BRILLIANT BUILDINGS

OFFICES OF THE FUTURE

Work smarter not harder

Meeting the changing needs of occupiers and hitting sustainability requirements

WILLMOTT DIXON

SINCE 1852

THE WORKPLACE DILEMMA

Office spaces are facing a huge challenge. In the years to come they may become unlettable, resulting in them becoming what's being termed as a 'stranded asset'.

This can come about for two reasons. The first is the huge shift in working practices we have witnessed in the past five years. An office is no longer just a place for employees to sit at desks, with meeting rooms, kitchens, and canteens as the main onsite facilities.

Instead, end-users of office spaces have different expectations, and if these aren't met, an outdated office space risks becoming unlettable. Organisations leasing office spaces will overlook them in favour of spaces that better meet the needs and expectations of its employees and are better aligned with their corporate carbon reduction targets.

Office buildings can also end up as stranded assets if they don't meet sustainability requirements. Moving forward, office spaces must meet government requirements around energy efficiency or they can no longer be let. As of April 2023, office spaces that fall below an EPC rating of E cannot legally be let.

In the next few years, these requirements will become more stringent, with an EPC of C being the minimum from 2027, and an EPC of B from 2030 onwards.

The good news is that these stranded assets can be recovered by either retrofitting or demolishing them, and creating new buildings in their place. However, the goal for landlords and building owners should be to avoid getting to the point where office spaces are at risk of becoming stranded.

In this Brilliant Buildings, we explore offices of the future – from both a sustainability and end-user perspective. We also look at examples of how we've helped customers transform their office spaces through new-build developments, as well as back-to-the-frame retrofit transformations.

Nick Gibb, Deputy Managing Director – Midlands, Willmott Dixon

CREATING OFFICES FIT FOR THE FUTURE

1 / Public Sector Hub, Lincolnshire
Providing energy savings that mean the building will be cost-neutral in just eight years, East Lindsey District Council's new state-of-the-art headquarters in Lincolnshire is a valuable mixed-use facility also offering further education space for Boston College.

2 / Aurora, Bristol
The first BREEAM Outstanding commercial office outside of London, Aurora provides 95,000 sq ft of Grade A office space while being designed to offer a 37% reduction in carbon emissions and 59% less water demand than a typical office building.

3 / TBC.London, London
An outdated 1990s office building next to London's Tower Bridge will be transformed into modern, net-zero offices. It also utilises circular economy principles to reduce embodied carbon – reusing 20 tonnes of steel is saving an estimated 48 tonnes of carbon.

4 / Brindleyplace, Birmingham
Underpinned by sustainability, wellness and technology, this back-to-the-frame transformation has seen 8 and 10 Brindleyplace combined into one building, creating one of Birmingham's largest floorplates. To enhance the experience of building users, desirable amenities include a bouldering wall, a gym and outdoor terraces.

5 / York House, London
With the Royal Borough of Windsor and Maidenhead's desire to start its office transformation without delay, our approach enabled us to start on site six months quicker than a traditional approach. The 1960s building now has a redesigned façade and a refurbishment that offers a modern work environment.

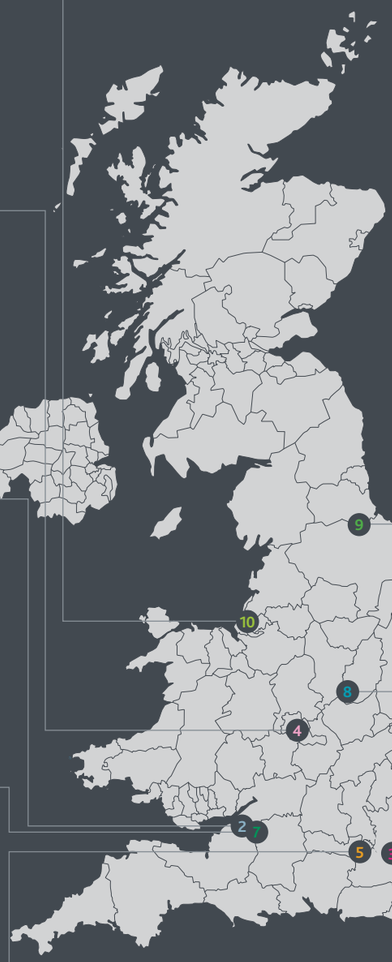
6 / Old Admiralty, London
We delivered a three-year-long programme to refurbish the Grade II listed building whilst retaining its heritage. The world-famous London landmark's future is now as rich as its history, combining a traditional exterior with modern, open-plan office spaces inside.

