

UNIVERSITY OF GLASGOW

Education Committee - Monday 14 June 2004

Review of Departmental Programmes of Teaching, Learning and Assessment: Review of Department of Civil Engineering held on 19 March 2004

Mrs Elaine Shearer, Senate Office

June 2004

The Review Panel

Professor Robin Leake, Vice-Principal (Estates) & Territorial Vice-Principal (Engineering, Physical Sciences & Information & Mathematical Sciences) (Convener)

Professor Michael Davies, Professor of Civil Engineering, University of Dundee

Professor John Sewell, Department of Electronics and Electrical Engineering, Senate Assessor on University Court

Dr Sarah Mann, Teaching & Learning Service

Mrs Elaine K Shearer, Senate Office [Panel Secretary]

A. Introduction

- A.1 The Department of Civil Engineering underwent 'Quinquennial Review' in 1993. It received a 'Highly Satisfactory' rating in the 1993 Teaching Quality Assessment and a 4c rating in the 2001 Research Assessment Exercise. A Faculty Review of the Department was conducted in November 2002.
- A.2 The Department provided a Self Evaluation Report (SER) and supporting documentation in accordance with the University's requirements for the Review of Departmental Programmes of Teaching, Learning and Assessment.
- A.3 The Review Panel met with the Head of Department, Professor Alan Irvine, who was accompanied for the first meeting by Dr Bill Stewart, Director of Teaching. Subsequently the Panel met with key staff and with two retired members of staff and five Graduate Teaching Assistants (GTAs) who represented hourly-paid staff. The Panel also met with seven MSc students and fifteen undergraduate students.
- A.4 The Review Panel considered the following range of provision offered by the Department:
- a) BEng/MEng in Civil Engineering
 - b) BEng /MEng in Civil Engineering with Architecture
 - c) BSc (Hons) in Environmental Design
 - d) MSc in Geotechnical Engineering – this programme is jointly taught with Heriot-Watt University
 - e) MSc in Water Resources Engineering Management – this programme is jointly taught with Heriot-Watt University

- f) MSc in Structural Engineering – this programme is jointly taught and jointly awarded with the University of Strathclyde

B. Overall aims of the Department's provision

- B.1 The Review Panel noted that the overall aims of the Department's provision were stated in the SER but did not appear to be articulated in any of the documentation available to students. Members considered that the overall aims were consistent with the mission of a rounded Civil Engineering department. The Panel **recommended** that the overall aims be made readily available to students through, for example, inclusion in all course handbooks and on the web.

C Undergraduate and Taught-Postgraduate Provision

C.1 Aims

C.1.1

The Review Panel found the department's overall aims for the different degree programmes, as stated in the SER, to be clear, inspiring, informative and appropriate and were disappointed that these aims were not conveyed to undergraduate students in any of the student documentation. There was a brief reference to the aims for the MSc programmes in the relevant student handbooks. The Head of Department accepted that the undergraduate students were probably not aware of the general philosophy underpinning the individual course aims. Taught postgraduate students would be more aware as the complementarity between the two institutions teaching on the degrees was highlighted to prospective students. The Panel suggested that an awareness of the overall aims and philosophy of each year might help student motivation. The Panel **recommended** that the Department take steps to explain to students the philosophy of each year of the programme in order that students know what they are expected to achieve.

C.1.2

The Panel noted that the Department had not, as yet, developed Programme Specifications. It was pointed out that these were intended to be student-centred and documents to which students could refer. The Panel **recommended** that the Department prepare Programme Specifications for all programmes, making explicit the aims of the programmes.

C.2 Intended Learning Outcomes (ILOs)

C.2.1

The Panel noted that, whilst the undergraduate module descriptors included aims and objectives for each module, they did not distinguish between them and there was little reference to ILOs. It was pointed out that, under the Code of Assessment, assessment was linked to the demonstration of ILOs and it was therefore essential that ILOs were articulated in order that students were clear about what they had to demonstrate and staff could design appropriate assessments. The Panel **recommended** that the Department reviews the ILOs at programme and modular level in conjunction with the Teaching & Learning Service.

C.3. *Assessment*

C.3.1

The Panel commended the wide range of appropriate methods of assessment used and the strong focus on continuous assessment, both formative and summative.

