Annual Report 1989

Chisholm Institute of Technology
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Chisholm Council

President
Paul Ramler, DipBus(CIT), AAIM, ACIT.

Vice-Presidents
D. Rae Anstee, SRN, SCM, InfWelfCert, DipWard & Unit Management, DipNursing Admin, FCNA.
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Members
Jennifer M. Acton, BEc, MEc(Monash).
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Clive K. Coogan, MSc(Syd), PhD(Bris), FAIP, FRSA.
Arthur E. Crook, BA(Hons)(Qld), MA(Melb), MAPsS.
Alison G. Hall (to February 1989), CertTech(ElecEng).
Linda J. Lawrie, BA, DipEd(Monash).
Craig McKenzie, Donald H. Peebles.
Ronald G. Ritchie, BMechEng(Melb), DipEd(Melb), DipMechEng(CIT), MAdmin(Monash), FIE(Aus), MMeche, MACE.
Paul K. Rodan (from 10 March 1989), BA(Hons)(WA), MA(Qld).
R. Graham Rutter, BComm(Hons)(Melb), FCA.
Richard J. Trembath, BS(Melb), MEd(Monash), PhD(Texas).

Categories of membership in accordance with the provision of Clause 4(1) of the Order-in-Council of 2 March 1982. Director, ex officio: G.N. Vaughan. Academic staff members elected by the full-time academic staff: A.E. Crook, R.L. Whyte.


Secretary to Council
Graham A. Trevaskis, BA, BEd(Melb), MA, EdD(Columbia), TPTC.

Fellows in Chisholm
Trevor Pearcey, BSc(Hons)(London), DSc(Melb), FSTS, ARCS(Imperial College), FBCS, FACS, MACM. Awarded Fellowship 9 December 1985.

Associate of Chisholm
Office of the Director

Director
Geoffrey N. Vaughan MSc(Sydney), PhD(Melb), FRACI, FPS, FSHPA, MPSGB

Operational Objectives and Performance Indicators

The operational objectives for the Institute are detailed in the Educational Profile published by Chisholm Institute of Technology. This Profile was first published in 1988 as a requirement of the Department of Employment, Education and Training and has been updated on an annual basis to meet the continuing requirements of DEET.

The objectives of the Institute are stated within a Mission Statement and through the listing of strategic objectives. The Mission Statement can be summarised as:

"To be recognised by 1991 as a highly innovative, forward looking and progressive educational institution serving the Australian community and the communities of the Asian and Western Pacific Basin with lifelong tertiary educational opportunities of a highly applied, practical and vocational nature, with the emphasis being on high quality teaching and learning, using relevant technologies."

The Mission Statement goes on to make comment on the spectrum of courses offered within the Institute, teaching and research, links with the wider community, the working environment, and access and participation to groups who are under represented in higher education.

The strategic objectives are directed towards the quality and excellence of teaching programs, education services, and applied research through refining and developing internal management systems for the review of courses and other activities within the Institute.

The strategic objectives are centred upon Chisholm's membership of the unified national system of higher education and include strategies to support growth in undergraduate and postgraduate programs, the generation of external funds, the provision of credit transfer and bridging programs for students within the TAFE system, the provision of special entry programs and credit arrangements, increasing the number and range of full-time paying short courses to meet community needs, arrangements for the export of educational services, the consolidation of nurse education, the development of an integrated communications and data processing network and to work towards a formal association with Monash University.

The strategic objectives are consistent with the policies of both the Department of Employment, Education and Training and the Victorian Post-Secondary Education Commission.

Strategies are being developed to increase efficiency and productivity by setting performance indicators in the areas of retention rates, graduation rates, class sizes, program rationalisation, and resource management. Selected performance indicators are available from the Institute's data collection and can be determined from the DEET and VPSEC statistical collections.

The Institute through its association with the Australian Committee of Directors and Principals and the Australian Vice-Chancellors Committee has participated in the pilot project to establish performance indicators for members of the unified national system of higher education. A draft policy on performance indicators is currently being trialled in selected Australian higher education institutions and will possibly be endorsed for national use at some time in the future.

Institute Objectives and Procedures

The Institute Council continuously reviews policies and procedures through the work and reviews undertaken by the committee of Council. Terms and conditions of employment for staff have undergone change during 1989; some through award requirements and others through the introduction of new local staff conditions of employment. Terms and conditions of employment for academic and non-academic staff are published in the Staffing Procedures Handbook (Administrative Guide, Volume 1). During 1989 the Human Resources Department produced a new edition of the Handbook to update and consolidate amendments, additions, and deletions which had been approved by the Institute Council over recent years.

During 1989 student regulations have been developed and amended and these have been consolidated and published in the Chisholm Handbook 1990, Volume 1, Student Manual.

Organisational Structure

During 1989 a new academic organisational structure was introduced through which four schools (previously divisions) were established within the Faculty of Technology. The David Syme School of Business was restructured to become the David Syme Faculty of Business, with a structure of four schools (previously departments). The schools within both faculties reflect the specialist areas of teaching undertaken within the respective faculties. Each faculty is headed by a Dean of Faculty and appointments have been made or are being advertised, at Head of School level for the various schools. The academic and administrative
structure of the Institute is shown in the Organisational Chart (page 2). The activities of one of the centres, the Centre for Robotics, were closed down during 1989 due to the lack of financial support to continue operations.

External Reviews

During 1989 selected areas of the Institute were evaluated under external reviews conducted by the Department of Employment, Education and Training. The Institute made submissions to, and received visits from, committees established to conduct the “Discipline Review of Teacher Education in Mathematics and Science” and the “Review of the Accounting Discipline in Higher Education”.

Summary of Operations – Major Initiatives and Achievements

The major achievements of the year have been indicated above and include the on-going reviews of Institute policies and the establishment of faculty based schools within the Faculty of Technology and the David Syme Faculty of Business.

One particular achievement which meets the strategic objectives of the Institute was the development of new programs through the financial assistance offered by the Victorian Education Foundation. New programs, dependent on the provision of new resources have been funded by the Victorian Education Foundation through applications made by the Faculty of Technology, the David Syme Faculty of Business, and the School of Art and Design. The programs have been funded through seed and support grants totalling $2 million.

The VEF funding the generous financial support by industry and business, and the awards received from the Australian Research Council have allowed the departments, schools and faculties to continue research activity to develop academic programs, and to introduce new initiatives. The Institute has commenced the necessary activity to introduce courses in Banking and Finance, and Retailing, through the distance education mode in association with the Monash/Gippsland Distance Education Centre.

The first full year of operation of the Full-Fee Paying Overseas Student Program occurred in 1989. The Institute had more than 400 overseas students enrolled in a variety of courses to become one of the major contributors to Australia’s education export program.

Further details of the activities of the Faculties and Schools are contained elsewhere within this Report.

Overseas Travel

A number of members of staff undertook approved overseas travel on Institute business and in accordance with the policies governing Professional Experience Programs during 1989. In the area of Institute business travel was undertaken for the marketing of courses within the Full Fee Paying Overseas Students Program. In accordance with Institute policies all overseas travel can only be taken following the approval of the Director.

Freedom of Information

During 1989 the Institute prepared and published a statement of certain documents and information as required under Section II, Part II of the Victorian Freedom of Information Act 1982. Copies of this statement are available from the Institute’s Freedom of Information Manager.

The Attorney-General’s Statistical Return and the Public Service Board Annual Report Form were also completed in relation to Freedom of Information requests dealt with by the Institute during the year ending 30 June 1989.

External Committees

Institute staff hold membership on a number of Course Advisory Committees and Course Accreditation Committees of other Colleges of Advanced Education in Victoria and other states of Australia. The Institute through the Director’s Office is also represented on the Victorian Conference of Principals of Colleges of Advanced Education Ltd and the Australian Committee of Directors and Principals Ltd. The Institute Director is also a member of the Board of Directors of the Cooperative Action of Victorian Academic Libraries Ltd, the International Development Program of Australian Universities and Colleges, SSAU Nominees Pty Ltd and SSAU Management Ltd. Members of staff frequently participate as members of ad hoc committees and working parties established by universities, colleges, industry and business, and other organisations representing the wider community interest.

The Council of Chisholm

Powers held by the Council of Chisholm:

On 21 November 1989 the Governor in Council amended the Chisholm Institute of Technology Order-in-Council which was made pursuant to the Post-Secondary Education Act 1978 in which the representation within Council of the general staff was increased. The amended Order-in-Council also adopted the parliamentary style, plain English and neuter gender approach
towards modern drafting, but at the same time retaining the powers of Council that had previously been provided in the old Order-In-Council.

The powers of Council are provided for in Part 7 in the amended Order-In-Council and these have not been changed from the powers of Council previously provided for.

**Pecuniary Interest Declarations**

The Order-in-Council of the Institute, in particular clause 604 provides as follows:

"(n) any person who has a pecuniary interest, whether directly or indirectly, in any business of the Council of any Committee of the Council of which such a person is a member must declare the nature of any personal interest on every occasion when the business is being considered at a meeting at which such person is present;

(o) no person is entitled to vote at a meeting of the Council or any committee thereof on any subject in which that person holds a direct pecuniary interest but nothing in this clause disqualifies a staff member who is a member of Council or of a Committee of Council from voting on matters affecting the general terms and conditions of the staff on the Institute;"

The Institute has no form requiring members of staff to declare pecuniary interests although the policy on paid outside work may require members of staff to make disclosure should their work interfere with their duties within the Institute.

**Publications and Information**

Publications produced by the Public Relations Office of Chisholm Institute of Technology in 1989 are:

- *Chisholm Handbook*, seven volumes including *Student Manual* which contains the Regulations of Chisholm as they apply to students. Produced yearly.
- *Chisholm Gazette*, three editions a year.

These publications may be obtained from the Public Relations Office, tel. (03) 573 2099.

The Student Regulations contained in the *Student Manual* are too numerous to summarise in this *Annual Report*, and copies may be obtained from the Student Administration Office, telephone (03) 573 2320.
Division of the Associate Director and Registrar

Associate Director and Registrar
Graham A. Trevaskis BA, BEd(Mdb), EdD(Colombia), TPTC

Computer Centre

General Activities

The statistics for 1989 from central computing resources show a somewhat increased overall demand from the lower activity in 1988. Logins are up by four per cent, connect hours (the time users spend logged into the systems) are up by 7.3 per cent, the number of user registrations are up 9.1 per cent, but the printed output is down four per cent. The School of Computing and Information Systems continues to dominate the statistics, with an average of 50 per cent of resource usage, depending on how one wishes to gauge such activity. The Robotics and Digital Technology usage increased, and in fact, exceeded all previous connect hours (although logins were smaller, indicating longer connect time for each login). Staff usage increased, so too did Humanities, Engineering and Maths. The Computer Centre activity remained steady, whilst the School of Business usage went to zero (Indicating that their computing needs were met from their own departmental micro systems).

An interesting feature was the decrease in paper usage, equating with the School of Business central facility inactivity, pointing to the success of the paper budget measures instituted in 1988, implemented to lessen the wastage of paper, and which now shows has levelled out.

Continued heavy use of the microcomputer laboratories, shown by the heavy number of tutorial bookings (and hereby cutting into the ad-hoc usage), means that the maintenance of these units needed a change of emphasis in service personnel, and the employment of additional Computer Technical staff. Again it is emphasised that usage of these units in statistical data cannot be ascertained as can be captured on central computing resources, so the impact on central systems can only be estimated. The level of computing demand on the Computer Centre has increased dramatically in the past two years, but is not shown in the statistic output published each year. Thus the analysis of usage data contained in this report will not reflect the total computer demand on centrally controlled systems.

The Computer Centre again maintained a 24 hour/seven day access to central facilities. The support of six Operating Systems on the computer units we offered for access, kept the Systems Programming staffing resources at maximum capacity.

Staff Training and Activities

Most Computer Centre staff attended instructional courses or conferences in 1989. Indeed, the staff training budget, supplemented by grants from the Institute's General Staff Development Committee (for which we are eternally grateful), was overspent by $7500.

In endeavoured to be involved with Institute activities, several internal and external committees were actively attended by Computer Centre staff in 1989. These included Computer Centre and Users Committee, Faculty of Technology Board, Graphics User Group, Equipment Advisory Committee, several ad hoc subcommittees and working parties of EAC, General Staff Development Committee, Hay Position Description Evaluation and Writing, Open Day Committee, Occupational Health and Safety Representatives Committee, Prime User Group, Pyramid User Group, DECUS (Digital Users Group), ATUG (Australian Telecommunication Users Group), AARNet (Australian Academic Research Network), VICNET (Victorian Colleges Network), Network Committee etc.

Hardware

During 1989, the control of all aspects of the PABX – technical, clerical and administration, distribution, were assumed by the Computer Centre at Chisholm. This introduced a degree of additional complexity to Computer Centre technical and administrative staff, but opened up an opportunity for experience in a newly deregulated area and the change to increase the reticulation of voice and data around the campuses in a more efficient manner. This aspect goes a long way in meeting the Institute Objective six (Chisholm Educational Profile 1989/91, issued October 1988), which reads:

"To provide an integrated communications and data processing network, including video/voice, digital and interactive facilities, designed to enable the delivery and rationalisation of courses, teaching and other learning activities on a multi-campus basis, and capable of contributing to efficient staff and student administration, and effective management of the resources available for Institute activities."

The Chisholm Computer Centre has developed a good working relationship with the Monash Computer Centre and are working in
concert towards the eventual merger in a way that assumes that the merger is already complete. Rationalisation of machine maintenance design and implementation of networking, in integrated PABX, procedures, cooperative resource sharing, and development of "Greater Monash" pockets of specialised expertise, are some of the developments already in place or in the later stages of implementation.

Networking plans were developed in 1989 for introduction in early 1990, which will link to all available laboratories and central computer facilities at Clayton, Caulfield and Frankston, together with the central administrative needs and local departmental desires. Eventually Gippsland will be integrated too, making a very extensive network covering voice, data and video.

Most of the equipment at Chisholm is ten years old (with the exception of the Pyramid Unix system), and the Institute's Equipment Advisory Committee (EAC) decided in 1989 to address this problem. A package consisting of a total of $3 million, was put together from Chisholm funds, for which the Computer Centre was required to coordinate a central computing replacement purchase scheme for academic processing.

In conjunction with Monash, the Computer Centre advertised for proposals for the replacement of central computing equipment, asking for proposals under the headings of micros, networking, mainframe and graphics equipment. Close cooperation was established with Monash Computer Centre at this time and laid the foundation for the 1990 merger negotiations for central computing services. It became obvious, for example, to have compatible networking across all campuses - Clayton, Frankston and Clayton - and some rationalisation of maintenance could be achieved.

The proposals for the Chisholm part of the call were evaluated by a team of Chisholm staff consisting of a blend of technical and teaching skills, to arrive at a solution that satisfied all aspects of Chisholm needs. At all times, contact with Monash was maintained, to determine if possible incompatibilities were emerging, but the outcome was an independent Chisholm solution that met the needs of the future merger. Orders were placed in late 1989 and deliveries started in January 1990. This will mean that the comparison of usage for 1990 will be difficult, as work will be on vastly different systems, configurations and environments.

It is anticipated that Chisholm central computing services in 1990 will jump from the (mostly) 1970s technology to 1990s technology, completely bypassing the 1980s. This huge change in the method of academic processing will become evident in 1990 through networked PCs Ethernet connections to mainframes at Caulfield and Clayton, opening up great challenges for technological experience for Computer Centre Staff and all users of central facilities. PABX usage in this exercise will increase also, bringing in opportunities never before offered, and with the merger with Monash, increased horizons on all technological fronts.

Educational Development Unit

General Activities

The normal activities of the Educational Development Unit continued in 1989 but with some changes in emphasis and growth in many areas. The influx of full-time paying overseas students has had a major impact on the activities and importance of the Language Development Section, replacement equipment in the Media Services Section has meant a substantial improvement in capacity to accommodate sophisticated production demands and there has been an increase in the range of academic staff development activities. Near the end of the year, negotiations towards an amalgamated structure with Monash University occupied much time, particularly of the Head of Department.

One major research grant of $110,000 from the Department of Education, Employment and Training was awarded in conjunction with the Human Resources Department to initiate an Institute wide program at Senior and Middle Management level on "Improving Productivity through Performance Review." In addition a Central Research Fund grant of $10,000 in conjunction with Mechanical Engineering allowed an evaluation of the educational outcomes of the Chisholm Vehicle Projects. Internal evaluations of courses were carried out by the School of Nursing on the effectiveness of clinical placements and with the Department of Software Development on third year students views of the computing course. The regular Student Evaluations was used by more staff than ever before until the end of the year when the Prime computing system for which it was written was decommissioned. The programs are being rewritten for use on a microcomputer.

Confidential advice on teaching was given to individual staff members by the Head of Department and a number of presentations were made to Institute Committees. He also acted as external consultant to Ballarat College of Advanced Education on the reorganisation of their Education Unit. The annual meeting of Directors...
of educational development units was attended in Adelaide prior to the HERDSA conference where the Head of Department made two presentations in collaboration with Mr. Paul Wellington of Mechanical Engineering on "Project work in engineering education" and "The educational value of 'real' projects in engineering education".

Significant visitors included Dr. George Gordon of the University of Strathclyde who spoke to a general staff meeting and to the Directorate on "Academic performance and departmental assessment in the United Kingdom", and Mr. Ian Hall from the Southland Polytechnic.

The Academic Staff Development program for 1989 included an extensive range of courses in February and March ranging from "Surviving with less: maintaining the quality of teaching with fewer resources and without additional load" to "Effective use of presentation aids". Practical teaching seminars were run mid year for small groups, an innovation being a concentration in one particular School on new staff members. The well established microcomputer training courses for both academic and non-academic staff continued but were on a smaller scale as substantial energy was devoted to establishing a working Desktop Publishing system for the production of handouts and Educational Development Unit publications.

Language Development Section

General Activities

The Language Development Section (LDS) is now firmly established as an essential service at the Institute on the basis of the assistance it provides for students and the support it thereby offers to other academic staff. The LDS has been operating at Chisholm for five years and a measure of its widespread acceptance and popularity is that, as of 1989, the 500-600 students who received assistance had either heard about the Section via word of mouth or had been referred by academic staff, ICS, Admissions or the Student Association. Time and effort spent in publicising the Section will therefore be scaled down somewhat for future years.

In February the LDS ran Academic Skills Orientation programs at Caulfield and Frankston, for which there was great demand. They were the first of a number of short courses run for native and non-native speakers of English throughout the year.

The most striking change in the LDS operation for 1990 was the advent of a large group of full-fee paying overseas students (FFPPOS). Over one-third of them sought assistance from the LDS at some time during the year. A new full-time Senior Tutor, Tim Moore, was appointed with primary responsibility for dealing with the language and study skills needs of these students. As the FFPPOS arrived with very diverse backgrounds in terms of culture, language and study skills, they required approximately three times as many consultations as their local counterparts. A welcome side-effect of the advent of the FFPPOS was an increase in interaction between LDS staff and discipline-based staff - a development which works to benefit all concerned.

Diagnostic tests of English developed by LDS staff were administered to a number of students at the request of other academic staff and Admissions Committee.

Because of students' timetables and their individual learning needs, most tuition was handled on a one-to-one basis, but small groups were formed where possible in order to handle the workload. A number of short courses were conducted during the year including mid-year orientation sessions for incoming FFPPOS and for the new Westpac Management Diploma students. Groups of second-year Engineering students who were speakers of English as a Second Language attended a writing course throughout the year. Supplies of print materials, videotapes, audiotapes and educational software were built up during the year for student use in the Self-Access Centre and for borrowing.

The demand on Frankston campus has been such that Toni Chang's time was increased to three days at Frankston from August, leaving one day for Caulfield. The majority of the Frankston students were mature age, many studying Nursing.

Other activities have included provision of advice to the Institute of English Language Testing, sale of the LDS audiotape and booklet package "Passing Exams" and preparation of material for the two Study Skills Handbooks which will be sold to tertiary and senior secondary students.

The Language Development Section finally has a budget allocation for the secretary (0.4 part-time), partly funded from FFPPOS money, and no longer needs this service supplied by the Educational Development Unit office.

Media Services Section

General Activities

For the first time since the inception of the Educational Development Unit, the Institute's Graduation Ceremonies were videotaped. This took place in May and October at the George Jenkins Theatre, Frankston Campus and the Chisholm Hall, Caulfield Campus. The tapes were available for sale to graduands.
Among the new equipment acquired by the Unit was a Fostex E8 eight channel multi-track audio recorder. This was installed in the video post production suite and allows up to eight separate audio tracks to be laid synchronously with the master edit videotape. A Sony BVU 950P SP U-Matic edit recorder was also installed in the video suite for video mastering.

A number of major videotape productions were undertaken during the year. The School of Management in conjunction with the Australian Chamber of Manufactures commissioned a course publicity videotape titled “Manufacturing Management – the Competitive Edge”. John Marshall, the ICI Fellow in Manufacturing Management presented the program and interviewed young managers in Industry. A number of leading manufacturing personnel endorsed the course for the videotape. These included Mr Bill Dix (Chairman, Ford Australia), Mr Ken Crompton (Australian Chamber of Manufactures), and Senator John Button (Minister for Industry, Technology and Commerce).

An external program on “Assessment of Older People in the Community” was produced for the Royal College of Nursing, Australia. The program although instructional was shot as a drama and is being used in the College’s distance education programs.

An interesting variety of photographic projects were undertaken including industrial photographs of factory sites at CIT, Dux, Nicholas Kiwi and Ford Australia for the Department of Robotics and Digital Technology and the School of Management. The Section’s first foray into forensic photography was initiated by Chief Superintendent Dave Axup who had a series of vehicle globes photographed after traffic accidents. Catalogue and exhibition photography supporting the Ceramic Design Department’s Visiting Fellow in Ceramics, Charles Olsen, was undertaken for his final farewell exhibition.

Publications

Media – Audiotape and Booklet Package

CLEREHAN, R., Passing Exams Melbourne, Chisholm Institute of Technology

External Committees

CLEREHAN, R.
- Chisholm member on Inter-College Committee for Multi-Cultural Education.
- Member of committee for reaccreditation of the Graduate Diploma in Teaching English as a Second Language, Victoria College.

Higher Degrees and Research Committee

The Higher Degrees and Research Committee allocated nineteen grants to staff from the Central Research Fund and produced the 1988 edition of the Chisholm Research Fund. The Committee was also involved in the allocation of Higher Education Contribution Scheme Postgraduate exemption scholarships to Doctorate and Masters candidates.

During the year, four academic staff members had their Australian Research Council grants renewed for 1990, and two Masters by Research candidates were successful in gaining Australian Postgraduate Research Scholarships.

Institute Community Services

Research and Development

Research has continued in the fields of childhood depression and social worker values. Presentations have been made to the Silver Jubilee Conference of the Department of Psychiatry at the Royal Melbourne Hospital (Coping with Depression), to the Australian Psychological Society (Approaches to Adolescents Experiencing Depression), and a paper has been completed for presentation to the Australian Psychological Society Silver Jubilee Conference and for publication (The Children’s Depression Scale: A Decade of Australian and Overseas Research), with assistance from the Chisholm Institute Research Grant. The Children’s Depression Scale has been translated into Hindi and published for research use in India.

Action research activities have included surveys into needs of full fee paying overseas students. Research is also continuing in the fields of student attrition, community based care, and access for students from ‘disadvantaged schools’.

