Decarbonizing
New York City Offices

Playbook for Consultants

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NEW YORK STATE OF OPPORTUNITY. | NYSERDA

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Contents

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Introduction

The commercial real estate sector is at a pivotal moment. As more U.S. cities adopt climate action plans along with stricter, performance-based energy codes and standards, practitioners must rise to face the huge challenges of reducing building emissions amid an office landscape transformed by a global pandemic. With tenants in leased spaces typically consuming more than half of a commercial building's energy, all commercial real estate stakeholders must work together to unlock substantial energy and carbon reductions in office buildings.

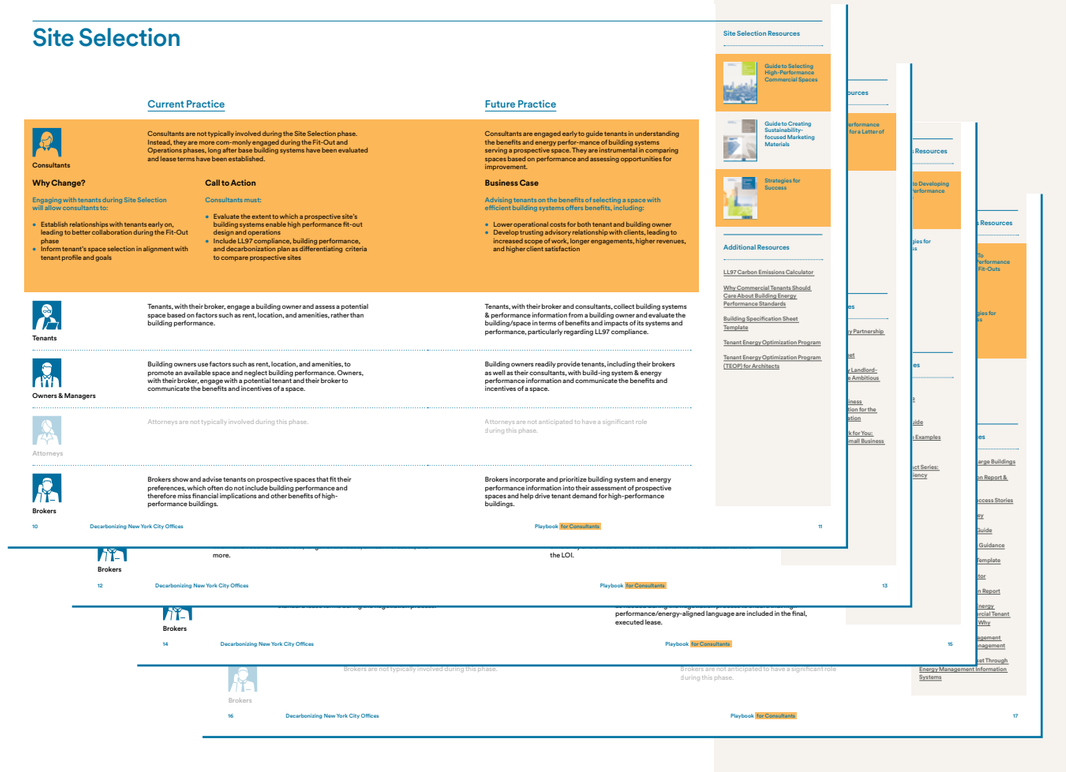
This playbook includes key insights and a suite of actionable resources to support Consultants in prioritizing building performance and incorporating decarbonization strategies across various phases of the leasing cycle.

How to Use this Playbook

This playbook provides commercial real estate stakeholders with insights into how to prioritize energy efficiency and emissions reduction strategies in the leasing, design, construction, and operation of office spaces. Curated guidance and resources are organized based on strategic phases of the commercial leasing cycle, with priority given to phases that offer the greatest potential for generating change. Stakeholders should reference and revisit the information attributed to each step as office spaces within their portfolio move through various stages of the leasing cycle.

How to Use these Resources

The resources included in this playbook help stakeholders at key phases of the commercial leasing cycle update their current practices to a new business as usual, which prioritizes energy efficiency and emissions reduction strategies. Resources relevant to Consultants are highlighted to indicate that they are actionable at that particular phase. All resources are accessible via clickable links.



Changing Business as Usual

The Decarbonizing New York City Offices initiative assesses business as usual within the commercial real estate industry, looking for opportunities for improvement and collaboration, all to drive sustained decarbonization and energy efficiency of leased office spaces.

One crucial item the team explored further was how current industry practices are changing to meet the increasingly stringent LL97 mandates. The project team used the collected information and valuable insights amassed during this initial phase to assess ways the industry must transition from current business as usual, in which energy efficiency and carbon emission reduction efforts are not prioritized, towards future practices that promote strategic energy efficiency investments, decarbonization strategies, and forward-thinking leasing practices. The content of this playbook summarizes how the commercial real estate industry at large typically operates and how the industry should strategically evolve.

Industry Drivers

Commercial Tenant Impacts
Tenants in leased spaces typically consume more than half of a commercial building's energy, and sometimes more depending on factors such as tenant type, building systems, and equipment efficiency.

