VOL. 13

2022

State of Green

ULI Greenprint Performance Report

Urban Land Institute

Recommended bibliographic listing:
Urban Land Institute. *State of Green: ULI Greenprint Performance Report*, Vol. 13. Washington, D.C.: Urban Land Institute, 2022.

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About ULI

The Urban Land Institute is a global, member-driven organization comprising more than 45,000 real estate and urban development professionals dedicated to advancing the Institute's mission to shape the future of the built environment for transformative impact in communities worldwide.

ULI's interdisciplinary membership represents all aspects of the industry, including developers, property owners, investors, architects, urban planners, public officials, real estate brokers, appraisers, attorneys, engineers, financiers, and academics. Established in 1936, the Institute has a presence in the Americas, Europe, and Asia Pacific regions, with members in 80 countries.

More information is available at uli.org. Follow ULI on Twitter, Facebook, LinkedIn, and Instagram.

About ULI Greenprint

The ULI Greenprint Center for Building Performance is a research organization focused on climate mitigation and makes the business case for green buildings by tying carbon reductions to increased asset value. ULI Greenprint also includes a worldwide membership alliance of leading real estate owners and developers committed to improving the environmental performance of the global real estate industry, striving to reduce greenhouse gas emissions by 50 percent by 2030, and achieving ULI Greenprint's Net Zero Goal for net zero carbon operations by 2050 for spaces under operational control. ULI Greenprint is organized within the ULI Randall Lewis Center for Sustainability in Real Estate, which also oversees ULI's Urban Resilience Program and the Building Healthy Places initiative.

About This Report

For the real estate industry, improved environmental performance can reduce operating expenses, increase tenant demand, lead to more efficient management of natural resources, and increase property value. This report tracks industry progress on improved performance using ULI Greenprint-member and strategic-partner properties as a proxy to demonstrate the progress that can be achieved industrywide. These benchmarks can be utilized by a range of stakeholders (e.g., academic researchers, sustainability practitioners, policymakers) as a reference point for analysis on multiple facets of real estate sustainability.

New in Volume 13

This year, the annual *State of Green: ULI Greenprint Performance Report* has changed to a streamlined format to better focus on building performance and data.

Volume 13 includes the ULI Greenprint member portfolio's typical analysis of year-over-year changes in carbon, energy, water, and waste, as well as annual benchmarks by property type, for the previous year. Data tracking progress toward ULI Greenprint's Net Zero Goal is also included for all companies committed. This volume does not include data on member projects implemented or building certifications achieved. For the first time, ULI Greenprint year-over-year, like-for-like, and annual benchmarks have been split into whole building and common area data separately to enhance transparency and value. Unless otherwise noted, data provided is whole building.

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Introductory Letter

We have reached the point at which the real estate industry knows it needs to decarbonize and is ready to act. The climate risks—both physical and transitional—are higher than ever. Stakeholder demand from investors and occupants continues to rise. More and more governments are passing regulations concerning reporting and performance around the globe.

No longer is it too expensive for real estate to act on climate change: now, the price of inaction is too high. Real estate cannot afford a portfolio of stranded assets that are unable to meet increasingly high public, private, and consumer expectations for carbon and energy. Climate mitigation is material to real estate operations; real estate has a fiduciary responsibility to decarbonize.

Much of real estate's action is spurred by leadership. The ULI Greenprint community of practice is an example of this leadership, with nearly 75 global owners and developers that are advancing sustainability in their own portfolios and the broader market. ULI Greenprint's progress is presented in this year's *State of Green, Volume 13,* which features the data and analytics behind the evergreen ULI Greenprint business case to "reduce carbon, and build value."

$1.4 T (€1.4 T)
IN REAL ESTATE ASSETS UNDER MANAGEMENT

15,843 properties
IN THE ULI GREENPRINT PORTFOLIO

3.6 billion ft²
(332 MILLION M²)

31 countries
REPRESENTED IN THE PORTFOLIO

We expected the 2021 return to work to drive up energy use and carbon emissions, but instead we found that carbon emissions continued to fall as ULI Greenprint members achieved notable green power procurement additions in their portfolios—a testament to members' increasing commitment to decarbonization. Although whole-building energy consumption remained flat from 2020 to 2021 in the ULI Greenprint collective portfolio, whole-building carbon emissions were reduced by 4.4 percent, surpassing the ULI Greenprint goal of 50 percent carbon reductions by 2030. This shows a serious increase in renewable energy procurement,[1] both on site and off site, to drive down carbon emissions across the ULI Greenprint portfolio.

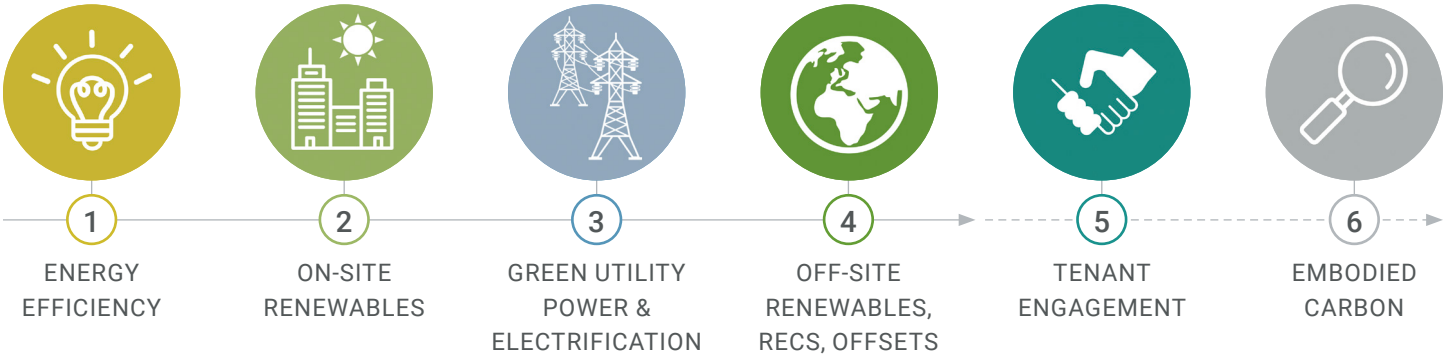
[1] Urban Land Institute, *Renewable Energy Strategies for Real Estate* (Washington, D.C.: Urban Land Institute, 2022). uli.org/renewableenergy.

