chronicle

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Library - Arts Block Approved

" Beginning of End " In Transfer to Ilam

The move of the Faculty of Science to Ilam in 1966 was the end of the beginning of the transfer of the University to the new site. Government approval to call tenders for the new Library-Arts block is the beginning of the end.

The Vice-Chancellor, Professor N.C. Phillips, made this comment last month when Mr Kinsella, Minister of Education, announced Government approval to call tenders for the 11-storey block, which will accommodate the Library in a four-storey base and six Arts departments in a slender tower rising above the base.

Situated between the Students' Union and the planned buildings of the Arts Faculty, the Library-Arts block will be at the centre of the University's future pedestrian traffic and will be the focal point of the Ilam complex. It will also be a major feature on the city's western skyline. The twelfth level will be 145 feet above ground level and the height of the lift towers above the ground will be 174 feet, compared with 164 feet for the Bank of New Zealand in Cathedral Square. The height of the roof of the Chemistry-Physics block is 105 feet and the height of its lift towers 120 feet.

The block will have a four-storey base covering nearly an acre of ground, which will be occupied by the Library. Rising sheer above the middle part of the south side of the base will be the six-storey tower, 125 feet by 70 feet, to accommodate the Departments of Classics, Philosophy, Political Science, Economics, Accountancy and Law. There will be a floor for heating, lighting and ventilating equipment between the base and tower blocks and a smaller plant room on top of the tower.

The building, which will have a floor area of 105,000 square feet, provides for expansion of the Library area to nearly double its initial capacity of 355,000 books and 1100 reader places. As the Library requires additional space it will take over floors in the tower from the Arts departments. Unlike most libraries, University libraries are unable to discard much of the considerable quantity of books, periodicals and other material which they continually receive. They often double their stock every 11 years and sometimes faster. In addition, the increase in the University's roll has also to be anticipated.

Cover picture: A drawing by the architects of the Library-Arts block at Ilam. A photograph of the architects' model of the block appears on the inside of the back cover.

The interim use of the tower floors for teaching departments required special provision for independent access. Entrance to and exit from the Library required control, but free access to the teaching departments above was also necessary.

To meet both requirements the opening of lifts and stairways will be limited to certain floors. A pair of lifts and a stairway at the west end of the block will serve the teaching departments only and will travel from the ground floor directly through the Library. The lifts and stairs at the east end will not have access to the tower floors until these are eventually taken over by the Library.

Only one of the four storeys the Library will occupy in the "base" of the building is a complete floor area. A large part of the ground floor on the north will be left open, apart from structural columns, to provide an all-weather concourse and to give a sense of spaciousness, through extensive vistas, to nearby courtyard areas. The fourth floor, on which there will be an open area for outdoor reading and relaxation, will be pierced by a large light well, 140 feet by 50 feet, which will flood natural light to the central part of the main floors just north of the tower. The third floor will have several mezzanine areas which, with the large second floor, will provide a spacious area with pleasant interior and exterior views. This method of uniting a full floor and an extensive mezzanine

area has proved very satisfactory in the School of Engineering Library, which was opened in 1967.

The "base", 220 feet long and 170 feet wide, will have projecting fire-resistant stairways on the north and a large entrance porch and foyer facing west. The building, which will be of reinforced concrete, was designed by the Ministry of Works.

REUNION BY 1973

The Vice-Chancellor said the University could now go forward again towards its goal of reunion at Ilam by 1973. "The University will have feelings of gratitude, relief and pleasure—gratitude to the Government for approving a project of such magnitude, to the University Grants Committee for piloting it through and to the Ministry of Works as the architect," he said.

"A tender has to be accepted and there are other important provisos standing between completing the University as a single unit by its centennial year," the Vice-Chancellor said. "But I have always had faith that objective was possible and now my faith is stronger than ever.

"The new building will be the most significant step in the building programme at Ilam since similar approval was given for the Faculty of Science. The transfer of a whole University to a new site is a large task. The move of the Faculty of Science in 1956 was the end of the beginning. This announcement is the beginning of the end.

"There will be feelings of relief in that the University can now expect to possess a fine Library which will not only be the hub of the University but which will, as the James Hight Library, commemorate one of our most eminent leaders and scholars," the Vice-Chancellor said.

The contract period for the new building is 40 months.

PRESSURE GROWS ON CITY SITE

Pressure on the University's city site is now as great as just before the Faculty of Science moved to Ilam. The total population on the city site is now 4120—it is expected to be 4150 when the official figure is taken at mid-year—compared with 4147 in July, 1965.

The pressure on the city site will continue to grow until the new Library-Arts block at Ilam and other buildings for the Faculty of Arts and the Registry are completed.

Giving these figures to Council, the Vice-Chancellor, Professor N.C. Phillips, said the total student roll at the end of March this year was 6148—exactly 400 more than the figure at July 1 last year. The roll was expected to be 6200 when this year's official figure was taken in July. Of the 6148, 1679 were first-year students.