Overview of Significance of Activities

Institute Community Services continued to work towards the objectives defined by the 1988 Review adopted by the Institute Council and to this end continued its support for students and staff of the Institute as follows:

(a) To provide short-term support for those members of the Institute who seek assistance with difficulties or needs in areas such as learning or teaching, coping with personal, family and work problems, as distance with financial, housing and child care support, advice on religious and moral dilemmas, vocational uncertainties and opportunities, legal matters and medical issues.
(b) To offer members of the Institute the possibility of expanding personal horizons through the provision of information on subjects such as job seeking skills, effective study methods, contraception methods, first aid, resuscitation techniques, and participation in group sessions to improve family, social and work relationships.

(c) To extend and enhance the capacity of the Institute to provide the services above to its members through agreements and links with organisations and groups outside the Institute.

(d) To foster and undertake research which supports the effective provision of such services to members of the Institute.

The educational thrust of these objectives is support for the Institute's efforts to reduce student attrition as well as to increase student retention and completion rates by providing ongoing consultation to students, staff, Student Union and Institute Committees upon individual and collective needs of students.

New Initiatives

Considerable energy has gone into the needs of full fee overseas students. A questionnaire has been developed, recommendations have been framed and workshops have been organised for all Chisholm staff who are concerned with overseas students.

Other significant developments included:

- Relocation at Caulfield from the Plaza to premises where all services except Dental and Careers are housed together.
- Reaffirmation of the umbrella concept through the close working relationships between services of different professional backgrounds.
- Recognition by the Institute of the importance of the non-Chisholm funded Institute Community Services by the provision, for the first time, of recurrent funds for the Child Care Services.
- Approval by the Institute of the Honorary Appointments policy so that medical practitioners, psychiatrists, counselors, an optometrist, a solicitor, chaplains and child care workers who provide services to students and staff at no cost to the Institute will be recognized as honorary staff of the Institute.
- Establishment of the Chaplaincy Committee, with membership drawn from the Victorian Chaplaincy Committee for Tertiary Institutions and local parishes together with students and staff working to employ a Christian Ecumenical Chaplain to commence in January 1990.
- Granting of a tenured position to the Coordinator of the Health Services.

Institute Community Services staff were also engaged in many Institute activities such as council committees, school boards, Women in Chisholm, Sexual Harassment, Disabled, Affirmative Action and Equal Opportunity committees and overseas student groups. Apart from local governments and neighbouring parishes working relationships were maintained with community groups such as Citizens Advice Bureaux. Groups for students and staff are run regularly (eg overeating, stress management, assertiveness, women's health, sexually transmitted diseases and transition to work).

New initiatives such as a pilot Needle Exchange Program have been undertaken and programs have been run on Family Therapy for doctors in the Caulfield area in conjunction with the Family Medicine Program at the Royal Southern Memorial Hospital.

The ICS Fieldwork Unit has strengthened with a focus on students from nursing and postgraduate students in psychology, social work and medicine. A six session teaching program outlining ethical practices and a cross-professional therapy model was well attended by staff and Fieldwork Unit places.

The refurbishment of the premises at Frankston and at Caulfield the relocation at 7 Princes Avenue of all services previously located in the Plaza have enhanced the working environment for Institute Community Services on both campuses and also the opportunities for interdisciplinary communication.

Statistics

Four in every five users of services (except child care and legal) were current students of the Institute. Turnstile figures for professional contacts for the period January to June 1989 show the magnitude of ICS operations but should be read in conjunction with plans for their refinement as well as Services-specific reports about preventative work.

ICS Turnstile usage for 6 months

<table>
<thead>
<tr>
<th></th>
<th>Caulfield</th>
<th>Frankston</th>
</tr>
</thead>
<tbody>
<tr>
<td>Careers Advisory Services</td>
<td>1521</td>
<td>1824</td>
</tr>
<tr>
<td>Counselling Services</td>
<td>1143</td>
<td>150</td>
</tr>
<tr>
<td>Child Care Services</td>
<td>250</td>
<td>30</td>
</tr>
<tr>
<td>Extension Services</td>
<td>270</td>
<td>2352</td>
</tr>
<tr>
<td>Health Services</td>
<td>4668</td>
<td></td>
</tr>
</tbody>
</table>

Detailed statistics by eligible categories of users will be available when a computer is purchased for the purposes of user monitoring at Caulfield. It is proposed that computers placed in the reception areas both at Caulfield and Frankston, in addition to providing comprehensive user monitoring and statistical system, will provide data for research and funding submissions and opportunity for regular recall of users who require further testing, for example, Pap smears.

Services were delivered on both Caulfield and Frankston campuses through the five units listed above: Careers Advisory Services, Counselling Services, Child Care Services (including the Child and Family Service, two independent Group Care centres, one on each campus, and a joint Family Day Care Scheme with the City of Caulfield), Extension Services (including Legal Services,
Chaplaincy and Field Work Unit) and Health Services (which include psychiatry, optometry and the Student Union Dental Service). For the purposes of this report only non-routine highlights receive comment below:

**Careers Advisory Services**

The Careers Advisory Services on both campuses experienced greatly increased use by students of the services offered, particularly those directed at tertiary-bound school leavers, and the transition programs for final year students. In an increasingly contracting employment market for new graduates, more employers than in previous years used the facilities offered on our campuses to recruit Chisholm students.

In mid-December 1988, the Careers Advisory Services were relocated from the Plaza to slightly smaller, but more central and more visible space in Suite 2.16 of A block. In the process we lost a utility room which had been used in the Plaza for our audio-visual facility and occasional interviewing by visiting employers.

The 1989 Recurrent Budget provided for an increase in the "Schools Liaison" allocation, which enabled us to present Chisholm at a substantially greater number of events offering course and career information to prospective students at secondary schools. In particular, Chisholm was, for the first time in many years, able to attend almost every "careers event" organised for secondary schools in rural Victoria.

Also in the 1989 Recurrent Budget was a "seedling" allocation for restoration of a resource which is vital both to users, as well as careers counsellors - the Careers Library. However, the amount ($10,000) is sufficient only to make a start on updating the library. Hopefully a higher grant in 1990 will allow important developmental work on the Career Information Centre to bring it to a standard which will satisfy minimal needs.

Towards the end of the half year, the CAS tendered successfully for a grant from the Department of Employment, Education and Training to run an Equity Links Project with Disadvantaged Schools. This Project commenced in the second half of 1989.

Tumstilte figures shown elsewhere in this report are not entirely appropriate for the variety of users and types of service of the CAS. The following user statistics are held to be more descriptive. During the six month period (January to June 1989), numbers of users/user groups having more than casual contact with the staff of the CAS were as follows:

<table>
<thead>
<tr>
<th>Type of Service</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospective students</td>
<td>211</td>
<td>171</td>
<td>293</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolled students</td>
<td>1829</td>
<td>360</td>
<td>-</td>
<td>293</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>245</td>
<td>70</td>
<td>19</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employers</td>
<td>-</td>
<td>-</td>
<td>57</td>
<td></td>
<td></td>
<td>152</td>
<td></td>
</tr>
<tr>
<td>Secondary Schools</td>
<td>-</td>
<td>-</td>
<td>89</td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Community Groups</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9000*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(ie careers events)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4700*</td>
</tr>
<tr>
<td>*estimates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Child Care Services**

**Child and Family Service**

During 1989 the following developments have taken place in the area of child care:

- Recurrent funds at 0.375 fraction were made available effective from January 1989, thereby increasing the service delivery capacity.
- A Babysitting Club was established on the Caulfield campus to accommodate child care needs of parents.
- An application for funding for second Group Care Centre on the Caulfield Campus has been completed and submitted.

**Extension Services**

**Legal Services**

The Southern Communities Legal Service Inc has continued to operate and receive funding from the Victorian Legal Aid Commission and from the Student Union Board. New initiatives include a voluntary lawyer scheme and educationally based legal programs. Some work is also being done in the area of domestic violence and women's refuges.

**Chaplaincy Services**

The Chaplaincy Committee appointed for the first time a Christian ecumenical chaplain at the end of 1989, funded by the Uniting and St John's Anglican Churches in Malvern. The chaplain has been appointed on a half-time basis and will work with a team of Jewish, Anglican and Uniting Church chaplains.

The committee has considered a number of issues including the needs of Muslim and orthodox Jewish students, approaches from specific religious groups and multicultural issues generally.
Fieldwork Unit

The Fieldwork Unit has confirmed its liaison with a range of medical, nursing, social work and psychology courses from Monash, Melbourne and La Trobe Universities as well as Chisholm and Phillip Institute of Technology and the Gippsland Institute of Advanced Education. Supervision workshops have been held for staff accepting placement students. Regular in-service programs and weekly interdisciplinary peer supervision meetings have continued. In addition experts from outside Institute Community Services have been invited to lead discussion groups and training programs. In 1989 Fieldwork places included fifteen undergraduate nursing students, six medical students, four postgraduate medical practitioners, eight social work and psychology places for placements ranging from day visits of observation to three months full-time placements.

Health Services

There has been ongoing involvement with teaching and supervision with the Family Medicine Program:
- Placement for and supervision of nursing students from Chisholm and Frankston.
- Ongoing and increasing involvement in undergraduate placements and teaching of Monash medical students.
- Increasing health promotion programs jointly with Student Union.
- Supervision and teaching of postgraduate doctors in the Family Medicine program.

Conclusion

In summary, the practice of institute Community Services has been consolidated to the point that feedback from meetings of organisations such as the Australian and New Zealand Student Services Association is that, once again, we continue to be regarded for style, delivery and educational emphasis as a positive point of reference by other Universities and Colleges.

Library

Research and Development

The Library conducted a study on the use of its facilities by students. The purpose was to determine what variations, if any, could be detected in the patterns of library use of students enrolled in different Faculties and Schools. Chief investigator was Gary Hardy, Information Resources Librarian. The study was funded in part from Full-Fee Overseas Students (FFOS) income. A final report of the study will be published in 1990.

Other Significant Activities

The new Institute Librarian, Mr Hans Groenewegen, took up his duties on 3 April.

Due to a significantly increased allocation for the purchase of publications and a favourable dollar exchange rate, the Library was able to buy more books in 1989 than in the previous few years: a total of 9,070 volumes. In addition, the Library received some funding from the Institute’s FPOS program. However, increasing student numbers and the heavy use they make of the collections largely offset these gains in collection growth, and further improvement in the Library's purchasing power is required, if it is to support the Institute’s teaching and research programs anywhere near adequately.

The successful introduction into the Library of databases on Compact Disc Read Only Memory (CD-ROM) in 1988, and their enthusiastic acceptance by users, led to the acquisition of a further three CD-ROM titles in 1989: Psychological Abstracts, the Cumulative Index to Nursing and Allied Health Literature, and Books in Print.

Major maintenance work was done on the periodicals collection at the Caulfield Campus. The collection was tidied, loose issues of the most heavily used titles were placed in binders and pre-1980 issues of many titles were removed to compactus storage. Since then additional staff have been assigned to keeping the periodicals collection tidy and a more comprehensive binding program has commenced.

The Library participated in the Institute’s Open Day with exhibitions at both campuses. The Caulfield Campus Library had an exhibition of recently acquired publications in the fine arts, and the Frankston Campus Library had an exhibition of award-winning children’s books.

A new stack area on level one of the Boykett Building was taken into use during the year. The area is equipped with mechanized compactus shelving and is used mainly for the storage of early volumes of periodicals for which the demand has decreased. This has freed valuable space in the main library.

The Library’s Annual Information Exchange Day was held in September. The theme of the day was Planning for Change, in light of the forthcoming merger with Monash University.

Following a joint approach by the Library and the Educational Development Unit to the Equipment Advisory Committee, the Institute made an initial grant for the purchase of audio-visual equipment. The equipment purchased from this grant replaces worn out and obsolete equipment in teaching spaces in the Institute, including the Library seminar rooms. A second grant will be made in 1990.
All members of the senior staff of the Library were actively involved in the merger discussions with Monash University Library. A number of working groups were set up to deal with specific aspects of the two libraries' operations and these met regularly throughout the second half of the year. As a result, by the end of 1989 many of the details regarding the operation of the libraries after the appointed day had been agreed upon.

An amount of $784,000 was made available by the Department of Education, Employment and Training from the National Priority (Reserve) Fund, for the purchase of computer hardware and software to upgrade the library computer facility at Monash University. This will permit it to accommodate the needs of Chisholm and Gippsland libraries. As the Library's existing computer system is becoming less reliable with advancing age, the prospect of being able to transfer to the new Monash system soon after the merger is a very attractive one.

**Community Awareness**

The Library continued its active participation in the Southgulde Information Network, a cooperative network of Information providers in the South-Eastern region of Melbourne. The most significant aspect of its involvement is in the development of the Southgulde database, which contains information items relating to the early history of Frankston and the Mornington Peninsula. Much of the information in the database has been contributed by a network of volunteers, whose activities are coordinated by a网员 of the Library staff.

The Library was associated with the Centre for Competitive Advantage and the David Syme International Business Centre in promoting access to and use of library-based information services to business and industry.

The Library was involved in the planning of the Alumni Association and agreed to make its facilities and services available to members of the Association at a greatly reduced charge.

**External Committees**

The Library continued its membership of the Australian Bibliographic Network (ABN), the Cooperative Action by Victorian Academic Libraries (CAVL), and joined the newly established Australian Council for Libraries and Information Services (ACLIS).

The Institute Librarian, Mr Hans Groenewegen, was re-elected as Chairman of the ABN Network Committee; he was elected Vice-President of the Victorian Association for Library Automation, and was also elected to membership of the Victorian State Executive of ACLIS. He chaired the Librarianship Course Advisory Committee of Ballarat College of Advanced Education and was a member of the Course Advisory Committee of the RMIT Department of Information Services.

The Academic Services Librarian, Ms Jean Goulay, was a member of the CAVL Reference Interest Group (CARING).

The Systems Librarian, Ms Sue Steele, was a member of the Australian Dataphase ALIS Users' Group.

The Head of the Cataloguing Section, Ms Jean Tindall, represented the Library at the Victorian ABN Users' Group and its Cataloguing Standards Subcommittee.

The Head of Lending Services, Mr Andrew Dixon, was a member of the CAVL Reciprocal Borrowing Program Committee.

Ms Layne Alden was a member of the Special Interest Group on Library and Information Services for People with Disabilities of the Australian Libraries and Information Association (ALIA).

Ms Kate Boyle was a member of the In-Magic Users' Group.

**Publications**

**Articles**


**Book Reviews**


**Conference Proceedings**

Gourlay, J, "The Subject Librarian in the Academic Library", Third National Reference Librarians' Conference, University of Melbourne, 17-19 November.


**Public Relations Office**

The Public Relations Office again prepared the Institute's Handbook, the 1988 Annual Report, three editions of the Institute's magazine Chisholm Gazette, the staff fortnightly newsheet Chisholm People, and a number of other publications. An update sheet for the Prospectus was published. The office was responsible for the organisation of the 1989 Open Day and the published program. A total of 40 media releases and articles were prepared by the Office, and 591 advertisements...
were organised through the Institute’s agency, making a total cost of $270,524 of promotional and recruitment advertising by Chisholm for the year.

The office was closely involved in the establishment of the Chisholm Alumni Association and assisted with the preparation of Schools Liaison material and the Chisholm Solar Vehicle Project. It monitored the use of the Institute’s corporate identity, and established design guidelines for Institute publications.

A number of miscellaneous publications were prepared by the office, including the AIDS and STDs Information kit Adolescent Love and Safety, prepared by the Division of Continuing Education as a curriculum resource for secondary students; and the war memoirs of the Chancellor of Monash University, Sir George Lush.

An electronic version of the Institute’s Handbook, called HyperCourse, was designed and commenced, with a view to distributing it free of charge to secondary schools and libraries in 1990. This publication is believed to be the first of its kind in Victoria. It will run initially on Macintosh computers, with Public Relations staff evaluating the possibility of production of other versions.

Student Administration

International Students Office

The following promotional activities were undertaken in Asia during 1989 as part of the recruitment program for full fee overseas students.

<table>
<thead>
<tr>
<th>Location</th>
<th>Event</th>
<th>Attendee</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>Singapore</td>
<td>Aust. Education</td>
</tr>
<tr>
<td>Kuala Lumpur</td>
<td>Exhibition</td>
<td>T. Wong</td>
</tr>
<tr>
<td>Penang</td>
<td>Seminars/</td>
<td>J. Duncan</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>Interviews</td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>Kuala Lumpur</td>
<td>Seminar/</td>
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<tr>
<td>Singapore</td>
<td>Interviews</td>
<td>T. Wong</td>
</tr>
<tr>
<td>June</td>
<td>Singapore</td>
<td>IDP Exhibition</td>
</tr>
<tr>
<td>Kuala Lumpur</td>
<td>Seminar/</td>
<td>T. Wong</td>
</tr>
<tr>
<td>June</td>
<td>Singapore</td>
<td>IDP Singapore</td>
</tr>
<tr>
<td>Kuala Lumpur</td>
<td>Seminar/</td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>Kuala Lumpur</td>
<td>Austrade</td>
</tr>
<tr>
<td>Singapore</td>
<td>Austrade</td>
<td>T. Wong</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>Seminar/</td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>Kuala Lumpur</td>
<td>Malaysian Roadshow</td>
</tr>
<tr>
<td>Kuching</td>
<td>University</td>
<td></td>
</tr>
<tr>
<td>Penang</td>
<td>Interview</td>
<td></td>
</tr>
<tr>
<td>Kota Kinabalu</td>
<td>Office</td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>Hong Kong</td>
<td>Seminar/</td>
</tr>
<tr>
<td>Kuala Lumpur</td>
<td>Austrade</td>
<td>T. Wong</td>
</tr>
<tr>
<td>Singapore</td>
<td>Exhibition</td>
<td></td>
</tr>
</tbody>
</table>

External Committees

IRVINE, P.
- Victorian Tertiary Admissions Committee
- Form and Guide Committee
- Victorian Vice Chancellors Committee and Entry Policy Committee Colleges representatives
- VCOP - Tertiary Entry Policy, Committee, member
- Coordinators Committee
- Registrars Group, member
- AITEA, Professional Development Sub-Committee, member

CONWAY, M.
- AITEA
- Secretary, Victorian Branch Executive
- Member, Planning Community, State Conference

Publications – Division of the Associate Director and Registrar

Division of the Associate Director (Planning and Resources)

Associate Director (Planning and Resources)
John S. White BSc(Math), MACS

Human Resources Department

General Activities

Building further on its change from the traditional Staff Branch, the Human Resources Department continued on its path of change. Developments both within and outside the Institute again required a turnaround of forward planning needs and the implementation and formation of those developed in 1988.

A major activity during the year was the development of a program to improve the work performance of Senior and Middle Management. Funded by a Department of Employment, Education and Training Equity grant, the program is jointly run by the Human Resources Department and Educational Development Unit with consultants provided by the Australian Institute of Management. As part of the program, a residential Senior Management workshop was conducted in December at Campaspe House, Woodend to provide Chisholm's Directorate, Deans and Heads of Schools with a better understanding of how to motivate, manage and develop the staff. The development of a comprehensive program for middle managers throughout the Institute was a major outcome of this activity and the middle management component of the course will be run in the early part of 1990.

The objectives of the program were to provide senior and middle management with the necessary personal and managerial skills to fulfill their responsibilities under the second tier industrial agreements for improving staff performance and productivity.

Simultaneously, a program of in-house courses for general staff were introduced in semester two, following a needs analysis conducted among supervisors at the Institute to ascertain the most commonly observed staff development needs.

The courses, provide skills which can be utilised in the workplace, and were enthusiastically received by participants. A similar program will be offered in 1990, and attempts will also be made to offer training programs specifically designed to accommodate changed needs of departments.

During 1989 the Department also provided training for members of the Institute's staff who participate in selection committees for new appointees. The educational role of the Human Resources Department and its staff in the implementation of formal Selection Criteria against which all candidates are assessed is a continuing one and further formal training will be provided in 1990. A complete review of the Institute's appointment and selection processes was undertaken incorporating new, refined, fair and efficient appointment and selection procedures.

By the end of 1989 the Department had installed a Hay Maintenance program for the re-evaluation of general staff positions throughout the Institute.

During 1989 discussions with general staff representatives resulted in a plan being developed for the performance appraisal scheme across the Institute. In early 1990 a performance appraisal pilot program will be conducted for all staff in the Library before consideration is given to an Institute wide program. Whilst the appraisals will be conducted by department heads, training, monitoring, advice and assistance will be provided by the Human Resources Department.

In 1989, the Department provided in-house training for staff on the Institute's responsibilities and requirements under the Occupational Health and Safety Act.

Planning and Resources

Major Works Carried Out in 1989

The building works completed during the year centred around the refurbishment of the former Caulfield Technical School Building, now known as T block and the ongoing minor works program.

The first stage of the T block project, comprising the reinstatement of services and seven classrooms on level three, was occupied in early March followed by the opening of a pedestrian bridge over Railway Avenue linking B and T blocks. The remainder of the building was refurbished during the year to provide further classrooms and space for Faculty of Business, Office Management and Premises Branch. The total cost of the works was $1.153 million, funded...
under both State and Commonwealth capital programs.

Minor works and other projects carried out during the year included:

**At Caulfield**
- Alterations to level two, A block, for a Centre for Mathematical Training.
- Renovations to 7 Princes Avenue for Institute Community Services
- Accommodation on level one, A block for Public Relations
- Installation of a new fire alarm system in C block
- Demolition of houses and development of on-grade parking in Railway Avenue.
- Completion of the installation of the emergency evacuation system and provision of smoke doors in B block.
- An improved ventilation system in B block for Art and Design
- Projection booths and disabled access to lecture theatres in B block
- Airconditioning of offices on Levels five and six of F block.

**At Frankston**
- Completion of on-grade parking area.
- Completion of a disabled lift for A block.
- Replacement of the roof to Struan.
- Installation of emergency lighting in A and C blocks.
- Upgrade of security lighting in main car park.
- Demolition and clearing works at Portsea.

In addition to the above a number of projects were in progress at the end of 1989, planned for completion for the beginning of the 1990 academic year.
School of Art and Design

Dean

Jenny Zimmer FRMIT, BA(Hons)(Melb)

Research and Development

The year 1989 saw significant change in the School. The focus was on course development and the establishment of both a sound research base and a climate of recognition for it. The School has been assisted by access to grants from the Victorian Education Foundation (VEF) totalling nearly $1 million, effective over three years.

Staff and students of the School continued to uphold its considerable reputation in the art profession by exhibiting studio work, undertaking design consultancy and publishing.

During 1989 the Institute's Higher Degrees and Research Committee formed a subcommittee to develop guidelines for Master of Arts (Research) candidature in the visual arts. As a result of its conclusions the Institute was able to award its first Master of Arts in this area and the Committee approved several additional candidates for enrolment.

Most staff continued to carry out theoretical or applied research in the arts, and to engage in consultancy and commissioned work. In addition, the School successfully applied for a VEF grant for the development and delivery of a Master of Arts (Craft) by coursework, to be undertaken in industry partnership with the Meat Market Craft Centre. This course is due for accreditation and implementation in 1990.

Several members of staff enrolled for MA degrees at Chisholm and elsewhere.

Other Significant Activities

During the first semester the School of Art and Design, in partnership with the Faculty of Technology, developed and achieved accreditation of the Bachelor of Technology (Design) funded by the VEF. The inaugural Chisholm Design Group Director and staff were appointed and the first students were enrolled in second semester.

Arrangements were consolidated for the operation of the Tapestry stream within the Department of Fine Art, and for the rearrangement of the four-year Bachelor of Arts (Graphic Design) into a three-year BA and an optional BA (Honours).

The School of Art and Design was honoured to arrange the 1989 Caroline Chisholm Oration, delivered by the Hon. Joan Child.

International visitors to the School included Charles Olson, on exchange from the University of Whitewater – Wisconsin; leading European architectural glass artist, Jochem Kloos; Rajah Zaharuddin, Dean of the Faculty of Art and Design, Mara Institute, Malaysia; and Peter Lane, leading English craft writer.

