

**National Occupational Standards  
for Building Energy Assessment (Non-dwellings)  
on Construction, Sale or Rent**

**Asset Skills – Final Version Approved February 2009**

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# National Occupational Standards for Building Energy Assessment (Non-dwellings) on Construction, Sale or Rent

These National Occupational Standards (NOS) have been developed by Asset Skills in consultation with the Department for Communities & Local Government and a wide range of stakeholders and technical experts.

These standards have been developed for individuals undertaking assessment of any building other than a dwelling being built that requires a Regulation 17C statement (as required by regulations 17C and 20D of the Building Regulations 2000 (regulation 12D in the Building (Approved Inspectors, etc) Regulations 2000 and / or an Energy Performance Certificate (EPC) as required by regulation 17E of the Building Regulations 2000 (regulation 12 in the Building (Approved Inspectors etc) Regulations 2000, in England and Wales, and their equivalent in Scotland and Northern Ireland.

Note 1: The above paragraph relates to England and Wales. Building Regulations in Northern Ireland are similar to those in England and Wales but differ slightly in their numbering and terminology. In Scotland, Building Regulations are referred to as Building Standards.

Note 2: Asset Skills are aware that the distinction between energy assessments of non-dwellings at level 3 and those at level 4 needs to be more explicitly defined and it is intended that a separate consultation on this issue will be conducted in June / July 2008.

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## **UNIT 1**

## **Work in a safe, effective and professional manner**

Element 1.1	Contribute to the maintenance of health, safety and security at work
Element 1.2	Develop and maintain effective working relationships
Element 1.3	Conduct energy assessments in a professional and ethical manner

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### **About this Unit**

This Unit covers the essential, general competences expected of all accredited professionals in Energy Assessment regardless of their working environment. It is common to the National Occupational Standards for Asset Ratings, Operational Ratings and Air Conditioning Systems.

Element 1.1 describes the activities involved in contributing to the maintenance of health, safety and security at work. You must identify and manage the risks associated with your work, and ensure that your conduct does not endanger yourself or others. You are expected to know, and work in accordance with, the provisions of relevant legislation (e.g. Health and Safety at Work Act) and any relevant workplace policies.

Element 1.2 covers the development and maintenance of effective working relationships with all those people with whom you come into contact during your work. You are expected to communicate with others in a polite, clear and respectful manner, respond to enquiries and work towards avoiding any disputes that may arise. You are also expected to comply with formal complaints procedures if and when complaints are received. The main groups of people with whom you will need to develop good working relationships are your clients, other professionals, colleagues, building control bodies (local authorities and approved inspectors) and anyone else with whom you come into contact in the course of your work.

Element 1.3 covers the conduct of work in a professional and ethical manner. You are expected to present a positive and professional image at all times, work in accordance with prescribed codes of conduct and standards of good practice, and take steps to avoid any potential conflicts of interest during your work. It is also vital that you comply with the specific auditing and monitoring requirements of your accrediting organisation. Importantly, you must recognise and work within the limits of your own competence and expertise.

**Element 1.1**

**Contribute to the maintenance of health, safety and security at work**

**Performance Criteria**

**You must be able to:**

- 1 carry out working practices in accordance with legal requirements
- 2 identify any health, safety and security risks in different locations and take action to minimise or mitigate such risks
- 3 ensure your own personal conduct in the workplace does not endanger the health, safety and security of yourself and other people
- 4 follow the workplace policies and suppliers' or manufacturers' instructions for the safe use of equipment, materials and products
- 5 follow emergency procedures effectively to protect the health, safety and security of people
- 6 pass on any suggestions for improving health, safety and security within the **workplace** to the responsible persons

**Knowledge and Understanding**

**You must know and understand:**

- (a) the legal duties for health, safety and security in the **workplace** as required by legislation
- (b) what health, safety and security risks could exist in different locations, and the action to take to minimise or mitigate risks
- (c) why it is important to remain alert to the presence of risks in the **workplace**
- (d) the importance of personal conduct in maintaining the health, safety and security of yourself and others
- (e) suppliers' and manufacturers' instructions for the safe use of equipment, materials and products
- (f) who should be informed of any conflicts between different health, safety and security requirements
- (g) the procedures for different types of emergency
- (h) what types of suggestions for improving health, safety and security at work could be made and who should be given them

**Element 1.1**

**Contribute to the maintenance of health, safety and security at work**

**Scope**

**A. workplace:**

- (i) your own office
- (ii) any other location you visit in the course of your work

**Element 1.2****Develop and maintain effective working relationships****Performance Criteria****You must be able to:**

- 1 present a positive personal and professional image at all times when dealing with **others**
- 2 develop and maintain productive working relationships with **others** which promote goodwill and trust
- 3 deal with **others** in a tactful, courteous and equitable manner at all times
- 4 work within the limits of your own competence and expertise
- 5 recognise and manage any potential conflicts of interest that may arise during your work
- 6 request information from **others** in a polite, clear and professional manner
- 7 respond promptly to enquiries from **others** and ask questions to clarify their needs
- 8 take action in cases where you are unable to respond to enquiries from **others**
- 9 handle and resolve disputes and differences of opinion in ways which minimise offence and maintain respect
- 10 comply with formal complaints procedures