Enrolment figures are shown below:

	1969	1968	
	28 March	31 March	1 July
Arts	2744	2431	2462
Science	1650	1493	1533
Law	354	347	348
Commerce	544	539	545
Music	59	67	72
Engineering	761	730	763
Fine Arts	137	164	163

University Totals (corrected for students taking more than one course)

All students	6148	5666	5748
First years	1679	1471	1484

Class Numbers (Figures in brackets are those for 1 July 1968)

Stage I over 250:—		
General Mathematics I	304	(239)
Psychology I	328	(303)
History I	365	(284)
Education I	395	(350)
Sociology I	416	(351)
Economics I	451	(394)
Applied Mathematics I	463	(406)
Physics I	537	(463)
Pure Mathematics I	605	(540)
Chemistry I	615	(529)
English I	884	(795)
Stage II over 150		
Economics II	150	(164)
History II	156	(172)
Engineering Mathematics II	221	(249)
Pure Mathematics II	231	(221)
English IIA	232	(222)
Stage III over 100		
Pure Mathematics III	100	(64)
English IIIA	109	(93)

PERSONAL

Professor J.C. Garrett (English) is to be Acting Vice-Chancellor during the absence on leave of the Vice-Chancellor, Professor N.C. Phillips, from the end of this month until early September.

Professor W.A. Campbell Stewart, Vice-Chancellor of the University of Keele, was a distinguished visitor to the University in April. A Commonwealth Prestige Fellow, Professor Stewart met members of Council and the Professorial Board at lunch, addressed staff, talked with staff and senior students in the Education Department and gave a public lecture on "Higher Education in the 1960s".

Founding Professor of Education at Keele in 1950, Professor Stewart was Director of its Institute of Education, Deputy Vice-Chancellor and then Vice-Chancellor. He took his Ph.D. at the University of London in 1947, taught at several schools and then lectured in education at a number of British and American universities. He is a member of the Inter-University Council for Higher Education Overseas, chairman of the education committee of the Y.M.C.A. and has taken a leading part in new teacher training activities in Britain.

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Professor O. Hood Phillips has been visiting Lecturer in Law over the last month. He is Barber Professor of Jurisprudence and sometime Dean of the Faculty of Law at the University of Birmingham and is a distinguished writer on constitutional law.

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Resignations accepted with regret by Council were those of Mr G.L. Austin (Physics), Mr H.J. Jelinek (Electrical Engineering) and Mr H.A. von Biel (Physics).

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Mr S.S.P. Hamilton, formerly District Superintendent of Education in Christchurch has been appointed a lecturer in education. Mr Hamilton graduated M.A. in history and taught in primary, intermediate and secondary schools from 1932 to 1948. He was a lecturer in history at Ardmore Teachers' College for four years, an inspector of schools in Otago, officer for special education and senior inspector of schools before becoming District Superintendent of Education in 1964.

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Mr K.P. Grimshaw, senior lecturer in electrical engineering at the Staffordshire College of Technology, United Kingdom, has been appointed a senior lecturer in electrical engineering. He graduated B.Sc. with honours in engineering from the University of London in 1949.

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Dr J.W. Blunt has been appointed a lecturer in chemistry. He graduated from this University with a first-class honours degree in 1963 and was awarded his Ph.D. in 1966 for studies in steroid chemistry and reaction mechanisms. He worked subsequently with Professor H.F. DeLuca at the University of Wisconsin and since mid-1968 has been at the University of Oxford studying in the laboratories of Professor Sir Ewart Jones.

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Professor I.M. Cowan, Dean of the Faculty of Graduate Studies and Professor of Zoology at the University of British Columbia, will be visiting the University on an Erskine fellowship from the beginning of September to the end of November.

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Miss J. St.G. Kerr, Reader in Accountancy at the University of Melbourne, will lecture in cost and management accounting at the University from early June to mid-August.

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Dr R.J. Johnston (Geography) has been awarded an Erskine fellowship to present a paper at a conference of the International Geographical Union Commission on Quantitative Methods in Warsaw and to visit Britain, the United States and Latin America for discussions in connection with research interests (urban and social geography-application of quantitative techniques). He will be away from August 1 to September 15.

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Dr W.T. Robinson (Chemistry) is to attend the International Summer School on Crystallographic Computing at Carleton University, Ottawa, and the eighth International Congress of Crystallography at Stoney Brook, Long Island, in August and September. He will also visit institutions in connection with his research interests, crystal structure analysis.

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Mr F.W. Fahy (Mechanical Engineering) is visiting Australia to present a paper on materials research in New Zealand to the Commonwealth Aeronautical Advisory Research Committee and to visit Australian Universities and industrial research organisations.

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Dr H.F. Priest (Psychology) has been awarded an Erskine fellowship to visit universities in Britain, the United States and Australia to study

developments in perception laboratories. He will leave early in November and return in mid-December.

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Dr A.G. Williamson (Chemical Engineering) has been awarded an Erskine fellowship to attend conferences in Warsaw, Rostock and Sydney and to visit institutions in connection with his research interests – thermodynamics and statistical mechanics of non-electrolyte mixtures. He will be away from mid-August to October 7.

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Dr M.S. Krishnan, a former Director of the Geological Survey of India, and third Commonwealth Foundation lecturer, lectured in the Geology Department last month on the evolution of the Himalayas. He also gave a seminar on the "History of the Gondwana Era in India".

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Graduate Support for University Urged

There was a need to mobilise graduate support for tertiary education, said the retiring chairman of the University of Canterbury Association, Mr N.B. Ullrich, when he was elected an honourary life member at the Association's annual meeting. He said this could perhaps be achieved by the establishment of a New Zealand federation of graduate organisations.

The election of Mr Ullrich to life membership was proposed by the retiring president, Mr W.R. Lascelles. He said Mr Ullrich built the bricks which laid the foundations for the Association and the University Club. Without him they would not have been established. Mr Lascelles said the custom of deferring an hounour such as this "till age has withered the vitality that won it," had been rejected by the Executive, which unanimously recommended Mr Ullrich's election because it wished to bestow the honour when it was deserved.

