A Team Effort: Balancing Energy Efficiency and Reimagining the Office Space

December 10, 2020

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Better Buildings®
U.S. DEPARTMENT OF ENERGY

Agenda

- Welcome and Introductions
- Emerging Trends and Challenges
- Complementary Programs Driving Tenant Energy Efficiency
- Green Lease Leaders
- Urban Land Institute's Tenant Energy Optimization Program
- ENERGY STAR Tenant Space
- Case Study
- Q&A

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Panelists

Hannah Debelius
Science, Technology, and Policy Fellow
Building Technologies Office
U.S. Department of Energy

Emily Pierce
Director,
Greenprint Center for Building Performance
Urban Land Institute

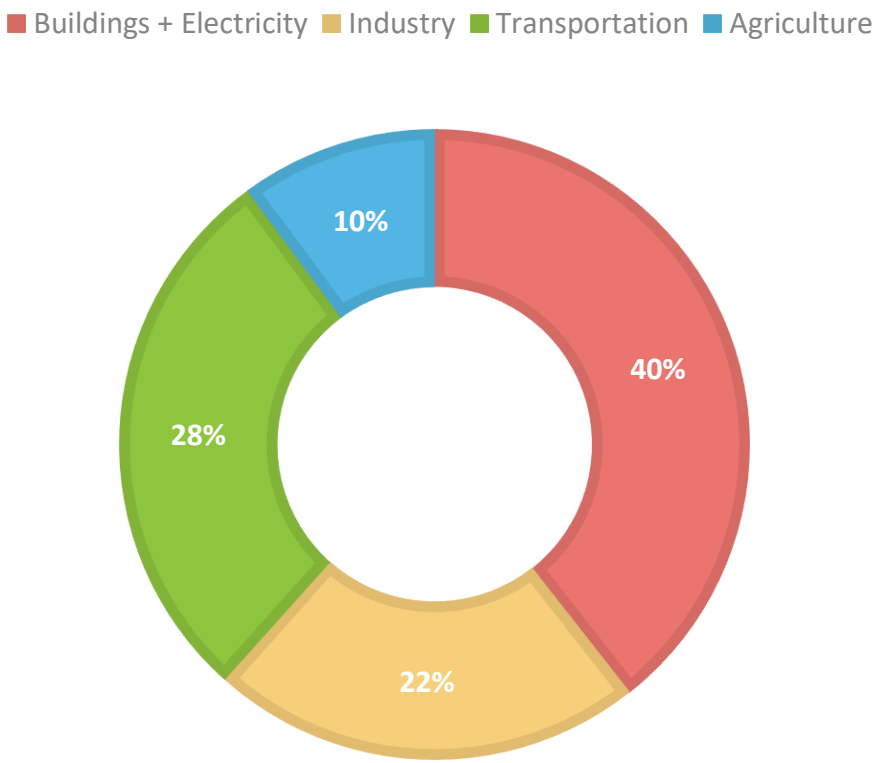
Craig Haglund
ENERGY STAR Program Manager,
CRE and Multifamily
US Environmental Protection Agency

