



Austin Energy Green Building Residential Rating Development Update

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History & Mission

Austin Energy Green Building developed the first rating system in the U.S. for evaluating the sustainability of buildings, creating a model for many other cities as well as the U.S. Green Building Council's LEED certification system.

Since 1991, Austin Energy Green Building has provided:

- Ratings and programs
- Education and outreach
- Advocacy and planning

Mission

To cultivate innovation in building and transportation for the enrichment of the community's environmental, economic and human well-being



Goal: Conservation

Energy + Water + Materials

- Save money
- Reduce pollution
- Reduce resource extraction/waste
- Reduce the need for landfills
- Support the City of Austin Climate Protection Plan
- Support the local economy
(focus on local materials & market development)



Goal: Quality of Life

Environment + Transportation + Education + Equity

- Promote healthier indoor & outdoor environments
- Promote transportation options that work for everyone
- Increase human health & well-being
- Improve construction worker health and safety
- Provide buildings that work for everyone



Austin Energy Green Building Ratings

Austin Energy Green Building (AEGB) rates new construction and major renovation projects for three markets



Single Family
Production & Custom Homes

16,445 Total Rated
15,233 Austin | 1212 Extended Area



Multifamily
Residential < 7 Stories

172 Total Rated
27,505 dwelling units

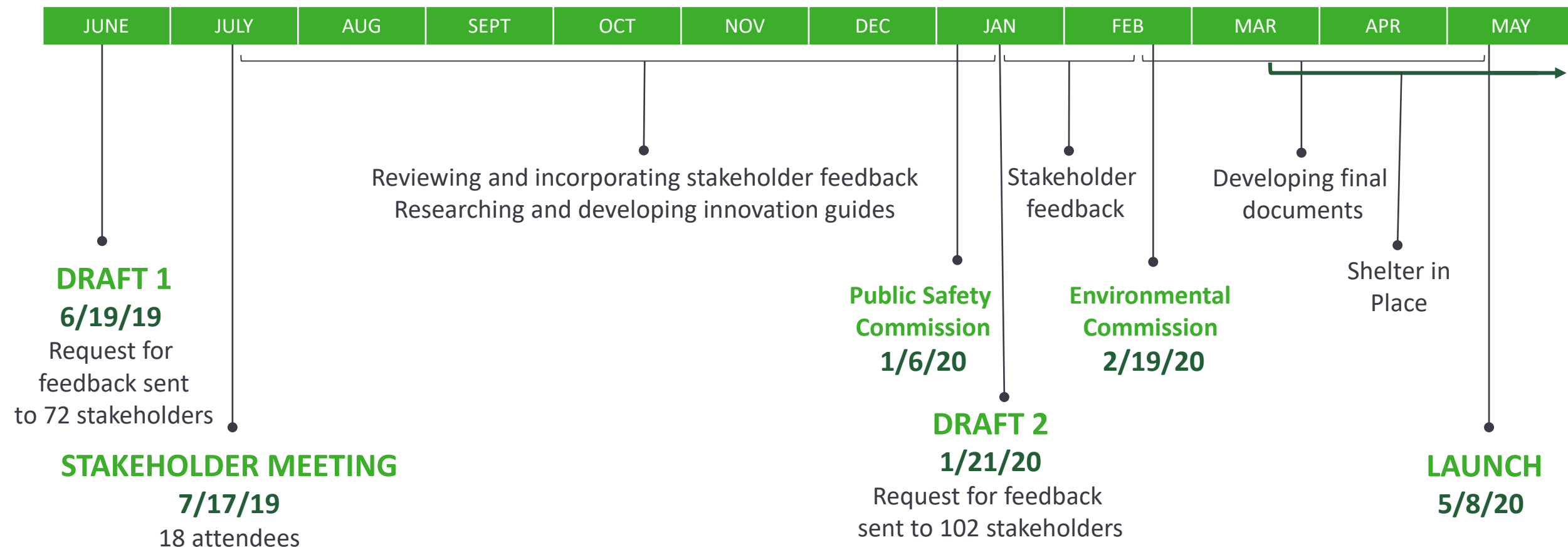


Commercial
& Residential ≥ 7 Stories

291 Total Rated
35,702,219 sq. ft.

16,908 AEGB Total Rated Projects
total reported from FY 1991 - 2019

Residential Rating Development Timeline



Stakeholder Summary

1ST ROUND	BASIC REQUIREMENTS	EDUCATION & EQUITY	SITE	ENERGY	WATER	MATERIALS & RESOURCES	HEALTH	TEAM
SINGLE FAMILY	19	1	7	10	3	15	18	
MULTIFAMILY	10	2	1	6	0	6	7	1

