



Pearson BTEC Level 4

Higher National Certificate in

Construction and Built Environment

Unit 4: The Construction Environment

Level 4 – 15 Credit

Unit Code – R/618/8083

Assessment Type: Internal

Unit Leader: Adewale Abimbola

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Please read this handbook in conjunction with departmental and unit pages on Microsoft Office Teams (including the Programme Handbook)

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1 INTRODUCTION

1.1 Purpose of the Unit Handbook

This unit handbook aims to provide learners with guidance and support with the construction environment unit of the qualification.

1.2 Introduction to the Unit

Construction is a complex and dynamic sector of the local, regional, national and international economy. In many countries, it is a driving force in the growth of finance, property and employment. This also means that it has considerable impact on many factors beyond its direct influence on the buildings and infrastructure that are created and maintained.

The construction industry is one of the major contributors to CO2 emissions. Also, the way that buildings are designed, constructed and maintained means they have an ongoing impact on the environment. Similarly, as a major employer, the industry has an ongoing impact on the working conditions of those in the sector and the way that people are educated, trained and supported through their careers.

In this unit, students will explore the makeup and the impact of the construction industry on the environment and society. By exploring the roles and relationships of individuals and organisations in the construction sector, students will gain an overview of the organisational and the personal ways in which the sector works to continue to improve the built environment and limit its impact on the environment, while maintaining economic sustainability and growth.

1.3 Unit Content

LO1 Explore the development of the construction industry through the roles and relationships of the professionals involved

History of the industry

Roles

Architect

General contractor

Sub-contractor

Engineer (e.g., structural, civil, building services, traffic, fire)

Project manager

Quantity surveyor

Others

Collaboration

Relationships between organisations/roles

Individuals and collaboration

Collaboration through technology (e.g., project sharing, BIM, email)

Avoiding conflict in collaboration

Professional bodies

The purpose of professional bodies

Chartered Institute of Building (CIOB)

Chartered Institution of Building Engineers (CIBSE)

Chartered Association of Building Engineers (CABE)

Chartered Institute of Architectural Technologists (CIAT)

Institution of Civil Engineers (ICE)

Royal Institute of British Architects (RIBA)

Royal Institution of Chartered Surveyors (RICS)

Others

Codes of conduct

Professional ethics

LO2 Assess the impact of the construction industry

Construction and economy

Employment

Direct

Supply chain

Skills gaps

Construction and sustainability

Definitions of sustainability (e.g., environmental, social, economic, cultural)

Connections between forms of sustainability

Environmental sustainability

Carbon emissions

Carbon footprint

Embodied energy

Carbon reduction

Targets (government/global)

Environmental Strategies in Construction

Material selection

Local supply

Renewables

Energy

'Retrofit First'

Diversity and inclusion

The current state of the industry (e.g., gender representation, minority representation, 'an aging industry')

Promoting diversity and inclusion (e.g., benefits, challenges)

Equality and diversity legislation

Organisation for equality and diversity (e.g., professional bodies, Women into Construction, GoConstruct)

LO3 Discuss the ways in which the construction industry ensures quality, timely completion and safety

History of safety in construction

Pre-regulations

Post-regulations

Ensuring safety

Safety pre-construction (e.g., design and planning, building regulations)

Site safety (e.g., legislation, regulations)

Safety in use

Cost control and cost monitoring

Material costs

Plant costs (e.g., purchase, lease)

Labour costs (e.g., direct labour, subcontractors)

Cost overrun (e.g., caused by defects, caused by changes, caused by weather)

Contracts, safety and quality, safety and quality

Types of contract relationship (e.g., services contracts, works contracts)

Contract requirements (e.g., time, cost, quality)

Contracts and statutory requirements

Timely completion and quality

Quality and value (e.g., defining value, increasing value, increasing safety)

Project 'sign-off' and quality (e.g., documenting completion of work, certifying safe work, hand-over of relevant information)

Professional standards and professional bodies

LO4 Examine the routes to employment and progression within the construction industry