"This past year brought the reality of climate change home for millions of people, visible in challenges with water—too much in some locations, not enough in others—and in punishing heat in areas unprepared for sustained periods of high heat and humidity. What to do? ULI Greenprint's mission couldn't be more relevant, with its focus on providing a blueprint for building owners to green their properties in ways that are transparent, verifiable, and comprehensive. If reading the day's litany of environmental crises makes you want to act, ULI Greenprint represents a way to channel that energy."

—Mary Ludgin, PhD, board chair of the ULI Randall Lewis Center for Sustainability in Real Estate, and senior managing director and director of global investment research, Heitman

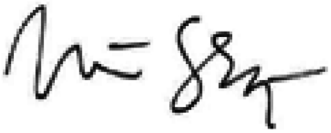
All roads are pointing to net zero. To date, 30 ULI Greenprint members have aligned to ULI Greenprint's Net Zero Goal, committing to net zero carbon operations by 2050 for spaces under operational control. By implementing strategies shown in the ULI journey to net zero carbon operations below, their portfolios' decarbonization results to date stand as a benchmark for other firms looking to achieve net zero over time.

JOURNEY TO PORTFOLIO-WIDE NET ZERO



Net zero is here, the time to act is now, and ULI Greenprint is eager to drive continued progress to decarbonize the built environment.[2]

Signed,



Marta Schantz, Co-Executive Director, ULI Randall Lewis Center for Sustainability in Real Estate

[2] Urban Land Institute, *ULI Blueprint for Green Real Estate* (Washington, DC: Urban Land Institute, 2020), uli.org/greenprintblueprint.

The ULI Greenprint Community

Real Estate Members

A global community of real estate owners, investors, and developers committed to leading the market and advancing sustainability across their portfolios:


Granite


THE
GREEN
CITIES
COMPANY


GROSVENOR


恒 隆 集 團
HANG LUNG GROUP


HEITMAN
A REAL ESTATE INVESTMENT MANAGEMENT FIRM


Howard Hughes


HUDSON
PACIFIC
PROPERTIES


JAMES CAMPBELL COMPANY LLC


Jamestown


JBG SMITH


Kayne Anderson
Real Estate


KILROY


KKR


LaSalle
INVESTMENT MANAGEMENT


LBA
REALTY

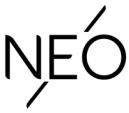

lendlease


MACQUARIE


MetLife
Investment
Management


MORGAN CREEK | VENTURES


MULTIGREEN


NEO


nuveen


PARAMOUNT
GROUP


PARKWAY


PEMBROKE


PGIM


PROLOGIS®


Rudín


SAVANNA


SKANSKA


SL GREEN
REALTY CORP.


STREET
WORKS
DEVELOPMENT


TA REALTY


TISHMAN SPEYER


THE
TOWER
COMPANIES


UNICO


WASH★REIT


ZURICH

Innovation Partners

Technology and service providers who contribute innovative best practices that advance sustainability with ULI Greenprint members and in the built environment broadly:

Strategic Partners

Industry actors who engage with ULI Greenprint and its members in the market on topics of relevance to ULI Greenprint's mission of reducing carbon emissions and increasing building value:

THANK YOU TO ULI GREENPRINT'S DATA PARTNERS

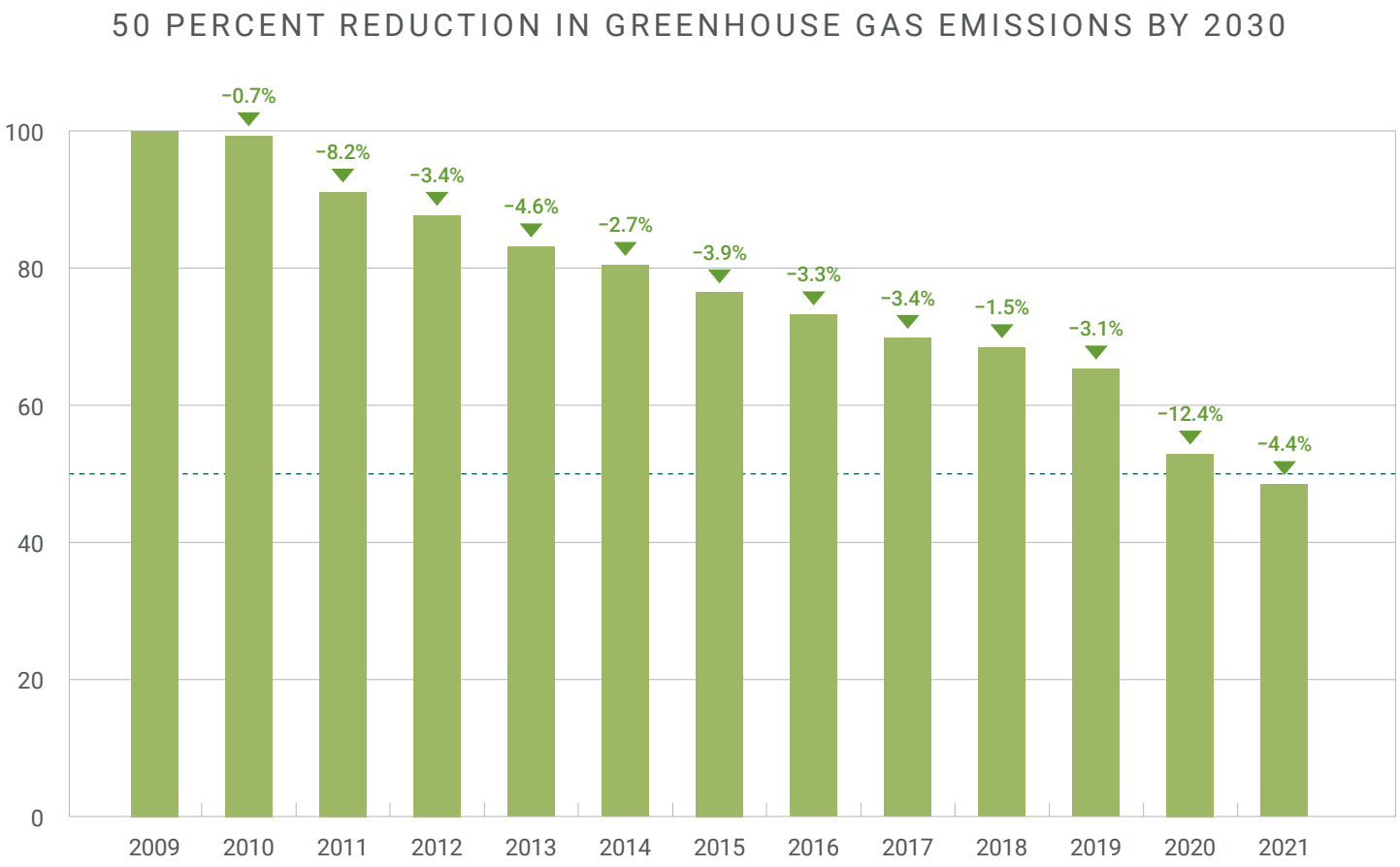
ULI is an Energy Star partner and proud recipient of a 2022 Partner of the Year award. For ULI Greenprint members with properties in the United States and Canada, Energy Star Portfolio Manager is a free online benchmarking tool that building owners and managers can use to measure and track energy, water, and waste consumption and carbon emissions.

