

UNIVERSITY OF GLASGOW

Academic Standards Committee - Friday 28 May 2010

Departmental Programmes of Teaching, Learning and Assessment: Report of the Review of Civil Engineering held on 11 and 12 March 2010

Mrs Jackie Williamson, Clerk to the Review Panel

Review Panel:

Professor Andrea Nolan	Senior Vice Principal, Convenor
Professor David Butler	University of Exeter, External Subject Specialist
Miss Caragh Nimmo	Students' Representative Council
Dr Graham Green	Dept. of Mechanical Engineering, Cognate member
Professor Eleanor Gordon	Senate Assessor on Court
Dr Vicky Gunn	Learning and Teaching Centre
Mrs Jacqueline Williamson	Clerk on behalf of Senate Office
Mrs Janet Fleming	Senate Office, Observer

1. Introduction

- 1.1 The Department of Civil Engineering is one of four within the Faculty of Engineering.
- 1.2 The Department is housed in the Rankine Building which it shares with Electronics and Electrical Engineering. Physical resources include a Hydraulics Laboratory, Geotechnics Laboratory, new Small Water Quality Laboratory, Environmental Biotechnology Laboratory, Drawing offices, Design/Modelling studio, three computing teaching labs which it shares with the Department of Electronics and Electrical Engineering and a newly refurbished 5th Year MEng study room.
- 1.3 The previous internal Review (DPTLA) of the department was undertaken in March 2004. It concluded that the provision was of a high quality overall and identified a number of areas for development to further strengthen its provision.
- 1.4 The Self Evaluation Report (SER) was compiled by Professor Simon Wheeler (Head of Department) and Dr Bill Stewart (Director of Teaching and Senior Adviser). A draft of the report was circulated electronically to staff and to student representatives on the staff/student committee. This resulted in a SER which was an honest, reflective and critical analysis of the Department's strengths and weaknesses and areas of improvement.
- 1.5 The Review Panel met with the Acting Dean of Engineering Dr Chris Pearce, the Head of the Department Professor Simon Wheeler and the Director of Teaching Dr Bill Stewart. The Panel also met with 12 members of staff, 3

probationary members of staff, 14 Graduate Teaching Assistants (GTAs)/hourly paid staff, 5 Postgraduate students and 17 Undergraduate students representing all levels of the Department's provision.

2. Background Information

2.1 The Department has a total of 33.2 FTE members of staff, of which 14.5 are academic staff, comprising 3 Professors, 1 Reader, 3 Senior Lecturers/Senior University Teachers, and 8 Lecturers/University Teachers (including one shared with Mechanical Engineering).

2.2 Student numbers for Session 2009-10 are as follows:

Students	Headcount	FTE
Level 1	95	88
Level 2	93	89
Level 3	75	73
Level 4	47	47
Level 5	21	21
Undergraduate Total	331	318
Postgraduate Taught	74	33
Postgraduate Research*	22	19
Total Students	427	370

*(for information only - research is not covered by the Review)

2.3 The Review Panel considered the following range of provision offered by the Department.

- MEng in Civil Engineering*
- MEng in Civil Engineering with Architecture*
- MEng in Civil Engineering (Fast Track)+
- BEng (Hons) in Civil Engineering*
- BEng (Hons) in Civil Engineering with Architecture*

The Department contributes to the following *joint* degree programmes offered with other departments or other institutions

- MSc in Global Water Sustainability (Jointly with Strathclyde University)+
- MSc in Geotechnics (Jointly with Strathclyde University)+
- MSc in Structural Engineering and Mechanics (Jointly with Edinburgh University)*
- MSc in Civil Engineering and Management (Jointly with Department of Management)

Programmes marked with an asterisk * are accredited by the professional body: the Joint Board of Moderators (JBM) of the Institution of Civil Engineers (ICE) and the Institution of Structural Engineers (IStructE). Programmes marked

with a plus (+) have recently been submitted for accreditation by the JBM and the department await a decision.

The Review Panel **commends** the broad range of programmes offered by the Department, which is one of the oldest Departments of Civil Engineering in the UK.

3. Overall aims of the Department's provision and how it supports the University Strategic Plan

- 3.1 The Review Panel were satisfied that the aims of the Department's provision as detailed in the SER were appropriate and supported the University's Strategic Plan. In particular, the Panel considered the Department's approach to promoting enquiry-led learning and design-based programmes that produce motivated and independent learners to be closely linked to the University's Learning and Teaching Strategy.
- 3.2 The SER stated that Design is a principal theme of the Undergraduate degree programmes, for both the MEng and BEng programmes. The design projects are aimed at encouraging the students to take a holistic approach to their learning and unlike many other institutions in the UK are taught from Year 1 of the degree. The design projects can be used to develop and assess a much broader range of problem-solving skills than conventional courses taught through lectures and assessed by examination.

