

1-15 Queen Victoria Street and 145-148 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 (10/11/2022)'. Noting that the report reflected the following suite of documents as produced by Troup Bywaters + Anders:

- Energy and BREEAM Statement (5th 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	4% 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 stated in section Conclusions of TBA-Q1-XX-RP-N-00002 QVS1 Energy and BREEAM Statement, the 4% 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_QVS1) - 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_QVS1). 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-Q1-XX-RP-N-00002 QVS1 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 Retention and refurbishment inherently limit the embodied carbon impact. <i>No mention of how the reduction of embodied carbon has been considered throughout the design</i>	A LCA assessment, via the Option 1 BREEAM MAT 01 methodology, will be undertaken prior to the formal end of Stage 2.

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-Q1-XX-RP-N-00002 QVS1 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	No mention of any landscaping or 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	It's not clear why the listed / refurbished parts of the building are excluded from BREEAM? 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.	This is the approach we agreed with the RBC for the first application. The reason being, the listed parts 1-15 QVS and 147-148 Friar Street and their associated buildings are listed, we propose to refurbish and extend the listed buildings. There is no clearly defined break between the listed and the extended part. Therefore, it was not practical, which the council agreed to previously, to assess such extensions under separate BREEAM as a result of the need to comply with listed building requirements. Whereas 145 and 146 Friar Street, although forming part of the same development, have clear party walls and a clear distinction can be made between the listed building, therefore allowing this to be assessed separately. This was agreed with RCB for the former scheme and carried over to this scheme. 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_QVS1) - Sustainable procurement plan - refer to attached plan - Material efficiency - refer to attached strategy
------	------------------------------	--	---

			Please note the number of Stage 1 required credits differs from scheme to scheme. In this case, RFO 2014 requires less than 2018
--	--	--	--

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 QVS1 LZC Study. The regulated baseline figures are also shown in Appendix C of TBA-Q1-XX-RP-N-00002 QVS1 Energy and BREEAM Statement The BRUKL in Appendix D of TBA-Q1-XX-RP-N-00002 QVS1 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 (54.1 kgCO ₂ /m ² . Annum) It is not clear if this is the final BRUKL. The BER is 33.4 kgCO ₂ /m ² . Annum – so the overall improvement is calculated at 38% - 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	-	The baseline MEP service strategy and energy consumption data is shown in Table 2 of TBA-Q1-XX-RP-N-00003 QVS1 LZC Study.
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-Q1-XX-RP-N-00003 QVS1 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-Q1-XX-RP-N-00002 QVS1 Energy and BREEAM Statement discusses the DHN.

EE7	Summary of the benefits of various energy technologies	<table border="1"> <thead> <tr> <th>Design measure</th><th></th><th>New build</th><th>Refurbishment/Extension</th></tr> </thead> <tbody> <tr> <td rowspan="2">Fabric improvements</td><td>U value</td><td colspan="2" rowspan="2">See Table 1</td></tr> <tr> <td>Air permeability</td></tr> <tr> <td rowspan="5">MEP</td><td>Heating</td><td colspan="2">VRF system with heat recovery SCOP5.5</td></tr> <tr> <td>DHW</td><td colspan="2">80% ASHP with SCOP2.8, 20% gas-fired water heater, 93%</td></tr> <tr> <td>Cooling</td><td colspan="2">VRF system, SEER-6.5</td></tr> <tr> <td>MVHR</td><td colspan="2">SFP=0.9W/l/s, 85% HR</td></tr> <tr> <td>Lighting</td><td colspan="2">100lm/W</td></tr> <tr> <td>Renewables</td><td>PV</td><td>130m², 22% efficient, 10° inclination, south-facing</td><td>None</td></tr> </tbody> </table> Table 8 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 30° inclination	Design measure		New build	Refurbishment/Extension	Fabric improvements	U value	See Table 1		Air permeability	MEP	Heating	VRF system with heat recovery SCOP5.5		DHW	80% ASHP with SCOP2.8, 20% gas-fired water heater, 93%		Cooling	VRF system, SEER-6.5		MVHR	SFP=0.9W/l/s, 85% HR		Lighting	100lm/W		Renewables	PV	130m ² , 22% efficient, 10° inclination, south-facing	None	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 easily 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. Refer to TBA-Q1-XX-RP-N-00001 QVS1 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.
Design measure		New build	Refurbishment/Extension																													
Fabric improvements	U value	See Table 1																														
	Air permeability																															
MEP	Heating	VRF system with heat recovery SCOP5.5																														
	DHW	80% ASHP with SCOP2.8, 20% gas-fired water heater, 93%																														
	Cooling	VRF system, SEER-6.5																														
	MVHR	SFP=0.9W/l/s, 85% HR																														
	Lighting	100lm/W																														
Renewables	PV	130m ² , 22% efficient, 10° inclination, south-facing	None																													
EE8	The total estimated reduction in the development's baseline carbon and/or energy emissions	A 65% + 72% reduction in carbon emissions against Part L 2013 (+ SAP 10) is achieved	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	A BREEAM 'Excellent' rating is to be targeted for the development. A pre-assessment is provided demonstrating a route to achieving 'Excellent' Not all of the development has been included in the assessment, it is not clear why. This should be explained 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. Further detail should be provided	Refer to SS11 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	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

	that are carefully selected, managed 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-Q1-XX-RP-N-00002 QVS1 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-Q1-XX-RP-N-00002 QVS1 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	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.

	waste in the construction, use and life of 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
--	---	--	--