

BREEAM New Construction 2014

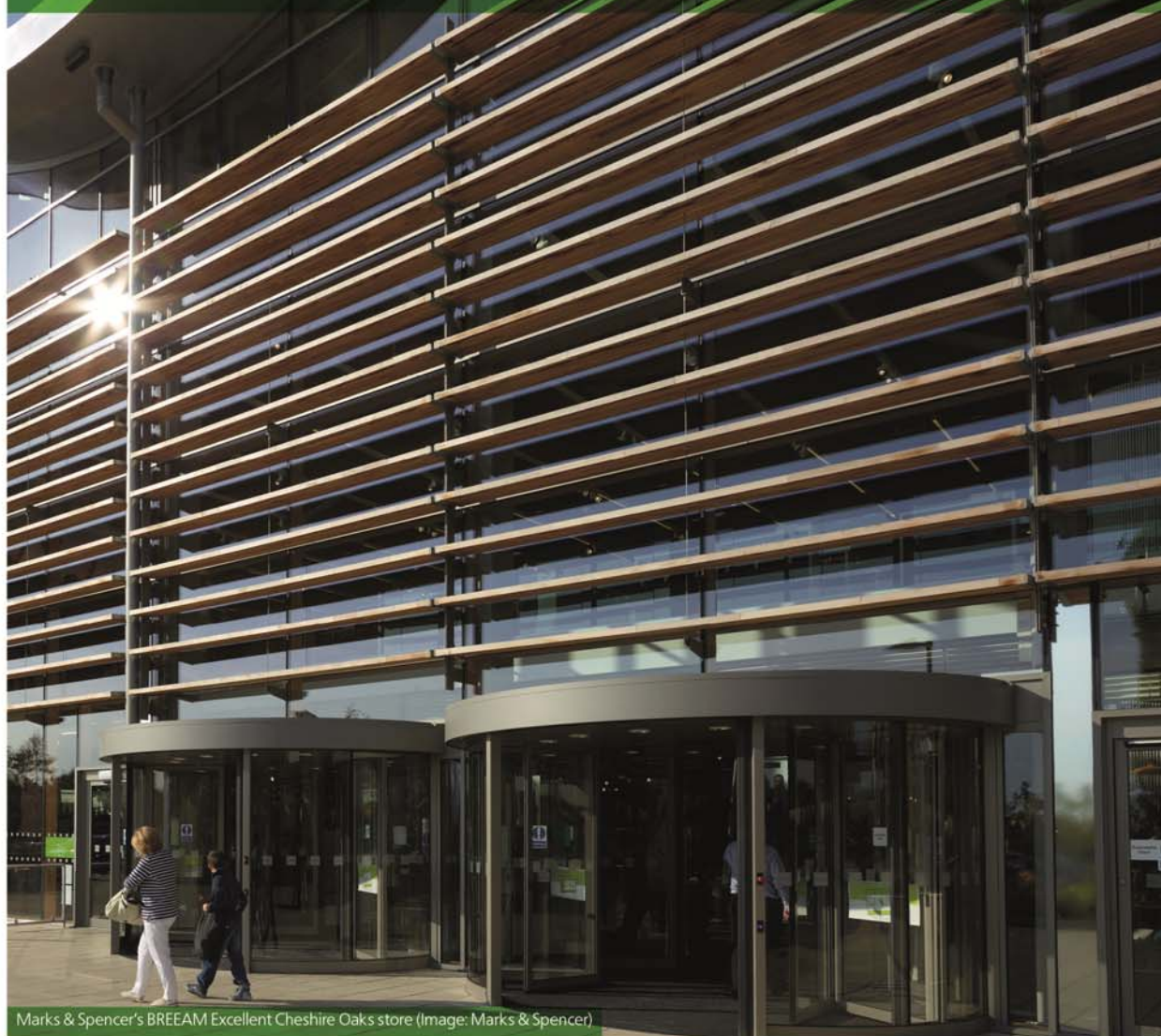
Dovedale

Design (Interim)

Dovedale

13 July 2018

Assessment Report



Marks & Spencer's BREEAM Excellent Cheshire Oaks store (Image: Marks & Spencer)

Assessment details

Assessment references

Registration number:	BREEAM-0067-6411	Date created:	3/4/2018
Assessor name: First:	Ian	Surname:	Bacon
Assessor licence number:	IB01		
Assessor organisation:	Blewburton Limited		
Architect name:	Archadia Chartered Architects		
Developer name:	Feltham Construction		
Property owner	A2Dominion Group		

Site details

Site name:	Dovedale
Address:	Albert Road Caversham
Town:	Reading
County:	Berkshire
Post code:	RG4
Country:	

Certificate details

The certificate will have the name of the architect (if entered above) and the name of the developer (from above).

Any other names to appear on the certificate are listed below:

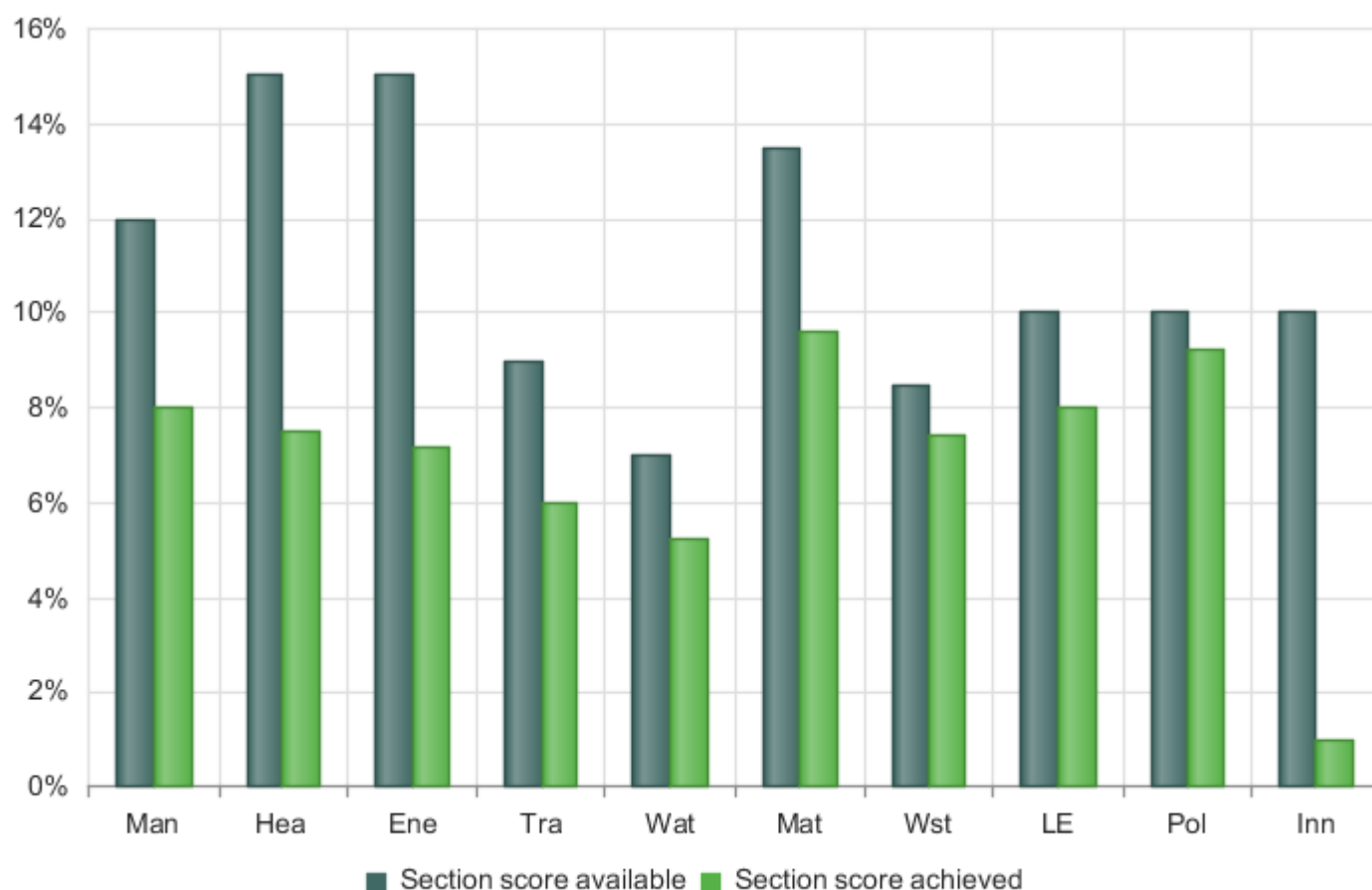
Name	Label
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BREEAM rating