Visiting Fellows for 1989 were Inge King, sculptor, and Geoffrey Edwards, Curator of Sculpture and Glass at the National Gallery of Victoria.

During 1989 the Computer Graphics facility was extended to students in the Fine Art and Ceramics Departments and the School has continued to address Equity and Health and Safety issues.

Three members of staff received Academic Promotions and one was promoted via the Caroline Chisholm Award scheme. Three staff members enjoyed extended Professional Experience Programs overseas, while others travelled for specific research projects. The Head of the Department of Fine Art went specifically to study tapestry courses throughout Europe and North America.

Promotions

The School of Art and Design continued to play an active role in Australia's cultural life. Individual artists and designers presented exhibitions and completed commissions, consultancies and other art-related advisory activities, including the Dean's membership of the Advocacy Committee of the Visual Arts/Craft Board of the Australia Council and Vice-Presidency of the Craft Council of Victoria.

This report does not provide the capacity to list the many inclusions within selected group exhibitions and the writing of art reviews, catalogue introductions and papers as required by various sections of the visual arts profession.

A laudable series of graduate exhibitions were presented for the Information and enjoyment of the public. These were extremely well attended, with an estimated crowd of more than one thousand, at the Meat Market Craft Centre on the occasion of "Design in Mind", the combined graduate exhibition of the Department of Ceramic Design on the Caulfield and Frankston Campuses.

Graduate Diploma students in the Department of Fine Art had a successful exhibition at Coventry Gallery, Sydney, early in the year.

The Dean visited Korea as a member of a three person delegation sent by the Department of Foreign Affairs and Trade to examine the visual arts and crafts in that country and to pursue possible exchanges of artists and exhibitions. The School published the Report for distribution.
Members of the School served on Course Advisory and Accreditation Committees for most other Victorian art schools and some that are located interstate. It also provided representation on VAITC committees, and the art collection and selection committees of a number of other institutions.

A number of staff were involved in arts related community activities, including lectures and gallery openings. The Dean opened numerous exhibitions, including several in NSW and the ACT. She served on the editorial committee of several arts organizations and judged numerous Municipal and Charity art shows.

Staff from all three Departments conducted overseas art study tours which included members of the public, and the School took an active interest in the work of the Commission for the Future and other initiatives which attempt to harness the creative skills of artists and designers within the drive for value-added productivity. Much of this activity emanated from the new Chisholm Design Group.

**External Committees**

**ZIMMER, J.**
- Vice-Presidency of Crafts Council of Victoria.
- Vice-Presidency of Victorian Ceramics Group.
- Chairmanship of the Jewellers and Metalsmiths Group of Victoria.
- Presidency of International Association of Art, UNESCO, in Australia.
- Course Advisory Committees: Warrnambool CAE, Ballarat CAE, Gippsland IAE, Bendigo CAE, RMIT and Hawthorn Institute of Education.
- Art Advisory Committees: Footscray Institute of Technology, Caulfield City Council, Meat Market Craft Centre, the National Trust of Australia, and the Australian Graphic Design Association.

**Publications**

**Articles**


**KITSON, M.** "Historical Archaeology: Military and Naval Defence, Swan Island Fort and the West Channels", *Swan Bay Management Plan*, Department of Conservation, Forests and Lands, Victoria, December.

**ZIMMER, J.** "Journeys of a Modern Magi", *Craft Arts International*, 16 August/October, pp 49-52.


**ZIMMER, J.** "Where There is Appropriate", *Fibre & Text*, Melbourne, pp 8-11.

**Reports**

**ZIMMER, J.** (ed) Richards, D., Mensies, J. Visual Arts/ Crafts Study Tour to Republic of Korea, 1989, for Department of Foreign Affairs and Trade, Canberra, Chisholm Institute of Technology, Melbourne.

**Conference Papers**


**HOFFERT, B.** "Art in Australia", International Association of Art - UNESCO General Assembly, Madrid, Spain.

**HOFFERT, B.** "The Artist in Australian Society", International Association of Art - UNESCO Conference on The Role of the Artist, Lyon, France.

**HUGHES, B.** "Glass as a Professional Career" 6th National Ausglass Conference, Melbourne.


**ZIMMER, J.** "Ornaments and Art" 6th National Ausglass Conference, Melbourne.

**ZIMMER, J.** "Can Artists be Trained?" VAITC Forum, Melbourne, December.

**ZIMMER, J.** "Contemporary Art in the Land of the Morning Calm" NCHADS, Annual Conference, Canberra, September.

**ZIMMER, J.** "Chisholm's Design Initiative" NCHADS, Annual Conference, Canberra, September.

**ZIMMER, J.** "Ceramics in Society: Then and Now", Victorian Ceramics Group, March.

**Exhibitions and Commissions**

**DUPREE, G.** Paintings, Australian Galleries, Melbourne, April.

**GOLGH, C.** Paintings, Christine Abrahams Gallery, Melbourne, May.

**HOPKINS, J.** Paintings, Macquarie Galleries, Sydney, February.

**HOPKINS, J.** Portraits, commissioned privately, December.

**HYLANDS, A.** Ceramics, Beaver Gallery, Canberra, October.

**LA GERCHE, G.** Paintings, Coventry Gallery, Sydney, July.

**LA GERCHE, G.** Paintings, Christine Abrahams Gallery, Melbourne, June.

**LA GERCHE, G.** Paintings, Deighton Bros, Perth, December.

**LA GERCE, G.** Painting, Law Building, Perth.

**NEESON, J.** Prints, Hotel, Eden on the Yarra, Melbourne.

**PIGGOTT, R.** Paintings, Powell Street Gallery, Melbourne.

**PRICE, R.** Ceramic Percussion, Crossman Gallery, University of Wisconsin, Whitewater, USA, October.

**ROCKETT, K.** Stamp Design - Christmas Island, issued in August.

**STAVIANOS, W.** Paintings, David Jones Gallery, Sydney, October.

**STAVIANOS, W.** Paintings, Luba Blu Gallery, Melbourne, September.

**SZIBER, J.** Ceramics, Burnie TAFE, College Gallery, Tasmania, December.

**TEASDALE, N.** Paintings, David Ellis Fine Art, Melbourne, October.

**WILLIAMS, G.** Paintings, Pinacotheca Gallery, Melbourne, June.
Faculty of Business

Dean
Peter Chandler BCom(Melb), MA(Mkt)(Lancs), MAIEx

School of Accounting

Head of School (Acting)
Eric Smith BCom, DipEd(Melb), AASA

Significant Activities
- Visit by the Review of Accounting Discipline in Higher Education.
- Commencement of a Graduate Diploma in Accounting.

Promotions and Marketing
Mr Gurdarshan Gill and Mr Eric Smith were involved in visits to schools to promote Business Faculty courses.

External Committees
Mr Laurie Webb is a member of the Education Committee of the Australian Society of Accountants.

Publications

Books

School of Banking & Finance

Head of School
Denise Wheeler BSc(Monash), DipEd(SCVillawhithorn), MCom(Melb)

General
In 1989 three new courses were accredited. The most innovative of these was the Bachelor of Business (International Trade) which is offered at the Frankston campus. It is a unique program combining foundation studies in business, specialist studies in international trade and an elective sequence chosen from a foreign business language. The Introduction of studies in foreign business languages has been supported by a $1 million grant from the Victorian Education Foundation. Language laboratories have also been installed at both campuses.

The Graduate Diploma in International Business targets existing business practitioners who need skills in either the finance or market aspects of International trade.

The Graduate Diploma In Taxation is a full-fee paying course designed for taxation practitioners. This course is offered on an “In house” basis at the Australian Taxation office as well as on the Caulfield campus.

The school was successful in its tender to conduct two in house banking executive programs, namely the Westpac Management Diploma and the State Bank Victoria Banking Diploma. In addition, a successful in house training course was conducted for ANZ Bank. A number of short course banking programs were also conducted as part of the Faculty's 1989 executive program on the Caulfield campus.

An inaugural banking and finance industry conference was held over two days at the Hotel Windsor in November. Prominent speakers included Mr N.R. Clarke, Chief Executive Officer, National Australia Bank, Mr Bill Moyle, (former) Chief Executive Officer, State Bank Victoria, and Mr Alan Cullen, Executive Director, Australian Bankers' Association. They addressed participants on the future directions in banking and finance. Extensive industry sponsorship was received for this conference which has now established itself as an annual event.

The school raised $1 million in funds to install the first simulated industry standard Treasury Dealing Room in an Australian tertiary educational institution. Donors included the Victorian Education Foundation, major Australian banks, software and hardware companies and Chisholm's Equipment Advisory Committee. Kevin Tant, National Australia Bank, Fellow in the Treasury Operations joined Chisholm bringing twenty years banking experience to the School.

Banking and finance students had the opportunity once again to participate in our international summer program to Japan, Hong Kong and Indonesia over the summer semester.

In December 1989, the School was provided with a quota from the Monash Gippsland Distance Education Centre to offer its Bachelor of Business (Banking and Finance) be external studies in 1990. This is the first Chisholm based course to be offered in this mode through the Distance Education Centre.
External Committees

Denise Wheller and Robin Edwards were invited to join the Westpac Management Diploma Steering Committee.

Denise Wheller joined the Footscray Institute of Technology Banking and Finance Course Committee.

Greg Tucker continued his involvement on the CITSU Bookshop. He also became a member of the Gippsland Institute of Technology Banking and Finance Advisory Committee.

Publications

Articles


Conference Proceedings

HICKS, J., Dr, "Australia's Overseas Debt", School of Banking and Finance Annual Conference, 1 December 1989.

Banking and Finance Occasional Papers

- 1. ALCHIN, T., and WILLIAMS, B., "Some important aspects of Third World Debt and some possible solutions to the crisis".
- 2. PRITCHARD, L.D., "Does Australia really have a current account problem?".

School of Management

Head of School (Acting)

Tim Haslett MA(Hons), Auckland, MEdAdmin(UNE), MAdmin(Monash), DipTeach(NZ)

General Activities

During the year the School of Management continued with its strategic redirection.

Accreditation of the Bachelor of Business (Manufacturing Management) proceeded with the first intake of students being in 1990. This course is led by Ed Neff who was Operations Director at Heinz before joining the School of Management. Applications were characterized by very strong demand from part-time students already working in Manufacturing. The School is currently developing a Graduate Diploma in Manufacturing Management which will be offered on a full-fee paying basis. The course leader for this program is Hans Elen who was Director-General of DITR before joining the School.

The second new degree developed was the Bachelor of Business (Human Resource Management) to be offered for the first time on the Frankston Campus in 1990. The course, which is led by Dr James Sarros, enjoyed strong demand from both part-timers and school leavers. The School will be offering a Graduate Diploma of Business (Human Resource Management) on a full fee paying basis. The course leader, Jeff McLan, is currently developing the program.

With the new degrees starting the phasing out of programs in Office Administration has begun with final intakes for these programs in 1989.

Development also began on a Graduate Diploma of Business (Business Management) led by James Burgess. This degree, which will be full fee paying, will offer students accelerated progress through the use of residential units.

The School attracted funding from Ford (Australia) to fund the Ford Teaching Fellowship. It is expected that this position will be filled in 1990.

Promotion of the Manufacturing degree was given a boost by the production of a promotional video. It was produced by EDU and funded through sponsorship by Australian Chamber of Manufactures, Vary Board and Pacific Dunlop. The film featured John Marshall, the ICI Teaching Fellow with appearances from Senator John Button, Bill Dix, managing Director, Ford, Ken Crompton, Chief Executive Office, Australian Chamber of Manufactures, Dr. Michael Deely, Managing Director, ICI and Anna Booth, Secretary, Allied Textile & Footwear Workers Union of Australia. This tripartite support for the degree indicates the wide acceptance of the need for this program.

Dr James Sarros was selected as one of three Australian Council for Educational Administration Travelling Scholars. During his visits to Council affiliates, Dr Sarros spoke on topics such as stress and burnout in administration, organizational restructures and concepts of leadership.

The following Management staff were on PEP leave:

- Wendy Bell investigated telecommunications and distance learning initiatives, particularly with Asian countries.
• Yvonne McLaughlin investigated general business and management practices and procedures with particular emphasis on manufacturing management and productivity management.

• Denise Welch did a research study into two Australian manufacturing companies involved in international business operations focusing on managerial implications of "offshore" manufacturing.

Publications

Articles


BELL, W., & LANGDON, A., "Office Procedures In Australia", Melbourne, Pitman Publishing.


SARROS, J.C. & SARROS, A.M., "Educators need to take more positive steps", The Age, 16 May.


SARROS, J.C., "Some good models, but never a classic: how human resources management can help educational administrators", The Practising Administrator, vol 11 no 1, pp 42–45.

RALSTON, K., Working Better, Melbourne, McCullough Publishing.


RALSTON, K., "Turn your staff into high performers", Enterprise, vol 2, no 4, pp 18–19.

RALSTON, K., "Advertising for staff", Enterprise, vol 2, no 5, p 35.

School of Marketing

Head of School (Acting)

Peter Reed BBus, GradDiplMktg, MBus(Chisholm), AASA

General Activities

In June 1989 the School of Marketing, joined with the Michigan State University, to present a Logistics Management Executive Development Program. This was the first Australian presentation of this internationally renowned course and Dr

Bowersox, Professor of Management and Logistics, Dr Cooper, Associate Professor In Marketing and Transport, and Dr Moncza, Professor of Purchasing and Materials Management, came to Australia to present components of it. The School of Marketing staff contributing to the program included Adrian Furniss, Mayne Nickless Fellow In Logistics Management, and Brian Hirsh, Chairman of the Logistics Management Course Advisory Committee.

The School also conducted an innovative program for Telecom Australia. This was a five week residential course for 40 senior Telecom Executives. It was led by Senior Lecturers Garry Harris and Chris Kimberley. The program entitled, Strategic Marketing Management, was an accredited course and as such was the first course of this type to be offered by the David Syme Faculty of Business.

A number of prominent visiting fellows were guests of the School of Marketing during 1989. These included:

• Professor Malcolm McDonald, Head of the Department of Marketing, Cranfield Institute of Technology, UK. Professor McDonald has an international reputation for his work on marketing planning.

• Dr Aubrey Wilson, an English marketing consultant. Dr Wilson is the author of text books on industrial and services marketing.

• Professor David Cravens, Professor of Marketing, Texas Christian University, USA. Professor Cravens is an author of several texts on marketing, including a best selling book on Strategic Marketing.

Another prominent activity of the School was a "Pure Food Seminar", organised by Dr Bill Schrader, the Elders XIIX Fellow in Agribusiness. A part of this highly successful seminar was a nationally telecast one hour program entitled the "Peter Couchman Show". Dr Schrader and the School of Marketing were also coorganisers of the second national agribusiness conference.

As a part of the major thrust into international business, the Graduate Diploma in International Business (Marketing) was launched in Semester two, 1989. This course focussed on the need for Australian Industry to expand beyond the domestic arena. The School continued its International Focus In the Bachelor of Business (Marketing) with students participating in another study tour of the USA.

During the year the School also assumed responsibility for the David Syme International Business Centre, whose main focus is to assist Victorian Industry In their export development.
Centre for Development of Entrepreneurs

In July 1984, the Centre for the Development of Entrepreneurs was established within what was then the David Syme Business School to encourage people in Australia and neighbouring nations to understand the entrepreneurial activity is vital to economic development and to provide practical advice on how individuals and organisations could become more entrepreneurial.

The uniqueness of the Centre is evident from the services which have been developed and the many resources which it offers.

In 1989, the Centre has:

- Regularly conducted special Workshops in Entrepreneurship, designed to develop entrepreneurial skills and enhance business management capabilities amongst intending and existing business entrepreneurs.

- Developed the government-sponsored Graduate Enterprise Program, designed to assist graduates in setting up their own business ventures using the special skills, training and technology they have acquired during their training; and providing them with the necessary business skills and support structure to enable them to be successful.

- Conducted the New Enterprise Incentive Scheme a special program aimed at encouraging unemployed persons to enter the workforce by establishing their own new business enterprises, and providing them with the knowledge and skills to do so.

- Conducted the Country Centres Project throughout Australia, a program commissioned by the Federal Department of Immigration, Local Government and Ethnic Affairs, with the objective of identifying new business opportunities and establishing new business ventures in major rural areas around Australia. This also entailed the development of a special “Local Enterprise Development Manual” to be used as a guide for other local rural areas looking to further develop new business enterprise within their area.

- Published a range of business planning manuals.

- Conducted numerous education and training programs within the Centre itself through Chisholm Institute of Technology, through other educational institutions (such as RMIT, Monash University, Melbourne University, Gippisland C.A.E., Victoria College, and other TAFE Institutions), and as “in-house” training programs for companies and organisations. These also included workshops on “Intrapreneurship” aimed at developing creative business thinking and idea generation amongst employees within an organisation.

- Conducted seminars on entrepreneurship and business enhancement.

- Provided consulting services in all areas of business development including financing, general management and accounting, staff development and training, research, manufacturing technology, marketing, advertising, export marketing etc.

- Provided a business “Incubator” environment, where skills and resources are provided to approved growth-potential new ventures during the initial “embryo” phase of their development, until they are able to “go it alone”.

Dr Denis Klellerup was appointed as Executive Director of the Centre for the Development of Entrepreneurs in 1989.
School of Education

Dean
Raymond McD. Anderson BCom, BEd(Melb), MEd(Monash), PhD(Stanford), TPTC

Research and Development

Tony Townsend was funded by the Chisholm Higher Degrees and Research Committee ($11000) to develop a national network of people working in the area of school effectiveness, to survey those people on issues relating to the definition and implementation of school effectiveness, and to produce an overview of the current status of school effectiveness in Australia. The research clearly showed that people at the school level, Principals, teachers, school councillors, students and parents, did not have a unanimous perception of what schools should be doing to be effective, but were largely agreed that a dedicated and qualified staff was the most important factor in establishing school effectiveness. By the end of the 1989 a network of more than one hundred and thirty people Australia wide had been established, with some interest being shown by people overseas as well.

Charles Meyer continued research into public opinion, newspapers and Australian attitudes to Australian Germans in the 19th Century.

Annette Douglas, with the help of second year Sports Studies students, conducted a study of the fitness of grade five students at two local primary schools. A follow up study will be undertaken in 1990.

Elizabeth Mellor was a member of the Rural Pre-School Services Investigation Project Team, established and funded by the Department of Community Services Victoria to investigate means of providing preschool opportunities for four year old children in the Mallee region. The Project Team conducted seminars for teachers and members of the community at Bendigo and Wyperfield, and utilised research carried out by school's Bachelor of Education students under her guidance.

Julie Edwards and Ian Walker collaborated with the panel of experts which carried out an evaluation of the Victorian Certificate of Education Pilot Program.

Joe Dora was involved in two research projects: Mature Age Students in Primary Education and The Primary Classroom Curriculum: Policy Versus Practice.

Tom Hill concluded a research project, Metacognition and Calculator Applications, on the ability of young children to operate calculators to aid their understanding of mathematical concepts.

Other significant activities

The Dean, Dr Ray Anderson, was seconded to the position of Acting Associate Director and Registrar for eight months during 1989. As a consequence, Dr Richard Tremblay was appointed as Acting Dean of Education.

Joe Dora developed a new Integration Aide Certificate Program (year long) to commence in 1990.

Chisholm, Frankston was the venue for the Annual Conference of the Australian Science Education Research Association.

Margo Guest presented two conference papers at the National Protective Behaviours Conference (Canberra, May 1989). These were Protective Behaviours and Young Adults, a summary of student statistics on the prevention of violent crimes, and Self-Destructive Behaviours in Young Adults - a Protective Behaviour Option, a profile of the clustering of self-destructive sexual and other behaviours in young adults.

She continues to consult with schools and other community organisations on the subject of crime prevention and has conducted 24 primary and postprimary in-service activities.

Margo also presented her own and Chisholm student research findings to the Victorian Forum of the National Committee on Violence.

Charles Meyer continued development of Chisholm English Language Centre, a Centre within the School of Education. Students from Indonesia, Hong Kong, Japan and People's Republic of China were prepared for entry to secondary school of tertiary studies.

Tom Hill organised two In-service days for 387 practicing teachers from 25 schools.

The South Pacific Centre for School and Community Development received further funding from the C.S. Mott Foundation in America ($US25,000) and from the Australian Association for Community Education ($7,500) to continue its work in the Pacific Region. A major planning activity was held in Fiji in October. During the course of the year two newsletters were produced by the Centre. Tony Townsend edited the South Pacific News, the official Newsletter of the Pacific Region of the International Community Education Association (four issues) and Network News, the Community Education newsletter of the Australian Effective Schools Network.

Tony Townsend was invited as the Pacific delegate to the annual C.S. Mott Foundation sponsored Community Education Leadership...
Renewal Institute held in Bandera, Texas, in May. The theme was Redesigning Education for 1999. He was also consultant to the Santa Barbara County Schools Office on the establishment of a "Partners in the Pacific" program in conjunction with the South Pacific Centre for School and Community Development.

The Division of Continuing Education was the organizing body for a number of seminars and conferences during the year. Among these were the second National Conference on Incontinence held in Sydney, the Catholic Education Conference and the Australian Geriatric Society Conference, both held in Melbourne.

One of the Division's major highlights of 1989 was the launch by Professor Ron Penny of the Adolescent Love and Safety Kit. This is a teaching and resource manual for the prevention of AIDS and other sexually transmitted diseases in adolescents. The Division is presently undertaking their third printing of the program, and it is proving to be very popular right across Australia.

Dr Ron De Fossard, lecturer in the Tissue Culture Course, produced another of his fine books on Propagation of the Centre is also printing and distributing this. The Division's other publications continue to sell well and there are several others in various stages of production.

Dr Phil Berry and Mr Brian Murphy accompanied a group of Diploma of Teaching students on professional experience in Vancouver, Canada, where they taught in various primary schools.

Promotions

The Partners Across the Pacific scheme was undertaken by The South Pacific Centre for School and Community Development in conjunction with the Santa Barbara County Superintendent of Schools. This scheme identified schools and individuals in Australia, Fiji, Vanuatu, and the Solomon Islands, and matched them with counterparts in Canada and the USA.

Joe Dona coorganised (with Frankston City Council) the voluntary involvement of School of Education students in the Frankston Recreation and Respite Program for Disabled Children and their parents over school holiday periods.

Margo Guest has presented regular sessions on Radio 3RPP on community health and safety matters.

Marketing

The School of Education engaged in large-scale promotion of the Chisholm English Language Centre via its agents in Hong Kong, Indonesia and Japan.

External Committees

ANDERSON, Dr R.
- Course Advisory Committee, Gippsland Institute of Advanced Education;
- Course Advisory Committee, Phillip Institute of Technology;
- Course Advisory Committee, Warrnambool Institute of Advanced Education;
- Member of the South Western Regional Further Education Council;
- Deans of Teacher Education.

BILSBOROUGH, B
- Chairman, Course Advisory Committee, Graduate Diploma Primary Music, Victoria College.

MELLOR, E.
- Phillip Institute of Reaccreditation Committee for its Diploma of Teaching (Early Childhood) course;
- University of Melbourne - School of Early Childhood Studies, Course Advisory and Reaccreditation Committee (Acting Chairperson).

MEYER, C.
- (VCAB) LOTE Committee for VCE;
- Joint Education Systems and Tertiary Institutions Committee for LOTE;
- Sueono/Frankston Friendship Association (Frankston City Council).