**Knowledge and Understanding****You must know and understand:**

- (a) why it is important to present a positive personal and professional image when dealing with people, and how this can be achieved
- (b) why it is important to promote goodwill and trust when working with **others**, and ways in which this can be achieved
- (c) the extent and limits for your own competence and expertise; the importance of not working beyond these limits
- (d) the range of potential conflicts of interest that you may encounter, and the action required to manage these
- (e) how to identify the information you require and the potential sources of such information
- (f) how to respond to enquiries from **others** and how to clarify their needs
- (g) how to respond to enquiries which are outside your authority, beyond your area of knowledge / expertise or where the information requested is confidential
- (h) ways in which disputes or differences of opinion should be handled and resolved to minimise offence and maintain respect
- (i) the details of the formal complaints procedure that covers your work, and any specific organisational requirements with regard to complaints

**Element 1.2**

**Develop and maintain effective working relationships**

**Scope**

**A. others:**

- (i) clients
- (ii) other professionals
- (iii) colleagues
- (iv) building control bodies
- (v) anyone else with whom you come into contact in the course of your work

**B. action:**

- (i) inform the enquirer
- (ii) pass the enquiry onto the relevant person or organisation



**Element 1.3****Conduct energy assessments in a professional and ethical manner****Performance Criteria****You must be able to:**

- 1 carry out your work in accordance with prescribed codes of conduct, ethical standards and **recognised guidance and codes of practice**
- 2 develop yourself within your role
- 3 manage your own work activities effectively
- 4 recognise and respond appropriately to pressure from any person which might influence the objectivity of your judgement
- 5 comply with the auditing and monitoring requirements of the accreditation or certification organisation to which you belong
- 6 comply with all legislation relevant to your work
- 7 have regard to all relevant approved guidance relating to the assessment of energy performance

**Knowledge and Understanding****You must know and understand:**

- (a) your specific responsibilities under prescribed codes of conduct and ethical standards
- (b) the importance of complying with **recognised guidance and codes of practice**
- (c) the specific auditing or monitoring requirements that relate to your registration with your accreditation organisation and your responsibilities in complying with these
- (d) Government Policy on combating Climate Change and the reduction of carbon emissions
- (e) the main points of the legislation relevant to your work – be it derived from the Housing Act 2004 and its associated Regulations for Home Information Packs or the European Performance of Buildings Directive (EPBD) and its associated Regulations or elsewhere
- (f) relevant approved guidance relating to the assessment of energy performance

**Element 1.3**

**Conduct energy assessments in a professional and ethical manner**

**Scope**

**A. others:**

- (i) clients
- (ii) other professionals
- (iii) colleagues
- (iv) building control bodies
- (v) others with whom you may be in contact during the course of your work as an Energy Assessor

## **UNIT 2**

### **Prepare for energy assessments of non-dwellings to produce Regulation 17C calculations (and their equivalent in Scotland and Northern Ireland), Energy Performance Certificates (EPCs), Operational Ratings (ORs), Display Energy Certificates (DECs) and Advisory Reports (ARs)**

Element 2.1	Agree and confirm instructions to undertake energy assessments
Element 2.2	Investigate relevant matters relating to the property and energy usage

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#### **About this Unit**

This Unit covers activities that are carried out prior to the energy assessment of non-dwellings to produce certificates (EPCs or DECs) and reports (Recommendations Reports and Advisory Reports) and the report required to demonstrate compliance with Regulations 17C and 20D of the Building Regulations 2000 (regulation 12D of the Building (Approved Inspectors etc) Regulations 2000 (and their equivalent in Scotland and Northern Ireland) where an approved inspector is the building control body), i.e. taking instructions, clarifying requirements and making initial enquiries on matters relating to the property in question.

It is common to both these NOS and those for Operational Ratings.

Note that the term 'assessment' is used throughout the standards when referring to the overall process of determining the Asset Rating of a property, or its Operational Rating, whereas 'inspection' is used only when referring to on-site inspection of the property and its features.

Element 2.1 requires that you agree and confirm instructions to undertake energy assessments.

Element 2.2 is about investigating relevant matters relating to the property and energy usage, including confirmation from the client of the design of the building as built, together with an indication of any changes made to the design during construction.

