

# Draft Westminster City Plan 2019-2040 Review

## Introduction

We have reviewed the proposed “New Policy 43: Retrofit First” within the Draft Westminster City Plan 2019-2040, available via: <https://www.westminster.gov.uk/planning-building-and-environmental-regulations/planning-policy/westminsters-planning-policies>. We have provided comments on the stated targets (see extract below) and additional policy wording set out in pages 174 to 178.

This review has been prepared for London Property Alliance and Gerald Eve at their request. We are not responsible for how London Property Alliance or Gerald Eve may use the information as part of a wider review of Regulation 19: the Westminster City Plan or for other purposes including work with their clients.

Building type	LETI band equivalent
Non-residential buildings	Target A Minimum B
Residential (including mixed-use) under 18 metres in height	Target B Minimum C
Residential (including mixed-use) over 18 metres in height	Target C Minimum D
Exceptions (site constraints, fast track affordable housing schemes, custom-build and self-build homes)	Lowest deliverable embodied carbon without affecting provision of affordable housing

**Figure 1: Extract from the draft City Plan summarising the proposed stretch and minimum targets by building type**

The document further states:

### Use of targets and absolute minimums

43.9 / The use of LETI Band A is the current stretch target for non-residential schemes. The use of LETI Band B is the current stretch target for residential and mixed-use schemes below 18 metres. LETI Band C is the current stretch target for residential and mixed-use schemes above 18 metres. The targets differentiate heights buildings which include residential development to reflect the wider range of low-carbon materials that are available for use in residential buildings below 18 metres.

43.10 // It is expected that these benchmarks will likely become business as usual during the City Plan period as building standards improve and the push for sustainable development gains greater momentum. The Whole Life-Cycle Carbon assessment should provide detail on the measures taken to lower embodied carbon, including an assessment of the design performance against the target benchmarks.

And, for both of the housing targets:

"C". Where development is proposing the delivery of policy compliant levels of affordable housing (35% for private sector land, and 50% for public sector land), applicants should demonstrate the maximum embodied carbon reductions deliverable without affecting the viability of affordable housing delivery.

## Key Challenges

We are fully supportive of addressing embodied carbon emissions in light of the climate change emergency and ensuring the impacts from both new development and refurbishment are minimised, adopting a retrofit first approach. However, we believe there may be some challenges associated with meeting New Policy 43. This may result in the payment of carbon offsets to Westminster City Council (WCC) in the early years of its adoption. Currently, they do not apply to embodied carbon emissions.

**The proposed upfront embodied carbon LETI-based target values for non-residential development are challenging to achieve.**

### The Targets

The proposed target for new non-residential buildings is LETI band A for upfront embodied carbon emissions, with an absolute minimum rating of B, as shown above in Figure 2. The bands are shown as kgCO<sub>2</sub>e/m<sup>2</sup> values by sector in Figure 2.

**Upfront Embodied Carbon, A1-5 (exc. sequestration)**

	Band	Office	Residential (6+ storeys)	Education	Retail
LETI 2030 Design Target	A++	<100	<100	<100	<100
	A+	<225	<200	<200	<200
	A	<350	<300	<300	<300
LETI 2020 Design Target	B	<475	<400	<400	<425
	C	<600	<500	<500	<550
	D	<775	<675	<625	<700
	E	<950	<850	<750	<850
	F	<1100	<1000	<875	<1000
	G	<1300	<1200	<1100	<1200

**Figure 2. Current LETI Targets (units kgCO<sub>2</sub>e/m<sup>2</sup>)**

The LETI targets do not differentiate between new-build and retrofits and it is acknowledged by LETI that to achieve the higher bands an element of retrofit is required.

In relation to the Westminster City Plan, the Embodied Carbon Evidence Base for the City Plan also notes a combination of new build and retrofit will be required, see section below.

