

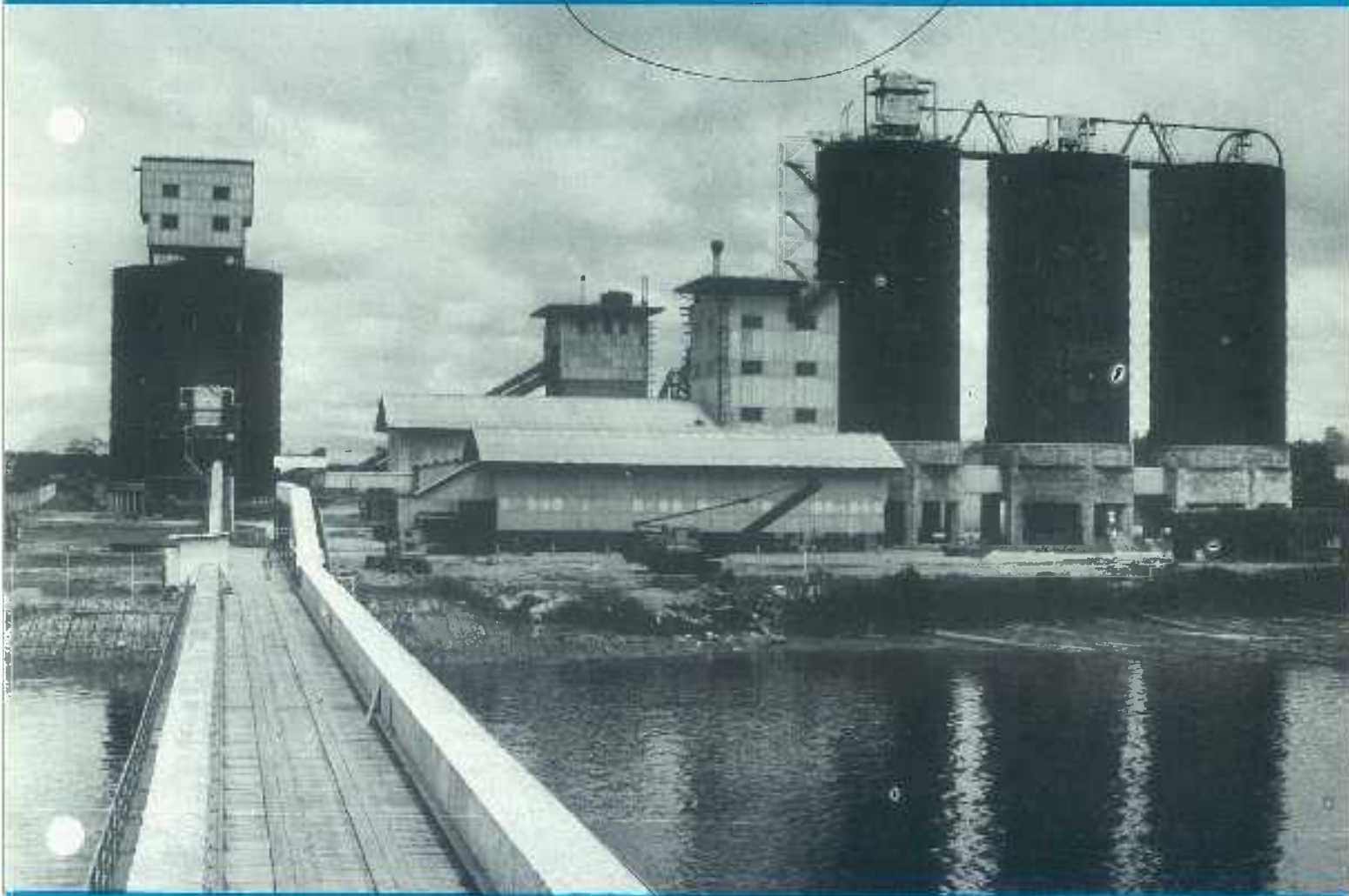
20 JUN 1979

NEW ZEALAND

Engineering

THE JOURNAL
OF THE NEW ZEALAND INSTITUTION OF ENGINEERS

P140
146



PRINT OUT JUNE 79

The Monthly newsletter of the New Zealand Institution of Engineers

TRANSFER OF TECHNOLOGY

The world's engineers are presenting a general guide to technology transfer to the nations of the world at the United Nations Conference on Science and Technology for Development in Vienna in August.