Element 2.1 Agree and confirm instructions to undertake energy assessments	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 respond promptly to requests to undertake energy assessments from <b>clients</b></li> <li>2 determine the nature and characteristics of the property to ensure that it requires an Operational Rating or Asset Rating as appropriate</li> <li>3 clarify and confirm the requirements and expectations of <b>clients</b> and the scope of your instructions</li> <li>4 explain to the client that the Regulation 17C statement, (and their equivalent in Scotland and Northern Ireland) and Energy Performance Certificates are legally required documents in almost all circumstances, that their form and content is prescribed, and that the EPC must be accompanied by cost-effective recommendations</li> <li>5 explain to <b>clients</b> the terms and conditions and fee structure under which you will undertake an energy assessment</li> <li>6 explain to <b>clients</b> the limitations and constraints of the planned energy assessment</li> <li>7 confirm to <b>clients</b> the terms, conditions and arrangements that have been agreed</li> <li>8 provide any necessary guidance to <b>clients</b> with regard to the legislation governing energy assessment</li> <li>9 confirm to <b>clients</b> the terms, conditions and arrangements that have been agreed</li> <li>10 confirm with the <b>clients</b> or other occupiers any <b>specific arrangements</b> that apply to the energy assessment</li> <li>11 identify any <b>circumstances</b> that prevent you from undertaking an energy assessment and explain the reasons to <b>clients</b> politely and clearly</li> <li>12 select a software tool approved under the</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the Building and EPB Regulations energy performance requirements that are relevant to new buildings other than dwellings</li> <li>(b) the types of property and situations that do not by law require energy certification and how to deal with voluntary certification</li> <li>(c) how to clarify and confirm the requirements and expectations of the <b>client(s)</b> and the scope of your instructions</li> <li>(d) how to identify and explain to <b>clients</b> any <b>circumstances</b> that prevent you from undertaking an energy assessment</li> <li>(e) the limitations and constraints that apply to the conduct of energy assessments</li> <li>(f) the importance of explaining and confirming in writing the arrangements agreed between you and <b>client(s)</b></li> <li>(g) the importance of explaining the terms and conditions and fee structures and payment arrangements for energy assessments</li> <li>(h) the legislation governing energy assessment</li> <li>(i) the limitations and constraints of the planned energy assessment</li> <li>(j) how to confirm on-site inspection arrangements with the <b>client(s)</b> or other occupier</li> <li>(k) the <b>circumstances</b> that may prevent you from undertaking an energy assessment and the importance of explaining the reasons to <b>clients</b> politely and clearly</li> <li>(l) the importance of confirming whether any <b>specific arrangements</b> apply to the energy assessment</li> <li>(m) the frequency of energy assessments and the validity of certificates and reports</li> </ol>

Regulations for the energy assessment	(n) which software tools have been approved for particular applications and the principles of their operation
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**Element 2.1      Agree and confirm instructions to undertake energy assessments**

**Scope**

**A.    Specific arrangements:**

- (i) access to the property
- (ii) those present at the property at the time of on-site inspection
- (iii) health and safety issues

**B.    Circumstances:**

- (i) properties beyond your current level of competence
- (ii) your own diary pressures
- (iii) difficulties in gaining access
- (iv) conflicts of interest
- (v) lack of key information

**C.    Clients:**

- (i) internal
- (ii) external

Element 2.2 Investigate relevant matters relating to the property and energy usage	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 investigate and record such information as is necessary to ensure complete and comprehensive energy assessment and certification</li> <li>2 evaluate information in order to identify any <b>significant factors</b> that may influence the conduct of the energy assessment</li> <li>3 explain the scope of information that will assist the energy assessment to <b>clients</b> and request such information from them</li> <li>4 inform <b>clients</b> promptly in cases where your investigations reveal problems that prevent you from assessing the energy performance of the property</li> <li>5 identify circumstances that prevent you from assessing the energy performance of the property and explain this to <b>clients</b> with reasons</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the Building and EPB Regulations energy performance requirements that are relevant to new buildings other than dwellings</li> <li>(b) the different types of information that it is important to obtain to ensure a complete and accurate assessment and certificate</li> <li>(c) the different sources of information (including existing calculations and energy audit reports) relating to the energy performance of the property and how to obtain such information</li> <li>(d) the different stages involved in assessing the energy performance of new buildings i.e. the design assessment (ensuring compliance with relevant aspects of Building Regulations, and leading to the production of the 'as built' assessment, for the purposes of production of an Energy Performance Certificate</li> <li>(e) prevailing geographical / environmental features that may affect the energy performance of the property</li> <li>(f) how to evaluate relevant information in order to identify and address any <b>significant factors</b> that may influence the energy assessment</li> <li>(g) the special circumstances that may apply to some properties in relation to energy usage</li> <li>(h) how to identify circumstances that prevent you from assessing the energy performance of the property and the importance of explaining to clients why you may not be able to fulfil the agreed contract</li> </ol>

**Element 2.2**

**Investigate relevant matters relating to the property and energy usage**

**Scope**

**A. Significant factors:**

- (i) gaps in information concerning the building and its energy use
- (ii) health and safety considerations
- (iii) accessibility

**B. Clients:**

- (i) internal
- (ii) external



## UNIT 3

### **Assess the energy performance of new-build non-dwellings prior to first occupancy using the Simplified Building Energy Model (SBEM)**

Element 3.1	Conduct energy assessment of new-build non-dwellings
Element 3.2	Produce Energy Performance Certificates, Recommendation Reports and Reports on Regulation 17C Calculations (and their equivalent in Scotland and Northern Ireland)

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#### **About this Unit**

This Unit covers assessing the energy performance of new-build non-dwellings prior to first occupancy. The aim of the assessment is to gather data and information, in accordance with approved tools, to ensure compliance with the relevant aspects of Building Regulations and to enable the generation of Regulation 17C calculations (and their equivalent in Scotland and Northern Ireland), production of Energy Performance Certificates and recommendations for cost-effective improvement.

**This Unit relates to new-build non-dwellings that can be assessed using the Simplified Building Energy Model (SBEM). It does not cover new-build non-dwellings that require the use of a Dynamic Simulation Model (DSM).**

Element 3.1 requires that you conduct energy assessment of new-build non-dwellings prior to first occupancy.

