AUSTIN ENERGY GREEN BUILDING

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How it goes down:

I: Planning and Design Phase:

1. Letter of Intent: When zoning or other City of Austin criteria requires an AEGB Rating, please download, sign, and upload the signed Letter of Intent (LOI) to the "Documents" tab of the ORS.

2. Meetings: Your AEGB representative(s) would like to meet with the project team, as early in the process as possible … [and] at significant design phase milestones.

3. Review: AEGB representative(s) will provide a comprehensive review of the project, drawings, specifications, and other documentation applicable to the rating.

4. Conditional Approval: Upon satisfactory review of the building permit set, an AEGB Conditional Approval letter will be issued. For mandated AEGB projects, the Conditional Approval letter should be attached to the front of the Building Permit set at the time of intake with the Planning and Development Review Department (PDRD).

5. Design Phase Fees: Payment of the Registration Fee is due in accordance with the terms on the invoice and before AEGB can approve the Design Phase and issue the Conditional Approval. Once the Design Phase is approved, the Services Fee invoice will be initiated.

Development Type	Size	Registration	Services	Total
Single Family	Any	$50 per home certified	N/A	$50
Multifamily/Commercial	< 50,000 ft^2	$250 per building	$1,000 per building	$1,250
Multifamily/Commercial	50,000 – 250,000 ft^2	$250 per building	$3,500 per building	$3,750
Multifamily/Commercial	> 250,000 ft^2	$250 per building	$7,000 per building	$7,250

II: Construction Phase:

1. Updates and Documents: Required construction phase documentation is described within the guidebook and on the ORS.

2. Site Visits: The AEGB representative(s) are also available as a resource to your Contractor and will verify the project's progress toward achieving certain measures directly on site.

3. Construction Phase Approval: The AEGB representative(s) will conduct site visits and review the submitted construction phase documentation in order to determine achievement of the Basic Requirements and additional measures in the Construction Phase. Upon satisfactory review of all Basic Requirements and voluntary measures pursued by the project, an AEGB Final Approval letter will be issued. Projects may continue efforts toward achieving a higher rating after the Final Approval is issued. The Final Approval will appear in the "Documents" tab.

4. For mandated AEGB projects, this Final Approval may be necessary to acquire the Certificate of Occupancy.

5. Construction Phase Fees: Payment of the Services Fee is due in accordance with the terms on the invoice and before AEGB can issue the Final Approval.

III: Close-Out Phase:

1. Rating: The Close-Out Phase offers the project an opportunity to celebrate the team's successes as AEGB confirms and awards the final Rating.

2. Professional Directory: Project team members may verify their Company Profile and confirm their preference to be included in the AEGB Professional Directory.

3. Case Study: Your AEGB representative(s) will assist in developing and publishing to our website a project Case Study using the AEGB Case Study template.

4. Certificates and Plaque: All AEGB rated projects receive Certificates listing the participating team members.

5. All commercial projects receiving an AEGB Rating are eligible to display the AEGB plaque on the building. AEGB provides the plaque free of charge to all commercial projects achieving 3, 4, or 5-Star ratings.

The Checklist

Download the .xls scorecard
Download PDF scorecard
Compiled from the Commercial Guidebook

I. MANDATORY MINIMUMS

1. Plans and Specifications — how and what to document.

2. Current Codes and Regulations — must be met.

3. Building Systems Commissioning — establish organizational systems.

4. Building Energy Performance:

    a. Meet the requirements of the 2015 International Energy Conservation Code, Section C406.2 re more efficient HVAC equipment performance.
    b. Surpass current Austin Energy Code requirement for building interior lighting power by 15%, and surpass the requirement for parking garage lighting power by 15%. OR demonstrate at a minimum a 5% improvement (3% if major renovation) in the energy cost performance of the total building compared to a baseline building.

5. Outdoor Water Use Reduction:
    a. OPTION 1 - No Irrigation Required: Demonstrate that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.
    b. OPTION 2 - Reduce or Eliminate Irrigation: Reduce the project's potable landscape irrigation water demand by 30% from the calculated baseline for the site's peak watering month as calculated in the AEGB Irrigation Calculator.

