

LE 02 Ecological risks and opportunities

(All buildings)

Aim

To determine the existing ecological value associated with the site, including surrounding areas, and the risks and opportunities for ecological protection and enhancement as part of the project.

Overview

Assessment type	Available credits	Applicable assessment criteria
Fully fitted	2 + 1 exemplary	All
Shell and core	2 + 1 exemplary	All
Shell only	2 + 1 exemplary	All
Residential: Fully fitted	2 + 1 exemplary	All
Residential: Partially fitted	2 + 1 exemplary	All
EU Taxonomy	-	All (See Ref 3.0-3.1)

Minimum standards

Rating level	Criteria
-	None

Assessment type specific notes

Reference	Assessment type specific note
-	None

Building type specific notes

Reference	Building type specific note
-	None

Issue specific notes

Reference	Issue specific note
3.0	<p>For EU taxonomy A1-7.1-DNSH 6 – An Environmental Impact Assessment (EIA) where required according to the Planning and Building Act shall be demonstrated.</p> <p>These EU taxonomy requirements are fulfilled via legal requirements, via use of MKB and NVI.</p>
3.1	<p>For EU taxonomy A1-7.1-DNSH6 - For sites/operations located in or near biodiversity-sensitive areas (including the Natura 2000 network of protected areas, UNESCO World Heritage sites and Key Biodiversity Areas, as well as other protected areas), an appropriate assessment, where applicable, has been conducted and based on its conclusions the necessary mitigation measures are implemented.</p> <p>These EU taxonomy requirements are fulfilled via legal requirements, via use of MKB and NVI.</p>

Assessment criteria

This issue is split into four parts:

- Prerequisite – Environmental Impact Assessment
- Survey and evaluation – One credit
- Determining ecological outcomes - One credit
- Exemplary credit – Wider site sustainability

Prerequisite – Environmental Impact Assessment

- 1 An Environmental Impact Assessment (EIA), where required according to the Swedish Environmental Assessment Ordinance (2017:966), shall be demonstrated. Where an EIA has been carried out, the required mitigation and compensation measures for protecting the environment are implemented.

Survey and evaluation – One credit

- 2 A suitably qualified ecologist (SQE) carries out a survey and evaluation (see M1) for the site early enough to influence site preparation works, layout and, where necessary, strategic planning decisions (typically Preparation and Brief stage).
- 3 The SQE's survey and evaluation determines the site's ecological baseline, including:
 - 3.a Current and potential ecological value and condition of the site and related areas within the zone of influence.
 - 3.b Direct and indirect risks to current ecological value from the project.
 - 3.c Capacity and feasibility for enhancement of the site's ecological value and, where relevant, areas within the zone of influence.

- 3.d Biodiversity Units (see Definitions) for the Baseline scenario, if the project intend to fulfil the criteria in LE 04 on calculation of Biodiversity net gain or Urban Greening Factor.

Determining ecological outcomes – One credit

- 4 Achieve criteria 2 and 3.
- 5 The ecologist collaborates with appropriate project team members (e.g. landscape architect, architect, drainage designer etc.), sharing relevant information and recommendations from the survey and evaluation to influence the project design as well as decisions regarding site preparation and construction works (see M3.2).
- 6 Where deemed necessary by the ecologist: the ecologist, with full support from the project team, collaborates with representative stakeholders (see M3.2) early enough to influence key planning decisions (typically Concept Design stage).
- 7 The ecologist identifies the optimal ecological outcomes for the site, and identifies measures to achieve these outcomes in line with:
 - 7.a The collaborations undertaken as part of criteria 5 and 6.
 - 7.b The mitigation hierarchy:
 - 7.b.i Avoidance
 - 7.b.ii Protection
 - 7.b.iii Reduction or limitation of negative impacts
 - 7.b.iv On-site compensation
 - 7.b.v Enhancement, considering the capacity and feasibility within the site, or where this is not viable, off-site.

Exemplary credit – Wider site sustainability

- 8 Achieve criteria 1-7.
- 9 When determining the optimal ecological outcome for the site consider the wider site sustainability-related activities and the potential for ecosystem service-related benefits. For a list of the minimum areas for consideration, see M4.
- 10 Incorporate at least one measure into the design that would demonstrate an ecosystem service related benefit.

