

[C020/SQP096]

Higher
Land Use
(Built Environment)
Project Specification

NATIONAL
QUALIFICATIONS

100 marks are allocated to this project.

INTRODUCTION

Purpose of this specification

30% of the external assessment for Higher Land Use (Built Environment) is to be based on a project, devised by the centre to comply with this SQA specification. The purpose of the project is to assess candidates' ability to apply knowledge and skills, gained through study of the three component units of the course, to the solution of a real or hypothetical building development problem. It will focus on those practical outcomes which are difficult to satisfactorily assess in the external assessment question paper.

This specification provides the framework for the project, details of the unit outcomes to be covered, details of the mandatory activities to be undertaken by candidates, advice on local application and a marking scheme.

Marking of the project

Candidates' projects will be marked by centres, using the marking scheme provided, and will be subject to external moderation by SQA.

Scope of the project

The arrangements for Higher Land Use (Built Environment) state that the project will allow evidence to be generated for:

- external assessment;
- internal assessment of a number of unit outcomes.

Although the project will require candidates to integrate skills acquired through study of the component units in less familiar contexts, the mandatory tasks of the project do mirror a number of the practical tasks to be completed by candidates to achieve certain outcomes of each of the three units. A significant and sensible reduction in the total amount of project and assignment work will be achieved if internal unit evidence for these outcomes is gathered from the project work. The specification provides details of the unit outcomes which must be covered by the project activities.

Internal assessment evidence for the other outcomes may be gathered using the appropriate National Assessment Bank exemplars. As an alternative, centres may extend the project, beyond the minimum requirements of this specification, in order to generate additional evidence for internal unit assessment. This may be by including additional tasks covering other outcomes. These tasks could be from the National Assessment Bank exemplars or be centre devised and of equal validity and reliability as the NAB exemplars.

If the above arrangements are adopted, then the internal unit assessment results and the external project marks must be recorded separately. Copies of the relevant evidence and records must be made available for both unit assessment moderation and external project assessment moderation.

PROJECT SPECIFICATION

Overview of the project

The overall aim of the project should be to require candidates to demonstrate the ability to complete a number of tasks which are essential to the process of developing a medium-sized land site for residential, commercial or light industrial use. The tasks may be broadly grouped under the following headings.

- 1 Planning of the project activities.
- 2 Detailed site survey and digital preparation of a contoured plan.
- 3 Preparation of a finished digital map of the site.
- 4 Acquisition and analysis of planning information.
- 5 Preparation of a planning advisory report.
- 6 Acquisition and analysis of valuation information.
- 7 Preparation of a valuation advisory report.
- 8 Evaluation of the completed project and the development proposals.

It is expected that a suitable site, in the vicinity of or within easy reach of the centre, be selected for the project.

The project devised by the centre should set parameters within which each individual candidate can select the type of proposed building development. Candidates will work in small teams for surveying work and in the acquisition of planning and valuation information but individually for associated map preparation, planning and valuation information analysis and report writing.

To ensure reliability and credibility, all assessment should be carried out under controlled conditions. With project work, this means that the assessor must closely monitor the progress of each candidate's work to ensure that evidence submitted is the candidate's own work.

Candidates should be required to prepare a portfolio of evidence containing the project plan, survey data, maps, computations, reports, drawings and project evaluation.

Minimum requirements of the project

The project must cover the outcomes shown in Table 1. In designing the project, centres must consider the performance criteria and range requirements of these outcomes.

TABLE 1

Outcomes to be covered by the project.

UNIT	OUTCOME	TOPIC
1 Land Use : Mapping	3	Plotting of relevant Ordnance Survey digital map, digital site survey and preparation of contoured site plan.
	4	Preparation of finished digital map of the site.
2 Land Use : Planning	3	Analysis of planning policies and the development potential of the site. Preparation of a planning advisory report
3 Land Use : Economics	3	Determination of the value of the site for the selected development and preparation of a valuation advisory report.

Project tasks

Total marks 100

Task 1

The candidate should be supplied with an outline of the project and will be required to produce a feasible project plan which will identify the sequence of activities, set clear time scales for completion of the stages of the project and provide a method of recording progress.

