6.3 Energy

<table>
<tr><td>Ene 01</td><td>Improvement in Energy Efficiency Rating</td><td>Up to 6 credits are awarded based upon the improvement in the energy efficiency of the dwellings compared to pre-refurbishment. The credits are awarded as follows:

<table>
<tr><th>Credits</th><th>Improvement in EER</th></tr>
<tr><td>0.5</td><td>≥5</td></tr>
<tr><td>1</td><td>≥9</td></tr>
<tr><td>1.5</td><td>≥13</td></tr>
<tr><td>2</td><td>≥17</td></tr>
<tr><td>2.5</td><td>≥21</td></tr>
<tr><td>3</td><td>≥26</td></tr>
<tr><td>3.5</td><td>≥31</td></tr>
<tr><td>4</td><td>≥36</td></tr>
<tr><td>4.5</td><td>≥42</td></tr>
<tr><td>5</td><td>≥48</td></tr>
<tr><td>5.5</td><td>≥54</td></tr>
<tr><td>6</td><td>≥60</td></tr>
</table>

For dwellings which are being developed as part of a material change of use project, the following convention should be used to determine the pre-development EER.

- For newly constructed thermal elements that replace existing elements, input data to calculate the pre-refurbishment EER for the element being replaced should be based upon the U value of the elements prior to replacement as set out in appendix s of SAP 2009.
- All other assumptions should be based upon details set out in SAP Appendix S or using actual values.</td><td>6</td><td>1.5</td><td></td></tr>
<tr><td></td><td colspan="2">Responsible team member: HL</td><td></td><td></td></tr>
</table>

<table>
<tr><td>Ene 02
Mandatory Elements</td><td>Energy Efficiency Rating Post Refurbishment</td><td>Up to 4 credits are awarded based upon the Energy Efficiency Rating for each dwelling post refurbishment. The credits are awarded as follows:

<table>
<tr><th>Credits</th><th>EER Post Refurbishment</th><th>Minimum Requirements</th></tr>
<tr><td>0.5</td><td>≥50</td><td>BREEAM Pass</td></tr>
<tr><td>1</td><td>≥55</td><td>BREEAM Good</td></tr>
<tr><td>1.5</td><td>≥60</td><td></td></tr>
<tr><td>2</td><td>≥65</td><td>BREEAM Very Good</td></tr>
<tr><td>2.5</td><td>≥70</td><td>BREEAM Excellent</td></tr>
<tr><td>3</td><td>≥75</td><td></td></tr>
<tr><td>3.5</td><td>≥80</td><td>BREEAM Outstanding</td></tr>
<tr><td>4</td><td>≥85</td><td></td></tr>
</table>

1 innovation credit can be awarded where the post refurbishment EER is ≥90, equivalent to an EPC rating of A

2 innovation credits can be awarded where the post refurbishment EER is ≥100.</td><td>4+2</td><td>2.5</td><td></td></tr>
<tr><td></td><td colspan="2">Responsible team member: HL</td><td></td><td></td></tr>
</table>

<table>
<tr><td rowspan="3">Ene 03</td><td>Primary Energy Demand</td><td>Up to 7 credits are awarded based upon the primary energy demand for the dwelling post refurbishment. The credits are awarded as follows:
<table><tr><th>Credits</th><th>Primary Energy Demand Post Refurbishment (kWh/m^2/yr)</th></tr><tr><td>0.5</td><td>≤400</td></tr><tr><td>1</td><td>≤370</td></tr><tr><td>1.5</td><td>≤340</td></tr><tr><td>2</td><td>≤320</td></tr><tr><td>2.5</td><td>≤300</td></tr><tr><td>3</td><td>≤280</td></tr><tr><td>3.5</td><td>≤260</td></tr><tr><td>4</td><td>≤240</td></tr><tr><td>4.5</td><td>≤220</td></tr><tr><td>5</td><td>≤200</td></tr><tr><td>5.5</td><td>≤180</td></tr><tr><td>6</td><td>≤160</td></tr><tr><td>6.5</td><td>≤140</td></tr><tr><td>7</td><td>≤120</td></tr></table></td><td>7</td><td>5</td><td></td></tr>
<tr><td colspan="4">Responsible team member: HL + MAA</td><td></td></tr>
<tr><td>Ene 04</td><td>Renewable Technologies</td><td>1 credit is awarded where at least 10% of the dwellings primary energy demand per annum is supplied by low or zero carbon technologies (LZCs) and the dwelling has reduced energy demand prior to the specification of LZCs with a maximum demand of 220kwh/m2/yr.

