Health Design in New Zealand

Te Whaihanga o Ngā Whare Hauora o Aotearoa

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Foreword

Designing a hospital is one of the biggest challenges any designer will face. The blend of ever-changing briefs, evolving clinical services, high political and community expectations, deeply technical engineering requirements and constant time and cost pressures can make designing and delivering environments that support healing and enrich the human experience overwhelming.

Health design has increasingly become a highly specialised discipline, which seeks to integrate complex clinical functions and engineering and building design to create human-centred spaces. In hospitals, we are at our most vulnerable and our most joyful — they are literally places where life changes. In such existential extremes, the design of health environments takes a supporting role and often becomes invisible. Like roads and drains, we expect it to be present and to work — we only notice it when it fails.

The designers of essential social infrastructure like hospitals play a crucial nation-building role but are often anonymous, or not well known. In New Zealand, our focus continues to be on today's challenges — funding, designing and delivering health infrastructure — rather than dwelling on what has gone before. So now, for the first time, this book captures and celebrates the health design stories, settings and people unique to this place. It sheds light on some of our unsung champions, explains much of our built hospital environments, and records many of our untold tales. And it traces the threads of current health design trends, people and places back through time.

The history of health design in New Zealand echoes our short history as a nation. Through pre-European, colonial and post-colonial periods, New Zealand's built environment has been shaped by remoteness, a challenging geography and a low population density by international standards. These characteristics have fostered both 'cherry-picking' health design trends and themes from the rest of the world and rapidly prototyping and adapting home-grown solutions.

The development of international design guidelines and standards such as the Australasian Health Facility Guidelines (AHFG) replaced earlier, local iterations like the so-called 'Blue Book' (Accommodation in Hospitals, Code of Practice, Department of Health, Wellington 1991), allowing local health designers to benchmark work against international best practice. As technology advanced and the global exchange of knowledge and personnel accelerated through the twentieth century, so New Zealand hospital design evolved in parallel with design and construction trends in other sectors and other countries.

As designers' confidence and resources have grown, developing, trialling and refining local variants has become more common. Both Australian and New Zealand hospital projects now feature regularly in international conferences and awards. The story of health design in New Zealand continues to evolve from the rich and detailed narrative in this book.

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New Zealand's small health design community makes a high level of collaboration between designers possible across regions and projects. The New Zealand Health Design Council (NZHDC), established in 2011, has supported an open environment in which the health design community regularly shares lessons, research, projects and successes. NZHDC has successfully built up a strong network of professionals working in health design, and continues to support skill and knowledge development and to champion higher quality in health design and delivery. International collaboration with health design organisations such as the Australian Health Design Council, the UIA (International Union of Architects) Public Health Group and

others allows local designers to continue to connect with current trends, global research and best-practice delivery.

New Zealand's remoteness and small size is a challenge for health infrastructure. Recent reviews of our hospitals and health facilities have identified the same problem: buildings and infrastructure are ageing and deteriorating, and are not properly planned, sized nor located. Even more concerning, health services are constrained and are beginning to be compromised by our buildings as clinical staff are required to 'make do' in challenging environments.

Remedying New Zealand's major health infrastructure deficit will require at least four to five times the current rate of recent capital investment, and affordability issues become more acute every year. Health designers recognise the responsibility to creatively respond with new ideas, efficient design and project-delivery strategies and standardised design elements. Balancing creativity and constraint will continue to shape New Zealand's health design work for the foreseeable future.

Globally, indigenous voices are increasingly heard in the design and delivery of social infrastructure. In New Zealand, Te Tiriti o Waitangi, our founding document, calls for a partnership between Māori and the Crown. Hospitals and health services have recently been shaped more strongly by greater inclusion of indigenous knowledge and perspectives in briefing and design processes. Health designers are becoming increasingly familiar with working alongside tangata whenua and others to meaningfully weave cultural themes and concepts appropriate to local communities into the design of hospitals.

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It is a truism to say that each of us either is, has been or will be a patient and so will experience a health environment at some time in our lives. Most health designers have some personal experience in a hospital, and this shapes perceptions and drives a personal commitment to improve the experience and environment for others.

New Zealand health designers, like others around the world, are increasingly understanding that providing a functional design solution is no longer sufficient to meet human needs. There is a growing awareness that design itself can be an agent of care, and that the built environment itself can enhance human experience and facilitate healing. In his recent book *Constructing Health*, the Canadian architect Tye Farrow draws connections between mind health and the built environment and advocates that designers need to be 'designing and constructing environments to actively cause health and enrich human experience'. Balancing all these influences will occupy health designers in New Zealand as we continue to shape our story and our environment.

Darryl Carey
Architect, health designer, founder NZHDC

Kia whakatōmuri te haere whakamua
I walk backwards into the future with my eyes fixed on my past

Introduction

Hospitals are among the largest public buildings in our communities and require a significant investment of society's resources in their creation and operation. Most people will use them at some point in their lives, often at a time of personal crisis. Yet healthcare facilities tend not to be well represented in architectural histories or awards. This is perhaps because their form follows their function far more than with most other building types, or because the time taken to complete them can result in them being outdated by the time they open. This book attempts to provide a greater recognition of the buildings erected to provide healthcare in Aotearoa New Zealand throughout its history.

It also looks at some of the designers who created these facilities, setting their work in health design in the context of their lives. Some are well known, and their other buildings well publicised; others have left little record. Sometimes, the designer is identified on the opening plaque or foundation stone. They may also appear in photographs, but the captions may identify only the individual, not the firm, and the connection is not necessarily obvious. Occasionally, references attribute different designers to the same building, perhaps due to an assumption based on style or because credit has been given to only one member of a team when the greater scale and complexity of buildings in recent years has made collaboration between firms increasingly common.

One term that recurs in histories of hospitals in New Zealand is 'Architect to the Board'. In some cases, hospital boards did employ their own architects, some of whom had a department of supporting staff. Over time, some practices, both private and public, developed a specialty in health design and were engaged by boards across the country. Often, however, the Architect to the Board was a local practitioner who had built up a detailed institutional knowledge and goodwill and was engaged on a project-by-project basis, sometimes over several decades.

The aim of this book throughout has been to set the commissioning, erection and eventual removal of these buildings, and the lives of their designers, in the wider historical context and in chronological order. The buildings covered in the main chapters are generally those associated with public hospitals, while specific health facility types such as mental health, elderly care, maternity and infant care, private hospitals and primary healthcare are covered in separate sections. Nurses' homes feature because although not healthcare facilities in themselves they were often some of the largest buildings on hospital campuses when staff were expected to live onsite. Several have been successfully repurposed for outpatient or administration uses.