- Sent to 72 stakeholders
- 12 individuals provided 106 comments

2nd ROUND

- Sent to 102 stakeholders
- 7 individuals provided 34 comments or questions
- Broad range of topics - 3 themes
 - Cost, flexibility and ease of use
 - Products, Materials, Design strategies to address health concerns
 - Additional clarifications or definitions on how to achieve certain measures



Excerpt from HB 2439

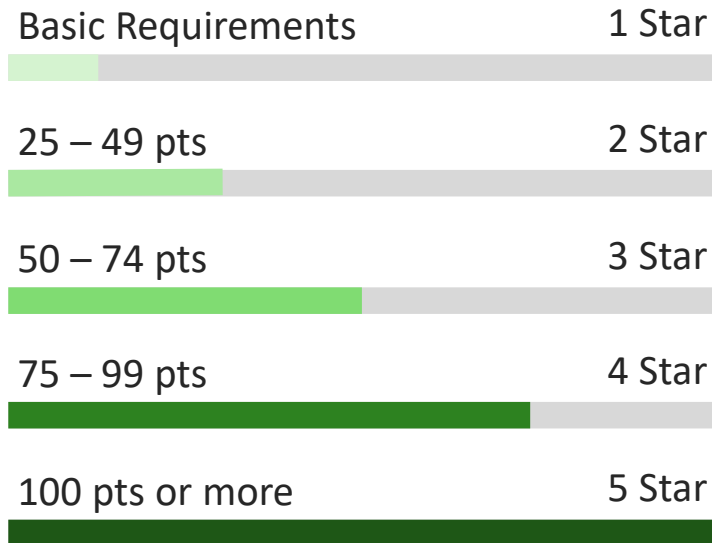
(a) Notwithstanding any other law and except as provided by Subsection (d), a governmental entity may not adopt or enforce a rule, charter provision, ordinance, order, building code, or other regulation that:

(1) prohibits or limits, directly or indirectly, the use or installation of a building product or material in the construction, renovation, maintenance, or other alteration of a residential or commercial building if the building product or material is approved for use by a national model code published within the last three code cycles that applies to the construction, renovation, maintenance, or other alteration of the building; or

(2) establishes a standard for a building product, material, or aesthetic method in construction, renovation, maintenance, or other alteration of a residential or commercial building if the standard is more stringent than a standard for the product, material, or aesthetic method under a national model code published within the last three code cycles that applies to the construction, renovation, maintenance, or other alteration of the building.

2020 Single Family Rating

The star rating achieved by a project is determined by the number of sustainability measures incorporated into the project.



+ Star level requirements



Single Family

2020 New Basic Requirements

- Digital Ventilation Controller
- Electric Vehicle Readiness



Energy & Water

Water Heater Efficiency

- More emphasis on heat pump water heaters

Residential Commissioning and Additional Testing

- Added points for commissioning HVAC system
- Added points for building envelope commissioning