Element 3.2 requires that you produce Energy Performance Certificates and recommendations for cost-effective improvement for new-build non-dwellings.

Element 3.1 Conduct energy assessment of new-build non-dwellings	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 conduct energy assessments of the design and construction of new-build non-dwellings</li> <li>2 apply conventions in order to identify the energy design philosophy from drawings and specifications</li> <li>3 apply assessment conventions in order to establish site factors, built form and dimensions of new-build non-dwellings from drawings and specifications</li> <li>4 apply conventions in order to identify the constructions and thermal properties of new-build non-dwellings from drawings and specifications</li> <li>5 calculate the thermal transmittances (U values) of opaque elements in accordance with the relevant technical standards for the types of construction used</li> <li>6 apply conventions in order to identify the air-tightness and ventilation of new-build non-dwellings from drawings, tests and specifications</li> <li>7 apply conventions in order to identify the heating, cooling and hot water systems used in new-build non-dwellings from drawings and specifications</li> <li>8 apply conventions in order to identify the lighting and renewable energy used in new-build non-dwellings from drawings and specifications</li> <li>9 apply conventions in order to assess new technologies in new-build non-dwellings</li> <li>10 identify and communicate <b>options for improvement</b> in the energy performance of new-build non-dwellings</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the stage for assessment of the energy performance of new-build non-dwellings i.e. the design assessment and the 'as built' assessment (leading to the production of a final Energy Performance Certificate)</li> <li>(b) relevant aspects of the legislation and regulations and the points at which an Energy Performance Certificate is required for new-build non-dwellings</li> <li>(c) the detailed assessment requirements that apply to the property as defined by the approved tool</li> <li>(d) the definitions and conventions embodied within the approved tool</li> <li>(e) the principles of building structure, elements, fabric, services and overall design philosophy</li> <li>(f) the use of energy performance rating calculation</li> <li>(g) how to recognise the various types of building construction and materials from drawings, specifications and services</li> <li>(h) the requirements and application of current, relevant Building Regulations that apply to the energy performance of new-build non-dwellings</li> <li>(i) the various emission rates and how to calculate each</li> <li>(j) the requirements and application of other technical standards relevant to the energy performance of new-build non-dwellings</li> <li>(k) the factors which are relevant to determining the energy performance of a new-build non-dwellings</li> <li>(l) the assumptions that are made in determining energy performance</li> <li>(m) the factors that are not deemed to affect energy performance</li> <li>(n) how to collate information required to assess the energy performance of new-</li> </ol>

	<p>build non-dwellings from drawings and specifications</p> <p>(o) the Target Emission Rating (TER) and Built Emission Rating (BER) and how to calculate each</p>
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**Element 3.1**

**Conduct energy assessment of new-build non-dwellings**

**Scope**

**A. Options for improvement:**

- (i) measures to ensure compliance with relevant Building Regulations
- (ii) further improvements to energy performance

<b>Element 3.2 Produce Energy Performance Certificates, Recommendation Reports and Reports on Regulation 17C Calculations (and their equivalent in Scotland and Northern Ireland)</b>	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 use approved tools correctly to determine energy performance ratings</li> <li>2 use approved tools to generate recommendations for appropriate measures to improve the energy performance of the property</li> <li>3 check the recommendations generated and make any necessary amendments</li> <li>4 delete recommendations that are inappropriate, providing your reasons</li> <li>5 prepare and issue an Energy Performance Certificate and recommendations for cost-effective improvement that meet relevant regulations</li> <li>6 explain the Energy Performance Certificate and recommendations for cost-effective improvement clearly to the client</li> <li>7 maintain internal records which are clear, complete and conform to accepted professional and statutory requirements</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the prescribed format and content of an Energy Performance Certificate</li> <li>(b) the range of measures to improve the energy performance of properties that may be included within an Energy Performance Certificate</li> <li>(c) the approved tools used to produce Energy Performance Certificates and recommendations for cost-effective improvement</li> <li>(d) the principles underpinning the approved tools used to calculate energy ratings</li> <li>(e) how to input data using the approved tools in order to determine energy performance ratings</li> <li>(f) how to use approved tools to generate recommendations for measures to improve the energy performance of property</li> <li>(g) the importance of checking that data has been correctly entered and how to review data if the calculation will not process</li> <li>(h) the importance of checking the recommendations generated, deleting any that are inappropriate, and providing your reasons</li> <li>(i) the way in which recommendations are generated and circumstances when it is appropriate to delete them</li> <li>(j) the importance of checking the Energy Performance Certificate to ensure it is complete and complies with the relevant regulations</li> </ol>

**There is no Scope for this element**

## UNIT 4

### **Assess the energy performance of new-build non-dwellings prior to first occupancy using Dynamic Simulation Models (DSMs)**

Element 4.1	Conduct energy assessment of new-build non-dwellings
Element 4.2	Produce Energy Performance Certificates, Recommendation Reports and Reports on Regulation 17C Calculations (and their equivalent in Scotland and Northern Ireland)

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#### **About this Unit**

This Unit covers assessing the energy performance of new-build non-dwellings prior to first occupancy. The aim of the assessment is to gather data and information, in accordance with approved tools, to ensure compliance with the relevant aspects of Building Regulations and to enable the generation of Regulation 17C calculations (and their equivalent in Scotland and Northern Ireland), production of Energy Performance Certificates and recommendations for cost-effective improvement.

