



R2111
**UNDERSTANDING GARDEN FEATURES, PLANT SELECTION
& PLANNING**

Level 2

Tuesday 20 June 2023

09:00 – 10:20

Written Examination

Candidate Number:

Candidate Name:

Centre Name:

IMPORTANT – Please read carefully before commencing:

- i) The duration of this paper is **80** minutes;
- ii) **ALL** questions should be attempted;
- iii) **EACH** question carries **10 marks**;
- iv) Write your answers legibly in the spaces provided. It is **NOT** necessary that all lined space is used in answering the questions;
- v) Use **METRIC** measurements only;
- vi) Use black or blue ink only. Pencil can be used for drawing purposes only. Ensure that all diagrams are labelled accurately with the line touching the named object;
- vii) Where plant names are required, they should include genus, species and where appropriate, cultivar;
- viii) Where a question requires a specific number of answers; only the first answers given that meet the question requirement will be accepted, regardless of the number of answers offered;
- ix) Please note, when the word '**distinct**' is used within a question, it means that the items have different characteristics or features.

ANSWER ALL QUESTIONS

Q1 a) Describe **FOUR** ways in which plant selection can improve the environmental sustainability of a garden.

MARKS

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b) Name **TWO** plants that could be hazardous to garden users.

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Total Mark

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MARKS

Q5 a) Name **ONE** man-made and **ONE** natural material suitable for furniture (or a bench) in a formal garden.

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b) Compare the benefits and limitations of **TWO** materials suitable for use as paths in a formal garden by completing the table below:

| | Material 1 | Material 2 |
|-----------------------|-------------------|-------------------|
| Named material | | |
| Benefit | | |
| Limitation | | |

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c) Name **TWO** vertical hard landscape features, characteristic of formal gardens.

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| Total Mark |
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Please see over/.....

Q6 a) Name TWO plants suitable for use in a knot garden.

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b) Describe the characteristics of TWO features of a knot garden.

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c) Describe how ONE NAMED design principle is used in a knot garden to ensure that the design 'works'.

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| Total Mark |
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Q7 a) Name **TWO** herbaceous perennial plants suitable for planting beneath trees in a woodland garden, giving **TWO** decorative merits for **EACH** by completing the table below:

| Plant Name | Decorative Merit |
|-------------------|--|
| | 1. 2. |
| | 1. 2. |

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b) Describe **TWO** other garden situations where herbaceous perennials can be used effectively in a garden.

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MARKS

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Q8 a) Describe how **TWO** distinct **NAMED** soft landscape features can provide cohesion in an informal garden.

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b) Name **TWO** distinct soft landscape features suitable for inclusion in a formal garden.

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MARKS

Q9 Describe **FIVE** deciduous trees from distinct genera, suitable for planting in a domestic garden, giving **ONE** decorative merit for **EACH**, by completing the table below:

| Name of deciduous tree | Decorative Merit |
|------------------------|------------------|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |

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| Total Mark |
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Please see over/.....

Q10 a) State a hazard and risk associated with **EACH** of **TWO** distinct **NAMED** materials that can be used in the construction of a patio by completing the table below.

| Named material | Hazard | Risk |
|----------------|--------|------|
| 1. | | |
| 2. | | |

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b) Describe how the environmental sustainability of **EACH** of the materials named in a) can affect choices made during the planning and design stage.

- i) material 1
- ii) material 2

2
2

i).....

 ii).....

Total Mark

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Charity Registration Number: 222879/SC03826**

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UNDERSTANDING GARDEN FEATURES, PLANT SELECTION
& PLANNING

Level 2

Tuesday 20 June 2023

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|------------------------------|------------|-----|--------------------------------|------------|------------|
| Candidates Registered | 701 | | Total Candidates Passed | 544 | 85% |
| Candidates Entered | 637 | 91% | Passed with Commendation | 327 | 51% |
| Candidates Absent/Withdrawn | 54 | 8% | Passed | 217 | 34% |
| Candidates Deferred | 10 | 1% | Failed | 93 | 15% |

Senior Examiner's Comments:

- 1 Candidates should be able to demonstrate a good range of plant knowledge and be able to give accurately named plant examples where appropriate. Common names and generic names are often too vague and cannot be rewarded in the positive manner that genus, species and where appropriate, variety/cultivar can. This is particularly important when answering questions relating to particular (named) plant(s). Marks can only be awarded for these narratives where the example(s) are correctly and fully identified.
- 2 Candidates must be able to display accurate knowledge of the technical terms and concepts detailed in the syllabus, in the context of horticulture and also be aware that wider interpretation will not be rewarded. The examination should be regarded as a possible introduction to higher level studies, which will only be open to those who are in possession of a clear understanding of the horticultural terms and concepts which are current.
- 3 The introductory rubric given on the first page of each question paper should be read carefully by candidates. At each examination there are a significant number of candidates who ignore or misread the instructions given and consequently may not perform as well as they could have done.
- 4 Candidates should pace themselves during each paper. The most successful candidates allow sufficient time to read the question thoroughly before answering it and also take time to read through their answers. They should take care to write as legibly as possible, so that the examiner is in no doubt about what is intended.
- 5 Candidates need to interpret key words within questions, particularly those such as 'state', 'list' and 'describe'. Questions requiring descriptions or explanations obviously require a more detailed answer than those requiring a list.
- 6 It is important to ensure that responses to questions are to the point. Candidates should bear in mind that small sketches might be used to convey information more succinctly than words.
- 7 Successful candidates ensure that their answers are focused and to the point. It is disappointing when they cannot be rewarded for their efforts because the answer is

irrelevant to the particular question. Candidates should take note of the mark allocation for specific sections and allocate their time and efforts accordingly.

- 8** Diagrams can enhance an answer and where appropriate can replace detailed descriptions. They should be large, clear and well annotated, ensuring that labels are properly attached to the features they describe. Diagrams should preferably be in pencil. Colour may be used successfully but only where it is relevant to the answer.
- 9** In each examination it is clear that some candidates are ill prepared to answer papers of the type set. It is essential that candidates have the opportunity to practice questions. Ideally some papers should be answered in a time constrained situation. Appropriate feedback must, in any case be provided.

Q1 a) Describe **FOUR** ways in which plant selection can improve the environmental sustainability of a garden.

b) Name **TWO** plants that could be hazardous to garden users.

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**Q1 a)** Good descriptions of ways in which plant selection can improve the environmental sustainability of a garden were provided by many candidates who were awarded full marks. Suitable answers included:

Select drought tolerant plants e.g. *Lavandula angustifolia* 'Hidcote' that will not require additional irrigation using mains water and that can survive extreme heat in summer.

Select native plants e.g. *Crataegus monogyna*, *Betula pendula*, *Malus sylvestris* which are food plants for wildlife and native caterpillars. *Malus sylvestris* provides flowers for pollinators and autumn fruit for birds and small mammals.

Plan to include native or mixed hedges for boundaries e.g. *Crataegus monogyna*, *Prunus spinosa*, *Acer campestre*. These will provide nesting sites for birds and hibernation shelter for insects and small mammals e.g. hedgehogs.

Select plants using 'Right Plant, Right Place' principles to ensure that plants can survive the conditions without the addition of chemical fertilisers. Do not select ericaceous plants for neutral or alkaline soils to avoid the need to incorporate acidifying chemicals or composts. Plants are likely to produce poor growth and will ultimately need to be replaced.

Select direct sown hardy annuals or woody or herbaceous perennials rather than seasonal half-hardy bedding plants. Less resources are used in their production and provides a permanent planting display.

Select meadow grasses and low growing native flowering plants instead of a lawn. These will provide sources of food and shelter to native wildlife and require less irrigation, no requirement of machinery for cutting and no requirement of chemical fertilisers.

**b)** The majority of candidates were able to name suitable plants that could be hazardous to garden users and gained maximum marks. These included:

*Digitalis purpurea*, *Berberis thunbergia*, *Euphorbia characias* subsp. *wulfenii*, *Crataegus monogyna*.

**Q2 a)** Name **FOUR** distinct features to record in a garden survey.

b) Describe **THREE** potential hazards and their associated risks when carrying out a site survey of a neglected garden.

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Q2 a) A range of features to record in a garden survey were provided by most candidates who achieved full marks. Suitable answers included:

Garden shed, summerhouse, specimen trees, wildlife pond, post and panel fence, location and type of gate, overhead electric cables, herbaceous border, boundary walls.

Candidates who named garden site characteristics considered when carrying out a site appraisal e.g. soil, aspect, microclimate could not be awarded any marks.

b) The best candidates were able to describe potential hazards and their associated risks when carrying out a site survey of a neglected garden and were awarded full marks. Acceptable answers included:

A damaged/aged brick-built outbuilding which is unstable. The risk is that it could collapse causing cuts or head injuries from falling debris.

Damaged trees can be a hazard if any branches are weak. The risk is that the branch could fall and hit people causing bruising. If the branch is on the ground, it could be a trip hazard causing cuts and grazes to hands and legs.

A water feature e.g. a pond could be hidden under overgrown plants. The risk is that someone could step on it and fall in the water and be infected by an infectious disease or drown.

A garden that has been neglected will be overgrown with weeds e.g. nettles and brambles. There is a risk that the surveyor could be stung or scratched when measuring the boundaries.

Q3 a) Describe how **TWO** distinct garden planning principles can contribute to the production of a garden design that 'works'.

b) Name **FOUR** features used as focal points in an English Landscape Garden.

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**Q3 a)** Candidates who had a good understanding of garden planning principles and how they can contribute to the production of a garden design that 'works' gained maximum marks. Suitable answers included:

**Movement and direction**

This is when the eye is guided around the garden by the placement of focal points so that the viewer is invited to explore the garden, both visually and practically. Clever positioning of focal points can also pull the eye away from an ugly feature e.g. an electricity pylon or bin store by providing a feature that is attractive and interesting to look at. The eye also follows lines e.g. the edge of a sweeping border.

**Unity/cohesion**

Unity/cohesion is achieved through the consistent use of and linking of elements in the garden and relates to the local surroundings. All parts of the design form a unified whole, linked by consistent styles, materials, forms or colours in hard landscaping and planting. An example of this is when the house and garden walls are built from red clay bricks. Similar brick and colours can be repeated in paths, border edging or flower colour.

**Rhythm**

Rhythm is the sense of motion that is created through the placing of repeated elements in the garden and the flow of continuous lines. Rhythm moves the eye through the space through repeating hard landscape elements or plants through the garden e.g. clipped Buxus balls or creating flowing lines in paths.

**Balance**

Balance can be achieved when the weight and mass of elements of the design are intrinsically in balance with each other and the garden. This may be achieved through symmetrical balance e.g. identical plant forms placed either side of a central path. Alternatively, asymmetrically balanced around a central feature e.g. a large tree on one side balanced by a pergola on the other side.

**b)** Full marks were achieved by candidates who named suitable features used as focal points in an English Landscape Garden. These included:

- Classical Greek or Roman temple
- Gothic folly
- Classical statue
- Classical bridge – Palladian or Chinese
- Chinese Pagoda
- Specimen tree or copse of trees in open parkland

Candidate who named features that do not stand out e.g. a Ha Ha or those not typically found in an English Landscape Garden e.g. Pergola could not be awarded any marks.

**Q4 a)** State **FOUR** factors relating to soil to record when carrying out a site appraisal.

b) Describe **TWO** survey methods for plotting garden features.