7 / Keynsham Civic Centre, Somerset
This mixed-used development is among the most energy-efficient office projects in the country. It has one of the largest council-owned solar panel systems in the UK, which will provide 55% of the total annual electrical needs of the office building..

8 / The BioCity Discovery Building, Nottingham
A combined life science and business hub featuring laboratories and office space, the £27m BioCity project complements our work in the science and technology sector while demonstrating the opportunities offered by brownfield regeneration.

9 / Innovation Central, Darlington
At its core, this project creates a business community that will support economic growth, create jobs and inspire ideas. The specialist Grade A office spaces and laboratories provide an impressive home for start-ups and innovative SME businesses to thrive.

10 / Merseyside Police HQ, Liverpool
The new four-storey HQ is Merseyside Police's flagship base, bringing together more than 1,100 officers and police staff under one roof. The 12,800m2 centre is designed with energy efficiency in mind, and will save the force a predicted £250,000 a year in running costs.



Pictured on the front page:
Interior of 10 Brindleyplace, Birmingham

THE ROLE OF OFFICES IN SUSTAINABLE URBAN REGENERATION

For many towns and cities, it's time to sink or swim. In recent years, in particular post-pandemic, there has been a shift in peoples' behaviours and needs – and this is driving a large-scale evolution. Towns and cities across the UK are putting together masterplans that aim to improve regional resilience, boost investment, and enhance environmental and social prosperity.

Whether it's a retrofit, refurbishment or new build scheme, commercial offices play a key role in the urban regeneration mix. Creating spaces where businesses can thrive positively feeds into the three core pillars of sustainable urban regeneration: economic, environmental, and social.

Creating towns and cities where people love to live, work, study and visit

Towns and cities are essentially independent ecosystems, and need to provide a balance of living, working, studying and socialising to attract and retain people in the local area.

As a consequence of the pandemic, this ecosystem has been thrown out of balance. With shifts in both lifestyle and working practices, many towns and cities are at make-or-break point.

Changes in working practices, like the rise of hybrid working, have directly impacted on footfall through town and city centres, so there needs to be a concerted effort to attract more employers. This will play a key role in restoring this ecosystem, encouraging city centre living and an important economic boost for businesses.

With political policies such as Levelling Up and proposals like the 'Northern Powerhouse' on the agenda, there are greater opportunities to create economic improvements for regions across the UK in the coming years. Providing office spaces that can attract investors and employers to an area will play a key part in this.

In 2018, we delivered the Aurora office development in Bristol. The office space was ahead of the curve, recognising a need in the area and taking the initiative to fulfil it. In fact, the office space experienced such high demand that 85% was let before construction work was finished.

A key part of this success was providing Grade A office space that reflected the increasing focus on sustainability from both investors and tenants. To meet these requirements, the building became the first BREEAM Outstanding office development outside of London.

The 95,000 square foot of Grade A office space was incredibly important for the city's economy, helping to attract new investment and setting the standard for sustainability in the region.

