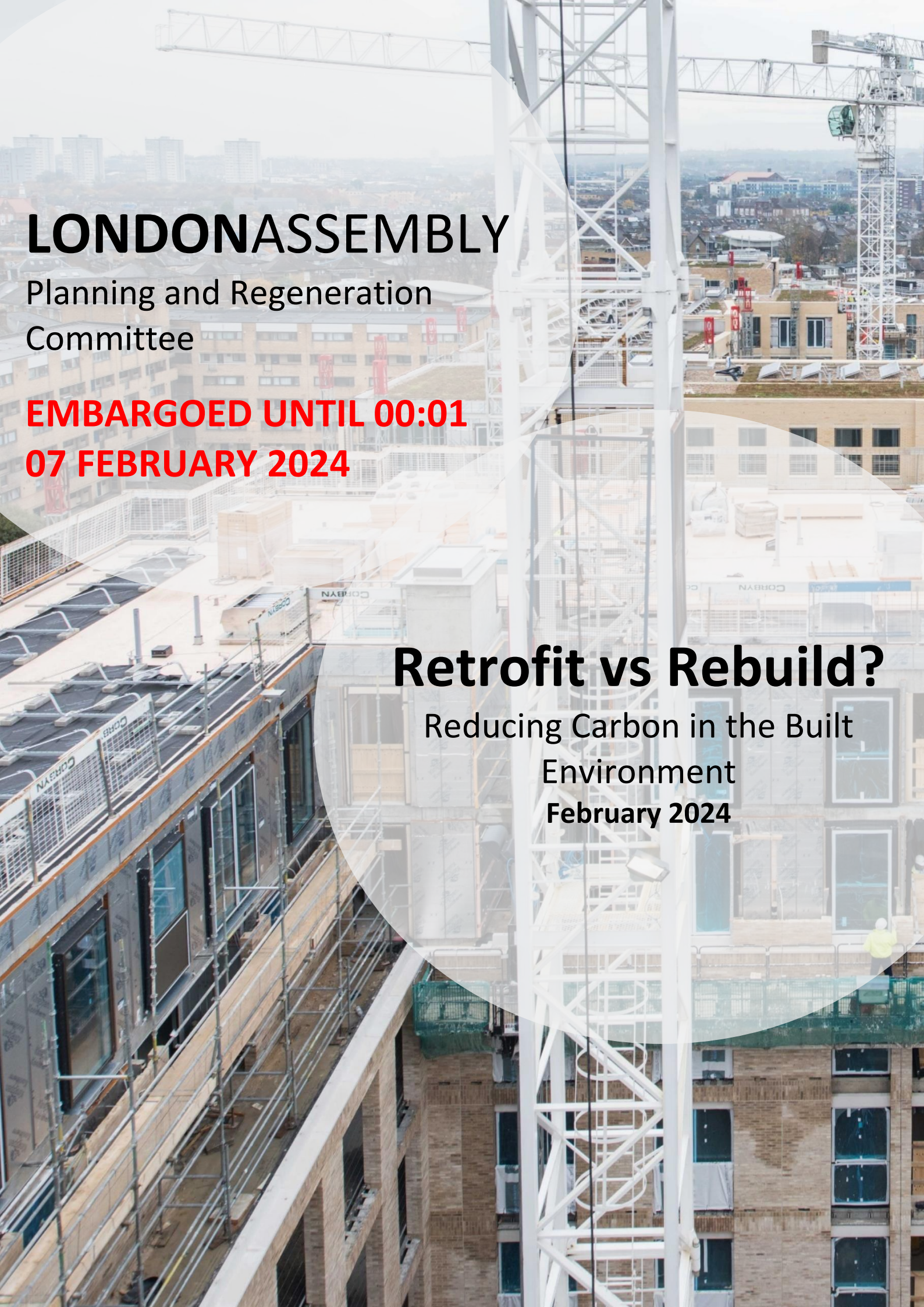

LONDONASSEMBLY

Planning and Regeneration Committee

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Retrofit vs Rebuild?

Reducing Carbon in the Built Environment

February 2024

Planning and Regeneration Committee

The Planning and Regeneration Committee examines and reports on matters relating to spatial development, planning and regeneration in London and leads scrutiny of the Mayor's Spatial Development Strategy (the London Plan). The Committee also has lead responsibility for scrutiny of the Old Oak and Park Royal Development Corporation, and the London Legacy Development Corporation.

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Foreword

Sakina Sheikh AM
Chair of the Planning and Regeneration Committee

The UK must take serious action to meet the challenge of climate breakdown. London can be key to unlocking this action and taking a lead in the UK. The recommendations in this report offer clear steps that can move our climate action forward by decarbonising how we construct.

Ensuring we build sustainably must be at the heart of how we construct for the future. Whilst the London Plan has world-leading policies that can enable this, it's our job on the London Assembly to keep pushing it further. We face a climate crisis and a housing crisis, and urgent action is needed to tackle both. We need to build more homes whilst rapidly retrofitting our current housing stock.

As we navigate a cost of living crisis, let's be clear that retrofitting existing buildings and homes can save people money while making their homes warmer and more comfortable. The Government can make retrofitting more financially viable by heeding the calls from industry to reduce the Value Added Tax (VAT) builders currently have to pay to retrofit.

Steps to install heat pumps, double glazing and insulation have helped reduce "operational" carbon emissions in London's buildings. However, the construction of a building itself produces significant carbon emissions called "embodied" carbon emissions in the bricks, mortar, glass and concrete.

This report looks at the new approach laid out in the London Plan to assess both operational and embodied carbon emissions through Whole Life-Cycle Carbon (WLC) Assessments. WLC Assessments compel builders to show they are working to reduce carbon emissions during construction. They also compel builders to actively consider alternatives to demolition such as retention and retrofit if these reduce the carbon footprint of a development.

A trend towards discouraging demolition could positively impact how we manage the quality of our historic housing estates going forward. This, in turn, could positively impact

the capacity for communities to remain in their homes and to protect beloved historic community buildings, if they choose to.

There is no room for delay. We need a serious reorientation of our approach in order to ensure climate considerations are embedded at every layer of governance. This report offers recommendations to enable this within our planning system.

I want to thank all those who have contributed to this investigation, and in particular the London Assembly Secretariat. I also want to thank my Planning and Regeneration Committee Members for their cross-party collaboration on this crucial investigation. The London Assembly can make our most effective contributions when we can find common ground and solutions to improve Londoners' lives.

Executive summary

In London, buildings account for an estimated 68 per cent of London's carbon emissions.[1]

Emissions from the built environment can cover a broad range of sources. It is common to talk about the emissions that arise from operating the building – for example, heating and cooling. At national and London levels, there has been a drive for greater energy-efficiency to reduce these kinds of emissions, which are known as 'operational' carbon. However, buildings also give rise to carbon emissions that are described as 'embodied' in the building. These emissions arise from the energy used to extract, transport and assemble materials to construct buildings. Embodied emissions also arise from work done to maintain and repair buildings; and later, to demolish them and dispose of the waste.

