

JOINT BOARD OF MODERATORS

2005 ANNUAL REPORT

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1. Chairman's Introduction

I am very pleased to present my first Annual Report to you as Chairman of the Joint Board of Moderators (JBM) outlining the activities that the JBM has been involved with during 2005. It was again a busy year for visits within the UK. On the International front we continued to provide direct support to those countries that have a limited number of universities offering degree programmes falling within the scope of the JBM, and to work closely with those countries whose scale of activities make it feasible to set-up their own accreditation system.

The revised guidelines for degree programmes have been published on the JBM website. The Board is not aiming to issue them in hardcopy format but wishes to encourage universities and employers to download documentation from the JBM website, thus ensuring that they have access to the most up-to-date JBM information. This is important as some of the documents on the website are there as 'interim documents'.

I would like to make a specific reference to Annex D – Health and Safety Risk Management in Degree Programmes. This Annex relates to the teaching of health, safety and risk management and the focus of the revised document places new emphasis on the management of risk in all areas, including health and safety matters. Where possible, the JBM intends to identify areas of good practice in Universities in their implementation of the new Guidelines and with the agreement of Departments to arrange for the information to be uploaded to the JBM website.

All accreditation visits are now made under the terms of UK-SPEC and as a consequence one of the major challenges facing visiting teams over the coming year will be the need to assess programmes against the UK-SPEC defined Output Standards. The visiting teams must ensure that this assessment does not become a narrow pass/fail element of the visit schedule to the exclusion of the broad aims of JBM accreditation. In addition, an important role of the visiting teams remains the need to identify and disseminate good practice amongst the academic community.

In my capacity as Chairman of the JBM, I was pleased to attend the ICE/IStructE/ACED meeting with Heads of Civil Engineering Departments in April and also the launch of the Constructionairum course at the National Construction College (East) CITB Norfolk.

Over the coming year the Engineering Council Liaison Officer to the JBM, Mike Robbins is planning to take part as an observer on a number of accreditation visits and I am sure that you will offer him the same warm welcome you give to the JBM visiting teams.

I would like to thank the JBM secretariat for their support over the past year and also to those secretariat staff from the member institutions who had supported the accreditation process in their role as visit secretaries.

At the meeting of the JBM Chairman and the Presidents of the associated Institutions it was agreed that the Institutions owe a great deal to those members from academia and industry that contribute to the work of the JBM and its associated Sub-Committees.

Dr John A Hill

2. Role of the Joint Board Of Moderators

The Institution of Civil Engineers (ICE), the Institution of Structural Engineers (IStructE), the Institute of Highway incorporated Engineers (IHIE), and the Institution of Highways & Transportation (IHT), established a Joint Board of Moderators to coordinate accreditation activities for educational programmes in the civil, structural, transportation and associated engineering disciplines within the built environment sector.

The JBM debates and make recommendations on accreditation, approval and non-accreditation of educational programmes for decision by the JBM member institutions. The JBM will maintain and strengthen links with universities and colleges on all matters concerned with the education of civil, structural, transportation and associated engineering disciplines within the built environment sector.

The JBM ensures that the standards of programmes in Civil, Structural and associated engineering disciplines within the built environment sector meet the academic requirements for Chartered, Incorporated or Technician Membership of these Institutions. It is required, in concert with the educational establishments, to develop a system for accrediting/approving programmes of study to enable it to publish and keep up-to-date a list of qualifications which can meet or contribute towards the academic base requirements for Membership and Chartered Engineer (CEng)/Incorporated Engineer (IEng) and Engineering Technician (Eng Tech) qualifications. Applications for accreditation made through individual Institutions are referred to the Board.

If requested the JBM will also consider accreditation of programmes overseas provided that the sponsoring Institutions of the JBM incur no costs and the area of activity falls within their business objectives.

The membership of the Board is drawn from the academic, public and private sectors, representing a wide spectrum of engineering associated with the built environment. All members involved in the accreditation activities of the Board are experienced engineers who bring to the moderation exercise an ability to make balanced judgements on the ability of a department to create a high standard of graduate output. As well as assessing the quality of the facilities, the content of the syllabus, the teaching and research base, and the rigour of the examinations, moderators assess how the department aims to stimulate creativity through the application of engineering principles. During the visit the representatives of the JBM will meet students, recent graduates from the programmes to be reviewed and representatives from local industry to ensure that the students experience is a positive one.