Emerging Trends and Challenges

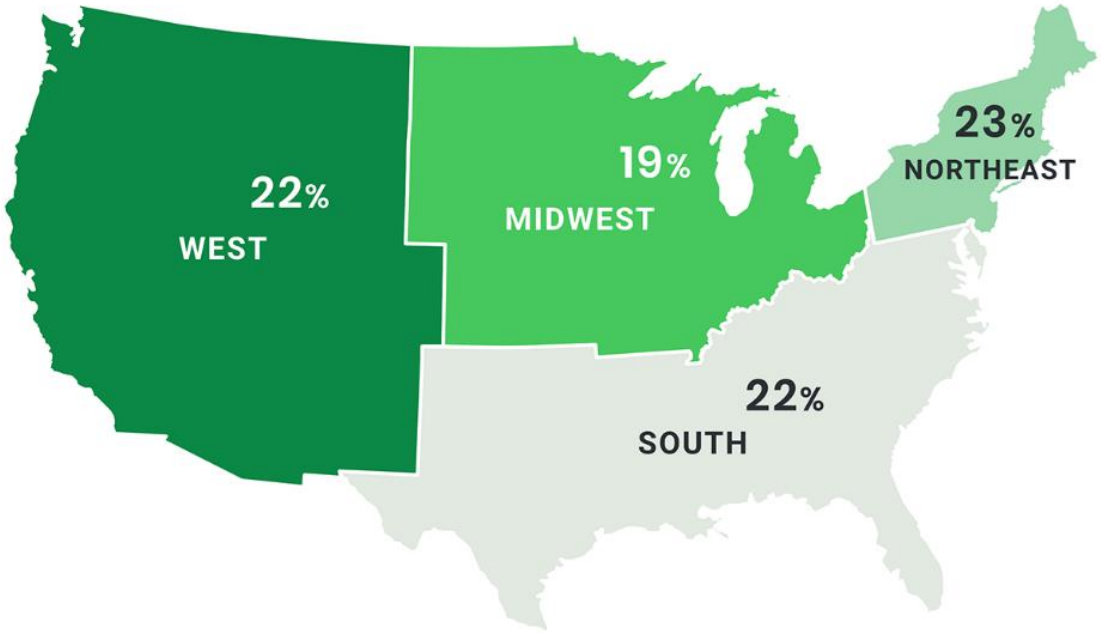
Allison Kirby

Why Building Emissions Matter

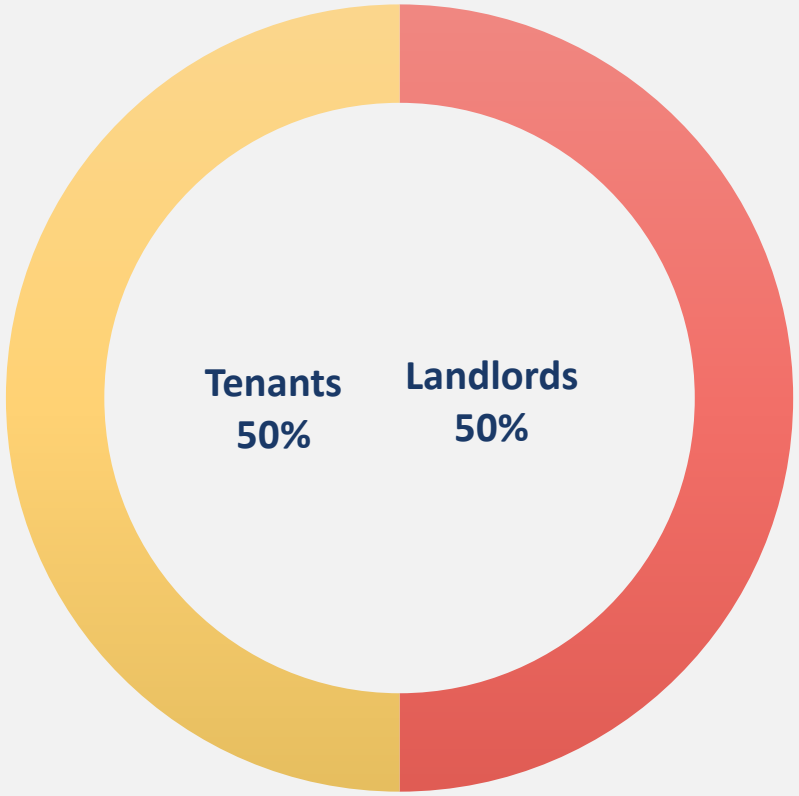
U.S. Greenhouse Gas Emissions



Commercial Building Electricity Reduction During April May Stay Home Order Less than 10% occupancy