In March 2023, the London Assembly's Planning and Regeneration Committee carried out an investigation into embodied carbon in buildings; and how the Government and the Mayor are addressing embodied carbon. It was clear from our investigation that embodied carbon is an urgent issue in the context of the climate emergency, as it can make up a significant proportion of a typical building's total carbon emissions – between 30 and 70 per cent, according to the built environment consultancy Arup.[2] However, it is only since 2021, when the current London Plan was published, that developers have been required to measure and aim to reduce the embodied carbon in major developments.[3] In the rest of the UK this is not yet a requirement.

The London Plan includes a policy that requires developers to carry out a Whole Life-Cycle Carbon (WLC) Assessment. This is a way of measuring all the emissions that arise during the entire life cycle of a building, from its construction to its potential demolition or change of use. To date, we do not know how much embodied carbon is associated with development, construction and demolition in London, because developers have not been required to report on this. However, the Greater London Authority (GLA) is now able to gather data on the whole life carbon associated with major developments in London. During our investigation, we heard that this policy is incentivising industry to understand, and aim to reduce, embodied carbon in developments.

The London Plan also has a circular economy policy that encourages developers to design buildings such that they are adaptable; are retained in use for as long as possible; and allow for reuse and recycling of materials at the end of the building's lifetime. During our investigation we discussed how this circular economy policy links with the whole life carbon policy to encourage developers to show that they have considered retention and retrofit for major developments.

[1] Business LDN, Place Commission, May 2023
[2] Arup, Net Zero Carbon Buildings: Three Steps to Take Now
[3] GLA, The London Plan, March 2021

The first chapter of this report looks at why the whole life carbon policy in the current London Plan is important. It contains a recommendation that the London Plan approach informs the Government's planning policies and building regulations.

The second chapter looks at what we know about the WLC Assessments submitted so far, and makes recommendations on how the GLA's guidance can be made stronger in its next iteration, to ensure that developers are more robustly incentivised to explore and select the least carbon-intensive development option.

The third and final chapter looks at the bigger picture around retention, reuse and retrofit of buildings, to understand whether the London Plan policies on whole life carbon and the circular economy are likely to lead to more sustainable outcomes for development in London. It was clear from our investigation that whole life carbon is only one of many factors that contribute to decisions on whether and how to retain and retrofit buildings and reuse existing materials. There are other aspects that affect whether retrofit of a building is viable and practical; these are weighed up by developers when they develop planning proposals, and by local authorities when they decide on planning applications. In this context, there are actions that Government and the GLA could take in order to make retrofitting more frequently viable and practical, and to address barriers to the circular economy.

We carried out this investigation in the context of a high-profile planning inquiry called by the Secretary of State Michael Gove into the future of the Marks & Spencer building on Oxford Street. Since we carried out the investigation, the Secretary of State's decision (which disagreed with the recommendation of the Planning Inspector) was to reject planning permission for a developer to demolish the building and rebuild on the site. While harm to heritage assets was cited as the main reason for the Secretary of State's decision, embodied carbon was cited as another reason against the scheme.[4]

Arguably, embodied carbon is increasingly becoming a factor in planning decisions. However, the inquiry and intense disputes concerning the building's future also showed the complexity of WLC Assessments, and the difficulty of weighing these up with the many other factors that are involved in a planning decision. We believe that this case underlines why WLC Assessments are essential for major developments and should be built into national policy; and why we need to encourage assessments that are more transparent, accountable and credible. We have made a series of recommendations on this basis.

[4] Department for Levelling Up, Housing and Communities (DLUHC), Application made by Marks and Spencer PLC 456-472 Oxford Street, London W1, 20 July 2023, p.3 and pp.10-11

Recommendations

Recommendation 1

The Government should introduce a mandatory requirement in national policy to undertake WLC Assessments for buildings, looking at the policy on minimising greenhouse gas emissions set out in the London Plan's Sustainable Infrastructure Policy 2 Part F as a potential model.

Recommendation 2

The Mayor should publish annual data gathered from WLC Assessments to enable the success of the policy to be tracked, and to identify improvements needed. The GLA should analyse the data and provide an estimate of the amount of embodied carbon emissions associated with London developments, broken down by type.

Recommendation 3

The GLA should explore the following measures in the next iteration of the WLC Assessments guidance, to standardise assumptions and improve the ambition, accuracy and accountability of the assessments submitted by developers:

- **ambition: more ambitious "standard" and "aspirational" benchmarks to match global best practice**
- **accuracy: applicants should be required to incorporate electricity grid decarbonisation projections into their assessments**
- **accountability: a full assessment of the carbon implications of alternatives that involve retrofit; and a requirement for a third-party, independent audit of the WLC Assessments (with the cost borne by applicants).**

Recommendation 4

The Government should assess how to ensure retrofit is more frequently viable, including whether VAT on building refurbishment could be removed or reduced (to bring retrofit in line with new buildings), subject to budgetary and other considerations.

Recommendation 5

The Government and the Mayor should assemble a working group to identify the support that local authorities need, in terms of their skills and capacity, to promote whole life

carbon and circular economy approaches; and how this support could be obtained.

Recommendation 6

As part of a potential review of the London Plan, the GLA should conduct a review of the infrastructure, products and services that are needed to support the circular economy in building and construction. As a result of this review, the GLA should set out actions it will take.

Chapter one: Policy context

Understanding carbon from construction in London

The UK built environment is responsible for approximately a quarter of total UK greenhouse gas emissions.[5] These emissions arise from the construction, operation and demolition of buildings.

There is increasing evidence that embodied carbon represents a significant proportion of the emissions in the built environment. According to the UK Green Building Council, embodied carbon from construction and refurbishment represents 20 per cent of total built-environment emissions.[6]

If London is to meet the Mayor's target to be net zero carbon by 2030, there is an urgent need to reduce emissions from buildings in London.[7]

Operational carbon emissions (the energy used to run buildings, e.g. heating and cooling systems) are regulated through building regulations. However, during our investigation we found that embodied carbon is treated differently, and the building industry is not currently required nationally to measure and reduce the embodied carbon arising from construction. In this context, the GLA's London Plan policy on whole life carbon is important – because it represents the first UK requirement on developers to measure and minimise embodied carbon in developments.

"Carbon emissions are the biggest indicator for the warming climate that we are facing and globally the construction industry is responsible for 40 per cent of those emissions. Therefore, the way that we operate our buildings and the materials that we build them out of are increasingly important to reducing that contribution. The way that we measure carbon emissions in buildings is through whole life-cycle carbon (WLC) assessment. That is why the policies the GLA has introduced are so important for, firstly, understanding where we are as an industry, and secondly, influencing those urgent reductions that we need."

