

From Old to Gold: Policies, Plans and Challenges in Retrofitting

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What will this talk cover?



1. National policy relating to retrofitting, funding issues and industry responses.
2. Approaches being taken by local authorities and the effectiveness of existing and emerging policies.
3. Particular challenges involving heritage assets.



01

National policy; funding issues; industry responses



Some definitions

01

Embodied carbon

Emissions associated with materials, construction, maintenance, repair, demolition and disposal of a building.

02

Operational carbon

Emissions associated with use of energy within a building (e.g. for heating and cooling)

03

Whole life carbon

Combined total of embodied and operational emissions over whole life cycle of a building.



National policy



- NPPF §157:

The planning system should **support the transition to a low carbon future in a changing climate**, taking full account of flood risk and coastal change. It should help to: **shape places in ways that contribute to radical reductions in greenhouse gas emissions**, minimise vulnerability and improve resilience; **encourage the reuse of existing resources, including the conversion of existing buildings**; and support renewable and low carbon energy and associated infrastructure.



M&S v DLUHC (photo credit John East)



House of Commons
Environmental Audit Committee

Building to net zero: costing carbon in construction

First Report of Session 2022–23

*Report, together with formal minutes relating
to the report*

*Ordered by the House of Commons
to be printed 11 May 2022*

Other government policy



Whole life carbon assessment for the built environment

Global

2nd edition, September 2023

Version 2, November 2023

Effective from 1 July 2024

Policy Position Paper

Embodied carbon regulation – alignment of industry policy recommendations

Around 1 in 10 tonnes of the UK's total greenhouse gas emissions are so-called "embodied carbon" emissions, related to the production and use of construction materials. They total 64 million tonnes CO₂e per year, more than the country's aviation and shipping emissions combined.

Despite their magnitude, embodied carbon emissions are unregulated in the UK. Similar legislation has already been implemented in several European Countries, the state of California, and is in the latter stages of debate for cross-EU introduction – all demonstrating the feasibility for the UK to do the same.

Several construction industry initiatives have been launched in recent years, calling on the government to move to reduce embodied carbon emissions in construction. Collectively, these initiatives are supported by hundreds of businesses, including a number of the largest UK housebuilders, developers, contractors and financial institutions. These organisations see such regulation as key to bringing consistency and accelerated action in this area – and many of their statements of support are shown at www.part-z.uk/industry-support.

These UK industry initiatives have all called for reforms to regulation, though dates and details have varied as collective industry knowledge around embodied carbon has evolved. Now, at the start of 2024, a general election year, these initiatives are joining together to call on the next government with one voice.

For more information, contact: Will Arnold, Head of Climate Action, The Institution of Structural Engineers, will.arnold@istructe.org

The undersigned groups call on party leaders to make the following manifesto commitments:

Key ask:

- "Our government will move to reduce embodied carbon emissions in building construction within two years of taking office."

Specific steps:

- Within six months of taking office: Policy signalled confirming the dates and interventions below.
- By 2026: Mandate the measurement and reporting of whole-life carbon emissions for all projects with a gross internal area of more than 1000m² or that create more than 10 dwellings.
- By 2028: Introduce legal limits on the upfront embodied carbon emissions of such projects, with a view to future revision and tightening as required.

Signed by:

Industry continues to call for further regulation

RICS

744

CIBSE

Institute of Building





Local policy matters





Overview

- Very few plans adopted plans have an explicit policy on retrofitting.
- Without a clear and explicit policy it is difficult to refuse applications for this reason (see M&S case).
- Several emerging plans include policies to encourage retrofit/discourage demolition. 9/33 London authorities are pursuing this approach.
- Range of different policy approaches taken, hands-off encouragement through to stringent tests.



'Retrofit First' - Emerging Policy/Guidance

-  Accepted policy or guidance on retrofit first
-  Emerging policy or guidance on retrofit first
-  No emerging policy or guidance but supporting new or existing references

London Plan (2021)

Policy SI 2

F “Development proposals referable to the Mayor should calculate whole life-cycle carbon emissions ... and demonstrate actions taken to reduce life-cycle carbon emissions.”

