

## Chapter 9

# From sandstone to stainless steel

Richmond Jeremy

## The Faculty's buildings

The growth of the Faculty of Medicine is reflected in the buildings which accommodate its activities. When most people think of the Faculty, their first image is of the Anderson Stuart Building. This sandstone masterpiece was certainly the focus of the Faculty during its first century, but in the last 50 years that focus has shifted. This shift has been most marked in the last 25 years, with the rise of the clinical schools and affiliated research institutes. This chapter records the role of the Faculty's buildings in research and teaching, at both the University campus at Camperdown and the clinical schools.

## The University's Camperdown Campus

### The Anderson Stuart Building



Anderson Stuart's dream

The Old Medical School (now known as the Anderson Stuart Building) was constructed in several stages. The centre of the building with the east front and tower was constructed between 1884 and 1889 at a cost in excess of £60,000. Extensions on the north side were constructed in 1909–1912 and the north entrance was completed in 1922. The history of the construction of the Anderson Stuart Building and its architectural features have been described in detail by James Kerr in the Faculty's Centenary Book.

The building was designed with large lecture theatres and spacious demonstration rooms, but, as the Faculty grew, the pressure on space within the Medical School building became ever more intense. In 1916 the Dean Anderson Stuart, lobbied the University for further extensions of the building to both the south and to the west, in addition to the north.



The first stage of the Anderson Stuart Building



A Lloyd Rees drawing of the building

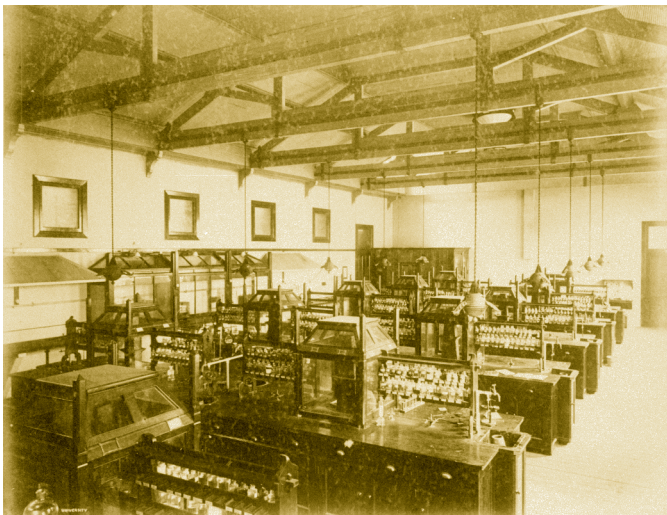
These extensions would have included an elegant Anatomy Museum and further courtyards. Although plans were prepared by the Government Architect at the time, no other extensions were constructed.

For 50 years the Old Medical School was the sole University location for the teaching, research and administration of the Faculty. Following construction of the New Medical School (later known as the Blackburn Building), the Anderson Stuart Building remained the home of teaching and research in anatomy, physiology, histology and embryology. As a result, the building was subjected to decades of ad hoc internal subdivision and adaptation to whatever current needs were, without



Building the south-west corner of the Quadrangle, later the Fisher Library and more recently MacLaurin Hall. The original (south) wing of the Anderson Stuart Building is on the right.

consideration of the aesthetics or fabric of the building and this practice has continued until recent times. On one memorable occasion a senior Professor, delivering a lecture on tissue histology, was frustrated that the wooden balustrade of his lecture platform was interfering with projection of his teaching slides. The lecture was suspended whilst the Professor disappeared, only to return moments later with a large saw, with which he promptly cut down the offending balustrade and then continued the lecture.



Chemistry laboratory on the top floor

With few exceptions, the large teaching rooms have been so divided and altered that the original plan is almost unrecognisable. Many important architectural features remain hidden, such as Anderson Stuart's original bathroom, located under a staircase, and the beautiful stained glass window over the east entrance, which is crassly obscured from the inside by the tiling of a toilet suite added many years later.

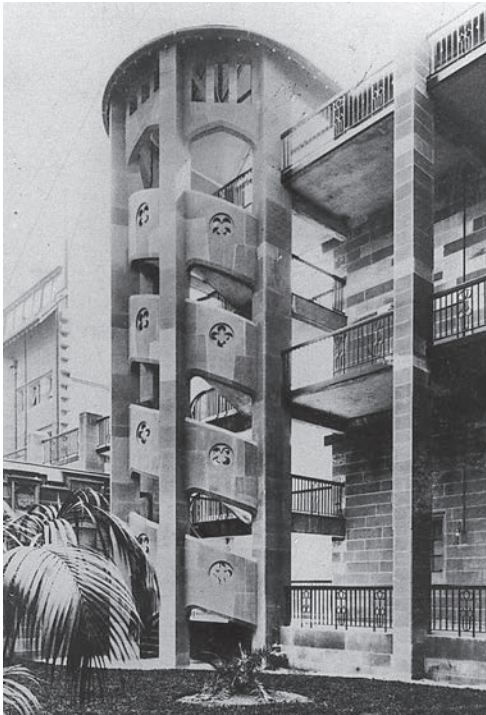


Dissection room

Unfortunately, a walk around the building now reveals the most appalling intrusions of modern technology and services, most recently evident as blue cabling for digital communications, upon this iconic structure. Monstrous (but essential) air-conditioning units hang above corridors; old pipe services are truncated and left suspended on walls and ceilings; active and redundant electrical cabling is everywhere; and many

rooms are unusable with derelict fittings, whilst even bathrooms have been converted into offices (resulting in a distinct lack of important facilities in the building). Externally, the erection of the School of Chemistry immediately next door (outside of the original front door of the Anderson Stuart building) obscured an outstanding view from City Road.

During the 1990s a program of partial restoration of the building was commenced, with refurbishment of the main east-west corridor and the public spaces in the central core on the





ground floor where the Burkitt Library was once housed. At the same time, some refurbishment of research laboratories was undertaken. The refurbishment is described at the end of this chapter. The difficulty and expense of this program demonstrated conclusively that the building could not practically be refitted for modern laboratory research and that future use of the building must be commensurate with its character. Thus, 120 years after construction commenced, the building can no longer sustain all the different activities which have been forced upon it.

Despite the physical difficulties associated with the building, it continues to accommodate important teaching in anatomy, histology and physiology for students in the Faculty as well as those in the Faculties of Dentistry and Science. As the teaching needs of these disciplines have evolved, so efforts have been made to adapt the building. In 1974, with the introduction of a new five-year curriculum, Michael Blunt, as Head of Anatomy, had demonstrated that small group tutorials were more informative than large formal dissection classes. Consequently, the Vesalian



Modern teaching room for histology

Theatre was subdivided. With the evolution of digital imaging for teaching of histology, the Leeuwenhoek and Retzius laboratories have been remodelled for more flexible teaching around carrels with computers, as well as retaining capacity for formal seminars. Fortunately the open feeling of these large rooms has been maintained and they remain amongst the most attractive teaching rooms in the building.

The building is now one of the main locations for the School of Medical Sciences, headed by Chris Murphy. Research continues to be an important activity and a large number of postgraduate research students work in the building, albeit in some rather interesting accommodation in many cases. Notwithstanding the basement location of his laboratory, Max Bennett has spent his

career making important discoveries in basic neuroscience, which he has now linked with colleagues in clinical neurology and psychiatry in the formation of the Brain and Mind Research Institute. It is rapidly becoming a leading neuroscience research institute. The Anderson Stuart Building is also home to the Institute of Biomedical Research, directed by Nick Hunt, which supports collaborative research in basic biomedical science.



Refurbished laboratory with mezzanine floor, preserving the depth of the windows framed in sandstone

The future of the Anderson Stuart Building lies as an administrative centre for the Faculty and as a teaching facility. The Anatomy Museum is a focal point within the building, as are the large microscopy teaching laboratories. As research laboratories are moved out to new accommodation, there is a need for a staged refurbishment of the entire building which is sympathetic to its original design. Intrusive services and inappropriate additions, internal and

external, must be demolished and the fabric of the building restored. This restoration will require some years of work, but a start will be made in 2006 with restoration of the north foyer, corridors and adjacent large teaching laboratories.