Building Performance Standards
Industry members must prepare to comply with regulations that require buildings to meet energy and/or emissions-based targets to curb the impacts of climate change. One such law is NYC's Local Law 97, which requires most buildings over 25,000 sq. ft. to meet increasingly stringent carbon emissions limits or face hefty fines.

Energy Conservation Code
Building energy codes are becoming increasingly stringent, evolving from prescriptive pathways to performance-based requirements. Many codes have been updated to include efficiency measures—such as improved insulation and lighting standards—and to prioritize electrification.

Corporate Sustainability Goals
An increasing number of companies are pursuing sustainability goals, often manifesting in reduced or zero-carbon emissions objectives. These targets can often be reached, in part, by reducing building emissions through energy efficiency and electrification measures.

Reporting Requirements
Sustainability reporting is becoming more essential in order to meet the requirements of government agencies, third-party verifiers, and financial lenders.

COVID-19 Pandemic
The COVID-19 pandemic revealed a discrepancy in building occupancy versus energy consumption. Companies are now rethinking how they design and operate their office spaces to better align with actual occupancy and to ensure a safe and healthy workplace.

Current Practices

Current Practices do not take into consideration the increasingly stringent environmental and regulatory standards impacting real estate. Stakeholders often do not prioritize energy efficiency and emissions reduction strategies due to:

- Uncertainty in the market from the impacts of the COVID-19 pandemic
- A lack of understanding regarding corporate environmental goals, high-performance building standards, and/or energy code requirements, as well as the potential impacts of noncompliance
- A wide range of competing priorities
- A lack of data and/or key information to guide the design and operation of efficient office spaces
- A lack of knowledge or familiarity with energy efficient equipment, solutions, and best practices
- A lack of motivation and/or incentives to go above and beyond the status quo (e.g. minimum code requirements or basic client demands)

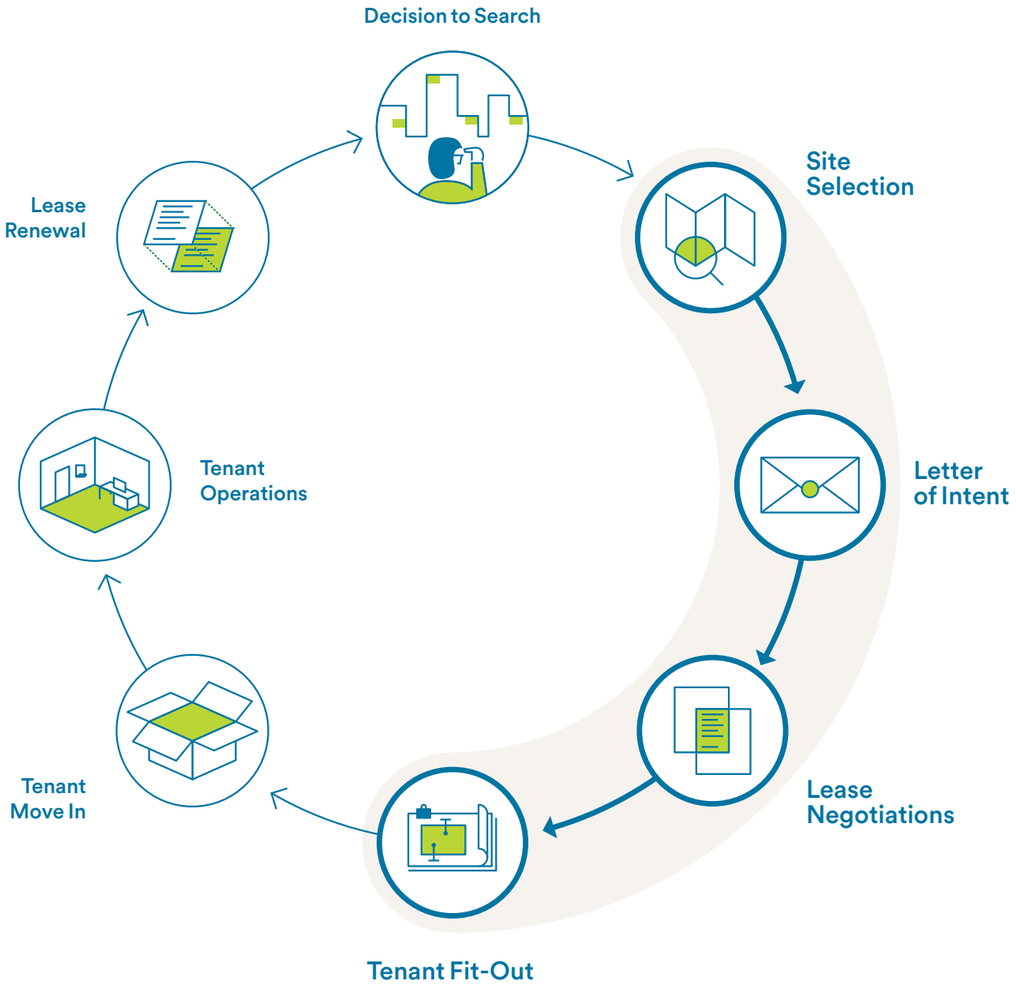
Future Practices

Future Practices evaluate the risks/opportunities from the current and future impacts of environmental and regulatory changes. Stakeholders prioritize, pursue, implement, and monitor energy efficiency and decarbonization strategies through:

- Early engagement and continued collaboration
- Awareness regarding the benefits of and rationale for reducing the energy/carbon footprint of office spaces
- Leasing terms that are mutually beneficial and distribute responsibilities and financial needs equitably
- Accessible and ongoing data sharing

The Leasing Cycle

Within the leasing cycle of an office space, there are eight phases during which a building owner and/or a tenant evaluate changes to a leased commercial space. These steps provide opportunities to integrate meaningful energy saving and carbon reduction practices into the design and operations of a tenant space. While intervention opportunities exist within all eight steps of the leasing cycle, the four steps highlighted below are prioritized in this playbook, as they present the greatest potential for generating change.