6. Indoor Water Use Reduction
    a. OPTION 1 - Building Performance Requirements: Demonstrate a 5% reduction in building water use over the baseline as calculated in the AEGB Building Water Use Reduction Calculator
    b. OPTION 2 - Prescriptive Performance Requirements. Install water efficient flush and flow fixtures that do not exceed the flush and flow rates in Table 1.
    c. AND TABLE #2 - REQUIRED

Table 1: Maximum Flush and Flow Rates for Building Plumbing Fixtures

Fixture or Fitting	Flush/Flow Rate
Water Closet	1.28 gpf [1]
Urinal	0.5 gpf
Public Lavatory Faucet	0.5 gpm
Private Lavatory Faucet	1.0 gpm
Kitchen Faucet [2]	1.8 gpm
Showerhead	2.0 gpm

Table 2: Process Water Use Requirements

Appliance or Water Use	Requirement
Residential-style Dishwashers	ENERGY STAR or performance equivalent
Pre-rinse Spray Valves	≤ 1.3 gpm
Ice Machine	ENERGY STAR or performance equivalent and use either air-cooled or closed-loop cooling, such as chilled or condenser water system
Water Feature	Use at least 50% non-potable water supply

7. Low-Emitting Materials

Paint Type	VOC Limit (g/L) *
Non-flat Topcoat	100
Flat Topcoat	50
Primer or Undercoat	100
Anti-Corrosive Coating	250

8. Storage and Collection of Recyclables — as expected.

9. Construction Waste

    a. Option 1: Divert at least 50% (by weight) of non-hazardous construction and demolition materials, excluding excavated soil, stone, and land clearing debris, from landfill and incineration.
    b. Option 2: Recycle and/or salvage non-hazardous construction and demolition materials by sending the project's total commingled waste materials to a [registered] mixed-recovery processing facility.

10. Tenant Requirements — new for 2016. All future tenants must be on board with the program.

II. INTEGRATED PROJECT DESIGN

Intent: To develop an early understanding of the relationships between building systems and the natural environment, set sustainability goals early in the design process, and implement green design and construction strategies to achieve a high-performance and cost-effective building.

III. SITE

1. 1: Environmental Sensitivity
    a. Project site is not in the Drinking Water Protected Zone, which includes the Barton Springs Zone, Barton Creek Watershed, Edwards Aquifer Recharge and Contributing Zone, and Balcones Canyon Land.
    b. Project site is not a Greenfield.

2. Desired Development: Project site is located within the Urban Watershed Desired Development Zone.

3. Density: Project site is located within one of the centers or corridors as defined in the Imagine Austin Comprehensive Plan Growth Concept Map.

4. Diverse & Walkable Communities:
    a. Building is connected to neighboring properties via pedestrian and/or bicycle-only paths (shading is preferred) that are separate or protected from vehicular traffic.
    b. Locate the building so that any functional entry is within 1/2-mile walking distance to at least 10 distinct basic services.

5. Brownfield Redevelopment:
    a. Develop on a site defined as a brownfield and requiring remediation by a local, state, or federal authority. Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.
    b. Remediate site of contamination using established technologies that have minimal disruption on the site's natural features above and below ground.

6. Site Specific Design — as expected.

7. Public Transportation — needs to be close by. For detailed requirements see full PDF.

8. Bicycle Use — storage and showers, &c. See PDF.

9. Parking Capacity
    a. OPTION 1 - No New Parking. If no new parking is provided in the building, the project must demonstrate how occupant transportation will be alternatively managed. Parking may be provided in a shared, off-site garage. OR
    b. OPTION 2 - Projects with Parking Minimums. Provide 20% less parking than the minimums defined in the Land Development Code Chapter 25-6, Appendix-A, Part 1, with preferred parking for carpools and vanpools for 5% of total parking capacity.
    c. OPTION 3 - Projects without Parking Minimums: For areas with no minimum parking capacity requirement provide 60% less than the base ratios defined in the Land Development Code Chapter 25-6 Appendix A, Part 1, with preferred parking for carpools and vanpools for 5% of total parking capacity.

10. Electric Vehicle Charging Station — for up to 6% of parking spaces, maybe less. See PDF.

11. Protect & Restore Habitat
    a. Preserve and protect 40% of all portions of the site identified as greenfield area from development and construction activity.
    b. Restore 30% of all portions of the site identified as previously developed with native or adapted vegetation. Turfgrass may not exceed 25% of the contributing vegetated area. Athletic fields are excluded from calculations.

