



R3111

**UNDERSTANDING GARDEN SURVEY TECHNIQUES AND
DESIGN PRINCIPLES**

Level 3

Friday 17 February 2012

09:30 – 10:45

Written Examination

Candidate Number:.....

Candidate Name:.....

Centre Number/Name:.....

IMPORTANT – Please read carefully before commencing.

- i) The duration of this paper is **75 minutes**.
- ii) **ALL** questions should be attempted.
- iii) **EACH** question carries **10 marks**.
- iv) Write your answers legibly in the spaces provided.
- v) Use **METRIC** measurements only.
- vi) Where plant names are required, they should include genus, species and where appropriate, cultivar.
- vii) Please note, sufficient lined space is provided. It is not necessary that all lined space is used in answering the questions.

Ofqual Unit Code T/601/3633

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ANSWER ALL QUESTIONS

MARKS

Q1 a) Describe **FIVE** characteristic features of a contemporary garden.

5

Please see over/....

Please turn over/.....

- Q2** a) State **FOUR** ways that existing underground services (utilities) can be located and identified during a site appraisal.

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- b) Review the limitations that may be imposed on garden planning and layout by the presence of existing services.

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Total Mark

5

Q3

Describe the further detail required in development of a client brief for **EACH** of the following:

- | | | |
|------|------------------|---|
| i) | food production; | 2 |
| ii) | home office; | 2 |
| iii) | home fitness; | 2 |
| iv) | relaxation; | 2 |
| v) | car parking. | 2 |

Please see over/.....

Total Mark

7

Q4

Describe how established trees may affect the design of a garden.

10

Please see over/.....

Total Mark

Please turn over/.....

Q5

Evaluate the use of **EACH** of the following possible components of a scale plan:

- | | | |
|------|-------------------------------|---|
| i) | graphic symbols and hatching; | 2 |
| ii) | numbered key; | 2 |
| iii) | arrowed labels; | 2 |
| iv) | line type and thickness; | 2 |
| v) | colour. | 2 |

Total Mark

11

Q6 a) Differentiate between the terms 'movement' and 'rhythm' in garden design.

2

b) Describe **TWO** distinctly different ways that **EACH** principle in a) can be used when designing a garden.

8

Please see over/.....

Total Mark

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Q7 a) Explain the causes of microclimatic variation within a garden.

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b) Describe **THREE** possibilities for a sunny south facing sheltered area within a garden design.

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Total Mark

15

Q8

Describe the level surveying of a site using an automatic level (quick set level), including conventional data recording methods.

10

Please see over/.....

Total Mark

17

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**The Royal Horticultural Society, Wisley, Woking, Surrey GU23 6QB
Charity Reference Number: 222879/SC038262**



**RHS LEVEL 3 CERTIFICATE IN THE PRINCIPLES OF GARDEN
PLANNING, CONSTRUCTION AND PLANTING
WRITTEN EXAMINATION**

09:30am Friday 17 February 2012

R3111

**UNDERSTANDING GARDEN SURVEY TECHNIQUES
AND DESIGN PRINCIPLES**

Candidates Registered	116		Total Candidates Passed	59	59.0%
Candidates Entered	100	86.21%	Passed with Commendation	11	11.0%
Candidates Absent	9	7.76%	Passed	48	48.0%
Candidates Deferred	6	5.17%	Failed	41	41.0%
Candidates Withdrawn	1	0.86%			

- Q1** a) Describe **FIVE** characteristic features of a contemporary garden.
- b) State **FIVE** factors that have influenced the development of contemporary gardens.

The aim of this question was to assess the candidate's knowledge of the development of historical garden design styles and their characteristics.

Features could have included: patios, decking, water features, groundcover planting, wildlife areas, lighting, new perennial planting, modern materials, such as concrete, glass or stainless steel, architectural and tropical plants. In most cases it was necessary to further qualify how the material or style is typical in a contemporary garden setting to gain higher marks. Many answers included vague terms such as "clean lines", "hard landscaping", "mass planting" or "statues" which could be found in a range of other styles. It often wasn't clear that the candidate understood the meaning of contemporary with many quoting examples of Modernism.

Factors in the second part of the question could have included: shortage and expense of labour in modern times, rise in home ownership, more disposable income, more leisure time, media (radio followed by television, now the internet), flower shows and festivals, advances in science (pesticides, plant breeding), electricity, improvement in concrete technology, the explosion of DIY, aluminium greenhouses, butyl liners, the internal combustion engine, foreign travel, environmental awareness, etc. Many candidates assumed contemporary gardens are small and urban whereas there are many examples of large country gardens in this style. There was generally a good understanding of environmental and ecological issues which have influenced contemporary design decisions.

