The University of New South Wales

GUIDE

TO

THE UNIVERSITY OF NEW SOUTH WALES

AT

KENSINGTON

1959

The University of New South Wales is located mainly at three major centres, Kensington, Broadway and Newcastle. This pamphlet relates to the activities at Kensington.

THE UNIVERSITY OF NEW SOUTH WALES

The University of New South Wales was incorporated in 1949. The objects of the University are: to provide facilities for higher instruction and advanced training in the various branches of technology and science in their application to industry and commerce; to aid by research and other suitable means, the advancement and development of science in its application to industry and commerce.

Four features distinguish the University.

* In all courses within the University, a certain amount of time is devoted to subjects of a general educational character outside the student's technical field.

* In general, courses in the University are available on a part-time basis, as well as a full-time basis. This means that students, who, from choice or from economic reasons, cannot take full-time courses, can pursue the same courses of study and obtain the same degrees, while supporting themselves in employment, and gaining valuable practical experience.

* Practical training in industry forms an integral part of most courses.

* The University is authorised to establish and maintain branches, departments or colleges at Newcastle, Wollongong, Broken Hill and other places in New South Wales. The Newcastle University College was established in 1951. As well as courses in Science, Engineering and Architecture, it provides an Arts Course. Courses are also available at Wollongong, Broken Hill, Orange and Lithgow.

In addition to extensive research programmes initiated in various Schools, the University undertakes, on request, special investigations or research on problems of applied science or technology.

The growth of the University has been remarkable. There are at present over 6,000 students in the University at all centres and the total full-time staff numbers 1,035, the full-time teaching staff, 533, and the part-time lecturing staff, approximately 400.

Since its inception, 868 students have graduated from the University, and these graduates have included 39 Doctors' and 90 Masters' degrees.

THE KENSINGTON SITE

The 70 acre site at Kensington was originally a race-course. This is not unprecedented, as just over a hundred years ago the University of Sydney also began to develop on what had been a race-course.

The buildings and equipment on this site represent only a portion of the University of New South Wales.

The N.S.W. University of Technology* was a development from the Sydney Technical College. Naturally, such a development could not take place overnight, with the result that many activities are still maintained in the buildings at Broadway, where the Schools of Applied Chemistry, Civil Engineering, Electrical Engineering, Mechanical Engineering and Biological Sciences are located. These schools are gradually being moved out to Kensington as more accommodation becomes available.

The Main Building

The first permanent building at Kensington was officially opened on April 16, 1955.

The main building faces south, with a facade 450 ft. long and 61 ft. high at the main entrance. The entrance is emphasised by a break in the facade where a sandstone fin carries the mural sculpture.

This sculpture symbolises the ideal that every student of the University should be to some extent an artist, giving due consideration to aesthetic factors in all his professional activities.

The Falconer, representing the Technologies, keeps his eye on the aesthetic, represented by the Dove, the symbol of beauty, while reason, symbolised by the Falcon on a leash, is restrained.

The building has four floors. Four wings run north and south behind the main block.

Brick was used because at the time structural steel in sufficient quantity was not available. The interior blends coachwood, in the panelling and furniture, with colour in the corridors and rooms.

* The name of the University was changed to The University of New South Wales on 7 October 1958.

The walls and ceiling of the foyer are lined with coachwood. The theatre, seating 300 and panelled with coachwood, recalls the shape of a Greek amphitheatre. The curtains carry an aboriginal design in blue-grey and purple-brown. Two 35 mm. and two 16 mm. arc projectors enable continuous shows to be projected. The stage lighting system is of extremely high standard. Property room, dressing rooms and outside access make for smooth production of stage functions. It is used by the National Institute of Dramatic Art.

Walls and ceilings of the corridors are painted in contrasting colours, which broaden the vistas, creating a feeling of space and dignity. The corridor on the third floor is broken in its length by the Architectural Exhibition Gallery.

The cafeteria, the Department of Production Engineering, Physics Workshop, Textile Technology, and the Electronic Computing Laboratory and the Department of Nuclear and Radiation Chemistry are on the ground floor; Administration, the Theatre, and Mining Engineering on the first floor; Applied Geology, Applied Physics, and Humanities on the second floor; the School of Architecture on the third floor.