Stakeholder Roles

There are five key stakeholders engaged at various phases of the leasing cycle, each with opportunities to affect the energy performance of tenant spaces. This playbook highlights the five stakeholders most engaged in leasing, design, and operations activities, focusing on the top three — tenants, building owners & managers, and consultants — who have the most potential impact for efficiency improvements.

Consultants
Consultants, such as architects and engineers, can provide technical expertise that helps tenants and building owners meet their sustainability and energy efficiency goals. These technical experts provide best practice methods and equipment specifications to optimize performance and save on utility costs.

Tenants
Tenants have the opportunity to prioritize energy efficiency and sustainability when engaging in the leasing process and through lease modifications; retrofits during tenant fit-outs and occasional mid-lease upgrades; the operation of their space; ongoing performance data collection and real time energy management, and more.

Building Owners & Managers
Building owners and managers are able to optimize their buildings, creating efficient, high-performance units that lower energy costs and improve tenant comfort. They have agency over certain actions that tenants are not able to take, like upgrading base building systems to reduce fossil fuel consumption.

The following stakeholders are valuable experts with a targeted role in influencing the performance of leased offices.

Attorneys
Attorneys have specific expertise regarding the commercial leases, including defining and negotiating terms. As such, attorneys can help both tenants and building owners prioritize and collaborate on efficiency and performance during the leasing process.

Brokers
Brokers are an important stakeholder as a liaison between building owners looking to lease commercial space and tenants seeking to rent commercial space. As a cohort focused on client demands, getting tenants and building owners to prioritize energy efficiency and fossil fuel use reduction is a critical initial step to gaining traction within the broker community.

The Leasing Cycle

Key to Stakeholder Roles

Step	How it Works Now	What Needs to Change	Who's Involved
1. Decision to Search	Tenant decides to search for an office space.	Along with identifying location, amenity, and programmatic needs, tenant clearly identifies their energy efficiency and sustainability goals and requirements.	
2. Site Selection	Tenant evaluates and selects a space presented by their broker based on factors such as rent, location, and amenities, rather than building performance.	Tenant and their broker collect building systems and performance information from building owners and utilize consultants to understand the benefits and impacts of this information to inform space selection.	
3. Letter of Intent	Building owner & tenant, with their respective brokers, execute a Letter of Intent (LOI) for the selected space.	Building owner and tenant, with their brokers, incorporate energy and emissions reduction language into the LOI. Attorneys conduct due diligence to verify the terms. Consultants are engaged to ensure the language aligns with current sustainability objectives.	
4. Lease Negotiations	Building owner & tenant, with their respective attorneys, negotiate and execute a lease based on the LOI.	Building owner and tenant, with their attorneys, execute an energy-aligned lease that enables them to share the costs, benefits, and responsibilities. Consultants provide justification for pursuing energy efficiency measures and practices.	
5. Tenant Fit-Out	Tenant, with their consultants, design, construct, and/or commission the space.	Tenants, with their consultants and in coordination with building owners, design the space with strategic energy efficient systems and practices that comply with building performance targets and integrate with base building systems.	
6. Tenant Move In	Tenant moves into their new or renovated office space.	Tenant moves into their new or renovated office space. During on-boarding, management identifies various efficiency initiatives and tenant sustainability champion contacts.	
7. Tenant Operations	Tenant occupies and operates the space for the lease term.	Tenant occupies and operates the space for the lease term, monitoring and optimizing their energy use regularly; sharing energy data and usage with building owners and complies with any reporting requirements.	
8. Lease Renewal	Tenant decides to renew their lease or search for a new space, before their existing lease expires.	Tenant decides to renew their lease or search for a new space based on their energy efficiency and sustainability goals and requirements before their existing lease expires.	

Critical phases of the leasing cycle to reduce energy use and carbon emissions in office spaces

Site Selection

Current Practice

Future Practice

Consultants

Consultants are not typically involved during the Site Selection phase. Instead, they are more commonly engaged during the Fit-Out and Operations phases, long after base building systems have been evaluated and lease terms have been established.

Consultants are engaged early to guide tenants in understanding the benefits and energy performance of building systems serving a prospective space. They are instrumental in comparing spaces based on performance and assessing opportunities for improvement.

Why Change?