- Q2**
- a) State **FOUR** ways that existing underground services (utilities) can be located and identified during a site appraisal.
 - b) Review the limitations that may be imposed on garden planning and layout by the presence of existing services.

The aim of this question was to assess the candidates understanding of the importance of locating services at site appraisal and how the presence of a range of services will affect the design proposals.

Possible ways of locating and identifying services included:

- plans, from various sources,
- inspection points and manholes,
- home owner or local knowledge,
- signs/plaques,
- cable detectors.

Most answers correctly named appropriate methods. Some however stated different plans as two or even three different ways, such as from the local authority, utility companies, builders or the property deeds, some of which may not be very accurate or will probably not exist for older properties. There was some confusion as to how cable detection tools are classified and how they work. Many answers suggested digging down to locate the services which would not be practical on a trial and error basis, especially during a site appraisal.

Review of limitations should have included appropriate explanations of: expense of moving some services and ancillary equipment, problems with obsolete pipework/fittings, impossibility of moving some services (especially drains), building regulation/legal issues, unsightly and therefore necessity of disguising or hiding, future access requirements, cables causing overhead obstructions, possibilities of connecting proposed features, weight bearing issues. Marks were awarded appropriately to answers which gave examples of planning implications of both hard and soft landscaping features for the identified issues. Many answers included safety implications of hitting underground services during the construction stage which is not a planning and layout issue.

Q3 Describe the further detail required in development of a client brief for **EACH** of the following:

- i) food production;
- ii) home office;
- iii) home fitness;
- iv) relaxation;
- v) car parking.

The aim of this question was to assess the candidate's ability to gather necessary information about client requirements and aspirations for a range of situations prior to preparing design proposals.

For each area answers should have included details of client requirements and aspirations specific to the intended activity, such as: numbers and status (age, sex, disability etc.) of proposed users, screening and privacy, views, surface finishes, proximity to house and entrance to garden (access and services), sun and shade, safety and security, storage of tools and equipment, planting (food, scent, cutting etc.), lighting and power, budget, and other relevant information. Most candidates were able to list a sufficient number of these points to gain high marks. Some candidates confused the client brief with either the site analysis or design solutions. The question asked for details required for development not actual proposals, although a brief expansion along these lines in many cases helped to clarify the point.

Q4 Describe how established trees may affect the design of a garden.

Describe how established trees may affect the design of a garden.

The aim of this question was to assess the candidate's understanding of a site appraisal and its application in the planning and layout of a garden.

Marks were awarded for descriptions of:

- shade issues: seasonal possibilities of underplanting (bulbs etc.), likely to be dry shade, comfort of garden users (either providing wanted shade or lack of areas to enjoy sun), limitations on siting ponds, greenhouses, shade giving dramatic light contrasts/moods,
- wildlife possibilities,
- maintenance issues: falling leaves, algae/moss formation causing slippery paths,
- problems with roots, hard landscaping and planting restrictions, damage to structures, level change restrictions, drainage pattern changes,
- overhead privacy/ screening,
- design possibilities, including theme creation (woodland garden), focal point, tree seat, backdrop, framing, instant height and maturity to a new garden,
- legal issues, including TPOs.

This question was generally answered well with many candidates achieving a high mark.

Q5 Evaluate the use of **EACH** of the following possible components of a scale plan:

- i) graphic symbols and hatching;
- ii) numbered key;
- iii) arrowed labels;
- iv) line type and thickness;
- v) colour.

The aim of this question was to assess the candidate's understanding as to how different elements of a garden are depicted graphically on a variety of scale drawings.

The question asked for the uses and advantages and disadvantages of five different methods of graphically representing garden features on a scale plan in a clear and unambiguous way.

Standard symbols (BS) are quick and easy to draw and are universally recognised so no label or key is required, however most standard symbols are not very realistic. More artistic invented symbols can give an indication of a proposed design, (a tree looks like a tree). Shaded hatching can give depth and realism to a design drawing. There are problems with differentiation in large schemes if too many different symbols are used. The use of colour is a problem if photocopied in black and white.

A numbered key takes up little space on the drawing area itself and reproduces well, especially on complex plans to a small scale, easy to produce schedules from key and cross reference with other paperwork, especially CAD drawings and computer generated databases. However it can get confusing if the same items are repeated in various locations on a plan, number IDs can get confused with quantities.

