

*The Institution  
of Structural  
Engineers*



INSTITUTE OF  
HIGHWAY  
ENGINEERS



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& TRANSPORTATION

**ice**  
Institution of Civil Engineers

## JOINT BOARD OF MODERATORS

### 2012 ANNUAL REPORT

## CONTENTS

- 1. Chairman's Introduction**
  - 2. Executive Summary**
  - 3. Role of the Joint Board of Moderators**
  - 4. JBM Activity undertaken in 2012**
    - 4.1 Visits undertaken
    - 4.2 Summary of course accreditations
    - 4.3 Summary of programmes accredited as meeting Further Learning requirements
    - 4.4 Summary of Employer Managed programmes approved as meeting Further Learning requirements
  - 5. JBM main Board**
    - 5.1 Summary of policy items
    - 5.2 Summary of issues arising following visits to review undergraduate courses
    - 5.3 Activities for 2013
  - 6. International Sub-Committee**
    - 6.1 Summary of policy items
    - 6.2 Summary of issues following visits to universities
    - 6.3 Activities for 2013
  - 7. Higher Level and Qualifications Sub-Committee**
    - 7.1 Summary of policy items
    - 7.2 Activities for 2013
  - 8. Further Learning Sub-Committee**
    - 8.1 Summary of policy items
    - 8.2 Summary of issues following visits
    - 8.3 Activities for 2013
  - 9. Good practice**
    - Annex 1 More detailed examples of good practice
  - 10. Statistical Information**
    - Annex 2 Details of Membership
    - Annex 3 Student Intake Numbers 2012
    - Annex 4 Graduates 2012
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## 1. **Chairman's Introduction**

I am very pleased to present the Annual Report to you as Chairman of the Joint Board of Moderators (JBM) outlining the activities that the JBM has been involved with during 2012.

The Board has been impressed by the good practice it has seen in many of the departments visited. The Board strongly believes that it is important that it should facilitate the sharing of good practice through this Annual Report and by specific examples provided on the JBM website.

In 2012 we held one very successful pre-visit briefing for Universities based on our new submission requirements and the presentations and supporting paperwork are now available to download from the JBM website.

Following feedback from Universities seeking clarification on a number of items relating to the policy to encourage more academic staff to become professionally qualified, revised guidance material has been developed and was circulated to Heads of Departments in February 2012. JBM teams will continue to report back to the Board on any issues regarding the implementation of this revised guidance.

JBM teams are continuing to monitor website wording during their visits and over the last year we have seen considerable improvement on the information on websites and in published material.

The Institutions continue to be indebted to those members from academia and industry that contribute to the work of the JBM and its associated Sub-Committees.

Dr J Roberts

## 2. Executive Summary

The Board and its Working Groups and Sub-Committees discussed a number of major policy issues during 2012.

Dr John Roberts is Chairman of the JBM, Professor Lark is Chairman of the Further Learning Sub-Committee, and Professor Nigel Smith is the Chairman of the International Sub-Committee and Mr Jones of the Higher Level and Technician Qualifications Sub-Committee.

Additional guidance material to support the Further Learning process was developed in 2012 and this is available on the JBM website. [www.jbm.org.uk](http://www.jbm.org.uk).

The monitoring and audit visits continue to be made to organisations offering approved Employer Managed Further Learning programmes.

In January 2012 –Nick Buenfield (Imperial), Dave Allen (Leeds Metropolitan) and Peter Guthrie (Cambridge) joined the Board. In July 2012, Paul Whitehead replaced Dave Allen. In October Ms Ellie Gormley (Telford & Wrekin Council) and Mr Jonathan Pearson (Lincolnshire County Council) replaced Mr Stephen Spender and Mr Tim Edmunds as IHE Board representatives.

In 2012 the JBM undertook 11 full re-accreditation visits, 4 review visits, two audit visits to companies offering Employer Managed Further Learning programmes and participated in two EAB visits to Universities. Representatives of the JBM also took part in the pilot visit to the University of Bristol to look at the EngD programme as meeting both Further Learning requirements and IPD requirements for potential Chartered Engineers.

A re-accreditation visit to the University of the West Indies took place at the end of November 2011 and the report was considered by the International Sub-Committee and the Board in 2012.

The JBM guidance on website wording is being monitored by visiting teams and the JBM secretariat. It was noted that the various Institution Auditors were also reviewing website wording as part of the audit process. The Board has agreed that there should be an annual review of all website wording.

Professor Barry Clarke (Leeds University) has been elected as chair of the EAB for a 2 to 3 year period. As he was the ICE nominee, the ICE has now nominated Professor Dragan Savic (Exeter) to the EAB in his place.

## 3. Role of the Joint Board of Moderators

The Joint Board of Moderators (JBM) is a body that was arguably thirty years ahead of its time. Founded in 1977 by the ICE, IStructE and the Municipal Engineers, the JBM is the interface between universities, professional institutions and industry – it pre-dates the

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government's current employer-engagement agenda and carries out vital work to ensure Civil Engineering standards are maintained and up-to-date.

It does this, among other things, by carrying out visits to some 56 UK universities to accredit the educational base for membership of the institutions, and the award by licence from ECUK of CEng and IEng status. The JBM also has 3 sub-committees which look at Further Learning, Higher Level and Technical Qualifications and International matters. Further Learning builds on the educational base of a Bachelors degree and leads to achieving IEng or CEng through the membership routes of each of the JBM institutions. In most cases, a Masters degree completes the educational base.

Four institutions currently make up the membership of the JBM – ICE, IStructE, IHE and CIHT – and the Board has a balanced membership of academic and industrial members, from the public and private sectors, with the chairmanship alternating between the industrial and academic members. The current Chair for example is Dr John Roberts from Jacobs and the next Chair will be from a University.

This balance of membership is what gives the JBM credibility – with a panel of academic and industrial members to draw on for accreditation visits - links between employers and universities are strengthened so that degrees meet employer expectations and, at the same time, industry is kept up to date with and can contribute to the Civil Engineering curriculum and its delivery. Typically visits to universities take place on a 5 year cycle, with review visits in-between, where appropriate, to follow up issues and review progress on new courses. The review follows JBM guidelines which comply with the 'UK-SPEC'. These guidelines lay down the three core subjects of Materials, Structures, Geotechnics, together with Fluid mechanics and Surveying, suggest optional subjects, and identify 'threads' which run through course design namely, Sustainability, Design and Health and Safety.

A review team consists of two academics, two from industry, a secretary from one of the institutions, and, often, an observer who may be a JBM Board member who is new to the process. The review itself is intensive, with the team meeting the departments', support staff, senior university staff, members of industrial boards and not least, the students and recent graduates. There is a thorough review of the output standards of the work produced by students, tours of facilities, workshops and laboratories, feedback to the department and finally the report.