Engaging with tenants during Site Selection will allow consultants to:

- Establish relationships with tenants early on, leading to better collaboration during the Fit-Out phase
- Inform tenant's space selection in alignment with tenant profile and goals

Call to Action

Consultants must:

- Evaluate the extent to which a prospective site's building systems enable high performance fit-out design and operations
- Include LL97 compliance, building performance, and decarbonization plan as differentiating criteria to compare prospective sites

Business Case

Advising tenants on the benefits of selecting a space with efficient building systems offers benefits, including:

- Lower operational costs for both tenant and building owner
- Develop trusting advisory relationship with clients, leading to increased scope of work, longer engagements, higher revenues, and higher client satisfaction

Tenants

Tenants, with their broker, engage a building owner and assess a potential space based on factors such as rent, location, and amenities, rather than building performance.

Tenants, with their broker and consultants, collect building systems & performance information from a building owner and evaluate the building/space in terms of benefits and impacts of its systems and performance, particularly regarding LL97 compliance.

Owners & Managers

Building owners use factors such as rent, location, and amenities, to promote an available space and neglect building performance. Owners, with their broker, engage with a potential tenant and their broker to communicate the benefits and incentives of a space.

Building owners readily provide tenants, including their brokers as well as their consultants, with building system & energy performance information and communicate the benefits and incentives of a space.

Attorneys

Attorneys are not typically involved during this phase.

Attorneys are not anticipated to have a significant role during this phase.

Brokers

Brokers show and advise tenants on prospective spaces that fit their preferences, which often do not include building performance and therefore miss financial implications and other benefits of high-performance buildings.

Brokers incorporate and prioritize building system and energy performance information into their assessment of prospective spaces and help drive tenant demand for high-performance buildings.

Site Selection Resources

Guide to Selecting High-Performance Commercial Spaces

Guide to Creating Sustainability-focused Marketing Materials

Strategies for Success

Additional Resources

LL97 Carbon Emissions Calculator

Why Commercial Tenants Should Care About Building Energy Performance Standards

Building Specification Sheet Template

Tenant Energy Optimization Program

Tenant Energy Optimization Program (TEOP) for Architects

Letter of Intent

	Current Practice	Future Practice
Consultants	Consultants are not typically involved during this phase.	Consultants are included to review building and tenant performance opportunities.
Tenants	Tenants, with their broker, review the LOI created by the building owner and their broker.	Tenants, with their broker, incorporate energy efficiency and carbon emissions reduction language into the LOI. Attorneys conduct due diligence to verify the terms. Consultants are engaged to ensure the language aligns with current sustainability objectives.
Owners & Managers	Building owners, with their broker, create a LOI for review by the tenant and their broker.	Building owners, with their broker, incorporate energy efficiency and carbon emissions reduction language into the LOI. Attorneys conduct due diligence to verify the terms. Consultants are engaged to ensure the language aligns with current sustainability objectives.
Attorneys	Attorneys occasionally review LOIs, drafted by brokers for larger deals, but are often not involved in this phase.	Attorneys should ensure energy efficiency and emissions reduction language is included in the LOI in order to provide a foundation for incorporating high-performance/energy-aligned language in the lease.
Brokers	Brokers draft an LOI outlining essential terms of the offer, including key information such as lease rate, length of the lease, annual increases, and more.	Brokers incorporate simple and concise language regarding energy efficiency and emissions reduction efforts into the essential terms of the LOI.

Why Change?

Engaging with tenants during the LOI phase will allow consultants to:

- Establish relationships with tenants early on, leading to better collaboration during the Fit-Out phase
- Aid tenants and building owners in identifying potential performance improvement opportunities

Call to Action

Consultants must:

- Review building and tenant performance opportunities

Business Case

Advocating for energy efficiency and emissions reduction language into the LOI offers benefits, including:

- Develop trusting advisory relationship with clients, leading to increased scope of work, longer engagements, higher revenues, and higher client satisfaction

Letter of Intent Resources

High-Performance Clause for a Letter of Intent

Additional Resources

Landlord-Tenant Energy Partnership Efficiency Toolkit

Green Leasing Info Sheet

Overcoming Seven Key Landlord-Tenant Hurdles to Make Ambitious Carbon Reductions

Understanding the Business of Real Estate: Information for the Successful Implementation

Making Efficiency Work for You: A Resource Guide for Small Business Landlords and Tenants

Lease Negotiations

	Current Practice	Future Practice
Consultants	Consultants are not typically involved during this phase.	Consultants are engaged and provide justification for pursuing energy efficiency measures and practices, such as rationale, benefits, costs, financial returns, and reduced financial risk implications.
Tenants	Tenants, with their attorneys, review and respond to the lease draft provided by the building owner and their attorneys.	Tenants and their teams advocate for energy-aligned leases that enable tenants and building owners to share both the costs and benefits of investments, as well as the responsibility for ensuring efficient design and operations are implemented.
Owners & Managers	Building owners use a standard lease with exhibits for the tenant and their attorneys to review.	Building owners advocate for energy-aligned leases that enable building owners and tenants to share the costs and benefits of investments as well as the responsibility for ensuring efficient design and operations are implemented.
Attorneys	Attorneys draft, analyze, and advise their respective tenant and building owner clients about the lease agreement as well as facilitate the lease term negotiations.	Attorneys include high-performance/energy-aligned lease language within both the standard lease draft as well as the final, executed version.
Brokers	Brokers may review the draft lease or advise attorneys as needed on standard lease terms during the negotiation process.	Brokers review the draft lease agreement and advise attorneys as needed during the negotiation process to ensure that high-performance/energy-aligned language are included in the final, executed lease.

