

# CONSTRUCTION AND THE BUILT ENVIRONMENT

## Unit 7: Modern methods of construction



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## Construction and the Built Environment

### Level 1 Unit 7: Modern methods of construction

#### Sample scheme of work

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This is an example of a possible scheme of work. You can use it as it is, or you can adapt it to meet your own delivery needs. You may wish to consider the provision of extra learning workshop time for those learners who need additional learning time.

This unit is assessed through an internally designed, set and marked assignment. This will be subject to external moderation. Guidance on assessment, evidence requirements and assignment structure is available in the unit specification.

This unit also contains sections entitled 'Guidance for Delivery', 'Opportunities for applied learning' and 'What activities might be involved in this unit?' This scheme of work is designed to support the information therein.

<b>Total GLH</b>	30 (22 for delivery and 8 for assessment)
<b>Aim</b>	<p>This unit offers learners an opportunity to gain knowledge and understanding of modern methods of construction. They will learn why modern methods of construction are superseding traditional methods of construction and will develop an understanding of the benefits in terms of speed, quality and cost.</p> <p>When they have achieved this unit learners will:</p> <ul style="list-style-type: none"> <li>• know about traditional methods of construction</li> <li>• know about modern methods of construction and the materials used</li> <li>• understand the differences between traditional methods and modern methods of construction, and the practical implications of these differences.</li> </ul>

<p><b>Notes</b></p>	<p>The scheme of work presented here uses a case-study, task-based approach to teaching and learning, with applied learning and practical activities being integrated as and where appropriate. Several different assessment criteria may be integrated within a single activity.</p> <p><b>Key for Functional Skills (FS)</b></p> <p>There are three Level 1 FS associated with the Foundation Diploma. These are broken down as follows:</p> <p>English: speaking and listening (S&amp;L E); reading (Read E); writing (Write E); or E (all) for all three</p> <p>Mathematics: representing situations using mathematics (RS M); analysing and processing using mathematics (A&amp;P M); interpreting and presenting results (I&amp;P M); or M (all) for all three</p> <p>Information and Communication Technology: use ICT systems (Use ICT); find and select information (F&amp;S ICT); develop, present and communicate information (DPC ICT); or ICT (all) for all three</p> <p><b>Guided Learning Hours</b></p> <p>There are 30 GLH associated with this unit, 22 of which are scheduled for delivery of the knowledge, understanding and skills associated with the unit. For the purposes of this scheme of work it is assumed that each session will be one hour long and that there will therefore be 22 sessions. Consortia are of course free to organise the time in any way that suits the needs of their learners and of the centres that comprise the consortium.</p> <p><b>Evidencing PLTS and FS</b></p> <p>PLTS are signposted against the assessment criteria throughout the unit, and can be evidenced from the learners' assessed work.</p> <p>Where FS are signposted it is because there are opportunities for the <b>development</b> of FS, rather than opportunities for <b>evidencing achievement</b> of FS from the internally set and marked assessment(s) for that unit.</p>
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Session number	Topic	Suggested activities, assignments, assessments and resources	AC	PLTS	FS	GLH	Comments
1	Traditional methods of construction	<p>Learners are not required to develop a comprehensive and in-depth knowledge of traditional construction methods and their uses. It is however important that they can differentiate between traditional and modern methods of construction and describe the benefits of the latter. To do this they need to have examples of both to compare. In this unit the teacher should restrict the treatment of traditional construction to deep concrete foundations, single and double skin brick walls, brick and block cavity walls and timber-framed structures.</p> <p>In the first activity learners should be given the opportunity to visit at least one of the following: a traditional building site, a builder's merchant or a manufacturer's premises, to take photographs, make notes and interview experienced staff.</p> <p>Practical techniques employed in each of these disciplines should be covered briefly and supported, where time allows, by demonstration of such techniques.</p> <p>The second activity should involve a visit to the brickwork and carpentry and joinery workshops of the local further education college, to watch apprentices practise their skills and ask them questions about what they are learning.</p> <p>The teacher should create and maintain a library of materials and components, provided by on-site personnel, builders' merchants and manufacturers, for future use.</p> <p>A list of useful resources is included in the unit specification.</p>	AC1a	-	S&L E Read E Use ICT F&S ICT	6	<p>There is some overlap between the content of this unit and that of Unit 4, topics 1 and 2. Teachers should take this into account when designing their teaching and learning strategies.</p> <p>Traditional methods of construction need not always imply old buildings. Many new buildings are constructed in a traditional manner. Most repair, maintenance, conservation and restoration projects use traditional methods and materials by definition, but may use modern tools, equipment and plant where they do not harm the integrity of the project.</p> <p>The teacher should provide handouts of traditional construction techniques to allow time for the recommended visits.</p>