This extraordinarily beautiful, and certainly unique, building is the heart of the history of the Faculty. The care and restoration of the building for the benefit of future generations is now a major task for the Faculty and the University.

### The Blackburn Building

The pressure on space within the Old Medical School had continued to grow, particularly when student enrolments jumped from 95 in 1914 to 218 in 1919 and preference was given to returned servicemen. In the mid- and late-1920s enrolments fell, however, and did not increase again until 1932. Nonetheless, the Faculty sought support for the construction of a New Medical School adjoining the Royal Prince Alfred Hospital. The new 'clinical' professors in Medicine and Surgery sought a teaching and research building closer to the focus of their clinical practice. At that time, the Rockefeller Foundation was actively supporting the development of medical schools around the world. In 1929 George Bosch and Claude Stump (first Bosch Professor of Histology and Embryology) approached the Rockefeller Foundation for support of the New Medical School. Fortuitously, Stump had been Professor of Anatomy at the Rockefeller Medical School in Bangkok and was able to secure necessary meetings with the directors of the Foundation, leading to a grant of £100,000 towards the construction of the New Medical School.



Blackburn Building

The site selected was on the boundary between the grounds of the University and the Royal Prince Alfred Hospital and is in fact directly over the old course of the Orphan School Creek, which is now piped underground. The building is of steel frame construction with concrete floors of 'waffle slab' design. This rather unusual construction was designed to reduce weight. The facing walls are of brick and there is a unique tiled Mansard roof for the upper floor, originally designed for the snows of New York. The interior corridors were sited to provide



Blackburn from the Bosch Lecture Theatre

some protection of the interior rooms from excessive summer heat, and central courtyards provided natural lighting for interior rooms. The corridors were floored with green linoleum, which remains to this day, although extensively patched and resurfaced. The entry foyer has terrazzo steps and black granite facings, with an elegant art deco window and lantern. Unfortunately, most visitors to the building don't notice these features because of the plethora of signs and fire alarm equipment in the foyer.

The building was completed in 1933 and became the base for the new Chairs of Medicine (C G Lambie 1930–1956) and Surgery (Sir Harold Dew 1930–1956) as well as the Departments of Pathology and Bacteriology. The building was constructed around two central courtyards for light and ventilation, with an octagonal central core. This core contained two large double storey spaces, the lower one accommodating the Medical School Library and the upper one

accommodating the Pathology Museum. Large teaching laboratories were constructed in the western wings and offices and research laboratories occupied the remainder of the building.

In 1960 the building was renamed the Blackburn Building in honour of Sir Charles Bickerton Blackburn, Dean of the Faculty (1932–1935) and Chancellor of the University (1941–1964). During the first 20 years, the personalities of Lambie and Dew coloured the activities within the building. Whilst Dew was an outgoing and engaging personality, Lambie was much more reserved and even more so after prolonged illness in 1940–1942. Dew encouraged many young researchers, including a future Professor of Medicine (Ruthven Blackburn). He was particularly interested in cardiac surgery and neurosurgery. The surgical research program was further supported by the generous benefaction of R Gordon Craig, which provided for a research laboratory in urological diseases. After an initial flurry of activity, research in Medicine tended to languish during Lambie's later years and it was not until he was succeeded by Ruthven Blackburn that the research program in this discipline really moved forward. Blackburn began the recruitment of a wide range of new academic staff, at a time when medical sub-specialties were beginning to establish their own



identities. Among the academic leaders recruited to his unit, who were to in turn establish their own research units, were Jim McLeod (Bushell Professor of Neurology), John Turtle (Kellion Professor of Endocrinology) and Paul Korner (Scandrett Professor of Cardiology).

During the last 30 years, the Blackburn Building has been the home of teaching in Pathology and Infectious Diseases. The morgue in the basement is now long gone, but was for many years a place of forced pilgrimage for generations of medical students. The stainless steel refrigerators and porcelain tables (as well as that indescribable odour) were the backdrop to autopsy demonstrations by Frank Magarey (Dean of the Faculty 1960 to 1965) and Vincent McGovern, given to students trapped in tiered seats. Now the morgue space has been refitted as teaching rooms, but the refrigerator trays remain to this day, serving now as storage space for the Medical Society Bookshop.

Within the walls of the Blackburn Building some notable research advances have been made. In surgery, a team led by Ross Sheil established and improved techniques for organ preservation and liver transplantation, leading to the establishment of the first Australian liver transplant service at Royal Prince Alfred Hospital. At the same time and just down the corridor, Colin Sullivan, working in the David Read Laboratories for Respiratory Medicine, was making fundamental discoveries about breathing disorders occurring during sleep. His research led to the development of new devices to treat sleep apnoea, now known to affect hundreds of thousands of Australians. In recent years, the vascular surgery group, including James May, John Harris and Geoffrey White, have achieved international recognition for their development of new stent procedures which have revolutionised the treatment of vascular disease.

The Pathology Museum is a well known attraction of the Blackburn Building, but few people know of the Brain Bank also housed in the building. This internationally recognised tissue bank, organised by Clive Harper of the Department of Pathology, is a leading resource in the study of neuro-degenerative diseases.

Like the Anderson Stuart Building, the Blackburn Building has been the victim of many inappropriate alterations over the years. On occasion these have been extremely ad hoc, as when John Read took a sledgehammer to create a new doorway between two of his laboratories. The brick infill of the western entrance and the services and air-conditioning units piled upon it present an unsightly front to Royal Prince Alfred Hospital and obscure the original steel window's walk around the base of the mansard roof. Both internal and external features of considerable architectural interest have fallen into disrepair and the building is in need of extensive refurbishment, but this cannot be undertaken until new research accommodation becomes available.

## The Bosch buildings

George Henry Bosch (1861–1934) was one of the Faculty's greatest benefactors and is remembered in the naming of the main lecture theatres (Bosch 1A) and the teaching and research block (Bosch 1B) adjacent to the Blackburn building. The four lecture theatres in Bosch 1A have been critical to the teaching of medical, dental and pharmacy students for 30 years. The subterranean architecture seems to remind the visitor that these lecture theatres were built at the time of the Cold War and consequently the design appears to have included some necessity to withstand nuclear attack. The brutal design included the seats, which were made as hard as possible to prevent somnolence amongst students. Unfortunately, an underground location has disadvantages during Sydney thunderstorms, and on more than one occasion the lower levels have had half a metre of water sloshing around, as they lie in the path of what was once Orphan Creek.

Having escaped from chemistry and physics lectures in the Carlaw and Chemistry buildings, students arrived at Bosch ready to learn some 'real' medicine. Here were lectures on everything from embryology through anatomy and physiology to behavioural and social sciences. Original teaching aids were limited to blackboards, but the coloured chalk drawings for tissue structure were indeed works of art. As the digital information age has evolved, so lectures have moved from chalk and blackboards to lantern slides and Powerpoint presentations. Today lectures are video recorded for student playback via the Internet or on hand held video players. The march of technology and modern teaching practice has, nonetheless, robbed today's students of some of the character of the lectures of 30 years ago. No longer do they have the benefit of Viv Whittaker's lecture (titled 'The Chamber Pots of Europe') on porphyria and the Royal Houses of Europe – easily the best remembered lecture of the entire course. The professor who gave a memorable lecture whilst lying on his back on the demonstration table has long since retired. Only recently we have lost Les Arnold, whose lovely lantern slides of the evils of drug abuse and infective endocarditis, graced his lectures for generations of students.



Bosch Lecture Theatres

Although the blackboards remain, the theatres have been refitted progressively to accommodate the new technologies. Two theatres have been modernised and are now very comfortable. The pressure of increasing class sizes in Medicine and Dentistry has, however, outgrown the capacity of

the Bosch theatres and from 2006, the major lecture theatre for the Faculty will be the renovated Footbridge Theatre on Parramatta Road. (Those concerned about the loss of the site for the Medical Revue (and those of other faculties can be reassured that theatre space is available in the Seymour Centre nearby).