4. An Evaluation of the Student Learning Experience

4.1 Aims

The Review Panel was provided with details of the programme aims as part of the SER and noted that the aims have been written to take account of the Engineering Council's UK-SPEC requirements and the Subject Benchmark Statement for Engineering, and are appropriate for accredited degree programmes forming the educational base for professional Chartered Engineers. They are also appropriate given the stated aims in the latest draft of the Faculty of Engineering Corporate Plan. The Review Panel noted that the programme aims were appended in the undergraduate Student Handbooks and **recommends** that the programme aims are included in the main text of the Undergraduate Student Handbooks.

4.2 Intended Learning Outcomes (ILOs)

- 4.2.1 The Review Panel noted that the degree programme ILOs are currently not in the Student Handbook or in other documentation provided to students. The Department has indicated in the SER that this will be remedied for the 2010-11 academic year. The Review Panel would welcome assurance that this will be done for 2010/11
- 4.2.2 The Review Panel **commends** the Department for its use of a wide variety of different assessment methods including laboratory reports, design submissions (individual and group), computer-based assessments, written class tests, oral presentations, poster presentations, major individual project reports and field

work exercises to enable students to demonstrate achievement of the programme ILOs.

4.3 *Assessment, Feedback and Achievement*

Assessment Methods

4.3.1 The SER referred to the different methods of assessment as discussed in 4.2.2 that the Department use. The Review Panel was interested to learn that these methods of assessment give the Department an advantage in ensuring that ILOs are achieved and that particular skills and abilities that cannot be assessed through normal methods of assessment are being assessed. The assessment methods also reflect how different students learn in different ways and the students benefit from all of the methods used. The Undergraduate students spoke in favour of having Year 1 Mathematics split into seven modules and being tested after each module, as that made learning the subject easier and more effective for them.

Feedback on Assessment

4.3.2 The Review Panel noted from the SER that much of the assessment process, with the exception of examinations, had strong formative aspects, particularly the more substantial coursework submissions such as design reports. The SER stated that the Department had a target that feedback on coursework submissions should be provided within 3 working weeks. The Panel met with Undergraduate students who felt that there are inconsistencies between certain members of staff and the feedback received. The students are aware that the department is under-staffed and are very understanding when they receive feedback late but they are concerned that there is an issue when no feedback is received at all, which was reported in some cases. This issue was raised with staff, who advised the Panel that there were many opportunities for the students to get oral feedback such as in year 2 within the 3 week intensive project when a member of staff is there from 9am - 5pm of the full 3 weeks. Staff noted that the increased number of students that has occurred in Civil Engineering over the last 5 years has brought an increased amount of coursework for marking which is very time consuming. Staff were asked how the issue of timely feedback might be addressed and they said that more staff were required in certain subject areas within the Department. It was noted that although an academic would join the Department in June 2010, the Department would be losing staff in September 2010. The panel noted the supportive comments of students and **recommends** the Department reviews the turnaround times for feedback and assessment for all staff and courses.

4.3.3 The Review Panel felt that it was commendable that all students in Design Project courses, Year 5 Case Studies and Architecture courses, receive feedback frequently throughout an exercise, allowing them to take this into account and improve future work. The Review Panel **recommends** that the Department do more to put case studies across the new School structure as this could help reduce the input from Civil Engineering staff input into the case studies.

4.3.4 The Review Panel noted from the SER that some members of staff within the Department used a proforma sheet which highlighted specific comments and **commended** the use of this. The Review Panel **recommends** the use of

proforma sheets for formative assessment within the Department by all members of staff.

- 4.3.5 The Review Panel noted from the SER that some staff use Assignment Guidance Sheets for coursework exercises which detail the breakdown of marks for that particular piece of coursework. The Review Panel **recommends** that the Department adopt the use of Assignment Guidance Sheets as standard practice for all major coursework submissions.
- 4.3.6 The SER states that course submission deadlines are usually not provided in the course documentation, but they are clearly stated on the handouts given for each piece of coursework. When the Review Panel spoke to the undergraduate students they felt that the deadlines for submission of course work clustered (often on the same day for all their subjects) and suggested that perhaps they could be staggered. The Review Panel **recommends** that coursework submission deadlines be included in course documentation.
- 4.3.7 The Review Panel noted from the SER that plagiarism guidance is given in Year 1 and then 4 and 5. The Review Panel **recommends** that guidance on plagiarism be given to students at the start of each year and in particular to year 2 and 3 direct entry students. Information on plagiarism should be included in all course documentation and given at the group advising sessions.
- 4.3.8 The Review Panel noted from the SER that the Department and the External Examiner raised concerns regarding the University policy to reduce all 10 credit course examinations from 2 hours to 90 minutes. The External Examiner took the view that in a 90 minute period there is no margin for a student to read and understand a paper, decide on tactics and then adequately to attempt solutions. The Panel raised the issue with students who confirmed that concerns had been raised through the Staff Student Liaison Committee (SSLC). The panel agreed to feed these comments back to the Academic Structures implementation group who will review the structure of the academic year.
- 4.3.9 The students felt that one particular 10 credit course should be allocated more than 10 credits. The students also said that the examination paper for this course had changed from question based to one based on calculations. The panel asks the department to re-assure itself the credit rating for the course remains appropriate.
- 4.3.10 The Review Panel was interested to explore with staff members whether they had considered looking at technology as an additional means of giving feedback to students. The staff at the meeting said that they were unsure as to how technology could help in this area. The Review Panel **recommends** the Department contact the Learning and Teaching Centre for advice on the use of technology to support both more timely feedback and sustainable long term levels of staff involvement in feedback processes.

