



**AUSTRALASIAN ASSOCIATION  
FOR ENGINEERING EDUCATION**

**NEWSLETTER**

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Vol.1, No.2

Sydney, September 1989

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**1ST ANNUAL CONVENTION AND CONFERENCE OF AAEE**

under the theme:

*Strengthening Academia/Industry Co-operation*

**THE UNIVERSITY OF SYDNEY 10-12 DECEMBER 1989**

**AN INVITATION TO ATTEND THE CONFERENCE**

**THE CONVENTION**

This first convention of the Australasian Association for Engineering Education is to launch the Association and to elect members of its Executive Committee. It is anticipated that on Sunday, December 10 1989, members of the Association will discuss its Charter and Bylaws of the Association, and will formally launch the Association.

**THE CONFERENCE: AIMS AND OBJECTIVES**

The aim of this conference is to generate interest on engineering education among academics and industry leaders within Australasia and the Pacific Region, and to become an important international event which coincides with the Association's annual general meeting. It is anticipated that this format will continue in the future.

The conference will provide a forum for discussion and exchange of information on engineering education in general, and academia/industry collaboration in particular. The conference objective places particular emphasis on the need for continuing engineering education in a rapidly advancing technological era.



## TOPICS

The theme *Strengthening Academia/Industry Co-operation* was chosen to emphasise the importance of industry involvement in engineering education and the need for continuing education of engineers in a continuously changing and advancing technology. There is a variety of problems which need to be identified and addressed. It is anticipated that the conference topics, among others, will include:

- \* Importance of education/industry co-operation.
- \* Continuing educational needs of engineers and technologists.
- \* Industry involvement in engineering education.
- \* Community attitudes towards engineering education.
- \* Participation and equity in engineering education.
- \* Teaching engineering designers.
- \* Technology for development.
- \* Impact of new technology on the effective training of engineers and technologists.
- \* Effective methods in training engineers and technologists, etc.

It is hoped that the papers will present concepts and achievements of educators and industry leaders. The needs of industry are of particular interest especially as they relate to matters concerning continuing engineering education and industrial training. The implementation of special methods used in continuing engineering education are of particular relevance to the conference theme.

## EXHIBITION AND PRESENTATION

An exhibition of teaching equipment, computer software and hardware, relevant teaching material and books, which facilitate effective training of engineers, will coincide with the convention and conference. There is also room for innovative formats permitting flexible arrangements for poster sessions, group discussion and interaction, and demonstrations etc. Any institution or individual interested in conducting such an activity should contact the Chairman of the Organising Committee.

## DEADLINES

Due to the shortage of time, authors and contributors should observe the following deadline dates:

- \* Receipt of final manuscripts (camera-ready copy): 15 October 1989.
- \* Acceptance of papers notified by 1 November 1989.

## CONFERENCE PROGRAMME AND REGISTRATION FORMS

The conference programme will be announced in November 1989 and potential participants notified. Those who wish to obtain a copy of the programme should complete and return the attached notice of interest. At the time of acceptance of their manuscripts authors will be asked to pay a conference fee.

## CHAIRMAN AND ORGANISING COMMITTEE

Several individuals have expressed interest in the formation of the Association and have indicated that they are willing to undertake the tasks required to set up the Association and organise the annual convention and conference. It is our pleasure to announce that Professor Trevor W. Cole has accepted the task of Conference General Chairman. Also, an organising committee consisting of several individuals concerned about engineering education has been formed to assist with the variety of tasks relating to this important event.