Checklists and tables

None

Methodology

M1: Survey and evaluation

For criterion 2 and 3, the SQE can use their discretion to confirm if their survey is early enough to understand the ecological features that are present before works commence and in time to influence site clearance, preparation and layout.

For criteria 2 and 3, the survey and evaluation approach used should be appropriate to the scope and scale of the project, as determined by the SQE.

The evaluation should be performed according to the standards SS 199000:2023 (SV) and SS 199002:2023 (SV). A desktop-study can be used when the SQE determines that a site survey does not contribute to the evaluation or when the inventory season is not prevalent, according to 199000:2023 (SV). The SQE then needs to justify that a desktop-study will provide sufficient information to determine the existing ecological value.

SS ISO 17620 shall be applied where deemed appropriate by the SQE.

M2: Collaboration to determine ecological outcomes

Collaboration needs to happen early in the project to determine ecological outcomes and continue throughout the project whenever key decisions are being made that could impact ecological outcomes. Evidence must include a confirmation from the ecologist that they were allowed to undertake all collaborations with project team members and stakeholders (where appropriate) that they deemed necessary to fulfil the project's optimal ecological outcomes.

M2.1 Collaboration with stakeholders

For criterion 6, where deemed necessary by the ecologist, the ecologist and/or project team should consult with representative stakeholders to determine appropriate options for the site in question. This may include:

- Local government and other statutory relevant organisations.
- Local community groups or organisations.
- Local, regional and or national fauna focused groups.

The nature of this consultation will vary depending on the project's type and scale and the sensitivity of the site and should be guided by the ecologist.

M3: Determining ecological outcomes, and identifying and agreeing measures

Appropriate actions for the site need to optimise ecological outcomes in terms of:

- 1 Ecological benefit offered (pre, during and post project completion, as appropriate).
- 2 Protecting wildlife during site-preparation and construction.
- 3 Contribution of the site to local biodiversity goals taking into consideration quality, connectivity and fragmentation of local habitats.
- 4 Opportunities to enhance the value of existing habitats and biodiversity in the vicinity, or to restore or add new features of ecological value to local biodiversity.
- 5 Wider community and end user involvement benefits.

To identify, appraise and agree appropriate actions for achieving optimal ecological outcomes with stakeholders, the following need to be considered:

- 1 Ecological value and biodiversity, accounting for:
 - 2 Local priorities.
 - 3 Long term viability of the outcome or option.
 - 4 Alignment with the site's function, amenity and value.
 - 5 Practicality, including consideration of:
 - 5.a Timing and duration of implementing and realising the outcome.
 - 5.b Long term management and maintenance implications, and outline costs.
 - 5.c Opportunities and barriers arising from management structures and procurement processes.
 - 5.d Availability of appropriate skills, budgets and other resources at all stages.

M4: Wider site sustainability

For criterion 9, the following opportunities for integrating ecology with wider site sustainability-related activities and ecosystem services should be considered as a minimum and where relevant (see definitions):

- 1 Landscape
 - 1.a Landscape design
 - 1.b Heritage and local character
 - 1.c Green infrastructure
- 2 Health and wellbeing
 - 2.a Recreational space (including growing space, community agriculture or horticultural and allotment activities)
 - 2.b Water quality measures
 - 2.c Noise mitigation measures
 - 2.d Air quality control measures
 - 2.e Light pollution control measures
- 3 Resilience
 - 3.a Climate change mitigation
 - 3.b Management of surface water run-off

- 3.c Flood risk management
- 3.d Climate-sensitive urban design (heat island effect, thermal mass, shading, biotic cooling etc.)
- 4 Infrastructure
 - 4.a Maximising the benefits of green infrastructure and optimising alignment with existing infrastructure on the site and the zone of influence.
 - 4.b Community and end user involvement
 - 4.c Life cycle costing and service life planning (Where targeted under Man 02 Life cycle cost and service life planning)