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Q4 a) Most candidates were able to provide factors relating to soil to record when carrying out a site appraisal and were awarded full marks. Acceptable answers included:

Soil pH (acidic, neutral, basic) – this can affect the growth of plants as some can only tolerate a specific pH range.

Soil texture – refers to the mineral composition of the soil i.e. sandy loam, silty loam, clay loam.

Soil structure – refers to the way the soil components i.e. minerals and organic matter are combined to form aggregates.

Soil drainage – refers to the flow of water through the soil e.g. a soil with poor drainage will tend to become waterlogged.

b) Candidates who had a good knowledge of different methods of surveying for plotting garden features gained maximum marks. Suitable answers included:

Triangulation – to plot the position of a specimen tree.

Measure and locate two fixed points, A and B e.g. the back wall and corners of the house. Measure from point A to the specimen tree, then measure from point B to the same position on the specimen tree i.e. A to C and B to C. Record all measurements.

Off Sets – used to measure curved lines e.g. a border or a curved wall.

Establish a fixed baseline from known measurements e.g. a house wall or a fixed pegged line. Take measurements from the feature to the fixed line meeting the baseline at 90°. Record the measurement along the baseline where each offset measurement is taken.

Running measurement – to record the position of features e.g. doors and windows along a house wall, along a fixed line.

Begin measuring at zero with a tape fixed along the line. Record the distance of each feature from zero along the line. Running measurements are cumulative taken along a fixed line.

- Q5 a)** Name **ONE** man-made and **ONE** natural material suitable for furniture (or a bench) in a formal garden.
- b) Compare the benefits and limitations of **TWO** materials suitable for use as paths in a formal garden by completing the table below:

| | Material 1 | Material 2 |
|-----------------------|-------------------|-------------------|
| Named material | | |
| Benefit | | |
| Limitation | | |

- c) Name **TWO** vertical hard landscape features, characteristic of formal gardens.

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- Q5 a)** Maximum marks were awarded to candidates who were able to name man-made and natural materials suitable for furniture (or a bench) in a formal garden. These included:

**Man-made** – cast iron, aluminium (or other metal), polished concrete.

**Natural** – granite, sandstone, limestone, hardwood timber e.g. oak or cedar.

- b) Good comparisons of the benefits and limitations of materials suitable for use as paths in a formal garden were provided by many candidates who gained full marks.

|                       | <b>Material 1</b>                                    | <b>Material 2</b>                                                                                                     |
|-----------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>Named material</b> | Granite slabs.                                       | Reclaimed clay bricks/pavers.                                                                                         |
| <b>Benefit</b>        | Flat and even surface and edges suit a formal style. | Can use reclaimed clay bricks/pavers. They will create cohesion with bricks used for the house or wall in the garden. |
| <b>Limitation</b>     | Can become slippery when wet.                        | Require specialist skills to install them which adds to the time to lay them and the cost.                            |

Other acceptable materials which gained marks included:

10-20mm gravel, porcelain slabs.

- c) A range of vertical hard landscape features, characteristic of formal gardens, were provided by the best candidates who were awarded full marks. These included:

Clay brick wall, cast iron gate, square cut sandstone stone wall, tiered granite stone fountain, marble/granite sculpture, classical urn.

- Q6 a)** Name **TWO** plants suitable for use in a knot garden.
- b) Describe the characteristics of **TWO** features of a knot garden.
- c) Describe how **ONE NAMED** design principle is used in a knot garden to ensure that the design 'works'.

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- Q6 a)** The majority of candidates provided suitable named plants for use in a knot garden and achieved maximum marks. These included:

Salvia rosmarinus, Buxus sempervirens, Lavandula angustifolia, Hyssopus officinalis.

- b)** Candidates who clearly understood that the features of a knot garden can relate to the structure or the design elements were able to describe their characteristics. Full marks were gained for suitable answers which included:

Knot gardens are laid out in a symmetrical pattern across a central axis forming a mirror image either side of the central axis. Closely clipped, evergreen, low hedging form an intricate interweaving pattern reminiscent of the up and over threads of embroidery. The design should be viewed from above for maximum impact and is positioned near the upper windows of the house.

Within the hedging are spaces which contain either coloured gravel which contrasts with the hedging or a single species or colour of planting. Herbs e.g. *Lavandula angustifolia* can be planted within the hedging, one species of flowering bulb or seasonal bedding.

- c)** Candidates who were able to describe how a specific design principle is used in a knot garden to ensure that the design 'works', were awarded full marks. Acceptable answers included:

Simplicity

An uncluttered design is achieved as a limited number of different plant species are used, and the colour palette is restrained. Usually only two or three different colours are used compared to a variety of colours which could make the design appear cluttered.

Balance

In knot gardens balance involves the symmetrical layout of the patterns created by low clipped hedges and coloured infill of either plants or hard materials repeated on either side of a central axis.

Repetition

Repetition of a single species of hedging plant, single species of infill plants and single colour of one type of gravel for pathways provides a sense of cohesion throughout. The uninterrupted interweaving of clipped hedging in a knot pattern creates a sense of flow, moving the eye through the garden.

Candidates who described the use of symmetry as a design principle could not be awarded any marks. Symmetry can be an element used to create balance within gardens but is not a principle in its own right.

Q7 a) Name **TWO** herbaceous perennial plants suitable for planting beneath trees in a woodland garden, giving **TWO** decorative merits for **EACH** by completing the table below:

| Plant Name | Decorative Merit |
|------------|------------------|
| | 1. 2. |
| | 1. 2. |

b) Describe **TWO** other garden situations where herbaceous perennials can be used effectively in a garden.

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**Q7 a)** Herbaceous perennials suitable for planting beneath trees in a woodland garden were described by many candidates who achieved full marks. These included:

| Plant name                   | Decorative merit                                               |
|------------------------------|----------------------------------------------------------------|
| <i>Alchemilla mollis</i>     | 1 Hairy, light green, leaves with scalloped and toothed edges. |
|                              | 2 Small bright yellow flowers borne in large sprays.           |
| <i>Geranium macrorrhizum</i> | 1 Rounded and lobed semi-evergreen leaves.                     |
|                              | 2 Magenta pink flowers, up to 3cm across.                      |

Decorative merits include:

Flower colour or shape, leaf type or colour and growth habit. Scent/fragrance is not a decorative merit and was not awarded any marks.

b) The best candidates provided suitable descriptions of garden situations where herbaceous perennials can be used effectively in a garden and gained maximum marks. These included:

**In borders mixed with shrubs**

Herbaceous perennials provide seasonal change, mainly flowering in spring e.g. *Narcissus* 'Tête-à-tête' and summer e.g. *Geranium* 'Rozanne' between the permanent structure of woody shrub stems.

**Herbaceous borders**

Herbaceous borders comprised exclusively of herbaceous perennials selected for their height, colour and seasonality.

**Wildflower meadows**

Wildflower meadows where native flowering herbaceous perennials spread and seed naturally amongst native grasses, providing nectar for pollinators and seeds for birds.

**In planters and pots on a patio**

Herbaceous perennials provide seasonal change, including summer flowering and evergreen perennials e.g. Helleborus for winter to provide a changing but permanent display.

Candidates who did not name or describe a specific situation could not be awarded any marks.

- Q8 a)** Describe how **TWO** distinct **NAMED** soft landscape features can provide cohesion in an informal garden.
- b) Name **TWO** distinct soft landscape features suitable for inclusion in a formal garden.

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- Q8 a)** Good descriptions of how soft landscape features can provide cohesion in an informal garden were provided by many candidates who were awarded full marks.

