

# ADDENDA

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

# Energy Simulation Aided Design for Buildings Except Low-Rise Residential Buildings

Approved by ASHRAE and the American National Standards Institute on August 30, 2024, and by the International Building Performance Simulation Association on August 28, 2024.

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## FOREWORD

*Addendum k adds predictive analysis to the language and flexibility to the requirements regarding a financial analysis and goals, adds informative notes and clarifies language, and streamlines and makes the charrette more productive by requiring a list of potential EEMs be brought to the charrette. Specific changes are as follows:*

- *Adds flexibility to the required timing of the charrette and creation of the OPR but makes it so that both have to be completed before beginning load reduction modeling*
- *Restructures Section 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*
- *Specifies someone should be charged with coming to the charrette with a preliminary list of EEMs, which will make the charrette much more productive*
- *Expands language in Section 5.5.3 to include predictive analysis*
- *Adds an informative note in Section 5.5.5 to point to the predictive analysis informative appendix (exact letter TBD)*
- *Adds language in Section 5.5.8 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*
- *Modifies Section 5.5.9 to include measured data and states that any member of the team can present results of previous modeling (does not have to be the modeler)*
- *Expands the language in Sections 5.5.10 and 5.6.3 beyond just financial criteria*
- *Removes the term “energy” in Section 5.6 to be more inclusive of other goals*
- *Modifies Section 5.6.3 to allow more flexibility in terms of type of financial analysis, and adds an informative note to highlight common financial metrics/analysis*
- *Adds some example performance goals to Section 5.6.4 as an informative note*

**Informative Note:** *In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~striketrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.*

## Addendum k to Standard 209-2018

**Modify Section 3.2 as shown.**

### 3.2 Definitions

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

**Modify Section 5 as shown.**

**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 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)~~
- e. 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)

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
- g. 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 XX 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.

**5.5.112** 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 *A Handbook for Planning and Conducting Charrettes for High-Performance Projects* (see Informative Appendix F).

## **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*.

**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 ~~goals~~targets for the individual building systems and assemblies in the following subsections, with the intent that these ~~goals~~targets be tracked throughout the design process.

**Informative Note:** See Informative Appendix D for sample *OPRs*. The *OPR* ~~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.

**Modify Section 6.1.2 as shown.**

**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.

**Modify Informative Appendix F, "Informative References," as shown.**

Lindsey, G., J.A., Todd, and S.J. Hayter. 2003. *A Handbook for Planning and Conducting Charrettes for High-Performance Projects*. NREL/BK-710-33425. Golden, CO: National Renewable Energy Laboratory. Available at [https://www1.eere.energy.gov/buildings/publications/pdfs/commercial\\_initiative/33425rep.pdf](https://www1.eere.energy.gov/buildings/publications/pdfs/commercial_initiative/33425rep.pdf)

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Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

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