BREEAM Rating

	Credits available	Credits achieved	% Credits achieved	Weighting	Category score
Man	21.0	14.0	66.67%	12.00%	8.00%
Hea	18.0	9.0	50.00%	15.00%	7.50%
Ene	23.0	11.0	47.83%	15.00%	7.17%
Tra	9.0	6.0	66.67%	9.00%	6.00%
Wat	8.0	6.0	75.00%	7.00%	5.25%
Mat	14.0	10.0	71.43%	13.50%	9.64%
Wst	8.0	7.0	87.50%	8.50%	7.43%
LE	10.0	8.0	80.00%	10.00%	8.00%
Pol	13.0	12.0	92.31%	10.00%	9.23%
Inn	10.0	1.0	10.00%	10.00%	1.00%
Total	134.0	84.0	62.69%	-	69.23%
Rating	-	-	-	-	Very Good

Performance by environmental category



Issue scores

Please Note: X means the exemplary credit for the relevant issue

Management

Man 01 Project brief and design	Man 02 Life cycle cost and service life planning	Man 03 Responsible construction practices	Man03X	Man 04 Commissioning and handover	Man 05 Aftercare	Man05X
2 / 4	1 / 4	4 / 6	0 / 1	4 / 4	3 / 3	1 / 1

Health and Wellbeing

Hea 01 Visual Comfort	Hea01X	Hea 02 Indoor Air Quality	Hea02X	Hea 03 Safe containment in laboratories	Hea 04 Thermal comfort	Hea 05 Acoustic Performance	Hea 06 Safety and Security
1 / 4	0 / 1	3 / 5	0 / 2	N/A	0 / 3	3 / 4	2 / 2

Energy

Ene 01 Reduction of energy use and carbon emissions	Ene01X	Ene 02 Energy Monitoring	Ene 03 External Lighting	Ene 04 Low carbon design	Ene 05 Energy Efficient Cold Storage	Ene 06 Energy efficient transportation systems	Ene 07 Energy Efficient Laboratory Systems	Ene 08 Energy Efficient Equipment	Ene 09 Drying Space
2 / 12	0 / 5	1 / 1	1 / 1	1 / 3	N/A	3 / 3	N/A	2 / 2	1 / 1

Transport

Tra 01 Public Transport Accessibility	Tra 02 Proximity to Amenities	Tra 03 Cyclist facilities	Tra 04 Maximum Car Parking Capacity	Tra 05 Travel Plan
2 / 3	2 / 2	1 / 1	0 / 2	1 / 1

Water

Wat 01 Water Consumption	Wat01X	Wat 02 Water Monitoring	Wat 03 Water Leak Detection	Wat 04 Water Efficient Equipment
3 / 5	0 / 1	1 / 1	2 / 2	N/A

Materials

Mat 01 Life Cycle Impacts	Mat01X	Mat 02 Hard Landscaping and Boundary Protection	Mat 03 Responsible Sourcing of materials	Mat03X	Mat 04 Insulation	Mat 05 Designing for durability and resilience	Mat 06 Material efficiency
6 / 6	0 / 3	0 / 1	2 / 4	0 / 1	1 / 1	1 / 1	0 / 1

Waste

Wst 01 Construction	Wst01X	Wst 02 Recycled	Wst02X	Wst 03 Operational	Wst 04 Speculative	Wst 05 Adaptation to	Wst05X	Wst 06 Functional
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Waste Management	Aggregates			Waste	Floor and Ceiling Finishes	climate change	adaptability	
4 / 4	0 / 1	0 / 1	0 / 1	1 / 1	N/A	1 / 1	0 / 1	1 / 1

Land Use and Ecology

LE 01 Site Selection	LE 02 Ecological Value of Site and Protection of Ecological Features	LE 03 Minimising impact on existing site ecology	LE 04 Enhancing Site Ecology	LE 05 Long Term Impact on Biodiversity
1 / 2	2 / 2	2 / 2	1 / 2	2 / 2

Pollution

Pol 01 Impact of Refrigerants	Pol 02 NOx Emissions	Pol 03 Surface Water Run off	Pol 04 Reduction of Night Time Light Pollution	Pol 05 Noise Attenuation
3 / 3	3 / 3	4 / 5	1 / 1	1 / 1

Innovation

Inn 01 Innovation

N/A

Inn01X

0 / 10

Initial details

Albert Road

Assessment criteria

Version number : v4.0

Project scope : New Construction (Fully Fitted)

Building floor area (GIA) m2 : 4159.4

Building type (main description) : Multi-Residential Accommodation

Building type (sub-group) :
Sheltered accommodation

Multi-Residential -

Building floor area (NIFA) m2 : 4023.6

Assessment stage : Design (interim)

Location type : Large urban (>250,000 population)

Building services - heating system type : Wet system

Building services - cooling system type : None

Building services - domestic hot water system type : Centralised supply and distribution

Building service - controls : Standard controls (time/temperature)

Does water heating contribute less than 10% of the buildings total energy consumption? : Yes

Commercial/industrial refrigeration and storage systems : No

Building user transportation systems (lifts and/or escalators) : Yes

Laboratory function/area and size category : No laboratory

Laboratory containment level : No laboratory

Fume cupboard(s) and/or other containment devices : No

Unregulated water uses present? (e.g. vehicle wash system, irrigation) : No

Is external lighting specified within the construction zone? : Yes

Category assessment

Management | Man

Man 01 Project brief and design

To recognise and encourage an integrated design process that optimises building performance.

Site : Albert Road

ASSESSMENT CRITERIA

Stakeholder consultation (project delivery) :	Yes
Stakeholder consultation (third party) :	Yes
Sustainability champion (design) :	No
Sustainability champion (monitoring progress) :	

Credits awarded : 2.0

Comments :

The project delivery stakeholders have identified and defined their roles, responsibilities and contributions to the project. Third party stakeholder consultation has also been planned and executed, with feedback being given to the Design Team to inform decisions moving forwards.

Evidence linked to Man 01 Project brief and design

Document type	Document reference	Comments	Dwelling(s)
Other	Dovedale Programme		All
Other	P15-013, project directory		All

Man 02 Life cycle cost and service life planning

To deliver whole life value from investment and promote economic sustainability by recognising and encouraging the use and sharing of life cycle costing and service life planning to improve design, specification and through-life maintenance and operation.

Site : Albert Road

ASSESSMENT CRITERIA

Elemental life cycle cost (LCC) :	No
Component level LCC plan :	No
Capital cost reporting :	Yes
Capital cost of the project :	1844

Credits awarded : 1.0

Comments :

The anticipated capital cost of the project has been reported

Evidence linked to Man 02 Life cycle cost and service life planning

Document type	Document reference	Comments	Dwelling(s)
Excel/XML output	Dovedale cost breakdown for BREEAM		All

Man 03 Responsible construction practices

To recognise and encourage construction-sites which are managed in an environmentally and socially considerate, responsible and accountable manner.

Site : Albert Road

ASSESSMENT CRITERIA

Is all site timber used in the project 'legally harvested and traded timber'? :	Yes
Environmental Management :	Yes
Construction stage sustainability champion :	No
Considerate construction :	2
Monitoring of construction site impact (criterion 8) :	Yes
Utility consumption :	Yes
Transport of construction material and waste :	No
Exemplary level criteria :	No

Credits awarded : 4.0

Comments :

Responsibility will be assigned to an individual(s) for monitoring, recording and reporting energy and water consumption data resulting from all construction processes.

They will monitor and record data on energy consumption (kWh) from the use of construction plant, equipment (mobile and fixed) and site accommodation and using the collated data, report the energy consumption (total kWh and kWh/£100k of project value) and carbon dioxide emissions (total kgCO₂eq and kgCO₂eq/£100k of project value) from the construction process via the BREEAM scoring and reporting tool.

They will also monitor and record data on potable water consumption (m³) from the use of construction plant, equipment (mobile and fixed) and site accommodation necessary for completion of all construction processes and using the collated data report the total net water consumption (m³) from the construction process via the BREEAM scoring and reporting tool.

Feltham Construction operates an Environmental Management System for construction and related services and this is accredited to ISO14001.

The site is subject to Feltham Construction's pollution prevention policies and procedures which comply with the EA's 'Building a Better Environment, a guide for developers' Environmental Checklist.

Finally, there is a commitment that all site timber used for construction purposes on the project is to be sourced in accordance with the UK Government's Timber Procurement Policy.

Evidence linked to Man 03 Responsible construction practices

Document type	Document reference	Comments	Dwelling(s)
Email	CCS sign up confirmation		All
Other	Feltham Construction EMS Certificate		All
Specification	Dovedale BREEAM spec Design FINAL	See section 8.2	All

Man 04 Commissioning and handover

To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.

Site : Albert Road

ASSESSMENT CRITERIA

Commissioning schedule and responsibilities :	Yes
Commissioning building services :	Yes

Testing and inspecting building fabric :	Yes
Handover - Has a Building User Guide been developed prior to handover? :	Yes
Handover - Has a training schedule been prepared for building occupiers/managers? :	Yes

Credits awarded : 4.0

Comments :

A guide will be produced for the building covering information on technical and non-technical issues relevant to all potential users of the building and a training schedule will be prepared for and delivered to building management to cover the BUG, as well as aftercare provision.