The benefits of a visit go far beyond accreditation, however, with good practice identified within the visit reports and highlighted on the JBM's web-site – [www.jbm.org.uk](http://www.jbm.org.uk) - and through its annual report. Arising from this, opportunities for development are identified.

Essentially the JBM exists to strengthen Civil Engineering as a subject within universities, supporting departments, promoting professional membership, and encouraging participation with industry. As such the JBM is recognised as a pre-eminent brand for accreditation of university departments.

To reflect the range of the Board activities several specialist Sub-Committees have been established as follows: -

The International Sub-Committee of the JBM was established to assist the Board in its international activities and continues to develop international agreements with similar accreditation bodies operating in the built environment where the degree programmes would meet the educational benchmark requirements for membership.

The remit of the Further Learning Sub-Committee is to produce a series of documents defining further learning and provide supporting information and guidance, clearly setting out procedural and explanatory notes. The Sub-Committee also considers applications from Universities and Organisations for the approval of Masters Degrees and Employer Managed schemes as meeting the Further Learning requirements for Chartered and Incorporated Engineers as appropriate.

The Higher Level and Technicians Sub-Committee are responsible to the Board for any activities that relate to the assessment of Foundation Degrees/HNC/HND/NC/ND or equivalent programmes of study.

The Panel of Moderators has been established to assist the Board in its accreditation activities. This Panel consists of those members who can be called upon to form part of the accreditation visit teams. Members will be selected on the basis of their background and experience relevant to the programmes to be accredited. They will normally have been actively involved in accreditation activities through JBM within the previous 5 years. Normally, all visit team leaders, and one other member will be drawn from the Board and the remainder may be drawn from this Moderators' Panel.

The Board publishes a list of all accredited programmes on a regular basis; please refer to the JBM Website for more information on [www.jbm.org.uk](http://www.jbm.org.uk).

## 4. JBM Activity In 2012

### 1 Visits undertaken

Quinquennial Visits (Dates)		Review Visits (Dates)		EAB Visits (Dates)	
Swansea	26–22 January	Exeter	24 February	Oxford	8 – 9 February
Newcastle	26 27 January	East London	29 March	Cambridge	29 Feb – 1 March
Nottingham Trent	2 – 3 February	Greenwich	27 April	University of Bristol (EngDoc pilot visit with IET and IMechE)	27–28 November
Bolton	16 – 17 February	West London*	15 June		
Birmingham	8-9 March				
Salford	15 – 16 March				
Wolverhampton	21 – 22 June				
Derby	5 – 6 July				
University of the West of England	19 – 20 July				
Brunel	18 – 19 October				
Abertay Dundee	25 – 26 October				

\* Visit covered IEng programmes only

### 2 Summary of course accreditations

Date of JBM Board Meeting in 2012	No of UK Visit Reports considered CEng	No of Visit Reports Considered (O.seas) CEng	No of Paper Submissions for new programmes and reports on responses to JBM recommendations.	CEng Approved	CEng Rejected	No of UK Visit Reports considered IEng	IEng Approved	IEng Rejected
10.02*	4	1	5	14	3	2	5	3
4.05	9	-	3	34	-	1	6	--
13.07	4	-	4	6	-	2	9	-
5.10	3	-	3	6	1	3	4	
Total	20	1	15	60	4	8	24	3

\*This JBM meeting considered a number of visit reports for visits undertaken in October/November 2011.

### 3 Summary of academic programmes Accredited as meeting Further Learning requirements

Date of JBM Board Meeting In 2012	Further Learning for CEng	Further Learning for CEng Rejected	Further Learning for IEng	Further Learning for IEng Rejected
10.02*	21	-	-	-
4.05*	41	-	-	-
13.07	4	-	-	-
5.10	6	1	2	-
Total	72	1	2	-

\*This JBM meeting considered a number of visit reports for visits undertaken in October/November 2011.

### 4 Summary of Employer Managed programmes approved as meeting Further Learning requirements

Date of JBM Board Meeting In 2012	Further Learning for CEng	Further Learning for CEng Rejected	Further Learning for IEng	Further Learning for IEng Rejected
10.02*	-	-	-	-
4.05*		-	-	-
13.07		-	-	-
5.10	1	-	1	-
Total	1	-	1	-

\*This JBM meeting considered a number of visit reports for visits undertaken in October/November 2011

## 5. JBM Main Board

### 5.1 JBM Board Summary of Policy Decisions and Main Discussions by the Board

A number of major policy issues were discussed by the Board and by Sub-Committees on behalf of the Board during 2012.

#### ▪ Guidance on Laboratory Equipment

A guidance note has been developed by the JBM to assist Universities who have not delivered civil engineering programmes in the past but who now wish to start civil engineering programmes that outlines the range and type of equipment that they would need to obtain to support the delivery of civil engineering degree programmes.

#### ▪ Statement on Assessment

At the October meeting the Board was asked to provide a statement on the use of modified and alternative assessment methods in degree programmes. This was in response to the fact that some academics can hide behind professional bodies saying they have to conduct exams rather

than consider alternative assessment methods. The Board agreed that wording as used by another professional body would also be supported by them that: -

*Assessment practices should be fair, valid, reliable and appropriate to the level of award being offered – providers should have in place procedures to deal thoroughly, fairly and expeditiously with problems which arise in the programme of assessment of students. Assessment should reflect the subject benchmark statement and Learning Outcomes.*

▪ **Visits to New Universities**

The first exploratory visit to a College/University wishing to deliver civil engineering programmes was made to Llandrillo College who are intending to develop an IEng degree. This visit allowed JBM representatives to meet with academic staff, review output from existing programmes (for EngTech accreditation) and to tour existing facilities and give guidance on possible future accreditation.

▪ **Association of Civil Engineering Departments**

The ACED Committee is now contacted before each JBM meeting to ask if there are any items that they would like to raise for discussion with the JBM Board and its representatives. The ACED Committee will also attend the JBM Board meeting in February 2013 and this will be an annual activity.

▪ **Notification to the JBM of Staff Changes**

Please note that Departments are required to keep the JBM advised of any major changes since the last visit and this includes not only changes to the curriculum, resources and also staff changes.

▪ **RAEng Report – Engineers for Low Carbon**

A JBM guidance note on this area and updated Appendix C Sustainability were sent out to Heads of Department in November 2011 with a note that advised them that this area will be checked at visits from autumn 2012 onwards. The JBM has also been working with ThinkUp on a series of briefings for academic staff on this area and an update on work thus far and possible further actions will be discussed at the ICE/IStructE/ACED meeting with Heads of Department being held on 23<sup>rd</sup> April 2013.

▪ **Engineering Council Annual Meeting, Chairs of Accreditation Panels**

The Chair of the JBM, Dr John Roberts represented the JBM and the annual meeting of Chairs of Accreditation Panels.