Before construction of Bosch 1B, pharmacology and some physiology teaching was conducted in a fibro theatre known as 'The Barn' on the same site. The construction of Bosch 1B provided badly needed teaching and laboratory space for the Department of Pharmacology, which is in use to this day. The teaching laboratories of the Department are notable for their early use of computer simulations of drug interactions and pharmacokinetics, some years before the widespread adoption of this teaching aid. The same building also included an animal house which supported teaching and research for many departments and which replaced a number of previous small and inadequate facilities. This animal house has been critical to support of research in the Blackburn Building and is now being upgraded to extend its capacity and to meet modern requirements.

Since 1968 the top floor of Bosch 1B has housed the library of the Faculty and for a time the offices of the Dean. The library has long been a place for quiet study (and occasional sleep) by students and has a large collection of medical texts and journals including volumes from the early 20th century. As with libraries everywhere, the role of the library is changing from a book repository to a facilitator of information supply in electronic media (see Chapter 3). The earliest foray was the provision of multiple choice exams in Medicine by computer in 1978, with a black and white screen and students sitting the examination in turns. Now students can access journal articles and major texts online from home, study rooms or even the local café. As the role of the library changes, so the need for its accommodation will change in the coming years, with greater emphasis upon support services and self-study spaces and a conservation role for historic texts.

Unfortunately, the Bosch buildings were planned as part of a larger complex, which was never built. As a result, the buildings have little architectural merit and an unfinished appearance, with dark blank brick walls and rough cast concrete columns. As the University grows and requires increased accommodation, these buildings will be replaced by a more appropriate structure. This new building, which should be more aesthetic and enduring, will hopefully continue to bear the Bosch name.

## The School of Public Health

This rather unassuming, cream coloured building has had a variety of identities during the last 60 years. The original building, designed by Wilkinson, with its distinctive columned entrance and belfry tower was completed in 1930. The architecture is similar to that of the buildings along Physics Road and also of the Mills building, opposite the west side of the Anderson Stuart building, which now houses the Power Institute. In 1956 the original Public Health building was



Edward Ford Building: portico above front door

extended to the west along Physics Road, in the same style. This extension now houses the specialist library of the School of Public Health, including unique collections on parasitology and tropical diseases. A most pleasant reading room is adjacent to the journal stack that remains an old fashioned multi-level steel scaffold within the building.

Originally established as the School of Public Health and Tropical Medicine by the Commonwealth Government, it was renamed the Commonwealth Institute of Health in 1980. Following cessation of direct Commonwealth funding some years later, the Institute reverted to being a school of the Faculty in 1987. The teaching and research conducted within the building reflect the changing public health needs of Australia and the region. In the early years there was a



Entry hall of the Edward Ford Building

focus on tropical diseases and mosquito control, of national importance during the World War II. After the war, there was a gradual change in focus towards issues of occupational health, preventive medicine and epidemiology, which form the foundation of much current work within the school.

The School also provides leading postgraduate teaching in public health through the Master of Public Health (since 1978) and the Master of International Public Health as well as a wide range of other degree and diploma programs which are extremely popular with both Australian and international students. The School continues to increase its research activity in key fields such as tobacco control and the epidemiology of cancer.



Detail of wall decoration in Ford lobby

Unlike many other buildings on the campus, the School of Public Health has suffered relatively little degradation of its architecture, either internally or externally. Nonetheless, the visitor to the western end of the building may look up and find unusual steel framework along the upper walls and ceiling. Upon inquiry, it is revealed that this is the remnant of a very special facility – a climate chamber built by Graham Budd

– which could simulate any environment from the Antarctic to desert conditions in order to study the effects of the environment upon human physical and mental function (see Chapter 4). Sadly, this unique facility was demolished in the 1980s.

This building is also home to the Office of Teaching and Learning in Medicine, formerly the Department of Medical Education and the Medical Education Unit which was established in 1994 with Jill Gordon as head (see Chapter 2). This was one of the earlier such departments in Australia and played a critical role in developing the new four-year graduate medical program. The Sydney program (along with those of Flinders University and the University of Queensland) was revolutionary when introduced in 1997. The USyd Medical Program is now internationally recognised and the program has been licensed, in part or in entirety, to medical schools in Australia, Europe and the Middle East. The Office of Teaching and Learning in Medicine, now headed by Chris Roberts, provides educational consultancies in Australia and overseas.

## The rise of the clinical schools

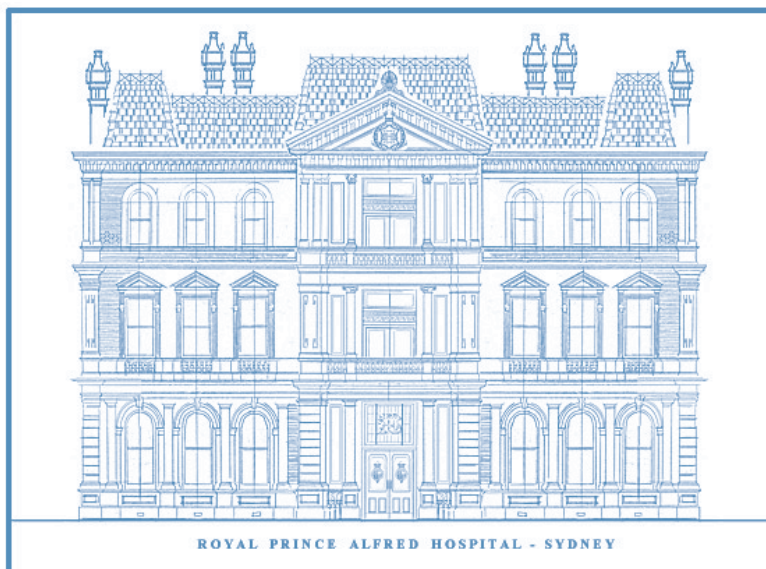
The University teaching hospitals have been a vital contributor to the life of the Faculty since the first students were enrolled. With the establishment of a Faculty of Medicine at the University of New South Wales and with changing health care needs in Sydney, many of the hospitals once associated with the Faculty are no longer, whilst other new hospitals have formed links with the Faculty. In addition, the role of the teaching hospitals has changed considerably in the last 25 years. Once simply places of formal instruction secondary to the Faculty, the teaching hospitals have acquired their own sense of identity and greater responsibility for teaching of medical students. For many years the medical curriculum only allowed students into the hospitals in their more senior years but today all students are given early clinical experience and the hospitals play an integral role in teaching throughout the entire medical course. This progress has been recognised by the devolution of much administrative authority to clinical schools, each headed by an Associate Dean, in 1999. The development of the clinical schools has been further accelerated by the growth of research in the teaching hospitals and in affiliated independent medical research institutes. Some

clinical schools are now larger than the faculties of medicine of other universities and indeed those schools may well be regarded as mini-faculties in their own right.

### The Royal Prince Alfred Hospital

The Hospital was built on land which had been granted to the University, opened in September 1882 with 146 beds, and was the first teaching hospital for the Faculty. The first seven students began at the hospital in 1887. Following the extension of the original hospital with construction of the Victoria and Albert pavilions, the C and D blocks were constructed to the east. These were all large 'Nightingale' wards which offered little privacy to patients or staff. The C and D blocks had verandahs with brick colonnades and wrought iron balustrades and continued in use until 1980. At that time the hospital was rebuilt with demolition of the old central Alexandra block and the C and D blocks and construction of the new 11 floor Edinburgh block. Although the brick arches of the old ward blocks were retained, these have now been lost in the recent major rebuilding of the hospital, which has also seen the demolition of the Blackburn pavilion (not to be confused with the New Medical School).

On the other side of Missenden Road, the King George V Hospital for Mothers and Babies was opened in 1941. This architecture award winning building was an obstetric teaching hospital until 2002 when the hospital was relocated to the new clinical services building on the eastern campus of the hospital. The old building now accommodates the George Institute and administration offices of the hospital and Area Health Service. The research and teaching in obstetrics and gynaecology were taken to a position of national leadership through the efforts of Rodney Shearman, and the Hospital continues to be home to one of Australia's few academic units in this field.