An air tightness test will be undertaken for each domestic unit and the communal areas overall in accordance with the appropriate standard and by a professional holding an ATTMA qualification at organisational level. The surveys will confirm avoidance of air leakage paths through the fabric (except through intentional openings). The target rate is 5.00 or below. Any defects identified via the post construction inspection will be rectified and tested again to ensure compliance.

A thermographic survey to cover 100% of the treated spaces that includes all elements of the building fabric that enclose an internal heated and/or conditioned (treated) zone of the building will be undertaken by a suitably qualified professional holding a valid ATTMA Level 2 certificate in thermography. Any defects identified via the post construction inspection will be rectified and tested again to ensure compliance.

An appropriate project team member(s) will be appointed to monitor and programme pre-commissioning, commissioning and, where necessary, re-commissioning of all relevant building services to the building and commissioning is to be carried out in line with current Building Regulations, BSRIA and CIBSE guidelines and/or other appropriate standards, where applicable. Where complex systems are to be commissioned, such as PV arrays, BMS etc., a specialist contractor will be required and appointed.

Evidence linked to Man 04 Commissioning and handover

Document type	Document reference	Comments	Dwelling(s)
Other	Dovedale Programme		All
Letter	Man04&5 commissioning letter - BMS		All
Letter	Man04&5 commissioning letter - PV		All
Letter	Man04&5 commissioning letter - Ventilation		All
Letter	Man04&5 non-complex commissioning letter		All
Other	P15-013 Handover staff training		All
Specification	Dovedale BREEAM spec Design FINAL	See sections 14.1/14.2/14.3	All

Man 05 Aftercare

To provide post-handover aftercare to the building owner/occupants during the first year of occupation to ensure the building operates and adapts, where relevant, in accordance with the design intent and operational demands.

Site : Albert Road

ASSESSMENT CRITERIA

Aftercare support :	Yes
Seasonal commissioning :	Yes
Post occupancy evaluation :	Yes
Exemplary level criteria :	Yes

Credits awarded : 3.0

Exemplary credits awarded : 1.0

Comments :

The following seasonal commissioning responsibilities will be completed by a specialist commissioning manager over a minimum 12 month period, once the building becomes occupied:

- Testing of all building services under full load conditions, i.e. heating equipment in mid-winter, cooling/ventilation equipment in mid-summer, and under part load conditions (spring/autumn);
- Where applicable, testing should also be carried out during periods of extreme (high or low) occupancy;
- Interviews with building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems;
- Re-commissioning of systems (following any work needed to serve revised loads), and incorporating any revisions in operating procedures into the O&M manuals.

The facilities management team or equivalent will undertake collection of and analysis at quarterly intervals over a period of at least 3 years after occupation of:

1. Occupant satisfaction (facilities, access etc., energy and water consumption data;
2. Compare this with what was expected in terms of targets for reduction set for energy and water consumption and;
3. Analyse any discrepancies with a view of adjusting systems if they are not operating as expected/designed;
4. Feedback any lessons learned to the design team and developer for use in future projects;

Evidence linked to Man 05 Aftercare

Document type	Document reference	Comments	Dwelling(s)
Letter	Dovedale BREEAM Man05 Letter		All
Letter	Man04&5 commissioning letter - BMS		All
Letter	Man04&5 commissioning letter - PV		All
Letter	Man04&5 commissioning letter - Ventilation		All
Letter	Man04&5 non-complex commissioning letter		All
Specification	Dovedale BREEAM spec Design FINAL	See sections 14.4 & 14.5	All

Health and Wellbeing | Hea

Hea 01 Visual Comfort

To ensure daylighting, artificial lighting and occupant controls are considered at the design stage to ensure best practice in visual performance and comfort for building occupants.

Site : Albert Road

ASSESSMENT CRITERIA

Glare control :	No
Daylighting (building type dependant) :	0
View out :	No
Internal and external lighting levels, zoning and controls :	Yes
Exemplary level daylighting :	No

Credits awarded : 1.0

Comments :

All fluorescent and compact fluorescent lamps are to be fitted with high frequency ballasts.

All internal lighting in all relevant areas of the building to be designed to provide an illuminance (lux) level appropriate to the tasks undertaken, accounting for building user concentration and comfort levels. The lighting design strategy allows for illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. For those areas where computer screens are regularly used, the lighting design will comply with CIBSE Lighting Guide 7 sections 3.3, 4.6, 4.7, 4.8 and 4.9.

All lighting to be zoned to allow for occupant control in accordance with the criteria that follows for relevant areas present within the building: In office areas, zones of no more than four workplaces & workstations adjacent to windows/atria and other building areas separately zoned and controlled.

External lights shall be provided with an average initial luminous efficacy of not less than 60 luminaire lumens per circuit Watt and the external lighting strategy overall has been designed in compliance with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011. In addition, illuminance levels for lighting in all external areas within the construction zone are specified in accordance with BS 5489-1:2013 and BS EN12464-2:2014.

Evidence linked to Hea 01 Visual Comfort

Document type	Document reference	Comments	Dwelling(s)
Drawing/Plan	100-1 P1 - GF elec ph.1		All
Drawing/Plan	100-2 P1 - GF elec ph.2		All
Drawing/Plan	100-3 P1 - GF elec ph.3		All
Drawing/Plan	101-1 P1 - 1F communal elec		All
Drawing/Plan	102-1 P1 - 2F communal elec		All
Drawing/Plan	103-1 P1 - 3F communal elec		All
Drawing/Plan	1493-ME-001 - Typ apt elec layout		All
Specification	Dovedale BREEAM spec Design FINAL	See sections 4.1 & 4.2	All
Drawing/Plan	10 - FC420 FINAL External Lighting 1493-E-900 P2		All

Hea 02 Indoor Air Quality

To recognise and encourage a healthy internal environment through the specification and installation of appropriate ventilation, equipment and finishes.

Site : Albert Road

ASSESSMENT CRITERIA

Min. sources of air pollution: indoor air quality plan :	Yes
Ventilation :	No
VOCs (products) :	Yes
Exemplary level VOCs (products) :	0
VOCs (post construction) :	Yes
Adaptability - potential for natural ventilation :	No

Credits awarded : 3.0

Comments :

An indoor air quality plan will be produced to cover removal, dilution and control of contaminant sources, procedures for pre-occupancy flush out and 3rd party testing and analysis and this will be undertaken in accordance with the relevant standards. Formaldehyde and total volatile organic compound (VOC) concentration levels will be measured post construction (but pre-occupancy) and is targeted to be less than or equal to 100µg/m³ averaged over 30 minutes and less than 300µg/over 8 hours, respectively.

All decorative paints, varnishes and additional product categories listed below will meet the standards and testing requirements listed in Table 18 of the BREEAM 2014 New Construction manual.

Evidence linked to Hea 02 Indoor Air Quality

Document type	Document reference	Comments	Dwelling(s)
Consultant's report	Dovedale. Indoor Air Quality Plan		All
Specification	Dovedale BREEAM spec Design FINAL	See section 2.4	All

Hea 03 Safe containment in laboratories

To recognise and encourage a healthy internal environment through the safe containment and removal of pollutants.

Site : Albert Road

ASSESSMENT CRITERIA - NA

Credits awarded : 0.0

Evidence linked to Hea 03 Safe containment in laboratories

No evidence has been linked to this issue yet

Hea 04 Thermal comfort

To ensure that appropriate thermal comfort levels are achieved through design, and controls are selected to maintain a thermally comfortable environment for occupants within the building.

Site : Albert Road

ASSESSMENT CRITERIA

Thermal modelling :	No
Adaptability - for a projected climate change scenario :	

Thermal zoning and control :

Credits awarded : 0.0

Evidence linked to Hea 04 Thermal comfort

No evidence has been linked to this issue yet

Hea 05 Acoustic Performance

To ensure the building's acoustic performance including sound insulation meet the appropriate standards for its purpose.

Site : Albert Road

ASSESSMENT CRITERIA

Acoustic performance standards and testing requirements : 3

Credits awarded : 3.0

Comments :

A suitably qualified acoustician working for Applied Acoustic Design has been appointed to provide advice on influencing outline design solutions internal acoustic performance and they are satisfied that at this stage the proposals will meet BREEAM requirements as detailed below.

The intention is that indoor airborne sound insulation values will be at least 5db higher and that impact sound insulation values will be 5db lower than the performance standards required by the current Building Regulations. It is proposed to use appropriate Robust Details for this purpose, but it may also be necessary to undertake A programme of pre-completion acoustic testing and if so, this will be carried out by a compliant test body to ensure that the relevant spaces (as built) achieve the required performance standards. If testing identifies that spaces do not meet the standards, remedial works will be carried out prior to handover and occupation.

Evidence linked to Hea 05 Acoustic Performance

Document type	Document reference	Comments	Dwelling(s)
Consultant's report	P15-013, Dovedale Close acoustic report 170125 1.0		All
Specification	Dovedale BREEAM spec Design FINAL	See section 6.1	All

Hea 06 Safety and Security

To recognise and encourage effective measures that promote safe and secure use and access to and from the building.

