University opens its doors

UNINEWS this time is issued in conjunction with UNIVISIT '88 Open Days which are geared to show the community what life at the University is all about.

Open Day for the University is always a major event and this year it has a special dimension — it is the University’s major public contribution to the Bicentennial celebrations. Two hundred is a mature age for any nation to reflect on its development. The birthday is also an opportunity for the University to review its role and show the relevance of its teaching and research to the development of the nation.

As I say in the Open Days guide: 'There has been much time and effort devoted by staff in preparing for the major event with the intention of making your visit informative, interesting and entertaining... We are proud of the achievements of the University. It is a success that is properly shared with the whole community of which we are proud to be a part.'

Open Days occur only every four years because an event of the size and scope requires enormous preparation. Displays and activities have been arranged by about 25 academic departments and Carnivale will demonstrate the extent of community co-operation with the University.

In addition, a microcosm of the Hunter Region will be found in the Great Hall, where many community organisations will present displays.

Open Days are intended to be different from the Schools Visit Days, which are put on for the benefit of high school students who aspire to go to uni. However, an important focus of UNIVISIT '88 will be a booth which will provide prospective students with the fullest possible range of course and career advice.

Some members of the community often have no real understanding of how much activity and commitment are generated at a modern university. I trust that UNIVISIT '88 will lead to a better insight into the contribution which the University makes to all facets of life in Australia.

Of course, our interest in having visitors see how we work is not one-sided. We need the support of taxpayers and prospective students and I am sure that they will find that they get something of great value from the University of Newcastle.

K.J. Morgan, Vice-Chancellor.

James Hardie scholarship winner

Lecturer in Architecture, Mr Robert Donaldson, has been awarded the James Hardie Scholarship for 1988.

Sponsored annually by James Hardie Pty. Ltd., the scholarship is awarded by the Newcastle Division of the Royal Australian Institute of Architects.

The purpose of the scholarship is to assist the study of a topic relating to the built environment. It is anticipated that the topic will have relevance to the Newcastle environment, but need not be restricted to this area.

Mr Donaldson will use the $1,500 made available by James Hardie Pty. Ltd. to complete an investigation of new and viable building techniques in residential construction using timber, a unique and renewable resource.

$1 million for cancer investigation

The NSW State Cancer Council has awarded a $1 million, five-year research grant to Professor Robert Sanson-Fisher of the University's Medical School.

The grant will be used by Professor Sanson-Fisher to develop and evaluate strategies for preventing primary and secondary cancer.

Professor Sanson-Fisher believes there is an urgent need to implement educational research in

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Plan for improved financial management

The University has acted to eliminate its recurrent fund deficit and improve financial management.

The measures will be phased in and will avoid projected deficits of about $2.4 million by 1989.

Despite these cuts in some areas the University will introduce a Degree in Building, expand the Aviation program, develop a new program of Information science and make appointments to vacant Chairs.

The Vice-Chancellor, Professor K.J. Morgan, said that economy measures were designed to put the University on a firmer financial footing and enable it to improve service to the Regional community.

The cuts were necessary because the University was over-committed in a number of its operations and because the Commonwealth Government had made further cuts in the base for the University's funding.

In late 1987, the Government advised that the University's recurrent grant for 1988 would be reduced by 1 to 1.5 per cent as 'an efficient measure'; and advice had recently been received that only limited support would be provided for the recent 4 per cent second-tier salary awards for academic and general staff.

Commonwealth support would cover only 76 per cent of the academic salaries award for 1988 and 41 per cent of the general staff award, with the prospect of substantially less support in 1989.

The funding changes include:

- The funding of certain operations by the University, e.g. 2NUR-FM, Animal House, Departments of Sport and Recreation and Community Programmes, will be substantially reduced over the next few years. The aim is that they become largely self-funding operations. The savings after three to four years is $400,000 per annum.
- Reduced part-time teaching and administrative staff allocations ($100,000 per annum).
- Reduced full-time teaching and administrative staff allocations ($300,000 per annum).
- Time off in lieu of overtime to be encouraged ($50,000 per annum).
- Reductions in expenditure on equipment and minor works ($550,000 for 1989).
- Restructuring of the University Health Service ($100,000 per annum).
- All vacancies in administrative staff positions over the next three years, frozen for at least six months pending review of each position.
- In respect to academic, technical and office support staff, vacant positions will only be filled where the vacancy occurs in a department which is understaffed as shown by pre-determined staff/student ratios.