2 credits can be awarded where at least 15% of the primary energy demand per annum is supplied via low and zero carbon technologies and where the primary energy demand is reduced to a maximum of 220kWh/m2/year.

Where covered by the Microgeneration Certification Scheme (MCS), technologies under 50kWe or 300kWth must be certified.

Combined Heat and Power (CHP) schemes above 50kWe must be certified under the CHPQA standard.</td><td>2</td><td>0</td><td></td></tr>
<tr><td colspan="4">Responsible team member: -</td><td></td></tr>
</table>

<table>
<tr><td rowspan="2">Ene 05</td><td>Energy Labelled White Goods</td><td>1 credit is awarded where fridges and freezers or fridge freezers are recognised under the Energy Saving Trust Recommended labelling scheme.

1 credit is awarded where washing machines and dishwashers are provided and are recognised under the Energy Saving Trust Recommended labelling scheme and washer dryers and tumble dryers are B rated under the EU Energy Efficiency Labelling Scheme.

Where a washer dryer or tumble dryer is not provided, information on the EU Energy Efficiency Labelling Scheme is to be provided to all dwellings.

1 credit is awarded where no white goods are provided but all dwellings are provided within information on the EU Energy Efficiency Labelling Scheme.</td><td>2</td><td>2</td><td></td></tr>
<tr><td colspan="4">Responsible team member: BH (to include in contractor prelims)</td><td></td></tr>
<tr><td>Ene 06</td><td>Drying Space</td><td>1 credit is awarded where secure internal or external space with posts and footings, or fixings holding:

- Studios, one and two bed dwellings - at least 4m of line.
- Three or more bedroom dwellings - at least 6m of line.</td><td>1</td><td>1</td><td></td></tr>
<tr><td colspan="4">Responsible team member: MAA</td><td></td></tr>
<tr><td rowspan="2">Ene 07</td><td>Lighting</td><td>1 credit is awarded where energy efficient space lighting is provided and energy efficiency security lighting is provided

OR

Where energy efficient space lighting is provided and security lighting is not provided.

1 credit is awarded where the energy required for internal lighting is minimised through the provision of a maximum wattage across the total floor are of the dwelling of 9 watts per m^2.</td><td>2</td><td>2</td><td></td></tr>
<tr><td colspan="4">Responsible team member: HL</td><td></td></tr>
<tr><td rowspan="2">Ene 08</td><td>Energy Display Devices</td><td>1 credit is awarded where the current electricity consumption or primary heating fuel consumption data is displayed to occupants by a compliant energy display device.

2 credits are awarded where current electricity and primary heating fuel consumption data is displayed to the occupants by a compliant energy display device.

1 innovation credit is awarded where the energy display device is capable of recording consumption data.</td><td>2+1</td><td>2+1</td><td></td></tr>
<tr><td colspan="4">Responsible team member: HL</td><td></td></tr>
</table>

Ene 09	Cycle Storage	Up to 2 credits are awarded based upon the provision of individual or communal cycle storage to the following levels: Number of bedrooms / Number of spaces for 1 credit / Number of spaces for 2 credits Studio and 1 bed: 1 for every two dwellings: 1 for every dwelling 2 and 3 bedrooms: 1 per dwelling: 2 for every dwelling 4 or more bedrooms: 2 for every dwelling: 4 for every dwelling	2	**2**	
	Responsible team member: **MAA**				
Ene 10	Home Office	1 credit is awarded where space and services have been provided which allow for the occupants to set up home offices within a suitable room with adequate ventilation. The required facilities within the designated space are as follows: - Two double power sockets. - Telephone point. - Window. - Adequate ventilation. - 1.8m of wall.	1	**1**	
	Responsible team member: **MAA**				

