COSTPCBCE21.2-B53.2
Evaluate and advise on energy factors in conservation

Overview

This unit is about collating and recording information and providing advice on energy efficiency.

It also concerns the whole life cost of a building project in terms of embodied energy and carbon. You will need to be able to establish the future energy needs of a property and assess and review the whole life energy, together with making recommendations for the most viable options.

COSTPCBCE21.2-B53.2
Evaluate and advise on energy factors in conservation

Performance criteria

Collate and evaluate information for the assessment of energy efficiency

You must be able to:

P1 explain to the client that an Energy Performance Certificate is a legally required document in certain **circumstances**, that its form and content is prescribed, and that it has to be accompanied by cost-effective recommendations

P2 explain to the client the terms and conditions for energy assessment

P3 explain to the client the limitations and constraints of the planned energy assessment

P4 identify any circumstances that prevent you from undertaking an energy assessment and explain the reasons to the client politely and clearly

P5 identify and collate information for the assessment of the energy efficiency of the **property**

P6 follow the correct procedures for collecting **information** to enable the energy efficiency of the **property** to be determined

P7 keep your notes and records legible, complete and accurate

P8 evaluate the collated **information** to calculate the energy efficiency rating of the **property**

P9 provide practical advice based on the ratings and recommendations of the energy efficiency report

Assess, and advise on embodied energy and whole life costs

You must be able to:

P10 confirm **energy goals and priorities** for the **asset** and assess current and future needs

P11 confirm assumptions about embodied energy and use options for the **asset** with **stakeholders**

P12 review the potential **whole life energy and carbon** content of the **asset** from historical analysis and the conservation, repair and maintenance programme information

P13 **assess and quantify** the **whole life energy and carbon cost** implications for the **asset** taking into account the views of experts and **stakeholders**

P14 review the **whole life energy and carbon** costs against the **asset's significance** and **energy goals and priorities**

P15 select and recommend the most viable options and **present** them clearly and accurately

COSTPCBCE21.2-B53.2
Evaluate and advise on energy factors in conservation

Knowledge and understanding

Collate and evaluate information for the assessment of energy efficiency

You need to know and understand:

K1	how to explain to the client that an Energy Performance Certificate is a legally required document in certain **circumstances**, that its' form and content is prescribed, and that it has to be accompanied by cost-effective recommendations (application)
K2	how to explain to the client the terms and conditions under which you will undertake an energy assessment (application)
K3	how to explain to the client the limitations and constraints of the planned energy assessment (application)
K4	what to identify as any **circumstances** that prevent you from undertaking and energy assessment (understanding)
K5	what to identify as **information** required for the assessment of the energy efficiency of the **property** (understanding)
K6	how to explain the reasons to the client politely and clearly (application)
K7	how to collate **information** for the assessment of the energy efficiency of the **property**
K8	how to collect **information** to enable the energy efficiency of the **property** to be determined (application)
K9	how to keep your notes and records legible, complete and accurate (application)
K10	how and why to evaluate the collated **information** and calculate the energy efficiency rating of the **property** (evaluation
K11	how and why to provide practical advice based on the ratings and recommendations of the energy efficiency report (synthesis)

Assess, and advise on embodied energy and whole life costs

You need to know and understand:

K12	how to confirm **energy goals and priorities** for the **asset**, both currently and in the future (application)
K13	how and why to assess the current and future needs of the **asset** (analysis)
K14	how to confirm assumptions about embodied energy and use options for the asset with **stakeholders** (application)
K15	how and why to review the potential **whole life energy and carbon** content of the asset from historical analysis (analysis)
K16	how and why to **assess and quantify** the **whole life energy and carbon** cost implications for the **asset** taking into account the views of experts and project **stakeholders** (analysis)
K17	how and why to review the **whole life energy and carbon** costs against the **asset's significance** and **energy goals and priorities** (analysis)
K18	how to select the most viable options and **present** them clearly and

	accurately (evaluation)
K19	how to recommend the most viable options and **present** them clearly and accurately (synthesis)

COSTPCBCE21.2-B53.2
Evaluate and advise on energy factors in conservation

Scope/Range

Collate and evaluate information for the assessment of energy efficiency

1 Circumstances:
- 1.1 properties beyond your current level of competence
- 1.2 difficulties in gaining access
- 1.3 conflicts of interest

2 Information:
- 2.1 levels of thermal insulation
- 2.2 types of efficiency of the heating system
- 2.3 ventilation
- 2.4 thermal performance of building elements such as mass walls, windows, floors and roofs

3 Property:
- 3.1 pre-1919
- 3.2 post-1919

Assess, and advise on embodied energy and whole life costs

4 Energy goals and priorities:
- 4.1 energy sources and infrastructure
- 4.2 energy consumption
- 4.3 carbon targets
- 4.4 use of renewable resources
- 4.5 use of non-renewable resources
- 4.6 energy reduction programmes
- 4.7 heat recovery and re-use
- 4.8 energy efficient technologies
- 4.9 energy efficient practices
- 4.10 embodied energy
- 4.11 sensitive retrofit

5 Asset:
- 5.1 pre-1919 building stock
- 5.2 post-1919 building stock

6 Stakeholders:
- 6.1 internal
- 6.2 external

7 Whole life energy and carbon:
- 7.1 energy sources and infrastructure
- 7.2 design stage
- 7.3 materials, components and embodied energy
- 7.4 construction and installation

7.5 energy use
7.6 conservation, repair and maintenance

8 Assess and quantify:

8.1 cost benefit analysis
8.2 whole life cycle costing
8.3 lifetime impact modelling
8.4 carbon accounting
8.5 significance of asset
8.6 feasibility studies
8.7 risk management
8.8 cost effective
8.9 historic analysis

9 Significance:

9.1 historical
9.2 conservation
9.3 social
9.4 cultural
9.5 political
9.6 aesthetic
9.7 environmental
9.8 visual and spatial
9.9 repair & maintenance
9.10 ecological and environmental
9.11 construction
9.12 architectural
9.13 archaeological
9.14 technological

10 Present:

10.1 orally
10.2 in writing
10.3 graphically
10.4 electronically

COSTPCBCE21.2-B53.2
Evaluate and advise on energy factors in conservation

Developed by	ConstructionSkills
Version Number	1
Date Approved	March 2012
Indicate review date	March 2018
Validity	Current
Status	Original
Originating organisation	ConstructionSkills
Original URN	COSTPCBCE21.2-B53.2
Relevant occupations	Town planners; chartered surveyors (not quantity surveyors); building inspectors; construction project manager and related professions
Suite	Town Planning, Conservation and Building Control
Key Words	Embodied energy; carbon; future energy needs; whole life costs