

**Uilding Engineering Programmatic Review - Phase 2**

***School of Building & Civil Engineering***

**March 18<sup>th</sup> – March 19<sup>th</sup> 2014**

**Panel Members**

Dr. Stephen Cassidy  
Dean of Academic Quality Enhancement, Cork Institute of Technology

Mr. Jack Coughlan  
Architect & Managing Partner, Jack Coughlan Associates

Mr. Tom Dunne  
Head of School of Surveying & Construction Management , Dublin Institute of Technology

Ms. Eleanor Heylin-Kelly  
Department of the Built Environment, Institute of Technology, Carlow

Ms. Eva Juhl  
Office of the Registrar & VP for Academic Affairs, Cork Institute of Technology

Mr. Joseph Kindregan  
Head of Department of Civil & Structural Engineering, Dublin Institute of Technology

Ms. Elizabeth Kirby  
Director, EK Designers

Mr. Martin Lane  
Joseph Lane & Sons

Professor Paul Olomolaiye  
Pro Vice Chancellor & Executive Dean, Faculty of Environment & Technology,  
University of Bristol

Dr. Barry O'Connor  
Registrar & Vice President for Academic Affairs, Cork Institute of Technology

Mr. Eoin O'Neill  
Partner, Michael Barrett Partnership

Mr. John O'Mahony  
Director, Arup Consulting Engineers Ireland

Dr. Patrick J. Purcell  
School of Civil, Structural & Environmental Engineering, University College Dublin

Mr. Michael Roulston

## **School Overview**

### **Present:**

Dr. Joe Harrington, Head of School of Building & Civil Engineering

Dr. Daniel Cahill, Head of Department of Construction

Mr. Des Walsh, Head of Department of Civil, Structural & Environmental Engineering

Ms. Katherine Keane, Head of Department of Architecture

- 
- Context of Programmatic Review
  - Overview of School of Building & Civil Engineering
  - Programme Structure
  - Research Programmes
  - Developments since Programmatic Review 2009
  - Challenges facing School -
    1. Construction sector
    2. Reduction in funding to the Higher Education sector
    3. Heavy Academic Staff Workload
    4. Perception of Engineering and attracting students to the discipline
    5. Research Agenda
    6. Restructuring of and consolidation within the Higher Education sector.

## **Department Review Meeting: Department of Civil, Structural and Environmental Engineering**

### **Present:**

#### **Panel Members:**

Mr. Joseph Kindregan

Head of Department of Civil & Structural Engineering, Dublin Institute of Technology

Dr. Barry O'Connor

Registrar & Vice President for Academic Affairs, Cork Institute of Technology

Mr. John O'Mahony

Director, Arup Consulting Engineers Ireland

Dr. Patrick J. Purcell

School of Civil, Structural & Environmental Engineering, University College Dublin

## **Department of Civil, Structural and Environmental Engineering**

Mr. Des Walsh, Head of Department

Mr. David Cadogan

Mr. Brian O'Rourke

Mr. J.J. Murphy

Mr. Mary Moloney

Dr. Áine Ní Shé

Mr. Leonard O'Driscoll

Ms. Denise Barrett

Mr. Kieran Ruane

Mr. Ted McKenna

Mr. Donogh Coleman

Dr. Niamh Power

Mr. Tim Buckley

Ms. Norma Hurley

Mr. Gerry Doyle

---

Overview of recommendations and developments within the Department since the previous Programmatic Review

- Development and provision of on-line programmes (Level 8 SPA Certificate in Environmental and Energy Engineering and Years 3 & 4 of the BEng(Hons) in Structural Engineering)
- Development of taught Masters programmes in Structural Engineering and Civil Engineering (Environment and Energy)
- Engineers Ireland accreditation of MEng in Structural Engineering attained
- Advantages of Level 7 programmes noted – students using it as starting point BEng in Environmental Engineering developed and Year 1 delivered in 2013/14
- Common Entry Programme developed; affords students additional year to consider options/opportunity for ordinary maths
- CIT Maths exam – advantage for Level 7 and Level 8 entrants
- Direct entry to Level 8 programmes with C3 Grade should be retained in parallel with Common Entry route
- Level 8 Certificate in Environmental Engineering taken as SPA by Level 7 graduates and Level 7 Certificate in Environmental and Energy Engineering taken by graduates in cognate disciplines. Both developed and successfully delivered as LMA/Springboard provisions
- Progression requirements in Maths to be clearly documented for students (Engineers Ireland accreditation requirement refers)
- Free Choice Module: students encouraged to take a module within relative Department
- Elective Module generally kept in Department e.g. Building Regulations
- Inter-disciplinary Modules developed and offered across different programmes eg Health and Safety is offered in Department of Architecture and in the Centre for Craft Studies
- Proposal, in this review, to offer German to be offered as Elective Module across Level 8 programmes in Engineering.