Royal Prince Alfred Hospital



A 'Nightingale' ward at Prince Alfred in the 1970s

for some groundbreaking work, including the introduction of open heart surgery for congenital heart disease, following the visit by Hank Bahnson of Johns Hopkins Hospital, and the innovative surgical ablation of arrhythmias by Douglas Baird.

Throughout the repeated rebuilding, the beautiful frontage to Missenden Road remains preserved, with the exception of an unsightly ambulance bay. The relationship between the Faculty and the Royal Prince Alfred Hospital has been particularly close, but not always without its tensions. When the Faculty's Departments of Pathology and Bacteriology relocated to the Blackburn Building in 1933, there was considerable dispute about who should provide clinical services to the Hospital resulting in a separation of services that endures. The Hospital's Kanematsu Institute has, on the other hand, been accommodated within the Blackburn Building since its move from Sydney Hospital more than 20 years ago.

Royal Prince Alfred Hospital was the location of the ground-breaking Clinical Research Unit, established by Ruthven Blackburn. The importance of this step cannot be overestimated, as it laid the foundations for the future explosion in medical research at, or close to, the Hospital. During the last two decades, the growth of research at the Hospital has accelerated with the formation of affiliated research institutes, which are accommodated at a range of sites at, or close to, the Hospital (see Chapter 5).



The Kerry Packer auditorium

The teaching facilities at the Hospital have recently been upgraded, as part of the overall redevelopment of the campus, with major assistance through a generous donation from Kerry Packer. The education centre, named for the donor, includes a state-of-the-art lecture theatre, and modern seminar and tutorial rooms. The heritage building, once the resident medical officer quarters, has been refurbished for the hospital library and student common rooms, and teaching rooms for medicine, nursing and paramedical professions.

The Page Chest Pavilion, also facing Missenden Road, was originally built to cater for patients with tuberculosis, but by the time of its completion, mass X-ray screening programs were reducing the prevalence of tuberculosis and a new epidemic, heart disease, was emerging. The Page Pavilion became a centre for cardiology and cardiac surgery and the setting

## Concord Repatriation General Hospital

Formerly the Repatriation General Hospital Concord – Concord became part of the NSW State Health system when the Commonwealth Government withdrew from direct support of hospitals. After some uncertainty about its future, the Hospital has become an important partner with Royal Prince Alfred Hospital in the Central Clinical School of the Faculty.

Following completion in 1941–1942, the hospital treated armed forces members, veterans and eligible dependents. The hospital was briefly a teaching hospital of the University from 1948 to 1951 but did not become a fully affiliated teaching hospital until 1963 (see Chapter 5).

Concord Hospital has long been a favourite attachment for medical students because of a long history of care and support for medical education. For many years, Jim Lawrence guided the education of students in medicine. The early morning seminars, which feature a wide range of visiting speakers, have become an established feature for both undergraduate and postgraduate teaching. Bob Lusby, now Sub-Dean of the Clinical School, has been responsible for ensuring that students were academically and clinically successful, including more recently in the graduate USyd medical program. The popularity of Concord with students continues to be a sign of the dedication and success of Lusby and his colleagues, notably Emily Hibbert, in delivering an exciting clinical teaching program.

The academic activities at Concord have been based in the Clinical Sciences Building, completed in 1973 and extended in 1980. This building, with the adjoining timber and fibro buildings, contains offices, a lecture theatre, seminar rooms and tutorial and clinical teaching rooms. A nearby



Concord Hospital





Concord Hospital

fibro building contains the hospital's important collection of pathology specimens. After 30 years, these buildings are showing their age and are inadequate for modern teaching and research needs. Accordingly, a new clinical research and teaching building is planned as part of the ongoing redevelopment of the hospital campus.

The research activity of the Hospital has increased markedly in recent years. The colo-rectal surgery group, headed by Les Bokey, has established a national reputation for epidemiological and interventional research in colo-rectal disease. This group was one of the first in the world to use a computer database to support research. The ANZAC Research Institute, directed by David Handelsman, the foundation of which commemorates the Gallipoli landings and the sacrifice of all of Australia's service men and women, undertakes fundamental research in endocrinology, notably andrology. The Centre for Education and Research on Ageing is a nationally recognised centre for basic science and clinical research in ageing. The most recent addition is the establishment of the National Centre for Research into Asbestos-Related Diseases, which will be directed by Michael Carbone, formerly from the University of Illinois.

The hospital has recently undergone an extensive refit by the Area Health Service and now provides modern pleasant wards and diagnostic facilities. A walk towards the river, however, reveals an extraordinary view of the past. Many of the old war-time brick bungalows and Nissen huts remain, often somewhat overgrown with creepers. One is inevitably reminded of military barracks. The wooden walkways between huts are festooned with steam pipes and other services and remain open to the weather. These relics are, however, about to disappear. The redevelopment of the Concord campus is continuing with clearance of the old buildings for a major new psychiatric medicine hospital which will replace the old Rozelle Hospital. One can hope that some record and perhaps one or two huts might remain to remind us of what a mid-20th century military hospital looked like.

Of all the Faculty's teaching hospitals, it is Concord which has the most pleasant grounds and most gentle atmosphere. The open spaces of the Hospital and the adjacent grounds of Rivendell and Yaralla along the Parramatta River are extraordinarily beautiful and peaceful and are indeed unique in an increasingly crowded city.

## The Royal North Shore Hospital

In the first hundred years of Sydney's existence, there was no hospital north of the harbour. It was not until 1888 that a small cottage hospital, with 14 beds and five nurses, opened at a site on North Willoughby Road, (now Willoughby Road) on the corner of Holtermann Street, Crows Nest. The first building, with 48 beds, was opened on 10 June 1903. Within 10 years it was clear that the growing population on the North Shore required a much larger hospital. A new hospital, which was to include five two-storey ward buildings, was planned for the nearby Gore Hill Reserve and construction began in 1901.

During the next 30 years, the Hospital slowly grew to a capacity of nearly 350 beds by the time of the World War II. A signal feature of the growth during these years was the absence of any single major building as a central focus of the hospital. Various cottages, two-storey brick buildings and timber huts were built along the eastern slopes of the Hospital grounds. Even today, the visitor is confronted by a rather bewildering array of brick and timber buildings scattered across the grounds. It was not until the 1960s that plans were laid for the construction of a major new ward building, which was finally completed in 1978, when the hospital had grown to a total of 920 beds. This massive brick building sitting atop the hill is a landmark visible from afar.

Various building developments have continued in recent years adjacent to the public hospital, including a modern private hospital and a large multi-storey car park, which suffers from the unsightliness of all such structures. The staff who applauded the completion of the new ward building in 1978 could hardly have guessed that it would not survive 30 years, but even now there is advanced planning for the complete rebuilding of the Hospital, which will provide the most up-to-date health care for the 21st century. It is to be hoped that this new building program, which should sweep away much of the confused development of past years, will provide the hospital with a strong and coherent architectural identity as well as a planned landscape, which has been so sadly missing for many years.

Nevertheless, the Royal North Shore Hospital has contributed some notable 'firsts' to health care in NSW. Shortly after World War I, Sydney's first Chest Clinic for care of patients with tuberculosis was established and in 1938 the first Congenital Heart Clinic in Australia was formed. In 1944, the first ligation of a patent ductus arteriosus in Australia was performed at the hospital. In more recent years the hospital has acquired an enviable reputation as a centre of excellence for orthopaedic surgery under the guidance of Tom Taylor and its spinal unit has become a national leader for care and rehabilitation of patients with spinal cord injury. The Pain Management Centre, led by Michael Cousins, is now an international leader in the research and management of pain syndromes. The Kolling Research Institute, presently directed by Rob Baxter has a long history of leadership in medical research and has been a focus for the research activities on the campus.



Royal North Shore Hospital

The Institute, presently housed within one of the old hospital buildings, is eagerly awaiting the rebuilding of the Hospital and a move to modern laboratory facilities.

