



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

**First Public Review Draft**

# **Proposed Addendum *h* 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)**

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## Foreword

The existing language workgroup proposed the changes below to update Modeling Cycle #2 - Conceptual Design Modeling and Modeling Cycle #3 - Load Reduction Modeling. These changes primarily clean up and clarify the language without changing scope of each cycle.

[**Note to Reviewers:** This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

### 6.2 Modeling Cycle #2—Conceptual Design Modeling

**6.2.1 Purpose.** Evaluate energy improvements that are tied to the form and architecture of the building.

**6.2.2 Applicability.** This *modeling cycle* applies to projects where the form and architecture of the building are still subject to design changes before *schematic design* begins. This *modeling cycle* applies to buildings with internal equipment/*process loads* less than 75% of overall energy breakdown.

**6.2.3 Analysis.** Create *energy models* based on architectural conceptual designs to ~~calculate~~ estimate annual building energy consumption by end use and peak heating and cooling loads with identical *HVAC systems*, internal occupancy, and equipment/*process loads*.

Exception: When HVAC system selection impacts the architectural form, multiple HVAC systems may be modeled.

**6.2.3.1** Perform comparative analyses of the conceptual designs options to inform design decisions.

~~**6.2.3.2** Provide recommendations to improve the energy performance of each conceptual design.~~

### 6.3 Modeling Cycle #3—Load Reduction Modeling

**6.3.1 Purpose.** Identify the distribution of energy by end use. Evaluate strategies that will reduce annual energy ~~use~~ consumption, heating, and cooling peak loads, and peak demand for electricity and other *energy sources*.

**6.3.2 Applicability.** Required for all projects, this *modeling cycle* shall be completed prior to the final selection of *HVAC system* type and prior to the end of *schematic design*.

#### 6.3.3 Analysis

**6.3.3.1** Create an *energy model* based on the *baseline* design, and calculate the annual *energy end uses* and heating and cooling peak loads.

**6.3.3.2** Develop a list of at least three peak load reduction strategies selected from one or more of the following categories:

- a. Building envelope (including, but not limited to, insulation level, window-to-wall ratio, glazing performance, shading, infiltration, phase change materials, and thermal mass)
- b. Lighting and daylighting
- c. Internal equipment loads
- d. Outdoor air (including, but not limited to, outdoor airflow, exhaust air, and energy recovery)
- e. Passive conditioning and natural ventilation

When internal equipment loads exceed 6075% of the building *energy end use*, at least two of the strategies shall be selected from the internal equipment loads category.

**6.3.3.3** Use *energy modeling* to evaluate each load reduction strategy compared to the *baseline* design using identical *HVAC system* types.