### Embodied Carbon Evidence Base for the City Plan<sup>1</sup>

It is noted within the Embodied Carbon Evidence Base for the City Plan that to achieve LETI band A or lower “would require higher levels of timber or recycled materials not currently available on the market at scale”. The executive summary of this document goes on to state that:

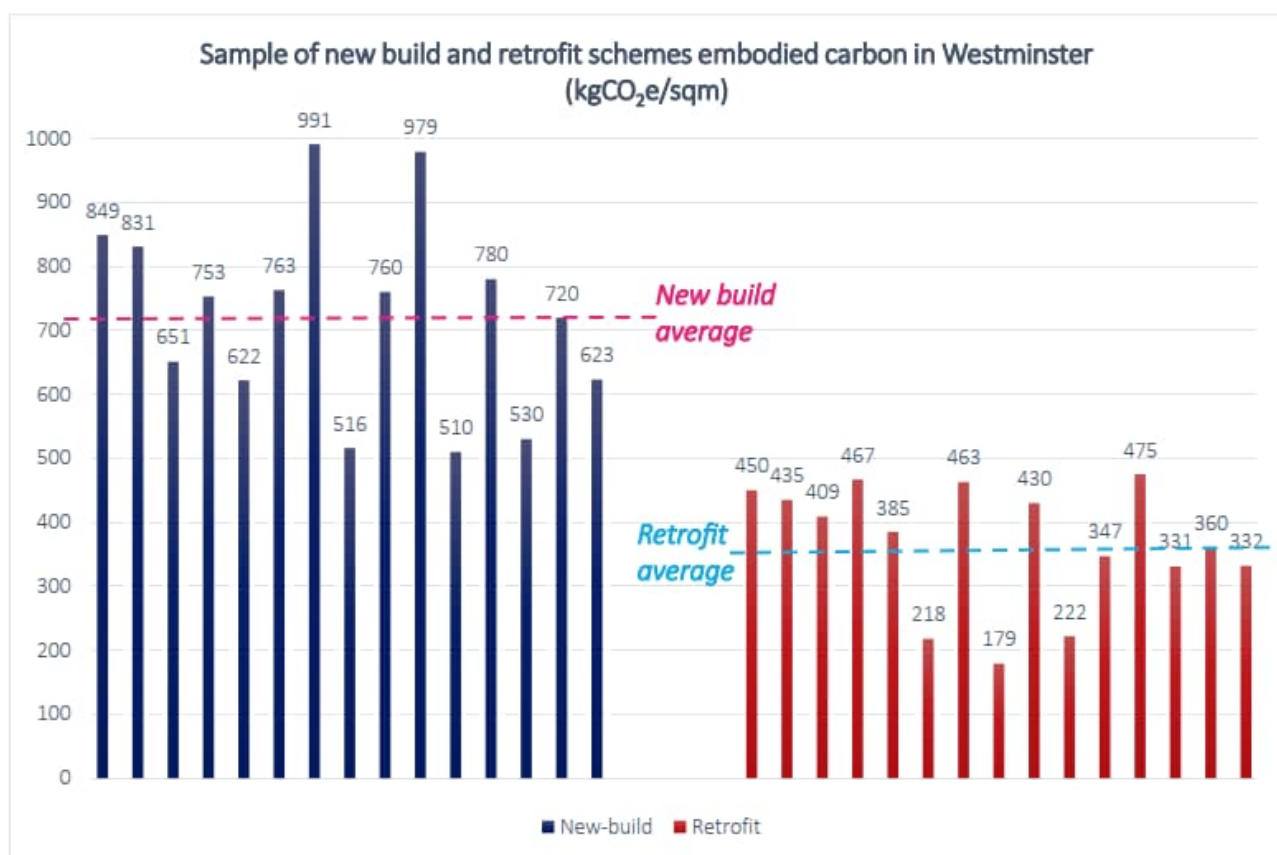
*“Even adopting good practice design and high levels of material substitution, each of the buildings still will not achieve carbon reductions in line with UK Net Zero Target, 1.5 degrees and The Paris Agreement (LETI Band A or below). Achieving further reductions is much more likely to be made possible by re-using structure and materials from existing buildings, by promoting retrofit and the circular economy.”*