The Royal North Shore Hospital did not become a teaching hospital of the University until after the World War II. In 1946 the University Senate agreed to the hospital becoming a teaching hospital which was officially opened by Sir Charles Bickerton Blackburn, Chancellor of the University, on 15 March 1948. From an initial number of 40, the student numbers grew to reach over 200 by 1977. Today, the hospital is a centre of excellence in both undergraduate and postgraduate medical education. The School, presently headed by Michael Field, has provided leadership and innovation in clinical skills and communication training of medical students which has been adopted by schools across the Faculty. The new postgraduate clinical skills teaching centre complements the practical and clinical training for students in the University of Sydney Medical Program.

## Westmead Hospital

Parramatta Hospital had long provided important experience to new medical graduates, particularly in the Emergency Department on Saturday nights. By the 1980s it was clear that a new teaching hospital was needed to cater for the health care of the burgeoning population in western Sydney. Plans were drawn up for a new teaching hospital to be constructed on old showground lands at Westmead. A strong partnership between the University and the Health Department saw the planning of a hospital with integrated teaching and research facilities, largely due to the efforts of Sir John Loewenthal.

The Hospital opened in 1978, with 12 interns, and progressively commissioned more facilities until reaching nearly 1000 beds five years later. The new Hospital was the most modern in the state, with two- and four-bed ward rooms and internal courtyards with lush plantings between long wide corridors. The exposed concrete aggregate, lime green and burnt orange internal colours were characteristic of the architecture of the time and have remained strong features of the hospital.

By the time of its 25th anniversary, the Westmead hospital had become one of the major, multidisciplinary referral and teaching hospitals of the State, providing services in all fields of medicine, surgery and related specialties. The NSW Institute of Clinical Pathology and Medical Research was moved from Lidcombe to Westmead after the hospital's opening and has become the State's leading pathology service.

From the outset, Westmead was directed towards the provision of training in a broad range of health care disciplines, including medicine, dentistry, nursing and health sciences. The Dental Faculty unit at the hospital provides important training and dental health care for the local population. The Western Clinical School, presently headed by John Uther, has become one of the Faculty's major schools and students attend the hospital throughout the four years of their medical course.

Research has been a strong feature of the development of Westmead throughout its history and the foresight of the hospital planners has been amply rewarded. The cardiology department, under the guidance of John Uther and David Ross, quickly gained an international reputation in the field of electrophysiology and treatment of arrhythmias. Subsequently, research programs in cancer medicine led by Rick Kefford, infectious diseases led by Tania Sorrell, and virology with Tony Cunningham have become national leaders.



Westmead Hospital

The success of the research programs at the Hospital led to the construction of the Millennium Institute which is accommodated in a purpose-built facility opened in 2000. The Institute has become a major research centre for the Faculty and the present building of some 4000 m<sup>2</sup> houses approximately 300 staff. Already this building is too small for the ever-growing research teams, and plans are underway for further building programs to allow much-needed expansion of the Institute.

## Nepean Hospital



Nepean Hospital

One of the newest additions to the Faculty's clinical schools, the Hospital had for many years served the Penrith and surrounding areas as a community hospital, but as the population grew there was a need for expansion of medical services. A small number of undergraduate medical students had attended

the hospital on rotation from Westmead since the end of the 1980s. With the introduction of the new graduate medical program, students were allocated to Nepean Hospital as their home school, although some rotations with Westmead continued. Through the tireless efforts of John Stewart, Sirus Naraqi and Brad Frankum, the clinical teaching program at the Hospital was established and progressively enhanced. For some years, this work was accommodated within demountable buildings in the Hospital grounds.

In 2000 a major rebuilding of the Hospital was undertaken with provision of new inpatient and outpatient facilities in a modern multi-service building. The clinical school, presently headed by Michael Peek, moved to new premises in this building and space was provided for laboratory and research facilities in an academic precinct. Following new chair appointments in Medicine and Psychiatry and present recruitment of several new Senior Lecturers, the accommodation at the hospital has already become full, and further expansion is necessary.

The number of students at Nepean Hospital has steadily grown during the last 10 years and there is pressure for increasing the training of medical, nursing and paramedical staff in the western metropolitan region. At a hospital where there was almost no research activity a decade ago, the Faculty is challenged with finding sufficient laboratory space for researchers' needs. The success of the Nepean Clinical School illustrates the critical effect that an academic unit can have upon a hospital.

## The paediatric hospitals

### The Royal Alexandra Hospital for Children

Located at Camperdown, it was the Faculty's major teaching hospital for paediatrics from 1906 to 1995. Its precursor, the Sydney Hospital for Sick Children, had been associated with the Faculty since 1884, with Anderson Stuart as one of the physicians. It consisted of scattered buildings across a site on Bridge Road, Camperdown. The hospital was the site of one of the first affiliated medical research institutes. The Institute for Child Health was established in 1949, with Lorimer Dods as the first Director. It was active until 1981, when it was incorporated within the University.

With the building of the new Westmead Hospital in 1976–1978, it was evident that a new children's hospital was needed for the western Sydney region. Accordingly a state-of-the-art paediatric hospital was constructed adjacent to Westmead Hospital and opened in 1995. It is characterised by a bright, welcoming environment that is appreciated by patients, families, staff, students and visitors alike. The Royal Alexandra Hospital was closed and the site has now been redeveloped as inner city apartments.

### The Children's Hospital at Westmead

Initially known as the New Children's Hospital, it is now the one of the two major paediatric teaching hospitals in Sydney and serves both the local community and a broad referral population throughout NSW. The hospital provides multidisciplinary care in all specialties. The close location

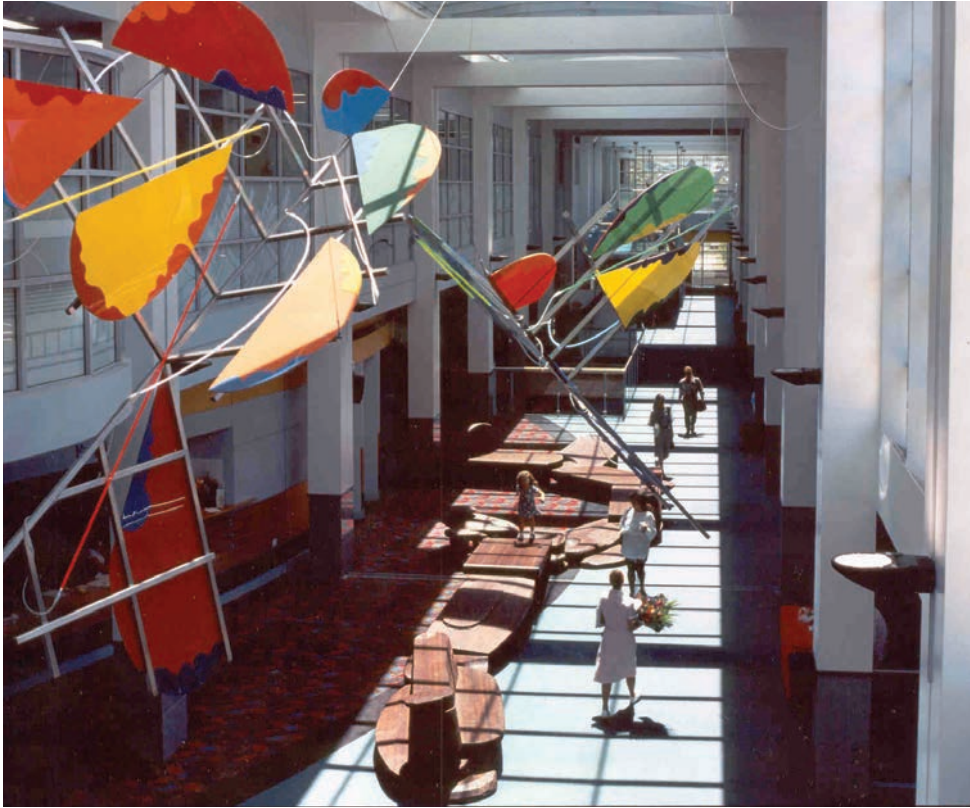


Children's Hospital front entrance

of the hospital to the Westmead Hospital has created the strongest aggregation of health care facilities in the state. The building was designed to be welcoming to children and parents.

The Hospital is the location of the Faculty's School for Teaching and Research in Paediatrics, presently headed by Kathryn North. The school provides coordination of teaching in paediatrics for students in their third and fourth years and most students attend clinical rotations at the Hospital.