▪ **Website wording**

This continues to be monitored by the ICE and JBM secretariat. The main issue identified seems to be that it is very difficult for the civil engineering academic staff to get wording changed internally. In some cases, the Department has updated pages to show the correct wording but their marketing team or the web team have changed it back to the previous wording. However, there is now a huge improvement in the wording issue as a whole since website wording checking began. Visit Teams now check the University website before visits and the correction of this has been made an accreditation recommendation in recent visits where the website has been incorrect or misleading. The UCAS website is also misleading but only universities can change

their entries on this website and is based on key information sets relating to each programme, rather than the Department.

▪ ***KIS Wording***

Several universities contacted the JBM as HESA had set a deadline of the 22<sup>nd</sup> August 2012 to finalise accreditation statements, with a restriction of 80 characters (excluding spaces) permitted for the sentence in addition to the first prescribed part. This issue was raised with the Engineering Council who produced suggested alternative wording that the Board was happy to approve.

▪ ***HE Kite Marking***

At the EAB meeting held in June 2012, Darren Race of SEMTA gave a presentation about their plans for the introduction of a HE Kite Marking system for programmes covered by this Skills Council (electrical, mechanical, production engineering etc.). Although civil engineering programmes are not covered by this Skills Council, it was believed that Construction Skills was also considering this issue.

The Board considered a draft document which outlines a framework/checklist that SEMTA would use to ensure that individual programmes meet the appropriate criteria and could therefore carry a SEMTA Kite Mark on individual course pages. It is likely that a similar checklist will be developed by Construction Skills. Comments from JBM Board members on these proposals were forwarded to the Engineering Council. . In the meantime the House of Lords Committee into STEM graduates has published its report, to which the Engineering Council and some other PEIs gave evidence. PEI accreditation gets very strong support from the Committee, with doubts expressed about the merits of kite-marking.

The Engineering Council and other professional bodies have been in contact with BIS directly and it has now been agreed that Kite Marking criteria will not be developed. .

▪ ***Liaison with the Engineering Council***

The JBM has been pleased to assist the Engineering Council by taking part in a pilot visit to the University of Bristol in November 2012 to consider issues associated with the accreditation of Engineering Doctorate programmes as meeting the Further Learning requirements for Chartered Engineers. A report on this visit will be considered in early 2013.

Also at the request of the Nominations and Audit Committee of the Engineering Council representatives from the JBM will take part in a Working Group looking at issues associated with the licensing of multi-Institution activities.

Professor Peter Hicks continues to act as the Engineering Council's Liaison Officer on accreditation matters.

▪ ***Guidelines for Foundation Degrees***

These guidelines have been revised by the Higher Level and Qualifications Sub-Committee to provide the opportunity for Universities and Colleges to use not only work based learning but also work related learning within their programmes.

- **Higher Apprenticeship Programme in Sustainable Built Environment**

Leeds College of Building has developed a Higher Apprenticeship in Sustainable Built Environment that is underpinned by an Edexcel Level 5 NVQ Diploma in Construction Management (Sustainability) and this package has been approved by the JBM as meeting the educational base for an Engineering Technician.

- **Training for Moderators**

Training of new Board members continues to be through on-the-job training during visits and attendance at a briefing session for new JBM Board members.

- **Policy items from Visit Reports discussed at the October JBM Board meeting**

- **Drawing and sketching skills lack of evidence in student work**

It was agreed that this is an issue that JBM teams need to be alert to and any submission document should make it clear that we expect to see evidence of sketching in the students' work, ideally sketch books or similar documents should be made available to the Visiting Team.

It was noted that the request for this evidence is currently associated with the communication skills section of the submission document but it should be included in any evidence that demonstrates how the Design Annex is being embedded and if this is not referenced in the JBM Design Annex the it should be added, as civil engineering students need to be able to communicate an engineering idea.

- **Timetabled teaching hours**

This area was discussed by the JBM Board as Team members had become concerned about the average timetabled teaching hours and the average timetabled hours are as follows: -

Year 1	17 – 24 hours
Year 2	12 – 24 hours
Year 3	12 – 17 hours

There is on average more contact time in Year 1 and this reduces in the latter years of the course.

The Board agreed that timetabled teaching hours will be monitored. so that a common means of recording time will be defined to allow some degree of comparison to be made. However the JBM does not intend to issued prescribed or mandatory minimum times. This will be influenced by the new KIS data which requires each university to state the number of "contact hours".

## 5.2 Undergraduate programmes – comments included in various Visit Reports

### Undergraduate Programmes

#### Aims and Objectives

- That the aims and objectives be amended to provide more clarity and differentiation between the courses.
- That the Department review the aims and objectives of the two new programme variants – ‘...with International Study’ and ‘...with Industrial Experience’ - to ensure that the published KIS sets out clearly the unique features of these programmes.
- That the School reviews and up-dates its educational aims to reflect its vision. As part of this review, it is recommended that the aspirational aims of the School are revisited and refreshed.
- The aims and objectives of the BEng (Hons) programme should be revised to highlight the strengths of the programme.

#### Assessment Methods/Marking

- The Department should keep under review the balance of assessment which is undertaken by examination and by coursework in order to ensure that learning outcomes are being assessed in the most appropriate way.
- Some assignment briefs could be further refined so that assessment criteria and weighting are made more explicit in relation to learning outcomes. This will assist in ensuring students demonstrate full coverage of core subjects and the threads in their coursework.
- To consider the marking systems in place for addressing poor English, especially in projects, and whether students can re-submit in these cases
- To re-visit the assessment and marking procedures for projects and assess whether this can be improved, in time for the full visit next year.
- To make use of the TurnItIn Plagiarism programme to encourage students to check their own work before submission.
- It will be important to ensure that the current method of assessments, in terms of proportion between types of assessments and referral procedures, continues to be the case as the programmes roll through, especially with the flexibility regarding vertical integration and movement between programmes.
- To review the coursework-only assessment of the Advanced Structural Engineering and Advanced Geotechnical Engineering modules in the final MEng year, subjects that are strongly founded in scientific theory and are normally assessed by a mixture of written examination and practical coursework.
- The JBM panel members recommend that the assessment criteria for year 3 projects should be changed to ensure that students show consideration of economic, social and environmental issues.

#### CSCS cards

- Those students who complete the CSCS card test successfully should receive credit for doing so.

**Communication Skills**

- To work with the students to develop their communication skills especially in regard to project work.

**Computer Packages**

- Whilst students are strong in the area of computational modelling, they do not look to validate the data that underpins the programme and this must be addressed.
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**Core Subjects**

- Building on the development work involved in the transition to 20 credit modules in the first year (Level 4) of the BEng (Hons) programme, the Department must further deepen the delivery of the core subjects of Materials, Structures and Geotechnics as the course progresses through to Level 5 and Level 6.
- That the School considers re-addressing the balance of composite teaching within the courses.
- That in line with JBM guidelines the module xxxx is not condonable as materials is a core subject.