The Board has formulated Guidelines, which define in general terms the curriculum, learning outcomes, standards and other requirements against which all accreditation decisions are made. The Board aims not to be over-prescriptive in its requirements since it wishes to encourage diversity in education provision.

All accreditation visits are preceded by the submission of a standard report by the Department. The structure of each visit also follows a standard format. It involves a tour of laboratories and facilities, scrutiny of the quality of students' examination and coursework, and the assessment system. Discussions are held with academic staff, support staff, students and the Vice Chancellor, or Chief Executive, on all matters affecting the content,

standard of teaching and learning, departmental facilities and funding issues relating to the programmes being accredited. For its visit to a Department, the visiting team generally consists of two academics, two practising engineers and a secretary.

Each team's Visit Report and recommendations are considered by the full Board of the JBM, which decides whether to make recommendations to the participating Institutions that they should grant or renew accreditation for a period of up to five years. If the report is deemed sufficiently unsatisfactory the Board may refuse or terminate accreditation, but existing students on accredited degree programmes are always protected from any changes in accreditation decisions.

To reflect the range of the Board activities a number of specialist Sub-Committees has 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 Company Managed schemes as meeting the Further Learning requirements for Chartered and Incorporated Engineers as appropriate.

The Higher Level and Technicians Sub-Committee is responsible to the Board for any activities that relate to the assessment of 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.

3. Executive Summary

The Board and its Working Groups and Sub-Committees discussed a number of major policy issues during 2005.

In July 2005, as a consequence of the work of the Guidelines Group, the Board issued to universities a series of revised Guidelines for MEng, BEng (Hons) and IEng degree and supporting Annexes. The documentation can also be downloaded from the JBM website on www.jbm.org.uk.

A new Briefing File for JBM members was produced and also two training sessions were held for Board, Sub-Committee and Panel members in September and October 2005 outlining the new accreditation processes that has been developed following the introduction of UK-SPEC. A further session will be held in early 2006.

The first series of visits against the new Guidelines including the document "Guidelines for Checking Output Standards of Degree Programmes" were undertaken in autumn 2005. Any issues identified following these visits will be discussed by the JBM at its meetings in January and April 2006.

New submission guidelines for universities have also been developed and issued as a working draft to universities preparing for accreditation visits in Spring 2006 and these are to be discussed at the Board meeting in January 2006.

Details of the Board's considerations follow together with a summary of good practice and some of the recurrent issues identified during the 2005 visits to the Universities.

With the move to accreditation of programmes against defined output standards it is important that the programme leader develops a portfolio of student evidence to support the output standard requirements for each of the programmes at their exit level. A Department should seek to map its learning outcomes for course modules against the requirements set out in UK-SPEC.

The Board would also encourage Departments as part of their preparation for forthcoming JBM accreditation visits, to provide thread diagrams, with examples of course work and other evidence of the threads being separately displayed for inspection by the visiting team, in the context of the three JBM Annexes B, C and D: Design, Sustainability, and Health & Safety Risk Management.

Universities are encouraged to review the content of all programmes to ensure that health, safety and risk and environment and sustainability issues are covered satisfactorily and in compliance with revised the JBM guidelines.

4. JBM Activity In 2005

4.1 Visits undertaken

Quinquennial Visits (Dates)		Review Visits (Dates)		DABCE Visits (Dates)
University of Dundee	3 /4 February	University of the West of England*	12 May	The JBM did not participate in any DABCE accreditation visits in 2005
University of Glasgow	10/11 February	Heriot-Watt University	24 November	
Manchester University	24/25 February			
London South Bank University	10/11 March			
City University	17/18 March			
Leeds Metropolitan*	3 /4 November			
Imperial College	1 /2 December			
University of Bath	8/9 December			

* Visit covered IEng programmes only

4.2 Summary of course accreditations

Date of JBM Board Meeting in 2005	No of UK Visit Reports considered CEng	No of Visit Reports Considered (O.seas) CEng	No of Paper Submissions for new programmes	CEng Approved	CEng Rejected	No of UK Visit Reports considered IEng	IEng Approved	IEng Rejected
21.01	11*	1	6	28	-	2*	13	-
22.04	4	-	1	22	-	2	4	-
01.07	-	-	2	4	-	1	3	-
14.10	1	-	1	4	-	-	-	-
Total	16	1	10	58	-	5	20	-

*This JBM meeting considered a number of visit reports for visits undertaken in October/November 2004

4.3 Summary of programmes of study approved as meeting Further Learning requirements

Date of JBM Board Meeting in 2005	Further Learning for CEng	Further Learning for CEng Rejected	Further Learning for IEng
21.01	42	1	-
22.04	23	7	-
01.07	4	-	-
14.10	5	-	-
Total	74	8	-

5. Summary of Policy Decisions and Main Discussion by Board

A number of major policy issues were discussed by the Board and by Working Groups/Sub-Committees on behalf of the Board during 2005. The structure and operation of the JBM continues to be monitored as the functions of the JBM become more fully integrated and effective.

