimum Indoor Air Quality Performance

- ☐ Be sure to complete the template.

Mechanically Ventilated

- ☐ Don't forget to include a detailed narrative describing the project's ventilation system, including the outside air intake volumes and any special conditions.
- ☐ 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.

Naturally Ventilated

- ☐ Don't forget to include a detailed narrative describing the project's ventilation system and project drawings showing the natural ventilation design, including naturally ventilated zones, operable window areas, and distances from operable windows.

EQp3 Minimum Acoustical Performance

Sound Transmission Class (Calculation)

- ☐ Be sure that the STC table is complete for space types and assembly material and that all core learning spaces have been included in the table.

Sound Transmission Class (Measurement)

- ☐ Don't forget that the measurement methodologies used to demonstrate compliance with the sound transmission class requirements should conform to those recommended in ANSI s12.60-2002 Section E5.1

Background Noise Level

- ☐ Remember to provide a narrative describing the means by which the background noise level in classrooms and other primary spaces was designed.

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.

Reverberation Time, Case 1 - Classrooms/ Core Learning Areas Less Than 20,000 Cubic Feet (Path 2 - ANSI Measurements)

- ☐ Don't forget that the measurement methodologies used to demonstrate compliance with the reverberation time requirement of 1.5 seconds or less should conform to those recommended in ANSI s12.60-2002 Section E4.3.

EQc1 Outdoor Air Delivery Monitoring

- ☐ Don't forget to include a detailed narrative describing the project's ventilation design and CO2 monitoring strategy. Information regarding the location of installed CO2 sensors and quantity of installed monitors, their operational parameters, and setpoints must be included.

Mechanically Ventilated Spaces

- ☐ **Densely occupied spaces:** Remember to provide project drawings documenting the location and type of installed CO2 sensors. CO2 sensors must be provided in all occupied spaces (conference rooms, etc.) considered densely occupied (greater than 25 people per 1,000 square feet) and be located in the breathing zone.
- ☐ **Non-Densely occupied spaces:** Don't forget to provide documentation demonstrating direct outside airflow measurement and the ability of the system to measure the rate within 15% of the design minimum outdoor air rate as defined by EQp1. Be sure that the alarm rates are consistent with EQp1 and EQc2.

Naturally Ventilated Spaces

- ☐ Be sure to include a narrative describing how the sensor placement, ventilation design, and CO2 monitoring strategy allow equal and simultaneous airflows throughout non-monitored spaces and 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

- ☐ Remember 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 that 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.
- ☐ Don't forget to provide the IAQ Management Plan.
- ☐ Remember to include photographs and a narrative highlighting how all five of the SMACNA IAQ measures were implemented.
- ☐ 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

- ☐ Remember to provide the project IAQ Management Plan highlighting the pre-occupancy phase practices.
- ☐ 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 provide a copy of the IAQ test report that indicates tests were conducted for all of the required contaminants and that the 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 been 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 been 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 been 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 been 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 been 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.
- ☐ Don't forget to provide confirmation that the test results represent the manufacturing practices employed for the product used on the project and that they were completed before the start of manufacturing but no earlier than 24 months prior to the last date of manufacture.

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.
- ☐ Don't forget to provide confirmation that the test results representing the manufacturing practices employed for the product used on the project and that they were completed before the start of manufacturing but no earlier than 24 months prior to the last date of manufacture, has not been provided.

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 been 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, room separations, self-closing doors, and required ventilation systems.
- ☐ Be sure to provide confirmation that chemical areas have been designed as separate rooms with dedicated exhaust systems and appropriate negative pressurization.