The document is from the World Federation of Engineering Organisations and is called "Transfer and Development of Technology."

The report has been put together from the comments of more than seventy national members of the organisations (including New Zealand).

It describes ways in which criteria can be established for choice of the different technologies which are available in countries in differing situations, from those with desert climates to those with an abundance of natural resources.

It deals also with the creation of the required conditions for the development of technology in developing countries. It points out that the socio-economic climate as well as the economic and scientific environments has to be considered by engineers.

The report ends with a summary of the ways in which the W.F.E.O., as an international network of professional engineers, can help in the transfer of technology particularly with the organisation of technical conference and symposia and the dissemination of technical information.

N. Z. DELEGATION

The final meeting on the brief for the New Zealand delegation to the Vienna Conference was held in Wellington on 26th April.

It was attended by the Executive Vice-President for Engineering Science, Dr. R. J. Aspden, and the Secretary, A. J. Bartlett.

The New Zealand delegation will include a senior member of DSIR, and it is possible that it will also be joined by an engineer.

Copies of the W.F.E.O. report may be obtained from the NZIE Secretary, P.O. Box 12241, Wellington.

Lifesaving Points To Moneysaving

Wellington City Engineer, G. J. Macdonald (M), got agreement in May for an increase in the testing budget of \$20,000 for an idea that might save nearly eighteen million dollars on the costs of the Wellington Airport extension.

The problem — the protection of the seaward face of the proposed airport extension into Lyall Bay. The current proposal is for 3000 Akmon concrete blocks and other heavy rock protection to keep the waves of Cook Strait from destroying the 220 metre extension. The cost of these will be more than \$22 million dollars, tipping the scales heavily against the Lyall Bay extension, and for the extension into Evans Bay. Mr. Macdonald believes that his idea ... of raising the level of the sea-bed to dissipate the force of the waves ... will overcome the difference in costs, particularly since his preliminary estimate is that the raising of the sea-bed will cost only \$4.5 million.

A model of the area, including wave making equipment, is now being built at the Gracefield laboratories of the Ministry of Works and Development for testing there. The budget for this testing has been raised from \$40,000 to \$60,000, and one of the main reasons for the increase is to test Mr Macdonald's theory.

Mr Macdonald says he got the idea from his days as a surf life saver in Lyall Bay. He used to swim out in troughs between big waves, diving under the waves and holding onto the sand below until they had passed.

He was impressed by the reduction of turbulence under the waves even in comparatively shallow water.

When the costs estimates on the runway extension were prepared Mr Macdonald was struck by the high costs of protecting the end of the runway from head-on attack by the waves, and thought of raising the bottom of the sea as an alternative method for reducing the wave energy.

He got some help from the Scientific and Technical Information Service in Wellington, then developed his idea to the stage where it could be presented to his council's airport committee.

His proposal is to fill the sea floor and create an artificial beach extending from the end of the runway, and then to cover this beach with coarse rock. The expectation is that the circular water motion which propagates the waves will be interrupted by the shallower floor, causing the wave at the surface to distort, rise and break, thus discharging its energy in surface turbulence as nature does.

The shape and depth of the new sea floor and the beach will need to be verified in the model to ensure that once a large wave begins to break, it continues to do so in order that it is reduced to harmless proportions by the time it surges up the exposed part of the beach.

The size of stone to line the artificial beach and form the edge between the new beach and the old natural one

will also need to be tested to ensure that the stone is large enough to stay in position and will not erode.

A steep beach would require larger, more angular stones than a more gently sloping one, and it maybe necessary for a live bed model to be built subsequently to verify the effect of sand drift once the general principle has been proven.

Government Help For Overseas Work

The President, Mr. D. A. Thom, recently visited the Minister of Works, Mr. Bill Young.

One of the items for discussion was Government assistance for consulting engineers and contractors with overseas projects.

There are two particular areas where assistance is required — finance and skilled personnel.