PERRY, Dr P.
- World Councillor, International Society for Education through Art (INSEA);
- Chairperson, South East Asia – Pacific Regional Council of INSEA;
- Member, INSEA Research Board;
- President, Australian Institute of Art Education (term expired July 1989);
- Founding member of the Executive of the National Affiliation of Arts Educators;
- Assistant Examiner, Art and Design Program, International Baccalaureate;
- Chisholm's representative on the Tertiary Working Party of the Premier's China Advisory Committee;
- Executive Member of the Ministry of Education's Tertiary Arts Group;
- Council Member, Art Craft Teacher's Association.

DOUGLAS, A.
- Executive of the Tertiary Arts Group set up by the Arts Policy, Victorian Ministry of Education.

TOWNSEND, T.
- Member of the International Executive Council of the International Community Education Association ad as Regional Director of the Pacific Region of ICEA was also the Chairman of the Pacific Regional Council.
Publications

Books
DORA, J., *Beginning to Teach*, Melbourne, Chisholm Institute of Technology.

Articles
PERRY, P., "Remembrances", *Interacta 4*, Melbourne, December.

Invited Lectures
TOWNSEND, T., "School Based Management, Community Education and Training of Teachers" a seminar to staff and graduate students of the Faculty of Education, University of Lethbridge, Alberta, Canada, November.
TOWNSEND, T., three workshops on "Policy Development" and one workshop on "Goal Setting" for teachers from the South Eastern Metropolitan Region of the Ministry of Education, Chisholm, April.
TOWNSEND, T., "The Role of the President" for kindergarten chairman in the Frankston, Hastings, Mornington and Rinders areas, Frankston and Rosebud, May.
TOWNSEND, T., "Effective Schools in Australia", Australian College of Education, Sale, September.
PERRY, Dr P., speaker at the International Conference: Art Education and Local Tradition, Cairo, Egypt, January, 1989.
School of Nursing

Dean
Dorothy Angell RN, DTM, DWM, DNE, DANS, MEd(Manchester), FCNA, MNChN

Introduction
Progression into the third operational year for the School of Nursing was accompanied by an air of anticipation and excitement as the first cohort of basic nurse education students would become graduates at the end of the year.

In 1989 the new intake of students totalled 234, while the overall student population of the School swelled to 520. An increase in staff and student numbers necessitated further work in both curriculum review and development, particularly as it was the first run of the third year of the course. At the end of the year it was pleasing to note that out of the original intake of 129 students in 1987, 76 students became eligible for registration as nurses and a further sixteen students would complete their studies in 1990.

General Activities
Apart from the day to day activities involved in maintaining both academic and professional standards in the basic course all staff have been actively involved in upgrading their own qualifications in preparation for the merger with Monash University. In spite of these busy schedules, work continues on the development of post-registration courses for nurses.

Mid-year, the School of Nursing was approached by representatives from the Health Department's office of Psychiatric Services to discuss the development of a course for registered psychiatric nurses. Agrowth in psychiatric services in region eight warranted the recognition of the educational needs of this group. Now, under a single generic title of Graduate Diploma in Health Science, students will be able to enrol for a major study in palliative care, child protection or psychiatric nursing and it is hoped that further major studies will be developed as the future needs of the nursing profession are identified. It is anticipated that commencement of the Graduate Diploma in Health Science and a Bachelor of Nursing degree course will occur in 1991.

The School of Nursing, through the Dean, has obtained membership of the International Caring Association, a nursing organisation involved in research into the nature of caring. In April, the Dean attended the Eleventh National/International Conference in Denver, Colorado, USA on "The Caring Imperative in Education". Information and materials brought back from the conference, plus a visit to the Centre for Human Caring at the University of Colorado, have given staff access to the latest research and concepts in this growing field of nursing study. A visit to the School of Nursing, University of California, San Francisco on the return trip to Australia, has ensured that staff of the School of Nursing will benefit from the contacts established exchanges can only enhance the further development of nurse education at Chisholm.

Academic Staff from the School of Nursing are now well represented on many external and outside professional bodies. Gloria Seymour is a member of the Higher Degrees and Research Committee and the School Board for the School of Education. Elaine Duffield is a member of the Academic Programs Committee and she is also involved in a number of outside professional bodies including membership of the Nurse Education Working Party for CASA and the Senior Nurse Academic Network of the Royal College of Nursing, Australia. In 1990, Ms Duffield will take up an appointment as councillor for the Australian Nursing Federation - Victoria Branch.

Apart from membership of a number of external committees, the Dean sits on Course Advisory Committees at Bendigo College of Advanced Education, La Trobe University, Phillip Institute and Western Institute. The institutions offer courses ranging from the basic diploma course, through to a Masters in Nursing degree. The Dean has the office of Chairperson for the Course Advisory Committee for the joint Masters in Nursing degree program from La Trobe University and Phillip Institute. In addition to an involvement with tertiary Course Advisory Committees, the Dean is a member of the Region Eight Post-basic Rehabilitation and Extended Care Course Advisory Committee for the Health Department.

Since the release of the National Board of Employment, Education and Training (NBEET) discussion paper on Course Length and Nomenclature, the Dean as convener of the Heads of Schools/Departments of Nursing - Victoria, and a member of the Senior Nursing Academic Network of the Royal College of Nursing Australia, actively participated in the lobby for an eight semester degree as the initial qualification for nurses. The length of this degree is seen as being vital to the maintenance of health care standards in Australia.

Community Interaction
The School has been involved in a wide range of promotional activities externally and on campus. In July, an all day seminar for careers teachers from schools located in the surrounding
area was held at the Frankston Campus. Also the Assistant Registrar and Administrative Officer attended a two-day Career Information session held at the Moorabbin Town Hall. Members of the academic staff attended Career evenings at Dandenong and Noble Park and hospital Open Days. The School participated in the Institute Open Day with several displays and demonstrations being used to stimulate community interest in the Chisholm nursing course. Information evenings were also held in January and August with a good attendance on both occasions.

During year three, students undertake study related to birth and parenting. The community aspect of this study involves the "Adopt a Mother Program" where a student is attached to a family who is expecting a baby. An afternoon tea was held in order to thank the mothers for the participation in the program. Toddlers and babies took over the laboratories for an afternoon. Many of the mothers are now involved in the teaching aspects of the program.

Conferences

Staff involvement in professional seminars and conferences continues and this year saw participation in the national conferences on Primary Health Care, Nursing Theory, Nurse Education Targets 1989-2000, and the Australian Congress of Mental Health. At local level staff attended conferences on Pain Management, Consumer Health, Bioethics, Drug and Alcohol Research and Developmental Disabilities. In all, the total budget for both academic and general staff development was expended.

Publications

School of Social And Behavioural Studies

Dean
Richard J. Snedden BA(Hons), LLB(Melb), Bed(Monash), MACE

Department of Humanities

Research
Dr Brian McFarlane spent five weeks in England researching a comparison between 1940s and 1950s British Cinema and the new Australian Cinema as part of the necessary research for his book, "New Australian Cinema - Sources and Parallels". This involved viewing 32 relevant films of the period from the British Film Archive and interviewing 26 actors, directors, producers and writers who were actively involved in film-making of the period.

Mr Ian Murray has continued his research into the role of the traditional welfare worker.

Other Significant Activities
A new course, the Bachelor of Arts (Police Studies) was accredited and introduced.

Two new double degree courses were introduced. They were the Bachelor of Arts/Bachelor of Business (International Trade) and the Bachelor of Arts/Bachelor of Business (Human Resource Management), The Bachelor of Arts/Bachelor of Business (Management), Bachelor of Arts/Bachelor of Business (Business Administration) and the Bachelor of Arts/Bachelor of Business (Office Administration) were phased out as the David Syme Business School was restructured.

Two new minor streams were introduced to the Bachelor of Arts course. They were Business Chinese and Business Japanese.

Mr Ian Murray was appointed the Victorian Branch Secretary for the Australian Institute of Welfare and Community Workers. He was also appointed to the Board of Examiners which accredits courses in Welfare Studies for recognition by the Institute.

Mr Tony O'Grady and Dr Brian Costar continued as members of VISE Politics Management Committee as Chief Examiner and Examiner respectively for VISE Politics.

Mr Tony O'Grady ran a course in a Chinese Politics subject for the Monash University Department of Politics.

Dr Brian McFarlane conducted two in-service days for the Victorian Association for the Teaching of English and the State Film Centre on the subject "How To 'Read' a Film" at the State Film Centre. Dr Rose Lucas and Ms Sita Tweg conducted workshops on "Random Harvest" at the State Film Centre.

Mr George Clarke was training consultant in course development at the Staff Training Centre, Victorian Office of Corrections.

Dr Brian McFarlane organised and appeared with Mr Ivan Hutchinson on the TV Ed (Ministry of Education) program, "Read Any Good Films Lately" for SBS.

Dr Brian McFarlane continued as a member of the Editorial Board for Cinema Papers, Melbourne.

Promotions
Dr Brian McFarlane gave guest lectures on film study to senior students at Tintern CEOS and held an in-service session with the staff.

Mr Maurice Hasen has been tutor in Behavioural Studies for the University of the Third Age.

Department of Applied Psychology

Course Accreditation
The Course Development and Accreditation Committee of the Australian Psychological Society completed its review of the Psychology major strand and the Graduate Diploma in Applied Psychology early in 1989. On its recommendation the Council of the Society approved the reaccreditation of both programs for the maximum period of five years.

Course Development
A new optional third year subject in Sports Psychology was introduced in 1989. The subject reflects a growing interest in this area among students, the discipline of psychology generally, and among prospective employers of graduates.

A full three-year sequence in psychology for Nursing students was offered for the first time in 1989. The program has been developed over three years by Mr Barry Evans, and represents one of the most thorough attempts to cater for the needs of nursing students for such programs yet developed in Australia. It has been very well received by students, and has attracted considerable interest among nurse educators in Australia and overseas.

Some minor adjustments to second and third year programs in research design and analysis were made. They are intended to increase emphasis on design of experiments, and reduce emphasis on data analysis. In recognition of increased availability of statistical software and increased familiarity among students with microcomputers.
Research

The research program of the department has centred on postgraduate work by staff and students. Mr Barry Evans completed a two-year program on the evaluation of training in consulting skills for medical practitioners, funded by a research grant from the National Health and Medical Research Council. Mr Evans' results have been communicated in a number of conference papers, and have been incorporated in a doctoral thesis now under examination. Ms Michelle Pain and Mr Graeme Hyman continued research towards doctoral degrees at Monash University and the University of Melbourne respectively. Mr Tom Whelan commenced postgraduate studies at Lincoln School of Health Sciences, concentrating his research on the question of psychological preparation of children for surgery. He was granted study leave, to be undertaken in 1990, to research this topic in the states of Victoria, New South Wales, and Queensland, and in the United Kingdom.

Four candidates for the degree of Master of Arts were in progress in the department in 1989. Topics include adaptation of the aged to hostel type accommodation (Ms Marta Balan), attitudes of school children to physical disfigurement (Mrs Margaret Jordan), gravitational effects on perceptual phenomena (Mr O.I. de Kretser), and the effect of psychologists' reports on sentencing practice in the criminal courts (Mr L. Miles).

Consulting and Related Activities

Substantial consulting assignments were undertaken by several members of staff. Mr Arthur Crook conducted a number of training courses for state government departments in human resource development, and Dr Max Jory and Mr Graeme Hyman offered programs in stress management to a number of clients in public and private sector organisations. Dr Rodrick Francis undertook a number of consulting assignments in market research, and in psychological assessments for the criminal courts. Mr Crook also conducted courses in leadership for the RAAF Academy at Point Cook, as part of postgraduate training for graduates of the Joint Services Academy.

Community Involvement

Mr Rob Curnow acted in an advisory capacity to the Peninsula Hospice Association, and conducted research on behalf of the management committee. Ms Mary March continued her association with the Dandenong and Westernport Alcohol and Drug Dependence Council. She was involved, with Mr Curnow, in an evaluation of a method for preliminary identification of suspected alcohol impairment of drivers, on behalf of the Victoria Police.

Mr Barry Evans was involved, with Mr Greg Coman, in an investigation of stress and coping processes among personnel of the Federal and Victoria Police. Their study was funded by a grant from the Police Department, and given additional support by a research grant from the Higher Degrees and Research Committee of Chisholm Institute.

Mr Arthur Crook was appointed a member of the Victorian Government's Higher Education Consultative Committee.

Conferences and Conference papers

Staff of the Department attended a number of conferences during 1989. Papers given at these conferences are included in the list of publications attached to this report.

Department of Applied Sociology

Research

Dr Moni Storz completed her pilot study on the sexual harassment of women in public places.

Dr Neville Knight interviewed a number of professional youth workers and has developed a typology of their activities. This research has now been written up as an academic paper.

Mr Barry Ellem was appointed Official Visitor to the new Melbourne Remand Centre by the then Minister for Corrections, Mr Steve Crabb.

Dr Bruce Wearme sat on the Council of the Australian Institute of Archaeology.

Dr Joy Bjiljak has written a full report, An Exploratory Investigation of Educational Coexistence in England and the United States, which is based on her interviews with principles of Charterhouse in England and Princeton Day School in the United States and principles of some less famous schools in London and New Jersey.

Other Significant Activities

1989 has been an exciting and busy year for the department. Three new upper division units were successfully introduced:

- "Sociology of Genocide": Dr Naomi White
- "A Prominent Social Theorist": Dr Bruce Wearme
- "Society and Technology": Mr Barry Ellem.

Mr Jim Ross and Mr Robert Wolframm initiated and organised a group of 40 Chisholm Sociology students to spend 1st semester 1990 studying and working in Fiji. Mr Doug Truter led a group of people to set up the off-shore campus at Fiji at the end of the year.

A number of staff attended The Australian Sociological Association (TASA) conference.

Dr Moni Storz conducted a seminar on accelerated learning techniques for a group of
teachers at the Malaysian Ministry of Education in Kuala Lumpur. She also conducted a Train-the-Trainer Workshop using accelerated learning principles for the Malaysian Institute of Management. Through Monash University's Centre for International Business, she conducted a workshop on Asia's Business Cultures and Intercultural Communication Skills for business people. She was the keynote speaker at the Annual General meeting of the Australian Accelerated Learning Society (Victoria).

Community Awareness

In the latter part of the year Dr Moni Storz organised an educational tour for a group of Asian students from Malaysia, Singapore and Thailand to visit Chisholm and Monash University. The Department hosted the whole visit.

Ms Cathy Lewis conducted a series of effective learning workshops for high school students using accelerated learning techniques.

Mr Barry Ellem gave a series of lectures to the Bayside University of the Third Age.

Dr Bruce Wearnie gave a series of seminars on A Christian World-View to the Australian Fellowship of Evangelical Students conference in January.

Publications

Books

CRIEDE, B. A. & O'LOUGHLIN, I. L., Insight 90, Melbourne, Avid.

MCFARLANE, B. (Ed), Viewpoints 90, Melbourne, Longman Cheshire.

SIMON, A. M., "Ous' n Oz: South African Immigrants in Melbourne", Melbourne, Chisholm Institute of Technology.


WEARNIE, B. C. The Theory and Scholarship of Talcott Parsons To 1951, UK, Cambridge University Press.

Referred Journals

CORAM, B. T., "Social Relations and Forces of Production In the Transition to Socialism", Social Theory and Practice.

COSTAR, B. J., "Controlling the Victims: the Authorities and the Unemployed in Queensland During the Great Depression", Labour History, vol 56.


MCFARLANE, B., "Reshaped for the Screen: Random Harvest", Literature Film Quarterly, vol 17, no 4, pp 268-273, USA.


WEARNIE, B. C., "Whatever Happened To Michael Griffiths? A Retrospective Analysis of Evangelical Christianity in Australia Over The Last 20 Years", Tyndale Paper, vol 34, no 3.

Chapters and Articles

COSTAR, B. J., "Vince Gair", in CRIBB, M. (Ed), The Premiers of Queensland, Brisbane, University of Queensland Press.


LUCAS, R., "In the Spaces of the Sky ... Our Eyes Hunt Stan's: Creating Possibilities in the Poetry of JS Harry", in BROOKS, D. & WALKER, B. (Eds), "Poetry and Gender: Issues in Australian Women's Poetry", St Lucia, University of Queensland Press.


MCFARLANE, B., "Phil Noyce and "Dead Calm": Interview", Cinema Papers, no 72.


Public Lectures and Conference Proceedings


LUCAS, R., "Patterns of Desire in H. D.'s "Trilogy", AUTLA, Macquarie University.

LUCAS, R., "Complex Identity in Sally Morgan's "My Place"", History Department, Monash University.
KNIGHT, N., "Youth Workers: Pioneers of Settlers?", Australian Sociological Association Conference, La Trobe University.

MCFARLANE, B., "Fighting Great Expectations", Australian Universities Language and Literature Association Conference, Macquarie University.

MUSCHAMP, D. J., "Ethical Arguments", Monash Centre for Human Bioethics.

MUSCHAMP, D. J., "Ethical Dilemmas in Nursing Practice", Phillip Institute.


WHITE, N., "About Fathers: Men's Interpretations of Their Fathering Role", Australian Family Research Conference.

WHITE, N., "Shame, Guilt and Writings of Primo Levi", The Holocaust and Artistic Imagination, Jewish Holocaust Centre.

WOODWARD, D., Inaugural Conference of the Chinese Studies Association of Australia, Melbourne University.

Broadcasts


Book and Film Reviews


MCFARLANE, B., "Dead Poets' Society", Cinema Papers, no 7.

MCFARLANE, B., "Back of Beyond: Discovering Australian Film and Television", MURRAY, S. (Ed), Cinema Papers, no 72.


Theses

LUCAS, R., "Imag(in)ing the Mother: Transformative Images in H.D.'s Epic Poetry", Monash University.
Faculty of Technology

Dean
Roy Williams BE, PhD(NSW), ASTC, FIEAust, FIProdE, FRSA

School of Applied Science

Head of School
D. Graeme Ross BSc(Mdh), PhD(Monash)

General Activities

During 1989 the School of Applied Science continued to develop and strengthen its undergraduate programs, and to expand its recognised strengths in postgraduate and applied research and development programs.

The Bachelor of Applied Science (Multidiscipline) increased its "new to course" students by twelve percent. A total of 54 students graduated, including four awards of "Degree with Distinction".

Three students were awarded Masters Degrees during the year, and one student graduated in each of the Graduate Diploma in Water Science and the Graduate Diploma in Applied Polymer Science.

Applied research and development continued to be a major strength of the School with considerable expansion of the activities in the projects conducted through the Centre for Applied Mathematical Modelling, the Centre for Stream Ecology and the Polymer Research Centre.

The School continued to offer bridging programs to provide access to Applied Science and Engineering programs for individuals who had not taken formal science studies to year twelve. In addition, bridging and supplementary programs in mathematics continued to be provided with the support of the special Victorian Education Foundation Grant of $284,000 to the Chisholm Department of Mathematical Sciences and the Monash University Department of Mathematics.

A major activity during 1989 consisted of internal discussions, and discussions with staff of the Faculty of Science at Monash University, concerning academic programs and structures following the merger of Chisholm and Monash to take place in 1990. The academic structure model agreed upon was one of total integration with staff of the School of Applied Science to become members of an expanded Faculty of Science.

Staff of the Department of Mathematical Sciences at Chisholm are to join with the staff of the Department of Mathematics at Monash to form a single School/Department. Staff from the Department of Chemistry and Biology at Chisholm are to join with the staff of the Department of Chemistry at Monash, although the future location of Chisholm Staff associated with the "Water Science section" and those providing service to the School of Nursing has yet to be finalised.

I would like to take the opportunity to thank all staff from the School of Applied Science for their contributions and commitment to the Schools activities, and wish them well in their future locations within the Faculty of Science of the new Monash. It is essential that they carry forward with them into the Faculty of Science the unique strengths that have been built up within the School of Applied Science.

Department of Chemistry and Biology

General

The Department maintained a high level of activity during the year. Both the Graduate Diplomas (Applied Polymer Science and Water Science) were reaccredited and there was a new intake into the Polymer Course.

Research continued to have a high priority. There were about twelve Master's students and one Doctoral program was approved. Several staff spent time overseas and interstate where they attended major conferences and presented papers.

During the year Bob Burford retired and Trish Geraghty resigned to take up a position with the Environmental Protection Agency. Mark O'Brien also resigned to take a two year research fellowship with RIKI, an international biological research centre in Tokyo, Japan.

Service to the School of Nursing continued and 1989 saw the first offering of the final year of the Diploma. Kerrie Dickson and Wayne Stutrock were appointed to teach on the Frankston Campus.

Research Activities

Below is a list of staff members who have conducted research activities throughout 1989.

**HEWITT, D.G.**

- Free-radical polymerisation mechanisms.
- Aboriginal Medicine - thesis submitted: T.W. Jackson "Chemical Constituents of Aboriginal Medicinal Plants".
- ESPM: During the year the Polymer Research Centre entered into an association with Monash University and RMFT to form ESPM - a research and consulting unit to provide skills in Engineering and Science of Polymeric Materials.
CHYNOWETH, K.
- Miscibility in polymer blends.
- Thermal properties of polymers.
- Crystallization behaviour of polymers.

DAVIES, T.
- Use of Reed Beds for Treating Municipal Wastewaters - Frankston, Mornington Peninsula & District Water Board (MPDWB).
- Single household reed bed for treating septic tank effluent, Sommerville MPDWB.
- Use of Reed Beds for Treating Tip Leachate, Lysterfield, Sherbrooke Shire.
- Treatability Assessment of Industrial Wastes by a Portable Wetland Unit, Calvert City, Kentucky, USA. Tennessee Valley Authority, USA.

BECKETT, R.
- $15,000, ARC "Characterisation and Behaviour of Suspended Particulate material in Fluvial and Estuarine Systems" (Beckett & Hart).
- $38,000, Australian Research Council "Characterization of Polymers by Field-Flow Fractionation Techniques" (Beckett, Chynoweth, Hewitt).
- Postgraduate Student Supervision.
- Deinde Holchin, "Investigation of Pollutant Speciation in Natural Waters by Field Injection Analysis - ARC funded for 1989 (with B. Hart).
- Nutrient Spiking in Australian Streams - AWRA (funded with Hart & Freeman).
- Development and commercialisation of a low cost field instrument for phosphorus analysis based on HIA-R&D Grant/Mindaqua (with Hart, Freeman, Porter, Hannon).

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BAILEY, P.
- The functional role of snags in the biology of rivers and streams. Funding of $22,750 obtained from Australian Water Research Advisory Council, Department of Water Resources, Department of Conservation, Forests and Lands (Bailey, Lake, Day).
- Mechanisms of leaf pack colonization by stream invertebrates. Funding of $1000 from Chisholm Central Research Fund (Bailey).
- An Investigation of the pattern of consumption of terrestrial leaves by stream invertebrates. Funding of $1000 from Chisholm Central Research Fund (James, Bailey).

DICKSON, K.
- Ongoing research projects, in conjunction with staff at Monash University, Department of Physiology, on the effects of oligohydramnios, and growth retardation on fetal lung development.

BAPAT, J.
- Work started on the development of Flow Injection Analysis for determination of dissolved organic carbon. Grant from Rick Edwards and Barry Hart.
- Supervisor of the work of Gio Dele Renna, MSc.

Publications

CHYNOWETH, K., "Investigations of Miscibility in Polymer Blends", 17th Australian Polymer Symposium, Brisbane, January.

CHYNOWETH, K., "General Principles of Polymer Blends" Plastics and Rubber Institute, Melbourne, September.

CHYNOWETH, K., "Miscibility Measurements in PCL/PVC Blends", Pacific Polymer Federation, Honolulu, December.

DAVIES, T., "Low Cost Treatment of Wastewaters" Australian Water & Wastewater Association Branch Meeting.

DAVIES, T., "Constructed Wetlands for Wastewater Treatment". Seminar, Mornington Peninsula District Water Board.

