

NBS and BREEAM

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Benefits of using NBS specification products

- Covers Building, Engineering and Landscape, provides technical accuracy, saves time and offers quality control.
- Extensive guidance is provided in relation to how to complete clauses, with example inserts.
- Can be used to create a traditional specification, performance specification or mix of both.
- Other features include facilities to set up user guidance, refer to manufacturers product information and specify by proprietary reference, set document permissions, manage revisions, and print using a number of options.

Why use BREEAM

- Provide recognition for low environmental impact buildings.
- Enable best environmental practice to be incorporated into a building project.
- Encourage and reward innovative solutions that minimise environmental impact.
- Set benchmarks that are higher than regulation.
- Help reduce running costs, improve working and living environments.
- Meet Planning requirements.
- Obtain financial assistance with projects.

Development - practical implications

- Shade, shelter, solar gain and glare can all be significantly enhanced (or minimised) by determining the optimum location and position of the development.
- Careful orientation can help maximise the potential use of solar water heating, photovoltaic energy collectors and natural ventilation stack systems.
- Possible measures to consider include passive solar heating, high levels of natural light and the use of thermal insulation, natural or mixed mode ventilation strategies.
- Water use minimization, use of renewable energy sources, recyclable materials and materials with a low environmental impact are all areas which may need consideration.

How does NBS help?

- Identifies the RIBA work stage at which decisions relating to BREEAM should be considered.
- Identifies where BREEAM credits are influenced via the project specification.
- Provides guidance on what the BREEAM credit criteria require and provides links to both the BREEAM website and Green Guide Online.
- Includes content relating to systems and individual products whose use may lead to the award of credits under BREEAM schemes.

How does NBS help?

Screen check U2010-1.1 - NBS Engineering Services - [V59 Luminaires and lamps]

File Edit View Format Clause Insert Go Tools Windows Help

V59 LUMINAIRES AND LAMPS

405 LUMINAIRES:

- Manufacturer: []
 - Product reference: []
- Description: []
- Features: []
- Ballasts CELMA energy efficiency index (minimum): []
- Control gear position: []
- Luminaire power factor: []
- Lamps:
 - Number: []
 - Type to PD IEC TS 61231 to ILCOS L: []
 - Colour temperature: []
 - Colour rendering index: []
 - Rating: []

420 AIR HANDLING LUMINAIRES:

- Standard: To BS 4533-102 19

Guidance

2 BREEM

2.1 High frequency lighting

The BREEM models award a credit for the use of luminaires fitted with fluorescent lamps operating on high frequency electronic ballasts in all occupied spaces - circulation spaces can be excluded. See BREEM Assessment manual for further details.

2.2 External lighting

The BREEM models award a credit for the use of energy efficient luminaires for external areas of a development. The following demonstrates compliance (where provided):

- All external light fittings for the building, access ways and pathways have a luminous efficacy of at least 50 lamp lumens/ circuit Watt when the lamp has a colour rendering index (Ra) greater than or equal to 60, or 60 lamp lumens/ circuit Watt 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 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/ circuit Watt 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/ circuit Watt when the lamp wattage is greater than or equal to 25 W, or 50 lamp lumens/ circuit Watt when the lamp wattage is less than 25 W.
- 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. Automatic lighting controls can be specified in [section V51](#).

Refer to the particular BREEM Assessor manual, dependant upon the building type, for further details.

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Clause	Reports	Validate												
Src	Clause	G M U Title	Link...	Prev...	Edited by	Edited date	Edited time	T...	P...	Val Result	CA	MC	ML	MP
nbsesc	390	G	Bayonet lamp holders		nbs1	03/06/2009	11:34				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
nbsesc	391	G	Edison screw lamp holders		nbs1	22/06/2004	15:34				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
nbsesc	392	G	Fluorescent lamp holders		nbs1	22/06/2004	15:34				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
nbsesc	305	G	Enclosures for controlgear		che1	03/07/2006	09:56				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How does NBS help?

