

138-141, 142-143 & 144 Friar Street, Reading

Comments on Planning Submission

15th November 2022

The following addresses comments received from Hoare Lea in their 'Energy and Sustainability Consultation Review – Rev 01 (08/11/2022)'. Noting that the report reflected the following suite of documents as produced by Troup Bywaters + Anders:

- Energy and BREEAM Statement (4th August 2022)
- MEP Strategies Report (15th July 2022)
- LZC Study (15th July 2022)

Sustainability Statements

Ref	RBC Requirement	RBC / Hoare Lea Comment	Response
SS1	Energy efficiency and carbon emissions of the building	62% carbon reduction achieved at the Be Lean stage (Part L 2013), this is welcome The BRUKL document should be provided to demonstrate the calculation – as the appended BRUKL doesn't match this carbon reduction	As explained in section Methodology of TBA-Q2-XX-RP-N-00002 QVS2 Energy and BREEAM Statement the 62% carbon reduction is calculated relative to the LZC base case baseline, not the TER. Refer to attached report, updated to include intermediate BRUKLS for clarity.
SS2	Water conservation	2 credits targeted against Wat 01 – this is described as the maximum achievable due to limitations around shower performance Rainwater and greywater harvesting should be explored to see how additional water savings can be achieved	(Extract from separate FRA ref. JME263 138-144 Friar Street FRA_QVS2_REVA) - There is insufficient space alongside the MEP plant spaces to provide enough storage to make it economically viable to use rainwater harvesting within the scheme. That said, there is the potential for small scale rainwater harvesting to be incorporated within the raised planters, and therefore the inclusion of SUDS planters will be considered fully at Stage 3 – Refer to attached Examples.
SS3	Flood risk and drainage strategy	Flood risk is deemed to be low. A blue roof is Proposed	A separate FRA has been prepared and submitted with the application (ref. JME263 138-144 Friar Street FRA_QVS2_REVA). The site is flood zone 1, and no significant source of flooding has been identified.

			A blue roof is proposed across the majority of the roof (Refer to attached calculations), with tanked permeable paving and SUDS planters in the courtyard to provide attenuation to meet the requirements of the Reading Borough Council Plan in relation to SUDS.
SS4	Community impacts	No mention of community impacts	Refer to the attached 'Statement of Community Involvement' as produced by Town Planning Bureau Consultation with the public has continued post submission including meetings with the public, local press and community groups; inclusive of a further public consultation event in November 2022.
SS5	Transport	A travel plan has been created with some BREEAM credits targeted.	No response required.
SS6	Health and Wellbeing including day-lighting analysis and thermal comfort	No analysis provided. Daylighting and View Out credits not targeted due to massing and site context. Thermal comfort credit targeted. <i>It is expected that some analysis and commentary would have been undertaken on the facade to reduce the cooling demand in relation to thermal comfort</i>	The architect has undertaken passive design assessments and built these within the architectural pack the key points of which are highlighted below: • Minimum glazed elements to south facing facades • Maximisation of natural lighting for every hotel rooms Refer to TBA-Q2-XX-RP-N-00002 QVS2 Energy and BREEAM Statement, updated in terms of the above. Detailed thermal comfort analysis to be undertaken at Stage 3.
SS7	Material usage, wastage, responsible sourcing and environmental impact, including embodied carbon	Relevant BREEAM credits targeted <i>No mention of how the reduction of embodied carbon has been considered throughout the design</i> <i>A pre-demolition audit is required to understand the opportunities to retain and re-use materials onsite</i>	A superstructure LCA assessment, via the BREEAM MAT 01 methodology, will be undertaken prior to the formal end of Stage 2. A pre-demolition audit has been targeted for undertaking at Stage 3. Both are targeted credits.