Louisa Bowles, Partner and Sustainability Lead
HawkinsBrown[8]

London Plan policies

Whole life-cycle carbon

WLC Assessments are a way of measuring all the emissions arising during the entire life cycle of a building, from its construction to its eventual demolition. The London Plan set a policy requirement for developers to carry out WLC Assessments for major developments, to be submitted during planning stages. To fulfil this requirement, developers have to calculate and minimise the embodied carbon and the operational carbon arising from a potential development, and describe how they are minimising carbon emissions:

London Plan policy on Minimising greenhouse gas emissions

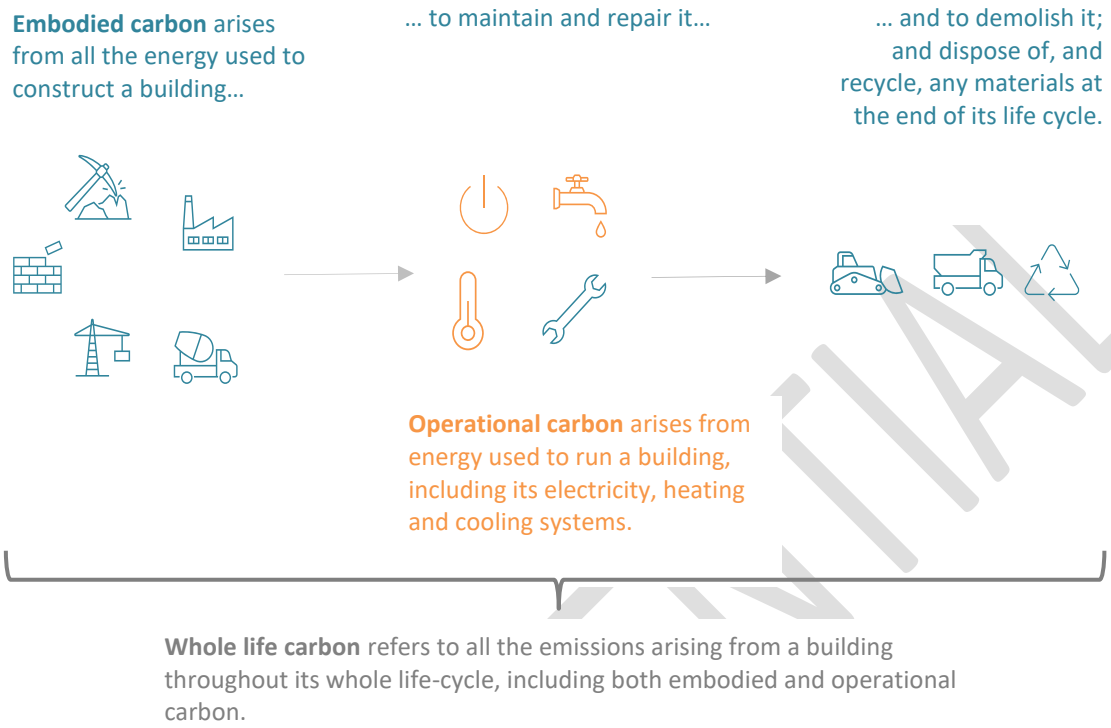
"Development proposals referable to the Mayor should calculate whole life-cycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions."[9]

We heard evidence about the importance of industry taking a WLC approach to development. By carrying out a WLC Assessment, a developer can assess: the embodied carbon of the materials and structure proposed; options for reducing carbon; and options for reusing and retrofitting components of the existing building. By building WLC Assessments into policy, developers can be held to account for the choices they have made around carbon reduction and the least carbon-intensive approach possible. As Dr Julie Godefroy, Head of Net Zero Policy at the Chartered Institution of Building Services Engineers (CIBSE) told us:

> *"The GLA's policy is very important and it is important that they are taking a WLC approach because gradually it could help us inform design decisions and balance when there may be decisions to make between investing more in one or the other, and particularly in the context of retrofit, but also to some extent in new build."*[10]

[5] UK Green Building Council, Net Zero Whole Life Carbon Roadmap, November 2021, p.6.
[6] UK Green Building Council, Net Zero Whole Life Carbon Roadmap, November 2021, p.44.
[7] Mayor of London, Pathways to Net Zero Carbon by 2030
[8] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[9] GLA, The London Plan, March 2021, Policy SI 2 Part F Minimising greenhouse gas emissions
[10] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023

Figure 1 – What is embodied, operational and whole life carbon?



We heard during our investigation that there can be complex trade-offs in taking a whole life carbon approach. For example, we heard how developers need to balance the benefits of retaining an old building against the benefits of building a new, energy efficient one.[11] Constructing new buildings with energy efficient components can save more operational carbon; but our guests noted that retaining and reusing existing buildings or components is usually more efficient, in terms of embodied carbon, than demolishing and rebuilding.[12]

Guests also described to us that as the UK electricity grid decarbonises, the amount of operational carbon from a building will decrease over time, representing a smaller proportion of the overall whole life carbon emissions from the building.[13] This could mean the benefits of rebuilding a new energy efficient building are less significant over time.

In the light of these complex calculations and trade-offs between operational and embodied carbon, a WLC Assessment should reveal the most carbon-efficient option over the lifetime

[11] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[12] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[13] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023

of the building. This may mean that reusing and retrofitting a building, or elements of it, is more carbon-efficient overall than developing a new, energy efficient building.

Circular economy

The GLA told us that the London Plan policy on whole life carbon should be read alongside a separate London Plan policy on the circular economy.[14] The latter prioritises the "retention of existing structures above demolition, where this is the more sustainable and appropriate approach."[15]

The circular economy policy requires developers to show that they have designed buildings that are adaptable; are retained in use for as long as possible; and allow for reuse and recycling of materials at the end of the building's lifetime.[16] As David Cheshire, Director in the sustainability team at AECOM told us, there is a preference in the circular economy guidance "towards refurb and retention over demolition and new build. Certainly, the guidance is trying to push people in that direction."[17]

London Plan policy on reducing waste and supporting the circular economy

"Referable applications should promote circular economy outcomes and aim to be net zero-waste. A Circular Economy Statement should be submitted, to demonstrate:

1) how all materials arising from demolition and remediation works will be re-used and/or recycled
2) how the proposal's design and construction will reduce material demands and enable building materials, components and products to be disassembled and re-used at the end of their useful life."[18]

National planning policy and Building Regulations

The London Plan policy on WLC Assessments has been recognised as a potential example for the direction that national policy could take. In 2022, the House of Commons Environmental

[14] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[15] GLA, The London Plan, March 2021, p.381
[16] GLA, The London Plan, March 2021, Policy SI 7 Part B
[17] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[18] GLA, The London Plan, March 2021, Policy SI 7 Part B

Audit Committee (EAC) undertook an inquiry on whole life carbon. During the inquiry, Will Arnold, Head of Climate Action at the Institution of Structural Engineers, stated that the WLC Assessment requirement in the London Plan "is one of the most important things that has happened in this country" on the topic of sustainability and the built environment.[19] The inquiry report published in May 2022 stated: "The single most significant policy the Government could introduce is a mandatory requirement to undertake whole-life carbon assessments for buildings."[20]

"It is undeniable that the GLA is a national leader in planning policy in this area [Whole Life Carbon Assessments]. Sadly though, England is a laggard in the developed world and so we are not a global leader, and it is quite interesting to look at other countries."