Technical skills

Employability skills

Communication

Collaboration

Resilience

Adaptability

Independence

Stages of employment

Professional bodies

Technician

Chartered

Fellow

Progressing in employment

Education and training

Continuing Professional Development

Personal development plans

Lifelong learning

Leadership and management

Developing as a manager

Leadership skills

Supporting the development of others

2 TEACHING AND LEARNING METHODS

Delivery will be through lectures, group workshops and tutorials. It is expected that learners undertake problem solving, further reading and research to support the guidance provided during taught sessions. Reading materials will be provided via the virtual learning environment (VLE) to support teaching but learners are encouraged to familiarise themselves with college library and online databases. Prior to each assessment, there will be series of formative feedback tutorial sessions/revision. These sessions will provide the opportunity for learners to receive constructive feedback on work/tasks prior to assessment.

3. LECTURE PROGRAMME

Week	Date	Lecture Duration (Hours)	Learning Aim	Session Aim
1	WC 02/09/2024	1.75	N/A	- Induction
2	WC 09/09/2024	1.75	LO1	- Unit introduction - Historical development of the construction industry
3	WC 16/09/2024	1.75	LO1	- Company Organisation/ Organisation structure - Construction stakeholders
4	WC 23/09/2024	1.75	LO1	- Professional and other institutes, including societies, codes of conduct, and professional ethics
5	WC 30/09/2024	1.75	LO1	- Supply chain in construction
6	WC 07/10/2024	1.75	LO1	- LO1 Revision - Give Assignment 1 Informally
7	WC 14/10/2024	1.75	LO2	- Sustainability: Environmental, economic, and social strategies in construction.
8	WC 21/10/2024	1.75	LO 2	- Diversity and inclusion
	WC 28/10/2024			- STUDY REVIEW WEEK
9	WC 04/11/2024	1.75	LO2	- LO2 Revision - Issue Assignment 1
10	WC 11/11/2024	1.75	L01&2	- Support/independent study

11	WC 18/11/2024	1.75	L01&2	- Support/independent study
12	WC 25/11/2024	1.75	L01&2	- Support/independent study
13	WC 02/12/2024	1.75	L01&2	- Submit Assignment 1– Group A Presentation
14	WC 09/12/2024	1.75	L01&2	- Submit Assignment 1 – Group B Presentation
15	WC 16/12/2024	1.75	L03	- Project handover
HOLIDAY	WC 23/12/2024			
HOLIDAY	WC 30/12/2024			
16	WC 06/01/2025	1.75	L03	- Construction regulations and legislation - Assignment 1 feedback
17	WC 13/01/2025	1.75	LO3	- Health & safety within the construction industry
18	WC 20/01/2025	1.75	LO3	- Earned value management and cost monitoring
19	WC 27/01/2025	1.75	LO3	- LO3 Revision - Give Assignment 2 Unofficially
20	WC 03/02/2025	1.75	LO4	- Personal development plan (1)
21	WC 10/02/2025	1.75	LO4	- Personal development plan (2)
22	WC 17/02/2025	1.75	LO4	- Routes into employment
	WC 24/02/2025			- STUDY REVIEW WEEK
23	WC 03/03/2025	1.75	LO4	- Employment progression
24	WC 10/03/2025	1.75	LO4	- LO4 Revision - Issue Assignment 2

25	WC 17/03/2025	1.75	LO4	- Support/independent study
26	WC 24/03/2025	1.75	LO3&4	- Support/independent study
27	WC 31/03/2025	1.75	LO3&4	- Support/independent study
28	WC 07/04/2025	1.75	LO3&4	- Submit Assignment 2
	WC 14/04/2025	HOLIDAY		
	WC 21/04/2025	HOLIDAY		
29	WC 28/04/2025	1.75	LO3&4	- Give feedback Assignment 2
30	WC 05/05/2025	1.75	LO3&4	- Give feedback Assignment 2
31	WC 12/05/2025	1.75	LO3&4	- Resubmissions – Assignments 1 & 2
32	WC 19/05/2025	1.75	LO3&4	- Resubmissions – Assignments 1 & 2 - End of Unit
	WC 26/05/2025			-



4. ASSESSMENT SCHEDULE

4.1 Detailed Description of Assessment Scheme

The unit will comprise of two summative assessments.