C.3.2

It was not clear to the Panel how the formative assessment was used to help students with their progress. The Director of Teaching explained that reports and coursework were returned to students with either written comments or work solutions; predominantly verbal feedback was provided in Design classes where staff were proactive in asking students how they were progressing; for tutorial exercises, work solutions might be handed out; and class tests were given in some modules. Undergraduate students met by the Panel were divided in their views with some feeling they received good feedback and some feeling they did not. The view was expressed that specific feedback on individual progress would be welcomed at the end of the 3rd/4th years so that students would be aware of the level of attainment they would require to achieve in their final year. The Panel **recommended** that the Department provide feedback to students on their progress by relating their performance in continuous assessment to their understanding of the programme.

C.3.3 Code of Assessment

The Panel noted that the staff continued to assign percentage marks to examination scripts and then converted these to grades and that this was the procedure adopted by the Faculty of Engineering. The Director of Teaching informed the Panel that the generic assessment criteria were little used in the marking of coursework. It was suggested that this was where the criteria were most useful in helping to achieve greater objectivity and a wider spread of marks. The Panel **recommended** that staff be strongly encouraged to use the assessment criteria not only to ensure adoption of the full spread of marks but also to enable more objective feedback to students. To help achieve this objective a short bespoke training course for staff might be provided by TLS.

C.3.4 Group Projects

The Panel noted that the Department had a consistent methodology of assessment of group projects comprising individual presentations with a separate mark for each individual, a final report with both whole team and individual contributions, and a final oral presentation with individual contributions. Despite this, the problem of differentiating between students remained problematic. The Panel suggested that each team member might be asked to write a short reflective analysis on his/her part in the project. The students met by the Panel reported that they had not experienced any difficulties with group-work assessment or with members not pulling their weight. They informed the Panel that, if there were any problems, these could be discussed with staff and, in the case of failure to pull one's weight, could be effectively solved by peer pressure.

C.3.5 GTAs

The Panel noted that the GTAs undertook marking and assessment and that they had attended the TLS course on this. Members were informed that discussion took place with the relevant academic staff prior to marking and that sampling, but not full double marking, was undertaken by the responsible lecturer.

C.4 Curriculum Design and Content

C.4.1

The Review Panel considered the curricula of the programmes offered to be well designed to meet the programme aims. Compliance with the requirements of industry was ensured through accreditation by the appropriate professional bodies and through formal consultation with industry via the Industrial Advisory Group. The research ethos ensured that the latest developments were incorporated into the curricula.

C.4.2

The Review Panel considered that the Department had done a considerable amount to develop the curriculum in very interesting ways and commended the following practices:

- progressive integration within the curriculum of active student learning processes to develop design, problem solving and communication skills, culminating in 'unique' year 5;
- attention to the development of employability and professionalism through multi-disciplinary project groups focused on real world tasks, and through field visits and involvement of the professionals from outside the university;
- the range of teaching and learning methods used;
- strong focus on continuous assessment playing both a formative and summative role;
- attention to ways of supporting students in the early years through small group tutorials;
- Induction Day task: group work and presentations.

The 'Environmental Impact Assessment' module and the 'Learning from Disasters' exercise in Year 1 and the 'interact' design project in Year 3 (which involved multi-disciplinary teams of students from four west of Scotland institutions) were considered to be examples of good innovative practice.

C.4.3 Common Core

The Panel raised the issue, advocated in the Self Evaluation Report, of whether there should be a common core of modules taught across the Faculty. The retired members of staff and the GTAs met by the Panel noted that there were advantages and disadvantages to this but expressed doubt that Design could be included in any core. It was felt that while core teaching would be feasible at Level 1, it was more practical to focus on examples from Civil Engineering. The view was also expressed that students wishing to study Civil Engineering could be put off and might struggle in second year when they were exposed to more specialised work. The sense of belonging was also felt to be important. Members of staff met by the Panel expressed differing views with some supporting common teaching of Mathematics. It was pointed out, however, that combined classes would be very large and even combining Civil with one of the other engineering departments would produce class sizes of c150; combining three departments would mean c200-250. With such class sizes one lecturer would be unable to provide feedback which could create problems for student support and retention. The Panel **recommended** that the Faculty give urgent consideration to the development of common teaching in core Engineering subjects with a view to reducing the departmental teaching load and ensuring that faculty staff expertise was most appropriately deployed. The Director of Teaching noted that, in the past, there had

been considerable common teaching but this had been reduced because of pressure from students and the need to retain FTEs in a climate of falling student numbers.