The Embodied Carbon Evidence Base for the City Plan does however state that LETI band B would be achievable for the common building archetypes modelled, based on “a moderate 2-8% uplift in cost for office and mixed use buildings”. This said, the measures listed against non-residential buildings such as offices include the use of mass timber structures and Ground Granulated Blast-furnace Slag (GGBS). The use of mass timber for larger buildings is very challenging due to the additional fire and insurance limitations, in addition to challenges in procurement and constructability. Furthermore, utilising GGBS as a carbon reduction measure is advised against because the supply of GGBS is limited, meaning that any increase in GGBS use in one location, would result in a decrease elsewhere, balancing out global emissions. In addition, the local supply of GGBS is anticipated to become more constrained due to the closure of UK-based blast furnaces. It is therefore recommended, as per IStructE guidance<sup>2</sup>, that GGBS is only utilised whereby there is a technical requirement for its use, rather than as a mechanism for lowering carbon emissions.

### City Plan Topic Paper: Retrofit First and Reducing Embodied Carbon

A second document has been prepared, “City Plan Topic Paper: Retrofit First and Reducing Embodied Carbon”<sup>1</sup>.

This document shows that none of the current new-build developments within Westminster have an upfront embodied carbon of LETI band B or better, see Figure 3, highlighting the challenge of achieving these targets.



**Figure 3. Screenshot from WCC Topic Paper: Retrofit First and Reducing Embodied Carbon Showing Current Trends in Westminster**

<sup>1</sup> Available from: <https://www.westminster.gov.uk/planning-building-control-and-environmental-regulations/planning-policy/city-plan-partial-review>

<sup>2</sup> Available from: <https://www.istructe.org/resources/guidance/efficient-use-of-ggbs-in-reducing-global-emissions/>

Evidence of achieved embodied carbon levels is also available via the UK Net Zero Carbon Building Standard (NZCBS) development work. As part of this project, upfront embodied carbon data was collected for a large number of buildings across the UK.

The current proposed Westminster City Plan target of LETI band A is *lower than the 25<sup>th</sup> percentile of all data collected for non-domestic buildings as part of the Net Zero Carbon Building Standard (NZCBS), as per the screenshot below. The 'absolute minimum rating of B', which is equal to 475 kgCO<sub>2</sub>e/m<sup>2</sup> for offices, 400 kgCO<sub>2</sub>e/m<sup>2</sup> for education, and 425 kgCO<sub>2</sub>e/m<sup>2</sup> for retail, is also not achieved for the 25<sup>th</sup> percentile of data collated for any these building types.*

Sector	All	Offices	Homes*	Commercial residential	Logistics / warehouses	Healthcare	Schools	Higher education	Culture and entertainment	Science and technology
Number of projects	499	61	204	78	20	9	80	10	21	16
Min	179	179	226	295	332	409	353	409	335	446
25th %ile	468	481	493	419	371	512	480	520	517	491
50th %ile (median)	561	592	566	464	460	589	579	616	600	569
Mean	568	618	574*	511	455	611	574	594	627	582
75th %ile	639	732	632	580	491	687	633	674	760	642
Max	1344	1344	1101	972	652	927	865	739	965	866

**Figure 4. Screenshot of Upfront Embodied Carbon Data Collated as Part of the Net Zero Carbon Building Standard (units kgCO<sub>2</sub>e/m<sup>2</sup>)**