Of all the areas of building design, that for healthcare possibly requires the greatest amount of collaboration between the architect, other members of the design team, clinicians, users and others. For reasons of space only, this history focuses mainly on the architects, with a separate section on the engineers and specialist consultants who have been increasingly relied on for specialist support as technology has advanced.

Surprisingly little has been written about the buildings of some larger existing facilities, while some smaller, often long-gone hospitals have been extensively documented. In fact, the imminent threat of closure has often generated the most interest among historians. Facilities throughout the country are included, with some greater emphasis on the larger tertiary hospitals and those that have been operating the longest.

Opening dates have been somewhat problematic to establish and records are sometimes contradictory. Sometimes the opportunity was taken for a visiting dignitary to open a barely completed shell, well before patients were admitted. In other cases, the building was

operational for some time before it was officially opened. A particular difficulty arises where larger facilities were completed in stages over several years. Where possible, the dates stated are those inscribed on plaques, either still in existence or visible in photographs.

The book is broken up into roughly quarter-century eras, based on what was happening in wider society at the time. Of course, not all the buildings and practices considered fall neatly into a particular period. Many practices operated in only one era, possibly two, but a small number of practices continued their existence across multiple periods. They are grouped in the era that seemed most appropriate, but where possible their work is also mentioned where it occurs elsewhere.

Within each era, hospitals are generally considered from the north of Aotearoa New Zealand to the south, with allowances made for the country's complex geography. This is relatively straightforward in the earlier eras, when settlement and development tended to move roughly in that direction anyway. In more recent times, specialist practices have carried out work throughout the country, so the grouping is more by practice and time.

As with any history, some sources for one hospital, building or designer contain conflicting narratives. In these cases, reliance has been placed on press articles of the time or records held at the relevant facility or at Archives New Zealand. While every attempt has been made to correct existing errors, it is inevitable that some will have carried through into this text. Readers interested in further exploration of places and people in this book are encouraged to use the references provided as a starting point for their own research, and to draw their own conclusions.

1

Hauora Māori

AFTER THEIR MIGRATION TO AOTEAROA from central Polynesia – a gradual process generally thought to have occurred between 1200 and 1300 CE – Māori modified building forms and techniques brought from their homelands to suit the different materials available for construction and the greater need for warmth in a cooler climate. They generally lived in whānau-based kāinga near food sources such as rivers, beaches and forests, though they would also occupy temporary camps as they moved between seasonal resources. More permanent villages included a variety of building types such as pātaka (food store), kāuta (kitchen) and sometimes a wharenui (meeting house).[1]

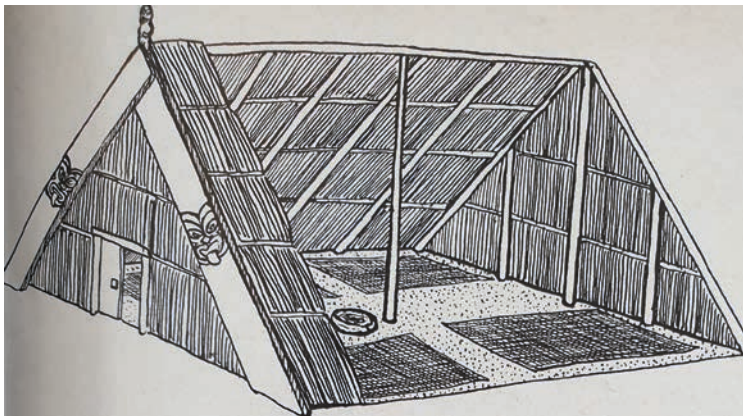
The most common type of building, providing shelter while sleeping, was the wharepuni, which tended to be rectangular, with low side walls, resulting in a small air space that was easier to heat, but in which people were unable to stand. It was constructed of a variety of materials such as timber, raupō, ponga and kiri, and generally had thatch-clad walls and roof, with rush linings. During the warmer months, it is thought that the whakamahau (porch), attached as an extension of the roof or as a lean-to, was the preferred location for sleeping. It was also used for work and social activities, as a place to receive visitors and to engage in activities that were tapu inside, such as eating. The whakamahau could also be used as a place for the sick to sleep, separating them from the rest of the occupants.[2]

The concept of tapu is complex, but eminent Māori psychiatrist Sir Mason Durie has noted that its conferment 'was essentially a safety measure designed to invoke a sense of caution and to warn of threatened danger'. It was believed that illness arose when people offended the gods or violated tapu. By contrast, ordinary or common things, or those free from the restrictions of tapu, were considered noa.[3] As in the rest of the world at that time, an understanding of the scientific principles of hygiene and infection was limited, but religious practices and restrictions had some empirical basis. For example, tapu played an important role in guiding practices for sanitation and water supply, and in Māori villages the turuma (toilet) was generally well separated from living areas.[4]

Tapu also affected childbirth, and whare kōhanga were built for use by women and attendants before and after labour and delivery.[5] Separate temporary shelters were generally built outside the village for other conditions considered tapu, such as whare rāhui for the sick, thus helping to prevent the spread of disease, and whare mate for the dying and their immediate families. In contrast to hospitals in other parts of the world, which remained in use despite many patients dying in them, to Māori death was highly tapu and could render a dwelling house uninhabitable.[6]

Māori led active lives, usually had a diverse diet and were generally healthy. Their geographical isolation also protected them from many of the infectious diseases common in other parts of the world. They were, however, 'probably affected by pneumonia, tetanus, gastroenteritis, arthritis, rheumatism and various skin diseases', and it is now known that the root of the bracken fern, eaten by a number of iwi, can lead to cancer. 'The fibrous Māori diet meant people tended to wear their teeth out, which over time led to malnutrition, disease and death.'[7]

Tohunga were central to the healing process, focusing on body, mind and spirit. As well as protecting the tribal memory and possessing knowledge and expertise in many fields, they were able to confer and remove the restrictions of tapu. Their diagnostic practice concentrated on uncovering any breaches of tapu and on restoring balances between tapu and noa. They were the professional experts in various fields, and through extensive training developed a deep understanding of physiological principles and the healing properties of plants. Because tohunga themselves could be tapu, at times they could not touch other people or food.[8]



Māori treated illness with karakia (prayers), ritenga (rituals), rongoā rākau (medicinal plants) and wai tapu (immersion in sacred water), with an emphasis on finding the cause of the illness, and hence eliminating the spirit or dealing with the transgression causing it. As Durie has pointed out, like Western medicine at the time, Māori rongoā was limited in dealing with acute conditions. Some ailments were regarded as mate atua, supernatural afflictions, but more pragmatic treatments were adopted for those known to be mate tangata, human illnesses. For example, cuts were sewn up with muka (flax fibre), splints were used to bind broken bones and boils were incised and drained.[9]

