

University College Dublin

School of Civil Engineering

Quality Improvement Plan

School of Civil Engineering

9 June 2016

1. Introduction

The original review of the School of Civil Engineering took place on the 5th-8th October 2015. In response to the Quality Review report, the Quality Improvement Plan (QIP) was developed by the Quality Improvement Committee (QIC). The membership of this committee was as follows:

- Chair: Dr. Aoife Ahern, Interim Head of School (Chair)
- Interim School Head of Teaching and Learning: Dr. PJ Purcell, Senior Lecturer
- School Head of Research, Innovation and Impact: Prof. Eugene O'Brien, Professor
- School Head of Graduate Studies: Dr. John O'Sullivan, Lecturer
- School Administrator: Mr. Andrew Griffiths, Administrative Officer
- Technical Staff Representative: Mr. John Ryan, Technical Officer

The QIP was prepared in May 2016. The QIC each reviewed particular sections of the Review Group's report and prepared sections of the QIP. The QIC met on the 23rd May to review and discuss the QIP. The QIP was further refined and circulated to all staff on the 27th May 2016. It was agreed by all staff on 2nd June 2016 and was submitted to the UCD Quality Office on the 9th June.

Categories

1. Recommendations concerning academic, organisational and other matters which are entirely under the control of the unit
2. Recommendations concerning shortcomings in services, procedures and facilities which are outside the control of the unit
3. Recommendations concerning inadequate staffing, and/or facilities which require recurrent or capital funding

Timescale

- A. Recommendation already implemented
- B. Recommendations to be implemented within one year
- C. Recommendations to be implemented within five years
- D. Recommendations which will not be implemented

Report	RG Recommendation	Category (see list above)	Action Taken/Action Planned/Reason for Not Implementing	Timescale (see list above)
ORGANISATION AND MANAGEMENT				
2.8	The Review Group recommends the formation of a Research Committee that would deal with strategic research issues. This Committee could identify key potential Industry partners with which the School could develop stronger links. Furthermore, this Committee could develop a research	1	A Research Committee has been established. Its membership comprises the Head of Research, the Head of each of the research groups in the School and the College Research Manager. This group will now develop the research strategy for the School by December 2016. The Committee will meet at least once per semester.	A

	strategy for the School and could oversee management of the laboratories.		<p>It is proposed that a Laboratory Management Group will be set up in September 2016 to manage day-to-day the laboratories: this will include one academic staff member, a technician, a postgraduate/postdoctoral researcher using the laboratory for research and a postgraduate/postdoctoral researcher engaged in using the laboratory for teaching and demonstration. This is not a strategic committee and will not develop the laboratory strategy and future plans: instead it will oversee how the laboratories are operated daily.</p> <p>The School do not wish to place the Research Committee as managers of the laboratories as the Research, Teaching and Learning and Buildings and Safety Committees should be closely linked to the strategic development of the laboratories. Instead it is proposed that the Heads of the 3 strategic committees in the School will liaise to develop a medium-term and long-term plan for the laboratories that reflects their importance to research, teaching and the environment of the School.</p>	
2.9	A clear alignment of Head of School and Head of Subject would be welcome here. The Review Group agrees that it would be in the School's interest that these roles be combined.	1	At present, an interim Head of School is in place. It is intended that when the next full-time Head of School is confirmed in September 2017 that the roles of Head of Subject and Head of School will be combined.	B
2.10	The School Executive Committee should support and advise the Head of School in managing finances and planning for the School. All School committees should feed into the School Executive. Final decisions should remain with the Head of School.	1	<p>The Head of each of the School committees (Research, Teaching and Learning, and Buildings and Safety) now all sit on the School Executive, along with a representative of the support staff.</p> <p>The Head of School consults with the School Executive on all expenditure in excess of 1000 euro from the School Cost Centre.</p>	A