**This Unit relates to new-build non-dwellings that can only be assessed using a Dynamic Simulation Model (DSM) as opposed to the Simplified Building Energy Model (SBEM) which applies to Unit 3.**

Element 4.1 requires that you conduct energy assessment of new-build non-dwellings prior to first occupancy.

Element 4.2 requires that you produce Energy Performance Certificates and recommendations for cost-effective improvement for new-build non-dwellings.

<b>Element 4.1 Conduct energy assessment of new-build non-dwellings</b>	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 conduct assessments in the design and construction of new-build non-dwellings</li> <li>2 apply conventions in order to identify the energy design philosophy from drawings and specifications</li> <li>3 apply assessment conventions in order to establish site factors, built form and dimensions of new-build non-dwellings from drawings and specifications</li> <li>4 apply conventions in order to identify the constructions and thermal properties of new-build non-dwellings from drawings and specifications</li> <li>5 calculate the thermal transmittances (U values) of opaque elements in accordance with the relevant technical standards for the types of construction used</li> <li>6 apply conventions in order to identify the air-tightness and ventilation of new-build non-dwellings from drawings, tests and specifications</li> <li>7 apply conventions in order to identify the heating, cooling and hot water systems used in new-build non-dwellings from drawings and specifications</li> <li>8 apply conventions in order to identify the lighting and renewable energy used in new-build non-dwellings from drawings and specifications</li> <li>9 apply conventions in order to assess new technologies in new-build non-dwellings</li> <li>10 identify and communicate <b>options for improvement</b> in the energy performance of new-build non-dwellings</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the stage for assessment of the energy performance of new-build non-dwellings i.e. the design assessment and the 'as built' assessment (leading to the production of a final Energy Performance Certificate)</li> <li>(b) relevant aspects of the legislation and regulations and the points at which an Energy Performance Certificate is required for new-build non-dwellings</li> <li>(c) the detailed assessment requirements that apply to the property as defined by the approved tool</li> <li>(d) the definitions and conventions embodied within the approved tool</li> <li>(e) the principles of building structure, elements, fabric, services and overall design philosophy</li> <li>(f) the use of energy performance rating calculation</li> <li>(g) how to recognise the various types of building construction and materials from drawings, specifications and services</li> <li>(h) the requirements and application of current, relevant Building Regulations that apply to the energy performance of new-build non-dwellings</li> <li>(i) the various emission rates and how to calculate each</li> <li>(j) the requirements and application of other technical standards relevant to the energy performance of new-build non-dwellings</li> <li>(k) the factors which are relevant to determining the energy performance of a new-build non-dwellings</li> <li>(l) the assumptions that are made in determining energy performance</li> <li>(m) the factors that are not deemed to affect energy performance</li> <li>(n) how to collate information required to</li> </ol>

assess the energy performance of new-build non-dwellings from drawings and specifications

- (o) the Target Emission Rating (TER) and Built Emission Rating (BER) and how to calculate each



**Element 4.1**

**Conduct energy assessment of new-build non-dwellings**

**Scope**

**A. Options for improvement:**

- (i) measures to ensure compliance with relevant Building Regulations
- (ii) further improvements to energy performance

<b>Element 4.2      Produce Energy Performance Certificates, Recommendation Reports and Reports on Regulation 17C Calculations (and their equivalent in Scotland and Northern Ireland)</b>	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 use approved tools correctly to determine energy performance ratings</li> <li>2 use approved tools to generate recommendations for appropriate measures to improve the energy performance of the property</li> <li>3 check the recommendations generated and make any necessary amendments</li> <li>4 delete recommendations that are inappropriate, providing your reasons</li> <li>5 prepare and issue an Energy Performance Certificate that meets relevant codes of practice and standards</li> <li>6 explain the Energy Performance Certificate and recommendations for cost-effective improvement clearly to the client</li> <li>7 maintain internal records which are clear, complete and conform to accepted professional and statutory requirements</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the prescribed format and content of an Energy Performance Certificate</li> <li>(b) the range of measures to improve the energy performance of properties that may be included within an Energy Performance Certificate</li> <li>(c) the technology used to produce Energy Performance Certificates and how to use it correctly</li> <li>(d) the principles underpinning the approved tools used to calculate energy ratings</li> <li>(e) how to input data using the approved tools in order to determine energy performance ratings</li> <li>(f) how to use approved tools to generate recommendations for measures to improve the energy performance of property</li> <li>(g) the importance of checking that data has been entered correctly and how to review data if the calculation will not process</li> <li>(h) the importance of checking the recommendations generated, deleting any that are inappropriate, and providing your reasons</li> <li>(i) the way in which recommendations are generated and circumstances when it is appropriate to delete them</li> <li>(j) the importance of checking the Energy Performance Certificate to ensure it is clear and complete</li> </ol>

**There is no Scope for this Element .**

## **UNIT 5**

### **Undertake energy inspections of existing non-dwellings with frequently occurring characteristics using the Simplified Building Energy Model (SBEM)**

Element 5.1	Inspect existing non-dwellings with frequently occurring characteristics
Element 5.2	Produce Energy Performance Certificates

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#### **About this Unit**

This Unit covers the competences required to inspect existing non-dwellings with frequently occurring characteristics in order to determine energy performance. Such buildings will contain, for example, simple heating systems, simple natural ventilation, small comfort cooling systems and typical fabric as defined in the approved tools.