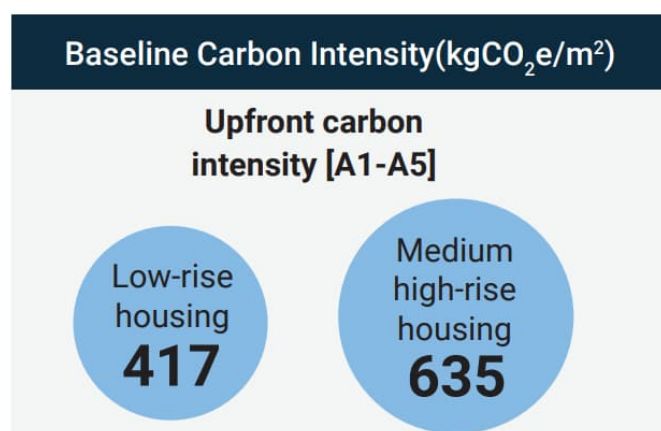
Based on the above (Figures 3 and 4), the draft policy targeting LETI band A ratings for non-residential buildings is not achievable through solely new construction activities without at least some level of reuse (for example reuse of foundations). Reuse will likely support the minimum rating of 'B' being achieved but it will still be challenging to achieve the 'A' rating. Furthermore, it is noted that re-use of foundations is dependent on the site. As such it is likely to effectively mean that development is comprised of retrofits rather than new buildings until building technology advances sufficiently to be able to meet these targets for new buildings. However, the timescales for this are uncertain and based on myriad of factors. New builds may be possible if carbon offsets are paid.

### Residential and Mixed-Use Targets

The proposed residential embodied carbon targets are less onerous than the non-residential targets. The draft City Plan states that new residential buildings, including mixed-use, over 18 metres in height should target an upfront embodied carbon equivalent of LETI band C (less than 500 kgCO<sub>2</sub>e/m<sup>2</sup>) with an absolute minimum rating of band D (less than 675 kgCO<sub>2</sub>e/m<sup>2</sup>), see Figure 1.

For residential buildings, including mixed-use below 18 metres in height, a target of LETI band B (less than 400 kgCO<sub>2</sub>e/m<sup>2</sup>) and an absolute minimum rating of band C (less than 500 kgCO<sub>2</sub>e/m<sup>2</sup>) should be achieved.

**Analysis from the Future Homes Hub (FHH) demonstrates that these values are likely to be achievable for new-build residential development,** as shown below in Figure 5.



**Figure 5. Future Homes Hub Upfront Carbon Intensity Baselines for Residential Development**

It is noted that the targets within the draft City Plan are for residential and mixed-use development. This means that by combining retail or office with residential, these less onerous residential targets could be used. Therefore, this encourages developers to build mixed-use residential developments within Westminster, rather than solely non-domestic buildings.

## LETI Targets Only Address 4 Sectors

The LETI Targets only exist for four sectors: office, residential (6+ storeys), education, and retail. To address this, the draft City Plan states that:

*“For developments involving the construction of bespoke buildings which do not have a recognised LETI benchmark, or self-build or custom-build homes, applicants should achieve the maximum reductions in upfront embodied carbon deliverable, and these should be fully justified.”*

It is noted that this provides a level of ambiguity for developments that do not align with the LETI sectors. There is no guidance on how to evidence maximum reductions have been achieved, or from what baseline.

## Stage of Assessment

There is no clear guidance on the stage of assessment or recognition of how this may affect the upfront embodied carbon calculated values and therefore the LETI band. At early stages of assessment, although there is the largest potential to reduce emissions, the results are the most inaccurate due to the number of assumptions required, and generic rather than “low carbon variants” of materials are typically modelled. Furthermore, the RICS 2<sup>nd</sup> Edition Guidance<sup>3</sup> includes a new methodology for adding contingency factors to results. Following the RICS approach could lead to adding contingency to upfront embodied carbon results of up to 26% depending on the stage of design, basis of information, and carbon data uncertainty. This will have implications for demonstrating achievement of targets and highlights the importance of the stage of assessment.

## Carbon Offset Payments

The Draft City Plan states that:

*“In exceptional circumstances where there are site specific constraints that make the benchmarks undeliverable, any shortfall against the minimum embodied carbon targets will be offset through financial contribution towards the council's offset fund.”*

and

*“ 43.11 /.... Where applicants fully demonstrate the embodied carbon benchmark is undeliverable due to site specific constraints or justified bespoke design parameters, payments are to be made to the carbon offset fund in lieu of meeting embodied carbon targets on site...”*

It is noted by AECOM that the Council's offset fund has an **offset cost of £880 per tonne of carbon**, meaning that this could be a significant cost impact for developments.

