

# BREEAM 2018

Review of BRE Consultation Draft

13<sup>th</sup> October 2017



envision

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## 1. BREEAM 2018 REVIEW

Management			
<ul style="list-style-type: none"> <li>No mandatory credit change.</li> <li>Management less weighted than 2014, with 11% of fully fitted (down from 12%).</li> <li>CCS carries less weight. Only one credit rather than 3. Alternative methods of compliance likely to impact contractors.</li> <li>More emphasis on POE and handover. Requirement for separate Building User guides etc.</li> <li>Seasonal commissioning is more onerous.</li> </ul>			
BREEAM 2014 Credits	BREEAM 2018 Credits	Type of Change	Summary of Change
<b>Man 01 –</b>			
Stakeholder Consultation – project delivery	Stakeholder Consultation – project delivery	- Additional credit requirements	Removed the term ‘if appropriate’ in compliance requirement 3, implying that the project must produce a project execution plan and a communication strategy to comply.
Stakeholder Consultation - Third parties	Stakeholder Consultation - Interested parties	- Additional credit requirements	New requirement (CR5) for relevant members of the team to hold a workshop to review operational energy in line with Ene 01 requirements.
Sustainability Champion	BREEAM AP – Concept Design	- Additional credit requirements	New pre requisite to formally agree strategic performance targets early in the design process.  Emphasis on wording of AP. Advisory Professional  No longer reference to attending specific meetings.
Sustainability Champion	BREEAM AP Developed Design	- Additional credit requirements	New pre requisite to formally agree strategic performance targets early in the design process.  Emphasis on wording of AP. Advisory Professional No longer reference to attending specific meetings.

<b>Man 02 - LCC</b>			
Two credits – Elemental LCC	Two credits – Elemental LCC	Clarification	Less prescriptive, gives greater clarity that you can set your own study period, i.e. no longer 20,30, 60 years.
One Credit – Component Level LCC Options	One Credit – Component Level LCC Options	No Change	
One credit – Capital cost reporting	One credit – Capital cost reporting	No Change	
<b>Man 03 – Responsible Construction</b>			
One Credit – Environmental Management	One Credit – Environmental Management	Clarification	Clarified principal contractor to mean the party who has responsibility at any time for the managing of the construction site. This will require demolition contractors to have ISO14001.
One Credit – Sustainability Champion Construction	Professional - One Credit – advisory professional - site	No Change	
Two Credits – Considerate Construction	Up to 2 credits –  Route 1 –  Risk evaluation and interpretation (one credit)  Training, awareness, monitoring and reporting (one credit)  OR  One credit - CCS	Credit scoring changed	Less emphasis / weight given to the CCS. Must achieve a 40 or more with 8 points in each section to achieve one credit (was 3 under BREEAM 2014).  The route 1 option achieves two credits plus exemplary level credit.
Two credits - Monitoring of Construction Site Impacts	Two credits - Monitoring of Construction Site Impacts		Credits for monitoring energy and water, and second credit for transport of construction materials. No change.

			<p>Transport movements – now have to set a target for transport movements.</p> <p>Monitor major building elements used in Mat 01 only.</p>
<b>Man 04 - Commissioning and Handover</b>			
Commissioning and testing schedule and responsibilities (1 credit)	Commissioning and testing schedule and responsibilities (1 credit)	No Change	
Commissioning building services (1 credit)	Commissioning – Design and Preparation (1 credit)	New clarification	The project team member cannot be involved with the general installation, and therefore have to be reasonably independent.
Testing and inspecting building fabric (1 credit)	Testing and inspecting building fabric (1 credit)	No change	
Handover (1 credit).	Handover (1 credit).	New requirement	<p>Requires two building user guides to be produced. One for technical, one for building manager.</p> <p>Two training schedules are required.</p>
<b>Man 05 - Aftercare</b>			
Aftercare support (1 credit)	Aftercare support (1 credit)	No Change	Minor clarifications, but no material change.

