

## Principal Assessor Report 2002

**Assessment Panel:**

**Construction Technician**

**Qualification area**

**Construction**

**Subject(s) and Level(s)  
included in this report**

**Construction  
Building and Architectural Technology  
Civil Engineering  
Building Services  
Quantity Surveying (PBNC)  
  
All at Higher**

## Statistical information: update

Number of entries in 2001	
<b>Pre appeal</b>	Construction 24
	Building and Architectural Technology 38
	Civil Engineering 14
	Building Services 1
	Quantity Surveying 1
	<b>Total 78</b>
<b>Post appeal</b>	Construction 25
	Building and Architectural Technology 38
	Civil Engineering 14
	Building Services 1
	Quantity Surveying 1
	<b>Total 79</b>

Number of entries in 2002	
<b>Pre appeal</b>	Construction 76
	Building and Architectural Technology 37
	Civil Engineering 30
	Building Services 8
	Quantity Surveying 2
	<b>Total 153</b>
<b>Post appeal</b>	Not available

## General comments re entry numbers

There was a substantial increase in the number of candidates. Only three centres presented candidates in 2001, whereas in 2002 eight centres presented. One candidate was from school, and all others from colleges.

**Construction:** Six centres presented candidates in 2002. Two centres presented in 2001.

**Building and Architectural Technology:** Four centres presented in 2002. In 2001, all candidates were from a single centre.

**Civil Engineering:** As in 2001, two centres presented.

**Building Services:** All candidates were from a single centre.

**Quantity Surveying:** Only two candidates, one from each of two centres, submitted a completed assignment portfolio.

## General comments

**Construction:** The overall ability of the candidature was much the same as in 2001. Performance in the question paper showed a marginal improvement, but was again disappointing. The mean mark for the question paper was dragged down by the extremely poor performance of candidates from a centre which presented for the first time.

The level of achievement in project work was exactly as that of 2001.

**Building and Architectural Technology:** Again, the overall ability of the candidate group was unchanged. There was a further small decrease in achievement in the question paper but a marked improvement in project work. Results, however, were still well below those achieved in 2000.

**Civil Engineering:** The same two centres presented as in 2001. The ability of the candidature was exceptional, with 40% of candidates being awarded an A grade.

**Building Services:** A single candidate sat the question paper in 2001, so that 2002 saw the first group of candidates. There was a broad range of ability, but the mean mark for this first group was most satisfactory.

**Quantity Surveying:** Both candidates achieved a pass. One submitted an excellent portfolio and was awarded an A grade.

For further detail see section headed **Comments on candidate performance.**

## Grade boundaries at C, B and A for each subject area included in the report

These were unchanged from year 2001, and apply to all subjects.

<b>Grade</b>	<b>Lowest mark (from 100)</b>
Upper A	85
Lower A	70
B	60
C	50

### General commentary on grade boundaries

#### *Notional percentage cut-offs for each grade*

Question papers and their associated marking schemes are designed to be of the required standard and to meet the assessment specification for the subject/level concerned.

For National courses the examination paper(s) are set in order that a score of approximately 50% of the total marks for all components merits a grade C (based on the grade descriptions for that grade), and similarly a score of 70 % for a grade A. The lowest mark for a grade B is set by the computer software as half way between the C and A grade boundaries.

### Comments on grade boundaries for each subject area

The characteristics of the candidature were unchanged for each subject and there was no evidence to justify any changes in grade boundaries.

## Comments on candidate performance

### General comments

#### **Construction:**

A total of 76 candidates sat the question paper and/or completed the project. 73 candidates sat the question paper and 59 candidates submitted the project. One centre with 14 candidates failed to submit any project marks. Only 56 candidates completed both components.

The mean mark for the question paper was 45% (44% in 2001) and that for the project was 62% (62% in 2001). The mean overall mark for the 56 candidates who completed both components was 53%.

Performance in the question paper would have shown a marked improvement but for the extremely poor performance of the candidates from one centre.

The pass rate in external assessment was exactly 50% (48% in 2001).

#### ***Question Paper***

As in 2001, candidates' scripts were poor in many cases. For only three questions, two in section A and one in section B, was the mean mark over 50% of the marks available. All questions were attempted, although only 17 candidates attempted question 7 of section B, which covered the preparation of a longitudinal section and the calculation of earthworks cut and fill.

The mean mark for section A was 18/40 and that for section B 27/60.

#### ***Project***

12 projects from a single centre were moderated. The general standard was high and the centre's marks were accepted. However, as in 2001, candidates' portfolios did not contain drawings prepared by candidates using a commercial CAD system, as required by the project specification.

Another centre, selected for moderation, failed to submit either the projects or marks. All other centre marks were accepted.

#### **Building and Architectural Technology**

37 candidates sat the question paper, but only 31 of these submitted a completed project portfolio.

The mean mark for the question paper was 48% (49% in 2001) and that for the project was 57% (49% in 2001). The mean overall mark for the 31 candidates who completed both components was 54%.

The results indicate a slight decrease in performance in the question paper and a marked improvement in project work. However, results in 2001 were well below those of 2000.