It was the question of skilled personnel that was discussed with the Minister, and he assured the President that any specific proposal put forward by the private sector for the secondment of personnel from the Ministry of Works and Development to projects overseas would receive sympathetic consideration.

The question of financial assistance is being taken up with other Government agencies, and a statement from Government on the matter is expected in the Budget.

CONTINUING EDUCATION REPORT

"Some Doctors out of Touch," the headline said. And it appears that some doctors ... particularly older ones ... are, indeed, losing touch with advances in medicine according to a recent survey conducted by the Auckland Medical School.

As a professional engineer do you feel that you, too, need to update your knowledge? Or, do you think that from the experience your work gives you and the occasional article you read that you are rubbing along very nicely as you are?

If the answer to the first question is "Yes" then the Institution's structured Credit System of continuing education should be able to help you.

If your answer to the second is "Yes" while you could be right, it is possible that you are letting the world go by without your realising it and one day there might just be a rude awakening. Think on it carefully.

In many other professions, Continuing Education is a serious business. Overseas, the techniques adopted are sometimes very sophisticated. In North America, for example, considerable use is made of video tapes and television. The Institute of Chartered Accountants in England and Wales possesses an impressive array of packages for home or group study.

These include a number of audio taped courses very much along the lines of what NZIE is producing in the Specialist Core and Electives sections of its Programme. The samples received are well presented and easy to listen to. The Chartered Accountants take their "Continuing Professional Education" very seriously.

If you were admitted after 30 June 1978, and either wish to commence to practise or to advance to Fellowship, you must in the first case complete accredited courses totalling 80 hours in two years and, in the second, 400 hours in ten years.

Last month a plea was made to engineers to come forward, wherever you are, and assist in the setting up of the Specialist Core section of the Institution's Structured Credit System of Continuing Education.

This is repeated now. We need you.

Shortly, the 1979 schedule of courses will be published together with their associated credits towards the Professional Development Certificate.

Note that the first Common Core course this year will be the three-day seminar "The Engineer and Current Issues" to be held in Auckland, 23 - 25 August 1979.

Inquiries should be made to: Centre for Continuing Education, University of Auckland.

Don't miss the third NZIE General Studies course at Auckland on August 23 to 25 inclusive.

This year's programme covers topical issues of critical importance to Engineers from both the public and private sectors.

The three days study will require a total involvement from morning to night with lectures, discussions and social functions led by prominent political, business and university experts. The programme will cover the following topics:

Thursday:

Political processes and their consequences to engineers;

- Central Government decision making
- Statutes and Regulations
- Bureaucratic controls and their economic impact
- Engineering in a controlled economy

Friday:

Project decisions, Risks and Liabilities;

- Economic decision making in capital projects
- Public vote in decision making
- Risk evaluation and engineering judgement
- Responsibility and liability

Saturday:

Energy and the Future;

- The local and world situation
- Planning for the future
- The small-scale technology oriented industry in N. Z.
- The Engineers' role in the future.

More information from:

John Irving, P.O. Box 4241, Auckland 1. Or phone 773 227.

FROM THE SECRETARY

Last month I talked about the importance of short deadlines for *Print Out* and the new journal. Another important feature is the news itself. However short the deadline, and sparkling the presentation, if information about people and events is lacking, then the new publication will fail.

Print Out it appears, is being well received. To a great extent the material in *Print Out* has been very little different to that which has appeared in *N.Z. Engineering* for years. It looks different because the presentation is different, and because it looks different, it might read a little differently too.

But we have not been successful so far in developing a regular chain of contributors from branches up and down the country, from technical groups and from the divisions to give us the up-to-date news on the Institution's activities and engineering in general that we must have.

It wasn't for the want of trying. I quote from the last month's issue of the Otago branch newsletter: "*Print Out*," said Errol Chave, the branch chairman, "will only flourish if vigorous and up-to-date contributions are made." Right. And everyone has something to say.

After all, however much we all individually resist change, things do happen to us. We get transferred, even promoted. Some of us have twins. Some of us have ideas on engineering, or on the engineer in the society in which we live. Our projects ... occasionally ... come to fruition. All these are worth writing about. Other people want to know, either for their profit, or their pleasure.