Details of the main activities of the associated Sub-Committees are reported in the following sections.

5.1 International Sub-Committee

Following the two international visits organised during 2004 a number of policy issues were identified and considered at the Sub-Committee meetings in 2005. As a consequence the JBM member institutions agreed and approved a revised international policy.

The International Sub-Committee continues to work with their colleagues on the Russian International Accreditation Board (RIAB) and they were pleased to receive reports on the RIAB recent accreditation visits to Donbass State Academy of Civil Engineering and Architecture, Novosibirsk State university of Architecture and Civil Engineering and Tomsk State University of Architecture and Civil Engineering.

The Board requested clarification from EC^{UK} regarding the accreditation of degree programmes taught in languages other than English. The EC^{UK} has since advised the Board that it can accredit programmes that have not been taught in English, but that any subsequent Professional Review for EC^{UK} registration must be conducted in English.

An accreditation visit to two universities in Sri Lanka will take place in February 2006.

5.2 Higher Level and Technician Qualifications Sub-Committee

Following discussion with the Engineering Council UK (EC^{UK}), it has been decided that, in future, the Joint Board of Moderators (JBM) will no longer need to carry out the accreditation of HNC/D programmes as part satisfying the academic base requirement for registration as an Incorporated Engineer. HNC/Ds will be accepted as fully satisfying the academic base requirement for EngTech without the need for accreditation.

The JBM had taken this decision due to the following factors:

- HNC/Ds exceed the academic base requirement for EngTech registration. Edexcel (England, Wales and Northern Ireland) and the Scottish Qualifications Authority (Scotland) already set out requirements for the provision of HNC/D programmes and as these programmes are part of the National Qualifications Framework (NQF) they are already subject to Quality Assurance Agency scrutiny.
- Any HNC/D students who wish to achieve the academic base for IEng will need to complete Further Learning to meet the benchmark qualification of an ordinary degree, or alternatively achieve it via the Individual Case Procedure route using experience in lieu of this academic base.

The JBM agreed to continue to develop and maintain a list of approved programmes for EngTech registration, including HNC/Ds.

One area that the Sub-Committee will be reviewing in 2006 is the growth of Foundation Degrees and they will consider if separate guidance is required.

5.3 Further Learning Sub-Committee

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

As the Board has gained experience in assessing Masters degrees as meeting the further learning requirements for a Chartered Engineer, it has become clear that a Post-Graduate Diploma would also meet the appropriate output standards for a Chartered Engineer provided it is not awarded as a default to students deemed incapable of completing the thesis part of an MSc, and as such, these awards can also now be approved.

The Board agreed to recommend to the JBM Member Institutions, that it should not normally consider Masters degrees/PGDips as Further Learning proposals for meeting the additional learning requirements for a Chartered Engineer unless the university concerned had accredited CEng undergraduate degree programmes.

A Working Group was tasked with delivering new Guidelines covering all aspects of Further Learning at IEng and CEng level and new guidance material for organisations offering schemes aimed at meeting the Further Learning requirements for a CEng were issued in September 2005 and they are available for download from the JBM website. A range of further documentation to support IEng activities is currently being developed and will be available in early 2006.

The Board considered the first ever audit of a Company-Managed Work-Based Further Learning Programme and agreed that it was both a commendable programme and should be approved for a further two-year period.

It was agreed that the JBM member institutions should promote the uptake of Employer-Managed Work-Based Further Learning Programmes to increase accessibility beyond the large employers.

The Sub-Committee will also arrange for a series of briefing sessions for Supervising Engineers to be held in the regions in 2006.

5.4 The Output Standards Working Group

A final document was published in July 2005 after a period of consultation with Board members and after approval by the professional Institutions associated with the JBM.

5.5 The Guidelines Working Group for MEng, BEng (Hons) and IEng degree programmes

A final document was published in July 2005 after a period of consultation with Board members and after approval by the professional Institutions associated with the JBM.