Why Change?

Engaging with tenants during the Lease Negotiation phase will allow consultants to:

- Provide justification for fit-out and building integration, including cost implications
- Ensure that the tenant can comply with the agreed upon energy and performance terms
- Establish relationships early on with tenants in anticipation of providing design, construction, and/or commissioning services during Fit-Out phase

Call to Action

Consultants must provide tenants with:

- Insights regarding how specific lease provisions (e.g. increased operating hours, increased outdoor air, watts / SF) may impact their energy use and carbon emissions
- Insights on lease provisions that will facilitate high-performing fit-outs and collaborative operations during lease term
- Help in identifying relevant incentives

Business Case

Advocating for high-performance, energy-aligned leases offers benefits, including:

- Increased revenues by providing consulting services earlier in the leasing cycle
- Increased market demand for high-performance building expertise and services

Lease Negotiations Resources

Guide to Developing High-Performance Leases

Strategies for Success

Additional Resources

Green Lease Leaders:
Tenant Resource Guide

Green Lease Leaders:
Landlord Reference Guide

Green Lease Language Examples

Green Leasing in DC

Climate Mobilization Act Series:
Unlocking Tenant Efficiency

Tenant Fit-Out

Current Practice

Future Practice

Consultants

Consultants coordinate with the tenant and/or building owner as needed on the design, construction, and commissioning of the office space.

Consultants design the tenant space with energy efficient systems and practices that comply with building performance targets and integrate with base building systems. Consultants participate in project kick-off, charrettes, and coordination meetings to advise and ensure high-performance measures are properly executed.

Why Change?

Providing design recommendations that maximize efficiency opportunities will allow consultants to:

- Help tenants and building owners meet building LL97 compliance requirements
- Improve the industry's baseline energy performance standards
- Optimize system integration and operations

Call to Action

Consultants must:

- Inform tenant fit-out design in an effort to meet LL97 targets
- Coordinate with building owners to optimize system integration and operations
- Maximize impact by getting involved as early as possible
- Evaluate measures using incremental costs and savings calculations

Business Case

Coordinating with tenants and owners to increase efficiency of tenant spaces can have benefits, including:

- Increased operational energy and cost savings for both whole building and tenant space
- Increased market demand, recognition, and revenues for high-performance building expertise and services
- Lower clients' exposure to potential LL97 fines
- Create quantifiable financial savings for clients by reducing O&M costs over the long term

Tenants

Tenants engage consultants to design, construct, and/or commission the space and coordinate logistics with building owners.

Tenants engage consultants and coordinate with building owners to design the space to comply with building performance targets and to integrate with base building systems.

Owners & Managers

Building owners coordinate with tenant and consultants as needed during the design, construction, and commissioning of the space.

Building owners coordinate with tenant and consultants throughout the design, construction, and commissioning of the space to ensure it is designed to meet building performance targets.

Attorneys

Attorneys are not typically involved during this phase.

Attorneys are not anticipated to have a significant role during this phase.

Brokers

Brokers are not typically involved during this phase.

Brokers are not anticipated to have a significant role during this phase.

Tenant Fit-Out Resources

Guide To High-Performance Office Fit-Outs

Strategies for Success

Additional Resources

Retrofit Playbook for Large Buildings

Turning Data Into Action Report & Tear Sheets

Commercial Tenant Success Stories

Build Out to Save Money

Service Procurement Guide

Tenant Design Criteria Guidance

Energy Model Report Template

Value Analysis Calculator

High Rise / Low Carbon Report

Tenant Focus: Fitting Energy Efficiency into Commercial Tenant Fit-Outs, the How and Why

Increasing Tenant Engagement Through Plug Load Management

Transforming the Market Through Energy Management Information Systems

Conclusion

Decarbonizing the building sector is a crucial step towards meeting New York's ambitious climate goals, such as the state's mission under the Climate Leadership & Community Protection Act to achieve 85% carbon emissions reductions from 1990 levels by 2050.

In recent years, significant efforts have been devoted to curbing emissions from the commercial building stock. Increasingly stringent regulatory standards – from local laws to energy codes to disclosure requirements – have pushed commercial real estate towards more energy efficient, low/no-carbon properties. These evolving regulations aim to address both operational inefficiencies and the broader impact of buildings on the environment. Additionally, more and more companies are pursuing corporate sustainability goals in recognition of the diverse benefits of improving the performance of real estate assets. Implementing energy efficiency measures in commercial buildings and tenant spaces not only reduces costs and carbon emissions, but creates healthy, comfortable work environments that enhance employee satisfaction and productivity. In tandem, these external and internal drivers further advance commercial building decarbonization.

Heightened building performance requirements and corporate sustainability goals spotlight the office tenants' significant role in whole building performance. Tenants are responsible for more than half of a commercial building's energy use and its corresponding carbon emissions. If the industry is to produce substantial and sustained emissions reductions, business as usual practices must evolve across all stages of the leasing cycle—from how tenants select spaces, to how leases are structured, and how offices are retrofitted and operated. A paradigm shift is needed to bring tenants and owners, along with their respective teams, to the table to proactively and collaboratively develop strategic decarbonization plans.