Arrowed labels are easy to understand on simple drawings where text is not desirable or possible in the drawing itself, but need nearby space to put text or arrows become too long and can cause problems with crossing lines, especially with multiple features all referenced by arrows from the same title. Arrows and leader lines can confuse the design lines.

For line type and thickness there are recognised standards as with symbols, so a key or labels are not always required. Dotted lines indicate unseen work/features, especially underground, where they would get confused with surface lines, likewise features to be removed, or have been removed, can be indicated in a similar way. Dimension lines are shown as thin lines to avoid confusion with lines depicting the actual feature. Thicker lines are used to indicate more important features and outlines of areas, thinner lines for detail such as paving patterns. Thicker lines are used to indicate features higher up (hierarchy of line) to give a drawing more artistic depth and perspective.

The advantages of colour are good visualisation, especially to show proposals to clients – a pond is blue, a lawn is green, and this also gives good visual differentiation between features. A colour code system can be employed for lines etc. However it is time consuming and difficult to do well, printing is expensive and there are problems with black and white photocopying. There is a need to be aware of colour blindness.

This question was not well answered generally mostly because candidates did not produce an evaluation but simply described the use of each graphical technique, possibly with a drawn example. Often only one point was described for each method.

- Q6**
- a) Differentiate between the terms ‘movement’ and ‘rhythm’ in garden design.
 - b) Describe **TWO** distinctly different ways that **EACH** principle in a) can be used when designing a garden.

The aim of this question was to assess the candidate’s knowledge and understanding of basic design principles.

Marks were awarded to answers which included movement as being the visual progress of the eye along a designed route(s) through a garden to create an appropriate mood or feeling, or to physically invite the view to move along this route. Rhythm is the speed and “beat” of this visual progress instigated by the regular occurrence or pattern of features. Many candidates described movement well but fewer were able to define rhythm in adequate detail. Credit was given to answers which described physical movement of features, such as wind in grasses, but this is not really what is implied in design principle terms as it is not controllable and can give completely different and sometimes unwanted effects depending on the velocity of the wind.

Marks in the second part of the question were awarded for appropriately described examples. Movement usually included the use of paths or ground patterns leading to focal points, and hedges or avenues leading the eye through areas by visual enclosure. Better answers included both hard and soft features in their examples. Rhythm was not so well understood with many candidates quoting the use of repeated plants, features or colours throughout a design. This is really unity in design principle terms and needed to be expanded to include the sequence or pattern of repetition in order to produce a “beat” and/or speed.

- Q7**
- a) Explain the causes of microclimatic variation within a garden.
 - b) Describe **THREE** possibilities for a sunny south facing sheltered area within a garden design.

The aim of this question was to assess the candidate’s understanding of the implications of information gathered during a site appraisal.

Answers to part a) included explanations of altitude, aspect, slope, orientation and physical features, such as buildings, walls and plants causing wind breaks or wind tunnel effects, trapped air causing frost pockets, reflection, radiation, convection, rain shadows, and shade. Although only causes were asked for in the question, it was necessary to include the possible microclimate variations for each situation in order to clearly explain the cause.

Answers for the second part of the question included variations on the following:

- planting style possibilities with examples e.g. gravel garden, and a range of suitable plants, features and materials,
- user areas with examples such as patios, decking area, with plants and features, possibly to a style e.g. Mediterranean or tropical, and a range of suitable plants, features and materials,
- food production, fruit or vegetable garden with a range of suitable plants, features and materials.

Better answers expanded on these and included general advantages of the situation such as a prolonged and early season use and creation of sun traps. Many answers suggested the inclusion of shade, often in the form of a pergola which defeats the advantages of having a sunny situation. Likewise some candidates suggested a children's play area which would also require some shade from mid-day sun. This question was generally well answered with many candidates gaining high marks, especially in the second part.

Q8 Describe the level surveying of a site using an automatic level (quick set level), including conventional data recording methods.

The aim of this question was to assess the candidate's knowledge of basic surveying, equipment, techniques and terminology.

The use of a quickset level for level surveying was generally well understood and in most cases the process was well described, including situations where a change point is necessary. However very few candidates stated why a change point might be required. Nearly all answers included the method of taking back sights, fore sights, and intermediate sights but it was not always clear as where these points might be located on the site to be surveyed. Most answers included an explanation of establishing a datum but only a few described how or why this is allocated a value. Less well understood was the method of recording the data in a standard table format and how rises and falls or heights of collimation are calculated to produce a reduced level. Very few answers included checking methods.

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