DAVIES, T., "Constructed Wetlands for Wastewater Treatment". Chattanooga High School, Tennessee, USA.


BECKETT, R., "Applications of Field-Flow Fractionation Techniques in Environmental Studies" invited Keynote address, First International Symposium on Field-Flow Fractionation, Park City, Utah, USA, June.

BECKETT, R., "Some Applications of Field-Flow Fractionation Techniques to Environmental Studies", RACI International Conference and Tenth Australian Symposium on Analytical Chemistry, Brisbane, August.


BECKETT, R., "Optimisation of Field-Flow Fractionation for Particle Size Analysis: Exploiting the Capabilities and Extending the Limits", RACI Victorian Physical Chemistry Group Symposium on Particle Size Techniques: The Limitations, Melbourne, No vember.

BAILEY, P., "Foraging Behaviour in an Aquatic Sit-and-Wait Predatory Bug". Department of Zoology, La Trobe University.
BAPAT, J., Delivered two lectures on behalf of Toastmaster's Speaker's Bureau to Rotary and Kiwan Clubs. Topic: "Can we reduce our risk of getting cancer?".

CAMPBELL, L., "Seasonal Variations in Leaf Decomposition Rates in Two Australian Streams", 24th Congress of the International Association of Limnology, Munich, August.

CAMPBELL, L., "Farming and Streams - Impact, Research and Management". Presented to symposium, The State of Our Rivers, Australian National University, September.

Research Publications


Unrefereed Journal Articles


Awards Received

CAMPBELL, L. Hillary Jolly Award, presented by the Australian Society for Limnology for Outstanding Contribution to Australian Limnology.

Department of Mathematical Sciences

General Activities

The department has recognized for some time that with the move to quantitative analysis in most disciplines of study there exists a significant number of students who are ill prepared for their course of study. To cater for the needs of the students many specialized courses have been developed. This work gained a significant boost in 1989 with the establishment of the Mathematics Training Centre, funded in part by a Victorian Education Foundation grant. The establishment of the Centre has given a focus to these developments and has made the resources more obvious and accessible to the students. The development and purchase of suitable resources for this centre is an important ongoing activity.

Members of the Department have also been active in research and development. In general this activity is carried out under the umbrella of the Centre for Applied Mathematical Modelling reported elsewhere. Further work includes:

- Design and Analysis of a questionnaire for the South Dandenong Region Task Force of the Birth Services Review.
- Experimental design and data analysis for the Department of Physiology, Monash University.
- Development of a "front-end" to enable efficient input of Mathematical notation to the authoring package "AUTHOR".

Publications


Presented Papers


LOCHERT P.B., "Use of Statistical Packages in Undergraduate Courses", Workshop of the Statistical Education Group of the Statistical Society of Australia, December.
External Committees

**LOCHERT P.B.**
- Australian Society for Operations Research (Melb-Chap) (V-President).
- Water Engineering Technical Committee of ACADS.

**MANN K.J.**
- International Editorial Board of Hydraulic Engineering Software.
- International Editorial Board of Microsoftware for Engineers.

Centre for Applied Mathematical Modelling

Introduction

The Centre for Applied Mathematical Modelling (CAMM) is one of a small number of approved "Centres of Expertise" established at Chisholm Institute of Technology.

CAMM specializes in research and development related to air quality modelling, operations research and applied statistical analysis. The primary focus is on the first of these, and the majority of the income is from industry and non-government organisations.

CAMM is Australia's leading research group in air quality modelling (prediction and assessment of air pollution problems using computers), covering:

- **Development**: eg CAMM produced the AUSPLUME regulatory model which is used for licensing emissions to the atmosphere.
- **Testing**: CAMM has assessed the usefulness and reliability of more models with more experimental data than any other group in Australia.
- **Application**: eg in 1989, CAMM's expertise was enlisted to assess the environmental hazard or nuisance posed by one power station, fourteen industrial emissions, one site of soil and groundwater contamination, and a hazardous chemical spill.

With the exception of some commercially funded work, most of CAMM's research is published in refereed journals.

CAMM's work is heavily motivated by the increasing problems of air pollution and hazardous chemicals. There is an explosion in the number of development sites which are found to be contaminated with hazardous chemicals; chemical spills have become almost weekly occurrences; and there is a steady increase in health problems such as asthma which are related to air pollution. Australia seriously lags the US in skills to handle these problems, so CAMM is working to fill the need. In particular, CAMM has been diversifying its skills and attention during 1989 to respond to the concerns above. A rapidly increasing demand is expected for people working in these areas.

CAMM has begun monitoring and modelling of hazardous chemicals emitted by sites contaminated with hazardous chemicals. A computer model is also being developed for hazardous chemical spills, to be used in disaster management, planning and risk assessment. We are pioneers in these fields in Australia, and are establishing ourselves with little funding.

CAMM's activities are generally interdisciplinary in nature, examining the broad aspects of a problem rather than just concentrating on the mathematical components in isolation.

Since its inception there has been consistent growth in the activities of CAMM, particularly in the area of externally-funded projects, the level of which provides clear evidence that CAMM is viewed as a "centre of expertise" by the industrial and scientific community.

The Advisory Board of CAMM currently consists of:

- Dr D.G. Ross Executive Director, Project Leader, Applied mathematical modelling.
- Mr R.D. Burt Project Leader, Statistical modelling.
- Mr A.L. McLean, Mr C.G. McCann, Dr I. Wallis Principle Investigations Engineer, Consulting Environmental Engineers.

Activities

1989 saw CAMM continue to show consistent growth in applied research and development with a number of new long term projects which build upon an existing strong base of continuing projects. The rapid growth in short term consulting activities continued, particularly in the area of regulatory air quality modelling.

**Highlights for 1989 included:**

Continuing overseas support for CAMM's air quality modelling activities as exemplified by:

- Funding via a Cooperative Agreement between CAMM and the USDA, Forest Service.
- A further research contract with Air Resource Specialists, Inc., Colorado, USA.
- The successful completion of a research contract with Colorado State University and the National Centre for Atmospheric Research.

Further consolidation of CAMM as a major consultant in Victoria in regulatory air quality modelling. The AUSPLUME model, developed by CAMM under contract to the EPA of Victoria, is accepted as the major model for use in Schedule E.
of the State Environment Protection Policy (The Air Environment).

The visit of Dr. Dick McNlder from Johnson Environment and Energy Centre, University of Alabama at Huntsville with joint funding from CAMM, CSIRO Division of Atmospheric Research and the Chisholm Visiting Fellows Scheme.

Diversification of skills to respond to environmental concerns associated with contaminated sites, disaster management planning, and risk assessments for hazardous chemical spills.

Further funding for the VPSEC sponsored tripartite agreement between the Victorian Government, AMSAACS Pty. Ltd. and Chisholm to develop "Automated Optimal Time Series Forecasting" software.

Publications

Books


Referred Journal Articles


ROSS D.G., CARRAS J.N. and BEST P.R., "Workshop Conclusions and Recommendations", Clean Air (Aust.) vol 23, no 4, p 110.


Conference Proceedings


Other Referred Publications


Unrefereed Reports


ROSS D.G., "Odour Calculations - Seymour Dyeworks", Report to East Melbourne Laboratories Pty Ltd, CAMM rpt no 1/89, April.


ROSS D.G., "Flume Calculations - 3MW Boiler ICI Specialty Chemicals, Cheltenham", Report to MGT Environmental Consulting Pty Ltd, CAMM rpt no 7/89, June 89.


LORIMER G.S., "Odour Calculations for Lacey Valves, Sale", Report to EML Air Pty Ltd CAMM rpt no 14/89, October.

ROSS D.G., "1,1,1-Trichloroethane Emission Impact Study", Report to CMA Foam Group, Maribyrnong, CAMM rpt no 15/89, November.


LORIMER D.G., "Assessment of Proposed Emissions to Air from Spencer Street Power Station, Melbourn", Report to Rinsill Engineers Pty Ltd. CAMM rpt no 17/89, December.

Centre for Stream Ecology

The Centre for Stream Ecology was established in July 1987 as a joint research facility.
drawing together expertise from the Water Studies Centre at Chisholm, the Zoology Department (now the Department of Botany and Zoology) at Monash University and the Department of Environmental Records (now the Department of Invertebrate Survey) at the Museum of Victoria. Core funding has been provided by the Australian Water Research Advisory Council (AWRAC) for an initial period of four years.

Research and Development

The Centre has research (underway, planned or recently completed) that will contribute to the priorities of both the water industry and environmental management agencies in the following areas: ecological aspects of river management; fundamental aspects of important processes controlling the functioning of stream ecosystems; scientific research addressing major environmental problems, including salinity, eutrophication, turbidity, and toxicants; development of scientific instruments particularly for use in water quality monitoring; and new wastewater treatment technology.

During 1989, the Centre received additional funding of almost $200,000 for five new projects from the ARC and AWRAC. A measure of the scientific excellence of the Centre's research can be gauged from the fact that the Centre has received seventeen grants from ARC and AWRAC over the past five years, with total funding of almost $1 million. Additionally, over this same period the Centre has attracted thirteen research grants from the water industry for applied projects, with total funding of almost $500,000. Organisations that have provided funding to the Centre include Department of Water Resources, Department of Conservation, Forests and Lands, Environmental Protection Agency, Mornington Peninsula and District Water Board, Latrobe Valley Water and Sewerage Board, and the Salinity Bureau.

Research projects are currently underway with a number of Australian (Centre for Environmental Applied Hydrology; Murray-Darling Freshwater Research Centre; Australian Centre for Tropical Freshwater Research; Centre for Limnological Modelling; Mindata Pty Ltd; CSIRO Division of Chemical and Polymers) and overseas (Department of Chemistry, University of Utah, USA; Department of Chemistry/Centre for Process Analytical Chemistry, University of Washington, USA; Department of Chemistry and Department of Biology, Chiang Mai University, Thailand; Department of Biology, University of Pittsburgh, USA) research groups. A particularly strong link has been formed with the Centre for Environmental Applied Hydrology at Melbourne University.

The Centre's consulting activities have been extremely successful, with income increasing by over tenfold in the last three years ($48,000 in 1987; $258,000 in 1988; $530,000 in 1989). Most of the income during 1989 was derived from environmental investigations and analytical work, mostly relating to heavy metals, done for two companies - NSR Environmental Consultants and Macquarie Resources.

A significant proportion of the Centre's research funding presently comes from AWRAC, via the centres of concentration initiative; this amounts to approximately $150,000 per year period to June 1991.

Although the present gross income from consulting is approximately the same as from research grants, the Centre will need to considerably expand its consultancy activities if it is to effectively supplement its research program from this source. At present, the Centre is able to "reinvest" approximately 10–15 per cent of the gross income (the profit) into research; in 1989 this amounted to almost $80,000.

The Centre has submitted an application (with the Department of Botany & Zoology and Department of Geography & Environmental Science at Monash University, and CEAH at Melbourne University) to the Australian Research Council for a Special Research Centre in River and Wetland Research. If successful, this would provide funding ($700,000–$800,000 pa) for a period of six years.

Total funding for research during 1989 was almost $800,000, of which $530,000 was received from funding organisations outside Chisholm Institute and Monash University. Research funding from outside sources has grown by 125 per cent over the past three years.

The Australian Water Research Advisory Council (AWRAC) was the largest single source of research funds with six projects receiving either all or a substantial amount of their funds from this source. Other projects were supported by the Australian Research Council; Department of Water Resources; Environment Protection Authority; Department of Conservation, Forests & Lands; Mornington Peninsula & District Water Board; Salinity Bureau; Murray-Darling Freshwater Research Centre; Mindata Pty Ltd and the Federal Department of Industry, Technology & Resources.

The Centre obtained substantially increased (fourfold over 1988) funding from the Australian Research Council in 1989; three projects were supported (total funds of $64,000). ARC have agreed to continue support for these three projects during 1990, but unfortunately at slightly reduced funding level ($40,000). AWRAC agreed to support two projects from 1990 (total funds $132,500 over three years).
Stream Ecology

Excellent progress has been made during 1989 with the two main core research programs. Dr Barbara Downes has been working with Dr Sam Lake at Monash University on Organisation of Benthic Stream Communities and Dr Rick Edwards has been working with Dr Barry Hart and Dr Ian Campbell at Chisholm on The Role of Microbial Communities in the Cycling of Carbon, Nitrogen and Phosphorus in Australian Streams.

Two AWRAC-funded projects on stream ecology were completed during 1989. Dr Sam Lake and Dr Richard Marchant, working with Tim Doeg on The Influence of Disturbance on Macroinvertebrate Communities showed the effect that disturbance has on stream communities. Three scientific publications have come from this research. The other project on Nutrient Spiralling in Australian Streams conducted by Dr Barry Hart, Ian McKealve and Paul Freeman, produced a new sensitive FIA-based phosphorus analyser that is currently being commercialised. Additionally, the research results suggest that phosphorus may be spiralled (cycled) further in Australian streams compared with streams in the northern hemisphere. The other project on Input and Processing of Organic Matter in Australian Streams (Dr Ian Campbell, Dr Kim James, Ms Anne Deveaux) is producing some exciting new results that will significantly alter the current theories on how organic matter is processed in Australian streams.

River Management

In February 1989, the Centre completed a critical review of the current scientific literature on the biological effects of saline discharge to streams and wetlands. The Centre took the lead role in this project which involved a team consisting of five staff from the Centre, together with specialist consultants from Biosis Research, Environmental Horticulture and Kinhill Engineers. The report has been very well received. Additionally, two papers on this work will be published in the scientific literature; one in Water Research and the other in Hydrobiologia.

Water Quality Instrumentation

The water quality instrumentation group continued to make excellent progress in the development and commercialisation of field and laboratory water quality instrumentation based on flow injection analysis. During 1989, the group completed the development and testing of a laboratory-based FIA analyser and the first instrument was sold. The project is jointly funded by the Federal Department of Industry, Commerce and Resources and MinData Pty Ltd, a Melbourne based instrument company. Further work will be undertaken in 1990 to produce a field-based version of this instrument and to extend the range of determinands that can be analysed using the laboratory instrument.

Aquatic Colloidal Chemistry

The past year has been a very active one for this group with the award of major grants from AWRAC ($97,000 over two years) and ARC ($38,000 in the first year), in addition to the existing grants from ARC. Murray-Darling Freshwater Research Centre and Chisholm Institute. Four new Masters students - Deirdre Hotchin, Myhuong Nguyen, Reshmi Sharma and Rick Wood - joined the group.

The emphasis continues to be on the development and use of new separation and sizing techniques for characterising particles, colloids and macromolecules. This has enabled two new instruments to be assembled, flow FFF and thermal FFF. The flow FFF can be used to determine the molecular weight distributions of water-soluble macromolecules (e.g. humic substances) as well as very fine colloids in the range 0.001-0.1 mm which are beyond the reach of the existing sedimentation FFF instrument. Thermal FFF is used for characterising polymers. A wide range of applications is being tackled from the origin and nature of colour and turbidity particles, the sorption of nutrients and herbicides to natural colloids, the enumeration and sizing of aquatic bacteria and the treatment of paper mill effluents.

Wastewater Treatment

Investigation of artificial reed beds for treating sewage effluents is being undertaken in collaboration with the Mornington Peninsula & District Water Board. During 1989, routine monitoring of the performance of beds planted with Phragmites compared with unplanted controls showed excellent removal of BOD, suspended solids and total nitrogen. Additionally, special investigations were commenced on the hydraulics of the beds (using rhodamine) and on the use of aeration of sections of the bed to enhance nitrogen removal performance. Reed beds should provide a low cost, environmentally-sound alternative sewage treatment method for small communities. To this end, an experimental single household reed bed has been constructed at Somerville. This system uses effluent from a septic tank. Also, a new application for treating tip leachate at Listerfield has been designed and will be operational by early 1990.

Community Awareness

The Centre is concerned that the knowledge gained from the Centre's research is used to assist in the restoration and management of streams,
rivers and wetlands in Australia. Activities during 1989 that contributed to an improved flow of information included: production of two issues of the Centre newsletter Lotic; running a specialist short course in ecological river management; lectures at scientific conferences; talks at other venues (e.g., River Basin Management Society Workshops, River Basin Management Association Conferences, Salr Conservation Association Conference), and through Centre staff serving on various advisory committees (e.g., State of the Environment Committee, Expert Committee on the Silviculture and Value Adding Research Project, Latrobe Valley Wastewater Review).

At present Centre staff are working with the Victorian River Basin Management Society on the development of a certificate course for river managers. Another project, presently being planned with the Victorian Salinity Bureau, is to develop a package (kit) for school children to assist with awareness of biological assessment of salt-affected wetlands and streams.

Other Significant Activities

Dr Ian Campbell received the Jolly Award from the Australian Society of Limnology for outstanding services to Australian limnology.

The Centre ran a very successful three-day short course on Ecological River Management. The course was organized and run by Patricia Geraghty who was on secondment from the Centre to the Department of Water Resources. The course was funded by the Department of Water Resources and was attended by 21 river management staff from River Management Boards throughout the State.

Postgraduate Training

The Centre participates actively in the postgraduate training programs at both Chisholm and Monash University; these include a Graduate Diploma in Water Science and Honours, masters & PhD research programs. There are currently fourteen postgraduate students (five PhD, nine Masters) associated with the Centre. During 1989, five PhD candidates and nine Master’s candidates were associated with the Centre.

The Centre was granted two AWRAC Summer Research Scholarships in 1988/89 and a further two in 1989/90. The 1988/89 awards were made to Patrick O’Leary and Danny Vertessy; both used the scholarships to complete a small research project over the summer period. Patrick worked with Dr Sam Lake at Monash University on the diet activity of macroinvertebrate fauna in the backwaters of an upland Victorian stream studying substrate colonization in the Acheron River. Danny investigated the consumption of leaves in streams under the guidance of Dr Kim James and Dr Paul Bailey at Chisholm. Subsequently, Patrick went on to complete an Honours degree during 1989, at Monash University. Danny worked during 1989 but has recently enrolled for a Master of Applied Science at Chisholm.

Consulting

Consultancy activities to industry and government agencies were greatly increased in 1989, with a gross turnover exceeding $550,000, a 113 per cent increase over the income obtained in 1988.

A major proportion of the consulting funds were for water quality investigations and trace metal analysis undertaken for NSR Environmental Consultants Pty Ltd.

The other major client during 1989 was Macquarie Resources Ltd who are developing a major copper mine near Benambra in the headwaters of the Tambo River, Victoria. The Centre is acting as lead consultant and is undertaking an extensive program of water quality and hydrological investigations. The hydrological component is being done by the Centre for Environmental Applied Hydrology, Melbourne University. Macquarie’s Technical Manager, Mr. J. Basic, has provided excellent leadership and encouragement throughout this project.

The close relationship between the Centre and Mr Max Amos, an analytical chemistry consultant operating his company AnalSpec Pty Ltd out of Chisholm, has been integral to the success of the Centre’s consulting operations.

The increased scale of the work during 1988 revealed a number of emerging problems with the size and condition of the laboratory available. Work was commenced in 1989 to modify an existing laboratory to accommodate all the consulting analytical work; NATA certification is being sought for this laboratory. The laboratory has been air-conditioned, a series of partitions added to provide clean areas for trace metal work and new benches obtained. The cost of these modifications (approximately $30,000 to date) has been totally met by the Centre.

Publications


DOWNES, B.J., Host Specificity, Host Location and Dispersal: Experimental Conclusions from Freshwater Mites (Uphonicola spp.) Parasitizing Unlined Mussels, Parasitology 98: 189--196.


HART, B.T., Stream Quality to Protect In-stream Uses, In In-stream Needs and Water Uses, Department of Water Resources, Sydney.


SUREN, A.M & P.S. Lake, Edibility of Fresh and Decomposing Macrophytes to Three Species of Freshwater Invertebrate Herbivores, Hydrobiologia 178: 165--178.

Reports


Lectures and Presentations

Dr Barry Hart gave the keynote address Flow Injection Analysis of Waters and Wastewaters: Present and Future (coauthored with Ian McKelvie and Paul Freeman) at the Australian Water and Wastewater Association Annual Conference in Canberra in March. Tom Davies also presented a paper at this conference.

The Role of the Scientists in Integrated Catchment Management was the title of a paper given by Dr Barry Hart at the Association of Victorian River Management Authorities Annual Conference in March.

Dr Ian Campbell delivered a paper on A Preliminary Investigation of Seasonal Differences in Leaf Decomposition Patterns In Australian Streams (co-authored with Dr Kim James and Dr K Cummins) at the North American Benthological Society Conference in Ontario, USA, during May.

At the Australian Society for Limnology Conference in July, papers were presented by Dr Rick Edwards, Bacteriovory by a Deposit-feeding Mayfly, Dr Kim James, Leaf Breakdown Rates In Cleared and Forested Streams, Grant Douglas, Fractionation and Characterization of Suspended Particulate Matter in the Murray-Darling River System Dr Richard Marchant, The Robustness of Classification and Ordination Techniques Applied to Macroinvertebrate Communities In Victorian Streams, and Dr Barbara Downes and Dr Sam Lake, Factors Affecting Colonization of Disturbed Rocks by Blackflies.

At Chemistry International in Brisbane at the end of August, Ian McKelvie presented a paper entitled Determination of Dissolved Organic Phosphorus in Natural Waters by In-line Photooxidation and Flow Injection. Papers were also given by Paul Freeman - Detection Limit Enhancement for Orthophosphate Using Flow Injection Analysis, Reagent Optimization and In-line Ion-exchange Pre-concentration; Max Amos - Sample Preparation, Pretreatment for Atomic Spectroscopy Methods in the Analysis of Environmental Samples; Dr Ron Beckett - Some Applications of Field-Flow-Fractionation Techniques to Environmental Studies;

Dr Barry Hart presented the keynote lecture at the 1st Symposium on Environmental Chemistry, RACI, in Brisbane during August.

Dr Sam Lake and Dr Barbara Downes presented papers at the Ecological Society of America conference in Toronto during August.

Dr Craig Campbell, Lake, Marchant and Hart all presented papers at the International Society for Limnology conference in Munich in August.

During September, Dr Barbara Downes presented a paper at the Ecological Society of Australia Conference in Woollongong.

Dr Ian Campbell presented a paper, Farming and Streams - Impact, Research and Management (co-authored with Dr Kim James and Dr Rick Edwards) at the State of Our Rivers conference in September.

International Visiting Scientists

During July, Professor Francois Morel from MIT Boston, USA, visited the Centre and presented a lecture on Biological Implication of Trace Metals in the Oceans.

Dr Mark Schure from Boston, USA visited the Centre in August and spoke with staff about his work. He has developed digital simulation techniques for use in field-flow fractionation studies.
Also during August, Dr Howard Taylor, United States Geological Survey, Denver, USA, conducted a seminar at the Centre on Occurrence and Distribution of Trace Metals in the Mississippi River and its Tributaries.

Dr Kate Grudapan from the University of Chiang Mai in Thailand visited the Centre in September and spoke on Flow Injection Analysis in Combination with Radioactive Detection to members of staff involved in research work which utilises flow injection analysis techniques.

Professor Judy Meyer from the Institute of Ecology and Zoology at the University of Georgia, Athens, USA, spent three weeks working at the Centre during November. Professor Meyer conducted a number of discussions with staff and students at the Centre and gave seminars on Lotle Microbial Food Webs at Chisholm Institute and on Nutrient Dynamics in Southern Appalachian Headwater Streams at Monash University. Dr Helfman spoke on Vesperal Violence: the Behavioural Ecology of Fish Predation at Twilight at Monash University and also visited the Centre for Catchment & Instream Research, Griffith University, Brisbane.