**This Unit relates to existing non-dwellings with frequently occurring characteristics that can be assessed using SBEM.**

Element 5.1 covers inspecting existing non-dwellings with frequently occurring characteristics to determine energy performance.

Element 5.2 covers producing Energy Performance Certificates and recommendations for cost-effective improvement for non-dwellings with frequently occurring characteristics.

<b>Element 5.1      Inspect existing non-dwellings with frequently occurring characteristics</b>	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 ensure that you have the equipment and resources needed for the inspection of non-dwellings with <b>frequently occurring characteristics</b></li> <li>2 identify yourself to those present at the property before commencing the inspection</li> <li>3 use surveying equipment correctly and interpret data generated by it accurately</li> <li>4 identify and record the method of construction of the property and the main materials used</li> <li>5 identify <b>circumstances</b> when at the property that prevent you continuing with the inspection and explain the reasons to the client(s)</li> <li>6 undertake a methodical visual inspection of all relevant aspects of the property in accordance with the requirements of approved tools</li> <li>7 make accurate observations and take measurements which are necessary to provide data for the calculation of an energy performance rating and production of recommendations for cost-effective improvement</li> <li>8 obtain all additional information that is needed about the property</li> <li>9 make further investigations where observations are inconsistent with existing evidence and expected findings</li> <li>10 follow the correct procedures for collecting information to enable the energy efficiency of the property to be determined</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the principles of building structure elements, fabric, services and overall design philosophy</li> <li>(b) what equipment and resources are needed to undertake the inspection</li> <li>(c) the detailed inspection requirements that apply to the property as described in the relevant guidance documents</li> <li>(d) the definitions and conventions embodied within approved tools</li> <li>(e) how to recognise different types of building construction, materials and services from drawings as well as buildings</li> <li>(f) how to identify and classify variations in building use</li> <li>(g) how to conduct the inspection in a thorough, methodical and consistent manner</li> <li>(h) the problems that can affect the energy performance of the building fabric</li> <li>(i) the implications of hazardous building fabric for the energy assessment and reporting</li> <li>(j) how to make accurate observations and take accurate measurements</li> <li>(k) how to make further investigations where observations are inconsistent with existing evidence and expected findings, and how to identify the causes of these inconsistencies</li> <li>(l) factors which are relevant to determining the energy performance of a property</li> <li>(m) the assumptions that are made in determining energy performance</li> <li>(n) the factors that are deemed not to affect the energy performance of the property</li> <li>(o) the relative sensitivity of the different factors that affect the energy performance</li> </ol>

of the property

- (p) how to collate information required to assess the energy performance of property

**Element 5.1      Inspect existing non-dwellings with frequently occurring characteristics**

**Scope**

**A    Frequently occurring characteristics:**

- (i) simple heating systems (Boiler Systems <100kw)
- (ii) simple natural ventilation
- (iii) small comfort cooling systems (up to 12kw)
- (iv) typical fabric as defined in the approved methodology
- (v) typical lighting systems as defined in the approved methodology

**B    Circumstances:**

- (i) the discovery of unexpected or hazardous conditions or materials
- (ii) other potential threats to health and safety

Note: This Unit relates to existing non-dwellings that can be assessed using SBEM.

<b>Element 5.2      Produce Energy Performance Certificates</b>	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 assemble and collate information from your on-site inspection and from other relevant and reliable sources</li> <li>2 use approved tools correctly to determine energy performance ratings</li> <li>3 use approved tools to generate recommendations for appropriate measures to improve the energy performance of the property</li> <li>4 check the recommendations generated and make any necessary amendments</li> <li>5 delete recommendations that are inappropriate providing your reasons</li> <li>6 prepare and issue an Energy Performance Certificate that meets relevant codes of practice and standards, and produce recommendations for cost-effective improvement</li> <li>7 explain the Energy Performance Certificate and recommendations for cost-effective improvement clearly to the client</li> <li>8 maintain internal records which are clear, complete and conform to accepted professional and statutory requirements</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the prescribed format and content of an Energy Performance Certificate</li> <li>(b) the range of measures to improve the energy performance of property that may be included within an Energy Performance Certificate</li> <li>(c) the technology used to produce Energy Performance Certificates and how to use it correctly</li> <li>(d) the principles underpinning the approved tools used to calculate energy ratings</li> <li>(e) how to input data using the approved tools in order to determine energy performance ratings</li> <li>(f) how to use approved tools to generate recommendations for measures to improve the energy performance of property</li> <li>(g) the importance of checking that data has been inputted correctly and how to review data if the calculation will not process</li> <li>(h) the importance of checking the recommendations generated, deleting any that are inappropriate, and providing your reasons</li> <li>(i) the way in which recommendations are generated and circumstances when it is appropriate to delete them</li> <li>(j) the ways in which costs and benefits can be included in recommendations within the scope of your responsibility and competence</li> <li>(k) the importance of checking the Energy Performance Certificate and recommendations for cost-effective improvement to ensure they comply with relevant requirements</li> </ol>

**There is no Scope for this Element.**



## UNIT 6

### Undertake energy inspections of existing non-dwellings using the Simplified Building Energy Model (SBEM)

Element 6.1	Inspect existing non-dwellings to determine energy performance
Element 6.2	Produce Energy Performance Certificates

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#### About this Unit

This Unit covers the competences required to inspect existing non-dwellings in order to determine the energy performance of the property.