Durie has used the analogy of a house to describe the holistic approach of Māori to health, likening its four key components to the four walls or sides. These consist of taha tinana (physical health), taha wairua (spiritual health), taha whānau (family health) and taha hinengaro (mental health). Should one or more of these supports be missing or damaged, then, just as with a building, a person or group may become unbalanced, unwell and potentially die.[10]

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In comparison with European medical practice of the late eighteenth and early nineteenth centuries, Māori traditional healing relied less on surgery, used herbal rather than chemically manufactured medicines, and adopted a communal and holistic rather than an individual and specific diagnostic approach. Neither culture, however, understood the biological causation of disease. In pre-European times, the average life expectancy of Māori was approximately 30 years. Although this may seem low, it should be noted that in the early nineteenth century the life expectancy in Britain was only marginally higher, at around 35 years.[11]

At the time of James Cook's landing in 1769, the Māori population of Aotearoa is estimated to have been around 100,000. By 1840 it had declined by 10–30 per cent, mainly due to introduced diseases such as measles and influenza 'and the effects, direct and indirect, of the [1830s] musket wars, including dislocation from lands that were important for agriculture and provided access to mahinga kai'.[12] Their geographical isolation meant that Māori had little or no immunity to illnesses that were not fatal in Europe. Sexually transmitted diseases spread wherever there was contact between coastal Māori and foreign seafarers, and acute intestinal infections such as dysentery and typhoid were also probably present before 1840.[13]

Because most Māori lived some distance from the ports and the new European settlements and were dispersed, they avoided the complete devastation that affected indigenous people elsewhere. Also, as demographer Ian Pool has noted, because New Zealand was so far away, the most virulent diseases had often killed the vulnerable on ships en route to New Zealand, leaving the survivors immunised and not infectious before they arrived.[14]

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A sketch of a wharepuni by W. A. Taylor.

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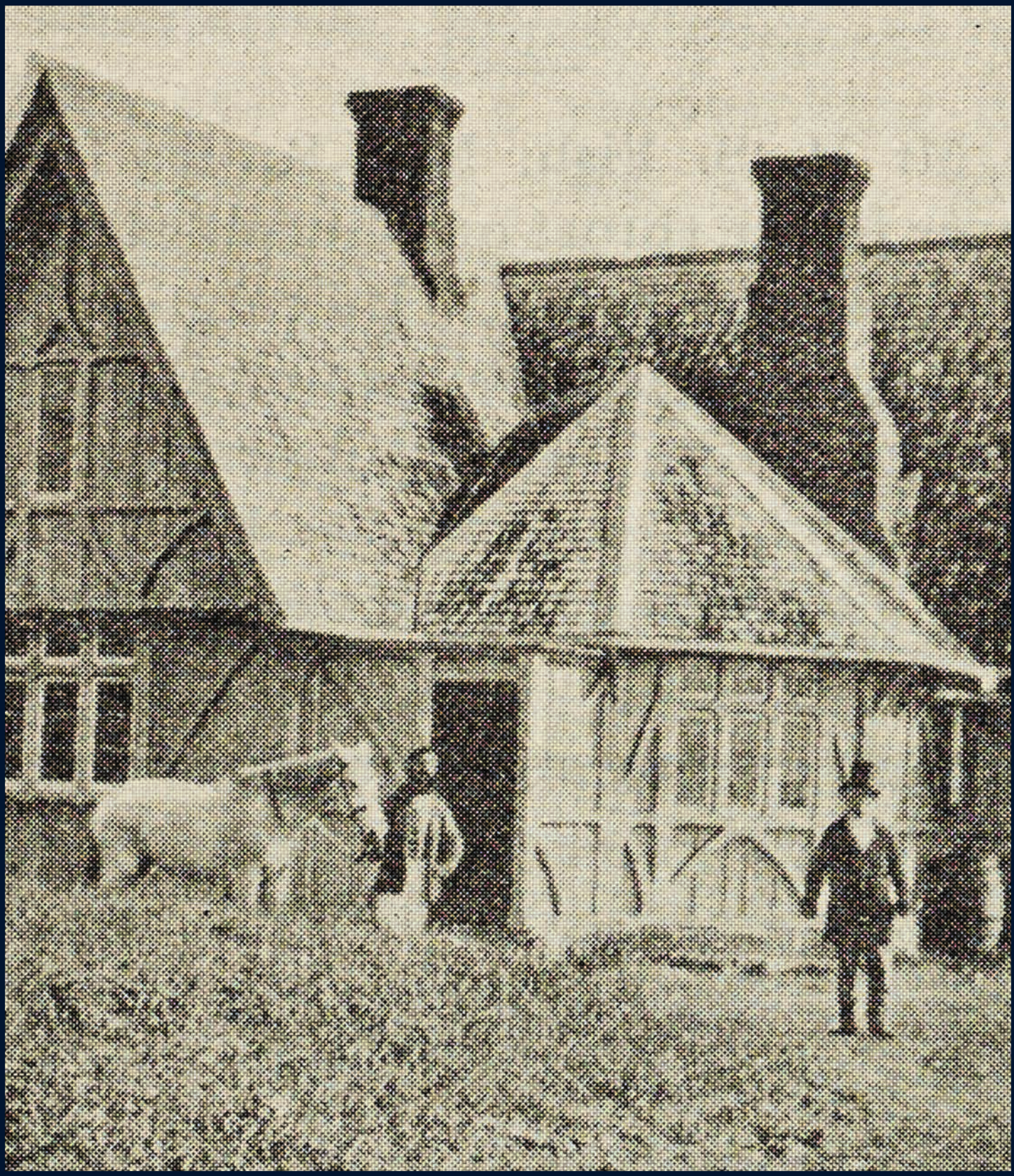
***The residence of a New Zealand chief*, by Augustus Earle, who spent eight months in Northland in 1827, is a detailed depiction of a wharepuni.**

2

The first hospitals

1830–1851



THE MISSIONARIES WHO CAME TO AOTEAROA seeking to convert Māori to Christianity established the first schools, and subsequently the first hospitals. In 1814 the Reverend Samuel Marsden founded the first Church Missionary Society station at Rangihoua in the Bay of Islands. After the second mission station was established in 1819 at Kerikeri, site of Kemp House and the Stone Store, and now one of the country's most revered historic places, Henry Williams set up a third at Paihia in 1823. He was joined by his brother William, who had trained as a surgeon in Britain, and when they established the first inland mission station, 20 kilometres away at Te Waimate in 1834, they incorporated a rudimentary hospital building.[1]

