COlonisation – the first hospitals

When Australia was colonised by European settlement in January 1788, there was adequate planning for health services but apparently no provision made for a hospital. With the first fleet containing ten doctors for 1,363 passengers, the colony commenced operations with a doctor/population ratio of 1:136, a figure that has never been equalled since!

However, soon after the fleet arrived in Sydney, a tent hospital was required to care for the many convicts who were suffering from the ill-effects of their long sea voyage including dysentery, smallpox, scurvy and typhoid. The tents were only replaced when a prefabricated hospital made from wood and copper arrived with the second fleet in 1790.

These makeshift facilities continued in use for 26 years until construction commenced in 1814 for Sydney’s first permanent hospital. It is unclear who prepared the design for the three Colonial Georgian buildings which comprised this hospital, but when it opened in 1816, the result was far from satisfactory, prompting an adverse report from the first Government Architect for NSW, Francis Greenway.

As other colonies were established in Australia, in Tasmania in 1803, in Queensland in 1824, in Western Australia in 1826, in Victoria in 1834 and in South Australia in 1836, the need for hospitals in each of these locations was recognised.

In these early days, one of the first government departments established by the colonial administrations was a Public Works Department to provide the struggling colonies with the basic infrastructure of roads, bridges, water systems and buildings. As a result many of the early hospitals were designed by these PWD’s, a practice that continued in many states until the 1980’s.

However, from these inauspicious beginnings, a sophisticated architectural design industry has emerged, which today is responsible for the design of health facilities totalling over $7 billion per annum throughout Australia.

+ Sydney Hospital - The oldest hospital in Australia, opened in 1816.
+ The Royal Melbourne Hospital
HEALTHCARE AND HOSPITALS

While hospitals today represent the ultimate sophistication in healthcare delivery, it is important to recognise that prior to the twentieth century, hospitals were normally only utilised by the poor and destitute, or those near death. The wealthy and ‘well-off’ were treated at home.

With advances in medical technology and treatment techniques in the late nineteenth century, the role (and perceptions) of hospitals changed. As healthcare advanced hospitals became a symbol of these medical advances and were utilised by both rich and poor members of the growing Australian population. Salubrity became a priority in hospital design with the role of sunlight and fresh air in the curing of disease playing a crucial design role.

IMPACT OF A FEDERATION

Under the Federation system of government adopted by Australia in 1901, when each of these colonies united to form Australia, each State retained responsibility for the provision of healthcare services. As a result, each State Government also retained responsibility for the provision of the healthcare facilities required to provide these health services. This method of governance initially created six different health care systems and six different arrangements for the provision of healthcare facilities.

With the creation of the Northern Territory and the Australian Capital Territory in 1911, and the subsequent entry of the Federal Government into the provision of healthcare services, this was expanded to nine public healthcare systems and nine different arrangements for the provision of public healthcare facilities. The subsequent development of private hospitals provided another layer of complexity and the recognition of a need for standards given that a Government agency wasn’t directly involved in the provision of these facilities.

Following Federation, the newly formed States came to grips with their responsibilities for the provision of government services including healthcare delivery, at the same time as developments in the provision of healthcare services led to improvements in the standard of hospitals.

HOSPITAL ARCHITECTURE AS A SPECIALISATION

During the 1920’s and 1930’s, innovations in the design of European hospitals and sanatoria were gradually reflected in Australian hospitals when the demand for additional (or upgraded) hospital beds led to a minor boom in hospital development in the capital cities of the Australian states. With the strong connections between hygiene and function, hospitals became the ideal building type to express the clean lines of architectural modernism and therefore were among the first large scale civic buildings to adopt this style.

The rapid changes in hospital design led to this field becoming one of the first specialisations in architecture, at a time when the architectural profession was very parochial – well before the development of national firms. Those who recognised this opportunity and undertook the research, were able to ‘corner the market’.

Sir Arthur Stephenson was one architect who foresaw the possibilities and undertook extensive study tours overseas to ensure that the design of Australian hospitals reflected these improvements. Based on this newly acquired knowledge, he was commissioned to design St Vincent Hospital in Melbourne and then went overseas again to undertake further research. His 1932–33 study tour resulted in knowledge that ‘laid the foundations for Australian hospital design over the next two decades. This trip across America Britain and Europe included hundreds of hospitals’.