The Decarbonizing New York City Offices initiative advances the transition to forward-thinking real estate practices that prioritize efficiency and decarbonization efforts by assessing current stakeholders' positions and providing strategies to help overcome typical barriers. This initiative recognizes the opportunity that all stakeholders—including tenants, owners, designers, energy consultants, brokers, and legal experts—have to create high-performance leased office spaces. As such, this playbook highlights how teams across disciplines can work together to achieve win-win scenarios. The resources throughout provide insights and actionable guidance for each stage of the lease cycle. Our project team strongly encourages readers to refer to this playbook, assess how their current practices can evolve, and leverage the various tools over the course of an asset's lease term. We are hopeful that these resources will empower practitioners in the commercial real estate industry as we strive to decarbonize office buildings in New York City and beyond.

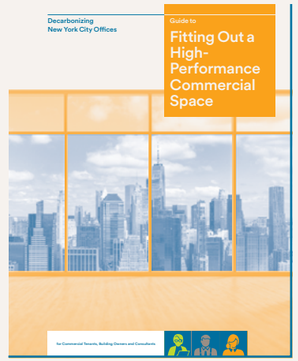
Decarbonizing NYC Offices Resources

Guide to Selecting High-Performance Commercial Spaces

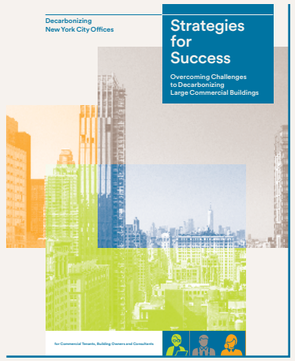
Guide to Creating Sustainability-focused Marketing Materials

High-Performance Clause for a Letter of Intent

Guide to Developing High-Performance Leases



Guide To High-Performance Office Fit-Outs



Strategies for Success

Additional Resources

In addition to the resources developed for the Decarbonizing NYC Offices project, the following additional resources are useful at various phases of the leasing cycle to help achieve energy efficiency and emissions reduction efforts in commercial office spaces.

Site Selection

Local Law 97 Carbon Calculator
A tool to estimate a building's carbon penalty as a result of NYC LL97. Allows user to automatically load building data from NYC's benchmarking database or manually enter information to generate carbon thresholds, potential penalties, and utility cost metrics for three compliance periods.
Source: Building Energy Exchange (BE-Ex)

Why Commercial Tenants Should Care About Building Energy Performance Standards
A plan outlining actions that need to be taken, for both private industry and the District government in buildings, energy infrastructure, and transportation systems between now and 2032 to meet the District's ambitious GHG reduction targets.
Source: Institute for Market Transformation (IMT)

Building Specification Sheet Template
A template for a building specification sheet given to brokers, prospective tenants, and parties involved in new fit-outs and design that outlines the energy and sustainability features of owner's buildings.
Source: NYC Mayor's Office – Carbon Challenge

Tenant Energy Optimization Program
Report Summary: An approach that integrates energy efficiency into tenant space design and construction and delivers financial returns through energy conservation.
Source: Urban Land Institute (ULI) – Tenant Energy Optimization Program

Tenant Energy Optimization Program (TEOP) for Architects
10-step process for embedding energy efficiency into leased spaces during initial fit-outs or significant renovations and shows how architects can plug in and use it to streamline their work.
Source: ULI

Letter of Intent

Landlord-Tenant Energy Partnership Efficiency Toolkit
Toolkit providing landlords and tenants essential strategies and key recommendations they can adopt to integrate energy efficiency, starting at site selection through operations.
Source: IMT

Green Leasing Info Sheet
Info sheet provides a top-line introduction to green or high-performance leasing, as well as IMT's Green Lease Leaders recognition program.
Source: IMT

Overcoming Seven Key Landlord-Tenant Hurdles to Make Ambitious Carbon Reductions
This resource provides key takeaways from the event, combining insights from leaders representing building owners, tenants, trade associations, nonprofits, and the NY Green Bank. It also identifies next steps to creating productive, mutually beneficial relationships between landlords and tenants that will make compliance to the new legislation easier to achieve.
Source: IMT

Understanding the Business of Real Estate: Information for the Successful Implementation
This document aims to enhance city personnel perspectives on how the real estate industry functions—including how different market actors work together throughout the various phases of a building's lifecycle—and foster more meaningful conversations with stakeholders.
Source: IMT

Making Efficiency Work for You: A Resource Guide for Small Business Landlords and Tenants
A resource that presents replicable starting points that complement current value propositions around sustainability. The guide includes the following sections: Green leasing frequently asked questions, Infographic: How the lease can bring landlords and tenants together on energy efficiency, sample green lease clauses, tenant operations guide, tenant build-out guide, case studies.
Source: IMT

Lease Negotiations

Green Lease Leaders: Tenant Resource Guide
This document provides guidance to tenants on how to comply with/ implement national green leasing standards and achieve recognition as a Green Lease Leader for their efforts.
Source: IMT

Green Lease Leaders: Landlord Reference Guide
This document provides guidance to landlords on how to comply with and implement national green leasing standards and achieve recognition as a Green Lease Leader for their efforts. It also sets the national standards for what constitutes a green lease.
Source: IMT

Green Lease Language Examples
Collection of green lease clauses presented in two forms; landlord or tenant priorities for 28 sustainability priorities in leasing.
Source: IMT