On the other hand, New Policy 43 notes:

*“43.11 / ...Applicants will also be able to credit embodied carbon reductions below the minimum benchmarks to the total carbon offset payment calculated in their energy statement. Further details are provided in Policy 40 (Energy). Further details on how this is to be calculated will be provided in the Planning Obligations and Affordable Housing Supplementary Planning Document (2024).....”*

This is also discussed within the Topic Paper. Here it is noted that there is the potential for embodied carbon reductions below the minimal benchmark set to be credited to the total amount of carbon to be offset in an applicant's energy statement. An example of how this would work is displayed within the Topic Paper as below.

<sup>3</sup> Available from: <https://www.rics.org/profession-standards/rics-standards-and-guidance/sector-standards/construction-standards/whole-life-carbon-assessment>



Example 10,000sqm building – powered entirely by electricity	
Energy Statement total carbon (t/CO <sub>2</sub> e)	80t X offset period (30 years) = 2,400t
Price (including electricity discount)	£792,000
Target total embodied carbon: 475kg/sqm (t/CO <sub>2</sub> e)	4,750t
Embodied carbon actual: 430kg/sqm	4,300t (difference: 450t)
Discount from offset payment	450t X £880 £396,000
<b>Total carbon offset payment</b>	<b>£396,000</b>

**Figure 6. Example of Calculation for Offset Payment Based on Introduction of Draft Policy**

## Demolition and new construction is possible

The draft City Plan notes the following:

*“43.6 / .....Where the demolition of an existing building occurs and where the development is a major scheme, development should aim to meet the relevant target embodied carbon benchmark. Where the target benchmark is not possible, a minimum embodied carbon benchmark will still apply to limit the overall carbon footprint of the development....”*

We have noted above challenges with the minimum embodied carbon benchmark for new build non-domestic buildings.

*“43.7 / Where there are site specific constraints that make a benchmark unachievable, applicants should provide robust justification of the building design, and should include a breakdown of the embodied carbon in the structure, façade and MEP, demonstrating how these align with the relevant benchmark, and providing justification for features which cannot meet the benchmark.”*

The LETI Embodied Carbon Primer<sup>4</sup> and the GLA both contain assumed percentages for building element impact, although it is noted that the percentages given within the Embodied Carbon Primer are for cradle to gate carbon emissions (EN 19578 life cycle modules A1-A3) only, opposed to upfront carbon emissions (EN 19578 life cycle modules A1-A5) as per the LETI targets referred to within the Draft Policy. Based on AECOM experience, these percentages can vary greatly by development depending on the form and function of the building.

The City Plan notes the following:

*“43.3 / Where whole-life carbon assessments are relied upon to justify demolition and construction of a new building, these must follow the most up to date RICS methodology and the Mayor of London’s Whole Life Carbon London Plan Guidance (LPG) and be presented as an appraisal of the construction options for reuse, refurbishment, retrofit, deep retrofit and demolition. When presenting comparisons between retrofit and newbuild options, a realistic whole life cycle for a retrofit scheme should be used which accounts for the extended life of a building resulting from a high-quality retrofit; and how the material choices for a retrofit option and a newbuild both aim to deliver the lowest embodied carbon achievable.”*

The use of RICS guidance has implications for developers. The latest RICS guidance is the 2<sup>nd</sup> Edition WLCA Professional Statement (PS), which includes the requirement to account for:

***“Emissions from any demolition that has already occurred via a previous site owner or event must still be considered within the scope of the WLCA and be reported in A5.1, if demolition occurs within three years of the sale or new proposal.”***

This means that for a developer buying a recently demolished ‘virgin’ site, they would still be required to account for the impacts from the demolition despite not owning the site at that time.