12. Beneficial Open Space

a. Provide outdoor open space equal to at least 30% of the total site area (including building footprint).
b. A minimum of 7.5% of the total site area (including building footprint) must be vegetated with native or adapted plants or have overhead vegetated canopy coverage. Turfgrass may not contribute to the native/adapted vegetated area, but may contribute towards overall open space.
c. Beneficial Open Space must be exterior space that is physically or visually accessible, and meets one of the following criteria:
    i. Communal site elements that accommodate outdoor dining, meetings, classes or other social activities
    ii. Pedestrian oriented hardscape, including but not limited to, sidewalks and trails.
    iii. Recreation oriented areas such as play grounds, pools, amenity decks, athletic courts or fields
    iv. Garden space that provides passive recreation opportunities, or is dedicated to food growing
    v. A "Protected or Restored Habitat" that provides elements of human interaction through trail access, viewing platforms or an interpretive signage component
    vi. Wetlands or vegetated wet ponds with average side slope gradients of 1:4 (vertical: horizontal) or less or Vegetated roofs

13. Access to local and regional produce
    a. OPTION 1: Implement a weekly local produce delivery program available on an elective basis to employees or residents of the building. OR
    b. OPTION 2: Implement a local produce purchasing policy for the building's cafeteria. OR
    c. OPTION 3: Integrate opportunities for agriculture, appropriate to the scale and density of the project, using the Floor Area Ratio (F.A.R.) as the basis for calculation. The garden must be available to building occupants for participation.

14. Heat Island Reduction
    a. OPTION 1: Provide any combination of the following strategies for 50% of the site hardscape.
        i. Vegetated open-grid pavement system (at least 50% pervious)
        ii. Paving materials or shade structures with a three-year aged solar reflectance (SR) value of at least 0.28. If three-year aged value information is not available, use materials with an initial SR of at least 0.33
        iii. New or existing plants that provide shade over hardscape within 10 years of building occupancy
        iv. Shade structures covered by energy generation systems, such as solar thermal collectors, and photovoltaics
    b. OPTION 2: Locate at least 50% of on-site parking spaces underground, or in structured parking with a concrete top deck surface, or roof material with a three-year aged SRI of at least 32. If three-year aged value information is not available, use materials with an initial SRI of at least 39 at installation. Parking garages with vegetated roofs or covered by energy generation systems also meet this requirement.

15. Light Pollution Reduction — complex, see PDF.

16. Integrated Pest Management — vague, see PDF.

IV. Energy

1. Energy:
    a. OPTION 1: Whole Building Analysis: Demonstrate at a minimum a 7% improvement (5% if major renovation), using one of the four metrics below, of the performance of the proposed building compared to a baseline building. Metrics follow. Points awarded according to table #1.
        i. Energy cost ($) – Total annual energy cost calculated for the building's energy consumption, using the actual energy rates that will apply to the project once it is in operation.
        ii. Site Energy (MMBTU) – Includes all energy consumed within the boundaries of the project site, from all sources.
        iii. Source Energy (MMBTU) – Includes the energy impact associated with the project upstream of the site. It is the energy necessary to generate and deliver all the Site Energy consumed by the building, from all sources.
        iv. Greenhouse Gas Emissions ($CO2_e$) – Total annual greenhouse gas emissions, in terms of carbon dioxide equivalents, of all energy consumed by the building, from all sources.

Table 1: Points for Energy Performance Percentage Improvements

Points	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
New Construction	7%	9%	11%	13%	15%	17%	19%	21%	25%	29%	33%	37%	43%	49%	55%	65%
Major Renovations	5%	7%	9%	11%	13%	15%	17%	19%	23%	27%	31%	35%	41%	47%	53%	63%

    b. OPTION 2: Prescriptive Requirements. For office buildings up to 50,000 square feet see table #2 below.

