



Sustainable Design Guidelines

**for Multi-Family
Residential Properties**



Sustainability Navigator



Baseline Information

The information in this document is based on the requirements for the following type of residential property:

- + 100 affordable four-story multi-family apartment units (R-2 occupancy) (roughly 100,000 sf)
- + Slab on grade - gable roof
- + Climate zone 4 (Maryland/DC/VA)
- + 40% glazing - vinyl windows
- + Façade materials 50/50 of brick and fiber cement siding
- + NFPA 13R sprinkler system and one intermediate fire wall splitting the floors into less than 12,000 sf each
- + Electric split system mechanical units for apartments and gas powered RTU for common area loads
- + Assume base level certification in each sustainable program
- + Typical amenity spaces including small fitness room, community room, lobby, and 75-80% residential efficiency
- + 2015 ICC code as baseline
- + Assumes current versions of the following sustainable certification programs as of 2017

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What's required/and recommended?

	IECC 2015	ASHRAE 90.1-2010	IGCC 2015	Energy Star Homes v3.1 (Rev. 08)	LEED v4 Homes Multi-family Mid-rise	Enterprise Green Communities (EGC) 2015	Home Innovation Research Labs (NAHB) - NGBS 2012 (New Construction)	Passive House (PHIUS+ 2015 Multifamily 2.0)	Viridiant (Earthcraft)	AHJ
Energy Modeling (and/or ComCheck)	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	*
Third-party rater required	N/A	N/A	N/A	Yes	Yes	Yes (Energy Star required)	Yes	Yes	Yes (HERS)	*
Post construction verification	N/A	N/A	N/A	Yes Testing, however similar testing now code required so easier to achieve	Optional points	Utility information from tenants required	Optional points	Yes	12 months utility bills optional	*
Exterior-venting range hoods	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	*
Fresh air intake at apartments	Yes	Yes	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	*
Split system SEER rating requirement and/or recommendation	SEER 13	SEER 13	SEER 15***	SEER 15***	SEER 15***	SEER 15***	SEER 15***	SEER 20***	SEER 14	*
LED lights bulb requirement and/or recommendation	No	No	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	*
Fixture flow rates (Kit/Lav/Toilet/Shower) - Reference IPC 2015	2.2/2.2/1.6/2.5	N/A	1.8/1.5/1.28WS 2.0WS	N/A	Optional points for lower rates	2.0/1.5/1.28/2.0 (Optional points for lower rates)	Optional points for lower rates	N/A	Optional points for lower rates	*
Watersense (WS) labeled fixture requirements?	N/A	N/A	Some fixtures require the label	N/A	Optional points if selected	Yes to all	Optional points if selected	N/A	Optional points if selected	*
Blower door testing (check with code and/or program requirements for required thresholds)	Yes	Yes	Yes (IECC)	Yes (IECC)	Yes (IECC)	Yes (IECC)	Yes (IECC)	Yes (IECC)	Yes	*
Duct blaster testing (check with code and/or program requirements for required thresholds)	Yes	Yes	Yes (IECC)	Yes (IECC)	Yes (IECC)	Yes (IECC)	Yes (IECC)	Yes (IECC)	Yes	*
Commissioning of HVAC	Yes	N/A	Yes	Yes (IECC)	Yes (IECC)	Yes (IECC)	Yes (IECC)	Yes (IECC)	Yes (IECC)	*
Enhanced commissioning of HVAC	N/A	N/A	Yes	No	Optional points if selected	Optional points if selected	Optional points if selected	Yes	N/A	*
Roof insulation value requirement and/or recommendation	R-38	R-38	R-38 (IECC)	R-49***	R-49***	R-49***	R-49***	R-49***	R-49***	*
Wood framed wall insulation value	R-20 or R13+3.8 c.i.	R-20 or R13+3.8 c.i.	R-20 or R13+3.8 c.i. (IECC)	Flash (2") and Batt (3.5") - R27***	Flash (2") and Batt (3.5") - R27***	Flash (2") and Batt (3.5") - R27***	Flash (2") and Batt (3.5") - R27***	Flash (2") and Batt (3.5") - R27***	Flash (2") and Batt (3.5") - R27***	*
GC forms and requirement complexity (1-5, 5 being most complex)**	N/A	N/A	2	2	3	2	3	5	3	*
Comparison cost of program certification fees***	N/A	N/A	N/A	\$0	\$1,200/bldg registration + \$0.04/sf for cert. (~\$4,000)	\$0	\$600/bldg + \$30/unit = \$3,600	\$1080/unit up to 2,500 sf	\$500 pre-review fee	N/A
Overall project cost increase (1-5, 5 being the most costly)**	N/A	N/A	1 - 3	2	4	1	1	5	2	*
Complexity and number of requirements (1-5, 5 being most complex)*	1	1	3	3	4	3	3	5	4	*

*Always consult your local county AHJ for additional requirements that may vary from this list

**We always encourage the use of a cost estimating firm or GC for additional assistance with sustainable program cost requirements and variations that may be present in any region

***These are recommended values, we also recommend the use of a sustainability consultant for additional information and the most up to date sustainable program requirements

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