Since 2016, ULI Greenprint has partnered with Measurabl to leverage its software tool in support of data collection, analysis, and reporting from ULI Greenprint members. This longstanding relationship drives sustainability and building performance tracking to streamline ESG reporting and provide opportunities for portfolio-wide energy management to plan, do, check, and act.

In 2020, ULI Greenprint added Goby as a data partner to improve the data reporting experience of Greenprint members who use that ESG platform. Goby helps organizations execute ESG initiatives that attract and retain investors, and accelerate sustainable and responsible growth, while mitigating enterprise risk. Goby is now part of the utility management platform Conservice, which partners with real estate owners and managers to optimize their cash flow and conserve resources through Conservice's software-enabled utility management platform.

Annual Results: 2020–2021

ULI Greenprint has been tracking year-over-year, like-for-like percent reductions in absolute carbon emissions since 2009 to measure against the portfolio-wide 50 percent reduction by 2030 goal. Adding up each year's percent carbon emissions reductions, this year ULI Greenprint members reached a cumulative reduction of 51.6 percent, surpassing the 50 percent goal. This shows an average yearly reduction of 4.3 percent from our real estate members since 2009.

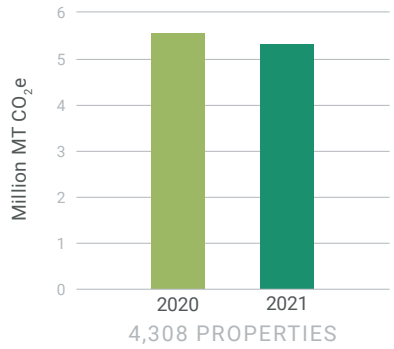


Every year, ULI Greenprint compares member portfolios' performance of assets across energy, water, waste, and carbon. This year, as noted, ULI Greenprint collected whole-building and common-area data separately. The following comparisons refer to whole-building data only.

2020–2021 YEAR-OVER-YEAR PERFORMANCE

CO_2 EMISSIONS

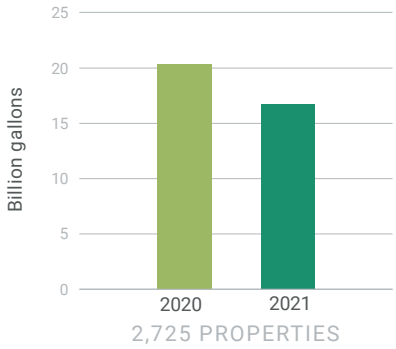
▼ −4.4%



4,308 PROPERTIES

WATER CONSUMPTION

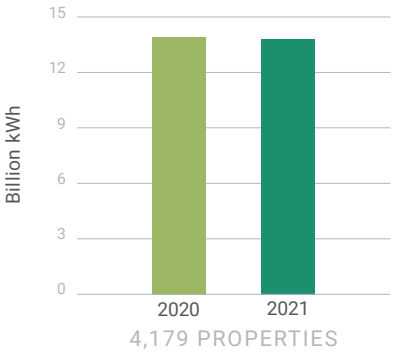
▼ −17.8%



2,725 PROPERTIES

ENERGY CONSUMPTION

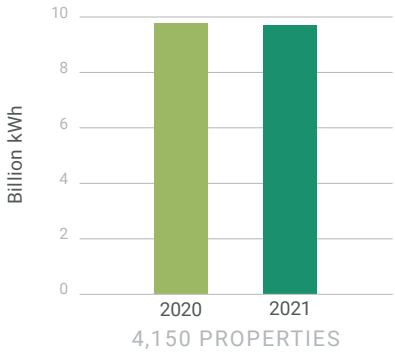
▼ −0.0%



4,179 PROPERTIES

ELECTRICITY USE

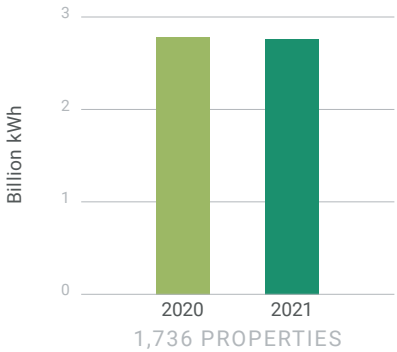
▼ −0.9%



4,150 PROPERTIES

NATURAL GAS USE

▼ −0.9%



1,736 PROPERTIES

LANDFILL WASTE

▼ −0.1%

1,302 PROPERTIES

WASTE DIVERSION

▼ −9.2%

795 PROPERTIES

Net Zero Carbon by 2050

ULI Greenprint's Net Zero Goal aims to reduce the operational carbon emissions of its members' buildings under operational control to net zero by 2050.