5.6 Other Issues considered by the Board in 2005

In April 2002 it was agreed that Universities could decide to allow students to enter civil engineering programmes without an A level in mathematics. During, 2005, the visiting teams explored in detail during accreditation visits, the steps that those Departments who had chosen to adopt this relaxation in entry requirements, had put in place to ensure that necessary mathematics standards are being maintained.

The Board noted that as a consequence of a reduction in teaching income there continues to be pressure on Departments to recruit new staff with a proven research record as income generators. The Board recognised that most extra income now comes through research work and Departments at Universities without strong research activities will be forced to increase the student to staff ratios in order to remain viable. In the light of these pressures exhortations for the recruitment process to put greater weight on new staff with appropriate professional and practical experience are too often falling on deaf ears.

EC^{UK} has advised that the requirement that overseas students complete two years of study at a UK university before being awarded an accredited degree no longer exists. The Regulations and Standards Committee felt that a blanket rule of this sort could not be sustained once accreditation was linked to output standards. A university would presumably have admitted someone to the final year of a programme on the basis that their prior learning together with that final year would enable them to achieve the learning outcomes of the programme. This would not necessarily stop institutions from saying that accredited status only applied to those who had completed two years of a particular programme, but that would have to be done on a programme by programme basis, rather than as an overall rule. The university would have to demonstrate how those who only did one year actually achieved the outcomes. It would certainly be reasonable for Institutions to look closely at any programme, which seemed to have a large number of such graduates

The Board was pleased to receive a report from the ICE's Panel for Historic Engineering Works (PHEW) that stated that they were planning to develop educational material that could be used by universities to support their undergraduate teaching.

In 2005 to assist the operation of the JBM the member Institutions reviewed their nominees to the Board and the associated Panel of Moderators and three new Members joined the Board throughout 2005, Professor D Lloyd-Smith (Imperial College), Mr F Montgomery (Leeds University), and Dr D Reid (Napier University). Professor Croll was asked to remain as a co-opted member of the Board for a further year to support Dr Hill. Mr G Rigby (Mouchel Parkman), Mr C Smith (WSP Group), Dr D Ferguson (Queen's University Belfast), Professor A Woodside (University of Ulster), Mr S Spender (Hampshire County Council) and Mr T Edmunds (Norfolk County Council) were invited to join the Panel of Moderators. All new Board, associated Sub-Committee and Panel members were asked to take part in the two JBM training sessions held in September and October 2005.

Professor M Barnes, Professor N Smith, Mr S Garrity and Mr P Cooper completed their service on the main JBM Board at the end of 2005 and they have kindly agreed to remain as members of the Panel of Moderators for a further three years.

The Board considered resourcing and, in particular the possibility of charging for accreditation and they agreed at the moment not to charge for UK accreditation and this issue will be

discussed further next year.

The Board agreed to a proposal to revamp and develop the JBM website which would involve very basic restructuring of the existing information rather than whole-scale restructuring of website design and functionality.

In January 2005 the EC^{UK} took over the secretariat responsibilities for DABCE from the Institution of Electrical Engineers. In January 2006 this Committee will be renamed the Engineering Accreditation Board (EngAB) and the terms of reference and composition have been amended accordingly. All JBM member institutions have been invited to make nominations for membership of the new Committee.

5.7 Issues to be considered by the Board in 2006

In 2006, the following areas are to be considered by the JBM: -

- Need for further guidance to departments as visiting teams gain more experience of assessing, undergraduate and masters programmes using the new Output Standards documentation
- Development of supporting guidance material on Further Learning for potential Incorporated Engineers and candidates that have not been able to follow an Employer-Managed Work-Based Further Learning programme.
- Guidance on entry standards for entry to approved MSc or PGDip awards will also be considered. Development of the JBM website
- The issue of MEng as a fast-track route to CEng registration will be given further consideration

6. 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. This section of the report summarises the main areas of good practice observed during 2005.

Following the publication of the new detailed Annexes on Design, Sustainability and Health, Safety and Risk Management, the documentation received from Departments has usually been of a high quality. In one case the way the University outlined how it is intending to address the provision of health and safety risk management within undergraduate programmes was considered to be exemplary and the Board is currently seeking the approval of the Department to be allowed to include its proposal on the JBM website as an example of good practice.