Session number	Topic	Suggested activities, formative assessments and resources	AC	PLTS	FS	GLH	Comments
2	Modern methods of construction	<p>Learners are not required to develop a comprehensive and in-depth knowledge of modern construction methods and their uses. It is, however, important that they can differentiate between traditional and modern methods of construction and describe the benefits of the latter. To do this they need to have examples of both to compare. In this unit the teacher should restrict the treatment of modern construction methods to materials such as lightweight blocks, plastic moulded skirtings, covings and piping, and methods such as modules or 'pods' pre-fabricated off-site and positioned using cranes, panels manufactured off-site, ready-made walls and floors, trussed rafters and 'thin-joint' systems.</p> <p>In the first activity learners should be given the opportunity to visit at least one of the following: a modern building site, a builder's merchant or a manufacturer's premises, to take photographs, make notes and interview experienced staff.</p> <p>Practical techniques employed in each of these disciplines should be covered briefly and supported, where time allows, by demonstration of such techniques.</p> <p>The second activity should involve learners in producing a display using simple design sketches and construction drawings, posters, photographs and manufacturers' advertising and technical materials. This should be extended into a debriefing session based upon the visits.</p> <p>A list of useful resources is included in the unit specification.</p>	AC2a	-	S&L E Read E Use ICT F&S ICT	6	<p>Teachers should exercise caution when delivering and assessing this unit. Learners will be keen to try their hand at producing drawings and may spend too much time on this if not carefully monitored. This unit is about modern methods of construction, <b>not</b> construction drawing techniques. Learners will benefit from scrutiny of design sketches and construction drawings but, although they may demonstrate rudimentary skills in construction drawing, they are not required to display proficiency in this unit.</p> <p>The teacher should provide handouts of modern construction methods, materials and techniques to allow time for the recommended visits.</p>

Session number	Topic	Suggested activities, formative assessments and resources	AC	PLTS	FS	GLH	Comments
3	Differences between traditional methods and modern methods of construction	<p>This topic covers the differences between modern and traditional methods of construction and the practical implications of those differences in terms of speed of erection, quality of work, labour requirements and project costs. The teacher must build upon the knowledge and understanding gained in topics 1 and 2.</p> <p>The first activity should involve a comparison between the different methods used to build, for example, a traditional masonry-built house and a modern system-built building such as a new school. Learners should work in small groups, with each group discussing one of the differences identified above, and estimating the savings in time and money associated with modern methods of construction. Cost savings may be approximate and relative.</p> <p>This should be followed by a short presentation by all groups to the entire class. The teacher should help by leading the subsequent discussion in the right direction and correcting any mistakes or misapprehensions.</p> <p>The second activity should involve learners performing simple practical activities to compare and contrast traditional and modern techniques, if facilities and time allow. The number of activities need not be high. The important thing is that learners experience at first hand how long each task takes, and the quality and cost of the outcomes.</p> <p>A list of useful resources is included in the unit specification.</p>	AC3a, b	IE3 IE6	E (all) M (all) ICT (all)	10	<p>The importance of sustainability should be emphasised throughout. Sustainability is not assessed directly in this unit, but it is a very important aspect of the modern approach.</p> <p>The materials produced for the group presentations should be collated into a portfolio. This should be used as a formative assessment. The portfolios should be returned to the learners after assessment to help them complete their summative assessment tasks.</p>