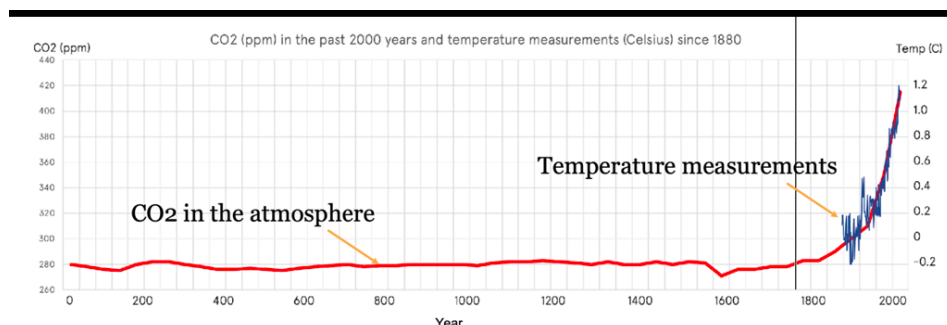


Smallbrook Ringway planning objection: Response to Turley Whole Life Carbon document etc

August 2023

2022/08496/PA



“[Climate change] is the defining issue of our age. It is the central challenge of our century. It is unacceptable, outrageous and self-defeating to put it on the back burner.”
UN Secretary General Antonio Guterres

Evidence of the accelerating climate crisis grows this summer. It is good to see a Design Stage Whole Life Carbon Assessment for the Smallbrook Ringway planning application : thanks to all involved. Although conspicuously absent previously, this is welcome, as it would be impossible to make an informed decision on the central planning question at issue - whether to allow demolition of a locally listed heritage building and carbon intensive new buildings - without this.

1: WLC & RETROFIT

Turley's document contains a number of assumptions, but compares the carbon footprint or "Whole Life Carbon" (WLC) for one of the three proposed buildings with the alternative of retrofitting the existing building.

The applicant's calculations assume operational carbon is the same for both options. This is questionable, as **retrofit may use less energy** than operating the energy-hungry proposed 55-storey towers. The assumption, however, in effect removes operational carbon from the WLC comparison, putting the **focus on embodied carbon** - ie the carbon footprint of demolition, construction and maintenance.

The document's headline figures here are 911 kgCO₂e/m² embodied carbon for the new proposal, against 597 kgCO₂e/m² for retrofit. **On these figures therefore demolition and rebuilding uses 53% more embodied carbon than retrofit.**

2: WLC - CONTEXT

To give further context, the applicant's 911 kgCO₂e/m² is 46% higher than the RIBA recommended maximum of 625 kgCO₂e/m² - details below. Turley reference to 800 kgCO₂e/m² standards are misleading: this was an intermediate target. The applicant describes their embodied carbon retrofit calculation of 597 kgCO₂e/m² as "hypothetical". Perhaps understandably, it is not justified with sufficient detail to allow meaningful comment; but it **appears high when benchmarked against other best practice**, eg the completed Entopia building (a retrofitted 1930s telephone exchange) used just 408 kgCO₂e/m².

The applicant's report (table 2) makes the valid point that carbon from operational energy (RICS B6) is likely to be less than the current (SAP 10) estimates, because of predicted UK grid decarbonisation. This puts **even greater focus on minimising embodied carbon**. The further implication of this is, as construction is still highly carbon intensive at present (in manufacture, transport, site plant, etc), **the embodied carbon of demolition and construction now is more highly damaging**. The M&S planning inquiry reinforces this point.*

Turkey's report introduces a comparison which is perhaps misleading. Floor space in the retrofitted building would be less than the proposed towers, so they suggest "the net difference of 1,350 new homes ... would therefore mean greater levels of embodied carbon emissions." The report's Table 1 reduces the 53% comparison above to just 8%.

This obfuscation is at least highly questionable. For example, Our Future City (OFS) plan refers to residential conversion of underused retail buildings in the city centre. This would provide new city centre homes more quickly, and **with less embodied carbon than the proposed high rise towers**, which will take fourteen years to complete. The equitable carbon comparison is per square metre of floor area. See also (4) below re Birmingham's housing needs.

3: WLC QUESTIONS

A number of the applicant's figures must be questioned.