Seconding the motion, which was carried by acclamation, Mr T.W.C. Tothill, the incoming president, referred to Mr Ullrich's distinctive, signal service.

Thanking members, Mr Ullrich said establishment of the Association and Club had given him a great deal of personal pleasure and satisfaction, but nothing could have been achieved without the assistance of many persons and above all without the assistance and support of the University. He paid particular tribute to Brigadier J.T. Burrows, the Association's first president, Dr L.L. Pownall, who had given a tremendous amount of vigour and enthusiasm to the establishment of the Club and the Association, Dr Mary Harding, Miss Nancy Northcroft, Mrs E. Gorman, Mr J.W. Reed, Mr W. Goode, Mr Peter Yeoman, Mr N.D. Thomson, Mr J.R.M. Davidson, Dr David Poswillo, Mr A.C. Brassington and more recently Mr John Loftus, Mr V.M. Busby and Mr Lascelles.

Dining On Saturdays

The University Club has extended dining hours. From Saturday May 10, full dinners will be served in the Club on Saturday evenings.

Reservations will be required for dining at the Club on Saturdays. Members are asked to make reservations at the bar during the week or to telephone the Club (72-500) before it closes on Friday evenings.

In taking this step the Executive trusts that members will support it from the outset. Originally dinners were served only on Friday evenings. They were extended to week nights, other than Monday, a year later and have been well supported.

Mr Ullrich said he felt the time might now be ripe for the establishment of a New Zealand Federation of University Graduates. "There is, I feel, a need to strengthen intellectual and personal relationships between graduates and graduate organisations –

"(1) To mobilise graduate support for tertiary education.

"(2) To provide the opportunity for graduate organisations to achieve more effectively their objects by the mutual interchange of ideas.

"(3) To provide the machinery for the effective expression of graduate opinion on a national basis.

"Universities have been places where there has been, or should be, a complete freedom of thought and opinion – places where problems can be openly discussed without fear; places where new ideas can flourish and be judged on their merits without prejudice," Mr Ullrich said. "There are not very many places left in our society where this situation still exists and it is in this area that the intrusion of Government control and Government activity is potentially dangerous. It is here, I believe, that graduate organisations may find their most important role."

Mr Ullrich said that as far as the Club was concerned he would like to see in the immediate future its consolidation on the present site and eventually its establishment in the old Students' Union on the city site. Here the Club could be developed with the extension of facilities and services to members.

"I believe the Club and Association, although only in their infancies, will, with the tremendous membership potential, develop and become a most significant part of the University and the community," Mr Ullrich added.

MEMBERSHIP MOVE DEFEATED

A notice of motion aimed at widening the qualifications required for membership was defeated at the annual meeting of the University of Canterbury Association after a long debate.

Subscriptions for 1969 remain unchanged at $2 for members of the Association. For members of the University Club the subscriptions are: Town, single $25; town, double $30; Country, single $15; country, double $20. Entry fees also remain the same – town, single $16; town, double $20; country, single $10; country, double $16. New graduates will pay an entry fee of $10.

The new president of the Association is Mr T.W.C. Tothill and Mr V.M. Busby is the new chairman of the Club's Management Committee. Other officers for 1969 are: Vice-Presidents, Professor N.C. Phillips and Professor H.E. Field; honorary secretary, Mr N.D. Thomson; honorary treasurer, Mr J. Loftus; committee, Miss I.O. Orchard, Mrs R.K. Baker, Professor J. Vaughan, Dr M. Fahey and Messrs E.B.H. Dick and P. Yeoman.

In their annual report the retiring president, Mr W.R. Lascelles, and the retiring chairman, Mr N.B. Ullrich, expressed satisfaction with the range of Association activities last year, public relations, membership and the advance to financial stability.

In the formative years effort had in the main been directed to the functioning of the Club, which was the main social instrument of the Association, but it was hoped that progressively the Association would keep in view the objects for which it was formed, namely to act as a corporate focus for graduates and staff, giving support to and fostering interest in the University, the report said.

Membership stood at 935, an increase of 28 on last year. Of this number 112 were members of the Association only. The Club had 823 members, 558 of them husband and wife members. "University expansion is now so marked that membership should grow apace, bringing with the resultant increase more scope still for pleasant and useful association," the report said.

Visit by Professor E.E. Suckling

Professor E.E. Suckling, associate professor of physiology and biophysics at the Downstate Medical Centre, Brooklyn, is visiting the Zoology Department on an Erskine grant to lecture to students on nerve and muscle and to give seminars in instrumentation and other topics in biophysical research.

Professor Suckling, a New Zealander, worked for the Post and Telegraph Department before graduating in physics from Victoria University of Wellington. He then worked in Dunedin for three years with the Medical Research Council before going to New York in 1948. He gained his Ph.D. there and specialised in biophysics, particularly instrumentation and measurements. He has also worked on the electro-physiology of the heart, has been involved on projects on sleep for a number of years and is also interested in ultrasonic methods for biological research.

N.D.C. Report Backs Higher Spending on Education

The Educational, Training and Research Committee of the National Development Conference, opening in May, had done its work with liberality of mind, far-sightedness and a wisdom that rejected facile solutions and saw rather the need for many relatively unspectacular actions and processes, said the Vice-Chancellor, Professor N.C. Phillips, when commenting to Council on the Committee's report.

"There is much advice in the Report which has already been acted upon or is being acted upon by the University and by other New Zealand Universities; but the Report also contains many recommendations that call for our early action: one, chosen at random, is closer liaison with the Technical Institute. Nevertheless, we must be careful not to contribute to an undue proliferation of co-ordinating and investigating bodies, and I suggest that Council may think it wiser to defer formal action upon the Report until the National Development Conference has had an opportunity to consider it and until the Universities' Conference in late May has taken or prompted action on several mattars which the Report raises, such as the systematic compilation of statistical data on higher education," the Vice-Chancellor said.