6.4 Water

Wat 01 **Mandatory Elements**	Internal Water Use	Up to 3 credits are awarded where water efficient fittings are specified to reduce the internal potable water use to the following standards: Credits / Calculated water consumption (litres per person per day) / Minimum Requirements 0: >150: 0.5: 140-150: 1: 129-139: BREEAM Very Good 1.5: 118-128: 2: 107-117: BREEAM Excellent 2.5: 96-106: 3: <95: BREEAM Outstanding 1 innovation credit can be awarded where a combination of low flow rate fittings and grey/ rainwater harvesting result in an internal water consumption of less than 80 litres per person per day.	3+1	**2**	
	Responsible team member: **MAA**				
Wat 2	External Water Use	1 credit is awarded where a compliant rainwater collection system / internal irrigation use has been provided for the dwellings or where the dwelling has no communal or individual garden space.	1	**1**	
	Responsible team member: **MAA**				
Wat 3	Water Meter	1 credit is awarded where an appropriate water meter for measuring usage of mains potable water has been provided to dwellings. The meter should meet the following requirements: *An instrument intended to measure continuously, memorise and display the volume of water passing through it within rated operating conditions. A meter includes at least a measurement transducer, a calculator (including adjustment or correction devices if present) and an indicating device.*	1	**1**	
	Responsible team member: **HL**				

6.5 Materials

<table>
<tr><td>Mat 01</td><td>Environmental Impact of Materials</td><td>Up to 25 credits are awarded based upon the impact of new materials according to their green guide rating and their impact on the thermal performance of the dwelling for the following elements:

- Roof
- External walls (assumed mainly retained)
- Internal walls (including separating walls)
- Upper and ground floors (assumed mainly retained)
- Windows (assumed not retained)</td><td>25</td><td>10</td><td></td></tr>
<tr><td colspan="5">Responsible team member: MAA</td><td></td></tr>
<tr><td>Mat 02
Mandatory Elements</td><td>Responsible Sourcing of Materials</td><td>Up to 12 credits are awarded where new materials for refurbished building elements are assigned a responsible sourcing tier with points awarded as follows:

<table>
<tr><th>Tier</th><th>Points</th></tr>
<tr><td>1</td><td>4.0</td></tr>
<tr><td>2</td><td>3.5</td></tr>
<tr><td>3</td><td>3.0</td></tr>
<tr><td>4</td><td>2.5</td></tr>
<tr><td>5</td><td>2.0</td></tr>
<tr><td>6</td><td>1.5</td></tr>
<tr><td>7</td><td>1.0</td></tr>
<tr><td>8</td><td>0</td></tr>
</table>

Mandatory Requirement: All new timber used in the project is sourced in accordance with UK Government's timber procurement policy.

Failure to comply with this criterion can result in no BREEAM rating being achievable irrespective of any tradable credit score.</td><td>12</td><td>4</td><td></td></tr>
<tr><td colspan="5">Responsible team member: MAA + BH (to include in contractor prelims)</td><td></td></tr>
<tr><td>Mat 03</td><td>Insulation</td><td>4 credits are awarded where the insulation index for all new insulation used within the building is less than 2.