**Curriculum**

- Review the teaching of stiffness matrix methods in the BEng/MEng programmes.
- That consideration is given to the architectural content of the Civil and Architectural BEng(Hons) and MEng programmes or whether the given titles are the most appropriate for the current courses.
- The JBM panel members recommend that staff should ensure that all teaching material is brought up to date to match current practice.
- They need to revisit the module descriptions to ensure that they are correct, up to date and consistent.

**Design teaching**

- The significant improvements in provision of conceptual design introduced since the last JBM visit are fully acknowledged. Nevertheless, it is strongly recommended that further development should tip the balance more towards creative thinking, perhaps less in satisfying technical constraints of projects, and thus student learning should be more clearly focussed on design of a project from scratch and on assessment of different options.
- To enhance the conceptual aspects of design in the latter parts of the new BEng (Hons) programme.
- To look to increase the amount of studio space for design work that can also be utilised for group design work.
- That the design topic for the final year integrated project, module xxx is changed on an annual basis.

**Drawing and Sketching**

- To invite a guest lecturer, perhaps from the Arts Department, to teach free-hand sketching.
- To consider module options for Level 5, such an introduction to seismic design.

- That the School monitors the drawing and sketching skills of the students and where possible encourages the incorporation of these skills into projects and exams (hand sketching as well as CAD) and that the School considers reviewing the teaching of these skills to ensure the students receive enough guidance and practice.
- To submit a plan that outlines how they are intending to review the design thread that needs to be strengthened particularly in sketching and drawing and in the area of conceptual design

#### **Differentiation**

- That more differentiation is shown between BSc, BEng (Hons) and MEng programmes throughout the duration of the courses.
- That more specific consideration is given to how to differentiate between the BEng (Hons) 3<sup>rd</sup> year and the MEng 3<sup>rd</sup> year.

#### **Examination Papers**

- The BEng exam papers and solutions must be made distinct from the BSc across all modules.
- To review examination papers to reflect the changes in the teaching of design and this may mean that they need to more open ended.
- To ensure that the examination questions at M level are more open ended.
- When the staff start to produce examination papers for the final years of the CEng bachelor degree going forward the questions should be more open-ended.
- That all examination papers be reviewed to ensure that questions are sufficiently stretching and open-ended and not solely reliant on knowledge.
- The civil engineering team should implement arithmetic checking procedures for all examination scripts

#### **Field Courses**

- The Department should investigate the feasibility of introducing a field course

#### **Industrial Advisory Panel**

- Develop a civil engineering focused Industrial Advisory Board
- The new IAB would then assist in the provision of:
  - Mentoring of students by practitioners
  - Site visits
  - Visiting lecturers
- Industrial placements, which the Department should more strongly encourage students to undertake
- Establish a clear strategy and terms of reference for the Industrial Advisory Panel.
- That the membership of the IAB is expanded and deepened to further enhance communication between the University and Industry for the benefit of the programmes.
- The panel recommends that the Department develops the industrial advisory board/activity to strengthen links between the Department and industry.
- To establish Terms of Reference for the IAB that confirms that the Chair should be from industry and they should work with the Industrial Liaison Panel to review opportunities for the IAB to contribute to and review the undergraduate curriculum
- That the School utilise the IAC and consider increasing the number of site visits available for students and consider making some of them compulsory so to maintain a high turnout.

- The JBM panel members recommend that the Department should consider the introduction of discipline specific industrial liaison panels in order to support the timely and relevant evolution of their undergraduate teaching programmes.
- The IAB should be used more effectively to provide support and assistance, and the civil engineering team should consider having the IAB chaired by an industrialist
- To work with the Industrial Liaison Panel to increase the number of possible site visits
- Proposals on how they are going to use the construction community to inform their lectures and coursework.

#### **Industrial Placements**

- The Department needs to look at the guidance it is giving to students about the benefits associated with the industrial placement programme.

#### **Laboratories**

- The signage within the labs should be improved
- As part of the continued expansion in the quantity of civil engineering related laboratory equipment, the Department and University must ensure an appropriate allocation of space for the use of the equipment by the students in an efficient and effective manner.
- The staff should look to make greater use of their new laboratory equipment
- To ensure that when the new Laboratories are commissioned and before the students have access that appropriate health and safety signage is displayed.
- That Health & Safety signage is improved in the laboratories and protective clothing and equipment is more prominently placed.

#### **Learning Outcome Tables**

- The JBM panel members recommend that the department review the learning outcomes matrix to make sure that there is adequate coverage of all outcomes.

#### **Library stock**

- Some of the books in the library are a little out of date and new editions should be sought

#### **Teaching of Materials**

- Whilst the core subject of materials appears in all three years of the BEng (Hons) programme, the coverage is weak and should be broadened.
- That the School be required to submit a 2-3 page update on the teaching of materials including plans to introduce new modules and revisions to existing modules to improve exposure to the range, diversity and applicability of materials covered within the syllabus.

#### **Output**

- That the Outputs of each programme be made available to the JBM for Review as soon as the first cohort of students has completed the programme.

#### **Programme specification**

- BEng specifications could be improved by increasing the differentiation from the BSc
- Redraft the programme specifications and module specifications of technical MSc programmes so that the taught technical content is increased, with the examinations set at the appropriate level and reflecting the increased technical content.

- That the School review programme specifications to ensure that generic statements are consistent and differences between disciplines highlighted.

### **Projects**

- Within the projects, explicit marks should be given for both sustainability and health and safety risk management
- Increase the breadth of project titles available
- That for the Individual Projects a broad range of topics should be available and that students should be required to provide proof of their analytical thinking.
- To consider if it will be possible to include more team working into the final year project to enhance the employability skills of the students
- In extended project work, a clear and focused project aim and objectives should be required and this should be followed by appropriate selection of research methodology and research instruments in order to satisfy the aim and objectives.
- To confirm what actions are to be carried out to ensure that the assessment of group works reflects the quality of an individual's contribution to that of the overall group when it is divulged from group marked assessments
- That the School should review the MEng final year individual project dissertations to ensure that subjects are intellectually challenging and provide scope for initiative, creative thinking, analytical competence, and understanding the research method. Dissertations should not normally include desk studies.
- That the School brings its policy into line with JBM regulations with regard to the need for BEng/MEng students to pass the Individual Project in order to gain an accredited degree.
- That the nature of the BEng Individual Project is reviewed to ensure that aligns in spirit with the intentions of the JBM guidelines.
- That the School reviews its relationship with Chemical Engineering to ensure a collaborative approach and to realise the aspirations that the School has for the interdisciplinary project.
- The JBM panel members recommend that students should also be aware that a 'civil engineering project' could encompass the broader aspects of civil engineering.

