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Global Research

Retrofitting Buildings to be Future-Fit

The journey to decarbonization

Key Messages

1 Decarbonizing existing assets is critical to avoiding the ‘brown discount’

While economic headwinds, escalating costs and labor shortages are making it harder to unlock retrofitting opportunities over the short term, progressive owners are doubling down on net zero carbon (NZC) interventions in the knowledge that liquidity, pricing and debt are increasingly influenced by a building’s emissions performance. Rising energy costs will hasten the move towards efficient buildings and reinforce emerging value trends, with the financial risks of inaction already becoming apparent. Acute shortages of NZC buildings will benefit early adopters of retrofitting by boosting rent, reducing financial risk, improving access to capital at favorable rates, and making it easier to attract and retain tenants.

2 We must triple the pace of NZC retrofitting – collaboration at all levels will be key

At current rates, decarbonization will not be achieved until the end of the century, which will be too late to align with the Paris Climate Agreement. In the Global North, retrofitting rates need to triple from barely 1% today to at least 3% of stock per year. An estimated US\$3 trillion will be required to meet these targets. Addressing the knowledge gap, upskilling the workforce and scaling technology will be critical to accelerating the pace of retrofitting.

3 NZC interventions need to be strategically planned and pursued at scale

The actions to decarbonize are clear – maximizing operational efficiencies, the electrification of heat, incorporating on-site renewable energy and sourcing off-site local renewable energy, with offsetting as a last resort. Retrofitting is complex, and owners need to take a holistic, long-term strategic view for it to be successful.

4 Relationships between owner and occupier will need to deepen – requiring new business models

Both landlords and tenants stand to gain significant value by collaborating to form new partnerships, create new business models and identify co-investment approaches. Tenant usage is a major factor in delivering NZC outcomes. This will disrupt the economics of existing leases.

5 Retrofitting must also go beyond carbon to meet wider sustainability goals

The real estate industry must rebalance its efforts from new construction to retrofitting and embrace whole life carbon. NZC retrofits are both more viable and responsible when considered in tandem with broader asset repositioning that responds to changing workplace dynamics, health and wellbeing needs, social impact, biodiversity, and climate resilience.

Retrofitting will need to be at the core of real estate decarbonization plans

Globally, the real estate industry is facing an enormous challenge: retrofitting our buildings to reduce global carbon emissions. It is time for those leading the industry, along with governments, to drive the asset transformation needed. JLL estimates that US\$3 trillion will be required to meet these retrofitting targets. Addressing the knowledge gap, upskilling the workforce and scaling technology will be critical. The transition to a low carbon economy comes with a hefty price tag but as recently declared by the IMF,¹ further delaying climate policies will hurt economic growth; the time to act is now.

Many in the industry have heard the adage ‘the greenest building is the one that already exists’. This is largely due to the embodied carbon associated with the construction industry, which makes up 11% of global carbon emissions.²

Retrofitting existing building stock provides an opportunity for innovation in an industry that has been well overdue for a transformation. Given that real estate is the largest asset class in the world, there is significant incentive for companies to upgrade their real estate holdings.

However, lack of consistent data and standards often prevents investors and owners from taking action as globally many developers are not yet mandated to measure or report on the carbon footprint of their assets.

Retrofitting buildings across the world represents an immense task, not made any easier by the ongoing geopolitical crisis that has triggered the current energy crisis. This has emphasized the need for energy independence, which must be achieved by a shift away from fossil fuels to localized renewables, as well as the need to increase energy efficiencies and lower energy demand. Despite these challenges, there is a strong business case for retrofitting buildings to be future-fit.

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Rising energy costs will hasten the move towards efficient buildings



¹ <https://www.imf.org/en/Blogs/Articles/2022/10/05/further-delaying-climate-policies-will-hurt-economic-growth>

²WGBC

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Decarbonizing existing assets is critical to avoiding the ‘brown discount’

While economic headwinds, escalating costs and labor shortages are making it harder to unlock retrofitting opportunities over the short term, progressive owners are doubling down on net zero carbon (NZC) interventions in the knowledge that liquidity, pricing and debt are increasingly influenced by a building’s emissions performance. Rising energy costs will hasten the move towards efficient buildings and reinforce emerging value trends, with the financial risks of inaction already becoming apparent. Acute shortages of NZC buildings will benefit early adopters of retrofitting by boosting rent, reducing financial risk, improving access to capital at favorable rates, and making it easier to attract and retain tenants.