The Board has been pleased to note the way some Departments have chosen to prepare their submission documents, in particular the way in which the university had provided a detailed response to concerns raised at previous visits. This made the document easier to follow and assisted Moderators during the visit. It also helps the visiting team where the entire submission is received in a single bound document, ideally double sided. Another, change in the submission documents received during 2005 is the provision by some Departments of details of their past examination papers and module descriptors on a CD Rom. This caused a significant saving in terms of paper used and is something the Board encourages other

Departments to consider.

A recurring theme in most Visit Reports is that the visiting team was impressed by the articulate and enthusiastic students who were very supportive of the staff. Similarly, many Visit Reports refer to a strong team spirit between the staff and the students and that a good atmosphere is apparent during the visit, often as a result of the "open door" policy of the staff in the Department.

The links between Departments and Industry continue to be somewhat more variable. And as a consequence new guidance on industrial liaison has been included in the new University Briefing File. However, in those Departments with an effective Industrial Liaison Committee, or where there is a high level of regular contact between the Department and Industry, there was clear evidence of the benefits to be gained by all parties including students. In particular, excellent links between Universities and Industry have been established in those Departments offering sandwich or vacation placements. Evidence was also provided in many cases of good use being made of Visiting Professors, some of who were based in Industry, and of links developed between the Department and the HSE.

The Constructionarium scheme provides a great opportunity for students to be involved in approximations of realistic construction projects. The Constructionarium is a week-long residential course held at the National Construction College (East) CITB Norfolk, which at one university forms part of the Group Design Project module. This course offers excellent opportunities for the students, as they will construct a design provided by a senior consulting engineer and answer to a client on time, budget, quality and compliance. All construction roles are covered, from Chartered Engineer to general labourer. The students have built dams, oil rigs, tunnels, towers, bridges, and a stadium – all to a scale which requires real-life methods and materials, e.g. 20 tonne oil rig, 10m footbridge, 40m athletics stadium, 18m dam.

Many Departments do not have any formal arrangements for providing vacation work for students, but they do provide support and advice for those wishing to find employment and in some cases the Board have found that the Departments encourage students to consider the IAESTE (International Association for the Exchange of Students for Technical Experience), a scheme providing opportunities for vacation work that has proved popular with those students who have been able to gain experience via the scheme.

In one Department, the visiting team found that the student body arranges an annual expedition to El Salvador where students construct earthquake resistant structures for the local community. This gives students a chance to be involved in a real-life project, which also benefits the local community.

Good use is being made of the excellent facilities available in most universities. These facilities include Laboratories, Libraries and IT facilities, which are supported by dedicated supportive staff. A good number of Visit Reports indicated that the research work of staff was being fed back to the students in project work and occasionally in final year modules.

Good use is also being made of university intranet systems to enable students to access lecture notes, worked examples and previous examination papers. One system in particular usage and popular with staff and students is Blackboard.

Further areas of good practice identified in 2005 include the following:

- High standards in supportive documentation e.g. Industrial Training Manual, Project Logs, Professional Record Files etc.
- Extensive range of site visits and especially where these are integrated in the undergraduate programme.
- Field Courses – many with significant financial support from the Department.
- Innovative use of creative design.
- Good links with other Departments e.g. the Architecture Department, which enables practising architects to assist with MEng projects.
- Some evidence of greater attention being given to Environmental issues.
- Good quality CD Rom's being produced by staff in support of teaching.
- Departments that ask students to maintain a diary that shows their involvement in the MEng Group project and it is also used to provide evidence that they have worked as a group.
- The 'crit' process where ideas are not only challenged by engineering peers but also by associated disciplines such as architects.
- Where there is an emphasis on sketching and drawing to communicate ideas.
- A number of universities continue to offer students the option of spending a year abroad and this has worked well where this time abroad correlates closely with the accredited programmes offered by the Department.
- In operating their year abroad option, one University has decided to link to just one university in each of the countries involved in the supply of the overseas elements of the programmes and they have found that this has led to a good relationship between the academic institutions, which may not have been possible with a more diffuse arrangement;
- A number of universities are encouraging MEng students to undertake some vacation work in the industry and this carries some academic credit but does not contribute to the overall final degree pass.
- The integration of site visits within the weeklong geological or surveying field course and in some cases the fact that students have to plan their own work.
- Visiting teams have been impressed by those Final Year project frameworks that have been supplied by members of the Industry Partnership Panel. This 'real-life' context added greater meaning to the projects;
- Visiting teams have found that where it is possible for ICE-IStructE meetings/events to be held on University grounds has led to a high proportion attending from the student body.
- The efforts made by some Universities to ease mature students back into the education environment and to provide them with an opportunity to enter the profession.
- At one university the visiting team found that the Department had excellent links with industry and they were impressed with a scheme known as the "Open Door to Industry Scheme".