Screen check U2010-1.1 - NBS Engineering Services - [V59 Luminaires and lamps]

File Edit View Format Clause Insert Go Tools Windows Help

V59 LUMINAIRES AND LAMPS

405 LUMINAIRES: []

- Manufacturer: []
 - Product reference: []
- Description: []
- Features: []
- Ballasts CELMA energy efficiency index (minimum): []
- Control gear position: []
- Luminaire power factor: []
- Lamps:
 - Number: []
 - Type to PD IEC TS 61231 to ILCOS L: []
 - Colour temperature: []
 - Colour rendering index: []
 - Rating: []

Manufacturer's standard
A1
A2
A3
B1
B2

420 AIR HANDLING LUMINAIRES:

- Standard: To BS 4533-102 19

Clause Reports Validate

Guidance

fluorescent lamps, and LEDs or cold cathode lamps may be a more economic alternative for maintained luminaires.

Ballasts CELMA energy efficiency index: CELMA is a federation representing national manufacturers' associations for luminaires and electro-technical components. The UK members of CELMA are [The Lighting Association](#) and The Lighting Industry Federation. European manufacturers represented in CELMA have adopted a classification scheme for ballasts, which are marked with an energy efficiency index (EEI). The EEI represents the corrected total input power of the lamp-ballast circuit; there are five classes:

- Class A1 - dimmable electronic ballasts.
- Class A2 - electronic ballasts with reduced losses.
- Class A3 - electronic ballasts.
- Class B1 - magnetic ballasts with very low losses.
- Class B2 - magnetic ballasts with low losses.

Dimmable ballasts are classed as A1 if the following criteria are met:

- At 100% light output, class A3 energy efficiency is achieved.
- At 25% light output, the total input power is less than 50% of the power at 100% light output.
- The ballast is capable of reducing the light output to 10% of the maximum light output.

[BS 8300](#) recommends the use of high frequency electronic ballasts to avoid any perception of flicker.

Lamps:

-Type to PD IEC TS 61231: Two lamp coding systems are in general use:

- LBS - produced by Zentralverband Elektrotechnik und Elektronikindustrie (ZVEI) and promoted by the Industry

How does NBS help?

Screen check U2010-1.1 - NBS Engineering Services - [V60 External lighting systems*]

File Edit View Format Clause Insert Go Tools Windows Help

V60 EXTERNAL LIGHTING SYSTEMS

SYSTEM PERFORMANCE:

210 ROADWAY LIGHTING DESIGN: []

- Standard: []
- Design: Complete the design of the roadway lighting system.
- Performance: []
- Average power density energy consumption (maximum): []
- Initial circuit luminous efficacy (minimum): []
- Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

220 AMENITY LIGHTING DESIGN: []

- Standard: [In accordance with CIBSE Lighting Guide 6 and In accordance with ILE 'Guidance notes for the reduction of obtrusive light' GN01]
- Design: Complete the design of the amenity lighting system.
- Performance: [As Amenity lighting performance schedule]
- Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

230 MAINTENANCE FACTOR CALCULATIONS: []

- Calculations: In accordance with CIBSE Lighting guide 6.
- Proposals for luminaire maintenance: Submit.
- Proposals for lamp replacement: Submit.
- Maintenance factors: Submit.

240 LUMINAIRE AND LAMP MAINTENANCE PROPERTIES: []

- Lamp replacement method: []
- Lamp lumen maintenance factor: Submit proposals.

Guidance

clause | general | scope | reference documents

V60 220 Amenity lighting design

Use this clause to list performance requirements for amenity lighting systems. See [general guidance 4](#).

Clause heading: Repeat this clause for each type, location or function where the amenity lighting system varies. Include the system type, location or function within the clause heading. Insert, e.g.