As a revenue-raising initiative, the University was seeking to enrol a limited number of full fee-paying overseas students for the first time in 1989, Professor Morgan said.

An early voluntary retirement scheme had been introduced to alter the staff profile of the University and reduce expenditure.
Demand on statistics service

The high business demand on the Department of Statistics at Newcastle University has resulted in the formation of a commercial venture — NewStat.

NewStat is looking to implement in industries in the Hunter and Australia the philosophies that made post-war Japan a world leader in manufacturing.

The University’s Statistics Department was formed 18 months ago when a growing emphasis was placed on hard facts in the decision-making processes of commerce and industry and also because of an increasing need for specialist statisticians.

It was the growing demand on the department for consulting work that led to the formation of NewStat as a division of the University of Newcastle Research Associates (TUNRA).

NewStat has specialised in the medical/health and industrial/engineering areas and already has an extensive list of clients from the Hunter, Canberra and Melbourne.

BHP donates $100,000 to heart research

Heart research at the University of Newcastle recently received a major boost with BHP’s donation of $100,000 to the BHP-MONICA heart health education project.

The BHP-MONICA heart health education project investigates heart disease in the Hunter Region as part of a World Health Organisation global program.

BHP will contribute $50,000 a year for two years towards the project which is estimated to cost $325,000 over five years.

Lecturer on Aboriginal Institute

Dr Bill Jonas, Senior Lecturer in the Department of Geography, has been elected to the Australian Institute of Aboriginal Studies in Canberra.

The Institute, established under its own Act of Parliament, co-ordinates and funds research into Aboriginal topics throughout Australia.

As a member Dr Jonas is eligible for election to the Institute’s Council which for the first time has an Aboriginal majority.

In 1992-93 Dr Jonas and fellow geographer, Mary Hall, conducted comprehensive surveys of Aboriginal basic needs throughout New South Wales.

Dr Jonas is a member of the Awabakal Aboriginal community in Newcastle and is a former Director and Chairperson of the Awabakal Co-operative. He has also been a Royal Commissioner (British Nuclear Tests in Australia), Australian Heritage Commissioner and New South Wales Education Commissioner. He currently heads a Ministerial Task Force which is reviewing Aboriginal heritage legislation in New South Wales and he serves an advisory committee for Aboriginal courses.
Small but innovative

One of the University's smallest and innovative Faculties — Architecture — received a $658,000 boost in July which puts it on the path to Australia-wide recognition by the building and construction industry.

The $658,000 New South Wales Government grant will establish a Bachelor of Building in the Faculty of Architecture from 1989.

The new degree course is significant because it reflects an urgent need by Australia's building industry for improved management skills, and is the first such course offered by a University as an external degree.

The Dean of the Faculty, Professor Barry Maitland, said that the industry believed there was a huge market nationally for distance learning in the subject. To be offered first as a normal degree course in the University, it is intended to extend the program after the first year of operation into an external studies mode which would be the first to tap their demand.

In a further move to ensure economical provision of the course the Faculty will prepare material and learning packages and it is hoped to offer these in the external degree program in partnership with the University of New England, which has established facilities in this area.

Professor Maitland said the Building Degree was aimed at people in the building industry and site managers and would concentrate on subjects such as construction techniques, structural principles, management and contract law.

The Hunter Valley building industry has been pushing for some years for such a course and we were delighted when the New South Wales Minister for Housing, Mr. J. Schipp, announced the $658,000 grant at a function in July hosted by the Newcastle Branch of the Master Builders' Association, Professor Maitland said.

The money comes from the New South Wales Building Services Corporation which uses money raised from builders' licensing to support industry training programs.

It will fund the start-up of the Bachelor of Building course and a small building to accommodate it. Professor Maitland expects to recruit four or five additional staff and to build student numbers to about 50 on campus.