Seasonal commissioning (1 credit)	Commissioning – Implementation (1 credit)	New requirements	<p>Identify changes made by the building operator which may effect system performance.</p> <p>Produce monthly reports comparing sub metered energy performance to the predicted one.</p>
Post occupancy evaluation (1 credit).	Post occupancy evaluation (1 credit).	Additional credit requirements	<p>One year after buildings substantial occupation rather than initial occupation.</p> <p>More emphasis of ‘independence’ of third party for POE.</p> <p>More emphasis on the evidence to prove the POE is to be required. Committed funds and responsibility schedule.</p>

Health and Wellbeing			
<ul style="list-style-type: none"> <li>Weighting reduced slightly</li> </ul>			
BREEAM 2014 Credits	BREEAM 2018 Credits	Type of Change	Summary of Change
Hea 01 Glare Control (1 credit)	Hea 01 Control of glare from sunlight (1 credit)	Minor change	- Title change to credit to clarify what it means by glare
Daylighting (up to 2 credits)	Daylighting (up to 2 credits)	No change	
View Out (1 credit except Healthcare – 2 credits)	View Out (1 credit except Healthcare – 2 credits)	No change	
Internal and external light (1 credit)	Internal and external light (1 credit)		
	Exemplary credit – Daylighting	No change	

Exemplary credit - Daylighting	Exemplary credit – Internal and external lighting	No change New credit	New credit where specify manual dimming of lighting in each zone
Hea 02 Indoor Air Quality  Credit 1 - Indoor Air Quality Plan	Hea 02 Indoor Air Quality  Prerequisite - Indoor Air Quality Plan	Credit removed – changed to prerequisite  Credit requirements changed/more clearly defined.	Moved adaptability part of last credit to Wst 06, retaining only part of requirement as separate credit called ‘user control’. Removes need for distinction between minimising sources of air pollution and adaptability. Will help clarity/communication on credit requirements.  Will mean have to produce Indoor Air Quality Plan before can achieve any other credits. Part of drive towards improving consideration/engagement early in design stage, and development of strategies specific to building.
Credit 2 – Ventilation	Ventilation (one credit)	‘new’ credit	Details of compliance separately specified in methodology section. Removes the prescriptive requirement that intakes and exhausts are 10m apart and 20m from external sources, as designed in accordance with relevant standards. This was an option in 2014 but not very clearly defined. And introduction of pollution dispersion modelling as option for compliance.  Credit requirement was originally part of the ‘Potential for natural ventilation’ credit. Now specifically focused on a natural ventilation strategy capable of providing two levels of user control.

	User Control (one credit)		
Credit 3 – VOC emission levels (products)	Credit 3 – Emissions from building products (2 credits)	Increased number of credits	Increased number of credits – moving the exemplary level criteria into the main assessment criteria. More prescriptive emission limits. Reference to Guidance Note 22 as alternative method of compliance using relevant certification/labelling. (published in 2015, after BREEAM 2014 launched).
Credit 4 – VOC emission levels (post construction)	Credit 4 – VOC emission levels (post construction)	Minor change	TVOC levels that must be achieved more lenient (<500 instead of <300ug/m3)
Adaptability – Potential for natural ventilation (one credit)	None	Credit moved to Wst 06 (see User Control above)	Requirements for openable windows etc moved to Wst 06. Natural ventilation strategy with user controls remains as standalone credit.
Exemplary level criteria - One credit - Two credits	None One credit	Moved to main criteria Credit scoring changed	NC2014 exemplary level had 2 credits available. The first of these has now been moved to the main criteria, leaving the higher level requirements as one exemplary level credit.
Hea 03 Safe containment in laboratories	Hea 03 Safe containment in laboratories		Credits have been restructured, and the additional requirements for containment levels 2 and 3 incorporated within the first credit rather than as a separate credit.
One credit - Laboratory containment devices and containment areas	One credit - L Laboratory containment devices and containment areas	Changed credit requirements	
One credit – Buildings with containment level 2 and 3 laboratory facilities	No credit	Requirements incorporated within above credit	
No credit		New credit	



