Building Certifications

• Overview of voluntary rating systems
  — Energy Only
  — Sustainability
• Focus on largest players in the market
  — Provide context for Georgia
• Discuss recent developments and future plans
• Q&A

Why Certify?

• Because they have to ➔ local ordinances, mandates
• Retain/increase property values
• Faster lease ups; lower vacancy rates
• Lower operating costs
• Tenants ask for it
• Ownership sustainability initiative
• Earn recognition for efforts to improve energy/sustainability
• Market differentiation
Building Certifications

Energy
- ENERGY STAR
- DOE Commercial Building Energy Asset Score
- ASHRAE's Building Energy Quotient

Sustainability
- (Energy + Water, Materials, IEQ, etc)
- LEED
- ID+C
- O+M

Residential
- LEED
- HOMES
- ND

Energy

ENERGY STAR Overview
- Portfolio Manager and Benchmarking
- Scale of 1-100 - percentile ranking compared to overall stock
- Score based on:
  - 32 months of utility data
  - Size and location
  - Occupancy details (space usage, population, hours)
- ENERGY STAR Certification Eligibility:
  - Score of 75 or higher (top 25%)
  - Annual Certification
  - Acceptable Indoor Environmental Conditions, verified by a PE/RA:
    - Indoor air quality / ventilation
    - Thermal comfort
    - Illumination

ENERGY STAR
- Property types: office buildings, K-12 schools, hotels, retail stores, hospitals, data centers, multi-family residences
  - Not: college/university, enclosed mall, convention center, restaurant, fitness center, laboratory, medical offices, daycare, bar/nightclub, aquarium...
  - 25% of GSF maximum non-ratable space usage
  - Parking GSF < Building GSF
- Usage detail minimums:
  - 5,000 SF
  - 30 hr/week
  - 1 worker
  - Offices need 1 PC
  - Multifamily housing needs 20 units
- Utility data:
  - ALL fuel types for entire building – electricity, gas, oil, steam, PV generation
  - 12 full consecutive months of data for all meters and fuel types
Benchmarking in Portfolio Manager

**Buildings Benchmarking in Portfolio Manager**
- 287,010 Properties
- 28.2 Billion ft²
- 40% Market Penetration

**Diagram:**
- Benchmarking by Building Type
  - Number of Buildings
  - Medical Office: 4,837 (14%)
  - Hospital: 4,380 (2%)
  - Warehouse: 6,619 (2%)
  - Hotel: 6,426 (2%)
  - Retail: 41,402 (19%)
  - K-12 School: 51,580 (19%)
  - Other: 57,247 (21%)
  - All other types: 9,807 (10%)

**Energy Savings in Portfolio Manager**
- 7% Savings
- 6 point increase

**Certified Properties Nationally**
- 25,000 Properties
- 3.7 Billion ft²
- 35% Less Energy than Typical Buildings

**Growth in Certifications**
- Cumulative Number of Buildings
Certified Properties in Georgia (2014)

Certified Properties in Atlanta

2015 ENERGY STAR TOP CITIES

1. Washington, DC • 480 ENERGY STAR Certified Buildings last year
2. Los Angeles • 475
3. San Francisco • 292
4. Houston • 235
5. Atlanta • 328
6. Chicago • 251
7. New York • 299
8. Dallas-Fort Worth • 248
9. Denver • 195
10. Boston • 176

Benchmarking & Disclosure Mandates

Atlanta Commercial Buildings Energy Efficiency Ordinance
Passed April 20, 2015

- Energy Benchmarking
  - City Properties >10,000 GSF in 2015
  - Non-City Properties
    - >50,000 GSF in 2015
    - >25,000 GSF in 2016
- Benchmarking Disclosure
- Energy Audits every 10 years
- Retro-commissioning (optional)
- Targets for 2030 (compared to 2013 levels):
  - 20% reduction in commercial energy consumption
  - 50% reduction in carbon emissions
- Covers about 2,350 buildings

2015 = 90 days after Mayor signs ordinance!
Updates and Focuses

- Spread of mandatory benchmarking programs
  - Emphasis on data quality
  - Ease of use of Portfolio Manager
- Data Checker’s error alerts
- Reporting
- Test Designation
- “N/A” reasons

DOE Commercial Building Energy Asset Score (2015)