THE KENSINGTON COLLEGE

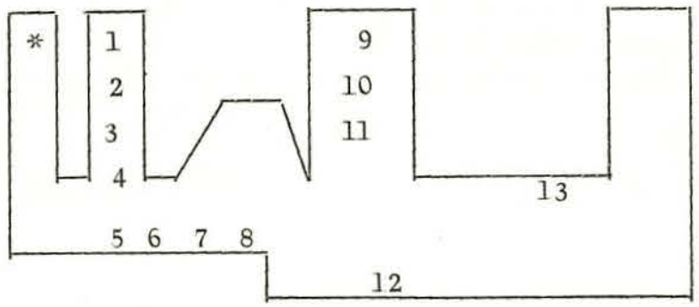
As the new residential College has been built on elevated land at the north east corner of the Kensington site, rooms on three sides command extensive views.

The bedrooms, on two floors, surround two internal courtyards, and a three storey wing and tower look across the main University development. General access to the bedrooms is by broad verandahs. Opening off the verandahs are lobbies, each serving four bedrooms. Beds and wardrobes are built in and storage space is provided.

The College accommodates 170 students, some resident staff and tutors. The building is self contained with common rooms, dining rooms, servery, kitchen, garage, etc.

The College building has been designed to reflect something of the Australian way of life, with ample verandahs and terraces. Landscaping and sculpture enhances the appearance of the courtyards.

GROUND FLOOR



Front

* Cafeteria
1 The J. I. Carroll Magnet Laboratory
2 Electronics Laboratory
3 Physics Workshop
4 Glass Blowing Workshop
5 Metal Cutting Laboratory
6 Engineering Inspection Laboratory
7 Methods Engineering Laboratory
8 Metrology Laboratory
9-11 Textile Technology
12 UTECOM Computing Laboratory
13 Department of Nuclear and Radiation Chemistry

DEPARTMENT OF PRODUCTION AND INDUSTRIAL ENGINEERING

Production engineers develop, operate and control the processes of casting, forging, welding, stamping, moulding and machining. They must also be familiar with the materials, machines and costs of such processes.

The degree course in Industrial Engineering, the first in an Australian University, is designed to train men with engineering ability whose interest lies in manufacturing operations and the responsibilities which attend the planning, developing and control of these operations.

The Metal Cutting Laboratory contains a wide range of equipment. By means of dynamometers and recording equipment, students are shown how to measure cutting forces, cutting speeds, surface finish, the work and power required by machining components, and the times for various operations.

Improved methods of production is the main subject studied in the Methods Engineering Laboratory. This ranges from the layout of plant to the detailed movement of operators on the assembly line.

The Metrology Laboratory houses a selection of instruments of extremely high precision for testing standards in gauges, etc., normally used in the production of better quality equipment in the engineering factories of this country.

THE SCHOOL OF TEXTILE TECHNOLOGY

Students can choose from four courses. Textile Chemistry, Textile Engineering, Textile Physics, and Textile Manufacture - all of which have a common core. On graduation they will help to meet the technological requirements of the textile industry.

THE ELECTRONIC COMPUTING LABORATORY

Recent developments in Science, Technology and Commerce have made it necessary to perform large numbers of complicated calculations and to process vast quantities of data. This has resulted in the development of high speed automatic computers (electric brains) such as UTECOM (University of Technology Electronic Computer).

Installation of this machine marks a major step towards providing computing facilities in Australia comparable with those overseas.

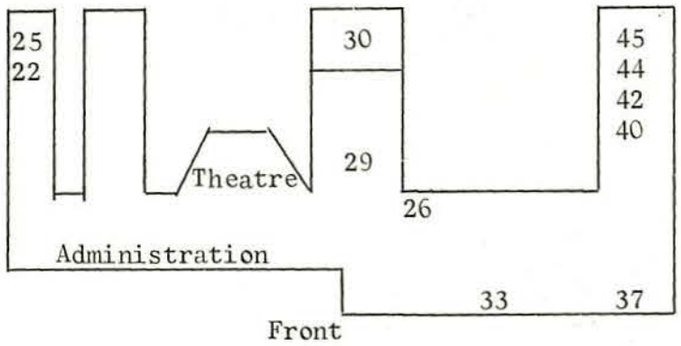
THE DEPARTMENT OF NUCLEAR AND RADIATION CHEMISTRY

This laboratory is the first to be designed and built in Australia specifically for nuclear and radiation research.