Since 1984 the Faculty of Architecture at the University of Newcastle has been almost self-consciously innovative looking for new ways to teach the subject and earning a reputation among the profession and aspirants — for being 'different'.

The changes began in earnest when Professor Barry Maitland became Dean in January 1984 after academic and professional experience in Britain.
When I came to Newcastle I had heard about this innovative Medical Faculty that was developing new methods of teaching and participation," he said. 'We invited the course development people from the Medical Faculty to advise us and found we had something in common.

Part of the dilemma of a professional Faculty such as ours is that there are external professional standards that have to be met and which alter from time-to-time according to society's needs.

We are obliged to meet these changing standards to gain professional accreditation and, at the same time, it is essential to maintain our academic credibility.

'Research and publication, for example, do not seem to be "naturally" part of the professional Faculty: architects' publications on the physical building they design, their research is the effort that goes into making the design work.

'Problem-based' approach

'Architecture schools are also seen within universities as being a bit eccentric because of those all-night students at their boards in the design studio.

'Ours dilemma was to find a way to better integrate lecture theatre and laboratory learning with the special conditions of the design studio and the need for academic excellence.

Professor Maitland and his colleagues, guided by the experience of Newcastle's Innovative Medical Faculty, developed a 'problem-based' approach to teaching.

This approach sees students taught theory in the context of the actual projects (or problems) they are being asked to solve.

A year class of say 45 students is broken into five tutorial groups of nine students, each group with a staff or practitioner tutor who rotates around the groups.

The groups work individually on design problems under specialist tutors and are brought together in a common lecture room to discuss design problems, theory and principles. The students then apply this learning to the problems on which they are working.

'This technique is very demanding on staff and requires a lot of attention to the framework of course planning, organisation and supports for students,' Professor Maitland said.

'But it also has real advantages in that it draws people together in an intellectual, motivational and management experience that has succeeded in cutting drop-out rates and lifting standards.'

The innovative methods were introduced gradually to the Faculty, first to a fresh intake of students in 1985 and then to second and fourth years in 1986. In 1987 all five years of the course adopted the technique.

Last year was a real test because we were subjected to scrutiny by the professional accreditation process - a Visiting Panel of the Royal Australian Institute of Architects,' he said.

'We had kept the Institute informed of what we were doing and the Panel, though supportive, examined the results carefully. Over three days the Panel talked to staff and students and watched the classes in action.

'We were delighted and encouraged that the Panel recommended a five-year accreditation for the Faculty, which is the longest term available.

(The Institute's Board of Architectural Education followed up this recommendation with a visit to the Faculty in July.)

Professor Maitland explained that design was at the heart of what an architect did, and this was the central skill that students were encouraged to develop.

'But around this cluster a variety of other skills which require training and knowledge: understanding a client's needs, how to use a site, how to integrate and develop complex historical and theoretical ideas, computing skills, draughting, model-making, video and still photography and even verbal skills.'

'Today we have about 40 professionals in the community who take part in the course as teachers or tutors and the profession is very helpful in taking students on site and into their offices.

'For its thoroughness of process, encouragement of self-motivation and relevance this technique is unique in Australian architecture schools and as pertinent to real conditions as we can get it.'
New Grants

Water pollution study of Lake Macquarie

A research project by two senior lecturers in the University of Newcastle's Department of Civil Engineering and Surveying will provide valuable information on water pollution.

Dr Wal Field and Dr Brian Williams have one of five Lake Macquarie City Council grants to study the city's greatest asset — Lake Macquarie itself.

They will use the $8,000 grant to develop a hydrodynamic and transport model of the Lake to predict how any water-borne pollutant will be dispersed once in the waterway.

The computer-based models provide users with information about currents in the Lake, how the water surface elevation changes and how pollutants are moved about the Lake under the influence of the currents and dispersive processes.

The hydrodynamic model uses data describing the bottom topography, the ocean tide and wind velocities and determines the water velocities and water surface elevations under the influence of a particular tide and wind specification.