Hospitals were an integral part of other mission stations such as at Kaitāia, where the Reverend Joseph Matthews opened one in 1837 after completing three months of basic medical training in Auckland that year. When the Reverend Richard Taylor moved from Te Waimate in 1844 to establish a station at Pūtiki, on the banks of the Whanganui River opposite the new settlement of Petre (later Whanganui), he, too, set up a hospital.[2]

In the South Island, after 57 French settlers arrived in Akaroa on the *Comte de Paris* in 1840, the crew of the accompanying naval corvette *L'Aube* erected in Rue Lavaud 'a small hospital, big enough to house a doctor and his medicines and at least eight patients. . . . The hospital was in the same building as the store, and together they formed a substantial one-and-a-half-storey weatherboard building.' This was for years the town's only public building, before falling into disrepair in the 1850s. Until 1846 French naval doctors worked at the hospital and provided free visits, hospital treatment and prescriptions for everyone on Banks Peninsula.[3]

The New Zealand Company, established by Edward Gibbon Wakefield to promote British settlement, sent its first emigrants to Aotearoa in 1840: they landed at the future Wellington in January. Further north, the company also, that year, began to settle Petre.

When New Zealand Company subsidiary the Plymouth Company established New Plymouth in Taranaki the following year, it sent with the first settlers on the *William Bryan* a prefabricated hospital building that was erected at the base of the Kawau pā, on the north side of what is now Huatoki Lane between Currie Street and James Lane.[4] Although this has been referred to as the town's first hospital, it was barely large enough to house a dispensary and soon proved inadequate. It was relocated to the corner of Devon and Brougham streets, now the site of the Kings Building, where it remained until around 1880.[5]

As the company's first South Island settlement began at Nelson in 1842, a small facility was built in Trafalgar Street, again mainly for use as a dispensary. Later in the decade this was moved to a lean-to attached to the immigration barracks on Church Hill.[6] Such barracks were erected in new settlements throughout the country to provide temporary accommodation for migrants once they had disembarked and before they found work. Though basic and sometimes barn-like, they were a step up from tents or huts. Once they were not required to house migrants, their large open dormitory spaces were often repurposed for hospital use.[7]

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After the signing of the Treaty of Waitangi/Te Tiriti ō Waitangi in 1840, Lieutenant Governor William Hobson established his first capital on a property purchased at Okiato in the Bay of Islands, near the township at Kororāreka, renamed Russell. Surveyor-General Felton Mathew intended to adapt the several existing Okiato buildings for a variety of uses, including a hospital.[8] There is, however, no mention of this being built before Ngāti Whātua offered 1400 hectares of land on the shores of the Waitematā Harbour, which became the site of the new capital of Auckland in 1841. The first hospital there was a small military facility, set up that year

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The Church Missionary Society mission station at Te Waimate, 1836.

→
Te Waimate Mission, c.1850. The hospital is at far right.

⮌
New Plymouth Colonial Hospital.

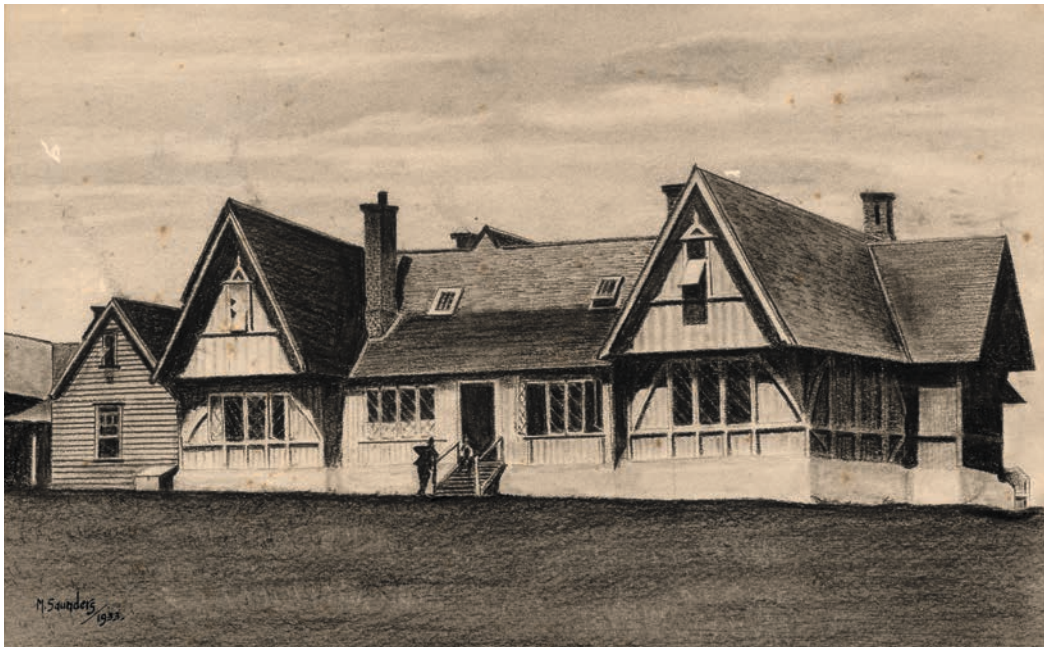

The Waimate - New Zealand
The Bishops House
Carpenters Shop
Hospital

Early New Plymouth, with the prefabricated dispensary often referred to as the town's first hospital on the left.

St John's College Hospital in Auckland, c.1902.

in the barracks built on the ridge overlooking the new settlement, now the site of parts of the University of Auckland and Albert Park.[9]

At Taurarua (Judges Bay) Mary Martin, wife of first Chief Justice William Martin, and Elizabeth Smith, who appears to have done much of the nursing, set up a hospital and dispensary service for Māori patients in 1842. 'The hospital first consisted of two or three rough huts and a tent made from blankets. Eventually a three-roomed raupō hut was built,



financed by friends in England.' As her biographer has noted, 'Although Mary Martin had brought a good stock of quinine and other medicines from England, the remedies were usually simple – good food, rest, herbal poultices, fresh air and prayers.'[10]

Some of the first fighting in what are now known as the New Zealand Wars was between Ngāpuhi and government soldiers at Kororāreka in the Bay of Islands in 1845. 'The major causes were the concern of some Ngāpuhi that the moving of the capital from the Bay to Auckland had hurt them economically, and that the Crown was exceeding its authority in the area.'[11] As large numbers of imperial troops arrived to protect the capital, it is thought that the single-storey stone hospital building at the barracks expanded to 50 beds in six wards, which would have made it large for its time, certainly for the new colony.[12]

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After petitioning by Māori leaders, Sir George Grey, New Zealand's third governor from 1845 to 1853, proposed in his first year in office to construct hospitals that would enable Māori to have access to European medical treatment. In 1846 he allocated funding for four facilities, later known as the 'colonial' or 'native' hospitals. As part of his policy for integrating Māori and Pākehā, Grey wished to provide hospitals that would be available to both, with their services

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A panorama of St John's College in Auckland painted by Caroline Harriet Abraham, c.1844–62. The hospital is the third building from left, with a brown roof.