The new hospital is rapidly building an enviable research reputation and it accommodates an ever increasing number of



Children's Hospital galleria

postgraduate research students. Among the important research activities are the investigation of how tissues and organs form before birth, and the causes and treatment of juvenile diabetes and heart and kidney disease in children. The Hospital is also an important clinical and research centre for clinical genetics and inherited disease. The Hospital has links with the Children's Medical Research Institute, founded in 1958, and now located next to the Hospital.

## The School of Rural Health

This distributed school is the newest addition to the Faculty's clinical schools. In 2000 the Commonwealth Government announced a new initiative to encourage clinical teaching of medical students in regional Australia. Funding support was provided for new teaching facilities in major regional centres and the Faculty was allocated a clinical school based at Dubbo Hospital (and including Orange and Bathurst Hospitals) and University Departments of Rural Health at Broken Hill and Lismore, as well as the Centre for Agricultural Health and Safety at Moree.

With support from Commonwealth and State governments, the University has constructed dedicated new teaching and student accommodation buildings at Dubbo and refurbished existing buildings at the other sites. The success of the program to establish the School is largely due to the efforts of Rick McLean and David Tiller. The Dubbo facilities include a meeting/seminar room, self-study and tutorial rooms, a clinical skills practice facility and offices for the School staff. The student accommodation is in self-contained bungalows amidst landscaped gardens, with provision for single, shared and family accommodation. The Dubbo complex was officially opened by the State Minister for Health for New South Wales, the Hon John Hatzistergos, in October 2005. The opening was highlighted by the planting of a plane tree, which was grown as a cutting from an ancient tree on the Greek island of Cos, itself reputed to be the very tree under which Hippocrates had taught. Members of the Greek community in Dubbo attended the opening and the celebratory dinner that night, as an indication of the broad support the school enjoys in the region.

Placements at the School of Rural Health have proved extremely popular with the third and fourth year medical students. Indeed, the demand for student accommodation at Dubbo has been so great that further extensions of the accommodation buildings are already planned.

Each of the sites of the School is networked with the other sites, including other clinical schools and Camperdown Campus by broadband video-conference facilities. Lectures or meetings held at one site are available in real time at the other sites and participants at all sites can join discussions and question sessions. The provision of these new facilities and the use of modern communications technology has helped ensure the success of the School, which is already manifest in the number of graduating students who have identified practice in a regional centre as their career choice. The importance of the School of Rural Health to the Faculty was emphasised by the 2005 Faculty Retreat held in Broken Hill, which set the scene for an even greater impact of rural and regional health care on the life of the Faculty.



Planting the Hippocratic tree at the Rural Clinical School, Dubbo



## Sydney Hospital

Formerly the Sydney Infirmary until 1881, Sydney Hospital is the oldest hospital in Australia and had provided some early apprenticeships in medicine and pharmacy. Nonetheless, it did not become a teaching hospital for the Faculty until 1909, when the increase in numbers of medical students mandated an expansion in clinical placements. Although Sydney Hospital was to become a major teaching hospital, its relations with the Faculty were never as close as was the case with Royal Prince Alfred Hospital. Following the opening of the new Westmead Hospital in 1978, the government steadily reduced activity at Sydney Hospital and this very historic hospital is no longer a main teaching hospital for the Faculty.

The new role for the Hospital is as home for the Sydney Eye Hospital, as the Faculty's Department of Clinical Ophthalmology, and the Save Sight Institute, following their relocation from the old Sydney Eye Hospital in Woolloomooloo. The Ophthalmology Department, headed by Frank Billson, has become one of the major academic ophthalmology units in Australia. New research laboratories at the hospital support the work of John McAvoy and Mark Gillies. The Department has grown to include academic staff at Westmead Hospital, where Paul Mitchell has conducted landmark epidemiological research in the Blue Mountains Eye Study.

## Continued growth

### The Medical Foundation Building

By the 1990s major new fields of research were opening up as the revolution in molecular biology gained pace. New research laboratories were required, for which there was no space in the Anderson Stuart or Blackburn buildings. In 2001 an opportunity arose to purchase a new building at 92–94 Parramatta Road, Camperdown, which had been the offices and laboratories of Worksafe Australia. A generous grant of \$10 million from the Medical Foundation enabled the University to purchase this six storey building and commence refit for research in molecular biology and related fields of genomics and proteomics. In November 2004 the refurbished building was officially opened by the Premier of New South Wales, the Hon Bob Carr, and new research groups began working in its laboratories.

The Medical Foundation Building has been critical to the success of the Faculty in entering these new research fields and in attracting leading researchers from within Australia and overseas to come to Sydney. The building's laboratories support cutting edge research which was unheard of just a decade ago. Juergen Reichardt, first appointee to the Plunkett Chair of Molecular Biology, has moved to Sydney from California and is investigating the molecular biology of prostate cancer, whilst Jonathan Arthur has brought new expertise in bioinformatics.

The success of the Medical Foundation Building has been such that the Faculty now seeks to expand its capacity through building extensions on adjacent premises, and to that end the University has purchased the property at 88–90 Parramatta Road for the sum of \$3.8 million, with the aim of constructing a new research building of nearly 4000 m<sup>2</sup> floor area. There is further opportunity for development of other adjacent properties, which will allow the Medical Foundation Building precinct to become a major research site for the Faculty. The location on Parramatta Road, at the gateway to the City of Sydney, also provides a landmark for the Faculty's research activities.

### The Woolcock Building

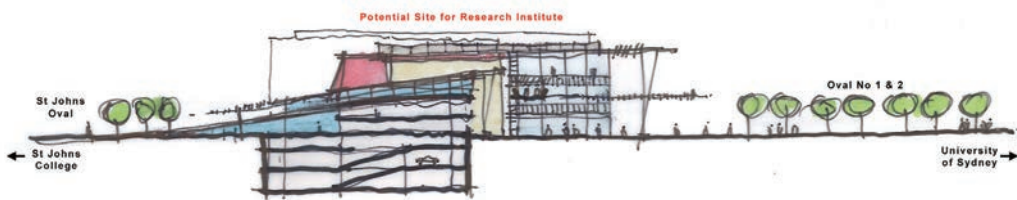


The expansion of the medical research institutes affiliated with the Faculty has resulted in many outgrowing the initial accommodation available to them. By 2005 it was clear that research activities were being severely constrained by lack of appropriate accommodation. The University therefore purchased an office building at 431 Glebe Point Road, for the sum of \$14.8 million. This building, which is rather similar to the Medical Foundation Building, will be refitted as a dedicated research building, with an emphasis on respiratory medicine and epidemiological research. From 2006, this new building will provide over 5000 m<sup>2</sup> of new research space for the Woolcock Institute of Medical Research and other research groups.

### The future

Despite the building achievements of recent years, there are major new capital development needs across the Faculty for support of both teaching and research. On Camperdown Campus, the Faculty recognises the need to restore the Anderson Stuart Building to proper usage and to renovate the Blackburn Building. During the next decade a program of staged restoration of the Anderson Stuart Building will be undertaken, which will include refurbishment to accommodate the offices of the Dean for the long term. The Blackburn Building will be refitted for modern teaching of both basic and clinical sciences, which will include restoration of its unique features, including the two-floor Pathology Museum and the octagonal library.