The transport model uses the data stored on magnetic tape by the hydrodynamic model to track the movement of pollutant 'particles'.

Dr Williams said the study hoped to identify the source of any pollutant, how it would be discharged, how long it would take to discharge and which areas of the lake would be most affected during the pollution flow.

'Hopefully the model will be able to identify those parts of the lake that move pollutant and those that do not,' he said.

'Investigators and researchers should be able to predict how a water-borne pollutant will disperse once it enters the Lake.'

The study is expected to be completed in 18 months although further developments are expected to continue after that.

At the end of the 18-month study period the model will be available for general use by researchers.

It is expected that researchers investigating lake processes will take the opportunity to incorporate some of the modelled transport mechanisms in their own work.

Problems with applying mathematics

People wanting to apply mathematics often complain that mathematicians have plenty of techniques for handling linear problems but not nearly enough for solving non-linear ones.

Since the invention of calculus three centuries ago, the calculus has been the main tool available for dealing with non-linear problems. However, the last 20 years have seen development in the study of convexity, a concept which has considerable application with non-linear problems, in particular with those in optimisation.

In the early 1970s, important mathematical research was undertaken on the differentiability properties of convex functions on quite general spaces. Because of the success in this area advances are now being made in the study of the more general class of locally Lipschitz functions and, in a number of circumstances, it is being found that many of the differentiability properties of convex functions also hold for functions in this class.

In the 1980s, Frank Clarke, from the University of Montreal, extended a calculus developed for convex functions to locally Lipschitz functions and it is an important tool for generalising calculus of variations results and optimisation techniques to functions which are not necessarily differentiable.

A research project of Professor John Giles entitled The determination of differentiability properties of distance functions on Banach spaces and application to non-smooth optimisation is currently underway in the Department of Mathematics financed by the Australian Research Grants Scheme. Distance functions are special locally Lipschitz functions which are more general than convex functions and they are particularly significant for certain problems in the geometry of Banach spaces and in the development of Clarke's techniques used in non-smooth optimisation.

The grant has enabled a group of researchers to gather over an extended period at this University.

The visitors include:

Professor Jon Borwein, from Dalhousie University, Halifax (from June 1 to September 30); Dr Simon Fitzpatrick, from the University of Auckland (from April 5 to December 18); and Dr O. de Barra, from Royal Holloway and Bedford New College, University of London (from May 12 to August 26) and for shorter periods in August and September. Dr A.L. Brown, from the University of Newcastle-upon-Tyne and Professor Petar Kenderov, from the Bulgarian Academy of Sciences.

The Centre of Mathematical Analysis at the ANU is sponsoring a workshop/miniconference on Functional Analysis/Optimisation to be held in Canberra in August and Professor Giles is organising this gathering. Over 30 mathematicians from around the world will be in attendance for periods varying from one to three weeks. Of course, the mathematicians involved in the research project at this University will be the core of that workshop in Canberra.

The results, which will excite them as mathematicians, may sometimes seem remote to those impatient to apply mathematics to their problems. But the path to application is this vital activity of pure mathematical research.
There are understandably feelings of uncertainty associated with the proposal to amalgamate the University and the Hunter Institute of Higher Education (HIHE). Members of the University are worried about what the move will mean for them. It is reasonable to assume that members of the staff of HIHE hang in the balance.

First, amalgamation must be accepted as involving individual members of the academic staff of both institutions who have parity. This does not mean the institutions must share everything 50-50. It means that in the University after amalgamation the former staff of the HIHE will have equivalent representation to current University bodies which make decisions, for example, on Senate. We in the University must accept that the HIHE provides a particular form of education which, while different from that provided by the Senate. We in the University must ensure that the HIHE provides an equivalent representation to that provided by the Senate. The merging of the two institutions will have become very diffuse, and the developing University of Newcastle will be a much stronger institution than the sum of the two current components.

In the development of the academic plan for the University, the role of Senate must be paramount. Senate, with proper representation from the current University and HIHE sectors, is the forum within which debate, decisions and recommendations must occur. There can be only one Senate in the amalgamated University. University is essential that there be only one Senate from the beginning of that University. To this end a proposal for the Senate of the amalgamated University of Newcastle has been drawn up. This proposal has already been before the Council Consultative Committee and will go to the next meeting of the University Senate.