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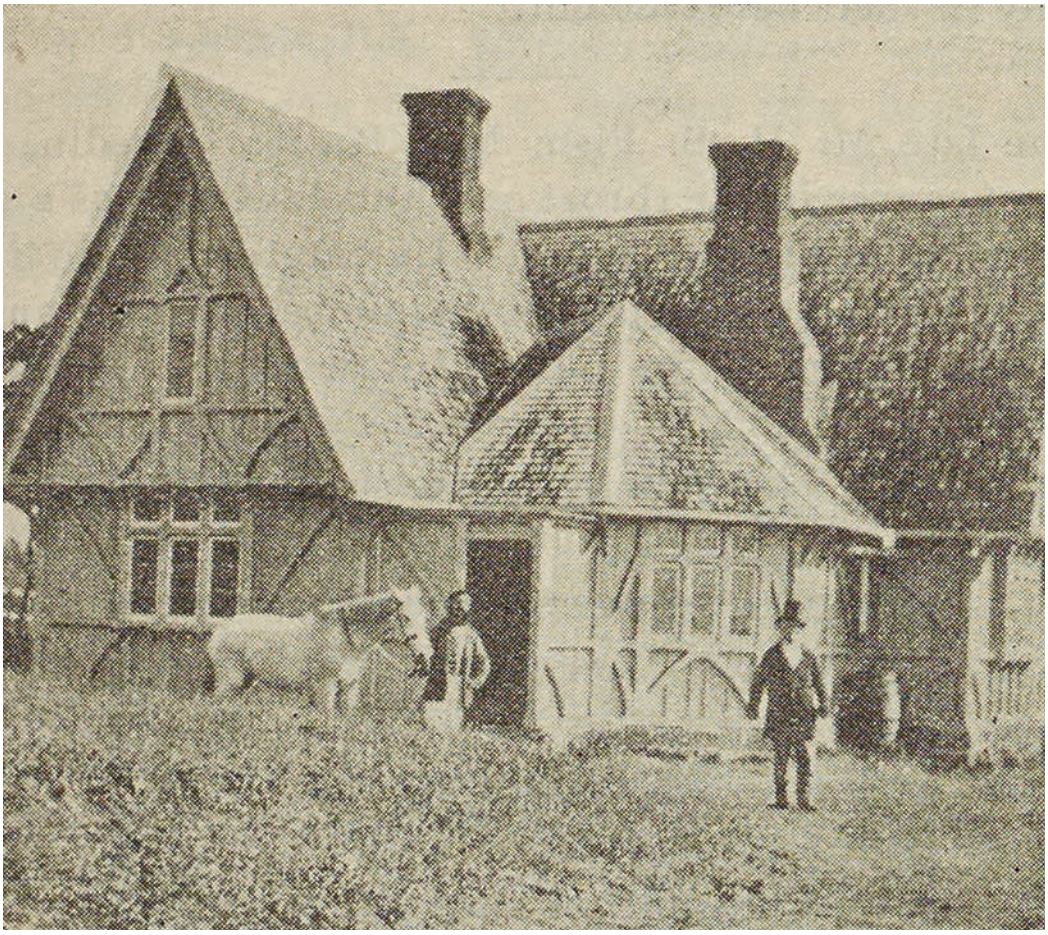
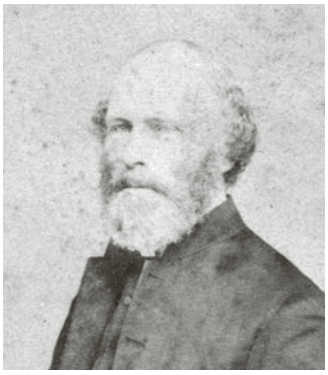
The Frederick Thatcher-designed Auckland Colonial Hospital, c.1850s.





free for Māori. The hospital in Wellington provided treatment to Pākehā at 1 shilling per day plus rations, and the others seem to have had similar arrangements. The patients at the first Napier hospital paid 7 shillings a day two decades later.[13]

Grey commissioned architect Frederick Thatcher to design the hospitals in Auckland and New Plymouth. Two years after arriving in New Zealand in 1842, the country's first Anglican bishop, George Augustus Selwyn, had established St John's Theological College at Te Waimate. Later that year he relocated it to land purchased by the Anglican church in east Auckland, where the original buildings have been variously attributed to William Mason, considered to be the first architect to work in New Zealand, and Sampson Kempthorne. Because Mason was in increasing demand elsewhere, and Selwyn was becoming dissatisfied with Kempthorne's work, he asked Thatcher, who had emigrated to New Zealand in 1843, to complete the bishop's house and the kitchen and dining hall.[14]

In 1846 Selwyn commissioned Thatcher to design Auckland's first purpose-built civilian hospital at the college. This had seven rooms, including separate male and female wards and a doctor's quarters, with a spacious loft. Its occupancy fluctuated: it was overloaded during outbreaks of disease, but at other times its beds were not required and instead it housed the college's Māori Adult School and the weaving department. It was demolished in 1922 to make way for the red-brick Selwyn Block, itself removed in the late 1980s. In 1847 Thatcher also designed the chapel at the college, which still stands and is now a Category 1 Historic Place.[15]

↖ **The Frederick Thatcher-designed New Plymouth Colonial Hospital.**

↑ **Frederick Thatcher.**

Thatcher, who had been appointed superintendent of public works in 1845, designed Auckland's 1847 colonial hospital, on land allocated for the purpose on the western side of the Auckland Domain and occupied by Auckland Hospital to this day. Not the central-city location it is now, the selection of this site followed the principle of keeping hospitals away from populated areas to limit the transmission of disease. The building itself stood close to the main entrance of the current hospital. It was H-shaped in plan, like the one at St John's, but substantially larger, with four wards, each holding eight to 10 patients, two five-bed wards, a surgery, a kitchen and three small staffrooms. The steeply pitched roof created a loft for staff accommodation and there was a detached dead house, or morgue.[16]