The risk of inaction on decarbonization will lead to financial risk sooner than many investors realize. The 2022 GRESB results – the global ESG benchmark for real estate related financial products – show that the average CRREM (Carbon Risk Real Estate Monitor) stranding year of GRESB-submitted buildings is 2025.³ As demand for NZC buildings continues to increase, the current supply-demand imbalance will provide a value uplift opportunity for those who act, and a potential brown discount for those who don’t.

Tenant demand risk

Value does not only come in the form of Return on Investment (ROI) – as an asset manager or investor it is also about tenant attraction and retention. Currently, 60% of Fortune 500 companies have some climate or energy target already in place. With increasing

corporate commitments around net zero, tenants are being more selective when deciding what space to occupy. In JLL’s 2022 Future of Work Survey⁴, the vast majority of organizations (74%) said they would be willing to pay a premium for leasing a building with leading sustainability or green credentials, and 22% said they already have.

By incorporating a decarbonization approach into the overall global corporate strategy and putting a carbon transition plan in place, investors can continue to attract the most coveted and best quality tenants to maintain or improve net operating income (NOI). It is short-sighted to solely focus on ROI, and instead the opportunity cost of losing the lease or having an unlettable asset in the future should be considered as part of the decarbonization strategy.

³Source: GRESB, 2022. Based on a sample size of 117,000 assets

⁴Based on survey of 1,095 decision makers and corporate occupiers across 13 global markets

Value uplift

It is a question of when, not if, sustainability will be reflected in the value proposition.

In **Australia**, a deep retrofit of an office building from the early 2000s resulted not only in an improved NABERS rating, but higher rents, lower utility bills (due to installation of on-site renewables), and an improved internal rate of return (IRR). The building now also benefits from the incorporation of new technology to monitor energy and water usage.

In a Central **London** office, a NZC audit modelled a 70% reduction in EUI (energy use intensity) and annual carbon savings of close to 200 tonnes CO₂. This would lead to a 225 basis point increase in total return over a 10-year hold period, despite the higher capital expenditure involved in carrying out the refurbishment. This stronger return is attributable to expectations of reduced letting voids, higher rental growth rates and a premium on the exit yield, amongst other factors.

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Acute shortages of NZC buildings will benefit early adopters

Regulatory risk

We can expect climate risk assessments to become part of all property valuations in the near future. Leading investors are already including net zero carbon in their mandatory due diligence as part of the asset acquisition process. In Europe, the EU Taxonomy and SFDR (Sustainable Finance Disclosure Regulation) have imposed mandatory ESG disclosure obligations to bring clarity and transparency to the market on all investment activities that involve European capital sources.

At the same time, many jurisdictions are beginning to implement taxes on carbon emissions or already have them in place, such as Canada, Singapore and New York City. As carbon pricing becomes more commonplace, it will become another cost line on companies' utility bills and incorporated in energy prices, further making the business case for low and zero carbon buildings. Energy cost savings are directly translating into property value, and this is only being exacerbated by the current energy crisis.

On average, the cost to decarbonize is 10%-20% of AUM at a portfolio level, but ranges widely at an asset level, partly because investments also have upside and distilling green additional costs is hard to do. Importantly, the availability of debt financing at attractive rates will be linked to robust transition plans that account for upcoming changes to the local regulatory environment.



2 We must triple the pace of NZC retrofitting – collaboration at all levels will be key

At current rates, decarbonization will not be achieved until the end of the century, which will be too late to align with the Paris Climate Agreement. In the Global North, retrofitting rates need to triple from barely 1% today to at least 3% of stock per year. An estimated US\$3 trillion will be required to meet these targets. Addressing the knowledge gap, upskilling the workforce and scaling technology will be critical to accelerating the pace of retrofitting.

Globally, nearly 100 countries have committed to a net zero target by 2050.⁵ The scale of the retrofitting challenge is huge:

- The cost of retrofitting the office stock alone across 17 major countries is conservatively estimated by JLL to exceed **US\$3 trillion**.⁶
- Across 10 major cities in Europe and North America, **90%** of the office stock is over 10 years old, and even offices completed just over 5 years ago will likely not comply with future energy efficiency standards.⁷
- JLL has calculated that in mature cities about **80%** of office buildings which exist today will still be in-use in 2050, meaning existing stock will have to be retrofitted at a rate of between **3.0%-3.5%** per year if the net zero target is to be met. However, current retrofit rates in the Global North are only around **1.0%**.
- Even in high growth emerging cities, where new construction could more than double the existing stock by 2050, retrofitting will still be a formidable undertaking.

