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REFURB & REUSE VS DEMOLITION & REBUILD

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Currently, the efficiency of buildings is recognised as a focal point for the construction industry's growth which is reflected by the introduction of new government measures, raising the benchmark for sustainability in construction.

Age is the biggest factor in a building's energy performance, and has particular pertinence to the UK's commercial and public sector building stock, a good proportion of which will have been built more than a century ago. In fact, 80% of buildings today will still be standing in 2050. Additionally, only 3% of new developments are green and sustainable, with 75% of a building's carbon footprint coming from the construction stage.

Could the installation of renewable features as part of a well-designed refurbishment programme be the sustainable, cost and time effective solution to improving efficiency of the country's ageing building stock? Or is demolition and rebuild the ideal solution?

A panel chosen by Pexhurst including building surveyors, architects, asset and estates managers, from the relevant sectors came to discuss the refurbishment versus rebuild debate and its potential impact on the government's 2050 net-zero ambitions, addressing the following questions:

- **Is there a market appetite for refurbishment and reuse?**
- **Are the current building quality assessments conducive to more sustainable buildings?**
- **How can the construction industry contribute to the circular economy?**

Chaired by Dr Gavin Dunn of CABE, a panel of leading industry representatives came together to discuss these themes, including:

> **Lee Stuart** Director at Pexhurst

> **Stuart Byles** Director at Pexhurst

> **Joe Cilia** Technical Director at the Finishes and Interiors Sector (FIS)

> **James Rixon** Director at rixon architecture

> **Ian Grimes** Director of Estates at the University of Hertfordshire

> **Rhi Jenkins** Associate Director at Avison Young

> **Mickey Scott** Associate at Hines

> **Rob Brown** Senior Construction and Project Manager at Mileway

> **Adam Alexander** Director of Energy and Sustainability at Colliers

> **Daksha Mistry** Director at Trident Building Consultancy

INTRODUCTION
FROM THE CHAIR

The Roundtable was chaired by Dr Gavin Dunn, CEO, NED, and Chartered Building Engineer at Chartered Association of Building Engineers (CABE). Gavin is also a member of the Buildings Regulations Advisory Committee (BRAC) and has advised on the Future Homes Building Standards (also known as 'FLOS'). FLOS make up some of the most ambitious and expansive changes to building regulations in the past 30 years. He is involved in the development of well-known building energy rating schemes, such as Energy Performance Certificates (EPCs).

Gavin outlined the two key themes central to the discussion. Firstly, making the circular economy an integral practice when producing new building materials. Secondly, attempting to reuse and adapt our existing buildings. He argued that refurbishing buildings does not even create 40% of the carbon impact that demolishing buildings and recreating them to modern, sustainable standards does.

> **"Every refurbishment project is an opportunity to create a difference."**
>
> Dr Gavin Dunn

BREEAM AND ENERGY RATINGS:
HOW USEFUL ARE THEY?

The discussions started organically on the topic of Building Research Establishment Environmental Assessment Methodology (BREEAM) and its relevance for fit-out and refurbishment projects.

Stuart Byles, Director at Pexhurst, suggested that BREEAM is a great opportunity to add value, but was concerned that clients may see it as a tick-box exercise rather than a holistic approach to improving building performance.

This was discussed as perhaps being in part due to the fit-out and refurbishment sector being relatively late to adopt BREEAM across the industry.

However, the market is adapting to BREEAM, as Stuart mentions that Pexhurst's clients are eager to make BREEAM a project objective.

Adam Alexander, Director of Energy and Sustainability at Colliers, corroborated this, stating that many of his clients are also following this trajectory: "What I'm seeing now is because of the ESG (Environmental, Social and Governance) agenda, a lot more clients are focused on being a bit savvier in terms of goals, and trying to stay ahead of the game in terms of market attraction." He predicts that BREEAM has evolved to become a methodology that encompasses all sectors, so will likely become the standard for fit-outs and refurbishments.

Rob Brown, Senior Construction and Project Manager at Mileway, agreed that the corporate cultural shift towards ESG has affected building design. "Ultimately, it's much easier to justify charging more rent to somebody because a building has ESG features, and is more energy efficient, when the corporate tenant that's going to occupy it has its own CSR and ESG agenda. This doesn't necessarily transfer throughout the portfolio, as smaller companies with little or no ESG requirements would not be prepared to accept a more expensive rent just to satisfy CSR and ESG agendas."

Gavin acknowledged the market's desire for BREEAM and asked what BREEAM rating clients are aiming to achieve. Rob Brown responded that this is a difficult question to answer, as the level of energy performance clients aspire to is dictated by their individual business goals and circumstances.

Ian Grimes, Director of Estates at the University of Hertfordshire, mentioned that the higher education sector is highly competitive in terms of building energy performance and sees that its peers are targeting 'Good', which encouraged the University of Hertfordshire to aim for 'Excellent'. He added that the University of Hertfordshire were very used to delivering and working within the BREEAM scheme and for them it was no longer a topic of conversation. They were simply doing it across all of their projects.

