

Sustainability at the Mueller Redevelopment

Green Building Update to the RMMA Commission

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Agenda

- Overview of Austin Energy Green Building (AEGB)
 - What is AEGB's role in the community?
 - What does it take to achieve an AEGB Rating?
- AEGB Results at Mueller
- Current Sustainability Projects

History and 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:

- Building ratings
- Education and outreach
- Advocacy and planning

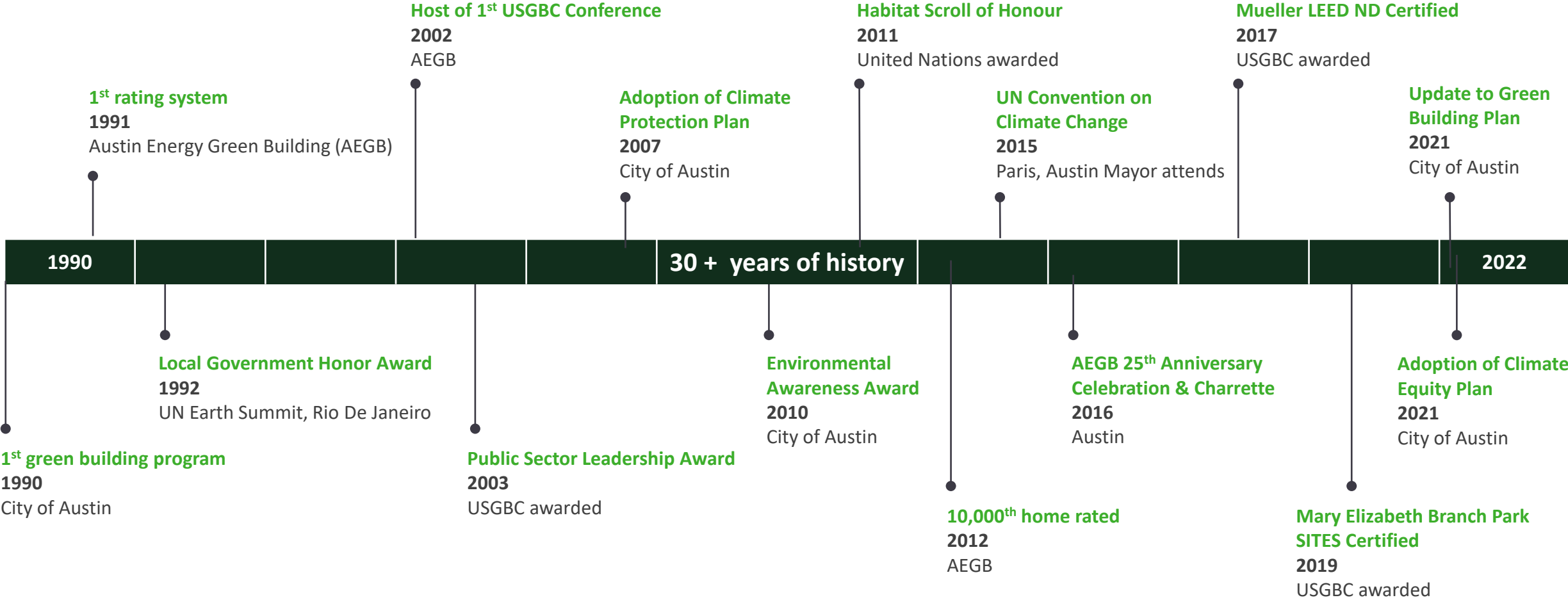
Mission

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



AUSTIN ENERGY
**GREEN
BUILDING**

Austin's Green Building Legacy



Austin Energy Green Building Ratings

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



Single Family

Production and Custom Homes

18,113

15.8 K Austin | 2.2 K Extended Area



Multifamily

Residential \leq 7 Stories

196

38.2 M sq. ft. | 32.8 K dwelling units



Commercial

And Residential 8+ Stories

327

41.4 M sq. ft. | 12 K dwelling units

18,636 rated projects

total reported from FY 1991 - 2021

Austin Energy Green Building

Local Sustainability Goals



Resource Stewardship:
Meet COA environmental initiatives including the Austin Energy Generation Resource Plan