	One credit – Fume dispersion and dilution			New credit with specific requirements for modelling dispersion and dilution of potentially contaminated flume
Hea 04 Thermal comfort	Hea 04 Thermal comfort			
One credit – Thermal modelling	One credit – Thermal modelling	Additional requirement (building specific)		New requirement introduced specific to multi-residential and supported living facilities, with specific reference to guidance on overheating risk in homes.
One Credit – Adaptability for projected climate change scenario	One Credit – Design for future thermal comfort	Change to credit title		Credit title change for greater clarity
One Credit – Thermal zoning and controls	One Credit – Thermal zoning and controls	No change		
Hea 05 Acoustic Performance	Hea 05 Acoustic Performance			Change to structure of credit to remove unnecessary distinction btwn different building types. All buildings (apart from multi-res) now have option for either direct compliance with requirements or bespoke set of criteria defined by acoustician.
Up to 3 credits for Education/Healthcare etc	Up to 3 credits – Acoustic performance			
Up to 2 credits or 3 credits for Industrial/Retail etc				
Up to 4 credits for Multi-Res or Other Residential Institution	Up to 4 credits - Acoustic performance for Multi-Residential	Combined with above		

Hea 06 Safety and security  One credit – Safe access	Hea 06 Security	Changed credit structure  Moved to separate credit  No change	Split out safety and security into 2 separate credits.
One credit – Security of site and building	One credit – Security of site and building		New credit if use a compliant risk based security rating scheme (e.g. Secured by Design, SABRE or Safer Parking Scheme)
-	Hea 07 Safe and healthy surroundings	New credit	
	One credit – Safe access	Moved from Hea 06/requirements changed	Credit requirements more simplified
	One credit – Outside space	New credit	New credit reintroduced for provision of outside space for amenity – was originally in some schemes in BREEAM 2008 version.

<b>Energy</b>			
General Comments:			
<ul style="list-style-type: none"> <li>Fully fitted score weighting has increased from 15% to 16%;</li> <li>Ene 01 has become a more complex credit, it will require extensive further modelling that will need to be reflected in fees (i.e. above and beyond Building Regulations documents that have been provided previously). Emphasis has been placed on more accurate prediction of both regulated and unregulated energy emissions.</li> </ul>			
BREEAM 2014 Credits	BREEAM 2018 Credits	Type of Change	Summary of Change