"The "Open Door to Industry Scheme" is a web-based scheme designed as means of integrating industry into Civil Engineering undergraduate studies via a novel programme of short visits, project shadowing and site visits, coupled with more conventional vacation and sandwich placements. Industrial Partners use the website to advertise vacancies and opportunities

to visit sites and students are required to take up these opportunities and report their experience of the visit to the staff. It is not compulsory but take up is increasing as students realise the value of industrial experience."

- The process followed by one Department in conceiving and setting the students projects was considered to be an example of good practice. The extent of industrial input in conceiving the projects in Years 2 and 4, and the close working relationship between the Department and its industrial partners during the work and assessment phases, resulted in substantial real-life projects that challenged the students and led to a high quality of work. Industry provided data and access to the sites. They were involved at the concept stage working with academics to agree the scope, the timetable and the methods of assessment. The work is supervised by both academics and industry with the academics taking the lead role in providing advice and assessing the work.
- The approach taken by one Department to introduce first year students to the concept of risk assessment. All students undertake a risk assessment exercise in Year 1. Following an introductory lecture the students were asked to complete two assignments that asked them to undertake a risk assessment as applied to an area in their own life, the first related to an area of their personal life such as part-time employment, a hobby or social event and the second was undertaken following a site visit to a local construction project. This report had to identify potential risks and to identify ways in which that risk could be mitigated.

7. Current Concerns

This was another year of consolidation as the Board visited a number of Departments seeking accreditation of programmes that satisfied the educational base for CEng and IEng. The aims and objectives of various degree schemes at a number of Universities were considered to be disappointing with many not differentiating significantly between IEng and CEng degree schemes or between full-time and sandwich degree schemes. The broadening aspects of the MEng degree were often overlooked in the aims and objectives. Also, many Departments failed to refer to the uniqueness of the course or the Departments particular strengths in the published documentation.

In recent years, many Civil Engineering Departments have merged, either with other engineering disciplines or with other departments in the areas of the Built Environment or Architecture.

The Board continues to be concerned about the number of Visit Reports stating that the visiting team had experienced difficulty in identifying a design thread throughout the course. The Board will keep this area under review since the difficulty is unlikely to ease with the pressure coming from the administration arm of the Universities to appoint "research active staff".

Another area of continuing concern is failure by universities to be able to demonstrate clearly how health, safety and risk management issues are integrated in their undergraduate programmes. When the visiting team has raised this, the subsequent paper response made by the Department has shown how these areas are being integrated in a very positive way.

Other specific issues of concern arising from the 2005 Visit Reports include:

- With the introduction of the new Guidelines the visiting teams are keen to ensure that environmental and sustainability, health, safety and risk management issues are embedded within the course programmes where appropriate.
- Need to monitor the design thread to ensure that it permeates the entire programme and is not isolated to individual modules.
- Need for more conceptual design/sketching/drawing and to ensure a 'design thread'.
- Need for more compulsory site visits and Field Courses and these should reflect the full coverage of civil engineering core subjects.
- That the benefits of membership of the Institutions should be stressed to members of the academic staff. It is important that students come into contact with lecturers who are professionally qualified. Departments must encourage academic staff to pursue professional membership and Chartered status where appropriate.
- Need to consider the issue of staffing, and in particular succession planning, taking into account the expectations of the JBM in terms of undergraduate teaching, research and the professional qualifications of staff.
- That student should be taught sufficient analytical techniques to enable them to check the output of appropriate computer packages.
- Need to review the examination questions being set at the MSc level to ensure that the questions being asked are demanding and stretch the students understanding and knowledge of the subject being examined.
- Need to review examination questions to enable the students to answer more open-ended questions.
- The feedback from marking students' work was very variable.
- Departments need to ensure that there is less of a bias towards literature/desk study individual projects, as opposed to laboratory/experimental work.
- Need for Departments to ensure that they fully utilise the support available through their industrial liaison panel or its equivalent. Some Panel members are more than willing to become involved in the assessment of Final Year projects, design tutoring, industrial placements (or vacation experience) and site visits.
- Where Departments offer a Civil Engineering with Architecture programme they need to ensure that their aim is to produce a civil engineer rather than an architect and that the focus in the programme is on relationship between the civil engineer and the architect.