Print Out is not very large, and despite the paucity of contributions, we have managed to fill it, we hope, with material of reasonable interest and topicality.

But this won't do for the new journal where there will be many more pages to fill, and more substance will be required. And we do not only need enough material for each month, we need material to choose from, so the standard can be kept high.

Part of this need must be met from articles about major engineering projects (as against the complete technical papers that we publish now). But there will be a need for engineering news and personal items of all sorts.

Our only hope of getting them in sufficient quantity is if every member of the Institution remembers the need and occasionally makes a contribution him, or her, self. You can start now.

The address is P.O. Box 12241, Wellington, the phone number, Wellington 739 444. We need *your* news for *Print Out*.

Produced by Moray House, P.O. Box 11 - 097, Wellington,
and printed by Litho Production Ltd., Wellington.



Statements or opinions in *Print Out* do not necessarily reflect the views of the Institution or the publishers, unless specifically indicated.

Reviewing Registration

FROM AUCKLAND

Progress towards a new Engineers Registration Act took another tentative step at a well attended meeting on the 26th. of April at the Auckland Professional Club. Approximately 200 engineers and representatives from allied engineering groups listened to NZIE Council member John Rice outline the background and limitations to the present Act, the reasons for a new Act, and the parallel situations in other countries.

The ensuing discussion was intended to focus on obtaining a consensus for repealing or amending the present Act, or promoting an entirely new Act, or doing nothing.

Unfortunately a show of hands indicated that less than 15% of the audience had read the 1924 Engineers Registration Act, and accordingly most speakers directed their comments at the proposals circulated by the NZIE.

Opinions were diverse. A spokesman for the Institute of Draughtsmen, while not against the new Act, foresaw some members being elevated out of that organisation to its detriment.

On the other hand, the spokesman from the Hospital Engineers fully supported the new Act in that he considered the responsibility for spending on capital projects would tend to revert to the engineering staff.

One member foresaw a bureaucratic empire of checkers emerging, and another felt that the new Act would be setting up yet another elitist group to "conspire against the laity."

The NZIE draft Act specifically came under fire for its proposals to structure professional responsibilities in a "complex matrix."

Despite the apparent vocal strength of the misgivers, the final vote indicated a majority desire to continue pursuing new legislation and the meeting directed the Committee to publicise the full draft in *N.Z. Engineering* to seek further comment and amendment.

FROM WELLINGTON

Wellington Branch held its meeting on the Registration Act on the 17th. of May. The panel on the platform were J. S. Berry, convener of the Registration Act review committee, and two committee members, P. C. Spearman (also a member of the Engineers Registration Board) and A. N. Grigg. Also on the platform was the Registrar of the Engineers Registration Board, D. H. Inch.

The meeting, of some 60 people, was by no means unanimous about any of the questions which were considered, but indications were that members thought that there should continue to be a Registration Act, that new legislation should be pursued, and that NZIE membership should not be mandatory for a registered engineer.

WHAT DO YOU READ ?

The task committee considering the new journal needs your help to assess your needs. We don't want to produce material you aren't interested in: at the same time, we don't want to give you a journal full of things that you've read about somewhere else. This is the first part of a larger questionnaire and it's to help the committee define the areas the journal should be covering. Please complete it and return it quickly.

I HAVE READ.....

In the past week:

N.Z. Listener

Time

Newsweek

The Bulletin

National Business Review

Trans-Tasman

The Capital Letter

In the past two weeks:

Engineers Australia

New Civil Engineer

The Chartered Mechanical Engineer

I.E.E. News

In the past month:

N.Z. Engineering

N.Z. Engineering News

N.Z. Energy Journal

Live Lines

N.Z. Concrete Construction

The Contractor

Better Business

N.Z. Company Director

N.Z. Economist

N.Z. Local Government

Management

Office Equipment News

Stock Exchange Journal

D.E.M.M. Product News

Industrial Equipment News

H.A.R.V.

N.Z. Manufacturer

Road Transport & Contracting

Transport News

In the past quarter:

N.Z. Motor World

Aviation Digest

Automation and Control

Landfall

Cut out this questionnaire: Fold as illustrated overleaf: Return to Institution As Soon As Possible.