4.4 Curriculum Design, Development and Content

Work Placements

- 4.4.1 The SER reported that currently there was a small element of compulsory work experience in the MEng programme which was assessed. It was noted that the Industrial Project (10 credits) was undertaken by MEng students in the summer vacation between Year 4 and Year 5. The work experience lasts around 12 weeks and students have to produce a report on their experiences which is

assessed and graded. All MEng and BEng students are encouraged to undertake relevant work experience during their other summer vacations but, apart from the Industrial Project, there are no formal requirements to undertake such work. The Review Panel asked the students about placements and they reported that they were a good idea as they helped with the Year 5 projects. The students said that the increased number of students on the MEng programmes was making it harder for all of them to get placements. The Undergraduate students were asked if they used the University Careers Service and they confirmed that they had not but indicated they would in the future as this would be of benefit to them. The students also said that they knew about Club 21 and of the assistance they could receive regarding Curriculum Vitae workshops. Staff at the review meeting informed the Panel that until 2-3 years ago, employment prospects were not a significant issue for graduates and, therefore, the Department's assistance to find positions was not required. However, current economic conditions had changed this and the Department was intending to engage more with the University Careers services to assist students in finding placements and positions post Graduation. The Review Panel **recommends** that the Department liaise with the Careers Service to identify and provide support for work-related learning opportunities through placements and positions post-graduation.

Teaching

4.4.2 The Head of Department in his meeting with the Review Panel stated that the Industrial Advisory Group (IAG) which was moribund in 2006 had been re-established in 2009. It was noted that despite no IAG meetings between 2006 and 2009, links between the Department and individual companies had continued. As a result a significant development for the Department had been a recent agreement with the Halcrow Group Ltd that the company would part-fund a Halcrow Chair of Transportation for a period of 5 years, to assist in the development of a new Transportation Group within the Department. This group would provide increased undergraduate teaching in Transportation, a new MSc programme in Transportation Engineering and Planning and Research in Transportation. There was also industry input to teaching, particularly the provision of industrial tutors from Buro Happold to assist academic staff in structural design aspects of some of the Design Project courses and major input from former staff of Mott MacDonald and URS to two of the Year 5 Case Studies. The Review Panel **commends** the Department's use of industrial tutors on its courses and the assistance of industrial staff on projects.

Study Abroad

4.4.3 The SER noted that in recent years there has been an increase in students coming from abroad (usually from other EU countries under the ERASMUS scheme) to study for one or two semesters in the Department. The Review Panel found it disappointing that so few students from the Department took up the opportunity to study abroad. When the Panel asked the undergraduate students their views on ERASMUS they said that they had not been given much information by the Department regarding ERASMUS options and that they were not encouraged to study abroad. The students were also concerned that the course they did abroad would not count towards their degree outcomes and that they would lose accreditation. At the review meeting with Key staff this issue was raised and staff were asked how students were made aware of the opportunity to study abroad and if they were encouraged to do so. Staff

confirmed that students were forwarded information on ERASMUS and study abroad opportunities that originated from central administration; that the level 6 notice boards were used to bring this information to the student's attention; and that students in second year were given a talk on studying abroad. The Department was asked what support was provided by the Department for international ERASMUS students and the Panel noted that ERASMUS students received an induction pack from the Faculty but there is no additional support for ERASMUS students from the Department. The Review Panel **recommends** the Departments engages with students to encourage them to undertake study abroad options.

4.5 Student Recruitment

Undergraduate Students

4.5.1 The Review Panel noted in the SER that the entry requirements for both the MEng and BEng were the same and had been since 1999. The SER stated that from September 2010 this would change with the MEng entry requirements becoming significantly higher than the BEng. These new arrangements reflected a Faculty decision to standardise entry requirements for Engineering degrees. The Review Panel asked the Head of Department (HoD) why this was happening now and they were informed that previously students could enter as BEng or MEng students and at the end of Year 3 decide to undertake the BEng and leave after Year 4 or undertake a 4th and 5th year and have a MEng degree which is the main route to becoming a fully chartered Civil Engineer. The students will be jointly taught from 1st to 3rd year and then separately after that. As the vast majority of other Universities have separate entry requirements for these degrees, the HoD believed it was timely for Glasgow to do likewise.