			The School Executive meets monthly, one week in advance of staff meetings, to allow the Head of School to consult on planning and financial issues.	
2.11	The Review Group also felt that a Technical Working Group would facilitate management of the laboratories. This Working Group could involve technical staff, research staff (Postdocs) and academics.	1	Please see response to paragraph 2.8.	B
2.12	The Review Group recommends that a succession plan for a Head of School be formulated as a matter of urgency. The panel recommends that there should be adequate overlap with the current Head of School.	1	An interim Head of School is now in place and succession plans are being formulated for the permanent Head to be in place in September 2017. It is expected that the permanent Head will be chosen in September 2016 and will shadow the current Head for a year before assuming full duties.	B
2.13	The Review Group supports the development of a staff-student committee.	1	A staff-student forum was established in December 2015. This comprises year heads and class reps and the programme coordinators. The committee meets once per semester within 4 weeks of the start of the semester.	
2.14	The development of a workload allocation model that reflects all activity within the School and the University is recommended.	2	The University is currently consulting with Heads of School regarding the development of a work load model. The School will await the results of this consultation before implementing a model	B
STAFF AND FACILITIES				

3.8	The School should develop a clear strategy with regard to staffing, with recruitment based on the current UCD funding model.	3	The School Executive will put together a strategy for staffing in 2016/2017, outlining particular key academic and technical posts.	B
3.9	Given the importance of laboratories to both teaching and research activities, the School should, as a matter of urgency, develop a plan to renovate equipment and related facilities.	3	The School has commenced on this and plans are being put in place to renovate equipment and facilities. A plan for prioritising investment in each of the laboratories is currently being formulated. In year 1 (2016/17) the Hydraulics Laboratory is being prioritised and equipment is being purchased.	A
3.10	The School should implement a new management model for the laboratories, possibly involving PhD and post-doctoral students.	1	As per the response to para 2.8 and para 2.11, the Laboratory Management Group will meet with the Technical Working Group once per semester to facilitate the management of the laboratories.	B
3.11	The School should re-examine the decision to provide a single computer lab, particularly in view of the need for computing facilities for student projects.	3	The School is currently exploring the development of a BIM room, with support from industry, that will provide computing facilities to students. Discussions with the relevant units in UCD have commenced and it is hoped that this room can be put in place in 2017. In terms of providing a computer laboratory, the School is not in a position to provide this.	B
3.12	The safety environment of the 3D printing room should be improved with particular attention given to provision of a clearly indicated fire exit. When laboratory equipment is operational again in the main laboratory, the corresponding specific safety measures should be clearly indicated.	2	The School will request the Safety Office to review the current safety environment of the 3D printing room in summer 2016 and will request advice on how to improve safety.	B

3.13	If the School is convinced that a 'bump space' is essential for the creative and social exchange of views, an initiative should be taken at School level to develop and possibly fund such a space.	3	The School is currently exploring the development of a social space for undergraduate and postgraduate students in the school. This will be located at the front of the building. It is proposed that this space will be a shared space for all students. The development of this space is dependent on resources being available. In addition, the School will also develop a separate space for postdocs and staff.	B
TEACHING, LEARNING AND ASSESSMENT				
4.19	The School needs to give urgent attention to increased marketing of both undergraduate and postgraduate programmes.	1	<p>The School, in conjunction with the College marketing manager, undertook in semester 2, 2015/2016, a survey/focus group of the current Stage 2 engineering students (who had not chosen Civil Engineering) to ascertain their perceptions of Civil Engineering and the reasons why they choose other disciplines. The feedback from this exercise will be incorporated into future Civil Engineering presentations to Stage one students. A new first year module to introduce students to the discipline is planned for 2016/2017. The school has also actively participated in the College postgraduate information evening in semester 2. In addition, the School engages in the Engineers Ireland second-level transition year programme.</p> <p>The School will also continue to actively market its postgraduate programmes overseas in conjunction with the College Marketing Manager and the VP for Internationalisation.</p>	A

