Hea12 Microbial contamination

1 of 1 credits achieved

Credit criteria

One credit where evidence provided demonstrates that the risk of waterborne and airborne legionella contamination has been minimised.

Credit validation

No humidification is specified.

Credit references

Assumption by Lugus Engineering.

Further information/action

Following credit requirements must be met:

- All *water systems* in the building are designed in compliance with the measures outlined in the Health and Safety Executive's "*Legionnaires' disease - The control of legionella bacteria in water systems*". Approved Code of Practice and guidance, 2000.
- Where no humidification is specified or only steam humidification is provided.

Hea13 Acoustic performance

1 of 1 credits achieved

Credit criteria

Where evidence provided demonstrates that the building design can be shown to achieve the appropriate indoor ambient noise levels.

Credit validation

Acoustic calculations will be made available demonstrating the noise levels requirements will be achieved.

Credit references

Confirmation given by Ramsden and Partners.

Further information/action

To award credit, indoor ambient noise levels in unoccupied offices must fall within the following ranges

- ≤ 40dB *LAeq,T* in single occupancy offices
- 40-50dB *LAeq,T* in multiple occupancy offices
- ≤ 40 dB *LAeq,T* general spaces (staffrooms, restrooms)
- ≤ 35 dB *LAeq,T* in spaces designed for speech e.g. seminar/lecture rooms
- ≤ 50 dB *LAeq,T* in informal café/canteen areas.

Calculations must be presented to proof that the requirements are met.

Energy

The following table summarises the credits awarded for this section.

The Code Credit Reference	Number of Credits Achieved	Number of Credits Available
Ene 1 - Reduction for CO2 Emissions	9	15
Ene 2 - Sub-metering of Substantial Energy Uses	1	1
Ene 3 - Sub-metering of areas / tenancy	1	1
Ene 4 - External Lighting	0	1
Ene 5 - Low or Zero Carbon (LZC) Energy Technologies	2	3
TOTAL CREDITS	13	21

Ene 1 Reduction of CO_2 emissions

9 of 15 credits achieved

Credit criteria

Where evidence provided demonstrates an improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO2 emissions.

Credit validation

According to the BRE calculation method, this project allows a reduction in CO_2 emissions with a CO2 index (EPC rating) of 28.

Credit references

Modelling calculation results performed by Lugus Engineering.

Further information/action

BREEAM credits	CO2 index (EPC rating)
1	63
2	53
3	47
4	45
5	43
6	40
7	37
8	31
9	28
10	25
11	23
12	20
13	18
14	10
15	0
Exemplar credit 1	<0
Exemplar credit 2	*True zero carbon building**

**True zero carbon building:* Where net carbon dioxide emissions resulting from energy consumed in the operation of the space heating/cooling, hot-water systems, ventilation, internal lighting AND process related energy consumption is zero or better.

Ene 2 Sub-metering of substantial energy uses

1 of 1 credit achieved

Credit criteria

One credit where evidence is provided to demonstrate the provision of direct sub-metering of substantive energy uses within the building.

Credit validation

Sub-metering will be installed for different energy use systems according to requirements.

Credit references

Confirmation given by Ramsden and Partners.

Further information/action

Requirements to award credit:

Separate energy sub-meters are provided for the following systems (where present):

- Space heating
- Humidification plant
- Cooling plant
- Fans (major)
- Lighting
- Small power
- Others major energy consuming items where appropriate

This must be proved by:
Drawings or specification clause indicating location and function of sub-meters
Details of a building management system (BMS) where this is to provide a breakdown of the energy use by each function.

It is acceptable to allow metering for lighting and small power to be combined, provided that metering is provided for each floor plate.

Ene 3 Sub-metering of areas / tenancy

1 of 1 credits achieved

Credit criteria

Where evidence provided demonstrates sub-metering of energy consumption by tenancy/building function area is installed within the building.

Credit validation

Sub-metering will be installed for distinct building functions according to requirements.

Credit references

Confirmation given by Ramsden and Partners.

Further information/action

A commitment to install sufficient sub-metering for different departments or areas required to award the credit.

Specific documentation required in form of:

- Drawings or specification clause indicating location and function of sub-meters
- Details of a building management system (BMS) where this is to provide a breakdown of the energy use by each function

For a single occupancy building sufficient sub-metering required to allow for monitoring of different departments or areas of an organisation. Metering by floor plate should normally be sufficient to achieve this.

Ene 4 External lighting

0 of 1 credits achieved

Credit criteria

One credit where energy-efficient external lighting is specified and all light fittings are controlled for the presence of daylight.

Credit validation

Lighting designer will not be commissioned.

Credit references

Confirmation given by Ramsden and Partners.

Further information/action

To comply with credit requirements, the following has to be demonstrated:

- All external light fittings for the building, access ways and pathways have a luminous efficacy of at least 50 lamp lumens/circuitWatt when the lamp has a colour rendering index (Ra) greater than or equal to 60. **OR** 60 lamp Lumens / circuitWatt when the lamp has a colour rendering index (Ra) less than 60.
- All external light fittings to car parking areas, associated roads and floodlighting has a luminous efficacy of at least 70 lamp lumens/circuit Watt when the lamp has a colour rendering index (Ra) greater than or equal to 60. **OR** 80 lamp Lumens / circuitWatts when the lamp has a colour rendering index (Ra) less than 60.
- All external light fittings for signs and uplighting have a luminous efficacy of at least 60 lamp lumens/circuitWatt when the lamp wattage is greater than or equal to 25W. **OR** 50 lamp lumens/circuitWatt when the lamp wattage is less than 25W.
- External light fittings are controlled through a time switch, or daylight sensor, to prevent operation during daylight hours. Daylight sensor override on a manually switched lighting circuit is acceptable.

