

## Principal Assessor Report 2003

**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 2002	
Pre appeal (Processed entries)	Construction 86
	Building and Architectural Technology 44
	Civil Engineering 35
	Building Services 8
	Quantity Surveying 14
	<b>Total 187</b>

Number of entries in 2003	
Pre appeal (Processed entries)	Construction 75
	Building and Architectural Technology 52
	Civil Engineering 48
	Building Services 15
	Quantity Surveying 27
	<b>Total 217</b>

### General comments re entry numbers

There was a further increase in entry numbers, and for the first time the total number of entries for the five Higher courses exceeded 200. As in previous years, almost all candidates were from colleges, there being only two school candidates for Higher Building and Architectural Technology.

**Construction:** The number of entries fell slightly in 2003 (-12.8%). Five centres presented candidates in 2003. Six centres presented in 2002.

**Building and Architectural Technology:** The number of entries continues to increase (+18.2%). As in 2002, three centres presented candidates.

**Civil Engineering:** Again, the number of candidates has increased (+37.1%). The same two centres presented candidates as in the previous two years.

**Building Services:** As in previous years, all candidates were from a single centre.

**Quantity Surveying:** Entries in 2003 showed a considerable increase on previous years, with 27 entries being processed from two centres. Only one centre however submitted projects for marking. This was the first candidate group for the Higher.

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Of the total of 217 entries, 53 candidates (24.4%) were either absent for the examination or failed to submit their PBNC project.

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

These were unchanged from year 2002, and apply to all subjects.

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

### **General commentary on passmarks and grade boundaries**

- While SQA aims to set examinations and create mark schemes which will allow a competent candidate to score a minimum 50% of the available marks (notional passmark) and a very well-prepared, very competent candidate to score at least 70%, it is almost impossible to get the standard absolutely on target every year, in every subject and level
- Each year we therefore hold a passmark meeting for each subject at each level where we bring together all the information available (statistical and judgmental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the senior management team at SQA
- We adjust the passmark downwards if there is evidence that we have set a slightly more demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- We adjust the passmark upwards if there is evidence that we have set a slightly less demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- Where the standard appears to be very similar to previous years, we maintain similar grade boundaries
- An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions are different. This is also the case for exams set in centres. And just because SQA has altered a boundary in a particular year in say Higher Chemistry does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related as they do not contain identical questions
- Our main aim is to be fair to candidates across all subjects and all levels and maintain standards across the years, even as syllabuses evolve and change

### **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:**

Of the 75 processed entries, 56 candidates sat the question paper and completed the project. One additional candidate sat the question paper.

The mean mark for the question paper was 42% (45% in 2002) and for the project was 46% (62% in 2001 and 2002). The mean overall mark for candidates who completed both components was 43% (53% in 2002).

Overall, performance was noticeably lower than in 2002. Question paper mean marks for the five centres ranged from 28% to 53%, only one centre achieving a mean mark of 50% or above.

The pass rate for the 56 candidates was 52% and for the question paper 51% (50% in 2002).

#### ***Question paper***

As in previous years, there were many poor scripts. In section B, for only one question was the mean mark over 50% of the marks available. All questions were attempted. The mean mark for section A was 17/40 (18/40 in 2002), and that for section B 25/60 (27/60 in 2002).

#### ***Project***

Projects from four of the five centres were moderated. The general standard was considerably lower than in previous years. For one centre, the mean mark achieved for candidate submissions was only 25%. For another centre, the marks awarded were overgenerous and the centre accepted the moderation results, which represented reductions in marks of between 12% and 19%.

There continues to be problems in centre interpretation and understanding of the project specification.

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

Of the 52 processed entries, 46 candidates sat the question paper and submitted the project.

The mean mark for the question paper was 54% (48% in 2002), which was a considerable improvement. The mean mark for the project was also 54%, compared to 57% in 2002 for those candidates completing both components. The mean overall mark was 54%, as in 2002.

The pass rate for the 46 candidates was 63% (57% in 2003).

The results show a small improvement over 2002. One pleasing aspect is that nine candidates (19.6%) were awarded a lower A grade.

#### ***Question paper***

For two of the three centres the mean mark for the question paper was over 50%. Although there were many poor scripts, there were also a number of good grade A scripts from two centres. Only five of fourteen candidates from the third centre scored 50% or more. The mean mark for the centre was only 40%.

All questions were attempted, but for only one question in section B was the mean mark awarded over 50% of the marks available.

The mean mark for section A was 24/40 (20/40 in 2002), and that for section B 30/60 (28/60 in 2002).