4.20	In order to increase the awareness of students enrolled in the omnibus first-year Engineering programme, it is considered critical that the School of Civil Engineering offer one or more elective courses in Semester 2 of the first-year omnibus programme.	1	A new module 'CVEN 10050 Introduction to Civil & Environmental Engineering' will be delivered as an in-programme elective in semester 2 of academic year 2016/2017. The module descriptor has been input and will shortly be available on the UCD website for potential students to view once timetabling issues have been resolved.	B
4.21	Greater attention should be given to student feedback in some instances, with action taken as appropriate to improve any areas of deficiency.	1	Currently, each module coordinator reviews student feedback. It is proposed that the Head of Teaching and Learning and the Head of School will review feedback on an annual basis. If warranted, the Head of School and the Head of Teaching and Learning will consult with module coordinators in order to put in place appropriate responses to particular feedback. This will commence in Summer 2016.	B
4.22	Scope exists to seek industry input with regard to course content (for example, increased exposure to CAD and BIM tools may be appropriate).	1	As per the response to Para 9.6, an Industry Advisory Committee is being put in place. This Committee will be consulted upon regarding course content on an annual basis.	B
4.23	Increased utilisation of laboratories for "hands-on" practice and design in the taught curriculum is recommended. This will require upgrade in laboratory facilities for which industry support should be sought.	3	<p>Significant efforts have been made in the current academic year and are planned to increase utilisation of laboratories. Some examples of new initiatives include:</p> <ul style="list-style-type: none"> (1) In the current academic year, students in the stage 2 module CVEN20080 Construction materials undertook the construction of creative pieces in concrete and timber in the School's materials laboratory; (2) The School has decided to develop a state-of-the-art BIM laboratory which would be available to engineering students across the College. To achieve this ambition, industry sponsorship is being sought at present. <p>Greater utilisation of the physical laboratories is restricted by health and safety considerations and the very significant decline in the number of technical officers in the School. However, the</p>	B

			School and Laboratory Management Group will continue to explore how more laboratories can be introduced to the students.	
4.24	Increased coordination and take-up of study abroad arrangements is required, particularly with regard to course credits and transfers.	1	An academic within the School is currently in place to coordinate this task. The School, however, feels that students can only be encouraged, not coerced, into engaging in study abroad arrangements and that language difficulties pose a significant barrier to many Irish students.	A
4.25	Attention should be given to development of on-line modules, especially at the Masters level.	3	The School has already developed two on-line modules at Masters level: CVEN40620 Water Resources Engineering 1 (online) and CVEN40630 Water Resources Engineering 2 (online). These modules are offered primarily to students in the School of Civil Engineering and in the School of Biology and Environmental Science. The feasibility of developing further on-line modules will be assessed, in terms of the resources required and the likely uptake, by the School Teaching & Learning committee. This will take place in academic year 2016/2017.	B
CURRICULUM DEVELOPMENT AND REVIEW				
5.7	Recommendations arising from the Engineers Ireland accreditation visit in January 2015 should be reviewed and diligently enacted within a reasonable timeframe.	1	There were no deficits or mandatory recommendations for improvement in the Civil Engineering programmes reviewed by Engineers Ireland. The only non-mandatory recommendation was: 'that the graduates had a good grounding in Finite Element Analysis, ROBOT and Eurocodes but would like more emphasis on BIM, REVIT and Sustainability'. This issue is addressed in 4.22 above.	A
5.8	The increase in the number of programmes in recent years should be reviewed, particularly in view of the decrease in student numbers. The School should also seek to identify		In the current academic year (2015/2016), the two ME programmes have been amalgamated into a single programme which has been operational since September 2015. Further rationalisation of programmes will be kept under continuous review.	A

	opportunities and synergies and develop a strategy to address this.			
5.9	It is important that the School engage strongly with Strategic initiative 2 of the UCD Strategy 2015-2020, which will involve a variety of curriculum review and enhancement activities.	1	The School is actively engaged in the Curriculum Review and Enhancement exercise under the direction of the interim Head of School who is the 'Champion' of this exercise for the College. The School is actively committed to the themes of SI2: Theme 1: Outcomes-led curriculum review and enhancement Theme 2: Defining and enabling the UCD degree Theme 3: Expanding learning outside the classroom Theme 4: Providing excellence in student academic advice Theme 5: Supporting the providers of the UCD education experience Theme 6: Measurement and demonstration of educational excellence	A
RESEARCH ACTIVITY				
6.12	The School should develop its own methodology in order to assess research output. One single database should be used (preferably Scopus or WOK) to compare all Faculty members' performance, not a subset of them. The research outputs appear very unbalanced between academic staff.	1	All staff are active researchers and are also engaged in teaching and management. However, inevitably staff have different, complementary strengths which is reflected in their relative engagement with different areas. The School will engage with staff to develop an agreed methodology, that is consistent with any University work load model, to measure research output by the end of 2016. Output will be reviewed on an annual basis (using this agreed methodology) by the Head of School and the Head of Research, so that appropriate and relevant support and mentoring can be put in place to help staff in their research activities. This first review will take place in summer 2017.	B
6.13	The Review Group recommends that the School analyse the decline in recent	3	The School Research Committee will assess if research output has declined and will attempt to identify causes.	B