SS8	Pollution issues, low NOx, low global warming potential (GWP), reducing need for mechanical cooling	BREEAM credits targeted. No mention of how the design has reduced the need for mechanical cooling.	The architect has undertaken passive design assessments and built these within the architectural pack the key points of which are highlighted below: • Minimum glazed elements to south facing facades • Superior windows with a low thermal conductivity to ensure that the entire building envelope is well insulated • High-quality insulation in order to minimize the heat exchange with the outside environment • Airtight construction to avoid uncontrolled airflow between the internal and external environment • No thermal bridging between well insulated elements such as walls, floors and roofs in order to reduce the need for heating or cooling to achieve a comfortable temperature • High quality Mechanical ventilation with heat recovery units that recover heat from the used air and transfer it to the fresh air coming in. This ensures a minimal loss of energy and a good indoor air quality Refer to TBA-Q2-XX-RP-N-00002 QVS2 Energy and BREEAM Statement, updated in terms of the above. Detailed thermal comfort analysis to be undertaken at Stage 3.
SS9	Ecological aspects to enhance the proposed developments flora and fauna	Ecologist appointed No detail provided on the measures that have been implemented to enhance the site's ecology	Refer to the attached 'Preliminary Ecological Appraisal Including a Protected Species Appraisal and BREEAM Assessment' as produced by Skilled Ecology Consultancy Ltd.
SS10	Best practice management of the site	Relevant BREEAM credits targeted – with emphasis on the Contractor	Best practice management of site BREEAM credits to be completed on appointment of Contractor

SS11	BREEAM Very Good / Excellent	BREEAM Excellent is targeted, and a pre-assessment is provided demonstrating a route to Excellent There is little evidence to see how the BREEAM targets have been designed in, and no evidence of any of the Stage 1 evidence being received	The architectural, civil and structural and MEP packages show how certain credits have been implemented into the design. At this stage, where the design stage assessment hasn't started, it would not be expected to see detailed evidence per credit as this is collected as the design progresses. For this project the Stage 1 requirements are: - Appointment of AP – refer to confirmation email - Ecologist appointment – Refer to the attached 'Preliminary Ecological Appraisal Including a Protected Species Appraisal and BREEAM Assessment' - Flood Risk Assessment - FRA has been prepared and submitted with the application (ref. JME263 138-144 Friar Street FRA_QVS2_REVA) - Travel plan – A transport plan has been prepared and submitted with the application - Sustainable procurement plan - refer to attached plan - Material efficiency - refer to attached summary
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Energy Strategies

Ref	RBC Requirement	RBC / Hoare Lea Comment	Response
EE1	Energy efficiency of the building	Energy efficiency measures and carbon emissions have been provided It's not clear from the report what is providing the heating and hot water in the Passive Design Measures Option	The baseline MEP service strategy and energy consumption data is shown in Table 2 of TBA-Q2-XX-RP-N-00003 QVS2 LZC Study. The BRUKL in Appendix C of TBA-Q2-XX-RP-N-00002 QVS2 Energy and BREEAM Statement is for the Green Iteration
EE2	Baseline annual predicted energy demand of the development (regulated and unregulated)	This has not been provided	
EE3	Baseline annual predicted carbon emissions of the development (regulated and unregulated), the Target Emission Rate (TER)	TER has been provided (53.1 kgCo2/m2. Annum) It is not clear if this is the final BRUKL. The BER is 45.1 kgCo2/m2. Annum – so the overall improvement is calculated at 15% - which doesn't match the results stated in the report. The BRUKLs should be provided for each stage for Review	
EE4	The contribution of each proposed renewable energy technology	It's not clear from the report what is providing the heating and hot water in the Passive Design Measures option Contributions should be provided for the ASHP. VRF is not a renewable energy technology when providing cooling and therefore cannot be considered	The baseline MEP service strategy and energy consumption data is shown in Table 2 of TBA-Q2-XX-RP-N-00003 QVS2 LZC Study. The original QVS1 Energy and sustainability statement, which was part of the approved QVS1 scheme specified ASHP as a renewable energy source. On page 23 it states that a combined heating / cooling ASHP unit will provide the comfort cooling. On page 7 of Appendix B of that report it is stated that comfort cooling is provided by VRF units. Therefore, it is implied that heating is also provided by VRF and that this was permissible in the approved QVS1 scheme. By extension, it should be permissible for QVS2
EE5	Cost information of technically feasible low or zero carbon renewable technologies, including additional insulation, low carbon decentralised energy, heat pumps etc	A LZC appraisal has been carried out for ASHP and GSHP. This has not included insulation requirements and costs associated with a GSHP installation	The TBA-Q2-XX-RP-N-00003 QVS2 LZC Study comprises an analysis of the ground heating potential for three types of GSHP and concludes that there is not enough heating capacity in the ground underneath the building to meet the heating demand. Therefore, no