There are many reasons for the current inaction around retrofit rates. Some are waiting until there are clear regulations around net zero buildings before embarking on a costly deep retrofit. At present, energy consumption targets for buildings are based on the energy use intensity ('EUI', measured in kilowatt hours per square meter, per year - kWh/m²/year) performance of new builds. However, there are no EUI targets for existing buildings as part of legislation (CRREM aims at giving one target EUI for an asset regardless of the building's age), which is quite a challenge for investors and owner-occupiers trying to decarbonize their existing portfolios. Still, property owners may face increased costs if they continue to wait for regulation and may also be further limited by future shortages of materials. Further delay also poses significant risk to the future value of assets. There is an imperative to act now, and owners stand to benefit from being proactive.

⁵ According to Net Zero Tracker, countries committed to 1.5C target, net zero and zero carbon

⁶ Australia, Belgium, Canada, China, Germany, France, India, Italy, Japan, Netherlands, Poland, Singapore, South Korea, Spain, Sweden, UK, U.S

⁷ Berlin, Boston, Chicago, London, Los Angeles, Madrid, New York, Paris, San Francisco, Stockholm

There is also a large knowledge gap when it comes to undertaking a deep retrofit.

Educating all stakeholders on the benefits of retrofitting existing stock – from increased resilience linked with future-proofing the asset, to ROI and rental uplift, tenant retention and attraction, and reduced financial risk – is key to accelerating the present retrofit rate. Globally, there is also shortage of the technical expertise required to advise on and carry out these retrofits. There is an urgent need to upskill our labor force and encourage sustainability training for building engineers, architects, and consultants.

These drivers of inaction are not hurdles that should deter the industry from taking charge and retrofitting our buildings. In fact, we can take a lesson from the Covid pandemic in which we were faced with an unprecedented

global health crisis. Investment, technology, and science came together, resources were made available, and countries collaborated on a global scale, the likes of which we have not seen before. To successfully transition real estate to meet global targets, we need action at a similar scale. We have the technology to retrofit our buildings in line with the Paris Agreement, but we need the capital, talent, regulation, and collaboration to accelerate the pace of retrofitting before it is too late.

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74% of CRE leaders say they would pay a premium for leasing a green building

Source: JLL Future of Work Survey, 2022



3 NZC interventions need to be strategically planned and pursued at scale

The actions to decarbonize are clear – maximizing operational efficiencies, the electrification of heat, incorporating on-site renewable energy and sourcing off-site local renewable energy, with offsetting as a last resort. Retrofitting is complex, and owners need to take a holistic, long-term strategic view for it to be successful.

Deep retrofits must be considered at the outset when creating a decarbonization roadmap. Every retrofit is a complex process and should be thought-out with a long-term view that prioritizes deep retrofits early. A retrofit strategy that incorporates embodied carbon, operational carbon, lifecycle assessments and consideration for the regional complexity of the energy grid, along with the context of change management is a highly effective way to decarbonize existing buildings.

The carbon impact of a new build, depending on asset type, size, and location, can be up to 1,500 kg of CO₂ per square meter. Emissions from retrofits, depending on their depth and extent, are typically below 500 kg of CO₂ per square meter, potentially generating just one third of the CO₂.

This is why retrofitting becomes instrumental in the low carbon transition, but it is a complex concept. **To simplify we refer to three types of interventions when we use the term ‘retrofit’:**

Deep retrofit on whole building: focus on significant works of size or scale that result in a fundamental change to the building structure and/or services. Examples include

fabric/envelope improvements such as wall and roof insulation, glazing replacement, heating and cooling systems, LED fittings, ventilation, Building Management Systems (BMS) optimization, other energy efficiency measures, distribution networks and architectural trades.



Deep retrofit on MEP equipment: focus on significant works of size or scale that result in a fundamental change to the mechanical, electrical, and plumbing (MEP) equipment in the building. Examples include ventilation, heating and cooling systems, LED fittings, BMS optimization, other energy efficiency measures, distribution networks and architectural trades.

Light retrofit: focus on performance optimization and the basic remodeling, replacement, or adaptation of existing building elements which tend to concentrate on a single aspect or feature. Examples include LED fittings, BMS optimization, other minor energy efficiency measures, distribution networks and architectural trades.

Through these various interventions, JLL has demonstrated considerable EUI reductions across all asset types, the most substantial being the results of a whole building deep retrofit, as illustrated in the table below.