4.5.2 The Review Panel noted from the SER that student intake on the Undergraduate programmes had more than doubled in the last 10 years but that the numbers of international students on the Undergraduate programmes were low. Small numbers of international students entered directly into 2nd year from the Glasgow International College (GIC). The Department had concerns regarding the ability of the GIC students to succeed on the degree programme as of the 3 students who entered the degree course in 2008/09 into second year only 1 had progressed into 3rd year. The Review Panel **recommends** that the Department works with the GIC staff to ensure that the standard of student achievement and the curriculum match are appropriate for acceptance onto the degree programmes.

Postgraduate Students

4.5.3 Total student intake numbers on the Postgraduate Taught (PGT) programmes is increasing as a consequence of increased numbers on the Structural Engineering and Mechanics programme and the addition of the Civil Engineering with Management programme (from 44 in 2007 to 58 in 2009). The PGT programmes attract a much higher percentage of international students than the Undergraduate programmes. As well as having the joint programme with Management the Department also has two joint programmes with the University of Strathclyde and one with the University of Edinburgh. The PGT students were asked by the Review Panel if they felt that the joint degree programmes worked well. They said that they did, except that timetabling can be an issue with a class starting at Glasgow at the same time as a class ending at Strathclyde. The Panel asked what do the students do in that situation and

they said that normally the lecturer lets them leave early. There is also a problem with re-scheduling of courses. The Review Panel **recommends** the PGT students receive more support regarding issues in relation to the management and operation of collaborative degrees.

4.5.4 The PGT students informed the Review Panel that there is no forum for them to raise any issues they may have. The Undergraduate students have the SSLC meetings once a semester but they did indicate that they would prefer them to take place more often. The HoD said that there was no SSLC for PGT due to PGT numbers being smaller in prior years but that the PGT students did receive information they required in an informal basis. The Review Panel **recommends** the creation of a SSLC for PGT students at School level in the new School structure.

4.5.5 The PGT students who joined the MSc in Civil Engineering and Management programme in January reported to the Review Panel that there was no induction or orientation course run for them. The Review Panel **recommends** the creation of an induction course in January for PGT students who join courses then rather than September. This could be undertaken at School level.

4.6 Student Progression, Retention and Support

Progression

4.6.1 The SER noted that progression rates from year 1 to 2 remain lower than the University's Key Performance Indicator (KPI) target figure. Maths and Mechanics in year 1 are the courses which cause the most problems for progression. Both of these courses have a substantial tutorial commitment and, as indicated in 4.3.1 the Department has introduced modules on the Maths course to assist students and help with the pass rates. To further support students with weak mathematical skills the Department has also introduced homework submissions for students who are achieving grade C or less as an overall grade. The University has a support system for students called NUMBER, students who met with the panel said that they did know of this service and that they did use it.

Staff Student Ratio

4.6.2 The Review Panel raised the issue of the Staff Student Ratio (SSR) which at 25.5:1 is high. The high SSR was also raised in the previous DPTLA review with the HoD at the time, who said that although student numbers had increased in the years up to 2004 staff numbers had decreased. Following the last DPTLA there were delays in recruiting staff until 2006 and as additional staff have been recruited since then, student numbers have continued to increase even faster. As a consequence, the SSR has increased significantly since the last DPTLA. Although the Department was keen to increase student numbers from the 2004 level, they have been encouraged by Faculty to take on even more than they are comfortable with. As noted in 4.3.2 although a new staff member is joining the department in June, with other staff leaving, the SSR issue will not be alleviated. The Review Panel recommends the new School structure addresses the issue of staffing within the Department with a view to improving the staff: student ratio on Civil Engineering programmes.

Tutors

4.6.3 The Review Panel noted from the SER that the Department operates a tutor system as part of Communication Studies 1 where up to 10 students are assigned to a tutor and group meetings take place once a fortnight. The

personal tutor system is a useful way of obtaining students' views in an informal way and of learning of any problems the students may be experiencing. There is no tutor system for PGT students and the Review Panel suggests that this be introduced.

4.7 The Quality of Learning Opportunities

Student Workload

4.7.1 The SER reported that the student contact hours for courses are based on long-standing norms which have operated within the Department and the Faculty for many years. The report also states that the students perceive their overall workload to be high. The staff informed the Review Panel that 3rd year students have the greatest workload due to design projects and course work. The students have raised the issue in the past regarding accumulation of deadlines and the Department has tried to establish a timetable of submission dates to alleviate this issue. (section 4.3.6 above)

Moodle

4.7.2 The Review Panel noted from the SER that Moodle is not universally used by the Department. The Undergraduate students said that Moodle is being more widely used now especially by newer members of staff and that the Department was trying to implement it more. PGT students informed the meeting that Moodle was not used for their courses. The Panel encourages the Department to consider the use of Moodle by all staff as this could assist with the assessment and feedback issues that the Department is encountering.