Simulation (EnergyPlus) to evaluate “physical and structural energy efficiency”

Energy Asset Score

ASHRAE’s Building Energy Quotient (2012)

- As Designed
  - Energy modeling
  - Independent of operational and occupancy variables
  - Licensed Professional
- In Operation
  - ASHRAE Level 1 Audit
    - Low/No Cost Measures
  - 12-18 months of operating data
  - Licensed Professional
Energy

- Tools for measuring, tracking, comparing
- Differences in inputs, level of effort, market uptake
- All trying to reduce the amount of energy used by buildings

http://www.energystar.gov/buildings
https://buildingenergyscore.energy.gov/
http://www.buildingenergyquotient.org/

Sustainability

Energy plus water, site, materials, IEQ...

LEED

- BD+C
- ID+C
- O+M

LEED Rating Systems

- BD+C: Building Design and Construction
- ID+C: Interior Design and Construction
- O+M: Building Operations and Maintenance
- ND: Neighborhood Development
- HOMES: Homes

Site
Water
Energy & Atmosphere
Materials & Resources
Indoor Environmental Quality

LEED Certification Levels

- Certification: 40 - 49
- Silver: 50 - 59
- Gold: 60 - 79
- Platinum: 80+

- Must earn all prerequisites
- Mix and match credits to earn points
LEED in Georgia by 2014

LEED in 2014

LEED Rating Systems

LEED Building Design and Construction

- New Construction & Major Renovations
- Core and Shell
- Schools
- Retail
- Health Care
- Hospitality
- Data Centers
- Warehouses/Distribution Centers
LEED Operations and Maintenance

- Existing Buildings (EB)
- Schools
- Retail
- Hospitality
- Data Centers
- Warehouses/Distribution Centers

LEED v4

- Major Prerequisite Changes
  - BD+C
    - WE: Whole-building metering; WaterSense labels; Minimum 30% landscape water use reduction
    - EA: ASHRAE 90.1-2010
    - IEQ: ASHRAE 62.1-2010; No smoking area in building interior except residential
  - O&M
    - SS: Site management policy
    - WE: Changed baseline year to 1995; whole-building metering
    - EA: Minimum ENERGY STAR score of 75
    - IEQ: ASHRAE 62.1-2010

LEED BD+C vs. EB O+M

LEED O+M Categories

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Older Versions: Sunset Dates & Updates

- **Sunset Dates**
  - NCv2.2/CSv2.0/Schoolsv2007/EBOMv2008
    - Must submit by June 27, 2015
  - v2009
    - Registration to end October 31, 2016
    - Must submit by June 30, 2021
- **Ongoing Updates**
  - Make certain requirements more stringent ➔ Raise the bar!
    - EBOM: Raise the minimum ENERGY STAR score requirement
    - BD&C: Reference a newer version of ASHRAE Standard 90.1

LEED Existing Buildings: Recertification

- Must recertify every 5 years
- Streamlined submittal for “Established” credit elements
- Provide latest 25% of recertification performance period for “Performance” related credit elements

![LEED Certified Projects Graph](image)

LEED Dynamic Plaque

- Performance monitoring and scoring platform
  - Alternative method to achieve LEED Recertification
- Any previously LEED Certified project can use DP except for Homes and ND projects
- Simplifies inputs and standardizes all rating systems
- Earn LEED Certification annually
- Future of LEED

Other Sustainability Rating Systems

- **LIVING BUILDING CHALLENGE**
  - 945 Certified Projects
    - New Construction (275)
    - Existing Buildings (668)
    - Sustainable Interiors (2)
- **GREEN GLOBES**
  - Recommended third-party certification for the U.S. Government (incl. LEED)
  - Includes a survey and third-party assessors
  - Scoring is 4 Globes; 1000-points
Sustainability Trends Summary

- **LEED**
  - v4 is coming but the market isn’t ready for it
  - Register under v2009 before Oct. 31, 2016
  - Recertification is due for many EBOM projects
  - Dynamic Plaque is the future of LEED but is just getting started
- **Living Building Challenge**
  - We strive for this but is nearly impossible to achieve
- **Green Globes**
  - Gaining popularity b/c of the less cumbersome process

QUESTIONS?

Pamela Moua, EIT, LEED AP O+M
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