Ene 5 Low zero carbon technologies

2 of 3 credits achieved

Credit criteria

One credit where evidence provided demonstrates that a feasibility study considering local (*on-site* and/or *near site*) low or zero carbon (LZC) technologies has been carried out and the results implemented.

Two credits where evidence provided demonstrates that the first credit has been achieved and there is a 10% reduction in the building's CO2 emissions as a result of the installation of a feasible local LZC technology.

Three credits where evidence provided demonstrates that the first credit has been achieved and there is a 15% reduction in the building's CO2 emissions as a result of the installation of a feasible local LZC technology.

Or alternatively;

A maximum of one credit where evidence provided demonstrates that a contract with an energy supplier is in place to provide sufficient electricity used within the assessed building/development to meet the above criteria from a 100% renewable energy source. (Note: a standard Green Tariff will not comply)

Credit validation

A 13.13% reduction in carbon emissions due to LZC technologies will be achieved.

Credit references

Modelling calculation results and feasibility study performed by Lugus Engineering.

Further information/action

The following demonstrates compliance:

First credit

1. A feasibility study has been carried out by an energy specialist (see compliance notes) to establish the most appropriate local (on-site or near-site) LZC energy source for the building/development. This study covers as a minimum:

- Energy generated from LZC energy source per year
- Payback
- Land use
- Local planning requirements
- Noise
- Feasibility of exporting heat/electricity from the system
- Life cycle cost/lifecycle impact of the potential specification in terms of carbon emissions
- Any available grants
- All technologies appropriate to the site and energy demand of the development.
- Reasons for excluding other technologies.

2. A local LZC energy technology has been specified for the building/development in line with the recommendations of the above feasibility study.

3. The feasibility study has been carried out at RIBA stage C (outline proposals) or equivalent procurement stage.

OR

4. The organisation that occupies the building has in place a contract with an energy supplier to provide electricity for the assessed building/development from a 100% renewable energy source. This supply must be delivered by an accredited external renewable source. The contract must be valid for a minimum of 3 years from the date the assessed building becomes occupied.

Second credit

1. The first credit for a feasibility study must be achieved.

2. A local LZC energy technology has been installed in line with the recommendations of the above feasibility study and this method of supply results in a 10% reduction in the building's CO2 emissions.

3. Figures used for calculations of the percentage carbon reduction provided by LZC technology are based on the output from *approved energy modelling software*.

Third credit

1. The first credit for a feasibility study must be achieved.

2. A local LZC energy technology has been installed in line with the recommendations of the above feasibility study and this method of supply results in a 15% reduction in the building's CO2 emissions.

3. Figures used for calculations of the percentage carbon reduction provided by LZC technology are based on the output from *approved energy modelling software*.

Exemplary level requirements

The following outlines the exemplary level requirements to achieve an *innovation credit* for this BREEAM issue.

1. The first credit for a feasibility study must be achieved.

2. A local LZC energy technology has been installed in line with the recommendations of the above feasibility study and this method of supply results in a 20% reduction in the building's CO2 emissions.

3. Figures used for calculations of the percentage carbon reduction provided by LZC technology are based on the output from *approved energy modelling software*.

Buildings complying with the exemplary level requirements would therefore achieve four credits for this issue.

Transport

The following table summarises the credits awarded for this section.

The Code Credit Reference	Number of Credits Achieved	Number of Credits Available
Tra 1 - Provision of public transport	2	3
Tra 2 - Proximity to amenities	0	1
Tra 3 - Cyclist facilities	0	2
Tra 4 - Pedestrian and cycle safety	1	1
Tra 5 - Travel plan	1	1
Tra 6 - Maximum car parking capacity	2	2
TOTAL CREDITS	6	10

Tra 1 Provision of public transport

2 of 3 credits achieved

Credit criteria

Up to three credits are awarded on a sliding scale based on the assessed buildings' accessibility to the public transport network.

Credit validation

An accessibility Index of at least 4 will be achieved.

Credit references

Assumption based on information obtained from Camden Council Website.

Further information/action

The following demonstrates compliance:

1. The public transport *Accessibility Index* for the building is calculated and BREEAM credits awarded in accordance with table 1:

Acessibility Index	BREEAM credits
≥2	1
≥4	2
≥8	3

Table 1: AI benchmarks and BREEAM credits

The *Accessibility Index* is determined by entering the following information in to the BREEAM assessor's *Tra1 Provision of Public Transport calculator:*

a. The distance (m) from the *main building entrance* to each *compliant public transport node*
b. The public transport type serving the compliant node e.g. bus or rail
c. The *average number of services* stopping per hour at each *compliant node* during the standard *operating hours* of the building for a *typical day* (see additional guidance).

Tra 2 Proximity to amenities

0 of 1 credits achieved

Credit criteria

One credit where evidence provided demonstrates that the building is located within 500m of *accessible local amenities* appropriate to the building type and its users.

Credit validation

There is no cash machine within 500m of the building.

Credit references

Assumption based on information obtained from Google Earth software.

Further information/action

The following demonstrates compliance:

1. Where the building is within 500m of the following amenities:
    - Grocery shop and/or food outlet
    - Post box
    - Cash machine