Annex No. 1**Details of Membership - 2005****Joint Board of Moderators**

Chairman	Dr J Hill
Members	Professor M R Barnes Mr P W Bedford Professor B G Clarke Mr P A Cooper Mr P Dipper Mr T A Ealey Mr S Evans Mr S W Garrity Mr D Hoskins Mr S Hyde Mr K Linje Professor D Lloyd-Smith Mr H MacIntyre Mr F Montgomery Professor R Plank Professor W Powrie Dr D B Reid Mr A Silver Professor N Smith Ms F Wainwright Dr C Williams
EC ^{UK} Liaison Officer	Mr M Robbins
International Sub-Committee Chair	Professor B Barr
HLTQSC Chair	Mr E Hewitt
Further Learning Sub-Comm. Chair	Professor R Jackson
Co-opted	Professor J Croll
Secretariat (ICE)	Mr M Barrett Ms E Ryan Ms D Seddon
Secretariat (IHIE)	Ms M DaCosta Ms J Walker
Secretariat (IHT)	Ms T Coyle Ms S Stevens
Secretariat (IStructE)	Mr A Brereton Mr D Byrne Ms M Dignan Ms L Pollard

Higher Level and Technician Qualifications Sub-Committee

Chairman	Mr E Hewitt	
	Mr D Hoskins	
	Mr J McNeill	
	Mrs J Knight	
	Mr B Pyper	
	Mr C Bedford	
	Mr P Dipper	
	Secretariat	M DaCosta
	D Byrne	
	M Barrett	
E Ryan		

International Sub-Committee

Chairman	Professor B Barr	
	Mr C Carter	
	Professor D Cleland	
	Mr R Eastwood	
	Professor R Hawkins	
	Mr E Hewitt	
	Mr J C Joel	
	Professor B Lee	
	Mr R McKittrick	
	Professor C Melbourne	
	Professor D Nethercot	
	Professor N Smith	
	Secretariat	M Dignan
	M Barrett	
E Ryan		
D Seddon		

Further Learning Sub-Committee

Chairman	Professor R Jackson	
	Professor M Barnes	
	Mr R Chantrelle	
	Professor B Clarke	
	Mr P Cooper	
	Mr E Hewitt	
	Mr J C Joel	
	Ms D Larkman	
	Dr J Keer	
	Mr L Parker	
	Secretariat	M Dignan
	M Barrett	
	E Ryan	
D Seddon		
S Stevens		

Students 2005	MEng			BEng (Hons) CEng			MSc			PGDip			IEng Degree			HNC	HND	NC	ND	Total Students
	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Total	Total	Total	Total	
Aberdeen																				
Abertay Dundee													16	0	16					16
Anglia Ruskin University													11	0	11		20			31
Aston																				
Bath	43	4	47	21	14	35														82
Belfast	61		61	50	2	52														113
Belfast Institute of Further & Higher Education																				
Bell College of Technology																				
Birmingham	78	8	86				48	38	86	4	0	4								262
University of Bolton													16	9	25	56				81
Bradford	0	0	0	36	12	48							6	5	11					59
Bridgend College																8	2	9	2	21
Brighton	5	1	6	41	9	50														56
Bristol	57	4	61	2	2	4														65
Burton College																23		12		35
Cambridge	225	59	284																	284
Cardiff	47	4	51	43	15	58	10	19	29											138
City	3	0	3	55	16	71	7	12	19											93
Coleg Menai																11				11
Coventry				28	6	34	9	11	20	3	0	3	27	4	31	55	14			157
Cranfield (RMCS)																				

Derby University																	3				3
Dundee College																					
Dundee University	8	0	8	23	0	23	12	18	30												61
Students 2005	MEng			BEng (Hons) CEng			MSc			PGDip			IEng Degree			HNC	HND	NC	ND	Total Students	
	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Total	Total	Total	Total		
Durham																					
East London						53			26						28						107
Edinburgh	58	7	65	13	3	16															81
Edinburgh's Telford College																					
Exeter College																8					8
Exeter University (entry to all engineering)	46	1	47	66	1	67															114
Falkirk College																					
Glamorgan													31	0	31						31
Glasgow University	74	2	76				17	38	55												131
Glasgow Caledonian University													29	2	31						31
Greenwich				12	5	17	7	6	13				4	0	4	14	7				55
Grimsby College																					
Heriot-Watt	24	0	24	31	0	31	54	22	76	13	3	16									147
Inverness College																8		13			21
Kingston				48	13	61	33	13	46				13	2	15			0			122
Leeds	54	5	59	80	7	87															146