C.4.4 Bologna

The Panel asked the Head of Department and staff if they had given any thought to how the Bologna Agreement might impact on programme design. The Head of Department noted that the 3+2+3 model would be difficult to translate to Scotland and would require a fundamental change of structure. His view was that this had to come down from SHEFC. The Panel suggested that institutions should take a view on how they wished to see it develop to feed into SHEFC. The view was expressed that the MEng might be easier to map to the Bologna model than other degrees. The Panel **recommended** that the Department give thought to how current teaching might need to be adapted to fit the Bologna model.

C.5 *Student Recruitment, Support and Progression*

C.5.1 Student Recruitment

The Panel explored with the Head of Department and Director of Teaching the support provided to the Department by the Student Recruitment and Admissions Service (SRAS). The Panel was informed that SRAS was currently assisting the Department with arrangements for a visit to China. The Panel noted that, in the absence of a Faculty Entry system, the Department preferred to deal with admissions internally in order to nurture potential applicants with a view to maximising the numbers entering Civil Engineering. Were a Faculty Entry System to be in place, the Department would be happy for SRAS to handle admissions. The Panel noted that there was a dedicated Admissions Officer for undergraduate programmes and that the Department organised one Applicants' Week in January and one Applicants' Day in March. The Head of Department was in favour of Faculty Entry as he felt that applicants had little idea of what they wanted to do and that a common first year would help them to decide the direction they wished to take. The Panel **recommended** that the Department review whether the balance between what it does and what SRAS does is the optimum for the Department or whether there were areas where they should be working together to increase efficiency for both home and overseas recruitment.

C.5.2

The Panel was informed that some references provided by schools for applicants showed a misunderstanding of what was involved in Civil Engineering. Staff assured the Panel that they expended much effort attempting to explain the curriculum to schools. The Panel **recommended** that the Department invite more school Careers Officers into the Department to explain about Civil Engineering.

C.5.3 Student Support

The undergraduate students met by the Panel indicated that they felt part of the Department; they knew the members of staff and had built up a rapport with their lecturers. They felt able to approach staff for help. Students found the GTAs helpful and indicated that they enjoyed laboratories taken by GTAs. The GTAs met by the Panel felt they had a formative and supportive role and that they could identify and help students who were falling behind.

C.5.4

The Panel noted that, although the percentage of students doing the MEng was now higher, the majority were still BEng students. The Panel **recommended** that the

Department give consideration to the balance between the BEng and the MEng and to how it could support those students who were not permitted, or did not wish, to progress to MEng.

C.5.5

The postgraduate students met by the Panel informed members that the lecturers were approachable and had time for them. They commented that there were people with different backgrounds on the postgraduate courses and suggested that more information should be provided at application stage on what was required. Students would have welcomed an introduction eg on how to use the software. One student had experienced difficulty in getting help with Numerical Analysis but the general view was that staff were always available to help. Some of the postgraduate students informed that panel that they had not yet received marks or feedback from Semester 1 while others had.

C.5.6 Progression

The Panel noted that the drop-out rates, particularly in Year 1, were a major concern and were attributed by the Department to misunderstanding on the part of students about the nature of Civil Engineering and to the amount of Mathematics and Mechanics involved. The Department had instigated a review of the reasons for the huge drop-out rate between Years 1 and 2 in 2003 and this was undertaken by the Director of Teaching & Learning Services who produced an interim report in December 2003. A further report on responses to a questionnaire was awaited. Overall, the students attending the focus group had found the first year a positive experience and the Department a very pleasant and supportive environment. The Panel questioned whether the responses of the students who had left would have provided a different picture and were informed that there had been a poor response rate from these students. The Head of Department informed the Panel that the drop-out rate from Year 1 this session was greatly improved and he attributed this to the quality of the intake although he noted that there were still students who had made the wrong course choice. Efforts were made to identify students at risk at an early stage and first year students were allocated a personal tutor to whom they could take problems. Students had a review meeting with their Advisor of Studies in January. The Head of Department highlighted the problem of entrants being unable to cope with the Mathematics. The Panel **recommended** that once the current Report on drop-out rates was complete, the Department, in conjunction with the Student Learning Advisers, should review all procedures to ensure that learning problems are detected and dealt with at an early stage. In compiling the report attempts should be made to obtain more feedback from a greater number of former students who dropped out of the Department's programmes.

