



**BSR/ASHRAE/IES Addendum cb  
to ANSI/ASHRAE/IES Standard 90.1-2016**

**Public Review Draft**

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# **Proposed Addendum cb to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings**

**First Public Review (May 2019)  
(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](http://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](http://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](http://www.ashrae.org).

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**ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305**

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**(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)**

## FOREWORD

*SSPC 90.1 explored areas outside of the physical building where energy savings would be possible by applying provisions presently in the Standard. Examples include lighting in parking lots that may not be directly associated with a building or lighting and equipment associated with campus environments or parks.*

*This addendum revises the Title Purpose and Scope (TPS) of Standard 90.1 to apply to areas outside of the physical building. The addendum introduces a new term “site” to define those types of environments where a physical building may not be present but the energy consuming lighting and equipment are covered by provisions in the Standard. Also, a new provision is included in Chapter 4 “Administration and Enforcement” to address sites with or without buildings.*

*Finally, related revisions are made to existing definitions and sections of Standard 90.1 impacted by the above modifications.*

***[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~striketrough~~ (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.]***

## Addendum cb to 90.1-2016

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Modify the standard as follows (IP and SI Units)

### \*MODIFY TITLE, PURPOSE & SCOPE AS FOLLOWS:

#### Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings

##### 1 Purpose

###### 1.1

To establish the minimum *energy efficiency* requirements of *buildings* other than *low-rise residential buildings*, and sites for

- a. design, *construction*, and a plan for operation and maintenance; and
- b. utilization of on-site, renewable *energy* resources.

##### 2 Scope

###### 2.1

This standard provides

- a. minimum *energy-efficient* requirements for the design and *construction*, and a plan for operation and maintenance of
  1. new *buildings* and their *systems*,
  2. new portions of *buildings* and their *systems*,
  3. new *systems* and *equipment* specifically identified in this standard that are part of a *site*,
  - ~~4.~~ new *systems* and *equipment* in existing *buildings*, and
  - 4 ~~5.~~ new *equipment* or *building systems* specifically identified in ~~the~~ this standard that are part of ~~industrial or manufacturing processes~~ *applications*and
- b. criteria for determining compliance with these requirements.

###### 2.2

The provisions of this standard do not apply to

- a. single-family houses, multifamily structures of three stories or fewer above *grade*, manufactured houses (mobile homes), and manufactured houses (modular) or
- b. *buildings* that use neither electricity nor *fossil fuel*.

###### 2.3

Where specifically noted in this standard, certain other *buildings* or elements of *buildings* or *sites* shall be exempt.

###### 2.4

This standard shall not be used to circumvent any safety, health, or environmental requirements.

### \*ADD NEW DEFINITION "SITE" and MODIFY EXISTING DEFINITIONS AS FOLLOWS

***on-site renewable energy:*** *energy* generated from renewable sources produced at the ~~*building*~~ *building site*.

***purchased energy:*** *energy* or power purchased for consumption and delivered to the ~~*building*~~ *building site*.

***purchased energy rates:*** costs for units of *energy* or power purchased at the ~~*building*~~ *building site*. These costs may include *energy* costs as well as costs for power *demand* as determined by the *adopting authority*.

***site:*** An area of land that is under the control of a single owner or entity, which contains *systems* or *equipment*.

**site-recovered energy:** waste *energy* recovered at the ~~building~~ building site that is used to offset consumption of purchased *fuel* or electrical *energy* supplies.

**site-solar energy:** thermal, chemical, or electrical *energy* derived from direct conversion of incident solar radiation at the ~~building~~ building site and used to offset consumption of purchased *fuel* or electrical *energy* supplies. For the purposes of applying this standard, *site-solar energy* shall not include passive heat gain through *fenestration systems*.

**solar energy source:** source of thermal, chemical, or electrical *energy* derived from direct conversion of incident solar radiation at the ~~building~~ building site.

**\*ADD NEW SECTION 4.1.1.6 SITE TO CHAPTER 4 AS FOLLOWS:**

**Chapter 4 – Administration and Enforcement**

**4.1.1.6 Sites**

Sites, with or without a contiguous building or buildings, and site systems and equipment using or producing energy, such as site lighting, motors for pumps (for example, fountain pumps and water movement equipment) and transportation equipment (for example, elevators and escalators) shall comply with the standard as described in Section 4.2 for systems and equipment specifically identified in the standard.

**\*MODIFY 10.4.5 AS FOLLOWS:**

**10.4.5 Whole-Building Energy Monitoring**

Measurement devices shall be installed ~~at the building site~~ to monitor the *energy* use of each new *building*.

**10.4.5.2 Recording and Reporting**

The *energy* use of each *building* ~~on the building site~~ shall be recorded at a minimum of every 60 minutes and reported at least hourly, daily, monthly, and annually. The *system* shall be capable of maintaining all data collected for a minimum of 36 months and creating user reports showing at least hourly, daily, monthly, and annual *energy* consumption and *demand*.