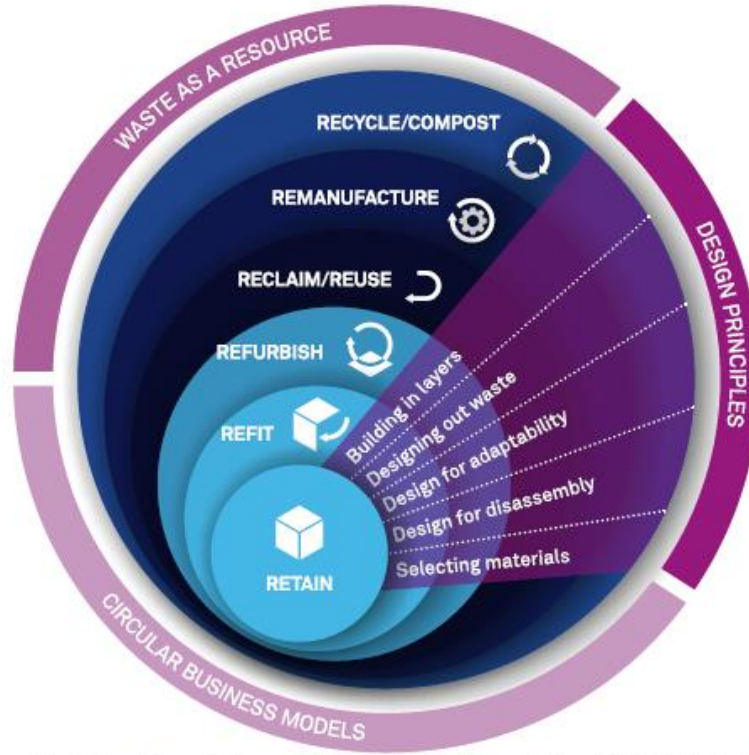
MAYOR OF LONDON

THE LONDON PLAN



THE SPATIAL DEVELOPMENT
STRATEGY FOR GREATER LONDON

MARCH 2021



Other LP policies

- Policy D3 optimizing site capacity through the designed approach
- Policy SI 7 – Reducing waste and supporting the circular economy

Source: Building Revolutions (2016), David Cheshire, RIBA Publishing

Whole Life-Cycle Carbon LPG

- Set of principles. Principle 1 is “Reuse and retrofit of existing built structures”
- Multi-stage assessment.
- Retrofit-first approach.
- Advisory benchmarks for embodied carbon.

CE Statements LPG

- Hierarchy for building approaches – retention the starting point
- Multi-stage assessment.
- Retrofit-first approach
- Design for adaptation and flexibility; enable materials to be reused/recycled

Retrofit vs Rebuild PRC report Feb '24

- Investigation and heard evidence March 2023
- Report looks at current policy and its impact so far.
- Recommendations for future policy:
 - More ambitious benchmarks for embodied carbon
 - Factor in grid decarbonisation
 - Third party review of WLCAs
 - Require assessment of alternative options inc. retrofit

CoL Current Policy (2015)

Policy CS 15

“Avoiding demolition through the reuse of existing buildings or their main structures”

Carbon Options Guidance PAN 2022

- Optioneering exercise
- Tool for pre-app discussion and negotiation
- Feasible design approaches, inc. refurb/ retrofit
- ‘Dashboard’ to report WLCA outcomes

CITY OF LONDON LOCAL PLAN

January 2015





CoL – emerging plan (reg 19)



Draft Policy DE 1

- “Retrofit first approach”. Proposals must ‘thoroughly explore’ potential as the “starting point” for appraising site options.
- Requires optioneering in line with the COG PAN.
- Requires submission of WLCA and minimizing WLC emissions
- Where new buildings are the most sustainable and suitable approach, must deliver “exemplar low carbon development”

Westminster - current

Policy 36 (Energy)

“Major development should be net zero carbon”

Supporting text:

“... support proposals that seek to sensitively refurbish or retrospectively improve the performance of current buildings....”