It provides the means for graduate teaching and for handling radioisotopes for research and industrial applications.

Careful attention has been given to the safety of research workers and of those working nearby and of the public generally.

FIRST FLOOR



25 Physics Second Year Laboratory
22 Lecture Room
30 Fuel Technology Laboratory
29 Examinations Branch
26 Guidance Officer
31 Fuel Laboratory
36 Ventilation Laboratory
37 Mineragraphy Laboratory
40 Rock Sectioning Room
42 Assay and Analytical Laboratories
44 Mineral Dressing Laboratory
45 Pilot Plant Laboratory

ADMINISTRATION

The University is governed by a Council, with the Vice-Chancellor as chief executive officer.

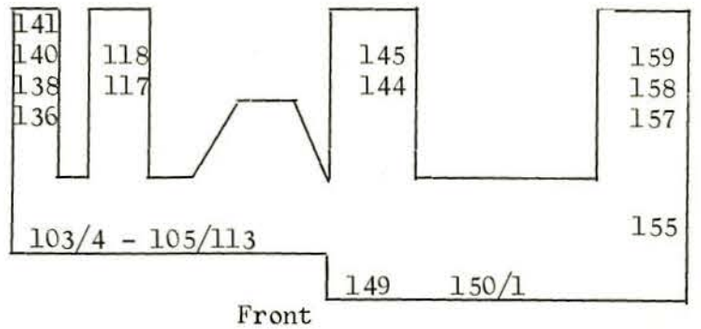
The detail of University business is organised through a number of Standing Committees:-

Executive, Finance, Personnel, Academic, Buildings and Equipment, Library, Public Relations Committees.

The Professorial Board furthers and co-ordinates the work of the Faculties. The six Faculties are composed from the nineteen Schools of the University.

Administration, apart from the work of the Schools, is carried out through two Divisions - under the Registrar, and the Bursar, respectively.

