



**BSR/ASHRAE Addendum *k* to
ANSI/ASHRAE Standard 209-2018**

First Public Review Draft

Proposed Addendum *k* to Standard 209-2018, Energy Simulation Aided Design for Buildings except Low- Rise Residential Buildings

**First Public Review Draft (May 2024)
(Draft shows Proposed Changes to Current Standard)**

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research-technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

© 2024 ASHRAE. This draft is covered under ASHRAE copyright. Permission to reproduce or redistribute all or any part of this document must be obtained from the ASHRAE Manager of Standards, 180 Technology Parkway NW, Peachtree Corners, GA 30092. Phone: 404-636-8400, Ext. 1125. Fax: 404-321-5478. E-mail: standards.section@ashrae.org.

ASHRAE, 180 Technology Parkway, Peachtree Corners, GA 30092

Foreword:

The main reasons for the changes are to (1) add predictive analysis to the language, (2) add flexibility to the requirements regarding a financial analysis and goals, (3) add informative notes/clarify the language, and (4) streamline/make the charrette more productive by requiring a list of potential EEMs be required to be brought to the charrette. The specific changes include the following: added flexibility to the required timing of the charrette and creation of OPR but made it so that both had to be completed before starting load reduction modeling; restructured 5.5.2 to include separate lists of entities that are required to attend the charrette versus those that are recommended to attend if applicable; added that someone should be charged with coming to the charrette with a preliminary list of EEMs (this will make the charrette much more productive and the work group agreed should be something that is done for all charrettes); 5.5.3, expanded language to include predictive analysis; 5.5.5, added an informative note to point to the predictive analysis informative appendix (the appendix letter is TBD); 5.5.8, added language to explain that it is required that the list of potential EEMs brought to the charrette be reviewed, refined, and expanded upon during the charrette; 5.5.9 was modified to include measured data and that any member of the team can present results of previous modeling (does not have to be the modeler); 5.5.10 and 5.6.3, expanded the language beyond just financial criteria; 5.6, removed the term “Energy” to be more inclusive of other goals; 5.6.3, modified to allow more flexibility in terms of type of financial analysis and added an informative note to highlight common financial metrics/analysis; and in 5.6.4, added some example performance goals as an informative note.

Final strikethrough and underlined for public comment

charrette: a meeting of project stakeholders to discuss design goals and design strategies that includes the topic of building performance.

5.4 Benchmarking. Determine the energy use per unit area of buildings with the same principal building activities in the same climate and determine their annual energy costs per unit area by applying using applicable local utility rates. These data shall be used in the ~~energy~~ *charrette* described in Section 5.5 to inform the development of the project energy goals.

5.5 ~~Energy~~ Charrette

5.5.1 ~~Prior to Modeling Cycle #2, if Modeling Cycle #2 is used for compliance, or prior to beginning Load Reduction Modeling Cycle #3, the project team shall conduct at least one charrette~~ that addresses building performance.

5.5.2 The representatives that participate in the *charrette* shall, at a minimum, include the following:

- a. Owner or owner representatives
- b. Architect
- c. ~~Engineer~~ HVAC designer

- ~~d. Building performance rating system consultant (if applicable)~~
- ~~d.~~ *Energy modeler* or the individual supervising the work of the *energy modeler*
- f. Other design team members required to reconcile technical requirements
- ~~g. Contractor (if applicable)~~ e. Representatives are permitted to fulfill multiple roles as appropriate.

Informative Note: If applicable, the following representatives are recommended to participate in the *charrette*:

- a. Building performance rating system consultant
- b. Other design team members required to reconcile technical requirements
- c. Contractor(s) and/or subcontractor(s)
- d. Commissioning agent
- e. Plumbing engineer
- f. Lighting designer
- e. Cost estimator

5.5.3 A designated participant shall be charged with creating and bringing a preliminary list of potential energy efficiency measures (*EEMs*) to the *charrette*.

5.5.34 Determine and document the purposes for including *energy modeling* in the proposed project. *Energy modeling* purposes to be discussed shall include comparative analysis, and compliance analysis, and predictive analysis.