10

Task 2

An area of open land suitable for potential development should be selected on which the candidate will:

- (a) produce a plot of the relevant Ordnance Survey digital map; 5
- (b) carry out a digital survey of the site and prepare a contoured site plan; 15
- (c) prepare a finished digital map of the site. 10

Survey work should be carried out in small teams. Other tasks should be completed individually using shared data.

Task 3

The candidate should be provided with a number of possible types of development for the site and will be required to:

- (a) select a type of proposed building development; 2
- (b) acquire planning information and analyse the development potential of the site, considering the granting of planning permission; 16
- (c) prepare a planning advisory report for the proposed development. 10

Task 4

The candidate will be provided with costing and valuation information and will be required to:

- (a) prepare a land valuation calculation for the proposed development; 16
- (b) prepare a valuation advisory report. 10

Task 5

The candidate will be required to prepare a brief evaluation report on the completed project. This should include:

- (a) a summary of what has been learned by undertaking the project; 3
- (b) an appraisal of the development proposal to identify deficiencies and suggest improvements. 3

(100)

Table 2 identifies, against each task, unit outcomes and specific performance criteria for which the evidence for internal unit assessment will be available if the minimum requirements of this specification are met. The project will generate all the evidence for four unit outcomes of the course.

TABLE 2

Outcomes and performance criteria for which sufficient internal unit assessment evidence will be available from the external course assessment project.

TASK	UNIT	OUTCOME	PERFORMANCE CRITERIA
2(a)	Land Use : Mapping	3	(a)
2(b)	Land Use : Mapping	3	(b)
2(c)	Land Use : Mapping	4	(a) (b)
3(a)	Land Use : Planning	3	—
3(b)	Land Use : Planning	3	(a) (b) (c) (d)
3(c)	Land Use : Planning	3	(a) (b) (c) (d)
4(a)	Land Use : Economics	3	(a) (b)
4(b)	Land Use : Economics	3	(a) (b)

[END OF PROJECT SPECIFICATION]

[C020/SQP096]

Higher
Land Use
Specimen Marking Instructions

NATIONAL
QUALIFICATIONS

HIGHER

LAND USE (BUILT ENVIRONMENT)

SECTION A	Marks
1 (a) Bridge House	1
(b) SU59898095	1
(c) The boundary runs north along the east bank of the river Thames, crossing to the west bank and following this past a sluice and the Granary, passing in front of the Swan Inn.	2
(d) OS Bench mark	0.5
Ground banking	0.5
(e) 5982 is a 4 figure parcel reference.	0.5
It is derived from the 10m reference for the parcel centre <u>59598082</u> .	0.5
(f) Distance between 2 spot heights = 105m	
Level difference = $45.4 - 44 = 1.0\text{m}$	0.5
Average gradient = $1 \text{ in } 105/1 = 1 \text{ in } 105$ or 1.05%	0.5
	(7)
2 (a) <i>Meaning of the term</i>	
The term refers to the survey technique in which site measurements are made using automatic electronic digital equipment. Data may be displayed digitally or transferred to a data collector.	1
<i>Advantages</i>	
(i) Significant reduction in site and office time.	
(ii) Elimination of operator errors in reading and recording measurements in the field.	
(iii) Equipment can handle large quantities of survey data.	
(iv) Verification of survey closure requirements may be made quickly in the field.	
	2 required 2 x 0.5
(b) <i>Equipment</i>	
Total Station integral equipment is used, incorporating two measuring components; an EDM instrument and an electronic digital theodolite; and either an on-board or an external data collector.	2
(c) <i>Procedure</i>	
(i) The instrument is set on a central peg to survey the entire site if possible.	0.5
(ii) The co-ordinates of the central peg are fixed.	0.5
(iii) Detail is fixed radially and spot heights taken at regular intervals. Detail is recorded in strings with a field coding system and stored under a job name.	0.5
(iv) Data is stored in the on-board data collector or in a hand-held collector.	0.5
	(6)