Aurora, Bristol

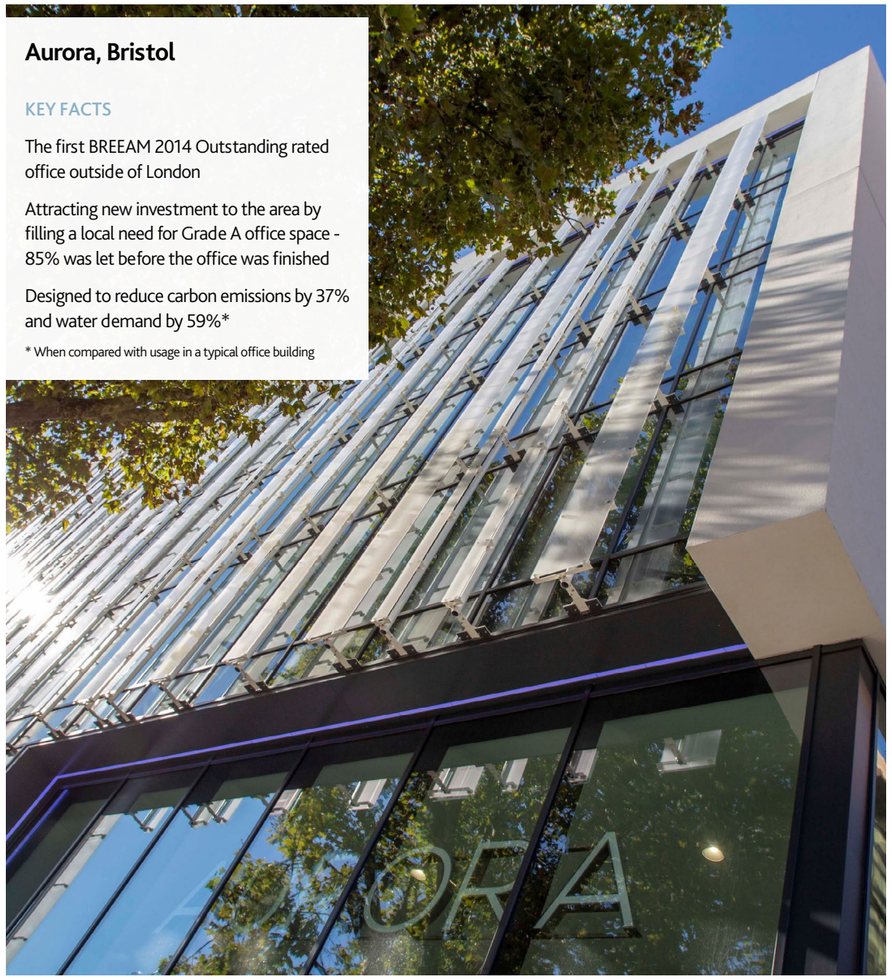
KEY FACTS

The first BREEAM 2014 Outstanding rated office outside of London

Attracting new investment to the area by filling a local need for Grade A office space - 85% was let before the office was finished

Designed to reduce carbon emissions by 37% and water demand by 59%*

* When compared with usage in a typical office building



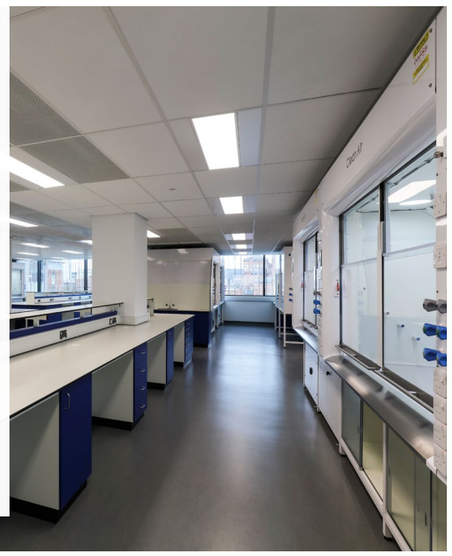
BioCity Discovery Building, Nottingham

KEY FACTS

Creating a state-of-the-art life science incubator on the edge of Nottingham's Creative Quarter

A mixed-use science and business hub featuring laboratories, office space, chemical and solvent storage rooms, and a café

Creating a cluster to attract organisations and skilled people to Nottingham, which will in turn drive scientific and technological innovation



Driving forward other industries

Although commercial office spaces form an industry of their own, they also play an integral role in other sectors such as higher and further education, science and technology, leisure and more.

The Spring Budget in 2023 announced the Government's intention to drive forward 12 Investment Zones. These zones will be located near research institutions such as universities and will focus on driving new, sustained growth in key sectors such as digital and technology, creative industries, life sciences, advanced manufacturing and green industries. All of which are constituent parts that drive our local economy.

Offices will play a key role here, providing the spaces required for collaboration to take place.

The BioCity Discovery Building in Nottingham is a great example of this. The £27m building provides a state-of-the-art life science incubator on the edge of Nottingham's Creative Quarter.

The mixed-use science and business hub features laboratories, office space, chemical and solvent storage rooms, and a café. The building covers almost 7,000m^2 of office and laboratory space, with capacity for 350 users and eight tenants.

There are different sized spaces available to let, enabling companies to expand and grow, as well as providing areas more suitable for start-ups and small and medium-sized enterprises.

This clustering approach of gathering together similar businesses under one roof has proven highly successful in attracting more organisations and skilled people to certain areas, as well as providing the spaces for collaboration and innovation to take place.

The fibre optic lights on the BioCity Dicovery Building also provide solar shading to reduce heat gain through the large glass windows

THE TIME TO TAKE ACTION IS NOW

The Intergovernmental Panel on Climate Change (IPCC) Synthesis Report that was released in March 2023 flagged that targets to limit the rise in global temperature below 2°C will not be met. Without swift action, the consequences of climate change will worsen and the task to combat it will become that much bigger.

Greenhouse gases are cumulative, so a delay in attempts to reduce carbon emissions means steeper cuts will need to be made in a shorter timeframe as we approach 2050.

