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Retrofit or new build?

PROPERTY



Look what's coming: vision for 1000 Aztec West

SHOULD IT STAY OR GO?

When a building appears to have run its course, there are now new ways to approach the question of what happens next. **Christian Annesley** reports

Over recent decades, the property industry has liked new buildings – new office buildings, in particular.

But the world is changing. Offices are still just as likely as ever to go out of fashion in terms of their fit-out – it was ever thus, and needs are always changing. Yet,

as the question of cutting carbon climbs every agenda, the embedded carbon in any building becomes part of the equation for a society intent on achieving net-zero in short order. Do you knock down something that's not quite fit for purpose or is there another way?

THE STARTLING BENEFITS OF A LIVING WALL

Retrofitting an existing masonry cavity walled building with a green or living wall can reduce the amount of heat lost through its structure by more than 30 per cent, according to new research from the University of Plymouth.

The study centred around the Sustainability Hub – a pre-1970s building on the university campus – and compared how effectively two sections of its walls retained heat.

Despite being on the same west-facing elevation, one of those sections was retrofitted with an exterior living wall façade, comprised of a flexible felt fabric sheet system with pockets allowing for soil and planting.

After five weeks of measurements, researchers found the amount of heat lost through the wall retrofitted with the living façade was 31.4 per cent lower than that of the original structure. They also discovered daytime temperatures within the newly covered section remained more stable than the area with exposed masonry, meaning less energy was required to heat it.

Dr Matthew Fox, the study's lead author, says: "It is our existing buildings that require the most energy to heat and are a significant contributor to carbon emissions. It is, therefore, essential that we begin to improve the thermal performance of these existing buildings."



These are questions that come up all the time in relation to property. After all, every building has a lifespan. Nothing lasts forever. But now there are these good reasons for not doing anything too hasty, and for repurposing where possible. Plus the technology to raise things up in terms of sustainability is improving all the time.

"Not every building can be saved, of course," notes James Digby of the property developer HBD. "But once you do the calculations, the argument for taking a building back to its frame and giving it a second life with new technologies for heating, cooling, ventilation and insulation are more likely than ever to stack up."

Some properties will have shortcomings that cannot be overcome, like low site coverage – a low-rise building where something higher would be preferable – or even be let down by not having the right internal ceiling heights, he says.

"The owner of any building is of course right to be mindful of what would-be occupiers will realistically want and what they will pay for it," says Digby. "But these sorts of failings aren't that common. In a city centre location that's in demand, there are increasingly good arguments for repurposing rather than knocking down and starting over."

In terms of the cycle of how offices get turned around in this way, it is more common for an occupier business to vacate a premise at the end of a lease and find a new home somewhere close by. If it is a grade-A occupier, the new space will very likely be a new-build or a property that's just been overhauled and brought

up to standard in terms of aesthetics and sustainability. The vacated space that's just been left behind then gets its own overhaul by the landlord. And so the cycle of improvement and renewal continues.

"There are other scenarios," says Digby. "Sometimes occupiers will stay put and refurbish floor by floor, shifting into other spaces as the work gets done. But that's less common as a rule, for obvious reasons. It's just disruptive."

Right now there are plenty of city centre offices being stripped out and repurposed as described, in places like Exeter and Bristol. Some have even come to the end of their turnaround phase, like 10 Victoria Street in Bristol.

Out-of-town overhauls are less common, but Aztec West to the north of Bristol, by the M5 motorway, is one that's underway.

The property is 1000 Aztec West,

which after its revamp will be net-zero carbon in operation, targeting BREEAM 'Excellent' and an EPC of 'A'. As that project and lots of others demonstrate, plenty is possible.



James Digby, HBD

The heritage challenge

The question of retrofitting the heritage buildings that litter the South West's cities and towns is also part of the picture here. These are

buildings that are here for keeps in a sense, often with some kind of protected status, and many are used for offices even if they don't always deliver the most usable spaces.

How is this side of the retrofit discipline evolving? There can sometimes be a tension, after all, between what planners want to retain and what is best in sustainability terms.

Kevin Balch is project design director for Nash Partnership, the architecture and planning consultancy, and specialises in historic environments. He points out how retrofitting historic properties has come under scrutiny, with many authorities now having to question what is appropriate.