From February until June, Dr Kanayathene Koshy, a Lecturer from the Chemistry Department, University of the South Pacific, Fiji worked at the Centre as a Visiting Fellow. During his time at the Centre, Dr Koshy developed a flow injection analysis technique for determining dissolved organic carbon in natural waters.

Dr John Brittain, Oslo Museum, University of Oslo, Norway, presented a seminar on River Regulation and Mayflies to Centre staff in April.

Higher Degrees Awarded

Doctorate
ST. CLAIR Ros, The Leptoceridae (Trichoptera) of Southeastern Australia with emphasis on the Immature stages (Dr P.S. Lake)

Masters
READ Julia, Differences in invertebrate functional feeding groups between forested and cleared sections of streams (Dr I.C. Campbell, Dr P. Bailey)

General Activities

In 1989 the School of Computing & Information Systems was reborn. The School celebrated the 25th Anniversary of Computing education at Chisholm Institute of Technology.

The focal point of this celebration was a gala event in July coordinated by Pearl Levin and Jack Greig, which brought together many graduates and former staff members who all had fond memories of their time at Chisholm. A history of this period was produced: "Computing at Chisholm: The First Twenty-Five Years 1965–1989". This collectors item is still available from the School of Computing & Information Systems office. The guest speaker at the 25th Anniversary dinner was Professor Bart Sylvester (alias Campbell McComas), a well known American computerist whose address was based on Artificial Intelligence (introduced as artificial stupidity).

The Sponsorship scheme for students in the first year of the Bachelor of Computing course proved very successful and continued in 1989.

In 1989 the School had 103 students graduating from the Bachelor of Applied Science (Computing), sixteen from the Bachelor of Applied Science (Computing/Bachelor of Business (Accounting) double degree, 107 from the Graduate Diploma in Computing, nineteen from the Graduate Diploma in Business Technology, twelve from the Graduate Diploma in Information Technology and one graduate of the Master of Computing program.

The School enrolled its first full fee overseas student: thirteen in the Bachelor of Applied Science (Computing); nine in the Graduate Diploma in Computing; and one in the Master's program.

VEF Micro Laboratory Project

In 1989 a micro laboratory of PC's was established with the assistance of a $266,040 grant from the Victorian Education Foundation (VEF) enabling the trialing of appropriate microcomputer technology for groups of students in the three year course. Trial objectives were specified, and experimental groups used the laboratory for SFT11 tutorials. A report on this usage highlighted some positive aspects of microlaboratories and several problems which had arisen. Subjects for 1990 trialing were selected (SFT11, SYS115 and SFT212), educational trial models set-up and 1990 trial plans put into place. Evaluation methods and measures were developed for these trials.

The VEF microlaboratory was also used during 1989 by many School of Computing & Information Systems students for many subjects, thus alleviating the scarcity of such resources
which significantly prevailed at the time.

**Department of Computer Technology**

In 1989 a number of staff from the Department of Computer Technology made use of the Chisholm professional experience program to further develop their professional skills. Mr Max Warland consulted to the National Australia Bank and assisted in the development of a corporate information repository. Mr Bob Sier worked with National Mutual Insurance developing model using advanced workstation and software technology to assist in AIDS actuarial research. Mr Noel Craske continued his role as assistant researcher on the Excitibur project which is a joint project involving La Trobe, Melbourne, Deakin, Macquarie, ANU, Bond and Queensland Universities and which is funded by Industry and the Victorian and Commonwealth Governments. Mr Craske spent semester two at La Trobe and Stanford Universities furthering his understanding and contributing to the important field of computer assisted learning.

The database special interest group in association with the Pearcey Centre and the Australian Computer Society conducted a seminar at Hyatt on Collins. This seminar examined current user experience and likely future developments of the relational database language SQL. It was clear from the large attendance and lively discussion amongst the attendees that the seminar made a timely contribution to the understanding of the use of SQL by practising computing professionals. The special interest group is continuing its research on the use of relational database management systems and data dictionary systems, and has organised regular seminars where expert speakers from industry and Chisholm academics interact.

Mr John Daly and Mrs Pearl Levin contributed their expertise to the preparation of tender documents and the evaluation of tenders for replacement of Chisholm central computing facilities.

The Graduate Diploma in Computing and the Graduate Diploma in Business Technology continued to be very popular and with places limited due to resource constraints, many applications were received for every available place. The Department pioneered the introduction of employer sponsored full fee paying Australia students in the Graduate Diploma in Computing, and in response to industry needs plans to expand this concept in 1990 with the accreditation of the full fee Graduate Certificate in Computing.

Staff from the Department presented papers at a number of conferences and seminars during the year including the ACS Computer Education Group Conference, the ACS First National Data Communications Seminar and the ACS Victorian Branch Annual Conference.

A number of other conferences were attended by staff during the year including the Ingres Asia Pacific Conference and the ACS National Conference, and a range of seminars on topics including distributed database, object oriented systems analysis, object oriented database, artificial intelligence and database, computer security, data communications and local area networks.

**Department of Information Systems**

The Master of Computing by Coursework, incorporating the Graduate Diploma in Information Technology were reaccredited in 1989. Enrollments in this program increased to 100 students and demand for places has significantly increased. Planning commenced for a management stream in the Masters and the development of an Honours Program in Computing.

New fifth year subjects in Knowledge Engineering and Cognitive Science were introduced to the Master of Computing, Computer Assisted Software Engineering (CASE) technology was introduced to the third year undergraduate program and both first year Information Systems subjects were restructured.

Ms Gill Bourne was appointed Deputy Head of Department. Mr Robert Dorling was appointed as Lecturer and Ms Nyorte Lindner as Senior Tutor on the Frankston campus. Ms Sharman Lichtenstein was appointed as Senior Lecturer with the support of a Victorian Education Foundation grant to study the educational quality of microcomputer based tutorials. Also supported by a VEF grant, Mr John Moore was appointed as Senior Lecturer and Director of the Chisholm CASE Laboratory.

In semester two the Centre for Information Systems Research (CISR) was established to further the applied research activities of the department. The first research fellow, Mr Henry Linger, was appointed to investigate new methods of system specification. Dr Michael Sacerdol of Fairfield House Consultants was appointed an CISR Associate for this project.

Research in the Department remains centred around higher degree programs with nine staff studying for higher degrees. Twenty-three students conducted research in the department as part of the Master of Computing program.

Ms Jan Warracke, the Ernst & Young Senior
Lecturer in Information Systems and Peter O'Donnell, a Master of Computing student completed the first stage of their research into methodology route maps with Ernst & Young. Mr Dan Eaves was a regular visiting lecturer at the Australia Management College (Mt Eliza) and led a large number of thesis students in the user interface area.

Mr Graeme Shanks graduated from the Master of Computing with a minor thesis which evaluated systems analysis workbenches. Together with Mr John Hughes of the Australian Wool Corporation and Mr Andrew Cheng, a Master of Computing student Mr Shanks developed a specific systems development method for AWC projects.

Many staff including Mr D. Arnott, Mr D. Eaves, Mr G. Shanks, Ms J. Warracke and Ms H. Smith presented papers at various conferences. Staff attended a wide variety of seminars and conferences including: CASExpo, ACS Conference, Object Oriented Database, Object Oriented Requirements Analysis, Newall Networks, Higher Education Computer Conference, Australia Expert Systems Conference, Computer Education Conferences.

Department of Software Development

The Department of Software Development is responsible for the overall management of the Bachelor of Computing and for the academic content of the Software Development subjects in many other courses from first year to fifth year.

In 1989 there were sixteen academic staff in the Department, twelve at the Caulfield campus and four at the Frankston campus.

The Bachelor of Computing is available at both Caulfield and Frankston campuses and there are approximately 800 students enrolled including 450 in first year. This high percentage of first year students implies a surge in growth over the next two years. Some of this growth is evident in the larger number of students enrolled at the Frankston campus. Extra enrolments have come also with the introduction of Full-Fee Paying Overseas Students.

Around June, a major review of the undergraduate subjects was commenced, leading to the introduction of a new first year syllabus involving PC based teaching using the LISP-like language PC-Scheme for semester one, 1990. The review process is continuing into 1990.

The Computer Power Senior Lecturer, Gerry Middleton, spent three months overseas in the USA and England visiting educational institutions similar to Chisholm, and looking at their methods of instruction, philosophies and facilities.

The Software Engineering Special Interest Group conducted seminars during the year with the most notable being Dr Paul Nash presenting the Vienna Development Method.

Staff training was a major activity during 1989 with all staff attending either external specialist courses (Advanced C, Ingres, Software Measurement, Network Connectivity, Interactive Software Engineering, etc.) or many of the more accessible internal courses.

New academic staff appointments included Sita Ramakrishnan as Lecturer on the Caulfield campus and Peter McKenzie as Lecturer on the Frankston campus. Anne McMillan was seconded to Resources & Planning Branch to coordinate the building of an Institute Space and Inventory System. Dianne Hagan, Jan Miller, Ainslie Ellis and Patsy Segall were all promoted to Lecturer. Dr Paul Nash, Course Leader for the Bachelor of Applied Science (Computing) moved to industry.

Pearcey Centre for Computing

1989 proved to be another successful year for the Pearcey Centre. Income for 1989 was close to $900,000 with profits of over $100,000 resulting from approximately 140 courses on numerous computing and related topics. The profits are shared between the Pearcey Centre and the School of Computing & Information Systems. Over 2,000 students attended these courses which proved once again that computer courses are still in demand.

Major corporate clients for whom consultancy and customised courses were provided were Coles Myer, the Department of Defence, Shell, ANZ Banking Group, State Electricity Commission and the National Australia Bank. A number of smaller consulting projects were also successfully completed.

Negotiations with Apple Computer, Australia were completed for the formation of the Apple Technology Centre. This centre will be a joint venture between the Pearcey Centre, Apple Computer Australia and Department of Industry, Technology and Resources, and will be the first of its kind in Australia. Its purpose will be to enhance the facilities of the Pearcey Centre and increase Apple knowledge of Chisholm staff and allow for the development of Apple courses and software.

The Pearcey Centre would like to acknowledge the cooperation of the staff of the other departments within the School of Computing and Information Systems. Their combined expertise allows the Pearcey Centre to run the large number of diverse courses that it offers.
School of Digital Technology

Head of School
Raymond F. Pugh BSc, BEd(Melb), MEnvSc(Monash), FMTC, TTTC, MAIP, MStTLE, MAAPT

Department of Applied Physics

General Activities
This year saw the introduction of a new second year minor study in Computer Vision. This subject brings together the elective studies in Computer Imaging and Advanced Computer Imaging. The student interest in this area continues to grow and recently acquired additional Matrox MVP AT/TP processor boards have improved the laboratory component of this course.

Postgraduate numbers increased during 1989 with two new Master of Applied Science candidates and one Master's candidate transferring to a Doctorate program. Three candidates, Ms Pam Shadbolt, Ms Brigitta Suendermann and Mr Stephen VanDenBerg gained their Master of Applied Science degrees at conferring ceremonies during 1989.

Three academic staff members, Dr Andrew Cramond, Dr Greg Jakovidis and Mr Ian McLeod were promoted from Senior Tutor to Lecturer.

Conferences
During the year staff from the Applied Physics Department attended a number of major international conferences where they presented papers. Dr Charles Don attended the Institute of Acoustics Conference in Oxford, UK, and the Eighth EASE Symposium in Zaragoza, Spain during April. In June Dr Michael Morgan was in Hong Kong for the Third Asia Pacific Conference, while Dr Peter Wells travelled to Seattle, Washington, for the ASNT Topical on Industrial Computerised Tomography in July. John Davis attended the Seventeenth International Symposium on Non-Destructive Testing of Wood held in Madison, Wisconsin, during late September.

Research and Consultancy
Staff within the Department had a very successful year in attracting funds from external sources to support their research activities.

Extraneous funds gained in this manner exceeded $500,000 during the year including $90,000 from ARANDA (microwave imaging), $75,000 from the SECV (computed tomography of wooden power poles), $85,000 from AMCOR (paper inspection), $60,000 from AJAX (nut and bolt inspection), $30,000 from the AERB (tomography research) and $10,000 from the Australian Research Council (acoustic impulse studies).

The tomography group's portable x-ray scanner, designed to investigate the structural integrity of wooden power poles, had its initial laboratory trial in July and produced its first images. A wood densitometer was also designed and built for the West Australian Department of Conservation and Land Management.

Members of the Acoustics Group continued their work using acoustic impulses as a problem to investigate a variety of environmental effects. Areas being studied include the propagation of impulses through the atmosphere with wind and temperature gradients, the effect of atmospheric turbulence and the measurement of ground impedance for varying soil moisture levels.

The development of computer algorithms for image processing applications that require minimal user input, texture classification and defect detection in a wide variety of agricultural and manufactured products are the main areas that the Computer Imaging Group continues to work on.

Publications

Refereed journals


Reports


Conference Proceedings

Department of Robotics and Digital Technology

The Bachelor of Applied Science (Digital Technology) saw further growth in student numbers, with a first year intake of 90 students. Laboratory and staff resources have been stretched to the limit by this growth.

A major expansion of the Digital Electronic Laboratory took place, with the installation of a network of workstations running the EEDesign system.

Mr J.W. Breen, Head of Department, represented the Colleges of Advanced Education on the Technical Committee which developed the design for the Australian Academic and Research Network, to be installed in 1990.

Publications

Conference Papers

BREEN, J.W., "ISDN Developments" VALA Melbourne, November.


School of Engineering

Head of School

John O'C. Walker MSc(Soton), MEd(Monash), DipCE(P'mouth), CEng, MICE, MIE Aust, MIWES

Department of Civil Engineering

General Activities

The undergraduate course, along with the courses of the other Departments, was subjected to Reaccreditation by the Institution of Engineers, Australia and the Victoria Post Secondary Education Commission.

The Graduate Diploma in Municipal Engineering was accredited and the second semester saw the first intake of students into this course. The Department has assumed teaching responsibilities for two subjects in the recently introduced course of Bachelor of Technology (Industrial Design). This involves the teaching of structural design concepts to students whose design field will be consumer products. The Department continues to offer service teaching to the Police Studies course conducted by the School of Social and Behavioural Studies.

R. Underwood was awarded the Webb Prize for 1989 by the Institution of Civil Engineers, UK, for a paper on "The Hume (Melbourne-Sydney) Freeway in the State of Victoria, Australia", which was published in the "Proceedings of the Institution" in April 1988.
Pat Pellcane, Associate Professor of Wood Science, Department of Forest and Wood Sciences, Colorado State University worked in the Department for five weeks. His visit was made possible by the Institute's Visiting Fellow Scheme.

**Research and Consultancy**

Staff have been involved in the following consulting and research activities:

**SMITH, G.W.**
- Product development in timber fasteners Pryda (Aust) Pty Ltd.
- Development of joined beams Eazard Timber Industries.
- Formation of Glued Laminated Timber Association of Australia.

**LE, Q.**
- Concrete cylinder compressive testing (involved preparation of a Quality Manual to gain ongoing NATA recognition).

**WILLIAMS, J.**
- An internal grant to study "Computered Speech Simulation".

These projects netted an income of approximately $48,700.

**External Committees**

Staff were involved in a number of committees:

**SMITH, G.**
- Chairman, Timber Structures Institute of Australia, member of the Standards Association Committee TM/ 1 - Timber Structures Code.

**UNDERWOOD, R.**
- Member of the Australian National Committee of the Permanent International Association of Road Congresses (PIARC).
- Australian Representative on the PIARC Technical Committee on Roads in Urban Areas.
- Member of US Transportation Research Board's Technical Committee on Citizen Participation in Transportation Planning.
- Member of the Steering Committee of the Traffic Engineering Practice Workshop at Monash University: Associate.
- Monash University Accident Research Centre.
- Member of Selection Panel to select the winner of the Cedric Tuxen Medal awarded by the Foundation for the Technical Advancement of Local Government Engineering In Victoria for excellence in Municipal Engineering.

**MUSPRATT, M.**
- Member, Division Committee.
- Chairman Education Branch Committee.
- Secretary Management Branch Committee.
- Treasurer - Caulfield Campus Chapter, Committee Member, Editorial Committee.
- Australian Project Manager (AAPM) Victorian Division, Institution of Engineers, Australia.

**WONG, B.**
- Member, Committee of the Australian Institute of Steel Construction.

**Conferences**

A number of Conferences were attended by staff:

**POWER, A.**

**MUSPRATT, M.**
- World Conference on Engineering Education for Advanced Technology, University of Sydney, Sydney, February and the Annual Conference of Australasian Association for Engineering Education, University of Sydney, December, also, "Continuing Education", World Conference Engineering Education for Advanced Technology, University of Sydney, February.

**WILLIAMS, J.**

**WOOTON, R.**

**Chisholm Timber Engineering Technology Centre**

In 1989 the Centre continued with its work on fingerjointing related research which has reached the stage of intensive mill trialling especially in relation to modified finger joint geometries and the development of cutter wear theories. These modifications have shown themselves capable of delivering the strength increases which the Victorian timber industry has sought for a number of years.

A major achievement was the Centre's leadership in establishing the Glued Laminated Timber Association (GLTAA) of Australia. This initiative by the Centre brought together all manufacturers of glued laminated beams in a rare display of solidarity for the purpose of ensuring that total quality management concepts would be put in place within the industry. This long overdue action was widely bailed within the forest industries. The establishment of the quality assurance aspects attracted considerable funding from the NSW Department of Business and Consumer Affairs. The Centre will act as the Accrediting Authority once the scheme is in place including the preparation of quality manuals.

Additionally the Centre now undertakes Quality Assurance testing on behalf of Australian Wood Panels Association members which includes all Australian manufacturers. The products include both particleboard and medium density fibreboard...
which make up the bulk of forest based panel products used in domestic floor construction and furniture manufacture. Together with the GLTAA work the Centre is establishing a considerable reputation as a provider of high quality testing services and using this to provide a steadily increasing financial base. Its laboratories are NATA accredited, the only laboratories at Chisholm with such national recognition.

Both Geoff Smith and Bob Milner continued with their work with Standards Australia and this contact is expected to provide additional consulting opportunities in the future.

Income to the Centre during 1989 was $108,000. This level is not regarded as satisfactory and avenues for increasing this will be investigated in 1990.

Conferences

MILNER, H.R.

- Attended the South Pacific Engineering Conference, Auckland, New Zealand in September.

Department of Electrical and Electronic Engineering

General Activities

To cater for larger student numbers in the first year program considerable laboratory refurbishing and re equipment was carried out. A significant portion of the purchase of department laboratory and research equipment was funded from externally generated funds and grants. The policy of equipping staff offices with personal computers was continued.

The revised Graduate Diploma in Engineering (Computer Control and Communications) was accredited. The course was broadened to integrate studies of the high technology computer communications facilities utilized with industrial computer control systems.

The Department is investigating the purchase of design software for the development and teaching of analog and digital electronics, microprocessors and digital signal processing systems.

Staff members attended a broad range of conferences and seminars.

Research and Consultancy

Whilst staff shortages limited extraneous activities two staff members (B. Lithgow and R. Lisner) are completing Doctorate programs and a number of research grant applications were submitted.

P. Voumard’s research program on HV Switchgear Condition Monitoring received an equipment grant of $43980. S. Jenvey visited Israel on radar equipment consulting work. R. Riordon completed a consulting project for Telecom on cable identification and loop testing. A. Zahedi commenced a research project on performance of lightning arrestors under polluted conditions.

Publications and Public Lectures

References


Conference Proceedings


Reports

JENVEY, S., “IFF Interrogator ELTA Design Review”. Report to RAAF.


Department of Mechanical and Industrial Engineering

Industrial Engineering

General Activities

Industrial Engineering, in collaboration with the Institute of Industrial Engineers, has been involved in the preparation and delivery of lectures and workshops for the new modularised program “Industrial Engineering Program for Professionals”. This is an important initiative as the course provides an opportunity for people in Industry to receive training in Industrial Engineering techniques to improve the effectiveness and productivity of operations.

An important promotional exercise was completed by the Department of Mechanical/ Industrial Engineering with a display of the 1987 Solar Vehicle at the Burnley Gardens (new permanent) and at the Shepparton Solar Week.

Research and Consultancy

Preparations are underway for an Industrial Engineering Centre of Excellence. B.W. Barnard worked on a consultancy basis on the design and construction of mechanism for the Tomography Research Project.
External Committees

The following staff were involved in external committees:

BARNARD, B.
- Member of the Caulfield Chapter of the Institution of Engineers, Australia.

JENNEY, B.
- Member, Manufacturing Facilities Panel, Engineering Excellence awards, Mechanical College Board, Victorian Division Committee, Victoria Division Manufacturing Branch, Institution of Engineers, Australia (BE AUST); member National Council Immediate Past President, Victoria Division Australian Organisation for Quality: Foundation Chairman of Council Quality Society of Australia; founding member Australia Quality Council; member, Quality and Reliability Board, QRS Reliability Committee, ME28 Screw Threads, Standards Association of Australia.

OKYAR, H.
- Member, Management Courses Advisory Committee Western Institute School of Business.

Conferences

Staff attended a number of conferences:

AL-HAKIM, L.

BARNARD, B.W.
- "Ergonomics & Safety" Conference in Sweden; B.W. Jenney, the International Conferences on Management Quality, Melbourne and the International Conference on Quality Improvement, Melbourne.

KENNEDY, R.D.
- E AUST/SME "Just-in-Time" conference in Melbourne.

Mechanical Engineering

General Activities

Mechanical Engineering purchased a state of the art CNC lathe to complement the existing CNC machining centre. As well as being involved in the display of the 1987 Solar Vehicle, the Mileage Marathon tape has been distributed to all eastern suburbs libraries and all competing secondary schools.

Research and Consultancy

Major developmental work for the Solar Challenge 1990 was completed with original designs, layout and strategies being decided.

The 1990 Solar Vehicle Project has already generated over $150,000 in sponsorship.

External Committees

DI TORO, N.
- Treasurer for the Society of Tribologists & Lubrication Engineers, Australia Branch and Arvind Shekharstava was secretary for Victorian Computational Mechanics Technical Committee (ACADS).

Conferences

DI TORO, N.
- Bearing Damage Analysis, Lubrication & Preventive Maintenance Conference in Atlanta, Georgia and ASME Wear of Materials, Denver, Colorado and Impotent Bone Interface Symposium, UK.

JENNEY, B.W.
- The International Conference on Management of Quality, Melbourne and the International Conference on Quality Improvement, Melbourne.

WELLINGTON, R.P.

Publications

Refereed Publications

MUSPRATT, M., "Conditions Affecting Projects in Less Developed Countries" Australian Project Manager (AIPM), vol 11, no 7, November, pp 28-30


Other Articles


KENNEDY, R.D., "Industrial Engineering - A New Perspective" The Industrial Engineer, vol 30, no 4, pp 15-19

Reports

LITHGOW, B., "The comparative differences between ipsilateral and contralateral monaural electrical stimulation as recorded from a population study in the central nucleus of the Inferior Colliculus". Report to Prof Clark, Dept. of Otolaryngology, Royal Victorian Eye and Ear Hospital.


Conference Proceedings


MILNER, H., "Timber finger joint design and manufacture", Second Pacific Timber Engineering Conference, University of Auckland, August.

MUSPRATT, M., "Continuing Education", World Conference Engineering Education for Advanced Technology of Sydney, February.

MUSPRATT, M. and ROBINSON, R., "Continuing Education for Engineers", AAEE Conference, University of Sydney, December.

MUSPRATT, M., "HiTech for Engineering and Implications for Management Decision Making", Applied Construction Management Conference, University of New South Wales, February.

ORMOND, A., "Capacitor Excited Induction Generator as a Remote Power Supply", Symposium on Power Engineering and Control, Swinburne Institute of Technology.