The commercial figures also tell the same story - the sooner action is taken, the sooner operational cost savings can be realised. Rather than waiting to reach the required EPC of A or B in 2030, at which point the capital cost for a retrofit or rebuild is likely to be higher, acting now will reduce operational costs for those interim years too.

If we look further into the future to 2050, when buildings will need to be an EPC A or A+ (net-zero carbon in operation), there's a strong case to undertake building works to achieve net-zero now. This will eradicate the need for future development and disruption, as well as providing operational cost savings for more than 25 years.

Acting now to reduce carbon emissions

Improving the energy efficiency of a building also brings carbon emissions benefits for building owners and tenants alike. With both parties having their own ESG commitments to meet and a growing list of sustainability reporting regimes requesting disclosure information, such as the Task Force on Climate-related Disclosures (TCFD) and Carbon Disclosure Project (CDP), this is an important consideration.

In April 2019 it was made compulsory for large businesses in the UK to report their scope 1, 2 and 3 emissions under the Government's Streamlined Energy and Carbon Reporting (SECR) initiative, so reducing carbon emissions is important for both tenants and landlords.

Building tenants will see their scope 2 emissions decrease if the building they occupy is more energy efficient, and landlords will see their scope 3 emissions reduce if their tenants are using less energy.

Research from Carbon Credentials predicts that scope 3 emissions account for around 85% of a commercial real estate company's entire footprint, so improving energy efficiency – or even better, aiming for net-zero – could go a long way to reducing these scope 3 emissions.

Buildings that are no longer fit-for-purpose in relation to their design, layout or facilities need to be addressed sooner rather than later, or they risk their lease values dropping – or even becoming unlettable. These spaces will be overlooked in favour of those that cater to today's ways of working.

Taking action now will protect building stock from being devalued or left empty.

OFFICE SPACES FIT FOR THE 21ST CENTURY

The needs of occupiers and tenants don't stand still; there is a natural evolution that takes place over time that is reflected in the changing designs of office spaces through the years. The open-plan spaces favoured in the 1950s and 60s were succeeded by 'Cubicle Farms' in the 70s and 80s, and now open-plan spaces are favoured once more.

Although this evolution is a natural process, the change in working practices we have seen in the last five years has been a seismic shift. In the coming years, many offices are at risk of being seen as outdated or no longer able to meet the needs of occupiers and tenants.

Spaces that meet evolving expectations

Post-pandemic, working from home is more prevalent than ever before, so attracting people back into offices has become key. Tenants and occupiers expect more from their office spaces, so simply having desks and meeting rooms is no longer enough. Communal and amenity spaces are being prioritised by officer workers – and that must be reflected by building owners and developers if they are to remain attractive.

Take meeting rooms, for example. Today's offices must cater for a range of use cases – from large groups meeting to collaborate in person, to a single user joining a virtual meeting. Ensuring there is flexibility in the spaces available and that the right technology is available are critical elements of any modern office.

Another area that has gained momentum in recent years is the drive for organisations to better support the wellbeing and work-life balance of their people. Some office buildings include facilities that encourage an active lifestyle, such as on-site gyms or even bouldering walls. At minimum, most offices will now provide showers and changing rooms to enable their people to freshen up after running or cycling to work, as well as facilities to store their bikes. Considering what facilities will enhance the lives of those working in the building can help to future-proof the space and become a real selling point.

Other wellbeing initiatives that are on rise in office spaces include maximising natural light sources, green walls, green roofs and outdoor spaces. Studies conducted by universities across the world have found that incorporating biophilic designs can support cognitive function, physical health and psychological wellbeing for building occupants.