Global Leadership:
Contribute to energy security + Climate Equity Plan



Environmental Responsibility:
Equitable access to Austin's environmental resources and highlight local culture



Workplace Advances:
Make green building the industry standard



Local Economy:
Foster green materials and job markets

Codes | Ordinances | Standards | Initiatives

Climate Equity Plan, City Initiatives & Austin Energy Goals (2030)

- Imagine Austin
- Zero Waste Plan
- Watershed Protection
- Austin Water Forward
- Vision Zero
- Austin Energy Resource, Generation and Climate Protection Plan to 2030
 - No new carbon generating assets
 - 100% carbon-free by 2035
 - 375 MW of local solar, with 200 MW customer-sited
 - 1200 MW conservation goal with 225 MW of DR capacity
 - 40 MW local thermal storage





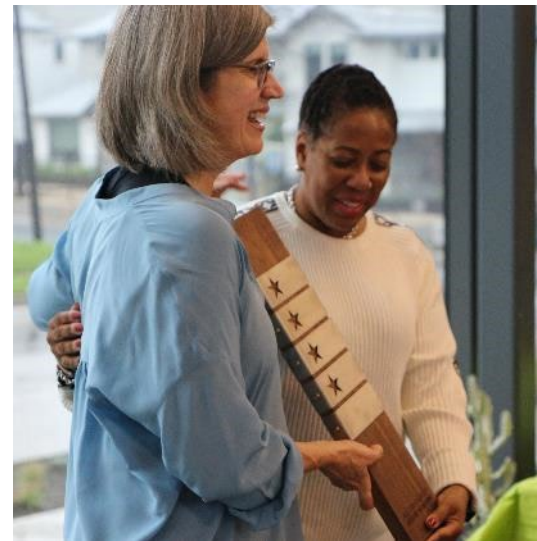
Austin Climate Equity Plan

The community's 2030 Climate Equity Goals include:

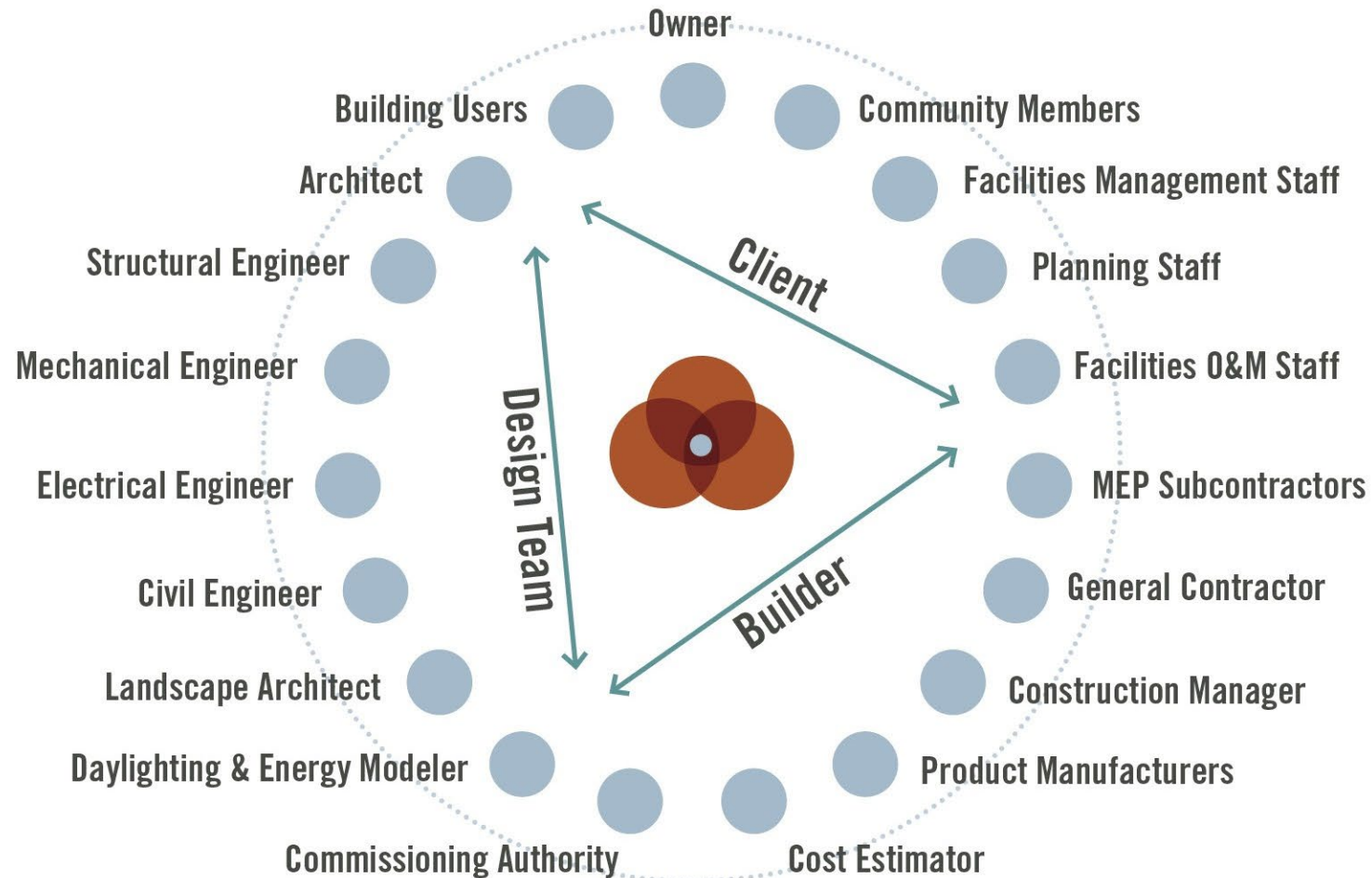
- Net-zero carbon for all new buildings
- 30% less natural gas-related emissions
- 25% less community-wide greenhouse gas emissions from refrigerant leakage
- 40% less embodied carbon footprint of local building materials
- Community-wide water demand of approximately 152,000 acre-feet per year
- 50% of trips in Austin are made using alternative transportation
- 40% of total vehicle miles traveled in Austin are electrified

Why Build Green?

- Buildings account for 40% of energy use in the United States
- Americans spend 90% of their time indoors, where pollutants can be 2-5x more concentrated than outdoors; our environment has more influence on our health than our genes, our habits and our access to medical care — combined!
- Sustainable practices support equity, the environment and the local economy



Integrative Approach - Key Stakeholders



Adapted from graphic by Bill Reed



AEGB Ratings

A project earns points from sustainability measures that determine its star rating.