Chris Brown, Managing Director
Climatise[21]

During our investigation, Rhian Williams, Strategic Planner at the GLA, told us that embodied carbon was currently a "huge gap" in the Government's policy. She said: "We have been leading the way really in this and we have been trying to share what we have done with other parts of the country."[22]

Rhian Williams added that it was anticipated "the Government do intend to consult on some form of national policy on embodied carbon," and that the GLA had been sharing learning and data that "might help inform what happens at a national level."[23]

The Government's response to the EAC report, published in September 2022, stated:

> *"We agree … that whole life carbon assessments (WLCAs) are likely to have a significant role to play in delivering this change [reducing carbon in the built environment]. WLCAs will help ensure that carbon is properly accounted for, encouraging the industry to use low carbon materials and to produce more efficient, low-carbon designs. This is why the Net Zero Strategy set out Government's ambitions*

[19] House of Commons EAC, Oral evidence: Sustainability of the built environment, 17 October 2021
[20] House of Commons EAC, Building to net zero: costing carbon in construction, 11 May 2022
[21] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 6 – Planning for a Low Carbon Circular Economy Part 2, 22 March 2023
[22] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[23] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023

to help the construction sector improve their reporting on embodied carbon in buildings and confirmed that we will explore the potential of a maximum embodied carbon level for new buildings in the future."[24]

Recommendation 1

The Government should introduce a mandatory requirement in national policy to undertake WLC Assessments for buildings, looking at the policy on minimising greenhouse gas emissions set out in the London Plan's Sustainable Infrastructure Policy 2 Part F as a potential model.

Guests also highlighted a gap in the Government's Building Regulations, which currently address operational carbon only.[25]

"Embodied carbon emissions are not regulated by building regulations. Therefore, when we are talking about operational carbon, there is at least the building regulations. They may not be sufficient, but there is something there. While on embodied carbon, without the planning policy, there is nothing."

Dr Julie Godefroy, Head of Net Zero Policy
CIBSE[26]

Building Regulations are separate from planning policy: planning permission assesses whether the development fits in with local and national policies; whether the intended use is a good fit for the area; and any potential impacts on the general environment, including neighbours. Building Regulations cover the technical structural, safety and accessibility aspects of development and progress throughout the construction.

The gap in Building Regulations was also covered in the House of Commons EAC report in 2022, which recommended that new Building Regulations on whole life carbon should be introduced no later than December 2023.[27] The Government response acknowledged this recommendation and stated:

[24] UK Parliament, Building to net zero: costing carbon in construction: Government Response to the Committee First Report, 30 September 2022
[25] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[26] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[27] House of Commons EAC, Building to net zero: costing carbon in construction, 11 May 2022

> *"We will consider through the feedback received from the above consultation and parallel stakeholder engagement what levers, including building regulations, will be needed to tackle embodied carbon. In addition, research and analysis will be carried out to understand the full practical, technical and economic impacts of potential interventions. This will be particularly important for minimising impacts on SMEs and ensuring that interventions deliver for the climate but do not undermine other objectives to level up the country and deliver more, safer homes. Our planned consultation in 2023 will therefore consider the outcomes of this analysis and research."* [28]

This consultation has yet to be launched by the Government.

[28] UK Parliament, Building to net zero: costing carbon in construction: Government Response to the Committee First Report, 30 September 2022

Chapter two: Mayor's planning guidance

When and how are WLC Assessments submitted?

The London Plan policy on whole life carbon applies to what is known as "referable" planning applications. "Referable" applications generally represent large or strategic developments in London (see box below for details).[29] Since the London Plan, all referable planning applications must be accompanied with a WLC Assessment and a Circular Economy Statement.

Referable applications are a very small proportion of the overall number of planning applications in London. However, the GLA told us, "As these generally comprise the largest schemes, the proportion of development that is part of a referable application is significant." For example, the GLA said that over 50 per cent of the London homes granted permission in 2021 were part of a scheme referable to the Mayor.[30]

The GLA should therefore be able to gather a significant amount of data about embodied carbon in London from the WLC Assessments it receives.

Referable applications are those that: consist of 150 homes or more; are over a certain height (for example, 30 metres for any buildings outside the City of London); or are on Green Belt or Metropolitan Open Land. These planning applications must be referred by the local planning authority to the Mayor, over Stages 1 and 2 referral (sometimes progressing to Stage 3).[31] During these stages, the Mayor assesses whether the planning application complies with London Plan policies for referable applications, including the requirement to carry out WLC Assessments.

Applicants are required to submit details of the estimated total carbon emissions for each stage of the development's life-cycle. As plans for design and development can change significantly throughout the planning process, the applicants are advised to submit

[29] GLA, Referral process for Local Planning Authorities
[30] Response from the GLA officers who attended the Planning and Regeneration Committee meeting on 1 March 2023, dated 1 June 2023
[31] GLA, Referral process for Local Planning Authorities; see also Town and Country Planning (Mayor of London) Order 2008

information to the GLA at various points throughout the process: pre-application, planning submission, and post-construction. Figure 2, below, shows the kind of information they are requested to submit at these points.

For the Circular Economy Statement, applicants need to explain how they have met the list of Circular Economy principles set out in the London Plan. They also need to explain and justify their proposed approach to existing buildings on the site – whether they have chosen to retain and retrofit an existing building; partially retain it; reuse any components of it; or demolish it. The London Plan Guidance sets the ambition that applicants should "aim for at least 20 per cent recycled or reused content, by value, for the whole building."[32]

Figure 2: Content of a WLC Assessment by stage [33]

Pre-application	Application	Post-construction
Applicants completing a pre-application should submit a description of the proposed development. They should confirm that options for retaining existing buildings have been fully explored, and set out information such as: • carbon emissions associated with pre-construction demolition • how much of the new build development will be made up of existing building elements • examples of how they have used all 16 whole life carbon reduction principles.	Applicants must submit much more detailed information, updating what was submitted at pre-application. They must also assess the estimated whole life carbon emissions in terms of kg CO2e for each building element, over each stage of the building's life-cycle. Other requirements include setting out opportunities to reduce WLC emissions. In London, referable planning applications are referred to the Mayor at Stage 1 and Stage 2 (sometimes progressing to Stage 3).	Applicants should update information provided at planning submission stage, using the actual WLC emission figures. Among other information requirements, they must also compare the figures submitted at application with the post-construction results and explain the difference.