High Efficiency Fixtures and Appliances

- Reduced points for LED lighting

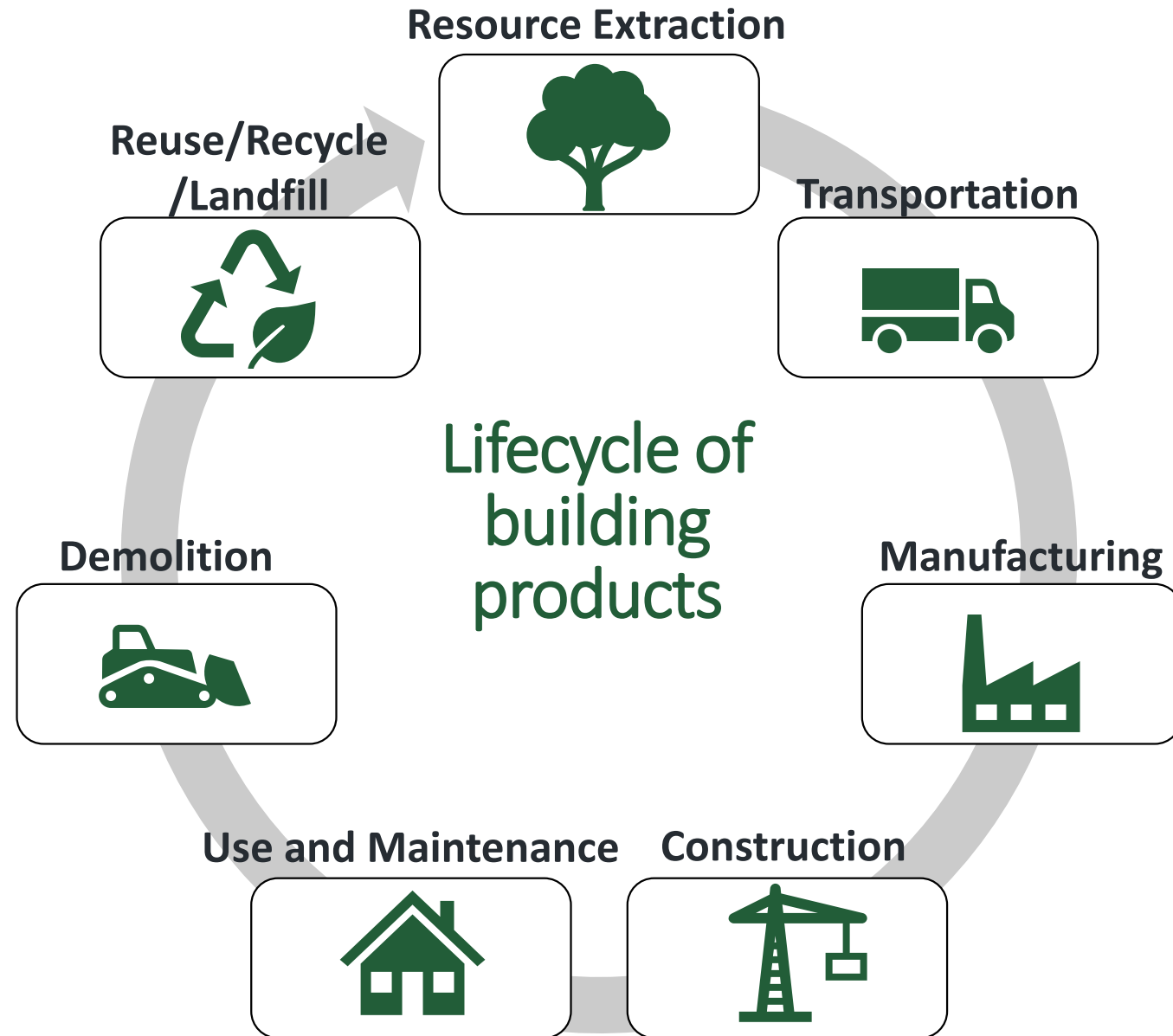
Electric Readiness

- Aligning with 2021 IECC code requirement

Indoor Water

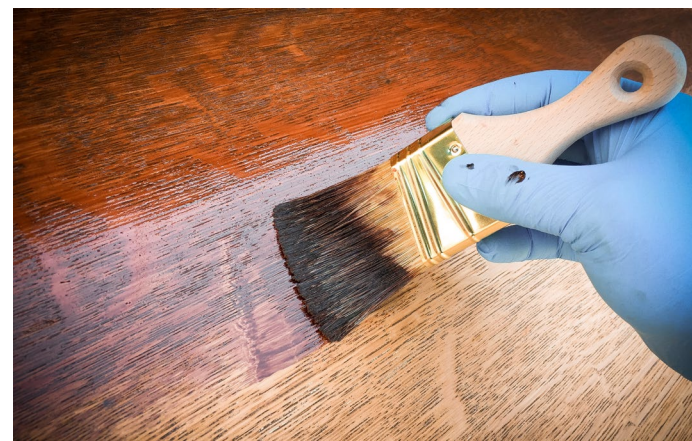
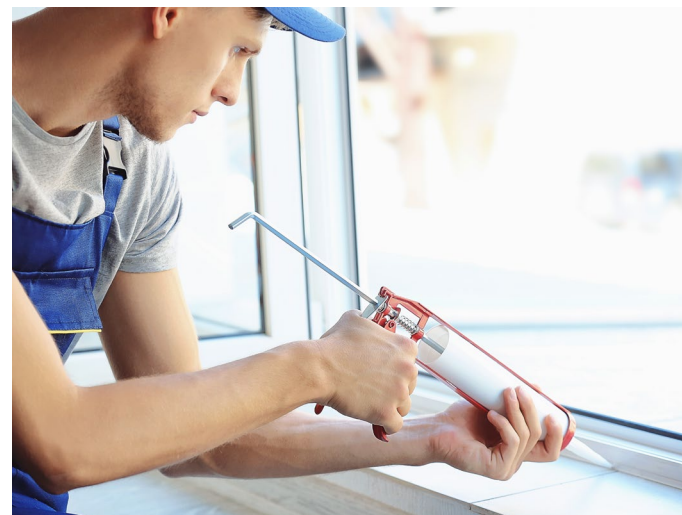
Water Efficient Home