C.6 *The Effectiveness of Provision*

C.6.1 Learning and Teaching

Undergraduate Provision

C.6.1.1 Site Visits

The undergraduate students met by the Panel appreciated site visits for adding relevance; for enabling students to see the 'wider picture' and for providing insight into future employment prospects. The comment was made that employers of students during vacations expected them to know practical things with which they were unfamiliar and it was the students' view that more site visits would help with this. Staff explained that site visits were constrained by the number of students and by Health and Safety requirements such as the requirement for safety boots and safety inductions which lasted for 45 minutes.

C.6.1.2 Mathematics Teaching

The Panel asked the undergraduate students about their experience of Mathematics teaching. First year was not perceived to be a problem. The second year course, however, was not felt to have been very beneficial and third year Mathematics was described as easier than second year. Staff concurred with this view and indicated that second year Mathematics was now problematic. The Panel noted that a faculty wide review of Mathematics teaching was planned. The students met by the Panel did not consider it a problem that Mathematics was taught by different lecturers and appreciated the different styles to which it exposed them. The Panel **recommended** a thorough review of service teaching for Mathematics, Statistics and Physics to ensure that the most appropriate people teach each subject within viable class sizes.

C.6.1.3 Group Projects

The undergraduate students indicated to the Panel that they found group projects worthwhile. The Panel was pleased to note the assistance given by the Industrial Advisory Group in providing materials for case studies.

C.6.1.4 IT

The undergraduate students met by the Panel indicated that they would like more emphasis on 'Autocad' and informed the Panel that they needed additional training on this. Although this had now been installed on the computers in the Department, the students complained that some had old versions. It was further noted that it would be helpful if the specialist software could be made available on other computers, eg in the library, as students (with exception to 5th year who had access cards) had to vacate the Rankine Building at 5.30pm. Staff informed the Panel that it was proposed to make it a requirement that student work was produced using 'Autocad' but acknowledged that there had been an issue regarding different versions of the software. The Panel noted that there was a debate among staff as to whether this was something that should be learned 'on the job' once students were in employment. The panel **recommended** that the Department take steps to ensure that the IT skills introduced in first year in areas such as 'Autocad' are reinforced in subsequent years and that the software employed both in the Department and at the Glasgow School of Art is compatible. The Panel further **recommended** that the Department explore the possibility of installing onto a centrally available computer cluster, eg in the library, all specialised software which students were required to access.

C.6.1.5 Employability/Communication Skills

The undergraduate students met by the panel felt that their communication skills were sufficiently developed through group projects and oral presentations. They did not, however, appreciate the relevance of providing summary reports of external lecturers' talks in Level 1. Staff were of the view that the general level of presentation skills of students was much improved. The students informed the Panel that they would appreciate more talks about career opportunities and assistance with interview techniques. The Panel **recommended** that the University provide training for students on interview techniques.

Postgraduate Provision

C.6.1.6 Split Campus Teaching

The Panel explored with the postgraduate students present their experience of provision on two sites viz the University of Strathclyde for the MSc in Structural Engineering and Heriot-Watt University for the MScs in Geotechnical Engineering and Water Resources Engineering Management. The students were generally positive in their attitude and reported it as an advantage to be able to experience two Universities and staff. They appreciated the different contacts between the Universities and their external contacts and saw this as a way to enhance their knowledge, including their knowledge of industry. They appreciated the contribution of the external lecturers as complementary to that of the academics.

C.6.1.7

The postgraduate students did report a problem with regard to compatibility of software, eg ISIS, with that at Heriot-Watt, and informed the Panel that they therefore had to travel to Edinburgh to complete coursework required by Heriot-Watt. The Panel **recommended** that the issue of compatibility of software be addressed by the Department.