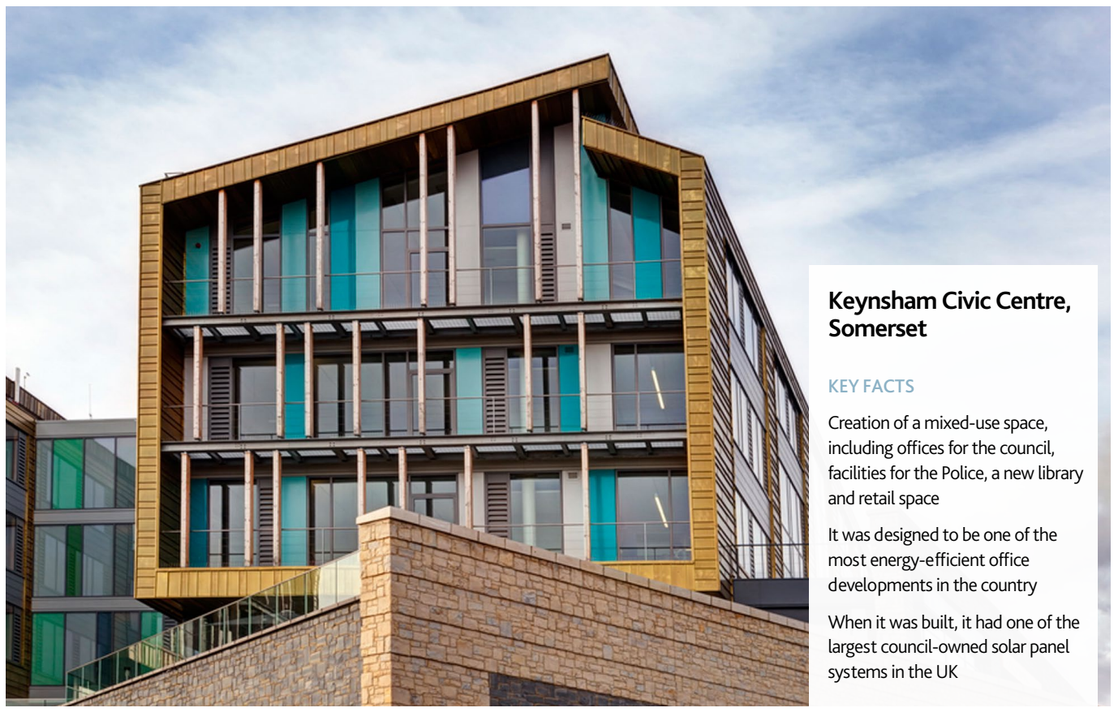
Estate rationalisation

With the rise of hybrid working and virtual meetings, it isn't uncommon for organisations to find they now have more office space than they need. This could present the opportunity for building owners to rationalise their estates – particularly those who both own and occupy the space.

A new office project we delivered at Keynsham Civic Centre is a great example of this in practice. Forming part of a major regeneration scheme to build a prosperous future for Keynsham, the council saw the opportunity to review its estate, reduce its buildings and place its people at the heart of the newly improved market town.

The council rationalised its office buildings from 12 down to four – with most staff now based in Keynsham to act as a catalyst for the regeneration. Building a new office space meant they could cater for any differing needs across the 12 old offices, bringing it all under one roof and creating a building that works for their people.

When you consider the operational costs behind 12 office spaces compared to four, the council set a great commercial example.



Keynsham Civic Centre, Somerset

KEY FACTS

Creation of a mixed-use space, including offices for the council, facilities for the Police, a new library and retail space

It was designed to be one of the most energy-efficient office developments in the country

When it was built, it had one of the largest council-owned solar panel systems in the UK

10 Brindleyplace, Birmingham

KEY FACTS

Life cycle assessments show that undertaking a back-to-the-frame transformation has saved around 60% of embodied carbon emissions

Combined two buildings, 8 and 10, into one, creating one of Birmingham's largest office floorplates at around 27,000 sq ft.

Created with the end-user in mind, achieving Fitwel 2 Stars, WiredScore Platinum and providing a range of amenities including a bouldering wall, gym and podcast studios

Keeping up with digital advancements

There is no question that digitisation will play a vital role in the future of office spaces – both from a sustainability and end-user perspective.

Firstly, there has been an increasing trend in office spaces looking to achieve certifications that recognise the level of digital connectivity in buildings – such as a WiredScore certification. Just as it has become commonplace for buildings to receive BREEAM certifications, the increase in digital certifications could be around the corner. These certifications can, at a glance, help tenants to see how 'digitally connected' a building is; the higher the rating, the more attractive it's likely to be to tenants.

Secondly, digital twins are increasingly talked about within the built environment, and we know they are going to play a key role in the future of sustainable office spaces.

In theory, the digital twin approach to a building or multiple buildings is limitless. For example, a digital twin can aid landlords in data-driven decision making, while offering live feedback on how the building is performing, a clear planned preventative maintenance strategy, footfall statistics, occupancy levels, space management, leak detection, and so on.

This data would be particularly powerful for a building owner looking to create another building like this; the data would allow a landlord to fully understand how they need the building to perform, with the evidence to back it up.

The use of a digital twin will also benefit landlords by reducing the likelihood of inflated costs due to inefficiencies and help to avoid unexpected costs from cropping up. For those using the office spaces, any potential issues in the building, such as heating or cooling systems breaking, will be picked up sooner, allowing it to be fixed sooner. The data could also help occupants to monitor how the building is being used so they can ensure they are efficiently using the space available.