Product Evaluation

#durable, #low emitting, #certified,
#transparency



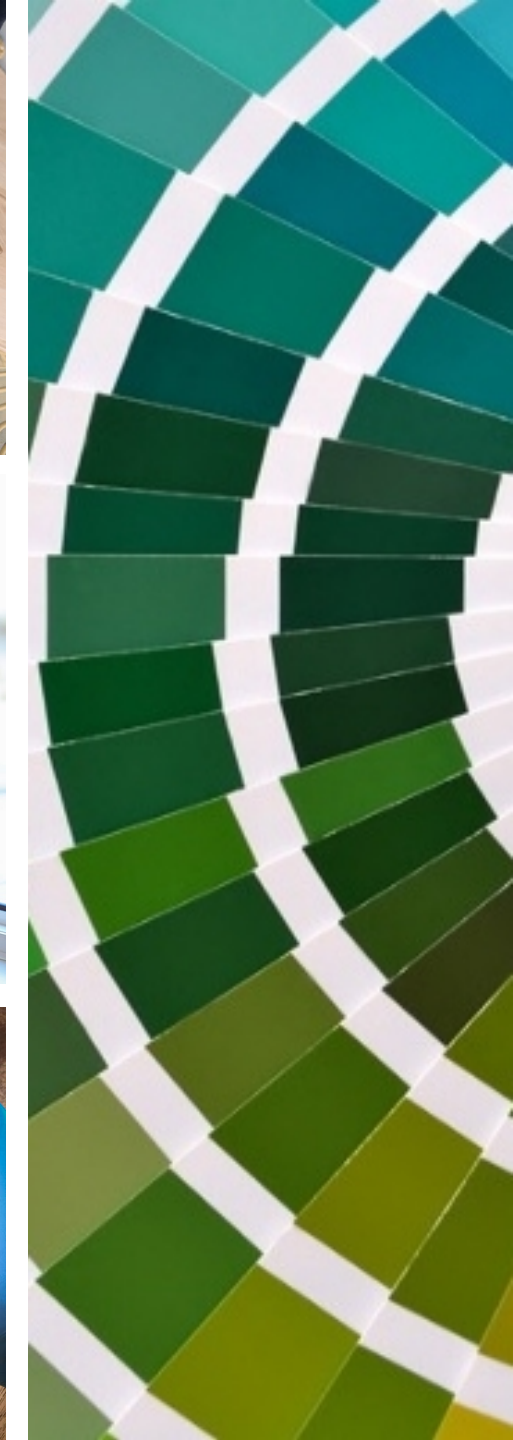
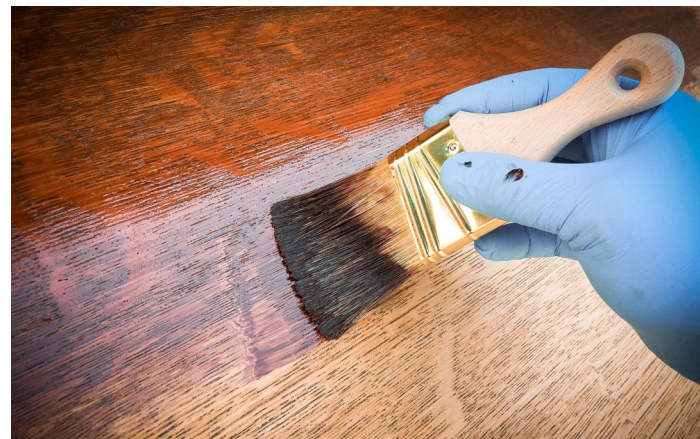
Health & Materials

Durable Finished Floor: vinyl products no longer accepted to achieve these points

Improved Indoor Air Quality:

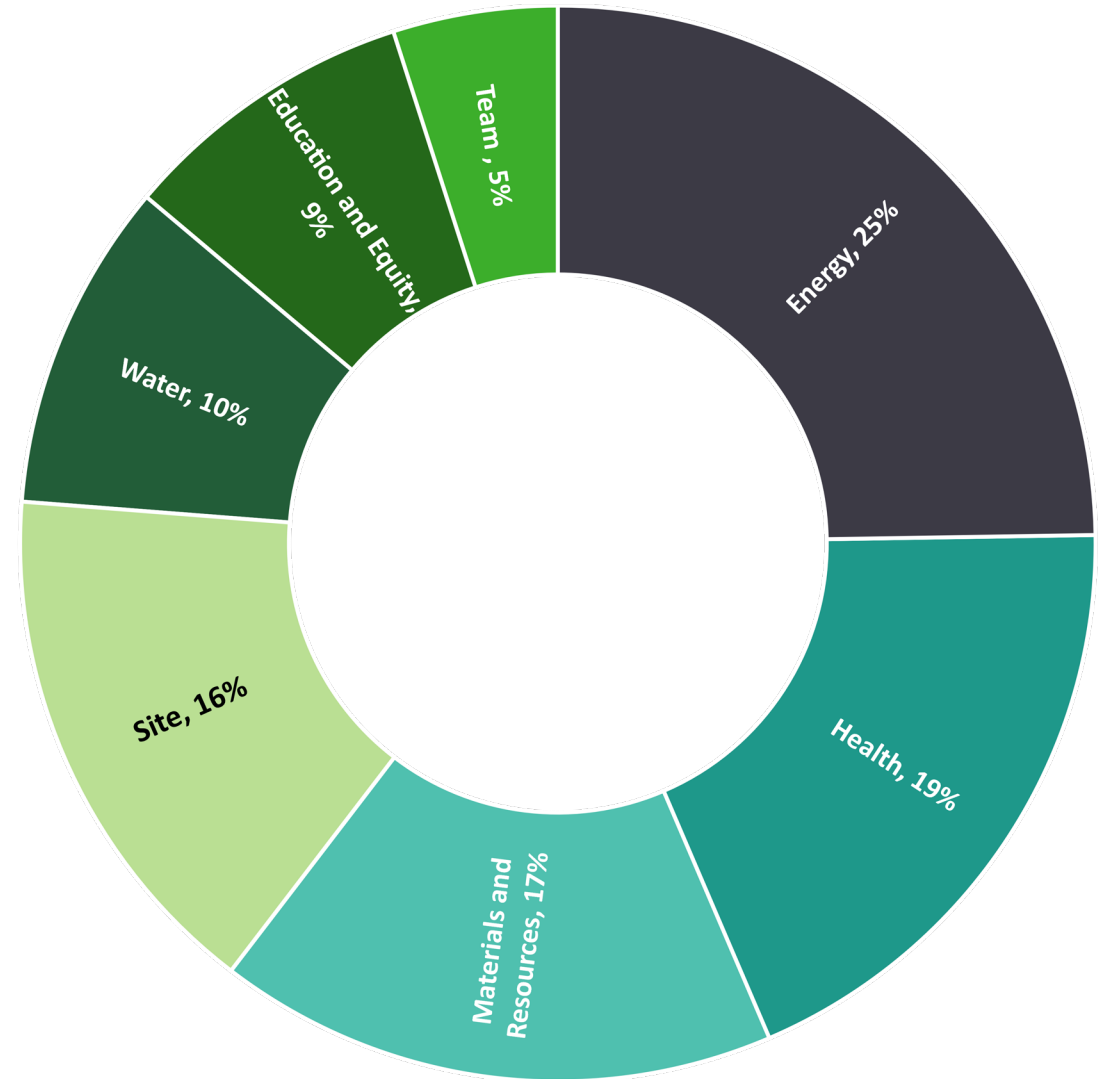
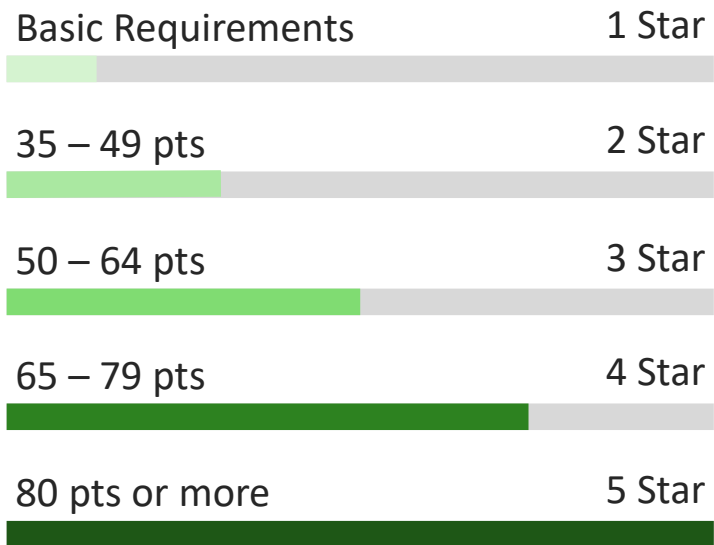
- New point for GS 11, Green Guard Gold or SCS Indoor Advantage Gold paints without APE's
- New point for Green Guard Gold or SCS Indoor Advantage Gold sealants
- Changed cabinet point to require no added urea-formaldehyde.