Compliance notes

Reference	Terms	Description
General		
CN1	Timing of ecological survey or report	If the ecologist's site survey or report is completed at a later stage than required, the ecologist needs to be satisfied that it was produced early enough for the recommendations to influence the Concept Design or design brief stage and leads to a positive outcome in terms of protection and enhancement of site ecology.
CN2	Verifying ecology reports or information	<p>If the appointed ecologist does not meet the definition of a suitably qualified ecologist (SQE), the report or information submitted to support the assessment must be verified by an individual who does.</p> <ol style="list-style-type: none"> 1 The individual verifying the report must provide written confirmation that they comply with the definition of a suitably qualified ecologist. 2 The verifier must provide signed confirmation that they have checked and approved the report. This must clearly reference the report and can be in the form of a signed letter or their printed name and signature on a completed pro-forma. In doing so, they are deemed to confirm that the report: <ol style="list-style-type: none"> 3 Represents sound industry practice. 4 Is correct, truthful, and objective. 5 Is appropriate given the local site conditions and scope of works proposed. 6 Avoids invalid, biased, or exaggerated statements. <p>Such confirmation from the verifier must be provided in addition to all other information required by the relevant technical manual and referenced as part of the evidence submitted to demonstrate compliance.</p>
CN3	Recognized biodiversity assessment and enhancement tools	Recognised biodiversity assessment and enhancement tools is listed in criterion 6 in LE04.

Evidence

Criteria	Interim design stage	Post construction stage
Prerequisite		
1	Copy of the Environmental Impact Assessment	No further actions required post-construction; no additional evidence is required other than that listed for the design stage.
Survey and evaluation		
2-3	A copy of the ecological survey or report which covers the contents within the methodology for 'Survey and evaluation' (M1).	No further actions required post-construction; no additional evidence is required other than that listed for the design stage.
Determining ecological outcomes		
4-7	Statement from the ecologist confirming that they collaborated with all project team members and stakeholders they deemed necessary to identify and deliver the project's optimal ecological outcomes and measures to achieve them.	No further actions required post-construction; no additional evidence is required other than that listed for the design stage.
Wider site sustainability		
8-10	A report or statement confirming which ecosystem service-related benefits were considered, as well as the measure/s being incorporated into the design. This should be part of the optimal ecological outcomes document.	Evidence confirming ecosystem service benefit has been implemented into the as-built project.

Definitions

Biodiversity net gain (BNG)

Biodiversity net gain (BNG) is a way of creating and improving natural habitats. BNG makes sure development has a measurably positive impact ('net gain') on biodiversity, compared to what was there before development. This is calculated as a percentage change in pre and post development amount of biodiversity units.

Biodiversity units (BU)

The units in which relative biodiversity value of an ecological feature is measured using recognised biodiversity assessment and enhancement tools. The biodiversity unit for each feature is calculated using the following components where applicable:

- 1 Distinctiveness
- 2 Condition
- 3 Strategic significance
- 4 Riparian zone encroachment
- 5 Watercourse encroachment

Each feature is assigned to a "module" below and the BUs are added up for each one:

- 1 Area habitat

- 2 Hedgerow habitat
- 3 Watercourse habitat

Compensation

Measures taken to make up for the loss of, or permanent damage to, ecological features despite mitigation, e.g. replacement habitat or improvements to existing habitats similar in terms of biological features and ecological functions to that lost or damaged.

Compensation can be provided either within or outside the project site, in line with the following hierarchy: within site, adjacent to site and off site (offsetting) as a last resort.

Connectivity

The degree to which the configuration of habitats facilitates movement of species between and across resource patches.

Conservation priority

Conservation priorities are areas or species that are most important to conserve due to their ecological value or vulnerability. These areas may include:

- Wilderness areas, or areas that are biologically intact and have little human intervention.
- Areas with significant biodiversity.
- Areas that are critical habitats for endangered or vulnerable species
- Areas that share boundaries with existing protected land.

Ecological baseline

The ecological baseline conditions are those which exist in the absence of proposed activities. It is used to compare performance after construction, to determine if it is the same or significantly changed. Often through a calculation tool for Biodiversity net gain or Urban Greening Factor, see LE 04.

Ecological feature

Examples of ecological features include habitat, ecosystems and species.

Ecological value

The importance, worth, or usefulness of a species, habitat or ecosystem in terms of its impact on other species and habitats, as well as the other environmental, social, cultural and economic value that can be delivered from species and habitats and their interactions (ecosystem services) specific to a geographical frame of reference.