3.1 Demolition: Although the narrative text of Turley's report states "Demolition of the existing building including estimated diesel use, electricity use, and transport and processing of waste (hazardous and non-hazardous)" is included, **demolition does not appear in their figures**. If this were added, clearly the case for retrofit would be further strengthened.

3.2 Formwork: on the RC frame is excluded "as it will be reused" - on this significant development all best practice demands **formwork should be properly included**.

3.3 Maintenance: this should be included in the embodied carbon as RICS methodology. Significant carbon is normal and expected, as many building products - services, PV, heat pumps, windows, cladding, WCs, kitchens, redecoration, fit out etc - require attention and/or replacement. Some of this is typically every 20 years (ie twice during a 60-year design life) or every 30 years (once in 60 years). Therefore Turley's statement "Service life assumed 60 years"

will again significantly understate the embodied carbon figures. End of life carbon should also be included.

3.4 Concrete: High carbon concrete “exposed frame” is proposed at lower levels. Cement produces 8%+ of global CO2 and **an exposed frame gives highly undesirable thermal cold bridging**, and therefore greater operational carbon.

3.5 Aluminium cladding. Virgin aluminium has a high carbon footprint and would be required for a lower maintenance anodised finish. Alternatively, recycled aluminium would have lower initial carbon, but a high carbon penalty to maintain powder coating and/or replacement.

3.6 High rise: All the considerations above of maintenance, materials, etc, are **exponentially compounded in both operational and embodied carbon, by the scale of skyscrapers’ 50+ stories. A medium-rise development would be much less carbon intensive.**

These examples - others could be given - highlight:

- (a) this is not a low energy/low carbon design; and**
- (b) this is not an independent WLC assessment** from a reputable third party. These and other points should be independently peer-reviewed; questioned with the applicant; **recalculation of these omissions should be rectified;** and a revised document issued for proper public comment and scrutiny.

The WLC report, and its deficiencies, further and predictably strengthen the case for retention and retrofit of this important and unique 1960s heritage building.



	Planning application proposed	Retrofit as assumed by developer	RIBA Climate Challenge 2030 target	Real world example	Comment
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	Planning application proposed	Retrofit as assumed by developer	RIBA Climate Challenge 2030 target	Real world example	Comment
Embodied carbon kgCO ₂ e/m ²	911	597	< 625	(Retrofit) 408	The proposed new building is 53% worse than retrofit; and also 46% worse than RIBA Climate Challenge 2030 figures; but many questions around methodology make this a significant understatement.
Operational energy kWh/m ² .yr (CPW p.71)	64.78	64.78	< 35	34	The proposal is 85% worse than RIBA Climate Challenge 2030 figures.
Operational carbon kgCO ₂ e/m ² .yr	7.69	7.69	N/A		As above.

RIBA 2030 Climate Challenge target metrics for domestic / residential

RIBA Sustainable Outcome Metrics	Business as usual (new build, compliance approach)	2025 Targets	2030 Targets	Notes
Operational Energy  kWh/m ² /y	120 kWh/m ² /y	< 60 kWh/m ² /y	< 35 kWh/m ² /y	Targets based on GIA. Figures include regulated & unregulated energy consumption irrespective of source (grid/renewables). BAU based on median all electric across housing typologies in CIBSE benchmarking tool. 1. Use a 'Fabric First' approach 2. Minimise energy demand. Use efficient services and low carbon heat 3. Maximise onsite renewables
Embodied Carbon  kgCO ₂ e/m ²	1200 kgCO ₂ e/m ²	< 800 kgCO ₂ e/m ²	< 625 kgCO ₂ e/m ²	Use RICS Whole Life Carbon (modules A1-A5, B1-B5, C1-C4 incl sequestration). Analysis should include minimum of 95% of cost, include substructure, superstructure, finishes, fixed FF&E, building services and associated refrigerant leakage. 1. Whole Life Carbon Analysis 2. Use circular economy strategies 3. Minimise offsetting & use as last resort. Use accredited, verifiable schemes (see checklist). BAU aligned with LETI band E; 2025 target aligned with LETI band C and 2030 target aligned with LETI band B.
Potable Water Use  Litres/person/day	125 l/p/day (Building Regulations England and Wales)	< 95 l/p/day	< 75 l/p/day	CIBSE Guide G.

Insufficient data has been given to compare with other RIBA 2030 targets. Note RIBA 2025 criteria were a transition standard.