However, Rob Brown pointed out that the British market structures make it more difficult to obtain higher BREEAM ratings, in comparison to in Europe. "Mileway is a pan-European business and in Europe it's much easier to achieve higher ratings because you have control of a lot of the elements that BREEAM In-use happens to look at. It looks at energy consumption and all the data around that, which is what gets you the points."

He continued: "What we found in the UK is that it's much, much harder. As much as we've got green leases and the tenants are written into the lease, they're supposed to provide us with that data. How do you get it, how do you monitor it? It's not our data to give to BREEAM In-use and the biggest challenge we've got is how we deal with the existing stock."

Mickey Scott, Associate at Hines, expressed that he has experienced similar roadblocks due to tenants focusing on their own ESG and CSR agendas, making providing data for landlords' assessments less of a priority. "Somebody's got to pay for it, haven't they? That's the problem – and I have exactly the same problem trying to assess my buildings. Tenants have got to report against their own goals and standards, and in some cases, they're not interested in working with me on my landlord goals and strategies because, to be blunt, it doesn't provide any benefit to them."

James Rixon, of rixon architecture commented that energy ratings add value, but also more responsibility to the architect. He commented: "For us as a business, it's another set of skills we need to have. We specialise in low energy design and have felt it necessary to become certified Passivhaus designers along with retrofit design and coordinators. We need to know about all of it; including the building physics, which has drifted over from traditional architecture."

"There's a lot going on concerning sustainability measures and quantifying them in terms of payback. We then need to debate whether it's a worthwhile investment. For example, looking at replacing windows from a simple payback thermal point of view, there's a 60-year payback – is it an investment anyone is interested in making purely from this narrow viewpoint?"

Adam Alexander speculated that the construction industry's focus on ratings can be misleading. He argued that the changes to Part L of the Future Homes Standards have made the industry shift in favour of all-electric vehicles, and yet the EPC ratings are truly based on primary energy levels.

Gavin Dunn surmised that the energy mix is changing the environmental impact of energy. "The UK is going through that difficult, painful transition of weaning itself off gas because it's not compatible with 2050 net zero standards. Gas is running out, and as we realise this, we have to import it from awkward places that cause price shots."

Gavin continued: "Everything is now shifting to electricity which is greening up far faster than we expected. This is mostly positive, but it changes all the assumptions about what you design and build and what you specify and how you rate. Even five years ago, if you installed something which used electricity it had a negative impact on your EPC compliance, and it made meeting all your BREEAM targets harder. Before it reduced your energy rating, but now it will favour you. Electricity has and now will become a good thing."

Rob Brown remarked that the technology has rapidly evolved behind the scenes to facilitate these shifts, which the construction industry has not foreseen.

PEOPLE AND THEIR IMPACT ON THE MARKET

Gavin steered the conversation from BREEAM and energy ratings to people and their impact on the market. He asked whether the effects of Covid-19 have catalysed change.

Lee Stuart, Director at Pexhurst, replied: “It is driving decisions, and we’re seeing a higher emphasis on BREEAM and sustainable buildings. It’s also changed workspaces. Especially, in the past couple of years where people have got used to working from home and they need to be drawn back to the office. But in an office environment that represents the modern world; one that’s environmentally friendly but also appeals to the social side of a business.”

Lee asked how this shift in expectation has changed what the panel provides. Daksha Mistry, Director at Trident Building Consultancy, stated that she specifies for clients with industrial units within their portfolios, and in her experience is finding a progressive shift towards specifying for the occupier’s wellbeing. She has noticed, for example, a demand for bicycle storage, showers and changing room facilities. “It’s all about giving employees an alternative to driving in; they can cycle in, and they see that there are different ways to sustainably get to work, and to enjoy the workplace.”

Adam Alexander noted from Daksha’s example, that BREEAM In-use becomes effective, to which she replied that there is no point in using BREEAM as part of a building’s design unless it is going to be executed sustainably through the continuous management of the building during occupation.

Lee Stuart then pointed out the irony that office buildings are often not being used sustainably: “We’re talking about ESG more than ever and legislation is coming along to help drive that. But we’re actually using our buildings in the least sustainable way ever – our offices are 25% occupied, but our ventilation rates have increased because of Covid guidelines.”

SUSTAINABLE BUILDING USE: TACKLING LOW OCCUPANCY LEVELS

Gavin Dunn asked the panel how the issue of low occupancy levels can be approached. Ian Grimes answered: “It depends on the sector. I’m in the university higher education sector and we’re looking at how to rebalance the space. Do we provide more teaching spaces and reduce offices?”

Joe Cilia, Technical Director at FIS, added: “I think Covid has just proven what can change, but there still needs to be further change.”