UNDERWOOD, R.T., "Local Area Traffic Management in Australia", 11th International Road Federation Meeting, Seoul, Korea, April.

WALKER, J.O.C., "Bachelor of Technology – Possible Relationships and Contacts" DEET/IE AUST joint Seminar, Canberra, November.


Invited Lecture

JENVEY, S., "Recent Developments In Antenna Design & Techniques" for Philips RCS – Systems Division Cambridge, UK, October.

Thesis Accepted For Higher Degree – Master Of Engineering

Statistics

Student Enrolments

The School of Art & Design, the David Syme Faculty of Business, and the School of Social and Behavioural Studies all operate courses on both campuses. The Schools of Nursing and Education are based exclusively on the Frankston campus and the Faculty of Technology is exclusive to the Caulfield campus other than for two undergraduate courses in computing and technology.

The actual number of students enrolled as at 31 March 1989 was 5910 at Caulfield, including 141 Full Fee Paying Overseas Students (FFOS); an increase of 168 students or 3.03 per cent. The numbers at Frankston were 2496 including 20 FFOS, an increase of 336 students or 15.56 per cent. For Chisholm overall, the non-FFOS increase relative to 1988 was 343, compared to an increase in 1988 relative to 1987 of 636.

The student load in Equivalent Full-Time Student Units (EFTSU) by Field of Study for 1989 (including FFOS) was:

<table>
<thead>
<tr>
<th>Field of Study</th>
<th>Load EFTSU</th>
<th>Per Cent of Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Science</td>
<td>1317.6</td>
<td>20.0</td>
</tr>
<tr>
<td>Engineering</td>
<td>892.1</td>
<td>13.5</td>
</tr>
<tr>
<td>Business</td>
<td>2081.7</td>
<td>31.6</td>
</tr>
<tr>
<td>Education</td>
<td>431.1</td>
<td>6.6</td>
</tr>
<tr>
<td>Nursing</td>
<td>490.0</td>
<td>7.4</td>
</tr>
<tr>
<td>Visual &amp; Performing Arts</td>
<td>550.3</td>
<td>8.4</td>
</tr>
<tr>
<td>Humanities, Social Sciences, incl. Law</td>
<td>810.5</td>
<td>12.4</td>
</tr>
<tr>
<td>Subtotal</td>
<td>5673.5</td>
<td></td>
</tr>
<tr>
<td>Non-Quota</td>
<td>57.7</td>
<td>0.1</td>
</tr>
<tr>
<td>Total</td>
<td>5632.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The Department of Industrial Design, also known as the Chisholm Design Group, had their maiden intake of 17 students enrolled as at 31 August 1989.

Since 1985, all of the growth in student numbers has been in the full-time sector of student enrolments increasing from 3441 in 1985 to 5103 in 1989 (excluding FFOS). Part-time enrolments have remained stable at about 3100.

Government initiatives on stress the need for CAPs to place high priority on offering places to school leavers has no doubt contributed to this growth pattern.

The government policy of previous years seeking to maximise the intake of new undergraduate students continued in 1989. The Victorian Government supplied some funding for undergraduate students as part of its Youth Guarantee initiative, providing 119 EFTSU places for new undergraduates and 150 EFTSU places for returning students. The School of Engineering again received in 1989 additional State funds to provide supplementary tuition for some 80 students. In addition, the 487 EFTSU enrolments in the School of Nursing are funded through State and Commonwealth grants.

In 1989 Chisholm experienced a second significant shift towards full-time students - influenced no doubt by the introduction of the Higher Education Contribution Scheme. The overall 1985-89 full/part-time student numbers are:

<table>
<thead>
<tr>
<th>Year</th>
<th>Full-time</th>
<th>Part-time</th>
<th>Ratio (F/T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>3441</td>
<td>3050</td>
<td>1.128</td>
</tr>
<tr>
<td>1986</td>
<td>3751</td>
<td>3105</td>
<td>1.208</td>
</tr>
<tr>
<td>1987</td>
<td>4189</td>
<td>2936</td>
<td>1.427</td>
</tr>
<tr>
<td>1988</td>
<td>4713</td>
<td>3189</td>
<td>1.478</td>
</tr>
<tr>
<td>1989</td>
<td>5103</td>
<td>3153</td>
<td>1.665</td>
</tr>
</tbody>
</table>

1 Higher Education Administration Charge Introduced.
2 Higher Education Contribution Scheme Introduced.

The ratio of all male:female students decreased from 1.267:1 in 1988 to 1.142:1 in 1989. The male:female ratio for new enrolments was 1.088:1 compared with 1.095:1 in 1988.

Changes in government policy in 1989 saw the phasing out of the subsidised overseas student quota and its replacement by an Equity and Merit Scheme.

Students completing a tertiary award course in 1988 included 3 Masters, 379 Graduate Diplomas, 897 Bachelors and 242 other tertiary awards.

Staffing

As at 31 March 1989 there were 422 fractional and full-time General staff and 383 fractional and full-time Academic staff, excluding all casual and sessional staff.
Enrolments by Field of Study

- Applied Science: 892.1
- Business: 2081.7
- Education: 431.1
- Engineering: 810.5
- Humanities, Social Sciences, incl. Law: 5103
- Visual & Performing Arts: 3050
- Nursing: 1317.8

Full and Part-time Enrolments 1985-89

- Part-time:
  - 1985: 1111
  - 1986: 1111
  - 1987: 1111

- Full-time:
  - 1985: 5103
  - 1986: 5253
  - 1987: 5103
  - 1988: 5253
Certification

In our opinion the accompanying Annual Financial Statements of Chisholm Institute of Technology comprising the Consolidated Balance Sheet, Consolidated Revenue and Expense Statement, Consolidated Statement of Sources and Applications of Funds, Consolidated Changes in Equity, together with the accompanying supporting statement and notes which form part of the Annual Financial Statements, have been drawn up to present fairly the financial transactions during the financial year and the financial position of the Institute at 31 December 1989.

The Annual Financial Statements have been prepared in accordance with Section 11 of the Annual Reporting Act 1983 (Victoria) and the Annual Reporting (Contributed Income Sector) Regulations 1988 (Victoria) as amended.

At the date of signing the Annual Financial Statements the undersigned are not aware of any circumstances which would render any particulars included in the Statements to be misleading or inaccurate.

P.H. Ramler
President of Council

G.N. Vaughan
Director

W.L. Priem
Chief Finance Manager

Dated this Eighth day of May 1990
Statement 1: Consolidated Balance Sheet as at 31 December 1989

<table>
<thead>
<tr>
<th>Note</th>
<th>CONSOLIDATED 1989</th>
<th>$000</th>
<th>INSTITUTE 1989</th>
<th>$000</th>
<th>CONSOLIDATED 1988</th>
<th>$000</th>
<th>INSTITUTE 1988</th>
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<tbody>
<tr>
<td></td>
<td>Accumulated Funds and Reserves</td>
<td></td>
<td></td>
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<td>Operating Grant Account</td>
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<td>(59)</td>
<td>(59)</td>
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<td>Capital Grant Accounts</td>
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<tr>
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<td>Asset Revaluation Reserve</td>
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<td>4,800</td>
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<tr>
<td></td>
<td>Building Development Fund</td>
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<td>1,486</td>
<td></td>
<td>1,486</td>
<td></td>
<td>1,486</td>
<td>1,486</td>
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<tr>
<td></td>
<td>Capitalised Recurrent Expenditure</td>
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<td>2,805</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Accumulated Funds and Reserves</td>
<td></td>
<td>97,463</td>
<td></td>
<td>97,911</td>
<td></td>
<td>98,173</td>
<td>98,521</td>
</tr>
</tbody>
</table>

Represented by:

Current Assets

| Note | Bank Accounts and Cash Balances |      | 1,023 |      | 943 |      | 23 | 5 |
|------|Debtors |      | 2,361 |      | 2,239 |      | 3,929 | 3,813 |
|      | Prepayments |      | 277 |      | 239 |      | 206 | 151 |
|      | Loans and Advances |      | 224 |      | 1,776 |      | 173 | 1,352 |
|      | Investments |      | 13,337 |      | 13,337 |      | 4,094 | 4,094 |
|      | Inventories |      | 236 |      | 236 |      | 196 | 196 |
|      | Total Current Assets |      | 17,458 |      | 18,770 |      | 8,601 | 9,611 |

Non-Current Assets

| Note | Investments |      | 4,000 |      | 4,000 |      | 4,167 | 4,167 |
|------|Loans and Advances |      | 176 |      | 176 |      |      |      |
|      | Land |      | 16,399 |      | 14,302 |      | 16,072 | 13,975 |
|      | Buildings owned by the Institute |      | 12,280 |      | 12,280 |      | 12,606 | 12,606 |
|      | Buildings vested in the Crown |      | 69,107 |      | 69,107 |      | 69,228 | 69,228 |
|      | Other Fixed Assets |      | 5,827 |      | 5,827 |      | 2,536 | 2,536 |
|      | Leasehold Improvements |      | 207 |      | 179 |      | 37 |      |
|      | Total Non-Current Assets |      | 107,996 |      | 105,871 |      | 104,646 | 102,512 |
|      | Total Assets |      | 125,454 |      | 124,641 |      | 113,247 | 112,123 |

Current Liabilities

| Note | Creditors and Accruals |      | 2,985 |      | 2,926 |      | 3,970 | 3,698 |
|------|Ministry of Education |      | 330 |      | 330 |      |      |      |
|      | Prepaid Tertiary Education Assistance Grants |      | 6,086 |      | 6,086 |      | 49 | 49 |
|      | Student Fees Received in Advance |      | 855 |      | 855 |      |      |      |
|      | Deposits and Bonds Held |      | 225 |      | 223 |      | 234 | 234 |
|      | Provision for Long Service Leave |      | 131 |      | 5,335 |      | 1,161 | 1,161 |
|      | Provision for Recreation Leave |      | 311 |      | 2,315 |      | 460 | 460 |
|      | Total Current Liabilities |      | 16,131 |      | 18,070 |      | 5,874 | 5,602 |

Non-Current Liabilities

| Note | Commercial Borrowings |      | 9,200 |      | 8,000 |      | 9,200 | 8,000 |
|------|Ministry of Education |      | 660 |      | 660 |      |      |      |
|      | Total Non-Current Liabilities |      | 9,860 |      | 8,660 |      | 9,200 | 8,000 |

Total Liabilities

| Note | Total Liabilities |      | 27,991 |      | 26,730 |      | 15,074 | 13,602 |

Net Assets

| Note | Net Assets |      | 97,463 |      | 97,911 |      | 98,173 | 98,521 |

The above Balance Sheet should be read in conjunction with the notes to, and forming part of, the financial statements.
## Statement 2: Consolidated Revenue and Expense Statement

for the year ended 31 December 1989

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
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<tr>
<td><strong>Revenue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government Grants</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Commonwealth</td>
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<td>39,798</td>
<td>38,561</td>
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<td>Victorian Education Foundation</td>
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<td>-</td>
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<td><strong>Total Government Grants</strong></td>
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<td>45,355</td>
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<td></td>
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<td>270</td>
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<td>1,093</td>
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<td>215</td>
<td>215</td>
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<td>454</td>
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<td>Other Property Rental</td>
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<td>308</td>
<td>105</td>
<td>105</td>
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<td>Halls of Residence Fees</td>
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<td>297</td>
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<td>Consultancy Fees</td>
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<td>664</td>
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<td>Donations</td>
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<td>262</td>
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<td>23</td>
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<td>Full-Fee Paying Graduate Students</td>
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<td>-</td>
<td>-</td>
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<td>94</td>
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<td>21</td>
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<td><strong>Total Other Revenue</strong></td>
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<td>11,040</td>
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<td>(48)</td>
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<td>54</td>
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<td>544</td>
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<td>298</td>
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<td>225</td>
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<td>20</td>
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<td>(55)</td>
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<td>54,790</td>
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</table>

PAGE 56  CHISOLM INSTITUTE OF TECHNOLOGY ANNUAL REPORT 1989
Statement 3: Consolidated Changes in Equity for the year ended 31 December 1989

<table>
<thead>
<tr>
<th></th>
<th>Balances 1 Jan 1989 $000</th>
<th>Surplus/ (Deficit) 1989 $000</th>
<th>Appropriations &amp; Transfers in $000</th>
<th>Balances 31 Dec 1989 $000</th>
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<td>8,489</td>
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<tr>
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<td>77,125</td>
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<tr>
<td>Plus additions:</td>
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<td>Transfers from Major Works</td>
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<td>Buildings of a Capital</td>
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<td>Nature</td>
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<td>Less:</td>
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<td>Transfers to the Revenue</td>
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<td>required to fund</td>
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<td>depreciation</td>
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<td></td>
<td></td>
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<tr>
<td>charges on Buildings</td>
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<tr>
<td>Building Development Fund</td>
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<td>1,486</td>
<td>1,486</td>
</tr>
<tr>
<td>Extrinsic Funds</td>
<td></td>
<td>14,217</td>
<td>4,650</td>
<td>18,867</td>
</tr>
<tr>
<td>Asset Revaluation Reserve</td>
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<td>4,800</td>
<td>(4,800)</td>
<td>(753)</td>
</tr>
<tr>
<td>Capitalised Recurrent</td>
<td></td>
<td>3558</td>
<td>(753)</td>
<td>2,805</td>
</tr>
<tr>
<td>Expenditure</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL INSTITUTE</td>
<td></td>
<td>98,521</td>
<td>(4,661)</td>
<td>97,911</td>
</tr>
<tr>
<td>Pelletray Pty Ltd</td>
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<td>(348)</td>
<td>(100)</td>
<td>(448)</td>
</tr>
<tr>
<td>TOTAL CONSOLIDATED</td>
<td></td>
<td>98,173</td>
<td>(4,661)</td>
<td>97,463</td>
</tr>
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</table>

The above Statement of Income and Expenditure should be read in conjunction with the notes to and forming part of the financial statements.
## Statement 4: Consolidated Sources and Applications of Funds for the year ended 31 December 1989

<table>
<thead>
<tr>
<th>Sources of Funds</th>
<th>CONSOLIDATED</th>
<th>INSTITUTE</th>
<th>CONSOLIDATED</th>
<th>INSTITUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funds from Operations</td>
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<td>$000</td>
<td>1989</td>
<td>$000</td>
</tr>
<tr>
<td>Inflow of funds from operations</td>
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<td></td>
</tr>
<tr>
<td>• Commonwealth Government Grants</td>
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<td>39,798</td>
<td>39,751</td>
<td>39,751</td>
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<tr>
<td>• State Government Grants</td>
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<td>4,642</td>
<td>3,964</td>
<td>3,964</td>
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<tr>
<td>• Other</td>
<td>12,700</td>
<td>11,861</td>
<td>8,250</td>
<td>8,250</td>
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<tr>
<td>• Proceeds from disposal of assets</td>
<td>94</td>
<td>94</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>57,234</td>
<td>56,395</td>
<td>51,986</td>
<td>51,986</td>
</tr>
<tr>
<td>Less: Outflow of funds from operations</td>
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<td>(60,956)</td>
<td>(48,708)</td>
<td>(47,904)</td>
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<td>Surplus (Deficit) for year</td>
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<td>(4,561)</td>
<td>3,783</td>
<td>4,082</td>
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<td>Add back non-cash items</td>
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<td></td>
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<tr>
<td>• Provision for employee liabilities</td>
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<td>6,029</td>
<td>1,532</td>
<td>1,532</td>
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<td>• Provision for Depreciation</td>
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<td>4,882</td>
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<td>286</td>
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<tr>
<td>• Equipment Write Off</td>
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<td>468</td>
<td>61</td>
<td>61</td>
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<td>Total Funds from Operations</td>
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<td>5,961</td>
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<td>Reduction in Assets</td>
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<tr>
<td>Current Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank Accounts and Cash Balances</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debtors and Prepayments</td>
<td>1,427</td>
<td>1,062</td>
<td>214</td>
<td>214</td>
</tr>
<tr>
<td>Investments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,427</td>
<td>1,062</td>
<td>4,457</td>
<td>4,457</td>
</tr>
<tr>
<td>Increase in Liabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Liabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepaid Tertiary Education Assistance Grants</td>
<td>6,037</td>
<td>6,037</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Fees Received in Advance</td>
<td>855</td>
<td>855</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposits and Bonds Held</td>
<td></td>
<td></td>
<td>185</td>
<td>185</td>
</tr>
<tr>
<td>Creditors and Accruals</td>
<td></td>
<td></td>
<td>1,351</td>
<td>1,086</td>
</tr>
<tr>
<td>Ministry of Education</td>
<td>330</td>
<td>330</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7,222</td>
<td>7,222</td>
<td>1,536</td>
<td>1,271</td>
</tr>
<tr>
<td>Non-Current Liabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ministry of Education</td>
<td>660</td>
<td>660</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loans State Bank of Victoria</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase in Equity</td>
<td>3,558</td>
<td>3,558</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase in Capitalised Recurrent Equity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Sources of Funds</td>
<td>19,593</td>
<td>19,320</td>
<td>13,725</td>
<td>12,568</td>
</tr>
<tr>
<td>Applications of Funds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase in Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debtors and Prepayments</td>
<td></td>
<td></td>
<td>3,005</td>
<td>3,005</td>
</tr>
<tr>
<td>Investments</td>
<td>9,243</td>
<td>9,243</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank Accounts and Cash Balances</td>
<td>1,000</td>
<td>938</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventories</td>
<td>40</td>
<td>40</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>10,283</td>
<td>10,221</td>
<td>3,018</td>
<td>4,004</td>
</tr>
</tbody>
</table>
Non-Current Assets

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Leasehold Improvements</td>
<td>215</td>
<td>215</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Land and Buildings</td>
<td>3,430</td>
<td>3,430</td>
<td>3,392</td>
<td>1,295</td>
</tr>
<tr>
<td>Long Term Investments</td>
<td>9</td>
<td>9</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>Other Fixed Assets</td>
<td>4,662</td>
<td>4,662</td>
<td>749</td>
<td>749</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>8,316</td>
<td>8,316</td>
<td>4,242</td>
<td>2,100</td>
</tr>
</tbody>
</table>

Reduction in Liabilities

<table>
<thead>
<tr>
<th></th>
<th>1989</th>
<th>1988</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creditors and Accruals</td>
<td>978</td>
<td>772</td>
</tr>
<tr>
<td>Income received in Advance</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Prepaid Tertiary Education Assistance Grants</td>
<td>-</td>
<td>4,809</td>
</tr>
<tr>
<td>Student Fees Received in Advance</td>
<td>-</td>
<td>1,655</td>
</tr>
<tr>
<td>Deposits and Bonds Held</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>994</td>
<td>783</td>
</tr>
</tbody>
</table>

Total Applications of Funds

<table>
<thead>
<tr>
<th></th>
<th>1989</th>
<th>1988</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>19,593</td>
<td>19,320</td>
</tr>
</tbody>
</table>

The above Statement of Sources and Applications of Funds should be read in conjunction with the notes to, and forming part of, the financial statements.

---

Statement 5: Revenue and Expense Statement
for the year ended 31 December 1989

<table>
<thead>
<tr>
<th></th>
<th>Note</th>
<th>Recurrent</th>
<th>Extraneous</th>
<th>Total 1989</th>
<th>Total 1988</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants and Other Revenue</td>
<td></td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
</tr>
<tr>
<td>Government Grants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commonwealth</td>
<td>31</td>
<td>38,596</td>
<td>1,202</td>
<td>39,798</td>
<td>38,561</td>
</tr>
<tr>
<td>State</td>
<td></td>
<td>4,606</td>
<td>36</td>
<td>4,642</td>
<td>3,964</td>
</tr>
<tr>
<td>Victorian Education Foundation</td>
<td>17</td>
<td>915</td>
<td>915</td>
<td>915</td>
<td>-</td>
</tr>
<tr>
<td>Total Government Grants</td>
<td></td>
<td>43,202</td>
<td>2,153</td>
<td>45,355</td>
<td>42,525</td>
</tr>
</tbody>
</table>

| Other Revenue                  |      |           |            |            |            |
| HECS/HEAC                      | 18   | 1,115     | -          | 1,115      | 2,146      |
| Research Grants                |      | 290       | 290        | 290        | 270        |
| Fees from Short Courses        |      | 1,201     | 1,201      | 1,201      | 1,093      |
| Fees from seminars             |      | 416       | 416        | 416        | 215        |
| Interest on Investments        |      | 2,192     | 2,192      | 2,192      | 1,090      |
| Investment Property Rental     |      | 524       | 524        | 524        | 454        |
| Other Property Rental          |      | 308       | 308        | 308        | 460        |
| Halls of Residence Fees        |      | 309       | 309        | 309        | 297        |
| Consultancy Fees               |      | 891       | 891        | 891        | 664        |
| Donations                      |      | 308       | 308        | 308        | 262        |
| Full-Fee Paying Overseas Students | 18  | 1,618     | 1,618      | 1,618      | 213        |
| Full-Fee Paying Graduate Students | 150 | 150       | 150        |            |            |
| Surplus on disposal of assets  | 85   | 9         | 94         | 94         | 29         |
| Other Income                   | 313  | 1,091     | 1,424      | 1,424      | 1,163      |
| Printing                       | 200  |           | 200        | 200        | 115        |
| Internal Equipment Rents Transfers | (891)| 891      |            | 891        |            |
| Total Other Revenue            | 842  | 10,198    | 11,040     | 8,281      |
| Total Revenue                  | 44,044| 12,351    | 56,395     | 50,806     |
| Expenditure                    |      | Total     | Total      |            |            |
### Operating Expenses

<table>
<thead>
<tr>
<th>Note</th>
<th>Recurrent</th>
<th>Extraneous</th>
<th>1989</th>
<th>1988</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
</tr>
<tr>
<td>Salaries</td>
<td>$28,813</td>
<td>$2,117</td>
<td>$30,930</td>
<td>$27,355</td>
</tr>
<tr>
<td>Superannuation Contributions</td>
<td>$4,299</td>
<td>$36</td>
<td>$4,335</td>
<td>$3,327</td>
</tr>
<tr>
<td>Long Service Leave Provision</td>
<td>$13 I</td>
<td>$46</td>
<td>$46</td>
<td>$92</td>
</tr>
<tr>
<td>Recreation Leave</td>
<td>$13 II</td>
<td>$292</td>
<td>$53</td>
<td>$345</td>
</tr>
<tr>
<td>Payroll Tax</td>
<td>$1,697</td>
<td>$129</td>
<td>$1,826</td>
<td>$1,617</td>
</tr>
<tr>
<td>Accident Compensation Levy</td>
<td>$354</td>
<td>$27</td>
<td>$381</td>
<td>$320</td>
</tr>
<tr>
<td>Consultants Fees &amp; Expenses</td>
<td>$97</td>
<td>$855</td>
<td>$952</td>
<td>$637</td>
</tr>
<tr>
<td>Other Personnel-Related Costs</td>
<td>$588</td>
<td>$198</td>
<td>$786</td>
<td>$1,011</td>
</tr>
<tr>
<td>Staff Development</td>
<td>$124</td>
<td>$6</td>
<td>$130</td>
<td>$123</td>
</tr>
<tr>
<td>Practice Teaching Fees</td>
<td>$206</td>
<td>$206</td>
<td>$206</td>
<td>$223</td>
</tr>
<tr>
<td>Building Occupancy</td>
<td>$3,160</td>
<td>$316</td>
<td>$3,476</td>
<td>$3,044</td>
</tr>
<tr>
<td>Depreciation - Buildings</td>
<td>$2,946</td>
<td>$529</td>
<td>$3,475</td>
<td>$2,885</td>
</tr>
<tr>
<td>Communications</td>
<td>$558</td>
<td>$100</td>
<td>$658</td>
<td>$488</td>
</tr>
<tr>
<td>Financial Charges</td>
<td>$15</td>
<td>$33</td>
<td>$48</td>
<td>$68</td>
</tr>
<tr>
<td>Library</td>
<td>$168</td>
<td>$54</td>
<td>$222</td>
<td>$822</td>
</tr>
<tr>
<td>Depreciation Library</td>
<td>$75</td>
<td>$75</td>
<td>$75</td>
<td>$75</td>
</tr>
<tr>
<td>Travelling Expenses</td>
<td>$361</td>
<td>$435</td>
<td>$816</td>
<td>$983</td>
</tr>
<tr>
<td>Audit Fees</td>
<td>$48</td>
<td>$48</td>
<td>$48</td>
<td>$54</td>
</tr>
<tr>
<td>Operational Expenses</td>
<td>$1,928</td>
<td>$1,438</td>
<td>$3,366</td>
<td>$2,734</td>
</tr>
<tr>
<td>Amortisation Leasehold Improvements</td>
<td>$36</td>
<td>$36</td>
<td>$36</td>
<td>$36</td>
</tr>
<tr>
<td>Depreciation Equipment</td>
<td>$665</td>
<td>$631</td>
<td>$1,296</td>
<td>$807</td>
</tr>
<tr>
<td>Equipment Purchases</td>
<td>$165</td>
<td>$116</td>
<td>$281</td>
<td>$1,595</td>
</tr>
<tr>
<td>Equipment Maintenance</td>
<td>$618</td>
<td>$74</td>
<td>$692</td>
<td>$544</td>
</tr>
<tr>
<td>Building Projects</td>
<td>$298</td>
<td>$298</td>
<td>$298</td>
<td>$225</td>
</tr>
<tr>
<td>Doubtful Debts Provision</td>
<td>$20</td>
<td>$20</td>
<td>$20</td>
<td>(55)</td>
</tr>
<tr>
<td>Total Operating Expenses</td>
<td>$47,557</td>
<td>$7,233</td>
<td>$54,790</td>
<td>$48,842</td>
</tr>
</tbody>
</table>

**Operating Surplus (Deficit) for Year**

| before Abnormal items | (3,513) | 5,118 | 1,603 | 1,964 |
| Less Abnormal Items | 13 I | $1,563 | $1,563 | $1,120 |
| Recreation Leave | 13 II | $4,135 | $4,135 | $426 |
| Equipment Write Off | 19 | $468 | $468 | $-
| Total Abnormal Items | $5,698 | $468 | $6,166 | $1,546 |

**Surplus (Deficit) after Abnormal Items**

| (9,211) | $4,650 | (4,563) | 418 |
| Retained Surplus at Beginning of Year | $893 | $14,217 | $15,110 | $11,868 |
| Transfer from Asset Revaluation Reserve | $4,800 | $4,800 | $2,885 |
| Transfer from Equity Managed on behalf of Crown | $2,946 | $2,946 | $-
| Transfer to Building Development Fund | $-
| Transfer to Crown Equity | $2,360 | ($236) |
| Transfer from Capitalised Recurrent Expenditure | $753 | $753 | $-

**Retained Surplus (Deficit) at End of Year**

| (55) | $18,867 | $18,812 | $15,110 |

The above Revenue and Expense Statement should be read in conjunction with the notes to and forming part of, the financial statements.
Notes to and forming part of the Annual Financial Statements for the year ended 31 December 1989

1 Legal Status and Nature of Activities

1.1 The Council of the Chisholm Institute of Technology is a body corporate established under an Order in Council pursuant to section 23 (4) of the Post-Secondary Education Act 1978, as amended by an Order in Council dated 21 November 1989.