Table 2: Prescriptive Performance Requirements

Small to Medium Office Buildings (up to 50,000 square feet)			
BUILDING ENVELOPE: ROOF & WALLS	Roof insulation	Insulation entirely above deck	R-30.0 c.i.
	Walls	Steel-framed	R-13.0 + R-7.5 c.i.
		Mass	R-7.6 c.i.
BUILDING ENVELOPE: PROJECTION FACTOR	Vertical Fenestration	Exterior sun control (S, E, & W only)	PF-0.5
AUTOMATIC DAYLIGHTING CONTROLS	Daylighting (required for qualifying top-lit and side-lit areas)	Automatic controls	Per ASHRAE 90.1-2013, Section 9 (LIGHTING)
WATER HEATER	Service water heating	Gas water heater efficiency	Condensing type = 90% efficiency
		Elec. Storage EF (≤12 kW, ≥20 gal.)	EF > 0.99-0.0012 x volume
		Pipe insulation (d <1.5 in / d ≥ 1.5 in)	1 in. / 1.5 in.

2. Renewables: Points awarded as follows according to the percentage of energy generated on site (of the building's total projected usage, 4pts maximum for 10% generation).

3. Advanced Commissioning: use experienced consultants and contractors.

4. Advanced Energy Metering: install high tech meters per spec.

5. Demand Response: participate in a program to reduce peak-load in real time.

6. Green Energy: subscribe to program that derives or offsets fossils fuels with renewables.

7. District Cooling: Implement or subscribe to one such system. Intent: To increase demand for district cooling systems that make energy generation and distribution systems more efficient, increase system reliability, and reduce environmental impacts and greenhouse gas emissions.

V. Water

1. Outdoor Water Use:

Table 1: Irrigation Water Use Reduction Points

Points	1	2	3
Percentage water use reduction	50%	75%	100%

2. Indoor Water Use: for things like faucets, toilets, &c.

Table 1: Building Water Use Reduction Points

Points	1	2	3	4	5	6
Percentage water use reduction	10%	15%	20%	25%	30%	35%

3. Process Water: earn points for reduced water usage of appliances in commercial kitchens and labs. Complex — see PDF (52).

4. Stormwater Management — treat 50% of runoff both in quality and quantity.

VI. Quality of Interior Environment

1. Indoor Chemical & Pollutant Control
    a. Provide ventilation directly to the outside of the building

b. Construct a full-height, deck-to-deck partition or a hard lid ceiling enclosure between the space and adjacent occupied spaces.
c. Operate the space at a negative pressure relative to surrounding areas under all operating conditions, and verify through commissioning.

2. Green Housekeeping — as expected. See PDF for required product specs.

3. Daylighting Design
    a. OPTION 1: Illuminance Calculations. Demonstrate through computer simulations that illuminance levels from daylight sources are between 25 fc and 300 fc at 9 a.m. and 3 p.m. on a clear-sky day at the equinox for 75% of the regularly occupied floor area. Calculate illuminance intensity for sun (direct component) and sky (diffuse component) for clear- sky conditions as follows:
        i. Use typical meteorological year data, or an equivalent, for the nearest available weather station.
        ii. Select one day within 15 days of September 21 and one day within 15 days of March 21 that represent the clearest sky conditions.
        iii. Calculate levels on a horizontal surface at appropriate work height (30" by default).
        iv. Use the average of the hourly value for the two selected days.
    b. OPTION 2: Measurements. Demonstrate through indoor light measurements that daylight illuminance levels between 25 fc and 300 fc have been achieved for 75% of the regularly occupied floor area. With furniture, fixtures, and equipment in place, measure illuminance levels as follows:
        i. Take measurements on a clear day between 10 a.m. and 2 p.m.
        ii. Measure at appropriate work plane height (30 inches by default)
        iii. For spaces larger than 150 square feet, take measurements on a maximum 10-foot square grid.
        iv. For spaces 150 square feet or smaller, take measurements on a maximum 3-foot grid.
        v. Take and record at least one outdoor measurement

4. Daylighting Controls — Automatic Dimming switches to bring artificial lights < 35% rated output.

5. Views to the Outside — Glazing systems and interior partitions allow for a minimum of 75% of regularly occupied spaces a view of vision glazing (between 2'-6" and 7'-6" from finished floor height) and a view of the outdoors.

6. Individual Controllability — Install and commission systems that provide for individual controllability of one or more of the following: air temperature, radiant temperature, air speed, and humidity, for at least 50% of the building occupants, and for all shared multi-occupant spaces. Individual controls must be accessible to occupants of the space that they control.