These investigations had a dramatic impact on both the functionalism and the design of the many hospitals he was then appointed to develop. The hospitals he designed following this trip (the Mercy Hospital 1934, the Freemason’s Hospital 1936, Bethesda Hospital 1936, the Pathology block at the Royal Women’s Hospital, the United Dental Hospital 1940, the Royal Melbourne Hospital 1942, and the Yaralla Military (Concord) Hospital 1942) all exhibited the strong tenets of modernism with streamlined broad balconies and large windows sweeping across white rendered facades.

During this period, Australia’s population was approximately 6.5 million residents, having slowly grown from the 3.8 million inhabitants present when the Federation of Australia was proclaimed on 1 January 1901. At the outbreak of World War II in 1939 Australia’s population had risen to 7 million – an average growth rate of 1.2 % per annum over the 38 years since Federation.

By the end of World War II, Australia’s population was still only 7.4 million, but over the next 20 years due to post-war migration programs, it climbed to 11.5 million – a tripling of the average growth rate to 3.57% per annum.
EXPANSION OF DEMAND FOR HOSPITAL PLANNING AND DESIGN SKILLS

With this growth, came the need for new residential suburbs and the need for the new infrastructure (including hospitals) to service this increase in population. As a result, after the material shortages of the immediate post-war years were overcome, Australia witnessed its second major boom in hospital construction over the period 1955–75. During this era, many of the central city hospitals were relocated to suburban sites closer to their catchment population.

During this period, hospital design was strongly based on functional needs and the requirements of technology and healthcare providers became paramount. Many had an institutional feel. The needs of patients were often not seen as a priority – leading to a reaction with the establishment of organisations in Australia which followed the Planetree philosophy that care should be organised around the needs of the patient.

Improvements in air conditioning and other mechanical systems enabled deep-planned buildings to evolve which permitted improved inter-relationships between a myriad of hospital departments, but also meant that many healthcare providers and patients were cut off from access to external views and access.

Following this surge, the rate of hospital construction stabilised for a decade until 1986 when a consolidation of private-for-profit hospital companies fuelled another decade of hospital development, this time in private hospital construction. Ramsay Health Care, Healthscope, Hospital Corporation of Australia, Australian Hospital Care, Hospitals of Australia and the major not-for-profit hospital groups all expanded their facilities during this period.

In 1995, Queensland recognised the need to upgrade its health facilities after twenty five years of minimal expenditure on capital works in health and embarked upon a $7 billion program of public hospital construction. In 2004 when this program had been completed, Queensland became one of the first States to ever undertake an evaluation of the outcomes achieved.

The Forster Review provided clear lessons for how the planning, design and development of similar projects could be improved in the future. Unfortunately, because there was no national research centre or mechanisms to share this information, this Review was never fully considered by other States about to embark upon similar programs of major health projects.

BEYOND 2000

By the early years of the 21st Century, the need to rebuild those hospitals constructed in the post-war years was starting to be recognised. Following asset audits and an assessment of business cases, a multi billion program of capital works was instituted throughout Australia. However, this time instead of the State Governments funding all the capital works required, new procurement arrangements were tested with the introduction of Public Private Partnerships.

The arrangements trialled on Port Macquarie Hospital in NSW were then refined by State Government agencies and led to projects such as the Casey Hospital in Berwick Victoria, the Royal Women’s Hospital and Royal Children’s in Melbourne, Royal Northshore Hospital in Sydney (image below) and the Sunshine Coast University Hospital in Queensland.

As hospital design increased in complexity, each of these separate jurisdictions developed their own standards and regulations for both public and private facilities. It was not until November 2006, that the Australasian Health Facility Guidelines were launched as an attempt at national alignment of the plethora of different standards and guidelines that had evolved since Federation.
DEVELOPMENT OF EXPERTISE

During the first half of the 20th Century, public hospitals were the mainstay of the provision of health services in Australia, aided by the significant contribution that the not-for-profit hospitals (primarily operated by religious orders) made in the major centres of population.