[32] GLA, London Plan Guidance and template, Circular Economy Statements, March 2022
[33] Summarised from GLA, London Plan Guidance and template, Circular Economy Statements, March 2022; and London Plan Guidance and template, Whole Life-Cycle Carbon Assessments, March 2022

What do we know about the impact of the WLC Assessments so far?

In March 2023 the GLA shared with us how many WLC Assessments they had received to date:

> *"The total number of Stage 1 Whole Life-Cycle Carbon Assessments (WLC) reviews conducted since the draft of the Whole Life-Cycle Carbon Assessments guidance document was published for consultation (October 2020) is 498. Of these, 246 Stage 1 reviews have been undertaken since the final publication of the guidance in March 2022.*
>
> *"The total number of Stage 2 WLC reviews conducted since the draft of the Whole Life-Cycle Carbon Assessments guidance document was published for consultation (October 2020) is 618. Of these, 400 reviews have been undertaken since the final publication of the guidance in March 2022. Please note that some development sites may have multiple reviews for versions of their WLC Assessments at each stage and these are counted in the totals."* [34]

The Committee understands that most of these schemes are still under construction. In March 2023, Jon Hall, WLC Officer at the GLA (seconded from AECOM) told the Committee that the GLA had only received "a couple of post-completion assessments", adding: "The couple that we have had that are post-completion are still incomplete."[35]

The GLA told us during our investigation that data has not yet been collected on how much embodied carbon overall is associated with construction and demolition in London. However, it also said that this lack of data has been "a key issue that the London Plan policy approach seeks to address."[36]

We discussed how the GLA evaluates the WLC Assessments, including the quality of the submissions from applicants. The consultancy AECOM is contracted by the GLA to evaluate WLC Assessments and Circular Economy Statements. Jon Hall commented at our meeting that "the assessments that we receive vary in their quality and completeness" and "applicants are still familiarising themselves with that process."[37]

In light of this, GLA officials told us that it is too early to share conclusions about the WLC Assessments it has received so far (in terms of the decisions developers are making in

[34] Response from the GLA officers who attended the Planning and Regeneration Committee meeting on 1 March 2023, dated 1 June 2023
[35] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[36] Response from the GLA officers who attended the Planning and Regeneration Committee meeting on 1 March 2023, dated 1 June 2023
[37] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023

London), and the extent to which the WLC Assessments and Circular Economy Statements have incentivised them to make carbon reductions.

Even though the data on the measurable impact of the policy is currently limited, we heard from industry guests that the GLA policy is incentivising industry to build their capacity to understand and reduce embodied carbon. Louisa Bowles described how "the policy is driving an increased uptake [of WLC Assessments] and, as a result of that, we are improving further the ways of measuring" whole life carbon. She said of the GLA's WLC Assessment policy:

> *"It will definitely drive change. Whenever there is a mandatory requirement to meet a policy in order to get permission to build, inevitably that is going to drive action. As I said… there is still a variance in uptake in terms of how the policy is treated. Some people will take it as an obligation to report and go through the mechanism and job done, but many clients are starting to realise that there are wider benefits in adopting the process in a slightly fuller, more integrated way. For example, low embodied carbon is tied up completely with material efficiency and therefore the circular economy. There are definitely cost benefits in being more efficient with your materials."* [38]

The GLA produces Annual Monitoring Reports (AMRs) which track key policies in the London Plan. GLA officials said that future AMRs would track outcomes of the WLC Assessment policy, though we were not told when these would be published.

Recommendation 2

The Mayor should publish annual data gathered from WLC Assessments to enable the success of the policy to be tracked, and to identify improvements needed. The GLA should analyse the data and provide an estimate of the amount of embodied carbon emissions associated with London developments, broken down by type.

The next iteration of the London Plan Guidance

Guests made suggestions at our meetings in March about how the next iteration of the GLA's London Plan Guidance on WLC Assessments could be updated in order to increase ambition, accuracy and accountability.

[38] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023

Ambition

We heard from the GLA and other industry guests that the London Plan guidance on WLC Assessments is at a very early stage and is about information gathering, rather than penalising industry for poor performance. Currently there are no targets for applicants to go below a certain level of carbon emissions, or penalties for exceeding these levels.

At this stage the GLA guidance sets benchmarks for emissions (i.e. the lower the benchmark, the lower the emissions) and asks applicants to calculate which benchmarks they are hitting. Applicants are required to explain where the emissions in their projects vary from the benchmarks. If their project falls higher than the range of the benchmarks, they are required to justify this in writing and "carefully examine how they can reduce WLC emissions."[39] The Guidance also sets out "aspirational" benchmarks, which applicants can voluntarily aim towards.[40]

Dr Julie Godefroy told us:

> *"There are two levels of benchmarks, which is I think exactly the way to go, because you can guide applicants towards what might be expected and have these ambitious benchmarks, but you do not quite yet take the risk of introducing a target when we may not be ready."*[41]

Louisa Bowles also told us about a project she was involved in, with the Low-Energy Transformation Initiative (LETI), RIBA and the Whole Life Carbon Network. She stated:

> *"We think there is now mileage to suggest that those limits or those suggestions [benchmarks] could be lower. The GLA standard performance, if you like, is what the RIBA currently terms as its 'building as usual.'"*[42]

The GLA has said that it may set targets in the future, informed by the data gathered from the WLC Assessments it receives.[43] GLA officials said at our meeting:

[39] GLA, London Plan Guidance: Whole Life-Cycle Carbon Assessments, March 2022
[40] GLA, London Plan Guidance: Whole Life-Cycle Carbon Assessments, March 2022
[41] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[42] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[43] GLA, London Plan Guidance: Whole Life-Cycle Carbon Assessments, March 2022

> *"We will be looking at all the data that we are gathering over the coming year and beyond to see how that will inform any changes to those benchmarks and any changes that we would need to make to guidance or policy."*[44]

Accuracy

The GLA guidance states that applicants are "not required to account for the long-term decarbonisation of the electricity grid in their WLC Assessments,"[45] because of the limitations of the data and methodology to do this:

> *"The UK's electricity grid is decarbonising and this will have an impact on the WLC emissions of a development. It will be important for consistent decarbonisation assumptions to be built into the available software tools and industry's progress with this will be monitored. However, at present, the data is not reliable to do so accurately for embodied carbon emissions."*

The GLA guidance adds: "Any applicants who wish to account for grid decarbonisation in their WLC Assessment should discuss and agree their proposed approach with the GLA."[46]