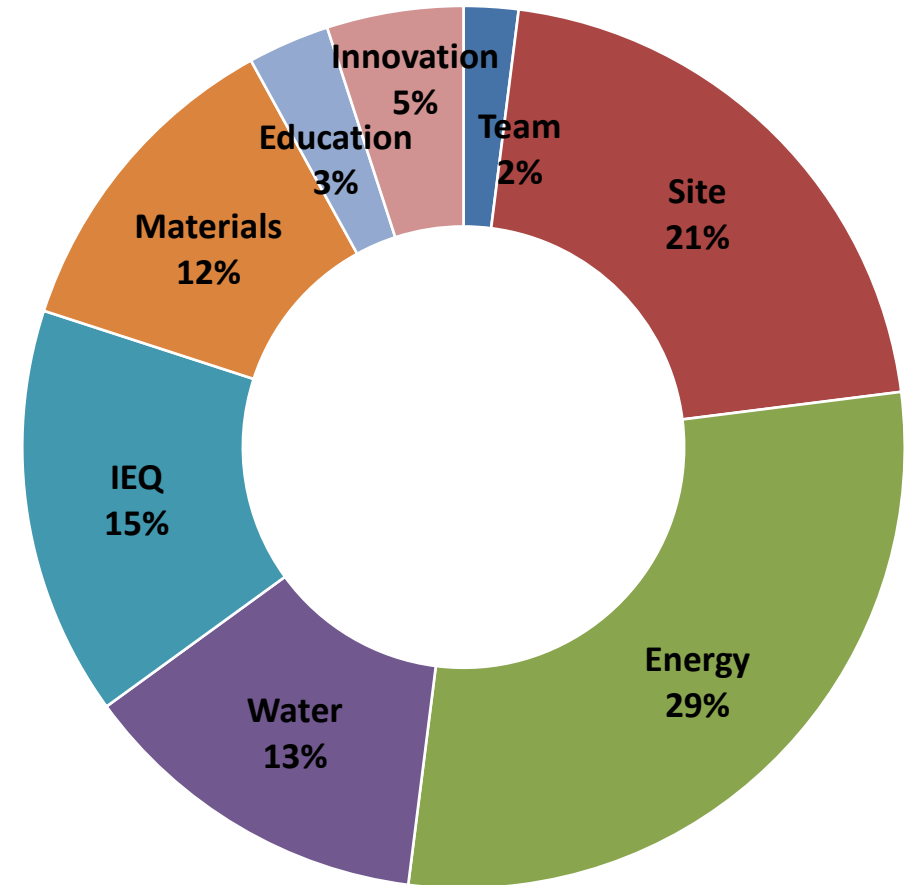
10 Basic Requirements

| | |
|----------------|--------|
| 35 – 44 pts | 2 Star |
| 45 – 54 pts | 3 Star |
| 55 – 74 pts | 4 Star |
| 75 pts or more | 5 Star |

Commercial Rating – Point Allocation

2016 Commercial Rating

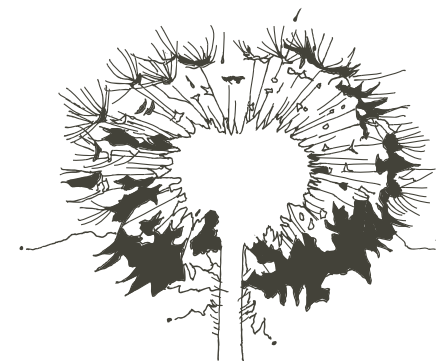
| Categories | Points |
|------------------------------------|------------|
| Integrated Design (Team) | 2 |
| Site | 21 |
| Energy | 29 |
| Water | 13 |
| Indoor Environmental Quality (IEQ) | 15 |
| Materials & Resources | 12 |
| Education | 3 |
| Innovation | 5 |
| Total | 100 |