While in many States, the architects and engineers employed within Public Works Departments were responsible for the design of public hospitals, there were exceptions to this. As noted above, one of the early architectural practices specialising in healthcare architecture was Stephenson & Meldrum (then Stephenson & Turner) based in Melbourne, although its founder Sir Arthur Stephenson commenced his illustrious career in hospital design whilst employed as an assistant architect for the Public Works Department of Western Australia.

The governance arrangements in each State dictated the way in which design consultants were appointed for these projects. In Victoria, for example, the Boards of Management of Hospitals often had the authority to commission their own private architectural and engineering consultants leading to the development of private architectural practices specialising in this field. In many other States however, the ‘power to construct’ (and the authority to appoint architectural and engineering consultants) remained vested in the Public Works Departments who jealously guarded their role in this area.

As a result, it was only during the second half of the 20th Century (1980’s and 1990’s) when State Governments around Australia devolved the design roles of their PWD’s and outsourced this work to the private sector that expertise in this field developed in the private sector often abetted by the acquisition of ex-PWD employees.

Initially, this expertise was confined to local firms operating individually in the capital cities of the major States due to the parochial procurement arrangements and State Government ‘Buy-Local’ policies. However as joint venture alliances developed between firms in different states, collaborations developed which then morphed into more permanent arrangements leading eventually to national firms being formed.

These national firms (with access to each of the health project jurisdictions) could then be assured of the continuity of work needed to underwrite the training and skills development required for health facility design.

FEDERAL GOVERNMENT ROLE IN HOSPITAL DESIGN

Initially under the Federation system of government adopted by Australia, the only responsibility for health issues allocated to the Commonwealth Government was for quarantine issues. However, after World War II, following the establishment of the Department of Veterans Affairs, sixteen Repatriation Hospitals were established around Australia to provide healthcare services for returned serviceman. This was the first time that the Commonwealth Government had taken on responsibility for the direct provision of healthcare services.

As a result, the Commonwealth Department of Works gradually developed expertise in the design of health facilities. Following the establishment of the Commonwealth Rehabilitation Service and the need for the Commonwealth to provide hospital design services for returned serviceman, this Department established a central core of hospital design experts.

In order to develop their own expertise in this field, during the 1970’s, the Commonwealth Department of Works instituted the Hospital Architects Training program, through which selected architects were out-posted to hospitals to gain an understanding of how healthcare services were delivered, before undertaking overseas study tours and a secondment in the design branch of UK Department of Health & Social Security based in London.

This resulted in the exchange of research and guideline material between Australia and the United Kingdom when the NHS Hospital Design Guides and the Activity Data Base were purchased for use in Australia.

The establishment by the Whitlam Labor Government in 1973 of the national Hospital and Health Services Commission headed by Dr Sidney Sax marked the commencement of health planning as a discipline in Australia. In 1974, it provided the first formal overview of health planning indices in their seminal publication “Hospitals in Australia”.

The Commonwealth Government’s expertise in healthcare design was considerably enhanced during this period when the Whitlam Government created a taskforce to plan and design the ‘Any Hospital’ project as part of its negotiations with the State Governments to introduce universal health insurance. Hospital design experts from around the world were brought to Australia to advise on how best to quickly develop a series of hospitals located in each capital city that could provide Commonwealth health services.

While the projects were never built, the core of expertise remained resulting in a joint Health-Works Departmental Branch being established to manage the Whitlam Government’s Hospital Development Program, which was responsible for funding hospital projects throughout Australia, including such iconic projects as the Westmead Hospital in Sydney.
NATIONAL COORDINATION & RESEARCH

One of the unforeseen benefits of this program was the opportunity for the Commonwealth to act as a facilitator of interaction between the health planners, architects and engineers in each State Government, so that information regarding hospital planning and design could be shared between what were up until that point autonomous groups in each State operating in isolation.

The need for research in the field of health facility planning and design was recognised at this time, with the establishment in 1974 of a Commonwealth Government advisory group, the Hospital Facilities Services Branch to service the growing enquiries for information generated by the Hospital Development program.