FOR LANDSCAPE UPLIGHTER00S

FOR FLOODLIGHTING

Standard: The [BREEAM](#) models award a credit for reduction of night time light pollution. The credit criteria aims to ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimized, reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties. Compliance requirements include:

- Lighting strategy has been designed in compliance with Table 1 (and its accompanying notes) of the [ILE 'Guidance notes for the reduction of obtrusive light'](#), (additional requirements apply to buildings in Scotland, refer to [Guidance Note: 'Controlling light pollution and reducing lighting energy consumption'](#)).
- All external lighting (except for safety and security) can be automatically switched off between 2300 hrs and 0700 hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours.
- If safety or security lighting is provided and will be used between 2300 hrs and 0700 hrs, this part of the lighting system must comply with the lower levels of lighting recommended during these hours in Table 1 of the [ILE's 'Guidance notes for the reduction of obtrusive light'](#); for example by using an automatic switch to reduce the lighting levels at 2300 hrs or earlier.
- Illuminated advertisements, where specified, must be designed in compliance with [ILE Technical Report 5B](#) 'Brightness of illuminated advertisements'.

Refer to the particular [BREEAM Assessor manual](#), dependant upon the building type, for further details.

Performance: The [BREEAM](#) models award a credit for the use of luminaires in internal and external lighting systems which provide minimum lux levels in accordance with the [CIBSE 'Code for Lighting'](#). Illuminance levels for lighting in all external areas within the construction zone must be specified in accordance with [CIBSE Lighting Guide 6B](#), 'The outdoor environment'. Refer to the particular [BREEAM Assessor manual](#), dependant upon the building type, for further details.

Performance of internal lighting may be specified in [section V50](#).

How does NBS help?

	RIBA Work Stage	NBS Work Section	EDUCATION	RETAIL	INDUSTRIAL	INDUSTRIAL (Speculative)	OFFICES	COURTS	PRISONS	HEALTHCARE	MULTI-RESIDENTIAL
1											
19	Hea 1 Daylighting	L10_cl150_U10-2; H13_cl475_U10-1; H10_cl475_U10-1; H11_cl475_U10-1 L10_cl155_U10-2; H13_cl480_U10-1; H10_cl480_U10-1 H11_cl480_U10-1	1 credit	2 credits	1 credit	1 credit	1 credit	1 credit	1 credit	2 credits	1 credit
20	Hea 2 View out	L10_cl670, 680_U10-2; N10_cl240, 245_U10-1, H13_cl115_U10-1; H10_cl115_U10-1 H11_cl110_U10-1	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	2 credits	1 credit
21	Hea 3 Glare control	V59_cl405_U09-2	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit
22	Hea 4 High frequency lighting	V50_cl220_U09-2; V60_cl210, 220_U09-3	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	2 credits	1 credit	1 credit
23	Hea 5 Internal and external lighting levels	V50_cl110, 120_U09-2; L10_cl160_U10-2; P21_cl935_U10-2; H13_cl115, 485, 935_U10-1; H10_cl115, 485, 575_U10-1; H11_cl110, 485, 935_U10-1; U10_cl110, 130, 140, 220_U10-1.	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	2 credits	1 credit	1 credit
24	Hea 6 Lighting zones	L10_cl766_U10-2; U10_cl110, 130, 140, 210, 230_U10-1.	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit
25	Hea 7 Potential for natural ventilation	K11_cl110_U10-2; K21-cl115_U10-2; M52_cl110, 225_U10-2; K40_cl105, 115; 135, 265, 270_U10-2; M42_cl105_U10-2; K45_cl310_U10-2; M50_cl110, 135, 138, 146, 150, 155, 170, 178, 186, 190_u10-2;	1 credit	1 credit	1 credit	1 credit	1 credit	2 credits		1 credit	1 credit
26	Hea 8 Indoor air quality	M60_General guidance_U10-1	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit
27	Hea 9 Volatile organic compounds	T10_cl210_U10-2; U10_cl210_U10-1. T50_cl210_U10-2.	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit	1 credit
28	Hea 10 Thermal comfort										