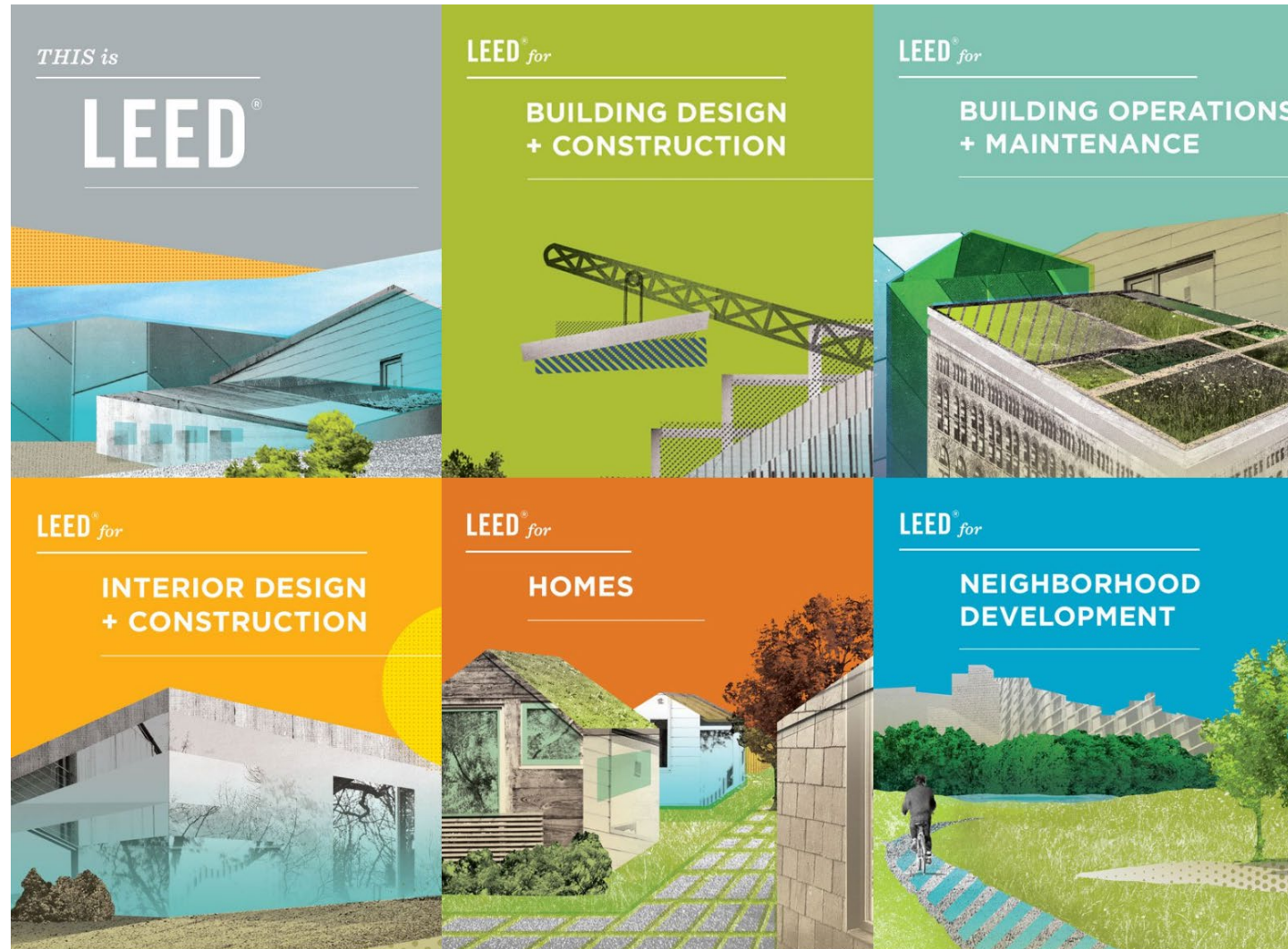
Rating System Alignment

AEGB provides local guidance for global sustainability initiatives.

AEGB, LEED, WELL, TRUE, SITES, the Living Building Challenge, etc. all work together to empower the industry to do our best work.



LEED Certification Systems





Mueller Design Guidelines

**Commercial Projects > 25,000 sq. ft.
Multifamily Projects**

2-Star AEGB Ratings
and/or
LEED Certification

Single Family Projects

3-Star AEGB Rating

Mueller by the Numbers

| Type | Unit | According to the Plan* | Results to Date |
|--|----------------|------------------------|------------------------------|
| Commercial Space | sq. ft. | 5.4 M | 2.6 M (48% built out) |
| Employees | people | 16,500 | |
| Retail | sq. ft. | 750 K | 627 K |
| Institutional, civic, office, other commercial | sq. ft. | 4.65 M | 2.4 M |
| | | | |
| Dwelling Units | units | 6,900 | 4,351 (63% built out) |
| New residents | people | 16,300 | |
| Apartments | units | 3,850 | 2,282 |
| Condos, single family homes, row houses, shop houses, Mueller houses | units | 3,050 | 2,069 |
| 25% of homes/apartments affordable | units | 1,725 | 1,272 |

Single Family



1,906 Rated Homes

- 3-Star: 1698
- 4-Star: 84
- 5-Star: 124

Total Savings

- 1,200 kW (Demand)
- 2,200 MWh (Energy)
- 32,500 tons construction waste diverted



Multifamily



2,145 Rated Units

- 1-Star: AMLI Phase I
- 2-Star: AMLI Phase II, Aldrich 51
- 3-Star: Mosaic, SYNC, Greenway Lofts, Wildflower Terrace, Overture at Mueller
- LEED Silver: Wildflower Terrace
- LEED Gold and 5-Star: The Jordan at Mueller
- LEED Platinum: AMLI Phase I and II

Total Savings

- 703 kW (Demand)
- 3,966 MWh (Energy)
- 9,472 Tons diverted (79%)
- 790,934 gallons irrigation (100%)
- 16.4 M gallons indoor (26%)



The Jordan at Mueller

Commercial



60 Rated Projects

2.6 million sq. ft.