<sup>4</sup> Accessed from: <https://www.leti.uk/ecp>

## Points to Note

### Use of LETI Targets for Residential Buildings Under 18m

The LETI targets for residential are buildings are solely in reference to developments above 6 storeys. This means that although they are applicable for the proposed policy for buildings above 18 metres, they are less applicable for the full range of residential buildings under 18 metres. The proposed WCC policy is currently targeting a LETI band 'B' (or minimum 'C') for these developments, which is the equivalent of <400 or <500 kgCO<sub>2</sub>e/m<sup>2</sup> for upfront embodied carbon, respectively. Based on findings from the Future Homes Hub, this should be achievable for these building types, assuming buildings over 18 metres are "medium rise".

### The Basis of LETI Targets is Limited

With regards to general use of LETI targets, these targets are currently based on a limited amount of data, as displayed below<sup>5</sup>. In addition, large quantities of this data pertains to structural only embodied carbon emissions, thereby creating uncertainty within how these figures have been scaled up to create targets covering the whole building. This is particularly of note for residential developments, where there are only 7 no. "whole" projects underpinning these benchmarks, and education, where there are only 4 no. projects underpinning these benchmarks (since the Arup and Price and Myers benchmarks shown below reflect only emissions from structures).

<b>UK building data only</b>  <b>Removed data that does not declare of assessment</b>  <b>153 data set</b> of project data used for the benchmark update	Data sets	Cundall/ Targeting Zero	Arup	Price and Myers	Hilson Moran
	Office	48	8	7	6
	Residential	7	3	32	0
	Education	3	0	28	1
	Retail	6	0	6	2

\*Arup and Price and Myers only provided emission from structures

**Figure 7. Basis of Data for LETI Targets<sup>5</sup>**

### Alignment with LETI and UKGBC

The City Plan guidance states that

*"where subsequent benchmarks are established by other bodies, for example the UKGBC, these may be used where they have been aligned to LETI benchmarks".*

It should be noted that LETI are involved in the development of the Net Zero Carbon Building Standard (NZCBS) referenced above, an industry initiative to align on net zero carbon targets and scope. Therefore, it is anticipated that LETI may align to this standard, rather than others aligning with LETI. It is also noted that the BREEAM guidance is updating and the new version 7 New Construction guidance anticipated to be launched in Summer 2024 will include embodied carbon targets, however it is unclear if or how these will relate to LETI.

### Format for Submission of Carbon Results

The format for submission of carbon results is not clear. LETI is referenced throughout, however it is not stated that LETI's Embodied Carbon Reporting Template should be utilised. RICS 2<sup>nd</sup> Edition WLCA guidance is also noted and has its own reporting template which is more onerous to complete than the LETI reporting template. This is because the RICS 2<sup>nd</sup> Edition WLCA guidance reporting template separates results in much more detail than both LETI and the GLA's WLCA reporting template.

<sup>5</sup> Extracted from the launch webinar: <https://www.leti.uk/carbonalignment>

**Scope Differences Between LETI and GLA**

An applicant preparing embodied carbon calculations in support of a planning application will need to prepare a different summary for WCC (who reference LETI bands) and for the GLA because there are some scope differences between LETI and GLA. GLA request that all building elements are included within the scope of the assessment, whereas LETI targets do not require the reporting of renewable electricity generation (e.g. photovoltaics), external works, or non-fixed fittings, furnishing and equipment (FF&E). This said, there is still functionality to incorporate these within the LETI results tool.

**Public Display of Total Embodied Carbon**

It is noted that:

*“43.8 / Following completion, major schemes will be required to publicly display the total embodied carbon associated with the development, ensuring the information is visible to visitors and occupants of a building.”*

Further details of the format are not provided. It is not clear whether this will be secured via a planning condition.

**A new planning deliverable will be required.**

The draft City Plan states:

*“43.14 / ....A Retrofit Plan will be required in line with the Sustainable Design Statement to summarise how the retrofit policy has been complied with and any issues relevant to the proposal.....”*

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