

Technical Note

Kensington Forum

Energy Statement Justification - Stage 3 Hearing

Date: 31 July 2020

Reference: 2915/24



MEP Building Services



Energy & Sustainability



BIM



Vertical Transport



Fire



Acoustics

DOCUMENT CONTROL

ISSUE	DATE	STATUS	PSH PREPARED	PSH CHECKED	PSH AUTHORISED
1	31/07/20	SUBMISSION	JP	MB	AH

Technical Note: Energy Statement Justification

1. Introduction

This Energy Statement Justification is submitted in support of the redevelopment proposals detailed within the full Planning Application (Reference GLA/4266 & PP/18/03461), approved by the Mayor of London on 21st June 2019 following a direction (under the powers conferred by Section 2A of the 1990 Act) that he would act as the local planning authority for the purposes of determining the planning application.

Since the decision to approve the planning application was taken by the Mayor, RBKC initiated a Judicial Review (JR) challenge of the decision. Prior to a formal JR hearing, the Greater London Authority (GLA) consented to judgement and the decision was quashed. As a result, there is a procedural requirement for a second Stage 3 Hearing and redetermination by the Mayor or Deputy Mayor.

The purpose of this Technical Note is to highlight areas of change within the GLA's guidance since the application submission, and to justify the previously approved proposals as acceptable in planning terms. This Energy Statement Justification should be read in conjunction with the Energy Statement dated December 2018 and all other supporting application documents and drawings. Together, they set out the planning rationale that underpins the energy strategy for the development.

2. GLA Energy Assessment Guidance Updates

The GLA Energy Assessment Guidance was updated, firstly in October 2018, and subsequently updated in April 2020. The 2018 version of this guidance was current prior to the hearing in June 2019 and is understood to have been taken into consideration by the GLA, acknowledging that the scheme was designed and submitted prior to its publication. Updated guidance was published in April 2020, however this contains no further change to carbon factors.

2.1. Carbon Factor Changes

The previously consented scheme was designed in accordance the 2016 version of the GLA guidance "Energy Planning Guidance". This version of the GLA guidance required energy assessments to use the SAP 2012 carbon factors in line with Building Regulations. The updated guidance now requires developments to use the SAP10 carbon factors (current as of January 2019), in order to meet the required carbon reduction targets, unless justification can be provided for using the previous SAP 2012 factors. It should be noted that Building Regulations currently continue to use the SAP 2012 carbon factors.

The SAP 2012 carbon factors have typically guided developments along a gas-based heating and hot water generation system, whereas electrically based systems must perform much better to have any chance of meeting the required carbon reductions. However, the SAP 10 carbon factors now favour electrically based hot water generation systems, such as Air Source Heat Pumps (ASHP).

2.2. Impacts of SAP 10 Carbon Factors

Carbon emissions associated with electricity usage have been significantly reduced (from 0.519kg/kwh to 0.233kg/kwh) with the introduction of SAP 10 carbon factors in January 2019. This change encourages developments to utilise electrically driven systems (such as ASHP) in lieu of gas-fired based systems.

If the SAP 10 carbon factors were applied at this stage of the determination process, this would necessitate starting from the first principles of design from both an MEP and energy/sustainability perspective and would require a redesign of the entire domestic hot water generation and heating strategy, most likely favouring ASHP. This would have numerous design and architectural implications such as redesigning the layout and size of the plant rooms within the basement and making provision

for water storage, replanning the roof spaces to include plant rooms which would reduce the size of the amenity spaces and playspace at that level and be more visible, the internal space planning of the apartments would need to change, additional plant space would be required within every level of the building with new risers incorporated which will impact floorplates and potentially the number of units. There are also parts of the façade that would require re-working.

2.3. GLA Guidance on Carbon Factors

Item 5.9 of the 2020 GLA guidance states that regardless of which carbon factors are used in the Energy Statement, applications will still be expected to meet GLA's minimum carbon reduction target. As detailed in the Energy Statement, the scheme meets site-wide 35% reduction in carbon emissions, in accordance with the GLA targets when applying the SAP 2012 factors consistent with current Building Regulations Part L, and the guidance at the time of submission.

2.4. CHP System Justification

Appendix 3 of the current (April 2020) guidance states that a gas-engine CHP can still be an appropriate energy solution for area-wide heat networks due to the greater electrical efficiencies achievable at a larger scale. The development contains over 1,150 rooms/units and comprises an entire urban block which is justified in terms of scale. The CHP-led heating system proposed in the current Energy Statement also includes spatial provisions to allow for the installation of plate heat exchangers, which will enable the development to connect to a district heating network, should one become available in the future (although not at the present time).

The proposed scheme split of hotel, serviced apartments and residential units (not to mention the large-scale conference and event space) all have a significant and constant annual electrical and hot water demand which provides an ideal baseload for CHP technology all year-round. This is true of both Part L assessments in which the hot water demand accounts for over 75% of the energy demand of the hotel, and hot water and heating account for around 65% of the residential carbon emissions. The exact contributions can be demonstrated within the BRUKL output document and SAP assessments.