SECOND FLOOR



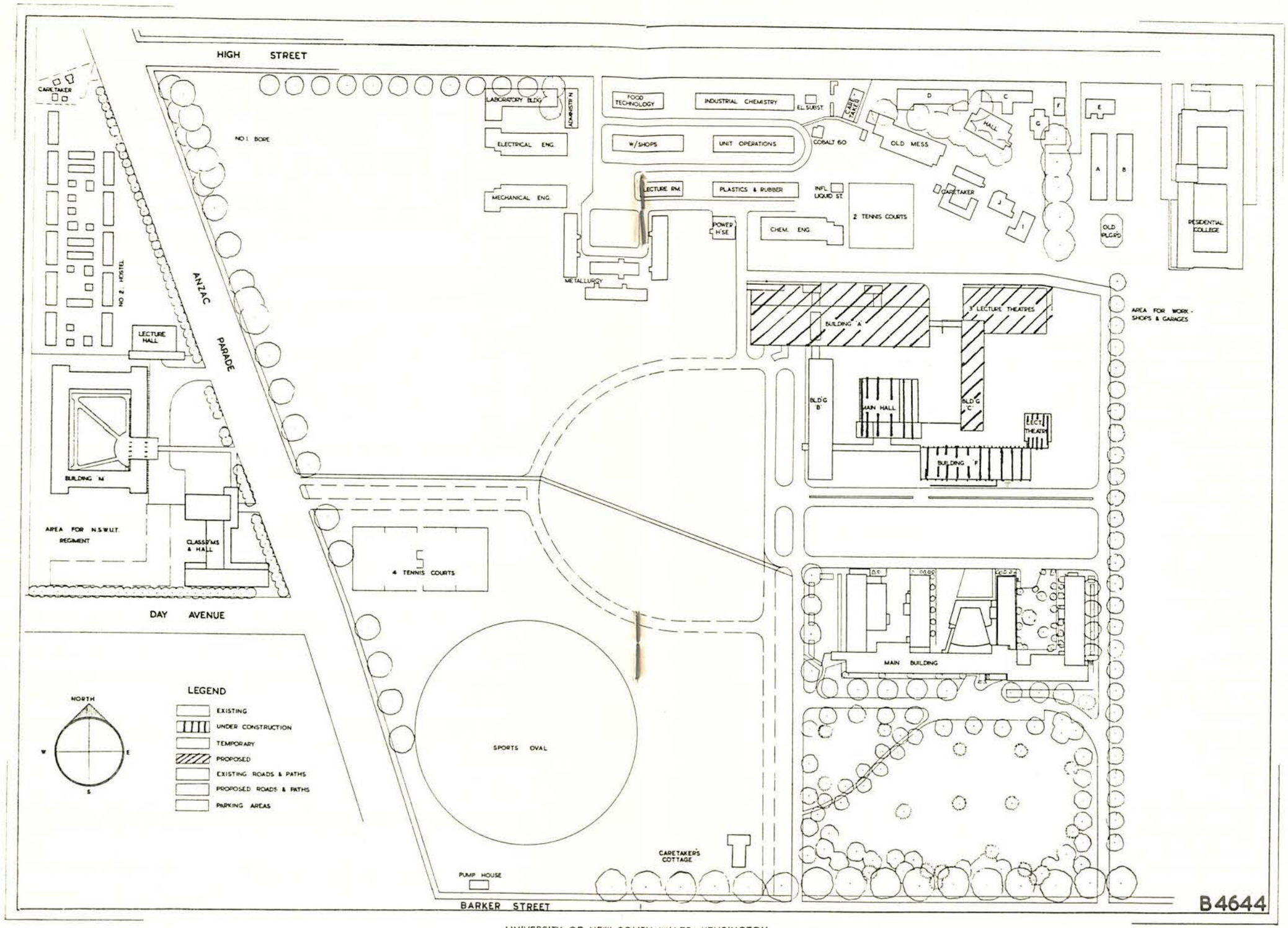
141 First Year Physics Laboratory
140 Lecture Room
138 Teaching Dark Room
137 Lecture Room
136 Nucleonics and Neutron Physics Laboratory
105 Vacuum Physics
106 Staff Workshop
107 Lecture Room
108 Physics Library
109 Acoustics Room
110 Research Laboratory (Including the J. I. Carroll X-Ray Laboratory)
111A Optics Test Room
112 Optics Polishing
113 Optics Grinding
117/8 Lecture Rooms (Humanities)
146 Studio (Architecture)
145 Building Science Laboratory
144 Lecture Theatre (Architecture)
147 Women Students Common Room
148 Preparation Room
149 Geology Laboratory
150 Lecture Room (Applied Geology)
151 Mineralogy Laboratory
155 Lecture Theatre
157 Research Laboratory
158A Clay Research Laboratory
159 Geological Museum
Photo-geology Laboratory
Geophysics Laboratory

THE SCHOOL OF MINING ENGINEERING AND APPLIED GEOLOGY

As the geologist, geophysicist and mining engineer play complementary roles in winning valuable raw materials from the earth, these aspects of technology are linked in one School.

Degree courses in Mining Engineering or Applied Geology lead to the degree of Bachelor of Engineering.

Students obtain approximately 18 months industrial experience before graduation. This, coupled with their theoretical training in the fundamental subjects of



UNIVERSITY OF NEW SOUTH WALES, KENSINGTON

science and engineering, and their practical courses in well equipped laboratories, have enabled many of them, after graduation, to rise rapidly to responsible positions.

The Department of Mining Engineering is well supplied with laboratories and equipment for student instruction and research.

Research and student training in the Geology Department is directed toward the study of industrial raw materials, their source of supply and their commercial application and also to the important study of rock structures and properties.

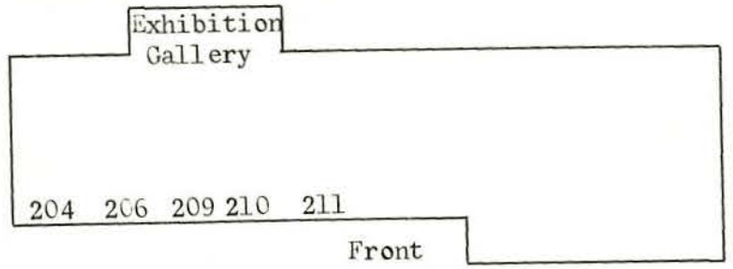
THE SCHOOL OF APPLIED PHYSICS

The course in Applied Physics is designed to equip students for work in industry and in the field of applied science generally. The course, which extends over four years, provides a thorough training in the fundamentals of physical science and in mathematics, and particular emphasis is placed on technological applications. The practical training includes courses in physical techniques; for example, high vacuum, electronics, photometric photography, and courses in formal experimentation designed to train the student in research techniques. The extra-mural training includes substantial periods in industry in each of the second and third years.