### **Risk Assessments**

- To ensure that risk assessments are carried out by students for every lab and that copies of these are kept and in addition that assessments are also included in projects and reports.

### **Site Visits**

- Increase site visits.
- That more opportunities are provided to ensure that students attend site visits.

### **Staffing issues**

- Review the staffing resource in line with programme learning outcomes and report on how appropriate staffing resources have been ensured. This is particularly relevant to the teaching of structural analysis and design.
- To work with the staff to encourage them to gain appropriate professional qualifications in engineering.
- That the School is required to increase the level of professional membership in line with JBM expectations by 2015 and that it should provide an annual update on progress, the first report being due in January 2013.

- That the School maintains its intention to reduce the SSR to a more acceptable value as a high priority
- The JBM panel members believe that the 'core civil engineering team' are overstretched particularly in satisfying demand for year 4 projects and therefore it is recommended that a mechanism be found for enhancing the support of this very important part of the course.
- To work with the staff to encourage them to gain appropriate professional qualifications in engineering.

#### **Staff Student Liaison Committee**

- The JBM panel members recommend that the department review the staff student liaison committee to reinvigorate and increase student awareness.

#### **Student Support**

- That the School expand the student 'buddy' system to support students in Stage 2.

#### **Timetabled Teaching Hours**

- That they monitor the number of time-tabled teaching hours to ensure that all topics outlined in the curriculum are covered in sufficient depth.

#### **Engagement with JBM member Institutions**

- More strongly encourage students to become members of the JBM institutions in their first year of studies
- Attempt to increase the number of talks from other institutions held on campus

#### **JBM Threads**

- To appoint a 'Threads champion' (especially to focus on Health and Safety Risk Management) to ensure all JBM threads are explicit in student output, in time for the full visit next year.
  - To consider allocating marks in projects and appropriate course work for student assessment of sustainability and H&S risk management.
  - The issues of the carbon economy and carbon counting should be included within the sustainability thread of the BEng
  - Conceptual design should be strengthened, and all design problems/briefs should be made more open-ended, right from the first year of the BEng programme
  - To look in depth at all areas covered by the JBM submission, such as core subjects and threads and programme specifications and syllabi to ensure that the level of detail is sufficient to satisfy the next JBM Team in 2012.
  - Ensure the Sustainability thread is more visible.
  - Consider the structure of year 2, in particular giving credit value to Surveying, and developing a project thread through all years to carry the Health and Safety and Sustainability threads.
  - Build on its Health and Safety procedures to embed a Health and Safety culture.
  - That clearer evidence is shown in written form for the embedding of sustainability throughout the duration of the courses.
  - That clearer evidence is shown in written form for the embedding of Health and Safety throughout the duration of the courses.
  - The JBM panel members recommend that there should be evidence of sustainability in the final year projects where appropriate.
  - Health and Safety needs to be clearly articulated across all programmes.
-

- Sustainability needs to be enhanced in the new BEng (Hons) programme and made more explicit in terms of assignments/coursework as this will help to strengthen the thread.
- Building on the development work involved in the transition to 20 credit modules in the first year (Level 4) of the BEng (Hons) programme, the Department must further embed the threads of Health and Safety Risk Management, Design, and Sustainability as the course progresses through to Level 5 and Level 6. The routine inclusion of these elements in the briefs and marking criteria for coursework, projects and examination questions, wherever appropriate, would be both beneficial and evident.
- That Design and Health and Safety Risk Management is more explicit in the student output.
- That the School consider reviewing and strengthening the design thread through the course to increase the visibility to the students of a link between design and geotechnics and materials.
- That the School takes the opportunity to review the taught thread of Structural Engineering across the degree programmes when the new Structural Engineering academic staff are in post.
- That the teaching of Materials is embedded in such a way that students are equipped with the skills to investigate and exploit new materials.
- That, given the strong design thread in the undergraduate programmes, students are encouraged to make more use of sketch books and physical models throughout their time on the programme.
- That the Department's review on the area of sustainability continues and they ensure that it continues to be strengthened and embedded throughout the programme.
- That the JBM would wish to see more evidence of risk management being addressed by the students and this could involve inclusion of this area where appropriate in coursework and individual projects.
- An update on how they are going to strengthen the embedment of sustainability throughout the undergraduate programmes.

#### **JBM Visit**

- The JBM panel members believe that the random selection of the student work did not evidence the early stages of the creative design process that the staff said had taken place and was also shown in some of the student log books. The assessment criteria should be changed to reflect this in the written reports.
- At the next visit the Department will need to provide a discernible body of evidence through the students' work that demonstrates how these recommendations have been addressed. They also need to strengthen their awareness of the structure of the construction industry; as this will also improve the employability skills of their graduates and they should also aim to reflect this knowledge and understanding in the revised module descriptors.

#### **JBM Website wording**

- Seven Universities were asked to confirm that the website wording and printed material (prospectus and student handbooks) is in line with the JBM guidance document.

#### **Degree Certificate wording for an overseas campus or overseas partner**

- The BEng degree certificate issued by the X campus or overseas partner, which is not accredited via the JBM, must specifically and clearly state the name of this campus so that it can be easily distinguished from the accredited degree programme at the UK campus.

### 5.3 Activities for 2013 JBM main Board

In 2013, the following areas are to be considered by the JBM: -

- To work with the Institution of Civil Engineers, Information Systems Panel and the Chartered Institution of Building Services Engineers on the development of its guidance note for Universities on BIM.
- To undertake 9 full accreditation visits, 6 review visits and to participate in an EAB visit.
- To review the reports produced by the Further Learning Sub-Committee on a monitoring meeting to an organisation offering Employer Managed Further Learning programmes.
- To run a briefing session for MSc admissions tutors and for organisations running existing approved Employer Managed Further Learning programmes
- To review the submission documents following feedback from Universities and Team Members following their experience of JBM visits in 2012.
- To contribute to the various Engineering Council workshops that are considering revisions to their existing guidance and regulation documents UK-SPEC and AHEP.
  
- ***Good Practice Workshop on the teaching of sustainability***  
Following the successful event held in September 2011, ThinkUp have been commissioned by the JBM and the RAEng to produce some further guidance material.
  
- ***Monitoring of University websites***  
As part of their visit activities the Visiting Teams will continue to check the wording on University websites to ensure that this is in line with the published JBM guidance material. The JBM auditors will also continue to review the wording on the websites associated with the visit reports that have been chosen for audit by the JBM Audit Panel.
  
- ***IStructE Working Group on the Teaching of Structures***  
The WG is chaired by Graham Owens and had been established following feedback from employers that graduates understanding of structural behaviours was not as good as it should be. The WG is identifying the essential areas that they believe should be taught to all students and their draft report has been published in the IStructE Journal to elicit feedback.

The WG is aiming to identify good practice to see how structures can be taught more imaginatively and they are also looking to organize a series of workshops in 2012 with the development of essential texts for use by Universities.