Green Leasing in DC
Business case for integrating green leasing practices in a city with a building performance standard. Includes introduction to green leasing, why it is needed to comply with the local law, how stakeholders take action and lease examples.
Source: IMT

Climate Mobilization Act Series: Unlocking Tenant Efficiency
In this webcast, panelists outline energy efficiency solutions for office tenants and building owner to work together and implement.
Source: BE-Ex

Tenant Fit-Out

Retrofit Playbook for Large Buildings
Knowledge-sharing platform offering a living library of case studies, technical resources, and best practices to support building owners and their teams in developing decarbonization roadmaps for high quality, low carbon retrofits that create asset value, reduce emissions, and enhance the resilience of their assets.
Source: New York State Energy Research & Development Authority (NYSERDA), Building Energy Exchange (BE-Ex), RMI, Urban Land Institute (ULI)

Turning Data Into Action Report & Tear Sheets
Retrofit packages of moderate to deep emissions savings in base building and tenant spaces suitable for four common commercial building typologies at nearly any level of baseline performance.
Source: BE-Ex

Commercial Tenant Success Stories
Select case studies of commercial tenants working with the NYSERDA to reduce operating costs, increase asset value, improve productivity, and foster a culture of sustainability in innovative retrofit stories.
Source: NYSERDA

Build Out to Save Money
Build-out or tenant improvement offers great opportunities to improve the energy efficiency of your space. A few simple decisions can help to reduce your occupancy costs and ensure a healthy environment for you employees.
Source: US Department of Energy - Better Buildings

Tenant Design Criteria Guidance
A template tenant design criteria used as standardized guidance document to inform all parties involved with a new fit-out or renovation of opportunities for building out and operating highly efficient and cost-effective tenant space.
Source: NYC Mayor's Office – Carbon Challenge

Energy Model Report Template
A template for building owners and operators to give feedback to their tenants on energy efficiency performance.
Source: ULI – Tenant Energy Optimization Program

Value Analysis Calculator
The Value Analysis Tool was created as a resource for project teams to use as part of the Tenant Energy Optimization process to analyze the relative energy and financial impacts of incorporating energy performance measures (EPMs) into a commercial tenant buildout.
Source: ULI – Tenant Energy Optimization Program

High Rise / Low Carbon Report
This survey profiles eighteen projects that undertook a deep retrofit that resulted in often dramatic energy reduction.
Source: BE-Ex

Tenant Focus: Fitting Energy Efficiency into Commercial Tenant Fit-Outs, the How and Why
Technical training workshop to help consultants, MEP engineers, and architects better understand how to integrate energy efficiency into their work with commercial tenants.
Source: BE-Ex

Increasing Tenant Engagement Through Plug Load Management
For the commercial real estate market, this study presents PPL strategies and their associated energy savings, while also exploring the most cost-effective pathways to implementation.
Source: IMT

Transforming the Market Through Energy Management Information Systems
Analyzes saturation of market and other key barriers, while presenting current national trends and solutions for how commercial real estate professionals, energy management information systems (EMIS) vendors, utilities, and local government actors can spread the usage of EMIS and with it create lasting change in energy management.
Source: IMT

Outside of the Four Priority Leasing Cycle Steps

The Great Energy Disconnect
Four-part article series sharing the lessons learned from the COVID-19 pandemic and the misalignment between the occupancy and energy use and defining strategies to realign them in a new, hybridized work environment.
Source: NYSERDA

Understanding Building Emissions
To better understand GHG emissions and how buildings and their operations contribute to those emissions, this resource will explain: how emissions are characterized, how much GHG emissions are associated with a building in the District, and ways to measure and target lower emissions for your building.
Source: IMT

A Better Building That Pays for Itself
James Hampton, Chief Engineer for Cushman Wakefield's commercial office property at 700 6th St NW, explains how a personal commitment to cost savings and better buildings, helped his team go from an Energy Star score of 69 to 90 and to invent the concept of free heating.
Source: IMT

Service Procurement Guide
This step-by-step guide will help you as a building owner make decisions about how to improve the operations and energy efficiency of your building while achieving triple-bottom line or high-road solutions (environmental, economic, and equity) through contracting by using your economic power.
Source: IMT

Comprehensive Building Operations and Maintenance Procedure Template
A template for a comprehensive O&M plan, developed jointly by the owner and tenant that includes mutual energy management goals, contacts, energy management procedures, schedules for equipment, regular maintenance and commissioning schedules, protocol for fine-tuning equipment such as sequences of operation, set points, control strategies, and a recommended training schedule.
Source: NYC Mayor's Office – Carbon Challenge

Efficiency Playbook for DC Building Professionals
The Priority Action Playbook from IMT's Building Innovation Hub outlines a list of actions for each profession and describes what they need to do to be prepared to prioritize energy efficiency.
Source: IMT

Electric Submetering System for Leased Spaces
Reference guide for landlords and tenants considering an electric submetering system for leased spaces.
Source: IMT

Guidelines for Energy Management
The US EPA's ENERGY STAR Guidelines for Energy Management provides a proven strategy for creating an energy management program focused on continuous improvement of energy performance.
Source: US EPA - ENERGY STAR Program

How to Choose the Right Energy Management Information System
To understand which EMIS is right for your portfolio or individual building, download IMT and the DC Sustainable Energy Utility's questionnaire and select the options that most accurately address your needs. The right choice can yield powerful insights that allow you to target low- and no-cost improvements, as well as strengthen the business case for investing in efficiency upgrades.
Source: IMT

ENERGY STAR Tenant Space
Recognition by the U.S. Environmental Protection Agency (EPA) for sustainability efforts in leased office spaces.
Source: ENERGY STAR

Glossary of Key Terms

Relevant to decarbonization efforts within the commercial building industry.

