LEED Interpretations and Addenda Database

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LEED Interpretations

8/31/2009 **ID#5234**

MPR/Prerequisite/Credit: EAc1: Optimize Energy Performance
Primary Rating System: New Construction v2.2

Email

Ruling

The applicant is requesting guidance for a building which receives condenser water for Heat Pumps within the building from a district geothermal loop (with supplemental cooling tower and boiler operation). The applicant is requesting that the system be removed from the "District" energy guidelines as well as the Appendix G Baseline system type and be allowed to use the ASHRAE Energy Cost Budget (section 11) methodology to define the Baseline system. It appears, based on the description, that the building does not fall under the District Energy requirements, in that it is not provided with cooling or heating from a district source, but rather provided with condenser water which feeds heat pumps that produce the cooling and heating within the building. As such it is not required to follow the methodology defined in the "Required Treatment of District Thermal Energy in LEED-NC version 2.2 and LEED for Schools." The project is also requesting exemption from the ASHRAE Appendix G system definition and to instead use the ECB method. According to LEED protocol, all projects following ASHRAE must use the Appendix G methodology, therefore this request is denied. The entirety of the Appendix G protocol must be used, including the Baseline system definition as determined by Table G3.1.1A. The project team may decide to pursue exceptions to this Table as identified in the "Exceptions to 3.1.1" portion of Appendix G, however it is uncertain if these will apply to the project. It would appear that the project should compare the design as described, to the appropriate system identified in Table G3.1.1A.

Formal Inquiry

This credit interpretation request is regarding the baseline system selection. The project is a campus classroom/laboratory building in Grand Junction, CO. The proposed building HVAC system is composed of distributed water source heat pumps served by a district geothermal condenser water loop. The district geothermal system has enough ground wells such that nearly all condenser heating and cooling loads will be met. However, there are gas fired boilers and cooling towers in place that will help to maintain loop temperatures during peak heating and cooling conditions. Our confusion is that the campus district cooling and heating system falls under the document, "Required Treatment of District Thermal Energy in LEED-NC version 2.2 and LEED for Schools." However, this document does not address the case of a district condenser water loop. If we were to follow Appendix G ignoring the fact that the building is served by a district condenser water loop, the system falls under the category of a hybrid system and ASHRAE 90.1-2004 Appendix-G dictates that the baseline system should be System 5 - Packaged VAV w/ Reheat. When we compare the baseline and proposed systems, this appears to be a clear case of fuel-switching. The proposed system is 90% or more electric heating, while the baseline system is 100% natural gas heating via hot water boilers. We are proposing to use the "Energy Cost Budget" method for determining the baseline system as detailed in ASHRAE 90.1-2004 section 11. Based upon figure 11.3.2 in ASHRAE 90.1-2004, the baseline system would be System 6 -Heat pumps on a condenser loop with boilers and fluid coolers. Note 7 of Table 11.3.2.A describes System 6 and the water-source heat pumps assumptions. We would use the electricity and gas rates paid by the campus in both models rather than following Steps 1 and 2 in the document, "Required Treatment of District Thermal Energy in LEED-NC version 2.2 and LEED for Schools." The air distribution system in both models would be through distributed heat pumps served by the condenser water loop.

Rating Systems & References

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Pre-2009 Projects:
LEED Online V2

For 2009, Homes or not yet registered projects
LEED Online V3

INTERACTING WITH ADDENDA

Addenda Tables

Submit a Suggestion
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Rating Systems

	v2.0	v2.1	v2.2	v2007	v2008	v2009
New Construction						
Schools						
Commercial Interiors						
Core & Shell						
Existing Buildings						
Retail CI						
Retail NC						
Neighborhood Development						
Homes						
Healthcare						

One Green Check mark for NC v2009 (verified with original website)

KEY

- ✔✔ The ruling was written for projects using this rating system and must be applied based on the project's registration date
- ✔ Project teams and reviewers may refer to the ruling for projects using this rating system, if reasonable and appropriate
- ! The ruling was not yet considered for projects using this rating system
- ✖ The ruling does NOT apply to projects using this rating system
- The rating system for this version does not exist

References

Corresponding LEED 2009 Addenda and LEED Interpretations

Rating System Addenda:

Reference Guide Addenda:

LEED Interpretations:

Other (viewed by admin only)

Should be considered for the next version of the rating system? **NO**

Does this refer to Multi-Family buildings? **NO**

Additional Notes: