

# Mark Scheme

Principal Learning

## Sample Assessment Material Construction and the Built Environment Level 3 Unit 7: Value and Use of the Built Environment: Protecting and Maintaining

PART A

| Question Number | Answer   | Mark |
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| 1(i)            | Noise from plant and machinery -<br>description of any two of the following solutions: <ul style="list-style-type: none"> <li>• Plant and machinery should be well maintained</li> <li>• Fitted with sound attenuators</li> <li>• Located away from receptors</li> <li>• Used between specified hours</li> <li>• Used in sound protected areas</li> </ul>  | (2)  |
| (ii)            | Dust -<br>description of any two of the following solutions: <ul style="list-style-type: none"> <li>• Regular damping down</li> <li>• Fitting cutting machines with a water feed</li> <li>• Fitting cutting machines with dust extraction</li> <li>• Minimising dust producing works</li> <li>• Enclosing the works e.g. scaffold and sheeting</li> </ul>  | (2)  |
| (iii)           | Mud on the roads -<br>description of any two of the following solutions: <ul style="list-style-type: none"> <li>• On site wheel wash facilities</li> <li>• Wheel bath</li> <li>• Regular road sweeping/cleaning</li> <li>• Restricting vehicle movement on and off site</li> <li>• Temporary stoned roads on site.</li> </ul>  | (2)  |
| (iv)            | Traffic Congestion -<br>description of any two of the following solutions: <ul style="list-style-type: none"> <li>• Delivery times restricted to non peak hours</li> <li>• Reduction of staff/workers car parking on site</li> <li>• Traffic management systems on and around site</li> <li>• Restricted working hours (outside peak or normal working hours)</li> <li>• Use of par and ride or company buses to bring workers to site.</li> </ul> | (2)  |

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|-----------------|--|------|
| 2(i)            | The designer -<br>description of any three of the following duties: <ul style="list-style-type: none"> <li>• Designers must ensure buildings can be maintained safely.</li> <li>• Designers must liaise with all those involved in design.</li> <li>• Materials and systems used should not pose any risk to health and safety.</li> <li>• Materials should be easily sourced and replaced.</li> <li>• Designers must consider the life span of the building.</li> </ul> | (3)  |

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| (ii) | <p>The principal contractor -<br/>description of any <b>three</b> of the following duties:</p> <ul style="list-style-type: none"> <li>• Manage health and safety on site and monitor quality and accuracy with the design.</li> <li>• Produce a health and safety file which contains all relevant information relating to maintenance</li> <li>• Ensure all as built information is accurate</li> <li>• Undertake an induction/hand over meeting to demonstrate how the various systems operate.</li> <li>• Identify any potential problems with the design or finished problems</li> </ul> | (3) |
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| 3(i)            | <p>The general public (customers) -<br/>description of any <b>three</b> of the following benefits:</p> <ul style="list-style-type: none"> <li>• Ensure health and safety during use</li> <li>• Ensures safe systems of escape are in place</li> <li>• Provides an attractive environment</li> <li>• Ensures the facilities are available when required for the community</li> <li>• Provides a central contact point for any problems or issues</li> </ul> | (3)  |
| (ii)            | <p>The workforce (employees) -<br/>description of any <b>three</b> of the following benefits:</p> <ul style="list-style-type: none"> <li>• Ensure a safe place to work in accordance with legislation</li> <li>• Provides facilities for workers such as kitchen and toilet provision</li> <li>• Provides additional security function to workers</li> <li>• Provides a central contact point for problems and issues</li> </ul>                           | (3)  |

## PART B

| Question Number | Answer   | Mark |
|-----------------|--|------|
| 4               | <p>Coherent discussion of the following:</p> <ul style="list-style-type: none"> <li>• Increase in insulation</li> <li>• Improved air tightness</li> <li>• SAP and / or SBEM energy ratings</li> <li>• Designing out cold bridging</li> <li>• Controlled ventilation</li> <li>• Controlled air changes</li> <li>• Specifies minimum U-values for elements</li> <li>• Reduction in energy consumption</li> </ul> | (8)  |