Site : Albert Road

ASSESSMENT CRITERIA

Safe external access : Yes

Security of site and building : Yes

Credits awarded : 2.0

Comments :

There has been consultation with the local Crime Prevention Design Officer from an early stage of the design and their suggestions will be implemented to ensure that the scheme receives Secured by Design certification.

Key issues raised and to be addressed include:

- Â Access control measures;
- Â PAS24 standard SbD CERTIFIED to doors and windows;
- Â Mail delivery;
- Â External lighting and any potential for CCTV.

A dedicated cycle path will provide direct access from the site entrance to the cycle storage provided. Footpaths on-site provide direct access from the site entrance to the building entrance and connect to public footpaths off-site, providing practical and convenient access to local transport nodes and other off-site amenities.

Evidence linked to Hea 06 Safety and Security

Document type	Document reference	Comments	Dwelling(s)
Email	Re 477 Albert Road Caversham (41.4 KB)	E-mail recording advice from SbD officer after initial review of scheme	All
Drawing/Plan	FC420-0-02 rev C2A - Site Landscaping - 2017-07-31	Site plan showing footpaths and cycle lane	All
Specification	Dovedale BREEAM spec Design FINAL	See sections 11.4 & 12.0	All

Energy | Ene

Ene 01 Reduction of energy use and carbon emissions

To recognise and encourage buildings designed to minimise operational energy demand, primary energy consumption and CO2 emissions.

Site : Albert Road

ASSESSMENT CRITERIA

Country :	England
Actual building - Energy Demand :	134.21 MJ/m2/year
Notional building - Energy Demand :	131.77 MJ/m2/year
Actual building - Primary Energy :	145.68 kWh/m2/year
Notional building - Primary Energy :	153.15 kWh/m2/year
Actual building - Emissions (BER) :	25.3 kgCO2/m2/year
Notional building - Emissions (TER) :	26.5 kgCO2/m2/year
Does this building contain areas that require a SAP assessment? :	Yes
What proportion of the building's total floor area (GIA) does it apply to? :	64
SAP Actual building - Energy Demand :	81.91 MJ/m2/year
SAP Notional building - Energy Demand :	77.43 MJ/m2/year
SAP Actual building - Primary Energy :	60.74 kWh/m2/year
SAP Notional building - Primary Energy :	63.95 kWh/m2/year
SAP Actual building - Emissions :	15.31 kgCO2/m2/year
SAP Notional building - Emissions :	15.58 kgCO2/m2/year

BUILDING SCORE

Total 'area-weighted' BREEAM credits achieved :
Heating and cooling demand energy performance ratio (EPRed) :
Primary consumption energy performance ratio (EPRpc) :
CO2 energy performance ratio (EPRco2) :
Overall building energy performance ratio (EPRnc) :
% improvement BER/TER :
Calculate score :

ASSESSMENT CRITERIA

Credits achieved :	2
Energy production from on or near site technologies :	7.18 kWh/m2/yr
Exemplary credits :	0

Credits awarded : 2.0

Comments :

The building has been assessed as a combination of Part L1A and Part L2A under the B. Regs, so SAP calcs and a BRUKL have been undertaken. The floor area assessed under L1A is 2,667.2m/sq. and under L2A it is 1,492.2m/sq.

Evidence linked to Ene 01 Reduction of energy use and carbon emissions

Document type	Document reference	Comments	Dwelling(s)
Other	Dovedale Close brukl - Design Final		All
Excel/XML output	Ene01 supp calc tool - Dovedale		All
Consultant's report	FeltDove034 - 1 - SAP Worksheets		All

Ene 02 Energy Monitoring

To recognise and encourage the installation of energy sub-metering that facilitates the monitoring of operational energy consumption.

Site : Albert Road

ASSESSMENT CRITERIA

Sub-metering of major energy consuming systems : Yes

Credits awarded : 1.0

Comments :

Easily accessible metering will be supplied to the mains gas and electricity supplies for the building and will be further sub-metered through easily accessible sub-meters in the following, all feeding into a BMS:

Â Electricity for each floor plate

Â Electricity for the lifts

Evidence linked to Ene 02 Energy Monitoring

Document type	Document reference	Comments	Dwelling(s)
Drawing/Plan	8165-00-M-SC-PLT-01-D - Plant room schematic		All
Specification	Dovedale BREEAM spec Design FINAL	See section 4.3	All
Drawing/Plan	BMS schematics		All

Ene 03 External Lighting

To recognise and encourage the specification of energy efficient light fittings for external areas of the development.

Site : Albert Road

ASSESSMENT CRITERIA

Is external lighting specified in accordance with the relevant criteria? : Yes

Credits awarded : 1.0

Comments :

External lights shall be provided with an average initial luminous efficacy of not less than 60 luminaire lumens per circuit Watt and the external lighting strategy overall has been designed in compliance with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011. In addition, illuminance levels for lighting in all external areas within the construction zone are specified in accordance with BS 5489-1:2013 and BS EN12464-2:2014.

Fittings are to be controlled with a time-switch or daylight sensor to prevent operation during daylight hours and have presence detection in areas of intermittent pedestrian traffic. They will be automatically switched off between 23:00hrs and 07:00hrs (with the exception of safety and security lighting).

Where safety/security lighting is provided for use between 23:00hrs and 07:00hrs, this part of the lighting system will comply with the lower levels of lighting recommended during these hours in Table 2 of the ILPAs Guidance notes.

Evidence linked to Ene 03 External Lighting

Document type	Document reference	Comments	Dwelling(s)
Specification	Dovedale BREEAM spec Design FINAL	See section 4.2	All
Drawing/Plan	10 - FC420 FINAL External Lighting 1493-E-900 P2		All

Ene 04 Low carbon design

To encourage the adoption of design measures, which reduce building energy consumption and associated carbon emissions and minimise reliance on active building services systems.

Site : Albert Road

ASSESSMENT CRITERIA

Passive design analysis : No

Free cooling :

Low and zero carbon technologies : Yes

KPI - LOW AND/OR ZERO CARBON ENERGY GENERATION

Total on-site and/or near-site LZC energy generation :

Credits awarded : 1.0

Comments :

Following a LZC feasibility study, the recommendation to install a PV array will be followed. A PV array rated at 36.18kWp will be installed on the roof and angled at 30°; facing south. Installation will be by an MCS accredited company using MCS accredited products.

Evidence linked to Ene 04 Low carbon design

Document type	Document reference	Comments	Dwelling(s)
Consultant's report	LZC Options Appraisal - Dovedale		All
Drawing/Plan	Revised Roof PV Layout March 2017		All
Specification	Dovedale BREEAM spec Design FINAL	See section 5.0	All

Ene 05 Energy Efficient Cold Storage

To recognise and encourage the installation of energy efficient refrigeration systems, therefore reducing operational greenhouse gas emissions resulting from the system's energy use.

Site : Albert Road

ASSESSMENT CRITERIA - ISSUE NOT APPLIABLE TO BUILDING/DEVELOPMENT TYPE

Credits awarded : 0.0

Evidence linked to Ene 05 Energy Efficient Cold Storage

No evidence has been linked to this issue yet

Ene 06 Energy efficient transportation systems

To recognise and encourage the specification of energy efficient transportation systems.

Site : Albert Road

ASSESSMENT CRITERIA

Energy consumption :	Yes
Energy efficient features :	Yes

Credits awarded : 3.0

Comments :

The building will feature lift systems for internal movement between floors. An analysis of the transportation demand and usage patterns for the building has been carried out to determine the optimum number and size of lifts (including counter-balancing ratio) and the energy consumption has been estimated for two types of system.

The lift system to this building is to be supplied by Otis and will be their Energy Gen2 model. This includes a specification to operate in a standby condition during off-peak periods, the lift car lighting and display lighting providing an average lamp efficacy, (across all fittings in the car) of > 55 lamp lumens/circuit Watt and the lift using a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. There is no use of regenerative drives.

Evidence linked to Ene 06 Energy efficient transportation systems

Document type	Document reference	Comments	Dwelling(s)
Specification	Dovedale BREEAM spec Design FINAL	See section 11.3	All
Consultant's report	Traffic Calculations Rev 19 Dovedale Iss 0		All
Manufacturer's literature	Energy Gen2 ISO25745 rev 1Dovedale Iss0		All

Ene 07 Energy Efficient Laboratory Systems

To recognise and encourage laboratory areas that are designed to be energy efficient and minimise the CO2 emissions associated with their operational energy consumption.

Site : Albert Road

ASSESSMENT CRITERIA - ISSUE NOT APPLIABLE TO BUILDING/DEVELOPMENT TYPE

Credits awarded : 0.0

Evidence linked to Ene 07 Energy Efficient Laboratory Systems

No evidence has been linked to this issue yet

Ene 08 Energy Efficient Equipment

To recognise and encourage procurement of energy efficient equipment to ensure optimum performance and energy savings in operation.