BREEAM
Building Research Establishment Environmental Assessment Methodology (BREEAM) is a method of assessing, rating, and certifying a building's environmental sustainability.

Building Management Systems (BMS)
A control system installed in a building that monitors and manages various systems such as heating, ventilation, air conditioning (HVAC), and lighting systems. A BMS automatically regulates and controls internal environmental conditions, such as temperature, to predefined set points. In addition to monitoring building systems, a BMS also optimizes energy use so that the system is as efficient as possible.

Building Performance Standards (BPS)
Outcome-based policies and laws aimed at reducing the carbon impact of the built environment by requiring existing buildings to meet energy and/or greenhouse gas emissions-based performance targets.

Building Letter Grades aka Building Energy Grades aka Building Energy Efficiency Ratings aka Local Law 95 of 2019 (LL95)
Requires certain buildings above 25,000 square feet to post an energy efficiency grade at each public entrance. Building Energy Efficiency Rating labels include an ENERGY STAR score and a corresponding letter grade indicating the building's energy performance relative to its peers.

Carbon, Embodied
Embodied carbon is the total greenhouse gas emissions released during the lifecycle of building materials, including extraction, manufacturing, transportation, construction, and disposal.

Carbon, Operational
Operational carbon is the total carbon from all energy sources used to keep a building warm, cool, ventilated, lighted, and powered.

Climate Leadership and Community Protection Act (Climate Act, CLCPA)
New York State law passed in 2019 that outlines a path for achieving net zero emissions, economy-wide, by 2050.

Climate Mobilization Act (CMA)
New York City legislation passed in 2019 aimed at reducing carbon emissions from buildings, this legislation consists of a slate of climate laws, including Local Law 97, designed to dramatically cut carbon in New York City.

ENERGY STAR score
An energy efficiency score (1-100) that a building earns using the United States Environmental Protection Agency's online benchmarking tool, ENERGY STAR Portfolio Manager to compare building energy performance to similar buildings in similar climates. See Building Letter Grades.

ENERGY STAR Tenant Space
An EPA recognition for sustainability efforts in a leased office space.

Energy Use Intensity (EUI)
Energy Use Intensity (EUI) expresses a building's energy use as a function of its size or other characteristics. EUI is expressed as energy per square foot per year and is calculated by dividing the total energy consumed by the building in one year (typically measured by kBtu) by the total gross floor area of the building.

Fitwel
A real-estate certification system that evaluates the health-affecting aspects of buildings to improve occupant well-being

LEED
"Leadership in Energy and Environmental Design" (LEED) is a green building rating system with multiple categories for different building and space types, providing a framework for healthy, efficient green buildings.

Local Law 97 of 2019 (LL97)
New York City law that requires most buildings larger than 25,000 square feet to meet strict greenhouse gas emissions limits starting in 2024. This new law is expected to reduce cumulative emissions from large buildings at least 40% citywide by 2030 through building retrofits.

Letter of Intent (LOI)
A letter of intent is a document used to indicate that both a tenant and building owner have agreed to move forward to a lease.

Real Time Energy Management (RTEM)
A system that continuously collects and transmits a building's current and historical performance data to the cloud. An RTEM system can detect equipment faults, so they can be addressed before they become failures or impact occupant comfort.

WELL
A performance-based system for measuring, certifying, and monitoring features of the built environment that impact human health and well-being, through air, water, nourishment, light, fitness, comfort and mind.

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Abbreviations

AHU	Air handling unit
BAU	Business as usual
BMS	Building management system
CapEx	Capital expenditures
CHP	Combined heat and power
CLCPA	Climate Leadership & Community Protection Act
CO2	Carbon dioxide
DCV	Demand controlled ventilation
DHW	Domestic Hot Water
DOAS	Dedicated outside air system
ECM	Energy conservation measure
EPD	Environmental Product Declaration
ERM	Emissions reduction measures
ERV	Energy recovery ventilation
ESG	Environment, social, and governance
GHG	Greenhouse gas
GRI	Global Reporting Initiative
HVAC	Heating, ventilation, and cooling systems
HW	Hot water
IRR	Internal rate of return
LEDs	Light-emitting diode lights
LL97	Local Law 97
LPD	Lighting power density
MEP	Mechanical, electrical, and plumbing systems
M&V	Measurement and verification
NPV	Net present value
RTEM	Real-time energy management system
SASB	Sustainability Accounting Standards Board
SBTi	Science Based Targets initiative
VAV	Variable air volume
VFD	Variable frequency drive

The Building Energy Exchange is a center of excellence dedicated to reducing the effects of climate change by improving the built environment. BE-Ex accelerates the transition to healthy, comfortable, and energy efficient buildings by serving as a resources and trusted expert to the building industry.

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