	research outputs, including the drop to 151-200 range of QS2015 ranking. The effect of the recent increase in teaching load (due to the increasing number of programmes) and the loss of laboratory technicians offering support to experimental research should be better analysed.		In relation to the QS 2015 and QS 2016 rankings, the citations per paper and h index have actually increased. The main cause of the decline in ranking appears to be academic and employer reputation, which together account for 50% of the QS score. The School proposes, therefore, to analyse the QS rankings and to analyse which factors are the cause of the School's decline. This will be conducted by the School Executive by December 2016, and an action plan will be formulated in and in place by summer 2017 .	
6.14	The School should seek to improve integration of its research activity in the Large Institutional Research Centres, particularly in relation to Energy and Environment.	1	The School are already integrated with the Earth Institute and will continue to be so. It does not currently have academic staff who are active in Energy research.	A
6.15	The Review Group recommends that the School improves its use of available international networks in order to increase their participation in international and European projects. This is particularly the case for CWRR which should take advantage of the current EPA funding to foster their international activities.	1	The CWRR will seek to use the available network in order to increase participation in international and European projects.	B
6.16	The School should take better advantage of its industrial network to engage research, leading to co-authored papers.	1	As per the response to Para 9.6, an Industry Advisory Committee is being put in place. Opportunities for research and publishing will be explored with this group.	B
6.17	The Review Group recommends that the School develop a strategy for the research group in Creative Design and 3D Printing and decide if they want to	1	The Research Committee will in academic year 2016/17 formulate a strategy for the most appropriate way to use the 3D printing centre.	B

	take full benefit of their pioneering initiative at UCD.		The School is currently engaged with the UCD Cantillon Research Centre for Entrepreneurship, Design and Innovation and is exploring its role and opportunities within the Centre. There is work to be done to further scope out the Design area for the College and to see how this can work in an integrated way with the areas of entrepreneurship and innovation. The College will play a key role in the Design area and the School's 3D capabilities would form part of this.	
MANAGEMENT OF QUALITY AND ENHANCEMENT				
7.5	The School should integrate quality management and quality enhancement into all of its activities on an on-going basis.	1	The School has already outlined in the responses to paragraphs 4.21, 5.9 and 6.12 how quality management and enhancement will be integrated into teaching, curriculum review and research.	A
SUPPORT SERVICES				
8.1	The Review Group recommends that IT Services monitor the computer facilities available to students in the Newstead building. This has recently been reduced and needs monitoring to ensure that adequate access is given to Civil Engineering students.	2	The Head of the School Buildings and Safety Committee meets regularly with IT services and will request that the recommendation of the Review Group is enacted.	B
EXTERNAL RELATIONS				

9.6	The Review Group recommends the formation of an Industry Advisory Committee which would strengthen the links with industry. This Committee could also provide input into the School's Academic Programmes. Formation of such a Committee could also aid in developing and maintaining the national and international reputation of the School.	1	<p>An Industry Advisory Committee will be established to provide input to the School's Academic Programmes. The Committee will also serve as a vehicle through which existing links to industry are strengthened and new relationships fostered.</p> <p>The Committee will be established in summer 2016.</p> <p>The School Head of Teaching and Learning will be responsible for establishing the committee and for convening the first meeting.</p> <p>The Committee will meet twice a year, once in each of the two teaching semesters.</p>	B
9.7	The Review Group recommends that the School identify key international Universities with which to foster relationships in the future.	1	<p>The School will identify key international universities with which to foster relationships in the future.</p> <p>The School Research and the Teaching and Learning Committees will have together have responsibility for this task and the list will be drawn up in summer 2016. The 2 Committees will engage with all staff in order to identify universities. The list will be updated continually.</p>	B

3. Prioritised Resource Requirements

This section should only contain a list, prioritised by the Quality Improvement Committee, of recommendations outlined in the Review Group Report, which require additional resources. The planned action to address each recommendation with an estimate of the cost involved should also be included:

1. _____

2. _____

3. _____

Note: The Quality Improvement Plan should be used to inform Unit and College level academic, support service and resource planning activities.