In 1846 Grey split the duties of superintendent of works between engineer Charles Whybrow Ligar in the north, and Thomas Henry Fitzgerald, designer of the Wellington colonial hospital, in the south.[17] This allowed Thatcher to focus on the design of the hospitals in Auckland and later New Plymouth. Tenders for the Auckland building closed on 4 January 1847, and because Thatcher was often out of Auckland, having been appointed the governor's assistant private secretary in 1846, architect Reader Gillson Wood supervised the building's construction. It was completed on 11 September 1847 and, although it was not officially opened until November, the wards were used from August because of a typhus outbreak in the town.[18]

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The 1848 colonial hospital that Thatcher designed for New Plymouth stood on an elevated 2-hectare property between Mangorei Road and the Henui River, now part of the site of New Plymouth Girls' High School.[19] Surveyor Frederic Alonzo Carrington's town plan had allocated a hospital reserve in the south-western section of the town, but the topography there seems to have proved less amenable to the imposition of his grid.[20] Built of heart rimu on a brick foundation, the building took some time to complete due to a shortage of workers, and bricks and mortar had to be brought from Nelson.[21] Rather than the H-shaped plan of Thatcher's two earlier hospitals, the New Plymouth design was a cross form, with offset wings and a polygonal dispensary nestled into one of the junctions. It has been suggested that this was based on his 1841 design for the parsonage of St Clement's in Hastings, Sussex, one of only two buildings in England that have been attributed to Thatcher. It is unclear, however, why he would have used a familiar design for his last hospital, rather than his first.[22]

Arthur Guyon Purchas, a qualified surgeon and physician who had trained at Guy's Hospital in London and emigrated to New Zealand in 1846, was given charge of the new hospital at St John's College. This would probably have been too late for him to have influenced the design of Auckland's colonial hospital but would have provided ample opportunity to discuss the New Plymouth design. Both Thatcher and Purchas were ordained as priests in 1853, and both designed churches around the North Island; for some time, some of Purchas's work was misattributed to Thatcher.[23]

Like Selwyn, Thatcher was a follower of the Camden Society, founded in Cambridge in 1839, and its 1846 successor, the Ecclesiological Society, both of which aimed to return churches to the supposed religious splendour and piety of the Middle Ages. The architectural manifestation of this was the growth of the Gothic Revival style in the Victorian era. This was to prove challenging in New Zealand, where early stone buildings, such as Kempthorne's St Thomas' in Kohimarama and the first St Stephen's Chapel in Parnell, built in 1847 and 1848, soon proved structurally unsound and were demolished. In the early colony good-quality

8

Hospitals of the south

1914–1945

THE YEARS OF DEPRESSION AND WAR also brought changes to hospital architecture in the South Island Te Waipounamu. In the north of the island, at Wairau Hospital, a two-storey brick nurses' home, designed by H. S. Clarkson, was added in 1926. The 1887 building became the Amersfoote Home, much of which was destroyed by fire in 1953. Architect Alexander Stewart carried out further work at Wairau in 1938. The large number of troops in the area during the Second World War at Woodbourne air force base and a nearby army camp resulted in the opening, in 1943, of a two-storey, three-ward, 90-bed wood-and-fibrolite building, plus a concrete mortuary. A 19-bed children's ward was built in 1959, and a recreation hall in 1968.[1]

To provide maternity care in the district, in 1916 a private residence on Blenheim's Maxwell Road was bought and converted into an eight-bed maternity home. Two years later, it moved to a larger home, known as Holmdale, on the corner of Weld and Litchfield streets. Despite being some distance from the hospital, this was used for several decades and even extended in 1946.[2]

On the current Nelson Hospital site, a store building was erected in Waimea Road in 1915 to serve the hospital and the Braemar Mental Hospital on the other side of the road, and a community clinic building opened in Kawai Street in 1920. The first dedicated nurses' home, the two-storey Dalton House, opened on Franklyn Street in 1916, was of roughcast ferro-concrete with a tiled roof. It was designed by local architect Arthur Reynolds Griffin, grandson of the founder of biscuit makers Griffin & Sons, working with Crichton & McKay. A two-storey timber and roughcast-plaster annex was added to it in 1935, though this burned down in 1938. The original hospital building on the site was replaced by a new building, also by Griffin, in 1926.[3]

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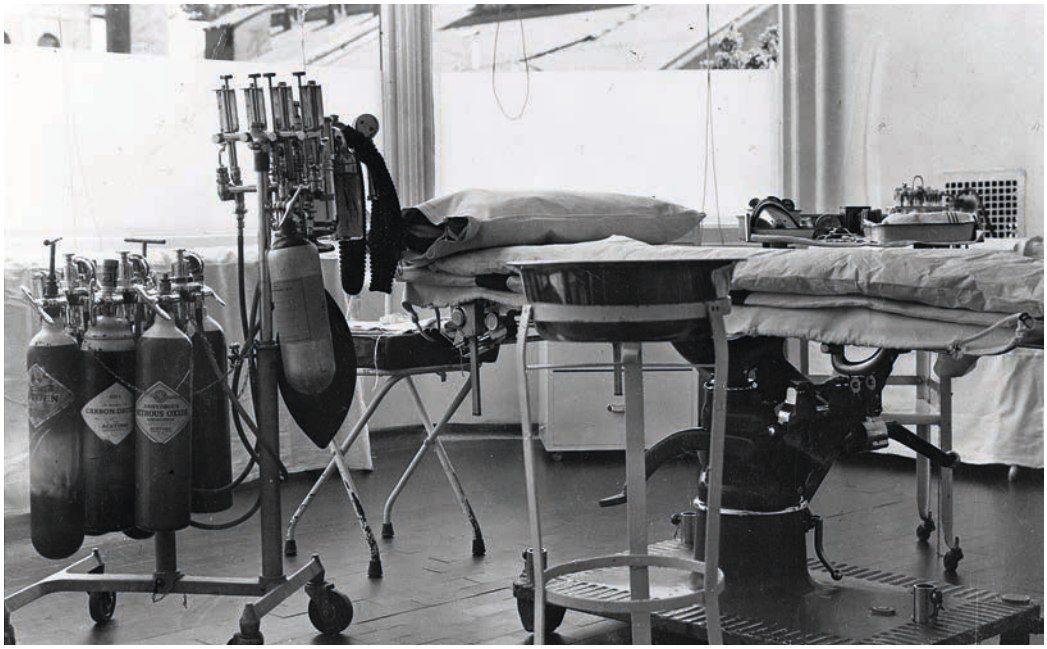
On the West Coast, a maternity ward opened at Reefton Hospital only weeks before the building was badly damaged in the massive Murchison earthquake of 17 June 1929 that killed 17 people and caused widespread destruction. The Department of Health recommended closure, but public pressure led to the hospital being demolished and replaced with a new 39-bed weatherboard building designed by the department's architects.[4] A new nurses' home, laundry and boiler house designed by Christchurch architect W. H. Trengrove opened in 1949. A hospital building, also designed by Trengrove, opened in two stages in 1952 and 1953, with operating theatres, and emergency and maternity facilities. In 1957 it was extended to create a children's ward.[5] The Inangahua Hospital Board, which operated Reefton, also opened a small hospital designed by architect R. Tudehope at the gold-mining town of Waiuta in 1914. After it closed, it was destroyed by arson in 1980, but rebuilt as a lodge by the Department of Conservation.[6]