7. Low Emitting Materials — as expected, see PDF for specs.
8. Moisture Protection — •
    a. No vinyl wall coverings or other vapor barriers, such as fiber reinforced plastic or vinyl (FRP or FRV) may be installed as the finish material on the interior of any exterior wall.
    b. Install effective building envelope drainage plane systems.

c. Design the building to be pressurized under all operating conditions, and verify through commissioning.

9. Acoustic Quality — isolate the building from external sources of noise as well as internal transmission from use and mechanical systems. Reverberation times are also specified. See PDF (60).

10. Outdoor Pollutant Control — Prohibit smoking near building entrances, air intakes, &c. , and install permanent doormats or grilles 6' long parallel to direction of travel at exterior entrances. (64)

11. Indoor Construction Air Quality — implement systems to maintain a certain quality of indoor air during construction.

VII. Materials and Resources

1. Additional Construction Waste Management: Divert at least 75% (by weight) of non-hazardous construction and demolition materials, excluding excavated soil, stone, and land clearing debris, from landfill and incineration. OR send the project's total commingled waste materials to a registered mixed-recovery processing facility.

2. Building Materials Use Reduction:
    a. OPTION 1 - Existing Building Reuse (1- 3 points) Retain existing non-hazardous building envelope (including exterior skin and framing, excluding window assemblies and non-structural roofing material), structure (including structural floor and roof decking), and interior non-structural elements (walls, doors, floor coverings and ceiling surfaces). Up to 3pts awarded for >60% reuse.
    b. • OPTION 2 - Whole Building Life Cycle Assessment (LCA) (1- 3 points) For new construction, conduct a life-cycle assessment of the project's structure and enclosure compared with a reference building. Projects may achieve 1 point for completion of a Whole Building Life Cycle Assessment. Projects demonstrating an overall reduction in life cycle impact compared to a reference building may achieve 2 points for a 5% reduction and, 3 points for a 10% reduction.
    c. OPTION 3 - Cradle-to-Cradle Certified Products (2 points) Install Cradle-to-Cradle v2 or v3 Silver or higher certified materials or products representing 2.5% of total building materials cost (excluding MEP), or five unique Cradle-to-Cradle v2 or v3 Silver or higher certified products (all divisions). Furniture may be included at the discretion of the project team.
3. Sustainably Sourced Materials — Use at least 25%, by cost, permanently installed materials and products that meet at least one of the criteria below. Up to 6 pts awarded for 75%.
    a. Salvaged or refurbished materials
    b. Building materials containing recycled content (the sum of post-consumer recycled content plus one-half of the pre-consumer content)
    c. Building materials and products extracted and/or manufactured (final assembly) within Texas
4. Certified Wood — At least 50%, by cost, of all new wood-based materials are certified in accordance with the Forest Stewardship Council (FSC) guidelines for wood building components.
5. PVC-Free — Use materials and products that do not contain PVC or Phthalates for five of the following categories (as applicable):

a. Flooring Systems (including carpet)
b. Wall Coverings (including wall base)
c. Window Treatments
d. Roofing Systems
e. Windows and Doors
f. Furniture
g. Irrigation System
h. Interior Electrical Systems
i. Interior Sanitary Waste Piping and Ventilation
j. Interior Domestic Water
k. Building and Site Stormwater Piping

VIII. Environmental Awareness and Social Justice

1. 1. Educational Outreach — Use the building as an educational tool to highlight the green building strategies implemented in the project: Provide at least two of the following Educational Services:
    a. A comprehensive signage program installed in the building and site to educate the occupants and visitors on the project's green features and the benefits of green building. Educational elements may include windows to view energy saving mechanical equipment and signage calling attention to water conserving plumbing fixtures or landscape features.
    b. A case study that educates design professionals and the public on the green building strategies implemented in the project. AEGB's template may be used to assist with developing your case study. The case study may be published on the AEGB website, at the discretion of AEGB, and with the permission of the project owner.
    c. An educational outreach program to educate the community on sustainable design, construction, and operations using the project as an example. This program may include regular guided tours of the facility, community workshops, or public presentations.

2. Construction Worker Equity — Abide by the Code of Conduct in construction contracting outlined in the Better Builder program that upholds sustainable workforce standards, and ensures that construction workers have safe, living wage jobs. Collaborate with the Workers Defense Project to develop a culture of construction site safety, proper training, and living wages from the top down. Req'd: signed agreement with the Workers Defense Project. See PDF for details (71).