From a contractor's perspective, this information could also be equally as powerful. Contractors play a critical role in working with customers to make sure their buildings are as efficient and well designed as possible. Having data from digital twins could help contractors to make the best decisions when constructing new, sustainable buildings as well as making informed decisions when decarbonising existing spaces. From a project perspective, this reduces risk, increases quality and drives efficiency.

Finally, using a digital twin can help to secure overseas investment. Many investors don't recognise EPC standards and opt instead to use rating systems such as Nabers. A digital twin can quickly and easily provide detailed kWh data in an informative way - not only can it show the total energy usage, but it will also highlight which areas are the most energy intensive, and if there are any peaks and troughs in energy usage.

THE GREAT DEBATE: BUILD NEW OR RETROFIT?

The debate of 'build new vs retrofit' isn't unique to office buildings, but it's certainly becoming a more prevalent question with the recent and upcoming changes around commercial EPC requirements. In truth, both approaches have merit, and they should be considered on a case-by-case basis.

There are many considerations to make when trying to decide what route is the best to take, including barriers to planning permission, programme duration, the impact on embodied and operational carbon and, of course, value-for-money.

Early engagement with our team can help to facilitate this decision-making process. We have access to various tools, methodologies and experience to be able to help clients find the best way forward – from looking into the commercial costs to completing whole-life carbon assessments.

Taking a whole-life carbon approach

An important consideration when choosing to build new or retrofit is understanding the whole-life carbon of your building. In the built environment, a common trap that people fall into is looking at the operational carbon of a building and not considering the embodied carbon alongside this.

A whole-life approach focuses on reducing the lifetime emissions of a building across both operational and embodied carbon. This includes the carbon emitted before, during and after the building is in use. This is typically broken down into the following stages: production, the construction process, in-use, end-of-life and beyond the building's lifecycle (where there are opportunities to reuse, recover and recycle materials).

Each building is unique, and a whole-life carbon assessment is the best way to help you understand how much carbon will be produced if you are considering whether to build new or to retrofit. This can help you to make an informed decision about the impact either decision will have in terms of carbon.

Retrofitting will usually produce less embodied carbon emissions, but operational carbon emissions might be higher if the building isn't as efficient as a new building. In the case of a new build, it could be the opposite - you are likely to have a higher amount of embodied carbon at the beginning, but less operational carbon will be produced during its lifetime.

Public Sector Hub, Lincolnshire

KEY FACTS

Uses 75% less energy than the old building

Cost savings will make the new building cost neutral in just eight years

Three years of post-completion energy monitoring will help to close any performance gaps and make the building as efficient as possible

Balancing cost with carbon

Although reducing carbon is imperative to the future of our planet, it's not uncommon for it to feel like budgets won't stretch to make a building as sustainable as possible.

Having worked with our customers to overcome this very challenge, we know that the trick is to approach a project with both cost and carbon in mind from the very beginning.

If we are engaged in a project from the early stages, our experts can utilise our in-house system Energy Synergy™ to help make informed decisions that balance cost and operational carbon.

We use the tool to run scenarios around different materials and design choices to understand what the impact is from both a cost and carbon perspective. This, in practice, enables us to design and build the best value, most sustainable buildings possible while ensuring budgets are met.

Sustainable from the start

In some cases, old buildings are so inefficient that demolishing them makes the most sense – from both a commercial and carbon perspective. There are also opportunities to reduce carbon at both the demolition and design stages.

When demolishing an old building, it's important to consider circular economy principles to identify how materials from the old building can be reused. For example, concrete from the old building could be crushed and reused in the construction of the new building.

At the design stage, a benefit of building from new is that sustainability can be embedded into the design from the outset, starting with the fundamental basics of a building. At the core of this sits the all-important fabric-first approach.

A fabric-first approach means that the orientation, size and shape of the building are all optimised to ensure energy requirements are as low as possible.

This is also combined with the careful selection of materials. Ensuring these materials have a low U-value will improve airtightness and enhance thermal performance. This essentially means that the building will need to use less energy to keep the building at an ambient temperature – it will keep the warm air inside and cold air outside during winter and keep the cool air inside and the warm air outside in summer.

A recent example of when building new is the best approach is the Public Sector Hub built for East Lindsey District Council as its headquarters in Horncastle, Lincolnshire.

