



• Manukau SuperClinic™

• Botany Downs
SuperClinic™, Howick

A SuperClinic™ in NZ

Manukau SuperClinic™, which was opened on 8 October 1997 by then Prime Minister Jim Bolger for South Auckland Health, is a new type of healthcare facility for New Zealand.

The SuperClinic™ is an ambulatory care facility accommodating seven clinical modules, offering specialist secondary care including orthopedics, ENT, audiology, paediatrics, ophthalmology, womens health, diabetic and geriatric services as well as 6 Operating theatres for day stay surgery in a range of disciplines including gastroscopy.

The SuperClinic™ also features the first digital radiology suite in New Zealand, allowing radiology and ultrasound images to be viewed at any location within the Middlemore network.

Ambulatory Care

Ambulatory Care has been one of the megatrend issues for healthcare throughout the world in the last ten years. As technology advances and healthcare service delivery becomes more patient-focused, more procedures and treatment episodes occur on an outpatient basis rather than involving overnight hospital care.

Well-designed ambulatory care centres can deliver healthcare more effectively, allowing patients to return to their homes the same day, contributing to their recovery and overall well-being.

The Concept

The 6500m² SuperClinic™ building at Manukau City, is believed to be the largest ambulatory care centre in the Southern Hemisphere.

The project had its genesis in 1994, when South Auckland Health recognised it was not able to continue to effectively meet future challenges of healthcare delivery to New Zealand's fastest growing and most diverse community from its current site and aging facilities at Middlemore Hospital.

The Crown Health Enterprise embarked on a \$120m facilities modernisation programme over several years intended to achieve a variety of goals consistent with international trends in healthcare, including:

- redistribution of healthcare services into the community;
- decongestion of the Middlemore site;
- co-ordinated redevelopment of key Middlemore Hospital facilities;

The SuperClinic™ programme, which includes a sister clinic in Botany Road, Howick, is a key part of that facilities modernisation programme.

The SuperClinic™ concept is simply a secondary care facility located in the community with a full range of specialist public healthcare services under a single roof.

Design Process

In determining the best model for the *SuperClinic™* project, facility and operation, South Auckland Health canvassed best international practice and formed ongoing links with individuals and organisations throughout the world.

While funding and delivery are very different, ambulatory care and day surgery facilities in the United States were found to be the most useful models for the *SuperClinic™* team.

A series of visits by clinical, management and design members of the team to ambulatory care centres and day surgery centres was an opportunity to learn first hand which features could be successfully transplanted to New Zealand.

Simmonds Healthcare from the US were engaged as healthcare consultants and assisted on clinical interface, briefing and outline design issues.

Chow:Hill Architects were engaged as Principal Consultants and assembled a team of specialist consultants to develop the outline concepts into detailed designs and contract documents under the guidance and co-ordination of project managers, Carson Group.

The detailed design and documentation process for the *SuperClinic™* projects was very demanding in terms of time, quality and involvement at every level.



•Typical waiting area

We were required to:

- issue full sets of documents for audit review at 30%, 60% and 90% completion prior to final issue;
- participate in audit review/value management workshops;
- present computer animations of the facility to clinical workshops;
- assist in preparation of models, full-size mock-ups, and a test examination room to refine the design;
- participate fully in briefing discussions on service delivery and respond to major changes, in some instances while under construction;
- demonstrate calculations and estimates of building services aspects, such as energy performance, usually from first principles;
- liaise with a range of medical equipment suppliers to ensure detailed spatial, structural and services requirements were met;
- continue to maintain control on programme and budget.

This level of involvement is expected of consultants who are providing quality service to healthcare projects on a daily basis - they require a strong commitment from all participants.



•Manukau *SuperClinic™*
main entry & porte cochere

Change in Healthcare

Many of us regard change as an opportunity, but just as many of us regard change with suspicion, especially in public healthcare.