### Conference Committee structure:

#### General Chairman

Prof. Trevor W. Cole, University of Sydney

#### Organising Committee Chairman

Dr Zenon J. Pudlowski, University of Sydney

#### Organising Committee Secretary

Dr James R. Rathmell, University of Sydney

#### Organising Committee Members

Dr Teresa Buczkowska, University of Technology, Sydney

Mr Brian Campbell, University of Sydney

Mr Ross Hutton, University of Sydney

Assoc. Prof. Robin King, University of Sydney

Mr Gary Lane, Telecom, Australia

Prof. Hugo K. Messerle, University of Sydney

Mr Douglas Magin, University of New South Wales

Assoc. Prof. Alex Reichel, University of Sydney

Assoc. Prof. John Reizes, University of New South Wales

Mr Cyril Streatfield, Institution of Engineers, Australia

### PRESENT STATUS OF THE CONFERENCE

The response to the call for papers has been extremely satisfactory, and over 40 abstracts of proposed papers have been submitted from a number of countries, including India, Indonesia, New Zealand, People's Republic of China, Peru, Poland, Singapore, South Africa and Australia. The submitted abstracts cover many aspects of engineering education and their authors represent almost every branch of the engineering profession. There are also proposals from industry and government agencies. It is anticipated that the Institution of Engineers, Australia will come up with a special workshop, which will present the impact of the Williams Report on engineering education in Australia.

In preparing the conference budget, the Organising Committee has endeavoured to keep the conference registration fee to the lowest possible level. It is hoped that the fee will not exceed \$A200 for members of AAEE and \$A235 for non-members of AAEE. The difference of \$A35 will constitute the membership fee for 1990, payable to join the Association. The organisers encourage full-time students to attend the conference by offering a low fee of \$A50 for members of AAEE and \$A60 for non-members. Similarly, the difference of \$A10 will form the student membership fee of AAEE for 1990. The conference fee will cover the proceedings, conference dinner (a harbour cruise), lunches, teas etc. The student fee does not cover the conference dinner. It is envisaged that a bus tour around Sydney would be organised at a reasonable cost for persons accompanying the participants. Further details concerning this activity will be included in the conference programme. Potential participants from outside Sydney are requested to make their own accommodation arrangements. A university college and a number of motels and hotels have been approached and asked to accept bookings from conference participants. Reservations for accommodation can be made to:

St. John's College (40 persons)

The University of Sydney

Missenden Road, Camperdown NSW 2050

Tel. (02) 51 1240 (Approx. \$A32 per night per person, including breakfast)



Camperdown Towers (20 double rooms)  
144 Mallett Street, Camperdown NSW 2050  
Tel. (02) 519 5211 (Approx. \$A75 per night per room)

University Motor Inn (Flag Inns Group)  
25 Arundel Street, Broadway NSW 2007  
Tel. (02) 660 5777 (Approx. \$A98 per night per double room)

Broadway Gardens (single/double/suite)  
Cnr. City Road & Myrtle Street, Broadway NSW 2007  
Tel. (02) 690 9100 (Approx. \$A108 per night per double room)

Camperdown Travelodge  
Cnr. Missenden Road & Marsden Street, Camperdown NSW 2050  
Tel. (02) 516 1522 (Single/double discount fee for Universities & CAE's at \$A104)

Central Plaza Hotel  
Cnr. George Street & Quay Street, City  
Tel. (02) 212 2544 (Single/double discount fee for Universities & CAE's at \$A120)

The conference will be held at a time when holidays commence in Australia. Sydney in particular is a place which experiences an influx of visitors. It is, therefore, recommended that potential participants make their accommodation arrangements as early as possible.

## ENQUIRIES

Address all enquiries and correspondence on the conference and proposals for the exhibition to:

Organising Committee Chairman  
Ist AEEEAC&C  
Dr Zenon J. Pudlowski  
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The University of Sydney  
SYDNEY, NSW 2006, Australia

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## WELCOME TO THE CONVENTION AND CONFERENCE

I came across a most interesting book the other day, *America by Design*, by David Noble. Its subtitle is *Science, Technology, and the Rise of Corporate Capitalism* and the book traces in some detail the emergence of the engineering profession in the United States from about 1860 to about 1930. In particular it looks at the electrical/electronic industries and the chemical industry, the way they developed, their needs for skilled people and their changing and increasingly influential links to the universities.