Dedicated Dehumidification: (new points)



2020 Multifamily Rating

The star rating achieved by a project is determined by the number of sustainability measures incorporated into the project.



Multifamily

2020 New Basic Requirements

- Digital Ventilation Controller
- Exhaust fans vented to outside at all cooktops
- All ductwork registers and grills kept covered during construction
- Projects must demonstrate irrigation water demand reduction of 30% from the baseline
- Updated recycling capacity requirements



Energy & Water

Prescriptive Energy Performance

- Reduced points for LED lighting
- Removed points for standard gas appliances

Additional Testing and Quality Installation

- Grade 1 insulation
- 100% testing

Electric Readiness

- Aligning with 2021 IECC code requirement

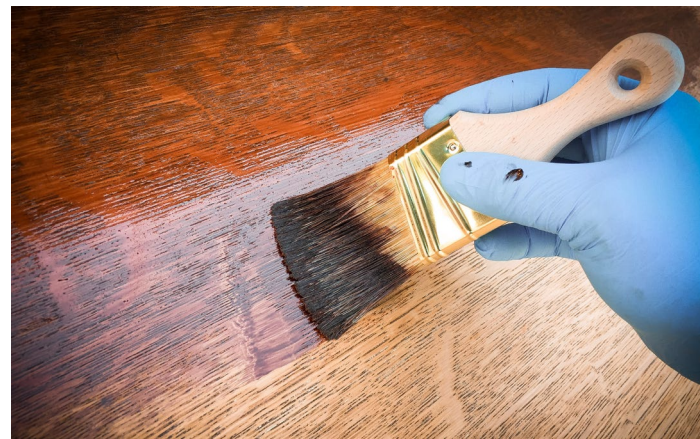
Irrigation Controls

Water Use Benchmarking



Health & Materials

- Auditory Comfort (NEW)
- Interior Paints and Coatings (NEW)
- Composite Wood
- Humidity Control: 3 points for dedicated dehumidification system with programmable relative humidity controls
- Durability (NEW)
- PVC's and Phthalates: increased number of points for choosing PVC free materials