Study Area

4.7.3 The SER reported that Year 5 MEng students have their own dedicated study room to use but the PGT students do not have such an area. The Review Panel asked the PGT students what they felt about the facilities within the Department for them to use and they said that it would be useful to have an area that they could go to complete group work and that space outside the computer laboratories would be good for them. There is a PGT suite in the James Watt Building but not all the PGT students were aware of this. There are facilities for the students to take courses at Strathclyde but as the group work tends to be based at Glasgow the facilities at Strathclyde are not used for this purpose. The Review Panel **recommends** the Department reviews the provision of workspace for PGT students and ensures that all PGT students are made aware of the study space currently available to them.

Cultural Diversity

4.7.4 The SER states that 50% of the academic staff of the Department are from other countries rather than the UK and that this diversity in the background and experience of academic staff also helps to ensure that a broad international perspective is maintained within the degree programme. A very substantial proportion of students on the MSc programme are non-UK, so it is important to maintain an international perspective within the curriculum and teaching styles of these programmes. Some students told the Review Panel that they had problems understanding one of the lecturers and had therefore stopped going to this class. The Review Panel **recommends** the Department reflects on the mentoring support provided to new lecturers and ensures that all staff are able to communicate efficiently in English.

4.8 Resources for Learning and Teaching

School Structure

4.8.1 The Review Panel asked the HoD what he felt the teaching & learning and student experience would be in the new School structure. The HoD said that the Faculty Teaching and Learning Committee had been looking at this and recognised that there could be benefits in co-ordinating teaching across the School. There would be a single administration support unit and “subject” units would exist within the School. The Department feels that it is important to maintain the identity of Civil Engineering within the School but it is more likely that there will be a move to a single School with common teaching in the School and that the School would have groups of programmes. The HoD said that the new School structure would have a number of priorities such as addressing the issue of assessment and feedback and increasing staff numbers.

Staff Workload

4.8.2 The Review Panel had noted from its meetings with both students and staff that the staff in Civil Engineering are under pressure with very significant teaching commitments as well as their research commitments. The HoD was asked if there was a work load model used within the Department. The HoD reported that in previous years there had been a work load model used within the Department but that it did not work very well and therefore the distribution of the Department’s work load has become more informal. The Department has three University Teachers/Senior University Teachers who are not involved with research and therefore their teaching and administration loads are higher than those who undertake research. The Department also ensures that less experienced members of staff have a lower teaching and administration work load than well established staff. The panel endorsed this approach. There are several experienced members of staff within the Department who have excessively heavy combined work loads. The HoD confirmed that it was the department’s policy to support less experienced members of staff by reducing their teaching hours. The Panel endorsed this approach. The review Panel suggests that the Department implements the use of a work load model (agreed within the new School) to ensure that all academic staff are aware of the teaching, administration and research commitments expected of them. The HoD indicated that new staff positions had been agreed and this would reduce the SSR which would improve the situation (see below).

Succession Management

4.8.3 The Department has acknowledged in the SER that staffing is an issue and with a departure and a retiral within the Department due in the next few months the Department has a number of initiatives in the pipeline. As stated in **4.4.2** the Department will in the near future sign a contract with Halcrow to receive funding towards a Professor of Transportation post for five years. The Department is also looking for approval to advertise for two further lecturer posts in transportation. The holder of the Department’s Regius Chair in Civil Engineering is due to retire in 2010 and the Department is looking to replace this prestigious position. A temporary fixed term lecturer in Water Engineering will be appointed for a year and a half (while an existing staff member is on an EPSRC Advanced Research Fellowship).

Probationary Staff

4.8.4 Three members of the Review Panel met with three probationary members of staff, who reported that they like other members of staff have felt under

pressure and have a large work load. Two of the probationers felt that their teaching commitments are impacting on their opportunities to undertake research. Another probationer finds that in order to undertake research work they have to work excessive hours. All probationary staff were appreciative of the 'reduced' teaching commitments and spoke very positively of the Department's mentoring system. The probationary staff know that if they have any problems or need advice then the mentor is there for them. The probationary staff were asked if they were getting support from the New Lecturer and Teaching programme (NLTP). They said that it was useful to be around peers and get ideas from other people, sharing experiences with peers and getting the peers learning experience and feedback was good.

Graduate Teaching Assistants

- 4.8.5 The Review Panel met with 14 Graduate Teaching Assistants (GTAs) who are either postgraduate research students or industrial tutors from external firms. The roles of the postgraduate research student GTAs involved undertaking tutorials and laboratory demonstrations although one pgr GTA did undertake teaching as he was more qualified to do so. All but one of the GTAs had attended the 3 hour statutory course with the Learning and Teaching Centre. The GTAs were asked what support and training did they receive from the Department. They said that they did receive training but that there was no standard format for training. The Panel was told that they undertake supervised tutorials before they are allowed to teach the tutorials on their own. The Review Panel **recommends** that the new School structure introduces a standardised system for the training and development of the GTAs, ensuring that this system fulfils Senate requirements concerning the training of GTAs.
- 4.8.6 The GTAs were asked if they receive feedback from the students which they do not. The students receive the feedback form from the GTAs but the GTAs do not see any of the completed forms, normally feedback is verbal from the course organiser but can be a few months after the feedback sheets are completed. Any feedback received is used to help the next year's students as it is not received in time to help the ones they are teaching at present. The GTAs were asked what feedback they gave to the students and they replied that it depended on what they were marking and what time they had to give feedback. They did not receive training on optimal approaches to providing feedback. The Review Panel **recommends** that the GTAs have access to student feedback that attains to them.