The old headquarters was old and inefficient, which was causing running costs to skyrocket. The new building uses a whopping 75% less energy. This will equate to a huge reduction in operational carbon as well as huge cost savings being made. In fact, the reduction in operational costs alone will make the new building cost-neutral in just eight years.

Taking a fabric-first approach to the Public Sector Hub allowed us to achieve high levels of insulation, making the building more energy efficient

Going back-to-the-frame to reduce embodied and operational carbon

In the quest to reduce carbon, embodied carbon must also be considered.

Undertaking a large retrofit project can leave you feeling like you have a brand-new building, but with the benefit of reducing the embodied carbon that is caused by knocking down an old building and creating a new one from scratch.

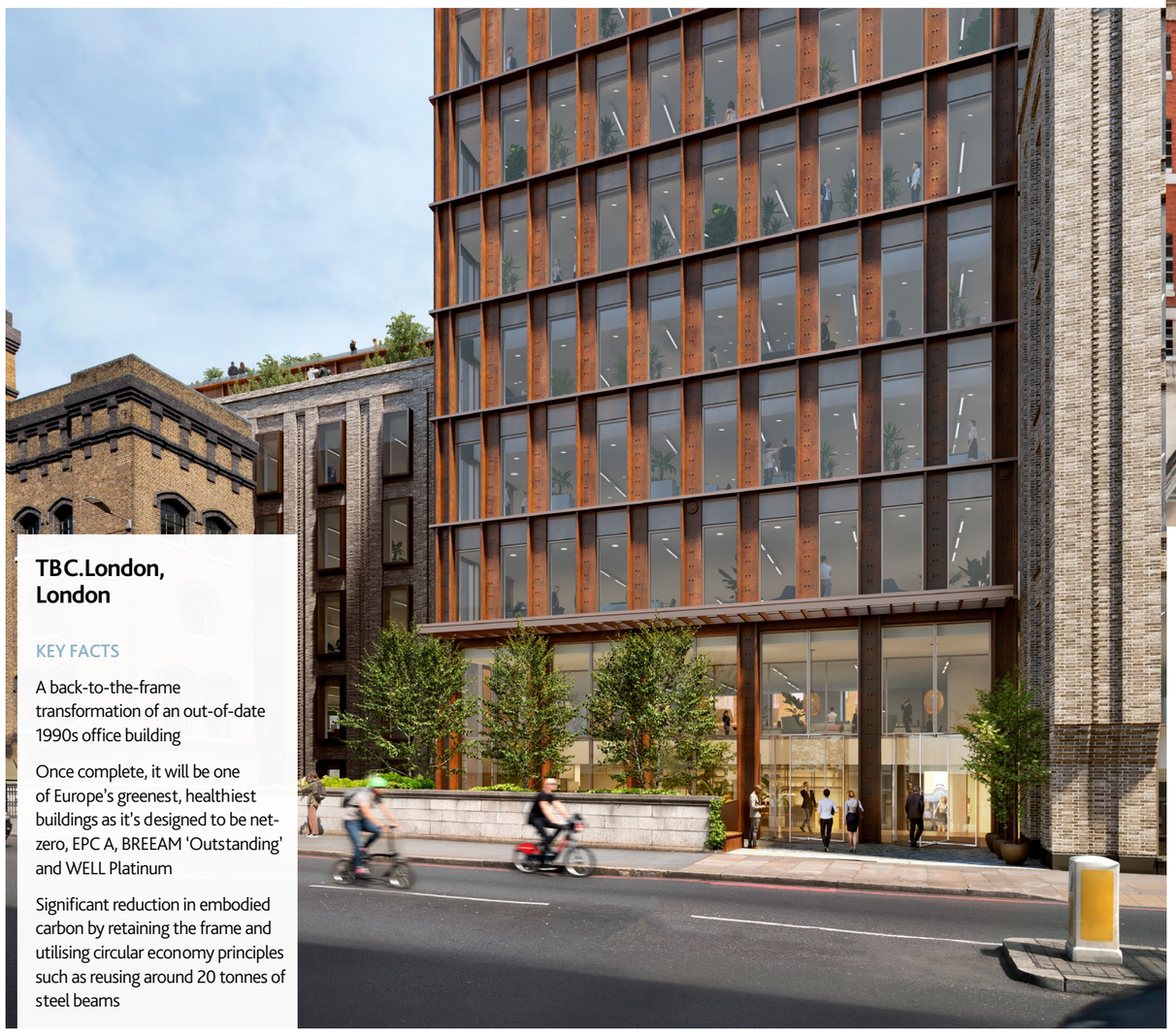
We're currently working on a project just a stone's throw away from the iconic Tower Bridge in London. This project will see a 1990s office transformed into one of the UK's most sustainable and healthy offices. With a focus on reducing embodied and operational carbon, TBC.London in London is truly a showstopper.