This net zero carbon operations goal is designed to meaningfully reduce the built environment's impact on climate change and aligns with the Paris Agreement and findings from the Intergovernmental Panel on Climate Change report advising that global warming be limited to 1.5 degrees Celsius. ULI Greenprint defines "net zero" as a highly energy-efficient portfolio that is fully powered from on-site and/or off-site renewable energy sources and offsets.

ULI Greenprint will measure members' progress toward these goals by tracking their collective improvements in energy efficiency, purchase of power from green utilities, and increased investment in on- and off-site renewable energy and offsets. This year's report increases the level of nuance and transparency in reporting on carbon emissions by scope and on sources of green power purchased or acquired.

ULI Greenprint member companies publicly aligned with the goal of net zero carbon operations by 2050 include the following, listed by wave of alignment:

FIRST WAVE

City Developments Limited

CommonWealth partners

HEITMAN (2030)

Hudson Pacific Properties* (2025)

Jamestown

KILROY* (2020)

LaSalle Investment Management

MULTIGREEN

NEO*

nuveen

The Tower Companies*

SECOND WAVE

Allianz

bxp Boston Properties (2025)

MORGAN CREEK VENTURES

PGIM

Rudin

Savanna

THIRD WAVE

AEW

Brookfield Properties

CLARION PARTNERS

CP Group

lendlease (2025)

SL GREEN REALTY CORP.

TISHMAN SPEYER

WASH*REIT

FOURTH WAVE

ACRE

The Green Cities Company

恒隆集團 Hang Lung Group

MetLife Investment Management

PEMBROKE (2035)

*Indicates an organization has already achieved the goal. Year in parentheses indicates an organization has an earlier timeline than 2050.

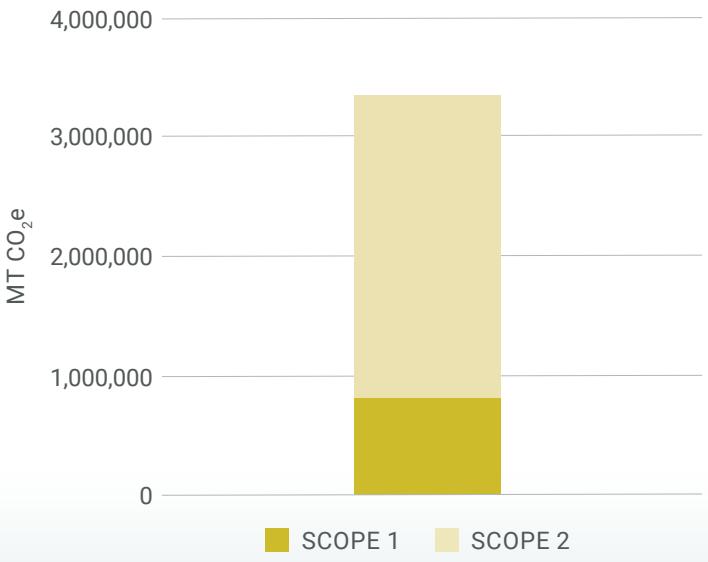
2021 GREENPRINT NET ZERO CARBON BREAKDOWN

Total Emissions	
Total emissions (scope 1 and 2) 4,370 assets 94,690,676 m^2	**3,347,354 MT CO_2e** **35.4 kg per m^2**
Scope 1 emissions	812,352 MT CO_2e 8.6 kg per m^2
Scope 2 emissions	2,535,002 MT CO_2e 26.8 kg per m^2

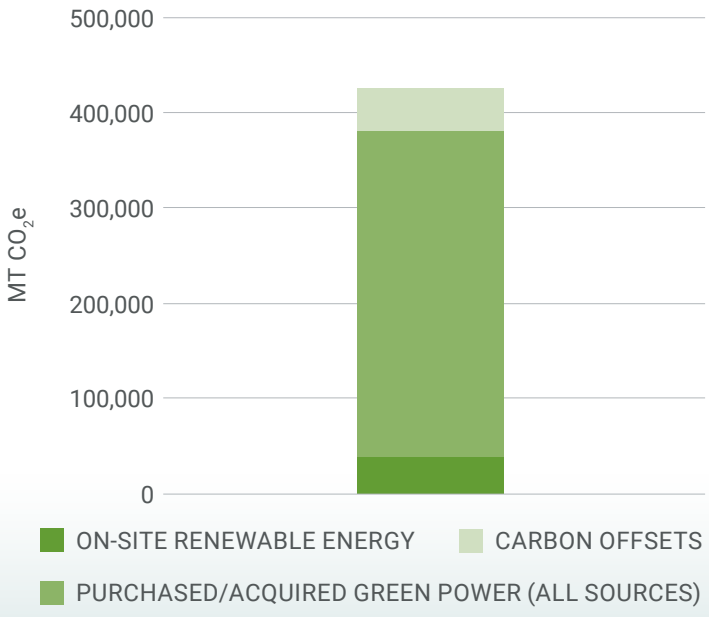
Total Avoided Emissions	
Avoided emissions from on-site renewables	**37,157 MT CO_2e** **102,901,874 kWh**
Avoided emissions from green power (purchased/acquired, all sources)	**343,947 MT CO_2e** **1,212,946,455 kWh**
Avoided emissions from physical PPAs, competitive or utility products, CCAs, self-supply (includes bundled RECs)	83,876 MT CO_2e 249,057,938 kWh
Avoided emissions from financial/virtual PPAs	2,330 MT CO_2e 7,998,000 kWh
Avoided emissions from unbundled RECs	199,223 MT CO_2e 616,326,873 kWh
Purchased carbon offsets	**42,813 MT CO_2e**

Note: Not all companies track or report on individual sources of purchased/acquired green power; therefore, avoided emissions from each source does not add up to total avoided emissions from green power. See EPA's definitions of Green Power Supply Options for more on sources of green power.