However, we heard from guests during the investigation that it is important to account for grid decarbonisation projections and for applicants to say which methodology they are using. Dr Julie Godefroy said:

> *"These options should be made clear and they should not be the subject of one-on-one discussions with the GLA. The options should be in the guidance themselves preferably and because it is a factor that is so easy to change in the assessment it is really hardly any more work. You can provide results under different assumptions, which I think is the case in the template. You can report with and without grid decarbonisation."*[47]

Accountability

Under the GLA guidance, applicants are not required to come up with alternative options for their proposed development and compare these options in terms of their whole life carbon emissions. We heard from guests at our meetings that, as a result, there is not a strong incentive for applicants to fully work through alternative proposals that could result in

[44] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[45] GLA, London Plan Guidance: Whole Life-Cycle Carbon Assessments, March 2022
[46] GLA, London Plan Guidance: Whole Life-Cycle Carbon Assessments, March 2022
[47] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023

carbon savings (e.g. a full retrofit of the existing building instead of a replacement), and in so doing, to be accountable to the GLA for choosing the most carbon-efficient option.

While applicants are required to confirm in their WLC Assessment that "options for retaining existing buildings and structures have been fully explored before considering substantial demolition," they are not required to compare these options in terms of carbon cost.[48]

"What is missing at the moment is a proper evaluation of the options in the WLC assessment … If [an applicant] decides to go for a rebuild, then the WLC assessment is only about rebuild. There is no real assessment of the retrofit alternatives. When there are these comparisons, there are several cases that I looked at where, in theory, there was a WLC comparison of new build versus retrofit scenarios. I will be blunt; they were quite biased towards the decision that the applicant wanted one way or another."

Dr Julie Godefroy, Head of Net Zero Policy
CIBSE[49]

We also heard from guests that, in cases where WLC Assessments have compared different options (between new build and retrofit), these have been "biased" towards the decision that the applicant wanted to take. Dr Julie Godefroy explained that WLC Assessments are predicated on many assumptions:

> *"WLC assessments, especially when you start talking about retrofit options versus new builds, there are so many assumptions. […] it is very easy to present something that looks thorough and which in fact has assumptions that are biased towards what you want the outcome to be."*[50]

For instance, guidance published by LETI emphasises:

> *"The WLC comparison should not be between a best performing new build, and an existing building with little or no improvement: it should consider, as alternative to demolition and new build, a low energy use, low carbon retrofit with similar level of ambition to that applied to the new build."*[51]

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[48] GLA, Whole Life-Cycle Carbon Assessments guidance and Circular Economy Statement Guidance
[49] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[50] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[51] LETI, LETI Unpicker: Retrofit vs Rebuild, March 2023

While the London Plan guidance does not require applicants to compare different proposals for development, the City of London has developed an approach that does require applicants to do so. Their 'carbon optioneering' Planning Advice Note says that if there is an existing building on the site, applicants should set out multiple options for what to do with the building. For each option, the applicant should calculate and report the estimated whole life carbon associated with it. The guidance states:

> *"The emissions associated with a minor refurbishment, major refurbishment, significant refurbishment & extension, and new-build options should be compared – compelling clients and design teams to look for opportunities to minimise demolition."*[52]

At our meeting, Kerstin Kane, Principal Planning Officer (Sustainability) at City of London Corporation, and Simon Sturgis, Founder of Targeting Net Zero, spoke about the importance of having a third-party independent audit to improve the robustness and credibility of the WLC Assessment.[53]

Kirsty Draper, Head of Sustainability for UK Agency at JLL, welcomed the transparency of the 'carbon optioneering' guidance set by the City of London – because it helped to set direction on this issue, and helped developers to understand the range of options.[54]

Rhian Williams pointed out the complexity and uncertainty of assessing different scenarios, but added that the GLA anticipated drawing on the work done by the City of London:

> *"We were aware of the work the City [of London] has done on that optioneering for WLC and it will be adopting that soon. It is all stuff that we want to learn from and consider in the future for the policy or for any revision to the guidance. We acknowledge that there is less certainty on that side of the equation."*[55]

The case of the Marks & Spencer building on Oxford Street (see case study below) shows the importance of having an independent audit of WLC Assessments. The Secretary of State Michael Gove's decision noted:

> *"He agrees with the Inspector … that the understanding of WLC Assessments and the tools available for calculations are still developing, and therefore it is no surprise that*

[52] WSP, How Whole Life Carbon optioneering is changing the planning landscape, 30 January 2023. See also: City of London, Planning Advice Note, Whole Lifecycle Carbon Optioneering, May 2022
[53] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 6 – Planning for a Low Carbon Circular Economy Part 2, 22 March 2023
[54] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 6 – Planning for a Low Carbon Circular Economy Part 2, 22 March 2023
[55] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023

there was disagreement over the lifetime carbon usage for the proposals and, more particularly, for a refurbishment."[56]

This case underlines the importance of having an approach to WLC Assessment that is credible and accountable.

CASE STUDY

WLC Assessments rely on different assumptions, meaning assessments submitted by developers – even when they compare different scenarios for retrofit and rebuild – can be challenged. These complexities played out in a high-profile case relating to the Marks & Spencer building on Oxford Street. The developer proposed to demolish the existing building and rebuild on the site. The developer Pilbrow & Partners carried out a WLC Assessment that compared retrofit and rebuild scenarios. A "rival" WLC Assessment was produced by Simon Sturgis, based on different assumptions for the retrofit scenario. Sturgis argued that the developer's WLC Assessment downplayed the retrofit potential for buildings.[57] This "rival" assessment was disputed by Pilbrow & Partners.[58] There were several other factors involved in the case – for example, the structure and quality of the existing building and its heritage. These factors were part of the argument between those who agreed with the developer's proposal and those who were in opposition.

In July 2023, following a lengthy planning inquiry called by the Secretary of State Michael Gove, he decided to turn down planning permission for the proposal, (disagreeing with the Planning Inspector's recommendation for permission to be granted). While the Secretary of State's decision was primarily based on an argument about heritage, it also referred to the embodied carbon impact of demolition.[59]

Recommendation 3

The GLA should explore the following measures in the next iteration of the WLC Assessments guidance, to standardise assumptions and improve the ambition, accuracy and accountability of the assessments submitted by developers:

- **ambition: more ambitious "standard" and "aspirational" benchmarks to match global best practice**

[56] DLUHC, Application made by Marks and Spencer PLC 456-472 Oxford Street, London W1, 20 July 2023
[57] Targeting Zero, Why a Comprehensive Retrofit Is more Carbon Efficient than the Proposed New Build, January 2022
[58] Building Design, The M&S inquiry must be decided on hard evidence, not well-meaning conjecture, 25 January 2023
[59] DLUHC, Application made by Marks and Spencer PLC 456-472 Oxford Street, London W1, 20 July 2023

- **accuracy: applicants should be required to incorporate electricity grid decarbonisation projections into their assessments**
- **accountability: a full assessment of the carbon implications of alternatives that involve retrofit; and a requirement for a third-party, independent audit of the WLC Assessments (with the cost borne by applicants).**

Chapter three: Are we seeing more retrofit and reuse?