THE SCHOOL OF HUMANITIES & SOCIAL SCIENCES

All undergraduates of the University, whatever their Faculty, must take courses in the Humanities and Social Sciences, compulsory courses in English, History and Philosophy, and electives from the social sciences - Government, Economics or Psychology. The purpose of these courses is to broaden the education of the students. The University has the main function of training scientists and technologists, but it aims also at producing educated men. The courses in Humanities and Social Sciences attempt to provide the breadth of knowledge, the refinement of sensibility and the sense of values which will increase the student's understanding and enjoyment of life, make him competent in fields other than those in which he is a specialist, and enable him to recognise the human and social implication of his work, both as a scientist and technologist and as a citizen.

THIRD FLOOR



204, 206, 210 - Studios for drawing and design work. Each desk has space for drawing board, storage of instruments and folio of drawings.

209, 211 - Lecture Rooms.

THE SCHOOL OF ARCHITECTURE AND BUILDING

The courses conducted at Kensington are the degree course in Architecture for the degree of Bachelor of Architecture and the diploma courses in Architecture, Building, and Quantity Surveying for the Diploma of Associateship of the Sydney Technical College. The Architecture courses are of five-year duration.

Our School of Architecture is the largest in Australia and one of the largest in the world. It has about 400 students training to be architects, 50 students training to be master builders or quantity surveyors, and several graduates studying for the degree of Master of Architecture.

Throughout the whole course we keep in view that the ideal architect has to be an artist, a constructor and a business man, and the subjects of the course are balanced and arranged in conformity with the principle that architecture is both a science and an art.

THE DALTON CHEMISTRY BUILDING

On the ground floor are two spacious, well-lit teaching laboratories for Analytical Chemistry. These are used by second and third year students in Chemistry and Chemical Engineering, Food Technology, Metallurgy, Biology, Textile Technology and General Science.

The two laboratories are divided by a balance room and instrument room with laboratory servicing rooms on the other side of the corridor. A smaller laboratory is equipped for gas and fuel analysis.

The third floor is divided into small offices and laboratories for lecturers with a research laboratory for higher degree students and teaching fellows.

A lecture room seats approximately 35.

Laboratories are specially equipped for Chromotography, Ion exchange, Electro Chemistry, Spectrography (with a dark room), and Analytical Radio-Chemistry.

The Library.

Pending the construction of a special building, the Library is housed on the second floor. The Reading Room is on the left of the main staircase and lobby, with shelves on three sides containing the volumes in open access.

So much scientific knowledge is disseminated in periodicals that a special room on the right of the lobby is set apart for the 1,000 periodicals currently received. Adjoining it is a work room where accessions are entered and stamped, the books lettered and prepared, binding, requisitions made, etc.

The Stack Room accommodates journals and books which are not in frequent demand.

There is a regular exchange of publications between Kensington (19,000 vols.) and the larger library at Ultimo (30,000 vols.).

THE SCHOOL OF METALLURGY

The main functions of the School of Metallurgy are to train metallurgists for the rapidly expanding metal industries and research and educational centres, and to conduct research work into problems of importance to the industrial development of Australia.

The metallurgist is interested in all activities associated with metals from their extraction from minerals, through their refining and the production of alloys to the working and shaping of them into useful articles.

The basic qualities needed for a young man to benefit by a course in metallurgy - metallurgical engineering as it is sometimes called - are good ability in chemistry and physics, an interest in things scientific and engineering in general, and (especially for work on the production side of industry), a personality which enables him to get on well with others.

The School offers two courses. One is a full-time course of four years; the other is a part-time course designed to enable students who prefer, for economic or other reasons, to study while they work in industry. This runs over seven years.