Site : Albert Road

ASSESSMENT CRITERIA

Ref A Small power and plug in equipment :	Yes
Major impact :	No
Ref B Swimming pool :	No
Major impact :	
Ref C Communal laundry :	Yes
Major impact :	No
Ref D Data centre :	No
Major impact :	

Ref E IT-intensive operation areas :	No
Major impact :	
Ref F Residential areas :	Yes
Major impact :	Yes
Ref G Healthcare :	No
Major impact :	
Ref H Kitchen and catering facilities :	Yes
Major impact :	No
Significant majority contributors BREEAM compliant :	Yes

Credits awarded : 2.0

Comments :

Domestic scale white goods will have the following ratings (or better) under the EU Energy Efficiency Labelling Scheme where provided:

• Fridges, fridge freezers • A+

Evidence linked to Ene 08 Energy Efficient Equipment

Document type	Document reference	Comments	Dwelling(s)
Specification	Dovedale BREEAM spec Design FINAL	See section 4.4	All

Ene 09 Drying Space

To provide a reduced energy means of drying clothes.

Site : Albert Road

ASSESSMENT CRITERIA

Is there a risk of ligature for residents? :	No
Residential internal/external drying space and fixings :	Yes

Credits awarded : 1.0

Comments :

External rotary dryers will be provided with a combined line length of not less than 86m. They will be located within an enclosed space with a secure entrance, accessible to the residents of the building only.

Evidence linked to Ene 09 Drying Space

Document type	Document reference	Comments	Dwelling(s)
Drawing/Plan	FC420-0-02 rev C2A - Site Landscaping - 2017-07-31	See top end of site	All
Specification	Dovedale BREEAM spec Design FINAL	See section 13.0	All

Transport | Tra

Tra 01 Public Transport Accessibility

To recognise and encourage development in proximity of good public transport networks, thereby helping to reduce transport-related pollution and congestion.

Site : Albert Road

BUILDING TYPE CATEGORY (FOR PURPOSE OF TRA01 ISSUE ASSESSMENT)

Building type category (for purpose of Tra01 issue assessment) :	Multi-Residential Accommodation
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ASSESSMENT CRITERIA

Public transport accessibility index :	5
Building dedicated bus service :	No

Credits awarded : 2.0

Comments :

Bus stops are located just outside the site entrance on Albert Road (3 x services - 22, X39 & X40) and 530m away by safe walking route on Bridge Street (4 x services - 24, 27, 29 & 800)

Evidence linked to Tra 01 Public Transport Accessibility

Document type	Document reference	Comments	Dwelling(s)
Other	Reading network map		All
Excel/XML output	BREEAM UK NC 2014 Tra01 Calculator v1.0 - Dovedale		All
Other	X38-X39-X40 River Rapids - Timetable Leaflet		All
Other	red 22 times		All
Other	pink 24 times (1)		All
Other	LCS 27 29 times		All
Other	Bus 800 Reading to H. Wycombe		All

Tra 02 Proximity to Amenities

To encourage and reward a building location that facilitates easy access to local services and so reduces the environmental, social and economic impacts resulting from multiple or extended building user journeys, including transport-related emissions and traffic congestion.

Site : Albert Road

ASSESSMENT CRITERIA

Close proximity and accessible to applicable amenities :	2
--	---

Credits awarded : 2.0

Comments :

St. Andrews Church is 490m away on Albert Road, Caversham Court Gardens are 245m away off of St. Peters Hill, Amir Convenience Store (food store) is further along the same road at 355m distance and postal services are a further 50m down the same parade of shops, with Barclays Bank across the road on Bridge Street at a distance of 410m from the site. Day Lewis Pharmacy is 495m away on Church Street and Rocking Horse nursery is 420m away via a safe walking route.

Evidence linked to Tra 02 Proximity to Amenities

Document type	Document reference	Comments	Dwelling(s)
Drawing/Plan	Dovedale amenities 1		All
Drawing/Plan	Dovedale amenities 2		All

Tra 03 Cyclist facilities

To encourage building users to cycle, so promoting exercise and helping reduce congestion and emissions, by ensuring adequate provision of cyclist facilities.

Site : Albert Road

DETAILS

Building type category (for purpose of Tra03 issue assessment) :	Sheltered housing, care home, supported housing/living facility
Number of compliant cycle storage spaces provided :	4
Cyclist facilities provided :	Showers and changing facilities

ASSESSMENT CRITERIA

Cycle storage spaces :	Yes
Cyclist facilities :	Yes

Credits awarded : 1.0

Comments :

It is currently estimated that there will be up to 60 residents and up to 10 staff present on site at any one time. Secure cycle and buggy storage is provided for these occupants in a specific store within the main building. Space is supplied for a minimum of 3 buggies and this will also include provision of two charging points. There will also be capacity for the storage of 4 cycles with wall and/or floor mounted secure fixings supplied and sufficient space is provided for movement within the store.

Access to the stores will be by a key fob or similar secure arrangement and lighting will comply with the standards set down in section 4.2 of this document.

Compliant cyclist/buggy user facilities will be available to residents within their residential units and for workers a compliant shower and changing facility will be available on the third floor of the building.

Evidence linked to Tra 03 Cyclist facilities

Document type	Document reference	Comments	Dwelling(s)
Drawing/Plan	FC420-0-02 rev C2A - Site Landscaping - 2017-07-31	Cycle parking and buggy store locations shown on this drawing	All
Specification	Dovedale BREEAM spec Design FINAL	See section 11.1	All

Tra 04 Maximum Car Parking Capacity

To encourage the use of alternative means of transport other than the private car to and from the building, thereby helping to reduce transport-related emissions and traffic congestion associated with the building's operation.

Site : Albert Road

ASSESSMENT CRITERIA

Maximum parking capacity :	No
Credits achieved :	0

Credits awarded : 0.0

Comments :

Too many spaces to be able to claim

Evidence linked to Tra 04 Maximum Car Parking Capacity

No evidence has been linked to this issue yet

Tra 05 Travel Plan

To recognise the consideration given to accommodating a range of travel options for building users, thereby encouraging the reduction of reliance on forms of travel that have the highest environmental impact.

Site : Albert Road

ASSESSMENT CRITERIA

Transport plan based on site specific travel survey/assessment : Yes

Credits awarded : 1.0

Comments :

A travel plan has been produced and recommendations arising from this will be implemented in full.

Evidence linked to Tra 05 Travel Plan

Document type	Document reference	Comments	Dwelling(s)
Consultant's report	Dovedale Travel Plan		All
Specification	Dovedale BREEAM spec Design FINAL	See section 11.2	All

Water | Wat

Wat 01 Water Consumption

To reduce the consumption of potable water for sanitary use in new buildings from all sources through the use of water efficient components and water recycling systems.

Site : Albert Road

APPROACH

Please select the calculation procedure used :	Standard approach
Credits awarded :	3
Exemplary performance :	0

STANDARD APPROACH DATA

Water Consumption from building micro-components :	3 L/person/day
Water demand met via greywater/rainwater sources :	0 L/person/day
Total net water consumption :	
Improvement on baseline performance :	40 %

KEY PERFORMANCE INDICATOR - USE OF FRESHWATER RESOURCE

Total net Water Consumption :
Default building occupancy :

Credits awarded : 3.0

Comments :

A communal laundry will be provided with Miele Little Giant PWS 6065 6.5kg drum capacity washing machines (9.08 litres water use per kg/dry load) installed.

The communal kitchen will be specified to include pre-rinse tap nozzles set at no higher than 8.3l/min. There will not be a dishwasher installed.

Communal and staff ablution facilities will feature WCs with a 6.0/3.0l dual flush and basin taps with flow rates controlled by flow limiters to 3.0l/min.

Apartments will have the following specification:

- WCs with a 6.0/3.0l dual flush;
- Basin taps with flow rates controlled by flow limiters to 3.0l/min;
- Kitchen taps with flow rates controlled by flow limiters to 5.0l/min;
- Showers with flow rates controlled by flow limiters to 8.0l/min;
- No baths.

Evidence linked to Wat 01 Water Consumption

Document type	Document reference	Comments	Dwelling(s)
Excel/XML output	BREEAM NC2014 Wat01 Calculator - Dovedale		All
Manufacturer's literature	Little Giant Vario Laundry Equipment	See page 10 for water use and kg load figures	All
Specification	Dovedale BREEAM spec Design FINAL	See section 7.3	All

Wat 02 Water Monitoring

To ensure water consumption can be monitored and managed, and therefore encourage reductions.

Site : Albert Road

ASSESSMENT CRITERIA

Water meter on the mains water supply to the building(s) :	Yes
Metering/monitoring equipment on supply to plant/building areas :	Yes
Pulsed output on all relevant water meters :	Yes
Existing BMS connection :	N/A

Credits awarded : 1.0

Comments :

A single pulsed water meter will be installed to monitor the mains water supply to the building.