Net Zero Carbon Interventions

Typical Energy Efficiency Savings by Type of Retrofit

	Light Focus on performance optimization	MEP* Deep retrofit on MEP equipment	Whole Deep retrofit on whole building
 Office	▼ 10%-15%	▼ 30%-40%	▼ 40%-60%
 Logistics	▼ 10%-15%	▼ 20%-25%	▼ 30%-35%

In regulated energy, based on European assets
 *MEP = Mechanical, Electrical and Plumbing
 Source: JLL, 2022

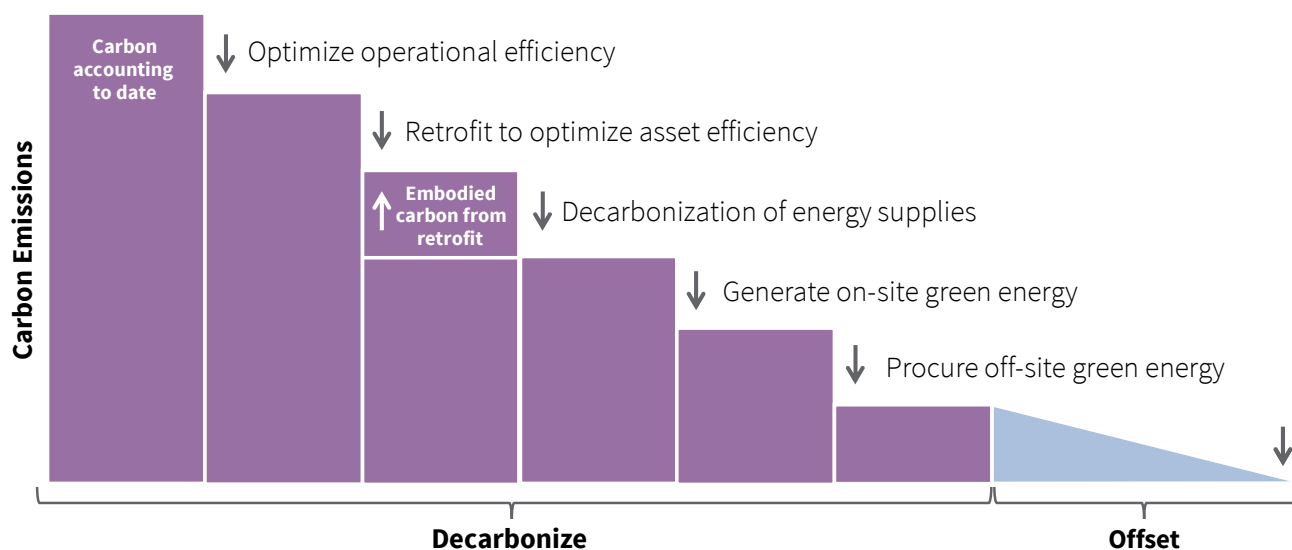
In decarbonizing an asset, there are similar levers that can be utilized:

- Understand the current EUI of the building
- Maximize operational efficiencies through low-cost and no-cost initiatives
- Improve energy efficiency through fabric improvements
- Electrification of heat
- Incorporate on-site renewable energy
- Source off-site renewable energy
- Offset the remainder as a last resort



A Decarbonization Pathway

NZC interventions need to be strategically planned



Source: JLL, 2022

Owners should be wary of incremental, small energy conservation-based retrofits.

For example, replacing a fossil-fuel burning boiler with a more efficient gas burning system still leaves the building tied to a CO₂ producing heat source, and for many years out. Incrementalism is not going to get us to net zero as small replacements could inhibit the potential to fully electrify the building within the desired time frame.

Electrification of such systems does require large capital spending but strategizing retrofits with a long-term view can also allow investors to smooth out their ROI. Investors and owners can bundle the quick ROI initiatives with larger capex projects so that together, these improvements have a shorter payback period. There is also a moral imperative to consider deep retrofits earlier because they allow investors to achieve a smaller cumulative carbon impact over time. Starting these improvements early on facilitates larger reductions in emissions sooner and lower emissions over time.

One issue when starting the decarbonization journey is the lack of clarity around the targets and standards that need to be achieved across various markets. There are essential tools such as CRREM that already provide guidance based on asset type, age and location. In Europe, CRREM has been adopted as an accepted standard by many institutional investors - the recent merging of CRREM and Science Based Targets initiative is a positive move for the consolidation and clarity of NZC targets.

Of particular importance is the need to develop a comprehensive NZC assessment and delivery strategy, as this will be instrumental in ensuring that any retrofits are well thought out and implemented effectively.