"While most people are now familiar with a 'fabric first' approach for upgrades, it becomes far more critical for older properties," he notes. "And there are some interesting developments, too. Recent evidence has

A shift towards sustainable spaces



There has been a gradual shift in how people want to live and work. The pandemic accelerated the reimagining of how commercial, particularly office,

space is used. Operating sustainably has never been so high on the agenda and Environmental, Social, and Governance (ESG) considerations have led to a marked shift. It can be difficult to know what's driving change and what's simply following.

With hybrid working, a reduction in space requirements is almost inevitable. Therefore, occupiers are having very different conversations with landlords to address how they adapt to meet the needs of a new generation of workers – who come to the office with different expectations and a desire for more collaborative space.

Major refits, shorter terms, less space or different uses for existing space are trends being driven by changes in employee's work habits and businesses reviewing their space requirements with ESG firmly at the forefront. While a good thing in the drive for more sustainable developments and building use, these changes require additional considerations. Who will meet the long and short-term costs of physical adjustments to properties? Occupiers, developers, investors will all be squeezed when already facing rising inflation and energy prices.

Policy changes such as the development of a new Placemaking Charter by West of England Combined Authority, as well as projects like the new net zero out-of-town office scheme being developed in North Bristol, indicate a positive regionwide shift.

The pressures on businesses to meet ESG ambitions and policies driving the energy agenda are apparent. However, it will be interesting to watch how the cost and implementation implications evolve.

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revealed, for example, that installing floor insulation is perhaps twice as effective as calculations would suggest. And in existing properties this is usually an easy option for property owners."

Balch says that what many may not realise is that any gaps in the thermal envelope become more and more important as you introduce insulation, meaning insulation is not nearly as effective – and gives a route for condensation, mould and decay to develop. In this context, moisture management and simplicity becomes the new mantra.

"And we have a term for it – 'soft retrofitting.' This is an interesting approach for owners of listed properties, where evidence shows that adapting how one uses the building might be just as effective as invasive insertions and costly upgrades."

So there is a case for being more cautious about new technologies in this context. Climate instability has made dispersing moisture harder – and things will likely get worse in the years ahead. Historic buildings get wet and then dry out by design, again and again. That means that introducing some kinds of new insulation can make things worse by trapping in moisture for longer unintentionally.

"Remember, if you get to 80 per cent relative humidity you get mould, and at 90 per cent timber rots," says Balch. "So you need to be mindful of that. Sometimes heat inside a building does not drive moisture out of the wall. Traditional moisture management is two-way and we need to keep an element of that. With a stone building that we tested, for example, adding 60mm of internal insulation was problematic but it turned out 40mm was not."

The essential point Balch is making in the context of today's retrofit agenda is that deep retrofit can be quite invasive and problematic if it isn't approached with know-how, caution and lots of testing along the way. A pinprick in a building envelope that has been designed for airtightness can see things going awry.

"With the energy crisis, too, the question of how buildings are heated has climbed the agenda. Historically local heating was used to keep people warm in the space they are occupying rather than warming a whole building. It's something that we probably need to revisit. What standards of comfort are appropriate and desirable?" ■



FUTURE LEAP'S GREEN VISION

Sometimes a building just needs some love, attention and money spent to bring it back into viable use for the long term.

On a prominent corner of Gloucester Road in Bristol sits the Future Leap co-working hub. In recent months a sister hub has opened in Clifton (pictured), but this original site opened in 2019. It was and is the physical embodiment of a sustainability vision that was shared by the members of Future Economy Group (FEG), a one-time community interest company providing a platform and network for more than 300 green-minded corporations and smaller companies.

Alan Bailey started running FEG as a limited company four years ago, ahead of making the £1.6m investment in the site for the sub-brand, Future Leap, to turn it into the 8,500 sq ft co-working hub it is today.

What was the idea behind upgrading a building like this?

"The hub incorporates a co-working space for environmental start-ups, businesses and not-for-profits, an

event space for hire, an exhibition and retail space showcasing green technologies and services, a highly sustainable catering service and a walk-in café," says Bailey. "Plus Future Leap also offers consultancy and recruitment services to help companies grow more sustainably."

So Bailey's investment in the space was a flag in the ground about sustainability when he made it. It promoted a vision for reuse and low carbon.

"The investment made the space as sustainable and carbon-neutral as possible," he notes. "It costs more upfront in some respects compared with conventional building practices, but the difference is not that marked."

"The investment in items like air-source heat pumps is a big capital investment, but it is the right thing to do and it pays back. Next to this, there are plenty of immediate benefits that flow from the reuse and recycling of materials on site, and from buying eco-products like recycled flooring, that don't cost more and often actually deliver a saving."