Suitable answers either related cohesion with the style or with the house or surroundings using repetition of materials, colours, form, textures.

Cohesion with the style

- wide range of plant types used e.g. annuals, herbaceous perennials, shrubs, grasses, vegetables
- plants are allowed to develop natural forms and set seed growing out of beds onto paths.

Cohesion with the house or surroundings

- native hedges, often comprising of several species e.g. *Crataegus monogyna*, *Rosa rugosa*, *Sambucus nigra* are allowed to flower and produce fruit and are clipped once a year
- wildlife pond planted with a range of aquatic plants covering the majority of the water and providing habitats for wildlife e.g. *Ceratophyllum demersum*, *Caltha palustris*, *Juncus effusus*, *Nymphaea alba*.

- b)** Most candidates were able to name soft landscape features suitable for inclusion in a formal garden and achieved full marks. These included:
- high quality ornamental lawn
 - topiary of evergreen shrubs in geometric forms
 - clipped, tall boundary hedges e.g. *Taxus baccata*, *Fagus sylvatica*
 - low clipped *Buxus sempervirens* hedge, edging paths.

Q9 Describe **FIVE** deciduous trees from distinct genera, suitable for planting in a domestic garden, giving **ONE** decorative merit for **EACH**, by completing the table below:

| Name of deciduous tree | Decorative Merit |
|------------------------|------------------|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |

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**Q9** Candidates who had a good knowledge of deciduous trees suitable for planting in a domestic garden were awarded maximum marks. These included:

| Name of deciduous tree                 | Decorative merit                                               |
|----------------------------------------|----------------------------------------------------------------|
| 1. <i>Prunus serrula</i>               | Trunk with shiny, coppery-brown young bark.                    |
| 2. <i>Malus x zumi</i> 'Golden Hornet' | Bright, deep yellow fruits which persist into winter.          |
| 3. <i>Acer griseum</i>                 | Peeling, papery chestnut brown bark.                           |
| 4. <i>Sorbus</i> 'Joseph Rock'         | Clusters of pale yellow to orange-yellow fruits.               |
| 5. <i>Amelanchier lamarckii</i>        | Five petalled, star-shaped white flowers in short lax racemes. |

Candidates who described trees over 12m or shrubs less than 4m in height could not be awarded any marks.



**Q10 a)** State a hazard and risk associated with **EACH** of **TWO** distinct **NAMED** materials that can be used in the construction of a patio by completing the table below.

| Named material | Hazard | Risk |
|----------------|--------|------|
| 1.             |        |      |
| 2.             |        |      |

b) Describe how the environmental sustainability of **EACH** of the materials named in a) can affect choices made during the planning and design stage.

- i) material 1
- ii) material 2

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Q10 a) Maximum marks were achieved by candidates who provided specific details of named materials that can be used in the construction of a patio. Suitable answers included:

| Named material | Hazard | Risk |
|----------------------------|---|--|
| 1. Clay brick pavers | The surface can become uneven over time and weeds grow between the blocks. | Slips/falls leading to head injuries. |
| 2. Softwood timber decking | Can become slippery when wet or in shade or can rot over time. Splinters can occur during construction. | Slipping and falling. Sprains, broken ankle/wrist, bruising or cuts from skin which is in contact with splinters or falling through rotten boards. |

Candidates who did not name specific types of material could not be awarded any marks.

b) The majority of candidates clearly understood how the environmental sustainability of specific materials can affect the choices made during the planning and design stage and achieved full marks. Acceptable answers included:

i) Clay brick pavers

If reclaimed from a neighbour's property clay brick pavers would have a very low transport carbon cost and prevent the material going to landfill. The manufacture of new material resulting in use of energy etc. is also avoided.

ii) Softwood timber decking

Softwood timber decking must be sourced from FSC certified suppliers, a renewable source where trees are replanted and the forests are managed sensitively. Decking can also be purchased from local forests reducing carbon emissions.