Ene 01	Ene 01	<ul style="list-style-type: none"> <li>- Credit Removed</li> <li>- Credit scoring changed</li> <li>- Additional credit requirements</li> <li>- New mandatory requirement</li> </ul>	<ul style="list-style-type: none"> <li>- Minimum scoring standards have changed, 4 credits required to achieved Excellent (5 previously), 6 credits required to achieve Outstanding (8 previously).</li> <li>- Under 2014, <b>12 credits in total</b> were available by providing the EPRnc as taken from the design/as-built BRUKL.</li> <li>- Under 2018, <b>9 credits</b> are available by providing the EPRnc as before with a further <b>4 credits</b> available for further energy modelling to predict operational energy consumption – <b>13 credits in total</b>.</li> <li>- For the further <b>4 credits</b>, a design workshop focusing on operational energy must be undertaken as a pre-requisite. The energy modeller must model several scenarios creating a range of predicted consumptions, informed by a risk assessment of the building energy uses. These scenarios will consider:             <ul style="list-style-type: none"> <li>o Weather</li> <li>o Operating hours for systems</li> <li>o Occupancy hours</li> <li>o Management factors</li> </ul> </li> </ul> <p>Further guidance for Prediction Modelling is provided here - <a href="http://www.breeam.com/filelibrary/Guidance%20Notes/DRAFT_GN32_UKNC2018_Energy_Prediction-Verification_FINAL.pdf">http://www.breeam.com/filelibrary/Guidance%20Notes/DRAFT_GN32_UKNC2018_Energy_Prediction-Verification_FINAL.pdf</a></p> <p><u>Exemplary Level Credits</u></p> <ul style="list-style-type: none"> <li>- Up to <b>2 credits (4 credits</b> under 2014) are awarded for the building achieving a EPRnc of <math>\geq 0.9</math>. Energy generation from LZC is sufficient to offset <b>all</b> regulated carbon emissions plus a stipulated percentage of unregulated emissions. Up to 3 credits (5 under 2014) are awarded if the building is calculated to be carbon</li> </ul>
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			<p>negative, i.e. LZC is used to offset all regulated and unregulated emissions.</p> <ul style="list-style-type: none"> <li>- Verification Stage – new exemplary credit.</li> <li>- Pre-requisite that the two credits under Ene02 are achieved.</li> <li>- The client collates and reports 12 months of operational energy use and compares with the targets as set out under the <i>Operational Energy Modelling</i> criteria</li> </ul>
Ene 02	Ene 02	<p><b>First Credit</b> – No change;</p> <p><b>Second Credit</b> – Additional credit requirements.</p>	<ul style="list-style-type: none"> <li>- Further clarification that sub-meters are to be provided per floor plate in large single occupancy or single tenancy buildings with one homogeneous function, for example hotel bedrooms, offices.</li> </ul>
Ene 03	Ene 03	Additional credit requirements	<ul style="list-style-type: none"> <li>- Minimum average initial luminous efficacy of external light fittings increased from 60 lumens/circuit watt to 70 lumens/circuit watt</li> </ul>
Ene 04	Ene 04	<p><b>First Credit</b> – Additional requirements;</p> <p><b>Second Credit</b> – No change;</p> <p><b>Third Credit</b> – Additional requirements.</p>	<p><b>First Credit</b></p> <ul style="list-style-type: none"> <li>- The total reductions in energy demand and CO<sub>2</sub> emissions from the implementation of the passive design measures must now be quantified;</li> <li>- This is done by taking from the Building Emission Rate (BER) from an SBEM/SAP modelled with fabric performance equivalent to that of the local building regulations notional building (or for Scotland, an equivalent compliant building) and without the passive design measures.</li> <li>- Any savings in energy demand or CO<sub>2</sub> emissions should then be calculated by comparing the respective BER outputs from two building models representing the 'proposed building' specification (fixed at a point as</li> </ul>

			<p>agreed by the project team and assessor), and the 'standard building' specification as detailed above.</p> <p><b>Third Credit</b></p> <ul style="list-style-type: none"> <li>- As for the first credit, the total reductions in energy demand and CO<sub>2</sub> emissions from the implementation of the LZC technologies must now be quantified;</li> <li>- The reduction in regulated carbon dioxide (CO<sub>2</sub>) emissions can be demonstrated by comparing regulated carbon dioxide (CO<sub>2</sub>) emissions with LZC technologies to the actual building regulated emissions without LZCs.</li> </ul>
Ene 05	Ene 05	No change	-
Ene 06	Ene 06	<p><b>First Credit</b> – No change;</p> <p><b>Second Credit</b> – Additional credit requirements;</p> <p><b>Third Credit</b> – No change.</p>	<ul style="list-style-type: none"> <li>- Minimum average initial luminous efficacy lift car lighting increased from 55 lumens/circuit watt to 70 lumens/circuit watt</li> </ul>
Ene 07	Ene 07	-	-
Ene 08	Ene 08	No change	-
Ene 09	Ene 09	Credit Removed	- Drying Space credit removed.

## TRANSPORT

- Weightings for type of assessment changed
- Transport credit re-arranged, main reason due to consideration of location of development. Urban/metropolitan developments achieve a significant number of credits by default but rural developments struggle.
- Initial stage would include a transport assessment to identify the 'baseline' for the assessment, therefore, projects will be rewarded for maximising opportunities to improve upon identified baseline.
- Proposed structure and content of transport category:
  - Tra 01 – Transport statement and travel plan to understand baseline (similar to Tra 05). Would also include reporting on amenities (Tra 02) and reporting on public transport accessibility (Tra 01).
  - Tra 02 – Sustainable transport measures, rewards for implementing measures stated in Travel Plan. Possible list: improve local cycling, signposting to public transport, electric re-charging stations, car sharing.