C.6.1.8 Communication

The postgraduate students met by the Panel confirmed that communication, in general, was good. Classes were small and there was good interaction between the MSc courses. Students did state, however, that they would appreciate greater contact with PhD students to, for example, assist them in making choices about projects. Communication was not helped by the fact that the students did not have a base room from which to work. Staff pointed out that opportunities for contact did exist, for example research seminars were open to postgraduate students.

C.6.1.9 Projects

One group of MSc students informed the Panel that they had received the project options late and that this was causing some concern as their choice would have to be made over the holiday period where they would be unable to discuss the topics with anyone. Some postgraduates were aware of the percentage contributions to assessment of the project while others were not. Students complained that students based at Heriot-Watt had first choice of projects at Heriot-Watt as the topics were posted on the notice board and they had first sight of them; the reverse was true for projects at Glasgow where Glasgow based students had first sight. The Panel suggested that this situation might be alleviated by the use of a web-site and it was noted that the MSc in Structural Engineering and the Water-based MScs did have web-sites. The Panel **recommended** that web-sites be set up for all the MSc programmes.

C.6.1.10 Module Availability

One overseas postgraduate student expressed disappointment that not all the modules which were listed on the web site for the MSc in Structural Engineering had been offered and indicated that she might not have applied had she known that a particular module would not run. Staff explained that, with only 10 students on the programme, it had not proved possible to offer all optional modules.

C.6.1.11 Management of MSc Programmes

The Panel formed the view that the experience of the postgraduate students, while generally positive, varied between the programmes and found the Structural Engineering students to be less positive than the others. Members were of the view that the consistency of the student experience and provision could be improved by the appointment of one person to have oversight of all the MSc programmes and to set common objectives. The Panel therefore **recommended** that the Department appoint a member to staff to be Director of Postgraduate Programmes with overall oversight of the MSc programmes.

C.6.2 Learning Resources

Staffing Resources

C.6.2.1 Staffing Levels

The Panel noted that the Faculty Review of the Department, undertaken in November 2002, had concluded that the recruitment of additional staff was essential if the Department was to have any chance of achieving a Grade 5 in the next RAE. The Department had also been advised to reduce its undergraduate provision from a 'Rolls-Royce' model to a less staff intensive model by reducing student contact hours. The Panel was concerned to note that no progress had been made with respect to the recruitment of additional staff and that, indeed, staffing levels had decreased as a result of early retirement. Furthermore, the Panel was of the view that, with the possible exception of Year 5, the current contact hours did not appear excessive. The Panel noted that the academic staff had to take on high teaching loads which were likely to be exacerbated by the increasing undergraduate intake. The Department employed 'ad hoc' teachers from retired staff and industry together with post-doctoral research assistants to supplement the teaching staff. The view of the Panel was that the staff were seriously overstretched in trying to maintain the quality of the undergraduate and postgraduate programmes offered by the Department. The Panel was aware of, and strongly supported, the application for a Roberts Fellowship to provide a young, research active new member of staff. It further **recommended** that, as soon as Faculty finances permitted, a further young lecturer be appointed.

C.6.2.2 Sustainable Development

The Panel explored with the staff whether the best use was being made of the Royal Academy of Engineering Visiting Professor in Engineering Design for Sustainable Development, Professor Barbara Carroll. Members were informed that Professor Carroll was now in the second year of her three year secondment but that she was keen for this to be extended for a further two years. It was the intention that Professor Carroll would train other members of staff in order that they could take over the teaching in the area of Environmental Impact once her appointment ended. The Panel **recommended** that the Department give consideration to how best to ensure that the teaching of Sustainable Development is maintained in the long term.

C.6.2.3 MSc Provision

The Panel explored with staff whether the MSc programmes were cost effective and sustainable. Staff acknowledged that it would not be possible to run the MSc programmes without collaboration with other institutions. It was, however, thought to be beneficial for the students to be exposed to two different Universities and this was corroborated by the students with whom the Panel met. The Panel was informed that the MSc programmes contributed 10% of the FTEs against 20% of staff effort. It was noted, however, that some of the MSc courses were also taken by 5th year MEng

students and it was pointed out that even if the MScs did not exist, half the modules would still have to be taught for MEng students. The MSc programmes facilitated links with the profession and industry and were a source of PhD students.