At Greymouth Hospital a children's ward designed by Department of Health architect Charles Scott Allan was added in 1928, a two-storey building accommodating the O'Brien women's and McBrearty maternity wards in 1938 and, in 1940, the Samuel Saltzman Tuberculosis Annexe Block, all designed by the Public Works Department. The Tasman Home opened in 1925 for the care of the elderly.[7]

By the beginning of the twentieth century, the old wooden buildings at Hokitika's Westland Hospital were reaching the end of their lives and were replaced by the Manson and Ellis wards in 1907. The Mandl Ward and a two-storey administration building of brick and roughcast concrete, designed by the Health Department under Allan, were added in 1922. An x-ray room was added by the Public Works Department in 1934.[8]

The two-storey Butler Nurses' Home opened in 1937 and the Williams Ward for children the following year. Both were designed by Trengrove. In 1963 the Ellis Ward was rebuilt as an



↑
Wairau Hospital nurses' home, Blenheim, c.1925.

→
Wairau Hospital operating theatre.

↩
Seddon Memorial Hospital, Gore.

11-bed maternity unit and an x-ray unit was added, but despite developing an orthopaedics specialty in the 1950s the hospital gradually lost services to Greymouth. The last patients moved out in 1989 and large public protests could not prevent its closure in 1992.[9]

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Tuberculosis, often simply called TB, was a major scourge in early New Zealand, especially for Māori, and persisted well into the twentieth century, peaking during the Second World War. A disease caused by bacteria that attack the lungs, it was subdued by vaccination from the 1930s and can now be treated with antibiotics, but up to the 1950s the main treatment was rest and exposure to sunlight and fresh air.[10]

In Christchurch in 1904, Nurse Sibylla Maude, who had resigned from her role as matron of the public hospital in order to establish district nursing in the city, raised money to set up a tent-based sanatorium for men at New Brighton. As her biographer Beryl Hughes has recorded, 'Although conditions were rough and uncomfortable, the improvement to the patients' health was so great that in 1905 Nurse Maude established a camp for women at Burwood, appealing to the women of Christchurch for money.'[11] When the Cracroft-Wilson family donated a site for a more permanent facility on a spur of the Port Hills on the edge of their Cashmere estate, the two camps were closed.[12]

In 1910 the first patients were admitted to Cashmere, which was designed by Samuel Hurst Seager of Hurst Seager, Wood & Munnings, and supervised during construction by Collins & Harman. The single-storey administration building was brick with a tiled roof, and its verandahs led to separate wings. Patients were housed in shelters open to the elements. Near these were the porter's hostel and morgue; the medical superintendent occupied a substantial

↖ Holmdale maternity annex, Wairau Hospital, Blenheim.

← Nelson Hospital nurses' home, 1916.

↑ Nelson Hospital, 1933.

brick house further down the hill. More shelters were added in 1912, 1913 and 1916, and a children's pavilion in 1916. Although the elevated site had been chosen to escape the pollution of the city, it was very exposed to the wind and had poor drainage.[13]

The next building on the site was the 43-bed King George V Coronation Memorial Hospital, of brick with a tiled roof and designed by Collins & Harman, which opened further down the hill in 1914. This section became known as the lower sanatorium, and the original building and shelters the middle sanatorium. In order to treat soldiers returning from the First World War with tuberculosis, the building was extended in 1917. A further extension in 1920 added 24 beds; another floor in 1929 added another 37.

←
Cashmere Sanatorium and Coronation Hospital, Christchurch, 1940s.

↑
Samuel Hurst Seager.

↗
Sanatorium Hospital, Cashmere Sanatorium.

→
Cashmere Sanatorium TB shelters, 1913.

In 1917 a nurses' home was built above the middle sanatorium. A military tuberculosis hospital opened on the summit of the hill in 1919; it became the men's sanatorium in 1925. Later known as the upper sanatorium, it closed in 1931. To the east of the men's sanatorium, another 32-bed facility opened for the children of patients in 1923, with a school added three years later. This tall wooden gabled building with high brick chimneys and deep verandahs,

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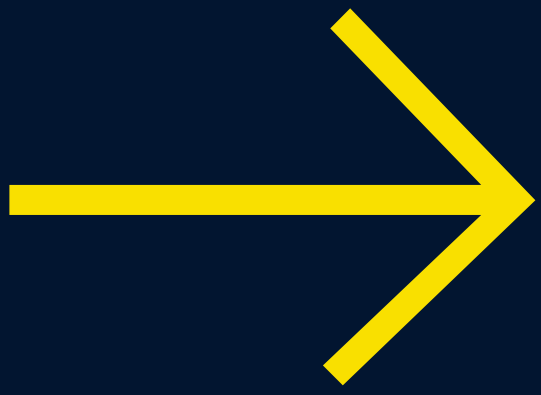

Recovery and reconstruction

2000–

THERE WERE SIGNIFICANT CHANGES in the health sector in the 1990s and the first years of the new millennium. In 1993 Crown health enterprises were formed to operate public hospitals on a more commercial basis, funded through four regional health authorities. In 1997 the latter were merged to form the Health Funding Authority and Crown health enterprises were renamed Hospital and Health Services. Further restructuring in 2001, following the Health and Disability Sector Act 2000, created 21 (20 from 2010) district health boards, with elected members, to run public hospitals and provide public health services, and the Health Funding Authority was absorbed into the Ministry of Health. This restructuring offered avenues for new practices to enter the health design market and there was a distinct 'changing of the guard', particularly among architects, around the turn of the century.[1]

The Building Act of 1992 had placed greater emphasis on performance-based design, leading to the rise of the profession of fire engineering and improved resilience to natural hazards such as earthquakes. A hierarchy of seismic resilience was established through importance levels (IL). Most typical buildings are designed to IL2, but a higher degree of strength and post-disaster repairability is required of most public hospital buildings; those accommodating hospital emergency departments and surgical facilities, which are required to be operational immediately after a severe earthquake, are IL4, general clinical buildings such as wards are IL3, and administration and outpatients IL2.