Possible future areas that could be looked at in the same detailed way are materials and geotechnics with the aim of providing guidance material on how these areas can be taught.

- ***JBM Documentation Working Group (DWG)***  
The JBM has re-established the Documentation Working Group (DWG) to review the range of information it requests from Universities prior to a visit and feedback from Visiting Teams. A revised visit timetable has also been developed that will be submitted to the JBM Board for consideration in early 2012.

- **Mandatory Visit to Universities offering new programmes at different levels**  
In early 2013, the Board will consider if it will now be a mandatory requirement that where a University is offer a new programmes that is to be at a different level e.g. when an IEng degree programme is changing to a CEng level bachelor degree, or the introduction of new MSc programmes.
- **Student entry data (2012)**  
In early 2013, the Board will consider the data that has been provided by Universities. Mr Andrew Stanley (ICE) has agreed to review this data and highlight key issues for the Board and the JBM member Institutions.
- **Number of Teaching Staff becoming professionally qualified**  
In early 2013, the Board will consider the data that has been provided by Universities.

## 6. International Sub-Committee (ISC)

Two meetings of the International Sub-Committee were held in 2012.

### 6.1 Summary of policy items

- **Hong Kong – Accreditation of Further Learning programmes**  
Requests for re-accreditation of the specialist MSc programmes have been received from both the University of Science and Technology and the University of Hong Kong. An initial visit to clarify some items raised by the JBM Assessors to the Universities has been made by Mr Ray Hulse.
- **Sri Lanka**  
Requests for the re-accreditation of civil engineering related programmes have been received from the University of Moratuwa and the University of Peradeniya. This application will be discussed by the International Sub-Committee in 2013.
- **Washington Accord**  
**Russia** - Represented by [Association for Engineering Education of Russia \(2012\)](#) have become members of the Washington Accord and any students starting an accredited degree (autumn 2012) onwards will meet the educational base for a Chartered Engineer.
- **West Indies**  
The re-accreditation visit took place in November 2011. The Visit Report was discussed by the Board in early 2012.
- **Egypt – British University of Egypt**  
The ISC noted that the Publication of a press release by the BUE and the University of Loughborough at the end of 2012 available on the BUE website, that confirmed that the “University of Loughborough will cease the “validation of BUE degree programmes beyond the 2013 - 2014 intake but will continue to award validated degrees in Engineering until 2017 – 2018.”

### ***Policy Items***

- The ISC has reviewed and amended the process for the appointment of international team members by the ICE and the IStructE.
- The ISC has reviewed the guidelines for Universities with an off-shore campus.

### **6.3 Activities for 2013**

Co-ordinate joint JBM visits to both the UK and international campuses of Nottingham University with some common team membership.

To work with the Engineering Council to develop a process for the accreditation of Erasmus Mundus programmes as programmes can be delivered by a number of academic partners.

## **7 Higher Level and Technician Qualifications Sub-Committee**

The Sub-Committee met twice in 2012 and agreed to continue to develop and maintain a list of approved programmes for EngTech registration. The updated list is available on the JBM website.

### **7.1 Summary of policy items**

- ***The Advanced Apprenticeship in Technical Supervision***

The Advanced apprenticeship in Technical Supervision which is part of the Construction Technician, Supervision and Management qualifications framework, reference FR00709 was approved as meeting the educational base for EngTech registration.

- ***Guidelines for Foundation Degrees***

The existing guidance document on Foundation Degrees had been reviewed by the HLQSC and it was agreed that the wording that related to the number of credit that should be gained for work based learning should be changed to say normally 60 credits with a minimum of 30 credits. The Mathematics Annex will also be updated to remove a reference to the nominal threshold of 40% as an overall pass and to emphasise that mathematics teaching should be embedded where appropriate.

### **7.2 Activities for 2013**

In 2013 the Sub-Committee and the Board will be: -

- Monitoring the number of candidates coming through the ICE apprenticeship scheme and those following the embedded technician option supported by the ICE.
  - Monitoring and contributing to the development by Edexcel (Pearson) and the City and Guilds of Level 6 qualifications.
-

## 8 Further Learning Sub-Committee

The Further Learning Sub-Committee has met twice during 2012.

### 8.1 Summary of policy items

The Further Learning Sub-Committee and the JBM Board have agreed that the definition of a 'technical' MSc is one where 50% of the course is content as well as the dissertation being in a technical area.

**Issues following accreditation/approval visits are shown below.**

#### **Employer Managed programmes**

- That the assessment procedures are reviewed to ensure transparency and continued rigour, especially for succession planning. One suggestion would be a marking criteria sheet for coursework.
- That the JBM is kept informed of developments and changes to the Programme, especially regarding the administration, succession planning and progression of the current candidates.
- To tidy the organisation of paperwork in portfolios
- Candidates to use more technical design computer packages
- Ensure candidates undertake adequate extra reading, such as technical journals, NCE, manuals and text books
- The SE should meet all candidates and assess whether some would be more suitable for working EngTech at this stage
- To engage with the JBM and request a further training day once portfolios have been signed off and the first candidates have completed the Programme

#### **Masters Programmes**

- The Department should investigate raising the pass mark on the MSc to 50% bringing it in line with the Higher Education Framework adopted by most UK universities
- As the MSc is technical, the Department must ensure that the final dissertation is technical in nature
- The JBM panel members recommend that the guidance and training on research methodology is reviewed.
- The JBM panel members recommend that the interdisciplinary nature of the group work is reviewed.  
The JBM panel members recommend that the department should review marking as there appears to be a mismatch between examiners comments and grades awarded.
- An assessment table shows that only 3% of the assessment for the MSc students is through written examinations and 28% relates to the dissertation and this has to be reviewed.
- Developing research being carried out by the Department should continue to be further extended and used to inform Masters level teaching.
- That it further enhances the MSc examination questions to ensure that they are all set at M Level.

- To set out clearly in the programme specification the aims of the new MSc programme in xxxx.
- The writing skills of the MSc students need to meet the standards expected by industry and so will need some significant improvement in some cases.
- The Department has started the process to review and strengthen their MSc exams and coursework so that they are assessed at the appropriate level in all cases and it is recommended that this work continues
- The civil engineering team should consider increasing the overall pass mark for the MSc from 40% to 50%

### ***Approval of Further Learning programmes***

During the past twelve months the Sub-Committee has continued to approve company and university proposals for schemes of Further Learning.

### ***Published Guidance material must be correct***

The need to update programme literature to ensure that the Further Learning requirements for BEng (Hons) graduates and MSc students with non-accredited first degrees are accurately addressed.