- Level 9 – Structural Engineering: Postgraduate Diploma exit award now being sought
- Work Placement element - optional. Successfully implemented since last Programmatic Review

## Meeting with Students

James Barry	MEng in Structural Engineering	<i>Graduate of BEng (Hons) in Structural Engineering (2013)</i>
Shane O’Flynn	MEng in Civil Engineering (Environment and Energy)	<i>Graduate of BEng (Hons) in Structural Engineering (2013)</i>
Paul Glavin	Year 4 BEng (Hons) Structural Engineering student	<i>Graduate of BEng in Civil Engineering (2012) (mature student route)</i>
Stephen Finn	Year 4 BEng (Hons) Structural Engineering student	<i>Graduate of BEng in Civil Engineering (2012)</i>
Luke Bridgeman	Year 3 BEng (Hons) Structural Engineering	<i>Common Engineering route student</i>
Anna Pietrzak	Year 3 BEng in Civil Engineering	
Michael Mc Carthy	Year 2 BEng in Civil Engineering	
Lydia O’Shea	Year 1 BEng in Civil Engineering	
Colum Quinn	Certificate in Environmental & Energy Engineering – Level 8	<i>Graduate of Certificate in Environmental &amp; Energy Engineering - Level 7 (2013)</i>

John Foley

Certificate in Environmental &  
Energy Engineering - Level 8

*Graduate of Certificate  
in Environmental &  
Energy  
Engineering - Level 7  
(2013)*

Mature Students comment that 30 hours tuition per week was a very heavy workload of contact time, acknowledging that this is reduced for modules delivered in the evening. Concern raised that marks for certain CA / project elements were not handed out until the end of Semester.

MEng students requested that work placement be made mandatory and that a greater connection be made with industry during the programme.

Enhanced access to CAD facilities requested.

### Meeting with Graduates

<b>Name</b>	<b>Company/Organisation</b>	
David Forde	JBA Consulting	<ul style="list-style-type: none"><li>• MEng in Civil Engineering (Environment &amp; Energy) (2012)</li><li>• BEng (Hons) Structural Eng. (2011)</li></ul>
Aidan O'Connell	Mott MacDonald	<ul style="list-style-type: none"><li>• MEng in Civil Engineering (Environment &amp; Energy Engineering) (2013)</li><li>• BEng (Hons) in Structural Eng. (2012)</li></ul>
Billy Allen	ARUP	<ul style="list-style-type: none"><li>• MEng in Structural Engineering(2013)</li><li>• BEng (Hons) Structural Eng. (2011)</li><li>• BEng Civil Engineering (2009)</li></ul>
Stephen Murphy		<ul style="list-style-type: none"><li>• BEng in Civil Engineering (2013) (ACCS)</li><li>• Year 3 student of online delivery of BEng (Hons) in Structural Engineering</li></ul>
John O'Brien	Self Employed	<ul style="list-style-type: none"><li>• BEng in Civil Engineering (2013) (ACCS)</li><li>• Year 3 student of online delivery of BEng (Hons) in Structural Engineering</li></ul>
David Shalloo	Irish Water	<ul style="list-style-type: none"><li>• BEng (Hons) in Structural Engineering (2012)</li></ul>

Aidan Ware	Postgraduate Research, CIT	<ul style="list-style-type: none"> <li>• BEng (Hons) in Structural Engineering (2012)</li> </ul>
Sinead Tangney	Postgraduate Research, CIT	<ul style="list-style-type: none"> <li>• BEng (Hons) in Structural Engineering (2013)</li> <li>• BEng Civil Engineering (2011)</li> </ul>

- Level 9 Graduate well equipped for employment
- Soft skills/Report Writing/Presentation skills need to be enhanced
- Recommendation to include more software
- Inclusion of Off Shore Development and Wind Farm Development
- Free Choice Module – not free!

### Meeting with Employers

<i>Name</i>	<i>Industry Sector</i>	<i>Company/Organisation</i>
John T Murphy	Deputy Managing Director	Mott MacDonald
Kevin Murray	Consultant	Irish Water
Tim Murphy	Contracts Manager	BAM

- Quality of CIT graduate on par with other University graduates
- CIT graduates more industry focused
- Need for graduates with specialist qualifications
- Work placement module excellent

Wednesday, March 19<sup>th</sup>, 2014

### Proposed Changes to Programme Structure /Modules

**Present:**

Mr. Leonard O'Driscoll  
Mr. Kieran Ruane  
Mr. Jim O'Byrne  
Mr. Tim Buckley  
Mr. Ted McKenna  
Mr. Donogh Coleman  
Mr. Ger Doyle  
Dr. Niamh Power  
Ms. Denise Barnett  
Ms. Norma Hurley  
Mr. David Cadogan