Leeds Metropolitan University														49	9	58			80			138
Lincoln College																						
Liverpool	39	5	44	39	24	63																107
Liverpool John Moores				21	2	23											16	18				57
London (Imperial)	59	36	95				41	157	198													293
Students 2005	MEng			BEng (Hons) CEng			MSc			PGDip			IEng Degree			HNC	HND	NC	ND	Total Students		
	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Total	Total	Total	Total			
London (UCL)	24	10	34	20	15	35	10	6	16												85	
Loughborough	47	1	48	36	5	41															89	
Manchester	64	13	77	17	9	26															103	
Mid Kent College																						
Napier				2	0	2	42	13	55				18	0	18						75	
New College, Nottingham																30	19	18			67	
Newcastle	45	0	45	42	5	47															92	
Newcastle College																21		27			48	
North East Wales Institute																						
North Lincolnshire College																						
North West Institute of Further and Higher Education																						

City College Norwich																	17	23		40
Nottingham	74	40	114				37	32	69											183
Nottingham Trent				12	1	13							25	2	27					40
Oaklands College																23		26		49
Oxford	130	24	154																	154
Paisley University													31	0	31					31
Perth College																				
Plymouth	7	0	7	34	1	35	5	4	9				44	3	47			20		118
Portsmouth	6	0	6	38	1	39	29	14	43	1	1	2	28	2	30		8			128
Students 2005	MEng			BEng (Hons) CEng			MSc			PGDip			IEng Degree			HNC	HND	NC	ND	Total Students
	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Total	Total	Total	Total	
Reading College																				
Salford	1	0	1	16	3	19	31	16	47	3	1	4	17	3	20					91
Sheffield College																20		13		33
Sheffield University	90	9	99	5	5	10	37	22	59	5	5	10								178
Southampton Solent University																38	6			44
Southampton University	41	4	45	30	2	32	31	26	57											134
South Bank				23	22	45	19	16	35				28	12	40	36				156
Stow College																				
Strathclyde	26	0	26	56	0	56														82
Suffolk																		9		9
Surrey	24	2	26	48	14	62	59	29	88											176

Swansea	36	6	42	35	6	41	1	4	5											88
Swansea Institute																9	6			15
Swindon College																				
Ulster				35	0	35	12	0	12				20	0	20					67
Warwick	17	2	19	20	5	25														49
University of Wales, College Newport																				
College of West Anglia																				
University of the West of England																				
Students 2005	MEng			BEng (Hons) CEng			MSc			PGDip			IEng Degree			HNC	HND	NC	ND	Total Students
	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Total	Total	Total	Total	
Wigan & Leigh College																				
Wolverhampton													39	0	39					39
Total	1513	247	1760	1078	225	1356	551	516	1093	29	10	39	452	53	533	379	217	150	2	5620

This data has been provided by Universities and Colleges. Missing data means that the overall totals shown in this chart are not a true reflection of the total number of students studying civil engineering programmes of study.

**GRADUATES IN
2005**

		MEng			BEng (Hons) CEng			MSc			PGDip			IEng Degree (Hons)			IEng Degree (Ord)			HNC			HND			NC		ND	
		Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Home	OS	Total	Total	OS	total	OS
Aberdeen	Full-time	6		6	11	6	17																						
	Sandwich																												
	Part time																												
Abertay Dundee	Full-time												6		6	2		2											
	Sandwich																												
	Part time																												
Anglia Polytechnic University	Full-time													2		2							0		0				
	Sandwich																						0		0				
	Part time																						21		21				
Aston	Full-time				1		1							1		1													
	Sandwich				5		5																						
	Part time				0		0																						
Bath	Full-time	11	0	11	0	0	0																						
	Sandwich	13	3	16	7	0	7																						
	Part time	0	0	0	0	0	0																						
Belfast -Queens	Full-time	12		12	44	6	50																						
	Sandwich	15		15	7	0	7																						
	Part time	0		0	0	0	0																						
Belfast Institute of Further & Higher Education	Full-time																					27		27					
	Sandwich																												
	Part time																												
Bell College of Technology	Full-time																												
	Sandwich																												
	Part time																												
Birmingham	Full-time	13	3	16	12	8	20	29	61	90		2	2																
	Sandwich																												
	Part time							3		3																			
University of Bolton <small>21 April 2005</small>	Full-time													4		4						0							
	Sandwich													0		0						0							
	Part time													13		13						25		25					