Working with FORE Partnership, we are creating a 110,000 square foot, 100% electric and zero carbon workspace that uses no fossil fuels. The existing five-storey building is being stripped back and renewed through a deep refurbishment, preserving the embodied carbon in the frame.

This project is also making use of creative approaches to reduce embodied carbon even further. We're using innovative concrete mixes to reduce the amount of cement needed as well as reusing steel from other buildings. Twenty tonnes of 1930s steel beams have been salvaged from an old department store on Oxford Street. This example of circular economy principles in action will save an estimated 48 tonnes of carbon dioxide compared to using new steelwork.

The project is targeting EPC A and BREEAM 'Outstanding' – the highest possible environmental assessments – as well as WELL Platinum, the highest rating under certification which serves as a marker of healthy building design.

This project is a great example of how retrofitting can save a huge amount of embodied carbon, whilst also creating a beautiful, sustainable building that meets end-user requirements.



TBC.London, London

KEY FACTS

A back-to-the-frame transformation of an out-of-date 1990s office building

Once complete, it will be one of Europe's greenest, healthiest buildings as it's designed to be net-zero, EPC A, BREEAM 'Outstanding' and WELL Platinum

Significant reduction in embodied carbon by retaining the frame and utilising circular economy principles such as reusing around 20 tonnes of steel beams

Old Admiralty Building, London

KEY FACTS

A three-year long fit-out and refurbishment programme

Took a sensitive approach to turning a heritage building into modern office spaces fit for today's standards

Met the English Heritage requirements for a Grade II listed environment

Unlocking projects

Across all sectors, construction projects seem to be facing more hurdles that they have to overcome when looking into the feasibility of a project. We've seen first-hand how taking a retrofit approach can help customers overcome some of these hurdles – particularly for projects working to tight timescales and funding timetables.

We worked with The Royal Borough of Windsor and Maidenhead to get one of its projects back on track. The unitary authority wanted to completely transform its out-of-date 1960s office, York House, into a modern and inclusive working environment.

The challenge? From the date of engaging with us, the desire was for work to start in just six weeks.

Instead of demolishing and rebuilding the office, which posed exceptional planning issues, we took the building back to the frame to completely transform the space.

We also immediately engaged specialist consultants and supply chain members, progressing a sequential release stage 3 design. These combined approaches meant we were able to start the project almost six months quicker than a more traditional approach.

The new office space was completely transformed internally and externally, providing the desired outcome for the customer in the required timescales.

DECARBONISING HERITAGE BUILDINGS

The nature of heritage buildings means that maintaining their character and integrity will always be the priority. That doesn't, however, mean that heritage buildings are exempt from trying to meet new EPC requirements.

They are exempt "insofar as compliance with certain minimum energy performance requirements would unacceptably alter their character or appearance", but there is still a lot that can be done without putting the character or integrity of the building at risk.

The most straightforward, light-touch updates to the building, such as upgrades to MEP services, can be fairly quickly and easily completed with no risk of this impacting the nature of the building. However, more intrusive work can also be completed if it is approached sensitively.

A key example of this was the three-year-long programme of works we completed at the iconic Old Admiralty Building in London. The CAT B fit-out and refurbishment was completed across 250,000 square foot and has created commercial office space across five floors. Although the externals are very much that of a heritage building, inside you'll find a modern and flexible working environment with open-plan spaces.

The full scope of works included a major opening up of the building to add new steelwork, new lifts, full M&E replacement including plant and equipment, and an asbestos removal programme.

To improve energy efficiency, our team also modified the MEP services, added cladding to risers and chillers, installed new ceilings, partitions and raised floors, and refurbished and added secondary glazing to the windows.

All in all, our team were able to update and modernise the floorplate and improve the building's energy efficiency, all while meeting the English Heritage requirements for a Grade II listed environment.

WILLMOTT DIXON

SINCE 1852

BRILLIANT BUILDINGS

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Willmott Dixon is a privately-owned contracting and interior fit-out group. Founded in 1852, we are family-run and dedicated to leaving a positive legacy in our communities and environment. Being a large company means we can create a huge and lasting positive impact on our society. This is not only done through what we build and maintain; it's achieved through the fantastic efforts of our people who make a major contribution to enhancing their local communities.

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If you'd like more information or to find out how we can help you to create offices of the future, please get in touch with:

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