Sustainable Building 2030 Energy Standard for Small Buildings

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The method outline below may be used for SB 2030 projects beginning the SD phase (or equivalent) prior to January 1, 2015.

This standard has been created as an option for small buildings—in lieu of the use of full building simulation—as a way to demonstrate that a building is aggressively incorporating cost-effective energy efficiency upgrades that go well above minimum energy code requirements consistent with the intent of the SB2030 program. Many small buildings have different limitations on possible design options and would have a disproportionately large cost of performing detailed building energy simulation to demonstrate energy performance consistent with the performance based SB2030 Energy Standard for the building. This Small Buildings option can be selected by project teams as an approach that ensures cost-effectiveness both in terms of the energy design options and the overall project design and development costs.

Project teams electing to use the SB2030 Energy Standard for Small Buildings in lieu of using building simulation to document energy performance must meet all requirements in Part 1 of this document and one of the Options for Part 2 (on the following pages). Limited variances for specific portions of the requirements may be granted if the project team can document that a specific requirement cannot be met due to special requirements for a project and/or non-cost effectiveness (>15 year payback). All projects must still document the project's Energy Standard. Major renovation projects are only required to meet the requirements that are specific to the equipment and systems that are being replaced.

Please notify the SB 2030 Coordinator (at sb2030@b3mn.org) if you intend to use the Small Building Method, as changes are necessary in the Tracking Tool to allow phase submission without design simulation documentation. The project team must also indicate which of the available options in Part 2 they will be using.

Tracking Tool Entry and Adjustment Factor for SB2030 Energy Standard Value. Project teams using this small buildings version of the SB2030 Energy Standards must still download, complete and upload both the Energy Standard Calculator and Building Strategy Checklist in the project tracking tool for each phase and submit design documentation at the Construction Documents phase. The SB2030 Energy Standard value calculated by the Energy Standard Calculator will be adjusted for small buildings by multiplying the calculator's Energy Standard by an adjustment factor that is dependent on the prescriptive option chosen. The appropriate adjustment factor values are listed within each prescriptive option; these will be entered into the tracking tool by an administrator upon path selection.

Part 1. Mandatory Equipment Requirements

All projects choosing to apply the SB2030 Energy Standard for Small Buildings must meet all of the energy efficient equipment requirements listed below wherever the type of equipment listed is used in the SB2030 building project.

EnergyStar Applicable Equipment: The building owner/occupant must agree to install EnergyStar rated equipment for any application that has EnergyStar rated equipment available. This includes, but is not limited to the following

- Appliances
- Computers
- Other Office Equipment
- CFL Light Fixtures
- Light Bulbs
- Small HVAC Equipment
- Televisions

Water Fixtures: The following types of plumbing fixtures must have design flow rates specified and installed at or below the flow rates listed below. Note that more stringent standards may be required for projects that are following a green building rating system that is broader than the SB2030 Energy Standard (e.g. B3 Guidelines or LEED-NC)

- Lavatory Faucets ≤ 1.5 gallons per minutes
- Kitchen Faucets ≤ 2.0 gallons per minute
- Showerheads ≤ 2.0 gallons per minute

Part 2. Prescriptive Building Design Options

Option 1 for Any Commercial Building ≤20,000 sf: ANSI/ASHRAE/IES Standard 90.1-2010 -- Energy Standard for Buildings Except Low-Rise Residential Buildings

Projects choosing this option must document that the design meets all of the applicable "Mandatory" and "Prescriptive" requirements in each section of the standard. Project teams may NOT use the Energy Cost Budget Method in lieu of the prescriptive requirements of the standard's sections. Use an adjustment factor of 1.3 with this option.

Option 2: ASHRAE Advanced Energy Design Guides (AEDGs): Limited to for Specific Building Types and Sizes

This is only an option for those building types that are addressed by an ASHRAE Advanced Energy Design Guide and that have a project square footage that falls within the range listed in the table below. Note that in a number of cases the SB2030 square footage limit is lower than the limit on square footage noted within the referenced AEDG. Projects choosing this option must document that the design meets all of the applicable requirements in the appropriate AEDG's 1+-page listing of Recommendations by Climate for the location's climate zone (as defined in the AEDG). For projects starting Schematic Design prior to 2013, the design team may use the AEDG versions that provide guidance for 30% savings over ASHRAE Standard 90.1 1999, or may choose to use the newer 50% savings version (when applicable version is available). For projects that start Schematic Design in 2013 or later, only the AEDG versions that provide guidance for 50% savings compared to ASHRAE Standard 90.1 2004 may be used. The table below shows the AEDG options that are allowed within the SB2030 Small Buildings Standard.

ASHRAE Advanced Energy Design Guide Options for SB2030 Projects

Building Type	Maximum Size for SB2030	AEDG Series	Adjustment Factor
Small to Medium Office Buildings[1]	≤ 20,000 sf	50%	None[1]
K-12 School Buildings[2]	≤ 20,000 sf	50%	None[2]
Small Retail Buildings[3]	≤ 20,000 sf	30%[3]	1.4[3]
Small Hospitals & Healthcare Facilities[4]	≤ 20,000 sf	30%[4]	Clinics 1.2[4] Hospital 1.7[4]
Small Warehouses and Self-Storage Buildings	≤ 50,000 sf	30%	None
Highway Lodging	≤ 50,000 sf	30%	1.2

[1] If SD started prior to 2013, the 30% AEDG may be used for office buildings up to 20,000 sf with an adjustment factor of 1.3.

[2] If SD started prior to 2013, the 30% AEDG may be used for K-12 School buildings with no adjustment factor.

[3] Retail buildings up to 20,000 sf may choose to use the 50% AEDG for Medium Retail with no adjustment factor.

[4] Hospitals and health care facilities may choose to use the 50% series AEDG for large hospitals with no adjustment factor.

Option 3 for Residential Buildings ≤ 20,000 sf: EnergyStar Homes for Low-Rise (3-stories or less) *OR* 2011 Enterprise Green Communities Criteria 5.1.b (4 stories or more)

Projects choosing this option must document that the design meets all of the applicable requirements in the referenced requirement. High-rise residential buildings complying with Item 5.1.b of the 2011 Enterprise Green Communities Criteria may NOT use the "Performance" option. Use an adjustment factor of 1.4 with this option.

Contact Patrick Smith at sb2030@b3mn.org for further assistance.