Sub metering (pulsed) will be in place for the communal laundry and kitchen/restaurant areas

Evidence linked to Wat 02 Water Monitoring

Document type	Document reference	Comments	Dwelling(s)
Drawing/Plan	8165-00-M-00-460-01 C - external mech services	Note the letter 'P' next to the meter location indicates that the meter is pulsed	All
Drawing/Plan	8165-00-M-SC-400-01 C - H2O schematic	Dwg showing sub-metering to laundry and kitchen facilities	All
Specification	Dovedale BREEAM spec Design FINAL	See section 7.1	All

Wat 03 Water Leak Detection

To reduce the impact of water leaks that may otherwise go undetected.

Site : Albert Road

ASSESSMENT CRITERIA

Leak detection on building's mains water supply :	Yes
Flow control device to each sanitary area/facility :	Yes

Credits awarded : 2.0

Comments :

An Aquilar Aquitron AT-WM leak detection system which is capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter will be installed. The leak detection system will feature:

- A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks is installed;
- Activation when the flow of water passing through the water meter/data logger is at a flow rate above a pre-set maximum for a pre-set period of time;
- The ability to identify different flow and therefore leakage rates over set time periods;
- The ability to be programmable to suit the owner/occupiers' water consumption criteria.

Aquilar Aquitron AT-PIR-SOV system flow control devices that regulate the supply of water to each communal/staff WC area/facility will be installed. For those areas with a single WC, this will be through the same switch that controls the lighting.

Evidence linked to Wat 03 Water Leak Detection

Document type	Document reference	Comments	Dwelling(s)
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Manufacturer's literature	AT-PIR-SOV Datasheet (v2)		All
Manufacturer's literature	AT-WM Data Sheet		All
Drawing/Plan	8165-00-M-00-460-01 C - external mech services		All
Specification	Dovedale BREEAM spec Design FINAL	See section 7.2	All

Wat 04 Water Efficient Equipment

To reduce unregulated water consumption by encouraging specification of water efficient equipment.

Site : Albert Road

ASSESSMENT CRITERIA - ISSUE NOT APPLICABLE TO BUILDING/DEVELOPMENT TYPE

Credits awarded : 0.0

Evidence linked to Wat 04 Water Efficient Equipment

No evidence has been linked to this issue yet

Materials | Mat

Mat 01 Life Cycle Impacts

To recognise and encourage the use of construction materials with a low environmental impact (including embodied carbon) over the full life cycle of the building.

Site : Albert Road

ASSESSMENT CRITERIA

Total Mat01 credits achieved :	6
Total Mat01 points achieved :	14.9
Number of building elements assessed :	6
Exemplary level compliant? :	No
Has IMPACT compliant software been used? :	No

KEY PERFORMANCE INDICATOR - EMBODIED GREENHOUSE GAS EMISSIONS BY ELEMENT

Total area of element m2 :	
External walls :	1815
Windows :	425.45
Roof :	1529.69
Upper floor construction :	2833.89
Internal wall :	3417.35
Floor finishes/coverings :	3138.62
Total impact kgCO2 eq. :	
External walls :	152904
Windows :	50534.32
Roof :	86305.99
Upper floor construction :	229545.09
Internal wall :	126522.86
Floor finishes/coverings :	223513.7
Area of element impact data relevant to m2 :	
External walls :	100
Windows :	100
Roof :	100
Upper floor construction :	100
Internal wall :	100
Floor finishes/coverings :	100

KEY PERFORMANCE INDICATOR - EMBODIED GREENHOUSE GAS EMISSIONS FOR BUILDING (ASSESSED ELEMENTS ONLY)

Total embodied greenhouse gas emissions for building (by assessed elements) :	869325.96 kgCO2 eq.
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Total embodied greenhouse gas emissions for building (by assessed elements) per m2 :	209.00273116314855 kgCO2 eq./m2
Proportion of applicable building elements that data reported covers :	4.5592705167173255 %

Credits awarded : 6.0

Comments :

Construction make up and areas taken from specification document and entered into Mat01 calc tool for award of credits above

Evidence linked to Mat 01 Life Cycle Impacts

Document type	Document reference	Comments	Dwelling(s)
Excel/XML output	BREEAM NC2014 Mat01 Calc Dovedale		All
Other	BRE Green Guide Green Guide 2008 ratings - brick external wall		All
Other	BRE Green Guide Green Guide 2008 ratings - Rendered external wall		All
Other	BRE Green Guide Green Guide 2008 ratings - tile hung external wall		All
Other	BRE Green Guide Green Guide 2008 ratings - uPVC windows		All
Other	BRE Green Guide Green Guide 2008 ratings - Velux rooflights		All
Other	BRE Green Guide Green Guide 2008 ratings - pitched roof		All
Other	BRE Green Guide Green Guide 2008 ratings - flat roof		All
Other	BRE Green Guide Green Guide 2008 ratings - upper floors		All
Other	BRE Green Guide Green Guide 2008 ratings - internal stud partitions		All
Other	BRE Green Guide Green Guide 2008 ratings - blockwork partitions		All
Other	BRE Green Guide Green Guide 2008 ratings - Tarkett flooring		All
Other	BRE Green Guide Green Guide 2008 ratings - Polysafe flooring		All
Other	BRE Green Guide Green Guide 2008 ratings - Homog. vinyl flooring		All
Other	BRE Green Guide Green Guide 2008 ratings - ceramic tile floors		All
Other	BRE Green Guide Green Guide 2008 ratings - Danfloor Equinox		All
Specification	Dovedale BREEAM spec Design FINAL	See sections 1.1-1.4, 1.6 & 1.7	All

Mat 02 Hard Landscaping and Boundary Protection

To recognise and encourage the specification of materials for boundary protection and external hard surfaces that have a low environmental impact, taking into account of the full life cycle of materials used.

Site : Albert Road

External hard landscaping and boundary protection :

No

Credits awarded : 0.0**Comments :**

Credit not targeted

Evidence linked to Mat 02 Hard Landscaping and Boundary Protection

No evidence has been linked to this issue yet

Mat 03 Responsible Sourcing of materials

To recognise and encourage the specification and procurement of responsibly sourced materials for key building elements.

Site : Albert Road**ASSESSMENT CRITERIA**

All timber and timber based products are 'Legally harvested and traded timber' :	Yes
Is there a documented sustainable procurement plan :	Yes
Percentage of available responsible sourcing of materials points achieved :	34
Please confirm the route used to assess Mat 02 :	Route 2: Proportion of materials responsibly sourced

Credits awarded : 2.0**Comments :**

Details taken from spec and processed in Mat03 tool and Sustainable Procurement Plan supplied

Evidence linked to Mat 03 Responsible Sourcing of materials

Document type	Document reference	Comments	Dwelling(s)
Specification	FCL sustainableprocurement-may 2015		All
Other	Acheson&Glover ISO14001		All
Other	Celotex ISO 14001 Certificate		All
Other	Hanson BES6001 CPRS00028		All
Other	Knauf BES6001 RS0050		All
Other	Brit Gypsum - Gyproc BES613170		All
Other	Kingspan BES6001 RS0014		All
Other	CERT-BES-6001-Gypframe-Metal		All
Other	Monier Redland ISO14001 ems-526399		All
Other	Wienerberger BES6001		All
Other	metsec-iso-14001-certificate		All
Other	Isover ISO14001		All
Other	Tarmac BES567267		All
Other	Tarmac BES568430		All
Other	Marshalls BES 6001 RS0008		All

Other	Polyfloor Standard XL P&P Jun17		All
Other	ISO-Certificate-14001 Danfloor		All
Excel/XML output	BREEAM-UK-NC-2014-Mat03-Calculator-Dovedale		All
Other	Vicaima-UK-Ltd--FSC-COC-Certificate-12-10-2016 1		All
Other	forest-stewardship-council-certificate - Premdor		All
Specification	Dovedale BREEAM spec Design FINAL	Sections 1.1-1.8	All

Mat 04 Insulation

To recognise and encourage the use of thermal insulation which has a low embodied environmental impact relative to its thermal properties

Site : Albert Road

ASSESSMENT CRITERIA

Embodied impact - insulation index : 3.62

Credits awarded : 1.0

Comments :

Materials details taken from spec and processed in Mat04 calc tool for score claimed above

Evidence linked to Mat 04 Insulation

Document type	Document reference	Comments	Dwelling(s)
Excel/XML output	Mat04 calc tool - Dovedale		All
Other	CELOTEX EPD		All
Manufacturer's literature	Celotex CW4000 productdatasheet		All
Manufacturer's literature	CelotexXR4000 productdatasheet		All
Other	Kingspan EPD		All
Manufacturer's literature	Kingspan TR27 flat roof		All
Other	Kingspan Gn. Guide ratings		All
Manufacturer's literature	Kingspan Tarec Kooltherm Technical Data Sheets UK		All
Specification	Dovedale BREEAM spec Design FINAL	Sections 1.1-1.3 & 2.1	All

Mat 05 Designing for durability and resilience

To recognise and encourage adequate protection of exposed elements of the building and landscape, therefore minimising the frequency of replacement and maximising materials optimisation.