Building services in hospitals became increasingly complex, with the use of laminar flow in operating theatres and negative and positive pressure rooms to minimise infection transfer. The Ministry of Health adopted the Australasian Health Facility Guidelines, introduced in 2006 and developed from those implemented in New South Wales in 2002.[2] Through this period as medical care became more specialised, a handful of new specialist architecture practices emerged.

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Australian practice Peddle, Thorp & Walker opened an office in Auckland in 1967 to supervise the construction of the Downtown redevelopment scheme, which the firm had designed for the Auckland Harbour Board. With the appointment of local partner Robert D. Horman, it became Peddle, Thorp & Horman, an independent company within the wider Peddle Thorp group. The firm became Peddle, Thorp & Aitken when Brian Aitken, who had joined in 1970 after graduating from Auckland and completing a master's degree at Columbia, became the local partner in 1978.[3]

From the 1980s hospital services in central Auckland were rationalised. By 1989 Green Lane Hospital's emergency department was closed and most general medicine and surgery was shifted to Auckland Hospital. Now known as Peddlethorp, the firm designed the conversion of Green Lane into the 2003 Greenlane Clinical Centre, an ambulatory care centre for outpatients and day surgery. This was followed by commissions to upgrade and expand, in 2009, the intensive care and national burns units at Middlemore Hospital, and for a major 2011 redevelopment of Rotorua Hospital that included a three-storey inpatient building and a central atrium in the form of a wharenui with carved timber panels.

At Auckland's Mason Clinic, Peddlethorp was responsible for the 2015 redevelopment of the 15-bed Pōhutukawa unit. The firm also designed the 2016 TRG Imaging Centre and the 2019 North Shore Surgical Centre, the latter a 1750-square-metre day-stay hospital with three operating theatres. The two buildings stand next to each other in Takapuna and are designed in a complementary style.[4]

↗

Greenlane Clinical Centre, Auckland: TCPD's 1970s building to left and Peddlethorp's 2003 building to right.

→

Ward block, Rotorua Hospital.


MUFFIN BREAK
Café
MUFFIN BREAK
Café
TAXI
300-3000


ROTORUA HOSPITAL

The first hospital project for both the New Zealand arm of Peddlethorp, and Klein Healthcare Designers, working in collaboration, was the Ascot (later Mercy Ascot) private surgical hospital opened in Remuera in 1999. Peddlethorp later designed the adjacent Ascot Central clinical suites.[5]

Established in 1991 by James and Johanna Klein, Klein was later rebranded as Klein Healthcare Designers to reflect their growing specialisation in health facilities. The commission for Ascot Hospital, Klein's first large health project, followed smaller work such as the 1994 alterations to the Wilson Home in Takapuna.[6] At Middlemore Hospital Klein worked with Chow:Hill on the 2003 four-storey adult medical centre (now Scott) inpatient building, adding another two floors to it in 2014. This led to the 2010 commission for the adjacent 240-bed Edmund Hillary ward block and, in 2014, the Harley Gray clinical services building, with 14 operating theatres, an 18-bed high-dependency unit, a 42-bed assessment and diagnostic unit and non-clinical support departments. The practice collaborated through the preliminary design stages of Harley Gray with the Australian firm Silver Thomas Hanley. Klein also completed the new laboratory, cardiac catheterisation laboratory and renal department, among several other refurbishment projects at Middlemore.[7]

At North Shore Hospital Klein designed the maternity extension, operating theatre upgrades and the 2011 three-storey Lakeview Building, which accommodated the emergency department and assessment and planning unit. The firm also worked on extensions and refurbishments at Waitakere Hospital, including the emergency department.[8]

The 2012 emergency and theatre building at Hutt Hospital, which has eight operating theatres, was designed to allow for very large seismic movements at the junctions to the existing hospital. Klein also designed the 2018 two-storey, 890-square-metre Ruakopito endoscopy unit at Hawke's Bay Fallen Soldiers' Memorial Hospital. The practice was also responsible for the 2020 endoscopy suite at Whangarei Hospital, plus a cardiac catheterisation laboratory and two new operating theatres the following year. As this book

↖ **Mercy Ascot Hospital, Auckland.**

↗ **Te Aka forensic mental health unit at the Mason Clinic, Auckland.**

went to print Klein was working on the expansion of the Te Kōtuku building there to provide a new SCBU (special care bay unit) and paediatrics ward.[9]

Klein's mental health projects have included the 15-bed Te Aka forensic mental health unit at the Mason Clinic in 2017, the 76-bed Tiaho Mai acute mental health unit in 2021 at Middlemore and, in 2024, specialist mental health facilities for child and youth, eating disorders, mothers and babies and high and complex care at Hillmorton in Christchurch. E Tū Wairua Hinengaro, currently under construction at the Mason Clinic, will be New Zealand's first forensic mental health facility with patient accommodation on two levels.[10]

Private hospital work by Klein has included Forté Health in Christchurch in 2014, a four-theatre surgical facility. This was designed with local architects, and DesignGroup members, Wilson + Hill, who also designed the 2016 Avenue Health building in Christchurch and the 2023 Canterbury Cancer Centre. Forté Health was, as *The Press* put it, 'born out of the closure of the earthquake-damaged Oxford Clinic'.[11] The clinical health planner for this was Ruth Whitehead, a nurse who had joined Klein in 1999 and who left in 2004 to set up a clinical health planning practice, The Health Planner. The building has a highly glazed façade to provide natural light and outlook, and was both New Zealand's first GreenStar medical facility and one of the first applications of pre-cast seismic structural system technology in the country.[12]

Other major private hospital developments include the 10-theatre redevelopment at Mercy Ascot, Intracare North Harbour, and additions and refurbishments for Ormiston Hospital and Southern Cross. Klein also designed the new four-theatre, 20-bed Kākāriki private hospital in Greenlane, Auckland, which involved the adaptive reuse of a former office building.[13]

The new century brought one of the country's worst natural disasters. On 4 September 2010 a magnitude 7.1 earthquake struck Canterbury, causing major and widespread damage to Christchurch and beyond. After more than 1500 aftershocks, on 22 February the following year came a shallower 6.3 quake that destroyed much of the central city. One hundred and eighty-five people lost their lives and many were injured, some severely. Emergency and health services were stretched to the limit. Christchurch Hospital, the only acute-care facility in the region, suffered significant damage.[14]

The redevelopment of Christchurch Hospital, and the city's specialist rehabilitation facility at Burwood Hospital, had been proposed before the earthquakes and was accelerated because of them. The buildings erected at Burwood in 2016 consist of 30,000 square metres of

↖ **Harley Gray clinical services building, Middlemore Hospital, Auckland.**

↗ **Harley Gray high-dependency unit, Middlemore Hospital.**

→ **Burwood Hospital, Christchurch.**