"The ETR Committee has digested an immense volume of evidence, amounting to about 3000 pages of material; its own report runs to 112 cyclostyled pages, plus appendices; and it makes 62 formal recommendations. Though it lays most emphasis on the high economic return to be expected from more investment in human resources, it is far from being narrowly vocational in outlook; it shows an appreciation of the need for breadth of education, as an indispensable basis for specialisation, and for proper attention to theory, without which pupils and students will find themselves outrun by the speed of technological change. It is interested not only in raising the standard of living but also in improving the quality of life in New Zealand. My general impression is thet the committee has done its work with liberality of mind, far-sightedness and a wisdom that rejects facile solutions and sees rather the need for many relatively unspectacular actions and processes.

"The committee does not find anything drastically wrong with our education system, which it believes on the whole to be efficient; but it sees scope for enhancing the usefulness of our educational resources by well-conceived incentives and most of all by better co-ordination within the various parts of the education system, within the system as a whole and between the system, on the one hand, and on the other Government and the public, particularly industry and commerce. It has resisted the temptation, to which it could well have succumbed, to recommend short-term, cut-rate remedies, deriving from an obsession with costs. On the other hand, its own recommendations are far from extravagant. Recurrent State expediture on all types of education, which was $133m in 1967-68, is projected to $200m in 1972-73 and $286m in 1978-79. Of this last figure, only $5m arises from the committee's recommendations. Operating costs for the universities, $19m in 1967-68, are set at $41m in 1972-73 and $69m in 1978-79 – a much more rapid rate of growth than for the whole education system. From being a seventh, the university share rises to almost a quarter, for reasons which need no elaboration here.

"Those parts of the report which most concern the universities deal with research and education. Larger sums for university research are advocated, and there are concrete proposals for directing more research including research in the social sciences towards specifically New Zealand problems. I think we shall welcome, indeed we have already done so, closer association with Government and industry not only by grants but also by such devices as temporary exchanges of staff and by the siting of Government research organisations on or near university sites. These ideas are not new but they receive fresh emphasis.

"On the educational side, there is a plea for greater publicity for the study courses already being offered and for more courses likely to benefit the economy, including courses for top and middle management. Much is made of the need for closer co-operation between universities and technical institutes such as by the extension of cross-crediting, by the transfer of students and possibly by simultaneous study at both institutes and universities. Similarly, a need is seen for closer relations between the tertiary and the secondary sectors of education."

The report came down unequivocally against any ill-considered restriction of admission to the university for a variety of reasons, the Vice-Chancellor added. It said: "The case for a very strict entrance requirement, sufficiently high as almost to guarantee 100 per cent success, can be argued; but it is open to the gravest doubt whether a limitation of this severity would have even a remote chance of supplying the country's needs for graduates and other qualified persons."

New Members of Association

The following new members have been elected to the University of Canterbury Association: Mr and Mrs J.E. Ryan, Mr J.B. Mackintosh, Mr I.M. Campbell, Mr R.A. Caldwell, Mr and Mrs A.U. McCurdy, Mr B.D. Kinley, Miss E.M. Couston, Mr D.P. Page,Professor and Mrs W.K. Jackson, Miss A.M. Johnston, Mr A. McL Cookson, Mr G.H. Perkins, Mr J.P. Goldsmith, Mr J.S. Ryan, Dr and Mrs W.B. Barlow and Mr J.H. Power.

"LURCH TO REACTION" IN BRITISH EDUCATION

A warning that British society was confronted with a "massive lurch" towards reaction, seen in racism, demands for the return of hanging and the end of the welfare state, and now in education, was given by Mr Short, Secretary of State for Education and Science at the annual conference of the National Union of Teachers. He said that all who were concerned with education were facing probably the greatest crisis of this century. Mr Short also described a recent speech on genetic factors in education by Lord Snow, a former Labour Minister, as "reminiscent of Dr Goebbels."

Mr Short's remarks represented a significant attack by a senior Minister on the mood of illiberalism that is sweeping through Britain. It means that the debate on education in particular has been joined at the highest level. As an example of the anti-egalitarian backlash in education, Mr Short instanced the so-called black paper. *Fight for Education,* a miscellany of attacks on permissive and progressive methods in education which was published last month. Its authors, Mr Short said, were not Alf Garnetts, but such articulate critics as Mr Kingsley Amis, Mr Angus Maude, Mr Robert Conquest, Mr Enoch Powell, Lord Snow, and Mr A.M. Hardie, Pro-Vice-Chancellor of Bath University.

He continued: "In my view the publication of the black paper was one of the blackest days for education in the past century. In your perfectly proper preoccupation with the problems of physical provision for education you should not fail to see the significance of the educational backlash. It is in this, and not in the slowing down of the rate of growth, where the real mortal danger to education lies at the moment. It is a danger to both the content, method and organization of education which we have evolved over the past 30 years".

Mr Short said that the immediate trigger that released the backlash might have been the activities of a tiny minority of students. If they were the end product of the system, the man in the street said, there must be something sadly wrong with it.

Yet there was more to it than that. He said. "We should indeed be blind if we did not see this in its wider context of a massive lurch in society towards reaction. It is the reaction of racism. It is the demands for capital and corporal punishment, for the ending of the welfare state, and now reaction in education." It was much more than an attack on the comprehensive secondary school, he said. It was an attack on liberal ideas on education generally.