A similar need in our largest State, New South Wales also sparked the establishment in 1976 of Hosplan – the Hospital Planning Advisory Centre of NSW. Because of the success of this Advisory Centre in fulfilling a national need for research and information regarding the planning and design for hospitals, it was closed in 1990 during the efficiency drives initiated by Premier Nick Greiner; when a review recognised that the majority of queries were by then being received from States other than NSW.

While individuals tried to cover this gap with initiatives such as the Group for Health Architecture and Planning (GHAAP) established by Ian Forbes, the need for a funded centre, although obvious, remained unfulfilled due to the split responsibilities of the States and territories and therefore the lack of a leader to address this issue.

This void for a national research centre and information broker remained in Australia until the Health Capital & Asset Managers Consortium (the predecessor of the Australasian Health Infrastructure Alliance) took the inspired step in 2004 of combining funding from the Health Departments of all States and Territories and from the New Zealand Ministry of Health to establish the Centre for Health Assets Australasia (CHAA) at the University of NSW.

GUIDELINES AND STANDARDS

Prior to the creation of the Centre for Health Assets Australasia (CHAA) on 1 January 2005, each State in Australia was responsible for the development of its own guidelines and standards. When the Centre was formed, each State Health Department donated the guidelines and standards it had developed in previous years to form the basis for one national centre of knowledge on health facility planning and design.

Through research, seminars and its role as an information broker, CHAA was able to deliver substantial economic efficiencies for health projects in Australia and New Zealand at a time when billions of dollars were being invested in health projects.

During the six years it operated (from January 2005 to December 2010), CHAA demonstrated the immense benefits of what could be achieved when the States combined their funding in this field to jointly fund research and to act as a central source of knowledge on the planning and design of health facilities.

With the funding from the public health agencies and substantial funding from the University of NSW, over $2 million was available to undertake its research, guideline development and dissemination role. CHAA also coordinated interaction with overseas research centres in this field and was so highly regarded overseas that the Europeans copied the concept and created eCHAA (the European Centre for Health Assets & Architecture) which still operates today.

Unfortunately for Australia, in December 2010 funding was not renewed and this major contribution by the Australian Health Infrastructure Alliance in progressing the ‘state-of-the-art’ in health facility planning and design has lapsed. While the Australian Health Infrastructure Alliance still exists, the interaction with the private sector which was so important to the success of CHAA is no longer extant.

The Australian Health Design Council has been established to fill this void, but needs the support of both client agencies and the private sector consultants and contractors if it is to match the success of CHAA.

However, the benefits to Australia are still being realised with many of the projects which benefited during the design stage from the research and guidelines developed by CHAA now being commissioned for use throughout Australia.

- Fiona Stanley Hospital
- Rockingham General Hospital
- Whyalla Cancer Centre
IMPACT ON CURRENT PROJECTS

This focus on research during this period also enabled a rapid dissemination of literature on Evidence Based Design in Australia. The Centre for Health Design which CHAA sought to emulate, is still going from strength to strength in the USA and has been pivotal in the world wide development of the research which underpins Evidence Based Design.

The information from overseas generated by the seminars and research undertaken by CHAA has also seen a renewed focus on patient-centre care in the design of these new healthcare facilities in Australia. Rather than the institutional models of the past, new designs are focussed on the needs of patients and their families (a home away from home) with the planning of hospitals modified to bring services to the patient rather than expecting the patients to traverse the labyrinth of many large healthcare complexes.

Examples of this patient centred approach can be seen in projects undertaken during this period such as the Royal Children’s Hospital in Melbourne, the Gold Coast University Hospital and the new Children’s Hospital in Queensland, the Royal Adelaide Hospital in South Australia and the Fiona Stanley Hospital in Perth.

The combination of Evidence Based Design and this patient centred approach has also resulted in a greater realisation by clients of the impact of the built environment on the healthcare services delivered in these healthcare facilities.

As a result, the past decade has witnessed a greater involvement by senior health executives and healthcare providers in the planning and design of these facilities and a far more collaborative approach to the future delivery of healthcare services.

As we approach the end of this extraordinary period of hospital development, the challenge facing both clients and project teams is how best to utilise the knowledge and experience gained to-date to improve the way we undertake the planning and design of health facilities in Australia in the future.