

Overview

This Unit for is about managing the impact of the built environment on the natural environment. Of course decisions will have to be made on real life-threatening issues. That judgement call rests with you. The unit requires a developing knowledge of the natural environment and the ability to quantify and justify decisions against a changing political climate. The aim is to seek continual enhancement about the sourcing of materials, and to predict and manage the effects caused by limited resources on society.

You will need to evaluate products against the sustainable agenda. The identification and management of conflicting criteria has to be quantified using models, predictions of behaviour patterns resulting in improved levels of building user satisfaction and the creation of added value to the client organisation. A detailed knowledge is required of all the influencing factors that will contribute to the preparation of a long-term sustainability strategy linked to the organisation's business plans.

You will supply sufficient data and additional details of the processes that lead to the approval of the sustainability strategy. This needs customising to the proposed project.

It is important to determine the clear demarcation of the statutory obligations of the client and the building user and how those obligations are monitored and enforced. Evidence will be required to support the regular management of systems which have been developed to monitor quality, the levels of performance and financial outturn against predetermined targets together with the details of reviews and, if necessary, the incorporation of changing influencing factors. This evidence should contain details of how these matters are communicated to the individual or groups who are responsible for the progress of the strategies. Project review will capture the base decision data, archiving this for decision making on future sustainable projects

Performance criteria

You must be able to:

Identify and evaluate sustainable resources

- P1 investigate, from appropriate **information sources**, the **factors** which impact on the **utilisation** and sustainability of finite and renewable resources
- P2 assess accurately the costs and implications of the management and replacement of renewable resources
- P3 identify and summarise appropriate and valid **information sources** and identify potential **alternative resources**
- P4 compare the technical performance and **environmental implications** of **alternative resources** with the performance of existing finite resources with a similar function and calculate any variances
- P5 investigate, assess and recommend suitable strategies for developing **alternative resources**, which indicate positive technical and environmental advantages

Investigate, evaluate and present sustainable requirements

You must be able to:

- P6 identify **goals and priorities** for potential development, both currently and in the future
- P7 **investigate** whether there is a justifiable need to undertake development and considering **alternatives**
- P8 **investigate** and identify the design, function and performance requirements of the potential project
- P9 **investigate** economic factors and **resources, environmental and ecological factors**, and **social views** that affect the future **asset value and sustainability** of potential development
- P10 evaluate the best balance between the potential **asset value and sustainability** and project design, function, performance and return on investment
- P11 present development strategies in a suitable format and justifying them to decision makers

Assess the environmental impact of development proposals

You must be able to:

- P12 investigate the **requirements** for assessing the environmental impact of **proposals** by examining policy documents, consulting stakeholders and consulting experts
- P13 select the **factors** which will be included in the assessment and the **criteria** to be used for assessing the impact
- P14 collate **relevant data** and examine the **proposal** in its context
- P15 identify and review **alternative solutions** which will improve environmental quality and increase sustainability
- P16 analyse and forecast the environmental impact of the selected **factors**, both individually and in combination

**Performance
criteria**

P17 assess, quantify and report on the significance of each **factor** and suggest measures which will reduce the environmental impact

Knowledge and understanding

You need to know and understand:

Identify and evaluate sustainable resources

- K1 what to identify as appropriate and valid **information sources** (understanding)
- K2 how to summarise appropriate and valid **information sources** (application)
- K3 how and why to investigate, from appropriate **information sources**, the **factors** which impact on the **utilisation** and sustainability of finite and renewable resources (analysis)
- K4 how and why to assess accurately the costs and implications of the management and replacement of renewable resources (analysis)
- K5 what to identify as potential **alternative resources** (understanding)
- K6 how to calculate any variances between the technical performance and **environmental implications of alternative resources** with the performance of existing finite resources with a similar function (application)
- K7 how and why to compare the technical performance and **environmental implications of alternative resources** with the performance of existing finite resources with a similar function (synthesis)
- K8 how and why to investigate and assess suitable strategies for developing **alternative resources**, which indicate positive technical and environmental advantages (analysis)
- K9 how and why to recommend suitable strategies for developing **alternative resources**, which indicate positive technical and environmental advantages (synthesis)

Investigate, evaluate and present sustainable requirements

You need to know and understand:

- K10 what to identify as **goals and priorities** for potential development (understanding)
- K11 how and why to **investigate** whether there is a justifiable need to undertake development and consider **alternatives** (analysis)
- K12 how to identify the design, function and performance requirements of the potential project (understanding)
- K13 how and why to **investigate** the design, function, and performance requirements of the potential project (analysis)
- K14 how and why to **investigate** economic factors and **resources, environmental and ecological factors**, and **social views** that affect the future **asset value and sustainability** of potential development (analysis)
- K15 how and why to evaluate the best balance between the potential **asset value and sustainability** and project design, function, performance and return on investment (evaluation)
- K16 how to present development strategies in a suitable format to decision makers (application)
- K17 how and why to justify development strategies to decision makers (synthesis)

Knowledge and understanding

You need to know and understand:

Assess the environmental impact of development proposals

- K18 how and why to investigate the **requirements** for assessing the environmental impact of **proposals** (analysis)
- K19 how to report on the significance of each **factor** (application)
- K20 how and why to assess and quantify the significance of each **factor** (analysis)
- K21 how and why to suggest measures which will reduce the environmental impact (synthesis)
- K22 how and why to select the **factors** which will be included in the assessment and the criteria to be used for assessing the impact (evaluation)
- K23 how to collate **relevant data** (application)
- K24 how and why to examine the **proposal** in its context (analysis)
- K25 what to identify as **alternative solutions** which will improve environmental quality and increase sustainability (understanding)
- K26 how and why to review **alternative solutions** which will improve environmental quality and increase sustainability (analysis)
- K27 how to forecast the environmental impact of the selected **factors** both individually and in combination (application)
- K28 how and why to analyse the environmental impact of the selected **factors** (evaluation)

Scope/range

Identify and evaluate sustainable resources

- 1 Information sources:
 - 1.1 desk research of published literature
 - 1.2 commissioned research
 - 1.3 consultation with appropriate authorities
 - 1.4 colleagues
- 2 Factors:
 - 2.1 nature
 - 2.2 location
 - 2.3 continued availability
 - 2.4 energy use/demand
 - 2.5 climate change
- 3 Utilisation:
 - 3.1 historic use
 - 3.2 current use
 - 3.3 anticipated future use
- 4 Environmental implications:
 - 4.1 social
 - 4.2 cultural
 - 4.3 technical
 - 4.4 economic
 - 4.5 visual
 - 4.6 political
 - 4.7 legal
- 5 Alternative resources:
 - 5.1 culturally and environmentally acceptable to use finite and non-renewable resources
 - 5.2 local and global ecological systems
 - 5.3 technological alternatives

Investigate, evaluate and present sustainable requirements

- 6 Goals and priorities:
 - 6.1 quantity
 - 6.2 cost

Scope/range

- 6.3 time
- 6.4 development
- 6.5 improvement
- 6.6 use
- 6.7 whole life costs
- 6.8 environmental impact and sustainability
- 6.9 security
- 6.10 health and safety
- 6.11 logistics
- 6.12 maintenance
- 7 Investigating:
 - 7.1 use of benchmarking tools
 - 7.2 research
 - 7.3 consultancy advice
 - 7.4 regulatory authorities
- 8 Alternatives:
 - 8.1 development
 - 8.2 adaptation
 - 8.3 alteration
 - 8.4 refurbishment
 - 8.5 relocation
 - 8.6 innovation
- 9 Resources:
 - 9.1 finance
 - 9.2 workforce (skills)
 - 9.3 raw materials
 - 9.4 manufactured systems and components
 - 9.5 energy & utilities
 - 9.6 land use
- 10 Environmental and ecological factors:
 - 10.1 natural resources
 - 10.2 emissions (air, land, water)
 - 10.3 waste and recycling

Scope/range

- 10.4 access to environmentally sensitive areas
- 10.5 effects of climate change
- 10.6 contamination
- 10.7 protect archaeological and historically valuable resources
- 11 Social views:
 - 11.1 client
 - 11.2 funders/investors
 - 11.3 workforce
 - 11.4 suppliers
 - 11.5 users
 - 11.6 community
- 12 Asset value and sustainability:
 - 12.1 provide capital growth
 - 12.2 location in relation to a stable economy and community
 - 12.3 saleable revenue
 - 12.4 minimising running costs (environmental and economic)
 - 12.5 minimising maintenance
 - 12.6 location

Assess the environmental impact of development proposals

- 13 Requirements:
 - 13.1 social and community obligations
 - 13.2 legal obligations
 - 13.3 current codes of practice
 - 13.4 feasibility
 - 13.5 conditions to be applied to the proposal
 - 13.6 considering significant environmental issues and effects
 - 13.7 examining alternatives
 - 13.8 proposing appropriate mitigation measures
- 14 Proposals:
 - 14.1 individual projects
 - 14.2 strategic policies, plans and proposals
- 15 Factors:

Scope/range

- 15.1 social (community use and adaptability)
- 15.2 ecological (including resource use)
- 15.3 conservation
- 15.4 technical (noise, insulation and fire)
- 15.5 programme
- 15.6 sustainability
- 15.7 accessibility
- 15.8 waste and recycling
- 15.9 regulatory
- 15.10 health and safety
- 15.11 emissions (air, land, water)
- 15.12 land use
- 15.13 protecting valuable archaeological & historical resources
- 15.14 logistics
- 16 Criteria:
 - 16.1 direct and indirect effects
 - 16.2 positive and negative
 - 16.3 risk and opportunity
 - 16.4 lifecycle of project
- 17 Relevant data:
 - 17.1 project baseline information
 - 17.2 survey information
 - 17.3 relevant standards
 - 17.4 relevant legal, regulatory and policy requirements
 - 17.5 historical
- 18 Alternative solutions:
 - 18.1 different locations
 - 18.2 different layouts
 - 18.3 extending the use of existing resources
 - 18.4 use of alternative resources
 - 18.5 changes to implementation and phasing
 - 18.6 not carrying out the proposal

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Assess and evaluate the environmental impact of
developments



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