C.6.2.4 GTAs

The GTAs met by the Panel informed members that they had undertaken the module for GTAs provided by the Teaching and Learning Service. They were briefed by the lecturer in charge and strict guidelines were provided on what was expected to be achieved in a laboratory session.

Physical Resources

C.6.2.5

Members of the Review Panel were taken on a tour of the Department by the Head of Department and other staff. The Panel were impressed with the facilities available and were of the view that the physical environment was of a high standard.

C.6.2.6

The Panel noted the problems experienced by the Department as a result of the low equipment budget. While the laboratories were fairly modern the Panel was informed that the Department had struggled to maintain standards of both equipment and software in laboratories. The Head of Department told members that the equipment budget had been frozen and that as a result the Department, wherever possible, utilised the expertise of its technicians to make equipment. The Convener noted that there was a working group currently looking at this area and that he was hopeful that the problem would be alleviated to some extent.

D The Maintenance and Enhancement of Standards of Awards

D.1 Internal Review

The Panel was confident that the Department was operating effective measures to maintain the standards of awards. Members noted that an examiner's report was written for each module and any conclusions were incorporated into the course organisation and assessment in the following year. These reports were considered at the annual degree review meeting prior to incorporation in the Annual Course Monitoring documentation. In addition, each sub area held an annual review of its courses suggesting improvements and modifications and, where appropriate, referral to input from industry to ensure the degrees were up-to-date and leading edge.

D.2 Accreditation

The requirement for accreditation of undergraduate programmes involved regular visits to the Department by the Joint Board of Moderators for the Institution of Civil Engineers and the Institution of Structural Engineers and by the Chartered Institution of Water & Environmental Management. This ensured rigorous maintenance and enhancement of standards by the Department in order to meet the requirements of these bodies.

D.3 Industrial Advisory Group

The Department benefited from the input of an Industrial Advisory Group comprising nine external members in senior positions in industry and six members of staff. The Panel noted that the degrees from the University were generally considered by

industrialists to offer a strong combination of engineering fundamentals with design skills. The external members also played a critical role in providing materials for Year 5 MEng case studies and had undertaken a SWOT analysis of the Department in session 2000/2001.

E. The Maintenance and Assurance of Quality

E.1 External Examiners

The External Examiners' Reports were generally positive and any points raised were considered and acted upon.

E.2 Student Feedback

The undergraduate students met by the Panel informed members that they received little feedback on the student questionnaires. The students considered the Undergraduate Staff-Student Committee to be an effective forum and informed the Panel that matters raised were dealt with. Again, students indicated that they would welcome more feedback on the outcome of discussions. The Panel **recommended** that the Department ensure that procedures are put in place to provide feedback to students on actions taken in response to student feedback questionnaires and to issues raised in the staff-student committees.

E.3 External Lecturers

The Panel explored with staff how external lecturers were supported and trained. Members were informed that some externals gave one or two lectures and they were given guidance on how the topic fitted into the course. Others contributed to projects where they were viewed as part of a team led by an academic member of staff. No formal training was provided but it was stressed that there was always a member of staff present and that externals were not left alone with students. This input was in the nature of tutorials rather than formal lecturing.

E.4 Course Review

The Panel noted that each degree programme was reviewed annually at a degree review meeting of the Teaching Committee. The Panel found the Annual Course Monitoring Reports to be thorough.

F. Enhancing the Student Learning Experience

F.1

The Panel concluded from the documentation provided that the Department regularly reviewed the student learning experience and took steps to enhance it. Recent enhancement of the physical environment included a new Water Laboratory; the creation of a design and modelling studio; the development of a new computing laboratory and the provision of a new student common room. Curriculum developments, for example the introduction of design classes into each year of the undergraduate degree programmes; the introduction of a field trip to London in 3rd Year and the introduction of industry-based case studies in Year 5 of the MEng programme, have also served to enhance the student learning experience (see also section C 4.2).

F.2 External Lecturers

The Panel asked the undergraduate students present how they found the external lecturers. While some were felt to be more interesting than others, the general view

was that it was welcome in providing a 'fresh take' and that it was beneficial to hear people from industry. The students were particularly appreciative of the participation of practicing engineers in the project work. The postgraduate students met by the Panel were also appreciative of the contacts with people from industry and felt that it gave them a useful insight into potential employing companies.