Within the amalgamated University it will be necessary to preserve many of our existing practices. The details might change, but, for example, all appointments to academic positions should be the result of open competition. In the University of research there is, understandably, some worry that scarce research funds will be diverted as a matter of course from the University sector. This cannot happen. We all accept that within the amalgamated University there may be a larger number of staff with the ability to do research, but funds for research should only be distributed in accord with current practice, i.e. on the basis of worth of the project and the existence of an infrastructure to support that research. This will not exclude members of the academic staff of HIHE from a share in receiving funds. It will ensure the current high standards required to gain research funds will be maintained.

In the academic area, the benefit of amalgamation flow from the enhancement of student opportunity and the greater educational benefits which can be provided to the Hunter Region. The University will be able to offer career-oriented and professionally-oriented courses which directly complement each other.

In time, the University will develop methods for full recognition of the range of awards at its disposal, with all the advantages of full credit transfer between courses in the one institution and a range of courses from the diploma to the full first degree and beyond. The encouragement given to students being able to transfer between courses to reach the level of professional training and academic rigour to suit the student will be a big advantage to the institution.
All in the Family

It is not surprising that Newcastle University’s rugby playing brothers, Mark, Paul, James and Stephen Heanly are so keen about their sport. Their grandfather captained Parkhouse, Kent, for many years and their father, Peter, played as a schoolboy for HMS Conway, and North Wales and later for the Minehead Barbarians.

Twenty years ago the Heanly family emigrated to Australia. The boys started their rugby careers with Epping Juniors and when Peter became a coach with the Club all the boys came under his instruction at some stage.

The family’s move north enabled Peter and the boys to join the Old Bar Clams, where Peter and Mark played together in the scrum.

The Heanly boys represented the North Coast on tours to New Zealand and Paul and Stephen have been selected to play for Newcastle Opens and under 19s respectively.

BRIEFS

2,000 LISTEN TO WHITLAM

Former Prime Minister, Mr Gough Whitlam, drew a crowd of 2,000 when he talked on the referendum on the Australian Constitution in the Great Hall of the University on August 12.

The visit was organised by the University’s Department of Community Programmes.

LINKS CONTINUE TO STRENGTHEN

Links between the Universities of Newcastle-upon-Tyne (United Kingdom) and Newcastle (Australia) continue to be strengthened. Recently Mr Ian Newton, Head of the Department of Surveying in Newcastle-upon-Tyne gave a seminar on medical uses of photogrammetry to Newcastle’s Department of Civil Engineering and Surveying. This followed a number of exchange visits between the Universities. Both departments are keen to develop contact between the Universities and their cities.

SAUDIA ARABIAN VISITOR

Dr Mohammad Al-Hussayen, Dean of the College of Architecture and Planning at King Saud University at Riyadh in Saudi Arabia, visited the Faculty of Architecture to gain first-hand experience of the Faculty’s innovative educational programmes, and of the Faculty’s advanced research facilities for assessment of the urban environment.

A joint series of presentations, with leading Australian architect Glen Muret and John Richardson (of Philip Cox & Partners), provided an opportunity for comparison of approaches to design for hot, arid environments in Saudi Arabia, Yulara (Ayers Rock) in Central Australia, and in the marginal areas of rural Australia.

US STUDENTS ON CAMPUS

Fourteen architecture students from Andrews University in Michigan (USA) recently visited the University of Newcastle.

The students spent four weeks of their summer vacation in Australia looking at buildings and discussing contemporary Australian architectural thinking. Dr Neville Clouten, Professor and Chairman of the Architecture Department at Andrews, said Newcastle University was the students’ preferred choice of host institution because of their interest in regionalism as it was applied to architecture.

Professor Clouten was a member of staff at Newcastle University’s Faculty of Architecture from 1969 to 1980.

UNINESS

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Printed by Newcastle Camera Print.
Contributions can be sent to John Armstrong or Linda Aurelius, C/- Information Office.
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