**This Unit relates to existing non-dwellings that can be assessed using SBEM. It does not cover existing non-dwellings that require the use of a Dynamic Simulation Model (DSM).**

Element 6.1 covers inspecting existing non-dwellings to determine energy performance.

Element 6.2 covers producing Energy Performance certificates and recommendations for cost-effective improvement for existing non-dwellings.

<b>Element 6.1      Inspect existing non-dwellings to determine energy performance</b>	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 ensure that you have the equipment and resources needed for the inspection</li> <li>2 identify yourself to those present at the property before commencing the inspection</li> <li>3 use surveying equipment correctly and interpret data generated by it accurately</li> <li>4 identify and record the method of construction of the property and the main materials used</li> <li>5 identify <b>circumstances</b> when at the property that prevent you continuing with the inspection and explain the reasons to the client(s)</li> <li>6 undertake a methodical visual inspection of all relevant aspects of the property in accordance with the requirements of the approved tool</li> <li>7 make accurate observations and measurements which are necessary to provide data for the calculation of an energy performance rating and production of recommendations for cost-effective improvement</li> <li>8 obtain all additional information that is needed about the property</li> <li>9 make further investigations where observations are inconsistent with existing evidence and expected findings</li> <li>10 follow the correct procedures for collecting information to enable the energy efficiency of the property to be determined</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the principles of building structure elements, fabric, services and overall design philosophy</li> <li>(b) what equipment and resources are needed to undertake the inspection</li> <li>(c) the detailed inspection requirements that apply to the property as described in the relevant guidance documents</li> <li>(d) the definitions and conventions embodied within the approved tools</li> <li>(e) how to recognise different types of building construction, materials and services from drawings as well as building structures</li> <li>(f) the problems that can affect the energy performance of the building fabric</li> <li>(g) the implications of hazardous building fabric for the energy assessment and reporting</li> <li>(h) how to identify and classify variations in building use</li> <li>(i) how to conduct the inspection in a thorough, methodical and consistent manner</li> <li>(j) how to make accurate observations and take accurate measurements</li> <li>(k) how to make further investigations where observations are inconsistent with existing evidence and expected findings, and how to identify the causes of these inconsistencies</li> <li>(l) factors which are relevant to determining the energy performance of a property</li> <li>(m) the assumptions that are made in determining energy performance</li> <li>(n) the factors that are deemed not to affect the energy performance of the property</li> <li>(o) the relative sensitivity of the different factors that affect the energy performance</li> </ol>

of the property

- (p) how to collate information required to assess the energy performance of property

**Element 6.1**

**Inspect existing non-dwellings to determine energy performance**

**Scope**

**A. Circumstances:**

- (i) the discovery of unexpected or hazardous conditions or materials
- (ii) other potential threats to health and safety

**There is no Scope for this Element.**

<b>Element 6.2 Produce Energy Performance Certificates</b>	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 assemble and collate information from your on-site inspection and from other relevant and reliable sources</li> <li>2 use approved tools correctly to determine energy performance ratings</li> <li>3 use approved tools to generate recommendations for appropriate measures to improve the energy performance of the property</li> <li>4 check the recommendations generated and make any necessary amendments</li> <li>5 delete recommendations that are inappropriate, providing your reasons</li> <li>6 prepare and issue an Energy Performance Certificate that meets relevant regulations, and produce recommendations for cost-effective improvement</li> <li>7 explain the Energy Performance Certificate and recommendations for cost-effective improvement clearly to the client</li> <li>8 maintain internal records which are clear, complete and conform to accepted professional and statutory requirements</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the prescribed format and content of an Energy Performance Certificate</li> <li>(b) the range of measures to improve the energy performance of property that may be included within an Energy Performance Certificate</li> <li>(c) the technology used to produce Energy Performance Certificates and how to use it correctly</li> <li>(d) the principles underpinning the approved tools used to calculate energy ratings</li> <li>(e) how to input data using the approved tools in order to determine energy performance ratings</li> <li>(f) how to use approved tools to generate recommendations for measures to improve the energy performance of property</li> <li>(g) the importance of checking that data has been inputted correctly and how to review data if the calculation will not process</li> <li>(h) the importance of checking the recommendations generated, deleting any that are inappropriate, and providing your reasons</li> <li>(i) the way in which recommendations are generated and circumstances when it is appropriate to delete them</li> <li>(j) the ways in which costs and benefits can be included in recommendations within the scope of your responsibility and competence</li> <li>(k) the importance of checking the Energy Performance Certificate and recommendations for cost-effective improvement to ensure they comply with relevant requirements</li> </ol>

**There is no Scope for this Element.**

## UNIT 7

### Undertake energy inspections of existing non-dwellings requiring the use of Dynamic Simulation Models (DSMs)

Element 7.1	Inspect existing non-dwellings to determine energy performance
Element 7.2	Produce Energy Performance Certificates

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#### About this Unit

This Unit covers the competences required to inspect existing non-dwellings in order to determine the energy performance of the property.