"To those of us who have been brought up in the free progressive atmosphere of English education a great deal of the black paper appears to be nothing but archaic rubbish; but we should be extremely foolish if we ignored it or underestimated the impact it may make because it is so ridiculously and so outrageously behind the times. The very eminence of some of its contributors alone will ensure the widest possible audience for it."

The real issue, he said, was not merely between the rigorous older discipline and the modern child-centred approach. It was elitism against egalitarianism, authoritarianism against democracy. One of the great glories of the modern approach in education was that we could have egalitarianism without sacrificing the gifts of the more able.

" Much Superior " Computer Facilities Overseas

Every university or research institution he visited had access to much superior computing facilities than those available in this University, said Mr R. Shepherd, Reader in Civil Engineering, in a report to Council on an Erskine fellowship which took him to the Fourth World Earthquake Conference and to earthquake engineering research and teaching institutions earlier this year. "By New Zealand standards Canterbury University computer users have been generously treated by the University Council, but this only serves to emphasise the totally inadequate provisions made in the New Zealand University system of what are now considered essential basic tools in almost all tertiary teaching and research activities," he said.

"If it proves possible to enlarge the core storage of our IBM360/44 this year, and to purchase some much-needed relatively inexpensive ancillary equipment such as card punches, we may manage to maintain a position only one generation of machine removed from the major University installations. Inability to hold even such a secondary position must inevitably effect the scope of the work which we can undertake and consequently jeopardize our recruiting and retention of first class staff and graduate students," Mr Shepherd said.

On a visit to the University of British Columbia Mr Shepherd was shown over the extensive computer facilities by Professor B.R. Penfold (Chemistry), who is on leave there. They discussed possible developments of the Canterbury system and also contacted Dr A. Fischer, formerly a Reader in Chemistry and now on the staff of Victoria University on Vancouver Island, where one of the few IBM360/44 university computer systems was installed.

"Our Canadian counterpart has a central core storage eight times larger than ours in addition to a much more extensive range of peripheral equipment," he said. "I was told that after undergoing a long period of operational difficulties the Victoria IBM 360/44 system is now performing reasonably satisfactorily."

Mr Shepherd said New Zealand science-orientated school leavers were strongly attracted to engineering studies and consequently engineering schools probably recruited a disproportionate number of top quality undergraduates. The B.E.(Hons.) standard was high with the result that those students choosing to continue to study for higher degrees were in the main, very able and, he believed they compared favourably with the graduate students in any of the institutions he visited. "When properly advised our graduate students have shown themselves capable of undertaking research projects of exceptional intellectual standard and this largely offsets the disadvantages under which we labour by virtue of having restricted material facilities for earthquake engineering research," he said.

"Nevertheless there are minimum standards below which we cannot allow the level of our facilities to fall without risk of inhibiting the full development of our student abilities. In some fields, notably digital computing systems, New Zealand is in danger of slipping too far behind the rest of the university world.

"In the last decade we have developed some rewarding and still promising fields of earthquake engineering research. We are up with the front runners and will continue to endeavour to justify this position."

STUDENT UNREST

Mr Shepherd saw evidence of considerable student unrest in Berkeley and Tokyo. "At Berkeley an attempt was being made to close the campus by the strike action of a minority of undergraduates. Some $500,000 worth of damage was done to the Wheeler Hall Auditorium one night during my stay, by unknown arsonists. The only readily visible sign of discontent was provided by pickets at the campus gates and some small groups of noisy demonstrators. It is evident that racial agitations are largely responsible for the continuing unrest at Berkeley. No disruption of the work of the engineering departments occurred during my visit.

"At Tokyo the situation during my stey was relatively quiet as the riot police had removed some six hundrad violent students from Tokyo University buildings in mid-January and many of these were still in gaol. Nevertheless, all classes in the University had been suspended and the staff had only just been able to return to their offices after being excluded by student activity for many weeks. The campus had the appearance of a battlefield. Glass from hundreds of broken windows littered the grounds and large areas of footpaths had been denuded of their concrete paving slabs by rioting students who had removed them under cover of darkness, carried them onto the roofs of the University buildings and subsequently thrown them onto the University officials and riot police below.

"The unrest in Tokyo seems to be organised by left wing student groups supported by many genuinely moderate students who desire reforms of a University system which, by our standards, appears extremely restrictive," he said.

How to Prevent Obsolescence

Forty per cent of a man's professional time has to be spent in acquiring new knowledge, according to an equation presented by E.S. Sellers at a conference on chemical engineering education at Cambridge last year attended by Dr R.B. Keey, senior lecturer in the Chemical Engineering Department.

In a report to Council on his study leave, Dr Keey quotes the equation on "Obsolescence of Learned Knowledge" as follows:

Let S = stock of useful knowledge,
F = fraction which becomes obsolete in 1 year,
L = learning rate $(yr)^{-1}$
R = fraction of working time (t) spent on learning new thing.

Then for a man to remain competent,
gain of a new knowladge = loss or obsolete matter

$$LR + ds/dT = FS \quad (1)$$

At least, the man must just "keep abreast", thus,

$$S = S_0$$
$$\text{and } ds/dt = 0 \quad (2)$$

where S_0 is the initial stock of knowledge after graduation. If the undergraduate course lasts four years, then the learning rate is given by

$$L = S_0/4 \quad (3)$$

Combination of equations 1 to 3 yields

$$R = 4F \quad (4)$$

Thus for a 10% obsolescence rate, 40% of the man's professional time has to be spent in acquiring new knowledge!