Ecosystem services

Ecosystem services are the benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; economic value such as tourism, and cultural and social services such as health and wellbeing, recreational, spiritual, religious and other non-material benefits.

Enhancement

Improved management of ecological features or provision of new ecological features, resulting in a net benefit to biodiversity, which is unrelated to a negative impact or is 'over and above' that required to mitigate or compensate for an impact.

Green infrastructure

Multi-functional space, urban and rural, that can form a network or be self-contained, which can deliver a wide range of environmental and quality of life benefits for local communities. It covers both 'green' and 'blue' (water environment) features of the natural and built environments. Examples include parks, open spaces, playing fields, woodlands, wetlands, grasslands, river and canal corridors, allotments, private gardens and living (green) roofs and façades.

Mitigation hierarchy

A framework that businesses, developers, and ecologists can follow in their efforts to avoid, minimise, restore, or offset biodiversity loss. The mitigation hierarchy is as follows:

- 1 Avoidance
- 2 Protection
- 3 Reduction or limitation of negative impacts
- 4 On-site compensation
- 5 Enhancement, considering the capacity and feasibility within the site, or where this is not viable, off-site

Optimal ecological outcomes

The optimal ecological outcomes for a project comprise high level mission statements, for which individual mitigation and enhancement measures must be identified and implemented to achieve said outcome.

For example, the optimal ecological outcomes might include 'Ensuring the site protects and supports local bird species', and the resulting measures to deliver this could be installing bird boxes / bricks into the project and undertaking nesting bird checks prior to vegetation clearance.

Site

For the purposes of BREEAM the site is considered to be the land enclosed by the boundary of the BREEAM assessment.

Strategic significance

Defines whether the habitat is a local priority or in a priority area for enhancement.

Suitably qualified ecologist (SQE)

An individual achieving all the following items can be considered to be 'suitably qualified' for the purposes of compliance with BREEAM:

- 1 Have the ability and relevant competence for the tasks included in the inventories or preliminary studies that are carried out.
- 2 During field inventories, be able to identify the biotopes, conservation species, organism communities, elements, structures and substrates that occur in the inventory area and that are necessary to deliver a quality-assured result.
- 3 Have the ability and relevant competence to deliver a quality-assured result in the part of the country and during the time of year that the field inventory is carried out.
- 4 Can determine which environmental information is relevant to search for and use.
- 5 Be able to understand the requirements in this document and interpret them with the support of science and proven experience.
- 6 Be well familiar with relevant literature and other guidance documents that are necessary to interpret the requirements in SS 199000:2023 and put them into practice.
- 7 Can assess the relevance of various observations and be able to make their own assessments with reasonable justifications if other guidance is lacking.

Zone of influence

The area(s) over which ecological features may be affected by the biophysical changes caused by a proposed project and associated activities. For example, this can include areas of land, flight paths or water bodies that are impacted by the site being assessed. These areas can be adjacent to the site or can be areas that are impacted by the site although not physically linked, including areas downstream. Species and habitats in areas within the zone of influence might be negatively affected by changes on an assessed site but these changes may also provide opportunity to maximise the benefits of enhancement activities within the zone of influence.

Additional information

BREEAM Strategic Ecology Framework

The BREEAM Strategic Ecology Framework was developed to guide the development of ecology related assessment criteria in BREEAM.

The aims of the Strategic Ecology Framework are to:

- Understand the existing ecological value and condition of a site and its associated areas, to identify appropriate objectives.
- Identify, protect, and enhance key existing ecological features.
- Remove or limit as far as possible, existing features identified as having negative impacts on the ecological value of the site.
- Mitigate unavoidable impacts and compensate against residual impacts.
- Enhance the broader ecological value of the site and its links to associated areas through the creation and/or management of ecological features on or near the site.
- Secure ongoing management and maintenance to ensure intended outcomes are realised over the life of the site.

Wider sustainability benefits

For more information and examples of the wider sustainability benefits that can be considered, see the BREEAM Briefing Paper 'Greening the Built Environment'.

Protected Nature Map

The Protected Nature Map tool is a tool from the Swedish Environmental Protection Agency that shows areas of protected nature in Sweden. It helps people who work with nature conservation or land and water planning. The map tool shows, among other things, national parks, nature reserves and Natura 2000 areas.