F.3 Conferences

One group of MSc students had attended a number of conferences. Students were very positive about this and found them not only interesting but helpful for socialisation. Students on other programmes had not had the opportunity to attend any conferences.

F.4 Employability

As noted in C 6.1.1 and C 6.1.5 above, the undergraduate students met by the Panel felt that their communication skills were sufficiently developed throughout the programmes but would welcome more site visits, talks about career opportunities and assistance with interview techniques.

F.5 Sports Day

The Panel was interested to note that the Department held an annual Sports Day in December. The students met by the Panel confirmed that everyone was encouraged to get involved and those who did not participate in the sport could participate in the socialisation afterwards. The Panel commended this as a means of encouraging social contact.

F.6 Student Society

The Panel was pleased to note the existence of a student Engineering Society.

G. Summary of Key Strengths and Areas to be Improved or Enhanced in relation to Learning and Teaching

G.1 Key Strengths

The Panel identified the undernoted as key strengths of the Department:

- high quality teaching and curriculum design;
- strength of team work in a department of dedicated staff who have done a considerable amount to develop the curriculum in very interesting ways;
- approachability of staff and support for students;
- strong supportive input from practitioners both in delivering the curriculum and through the Industrial Advisory Group;

The Panel commended the Department for the following practices:

- progressive integration within the curriculum of active student learning processes to develop design, problem solving and communication skills, culminating in 'unique' year 5;
- attention to the development of employability and professionalism through multi-disciplinary project groups focused on real world tasks, and through field visits and involvement of professionals from outside the University;
- the range of teaching and learning methods used;

- strong focus on continuous assessment playing both a formative and summative role;
- attention to ways of supporting students in the early years through small group tutorials;
- Induction Day task: group work and presentations;
- systematic identification of issues, for example assessment of group work, retention issues between levels 1 & 2, and clearly thought through strategies for dealing with the issues. Supported by annual review of each degree programme, informed by evaluation data, and Staff-Student committee.

G.2 Areas to be improved or enhanced

The Panel identified the undernoted as areas to be improved or enhanced:

- progression rates from Level 1 to Level 2;
- teaching of Mathematics;
- the development of ILOs and programme specifications;
- feedback to students both in terms of assessment and of action taken in response to student comments;
- IT skills development and the provision of software;
- interviewing skills;
- management of the MSc programmes;
- the development of 'Sustainable Development' provision.

In addition the Department should explore the possibility of common teaching across the Faculty in core subjects and review its activities with respect to student recruitment viz-a-viz the Student Recruitment and Admissions Service.

H. Conclusions and Recommendations

H.1 Conclusions

H.1.1

Members of the Review Panel were impressed with everything they had looked at during the review. They considered the Department to be a very successful one from a teaching perspective and noted that it had a justified reputation for high quality teaching. However, while the quality was very good, its sustainability was considered doubtful given the current staffing level of 10.83 FTEs. The Panel recognised that the high teaching load carried by even the most research active staff would detract from the Department's aspiration to improve research performance.

H.1.2

The recommendations interspersed in the preceding report and summarised below are made in the spirit of encouragement to the Department of Civil Engineering to address the issues identified by the Panel. The recommendations have been cross-referenced to the paragraph in the text to which they refer and are ranked in order of priority.

H.2 Recommendations:

Recommendation 1

The Panel was aware of, and strongly supported, the application for a Roberts Fellowship to provide a young, research active new member of staff. It further **recommended** that, as soon as Faculty finances permitted, a further young lecturer be appointed. (paragraph C.6.2.1)

Action: The Dean of Faculty of Engineering & The Head of Department

Recommendation 2

The Panel **recommended** that the Faculty give urgent consideration to the development of common teaching in core Engineering subjects with a view to reducing the departmental teaching load and ensuring that faculty staff expertise was most appropriately deployed. (paragraph C.4.3)

Action: The Dean of the Faculty of Engineering

Recommendation 3

The Panel **recommended** a thorough review of service teaching for Mathematics, Statistics and Physics to ensure that the most appropriate people teach each subject within viable class sizes. (paragraph C.6.1.2)

