Aim

This unit provides learners with an opportunity to develop understanding and skills to research current construction issues, modern methods of construction, and analyse information to present the chosen design solution.

Unit abstract

This unit provides learners with an opportunity to explore current practices and issues in construction and gain an understanding of the modern methods of construction. This will enable learners to develop skills in research and analysis to support the design process. Learners will also develop communication skills through presenting design solutions. This unit is particularly relevant to learners following the design discipline in construction and the built environment.

Learning outcomes

On successful completion of this unit a learner will:
1 Understand current construction issues and practices
2 Understand modern methods of construction
3 Be able to research and analyse information to support the design process
4 Be able to present the chosen design solution.
Unit content

1 **Understand current construction issues and practices**

   *Current construction issues*: concept to reality; buildability; sustainable construction; lean construction; fast track construction; greenfield versus brownfield developments

   *Whether to develop or redevelop*: refurbishment, conversion and adaptation practices

2 **Understand modern methods of construction**

   *Modern methods of construction (MMC)*: prefabrication; sustainable construction; energy saving construction; recycled building; applications of alternative technology; cultural buildings; tall structures; large span structures; hi tec construction forms; applied engineering constructional forms; impact of MMC on traditional design process

3 **Be able to research and analyse information to support the design process**

   *Research*: methodologies; current issues and practices; consideration of MMC in design

   *Analysis*: of technical information used in design eg standards for material and component production, methods of working, manufacturers’ product information, environmental information such as climatic information, local topography, local authority guidelines and requirements, outcomes of site and soil investigations

4 **Be able to present the chosen design solution**

   *Presentation*: main theories and processes; current design practices; level of competence typical of industrial practice; appropriate graphical and written communication
Learning outcomes and assessment criteria

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| LO1  
Understand current construction issues and practices                           | 1.1 analyse current construction issues and practices                                        |
|                                                                                   | 1.2 explain the implications of current issues and practices for the construction and built environment sector |
|                                                                                   | 1.3 compare the benefits of greenfield and brownfield development                           |
|                                                                                   | 1.4 compare the benefits of development and redevelopment                                   |
| LO2  
Understand modern methods of construction                                      | 2.1 discuss modern methods of construction                                                   |
|                                                                                   | 2.2 explain how modern methods of construction affect the traditional design process       |
| LO3  
Be able to research and analyse information to support the design process       | 3.1 present evidence of research into current issues, practices and modern methods of construction |
|                                                                                   | 3.2 perform analytical techniques to support the design process                            |
| LO4  
Be able to present the chosen design solution                                   | 4.1 produce a solution to given design problems in an agreed format                         |
|                                                                                   | 4.2 develop a presentation of the design solution to peers and assessors                    |
**Guidance**

**Links**

This unit links with other Edexcel BTEC HN Construction and the Built Environment units, for example:

- Unit 1: Design Principles and Application for Construction and the Built Environment
- Unit 7: Construction and Maintenance of Buildings
- Unit 8: Technology of Complex Buildings
- Unit 12: Conversion and Adaptation of Buildings
- Unit 13: Environmental Impact of Construction
- Unit 19: Building Control Procedures and Legislation
- Unit 24: Design Procedures for Construction
- Unit 25: Design Technology for Construction
- Unit 26: Properties and Performance of Construction Materials.

The content of this unit has been designed and mapped against the current CIC National Occupational Standards and the current NVQs at levels 4 and 5. Completion of the learning outcomes will contribute knowledge, understanding and skills towards the evidence requirements of the NVQs.

- See *Annexe B* for summary of mapping information to NVQs.

This unit has also been mapped to illustrate the links to the NQF units.

- See *Annexe D* for summary of mapping information to NQF units.

**Essential requirements**

Learners must demonstrate the ability to draw detailed architectural style drawings both manually and by using computer-aided design (CAD) and other current, modern IT facilities. Learners need access to design and CAD facilities, and a wide range of library resources including internet access to consider information from a wider source.

It is essential that a culture of health and safety is embedded in all the units to ensure that the learners understand the importance and relevance of health and safety issues. Therefore there should be clearly signposted aspects of current legislation and health, safety and welfare implications throughout the delivery and assessment of this unit.
**Employer engagement and vocational contexts**

Tutors should organise site visits, for example to construction sites using modern methods of construction, manufacturers of prefabricated items and/or refurbishment sites. To ensure site visits are successful tutors should outline the aims and objectives of the visits, conduct preparatory briefings and encourage learners to review the site visits once completed. Tutors should organise presentations by visiting speakers, for example contractors, consultants, and/or statutory body representatives. Tutors should use real-life case studies, based on site visits, for part of the assessment for this unit.