The current strategy will also comply with Item 5.8 of the 2020 GLA guidance by ensuring that air quality impact is minimised, for example through the selection of a lower emission unit. The NO_x emissions of the proposed CHP system are declared at <50mg/Nm³. The stated NO_x emissions are relatively low for CHP technology and have are not considered to pose significant risk to local air quality, as reviewed in the Environmental Impact Assessment submitted in the original planning application. Annual maintenance of the CHP will ensure that the NO_x emissions continue to comply with these limits.

3. Draft London Plan Updates

Following the submission of the original planning application, the London Plan has been updated and currently sits at draft status. The draft plan includes for a minimum 15% carbon reduction target within the 'Be Lean' stage of the energy hierarchy. The 'Be Lean' stage relates to passive design and energy efficiency measures that can be implemented to reduce the primary energy demand for the development, typically focusing on u-values

The Draft London Plan also includes the requirement for cash in lieu contributions to net zero carbon for non-domestic applications, raising this from a minimum 35% reduction

3.1. 'Be Lean' Demand Reduction

A level of redesign would be required to achieve a 15% carbon reduction within the Be Lean stage. The current consented scheme achieves 9% and 11% reductions for the domestic and non-domestic demises respectively (under the SAP 2012 figures) and falls only marginally short of the target. To meet the new 'Be Lean' targets under SAP 10 carbon factors, further passive design and energy

efficiency improvements would be required, and this would result in fundamental architectural changes to the scheme's massing and fabric.

It should also be noted that the required reduction is based on the overall carbon emissions of the development, a large proportion of which are attributed to the domestic hot water generation as identified in section 2.2, leaving a small proportion for which to achieve the 15% reduction using passive and active design measures.

This approach is not considered to be feasible or reasonable at this stage of what has been a protracted planning process since the first Stage 2 decision in November 2018, and the current design has been justified in accordance with the energy guidance and draft policies current at the time of submission. It is noted that the energy and sustainability proposals were considered acceptable by the GLA in June 2019 when updated (October 2018) guidance was already published, including the changes in carbon emission factors. There have been no additional policy changes since this time which would alter this approach and any additional decision-making weight that may now be attributed is not so significant to require a different approach in the circumstances of this application for the reasons given above.

3.2. Overall Carbon Reduction

The Draft London Plan states in paragraph 9.3.4 that the proposed updated requirement for delivering net-zero non-residential developments through cash in lieu contributions will be applied on final publication of the Plan. The draft London Plan is not yet adopted and is therefore not applicable to the scheme. Any carbon offset should therefore only apply to the current adopted policy as was current at the time of application.

The scheme achieves an overall saving of 46% in carbon emissions for the domestic buildings and 37% for the non-domestic buildings. The site wide carbon dioxide savings meet the 35% target for non-domestic buildings but did not meet the zero-carbon target for domestic buildings which was proposed to be mitigated with a carbon off-set payment. It is understood from the previous hearing, that SAP 2012 carbon factors would be used in calculating this.

4. BREEAM Energy Performance

The submitted Sustainability Statement proposes that the non-residential components of the development will target a minimum BREEAM rating of 'Excellent' in excess of the RBKC requirement of 'Very Good'. Under the BREEAM New Construction 2014 methodology, the non-domestic areas are currently achieving 11 out of the 12 available credits under the 'Energy consumption and carbon emissions reduction' criteria, significantly exceeding best practice.

5. Summary

The application is demonstrated to exceed the GLA's minimum 35% site wide reduction in carbon emissions, and is therefore in accordance with current London Plan Policy 5.2 (Minimising carbon dioxide emissions) and Draft London Plan Policy SI 3 (Energy Infrastructure) parts c and d. The scheme is also demonstrated to be in accordance with the GLA's Energy Assessment guidance at time of application.

The development is also demonstrated to be compliant with Appendix 3 of the current GLA Energy Assessment Guidance (April 2020) on the basis that the gas-engine CHP operate at greater electrical efficiencies achievable on the development consisting of over 1,150 rooms and comprising an entire urban block. The specified CHP is also in accordance with the NOx emissions stated in section 5.8.

The as yet unadopted Draft London Plan requires a carbon reduction of 15% within the 'Be Lean' stage of the energy hierarchy. The development has been demonstrated to deliver significant reductions in the 'Be Lean' section however does fall short of the 15% target, although largely in part due to the

significant proportion of carbon emissions being associated with systems that cannot be addressed within the 'Be Lean' section.

Redeveloping the scheme to comply with the recently updated GLA Energy Assessment Guidance and Draft London Plan would have numerous design and architectural implications such as redesigning the layout and size of the plant rooms, replanning the roof spaces (reducing the size of the amenity spaces and playspace), replanning of apartment layouts, provision of additional plant space within levels of the building including new risers, all of which would fundamentally impact the floorplates and potentially the number of units. There are also parts of the façade that would require re-working in conjunction with these changes.



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