The School has well equipped laboratories to enable it to present adequate experimental work as well as to conduct a wide range of research projects, involving such topics as foundry technology, titanium metallurgy and uranium extraction metallurgy.

COBALT 60

A large source of Cobalt 60 (500 curies) is housed in a special building on the Kensington site. The walls are of thick concrete. The radioactive material is kept at the bottom of a 12 ft. well covered with water.

For experiments with radiation it is brought to the surface by gear controlled from the far side of a thick concrete wall.

THE SCHOOL OF CHEMICAL ENGINEERING

The School of Chemical Engineering is concerned with the training of Chemical Engineers, Industrial Chemists and Food Technologists.

Chemical Engineers are concerned with the design, construction, operation and maintenance of chemical plant. The course is offered on a full-time and a part-time basis. The early years are spent in obtaining a sound basic training in Mathematics, Physics, various branches of Chemistry, and also in the fundamentals of certain engineering subjects. In the latter stages of the course, students are given intensive training in Chemical Engineering.

The Industrial Chemist is trained for the process side of chemical industry. He is concerned with the operation of chemical processes on an industrial scale, and the economics of these processes. He also studies matters concerning the relationship between management and labour, such as industrial safety. This course is offered part-time only and follows the part-time Applied Chemistry course for the first three years. It then branches into specialised training for the chemical process industries.

The interests of the Food Technologist cover the handling of fresh foods of all kinds, cold storage, canning, packaging, drying, dehydration and freezing of foods. His basic training is very similar to that of the Chemical Engineer, but in addition he receives a fundamental training in the relevant biological sciences.

The Research Building

In this building are the laboratories of Paint Technology and Ceramic Technology. Much of the School's research work will be located on the mezannine floor in this building, for example, a research group is studying the properties of high temperature uranium refractories.

The 60 ft. tower has been specially designed for pilot scale investigation of an industrial nature, particularly for such problems as those involved in distillation, liquid extraction and fluidised reactors.

The School of Electrical Engineering - Project Laboratories

An Impulse Generator or Surge Generator is installed in the 60 ft. tower of the building. When fully assembled, the Impulse Generator can produce a voltage surge of up to 2.1 million volts. It is used to test high voltage electrical equipment to find out whether it will withstand such

surges as lightning strikes. This is the highest Impulse Generator available in Australia at the present time and is possibly the largest mobile impulse generator in the world. It can be taken to test high voltage equipment on any suitable site.

"UTAC" (The University of Technology Analogue Computer) is on the upper floor. Research is being conducted to improve this computer and programming problems connected with UTECOM are being studied. On both floors are test and research equipment in the servomechanism laboratories.

The Mechanical Engineering Building

A section of the School of Mechanical Engineering is accommodated in the southern of the two buildings.

Students will come to the Automatic Control Laboratories and refrigeration Laboratories. Research activities by students and lecturers will be carried on in this building.

One project is connected with Solar Energy for which the equipment is mounted on the roof of the tower.

THE SCHOOL OF WOOL TECHNOLOGY

Improved efficiency through research, and increased extension services require specialist personnel trained to give service to the pastoral industry. The course consists of four years full-time study, but the second and third years each provide for a period of approximately six months approved work in the industry to gain practical experience.

The aim is to provide a pool of graduates in whom has been inculcated a liberal scientific outlook, and the habit of exact and logical thought. These men will be familiar with the latest developments in fields relating to wool production, wool commerce and wool utilisation.

They will also be good practical wool men, capable of handling wool and recognising its technical characteristics, through facility in the use of subjective appraisal on which the whole wool trade is based.

THE SCHOOL OF HOSPITAL ADMINISTRATION

The modern hospital demands a competent trained executive officer in the management role.

The School offers two courses, a three-year course leading to the Master's Degree in Hospital Administration, and a year's full-time extension course, leading to a Certificate of Hospital Administration.