How viable and practical is reuse and retrofit?

In our investigation we asked guests whether the London Plan requirement to carry out WLC Assessments and Circular Economy Statements is genuinely driving change in the industry, and incentivising more retrofit and reuse of buildings, over demolition and complete rebuild. As discussed in the previous chapter, industry guests told us that they have seen more attention in industry on reducing embodied carbon in construction; and that this increased attention was likely driven, in part, by the GLA's policies.

> *"We are starting to advocate with a lot of our clients who own existing buildings that they should think of them really as financial assets. Even if they are demolishing or partially demolishing them, there is a value to the material that is still contained within them and we need to start using that in a more positive way. It is not just treated as waste. It is actually a resource and, therefore, how do we use it? Those conversations are starting to happen, and I believe they would not be happening at this point so quickly without those [WLC and Circular Economy] policies being in place."*
>
> **Louisa Bowles, Partner and Sustainability Lead HawkinsBrown**[60]

However, it was also clear from our investigation that planning policy on whole life carbon is only one factor in the industry's capacity and decision-making about demolition, retrofit and reuse, and the decisions taken by planning authorities.

Dr Julie Godefroy told us that balancing whole life carbon with other issues in a planning application "is not straightforward," adding: "We have to acknowledge that this is one piece of the puzzle. We do not want to look at a building that no one will use, whether it is new or retrofitted." With regard to Circular Economy Statements, Dr Godefroy also said:

[60] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023

> *"I am not sure they [circular economy statements] have been a big driver. There are questions that may prompt a little bit of discussion and thinking, but I am not sure they led to a full examination of the potential for retrofit against demolition. I am not sure they were really influential in what was happening. It is very difficult because there will always be many considerations in retrofit – functionality, value and so on – beyond carbon and circular economy principles."*

Dr Godefroy suggested that there should be an evaluation of WLC Assessments and Circular Economy Statements, to better understand why and how decisions about demolition were made:

> *"Maybe a dedicated look at these planning applications that did involve demolition and rebuild instead of retrofit, and what was provided by the applicants in the WLC and the circular economy statements for these applications and how that was considered in the whole would be quite useful because, at the moment, it is not having the impact on really prompting different ways of thinking, and a dedicated focus on these applications that ended up opting for demolition."*[61]

We heard that many factors come into play in decisions over whether to retain or demolish a building. These relate to, among other things, structural and design issues; finances; other environmental outcomes and heritage considerations. For example, Kirsty Draper described how the feasibility of reusing and retrofitting parts of an existing building depends on the structure and fabric of the existing building.[62] Guests agreed that some buildings are more suitable for retrofit and reuse of their components than others.

We also heard that the costs associated with retaining and reusing elements of a building can be higher than demolishing and rebuilding. One reason that repurposing existing buildings is not always cost-effective is the VAT costs associated with refurbishment.[63] Simon Sturgis talked about the importance of "shifting the financial burden away from retrofit" and referred to VAT exceptions on building refurbishment as one way of doing this.[64] At present, standard VAT rates (20 per cent) apply to the supply and construction of building materials for project types such as extensions, renovations and partial rebuilding. New dwellings, depending on specific project details, may benefit from reduced VAT rates of zero per cent or 5 per cent, potentially influencing cost decisions.[65]

[61] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[62] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 6 – Planning for a Low Carbon Circular Economy Part 2, 22 March 2023
[63] House of Commons EAC, Building to net zero: costing carbon in construction, 11 May 2022.
[64] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 6 – Planning for a Low Carbon Circular Economy Part 2, 22 March 2023
[65] HM Revenue & Customs, Buildings and construction (VAT Notice 708)

Recommendation 4

The Government should assess how to ensure retrofit is more frequently viable, including whether VAT on building refurbishment could be removed or reduced (to bring retrofit in line with new buildings), subject to budgetary and other considerations.

Circular Economy Infrastructure: reusing and recycling materials

Louisa Bowles stated:

> *"The uptake of the narrative around circular economy has been positive and good and all the right conversations are happening in the well-run projects at the beginning of the stages. We are talking about reuse, we are talking about opportunities around flexibility and adaptability, structural spans, etc, all the good stuff that we should be."*[66]

However, guests also described that while these conversations are happening in industry, there are still challenges around data. Louisa Bowles told us:

> *"Measuring consistently around percentages of reuse or finding products that have a significant percentage of recycled content in them that are cost effective, deliverable, and available' was an 'infrastructural challenge."*[67]

Guests also told us that there are challenges in sourcing and storing recycled and reusable materials (as opposed to new materials), as well as assessing the safety of materials and building components to be used again.

Both Louisa Bowles and Chris Brown discussed the barriers to assuring the quality of material and storing and transporting it. Louisa Bowles said:

> *"When you are building at scale, there is an atmosphere of risk mitigation at the present point, certainly in the wake of various events like Grenfell, for example. Some of the materials that you might want to use as a designer, which might be a bit more innovative, might be a bit more explorative, they require certain certifications and warranties, etc, and that takes time for those providers to prove them. There is certainly a bit of time lag in terms of managing demolition waste such that it can get to the supply chain to be reused. There are certainly barriers around passporting,*

[66] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[67] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023

> *assessing quality of material, storing it, getting it to where it needs to be in order that it can be effectively recycled or pre-processed or reused."*[68]

Chris Brown gave an anecdotal example of these challenges:

> *"It is actually really difficult… In one [project], we tried to get second-hand steel to use in the building. It is extraordinarily difficult to get engineers to warrant the load-bearing capacity of second-hand steel. At the same time, the local authority was planning to demolish its not-very-old 1980s offices to sell the site for housing. We went to see what we could gather from that building that we could reuse, things like door handles, fairly basic stuff. However, we did not need them for maybe a couple of years and there is a relatively limited supply chain at the moment of people who will take useful things from buildings that are going to be demolished and hold onto them and make a business out of selling them on to somebody in the future. It is going to come, but it is not there at the moment."* [69]

Guests suggested that, while it can be easier to source and store materials to be reused at a smaller scale, achieving this kind of reuse and recycling of building materials at a city scale requires investment in infrastructure and networks. Louisa Bowles said:

> *"There are definitely some infrastructural improvements it is possible to make on a city level, for example, which would definitely scale up the uptake. If there was a network of availability that people could access when they were looking at their early design schemes and so on, that would definitely make things easier. At the moment, some of the clients that are exploring this are very reliant on their own contacts. It is a sort of private network, for example."*[70]

Recommendation 5

The Government and the Mayor should assemble a working group to identify the support that local authorities need, in terms of their skills and capacity, to promote whole life carbon and circular economy approaches; and how this support could be obtained.