BREEAM 2014 Credits	BREEAM 2018 Credits	Type of Change	Summary of Change
Tra 01 Public transport accessibility	Credit 1 – Accessibility index	No change	<ul style="list-style-type: none"> <li>• Rearranged order of requirements for ease of understanding, Tra 01 Calculator requirement after collating info on site accessibility.</li> </ul>
Tra 02 Proximity to amenities	Credit 1 – Proximity to amenities	No change	-
Tra 03 Cyclist facilities	Credit 1 – Alternative modes of transport (change of name)	New requirement	<ul style="list-style-type: none"> <li>• Extra requirements to get credit, now requires implementation of one of the following types of alternative transport modes: local cycling network, increase in local bus service provision, provide electric recharging stations, set up car sharing. Also includes original cycle storage and cycle facilities requirements.</li> </ul>
Tra 04 Maximum car parking capacity	Credit 1 – Maximum car parking capacity	No change	-
Tra 05 Travel plan	Credit 1 – Travel plan	No change	-

Water			
General Comments: <ul style="list-style-type: none"> <li>- Fully fitted score weighting remains at 7%</li> <li>- Higher minimum efficiency standards for each water fitting under Wat 01;</li> </ul>			
BREEAM 2014 Credits	BREEAM 2018 Credits	Type of Change	Summary of Change
Wat 01	Wat 01	- Credit scoring changed	<ul style="list-style-type: none"> <li>- The methodology and credits awarded for &amp; improvement have not changed;</li> <li>- The minimum water efficiency requirements for each performance level has changed for each water type fitting. Refer to Table 42, Page CCLXV in draft manual. <i>E.G, to score 3 credits for a WC in 2014 standards, minimum effective flush volume of 4 litres. Under 2018 lowered to 3.75 litres.</i></li> </ul>
Wat 02	Wat 02	- Additional credit requirements	<ul style="list-style-type: none"> <li>- NO change in metering requirements, guidance states that all main and sub-meters must now be connected to appropriate utility monitoring and management system, e.g. a building management system (BMS), not just capable of. However, it states that if the BMS is not present or operational at PC, the credit can still be awarded if the meter is capable of connection <i>when the BMS becomes operational.</i></li> <li>- Additional requirements for sub-metering on swimming pools and laboratories.</li> </ul>
Wat 03	Wat 03	No change	-
Wat 04	Wat 04	No change	<ul style="list-style-type: none"> <li>- No change, offers further clarification to identify all water demands from uses other those listed under Wat 01 Water consumption that could be realistically mitigated or reduced.</li> </ul>

Materials			
<ul style="list-style-type: none"> <li>No mandatory credit change.</li> <li>Materials is more heavily weighted under 2018. 15%, up from 13.5% for a fully fitted building.</li> <li>The requirement for Mat 01 is completely new and complex. It will require more emphasis on LCC / LCA. No longer uses Green Guide system.</li> <li>Mat 02 – New credit - Environmental performance of materials is measured using Environmental Product Declarations, not green guide ratings and does not appear to be area/ volume based. This is likely to penalise operators that build simple buildings, like IKEA/ Costco.</li> <li>Insulation credit has been removed as a standalone credit.</li> </ul>			
BREEAM 2014 Credits	BREEAM 2018 Credits	Type of Change	Summary of Change
Mat 01 Life cycle impacts (up to 5 plus innovation)	Mat 01 - Environmental Impacts from Construction Products – Building Life Cycle Assessment (up to seven credits + 3 exemplary)	New Credit New requirements New Credit scoring	<p>Complete move away from the GREEN Guide for Mat 01. Much stronger focus on LCC / LCA approach.</p> <p>BREEAM Simple Building Tool (NEED TO SEE THIS) or IMPACT Compliant LCA tool can be used.</p> <p>Undertake assessments in multiple parts. First at RIBA 2, Then at 4.</p> <p>Require that you use tool at early stage to make and prove decision interventions to reduce environmental impacts.</p>
Mat 02 Hard landscaping and boundary protection – One credit.	Mat 02 – Environmental Impacts from Construction products – One Credit	New Credit New Requirements	<p>Moved away from GG rating system, but more closely linked to the old Mat 1. This requires the use of materials with EPD certification. This does not appear to require minimum performance in each area. It simply requires proof of the use of a certain number of products which have EPD certification.</p> <p>EPD of at least 20 required. Each product carries 0.5 points, therefore potentially 40 materials used within the build must be certified to score one credit!</p> <p>Not volume / area based.</p>