The pass rate in external assessment was 56.8% (57.9% in 2001).

#### ***Question Paper***

As in 2001, there were scripts of varying quality. All questions were attempted, but for only two questions in section A and two in section B was the mean mark over 50% of the marks available.

The mean mark for section A was 20/40 and that for section B 28/60.

#### ***Project***

No project moderation took place and all centre marks were accepted

**Civil Engineering**

Two centres presented a total of 30 candidates. Both of these centres presented in 2001. The mean mark for the question paper was 63% (45% in 2001).

Both centres saw an improvement in results. The mean marks for each centre were 70% (62% in 2001) and 59% (40% in 2001). One centre presented 10 candidates, and 8 of these were awarded an A grade.

The pass rate was 83.3% (35.7% in 2001).

***Question Paper***

All questions in part A were well answered and the mean mark for section A was 28/40. In section B the mean marks for three questions were above 50% of the marks available. Only four candidates attempted question 10, which covered course content drawn from the three component units. The mean mark for section B was 35/60.

**Building Services**

The centre which presented the single candidate in 2001 presented 8 candidates in 2002. The group showed a broad range of ability, as indicated in the statistical information. The mean mark was 54%, with marks ranging from 34% to 82%. Results were pleasing for this first candidate group, with a pass rate of 62.5%.

***Question Paper***

Candidates were generally well prepared for the question paper and there were good attempts at all questions. For only question 8 was the mean mark below 50% of the marks available.

The mean mark for section A was 22/40 and that for section B 32/60

**Quantity Surveying**

Although around 20 candidates commenced the Quantity Surveying course, only 2 of these, one from each of two centres, submitted a completed portfolio for assessment. The marks awarded were 100/200 (C) and 154/200 (A), with a mean mark of 127/200.

## Areas of external assessment in which candidates performed well

Candidates generally did well in the following question:

<u>Subject</u>	<u>Question</u>	<u>Topic</u> (mean mark in brackets)
<b>Construction</b>	2	Production drawings and CAD (4.6)
	3	Performance requirements of external walls (4.5)
	9	CAD and manual first angle projection (13.4)
<b>Building and Architectural Technology</b>	1	Site temporary works (6.0)
	2	Foundations (5.2)
<b>Civil Engineering</b>	1	Responsibilities of design team (6.2)
	3	Beam loading and reactions (5.8)
	4	Soils (5.6)
	5	Computer design and ground water control (6.0)
	6	Frame loading, bending and shear (12.5) (A number of correct solutions from one centre)
	8	Bar chart and estimating (12.6)
<b>Building Services</b>	9	Steel frame construction and concrete mix design (13.3)
	1	Heating systems (5.18)
	7	Ventilation, thermal comfort and heating systems (12.3)
	10	Drainage and cold water supply (11.7)

## Areas of external assessment in which candidates had difficulty

Questions with which candidates had particular problems were:

<u>Subject</u>	<u>Question</u>	<u>Topic</u> (mean mark in brackets)
<b>Construction</b>	1	Building control and planning (2.6)
	4	Survey principles and methods (2.2)
	6	Foundations and safety in housing (8.0)
	7	Longitudinal sections and cut and fill (8.4)
	8	Setting out, thermal insulation and drawing (7.0)
	10	OS map reading and site area calculation (7.6)
<b>Building and Architectural Technology</b>		
	3	Joints in brickwork (2.3)
	6	Timber frame construction (8.0)
	7	Flat roofs (7.0)
<b>Civil Engineering</b>		
	2	Bill of Quantities contracts (4.1)
	7	Pad foundation design and soil analysis (8.9)
	10	Section I-value, corrosion resistance and shoring (7.4)
<b>Building Services</b>		
	8	Cable sizing and electricity distribution (8.8)

## Areas of common misunderstanding

### **Construction**

In question 4(a), many candidates did not understand the terms *trilateration*, *base-line* and *offsetting*.

In 4(c), many did not recognise the levelling instrument described in the question and the answers were not specific to that instrument.

### **Building and Architectural Technology**

For question 7(b), the candidates from one centre described *cold* and *warm* pitched roof construction, rather than flat roof construction.

### **Civil Engineering**

In question 2, candidates did not understand that the question was simply asking for the method of payment to the contractor under a Bill of Quantities contract.

### **Building Services**

None

### **Quantity Surveying**

None

## **Recommendations**

### **Feedback to centres**

#### **Construction, and Building and Architectural Technology**

As in previous years, candidates failed to recognise commonly used technical language and terminology. Centres should ensure that candidates become familiar with common terminology and with the names given to building elements and components. Scrutiny of previous question papers and use of published support material will help prepare candidates for question papers.

In Higher Construction, candidates must have underpinning knowledge and understanding of land surveying principles, equipment and setting out procedures. Many candidates only seem prepared to attempt questions on levelling reduction.

#### **All Question Papers**

Centres should ensure that candidates are prepared to attempt questions on all topics from the course content. Many candidates seem to avoid questions which differ in any way from those used in the NAB unit assessments. This indicates that preparation for the question papers could be improved.