- 3 (a) *Purpose of a local plan*
The explanation should highlight the following:
- (i) A local plan deals with land use planning at local level and not at strategic level.
 - (ii) It provides a framework for development to occur in a planned manner.
 - (iii) It provides a basis for consideration of planning applications.
 - (iv) It should aim to ensure that development maintains and enhances the quality of the environment in the public interest whilst protecting the interests of the individual.
- 3 required 3
- Why public participation is essential*
The answer should highlight the following:
- (v) It provides an opportunity to ensure that the rights of the individual are protected.
 - (vi) The public at large should understand that their views on land use are significant to the finalisation of a local plan.
 - (vii) Community support for land use allocations in a local plan is important for the implementation of development proposals.
- 2 required 2
- (b) *Means of participation*
- (i) Details of proposed developments are advertised in the local press and libraries.
 - (ii) Consultation takes place with Community Councils and with other community representatives.
 - (iii) Formal written comments are submitted to the planning authority.
- 2 required 2
(7)
- 4 (a) *Permitted Development*
This is development for which planning permission has been granted in advance. 1
- (b) *Neighbour notification*
Written notification must be served at all properties abutting and within 4m of the boundary of the development, including equivalent properties across a road which is less than 20m wide. 3
- (c) *Advice to client*
The planning permission has lapsed. A new application must be submitted. 1
- (d) *Valid planning considerations*
- (i) Provision of safe access to road.
 - (ii) Objections by local people to additional disturbance in the area. or other valid answers. 2
(7)
- 5 *Private, public and quasi-public developers*
Candidates should explain the motives of each in the property development process and should include the following:
- (i) Private developers generally develop land to maximise profit within the constraints of each project. An example would be a company such as Wimpey Homes. 2
 - (ii) Public developers would generally develop land for the benefit of the community. An example would be a local authority. 2

SECTION B

Marks

- 7 (a) (i) *Basic large scale series*
- | | | | |
|-----------------|---|------------|-------|
| Land-Line | Vector format with feature coding. 1 : 1250 urban and 1 : 2500 rural
Also 1: 10000 | | |
| Superplan plots | Site centred, customised at any scale from 1 : 200 to 1: 10000 | 2 required | 2 x 1 |
- (ii) *Medium-scale and small scale vector*
- | | | | |
|------------|---|------------|-------|
| Landplan | 1 : 5000 and 1 : 10000. Gradually replacing the 1 : 10000 published mapping series. | | |
| Oscar | Digital road centre alignment dataset, derived from the above. Or Meridian. | | |
| 1 : 625000 | From Basedata GB dataset. | | |
| 1 : 250000 | From Strategy dataset. | 2 required | 2 x 1 |
- (iii) *Raster products*
- | | | | |
|--------------------------------|--|------------|-------|
| 1 : 10000 Scale Raster. | Black and white or colour, derived from Landplan data. | | |
| 1 : 50000 Scale Colour Raster. | Scanned from OS Landranger maps. | 2 required | 2 x 1 |
- (iv) *Terrain visualisation products*
- | | | | |
|--------------------|--|------------|-------|
| Land-Form Profile | 1 : 10000 digital height dataset with either contours or digital terrain models. | | |
| Land-Form Panorama | 1 : 50000 as Profile. | 2 required | 2 x 1 |
- (b) (i) *Vector and Raster data*
- Vector*
- Data is depicted in vector format, that is as it would be drawn, using a combination of points (nodes) and lines. Points are used to depict locations of objects and lines to depict the linear features. Co-ordinate data is also used to identify points and feature codes to define line types. 2
- Raster*
- Data is structured using pixels. The pixel size defines the level of resolution and coarse or fine resolution is therefore possible. This is dependant on the hardware system. Each pixel has either an image or is blank and no feature codes are possible initially. 2
- (ii) *Advantages / Disadvantages*
- (i) Vector is more suited to ground survey and raster more suited to aerial survey.
 - (ii) A greater amount of raster data is currently available, including data from scanned aerial photographs and satellite images.
 - (iii) Raster depiction of spatial features is inherently more inaccurate than vector depiction, although accuracy improves with resolution. Where boundary locations are ill-defined, this is not necessarily a drawback.
 - (iv) Raster data is more easily collected, stored, manipulated and depicted.
 - (v) Larger data storage capacity is required for raster and this involves more expensive modern data storage systems.