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|-----------------|---|------|
| 5               | <p>Description of any 6 of the following benefits:</p> <ul style="list-style-type: none"> <li>• Allows for long term maintenance planning</li> <li>• Increased longevity of a building</li> <li>• Minimises disruption for building users</li> <li>• Allows for effective cost analysis of running costs</li> <li>• Greater cost efficiency over reactive/emergency maintenance/repairs</li> <li>• Ensure regular supply of work for maintenance team/contractors</li> <li>• Ensures the building is available and operational when required by the user and / or for the community</li> <li>• Maintains the appearance and aesthetic value of building or structure</li> </ul> | (6)  |

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|-----------------|--|------|
| 6               | <p>Description of any 3 of the following (2 marks each):</p> <ul style="list-style-type: none"> <li>• By ensuring the building or estate is in a good state of repair</li> <li>• Programming in essential repairs on a cyclical basis</li> <li>• Allowing detailed cost management for the owners which allows them to spread the cost of repairs and ensure essential works are completed</li> <li>• Keeping the property maintained ensures continued use and economic viability</li> <li>• Keeping the property in good repair allows for ease of adaptation when needed, e.g. change of use.</li> <li>• Makes the property attractive to potential future investors</li> </ul> | (6)  |

PART C

| Question Number | Answer  | Mark |
|-----------------|---|------|
| 7(i)            | <p>Coherent discussion of the following:</p> <ul style="list-style-type: none"> <li>• Keep the tenants informed at all stages, e.g. through newsletters</li> <li>• Involve the tenants in the process, e.g. through meetings</li> <li>• Allow them input to the timing and phasing of the works</li> <li>• Allow them a choice for the works they are having undertaken, e.g. choice of kitchen or bathroom</li> <li>• Provide alternative accommodation to those needing it (empty houses are available)</li> </ul>  | (5)  |
| (ii)            | <p>Coherent discussion and sketches where appropriate of any 5 of the following:</p> <ul style="list-style-type: none"> <li>• Where possible provide wall, roof and floor insulation.</li> <li>• New double or triple glazed windows in PVCu frames</li> <li>• New double or triple glazed doors in PVCu frames</li> <li>• Condensing combination boilers</li> <li>• Radiators fitted with thermostatic radiator valves</li> <li>• Replace suspended ground floors with solid concrete plus insulation</li> <li>• Reduce air infiltration and provide controlled air changes</li> <li>• Energy efficient light bulbs</li> <li>• District heating systems using bio mass boilers</li> <li>• Solar water heating</li> <li>• District power generation such wind turbine or photovoltaic panels</li> </ul> | (5)  |
| (iii)           | <p>Coherent discussion and sketches where appropriate of the following:</p> <ul style="list-style-type: none"> <li>• Programming to follow set pattern, specialist teams to work through the houses, e.g. a kitchen team to remove a kitchen a refit in a given period say 3 days, this followed by plasterers, decorators etc. This would be a rolling programme from house to house. Similar systems should be in place for the other works etc.</li> <li>• Those residents most effected by the works should be temporarily located to alternative accommodation, for example one of the refurbished empty properties</li> <li>• Create economies of scale for procuring materials, e.g. approaching a kitchen manufacturer to provide all units from</li> </ul>                                     |      |

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|      | <p>specified ranges would generate considerable savings, similarly, sanitary ware.</p> <ul style="list-style-type: none"> <li>• Create economies of scale for procurement of labour, e.g. labour might be obtained on set rates and the greater the number of units a company is offered the greater the reduction could be.</li> <li>• Implement systems to minimise waste, increase recycling, and work to standard unit sizes. Bespoke items cost more.</li> </ul>   | (5) |
| (iv) | <p>Coherent discussion and sketches where appropriate of any 5 of the following:</p> <ul style="list-style-type: none"> <li>• Use low maintenance products such as PVCu for doors, windows, fascias and soffits</li> <li>• Ensure all works are to the highest standards</li> <li>• Use of high quality materials especially for external works such as masonry paint, alternatively if there are rendered areas, use through coloured render to reduce painting obligations</li> <li>• Use good quality services equipment and sanitary ware, that is easily maintained and serviced, e.g. use of service valves and easy clean traps</li> <li>• Create low maintenance garden and open spaces</li> <li>• Minimise areas of external decoration</li> <li>• Ensure the refurbishment programme is thorough and deals with all issues</li> <li>• Prepare a cyclical maintenance plan to cover key areas</li> </ul> | (5) |