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Retrofits are complex and should be thought-out with a long-term view

In **EMEA**, JLL is working with LaSalle Investment Management to carry out NZC assessments across their EMEA portfolio and create a delivery strategy for a net zero transition. By doing this, LaSalle can incorporate the decarbonization strategy into the capital plans of their assets and allocate budget and time accordingly.

One key aspect in the decarbonization journey is planning these interventions around vacancies. When leases are up and there are no occupants is the ideal moment for investors to take advantage and carry out these deeper retrofits with limited disruption. In some cases, retrofits might be just for a couple floors in a multi-tenant building. The whole building won't be net zero, but it will be on the decarbonization pathway and is another option for the investor to spread the capex over time.



4 Relationships between owner and occupier will need to deepen – requiring new business models

Both landlords and tenants stand to gain significant value by collaborating to form new partnerships, create new business models and identify co-investment approaches. Tenant usage is a major factor in delivering NZC outcomes. This will disrupt the economics of existing leases.

To meet net zero targets there needs to be an alignment of all parties involved and at a level of collaboration we have not yet seen.

This starts with the tenant and landlord relationship. Tenants stand to benefit from lower operational costs, while for landlords the energy efficiency of buildings is now inextricably linked to value. However, in the general disconnect that exists between most landlords and tenants there is a clear necessity for both parties to align their objectives and partner together to achieve common ambitions.

One way to do this is to leverage memorandum of understanding agreements in leases which allow both parties to work together for shared common decarbonization goals. In particular, tenants need to collect and share data, while landlords need to be able to provide solutions, and costs should be spread fairly in line with responsibilities as neither party can afford to pay for it all. Moreover, tenants could potentially agree to sign lease extensions in return for the landlord covering the capex of a NZC refurbishment, so both benefit from the investment, and landlords could share NZC assessment results with current tenants, thus getting buy in and accountability.

Green leases can also be put into effect to make agreements legally binding, as well as to allocate

the commitments across both parties. Green leases were originally intended to provide mutual incentives for investing in building performance improvements, yet we now expect them to evolve into responsible leases that allow for more progressive contract models, co-investments and new business models which reflect this shifting relationship dynamic.

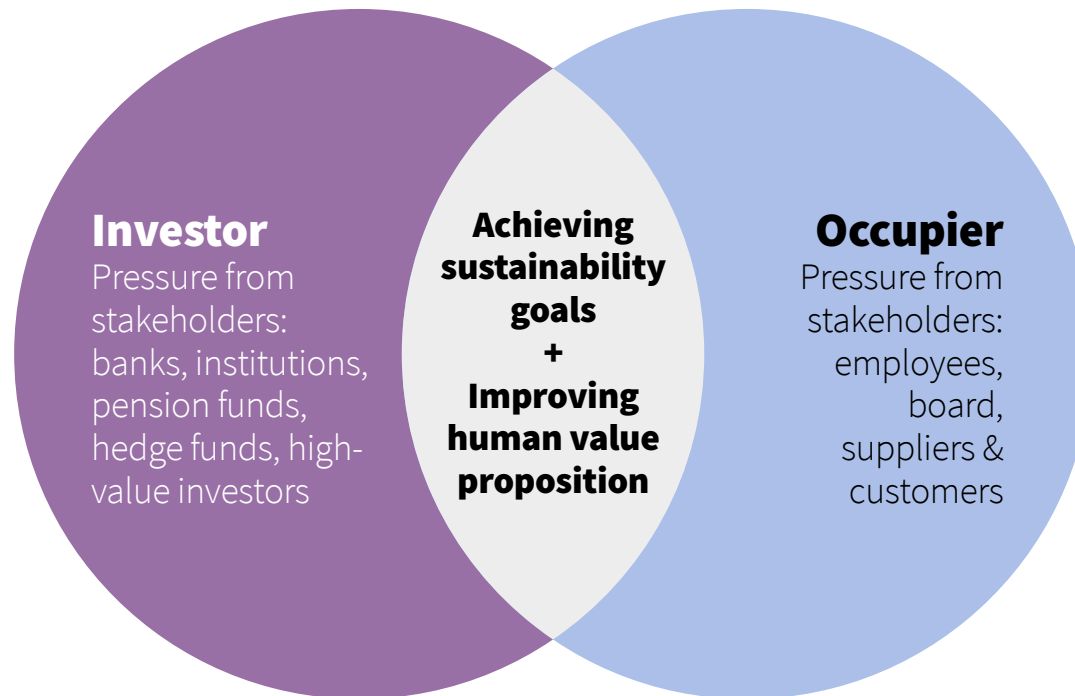
This alignment of stakeholders extends beyond just landlords and tenants – suppliers, building operators, management teams, on-site teams, even local governments, must work together if we are to successfully transition to a low carbon economy. Collectively, pressure must be put on governments to green the grid and incentivize renewable energy over fossil fuels for these retrofits to be in line with net zero standards. Without decarbonizing the electricity grid there are limits to what building owners can achieve in reducing their carbon emissions. Furthermore, if we're only talking about retrofitting in terms of physical changes to the building, it will never work, because how the building is used and how people interact with the space is a large part of the overall carbon footprint. Tenants and building managers need to learn how to use their space effectively to reduce energy emissions, waste and water usage.