Site : Albert Road

ASSESSMENT CRITERIA

Protecting vulnerable parts of the building from damage : Yes

Protecting exposed parts of the building from material degradation : Yes

Credits awarded : 1.0

Comments :

The architects have identified internal and external areas of the building that are potentially vulnerable and provided

features/solutions to prevent damage. These features/solutions will be fully implanted in the construction and specification for the buildings.

Evidence linked to Mat 05 Designing for durability and resilience

Document type	Document reference	Comments	Dwelling(s)
Consultant's report	FC420 - Man 05 - Resilience Durability		All
Specification	Dovedale BREEAM spec Design FINAL	See section 2.3	All

Mat 06 Material efficiency

To recognise and encourage measures to optimise material efficiency in order to minimise environmental impact of material use and waste.

Site : Albert Road

ASSESSMENT CRITERIA

Material efficiency measures have been identified, investigated and implemented during all RIBA stages :No

Credits awarded : 0.0

Comments :

Credit not targeted

Evidence linked to Mat 06 Material efficiency

No evidence has been linked to this issue yet

Waste | Wst

Wst 01 Construction Waste Management

To promote resource efficiency via the effective management and reduction of construction waste.

Site : Albert Road

ASSESSMENT CRITERIA

Construction resource management plan :	Yes
Compliant Pre-demolition audit :	Yes
Does the excavation waste meet the exemplary level requirements? :	No

KEY PERFORMANCE INDICATORS - CONSTRUCTION WASTE

Measure/units for the data being reported :	Tonnes
Non-hazardous construction waste data available :	Yes
Non-hazardous construction waste (excluding demolition/excavation) :	0.606 tonnes/100m ²
Total non-hazardous construction waste generated :	25.205963999999998 tonnes
Non-hazardous non-demolition const. waste diverted from landfill data available :	Yes
Non-hazardous non-demolition const. waste diverted from landfill :	80 %
Total non-hazardous non-demolition const. waste diverted from landfill :	20.164771199999997 tonnes
Total non-hazardous demolition waste diverted from landfill data available :	Yes
Total non-hazardous demolition waste generated :	817.36 tonnes
Non-hazardous demolition waste diverted from landfill :	90 %
Total non-hazardous demolition waste to disposal :	81.736 tonnes
Material for reuse :	
Material for recycling :	
Material for energy recovery :	
Hazardous waste to disposal :	

Credits awarded : 4.0

Comments :

A compliant Site Waste Management Plan has been produced for the whole site and will be fully implemented. The plan projects a total construction waste tonnage of 25 tonnes for the site as a whole. The total GIFA for the site is 4,122.5m², so this will see waste arising of 0.606 tonnes per 100m² for the development.

It is targeted to divert over 80% by tonnage of construction waste and over 90% of demolition waste from landfill.

Evidence linked to Wst 01 Construction Waste Management

Document type	Document reference	Comments	Dwelling(s)
Consultant's report	P15-013 ICE Pre demo audit Dovedale		All
Other	P15-013 SWMP issue 1 Dovedale		All

Specification

Dovedale BREEAM spec Design FINAL

See section 9.1

All

Wst 02 Recycled Aggregates

To recognise and encourage the use of recycled and secondary aggregates, thereby reducing the demand for virgin material and optimising material efficiency in construction.

Site : Albert Road

ASSESSMENT CRITERIA

Total % of high-grade aggregate that is recycled/secondary aggregate (Standard) : 0.0 %

Total % of high-grade aggregate that is recycled/secondary aggregate (Exemplary) : 0.0 %

% OF HIGH-GRADE AGGREGATE THAT IS RECYCLED/SECONDARY AGGREGATE - BY APPLICATION

Structural frame is applicable :

Structural frame :

Structural frame weight or volume :

Bitumen/hydraulically bound base, binder and surface courses for paved areas and roads applicable :

Bitumen/hydraulically bound base, binder and surface courses for paved areas and roads :

Bitumen/hydraulically bound base, binder and surface courses weight or volume :

Building foundations is applicable :

Building foundations :

Building foundations weight or volume :

Concrete road surfaces is applicable :

Concrete road surfaces :

Concrete road surfaces weight or volume :

Pipe bedding is applicable :

Pipe bedding :

Pipe bedding weight or volume :

Granular fill and capping is applicable :

Granular fill and capping :

Granular fill and capping weight or volume :

Credits awarded : 0.0

Comments :

Credit not targeted

Evidence linked to Wst 02 Recycled Aggregates

No evidence has been linked to this issue yet

Wst 03 Operational Waste

To recognise and encourage the provision of dedicated storage facilities for a building's operational-related recyclable waste streams, so that this waste is diverted from landfill or incineration.

Site : Albert Road

ASSESSMENT CRITERIA

Segregation and storage of operational recyclable waste volumes :	Yes
Static waste compactor(s) or baler(s) :	N/A
Vessel(s) for composting suitable organic waste :	Yes
Internal and, if applicable, communal storage & home compost facilities :	Yes

Credits awarded : 1.0

Comments :

There is dedicated bin store within the building, next to the plant room, to cater for the segregation and storage of operational recyclable waste volumes generated by the occupants of the building. The local authority, Reading Borough Council (RBC), will collect general waste and mixed recyclables that will be sorted into separate recyclable waste streams on arrival at their depot.

The dedicated space will be clearly labelled, to assist with storage and collection of the recyclable waste streams, accessible to building occupants/facilities operators for the deposit of materials and collections by the waste management contractor and of a capacity appropriate to the building type, size, number of units and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates. A water outlet is to be provided in the waste area for cleaning and hygiene purposes.

The commercial refuse storage requirements have been calculated in accordance with RBC requirements and the dedicated space is deemed acceptable to the needs of the building occupants.

Each apartment will have a container of no less than 30l capacity, split into three compartments of no less than 7l capacity, located in a non-obstructive position for recyclable materials

Evidence linked to Wst 03 Operational Waste

Document type	Document reference	Comments	Dwelling(s)
Specification	Dovedale BREEAM spec Design FINAL	See section 9.2	All

Wst 04 Speculative Floor and Ceiling Finishes

To encourage the specification and fitting of floor and ceiling finishes selected by the building occupant and therefore avoid unnecessary waste of materials.

Site : Albert Road

ASSESSMENT CRITERIA - ISSUE NOT APPLIABLE TO BUILDING/DEVELOPMENT TYPE

Credits awarded : 0.0

Evidence linked to Wst 04 Speculative Floor and Ceiling Finishes

No evidence has been linked to this issue yet

Wst 05 Adaptation to climate change

To recognise and encourage measures taken to mitigate the impact of extreme weather conditions arising from climate change over the lifespan of the building.

Site : Albert Road

ASSESSMENT CRITERIA

Adaptation to climate change - structural and fabric resilience :	Yes
Exemplary level - responding to adaptation to climate change :	No

Credits awarded : 1.0

Comments :

An adaptation to climate change strategy has been supplied and implemented by the architect in their designs

Evidence linked to Wst 05 Adaptation to climate change

Document type	Document reference	Comments	Dwelling(s)
Consultant's report	FC420 - Wst05 - Adaption to Climate Change		All

Wst 06 Functional adaptability

To recognise and encourage measures taken to accommodate future changes of use of the building over its lifespan.

Site : Albert Road

ASSESSMENT CRITERIA

Functional adaptability : Yes

Credits awarded : 1.0

Comments :

An functional adaptability strategy has been supplied and implemented by the architect and M&E team in their designs

Evidence linked to Wst 06 Functional adaptability

Document type	Document reference	Comments	Dwelling(s)
Consultant's report	FC420 - Wst06 - Functional Adaptability		All

Land Use and Ecology | LE

LE 01 Site Selection

To encourage the use of previously occupied and/or contaminated land and avoid land which has not been previously disturbed.

Site : Albert Road

ASSESSMENT CRITERIA

Previously occupied land :	Yes
Contaminated land :	No

Credits awarded : 1.0

Comments :

The site, until recently, consisted of a building formerly used as a supported living unit/care home with associated landscaping and hardstanding. This previous development of the site has been overlaid against the proposed development and the new building footprint is calculated to occupy 81.97% of land that was previously building or hardstanding.

Evidence linked to LE 01 Site Selection

Document type	Document reference	Comments	Dwelling(s)
Drawing/Plan	Topo Dovedale	Drawing that shows original site layout	All
Drawing/Plan	Annotated Site Plan - Dovedale	Proposed site layout	All

LE 02 Ecological Value of Site and Protection of Ecological Features

To encourage development on land that already has limited value to wildlife and to protect existing ecological features from substantial damage during site preparation and completion of construction works.