5.5.45 Define the *baseline* or *baselines* to be used ~~for comparative~~ in the analysis.

5.5.56 Establish project performance metrics to be used as the basis for the energy goals.

5.5.67 Use benchmarking data generated in Section 5.4 to inform the discussion and determination of the energy performance goals. The resulting energy performance goals shall be incorporated into the draft *owner's project requirements (OPR)* detailed in Section 5.6.

Informative Note: See Informative Appendix ***TBD*** for additional information on setting goals for *predictive analysis*.

5.5.78 Discuss and determine the method for evaluating the potential project alternatives ~~energy efficiency measures (EEMs) for the project.~~

5.5.89 ~~Generate~~ Review, and expand on a refine, and/or expand on the *list of potential EEMs*.

5.5.910 ~~The energy modeler shall~~ Present the results of any previously performed modeling analysis or measured data deemed relevant to design decisions associated with the project.

5.5.1011 Establish financial ~~and/criteria~~ or other criteria for ~~financial~~ analysis and decision making.

5.5.1112 Establish a project schedule for follow-up tasks related to items discussed during the *charrette*.

5.5.1213 Establish the process, documentation, and review team for complying with Section 5.7.4 for each *modeling cycle*.

5.5.1314 Create a written record of items discussed during the *charrette*.

Informative Note: For more information and best practice recommendations for running the *charrette* refer to the following guide:

https://www1.eere.energy.gov/buildings/publications/pdfs/commercial_initiative/33425rep.pdf

5.6 Energy Performance Goals in Owner Project Requirements OPR

5.6.1 ~~Prior to Modeling Cycle #2, if Modeling Cycle #2 is used for compliance, or prior to beginning Load Reduction Modeling Cycle #3, the owner, the *energy modeler*, and other building team members shall develop and document the energy performance goals in the OPR.~~ Prior to beginning Load Reduction Modeling Cycle #3, the owner, the *energy modeler*, and other building team members shall develop and document the energy performance goals in the OPR.

5.6.2 Document *building performance rating systems*, energy codes(s), and/or performance standards that apply to this project.

5.6.3 Document the ~~financial~~ criteria for decision making ~~and life cycle cost analysis (LCCA) between project alternatives.~~

Informative Note: Common financial metrics and criteria include minimum life-cycle cost, maximum simple payback period, minimum return on investment, and owner discount rate.

5.6.4 Document the overall project ~~energy~~ performance goal.

Informative Note: Common energy performance goals include, but are not limited to, achieving:

- a net zero energy, carbon emissions, etc.;
- a specific energy usage per unit area or other metric;
- a maximum annual energy cost or other metric such as carbon emissions;
- a minimum percent savings compared to ~~the~~ baseline;
- energy code compliance;
- a specific power usage effectiveness (PUE) in the case of a data center; and/or
- a performance threshold in a specific *building performance rating system*.

5.6.5 Document the performance ~~goal~~targets for the individual building systems and assemblies in the following subsections, with the intent that these ~~goal~~targets be tracked throughout the design process.

Informative Note: See Informative Appendix D for sample OPRs . The OPR should ~~shall~~ address the building systems for which performance goals have been established.

5.6.5.1 Building envelope, including roofs, walls, floors, doors, fenestration, and infiltration rate.

5.6.5.2 *HVAC systems*, ventilation, and control strategies.

5.6.5.3 Lighting systems and daylighting systems.

5.6.5.4 Service hot-water systems and flow rate restrictors to hot-water fixtures, fittings, and appliances.

5.6.5.5 Equipment related to plug and *process energy* use.

5.6.5.6 Specific owner and occupant requirements related to energy performance.

5.6.5.7 *Green building concepts* (optional).

5.6.6 ~~Energy~~ Performance goals in the OPR shall be updated as required throughout the design process.

6.1.2 Applicability. This modeling cycle applies before the building's geometry and site orientation have been set in the design process. This must be completed before or during the ~~energy~~ charrette described in Section 5.5.