Recommendation 6

As part of a potential review of the London Plan, the GLA should conduct a review of the infrastructure, products and services that are needed to support the circular economy in

[68] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023
[69] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 6 – Planning for a Low Carbon Circular Economy Part 2, 22 March 2023
[70] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 7 – Planning for a Low Carbon Circular Economy Part 1, 1 March 2023

building and construction. As a result of this review, the GLA should set out actions it will take.

Conclusion

The Committee was encouraged to hear about how the London Plan policies on whole life carbon and the circular economy are driving more attention on these issues in industry. We also heard that incentives to reduce whole life carbon, and aim for more retrofit and reuse, were coming from other angles too. Kirsty Draper described that in the commercial market, building occupiers are now more likely to have environmental, social, and governance commitments that encourage reductions in carbon. In addition, Chris Brown said:

> *"There is another pressure coming on the developers, which is where they get their money from. Increasingly, the people who are either shareholders or lenders to developers are starting to count the upfront and embodied carbon and so that pressure is going to increase."*[71]

There is an opportunity for London to build upon its leading role in this area, encouraging developers to expand their ambitions and standards in order to reduce London's embodied carbon emissions. The Committee aims for its recommendations to support further ambition and accountability in this area.

[71] London Assembly Planning and Regeneration Committee, Transcript of Agenda Item 6 – Planning for a Low Carbon Circular Economy Part 2, 22 March 2023

Committee activity

The Planning and Regeneration Committee held two meetings in March 2023, as part of an investigation on WLC and the Circular Economy in London's built environment.

The first meeting, on 1 March, focused on the policies in the London Plan on carbon in buildings; and the reuse and recycling of construction materials. The transcript for the meeting is here. The meeting covered the background to how these policies were developed; GLA objectives and next steps; and the implications of these for design considerations and development options. Guests at the first meeting were:

- Rhian Williams, Strategic Planner, GLA
- Arun Rao, Principal Policy and Programmes Officer, Environment, GLA
- Nina Di Certo, Principal Policy and Programme Officer, Waste and Circular Economy, GLA
- David Cheshire, Director, Sustainability, Buildings + Places, AECOM[72]
- Jon Hall, WLC Officer, GLA (seconded from AECOM)
- Dr Julie Godefroy, Head of Net Zero Policy, CIBSE
- Louisa Bowles, Partner and Sustainability Lead, HawkinsBrown

The second meeting, on 22 March, looked at the wider implications of these policies for decision making in planning. The transcript for the meeting is here. It looked at other factors and trade-offs at play regarding the retention and demolition of buildings, such as viability, heritage and housing need; and looked at some case studies where WLC Assessments have been applied. Guests at the second meeting were:

- Simon Sturgis, Founder, Targeting Net Zero
- Catherine Croft, Director, Twentieth Century Society
- Kerstin Kane, Principal Planning Officer (Sustainability), City of London Corporation
- Chris Brown, Managing Director, Climatise
- Dr Timur Tatlioglu, Partner in Historic Environment and Townscape, Montagu Evans
- Kirsty Draper, Head of Sustainability for UK Agency, JLL

Following the meeting the Committee received three pieces of correspondence from guests at the meetings, in response to questions raised:

- **Correspondence from Louise Bowles**, Partner and Sustainability Lead, HawkinsBrown, was received on 24 April 2023. It can be found here in Agenda item 7a, Appendix 7 of the Planning and Committee's meeting on 7 June 2023.
- **Correspondence from Dr Julie Godefroy**, Head of Net Zero Policy, CIBSE, was received on 22 May 2023. It can be found here in Agenda item 04c, Appendix 3 of the Planning and Regeneration Committee's meeting on 12 September 2023.

[72] AECOM is contracted by the GLA to assess the Circular Economy Statements and Whole Life-Cycle Carbon Assessments.

- **Correspondence from GLA officers**, was received on 1 June 2023. It can be found here in Agenda item 04b, Appendix 2 of the Planning and Regeneration Committee's meeting on 12 September 2023.

Other formats and languages

If you, or someone you know needs this report in large print or braille, or a copy of the summary and main findings in another language, then please call us on: 020 7983 4100 or email assembly.translations@london.gov.uk

Chinese

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Email 与我们联系。

Hindi

यदि आपको इस दस्तावेज का सारांश अपनी भाषा में
चाहिए तो उपर दिये हुए नंबर पर फोन करें या उपर दिये
गये डाक पते या ई मेल पते पर हम से संपर्क करें।

Vietnamese

Nếu ông (bà) muốn nội dung văn bản này được dịch sang tiếng Việt, xin vui lòng liên hệ với chúng tôi bằng điện thoại, thư hoặc thư điện tử theo địa chỉ ở trên.

Bengali

আপনি যদি এই দলিলের একটা সারাংশ নিজের ভাষায় পেতে চান, তাহলে দয়া করে ফো করবেন অথবা উল্লেখিত ডাক ঠিকানায় বা ই-মেইল ঠিকানায় আমাদের সাথে যোগাযোগ করবেন।

Greek

Εάν επιθυμείτε περίληψη αυτού του κειμένου στην γλώσσα σας, παρακαλώ καλέστε τον αριθμό ή επικοινωνήστε μαζί μας στην ανωτέρω ταχυδρομική ή την ηλεκτρονική διεύθυνση.

Urdu

اگر آپ کو اس دستاویز کا خلاصہ اپنی زبان میں
درکار ہو تو، براہ کرم نمبر پر فون کریں
یا مذکورہ بالا ڈاک کے پتے یا ای میل
پتے پر ہم سے رابطہ کریں۔

Turkish

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Arabic

الحصول على ملخص لهذا المستند بلغتك،
فرجاء الاتصال برقم الهاتف أو الاتصال على
العنوان البريدي العادي أو عنوان البريد
الإلكتروني أعلاه.

Punjabi

ਜੇ ਤੁਸੀਂ ਇਸ ਦਸਤਾਵੇਜ਼ ਦਾ ਸੰਖੇਪ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਲੈਣਾ ਚਾਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਇਸ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਉਪਰ ਦਿੱਤੇ ਡਾਕ ਜਾਂ ਈਮੇਲ ਪਤੇ 'ਤੇ ਸਾਨੂੰ ਸੰਪਰਕ ਕਰੋ।

Gujarati

જો તમારે આ દસ્તાવેજનો સાર તમારી ભાષામાં
જોઈતો હોય તો ઉપર આપેલ નંબર પર ફોન કરો
અથવા ઉપર આપેલ ટપાલ અથવા ઈ-મેઈલ સરનામા
પર અમારો સંપર્ક કરો.

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