4 credits are awarded where at least 80% of the new thermal insulation used within the building elements is responsibly sourced.</td><td>8</td><td>8</td><td></td></tr>
<tr><td colspan="5">Responsible team member: MAA + HL + BH (to include in contractor prelims)</td><td></td></tr>
</table>

6.6 Waste

<table>
<tr><td>Was 01</td><td>Household Waste</td><td>One credit can be awarded where the dwelling complies with one of the following scenarios:
<table>
<tr><th colspan="2">Scenario</th><th>Requirements</th></tr>
<tr><td>1</td><td>Compliant collection scheme</td><td>1. Three internal recycling containers where recycling is no co-mingled
2. One internal recycling container provided where recycling in co-mingled.
3. Minimum thirty litre total capacity, no single container less than seven litres.
4. Dedicated position within the dwelling.</td></tr>
<tr><td>2</td><td>Non-compliant collection scheme in place and no external storage</td><td>1. Three internal recycling containers.
2. Minimum sixty litre capacity.</td></tr>
<tr><td>3</td><td>No compliant collection scheme in place and adequate external storage</td><td>1. Three internal recycling containers.
2. Minimum thirty litre total capacity, no single container smaller than seven litres.
3. Dedicated position within the dwelling.</td></tr>
</table>
1 credit can be awarded where the following composting facilities are provided:
<table>
<tr><th>Scenario</th><th>Internal recycling storage requirements</th></tr>
<tr><td>Dwelling with significant external space</td><td>A compost service or facility is provided for green/ garden waste.
A compost service or facility is provided for kitchen waste.
An interior container is provided for kitchen comporting waste of at least seven litres.</td></tr>
<tr><td>Dwellings with no significant private space</td><td>Where a composting service is provided for kitchen waste.
Where an interior container is provided for kitchen composting waste of at least seven litres.</td></tr>
</table></td><td>2</td><td>1</td><td></td></tr>
<tr><td colspan="5">Responsible team member: MAA</td><td></td></tr>
</table>

<table>
<tr><td>Was 02</td><td>Refurbishment Site Waste Management</td><td>1 credit can be awarded where a compliant Site Waste Management Plan is in operation.

1 credit can be awarded where the first credit is achieved and the following requirements are met:
- Where non-hazardous construction waste generated by the dwellings refurbishment meets the following waste efficiency benchmarks:

<table><tr><th colspan="2">Amount of non-hazardous construction waste generated per £100,00 of project value</th></tr><tr><th>m^3</th><th>Tonnes</th></tr><tr><td>26.52</td><td>16.90</td></tr></table>
- Where the amount of waste generated against £100,000 of project value is recorded within the SWMP.
- Where a pre-refurbishment audit of the existing buildings is completed,
- Where the demolition is included within the refurbishment program, then the audit included demolition materials.

A third credit is awarded where non-hazardous demolition waste generated by the dwellings refurbishment meets the following standards:

<table><tr><th>Waste types</th><th>Volume</th><th>Tonnes</th></tr><tr><td>Non-hazardous construction waste</td><td>70%</td><td>65%</td></tr><tr><td>Non-hazardous demolition waste</td><td>80%</td><td>90%</td></tr></table>

Exemplary Level Requirements:

- Where a compliant Level 1; Site Waste Management Plan (SWMP) is in place
- Where Non-hazardous construction waste generated by the dwellings refurbishment meets or exceeds the resource efficiency benchmarks set by BREEAM
- Where the percentage of non-hazardous construction and demolition waste generated by the project has been diverted from landfill and meets or exceeds the refurbishment & demolition waste diversion benchmarks in accordance with BREEAM criteria</td><td>3+1</td><td>3+1</td><td></td></tr>
<tr><td colspan="5">Responsible team member: BH (to include in contractor prelims)</td></tr>
</table>

6.7 Pollution

<table>
<tr><td>Pol 1</td><td>NO_x Emissions</td><td>Credits are awarded on the basis of NO_x emission arising from the operation of all space heating and hot water systems for each dwelling type in accordance with the following criteria.

