

Submission from The Architects' Journal's RetroFirst campaign for reuse of existing buildings

(The Architects' Journal is the leading magazine and website for UK architects)

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The need to consider embodied carbon

The topic that the committee is investigating is a very important one and we fully support calls for the government to be more ambitious in rapidly bringing the UK's housing stock up to much greater levels of energy efficiency.

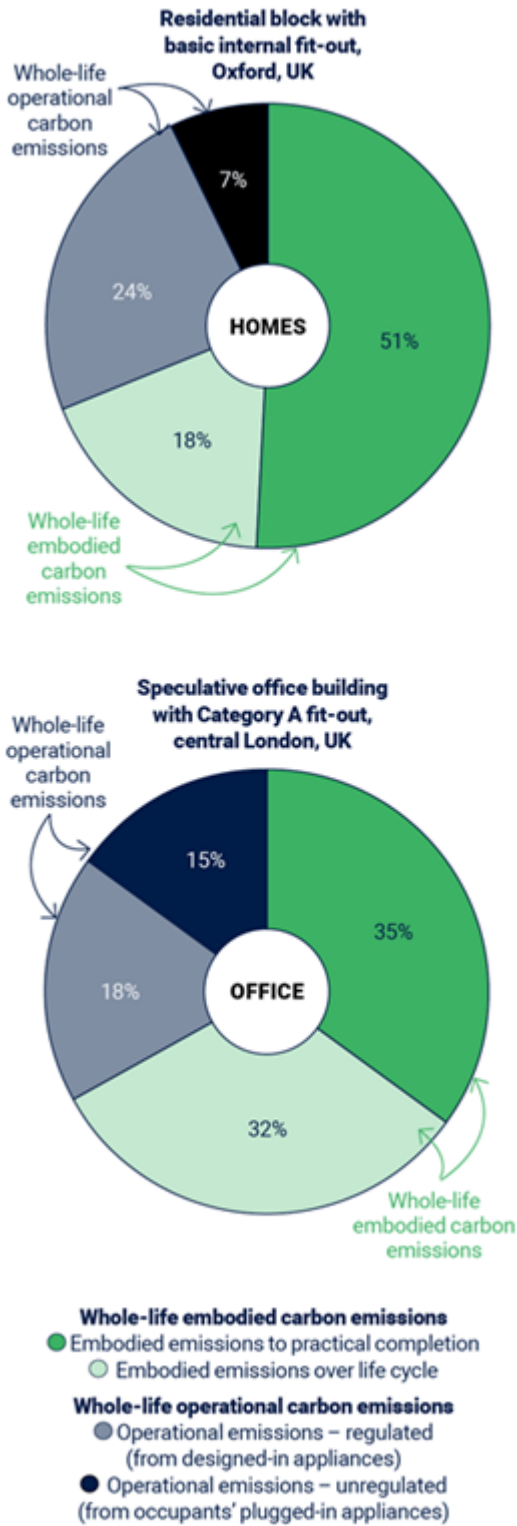
However, in a climate crisis that Parliament has acknowledged, the government needs to focus not only on swiftly reducing the day-to-day emissions of buildings such as homes (operational carbon) but also on the carbon associated with producing buildings in the first place (embodied carbon). These are the two sides of the whole life carbon equation.

Worldwide, the construction industry consumes almost all the planet's cement, 26 per cent of aluminium output, 50 per cent of steel production and 25 per cent of all plastics.

And precisely because of the way it gobbles up energy and resources, the industry's carbon emissions are sky-high. In the UK, **the construction industry produces no less than 45 per cent of the country's total emissions according to Innovate UK. And around 10 per cent of this is produced by construction, it is estimated.** As the government's former chief environmental scientist, Ian Boyd, has said of our current economic system, 'emissions are a symptom of consumption and, unless we reduce consumption, we'll not reduce emissions'.

To give an example of the impact, The Royal Institute of Chartered Surveyors (RICS) has found that, by practical completion stage, 35 per cent of the whole-life carbon of a typical office development will already have been emitted, while **the figure for residential is 51 per cent** (see charts below). This staggering fact has only been properly grasped in the construction industry relatively recently.