			discussion of insulation requirements or cost was required.																					
EE6	Feasibility of district or community heating	No evidence has been provided to determine whether there are any DHN nearby	Section “Decentralised Energy” of the TBA-Q2-XX-RP-N-00002 QVS2 Energy and BREEAM Statement discusses the DHN.																					
EE7	Summary of the benefits of various energy technologies	<table><tr><th>Design measure</th><th></th><th></th></tr><tr><td rowspan="2">Fabric improvements</td><td>U value</td><td rowspan="2">See Table 1</td></tr><tr><td>Air permeability</td></tr><tr><td rowspan="5">MEP</td><td>Heating</td><td>VRF system with heat recovery, SCOP5.5</td></tr><tr><td>DHW</td><td>90% ASHP with SCOP=2.85, 10% gas-fired water heater, 935</td></tr><tr><td>Cooling</td><td>VRF system, SEER=6.5</td></tr><tr><td>MVHR</td><td>SFP0.9W/l/s, 85%HR</td></tr><tr><td>Lighting</td><td>100lm/W</td></tr><tr><td>Renewables</td><td>PV</td><td>100m², 22% efficient, 10° inclination, south-facing</td></tr></table> Table 6 Summary of applied energy performance measures High efficiency, high temperature ASHP should provide 100% of the DHW – there is no need for a gas boiler. VRF – refrigerant with low embodied carbon should be specified – this should be confirmed PV – this would be more efficient if at 30o inclination	Design measure			Fabric improvements	U value	See Table 1	Air permeability	MEP	Heating	VRF system with heat recovery, SCOP5.5	DHW	90% ASHP with SCOP=2.85, 10% gas-fired water heater, 935	Cooling	VRF system, SEER=6.5	MVHR	SFP0.9W/l/s, 85%HR	Lighting	100lm/W	Renewables	PV	100m², 22% efficient, 10° inclination, south-facing	Part L 2013 penalises the use of ASHPs. In order to meet the Part L 2013 requirements, a proportion of gas heating needed to be introduced. This was most easy effected by pre-heating the DHW with ASHP and topping it up with gas. We kept the proportion of gas heating to the absolute minimum. Report updated to include VRF refrigerant detail. Refer to TBA-Q2-XX-RP-N-00001 QVS2 MEP Strategies, updated to include VRF refrigerant detail. We agree that a PV array at 30° inclination would generate more yield. However, it would also experience a higher degree of wind loading. It is industry practice to install PV arrays on flat roofs at 10° inclination to reduce wind loading.
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EE8	The total estimated reduction in the development’s baseline carbon and/or energy emissions	An 84% reduction in carbon emissions against Part L 2013 (+ SAP 10)	No response required																					
EE9	Zero Carbon Target	There is no policy requirement for Net Zero on purely non-domestic buildings, therefore, no offset payment to make	No response required																					