Learning and Teaching Committee

- 4.8.7 Although the Department has a Learning and Teaching Committee there is no student representative on the committee and not all of the GTAs were aware of the committee. The Review Panel **recommends** that there is student representation on the Learning and Teaching Committee, as recommended in university guidance (reference: Code of Practice on Student Representation).

Computer Laboratories

- 4.8.8 The SER also states that use of computer packages for example Strand7 is now embedded in the structural analysis courses in years 2-5. This has resulted in a significant increase in appreciation of the link between theory and design on the part of students, and has improved the quality of analysis in design projects. In Engineering Mechanics 1, a computer-aided learning package called Deflect is used to improve students' understanding of the behaviour of structures. It uses a computer-aided assessment program which gives immediate feedback and which has recently been mounted on Moodle. The Undergraduate students

who met with the Review Panel highlighted an issue in relation to the number of computers that they could access that have the special software (CAD, Strand7 and Oasys) that they are required to use for projects and coursework. With the building closing at 5:00pm and only a small number of students allowed access to the building after hours, the students reported that this is a serious issue. The students also advised the panel that with increasing student numbers there are not enough computers to accommodate all of the students. The students also claimed that this problem had increased due to the Department sharing its computer laboratories with the Electronic and Electrical Engineering students (whereas in fact this sharing was specifically introduced to increase the availability of computers to Civil Engineering students, by making available to them a large Electronic and Electrical Engineering computer laboratory which was previously less heavily used than the Civil Engineering computer labs). The Departmental staff are aware of the software issue but due to the cost of the software licenses they are unable to accommodate all computers with this license. These issues and concerns were raised by the Department in the SER which stated that the cost of provision of relevant software packages and the maintenance of software licences is a perennial issue. The Review Panel suggests that the department explains the situation to the students, making clear the expectations of their use of limited computer and software resources. The Review Panel recognises that the closure of the Rankine Building at 5 p.m. has reduced student access in recent years. The new Head of School should consider further options for extending access for students to specialist computer and software resources.

Technical Staff

4.8.9 The SER highlighted a shortage of Technical support staff. Staff told the Review Panel the shortage of technical support is at the detriment of research as technical staff were supporting teaching with laboratory classes for the courses. The staff hope that with the new School structure their might be benefits by having the new School think more strategically about how it uses the skills and knowledge of the technical staff. The Panel encourages the department to work with the other Engineering departments to address this issue collectively in the new School structure.

5. Maintaining the Standards of Awards

External Examiners' Reports

5.1 The External Examiner's reports for Session 2008-09 for the MEng/BEng programmes in Civil Engineering with Architecture (from the External Examiner with specific responsibility for the Architecture components), indicated that he was satisfied with the Department's teaching and the general performance of the candidates. The examiner felt that the strength of the programme lies in the opportunity it gives those candidates intent on focusing on the design and construction of buildings to explore three-dimensional thinking and spatial design. It offers invaluable opportunities to experience first hand the design process undertaken by architects in balancing the many practical and aesthetic factors presented by a design brief. It presents an opportunity to experience the full potential of what an engineer can bring to the design team and where best the engineer fits into this process. The External Examiner said that the current CAD programmes appear to need reviewing in order to be of more assistance to candidates and to achieve a level of compatibility with those being used by architects. The Examiner also stated that one of the weaknesses in candidates is the poor level of understanding of building structures and that

more consideration should be given to exposing candidates to innovative examples of building structures. The Examiner also noted in this report, as he had in previous reports the value of incorporating work experience in an Architect's studio into the already existing work experience element of the Civil Engineering with Architecture programme. The examiner also suggests that focus should be increased on identifying those candidates unsuited to the Architecture components of the programme in First Year and discouraging them from continuing. He also suggested displaying the work of good candidates within the Faculty itself and also as part of the degree show at Glasgow School of Art.