Summative assessment one 4.1 will cover learning outcomes 1 and 2.

Summative assessment two 4.2 will cover learning outcomes 3 and 4.

NB: There will be ample opportunities for assessment resubmissions. Resubmission dates will be communicated in due course.

4.2 Learning Outcomes and Assessment Criteria

Pass	Merit	Distinction
Learning outcome 1 [LO1]: Explore the development of the construction industry through the roles and relationships of the professionals involved		
P1 Discuss the development of the construction industry using historic and contemporary examples. P2 Explain the roles and responsibilities of those that work in the construction industry.	M1 Analyse the purpose of professional bodies in supporting the industry and protecting the public.	D1 Evaluate the ways in which professionalism, diversity and inclusion are important to the growth of the construction sector.
Learning outcome 2 [LO2]: Assess the impact of the construction industry		

P3 Explain the different types of sustainability and how the construction industry is reflected in these. P4 Define potential strategies to promote equality, diversity and inclusion and ensure fairness at work.	M2 Illustrate the challenges of the construction industry in regard to diversity and inclusion.	
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Pass	Merit	Distinction
Learning outcome 3 [LO3]: Discuss the ways in which the construction industry ensures quality, timely completion and safety		
P5 Discuss the processes and requirements for project handover, ensuring the safety and quality of work. P6 Explain the importance of monitoring costs in construction projects.	M3 Analyse the ways in which legislation and regulation work to ensure safety during construction and occupation.	D2 Critically analyse the role of professional bodies in supporting quality and safety in construction.

Pass	Merit	Distinction
Learning outcome 4 [LO4]: Examine the routes to employment and progression within the construction industry		
P7 Prepare a personal development plan, highlighting routes to achieve subject relevant technical and employability skills. P8 Examine the role of professional bodies and routes into employment.	M4 Assess the ways in which CPD and lifelong learning support employment progression.	D3 Evaluate the ways in which education, training and CPD are used to build leadership and management capacity in construction organisations.

4.3 Marking Standards

The controlled assessments will be marked in accordance with the Pearson standards. It will also meet requirements set by the Regulated Qualifications Framework (RQF). Learners are expected to make reasonable attempts towards problem solving. A coherent, well-balanced and organised approach to tasks with clear notations and evidence will be rewarded.

5. LEARNING RESOURCES

The library offers services and resources needed for this unit. The following resources have been provided to assist your studies in this Unit:

- Access to specialist databases.
- Class notes and lecture slides.
- Library electronic services.
- Links to online journal articles.
- Open-access computers and printers.
- Reprographic services.
- Staff expertise and advice.
- Librarian and team of learning support staff.

If you have any queries about how to access any of these learning resources, please ask the Unit Leader.

Textbooks

FEWINGS, P. (2008), Ethics for the Built Environment, Routledge

GRUNEBERG, S., FRANCIS, N. (2019), The Economics of Construction, Economics of Big Business

MCDONOUGH, W., BRAUNGART, M. (2010), Cradle to Cradle: Remaking the Way We Make Things, North Point Press

MIRSKY, R., SCHAUFELBERGER, J. (2014), Professional Ethics for the Construction Industry, Routledge

MURRAY, M., DAINITY, A., MURRAY, M. (2008), Corporate Social Responsibility in the Construction Industry, Routledge

SCHLEIFER, T. (1990), Construction Contractors' Survival Guide, John Wiley & Sons

Web resources

<https://bit.ly/3rKsWPc> Chartered Association of Building Engineers (Professional Body)

<https://bit.ly/3f9vzoo> Chartered Institute of Architectural Technologists (Professional Body)

<https://bit.ly/3xbOxB5> Chartered Institution of Building Services Engineers (Professional Body)

<https://bit.ly/3fsrTP1> Institution of Civil Engineers (Professional Body)

<https://bit.ly/3j46TyG> Royal Institute of British Architects (Professional Body)

<https://bit.ly/3ihhMhP> Royal Institution of Chartered Surveyors (Professional Body)