2021 TOTAL CARBON EMITTED

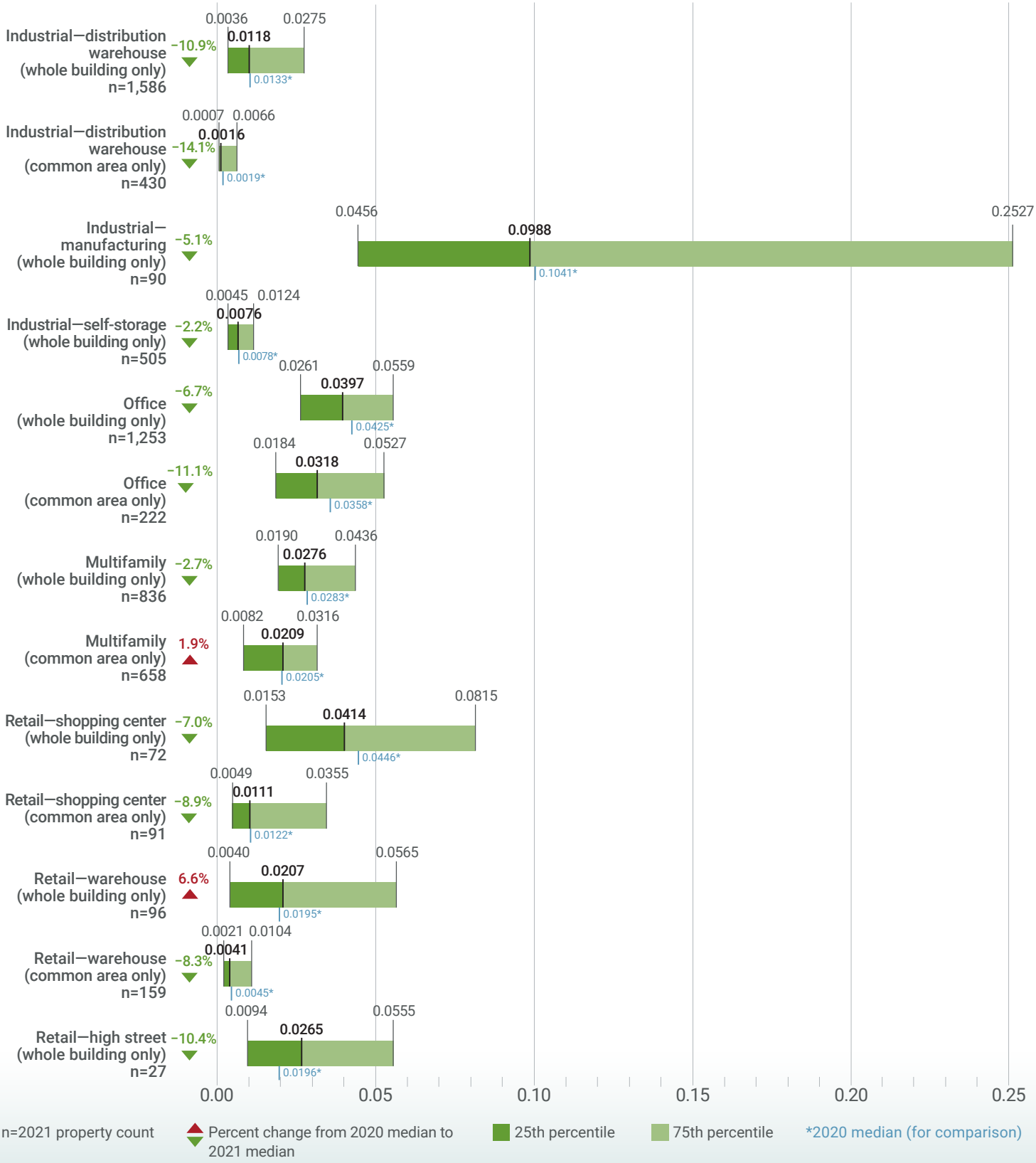


2021 TOTAL AVOIDED EMISSIONS



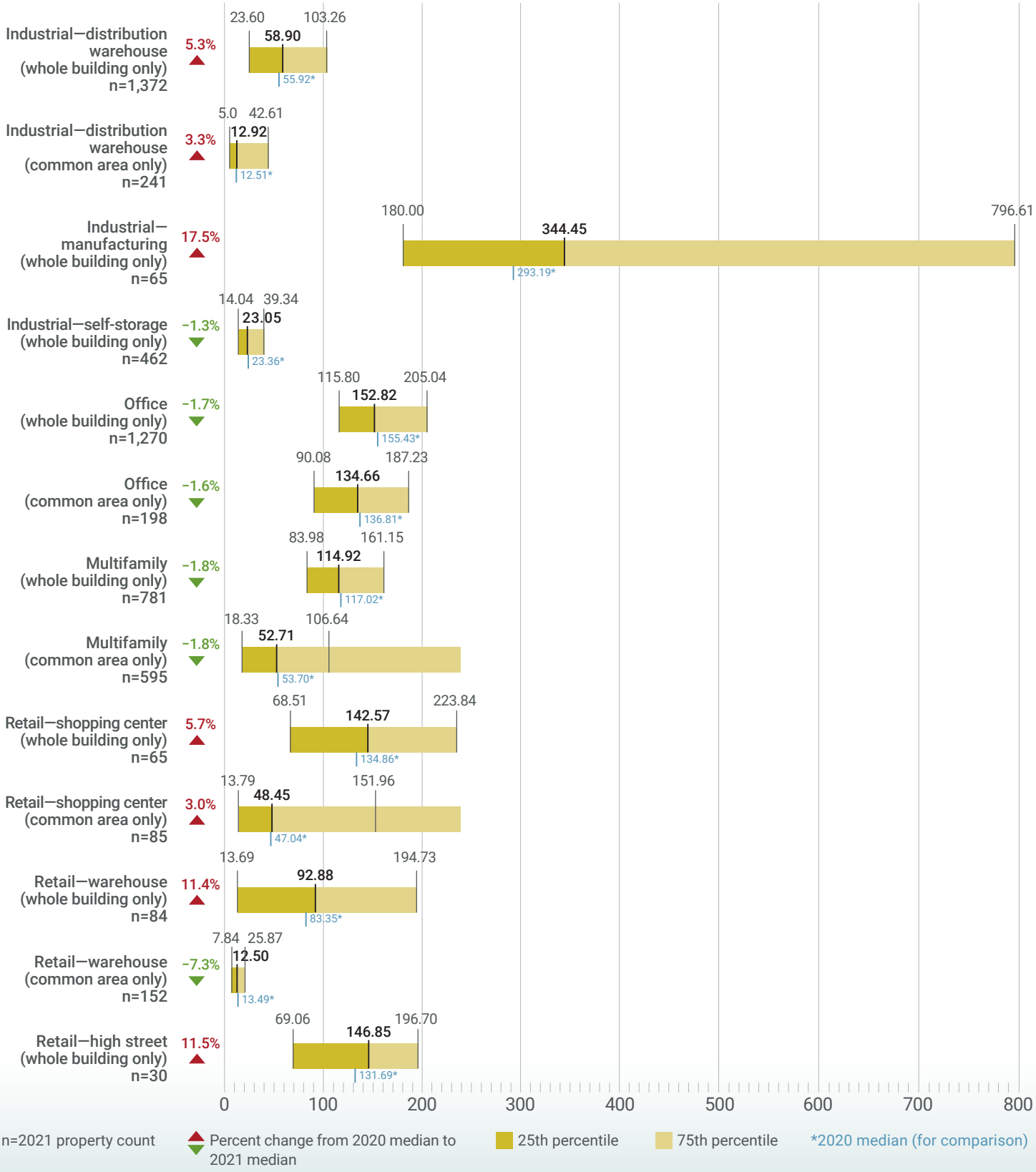
Carbon

2021 CARBON EMISSIONS INTENSITY BY BUILDING TYPE (MT CO_2E/M^2)

