

# Mark Scheme (Results)

## January 2010

Principal Learning

Construction CB301  
Design the Built Environment: The Design Factors

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## General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Mark
1 (a)	<p>Developing brownfield sites -</p> <p>Description of any 2 of the following:</p> <ul style="list-style-type: none"> <li>• Regeneration of an urban area.</li> <li>• Remediation of land contaminated with chemicals.</li> <li>• Improves the aesthetics and visual amenity of an area.</li> <li>• Low cost of land encourages affordable housing for key workers.</li> <li>• Growing public intolerance to derelict industrial and public wastelands.</li> <li>• Can attract inward investment for mixed use developments.</li> <li>• Relieves pressure on the countryside and green belts.</li> <li>• Increase complexity and cost of sub-structures</li> <li>• Good sustainable practice.</li> <li>• Existing infrastructure/mains services present.</li> <li>• Proximity and style of other existing developments.</li> </ul> <p>Any other appropriate answer.  1 mark for a simple description  2 marks for a clear description</p>	(4)

Question Number	Answer	Mark
1 (b)	<p>Design of public spaces -</p> <p>Description of any 2 of the following:</p> <ul style="list-style-type: none"> <li>• Opportunities for recreation use.</li> <li>• Provision of child friendly play areas.</li> <li>• Opportunities for social use.</li> <li>• Opportunities for educational use.</li> <li>• Balance between project foot print and public space.</li> <li>• Access requirements (emergency services or disabled)</li> <li>• Links the built environment community to the natural environment.</li> <li>• Provides character and a sense of place.</li> <li>• Planting can clean up contaminated or derelict land.</li> <li>• Higher house and land values.</li> <li>• Improved reputation of the town/city for high quality environments.</li> <li>• Improvement in ecology and environment protection.</li> <li>• Street furniture, landscaping and signage in keeping with the surrounding environment</li> </ul> <p>Any other appropriate answer. 1 mark for a simple description 2 marks for a clear description</p>	(4)

Question Number	Answer	Mark
2	<p>Measures to produce a streetscene that is pedestrian, cycle and/or vehicle friendly -</p> <p>Description of any 3 of the following:</p> <ul style="list-style-type: none"> <li>• Direct and accessible routes that are free from barriers create safe places for pedestrians and cyclists.</li> <li>• Clearly defined cycle routes and pavements for busier streets with fast traffic.</li> <li>• Well lit routes that are easy for users to find and follow.</li> <li>• Traffic calming measures including treatment of road surfaces.</li> <li>• Location of junctions and crossings to create a low speed environment.</li> <li>• Use of street furniture and good planting to divert and slow traffic.</li> <li>• Timed access for delivery routes.</li> <li>• Provision of cycle racks and secure parking for cycles.</li> <li>• Car share lanes.</li> <li>• Access arrangements for emergency services.</li> <li>• Access arrangements for disabled.</li> <li>• Pedestrian zones.</li> </ul> <p>Any other appropriate answer. 1 mark for a simple description 2 marks for a clear description</p>	(6)

Question Number	Answer	Mark
3	<p>Benefits to the environment and/or community by specifying local materials -</p> <p>Description of any 3 of the following benefits:</p> <ul style="list-style-type: none"> <li>• Reduction in embodied energy.</li> <li>• Reduction in pollution because materials are not transported long distances.</li> <li>• Reduced wear and tear on the national infrastructure.</li> <li>• Reduction in wastage.</li> <li>• Boost to the local economy.</li> <li>• Reinforcement of the local identity.</li> <li>• Traditional materials will be sympathetic to the local area.</li> <li>• Reduces the impact of future maintenance work on the environment.</li> <li>• An increase in local architectural interest.</li> <li>• Increased opportunities for 'just in time' delivery schedules.</li> </ul> <p>Any other appropriate answer. 1 mark for a simple description 2 marks for a clear description</p>	(6)

Question Number	Answer	Mark
4 (a)	<p>Advantages of Green Belts to the local community -</p> <p>Description of any 2 of the following advantages:</p> <ul style="list-style-type: none"> <li>• Prevents urban sprawl.</li> <li>• Can provide an attractive aesthetically pleasing area.</li> <li>• Stops neighbouring towns from merging.</li> <li>• Preserves the special historic/heritage character of towns.</li> <li>• Can provide recreation opportunities.</li> <li>• Safeguards agricultural activities.</li> <li>• Assists in urban regeneration.</li> <li>• Retains bio-diversity of locality.</li> <li>• Retains indigenous species.</li> <li>• Maintains air quality.</li> </ul> <p>Any other appropriate answer. 1 mark for a simple description 2 marks for a clear description</p>	(4)

Question Number	Answer	Mark
4 (b)	<p>Disadvantages of Green Belts to the local community -</p> <p>Description of any 2 of the following disadvantages:</p> <ul style="list-style-type: none"> <li>• Forces development further into the countryside.</li> <li>• Towns become more densely packed.</li> <li>• Land values rise in the areas near Green Belts.</li> <li>• Housing developments move beyond the Green Belt i.e. leap-frog the Green Belt.</li> <li>• More roads need to be built for longer commuter journeys.</li> <li>• Increase in commuting and traffic related pollution.</li> <li>• Increase high rise development.</li> <li>• Prevents natural population expansion within the community.</li> <li>• Can restrict the size of the local economy.</li> </ul> <p>Any other appropriate answer. 1 mark for a simple description 2 marks for a clear description</p>	(4)

Question Number	Answer	Mark
5	<p>Influence of a Planning Authority -</p> <p>Description of any 3 of the following:</p> <ul style="list-style-type: none"> <li>• The Local Development Plan determines the type of development allowed in different areas.</li> <li>• Ensures that a development is sympathetic to its surroundings.</li> <li>• Limits the type and colours of materials allowed for use.</li> <li>• The opinion of the local community is sought and considered.</li> <li>• Consideration of the density/number of dwellings that can be accommodated on the site.</li> <li>• Landscaping and green spaces are in context with the surroundings.</li> <li>• The amount of car parking does not exceed the parking policy for the area.</li> <li>• Ensure the development has sufficient community facilities, key services and infrastructure.</li> <li>• The Sustainable Appraisal ensures the development minimises the environmental impact including climate change and flood risk.</li> <li>• The requirements of specific groups are met i.e. children, older and disabled people.</li> <li>• Requirement for social housing.</li> <li>• Section 18 agreements with developers to encourage social investment in the community.</li> <li>• Restrictions on multi-storey development</li> <li>• Provide financial support in the way of grants to develop specific areas of land.</li> <li>• Planning policies.</li> <li>• Recognition of tree preservation order requirements.</li> </ul> <p>Any other appropriate answer. 1 mark for a simple description 2 marks for a clear description</p>	(6)

Question Number	Answer	Mark
6	<p>Influence of the site on the design of a building -</p> <p>Description and evaluation of 2 of the following:</p> <ul style="list-style-type: none"> <li>• Size and shape i.e. spacious or restricted, regular or irregular shape.</li> <li>• Topography i.e. flat or sloping.</li> <li>• Ground conditions i.e. implications for foundation design, construction methods employed and overall cost of building.</li> <li>• Existing trees and shrubs i.e. implications for foundation design, ground water levels etc.</li> <li>• Existing buildings i.e. type, size, condition and location; retain, possible listed status or demolish.</li> <li>• Orientation i.e. sun path, direction of prevailing wind, implications for layout, direction it faces and position of windows doors etc.</li> <li>• Views into and out of the site i.e. layout of building, location of specific rooms, degree of prominence of the building.</li> <li>• Surrounding and adjoining properties i.e. type, usage, size, scale, architectural style.</li> <li>• Access and circulation i.e. vehicular and pedestrian circulation patterns, rights of way, accessibility.</li> <li>• Availability of services i.e. mains, transport, shops etc.</li> <li>• Geographical location.</li> <li>• Local planning restrictions.</li> </ul> <p>Any other appropriate answer.  3 marks for each to a maximum of 6 i.e.  1 mark for a simple description  2 marks for a more detailed description  3 marks for a description that is evaluated.</p>	(6)

Question Number	Answer	Mark
7	<p>How dwellings can be adapted for disabled users - Coherent and balanced evaluation of the following features:</p> <ul style="list-style-type: none"> <li>• Entrance design - visible on approach, relate to external routes and car parking, weather protection, sufficient space for manoeuvrability, lighting levels.</li> <li>• Entrance doors - minimum clear width, resistance required to open the door, automatic doors, vision panels, distinguishable door furniture.</li> <li>• Thresholds - flush wherever possible.</li> <li>• Ease of navigation - rational and simple layout of the building, clear of hazards, corridors/passageways that are at least the minimum width.</li> <li>• Surfaces - colour and luminance contrast to define floors, walls, doors, ceilings, slip resistant floors, textured surfaces.</li> <li>• Vertical circulation - ramps/lifts should be provided at all changes of level, internal changes of level ie. single steps, short ramps should be clearly indicated. Handrails - contrast between background, size and shape that are easy to grip.</li> <li>• Lighting - carefully positioned lighting particularly on stairs/ramps that avoids bright directional light, glare, or strong shadows.</li> <li>• Facilities - WCs should meet space requirements, doors allow easy access, fittings should contrast with their background, locks, controls etc. should be able to be used by people with limited manual dexterity. Walk-in showers or bathrooms adapted for people with mobility problems or wheelchair users. Kitchens/food preparation areas to be designed to wheelchair standards.</li> <li>• Electrical sockets and switches to be within the reach of a wheelchair user ie. not located at floor level, or not too high to reach.</li> <li>• Braille switches and signage.</li> <li>• Induction loops.</li> <li>• Visual and vibration alarms.</li> </ul> <p>Other acceptable answers would be considered</p>	(20)

Level	Mark	Descriptor
	0	No rewardable material
1	1-5	One or two undeveloped and/or unsupported ideas. May lack cohesion. No evaluation. Lacks appropriate terminology.
2	6-10	General description of points for development. Limited evaluation. Minimal use of appropriate terminology.
3	11-15	Some discursive elements covering several aspects but points not fully developed or limited range. Some evaluation. Some use of appropriate terminology.
4	16-20	Broad range and a full development of relevant points. Clear evaluation. Sound use of appropriate terminology.







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