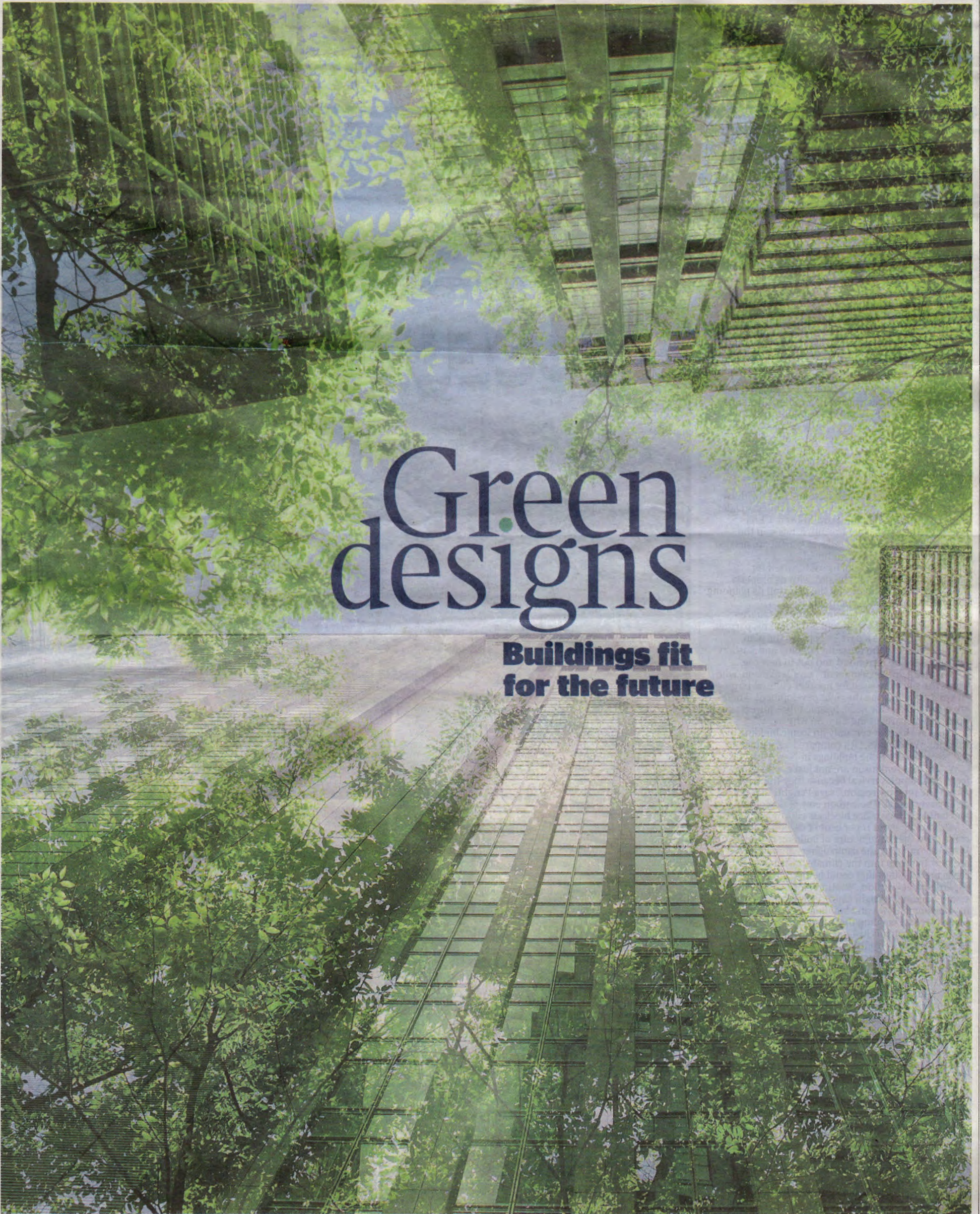


# Green designs

**Buildings fit for the future**



# Rebuild or retrofit: the fight

One of the key battlegrounds in the campaign to reduce carbon emissions is the construction industry, and one front has opened in the City over the relocation of the Museum of London, **Ben Cooke** writes

‘It’s a Marmite building,’ says Peter Jenkinson, gazing at Bastion House, ‘but I love it.’ To see whether the architectural mainstream shares his fondness for the 1970s office block that looms above the Museum of London, you need only look at the more modern building opposite, One London Wall.

Compared with its gently curving contours, Bastion House looks as blocky as a Lego set. Compared with the turquoise translucence of its windows, Bastion’s look almost opaque. While One London Wall looks of a piece with the glass towers rising in the distance, Bastion House looks like a vestige of an era the skyline has left behind.