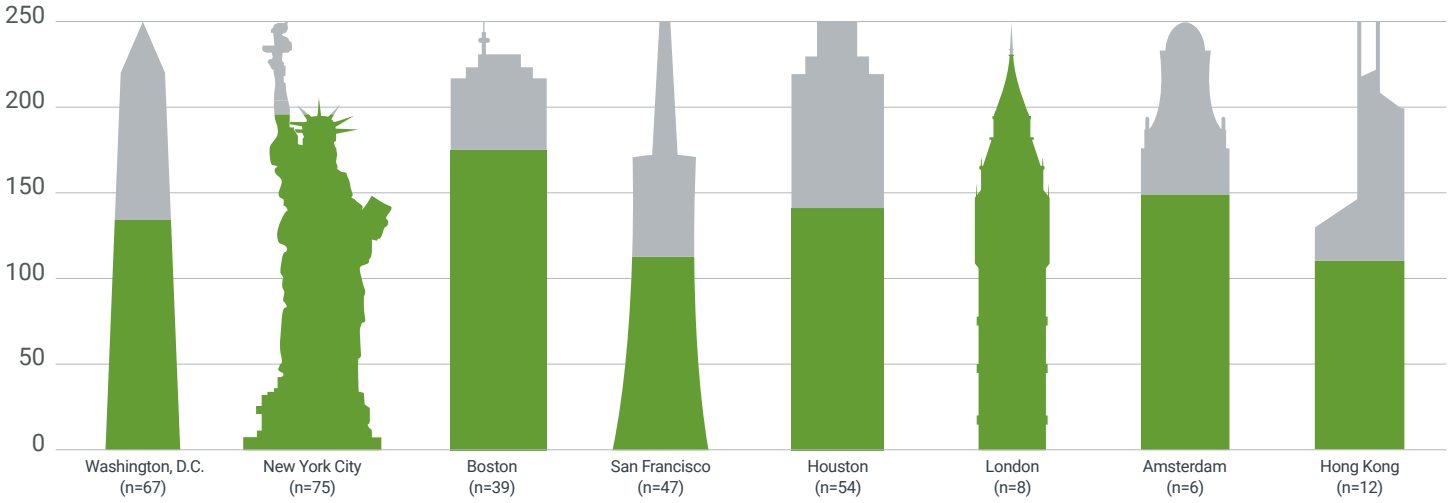


Energy

2021 ANNUAL ENERGY USE INTENSITY BY BUILDING TYPE (KWH/M²)

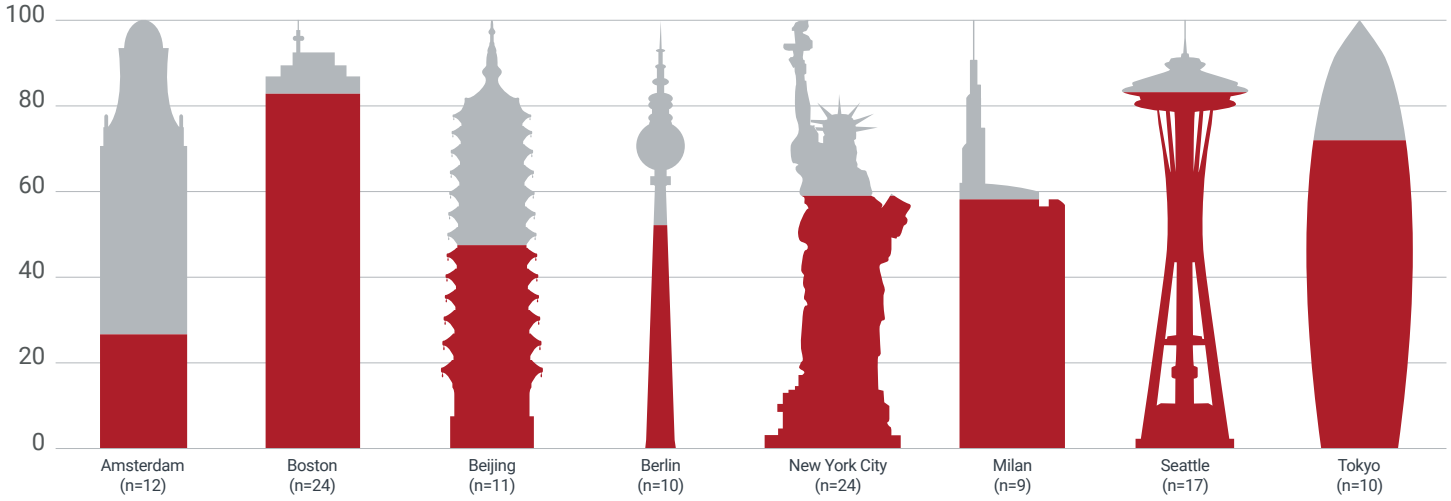


OFFICE ENERGY PERFORMANCE IN SELECT CITIES (KWH/M²)