Opportunities for shared value

Climate commitments and human experiences increasingly lend themselves to shared incentives between investors and occupiers

Investor Value Drivers

- Reduce carbon emissions
- Reduce waste and water
- Lower operating costs
- Improve occupancy rates
- Increase tenant satisfaction
- Reduce financing costs
- Reduce risk/increase resilience



Occupier Value Drivers

- Reduce carbon emissions
- Reduce waste and water
- Lower operating costs
- Employee retention
- Improve productivity, engagement, collaboration & well-being
- Reduce risk/increase resilience

5 Retrofitting must also go beyond carbon to meet wider sustainability goals

The real estate industry must rebalance its efforts from new construction to retrofitting and embrace whole life carbon. NZC retrofits are both more viable and responsible when considered in tandem with broader asset repositioning that responds to changing workplace dynamics, health and wellbeing needs, social impact, biodiversity, and climate resilience.

Effectively decarbonizing real estate requires a shift in mindset – away from needing to own or occupy the shiniest, amenity-laden new build on the block, to using clever design to reimagine an existing space that can still offer the same quality of environment and tenant experience as a new build.

Moving towards retrofits is not just important from an energy savings perspective, it is also imperative from a resource standpoint. The world has finite raw materials available for human consumption and the current rate of construction is depleting our natural resources; 50% of the world's raw material consumption is due to the development of buildings. Reusing and repurposing materials

as part of a retrofit significantly reduces the embodied carbon associated with the project.

In a retrofit in **Atlanta**, JLL was able to divert 93% of waste by recycling and donating building materials rather than disposing of them. At the same time, the total CO₂e was reduced by over 50%. Since the building was originally planned as a 70,000 square feet new build, renovating the existing 40,000 square feet building resulted in a 42% reduction in building impact.



Measuring and reducing embodied carbon



Source: Hall + Merritt

Situation

Instead of developing a new 70,000 sqft headquarters in midtown Atlanta, JLL helped modular flooring company Interface fully renovate an existing 40,000 sqft 1960s building, adding half a fourth floor and a full interior fit-out.

Results

- Total CO₂e emissions fell by just over 50%
- Total waste diversion of 93%
- Environmental impact 42% lower than new build

In **Europe**, JLL has worked with AXA to embed sufficiency principles into their new builds, such as assessing whether the new building is really needed, and to what extent instead could existing assets and materials be reused to maximize flexibility and reduce cost and carbon impacts.

Retrofitting is a piece of the wider sustainability approach and should be implemented alongside other resiliency strategies. When we talk about retrofitting, it's crucial to take a more holistic view and think about space use and how humans interact with the built environment.

JLL's 3-30-300 Principle leverages real estate spending to increase employee productivity by demonstrating how investments in healthy, sustainable workplaces offer the most profound opportunity for cost savings. The principle, measured in per square feet/year, calculates that