Mat 03 – Responsible Sourcing of Materials	Mat 03 – Responsible Sourcing of Materials (4 credits)	Change to scoring.	Requirements are similar, however 3 credits requires RSM points of 30%, rather than 54%. There is also an exemplary credit at 50% whereas before it was 70%.
Mat 04 Insulation (removed)	NA	Credit removed	
Mat 05 Designing for durability and resilience (one credit)	Mat 05 Designing for durability and resilience (one credit)	New requirements	<p>Additional requirements for material degradation.</p> <p>Exposed building elements can achieve specific design standards for robustness <b>or</b> undertake a detailed assessment of the material resilience as before.</p> <p>Require convenient roof access and façade access for cleaning and maintenance.</p> <p>Design the roof to prevent detrimental ponding.</p>
Mat 06 Material Efficiency (one credit)	Mat 06 Material Efficiency (one credit)	No change	

<b>Waste</b>			
BREEAM 2014 Credits	BREEAM 2018 Credits	Type of Change	Summary of Change
Wst 01 Construction waste management	No change to title	New credit area	Requirement for pre demolition audit now a separate credit, rather than hidden within Construction Resource Efficiency.
			Construction resource efficiency credits remain largely unchanged including benchmarks used to determine credit levels (1-3) which is surprising.
		New standard	The credit available for diversion of waste from landfill remains largely the same. To obtain exemplary level credit waste data will need to be verified by a PAS 402:2013 certified company which is new.

		Additional credit requirement	New requirements included into RMP credits require monthly reporting rather than merely end of construction period reporting and a named individual assigned to manage the RMP throughout the development process.
Wst 02 Recycled Aggregates	WST 02 retitled Use of Recycled & Sustainably Sourced Aggregates	Scope of credit changed	This credit area now links secondary aggregate use with social impacts so credit is focused to sourcing local available secondary aggregates to reduce transport and social impacts.
		Credit scoring change	The credit area also introduces a new Wst 02 BREEAM calculator to estimate sustainable aggregate points. The Wst 02 calculator combines scores for regional mineral depletion, social cost of transport and carbon footprint. Each of these metrics has an equal weighting in the scoring tool, with a maximum score of 3 for each metric, giving a maximum Sustainable Aggregate Point score of 9. Exemplary credits are available for >6 Sustainable Aggregate points. Looks like an interesting concept.
Wst 03 Operational Waste	Wst 03 Operational Waste	No substantive change	There are little in the way of changes for this credit area. The main change appears to be an expanded methodology section that sets out procedure to calculate dedicated space requirements for waste.
Wst 04 Speculative Floor and Ceiling Finishes	Wst 04 Speculative Floor and Ceiling Finishes	No change	There is a slight change to the speculative fit out requirements for office buildings. It states: Only install specified floor and ceiling finishes selected by the known occupant of a development. Alternatively, where only ceiling finishes and no carpets are installed, the building owner confirms that the first tenants will be refused permission to make substantial alterations to the ceiling finish The second part of the requirement is a new definition/restriction but this doesn't really change the criteria much.
Wst 05 Adaption to Climate Change	Wst 05 Adaption to Climate Change	Additional credit requirements	Additional requirements introduced for the first credit area going beyond a strategic review of risks. In addition to