Policy Review

PR1	Sustainable Design and Construction CC2 Policy: Proposals for new development, including the construction of new buildings and the redevelopment and refurbishment of existing building stock, will be acceptable where the design of buildings and site layouts use energy, water, minerals, materials and other natural resources appropriately, efficiently and with care and take account of the effects of climate change	BREEAM Excellent is targeted, and a pre-assessment is provided demonstrating a route to Excellent There is little evidence to see how the BREEAM targets have been designed in, and no evidence of any of the Stage 1 evidence being received	Refer to SS12 response
PR2	Adaptation to Climate Change CC3 Policy: Wherever possible, new buildings shall be orientated to maximise the opportunities for both natural heating and ventilation and reducing exposure to wind and other elements.	There is no reference to consideration of the form factor how the layout/orientation impacts on the reducing energy demand. Also, no reference of natural ventilation. This should be provided.	There are openable windows (150mm gap) to allow an element of natural ventilation, however, the primary means of ventilation for the project is MVHR to reduce overall noise and pollution within bedrooms, and as to not conflict with cooling.
PR3	Adaptation to Climate Change CC3 Policy: Proposals involving both new and existing buildings shall demonstrate how they have been designed to maximise resistance and resilience to climate change for example by including measures such as solar shading, thermal mass, heating and ventilation of the building and appropriately coloured materials in areas exposed to direct sunlight, green and brown roofs, green walls, etc	No detail has been provided as to how the building has been designed to maximise resistance and resilience to climate change. This should be provided.	As SS8
PR4	Adaptation to Climate Change CC3 Policy: Use of trees and other planting, where appropriate as part of a landscape scheme, to provide shading of amenity areas, buildings and streets and to help to connect habitat, designed with native plants that are carefully selected, managed	There is no reference to the proposed landscaping and how it has been developed considering native species and climate resilience. Detail should be provided.	As SS9

	and adaptable to meet the predicted changed climatic conditions.		
PR5	Adaptation to Climate Change CC3 Policy: All development shall minimise the impact of surface water runoff from the development in the design of the drainage system, and where possible incorporate mitigation and resilience measures for any increases in river flooding levels as a result of climate change	Detail should be provided on how surface water runoff is going to be reduced through the design of the drainage strategy. SuDs methods should be explored to see what opportunities can be designed into the development	As SS3
PR6	Decentralised Energy CC4 Policy: Any development of more than 20 dwellings and/ or non-residential development of over 1,000 sqm shall consider the inclusion of decentralised energy provision, within the site, unless it can be demonstrated that the scheme is not suitable, feasible or viable for this form of energy provision.	As set out in the SPD, evidence should be provided at the detailed planning application stage where GSHP systems are discounted, and ASHP systems selected, with the following technical analyses: – Calculated system seasonal efficiency comparison – Evidence of any constraints on boreholes related to existing utilities or other sub-surface infrastructure – Borehole spatial constraints – Any other technical reasons why GSHP cannot be progressed and ASHP must be taken forward as the primary heat technology. Further detail should be provided.	The RBC response is not relevant to the policy. See section “Decentralised energy” of TBA-Q2-XX-RP-N-00002 QVS2 Energy and BREEAM Statement for a discussion of decentralised energy. In terms of the ASHPs / GSHPs see EE6
PR7	Decentralised Energy CC4 Policy: Where there is existing decentralised energy provision present within the vicinity of an application site, further developments of 10 dwellings or more or non-residential development of 1,000sqm or more will be expected to link into the existing decentralised energy network or demonstrate why this is not feasible	No evidence has been provided of any investigations of nearby existing or proposed opportunities to connect to an offsite district heating connection. Detailed investigations should be undertaken to understand any opportunities.	Section “Decentralised heating” of TBA-Q2-XX-RP-N-00002 QVS2 Energy and BREEAM Statement states that connection to DHN is presently not possible but provisions will be made for the VRF to work with a water-based energy source in future.
PR8	Waste Minimisation and Storage CC5 Policy: Development should demonstrate measures to minimise the generation of waste in the construction, use and life of	The relevant BREEAM credits are committed to with no detail as to specifically how waste will be reduced. This should be provided.	In-use waste management strategy to be developed by occupier pre-occupation as is common practice.

	buildings and promote more sustainable approaches to waste management, including the reuse and recycling of construction waste and the promotion of layouts and designs that provide adequate, well-designed space to facilitate waste storage, reuse, recycling and composting.		Construction waste management strategy to be developed following appointment of Contractor
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