The current list of approved Employer-Managed programmes is as follows: -

- Cambridgeshire County Council
- Costain
- Dawnus Construction Ltd
- BAM Nuttall
- Jackson
- Kier Construction
- Network Rail
- PWD Brunei

### ▪ ***Good Practice***

The audit visit process to organisations is continuing and this has enabled the Sub-Committee to identify areas of good practice such as that listed below: -

#### **Dawnus**

This Programme is highly commendable and reaches a high standard. The JBM Verifiers were impressed with the commitment from the Company for the development of this programme. It was also felt that the moves to address succession planning were also an example of best practice.

#### **Cambridgeshire County Council**

The JBM Verifiers were impressed with the commitment from the Company for the development of this Programme. It was felt that the use of the in-house ILM accredited Management Diploma to fulfil Learning Outcomes was an example of good practice, which the candidates find very useful.

***New approvals in 2012***

Following visits or reviews of paper submissions some 72 MSc programmes were approved during 2013 as meeting the Further Learning requirements for a Chartered Engineer under the provisions of UK-SPEC for holders of a CEng accredited BEng (Hons) undergraduate first degree from the following universities: -

- o University of Aberdeen
- o Anglia Ruskin University
- o University of Bath
- o University of Birmingham
- o University of Bolton
- o University of Brunel
- o University of Coventry
- o University of Derby
- o University of Dundee
- o Edinburgh Napier University
- o University of East London
- o University of Exeter
- o University of Greenwich
- o University of Newcastle
- o Swansea University
- o Nottingham Trent University
- o University of Plymouth
- o University of Salford
- o University of Teesside
- o University of the West Indies
- o University of Wolverhampton

For a full list of accredited programmes please see the list on the JBM website ([www.jbm.org.uk](http://www.jbm.org.uk))

**8.3 *Activities for 2013***

In 2013 the Sub-Committee will be concentrating on the need to provide more focused guidance for candidates using the self-managed option and to organise a briefing session for MSc admissions tutors and a training session for companies offering approved programmes on assessment methods as more trainees start to complete their learning plans.

**9. *Good Practice***

Visit Reports are now prepared with points of good practice being highlighted for the information of Board Members and Universities. This aspect of reporting was introduced to improve the level of dissemination of good practice observed during JBM Visits. Examples of good practice are shown below and more detailed examples are listed in Annex 1 and a contact name is provided if more information is required. The JBM is very keen to facilitate the spread of best practice and comments are invited.

**Anglia Ruskin University**

Students undertaking CSCS tests in first year.

**University of Birmingham**

The School's Industrial Advisory Board was reconstituted in 2011. The Visiting Team met with IAB members, who reported that they had been encouraged by the School to participate actively in programme development. Many had taken placement students on the RESPECT industrial sponsorship programme which is run in partnership with engineering companies. Some concern was expressed about students having insufficient knowledge of basic Structural Engineering but this was perceived to be a problem across all universities.

**University of Bolton**

- Availability of PCs 365 days a year, 24 hours a day.
- Bookable group work rooms.
- Outstanding undergraduate teaching of structures and geotechnics.
- Profession-specific careers support within the library.
- Professional membership and development of staff.
- All STEM funding is ring fenced for STEM subjects within the University of Bolton, so that any funding intended for civil engineering will indeed go to civil engineering.
- The safety sheet completed before the survey field course which sees students docked marks for unsafe behaviour to a maximum of 30% of the module mark.

**Cambridge University**

- The panel commended the excellent organisation and preparation by the university for the visit.
- Both the staff and students are enthusiastic and committed.
- The breadth and coverage of all engineering disciplines is excellent.
- The excellent use of laboratories in all disciplines.
- The amount of practical work is commendable.
- The balance achieved between contemporary and traditional hands on laboratory equipment.
- The Fast Feedback facility for student responses to problems and concerns with individual modules.
- The First year parallel mathematics courses.
- The excellent guide to report writing produced by Dr Hugh Shercliff.
- The Part IB integrated design project (Robot).
- The compulsory 8 weeks industrial placement.
- The RAeS, IMechE and JBM commend the level of staff and student membership.
- The JBM commend the extended use of the Constructionarium to all civil registered students from the initially limited number of places.
- The two week surveying field course.
- The panel commended the excellent engineering for life sciences laboratories.

**University of Derby**

- Student support and relations with industry, with an infrastructure specialism, are excellent and make a significant contribution to employability.

- A significant number of lecturers have recent relevant and high level industrial experience.
- There is active promotion of EngTech and professional membership embedded into the FdEng.
- There is good practice in Mathematics teaching at Level 5 in terms of deriving engineering formulae, and this helps to provide comprehensive mathematical underpinning to the technical modules which also frees up time in those modules to focus on analysis and design issues.
- The inclusion of temporary works design teaching is a valuable part of the programme.

#### **University of Exeter**

- The Template for marking the Individual Project was felt to be good practice in prompting for a thorough consideration of marks to cover the whole range of learning outcomes expected in the project and the JBM team suggested that, with appropriate amendment, this could form the basis for providing constructive feedback to students.

#### **University of Newcastle**

- The Team was pleased to note that as from September 2012 students will be issued with digital tablets to provide improved access to handbooks, notes, and specialist software, Blackboard and library e-books.
- The Team was pleased to note the provision of a 'start-up' pack including text books and personal protective equipment.

#### **University of Oxford**

- The monthly Health and Safety Newsletter
- The coursework handbooks for the year two Surveying and Civil Engineering coursework modules are excellent examples of how new subject areas can be introduced during a very limited time schedule.
- The extensive programme of events organised by the Engineering Society and its associated newsletter.
- The Department stated in the submission document that they consider the Design Build and Test laboratories to be good practice together with the College tutorial system.

#### **University of Salford**

- Good institution support from the senior management of the University in terms of investment and vision for the future of the Directorate of Civil Engineering.
- The staff operate an open door policy with timetables on the doors to show when they will be available. This results in a good staff/student relationship.
- All students on the 2<sup>nd</sup> year attend the Constructionarium. Students really see the benefit of attending this course as they get to apply their theoretical knowledge and laboratory experience to real life problems within a team situation.
- On campus refurbishment – an opportunity for Civil Engineering students to visit the sites has been written in to the contracts and has full support of senior management of the University.

- There is a simple-to-use virtual learning environment. There is a University wide Mathscope which is well used by the students who found it extremely helpful. The University also runs regular Wordscope courses and the civil engineering staff run Structurescope sessions, particularly for first year students.
- Public engagement – MSc dissertation topics have been set this year which allow for community engagement with communication engineering topics to the members of the public at the Museum of Science and Industry. Obviously it will depend on whether students choose these topics, but the idea is commendable and would be very beneficial for those students and good preparation for their future employment.