Site : Albert Road

ASSESSMENT CRITERIA

Ecological value of the land defined using :	A Suitably Qualified Ecologist
Land of low ecological value :	Yes
Protection of ecological features :	Yes

Credits awarded : 2.0

Comments :

An ecology report has been undertaken for the site by AA Environmental and includes the results of a site based survey. It confirms that the site is of no ecological value and that all relevant UK and EU legislation relating to protection and enhancement of ecology will be complied with during the design and construction process, subject to site works likely to affect potential bird nesting habitat being timed to avoid the main bird nesting season, which, in general, runs from March to August. If this is not possible, a check will be carried out prior to works to ensure there are no active nests present.

Evidence linked to LE 02 Ecological Value of Site and Protection of Ecological Features

Document type	Document reference	Comments	Dwelling(s)
Specification	Dovedale BREEAM spec Design FINAL	See section 10.0	All
Consultant's report	GN13 BREEAM Ecologists report (Jan 2018)		All
Drawing/Plan	Annotated Site Plan - Dovedale		All

LE 03 Minimising impact on existing site ecology

To minimise the impact of a building development on existing site ecology.

Site : Albert Road

ASSESSMENT CRITERIA

Data sourced for calculating the change in ecological value from :	Suitably Qualified Ecologist site survey of plant species
Change in ecological value :	2 Plant species richness

Credits awarded : 2.0

Comments :

Calculations from the ecologist, reviewing the original situation and the proposed landscaping strategy, shows that the ecological value of the site will be equal to or greater than zero plant species

Evidence linked to LE 03 Minimising impact on existing site ecology

Document type	Document reference	Comments	Dwelling(s)
Consultant's report	GN13 BREEAM Ecologists report (Jan 2018)		All
Specification	Dovedale BREEAM spec Design FINAL	See section 10.0	All

LE 04 Enhancing Site Ecology

To encourage actions taken to enhance the ecological value of the site as a result of development.

Site : Albert Road

ASSESSMENT CRITERIA

Suitably Qualified Ecologist appointment (SQE) :	Yes
Ecologist's report and recommendations :	Yes
Increase in ecological value :	2 Plant species richness

Credits awarded : 1.0

Comments :

- As part of the proposals soft landscaping will be carried out. Such planting will aim to use native species, but where this is not practicable then species of known value for wildlife will be used.
- A series of bat boxes will be incorporated into the new build. These will be made of woodcrete (or equivalent), such as the Schwegler boxes, and be positioned in accordance with good practice.

Evidence linked to LE 04 Enhancing Site Ecology

Document type	Document reference	Comments	Dwelling(s)
Specification	Dovedale BREEAM spec Design FINAL	See section 10.0	All
Consultant's report	GN13 BREEAM Ecologists report (Jan 2018)		All
Drawing/Plan	Annotated Site Plan - Dovedale		All

LE 05 Long Term Impact on Biodiversity

To minimise the long term impact of the development on the site and the surrounding area's biodiversity.

Site : Albert Road

ASSESSMENT CRITERIA

Suitably qualified ecologist (SQE) appointed :	Yes
Landscape and habitat management plan :	Yes
Number of applicable measures :	5
Implemented measures :	5

Credits awarded : 2.0

Comments :

All relevant UK and EU legislation relating to protection and enhancement of ecology will be complied with during the design and construction process, subject to site works likely to affect potential bird nesting habitat being timed to avoid the main bird nesting season, which, in general, runs from March to August. If this is not possible, a check will be carried out prior to works to ensure there are no active nests present.

A landscape and habitat management plan, appropriate to the site, will also be produced, covering the first five years after project completion.

Evidence linked to LE 05 Long Term Impact on Biodiversity

Document type	Document reference	Comments	Dwelling(s)
Specification	Dovedale BREEAM spec Design FINAL	See section 10.0	All
Consultant's report	GN13 BREEAM Ecologists report (Jan 2018)		All

Pollution | Pol

Pol 01 Impact of Refrigerants

To reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems.

Site : Albert Road

ASSESSMENT CRITERIA

Refrigerant containing systems installed in the assessed building? : No

Credits awarded : 3.0

Comments :

No cooling systems or other systems containing refrigerant are specified for this development

Evidence linked to Pol 01 Impact of Refrigerants

Document type	Document reference	Comments	Dwelling(s)
Specification	Dovedale BREEAM spec Design FINAL	See section 3.2	All

Pol 02 NOx Emissions

To contribute to a reduction in national NOx emission levels through the use of low emission heat sources in the building.

Site : Albert Road

ASSESSMENT CRITERIA

NOx emission level - space heating : 33 mg/kWh

NOx emission level - cooling : 0 mg/kWh

Does this building meet BREEAM's definition of a highly insulated building? : N/A

Energy consumption: heating and hot water :

Credits awarded : 3.0

Comments :

A communal heating system for heat and hot water provision will be installed for the whole building using Remeha Quinta Pro TPS mains gas fired high efficiency condensing boilers with NOx emissions of <33mg/kWh

Evidence linked to Pol 02 NOx Emissions

Document type	Document reference	Comments	Dwelling(s)
Manufacturer's literature	Remeha-Quinta-Pro-TPS 15.09.09		All
Specification	Dovedale BREEAM spec Design FINAL	See section 3.1	All

Pol 03 Surface Water Run off

To avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, thereby minimising the risk and impact of localised flooding on and off-site, watercourse pollution and other environmental damage.

Site : Albert Road

ASSESSMENT CRITERIA

Annual probability of flooding : Low

Flood Risk Assessment :	Yes
Surface water run off - peak rate :	Yes
Surface water run off - volume, attenuation and/or limiting discharge :	Yes
Minimising watercourse pollution :	No

Credits awarded : 4.0

Evidence linked to Pol 03 Surface Water Run off

Document type	Document reference	Comments	Dwelling(s)
Drawing/Plan	666227-DWG-SBU-C-100	Proposed drainage design and layout drawing	All
Consultant's report	616937-REP-CIV-FRA-0-230715	FRA - see pages 7&8 Surface water stargey - pages 9&10 Calculations for runoff - Appx E	All
Consultant's report	666227-REP-SBU-Pol03 Proforma (w. Signature)	Pol03 proforma with detail on all areas where credits are being claimed	All

Pol 04 Reduction of Night Time Light Pollution

To ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.

Site : Albert Road

ASSESSMENT CRITERIA

Is external lighting specified in accordance with the relevant criteria? :	Yes
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Credits awarded : 1.0

Comments :

External lights shall be provided with an average initial luminous efficacy of not less than 60 luminaire lumens per circuit Watt and the external lighting strategy overall has been designed in compliance with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011. In addition, illuminance levels for lighting in all external areas within the construction zone are specified in accordance with BS 5489-1:2013 and BS EN12464-2:2014.

Fittings are to be controlled with a time-switch or daylight sensor to prevent operation during daylight hours and have presence detection in areas of intermittent pedestrian traffic. They will be automatically switched off between 23:00hrs and 07:00hrs (with the exception of safety and security lighting).

Where safety/security lighting is provided for use between 23:00hrs and 07:00hrs, this part of the lighting system will comply with the lower levels of lighting recommended during these hours in Table 2 of the ILP's Guidance notes.

Evidence linked to Pol 04 Reduction of Night Time Light Pollution

Document type	Document reference	Comments	Dwelling(s)
Specification	Dovedale BREEAM spec Design FINAL	See section 4.2	All
Drawing/Plan	10 - FC420 FINAL External Lighting 1493-E-900 P2		All

Pol 05 Noise Attenuation

To reduce the likelihood of noise arising from fixed installations on the new development affecting nearby noise-sensitive buildings.

Site : Albert Road

ASSESSMENT CRITERIA

Is this building untreated? :	No
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Noise-sensitive areas/buildings within 800m radius of the development : Yes

Noise impact assessment and, if applicable, noise attenuation measures : Yes

Credits awarded : 1.0

Comments :

A noise impact assessment has been carried out by a suitably qualified acoustic consultant holding a recognised acoustic qualification and membership of an appropriate professional body and noise sources from the building are expected to be greater than the levels required under BREEAM 2014, so measures will be installed to attenuate the noise at its source to a level where it will comply with BREEAM 2014 requirements.

Evidence linked to Pol 05 Noise Attenuation

Document type	Document reference	Comments	Dwelling(s)
Specification	Dovedale BREEAM spec Design FINAL	See section 6.2	All
Consultant's report	Dovedale - external acoustic report		All

Innovation | Inn

Inn 01 Innovation

To support innovation within the construction industry through the recognition of sustainability related benefits which are not rewarded by standard BREEAM issues.

Please use this page to add only *approved innovations*. The exemplary credits awarded at the bottom of this page only include the *approved innovations*. The credits awarded through *approved innovations* as well as through exemplary level criteria are then added together and the total number of credits is calculated on the BREEAM rating page.

Site : Albert Road

ASSESSMENT CRITERIA

Number of 'approved' innovation credits achieved? : 0

Credits awarded : 0.0

Evidence linked to Inn 01 Innovation

No evidence has been linked to this issue yet