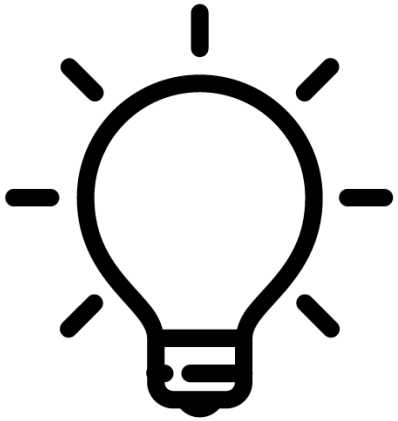


Energy Use in Leased Space



Barriers to Efficiency

Office closures



Lighting

Plug loads

Common Challenges in Reducing Building Emissions

- Building Age
- Lease Agreements
- Access to Financing
- Operator Knowledge
- Occupant Use

Seven Most Common Hurdles

- Traditional lease negotiations don’t prioritize carbon savings
- There is a misperception that tenants don’t care about energy efficiency
- It is challenging to engage occupants on energy efficiency
- Pre-lease signing often doesn’t adequately consider building and tenant operational needs
- Increasing occupant workspace density can hinder whole-building carbon reductions strategies
- Tenant capital is typically not available mid-lease
- Most tenants are unaware of financing options

Growing Demand for Building-Related Emissions Reductions

More cities are setting climate goals and passing building performance policies

More investors are demanding sustainable options and transparent reporting

Green buildings are proven to be healthier and save money

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Complementary Programs Driving Tenant Energy Efficiency

Allison Kirby

	Green Lease Leaders	ULI Tenant Energy Optimization Program	ENERGY STAR Tenant Space
Audience	Tenants, Landlords, Service Providers	Tenants, Landlords, Service Providers	Tenants
Building Types	Office, Multifamily, Industrial, Retail, Data Centers, Healthcare	Office, Multifamily	Office
Requires Landlord-Tenant Collaboration	☑	☑	☑
Helps meet corporate and mandates carbon reduction goals	☑	☑	☑
Offers Recognition	☑	☒	☑

Guidance Throughout the Leasing Process

Leasing Process	Step	ULI TEOP	ENERGY STAR Tenant Space	Green Lease Leaders
PRE-LEASE	Select a team	✓		✓
	Select an office space	✓		✓
DESIGN AND CONSTRUCTION	Set and communicate goals	✓	✓	✓
	Meter energy use	✓	✓	✓
	Integrate efficient equipment and lighting in the build out	✓	✓	✓
	Formalize landlord-tenant energy management best practices	✓		✓
POST-OCCUPANCY	Benchmark energy use	✓	✓	✓
	Establish regular communications to report performance between landlord and tenant	✓	✓	✓
	Earn Recognition		✓	✓

Green Lease Leaders

Hannah Debelius

What is a Green Lease?

Green leases, also known as “high-performance”

or “energy-aligned” leases, improve the rental negotiation process by **creating win-win agreements** for building owners and tenants.

Green leases **equitably align the costs and benefits** of energy and water efficiency investments for both parties.

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Why a Green Lease?

Goals

- Eliminate “split incentive” problem
- Increase value and productivity of leased space

Savings

- Potential to reduce energy consumption in an office building by 11%–22%
- Can reduce utility bills by up to $0.51 per square foot

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Defining a Green Lease

Green lease: A binding document defining how established goals will be met

- **Outlines Priorities of Both Parties**
- **Establishes a Sustainability Point of Contact**
- **Prioritizes Environmental, Health and Wellness**
- **Defines How Building and Tenant Space will Operate**
- **Enables Ability to Report Progress**

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Impact of the Green Lease Leaders Program

Established as the **industry standard**

2020 alumni represent **>1 billion square feet of floorspace**

Green Lease Leaders manage **nearly 3 billion square feet** of commercial and government space in the U.S. and Canada

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Landlords – Silver and Gold Recognition

Gold Recognition

Boston Properties

BRIXMOR Property Group

brandywine REALTY TRUST

City of Fort Collins

SL GREEN REALTY CORP.