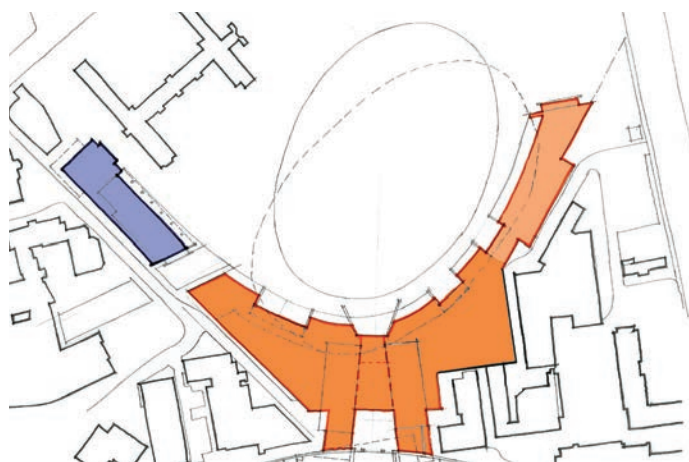
At the same time, the University is also addressing the need for new laboratory accommodation for biomedical science research. In a major initiative, planning has commenced for a new multi-disciplinary research building of up to 24,000 m<sup>2</sup> which will be a cornerstone of the research success of the Faculty during the 21st century. This \$100m building, which is to be designed as a major



Elevation for the proposed research building

architectural asset of the University, will employ the most modern design in glass and stainless steel. An important feature will be environmental responsibility, including energy efficiency and use of recyclable materials. The building will accommodate researchers from Faculties of Medicine, Science, Pharmacy and Veterinary Science, as well as affiliated medical research institutes, and provide state-of-the-art research facilities. It is anticipated that this building will open in 2009.

The Faculty’s growth also continues at the clinical schools. At the Northern Clinical School, the major redevelopment of the Royal North Shore Hospital will include new teaching facilities and research laboratories for the Kolling Institute. At Concord Hospital, the ANZAC Research Institute is already looking at second stage expansion, whilst construction is about to commence on laboratory facilities for the National Centre for Research into Asbestos-Related Diseases. In the Western Clinical School, the Millennium Institute is planning construction of a new research building immediately adjacent to the Children’s Medical Research Institute at Westmead. That development will allow much-needed expansion of the Institute and will facilitate research collaboration and sharing of critical research infrastructure with the Children’s Medical Research Institute. At Nepean Hospital, expansion of clinical teaching and research facilities on land adjacent to the Hospital is being planned, to serve the growth of the Hospital as the newest of the Faculty’s Sydney-based clinical schools.



Outline of proposed research building. St John’s College, upper left; St John’s Oval, centre.

From very humble beginnings in a small cottage, the Faculty of Medicine has grown and spread into many fine buildings across the University campus and the teaching hospitals. In the exciting years ahead, as the Faculty aims for even greater achievements, the present and future buildings of the Faculty will continue to be the foundations of these achievements.

A footnote:

## Refurbishing the Anderson Stuart Building

David Davey

### Background

In the 1960s, plans for a new building adjacent to the Bosch Lecture Theatres included space for the Departments of Anatomy, Histology and Physiology, then all housed in the Old Medical School. Any suggestion for improvement of the ageing Anderson Stuart fabric were quashed. Even significant safety issues were disregarded.

In 1991 John Young began the cycle of departmental reviews (see Chapter 2). The Anderson Stuart departments were the first to be considered and staff were uncertain about the underlying agenda. Those in Physiology took the opportunity to make a case for improved funding and a new building, pointing out that the Anderson Stuart Building was the oldest in Australia being used for modern scientific research. Although the possibility of a new building was not pursued, refurbishment of Anderson Stuart was considered.

When concept planning began, considerable problems were noted. There were no centralised services, not even hot water; no spaces such as in-ceiling or under-floor cavities or vertical risers



devoted to services; no records of where most services ran; and virtually every safety code had been breached. Council regulations are generally not applied retrospectively to existing buildings, but codes must be adhered to once changes are proposed. Thus any changes would be consequential, and invasive. There was no space for decanting people and equipment, various heritage considerations applied – and to maintain research continuing access to a full complement of services was essential.

A schematic plan was adopted late in 1994 to integrate the research spaces on the upper floors of the building, with teaching facilities and departmental administration restricted to the ground floor and basement. The initial cost estimate was \$22m. Since there was no free space within the building, the Burkitt Library was moved to the Edward Ford Building and merged

with the Public Health Library to form the Burkitt-Ford Library. At the time it was expected to be only a temporary home until a combined sciences library would be constructed by the end of the decade; it never eventuated. The basement animal house was relocated to the Ford Building Annex, and space on the top floor occupied by the Faculty of Dentistry was vacated. The substandard Listerian Lecture Theatre was converted to research space. The air-conditioning plant was a major problem, especially given the sloped slate tile roofs; clever engineers located it atop the nearby Fisher Library. Many laboratories were planned with partial mezzanines, so that the total research space would be substantially increased in the refurbished building.

Staff with laboratories on the ground floor or ground floor mezzanines where new teaching spaces were planned, and those in the path of a new lift, were first to move. These included Liam Burke, David Cook, Roger Dampney, Dave Davey, Paul Martin, Chris Murphy and Bill Phillips.

Some new teaching spaces were purpose-planned, while some were designed to be multi-purpose. The existing teaching labs still featured lead-lined sinks and plumbing, and the drive equipment for mechanical kymographs was still functional. No air-conditioning was included; open windows provided the ventilation. The outstanding feature was to be the quality of the planned research facilities. Each laboratory was designed for the occupant. Air-conditioning, fume cupboards, reliable power, water and drainage, data and telephone cabling, access to lifts, and safety equipment were all to be provided; features that had previously been impossible to achieve. It was clear from the outset that costs would prohibit an initial plan for the entire building. The work was staged: the first focused partly on providing infrastructure for the basic services. Unsightly surface-mounted additions over the years to water, power and telephony marred the internal sandstone; they would be removed and re-routed. Part of Stage 1 included the planning for Stage 2, which was predicted to continue 'seamlessly'.

## Stage 1

The first sign of activity was the closure of the Burkitt Library on 20 June 1995; a wake was held to mourn the loss. Tenders for the major work could not be called; delays in preparing the architectural and engineering drawings disrupted the schedule. The latter were not rigorously analysed, causing many later problems. Preparatory work included installing new mains electricity cables under Manning Road to the building, but the rest of 1996 was lost to repeated delays. The initial tenders were all judged to be too high, so the project was run under 'construction management'. The only success was the completion of the new animal house ahead of schedule, and the animals moved at the beginning of 1996.

In February, a workers' site was established behind the building, giving the appearance of activity. Inside the building minor works cleared some areas, but it was not until 26 April 1996 that a 'cutting of the first stones' ceremony marked the start. Week 1 of a planned 'critical path' matrix



Building a mezzanine

matrix was meaningless. Nothing was going to plan. The difficulties were numerous, ranging from poor planning to bad luck, and there were impediments imposed by the needs of researchers still working in the building. There seemed to be no incentive for project managers to stick to the time lines.

Particularly invasive was the 'northeast riser': a vertical corridor had to be cut through every floor from bedrock to the slate roof. The space would contain power and communication wiring, water (potable, unpotable, deionised, air-conditioning), some air ducts, and a lift. But the space at that time contained offices, labs, stairways and corridors; creating it was a non-trivial invasion.

In fact, the building was not a typical construction site, but an occupied and productive research facility. Some extraordinary oversights in planning became apparent. The early schedule included the closure of the northeast stairway and the destruction of a mezzanine that was the floor of Paul Martin's lab; the stairway was the only access to his lab. No relocation plans were included. Some problems could not have been foreseen although, without adequate plans of the building's services, everyone knew there would be nasty surprises.



The lower floor of a split laboratory

began. A Project User Group was established to liaise between contract managers, facilities management and the building occupants. Davey was a key member and persuaded John Cossey to take on the key role of 'facilities management' within Physiology.

By Week 2 most staff involved in the User Group were convinced the chronological component of the

For example, some cupboards built across an old doorway between Dampney's lab and the classroom were to be removed to provide access. It looked like a quick job, but the removal of one cupboard revealed a six inch steel drain pipe crossing the doorway at waist height. The 'quick job' grew into major plumbing task, adding weeks to the schedule.



Blue spaghetti

Despite numerous attempts at liaison between research staff and tradesmen, the work frequently interfered with research and teaching. Dust was an ongoing problem, with no attempt to control it at source other than a weekly sweep-up (causing even more dust). Everyone learned what a 'kanga' was, as the noise and vibration of these jack-hammers pervaded the building. Curfews on their use were regularly breached. The idea that a quick job high in one corner of the building could ruin a patch clamp experiment in the basement of the opposite corner had no impact.