<table><tr><th>Credits</th><th>Dry NOx level (mg/kWh)</th><th>Boiler class (BS EN 297: 1994)</th></tr><tr><td>1</td><td>≤ 100</td><td>4</td></tr><tr><td>2</td><td>≤ 70</td><td>5</td></tr><tr><td>3</td><td>≤ 40</td><td>-</td></tr></table>
3 points are awarded where all space heating and hot water energy requirements are fully met by systems which do not produce NO_x emissions.</td><td>3</td><td>3</td><td></td></tr>
<tr><td colspan="5">Responsible team member: HL</td></tr>
<tr><td>Pol 2</td><td>Surface Water Run Off</td><td>1 credit is awarded where there is a neutral impact on surface water:

- Where any new hard standing areas are permeable, this must include all new pavements, driveways and where applicable, public rights of way, car parks and non-adoptable roads.

- Where the building is being extended onto previously permeable surfaces or an impermeable surface which drains onto a permeable surface, the additional run off for rainfall up to 5mm caused by the area of extension must be managed on site using SuDS.

2 credits are awarded where water run-off from the site is slightly reduced:

- Where all run off from the roof for rainfall depths up to 5mm, have been managed on site using source control methods. This should include run off from all existing and new parts of the roof.

3 credits are awarded where water run-off from the site is substantially reduced:

- An appropriate qualified professional is appointed to design the drainage strategy for the site.

- Where run off as a result of the refurbishment is managed on site using source control achieving a reduction in the peak run off rate during a 1 in 100 year event by 75% and the total volume of run off discharged into water courses is reduced by 75%.

1 innovation credit is awarded where all run off from the site is attenuated using source control.</td><td>3+1</td><td>1</td><td></td></tr>
<tr><td colspan="5">Responsible team member: RSK</td></tr>
</table>

Pol 3 **Mandatory Elements**	Flooding	2 credits can be awarded based upon the flood risk for the site and mitigation measures: Where the site is confirmed to be of low risk of flooding in a flood risk assessment **OR** Where the flood risk assessment confirms the site is of medium or high risk of flooding and the dwelling floor levels or measures to keep water away from the dwellings or full flood resilience/ resistance strategy is implemented according to advice from a suitably qualified professional. **Mandatory Requirement: 2 credits required for BREEAM Excellent**	2	**2**	
	Responsible team member: **RSK**				

10.0 Appendix D: London Borough of Richmond upon Thames Sustainable Construction Checklist

LBRUT SUSTAINABLE CONSTRUCTION CHECKLIST

TO BE FILLED IN FOR ALL RESIDENTIAL DEVELOPMENT PROVIDING ONE OR MORE NEW RESIDENTIAL UNITS, AND ALL OTHER FORMS OF DEVELOPMENT PROVIDING 100sqm OR MORE OF NON-RESIDENTIAL DEVELOPMENT

ALL OTHER CLASSES OF DEVELOPMENT ARE ENCOURAGED TO COMPLY WITH THIS CHECKLIST

This document forms part of the Sustainable Construction Checklist SPD, and **should be read in conjunction with the associated Guidance Document**. Where further information is requested, please either fill in the relevant section, or refer to the document where this information may be found in detail, e.g. Flood Risk Assessment or similar. Scores will be awarded for different achievements on site, and a final score attributed to the site as a whole.

Property Name (if relevant):	Latchmere House - Scheme 1	Application No. (if known):	
Development Type	New and refurbished residential units		
Address (include. postcode)	Latchmere House, Church Road, Richmond, TW10 5HH		
Completed by:	Louise Wille, Hoare Lea		

MINIMUM POLICY COMPLIANCE

Please check the Sustainable Construction webpage for the policy requirements

Environmental Rating of development:

	Rating achieved		
Residential new-build			
Code for Sustainable Homes Level	Code Level 4	A pre-assessment is required to support this. Has this been provided?	☑
Non-Residential new-build (100sqm or more)			
BREEAM Level	Please Select	A pre-assessment is required to support this. Has this been provided?	☐
Extensions and conversions (residential dwellings)			
EcoHomes Level	BREEAM Domestic Refurbishment Excellent	A pre-assessment is required to support this. Has this been provided?	☑
If other environmental rating sought please state:			