Total Savings

- 6,558 kW (Demand)
- 19,794 MWh (Energy)
- 46,856 tons diverted (85%)
- 5.39 M gals irrigation (88%)
- 7.55 M gals indoor (32%)

Reclaimed Water Savings

- Irrigation: 24.7 M gals
- Projects that use reclaimed water indoors:
Mueller Central, Mueller Diamond, Frost Bank,
AISD PAC, HEB and Austin Energy Headquarters





AEGB 3-Star

- Neighbors Emergency Center
- Strictly Pediatrics at Mueller
- South Regional Retail
(26 at 3-Star)
- Mary Elizabeth Branch Park Pavilion

LEED Silver

- Mueller Retail Building 10
- The Thinkery
- Residence Inn
- Wildflower Terrace
- Austin Film Society – Armory Building

LEED Silver and AEGB 3-Star

- Starbucks
- Mueller Market District
- Mueller Cinema Building



AEGB 4-Star

- Satellite Dialysis
- Ella Wooten and John Gaines Parks
- Home Depot
- Alamo Drafthouse

LEED Gold

- Dell Children's Medical Center
- Dell Pediatric Research Institute
- Frost Bank
- SEDL

AEGB 4-Star and LEED Gold

- H-E-B
- Seton Administration Offices
- Mueller Central – Visitors Center
- Mueller Diamond
- Texas Mutual Insurance





AEGB 5-Star

- AISD Performing Arts Center

LEED Platinum

- Ronald McDonald House
- AMLI, Phase I and II
(LEED for Homes and LEED NC)

AEGB 5-Star and LEED Platinum

- Dell Children's Medical Center (2)
- Austin Energy Headquarters*
**LEED Rating on Track*



What do the Numbers Mean?

Annual Project Savings effectively:

- Planted 380,000 trees in Austin parks
- Removed 2,000 cars from Austin's busy roadways
- Provided electricity for 2,500 average Austin residences for a year



Current Projects

- Mueller Alpha and Bravo Office Buildings
- Origin Hotel
- AISD General Marshall Middle School
- Gemdale Medical Office Building
- DCMC 4th Bed Tower Expansion and Specialty Pavilion

AISD General Marshall Middle School



Gemdale Medical Office Building



DCMC 4th Bed Tower Expansion



Mueller Alpha Building



Origin Hotel



LEED ND Gold

Mueller is one of the largest projects to participate in the LEED Neighborhood Development certification

Goal: Silver

Achieved: Gold



Mueller Energy Center

The Mueller Energy Center provides chilled water cooling, steam for sterilization and onsite electric production to Seton's Dell Children's Medical Center. Other commercial projects can purchase chilled water for cooling their buildings.

2.1 M sq. ft.

Customer facilities supplied with chilled water

4,243 tons

Peak cooling



Solar at Mueller

Solar ready construction guidelines at Mueller allowed commercial and residential customers to readily install PV solar panels and served as a guide for the energy code's new solar ready ordinance.

813 kW

Commercial

Solar capacity on AEGB commercial rated buildings



Energy Storage at Mueller

Austin SHINES (Sustainable and Holistic Integration of Energy Storage and Solar PV) paired solar and energy storage with a control system at residential, commercial and grid scale applications

1.5 MW/2.5 MWh

Capacity of battery storage system on Zach Scott Street



EV Charging at Mueller

Four DC Fast chargers have been installed at the Mueller H-E-B, as well as Level 2 stations at several of the businesses within Mueller. A Vehicle to Grid pilot was also launched at Pecan Street lab in Mueller.

Austin Energy's Plug-In EVerywhereSM Network gives customers access to over 1,300 Level 2 charging stations.

\$4.17/mo

Monthly cost for Austin Energy's Plug In Everywhere Network

\$0.21/min

Cost for charging with DC Fast station



Thank You
Questions?

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