It is this last part of the story, the effects upon the traditional universities of America that I found the most interesting and especially the creation in 1894 of the SPEE - Society for the Promotion of Engineering Education. The Society was formed as a consequence of the previous year meeting of the World Engineering Congress in Chicago and of its members,



educators outnumbered practicing engineers ten to one. Initial discussions were on academic respectability and the relative proportion of laboratory to lectures or science versus practice in the curriculum. Over the following decades the number of practicing engineers and businessmen grew and the topics of concern moved to the *efficiency of graduates*, *adapting graduates to industry*, changing schools to meet the *specifications of industry* and preparing the engineering graduates for *business leadership*.

This society went on to play a major part in the development of engineering education (and later management education) and many important educators and industrialists of their time were actively involved.

The parallels (almost exactly a hundred years later!) with the Australasian situation in both universities and industry are surprisingly strong and relevant to the aims of the AAEE. Consequently, it is no wonder that I am drawing out those lessons and insights from the SPEE into a paper for our own inaugural meeting in December.

The inaugural meeting, *Strengthening Academia/Industry Co-operation*, has all the signs of being an important and valuable event in AAEE's short history. Not only will it formalise the AAEE and its committees, it will also set the agenda of action for the Association for the next few years. We all recognise that there are many problems and opportunities worthy of attention in the field of engineering and engineering education. I look forward to meeting all our current members and want to welcome to the meeting as many potential members as possible. See you there on December 10.

Trevor W. Cole,  
Professor,  
School of Electrical Engineering,  
The University of Sydney.  
Chairman of the Interim Executive Committee,  
AAEE



*Practical work at the University of Sydney. New experimental techniques and procedures always attract student attention.*



## **INSTITUTION OF ENGINEERS, AUSTRALIA WELCOMES THE FORMATION OF AAEE**

At the inaugural meetings in May and June of the Board of Education and Training (BET) of the Institution of Engineers, Australia, the formation of the Australasian Association for Engineering Education was given a warm welcome. The AAEE has the standing of a Society within the Institution, and, as such, attracts funding support for its activities.

The BET is one of five new national Boards set up to enhance the focus of the Institution upon the wide range of issues confronting the profession. The Board, which I chair, is a sub-set of the Council, and it includes the Chairman of the Institution's Accreditation Board, Mr Harry Wragge.

Dr Pudlowski and I have had a wide-ranging discussion about the Association and how it might develop. We share the view that it has the potential for a major role in the enhanced standing and performance of engineering education. From the perspective of the Institution, we see the Association as the principal focus for professional society activities in engineering education.

In addition to publication of referenced papers and items of news, a *Journal of Engineering Education* would provide a medium for much more effective communicating on matters of accreditation and education policies than we have at present. I believe that the Institution must be seen to be more accountable to its constituencies, and the *Journal* would provide a vehicle for that in the education area.

During my term of office as Vice-President with responsibility for education and training, I look forward to working closely with AAEE in promoting the interests of engineering educationists and excellence in engineering education.

*Dr Brian E. Lloyd,  
Vice-President (Education and Training),  
IEAust.*

## **4TH WORLD CONFERENCE ON CONTINUING ENGINEERING EDUCATION, BEIJING**

Technologically advanced and less-developed countries worldwide are increasingly turning their attention to continuing engineering education. This was clearly demonstrated by the interest shown and the widely spread submissions of papers at the 4th World Conference on Continuing Engineering Education, held in Beijing, which was attended by over 500 engineers from educational establishments, industry and governments.

A rapidly advancing technology and changing needs of world markets require engineers to update their knowledge. At the same time, retraining, where fields of expertise dry up, has become a notable feature.

The growing importance of the field is emphasised by the establishment of the International Association of Continuing Engineering Education (IACEE) at the conference. This Association has received a grant of \$US200,000 per annum for three years from the Finnish Government and a Secretariat was set up in Helsinki, after the conference.

One major feature to emerge is the deep involvement of industry, in particular that of large organisations exposed to increasing competition in the moving and expanding forefronts of technology. Governments are also becoming involved in advancing local industries to the required standards and helping them to develop the necessary skills, as well as maintaining any acquired leads.