EMPIRE STATE REALTY TRUST

JAMESTOWN

CLARION PARTNERS

PHYSICIANS REALTY TRUST

WASH★REIT

STAG INDUSTRIAL

LaSalle INVESTMENT MANAGEMENT

DIGITAL REALTY

welltower

Principal℠

Silver Recognition

Aligned Adaptive Data Center

FIRST CAPITAL
Creating thriving urban neighbourhoods

Hillsborough County Florida

Regency Centers.

Morgan Stanley
INVESTMENT MANAGEMENT

TISHMAN SPEYER

Rexford Industrial

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Tenants – Gold Recognition

LATHAM & WATKINS LLP

mastercard

ULTA BEAUTY

DGS CALIFORNIA DEPARTMENT OF GENERAL SERVICES

GREEN LEASE LEADER

potential to impact nearly

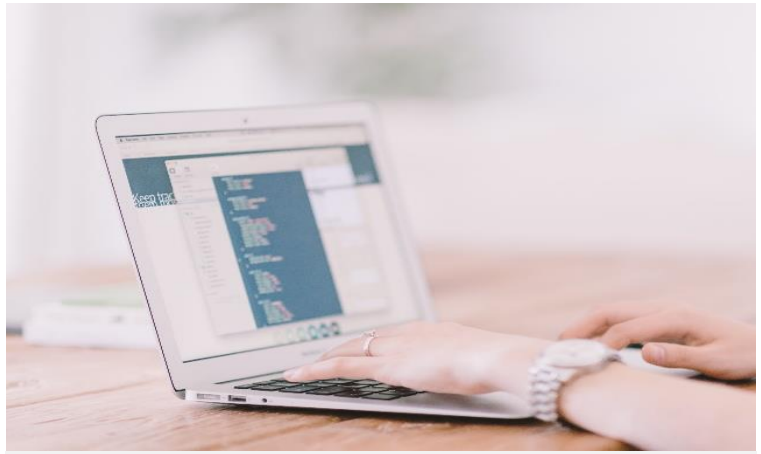
2.9

BILLION SQ. FT.

OF COMMERCIAL AND GOVERNMENT SPACE

across North America

Start Transforming Traditional Leases



Step 1

Complete the free Green Lease Leaders Audit at greenleaseleaders.com to see where you stand.

Step 2

Contact IMT for one-on-one assistance.