Score awarded for Environmental Rating (this will only be awarded once a pre-assessment is submitted to verify the level achieved): **Score** 16

CSH: Level 3 = *4*, Level 4 = *8*, Level 5 = *16*, Level 6 = *20*

BREEAM: Good = *0*, Very Good = *0*, Excellent = *8*, Outstanding = *16*

EcoHomes: Good = *0*, Very Good = *0*, Excellent = *8*

Accredited Assessors *(Please see Guidance document for more details on accredited assessors)*

Have you used a licensed Code for Sustainable Homes, EcoHomes and BREEAM Accredited Assessor respectively? ☑

Energy Assessment *(Please see Justification & Guidance document for more details on how to prepare an Energy Assessment)*

An energy assessment is required that demonstrates the expected energy and carbon dioxide emissions saving from energy efficiency and renewable energy measures, including the feasibility of CHP/CCHP and community heating systems. Has this been submitted? If yes, please tick. ☑

Carbon Dioxide emissions reduction *(Please see Justification & Guidance document for more details on how to calculate these figures as part of the Energy Assessment)*

- Percentage of **total** site CO_2 emissions saved through renewable **energy** installation? 16
- Percentage of **regulated** CO_2 emissions saved below Building Regulations target level through all low carbon measures? 40

LONDON BOROUGH OF RICHMOND UPON THAMES
Sustainable Construction Checklist

1. ENERGY USE AND POLLUTION

1.1 Need for Cooling — **Score**

a. How does the development incorporate cooling measures? Tick all that apply:

- Energy efficient design incorporating specific heat demand to less than or equal to 15 kWh/sqm *6* ☐
- Reduce heat entering a building through providing/improving insulation and living roofs and walls *2* ☐
- Reduce heat entering a building through shading *3* ☑
- Exposed thermal mass and high ceilings *4* ☐
- Passive ventilation *3* ☐
- Mechanical ventilation with heat recovery *1* ☑
- Active cooling systems, i.e. Air Conditioning Unit *0* ☐

1.2 Heat Generation

b. How have the heating and cooling systems, with preference to the heating system hierarchy, been selected (defined in London Plan policy 4A.6)? Tick the heating and cooling system that will be used in the development:

- Connect to existing CCHP/CHP networks *6* ☐
- Site-wide CCHP/CHP powered by renewable energy *5* ☐
- Gas-fired CCHP/CHP *4* ☐
- Communal heating/cooling powered by renewable energy *3* ☐
- Communal heating/cooling powered by gas *2* ☑
- Individual heating/cooling powered by renewable energy *1* ☐
- Individual heating/cooling powered by gas or electricity *0* ☑

1.3 Pollution: Air, Noise and Light

a. Does the development plan to implement reduction strategies for dust emissions from construction sites? *2* ☑

b. Does the development plan to include a biomass boiler? - ☐

- If yes, please refer to the biomass guidelines for the Borough of Richmond, and see guidance for supplementary information. If the proposed boiler is of a qualifying size, you may need to complete the information request form found on the Richmond websit - ☐

c. Please tick only one option below

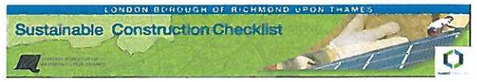
- Has the development taken measures to reduce existing noise and enhance the existing soundscape of the site? *3* ☐
- Has the development taken care to not create any new noise generation/transmission issues in its intended *1* ☑

d. Has the development taken measures to reduce light pollution impacts on character, residential amenity and biodiversity? *3* ☑

e. Have you attached a Lighting Pollution Report? - ☐

Subtotal 12.0

Please give any additional relevant comments to the Energy Use and Pollution Section below