EQc6.1 Controllability of Systems-Lighting

- ☐ Don't forget a narrative describing the project's lighting control strategy with data regarding the type and location of controls for both the individual workstations and multi-occupant spaces. Remember that on/off switches are not sufficient for shared multi-occupant spaces.
- ☐ For non-classroom multi-occupant spaces, don't forget a narrative describing the project's lighting control strategy with data regarding the type and location of controls for both the individual workstations and multi-occupant spaces. Remember that on/off switches are not sufficient for shared multi-occupant spaces.
- ☐ 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

- ☐ Don't forget a narrative describing the project's thermal control strategy, with a description of the type and location of controls provided for individual and shared multi-occupant spaces.
- ☐ Remember to provide a list of the individual workstations and their respective thermal controls and also the type and location of controls provided for shared multi-occupant spaces. Remember that open office cubicles are considered individual workstations and must be included in the count for individual workstations and not listed as a single multi-occupant space.

- ☐ Be sure that the 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 the thermal comfort ranges listed in the template 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.
- ☐ Don't forget to include a narrative describing the method used to establish the thermal comfort conditions for the project and how the systems design addresses the design criteria. Include a description of the system's ability to maintain the maximum humidity levels during periods of low cooling load or a justification for no dehumidification strategy based on the local climate conditions.
- ☐ 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.

EQc7.2 Thermal Comfort-Verification

- ☐ Don't forget to provide a narrative, including information regarding the proposed corrective action plan. Make sure to include follow-up questions in the survey and ensure that the survey addresses all thermal comfort variables in ASHRAE 55-2004.
- ☐ Remember that EQc7.2 cannot be awarded without the demonstrated achievement of EQc7.1.

EQc8.1 Daylight and Views-Daylight

- ☐ Don't forget to provide a narrative detailing why regularly occupied spaces were excluded from the glazing factor calculations.
- ☐ Remember that credit calculations include only regularly occupied spaces that are consistent between IEQc8.1 & IEQc8.2.

Option 1- Glazing Factor Calculation

- ☐ The glazing factor calculation is designed for simple geometries. When analyzing more complex geometries, be sure to use daylight simulation or light measurements to demonstrate credit compliance.
- ☐ Remember to provide supporting calculations or the supplemental calculator template.

Option 2- Daylight Simulation Model

- ☐ Remember to provide the daylight simulation model output and/or copies of project drawings showing the illumination simulation results.
- ☐ Don't forget to provide a narrative describing the method used to analyze the building's daylight capacity, including actual or simulated time of day and weather conditions, measurement equipment or software used, and the calculation method for determining the final daylighting area.

Option 3- Daylight Measurement

- ☐ Remember to provide copies of building floor plans showing daylight measurement illumination results on a 10-foot grid for all regularly occupied spaces.
- ☐ Don't forget to provide a detailed narrative describing the measurement methods and protocol, including the time of day and weather conditions when measurements were taken, the type of measurement equipment used and the calculation method used to analyze building illumination.

EQc8.2 Daylight and Views-Views

- ☐ Don't forget to provide a narrative detailing why regularly occupied spaces were excluded from the access to views calculations.
- ☐ Remember that the credit calculations include only regularly occupied spaces that are consistent between IEQc8.1 & IEQc8.2.
- ☐ 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 that views are not through opaque walls, partitions or doors.

EQc9 Enhanced Acoustical Performance

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

Option 1 - dBA

- ☐ Be sure to provide a description of the means by which the background noise level in classrooms and other primary spaces was kept below either 40 dBA and/or 35 dBA, using the methodology in ANSI S12.60.

Option 2 - RC

- ☐ Don't forget to provide a description of the means by which the RC levels in classrooms and other primary spaces was kept below either 32 or 27, using the methodology described in HVAC Applications ASHRAE handbook.

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.

INNOVATION IN DESIGN

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 2007 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 go to this link for more information on the Pilot Credit Library.

IDc1 Green Housekeeping

- ☐ Be sure to document a statement of purpose, demonstration of custodial training, the contractual or procedural requirements for operations staff, a clear set of acceptable performance standards by which to measure, and documentation of the program's housekeeping and environmental cleaning solution specifications. Please see LEED Interpretation 766 for more information.

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), a guided tour (a script and a tour stop description drawing), and / or electronic examples of the comprehensive signage program. Please see LEED Interpretation 3115 for more information.

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.

INNOVATION IN DESIGN

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.