### **Swansea University**

- Open-door policy of staff
- ELTS support for non-native speaking academic staff
- Invitation of the student representatives to attend Learning and Teaching meetings
- The weekly meeting of student representatives with the Head of Learning and Teaching.
- The introduction of a standard template for tutorial sessions.
- Electronic system for student feedback once they have completed a particular module
- The Atkins Carbon Prize competition is open to all Level 3 undergraduate students. The award is made to the student with the best project.
- The Access to Masters Sponsorship programme that allows Welsh graduates to apply for a scholarship a condition of which is that they spend 100 hours of the time working with a local SME to provide technical advice and support. The student can give an indication of the type of business they would prefer to be aligned to and the nominated University Industrial Liaison Officer will try and match the candidate with an appropriate company.
- Support for the activities on the ICE and the IStructE in the Region by the provision of University facilities for Institution meetings.

### **University of the West of England**

- The flexibility of the various study modes to cater for the lifestyle choice of the students and the particular local needs.
- Their plans to involve recent graduates in a mentoring scheme for the students and to invite at least one graduate to become a member of the Industrial Advisory Board.
- The open access to Library facilities during term time and the fact that they are moving more towards e-books will support those students completing modules or programmes using blended learning.
- The IAB's support for the programmes by providing case study material to support the JBM threads of design, health and safety risk management and sustainability.

### **University of West London**

- Student support both within the civil engineering team and through the library is excellent, well-integrated and continuously improving. There is a clear focus on assessment, and supporting individual research. A diverse student intake is very effectively supported.
- The experience of part-time students is used to good effect and relations between the university and employers are effective.

- Staff have good industrial experience in civil and structural engineering, project management, transportation, design, architecture and planning, and are professionally active.

**Annex No. 1****More detailed examples of good practice****University of Birmingham**

*Professor Mark Sterling CEng MICE, Head of Department, School of Civil Engineering,  
University of Birmingham, Edgbaston, Birmingham, B15 2TT  
Email: [m.sterling@bham.ac.uk](mailto:m.sterling@bham.ac.uk), Phone: +44 (0) 121 414 5065*

- Mentoring of Students by Practitioners
  - The School has a Memorandum of Understanding with Amey which has provided mentoring opportunities. Similar arrangements are planned with other companies. Informal mentoring takes place through the RESPECT programme or via QUEST and the students' own arrangements. The University's Alumni Office launched a formal mentoring scheme in 2010 for any undergraduate or graduate of the University.
- The School attended Constructionarium for the first time in 2011. Twenty nine students took part and found the experience extremely valuable. The Visiting Team was pleased to learn that the School intends to participate in Constructionarium again this year.
- Students in the 3<sup>rd</sup> year organise the Year 1 site visit and the surveying week. Year 1 students find interaction with Year 3 students useful and the Year 3 students gain valuable experience in hands-on management.

**Newcastle University**

*Professor Jon Mills, Head of School of Civil Engineering and Geosciences, University of Newcastle upon Tyne, Room 2.10, Cassie Building, Newcastle Upon Tyne, NE1 7RU  
Email: [jon.mills@ncl.ac.uk](mailto:jon.mills@ncl.ac.uk) Phone: ++44 (0)191 222 5393*

- The Team praised the emphasis placed on the quality of teaching and the student experience as evidenced through the investment in two senior teaching associates, a teaching fellow and two academic interns. There is now additional focus on recruitment, retention/satisfaction, industrial relevance/placements, progression to the industry and research into new pedagogic techniques and best practice in teaching for the School. The Team was pleased to note that the University not only recognises research and innovation within its promotion criteria but also teaching/learning and engagement (including involvement with professional institutions).
- This emphasis on teaching was especially demonstrated through two initiatives:
  - The teaching of Mathematics - the Team was advised that each student undergoes a diagnostic test during the induction week to assess their mathematical ability. Based on the results students are placed in either the advanced or intermediate stream. The students cover the same material but those students in the intermediate stream do so at a slightly slower pace and attend an additional 1- hour lecture per week.

- The teaching of English - the School is developing a writing strategy with the help of Alicia Cresswell from the University's Writing Development Centre. It is hoped that this strategy will improve the standard of written English.
- The Team highlighted the student 'buddy system' where Stage 3 or 4 students mentor Stage 1 students as an example of good practice. The buddy system had originally been introduced within the civil engineering programmes to address difficulties students were encountering with the Engineering Mechanics and Materials module in Stage 1 but had now developed into a more extensive support programme.

**Annex No. 2****Details of Membership - 2012****Joint Board of Moderators**

Chairman      Dr J Roberts

Members      Professor N Buenfeld CEng  
 Mr S Bhattacharya CEng  
 Mr G Bowring CEng  
 Mr M Dickson CEng  
 Mr T Edmunds IEng/Ms E Gormley IEng  
 Mr L Gentry CEng  
 Mr T Gurr IEng  
 Mr J Haines  
 Professor T Ibell CEng  
 Professor R Kalin CEng  
 Professor D Lloyd-Smith CEng  
 Mr E McCann CEng  
 Mr F Montgomery CEng/Mr C Smith CEng/Mr A Silver CEng  
 Dr G Owens CEng  
 Professor J Parkin CEng  
 Dr D B Reid CEng  
 Professor D Savic (CEng)  
 Mr S Spender IEng/Mr J Pearson IEng  
 Professor N Tyler  
 Professor K Viridi CEng  
 Professor A Woodside CEng  
 Professor G Parke CEng

Engineering Council Liaison Officer	Professor P Hicks CEng
International Sub-Committee Chair	Professor N Smith CEng
HLTQSC Chair	Mr C Jones CEng
Further Learning Sub-Comm. Chair	Professor R Lark CEng

Secretariat (ICE)	C Goan
	K Sharma
	E Ryan
	A Stanley
Secretariat (IHE)	C Sullivan
Secretariat (CIHT)	S Stevens
Secretariat (IStructE)	A Brereton
	K Bunting
	D Byrne
	C Hearing

**Higher Level and Technician Qualifications Sub-Committee**

Chairman	Mr C Jones CEng Mr Phil Brown (Southampton Solent University) (IEng) Mr Graham Ford (University of East London) (CEng) Ms Dora Timar (City and Guilds) Ms Jane Grant (WSP Group) Ms Kath Skillern (Edexcel) Mr Lou Haughton (South Thames College)
Secretariat	K Sharma D Byrne A Stanley S Stevens J Walker E Ryan

**International Sub-Committee**

Chairman	Professor N Smith CEng Professor D Cleland CEng Mr C Smith CEng Professor K Viridi CEng Professor B Lee CEng Mr R McKittrick CEng Professor D Nethercot CEng Dr C Williams CEng
Secretariat	D Byrne H Cross/R Webster C Goan E Ryan A Stanley

**Further Learning Sub-Committee**

Chairman	Professor R Lark CEng Mr I Cross CEng H McIntyre CEng Mr K Howatt CEng Dr D Easterbrook CEng Mr J Ingle CEng Mr S Spender IEng Mr McKittrick CEng
Secretariat	C Hearing C Goan E Ryan A Stanley S Stevens