Step 3

Visit greenleaseleaders.com and apply by March 31, 2021 deadline

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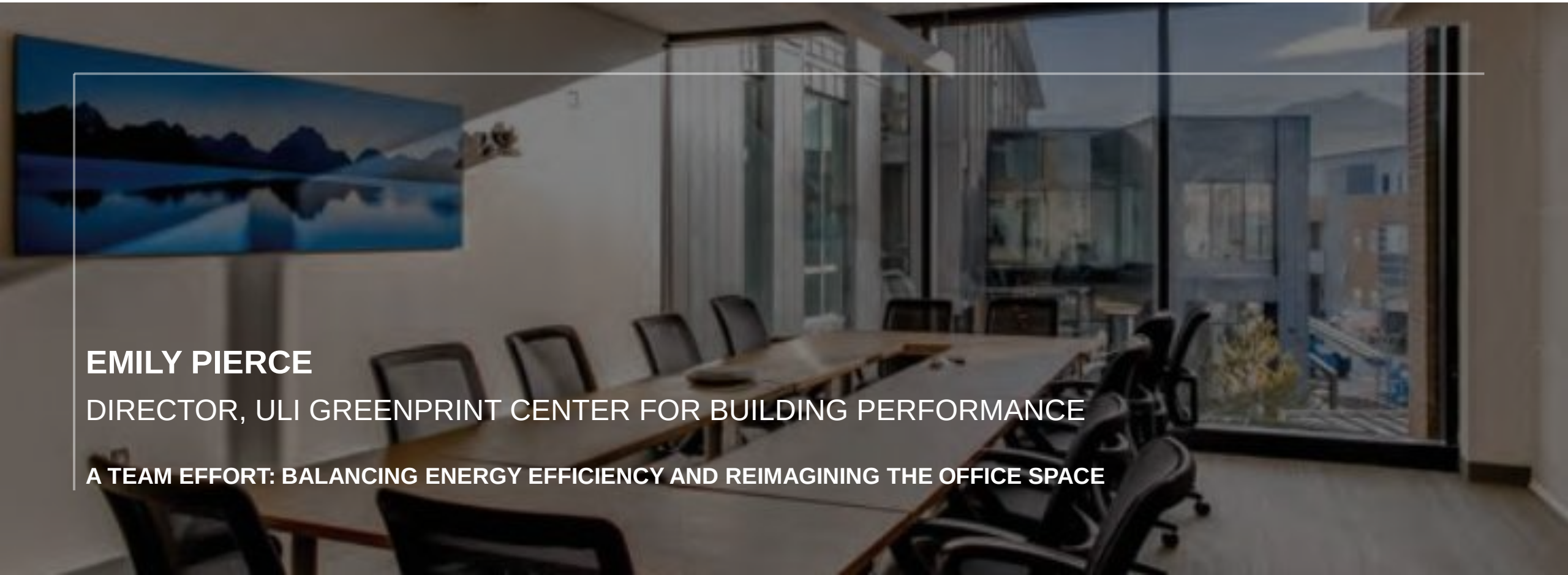

EMILY PIERCE

DIRECTOR, ULI GREENPRINT CENTER FOR BUILDING PERFORMANCE

A TEAM EFFORT: BALANCING ENERGY EFFICIENCY AND REIMAGINING THE OFFICE SPACE

ULI Greenprint - Reducing Carbon, Building Value

Worldwide alliance of **leading real estate owners and financial institutions** committed to improving the **environmental performance** of buildings

Member-driven initiative with the **goal** to reduce carbon emissions **50% by 2030** and achieve **net zero carbon operations by 2050**

Includes **44+ companies** representing 10,000+ properties totaling 220 million square meters across **32 countries**

Share best practices and promote the business case for green buildings with the broader ULI membership

ULI Greenprint Members

Tenant Energy Optimization Program (TEOP)

- **Over 50% of energy used in commercial office buildings is consumed by tenants**
- **Free and open program targeting tenant space sustainability**
- **A 10-step process to embed energy efficiency decisions into tenant space design and construction**
- **Proven business case with returns-driven results**
  - **Energy savings of 30 – 50%**
  - **Payback period of 3 – 5 years**
  - **Average IRR of 27%**

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TenantEnergy.uli.org

The Returns of Energy Efficient Fit-Outs are Evident

Company	Leased area (SF)	Added cost (per SF)	Energy reduction	Total savings	ROI	Payback (years)
Bloomberg	20,000	$3.06	10.5%	$173,880	140%	2.5
Coty Inc.	80,000	$0.71	30.7%	$716,148	328%	2.7
Cushman & Wakefield	7,500	$3.25	47.5%	$87,862	359%	1.7
Estée Lauder Companies	10,000	$1.29	12.1%	$15,862	42%	3.7
Global Brands Group	137,000	$0.98	11.8%	$438,090	126%	4.6
LinkedIn Corp.	36,000	$2.63	31.3%	$153,000	23%	6.4
NYSERDA	15,200	$2.42	39.0%	$188,017	179%	3.6
Reed Smith	117,000	$1.31	44.5%	$1,126,498	410%	2.2
Shutterstock	8,600	$2.63	22.9%	$369,897	40%	6.1
TPG Architecture	40,000	$2.01	21.6%	$275,372	162%	3.2