For reference purposes current (2021) Good Practice for new build projects in-use now are as follows:

Non-Domestic (new build office):

Operational Energy 90 kWh/m²/y (GIA) and/or DEC C(65) and/or NABERS Base build 5; Embodied Carbon LETI Band D 1180 kgCO₂e/m²; Potable Water Use 16 l/p/day


Non-Domestic (schools):

Operational Energy 75 kWh/m²/y (GIA); Embodied Carbon LETI Band D 870 kgCO₂e/m²; Potable Water Use 3m³/pupil/yr

Domestic/Residential:

Operational Energy 60 kWh/m²/y (GIA) no gas boilers; Embodied Carbon LETI Band D 1000 kgCO₂e/m²; Potable Water Use 110 l/p/day

RIBA 2030 Climate Challenge target metrics for all buildings

Best Practice Health Metrics 		References
Overheating	25-28 °C maximum for 1% of occupied hours	CIBSE TM52, CIBSE TM59
Daylighting	> 2% av. daylight factor, 0.4 uniformity	CIBSE LG10
CO ₂ levels	< 900 ppm	CIBSE TM40
Total VOCs	< 0.3 mg/m ³	Approved Document F
Formaldehyde	< 0.1 mg/m ³	BREEAM

4: HOUSING NEEDS

The remaining validity of the application lies in its provision of housing.

This, however, must also be questioned. There is a need for more affordable housing, and for larger houses - particularly valued by multi-generational households and recognising Birmingham's accelerating diversity - whereas little or none is proposed. Our Future City plan rightly enlarges the "city centre" in all directions, reducing pressure for over high density of the wrong accommodation in the inner core area. See also (2) above.

5: SMALLBROOK RINGWAY CENTRE RETROFIT

The Smallbrook Ringway Centre application **uniquely combines the issues of both heritage and carbon**; as well issues of scale, townscape, social urban value, affordable homes, etc. It provides a fantastic opportunity for Birmingham to reimagine what 'brownfield' and 'sustainable' now means.

The recent CCC report highlights CO2 from most UK sectors is falling just 1 per cent a year: that **needs to quadruple in the next eight years**. Business as usual – epitomised by the demolition and energy-hungry 50+ storey Smallbrook application – will never achieve this. Encouraging progress with grid decarbonisation puts more pressure on the **urgent cuts needed in buildings' embodied carbon**.

The planning application justifies demolition of the existing Smallbrook Ringway Centre as 'blocking' the city centre routes to Hurst Street. **But in fact the opposite is true.** One of Birmingham's great successes over 30 years is 'breaking the concrete collar' of the inner ring-road. The concrete collar here was the elevated road not the building itself. Smallbrook Queensway dual-carriageway has now been lowered: a large and successful public investment.

The existing building does not block this important route, but celebrates it with a vibrant piece of city. The 'Rainbow Bridge' to LGBTQ+/Chinese Quarter beautifully frames the existing pedestrian and cycle routes with a dramatic modern gateway.



Demolition would be a catastrophic failure of urban design planning. It would be contrary to NPPF, BCC policy, recognised best practice, etc; and would signal Birmingham had learnt nothing from its past mistakes. “Yet the city could become a model of creative post-war conservation and breathe new life into its Brutiful past, rather than trampling it to dust”. **Retention through the Counter-proposals, or a similar regenerative design, is already being praised and advocated by practitioners and commentators as a model for the future.**

6: CONCLUSION

It is increasingly clear that present planning policies may lag behind UK 2050 climate targets, behind Birmingham’s more progressive 2030 goal, and behind Birmingham’s emerging Our Future City vision and related policies.

The Secretary of State’s welcome recent decision to disallow the demolition of M&S Oxford Street* signals that **considerations of heritage and embodied carbon** should - and must - be given much greater weight. It also underlines the **obligation which our elected politicians**, both national and local, and planning officers, should - and must - exercise in their oversight responsibilities to **ensure that both climate and heritage matters are now fully and properly weighted in all planning decisions.**

The case for refusing the present Smallbrook Ringway proposal is now very strong indeed.

John Christophers
RIBA MAPM AECB UKGBC ACAN
zero carbon house

04 August 2023

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<https://www.standard.co.uk/business/m-s-office-block-masquerading-department-store-oxford-street-b1080782.html>
<https://www.bdonline.co.uk/opinion/the-mands-oxford-street-inquiry-was-a-clash-of-world-views/5121081.article>