Unit 202: Changing practices over time (learner)

# Worksheet 1: Sustainable practices and regulatory requirements

**Task 1**: Legislation and sustainability

Answer the following questions.

1. Explain how the Environmental Protection Act 1990 helps to protect the environment from construction activities.

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1. Describe how the Well Being of Future Generations (Wales) Act 2015 requires the construction industry to be more sustainable.

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**Task 2**: Responsible retrofit

Answer the following questions.

1. What is retrofit?

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1. Briefly describe four key features of responsible retrofit on modern and traditional buildings.

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1. Prior to commencing retrofit work on a pre-1919 building, who should be contacted?

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1. Explain what PAS 2030 covers in relation to retrofit.

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1. Explain what PAS 2035 covers in relation to retrofit.

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**Task 3:** Defining BREEAM

What does BREEAM stand for?

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R \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
E \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
E \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
M \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Task 4:** What is BREEAM?

Fill in the missing words in relation to the BREEAM assessment.

BREEAM (Building Research Establishment Environmental Assessment Method) is an internationally recognised \_\_\_\_\_\_\_ and certification scheme for buildings. It evaluates the \_\_\_\_\_\_\_\_ performance of buildings across various categories, including energy usage, water efficiency, materials, \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_ impact. BREEAM assesses the \_\_\_\_\_\_\_\_\_, construction and \_\_\_\_\_\_\_\_ of buildings and provides a \_\_\_\_\_\_\_ or certification based on their sustainability \_\_\_\_\_\_\_\_ . It encourages the adoption of environmentally friendly practices and promotes the \_\_\_\_\_\_\_\_ of sustainable buildings and \_\_\_\_\_\_\_\_\_ .

rating sustainability assessment operation development infrastructure waste ecological environmental

design management performance

**Task 5:** BREEAM offers different levels of certification to assess the sustainability performance of buildings. Using the internet, list the five different levels of BREEAM Assessment outcomes.

1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Task 6:** Improving sustainability by design and smart buildings

Using the internet, research and answer the following questions.

1. List four strategies that could be used in the design phase of a construction project to improve sustainable outcomes.

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1. Explain how sensors in smart buildings can help to improve energy efficiency in buildings.

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**Task 7:** Read the following statements about the use of thermal imaging cameras in construction and decide whether they are true or false. **Circle** the correct response.

1. Thermal imaging allows for the detection and visualisation of thermal patterns and anomalies in building fabric.

**TRUE or FALSE**

1. Thermal imaging can help construction professionals identify areas of heat loss, air leakage and insulation deficiencies within a building envelope.

**TRUE or FALSE**

1. Thermal imaging can detect potential issues such as inadequate insulation, thermal bridging or moisture intrusion, which can lead to energy wastage and decreased comfort.

**TRUE or FALSE**

1. Thermal imaging is only useful during the construction phase of a building.

**TRUE or FALSE**

1. The value of thermal imaging in energy-efficient construction lies in its ability to pinpoint areas of energy loss, identify thermal weaknesses and facilitate targeted improvements, resulting in enhanced energy efficiency and cost savings.

**TRUE or FALSE**

**Task 8**: List six key features of PassivHaus design.

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**Task 9:** Read the following questions on Passivhaus and decide whether they are true or false. **Circle** the correct response.

1. Passivhaus Design aims to minimise energy consumption in buildings.

**TRUE or FALSE**

1. Passivhaus Design focuses primarily on renewable energy generation.

**TRUE or FALSE**

1. Passivhaus Design emphasises airtight building envelopes.

**TRUE or FALSE**

1. Passivhaus buildings require mechanical ventilation systems.

**TRUE or FALSE**

1. Passivhaus Design principles can be applied to both residential and commercial buildings.

**TRUE or FALSE**