He offered the solution of flexibility through relocatability: “One example is the Lloyd’s building. The partitioning in that building is 50 years old and it’s still being used because that building was designed for relocatability and flexibility using a relocatable partition system.”

Joe continued: “We’re starting to see agile meeting pods coming into place, which will have a big impact. It starts to mean that you can lease the products and move them around as well, so we’re not wasting them. But it’s time to rethink about how the office works, about getting people in and providing them with spaces to collaborate, concentrate and communicate, and feel safe.”

Gavin suggested that investing in people is the path towards higher occupancy levels, stating: “This is the economic argument behind the WELL Building Standard. Do sustainability, but actually invest in the people and you get a much better economic value.”

THE CHALLENGE FACING FIT-OUTS: AESTHETICS VS EFFICIENCY

Rhi Jenkins, Associate Director at Avison Young, validated that investing in people is a priority, stating that the younger generations have higher expectations for how a workplace looks. “This plays into the spaces we’re creating. We’re expected to create more creative spaces, rather than just rolling out hundreds of desks. We need different, more collaborative spaces to motivate people to come in.”

Ian Grimes also confirmed this is the case with universities. Students have a high expectation of how a university should be, and if institutions want to attract students, they need to invest in enhancing their campus amenities.

Gavin once again steered the conversation towards the topic of fit-outs and how sustainable they are in practice.

Joe Cilia highlighted some of the issues that arise from fitting out buildings. “One of the things that we see all the time, is the old institutional standard of a Category A fit-out, which often includes a suspended ceiling, a raised floor, and a degree of M&E; and the first thing they do is take half the ceiling down and make the changes.”

“There are short leases of five years. The client goes in and makes the changes to do a Category B fit-out. And at the end of the lease, you take it out and you start the merry-go-round all over again.” He went on to reiterate his point about relocatability, and he also raised the issue of the sheer volume of materials going to landfill.

FIS is working with the industry to encourage circularity and reuse of products, through a ‘PreCycle agreement’ at point of sale that guarantees that there is a route to reuse or recycling and not to landfill, as well as an industry initiative looking at building a material bank for future use.

Rob Brown argued that the lack of sustainability in British building design stems from the cultural norm of prioritising aesthetics over efficiency. He recalled surveying a Grade A office in Finland which differed greatly from British offices of this grade. “They had exposed services, exposed soffits, all plugged in on cords, so it’s completely adaptable. Everything’s a standard ceiling height. So, the small amount of partitioning you do have, you just shuffle around.”

Rob continued: “It would work here, but culturally, we’re used to having raised floor, suspended ceilings, hiding everything away, and being very pretty. Doing that here will take a seismic shift in the culture,” he explained.

Gavin Dunn summarised the proceedings by expressing that the Building Regulations, while ambitious, are just a starting point for change, whereas everyone else involved in construction will have the opportunity to make a real difference. He also restated the pressing issue of materiality, highlighting that construction is the largest producer of landfill in the UK. However, he ended on a positive note regarding the future of construction: “Our discussion tells me there’s a lot of work coming down the line for everyone in the refurbishment and fit-out space. And perhaps every single one of those refurbishments is an opportunity to have an impact; an opportunity for us all to add value and enjoy our work.”

SUMMARY

In order to create a greener future for construction, everyone in the industry has a part to play, from architects, to clients and asset managers, to contractors. The market's appetite for refurbishment and reuse is growing, presenting a viable opportunity for further sustainability in construction.

- **Building regulations are just the beginning; the supply chain can go further in improving environmental impact**
- **The industry needs to innovate to overcome the issue of waste**
- **Fit-outs and refurbishments are a far more sustainable alternative to demolition and rebuild**
- **Relocatable design can be a possible solution to make buildings more reusable**
- **The market is adapting to incorporate sustainability as part of its agenda**
- **Office space tenants that want to attract employees back to the office need to invest in enhancing amenities**

You can watch a video of the Roundtable discussion here:
https://www.youtube.com/watch?v=kDuxNR1LSAM
If you are interested in participating in future roundtable debates, please contact:
marketing@pexhurst.co.uk

GLOSSARY

BREEAM	The Building Research Establishment Environmental Assessment Methodology is a sustainability assessment of new build and refurbishment projects within the built environment.
BREEAM In-use	The BREEAM In-use standards provide a framework to enable property investors, owners, managers and occupiers to determine and drive sustainable improvements in the operational performance of their assets, leading to benchmarking, assurance and validation of operational asset data.
CSR	Corporate Social Responsibility is a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders.
ESG	Environmental, Social and Governance is a set of standards measuring a business's impact on society, the environment, and how transparent and accountable it is.
Passivhaus	Passivhaus buildings provide a high level of occupant comfort using very little energy for heating and cooling.
WELL Building Standard	WELL is a performance-based system for measuring, certifying, and monitoring features of the built environment that impact human health and well-being, through air, water, nourishment, light, fitness, comfort and mind.

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