Soon, it could be gone. With the Museum of London moving to Smithfield Market, the City of London Corporation intends to submit a planning application to replace it and Bastion House with two larger office blocks, designed by the architects Diller Scofidio + Renfro and Sheppard Robson. Chris Hayward, the City’s chief executive, has said the proceeds of the museum’s redevelopment are needed to fund its relocation to Smithfield.

In effect, the City would be asking itself for permission to redevelop the site, with its property investment board submitting the plan and its planning committee, potentially, approving it.

However, a campaign group, Barbican Quarter Action (BQA) — of which Jenkinson and his partner, Shelagh Wright, are a part — opposes the plan, arguing that both the museum building and Bastion House should be retrofitted and put to new use.

‘We’re not anti-development,’ says Jenkinson, who wants the site to be used for another cultural purpose. ‘It’s just about having the right development. There are already plans for huge, priapic office towers across many parts of the City. So why here?’

‘Bastion House is certainly an iconic building of its time,’ Wright says. ‘It’s compared very much to the Mies van der Rohe buildings in New York.’

Wright and Jenkinson are not just campaigning for the building’s survival because they think it looks nice. ‘The primary reason,’ says Wright, ‘has got to be environmental. The carbon cost of demolition and building huge office blocks is enormous.’

Worldwide, about 11 per cent of carbon emissions come from the manufacture of building materials. With that in mind, the campaigners argue that we are now too deep into the climate crisis to be replacing buildings that could be retrofitted at the expense of less carbon. ‘Bastion House is a perfectly sound building,’ Wright says. ‘Why waste the carbon in knocking it down and building something new when there’s a building there that could be reused?’

Their campaign is just one instance of the growing enthusiasm for retrofitting. More than 1,200 UK-based architectural practices have pledged to ‘upgrade existing buildings for extended use as a more carbon-efficient alternative to demolition and new-builds whenever there is a viable choice’.

Planning authorities are embracing retrofitting too. In March the City became the first authority to require any developer wishing to demolish buildings with more than 1,000 sq m of floor space to study the feasibility of retrofitting the buildings instead. The requirement is intended to help the Square Mile reach net-zero carbon emissions by 2040. BQA argues that the City’s plan to demolish Bastion House and the museum evinces a lack of joined-up thinking.

In May last year the City published an assessment comparing the carbon emissions of two different futures for the Museum of London site: one, a full redevelopment, the other, a partial retrofit that

Peter Jenkinson and Shelagh Wright are campaigning for the Museum of London building and adjacent block Bastion House, right, to be retrofitted for new uses rather than being demolished and rebuilt, far right



# at the heart of architecture

## Bringing new flavour to vanilla buildings

HANNAH SKELLEY



Cape Town's waterfront grain silo decayed for 80 years before 2013, when Matthew Cash, a partner at Heatherwick Studio, in London, began developing a new home for South Africa's heritage art collection, the Zeitz Museum of Contemporary Art Africa. "We could have demolished the building," Cash says, "but it was such a significant site in terms of familiarity and the sense of identity it gave to Capetonians."

Starting with the harsh industrial façade, he aimed to make the reinforced concrete building more inviting. "The architecture tells you not to go in there. It was designed purely as a machine; it was very insular and very defensive."

The team stripped back years of render and paint on the exterior to reveal aggregates from Table Mountain, where the silo's slabs were slip-cast.

The building originally consisted of a series of concrete grain storage tubes, which were cut through at angles to create striking geometry and enough space to open up the heart of the building: "We carved a new atrium right in the centre to welcome people in and also create room for galleries to be inserted within the cells of the existing tubes."

Anything that could be retained and repurposed was given a new lease of life. The remaining tubes became lift shafts, with circular lifts. The dust house, designed to extract the highly flammable dust from the grain, was converted into a café. The basement conveyors now showcase installation artwork.

Cash worked with whatever the building had to offer and a £24 million budget. He used local materials, labour and manufacturing.

He says emotion plays a crucial role in preventing places from being destroyed. "A lot of buildings are retained, not because they are the most practical, but because they are the most loved. People don't love vanilla buildings. People don't defend them. They can't be bothered — it's those buildings that quietly get demolished and, worryingly, they contain as much carbon as anything else."

Across the Bradford skyline snakes a two-storey line of penthouses, designed to mirror the twists of a plait of woven silk. They sit atop Lister Mills, where silk and velvet were produced for more than 100 years. After its looms ground to a halt in 1990, the grade II listed structure was left to decay.

"It was vandalised, the windows were broken and the roof had caved in," says Jennifer Juritz, head of environmental design at David Morley Architects. Other organisations refused to retrofit the Velvet Mill, and were leaning towards demolition, but Juritz saw its potential. "People assume it's easier to demolish but repairs are always possible and we were keen to breathe a new purpose into this site," she says.