“substantial demolition and reconstruction should be fully justified” based on WLC impact
“compared to the existing building”





Emerging policy (reg 19)



Draft Policy 43 – Retrofit First

- Substantial or total demolition “should be fully justified”. Total demolition “will generally be resisted”, unless certain tests are met:
 - Public benefit
 - Similar/lower WLC carbon
 - Bespoke operational requirements
 - Structural constraints
- Requirement for WLC assessments
- Upfront embodied carbon targets

RBKC emerging plan (exam. concluded)



- Policy GB1 – Sustainable retrofitting: “Sensitive, sustainable and safe retrofitting of all our existing building stock is supported.”
- Policy GB3 – WLC Carbon: “demonstrate actions taken to reduce whole-life carbon emissions”.
- Supporting text notes that retention and refurbishment provides the greatest opportunity to minimize embodied carbon.



Effectiveness of policy approaches



- Policies without express criteria/which do not require consideration of retrofit options may be less effective.
- Emerging policies generally recognise a need for flexibility/exceptions.
- Policy trend will affect industry practice and have a 'nudge' effect, even where wording is less robust in some areas.

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- GLA PRC report found that WLCAs submitted so far varied in quality – industry is still building knowledge and capacity.
 - Burden on developers – will impact will be felt more by small/medium firms?
 - Planning policy is a factor in decision making, but other considerations also v. important - not least cost.



03

Retrofitting and Repurposing of Heritage Assets





Common Objectives:



- Restoration
- Reuse
- Improved Operational Efficiency Over Lifetime
- Lower Embodied Carbon
- Meet Social, Cultural and Economic Needs
- Inc. contribution to Sense of Place and Cultural Identity



Common Issues/Problems



- Listed Assets are protected by a strong legal and policy framework
- Reuse and repurposing (including measures to improve building efficiency) may involve substantial changes to the historic fabric
- Requires a careful and imaginative design-led approach that relies on the considerable expertise of many agencies, including the consideration of alternative approaches (with public “buy in”)
- Increased cost as an alternative to redevelopment
- Will not always provide the best commercial/operating solution



Improving the Environmental Efficiency of Listed Housing Stock



- A considerable challenge
- Will require changes to the internal and external fabric which may require LBC and hence advice from several specialists
- Maintaining character and respecting historic form and function will require bespoke and ultimately expensive solutions that home owners will be reluctant take on without assistance
- Climate Change and Historic Building Adaptation: Historic England Advice Note
- Lack of industry expertise
- Poor training and apprenticeship opportunities in this particular area



LBA 1990 and National Policy



- Statutory “presumption” sets a high bar
- Any proposal that would require planning permission (including a change to the external appearance of a building) will be subject to the discharge of the s.66 duty
- LBC will be required for any works of alteration or extension which would affect its character as a building of special architectural or historic interest (both external and internal) with the special consideration that this requires (ss.7&16)



NPPF



Para.208

Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.

Para.209

The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset



Major Development Opportunities



- Often involve the reuse and repurposing of LBs involving material changes to the historic fabric (and often introduce setting issues with respect to neighbouring historic assests)
- There is no presumption in favor of repurposing LBs so the public benefit test has to be applied where any such repurposing would cause less than substantial harm
- In these circumstances it may well be necessary to produce evidence to establish that the proposal:



Cont.



- Is in principle necessary to secure the viable longer-term beneficial use of the asset
- Provides an appropriate architectural response having regard to the significance of the asset and its setting
- Will secure beneficial lifecycle carbon savings
- Is an economically viable alternative
- Promotes the public interest in other ways (which would not otherwise be achieved) having regard to prevailing policy objectives at local and national level
- Is the least compromising option as a means of obtaining these benefits



Thanks!