Carbon comparisons



As the RetroFirst campaign recommends, the answer is to reuse what we have and stop the wasteful cycle of demolition and rebuild which is currently our default approach. As Carl Elefante, former

president of the American Institute of Architects, said: **‘The greenest building is the one that already exists’**. For both new build and refurbishment, we should also seek to reuse construction materials through recycling or ideally reclamation wherever possible.

In terms of reducing carbon emissions, this is low hanging fruit. And the RetroFirst approach could go hand-in-hand with delivering **the government’s election manifesto pledge to spend £9bn on improving the energy efficiency of homes, schools and hospitals.**

This is especially important since 80% of the buildings we will have in 2050 have already been built and because Britain currently has the oldest and coldest housing stock within the EU.ⁱⁱ

The AJ RetroFirst campaign and who’s backing it

We at **the Architects’ Journal** launched the campaign last September and its name refers to the notion of putting retrofitting and refurbishment first.

We now have substantial backing from almost **190 architect practices** including **14 winners of the RIBA Stirling Prize**. The campaign is also being assisted by key contributor the **Architects Climate Action Network (ACAN)**.

With widespread support across the industry, other RetroFirst supporters include:

- Property developers and engineers including **British Land, Canary Wharf Group and Arup**
- Professional organisations such as the **RIBA, the RICS, the TCPA** and the government-established **Building Better, Building Beautiful Commission** led by the late academic **Sir Roger Scruton** and Create Streets founder **Nicholas Boys Smith**
- Individuals including architect and TV presenter **George Clarke**

What additional policy interventions are needed for social housing, leaseholders, landlord and tenants?

The RetroFirst campaign calls for reform in three different areas– tax, policy and procurement.

1. TAX: Cut VAT rate on refurbishment, repair and maintenance from 20 per cent to 5 per cent

It is perverse that the tax system incentivises brand-new construction (which often involves wasteful demolition) while punishing re-use and renewal despite their many social, economic and environmental benefits. Up until now the need to comply with EU regulations has often been offered as an excuse not to change this. **Post Brexit, we will have the freedom to rebalance the system.**ⁱⁱⁱ

Our primary proposal could be achieved by rebalancing the tax burden which falls upon retrofit as opposed to new build following a calculation of the two sectors’ respective revenue contributions.

If implemented, **this reduction in VAT on refurbishment would boost efforts to increase the energy efficiency of existing buildings, by providing an incentive to homeowners, landlords, housing associations & local authorities.**

And if the Treasury proved unwilling to rebalance the tax burden, there are other low cost or cost-neutral options available which would also help incentivise retrofit and refurbishment.^{iv}

2. POLICY: Promote the reuse of existing building stock and reclaimed construction material by introducing new clauses into planning guidance and the building regs

This could be done by adding clauses to the National Planning Policy Framework (NPPF)^v and reforming the Building Regulations.^{vi}

3. PROCUREMENT: Insist all publicly funded projects look to retrofit solutions first, thereby stimulating the circular economy and supporting a whole-life carbon approach in construction

We propose the government should lead from the front on building reuse which would also help stimulate the market in retrofit products and skills. Since the **public sector owns more than 260,000 properties and spends more than £20 billion a year on running costs**^{vii} such a retrofitting drive could also achieve substantial cost savings.

If not now, then when?

Overall, we believe that **adopting such RetroFirst reforms would help make the UK a true international leader on climate change ahead of the COP 26 summit and make our drive to make existing buildings more energy efficient more effective and coherent.**

Since we launched the campaign, we have published extensively on this subject including many case studies and in-depth features. These can be found at www.architectsjournal.co.uk/news/retrofirst

We would be more than happy to share further material with the committee should that be helpful in order to take this important agenda forward.