Cut-Cost Plan for Expansion

A national plan to expand British universities, polytechnics and colleges of education while reducing the costs of higher education is being urgently prepared in Whitehall. The U.G.C., Vice-Chancellors and the Government are expected to have the plan ready by October. By 1982, the number of British students may double from the present 380,000 to 750,000.

The plan will ensure that unnecessary duplication between universities, and between polytechnics and universities, is avoided. It will show where universities and polytechnics could share facilities, particularly for science and technology, and for student welfare.

The background to the discussions is the certain prospect of greater demand for higher education, especially from the late 1970s, when the number of people aged 18 will rise from the present trough of about 740,000 to more than 900,000.

As the general level of education in the population rises and more pupils stay at school longer a greater proportion of those aged 18 will qualify for a higher education. One prospect is that one in three of them may be qualified for university, college or polytechnic instead of the present one in five.

It is imperative in the next decade that universities and polytechnics, the most expensive educational sector, should be expanded more cheaply than in the past. On this point the attitude of the Treasury and of the universities will be crucial.

If the Treasury says that the economy in the 1970s can support only the same proportion of 18-year-olds entering higher education – about 17 per cent a year – much will depend on what savings the universities can offer.

If they can reduce student costs, many candidates who would otherwise be turned away will be able to get a place. Once again it looks as though the universities will rise to the occasion. They will tell the Government that as long as the standard of what they offer students is not affected, they are prepared to make economies.

Continued Campus Unrest Forecast In U.S.

(By Bryan MacArthur)

Student revolt in Britain celebrated its second birthday with a flop at the London School of Economics and some observers are wondering if campus unrest is on the wane. Such complacency is dangerous. A prophet in America, indeed, suggests that by 1980 all students will be moving in the direction pointed by the student activists of today and that by then the student movement will show all the features of a successful social movement. Anyone tempted either to complacency or disagreement might ponder the small uprisings recently at the unlikely institutions of Leicester College of Education and University College, Swansea.

The prophet is Dr Nevitt Sanford, director of the Institute for the Study of Human Problems at Stanford University, and his prophecy is made in the new American book, *Campus* 1980, *the Shape of the Future in American Higher Education* (published by Delacorte Press).

One of the omens, according to Dr. Sanford, is the sharp increase among students in stated preferences for careers in teaching or government service, set against a decline of interest in business: less than 3 per cent of freshmen at Stanford in 1966 stated a preference for business.

Another study at Stanford showed that one-third of the men and two women out of every five put as major concerns of their future lives such items as "emotional well-being", "being liked and respected by others", "affection and love", and "developing a personal identity". Along with this Dr Sanford suggests that nowadays university students are seeking an education in the old-fashioned sense, and attempting to defer their commitment to a specialism and a career.

A study of the family backgrounds of student activists suggests, moreover, that such trends in student values will be more pronounced by 1980. Student activism is associated with affluent and highly educated parents, Dr Sanford argues. (So much for the allegation about Yahoos.) One of the safest predictions is that affluence will continue to increase, that an increasing number of students will be from highly educated families, and that there will therefore be more student activists on the campus.

Dr Sanford adds: "The fact that student activists (at Berkeley and Chicago) were, in the majority of cases, acting in accord with their parents' values shows that what was involved was no transitory phenomenon but, more likely, a deeply based social trend.

"The students knew quite well what they were doing, could be quite explicit about their values, and were able to connect their actions with a searching analysis of their university and their society. Not only will students of this new breed be around in greatly increased numbers in 1980, but there will still be plenty for them to protest against.

"On the national and international scenes, students will constitute a strong and increasingly effective force for more democratic and more human policies, while, on the higher education scene, student demands for a better education and for a larger role in determining their own affairs will have spread to virtually all institutions in the country."

Dr Sanford goes on to argue that the spread of unrest will depend on the ability of universities and colleges to listen to what students are saying and to adapt themselves to meet the sort of changes for which they will be asking. Many university officers may even grow to enjoy stimulation and change.

His analysis does not stop there. Along with the increased proportion of activist undergraduate students, he suggests, activist students will have moved into the graduate schools, or will be working as assistant professors, where they will support undergraduate movements for reform and awaken "suppressed activists" among the older professors. Others will be outside, also lending support.

"Many parents will discover that the sort of education being promoted by the new alliance is exactly what they want for their sons and daughters, and an interest in humanistic education, so long latent in American society, will be touched and released. Sitting in his office overlooking the Berkeley campus the other day, Dr Sanford offered the suburban vote for Eugene McCarthy last year (a vote from the educated middle-class) as a straw in the wind.

So much for complacency. An equal danger, however, is apoplexy on the part of students' elders. On this, one of the most penetrating articles I have read was written in the *Atlantic Monthly* by Martin Duberman, under the heading: 'On, Misunderstanding Student Rebels.'

He points out that since the past two generations of students have been denounced equally vehemently for their apathy in the 1950s and for their passion in the 1960s, it must be the fact of their youth that makes them the target for so much murderous abuse. Yet although adults struggle to confine students to their youthful role, all the evidence supports the claim that students today are both intellectually and physically more mature.

Some of the students' critics, moreover, are so obsessed with manners that they forget matters. They are so eager to denounce student rebels that they blind themselves (and others) to the serious questions that the new generation is raising about the nature of education, the proper functions of the university (a more critical question in America), and the very quality of society and life.