TEOP Helps Prepare for Other Recognitions

Step	1	2	3	4	5	6	7	8	9	10
	Select a team	Select an office space	Set energy performance goals	Model energy reduction options	Calculate projected financial returns	Make final decisions	Develop a post-occupancy plan	Build out the space	Execute the post-occupancy plan	Communicate results
Phase	Pre-Lease		Design and Construction						Post-Occupancy	

LEED

LIVING BUILDING CHALLENGE

BREEAM

GREEN LEASE LEADER

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TEOP and ENERGY STAR Tenant Space in Action

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Following the TEOP 10 Steps Helps an Office Fit-out Meet Energy Star Tenant Space Criteria

Achieving Energy Star Tenant Space for your office fit-out is a great way to earn recognition for leadership in energy efficiency for leased spaces. Led by the U.S. Environmental Protection Agency (EPA), the recognition designates tenant spaces as highly energy efficient. But how do you achieve such efficiency in a fit-out? The Urban Land Institute's Tenant Energy Optimization Program (TEOP) process can help.

TEOP walks fit-out stakeholders through a 10-step process to achieve deep energy and financial savings in leased office spaces. From pre-lease, through design and construction, to post-occupancy, the TEOP 10 steps ensure that energy efficiency is cost-effectively included from beginning to end.

When combined and followed for leased space fit-outs, the Energy Star Tenant Space recognition program and TEOP 10-step process produce not only deep savings, but also a pathway for achieving a high level of energy efficiency and overcoming the landlord/tenant split incentive. The table at right outlines all 10 TEOP steps, and the table on the following page outlines which steps of the TEOP process directly support criteria to achieve Energy Star Tenant Space recognition.

TEOP 10-STEP PROCESS FOR AN ENERGY EFFICIENT OFFICE FIT-OUT

PHASE I: PRE-LEASE

- Step 1: Select a team
- Step 2: Baseline and benchmark assets and units

PHASE II: DESIGN AND CONSTRUCTION

- Step 3: Set utility use and performance goals for residential units
- Step 4: Model utility reduction options
- Step 5: Calculate projected financial returns
- Step 6: Make final decisions
- Step 7: Develop a resident occupancy maintenance and operations plan
- Step 8: Retrofit the unit(s)

PHASE III: POST-OCCUPANCY

- Step 9: Execute the resident occupancy maintenance and operations plan
- Step 10: Communicate results

Energy Star Tenant Space Recognition Criteria	Associated TEOP Steps
Estimate energy use: Understanding your energy use helps identify actions you can take to make the biggest impact. Tenants are required to enter data into an energy-estimation calculator but do not need to meet an energy use target to qualify for recognition.	Step 3: Set energy performance goals As you set performance baselines, estimate your energy use. It is difficult to set performance goals without knowing where you are starting. An additional goal can be to achieve Energy Star Tenant Space.
Meter energy use: You can't manage what you don't measure! Tenants are required to have meters installed in their space.	Step 4: Model energy reduction options Step 5: Calculate projected financial returns Step 6: Make final decisions Installing submeters is a critical part of any tenant fit-out plan. Submeters will help you measure energy use so that you can start managing it appropriately. Make sure that submeters are not getting value-engineered out when modeling and deciding on energy conservation measures (ECMs) for the fit-out.
Light efficiently: Lighting is a major energy user and one of the most cost-effective upgrades. Tenants will need to meet a lighting energy use target to qualify for recognition.	Step 4: Model energy reduction options Step 5: Calculate projected financial returns Step 6: Make final decisions When considering all the potential ECMs for the fit-out, ensure that your team makes informed decisions to meet your lighting goals. Having the design team use the Energy Star Tenant Space tool to calculate lighting energy use is not only required for Tenant Space recognition, but also is a great exercise to better understand your space's lighting energy use.
Use efficient equipment: Equipment upgrades reduce the large energy draw from plug loads. Tenants will need to have a procurement policy in effect that specifies Energy Star equipment.	Step 4: Model energy reduction options Step 5: Calculate projected financial returns Step 6: Make final decisions The appropriate mix of energy reduction options also needs to include plug load efficiency considerations. Make sure your team includes the most Energy Star–recognized equipment and appliances possible, and that these items are included in the final fit-out decisions.
Share meter data with the landlord (if requested): Your data may enable whole-building benchmarking, which supports strategic investment in energy performance and is often needed for compliance with local laws and mandates.	Step 9: Execute the occupancy plan Step 10: Communicate results It is a best practice to start landlord/tenant data sharing communications upon occupancy, even if your local jurisdiction does not have energy- and data-sharing laws. Energy Star Portfolio Manager has a portal for sharing the data. Sharing and reviewing the meter data helps both parties better address energy use and mitigate any issues as they arise.