Site

Electric Vehicle Readiness

- 10% of all new parking

Equity

Housing Affordability

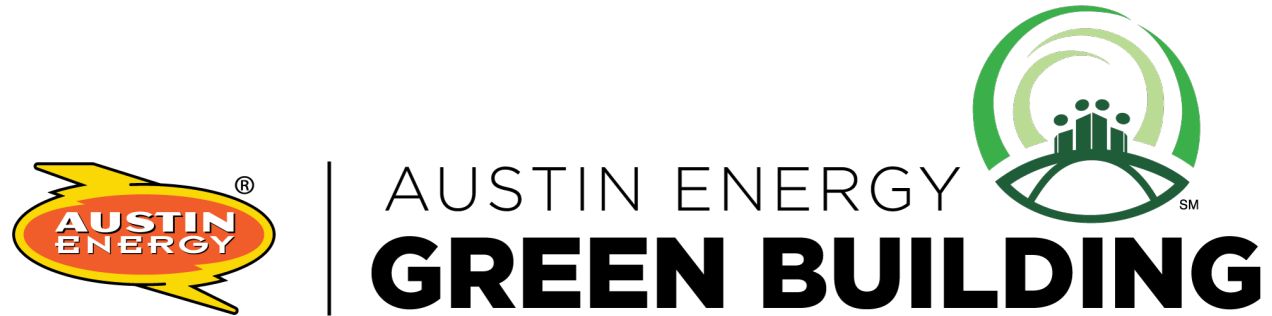
- Added an affordability calculator

Car Free Living

- New points for accommodating electric bikes and scooters



INNOVATION



Backup slides

PROPOSAL

1ST ROUND RESPONSE

BASIC REQUIREMENTS	VOCs from caulk, sealant, and adhesive products should comply with the revised lowered emission levels of SCAQMD Rule 1168.	This suggestion is addressed in the 2020 Multifamily Guide. (Health: Interior Sealants and Adhesives and Health: Exterior Applied Products)
	Polystyrene and polyurethane insulation board should be given negative points. Aerogel will be allowed as an alternative insulation material for thermal bridging applications	Philosophically, AEGB has avoided the use of negative points. Using a punitive mechanism has the potential to make it more difficult to "meet people where they are" and encourage wider participation in the rating system.
	a. Glazed tile should prohibit heavy metals being used in the pigments. b. Any carpet used in a home must be certified for VOC emissions by Underwriters Laboratories' GREENGUARD Gold program or the Carpet & Rug Institute's Green Label Plus program. It should be free of PVC, fluoropolymers, halogenated fire retardants, and coal fly-ash fillers. c. Carpet backing should not have recycled content that contains halogenated flame retardants. d. Epoxy floor adhesives that contain BPA or other phenol chemicals substitutes should be prohibited. e. Polyurethane floor adhesives should be given negative points.	a. – d. AEGB does not feel it would be appropriate to incorporate this suggestion into the rating system <u>as a basic requirement</u> at this time. Further market research will be conducted to determine its efficacy in the multifamily construction market. e. Philosophically, AEGB has avoided the use of negative points. Using a punitive mechanism has the potential to make it more difficult to "meet people where they are" and encourage wider participation in the rating system.
	a. PVC should be prohibited in all building products where cost-competitive substitutes exist. Such substitutes exist for flooring, doors, siding, window frames, blinds and fenestration, shower curtains, fence and decking material, wallpaper, and plumbing pipes for water supplies. b. Antimicrobial chemicals should be prohibited in all building products with the exception of its use as a preservative in products such as paint, sealants, and adhesives.	AEGB does not feel it would be appropriate to incorporate this suggestion into the rating system as a basic requirement at this time. Further market research will be conducted to determine its efficacy in the multifamily construction market.
	LEDs or lamp technologies of equal energy efficiency should be used throughout the home. The minimum efficiency should be based on requirements for Energy Star lighting products.	Due to a diversity of stakeholder opinions on the matter of issues like Electromagnetic Frequencies (EMF), and LED light properties, LEDs are not everybody's first choice for lighting. AEGB is invested in "meeting people where they are," and implements basic requirements in accordance with this philosophy.

PROPOSAL

1ST ROUND RESPONSE

MATERIALS		
	Maximize hard surface flooring, without vinyl.	This suggestion will be addressed in the 2020 Single Family Guide. (Materials and Resources: Durable Finished Floor)
	Wood floors that are durable should be defined as products rating at least 1,200 on the Janka wood-hardness scale. Extra points should be given for higher-rated wood flooring on this scale unless it is from endangered or threatened species	Materials and Resources: Durable Finished Floor of the 2020 Single Family Guide specifies flooring materials that do not fulfill the measure if installed in the measure language.
	The definition of rapidly renewable floors should be defined, and include linoleum, cork, and biobased resilient flooring with at least 80% renewable and/or inert mineral content. No orthophthalates should be contained in them. The definition of durable floors should eliminate vinyl (PVC) composition tile.	AEGB does not feel it would be appropriate to incorporate this suggestion into the rating system at this time. Further market research will be conducted to determine its efficacy in the single family construction market. ** We developed an education resource document on these topics providing additional definitions and background on durable and rapidly renewable flooring
	Floors installed without conventional adhesives (stained concrete, floating floors, tack strips) or with peel-and-stick materials, should be given extra points.	AEGB does not feel it would be appropriate to incorporate this suggestion into the rating system at this time. Further market research will be conducted to determine its efficacy in the single family construction market.
	AEGB needs to remove [composite lumber] as a requirement from the Single Family Home program.	This suggestion will be addressed in the 2020 Single Family Guide.
	Extra points should be awarded for cabinets and composite lumber products that exceed the national standard for emissions. These materials, ranked in order of environmental preference, include: 1) solid wood; 2) composites with No Added Formaldehyde (NAF); and 3) composites with Ultra-Low Emitting Formaldehyde (ULEF) Extra points should be awarded for cabinets and composite lumber products that are manufactured in the Central Texas region.	This suggestion will be addressed in the 2020 Single Family Guide.
	Window frames made of other materials than PVC and ABS plastic that meet Energy Code (e.g. Fiberglass, wood) should receive extra points. I found it inconsistent that the draft for Multifamily offered points for PVC-free materials (windows, doors, flooring), but this was ignored in the Single Family draft (except for awarding points for non-vinyl durable floors). There were also other common PVC building materials (fencing, fenestration, shower curtains, siding, supply plumbing, wallpaper) that were totally ignored in both drafts.	This suggestion will be addressed in the 2020 Single Family Innovation Guide (Materials and Resources Innovation Point: PVC and Phthalates) **We ended up including in the rating rather than as an innovation