Action: The Dean of Faculty of Engineering & The Head of Department

Recommendation 4

The Panel **recommended** that the Department take steps to explain to students the philosophy of each year of the programme in order that students know what they are expected to achieve. (paragraph C.1.1)

Action: The Director of Teaching

Recommendation 5

The Panel **recommended** that the Department explore the possibility of installing, onto a centrally available computer cluster, eg in the library, all specialised software which students were required to access. (paragraph C.6.1.4)

Action: The Head of Department

Recommendation 6

The Panel therefore **recommended** that the Department appoint a member to staff to be Director of Postgraduate Programmes with overall oversight of the MSc programmes. (paragraph C.6.1.11)

Action: The Head of Department

Recommendation 7

The panel **recommended** that the Department take steps to ensure that the IT skills introduced in first year in areas such as 'Autocad' are reinforced in subsequent years and that the software employed both in the Department and at the Glasgow School of Art is compatible. (paragraph C.6.1.4)

Action: The Director of Teaching

Recommendation 8

The Panel **recommended** that the Department provide feedback to students on their progress by relating their performance in continuous assessment to their understanding of the programme. (paragraph C.3.2)

Action: The Director of Teaching

Recommendation 9

The Panel **recommended** that staff be strongly encouraged to use the assessment criteria not only to ensure adoption of the full spread of marks but also to enable more objective feedback to students. To help achieve this objective a short bespoke training course for staff might be provided by TLS.(paragraph C.3.3)

**Action: The Head of Department
The Director of the Teaching and Learning Service**

Recommendation 10

The Panel **recommended** that the issue of compatibility of software be addressed by the Department. (paragraph C.6.1.7)

Action: The Head of Department

Recommendation 11

The Panel **recommended** that the overall aims be made readily available to students through, for example, inclusion in all course handbooks and on the web. (paragraph B.1)

Action: The Director of Teaching

Recommendation 12

The Panel **recommended** that the Department prepare Programme Specifications for all programmes, making explicit the aims of the programmes. (paragraph C.1.2)

Action: The Head of Department

Recommendation 13

The Panel **recommended** that the Department reviews the ILOs at programme and modular level in conjunction with the Teaching & Learning Service. (paragraph C.2.1)

Action: The Head of Department

The Director of the Teaching and Learning Service Recommendation 14

The Panel **recommended** that the Department give consideration to the balance between the BEng and the MEng and to how it could support those students who were not permitted, or did not wish, to progress to MEng. (paragraph C.5.4)

Action: The Director of Teaching

Recommendation 15

The Panel **recommended** that once the current Report on drop-out rates was complete, the Department, in conjunction with the Student Learning Advisers, should review all procedures to ensure that learning problems are detected and dealt with at an early stage. In compiling the report attempts should be made to obtain more feedback from a greater number of former students who dropped out of the Department's programmes. (paragraph C.5.6)

**Action: The Head of Department
The Director of the Teaching and Learning Service**

Recommendation 16

The Panel **recommended** that web-sites be set up for all the MSc programmes. (paragraph C.6.1.9)

Action: The Head of Department

Recommendation 17

The Panel **recommended** that the University provide training for students on interview techniques. (paragraph C.6.1.5)

Action: The Director of the Careers Service

Recommendation 18

The Panel **recommended** that the Department ensure that procedures are put in place to provide feedback to students on actions taken in response to student feedback questionnaires and to issues raised in the staff-student committees. (paragraph E.2)

Action: The Head of Department

Recommendation 19

The Panel **recommended** that the Department review whether the balance between what it does and what SRAS does is the optimum for the Department or whether there are areas where they should be working together to increase efficiency for both home and overseas recruitment. (paragraph C.5.1)

Action: The Head of Department

Recommendation 20

The Panel **recommended** that the Department invite more school Careers Officers into the Department to explain about Civil Engineering. (paragraph C.5.2)

Action: The Head of Department

Recommendation 21

The panel **recommended** that the Department give consideration to how best to ensure that the teaching of Sustainable Development is maintained in the long term. (paragraph C.6.2.2)

Action: The Head of Department

Recommendation 22

The Panel **recommended** that the Department give thought to how current teaching might need to be adapted to fit the Bologna model. (paragraph C.4.4)

Action: The Head of Department

Prepared by: Janet Anderton, Senate Office

Last modified on: Friday 4 June 2004