- (vi) Raster data requires coding since initially each pixel has an image or is blank. Areas of a particular topographic nature must be depicted by similarly coded pixels or by colour. 4 x 1
4 required
- (c) *Semi-automatic line following*
This is the process used in digitising an existing map. The lines on a scanned image of the map are followed automatically by a cursor which pauses at the line junctions until the operator indicates the next line to be followed. The operator inputs a feature code or identifier for each line. 4
(20)
- 8 (a) *Conventional map series*
Small scale maps
1 : 50000 (Landranger series) 40km x 40km. Cover all UK.
1 : 25000 10km x 10km double sheets covering most of the UK.
Also leisure maps.
- Large scale maps
1 : 10000 Detail is to scale. 5km x 5km single sheets (1/4 of 1 : 25000).
Cover all UK.
1 : 2500 Plans. 1km x 1km double sheets covering all UK except some moorland and mountainous areas.
1 : 1250 Plans. 500m x 500m single sheets (1/4 of 1 : 2500).
Cover only urban areas. 5 x 1
- (b) (i) *Stages in the production of a finished map*
1. Survey data is downloaded to a computer (usually a PC) with survey processing software.
2. The survey software calculates the co-ordinates of all points and checks the feature codes.
3. The resulting file is displayed on screen and can be edited.
4. A contour interval is selected and the contours added to the plot.
5. Scale and sheet size are selected and a plotter plot produced. 5 x 1
- (ii) *Merging of finished plan with OS digital plan*
6. A DXF file is produced of the survey plot.
7. Using the CAD package, the survey plot is merged with the OS digital plan, old detail is deleted and new detail added.
8. Border, title box and other text are added.
9. The finished map is plotted on paper or film. 4 x 1
- (c) *Role of the Secretary of State*
(i) He designates the areas for which structure plans are produced. 1
(ii) He must approve the finalised structure plans submitted by the local authorities within designated structure plan areas such as Glasgow and the Clyde Valley. 1
(iii) He has the power to make modifications and is responsible for issuing the final version with any modifications he makes. 1
- (d) *Planning Authority decisions*
(i) Grant planning consent. 1
(ii) Grant planning consent with conditions. 1
(iii) Refuse planning consent. 1
(20)

- 9 (a) *Advice on organisations providing assistance*
Two types of assistance should be included in the answer eg:
- (i) Financial assistance from organisations such as Scottish Homes or the local authority, where residential development is being considered, or from the local enterprise company or local authority where non-residential development is planned. 2
 - (ii) Advice and support in realising development should be sought from the local authority. 1
- (b) *Advice on considerations affecting availability of financial assistance*
- (i) Applications for financial assistance will be considered in terms of the extent to which the proposals comply with the policies of and supported by the funding agency. 2
 - (ii) The proposal will require to show that it requires some sort of financial support to realise development on the site, eg that market failure has occurred and that the development would not occur without financial support. 2
- (c) *Advice on planning documentation*
Each of the following must be included in the answer:
- (i) Completed planning application and necessary fee, with 4 sets of the necessary plans and drawings. 1
 - (ii) Completed land ownership certificate. 1
 - (iii) Completed neighbour notification certificate. 1
- (d) *Advice on right of appeal*
- (i) An appeal can be lodged against a refusal, 1 or any conditions considered unreasonable. It must be made to the Secretary of State within 6 months of the date of the decision being issued by the local authority. The appellant has the right to have the appeal determined via a public inquiry or through written submissions. 3
 - (ii) Where it is felt that the local authority failed to follow the correct procedures and as a consequence an injustice has been suffered the local ombudsman can be asked to investigate the matter. 2
- (e) *Recommendations on partnership*
- (i) The advice included in the answer should recognise that a public sector partner can bring positive benefits to the realisation of the development. In particular, such a partnership should be pursued if the public sector can bring skills, expertise and know how which complement the project. 2
- The following issues should also be considered as relevant:
- (ii) A local authority may be willing to prepare a development brief for the site which will provide valuable information to prospective purchasers who may wish to develop the site. Furthermore, this brief will also assist by providing a formal statement of the type, scale and form of development which the planning authority considers acceptable. Prospective developers of the site are therefore given a good idea of the kind of development that is likely to receive planning permission. This would assist the owner of the site and would therefore suggest that a partnership on this basis would be advantageous. 2
 - (iii) A public sector partner may be able to offer financial assistance to service the site or to support development where a shortfall or deficit in the viability of the development can be shown. The site owner should therefore pursue this with relevant agencies if the development of the site is uneconomic. 1