Will Hurst, managing editor, The Architects' Journal, 10th July 2020

RetroFirst campaign supporters

Built environment companies and organisations

- 44 Consult
- Anthropocene Architecture School
- Architects' Climate Action Network (ACAN)
- Arup
- Bath School of Design, Bath Spa University
- British Land
- Canary Wharf Group
- Capital + Centric
- Chapmanbdsp
- Crosstree
- Cundall
- Edinburgh World Heritage
- First Base
- FORE
- Hearth Historic Buildings Trust
- Historic Environment Scotland
- Hoare Lea
- Jensen Hunt Design
- London Waste & Recycling Board (LWARB)
- Mann Williams
- Max Fordham
- MultiLateral Structural Design

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- New York University, London
- Paradigm Land
- Pavehall PLC
- Price & Myers
- Priestley Construction
- Project Etopia
- RIBA
- RICS
- SAVE Britain's Heritage
- Society for the Protection of Ancient Buildings (SPAB)
- Spenbeck
- Town & Country Planning Association (TCPA)
- Trilogy Real Estate
- The Twentieth Century Society
- The Victorian Society
- U+I
- UK Green Building Council
- Urban Splash
- Useful Simple Trust
- WSP

Architecture practices

- 3D Reid
- 5th Studio
- 50.8 Architecture & Interiors
- AAB Architects
- aad architects
- ADP Architecture
- Alison Brooks Architects
- alma-nac
- Amos Goldreich Architecture
- Andris Berzins + Associates
- Allford Hall Monaghan Morris (AHMM)
- Allies and Morrison
- Architectural Emporium
- Architectural Thread
- Architecture for London
- Architecture Initiative
- Architype
- Aros Architects
- Assael Architecture
- Assorted Skills + Talents*
- Atelier; Helen Brooks Architects
- AWW
- Barr Gazetas
- BBM Sustainable Design
- Belsize Architects
- Ben Adams Architects
- Benjamin Tindall Architects
- Bennetts Associates
- Boano Prišmontas
- Brimelow McSweeney Architects
- Bryden Wood
- BuckleyGrayYeoman
- Buttress
- Caruso St John Architects
- Child Graddon Lewis
- Chris Dyson Architects
- Circle Architecture
- Clare Nash Architecture
- CMA
- Colman Architects
- Connolly Wellingham Architects
- Cousins and Cousins
- Curl La Tourelle Head Architecture
- Daria Wong Architects
- Darling Associates
- DarntonB3 Architecture
- David Chipperfield Architects
- Dennis Hellyar Architects
- Devlin Architects
- DLG Architects

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- DNA Architecture
- Donald Insall Associates
- Dow Jones Architects
- Downs Merrifield Architects
- Dress for the Weather
- dRMM
- Earle Architects
- ECD Architects
- ECE Architecture
- e-gg
- EPR Architects
- Fearn Macpherson Chartered Architects
- Featherstone Young
- Feilden Clegg Bradley Studios
- Feix&Merlin
- Fletcher Priest
- Foster + Partners
- Freehaus
- Gardner Stewart Architects
- Gensler
- Glenn Howells Architects
- GLM
- Goode Architecture
- Gort Scott
- gpad london
- Gray Macpherson Architects
- Grimshaw
- Group Ginger
- Halliday Clark Architects
- Hawkins\Brown
- Haworth Tompkins
- Heatherwick Studio
- Henley Halebrown
- Heritage Architecture
- Hills & Co
- Hopkins
- HPA Architecture
- HÛT
- Hutchinson & Partners
- Ian Ritchie Architects
- Jestico + Whiles
- John Gilbert Architects
- John Robertson Architects
- Jonathan Tuckey Design
- JTP
- Kendall Kingscott
- Knott Architects
- KR.eativ: Architects
- Living Space Architects
- LTS Architects
- LYN Atelier
- MAP Architecture
- Märraum
- MawsonKerr Architects
- MAX Architects
- McGinlay Bell
- McMullan Studio
- MICA Architects
- Mike Daubney Architects
- Mikhail Riches
- Morris + Company
- Morrow + Lorraine Architects
- Moxon Architects
- Morse Webb Architects
- MTBA Associates, Ottawa, Canada
- Murphy Associates
- Napier Clarke
- Neu Architects
- New Practice
- Nicola de Quincey architecture + conservation
- Norman-Prahm Architects
- O'Donnell + Tuomey
- Outpost
- Owen Ellis Architects
- Page\Park Architects
- Parkes Poole Architects
- Paul Testa Architecture
- PDP London
- Peak Architects
- Penoyre & Prasad
- Piercy & Company Architects
- Pollard Thomas Edwards
- PPIY Architects
- Procter-Rihl
- PRP
- Purcell
- Resi
- RGP Architects
- Robert Dye Architects