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### ***Project***

No project moderation took place and all centre marks were accepted.

### **Civil Engineering**

Of the 48 entries, 36 candidates sat the question paper. The same two centres as in 2002 presented candidates. The mean mark for the question paper was down slightly to 57% (63% in 2002).

The mean marks for the two centres were 68% (70% in 2002) and 43% (59% in 2002). The pass rates for the two centres were 83% and 41%. One centre achieved 6 upper A and 7 lower A grade awards. The overall pass rate was 64% (83% in 2002).

### ***Question paper***

All questions in section A were well answered and the mean mark for this section was 25/40 (28/40 in 2002). For section B the mean mark for four of the five questions was above 50% of the marks available. The mean mark for section B was 32/40 (35/40 in 2002). Many candidates answered the structural analysis questions very well.

### **Building Services**

The same single centre as in the past two years presented a group of candidates. 11 of the 15 registered candidates sat the paper. Results were very poor this year, with only one lower A and one C grade pass being awarded. The mean mark was down to 34% (54% in 2002), and the pass rate down to 18% (63% in 2002).

### ***Question paper***

Most candidates were poorly prepared for the question paper, particularly for the problem solving design problems of section B. For five questions of the paper, the mean mark was below 50% of the available marks. The mean mark for section A was 17/40 and for section B 17/60.

### **Quantity Surveying**

There were 27 processed entries, from two centres. Only 14 projects were submitted however, from one centre. Results were excellent for this first group of candidates completing the PBNC.

Projects were generally comprehensive and very well presented. The mean marks for the planning, developing and implementing stages were 27.6/40, 74.5/120 and 23.5/40 respectively, giving an overall mean mark of 126/200 (63%). There was evidence of good project planning and excellent research into aspects of eco-house design. It was clear that the centre had encouraged and motivated candidates to complete their projects, which were based on very detailed and rigorous project briefs. The pass rate was 92.9%.

## Areas of external assessment in which candidates performed well

Candidates generally did well in the following questions:

<u>Subject</u>	<u>Question</u>	<u>Topic</u> (mean mark in brackets)
<b>Construction</b>		
	1	Design requirements (4.8)
	10 (one centre)	Ground floor and foundation construction (15.0)
<b>Building and Architectural Technology</b>		
	1	Temporary roads and services (6.4)
	3	External walls and roofs (5.4)
	5	Floor and wall finishes (5.6)
	6	Foundations and sub-structures (12.7)
<b>Civil Engineering</b>		
	1	Professional bodies (5.5)
	4	Structural loading (5.7)
	5	Soils and concrete (5.3)
	6 (one centre)	Framed structures (14.7)
	8	Network diagram and unit rates (12.2)
	9	Timber joist design (13.3)
<b>Building Services</b>		
	2	Wet central heating systems (4.3)
	3	Fire control (4.4)
<b>Quantity Surveying (PBNC)</b>		
	N/A	Planning and Developing stages of project

## Areas of external assessment in which candidates had difficulty

Questions which gave candidates particular problems were:

<u>Subject</u>	<u>Question</u>	<u>Topic</u> (mean mark in brackets)
<b>Construction</b>		
	4	Land survey and earthwork volumes (2.0)
	5	Surveying – setting out (2.3)
	9	Co-ordination of drawings and interpretation of site plan (6.6)
<b>Building and Architectural Technology</b>		
	4	Window and door terminology (1.9)
	7	Framed structures and roof cladding (8.0)
<b>Civil Engineering</b>		
	10	Site investigation and concreting materials (7.2)
<b>Building Services</b>		
	4	Ventilation (2.0)
	5	Electric Heating (1.9)
	6	Electric wiring circuits – worksheet diagrams (3.4)
	7	Above ground drainage and hot water supply systems - worksheet diagram (4.8)

## **Recommendations**

### **Feedback to centres**

As in previous years, many candidates were unprepared for examination papers. This was evident again in their failure to recognise and use common construction terminology. Many candidates also exhibited poor examination techniques, and presentation was often very untidy. In some cases faint pencil was used in the answer book rather than ink. In many cases candidates failed to read questions carefully and wasted considerable time answering the 'wrong' question.

Generally candidates perform better in section A of question papers than in section B. Section B requires them to demonstrate deeper knowledge and understanding of aspects of design and construction. Results for section B in each subject point to a lack of depth in candidates' knowledge and understanding.

Notwithstanding the above comments, there are signs that centres are making efforts to ensure that candidates are able to attempt questions on all topics of course content. This is showing itself in the gradual improvement in the number of A grade awards.