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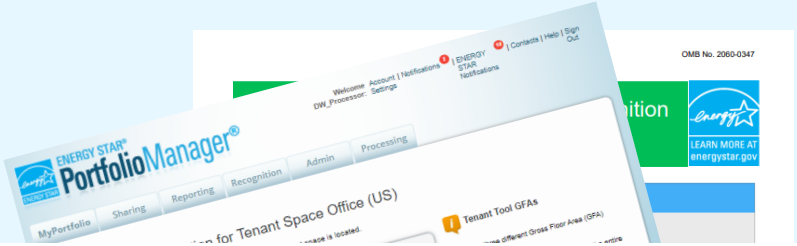
Introducing
ENERGY STAR®
Tenant Space Recognition



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Tenant Space Recognition: Origins

- *Energy Efficiency Improvement Act of 2015* -- directed EPA to develop recognition for energy efficient commercial tenant spaces
- In 2018, over 50 tenant spaces participated in EPA's Charter Tenant pilot
- Results from Charter Tenants informed and shaped new ENERGY STAR Tenant Space recognition

Feedback from Charter Tenants:

> *"Tenant spaces are notorious for not having incentives for energy improvements. This is a great step in the right direction!"*

> *"Since our space was sub-metered at the [start] of the Charter Tenant program, lighting [energy use] has dropped dramatically."*

ENERGY STAR Tenant Space recognition:

- Empowers and recognizes commercial tenants who adopt best practices for energy efficiency during fit-out and upgrade of their leased spaces.
- Distills the tenant-controlled actions that increase the efficiency of leased spaces and contribute to superior energy performance of the buildings that house these spaces.
- Recognizes office spaces with lighting systems that are about 25% more efficient than lighting found in typical office spaces.
- Provides a positive opportunity for tenants and landlords to collaborate around energy efficiency and sustainability.

How does ENERGY STAR Tenant Space recognition relate to whole building Certification?

- ENERGY STAR certification is EPA's flagship energy efficiency award for top performing commercial buildings. Tenant Space recognition is a tool that supports the goal of whole building efficiency and can help a building reach top performance.
- ENERGY STAR Certification requires 12 months of measured whole-building energy data. Tenant Space recognition does not require reporting of measured energy data.
- Buildings that earn ENERGY STAR certification may include leased spaces that have achieved ENERGY STAR Tenant Space recognition.
- Tenant Space designation may not be used "in a way that implies—or could be reasonably interpreted to imply—that a whole building is ENERGY STAR certified" (ENERGY STAR Brand Book).

Who is eligible to apply?

- To access the Tenant module within Portfolio Manager, a Tenant Space must:
  - Be either a general administrative office, financial office, or a non-diagnostic medical office (such as a doctor's office that does not include diagnostic equipment). It may include a data center.
    - *In Portfolio Manager, the EPA-Calculated Property Type (based on the property uses entered in your Details tab) must be Office or Financial Office.*
  - Represent all of the tenant's usable office square footage in the building. Usable square footage is defined as all areas within the demising walls reserved for your exclusive use.
    - *In Portfolio Manager, the property must be designated "Part of a Building" in the Basic Information section on your Details tab.*
  - Be located in the United States.