**\*MODIFY APPENDIX G AS FOLLOWS:**

**Normative Appendix G, Table G3.1, 10. HVAC Systems, Baseline Building Performance...**

**Exception:** For *fossil fuel systems* where natural gas is not available for the proposed site or *building* as determined by the *rating authority*, the baseline *HVAC systems* shall be modeled using propane as their *fuel*.

**Normative Appendix G, Table G3.1, 11. Service Water-Heating Systems, Baseline Building Performance ...**

**Exceptions:** Where natural gas is not available for the proposed site or *building*, as by the *rating authority*, gas storage *water heaters* shall be modeled using propane as their *fuel*.

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**NOTE TO REVIEWER:** *Addenda BK and BF also affect portions of sections changed by this proposal. On-site electricity generation systems is a new definition incorporated into the standard by Addendum bk that is affected by this addendum. Addendum bf adds a new Section 10.4.5 Air Curtains, so Section 10.4.5 Whole-Building Energy Modeling and subsections are renumbered to 10.4.6.*

*The following shows how the addendum will appear combined with addenda BK and BF. Additional changes needed to combine this addendum with prior addenda are shown in strikeout and underline. Such changes do not change the substantive nature of prior approved addenda and are not available for comment.*

# Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings

## 1 Purpose

### 1.1

To establish the minimum *energy efficiency* requirements of *buildings* other than *low-rise residential buildings*, and *sites* for

- a. design, *construction*, and a plan for operation and maintenance; and
- b. utilization of on-site, renewable *energy* resources.

## 2 Scope

### 2.1

This standard provides

- a. minimum *energy-efficient* requirements for the design and *construction*, and a plan for operation and maintenance of
  1. new *buildings* and their *systems*,
  2. new portions of *buildings* and their *systems*,
  3. new *systems* and *equipment* specifically identified in this standard that are part of a *site*,
  4. new *systems* and *equipment* in *existing buildings*, and
  5. new *equipment* or *building systems* specifically identified in this standard that are part of *process applications*and
- b. criteria for determining compliance with these requirements.

### 2.2

The provisions of this standard do not apply to

- a. single-family houses, multifamily structures of three stories or fewer above *grade*, manufactured houses (mobile homes), and manufactured houses (modular) or
- b. *buildings* that use neither electricity nor *fossil fuel*.

### 2.3

Where specifically noted in this standard, certain other *buildings* or elements of *buildings* or *sites* shall be exempt.

### 2.4

This standard shall not be used to circumvent any safety, health, or environmental requirements.

...

***on-site electricity generation systems:*** systems located at the ~~*building site*~~ *building site* that generate electricity, including but not limited to generators, combined heat and power systems, fuel cells, and *on-site renewable energy* systems.

***on-site renewable energy:*** *energy* generated from renewable sources produced at the *building site*.

***purchased energy:*** *energy* or power purchased for consumption and delivered to the *building site*.

***purchased energy rates:*** costs for units of *energy* or power purchased at the *building site*. These costs may include *energy* costs as well as costs for power *demand* as determined by the *adopting authority*.

***site:*** An area of land that is under the control of a single owner or entity, which contains *systems* or *equipment*.

**site-recovered energy:** waste *energy* recovered at the building *site* that is used to offset consumption of purchased *fuel* or electrical *energy* supplies.

**site-solar energy:** thermal, chemical, or electrical *energy* derived from direct conversion of incident solar radiation at the building *site* and used to offset consumption of purchased *fuel* or electrical *energy* supplies. For the purposes of applying this standard, *site-solar energy* shall not include passive heat gain through *fenestration systems*.

**solar energy source:** source of thermal, chemical, or electrical *energy* derived from direct conversion of incident solar radiation at the building *site*.

## Chapter 4 – Administration and Enforcement

### 4.1.1.6 Sites

*Sites*, with or without a contiguous building or buildings, and *site systems* and *equipment* using or producing *energy*, such as site lighting, motors for pumps (for example, fountain pumps and water movement equipment) and transportation equipment (for example, elevators and escalators) shall comply with the standard as described in Section 4.2 for *systems* and *equipment* specifically identified in the standard.

### 10.4.6 Whole-Building Energy Monitoring

Measurement devices shall be installed to monitor the *energy* use of each new *building*.

#### 10.4.6.2 Recording and Reporting

The *energy* use of each *building* shall be recorded at a minimum of every 60 minutes and reported at least hourly, daily, monthly, and annually. The *system* shall be capable of maintaining all data collected for a minimum of 36 months and creating user reports showing at least hourly, daily, monthly, and annual *energy* consumption and *demand*.

### Normative Appendix G, Table G3.1, 10. HVAC Systems, Baseline Building Performance...

**Exception:** For *fossil fuel systems* where natural gas is not available for the proposed *site* or building as determined by the *rating authority*, the baseline *HVAC systems* shall be modeled using propane as their *fuel*.

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