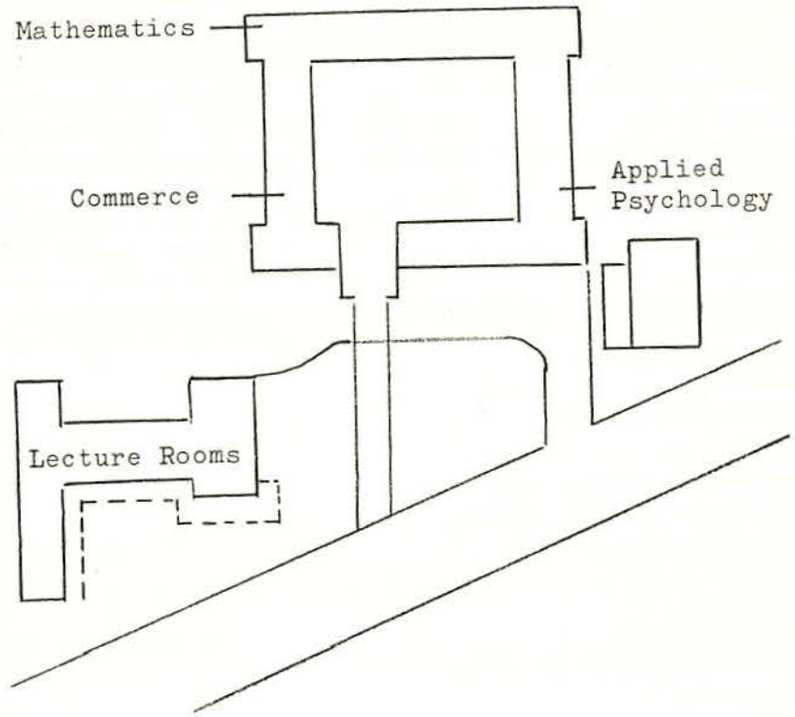
Candidates eligible for the latter course will be selected from individuals who are already working in hospitals or closely allied fields, and who are considered to have potential executive ability.

The three-year course is designed to give the Administrator a firm grasp of fundamental knowledge, methods and techniques with which he can fulfil his responsibilities.

THE SCHOOL OF TRAFFIC ENGINEERING

This is essentially a post-graduate School. It aims to train graduates in engineering, economics, science and other appropriate disciplines in the fundamentals of traffic control, planning of highway and other traffic works, and the operational analysis of highway and other transport systems.

The City of Sydney, with its high traffic density and major transport facilities, will provide the principal "laboratory" for much of the research to be carried out by the School. There will be a laboratory for studying applications of electronics to traffic control and safety problems.



On the western side of Anzac Parade, a single storey building of monocrete multicast construction accommodates the Faculty of Commerce, the Schools of Mathematics and Applied Psychology.

The 21,000 square feet of floor space contains five lecture rooms and three special purpose laboratories.

Similar types of buildings on either side of the entrance provide additional lecture rooms.

* * * * *

THE SCHOOL OF MATHEMATICS

Instruction in mathematics and statistics is provided by the School of Mathematics for students undertaking courses in all schools.

Facilities are also available for students to major in mathematics in a general science course.

THE SCHOOL OF APPLIED PSYCHOLOGY

To make an industrial society work, we must understand its human as well as technical aspects. Applied Psychology is one of the technologies concerned with such a study of human behaviour. It seeks principles to explain, understnad and predict human action. It deals with practical situations, but it is based on, and makes it own contributions to, a solid theoretical framework which it shares with academic psychology. It is thus both a technology and a social science.

There are increasing demands for professional psychologists in the fields of industrial psychology, personnel management, "human engineering" (the design of machines and processes allowing for the qualities of the human operator), educational and vocational guidance, clinical psychology, child development, selection and placement in the Armed Services, and teaching and research.

THE SCHOOL OF ACCOUNTANCY

Students are given a comprehensive and thorough training in Accountancy and associated subject of Commercial Law. Considerable emphasis is placed upon the problems and methods of Management Accounting. These specialist fields are built upon a foundation of general disciplines such as Philosophy, History, English and Psychology, and subjects such as Economics and Statistics. Students are provided with an insight into the role of Accounting as a tool of management.

THE SCHOOL OF ECONOMICS

The demand for persons trained in the methods of economic analysis is considerable. In recent years, not only the Public Service, but also commercial, financial and industrial concerns have found it to their benefit to employ economists in a professional capacity. The study of Economics is based upon a firm foundation of economic theory, given in both general and specialist courses. Particular emphasis is placed upon the application of the principles of economic analysis to problems of policy, the application of knowledge to industry.