He adds: "The lack of interest taken by most professors in most students, their refusal to reveal or engage more than a small share of their own selves, have made many of the best students cynical about knowledge and about those who purvey it. They hoped to find in their professors models on whom they might pattern their lives. Instead they find narrow specialists busy with careers, with government contracts and with the augmentation of status and income.

In an echo of the Sanford thesis, he points out that student activists are not rebelling against their parents' values, but applying them to the institutions in which they find themselves involved. They are determined adults who have found their education and their society wanting.

"It is a generation for which we should be immensely grateful and of which we should be immensely proud. Instead we tell them that they are frenzied children; that we will try to be patient with them but that they should not push us too far; that they, too, in time, will grow to understand the real ways of the world. To say that this condescension or blindness on the part of the older generation is a 'pity' does not fit the dimensions of the case. It is a crime."

Over the past week several members of the L.S.E. have made almost similar points. Students, for instance, and quite rightly, cannot understand a society that tolerates the sufferings of Vietnam and Biafra, or which seems complacent about race hatred, mass starvation, poverty in the midst of plenty, and so much homelessness.

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Aid For New Industry

"This is a very good example of the way in which the Department of Chemical Engineering can contribute to the establishment of a new industry," said the Vice-Chancellor, Professor N.C. Phillips, when he told Council of a contract with the Department of Scientific and Industrial Research to continue the carbon anode project being carried out in the department.

The DSIR has offered $2500 a year for two years to help investigate the use of New Zealand-made carbon anodes from Stockton No. 2 coal for use in the aluminium smelter to be built at Bluff. The carbon anodes are used to reduce aluminium oxide to aluminium in the furnace.

The Vice-Chancellor said Dr T. Hagyard, Reader in Chemical Engineering, had been working on this project for five or six years and now that Comalco hed indicated that it was going ahead with the smelter the tempo of research was being stepped up. The grant would be used to support a technical assistant.

The Vice-Chancellor also reported that a research contract had been accepted for Professor Leon Phillips (Chemistry) from the United States Air Force Office of Scientific Research for a sum of $U.S.25,000 for research into gas phase reactions of atoms, radicals and simple molecules.

Other gifts received were:

From the Australian Minister of National Development, the Hon. D.E. Fairbairn, to the School of Forestry – 12 sets of Eucalypt card sorting keys and a collection of publications from the Australian Forestry and Timber Bureau. Mr Fairbairn advised that in future these publications would be sent gratis to the School.

From Messrs C.S. Barker, A.L. Poole and J.W. Syme, further substantial donations for the Forestry collection.

From the Sierra Club, New York – 9 books of geographical interest.

From Emeritus Professor George Jobberns to the Geography Department, a gift of volumes, including runs of Geographical Journals.

Making Ends Meet In U.S.

Advice to those taking study leave in the United States is contained in a report to Council by Professor L.F. Phillips (Chemistry) on his leave spent as a Harkness Fellow from November, 1967, to February this year in Berkeley, Santa Barbara and Seattle.

He said that for a family of four the minimum that could be allowed for groceries was $35-$40 per week. Supermarket prices vary a great deal, even within a single shopping centre; some supermarkets, e.g. "Lucky" stores, offered discount prices. Thus, as with almost all things in the U.S.A., it pays to shop around. A furnished two-bedroom apartment or small house in a quiet neighbourhood commonly cost between $200 and $280 per month. Other expenses, such as telephone, electricity, clothing, were about the same as in New Zealand.

"Heating can be a dear item; in Seattle during a cold month we paid $40 for fuel oil alone. Gasoline costs no more in the U.S.A., but the cars use more of it because of their large size and the long distances travelled. Entertainment is relatively costly. For example if you cook a barbecue for some friends the meat alone will cost about $2 per person, or if you go to a movie it will cost at least $2 for the ticket. Dinner at a reasonably good restaurant costs $7-$12 per person. Haircuts, at $2.50, are evidently too expensive for most students; we found that a $10 home hair-cutting set, wielded by my wife, was a first-class investment. The price paid for retail goods is usually 5% or 6% more than the marked price because of state sales taxes.

"Before visiting a physician or dentist it is most advisable to make a telephone enquiry as to his scale of charges. The first visit to a doctor is commonly a financial trauma, especially if his initial examination can be made to involve some laboratory tests. Probably the best solution here is to have at hand a copy of your medical record supplied by the family doctor at home. In addition to such hospital insurance plans as Blue Cross or Blue Shield, and major catastrophe insurance, it is very helpful to have '$10 deductible' insurance to cover smaller medical expenses, at least for the children in the family.

"Motels typically cost from $12 to $20 a night for four persons, depending on standard and location (an extra $2 if one of the persons requires a child's cost, or crib). Probably camping equipment would be a good investment. Membership in the New Zealand Automobile Association entitles one to enjoy the many valuable services provided by the American Automobile Association, including maps, itineraries, and free towing.

"Children in America start elementary school one or two years later than they would in New Zealand, and it is usually necessary for a visitor to arrange a compromise between the level that his New Zealand-educated child should be at, and the level in the U.S. system dictated by the child's age. To ensure that our 6-year-old son would be able to enter Standard I with his contemporaries when we returned it was necessary for my wife to tutor him after school and during the summer vacation. He entered three schools without any problems of adjustment; probably the relatively high social maturity of American children and the emphasis that is placed on getting along well with other people were major factors in this," Professor Phillips said.

The Prospects of Protesters

Roughly one in three employers questioned by the Commarket Careers Centre in London say they will not offer jobs to students active in the current wave of protest movements. However, results of the centre's survey to find the reaction of potential employers dominating the graduate recruitment scene show that many companies see protestors as articulate future leaders who develop when given responsibility.