By working with Arup engineering, in Leeds, the £16 million cost-effective process hinged on keeping and mending as much of the existing fabric of the building as possible, including any of the York stone flooring that hadn't been stolen. Then Juritz set to work producing the pod penthouses, which accounted for 18 per cent of the overall spend, by sourcing materials from local communities to keep cost and carbon emissions down. Begun in 2006, it was finished in 2018.

"The semi-monocoque pods are made from highly insulated, ultra-light OSB [oriented strand board made of waste timber] frames on top of steel, which was manufactured by a company in Hull." The curved plywood ribs that form the penthouses were overlaid with modern zinc cladding.

"You could not build something that would provide this many generously sized flats in today's world for this amount of money without using the design ingenuity to work with what you've got," Juritz says.

The work emitted only half of the carbon that a newbuild would have done. "Even now you wouldn't find people who would build something with such scale and generosity. You get this lovely resource to mould into something new and, best of all, you get a sense of history that is irreplaceable."

Velvet Mill  
Bradford



involved knocking down Bastion House and adding a tower to the Museum of London building.

According to the architect Simon Sturgis, who peer-reviewed the assessment on behalf of BQA, the document was designed to "pay lip service" to retrofit, and "prove that newbuild is the only realistic solution".

The assessment found that the full reconstruction of the site would release 45,000 tonnes of carbon, while the partial retrofit would release only 30,000. The report argued that full reconstruction was, nevertheless, the "most sustainable outcome", because, by creating more floor space, it would have 10 per cent lower carbon emissions per square metre. Sturgis objects that "a more comprehensive retrofit approach than the one proposed, with Bastion House retained and retrofitted, would have far lower carbon emissions".

However, the City's assessment maintains that "inherent safety concerns" with Bastion House make its preservation unfeasible. The structure of the building is unusual. It is held up by four concrete columns in the middle and two concrete masses on either side. As the original structural design calculations are not available, the City says it is difficult to know how robust the structure is. Its concern stems from an analysis of the building by the engineering consultancy Buro Happold.

The City argues that, unless its base was strengthened at considerable expense, changes made to the building during retrofit might cause one of the columns to collapse, with the rest of the building going down too. Its assessment did not say that the building was unsafe at present, or that a retrofit was impossible, only that it was "very challenging".

Bob Stagg, a structural engineer at the engineering consultancy Conisbee, who reviewed the City's assessment for BQA, believes that the prospect of the collapse of Bastion House is a scare tactic intended to justify the complete redevelopment of the site.

Regulations instated in 1972 to prevent the collapse of buildings require them to be able to withstand a force of 34 kilonewtons (kN) per square metre. Although construction of Bastion House began months before the regulations, Stagg says "you just know that one of those reinforced concrete columns would easily be able to take a force of 34kN per square metre". He adds: "They really are trying to frighten people into thinking we must get rid of this building because it's unsafe, rather than saying we want to get rid of this building because we want to build half a billion quid's worth of fancy offices."

In April the City surprised BQA by announcing that, although it still intended to seek planning permission for full reconstruction, it was inviting developers to express interest in retrofit. The idea is to give two options to whoever buys the site from the City: either they can go with a full reconstruction plan, such as the one developed by Diller Scofidio + Renfro and Sheppard Robson, or with a scheme to retrofit some or all of the existing buildings.

BQA members believe this change of stance shows that their campaign is working. They also worry the short window for developers to submit their suggestions — 31 working days — might show that this "soft market test" is only a face-saving exercise designed to suggest that the City is considering the climate-friendly option. That window has now closed and the City is yet to say whether any developers came forward.

A City spokesman said: "We have invited parties to explore the opportunity to reuse Bastion House. Parties are encouraged to undertake their own due diligence to determine whether they consider that there are any appropriate solutions to improve the structure of the building and therefore enable its reuse."

Both Bastion House and the museum building have other features that make them less than ideal. The ceilings of Bastion House are lower than those of a modern office and its fire escapes are less numerous. It also needs a new, more insulatory façade. The ceilings of the museum building are also unfashionably low.

However, according to Sturgis, some of these problems can be fixed — for instance, with the addition of an external fire exit to Bastion House — and others would cease to be problematic if the buildings were put to a different use. Its low ceilings would be less of an issue if it were made into a hotel, he says.

"Because of the climate crisis being so significant, we have to be more flexible with these things," Sturgis says. "Let's face it, with a good design, whatever you make of those buildings, you're not going to lose money unless you're a hopeless developer. You're not going to max out [its value] unless you build a whole new tower block — but we're past that. We've got to be looking at things a bit differently."