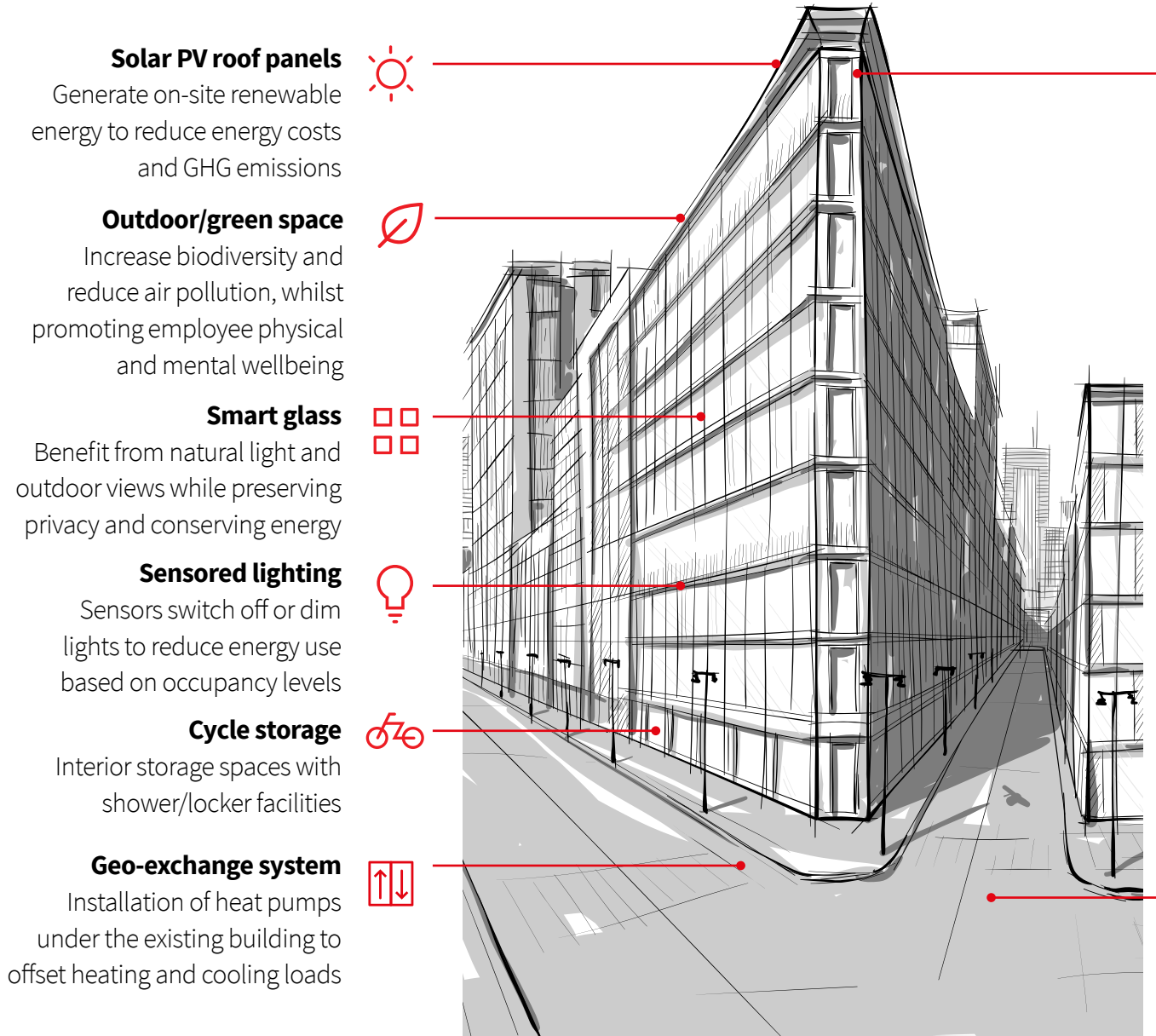


for every US\$3 spent on utilities, US\$30 is spent on rent and US\$300 is spent on human capital. It is meant to highlight how companies can leverage their real estate expenditure to support and engage employees. Staffing costs are a company's largest expenditure and investing in health and wellbeing as part of the overall deep retrofit not only bundles the costs together, but also results in less sick leave, better cognitive function, and even employee retention.

JLL included WELL certification as part of a deep retrofit for an office in **Central London**. By completing the certification at the same time, the client was able to create a decarbonization plan in line with its overall asset repositioning strategy and therefore identify all opportunities for asset enhancement.

Incorporating decarbonization as part of the overall asset repositioning strategy is a way of protecting the asset's value. With the return to the office and the future of work varying across cities, our old way of working is changing, as is the tenant perspective. To ensure an asset is attractive to tenants and commanding premium rents and low vacancy rates, the space is going to need to change to meet these new expectations. Deep retrofits are essential as part of this transition and should not be considered in isolation. The focus should be on future proofing assets, catering not just to existing needs, but to how the building will be used over the next few decades. Notably, in the face of more challenging times ahead with the current energy crisis and looming economic downturn, a shift from new transactions to asset repositioning is expected and we could likely see more owners considering retrofits over the next couple of years.