10 (a) *Planning factors for furniture factory*

All factors in answer must be valid.

The following must be included:

- (i) Local plan and structure plan policies and any relevant NPPG policies as they affect the site and its proposed industrial use. 2
- 3 other factors such as:
- (ii) The scale of the development in relation to the infrastructure capacity to the site, eg water, sewerage, gas, electricity. 1
- (iii) Traffic generation, the impact on highways and any pollution generation. Noise pollution will be of particular concern. 1
- (iv) Proximity of the site to residential properties. 1

(b) *Main stages in the property development process*

The following stages must be included:

- (i) The conceptual development stage and the identification and assembly of a suitable site for the development. 1
 - (ii) Appointment of a team to design and manage the project. 1
 - (iii) Obtaining of the required finance to fund the project from site acquisition, through the construction period and, if appropriate, the letting and/or sale of the finished building. 1
- The answer should also include the following: 1
- (iv) Due to the relatively large amounts of finance needed to complete the process, developers are very much dependant on both the interest rate charged and the willingness of banks or other funders to lend. 2

(c) *Factors in evaluation of a site for retail development*

This question integrates planning and economics course content.

The answer should display an appreciation of the following:

- (i) A development opportunity requires the analysis of a site in terms of its capacity to obtain planning permission by reference to local plan policies and planning principles, as well as market demand for the type of development. 2

The following factors should be highlighted:

- (ii) The local plan, structure plan and National Planning Policy Guidelines relevant to the site. In particular, this should focus on policies in relation to existing retail uses and the extent to which existing town centre retail uses are supported. If this support is policy, then the position of the subject site in relation to both the town centre and the policy must be considered in detail. 2
- (iii) An analysis of the existing road system and other infrastructure should be undertaken to ensure that these services are adequate to serve the scale of the proposed development, or that any improvements can be achieved. In particular, traffic generation and car parking must be considered. 2
- (iv) Physical characteristics of the site in terms of its shape, size, topography etc. 1
- (v) Competitor retail uses nearby or within the catchment area of the proposed development. 1
- (vi) The existing use of the site must be considered in terms of a number of factors including: number of ownerships and the difficulties which would be involved in acquisition, the cost of assembling the site and the position of occupiers, in terms of making valid planning objections to any scheme which may prevent planning consent being obtained. 2

11	Estimated Gross Development Value			
	Rental Value 2900m ² @£200/m ²	£580 000		
	Years Purchase in perpetuity @ 7%	<u>14 286</u>		
		£8 285 880		
	rounded to say	£8 285 000		
	After deduction of expenses of selling completed let building at 3%		£8 036 450	5
	Estimated Development Costs			
	Construction costs 2900 m ² @ £750/ m ²	£2 175 000		
	Allowance for contingencies at say 2.5%	54 375		
	Allowance for professional fees at 12.5%	<u>278 672</u>		
		£2 508 047		
	Finance costs for 6 months (1.12) ^{0.5}	<u>146 220</u>		
		£2 654 267		
	Developer s target profit	£1 242 750		
			£3 897 017	
	Residual available for site acquisition		<u>£4 139 433</u>	12
	Calculation of site value			
	Allowance for expense of site acquisition at say 2.5% and finance costs for 18 months. ie (1.12) ^{1.5} multiplied by 1.025 = 1.215			
	Residual value for site purchase			
	£4 139 433 divided by 1.215		£3 406 941	
	rounded to say		£3 406 000	3 (20)

[END OF MARKING INSTRUCTIONS]