**This Unit relates to existing non-dwellings that require the use of a Dynamic Simulation Model in order to produce Energy Performance Certificates and recommendations for cost-effective improvement for existing non-dwellings.**

Element 7.1 covers inspecting non-dwellings to determine energy performance.

Element 7.2 covers producing Energy Performance Certificates for non-dwellings.

<b>Element 7.1      Inspect existing non-dwellings to determine energy performance</b>	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 ensure that you have the equipment and resources needed for the inspection</li> <li>2 identify yourself to those present at the property before commencing the inspection</li> <li>3 use surveying equipment correctly and interpret data generated by it accurately</li> <li>4 identify and record the method of construction of the property and the main materials used</li> <li>5 identify <b>circumstances</b> when at the property that prevent you continuing with the inspection and explain the reasons to the client(s)</li> <li>6 undertake a methodical visual inspection of all relevant aspects of the property in accordance with the requirements of the approved tool</li> <li>7 make accurate observations and measurements which are necessary to provide data for the calculation of an energy performance rating and production of recommendations for cost-effective improvement</li> <li>8 obtain all additional information that is needed about the property</li> <li>9 make further investigations where observations are inconsistent with existing evidence and expected findings</li> <li>10 follow the correct procedures for collecting information to enable the energy efficiency of the property to be determined</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the principles of building structure elements, fabric, services and overall design philosophy</li> <li>(b) what equipment and resources are needed to undertake the inspection</li> <li>(c) the detailed inspection requirements that apply to the property as described in the relevant guidance documents</li> <li>(d) the definitions and conventions embodied within the approved tools</li> <li>(e) how to recognise different types of building construction, materials and services from drawings as well as building structures</li> <li>(f) the problems that can affect the energy performance of the building fabric and services</li> <li>(g) the implications of hazardous building fabric for the energy assessment and reporting</li> <li>(h) how to identify and classify variations in building use</li> <li>(i) how to conduct the inspection in a thorough, methodical and consistent manner</li> <li>(j) how to make accurate observations and take accurate measurements</li> <li>(k) how to make further investigations where observations are inconsistent with existing evidence and expected findings, and how to identify the causes of these inconsistencies</li> <li>(l) factors which are relevant to determining the energy performance of a property</li> <li>(m) the assumptions that are made in determining energy performance</li> <li>(n) the factors that are deemed not to affect the energy performance of the property</li> <li>(o) the relative sensitivity of the different factors that affect the energy performance</li> </ol>

of the property

- (p) how to collate information required to assess the energy performance of property



**Element 7.1      Inspect existing non-dwellings to determine energy performance**

**Scope**

**B.    Circumstances:**

- (i)    the discovery of unexpected or hazardous conditions or materials
- (ii)   other potential threats to health and safety

Note: This Unit relates to existing non-dwellings that require the use of a Dynamic Simulation Model (DSM) in order to assess energy performance.

<b>Element 7.2 Produce Energy Performance Certificates</b>	
<p><b>Performance Criteria</b></p> <p><b>You must be able to:</b></p> <ol style="list-style-type: none"> <li>1 assemble and collate information from your on-site inspection and from other relevant and reliable sources</li> <li>2 use approved tools correctly to determine energy performance ratings</li> <li>3 use approved tools to generate recommendations for appropriate measures to improve the energy performance of the property</li> <li>4 check the recommendations generated and make any necessary amendments</li> <li>5 delete recommendations that are inappropriate, providing your reasons</li> <li>6 prepare and issue an Energy Performance Certificate that meets relevant regulations and produce recommendations for cost-effective improvement</li> <li>7 explain the Energy Performance Certificate and recommendations for cost-effective improvement clearly to the client</li> <li>8 maintain internal records which are clear, complete and conform to accepted professional and statutory requirements</li> </ol>	<p><b>Knowledge and Understanding</b></p> <p><b>You must know and understand:</b></p> <ol style="list-style-type: none"> <li>(a) the prescribed format and content of an Energy Performance Certificate</li> <li>(b) the range of measures to improve the energy performance of property that may be included within an Energy Performance Certificate</li> <li>(c) the technology used to produce Energy Performance Certificates and how to use it correctly</li> <li>(d) the principles underpinning the approved tools used to calculate energy ratings</li> <li>(e) how to input data using the approved tools in order to determine energy performance ratings</li> <li>(f) how to use approved tools to generate recommendations for measures to improve the energy performance of property</li> <li>(g) the importance of checking that data has been inputted correctly and how to review data if the calculation will not process</li> <li>(h) the importance of checking the recommendations generated, deleting any that are inappropriate, and providing your reasons</li> <li>(i) the way in which recommendations are generated and circumstances when it is appropriate to delete them</li> <li>(j) the ways in which costs and benefits can be included in recommendations within the scope of your responsibility and competence</li> <li>(k) the importance of checking the Energy Performance Certificate and recommendations for cost-effective improvement to ensure they comply with relevant requirements</li> </ol>

**There is no Scope for this Element.**