Asset enhancement upgrades



Solar PV roof panels

Generate on-site renewable energy to reduce energy costs and GHG emissions



Outdoor/green space

Increase biodiversity and reduce air pollution, whilst promoting employee physical and mental wellbeing



Smart glass

Benefit from natural light and outdoor views while preserving privacy and conserving energy



Sensored lighting

Sensors switch off or dim lights to reduce energy use based on occupancy levels



Cycle storage

Interior storage spaces with shower/locker facilities



Geo-exchange system

Installation of heat pumps under the existing building to offset heating and cooling loads



Building reuse

Retain existing building structure to reduce waste to landfill and reduce embodied carbon emissions



Health and wellness

Design elements prioritizing health and wellbeing, such as fresh air, thermal comfort and ample daylight



Smart building control and metering

Digital controls and real-time data for increased occupant comfort, reduced energy use, and reporting



Transportation/commuting connections

Connections to public transportation and safe walking/cycling lanes



Electric vehicle charging

Charging stations on-site or nearby



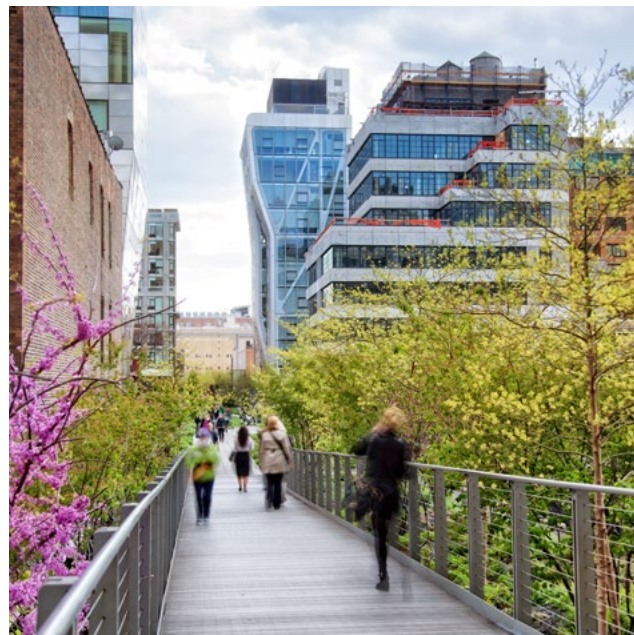
Water harvesting

Reduce water waste by installing a basement cistern to gather rainwater from the roof for reuse in the building's mechanical systems

One key issue to raise is the current lack of measurement and reporting of building data that would allow for proper tracking and verification of efficiency and carbon metrics, extending to the supply chain. At present, measurement and reporting of whole-life (operational and embodied) carbon data for new and existing projects in the built environment only exists in the minority.

Increasingly, we can expect regulations to come forward to require this data monitoring and sharing, but at present it is another barrier to enabling the implementation of retrofits. Since 2020, France, Finland, and Sweden have each began requiring developers to submit assessments of their projects' construction carbon footprint to get planning permission, joining the Netherlands, which has required the measurement since 2013. The EU is currently considering adding a similar policy to existing bloc-wide legislation on energy efficiency in buildings.

In most countries, however, planning permission is linked only to operational carbon, the emissions that will be generated while the building is in use. Some countries are taking a more proactive approach to address embodied carbon. Denmark, Finland, France, the Netherlands and Sweden have all passed laws to regulate whole-life carbon emissions from buildings. Australia recently became the sixth country to pass a climate change law with its landmark climate bill to reduce emissions by 43% by 2030, which will require the government to provide annual reports that track progress. As governments continue to set ambitious targets, data and reporting will become mandatory to ensure these targets are met.



Final reflections

We have a critical role to play within commercial real estate to have a meaningful and necessary impact on reducing global carbon emissions, and we can start right away. The technology, systems, processes, and means to reach net zero carbon and beyond exist today, but there is no one singular strategy, technology or entity that will address the journey and there is also no one-size-fits-all approach. While the scope and complexity of the challenge is immense, retrofitting existing buildings is the quickest and most cost-effective way to accelerate decarbonization in the built environment.



To find out how we can support your global real estate market strategy with research insights and strategic advice, please contact one of the team below.

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Through our end-to-end suite of Sustainability Services, we support our clients at every stage of their sustainability journeys. We start by helping them to develop sustainability strategies and action plans, then execute on those action plans, and optimize for cost and performance. Our sustainability solutions are configured to help our clients achieve their desired outcomes – whether those outcomes be financial, environmental, social, or governance- or resiliency-related – no matter where they are on their sustainability journey. With our end-to-end suite of energy and sustainability solutions, we can meet our clients exactly where they are, help them achieve their desired outcomes, and to do so more effectively and efficiently over time.

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