			<p>undertaking a systematic assessment of risk by assessing impact of extreme weather on buildings.</p> <p>New requirements are introduced to require projects to develop identify suitable solutions by RIBA stage 2 and further to update these during technical design RIBA stage 4 and show how these have been implemented into the design. This is a good next step and a really important area for the future especially for investors like who are interested in long term impacts on asset value</p> <p>Exemplary credits remain largely unchanged and are available where project can demonstrate integrated design with other credit areas of Hea04; Ene01; Ene04; wat01; Mat05 and Pol03. Was encouraged before but I suspect not really covered well under NC14.</p>
		Scope of credit changed	<p>The methodology has also been expanded to require greater emphasis on hazard identification focusing on 11 scenarios which were previously not specified.</p> <p>There is also a requirement to nominate a suitable individual (ref to BREEAM AP) to oversee the assessment and it implementation.</p>
Wst 06 Design Functional Adaptability	Wst 06 Design for Disassembly & Adaptability	Scope of credit changed	<p>the requirements for the functional adaptability initial credit has been expanded to include in addition to undertaking a study to explore the ease of disassembly to provide additional evidence of review and updates throughout RIBA stage 4 and to prepare a building adaptability guide to prospective tenants. The later being a really useful tool for investors with long term asset value in mind.</p>
		New credit area – moved from Hea 02	<p>A new credit area here – moved from Hea 02 (potential adaption for natural ventilation). Requirements include designing the building ventilation strategy to be flexible and accommodate potential for natural ventilation considering</p>

			room depths to support this along with openable windows. (similar to previously in Hea 02)
		Additional credit requirements	Within the methodology section there are now a detailed set of guidance definitions and evidence requirements. This is likely to be part of any project with good M&E designers but will push the more routine developers.

<b>Land Use and Ecology</b>			
General Note			
<ul style="list-style-type: none"> <li>This document seeks to align ecological assessment with the wide range of BREEAM schemes now available including BREEAM Infrastructure CEEQUAL and BREEAM Communities. The basic structure of the assessment is to align BREEAM with BREEAM UK Strategic Ecology Framework (SEF) published in 2016</li> <li>Two assessment routes are proposed: Ecologist assessment route – for sites where complex ecological systems are likely to be present and the Project team member assessment route – for sites where ecological opportunities and risks are limited in nature.</li> <li>There are subtle differences from what would have been done under NC14 requiring the developer to think and act beyond the site boundary. The outline scope of the SEF scoring /calculation methodology is provided but this is to be confirmed. The tool will break scoring down to different life cycle phases i.e. master planning; new construction; refurbishment and in use.</li> <li>Generally the Ecological Consultation document seems to be well aligned with the NC14 approach with the additional / broader scope that links ecology to other credit areas (environmental, social and economic issues- the sustainability main themes). The role and significance of the SQE appears to be retained but the assessments fundamentally need to be dovetailed with other sustainable design features and thereby potentially locking in ecological issues into the schemes better rather than being a tack on green feature only being reluctantly supported by developers.</li> </ul>			
LE01 Site Selection	LE01 Site Selection	No change	No substantive changes over NC2014 requirements (due to separate consultation).
	Assessment 1 Identifying and understanding the	Additional credit requirements	The new assessment area doesn't yet stipulate how many credits are eligible under the assessment. It is differentiated