What Are Recognition Criteria?

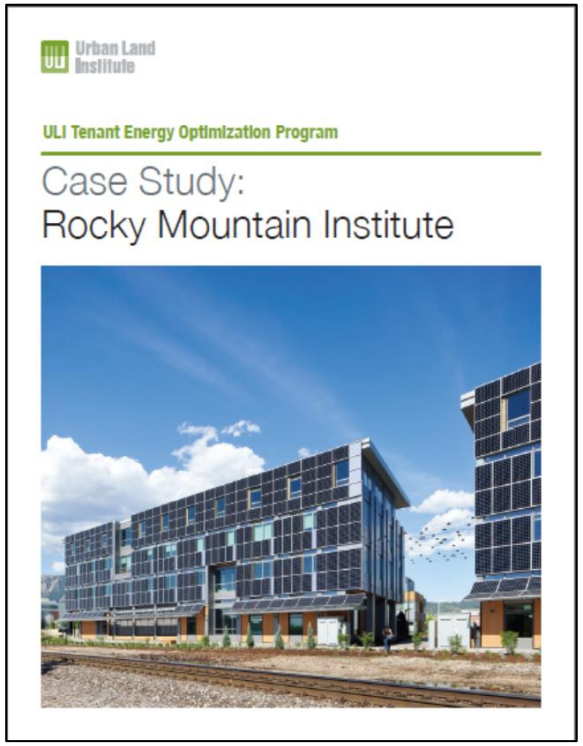
- ✓ **Estimate Energy Use**
  - ➢ Understanding energy use helps identify actions that make the biggest impact.
- ✓ **Meter**
  - ➢ You can't manage what you don't measure!
- ✓ **Light Efficiently**
  - ➢ Lighting is an important energy user and one of the most cost-effective upgrades.
  - ➢ Tenants will need to meet a lighting energy use target to qualify for recognition.
- ✓ **Use Efficient Equipment**
  - ➢ Upgrading equipment reduces the large energy draw from plug loads.
  - ➢ Tenants must have a procurement policy in place that specifies purchase of ENERGY STAR certified products whenever applicable (or substantially similar language)
- ✓ **Share Data** (upon request from landlord)
  - ➢ Tenant data may enable whole building benchmarking, which supports strategic investment in energy performance and is often needed for compliance with local laws and mandates.

Overview of the Application Process

1. Add a Tenant Space to Portfolio Manager
2. Access the Tenant module and complete data requirements
3. Generate application for Tenant Space recognition
4. Have a Licensed Professional (LP) conduct a site visit, verifying the information in your application
5. Complete the online application and submit the application electronically to EPA
6. Respond to questions from EPA, if necessary
7. Receive notification of the application's status

Case Study

Sustainable Tenant Space Case Study: Rocky Mountain Institute



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How does a Tenant Space achieve Net Zero Energy?

Landlord - Tenant collaboration and communication

Green lease clauses:
-Energy budget
-Recommissioning
-Disclosure
-Cost recovery

Onsite solar and innovative building technologies

Submetering and data transparency for tenants

Urban Land Institute

> Boulder Commons was a step out of the ordinary for Morgan Creek Ventures, however, after success meeting energy-use goals and a pending official net-zero certification, this type of design and construction has quickly become ingrained in our practices.

Andy Bush, Morgan Creek Ventures

Q&A

Resources

- Full RMI TEOP Case Study
- Full RMI Green Lease Leader case study
- Green Lease Leaders Library
- TEOP 10 Steps
- TEOP 10 Steps for Multifamily Owners and Operators
- TEOP and EPA Energy Star Tenant Space Guide
- TEOP for Architects
- Unlocking Hidden Value in Class B/C Buildings
- ENERGY STAR Tenant Space

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Thank you!

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