- Robert Rhodes Architecture + Interiors
- Robert Rowett Architectural Services
- Rogers Stirk Harbour + Partners
- Ruth Butler Architects
- Sarah Wigglesworth Architects
- Scott Brownrigg
- Selencky Parsons
- ShedKM
- Sheppard Robson Architects
- Simone de Gale Architects
- Simpson & Brown
- Sjölander da Cruz Architects
- Sow Space
- Square One Architects
- Stanton Williams
- Stephen Taylor Architects
- Steve Ritchie Partnership
- Stiff + Trevillion Architects
- Studio Basheva
- Studio Bednarski
- Studio Ben Allen
- Studio DuB
- Studio Egret West
- Studio Polpo
- Studio Seilern Architects
- Studio Van Hoorebeek
- Syndicate West Architects
- Tate Hindle
- Theis and Khan Architects
- Thomas Robinson Architects
- Tim Greatrex Architects
- Tonic Architecture
- Triangle Architects
- Turn Architects
- Type3 Studio
- Ullmayer Sylvester Architects
- Una Kaya Architects
- Urban Fabric Architects
- van Heyningen and Haward Architects
- Whittaker Parsons
- WilkinsonEyre
- Wilson Mason
- Witherford Watson Mann
- Woodfield Brady Architects
- Wren Architecture & Design
- Zaha Hadid Architects

Individuals

- Clara Bagenal George, Elementa Consulting
- George Clarke, architect and TV presenter
- Emma Dent Coad, former MP for Kensington
- Julie Godefroy, sustainability consultant
- Loyd Grossman, chairman of The Royal Parks
- Kelly Harrison, Heyne Tillett Steele
- Joe Holyoak, architect and urban designer
- J Jeffrey Keays, senior lecturer, school of architecture design & built environment, Nottingham Trent University
- Walter Menteth, architect and procurement reform campaigner
- Alice Moncaster, senior lecturer at School of Engineering and Innovation at The Open University
- Lucy Mori, architect and business consultant
- David Ness, adjunct professor at the School of Natural and Built Environments, University of South Australia
- Paul O'Neil, Bryden Wood
- Clare Richards, ft'work
- Simon Sturgis, Targeting Zero
- Professor Peter Walker, director of architecture and

ⁱ Source: UK Green Building Council.

ⁱⁱ Source: 2014 ENTRANZE report *Laying Down the Pathways to Nearly Zero-Energy Buildings*.

ⁱⁱⁱ The UK could even now drop VAT on refurbishment to 0%, an option forbidden under EU rules.

^{iv} One option might be to remove VAT only for 'deep low carbon eco-retrofit' projects, as a recent Change.org petition by architect Harry Paticas proposes. Alternatively, the Treasury might wish to combine its approach with the 'levelling up' agenda and provide grants to retrofit social housing specifically. This would contribute to our net zero target while also lowering the fuel bills of the poorest households.

^v Whole Life Carbon assessments could be mandated through the NPPF at pre-application and planning stage, a policy soon to be trialled on major developments in London (<https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/planning-guidance/whole-life-cycle-carbon-assessments-guidance-pre-consultation-draft>). Further incentive could be created by amending the NPPF to insert a 'presumption in favour of refurbishment' as a subset of the 'presumption in favour of sustainable development'. This could be bolstered by a requirement for any application proposing demolition of an existing building to demonstrate that reuse of the existing structure was first explored through a new 'sequential test' for prospective developments.

^{vi} The Building Regulations could be reviewed to include a requirement for Whole Life Carbon Assessments. This was recommended in a 2019 report commissioned by the Committee on Climate Change, suggesting a five year period to allow the industry time to adapt, and this would tip the balance in favour of the widespread retention of existing structures.

<https://www.theccc.org.uk/publication/options-for-incorporating-embodied-and-sequestered-carbon-into-the-building-standards-framework-aecom/> Furthermore, a 2018 report by Bionova illustrates how embodied carbon policies are being implemented in multiple states in the USA, and in other countries such as France. As the report points out "Governments have also played a role in this development, implementing policies that work together with the marketplace players." <https://www.buildup.eu/en/practices/publications/embodied-carbon-review-embodied-carbon-reduction-100-regulations-and-rating>

^{vii} Source: Cabinet Office