This was demonstrated, in particular, during workshop sessions preceding the conference, which were arranged under the sponsorship of UNESCO at different educational institutions around Beijing. The workshops offered an overview of the intensive continuing education programmes in China which are strongly supported by the government - one which is eager to move its own industry into the modern era.

A small contingent of academics from Australia attended the conference. The conference was well organised but, unluckily, coincided with the start of the student protests in Tiananmen Square. This meant that some of us finished up in army barracks just before leaving in order to bypass the Marshal Law imposed on the City of Beijing.

*Hugo K. Messerle,  
Professor & Head,  
School of Electrical Engineering,  
The University of Sydney*

#### **PRESENT STATUS OF THE AUSTRALASIAN ASSOCIATION FOR ENGINEERING EDUCATION**

Through the AAEE it is hoped that Australia and New Zealand will join so many countries within Asia and the Pacific Region in supporting an association which specifically addresses the topic of engineering education and industrial training. The AAEE has instituted a membership drive, initiated in May. The response to the drive meets our expectations and it demonstrates that several institutions and a number of individuals have a strong interest in engineering education.

We are particularly pleased that small schools of technology, and engineering, some from very remote places in Australia, have joined the AAEE regardless of their financial difficulties. This clearly demonstrates that they support the establishment of this Association and recognise its importance in this region. The School of Electrical Engineering at the University of Sydney, under the leadership of Prof. H.K. Messerle, has been the first institution to join the AAEE. We are also delighted that the Faculty of Engineering at Swinburne Institute of Technology, under the leadership of Dr L.M. Gillin, has provided the largest institutional membership, with 83 academics joining the AAEE. These are the most encouraging examples.

The Association, too, has attracted senior members of many tertiary institutions who joined as individual members. Those individuals are particularly respectable in this country, and we hope to meet them during the 1st Convention and Conference. So far, the individual membership of AAEE clearly demonstrates that senior academics are much more concerned about engineering education than is the junior staff. Also, the response from industry is quite satisfactory, with members of a very high reputation. Essentially, the Interim Committee is very pleased with the steady increase in membership.

#### **A SPECIAL ISSUE - ENGINEERING EDUCATION FOR ADVANCING TECHNOLOGY**

A special issue of the Pergamon's *International Journal of Applied Engineering Education*, entitled: *Engineering Education for Advancing Technology*, with expanded versions of conference papers, has been produced as a result of the World Conference on Engineering Education for Advancing Technology, held at The University of Sydney, 13-17 February 1989. It is currently being circulated.

The issue's comprehensive editorial, by Prof. Hugo K. Messerle and Dr Zenon J. Pudlowski, the guest editors, explains the conference background and the selection procedure for the submitted papers. The guest editors received many submissions for this issue from



all over the world, and the quality of the papers was excellent.

The issue includes 18 papers, which cover almost all aspects of engineering education, and their authors represent a wide cross-section of the engineering profession and areas closely associated with engineering education. There is also a contribution from industry and papers which present university/industry co-operation. It is encouraging to see that several papers cover interdisciplinary aspects and present themes and projects lying on the boundary between engineering and science, the humanities, culture, the environment etc.

Obviously, the special issue generated great interest within the Australian engineering community and subsequently their input is the biggest (12 papers). It is quite natural that in selecting the papers the guest editors attempted to present the achievement of individuals from the country hosting the conference. That was probably the best opportunity to address and present the problems which this relatively young country has to face in order to keep up with the enormous influx of new technologies.

It should be mentioned that a second issue is currently in press and should be available by the end of this year. It includes a selection of conference contributions from invited participants, as well as keynote addresses and plenary session contributions unpublished in the proceedings.

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For details of the Association and membership applications write to the Editor:

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*Association members and tertiary institutions are invited to contribute to the Newsletter on matters relating to membership and engineering education.*

*The Newsletter will also print advertisements from members and interested parties on available positions in employment and material on tertiary education (courses, conferences, workshops etc.). This section of the Newsletter will form an Australian Chronicle of Engineering Education. Minimal charge rates will apply to cover the cost of publication of the Newsletter.*

*Send contributions to the Editor at the address above.*