PROPOSAL

1ST ROUND RESPONSE

HEALTH	Paints and coating products that are environmentally superior should receive extra points. These include wall and ceiling paints: A) made primarily of natural materials; B) that are mineral based, and C) manufactured without APEs.	This suggestion will be addressed in the 2020 Single Family Guide. (Health: Improved Air Quality)
	The extra points for use of wall and ceiling paint that does not exceed 10 grams per liter should include the VOCs in tints	This suggestion will be addressed in the 2020 Single Family Guide. (Health: Improved Air Quality)
	I found it curious and inconsistent that the draft for Multifamily offered a point for sealants and adhesives with restricted emissions per SQAQMD Rule 1168, but this was absent in the Single Family draft. I also think that the Rule 1168 in both the Single Family and Multifamily drafts should be a requirement and not an option.	This suggestion will be addressed in the 2020 Single Family Innovation Guide. (Health Innovation Point: Exemplary Indoor Air Quality) ** Points for sealants included in the rating rather than as an innovation
	FGD content in wallboard should be limited to no more than 5% of total content. Wallboard with 0% FGD and/or use of wall material with No Added Formaldehyde (NAF) should receive extra points. These products should be certified for reduced air emissions by programs such as Underwriters Laboratories' GREENGUARD Gold and Scientific Certification System's Indoor Air Advantage Gold.	This suggestion will be addressed in the 2020 Single Family Innovation Guide. (Materials and Resources Innovation Point: Environmentally Preferable Products) ** We have not yet released this innovation still working with stakeholders on specific language and capturing the broad intent.
	Points for not using gyp. bd. (Use wood, plaster, tile, metal, etc. instead)	
	Under "Interior wall and ceiling paints" give point to natural finishes such as natural paint (as above), natural oil/wax finishes or no finish, with the option to submit product contents instead of certification.	
	Points for not using gyp. bd. (Use wood, plaster, tile, metal, etc. instead)	
	Encourage practices that minimize EMF hazards. (Such as a master switch to cut off power at the bedroom.)	Right now there is not sufficient scientific consensus demonstrating the effect on human health from Electromagnetic Frequencies on the scale of single family houses. AEGB will continue to seek out the latest research on EMF and reconsider this idea at a later date.

PROPOSAL

1ST ROUND RESPONSE

HEALTH	Installing windows with polyurethane foam or other toxic foams should be given negative points to encourage more benign products and installation methods. Polyurethane caulk, as a class, is considered the most hazardous of all common caulking materials, and should also be given negative points	Philosophically, AEGB has avoided the use of negative points. Using a punitive mechanism has the potential to make it more difficult to "meet people where they are" and encourage wider participation in the rating system.
	Deduct points for the use of spray foam insulation	
	Give additional points for the use of cellulose insulation	This suggestion will be addressed in the 2020 Single Family Innovation Guide (Materials and Resources Innovation Point: Low-Carbon Building Strategy) ** We have not yet released this innovation still working with stakeholders on specific language and capturing the broad intent.
	I found it inconsistent that the draft for Multifamily offered points for certain flooring that is FloorScore certified. However the Single Family draft does not use this certification. FloorScore certification should be used for both rating systems.	AEGB does not give points for Floorscore flooring in its single family rating because Floorscore engineered wood, for example, is not inherently superior to solid hardwood, tile, or concrete. AEGB incentivizes that glues, and not just flooring, to be approved, and flooring without glues should be the least toxic. In multifamily projects, hardwood floors would not be an alternative to engineered wood, so this same tradeoff would not arise.
	HVAC system includes a dedicated dehumidifier, can be ventilating or not.	This suggestion will be addressed in the 2020 Single Family Guide. (Health: Dedicated Dehumidification)
	Create a separate measure for air tightness beyond code.	This suggestion is addressed in the 2020 Single Family Guide. (Energy: Residential Commissioning and Additional Testing)