Sample Pearson BTEC Set Assignment Brief

Single Part Assessment

Unit 1 – Construction Technology

For use with:

Pearson BTEC International Level 3 qualifications in Building Services Engineering, Civil Engineering, Construction and the Built Environment

Certificate / Subsidiary Diploma / Foundation Diploma / Diploma / Extended Diploma

Supervised hours	6

For completion by the centre

Qualification (select as appropriate)	Certificate / Subsidiary Diploma / Foundation Diploma / Diploma / Extended Diploma
Assessment date	

Pearson BTEC

Instructions to Teachers/Tutors and/or Invigilators

The Pearson Set Assignment will be assessed internally by the centre using the unit assessment criteria given in the qualification specification. The Set Assignment will be sampled by the Standards Verifier as part of the standards verification annual centre visit.

The Pearson Set Assignment should be undertaken in conditions that assure the authenticity of outcome. This may require supervision.
We advise that the Pearson Set Assignment be completed in sessions that come to a total of 6 hours. The Pearson Set Assignment should not be shared with learners prior to the start of the assessment period. Teachers/tutors are responsible for security of the Pearson Set Assignment and materials.

Outcomes for Submission

Learners must complete this set assignment on a computer, using office productivity software.

Learners must save their work regularly and ensure that all materials can be identified as their work.

Learners must submit their own, independent work as detailed in the set assignment.

Instructions to Learners

Read the Set Assignment Information carefully.

You will be asked to carry out specific activities using the information provided. You will be given a specific time period to complete the assignment.

At all times you must work independently and must not share your work with other learners.

You must complete ALL activities.

Set Assignment Information

Scenario

You have been employed as a trainee engineer in the design section of a multi-national construction contractor, who specialise in design and build and turnkey projects. You are working in the offices in your capital city. Your company has an annual turnover of $600 million employing 900 staff and operatives. The company have strong and experienced management who are working on a diverse range of projects in your home country.

Your initial job with the company it to work under a chartered engineer on the development of an old industrial site.

Project

The client has purchased the site and is keen to develop a profitable and sustainable building on the site. The site (110m x 65m) is rectangular in shape. The initial suggested plan is for a new building of basic shape of 40 m x 20m with additional room for parking and some green relaxation and recreation areas.

From initial research the indications for maximum profitability for the client would be to develop a new low-rise building which will contain shops on the ground floor and office space in the floors above.

Client information

The client is a property developer with 20 years of experience buying sites and redeveloping them into profitable projects. The client has an excellent reputation for pioneering modern technologies to improve the performance and sustainability of the buildings.

Site visit report

The site visit report included the following information:

- The site is 2 miles (3.2km) from centre of a provincial city close to the ring road with good transport links and road infrastructure.
- This is a large square site with existing buildings surrounding the site.
- The site has been derelict for many years but previously contained a small low-rise factory

- The development will incorporate the main building, parking and small green relaxation and recreation areas.
- Access to the site is good and the road infrastructure will be completed as part of an earlier phase of the development.
- Service connections for water, electricity, telecommunications and mains drainage are readily available throughout the site.

Borehole report

Depth	Description
0	Ground level
0.300	Sandy topsoil
0.750	Compacted sand
1.700	Stiff sandy clay
2.950	Rock

There was no groundwater present at a depth of 2.95m

Set Assignment

You must complete ALL activities

ACTIVITY 1
Produce a report for your line manager that details the range of different structural forms available for construction the low-rise building. The report should provide your manager with sufficient information so that it is clear why certain structural forms will be more suitable for the project and why others will be unsuitable. Remember within your report to consider: • framed structures skeleton frame, portal frame, timber frame, structural insulated panels (SIP) • traditional construction • modular construction
This activity covers learning aim A. A. P1, A.M1, A.D1

ACTIVITY 2
Having decided which is the most suitable form of low-rise construction for the project. Produce a report examining the design and construction of the new building. The report will cover: 1. Foundation design and construction for the project 2. Superstructure design and construction for the project. Remember within your report to consider: • Procedures used in subsoil investigation and how these impact on the choice of foundation design • Methods of ground improvement (advantages and disadvantages) • Principles of Foundation Design • Different types of foundations (advantages and disadvantages) • Superstructure element design (walls, floors and roof) • Suitable internal finishes for the project.
This activity covers learning aims B and C. B. B.P2, B.P3, B.P4, B.M2, BC.D2 C. C.P5, C.P6, C.M3

ACTIVITY 3
As the site will be fully occupied by either the building structure or by parking and pedestrian access the planning of the external works is critical. Produce a report for your line manager which analyses the different aspects of the external works associated with the project. Remember within your report to consider: • Foul and surface water drainage • Utility services • Road and footpaths • Sustainable urban drainage systems
This activity covers learning aim D. D. D.P7, D.P8, D.M4, D. D3,