Unit 2: Sustainable Construction

Assignment Breakdown

Assignment 1

Title: P1, M1, D1 Environmental Features to be Protected

Scenario: A local environmental group has asked you to report on the environmental features that must be considered when planning construction projects.

Method: Report.

For P1, learners must describe **six** different features of the natural environment that could suffer as a result of bad practice in the construction and built environment sector. The six features should be differentiated from each other clearly and must not be different aspects of the same thing. There is no requirement for details of how any harm may occur. Evidence for this criterion could be provided, for example, in the form of a presentation, a report on a real project that has been studied or through oral questioning based on a tutor provided case study.

*Features*:

* air quality;
* ozone quality;
* soil quality;
* natural drainage landscape;
* natural amenities;
* land use;
* green belts;
* agriculture;
* forestry;
* countryside;
* heritage;
* water (resources, quality);
* marine environment;
* wildlife; biodiversity;
* natural habitat

Assignment 2

Title: P2, P3, P4, M2 Pollution

Scenario: An environmentally conscious client has asked you to give a presentation on the pollution that may be produced as a result of a construction project that they have commissioned.

Method: Presentation.

For P2, learners must explain **four** different forms of global pollution arising from construction projects. The forms chosen should be differentiated clearly and must not be different aspects of the same thing. A clear explanation of how each form of global pollution may harm the environment is required, but detailed explanation of any underpinning science is not required. Examples of suitable approaches to evidence are as for P1.

*Global pollution*:

* build-up of greenhouse gases (CO2) causing global warming;
* polluting emissions to air causing acid rain; ozone depletion due to use of chlorofluorocarbons (CFCs);
* over-extraction (of water, fossil fuels and raw materials);
* increased energy consumption; electricity generation;
* deforestation;
* loss of natural habitat; reduction in biodiversity

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For P3, learners must explain how **four** different forms of local pollution arising from construction projects may harm the local environment. The forms chosen should be differentiated clearly and must not be different aspects of the same thing. A clear explanation of how each form of local pollution may harm the environment

is required, but detailed explanation of any underpinning science is not needed. Examples of suitable approaches to evidence are as for P1.

*Local pollution*:

* air pollution from combustion products and volatile organic compounds (VOCs); polluting discharges to water by communities, industry and agriculture, contaminated land;
* waste disposal;
* existing site dereliction;
* comfort disturbance (traffic, smells, noise, dust and dirt);
* increased pressure on existing services and infrastructure;
* specification of hazardous materials eg lead and asbestos;
* extraction of raw materials (by drilling, mining and quarrying);
* electromagnetic radiation from overhead power lines;
* ‘sick building’ syndrome

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For P4, learners must explain how four key methods **(legislation, control, design and specification, management)** are used to protect the environment from the impact of the construction and built environment sector. Learners should demonstrate an understanding of how legislation and control is used, and the time

and expense involved in each. There is no requirement for learners to demonstrate a detailed knowledge of environmental legislation although they should name the most important pieces of relevant legislation, and understand which statutory bodies would monitor, police and enforce such legislation. Learners should provide examples to support their descriptions of design and specification and management. Examples

must be clearly categorised as a design, specification or management technique. Diagrams should be used to support the text, wherever appropriate, but the standard of sketching and drawing is not an issue here. Examples of suitable approaches to evidence are as for P1.

* legislation,
* control,
* design and specification,
* management

Assignment 3: Sustainable Construction Techniques

P5, M3, D2

Scenario: A client has asked you for a report on the impact of a construction project that

they have commissioned, and the sustainable construction techniques that will be used in the project.

Method: Report.

For P5, learners must explain three different, fit-for-purpose sustainable construction techniques. The techniques should cover one from each of the following areas:

energy, materials and waste.

* *Energy-based techniques*: eg reduced energy consumption, improved energy efficiency, use of renewable and alternative sources of energy
* *Materials-based techniques*: eg specification of renewable materials, consideration of embodied energy and low-energy manufacture of materials and components
* *Waste-based techniques*: eg producing less waste and recycling more, off-site prefabrication, modern methods of construction