- 5.1.2 The External Examiner's report for Session 2008-09 for the MSc in Structural Engineering and Mechanics, which was included in the supporting documentation, indicated that he was satisfied with the Department's teaching and general performance of the candidates. The external examiner said that an area of strength was the joint delivery of the programme by the Universities of Glasgow and Edinburgh with respective strengths in Structural Mechanics and Structural Engineering as this allows them to offer a wide range of dissertation topics to fit students' interests and abilities. He was also impressed with the in-depth knowledge required for the Glasgow papers as well, as demonstrated by most dissertation students on their topic.
- 5.1.3 The Review Panel believe that the Department offers a good range of courses at Bachelors and integrated Masters and Masters levels, most of which are accredited by the relevant professional body, they felt that the practical element of the Undergraduate programmes, being based around real projects, is excellent and effectively engages with students and show real life relevance.
- 5.1.4 The SER states that the Department prepares Annual Course Monitoring reports which it passes onto the Faculty's Quality Assurance and Enhancement Officer for further processing. These reports are not in the format that the University requires for its Annual Monitoring Reports (AMRS). When the Review Panel asked the HoD why this was the case he said that in previous years a standard Department report was used as it included aspects of information that the Department felt were useful and that were not on the University form. The Department also thought that they were not obliged to use the standard University format AMRs. The HoD informed the Review Panel that from this year on the Department would use the format as required by the University
- 5.1.5 The SER reported that the Department does not produce AMRs for its Postgraduate programmes but this will be rectified in the current Session. The Review Panel **recommends** that the Department produce AMR's for all of its postgraduate programmes.

6. Assuring and Enhancing the Quality of the Students' Learning Experience

Student Feedback

- 6.1 The National Student Survey (NSS) for 2009 indicated that the overall satisfaction rating for the Department had improved by 14% to 76%. After the 2008 NSS report the Department had convened focus groups for each year of the degree programme. Students who took part in those groups were generally positive about the content and organisation of the degree programmes but their opinions changed when completing the NSS. The Department in 2008 made certain recommendations:

- Assignment Guidance Sheets should be issued with all major pieces of coursework.
- Feedback pro forma sheets to be used were appropriate, for any piece of coursework.
- All staff are encouraged to use Moodle as a means of providing feedback to the class as a whole, as well as providing copies of notes, tutorials, worked solutions and other information on their course(s).

The Teaching Committee in August 2009 stated that these recommendations should now be considered to be instructions rather than suggestions and be implemented as soon as possible. The Review Panel **recommends** that these initiatives be implemented by the Department to address the NSS result issues.

Staff student Liaison Committee (SSLC)

6.2 The review Panel was pleased to note from the supporting documentation and its discussions with undergraduate students that lines of communication between staff and students were functioning in an open and efficient manner with regular meetings of the SSLC. The students who met with the Review Panel felt that the SSLC meetings worked as the students felt comfortable taking any issues they had to these meetings and also felt that feedback on other student experiences was good to have. It was suggested that the SSLCs should take place more than once a semester or later on in the semester as having them early in the semester when no issues had arisen was not helpful. The Review Panel **recommends** that the Department introduce SSLCs for their PGT students to participate in.

7. Summary of Perceived Strengths and Areas for Improvement in Learning and Teaching

Key Strengths

- Positive feedback from students who are supportive of the Department staff and find the courses challenging and stimulating.
- The Departments efforts in supporting students with the Mathematics courses and with the retention issues this causes.
- The teaching of Design from 1st to 5th year.
- The level 3 design projects (Interact).
- Assignment guidance sheets used by the Department.
- The use of a tutoring system for 1st years students.
- The range of assessment methods used by the Department to the benefit of the students.
- Engaging Industry personnel to assist in tutorials
- The curriculum design and development of the Departments courses.
- Probationary staff positive and complementary regarding mentoring system.
- Range of PGT degrees offered by the Department.

Areas to be improved or enhanced

- The Department should implement the use of the University's standard AMRs.
- The Department needs to look at its teaching committee function and include a rolling programme of enhancement to Learning and Teaching. .
- The Learning and Teaching Committee should include representatives from both students and GTAs.
- Enhanced use of technology for the assessment and feedback process and exploration of mechanisms to improve feedback to students that are not resource intensive.
- Ensure the marking criteria are clear and fair to the students.
- Implement the University's guidelines and policies and procedures.
- Implement a work load model.

- GTA support and development and training, and engagement in learning and teaching development.
- Management of staff performance where consistent poor student feedback on courses continues.
- A more robust Performance and Development review system.
- Better utilisation of Moodle within the Department.

Conclusions and recommendations

Conclusions

The members of the Review Panel enjoyed their visit to the Department of Civil Engineering, where they were made most welcome. The conduct of the meetings was excellent. The Panel was impressed by the dedication and progressive attitude of staff and graduate teaching assistants within the Department and with its commitment to teaching and enhancing the student experience. The Undergraduate students who met with the Review Group were very positive when they spoke about the Department and its staff and of their learning experience within the Department. A number of recommendations have been made to support staff in enhancing the quality of the student experience and the management of teaching and learning in the Department.

Recommendations*

The recommendations interspersed in the preceding report are as summarised below. The recommendations have been cross-referenced to the paragraphs in the text of the report to which they refer. They are grouped by the areas for enhancement noted above and ranked in order of priority.

In light of the restructuring of the University, recommendations have been redirected to the appropriate designates. Please note that the text of the recommendations has not been updated.