LE 02 Ecological Value of Site and Protection of Ecological Features	risks and opportunities for the site		from LE02 in that the concepts to protecting ecology and seeking opportunities has both ecological value as well as benefits to man through wellbeing, amenity value and community. As with LE02 it encourages the use of appropriately qualified persons to advise and be consulted.
		Additional credit requirements	The requirements are set out as five logical steps which broadly align with LE02 but it doesn't stipulate that these need to be undertaken by SQE. This appears to be because the evaluation criteria go beyond straight ecological issues as set out earlier. Issues covered include landscape design, heritage and green infrastructure, health and wellbeing, resilience and climate change
LE 03 Minimising Impact on Existing Site Ecology	Assessment 2 Managing negative impacts on habitats and biodiversity	Additional credit requirements	The assessment process has changed from the current system which focuses on working out the change in ecological value/ species for different types of habitat. The new focus is more process led following the steps listed below: <ul style="list-style-type: none"> <li>• Roles and Responsibilities</li> <li>• Liaison and collaboration with relevant stakeholders</li> <li>• Liaison with relevant stakeholders when implementing solutions, actions measures</li> <li>• Timescales and implementation/ delivery considerations</li> </ul>
		Additional credit requirements	Each stage has detailed assessment criteria to demonstrate compliance. The use of SQE is one of the requirements for this credit area.
LE 04 Enhancing Site Ecology	Assessment 3 of Ecological Value	Additional credit requirements	Like the previous credit the structure of the assessment seems to have changed although the main themes remain. <p>The areas of assessment cover the following issues:</p> <ul style="list-style-type: none"> <li>• Enhancing biodiversity</li> <li>• Off-site enhancement</li> </ul>

			<ul style="list-style-type: none"> <li>• Liaison and collaboration with relevant stakeholders</li> <li>• Liaison with relevant stakeholders when implementing solutions, actions measures</li> <li>• Roles and responsibilities</li> </ul>
		Additional credit requirements	To demonstrate compliance there are 6 main requirements which again ref the use of SQE for input. The enhancing biodiversity assessment area has quite specific requirements setting out what will be regarded as acceptable. This is beyond what is covered under the current LE 04 but I suspect the content would not differ in reality from what a good SQE report would have covered under the old system.
LE 05 Long Term Impact on Biodiversity	Assessment 4 Long Term Biodiversity Management and Maintenance	Additional credit requirements	<p>As with other credit areas there is less focus on the role of SQE to provide detailed recommendations and a broadening out of the scope to cover the following requirements:</p> <ul style="list-style-type: none"> <li>• Liaising with relevant stakeholders to identify appropriate long term landscape and habitat management and maintenance options and outcomes for the site and its surroundings</li> <li>• A strategic landscape and habitat management plan is developed and agreed including an indicative timetable for implementation and clear responsibilities for its future implementation as the site is developed</li> <li>• Where the strategic plan identifies responsibilities that lie outside of the control of the developer themselves, clear commitments and budgets are identified to allow these to be put in place at the appropriate time.</li> </ul>

Pollution			
BREEAM 2014 Credits	BREEAM 2018 Credits	Type of Change	Summary of Change
Pol 01 Impact of refrigerants	Credit 1 – No refrigerant use  Credit 2 – Impact of refrigerant Credit 3 – Leak detection	No change  No change  No change	<ul style="list-style-type: none"> <li>Define requirements for shell only – default all 3 credits if no ‘refrigerant-using’ building services or systems will be specified.</li> <li>-</li> <li>Change of wording ‘hermetically sealed’ system used rather than stating permanent automated refrigerant leak detection system.</li> <li>Broken down the credit into 4 sections rather than written in 2 paragraphs.</li> </ul>
Pol 02 NOx emission	Credit 1 – Local air quality (change of name)	New mandatory requirement	<ul style="list-style-type: none"> <li>Emission levels must be met under European Directive 2009/125/EC(215). Developments located in an Air Quality Management Area (AQMA) must meet the lower levels for that technology. More stringent NOx level requirements. (No mention of BREEAM Pol 02 calculator)</li> </ul>
Pol 03 Surface water run-off	Credit 1 – Flood resilience Credit 2 – Surface water run-off Credit 3 – Minimising watercourse pollution	No change  No change  No change	
Pol 04 Reduction of night time light pollution	Credit 1 – Reduction of night time light pollution	No change	
Pol 05 Reduction of noise pollution	Credit 1 – Reduction of noise pollution	Minor change	<ul style="list-style-type: none"> <li>Change in standard from BS4 142:2014 to BS 7445 for noise impact assessment requirement.</li> </ul>