1.2 The Institute is responsible to the State Minister for Education through the Victorian Post-Secondary Education Commission.

1.3 The principal objectives and functions of the Institute are:

A. The conducting of post-secondary education programs;
B. The conducting of such other activities deemed desirable to advance post-secondary education;
C. The provision of research, testing, and other facilities and expertise for the professions, business, industry, government and the community in general.

2 Statement of Principal Accounting Policies

The purpose of this statement is to disclose information relating to the Institute's accounting policies and changes in accounting treatment where such matters are material to the financial statements.

2.1 Accounting Basis

The Annual Financial Statements have been prepared in accordance with Australian Accounting Standards using accrual accounting. Apart from land and buildings which were revalued in December 1987, historical cost has been used for all other transactions.

2.2 Format of Statements

A. The statements are presented in a format consistent with the requirements of:

(i) The Annual Reporting (Contributed Income Sector) Regulations 1988 (Victoria) as amended; and
(ii) Section 27 of the Post-Secondary Education Act 1978 (Victoria).

B. For some years, fund accounting has been a feature of the accounting systems of educational institutions as the majority of annual income of such institutions comprises individual grants or donations for specified projects. In most cases, it is not permissible for these grants or donations to be used for purposes other than that specified. Accordingly, it is necessary to establish a separate fund to record the amount received, the expenditure, the balance of the grant, and all net assets making up the balance. Although the various funds are available only for specified purposes and must be accounted for separately, it is appropriate for annual reporting purposes to aggregate for the Institute in Statement 5 the income and expenditure under the headings of "Recurrent" and "Expenditure" thereby differentiating between government grant monies for specific teaching programs (i.e. Recurrent) and Institute generated programs and initiatives (i.e. Expenditure).

C. In preparing the statements all internal transactions have been eliminated.

3 Principles of Consolidation

The consolidated financial statements include the financial statements of the Institute and its subsidiary, Pellettary Pty Ltd.

IV Motor Vehicles

Motor Vehicles are replaced every two years or 40,000 kilometres, whichever occurs first. The Institute is exempt from payment of sales tax on vehicles purchased. As it is normal to recoup the original purchase cost on disposal, the depreciable amount is therefore nil. This results in a nil depreciation charge.

V Taxation

The Institute is not subject to income tax or sales tax, but is liable to other taxes in accordance with Federal and State legislation.

The Institute's subsidiary Company will derive a future income tax benefit attributable to tax losses that have not been recognised as an asset, or in the form of a reduction in the provision for deferred income tax.

The Company expects to derive future assessable income of a nature and amount sufficient to enable the benefit from the deductions for the losses to be realised, provided no changes to the taxation legislation occur which will adversely affect the Company in realising the benefit from the deduction for the losses.

VI Terms and Conditions of Employment

Terms and conditions of employment with the Institute are determined in accordance with the provisions of the Post-Secondary Education Act 1978 and such other Acts as applicable to the Institute from time to time.

VII Superannuation

The Institute contributes to each of the superannuation funds listed below. Details of the ratio of employee and employer contributions and the contributions by the Institute to each fund are listed against each fund.

Institute policy is that all new employees must join the Superannuation Scheme for Australian Universities unless they are current contributors to the State Superannuation Scheme.

A. State Superannuation Board of Victoria

Employees contribute between 3% and 8% of annual salary depending on their age. The Institute is required to pay periodically the emerging cost in respect of employees who have retired. For 1989 this cost was $2,012,399 (1988 $1,639,109).

No provision has been made for the future pension costs of former employees who are members of the Victorian State Superannuation Scheme. Such costs are accounted for as and when they emerge and are invoiced to the Institute by the Trustees of the Scheme.

The impact of this cost has been lessened by the announcement in 1981 by the Minister for Education that the Commonwealth Government had decided to assist with the additional superannuation costs to institutions for staff in State Government existing cost schemes such as the Victorian State Superannuation Scheme. This additional funding by way of supplementation relates to costs beyond those incurred in 1981. During the financial year supplementation amounting to $1,55,000 was allocated (1988 $86,800). It is estimated that the level of supplementation received is $1,170,291.00 below the actual costs paid and an accrual for this shortfall has been made (1988 $88,3,404).

B. Superannuation Scheme for Australian Universities

Employees contribute 7% of annual salary. The Institute contributes 14% of annual salary. Payments by the Institute in 1989 were $1,379,994 (1988 $1,035,493).

C. Chisholm Staff Superannuation Scheme

Employees contribute 5% of annual salary. The Institute contributes 10% of annual salary. Payments by the Institute in 1989 were $431,706 (1988 $447,462). This scheme is closed and no new members can enter.
D Tertiary Education Superannuation Scheme
This scheme administers the 3% employer contribution made in accordance with the National Wage Case Award provisions. Contributions in 1989 were $501,312 (1988 $236,628).

VIII Inventories
Only materials which are purchased and controlled centrally have been reported in the Balance Sheet. Materials purchased for departmental use and held under the control of individual departments have been expensed at the time of purchase. Stocktaking of centrally controlled stocks were completed at year end. Inventories have been valued at the lower of cost or net realisable value making both first in, first out and average cost as applicable.

<table>
<thead>
<tr>
<th>Consol. Institute</th>
<th>Consol. Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Canteen</td>
<td>11,610</td>
</tr>
<tr>
<td>Printing</td>
<td>49,252</td>
</tr>
<tr>
<td>Central Stationery</td>
<td>72,314</td>
</tr>
<tr>
<td>Premises</td>
<td>103,171</td>
</tr>
<tr>
<td>Total</td>
<td>$236,347</td>
</tr>
<tr>
<td>IX Pelletray Pty Ltd</td>
<td></td>
</tr>
</tbody>
</table>

This company was established by the Institute to manage the Technology Tower project, a nine level building, seven levels of which are commercially tenanted and two which are occupied under a leasing agreement with the Chisholm Institute of Technology Student Union Incorporated. The financial transactions of Pelletray Pty Ltd have been consolidated in the Institute’s financial statements for 1989.

X Leases
Operating lease payments, where the lessor effectively retain substantially all of the risks and benefits of ownership of the leased items, are included in the determination of the operating profit in equal instalments over the lease term.

The cost of improvements to or on leasehold property is capitalised, disclosed as leasehold improvements and amortised over the unexpired period of the lease or the estimated lives of the improvements, whichever is shorter.

3 Changes in Accounting Policy
1 Annual Reporting (Contributed Income Sector) Regulations 1988 (Victoria) as amended
All tertiary institutions were required to observe the financial reporting requirements of these Regulations from 1 January 1989. The application of these Regulations has necessitated a number of changes to the method of accounting for income and expenditure. In summary these changes are:
A capitalisation of expenditure from recurrent funds on assets. Previously all such purchases were treated as expenditure in the year of acquisition. For 1989 the Institute has capitalised such items where the cost has exceeded $500;
B the reduction of the Commonwealth operating grant by $3,558,000 representing the value of fixed assets purchased during the year and the transfer of that sum to the Capitalised Recurrent Expenditure Account in the Balance Sheet, the transfer of $753,000 from the Capitalised Recurrent Expenditure Account to Revenue and Expenditure Statement to cover the depreciation on fixed asset purchased from Recurrent Funds;
C charging of depreciation on items capitalised under A above;
D charging of depreciation on buildings held in trust for the Crown;
E capitalisation of acquisitions during 1989 by the Institute’s Library and depreciation thereof on the same lines as outlined in 31 C above;
F consolidation of the annual financial statements of the Institute’s subsidiary Pelletray Pty Ltd with the Institute’s annual financial statements.

II Higher Education Funding Act 1988 (Australia)
This Act, which provides the basis for Federal Government funding for tertiary education in Australia, discontinued the practice of providing separate grants to fund expenditure on equipment and minor works. Funds for these purposes are now included in the recurrent grant. The Institute has discontinued the practice of reporting the expenditure on such items in a separate Statement of Income and Expenditure.

III Depreciation
The Institute has reviewed the method of depreciation charged on assets purchased from extraneous funds. Amendments to the rates used to amortise such assets have been made to more adequately reflect their useful working life. As a consequence the annual depreciation charge has increased by $134,000 in 1989 over the basis previously used. Depreciation has been charged on an annual basis commencing in the year of acquisition.

Depreciation on assets purchased from recurrent funds has been charged on the same basis as depreciation on assets purchased from extraneous funds.

B Buildings have been depreciated at a rate of 3 1/2%.

IV Adjustment to Prior Year Comparative Figures
The Institute has not made adjustments in respect of prior years for the purpose of revising the requirements of the Annual Reporting (Contributed Income Sector) Regulations 1988 (Victoria) as amended, other than those required to provide comparable figures on depreciation on buildings for 1988. All of these adjustments have been reflected in the balances of Accumulated Funds and Reserve for 1988.

4 Equity Managed on Behalf of the Crown
Land and Buildings Vested in the Crown – the Council of the Institute is responsible for the stewardship of land and buildings vested in the Crown which are held by the Institute for the purpose contained in the Order in Council of the Chisholm Institute of Technology. The value of this equity was established by professional valuers in December 1987 at $79,149,000. Additional on cost since that date totalled $3,685,000 (refer to note 10.3). Amount of $2,946,000 (1988 $2,885,000) was transferred to the Reserve and Revenue account in the order the annual depreciation charge for which the Institute is not funded.

5 Asset Revaluation Reserve
This reserve represented the difference between the cost of land and buildings owned by the Institute and the valuation of same by professional valuers. This reserve was transferred in 1989 to the Institute’s general funds via the Statement of Income and Expenditure and applied towards the Institute’s liability for accumulated long service and recreation leave. The reserve does not represent cash; however, in the event that the full liability for accumulated long service and recreation leave became payable the liability could be met from the Institute’s cash and investment funds.

6 Building Development Fund
Student Union facilities on the Caulfield Campus were partially financed by progressive contributions from the Student Union to a building development fund. Following the completion of the facility and the signing of an occupancy agreement between the Institute and the Student Union the building development fund was transferred from Current Liabilities to the accumulated Capital Grant Accounts.
7 Segment Reporting
The Institute operates only in the area of educational services in the one geographic area, viz. Victoria, Australia.

8 Debts and Prepayments
The balance consists of:

<table>
<thead>
<tr>
<th></th>
<th>Consolidated Institute</th>
<th>Institute</th>
<th>Consol. Institute</th>
<th>Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants Receivable</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
</tr>
<tr>
<td>Superannuation</td>
<td>1,170</td>
<td>1,170</td>
<td>883</td>
<td>883</td>
</tr>
<tr>
<td>Dues</td>
<td>954</td>
<td>954</td>
<td>803</td>
<td>803</td>
</tr>
<tr>
<td>SubTotal</td>
<td>2,392</td>
<td>2,392</td>
<td>3,914</td>
<td>3,914</td>
</tr>
<tr>
<td>Less provision for doubtful debts</td>
<td>(3)</td>
<td>(3)</td>
<td>(5)</td>
<td>(5)</td>
</tr>
<tr>
<td>Total</td>
<td>2,361</td>
<td>2,361</td>
<td>3,909</td>
<td>3,909</td>
</tr>
</tbody>
</table>

9 Investments
All investments are made in accordance with Section 4 of the Victorian Trustees Act 1958 and are stated at cost.

The balance consists of:

<table>
<thead>
<tr>
<th></th>
<th>Consolidated Institute</th>
<th>Institute</th>
<th>Consol. Institute</th>
<th>Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term Deposits</td>
<td>$13,329</td>
<td>$13,329</td>
<td>4,088</td>
<td>4,088</td>
</tr>
<tr>
<td>Other Authorised</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
</tr>
<tr>
<td>Investments</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>SEC Security Deposit</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>$13,337</td>
<td>$13,337</td>
<td>4,094</td>
<td>4,094</td>
</tr>
</tbody>
</table>

10 Land and Buildings
These assets are shown at the valuation established by professional valuers in December 1987 plus the cost of additions since that date.

<table>
<thead>
<tr>
<th></th>
<th>Consolidated Institute</th>
<th>Institute</th>
<th>Consol. Institute</th>
<th>Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance 1 January</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
</tr>
<tr>
<td>* at Valuation</td>
<td>13,925</td>
<td>13,925</td>
<td>13,925</td>
<td>13,925</td>
</tr>
<tr>
<td>* at Cost</td>
<td>2,147</td>
<td>2,147</td>
<td>2,097</td>
<td>2,097</td>
</tr>
<tr>
<td>Plus Additions</td>
<td>327</td>
<td>327</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Balance 31 Dec.</td>
<td>16,399</td>
<td>16,399</td>
<td>16,072</td>
<td>13,975</td>
</tr>
<tr>
<td>Buildings Owned by the Institute</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Consolidated Institute</th>
<th>Institute</th>
<th>Consol. Institute</th>
<th>Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance 1 January</td>
<td>$12,643</td>
<td>$12,643</td>
<td>12,643</td>
<td>12,643</td>
</tr>
<tr>
<td>* at Valuation</td>
<td>12,643</td>
<td>12,643</td>
<td>12,643</td>
<td>12,643</td>
</tr>
<tr>
<td>* at Cost</td>
<td>384</td>
<td>384</td>
<td>384</td>
<td>384</td>
</tr>
<tr>
<td>Plus Additions at Cost</td>
<td>203</td>
<td>203</td>
<td>203</td>
<td>203</td>
</tr>
<tr>
<td>Balance 31 Dec.</td>
<td>13,230</td>
<td>13,230</td>
<td>13,027</td>
<td>13,027</td>
</tr>
<tr>
<td>Less Accumulated</td>
<td>$920</td>
<td>$920</td>
<td>(421)</td>
<td>(421)</td>
</tr>
<tr>
<td>Depreciation</td>
<td>12,280</td>
<td>12,280</td>
<td>12,606</td>
<td>12,606</td>
</tr>
<tr>
<td>Buildings Vested in the Crown</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
</tr>
</tbody>
</table>

11 Other Fixed Assets

<table>
<thead>
<tr>
<th></th>
<th>Consolidated Institute</th>
<th>Institute</th>
<th>Consol. Institute</th>
<th>Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>at Valuation</td>
<td>71,252</td>
<td>71,252</td>
<td>71,252</td>
<td>71,252</td>
</tr>
<tr>
<td>* at Cost</td>
<td>861</td>
<td>861</td>
<td>861</td>
<td>861</td>
</tr>
<tr>
<td>Plus Additions</td>
<td>2,825</td>
<td>2,825</td>
<td>861</td>
<td>861</td>
</tr>
<tr>
<td>Balance 31 Dec.</td>
<td>74,938</td>
<td>74,938</td>
<td>72,113</td>
<td>72,113</td>
</tr>
<tr>
<td>Less Accumulated</td>
<td>(5831)</td>
<td>(5831)</td>
<td>(2885)</td>
<td>(2885)</td>
</tr>
<tr>
<td>Depreciation</td>
<td>69,076</td>
<td>69,076</td>
<td>69,228</td>
<td>69,228</td>
</tr>
</tbody>
</table>

12 Leasehold Improvements

<table>
<thead>
<tr>
<th></th>
<th>Consolidated Institute</th>
<th>Institute</th>
<th>Consol. Institute</th>
<th>Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance 1 January</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
</tr>
<tr>
<td>Additions</td>
<td>45</td>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less Accumulated</td>
<td>215</td>
<td>215</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>32</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance 31 December</td>
<td>5,335</td>
<td>5,335</td>
<td>2,109</td>
<td>2,109</td>
</tr>
</tbody>
</table>

13 Provision for Long Service and Recreation Leave

1 Long Service Leave

<table>
<thead>
<tr>
<th></th>
<th>Consolidated Institute</th>
<th>Institute</th>
<th>Consol. Institute</th>
<th>Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance 1 January</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
</tr>
<tr>
<td>Add amount transferred from Statement of Income &amp; Expenditure as an abnormal item</td>
<td>$4,174</td>
<td>$4,174</td>
<td>$1,209</td>
<td>$1,209</td>
</tr>
<tr>
<td>Subtotal</td>
<td>5,335</td>
<td>5,335</td>
<td>2,109</td>
<td>2,109</td>
</tr>
<tr>
<td>Less payments made during the year</td>
<td>48</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance 31 December</td>
<td>5,335</td>
<td>5,335</td>
<td>1,161</td>
<td>1,161</td>
</tr>
</tbody>
</table>

14 Commercial Borrowings
Under finance arrangements established for the Technology Tower project, construction was initially funded from a combination of internal reserves ($7.5 million) and external borrowings ($8.0 million). To finance the externally funded part of the project, the Institute entered into a financing arrangement with National Australia Bank Leasing Pty Ltd through Peletray Pty Ltd, a company established by the Institute. On completion of construction, the building was sold to a Unit Trust owned by the two Banks which provided the external funding. This Unit Trust then leased back the building to Peletray Pty Ltd, which became responsible for the leasing of office space in the tower and the meeting of the lease back obligations to the Unit Trust.
The arrangement was approved by the Treasurer and the Minister for Education of the State of Victoria. The external borrowing is repayable in 1997. Legal ownership of the Technology Tower site remains with the Institute. The Unit Trust has lodged a caveat on the title.

15 Non-Accrued Liabilities

The sum of $5,693,000 reported in 1988 represented the value of accumulated long service and recreation leave not accrued as at 31 December 1988. For 1989 the full value of these liabilities has been provided.

16 Contractual Liabilities

At 31 December 1989 the Institute had contracted for, but not provided for in the financial statements, expenditure totalling $1,619,000 (1988 $1,167,000).

17 Victorian Education Foundation

During 1989 the Institute received grants for the following projects.

- Special Mathematics
  - Institute: $172,881
- Computing Laboratories
  - Institute: $162,689
- Design Course Development
  - Institute: $2,399,892
- Business Languages
  - Institute: $51,279
- Marketing
  - Institute: $50,000
- Treasury Dealing Room
  - Institute: $282,235
- Manufacturing Management
  - Institute: $1,000

18 HECS/HEAC

Commencing in 1987 the Commonwealth Government required tertiary students to make a financial contribution towards their course costs. For 1987 and 1988 this contribution was obtained via the Higher Education Administration Charge (HEAC). For 1989 the Higher Education Funding Act 1988 provided for students to be liable to pay a fee in the form of the Higher Education Contribution Scheme (HECS). Students have the option of paying the prescribed fee in each of the years for which they are enrolled or deferring payment until after they have completed their course of study and are earning a taxable income in excess of $21,999. The sum of $1,115,000 represents the amount paid by students electing not to defer payment.

19 Equipment Written Off

As part of the Institute's review of annual depreciation rates a number of items of equipment were identified which, although not fully depreciated, were considered to be of no further use. The residual value of this equipment has been written off.

20 Operating Surplus for the Year

The recurrent operating surplus for 1989 before abnormal items includes $286,797 representing an accrual of the estimated backlog in supplementation due to the Institute to cover payments made to the State Superannuation Board towards the pensions of retired officers (1988 $883,494). The total estimated backlog totals $1,170,291.

21 Secured Liabilities

<table>
<thead>
<tr>
<th>Borrowed From</th>
<th>Amount</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Bank of Victoria</td>
<td>$1,200,000</td>
<td>Fully secured on land owned by the Institute.</td>
</tr>
<tr>
<td>National Australia</td>
<td>$8,000,000</td>
<td>Fully secured on land and buildings owned by the Institute.</td>
</tr>
</tbody>
</table>

22 Schedule of Debts Payable

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not later than</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>one year</td>
<td>1,200</td>
<td>1,200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Later than one year but not later than two years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Later than two years but not later than five years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Later than five years</td>
<td>8,000</td>
<td>8,000</td>
<td>8,000</td>
<td>8,000</td>
</tr>
</tbody>
</table>

23 Capital and Leasing Commitments

Operating Lease

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$000</td>
<td>$000</td>
<td>$000</td>
<td>$000</td>
</tr>
</tbody>
</table>

Non-cancellable operating lease contracted for but not capitalised in the accounts:

Payable

- not later than one year: 765,564 — 651,880
- later than one year but not later than two years: 846,922 — 765,564
- later than two years but not later than five years: 2,886,621 — 2,683,867
- later than five years: 3,376,435 — 4,426,111

24 Audit Fees

Fees paid to the Auditor General Victoria were:

1989: $14,000
1988: $17,750