An Evaluation of the Student Learning Experience

Recommendation 1

The Review Panel recommend that programme aims are included in the main text of the Undergraduate Student Handbooks. [Paragraph 4.1]

For the attention of: **Head of Subject**

Feedback on Assessment

Recommendation 2

The Review Panel recommends the Department reviews the turnaround times for feedback on assessment for all staff and courses. [Paragraph 4.3.2]

For the attention of: **Head of Subject**
and **Head of School of Engineering**

Recommendation 3

The Review Panel recommends that the Department do more to put case studies across the new School structure as this could help reduce the input from Civil Engineering staff input into the case studies. [Paragraph 4.3.3]

For the attention of: **Head of Subject**
and **Head of School of Engineering**

Recommendation 4

The Review Panel recommend the use of proforma sheets for formative assessment within the Department by all members of staff. [Paragraph 4.3.4]

For the attention of: **Head of Subject**
and **Head of School of Engineering**

Recommendation 5

The Review Panel recommend the Department adopt the use of Assessment Guidance Sheets as standard practice for all major coursework submissions. [Paragraph 4.3.5]

For the attention of: **Head of Subject**
and **Head of School of Engineering**

Recommendation 6

The Review Panel recommends the inclusion of coursework submission deadlines be included in the course documentation. [Paragraph 4.3.6]

For the attention of: **Head of Subject**

Recommendation 7

The Review Panel recommends that guidance on plagiarism be given to students at the start of each year and in particular to year 2 and 3 direct entry students. Information on plagiarism should be included in all course documentation and given at the group advising sessions. [Paragraph 4.3.7]

For the attention of: **Head of Subject**
and **Head of School of Engineering**

Recommendation 8

The Review Panel **recommends** the Department contact the Learning and Teaching Centre for advice on the use of technology to support both more timely feedback and sustainable long term levels of staff involvement in feedback processes. [Paragraph 4.3.10]

For the attention of: **Head of Subject**
and **Head of School of Engineering**

Curriculum Design, Development and Content

Recommendation 9

The Review Panel **recommends** that the Department liaise with the Careers Service to identify and provide support for work-related learning opportunities through placements and positions post-graduation. [Paragraph 4.4.1]

For the attention of: **Head of Subject**
and **Head of School of Engineering**

Recommendation 10

The Review Panel recommends the Departments engages with students to encourage them to undertake study abroad options. [Paragraph 4.4.3]

For the attention of: **Head of Subject**

Student Recruitment

Recommendation 11

The Review Panel recommends the Departments works with GIC staff to ensure that the standard of student achievement and curriculum match are appropriate for acceptance into the degree programmes. [Paragraph 4.5.2]

For the attention of: **Head of School of Engineering**

Recommendation 12

The Review Panel recommends the PGT students receive more support regarding issues in relation to the management and operation of collaborative degrees. [Paragraph 4.5.3]

For the attention of: **Head of Subject**
and **Head of School of Engineering**

Recommendation 13

The Review Panel recommends the creation of a SSLC for PGT students at School level in the new School structure. [Paragraph 4.5.4]

For the attention of: **Head of School of Engineering**

Recommendation 14

The Review Panel recommends the creation of an induction course in January for PGT students who join courses then rather than September. This could be undertaken at School level. [Paragraph 4.5.5]

For the attention of: **Head of School of Engineering**
and **Dean (Learning and Teaching), College of Science and Engineering**

Student Progression, Retention and Support

Recommendation 15

The Review Panel recommends the new School structure addresses the issue of staffing within the Department with a view to improving the staff: student ratio on Civil Engineering programmes. [Paragraph 4.6.2]

For the attention of: **Head of School of Engineering**
and **Head of College of Science and Engineering**

The Quality of learning Opportunities

Recommendation 16

The Review Panel recommends the Department reviews the provision of workspace for PGT students and ensures that all PGT students are made aware of the study space currently available to them. [Paragraph 4.7.3]

For the attention of: **Head of Subject**

Recommendation 17

The Review Panel recommends the Department reflects on the mentoring support provided to new lecturers and ensures that all staff are able to communicate efficiently in English. [Paragraph 4.7.4]

For the attention of: **Head of School of Engineering**

Resources for Learning and Teaching

Recommendation 18

The Review Panel recommends that the new School structure introduces a standardised system for the training and development of the GTAs, ensuring that this system fulfils Senate requirements concerning the training of GTAs. [Paragraph 4.8.5]

For the attention of: **Head of School of Engineering**

Recommendation 19

The Review Panel recommends that the Department gives GTAs access to student feedback that attains to them. [Paragraph 4.8.6]

For the attention of: **Head of School of Engineering**

Recommendation 20

The Review Panel recommends the inclusion of a student representative on the Learning and Teaching committee as recommended in university guidance (reference: Code of Practice on Student Representation). [Paragraph 4.8.7]

For the attention of: **Head of Subject**
and **Head of School of Engineering**

Maintaining Standards of Awards

Recommendation 21

The Review Panel recommends that the Department produce AMRs for all its postgraduate programmes. [Paragraph 5.1.5]

For the attention of: **Head of Subject**
and **Head of School of Engineering**