Mr. Brian O'Rourke  
Mr. John J. Murphy  
Mr. Des Walsh, Head of Department

### **Module Level Reviews**

All Module Streams reviewed and changed in the period since the previous Programmatic Review in 2007

- Integration of Structural Design & Detailing modules provided continuity
- Engineering Practice Stream rationalised – on suite of Land Surveying modules now provided to all programmes across the School
- Health and Safety stand alone module developed and now available across the School and Faculty
- Water Engineering Stream – modules rationalised
- Mechanics and Structures Stream had modules adjusted according to course
- Mathematics Stream – now proposed to replace MATH6014 with MATH6016
- Geotechnical Engineering and Communications Module – no proposed changes
- Level 8 programme has been progressively re-aligned since the last Programmatic Review by looking at cross faculty commonality and rationalisation of module
- Proposals to introduce BIM and German have been developed
- MEng (Structural Engineering) – module in Sustainable Engineering changed to mandatory as recommended by Validation Panel
- Postgraduate Diploma qualification as exit award now sought for both taught Masters programmes
- Possible areas of interest for individual non-accredited modules Bridge Engineering, Waste Water, Flooding, Technical Engineering and Asset Management are being exploited
- In response to Validation Panel and External Examiner recommendation Module on Water and Waste Water (5 credits) changed to two modules (i) Water (ii) Waste Water in 2012/13

### **Review of Modules**

*This session was attended by the following staff from the Department of Maths at CIT*

Mr. J. P. McCarthy  
Ms. Hannah Lordan  
Dr. Julie O'Donovan  
Ms. Maryna Lishchynska  
Ms. Frances Wood  
Dr. Seán Lacey  
Dr. Áine Ní Shé, Head of Department of Mathematics

- Programme Change – BEng in Civil Engineering/embedded Higher Certificate in Civil Engineering replace Semester 1 Module MATH6014 with MATH 6016
- CIT Module should include more information on Marks & Standards/Plagiarism
- SafePass certification should be offered prior to work placement – currently being offered only by FÁS
- Additional support for Mature Students/International Students attending CIT
- Clarification to be sought regarding Engineers Ireland Maths requirements

### **Panel Feedback**

#### **Commendations**

- Panel commended Department on enthusiastic staff, and student cohort
- Documentation presented in coherent and easy to read format
- Excellent engagement by staff, students and employers
- Diversification of programmes and flexible methods of delivery. The Panel particularly commended School on innovative developments in the online delivery of modules.
- Industry reaction was that graduates compared very favourably with other Higher Education Institutes

#### **Recommendations**

- Clarification was requested on 70% progression grade in Maths at Level 7. *This was provided and included as Appendix to supplied documentation.*
- The Panel expressed concern at the standard of the laboratory and workshop facilities which are presently adequate but need early investment to maintain currency and the physical capacity to cope with pending increase in student numbers.
- Request for derogation from Free Choice Module to be available in 1<sup>st</sup> Semester only in each Year, rather than in every Semester, is supported by the Panel.
- A request was made to allow a derogation from the 2 hour exam rule to facilitate 3 hour exams at Level 9 to facilitate end of term open book / design focused assessments. Panel recommends that this be considered.
- Module level changes proposed by Department are supported by Panel. In particular, the growing importance of BIM is recognised by the Department and is being incorporated across programme modules. The development of German Language option ( in Level 8 programme) is proposed and would be welcomed by the Panel.



- Department should act to develop the soft skills of its students e.g. in report writing, presentation skills etc.

Significant soft skill learning is currently implicit in very many modules on Department modules and programme. In 2014/15 the Department will enhance these provisions and will work to explicitly document this learning and its assessment.

### **Conditions**

- Module reassessment regime must be explicitly stated in each module descriptor and consistently applied accordingly.

Reassessment descriptors have been provided in all modules which are the responsibility of the Department; these formal reassessment provisions will continue to be implemented consistently by the Department.

- The CIT module should be reviewed in light of significant experience gained in its delivery across the Institution.

CIT wide review is currently in progress; the Department has staff members proactively involved in this review and the Department will proactively promote any changes which emerge.

- Facility for students to obtain SAFEPASS should be explored, possibly with UCC, to further enhance the degree, particularly in terms of employability/work placement.

For a number of years the Department arranged for the provision of Safe Pass courses for all first years students; in light of challenging economic conditions the fees incurred by students lead to a drop off in demand for the course and the arrangements were discontinued. The Department will revisit the matter in 2014/15.

### **Conclusion.**

The Panel recommends 5-year validation of Department's programmes and commends the initiatives taken to date to develop the offerings and engagements with industry and professional bodies.

The Panel commends the work in relation to Health & Safety which has been undertaken by the Department but notes the concerns expressed that limited and inadequate access to Health & Safety advice/consulting services is available to the Department within CIT.