Data provided is whole building only.

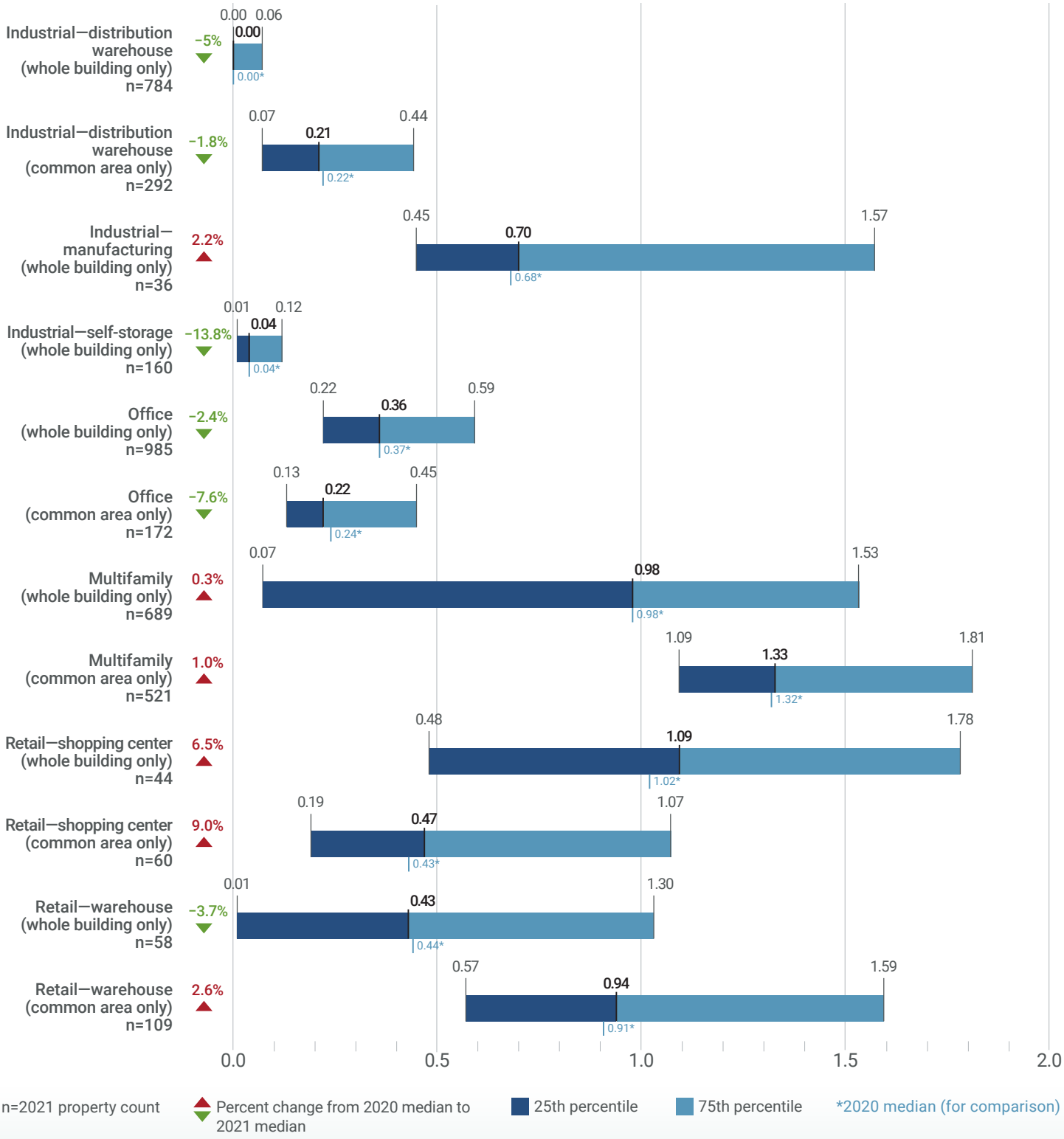
INDUSTRIAL—DISTRIBUTION CENTER PERFORMANCE IN SELECT CITIES (KWH/M²)



Data provided is whole building only.