2. TRANSPORT

2.1 Provision for the safe efficient and sustainable movement of people and goods

a. Does your development provide opportunities for occupants to use innovative travel technologies, such as electric cars? 2 ☑

b. **For major developments ONLY**: Has a Transport Assessment been produced for your development based on TfL's Best Practice Guidance?
- If you have provided a Transport Assessment as part of your planning application, please tick here and move to Section 3 of this Checklist. 5 ☑

c. **For smaller developments ONLY**: Have you provided a Transport Statement? 5 ☐

d. Does your development provide cycle storage? 2 ☑
- If so, for how many bicycles? 146
- Is this shown on the site plans? - ☑

e. Will the development create or improve links with local and wider transport networks? If yes, please provide details below. 2 ☑

Subtotal 11.0

Please give any additional relevant comments to the Transport Section below

Comment to point a: 31 of the units provide garages which provide the opportunity for electric vehicle charging.
Comment to point d: Only communal stores for apartments shown on plan, other storage spaces assumed in gardens for houses
Comment to point e: A new pedestrian and cycle route is to be provided via Garth Road. New pedestrian links are also provided to Latchmere Lane and St Anne Boleyns Walk, improving permeability and access to the local facilities and bus stops on Tudor Drive.

3 BIODIVERSITY

3.1 Minimising the threat to biodiversity from new buildings, lighting, hard surfacing and people

a. Does your development involve the loss of an ecological feature or habitat, including a loss of garden or other green space compared to the pre-development site? (Tick if yes) -2 ☑
- If so, please state how much in sqm? 5,400 sqm

b. Does your development involve the removal of any tree(s)? (Tick if yes) - ☑
- If so, has a tree report been provided in support of your application? (Tick if yes) - ☑

c. Does your development plan to add any tree(s) on site? (Tick if yes) - ☑

d. Please indicate which features and/or habitats that your development will incorporate to improve on site biodiversity:

• Pond, reedbed or extensive native planting	6 ☐	Area provided:	TBC at detailed design	sqm
• An extensive green roof	5 ☐	Area provided:	TBC at detailed design	sqm
• An intensive green roof	4 ☐	Area provided:	TBC at detailed design	sqm
• A brown roof	1 ☐	Area provided:	TBC at detailed design	sqm
• Garden space	4 ☑	Area provided:	TBC at detailed design	sqm
• Additional native and/or wildlife friendly planting to peripheral areas	3 ☑	Area provided:	TBC at detailed design	sqm
• Additional planting to peripheral areas	2 ☑	Area provided:	TBC at detailed design	sqm
• A living wall	2 ☐	Area provided:	TBC at detailed design	sqm
• Bat boxes	0.5 ☐			
• Other	0.5 ☑			

Subtotal 8.0

Please give any additional relevant comments, including specific reasons why living roofs cannot be incorporated in proposals with roof plate areas of 100sqm or more should this be the case, to the Biodiversity Section below

No roof plates are above 100sqm in size. Living roofs are not required for this development as no major grassland areas are being lost to development. 'Other' includes swale ditch planting

4 FLOODING AND DRAINAGE

4.1 Reducing and mitigating the risks of flooding and other impacts of climate change in the borough

a. Is your site located in an area at risk of flooding? (Tick if yes) - ☐

If yes, please tick only ONE option below:
- New development in a high flood risk zone (3a) -2 ☐
- New development in a medium flood risk zone (2) -1 ☐
- Redevelopment of an existing building or conversion 0 ☐

Is your development within 20 metres of a watercourse or a flood defence? (Tick if yes) - ☐

Have you submitted a Flood Risk Assessment? (Tick if yes) - ☐

b. Which of the following measures of the drainage hierarchy are incorporated onto your site? (tick all that apply)
- Store rainwater for later use 5 ☐
- Use of infiltration techniques such as porous surfacing materials to allow drainage on-site 3 ☑
- Attenuate rainwater in ponds or open water features 4 ☑
- Store rainwater in tanks for gradual release to a watercourse 3 ☐
- Discharge rainwater directly to watercourse 2 ☐
- Discharge rainwater to surface water drain 1 ☐
- Discharge rainwater to combined sewer 0 ☐

c. Please give the change in area of permeable surfacing which will result from your development proposal: N/A sqm
Please provide details of the permeable surfacing below *please represent a loss in permeable area as a negative number*

Subtotal 7.0

Please give any additional relevant comments to the Flooding and Drainage Section below

Point C is not applicable, as all drainage will be by infiltration to the ground.