Generally speaking, Commarket says in a summary of its findings, employers are in favour of taking on students involved in protest movements "as they are looking for signs of involvement and awareness".

International employers showed a distinctly more liberal attitude than national employers. This tended to suggest that they were more interested in seeking out individualistic traits in their recruits. The smaller national organizations probably find it more difficult, with the limited range of departments available, to absorb outspoken and aggressive personalities.

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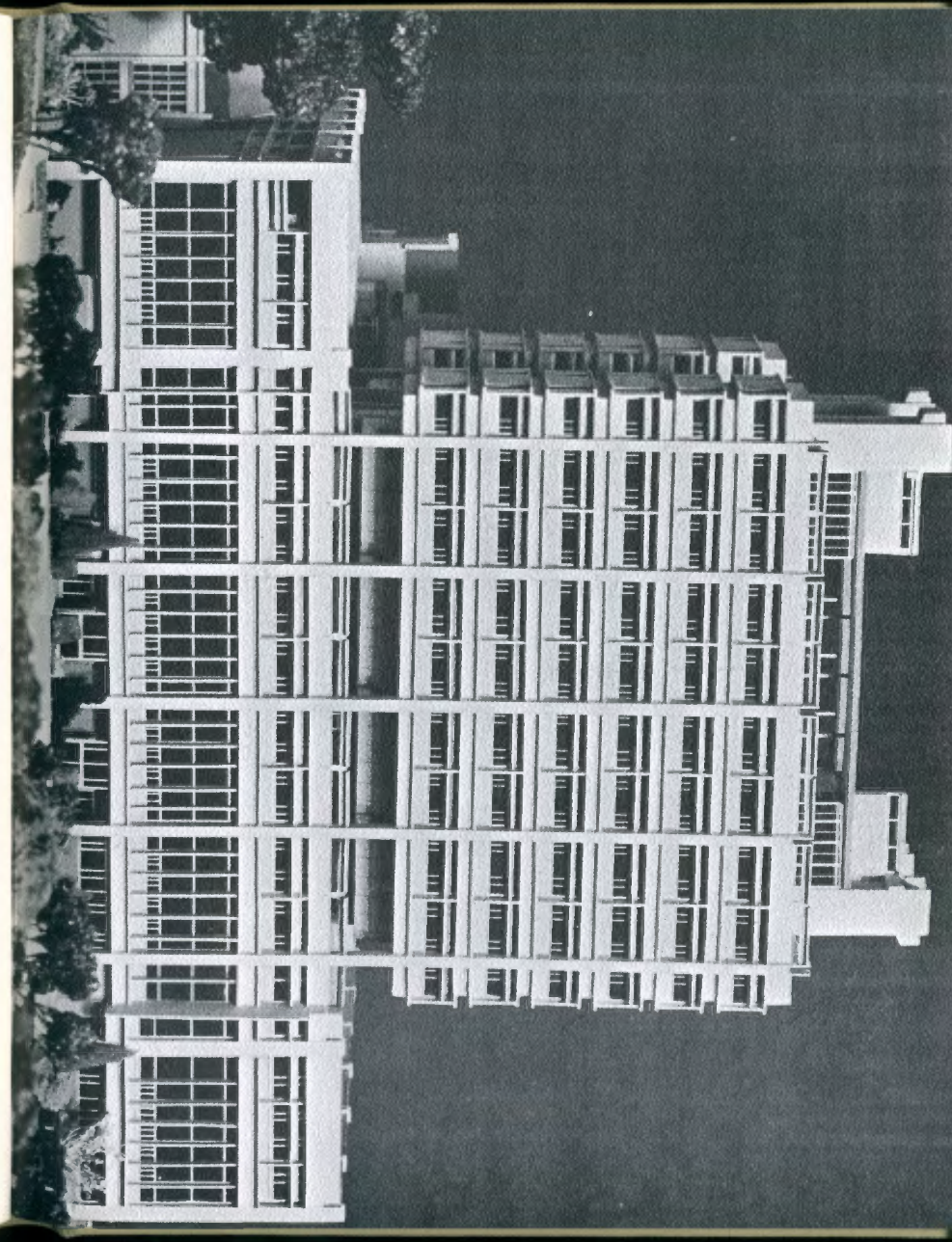

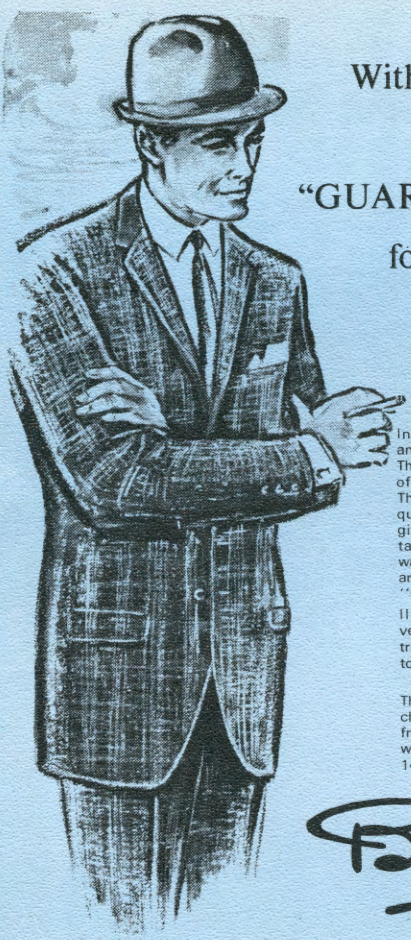

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