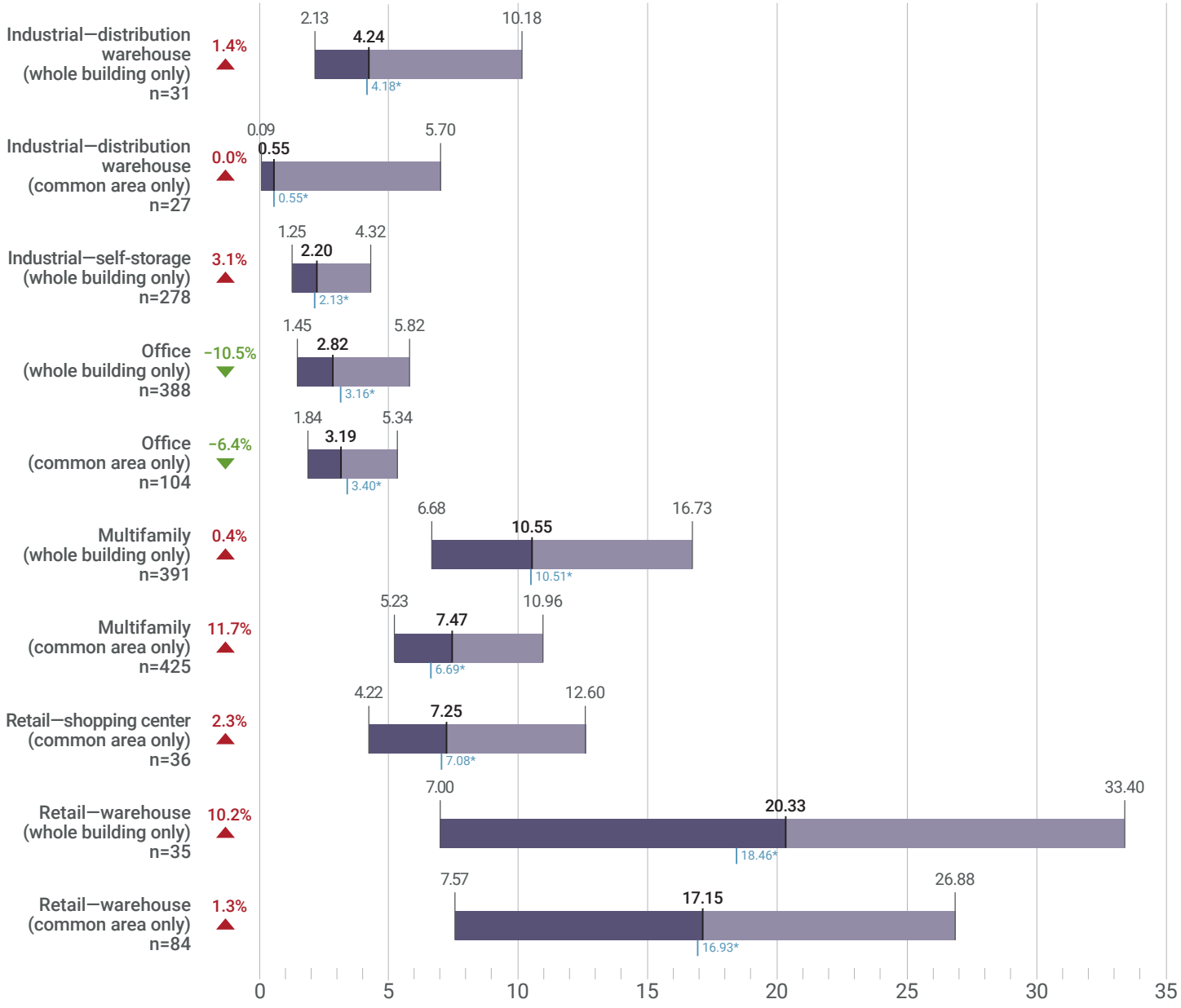
Water

2021 WATER USE INTENSITY BY BUILDING TYPE (KL/M²)



Waste

2021 WASTE INTENSITY BY BUILDING TYPE (KG/M²)



Guide to Report Terms and Charts

Report Terms

CARBON INTENSITY

Annual carbon emissions divided by gross floor area, including CDP (formerly the Carbon Disclosure Project) scope 1 and 2 emissions at minimum and scope 3 emissions if member companies choose to do so.

ENERGY USE INTENSITY (EUI)

Annual energy consumption divided by gross floor area. This report uses site EUI, which is equal to energy used on site divided by floor area.

MEDIAN

The value lying at the midpoint of a distribution of observed values.

NET ZERO

ULI Greenprint defines net zero as a building portfolio that is highly efficient and fully powered by on-site and off-site renewable energy sources and offsets.

RENEWABLE ENERGY CREDIT

A renewable energy certificate is a market tool that represents the property rights to the environmental, social, and other nonpower attributes of renewable electricity generation. RECs are issued when one megawatt-hour of electricity is generated and delivered to the electricity grid from a renewable energy resource.

WASTE DIVERSION

Reducing waste sent to a landfill through reduction of waste generation, recycling, reuse, or composting.

WHOLE-BUILDING VERSUS COMMON AREA–ONLY DATA

In buildings with tenants, building owners may or may not have insight into carbon, energy, water, and waste use data. Common area–only data thus refers to data from areas under operational control of the building owner, such as lobbies, hallways, parking lot, or exterior lighting. For this report, any data not explicitly reported as whole building was treated as common area only.

Greenprint Benchmark Data Thresholds

Benchmarks presented in this report represent the full suite of data provided by members, irrespective of lease type or occupancy level. The ULI Greenprint like-for-like analysis excludes buildings with less than 24 months of data collected, with over 50 percent change in energy, water, or waste use and over 100 percent change in carbon emissions from year to year, and with energy use intensities between 3.15 and 3,153 kilowatt-hours per square meter. The analysis does not account for additional variables, such as heating and cooling degree days, vacancy rates, and occupant density. The analysis does not normalize for changes in building performance due to COVID.

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