A Flood Risk Assessment has been prepared as part of the planning application.

5 IMPROVING RESOURCE EFFICIENCY

5.1 Reduce waste generated and amount disposed of by landfill though increasing level of re-use and recycling

a. Will demolition be required on your site prior to construction? 0 ☐
- Will 10% of demolition waste or more be reused in the new development? 1 ☐
- Will 15% of demolition waste or more be recycled? 1 ☑

b. Does your site have any contaminated land or has the site previously been used for potentially contaminating uses? 1 ☐
- Have you submitted an assessment of the site contamination? 2 ☐
- Are plans in place to remediate the contamination? 2 ☐
- Have you submitted a remediation plan? 1 ☐

c. Are plans in place to include composting on site? 1 ☑

5.2 Reducing levels of water waste

a. Will the following measures of water conservation be incorporated into the development? (Please tick all that apply):
- Fitting of water efficient taps, shower heads, dual flush toilets etc 1 ☑
- Use of water efficient A or B rated appliances 1 ☑
- Rainwater harvesting for internal use 4 ☐
- Greywater systems 4 ☐
- Fit a water meter 1 ☑

b. What is the water consumption target of the development (in litres per person per day?) 105 new built / 117 refurb
- The recommended target for conversions or other small scale residential properties is 105 litres/person/day. Will this be met? (Indicate if yes) 1 ☑

c. If applicable, have you submitted evidence that capacity exists in the public sewerage and water supply network? ☑

Subtotal 6.0

Please give any additional relevant comments, including reasons why the water consumption target has not been met should this be the case, to the Improving Resource Efficiency Section below

The targets shown in section 5.2.b above are in line with what is required for Code for Sustainable Homes Level 4 (for new-built houses) and BREEAM Domestic Refurbishment Excellent (for refurbished apartments). Please refer to the Pre-assessments for both of these environmental assessment methods provided as part of this planning application.

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Sustainable Construction Checklist

6 DESIGN STANDARDS AND ACCESSIBILITY

6.1 Ensure flexible adaptable and long-term use of structures

a. **If the development is residential,** will it meet the requirements set out in the Residential Design Standards SPD for internal space and layout? 1 ☑
- If the standards are not met, in the space below, please provide details of the functionality of the internal space and layout.

All standards proposed met.

AND

b. **If the development is residential,** will it meet the criteria included in the Lifetime Home Standards? 2 ☑
- If not all Lifetime Homes criteria are to be met, in the space below, please provide details of any accessibility measures included in the development.

All criteria proposed met

c. Are 10% or more of the units in the development wheelchair accessible? 1 ☑

OR

d. **If the development is non-residential,** does it comply with requirements included in Richmond's Design for Maximum Access SPG? 2 ☐
- Please provide details of the accessibility measures specified in the Maximum Access SPG that will be included in the development

N/A

Subtotal 3

Please give any additional relevant comments to the Design Standards and Accessibility Section below

LBRUT Sustainable Construction Checklist- Scoring Matrix **TOTAL** 63

Score for new construction	Score for extensions or conversions	Rating	Significance
80 or more	70 or more	A+	Project strives to achieve highest standard in energy efficient sustainable development
71-79	61-69	A	Makes a major contribution towards achieving sustainable development in Richmond
51-70	41-60	B	Helps to significantly improve the Borough's stock of sustainable developments
36-50	26-40	C	Minimal effort to increase sustainability beyond general compliance
35 or less	25 or less	FAIL	Does not comply with planning policies on sustainability and climate change

Authorisation:

I herewith declare that I have filled in this form to the best of my knowledge

Signature [signature] Date 18-12-2013