Power failures became a way of life. Some were inevitable, caused by uncharted wires being cut (fortunately with no injuries resulting), others by faulty newly installed breakers, or by an electrician identifying a circuit by turning each one off in sequence.

Flooding was an all too regular event. Pipes were cut accidentally or the supply was reconnected to an area where the new work was incomplete; at least one flood resulted from a nail driven into a wall, puncturing a copper pipe. The most spectacular flood was the result of an attempt to drain and remove some sprinklers. Large volumes of rusty water drained rapidly into the north-east ground level foyer, and thence into the entrances to the Davey and Cook labs, and into the new computer suite with its freshly laid carpet.

Fires were fortunately rare, though one, arising from the failure of an LPG gas line, resulted in modest damage, causing more flooding as the sprinklers were set off. False fire alarms were frequent, usually attributed to dust. Staff often took advantage of the time to attend to business elsewhere on campus, making it impossible to account for everyone in the event of a real fire. The fire brigade attended each event to deactivate the alarm; fines apply for repeated false alarms!

One tragic event was the sudden collapse of 'Jimmy the plasterer'; a model worker, always busy, he died later in hospital. There were few other serious mishaps. The demolition of an old mezzanine resulted in the failure of some fastenings; a large concrete slab was suddenly teetering with workmen on it. Fortunately it was stabilised fairly quickly.

There were also mistakes. The steel framework for a mezzanine was dynabolted into the sandstone walls and welded together. On inspection, the headroom was too restricted, necessitating a prolonged, difficult removal. The hundreds of kilometres of data and phone cabling was poorly managed. Despite regular oversight by John Dodson, masses of unlabelled 'blue spaghetti' took years to sort out, with errors still being discovered in 2004. Other mistakes in design occurred.



Flood

On level 6, in the north-east corner of the building, a disabled toilet that met council demands was completed as planned. The access lift in that corner was also completed; it had been designed to stop at level 5.

Staff were frequently warned of the risks of theft. One Friday, new computers were delivered to one of the refurbished classrooms. That night, University Security Officers apprehended men removing some of them from the

basement. While prevention of the loss was a benefit, a group of electricians was unexpectedly off the job! More delays.

The first positive step was the hand-over of the new staff common room and meeting room on 26 November 1996, more than a year after the library had closed, although it was a relatively simple job. The first meeting was scheduled in the new room on the following day. About an hour beforehand, a large area of the ceiling collapsed. Fortunately no one was injured, but the first hand-over was seriously marred.

It was clear from the outset that the timetable could not be adhered to. As teaching space was in short supply, Davey proposed a temporary classroom, of the sort used by schools. It was constructed in the courtyard. The logic of convenience and security prevailed, and an ugly aluminium box was constructed in the middle of the building in September 1996. It remained in service until March 1998 – much longer than anticipated. It was used variously for practical classes

and office space. For a period it housed most of Murphy's laboratory, and later the Physiology electronics workshop. It served as an incentive to complete the project.



Flood in the foyer

Because of inadequate project management, the project was taken over by the University. Graham Wearne was the main site manager, and became well known. He managed the impossible task with grace and good humour, keeping things moving.

There were progressive moves to new spaces in 1997. The new research spaces in the old classrooms all had mezzanines built well back from the windows, producing an aesthetically pleasing environment. The air-conditioning system was mostly well received





Ceiling collapse

– until it became evident that the system for eliminating condensate water was inadequate. More floods occurred, with water sometimes dripping from light fittings in rooms below. The units in the new computer room proved to be quite inadequate, and despite numerous upgrades and an emergency system, were still giving trouble in November 2005.

Stage 1 was declared complete 2 July 1998. The 'one year' project measured from the Burkitt Library wake had taken three years and two days.

### Cost blow-outs

The delays, surprises, and, in some cases mismanagement, contributed significantly to the growing cost of the project. Replacement of surface-mounted wiring and plumbing often disclosed substandard and/or dangerous installations in parts of the building, not included in Stage 1, extending the scope of the project. Cost-effective opportunities were sometimes taken to extend some work to an adjacent area.

Financial responsibility for some additional work was accepted by Facilities Management Office, some by departments, and some by the Faculty which contributed significant funds. The full extent of the blow-out is impossible to estimate, but it probably exceeds \$50m. One casualty was the planning for Stage 2 and thence Stage 2 itself. Although some laboratories have undergone some refurbishment since Stage 1 was completed, major infrastructure work, notably the construction of the needed southeast riser, has not. The folly of undertaking such major work in such an old, occupied building was learned by many.

### Long-term consequences



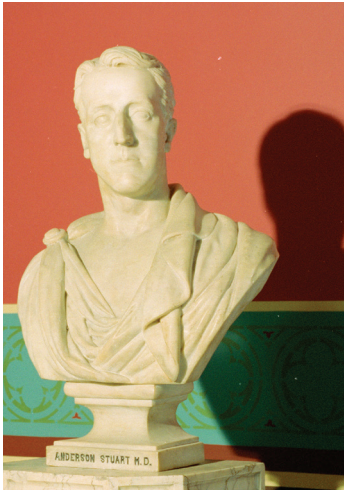
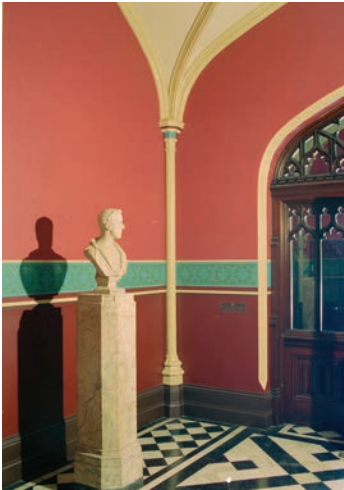
Constructing a mezzanine

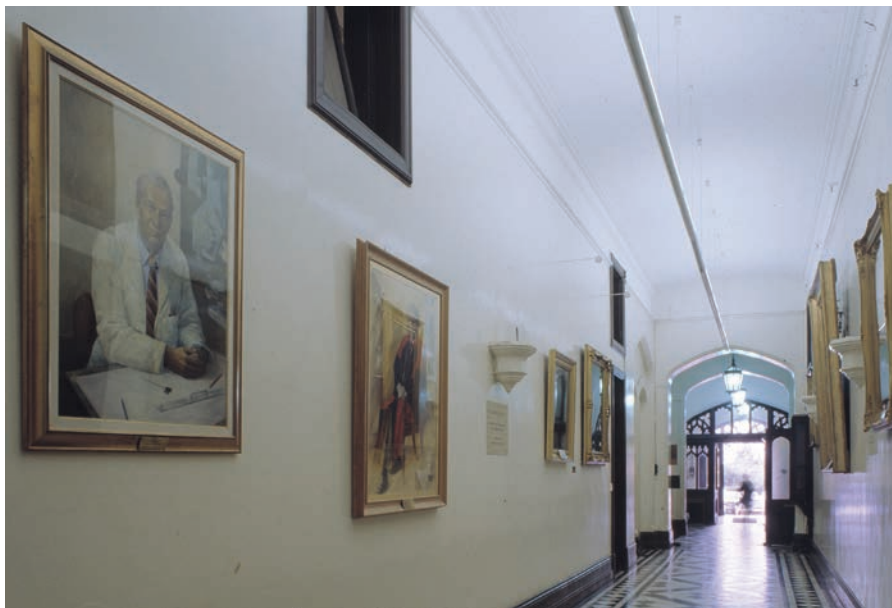
The improvements in teaching and research spaces have ensured that the training of future research students is effective and attractive, and that the research effort can keep pace with modern developments. But there are negatives. There is a rising demand for space for biomedical research. Because Stage 2 did not happen, space must now be found

elsewhere. Some labs have been relocated to the Medical Research Building, off the Camperdown Campus. The physical separation of departmental colleagues will inevitably degrade cohesiveness. Cooperative and often influential groups, such as those involved in the 1991 reviews that triggered the refurbishment project, may no longer be departmentally-based.

### Images of the Anderson Stuart Building











The Anderson Stuart Building in the 1920s from City Road, a view now obscured by the Madsen, Transient and Chemistry buildings.