The *SuperClinic™* projects were designed and documented in a climate of overwhelming change - change to service delivery, change to staffing levels, change to management and operation, and simply a change of environment - many of those involved needed to make the service and operation fit the facility just as much as the facility had to fit the service.

In a very real sense, the *SuperClinic™* projects were also *leading* change at South Auckland Health, rather than *responding* to it as most projects tend to do.

For the design and construction team, including South Auckland Health's Estates & Engineering managers, it often meant no specific client or brief were available - no-one had built or operated a *SuperClinic™* here before.

Judgements were made by the team based on research, experience and liaisons with clinicians and healthcare providers both here and overseas.

Success of this proactive approach to design in a changing healthcare delivery environment will continue to be measured by the ease with which current and future clinical services are integrated into the building.



•Day surgery recovery

Design Concepts

Change is a reality to healthcare delivery, as much as healthcare projects.

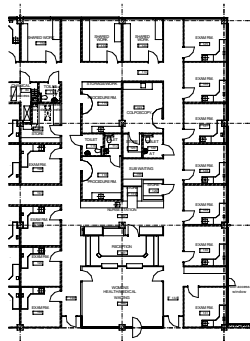
The *SuperClinic™* is designed to facilitate both operational flexibility and future adaptability in response to service changes in a number of ways which may not be apparent on first sight.

The floor plan is based on a 1800mm dimensional module, allowing two rooms of 3.6m (measured centre to centre of partitions) and a corridor of 1.8m for each 9m structural bay, and is organised into "clinical modules".

Each typical clinical module has two patient corridors leading off the Waiting room, with examination rooms to the exterior, procedure and more specialist rooms to the interior, and staff corridors, Nurse Station and Reception between.

A clinical module breaks down issues of space ownership and territoriality, allowing more efficient scheduled use of facilities - a diabetic clinic one day, a pediatric clinic the next.

The module layout envisages the clinician moving between 3 or 4 examination rooms, consulting with patients prepared by a healthcare assistant, rather than the clinician waiting in the room for the next patient to be brought in - significant operational efficiencies are possible though this approach without compromise to service quality.



•Typical module plan

Each typical examination room and procedure room was designed and documented with a high degree of client input and control.

Every aspect was discussed, different configurations trialed, feedback processed from staff, every single stud and nog and each electrical, mechanical, data and medical gas outlet was located and drawn, all to satisfy the requirements of a wide range of clinical services within a typical room with little more than a change in bed position or an extra piece of equipment.

Other rooms, such as shared work offices, which fit the examination room modular size are constructed and fitted with services blanked off to allow easy conversion to examination rooms - in fact, late in the construction period, 2 rooms were converted, demonstrating the built-in adaptability of the design.

The team also assisted South Auckland Health to develop a standard in-house catalogue of modular knock-down joinery components - cupboards, drawers, shelves, benches - to allow easy, economical repair and replacement of elements and to facilitate control in a variety of future projects by allowing staff to order custom configurations from a range of catalogue components.

While none of these features are of themselves particularly exciting or glamorous, they are essential for any healthcare project seeking to meet the challenges of change in healthcare delivery now and in years to come.



•Atrium and greeter station

Design Treatment

Public buildings, particularly healthcare buildings, should not be ostentatious or overdone - they must be of an appropriate scale and quality and, especially in Manukau, be capable of expressing a wide range of culture and opinion.

To this end, the building is intended to be as inviting, welcoming and comfortable as a 6500m² building can be through use of a range of familiar forms and details:

- gable roof projecting at the entry - a form well known around the Pacific rim;
- concrete tile hipped roof, exposed rafters, eaves gutters - all familiar domestic details in New Zealand, albeit on a larger scale;
- coloured concrete block veneer cladding (used for the first time in New Zealand) with "punched" windows and articulated texture - rather than larger scale, commercial detailing like curtain wall glass.

The main internal feature of the building is the central atrium space, running full length, providing public entry to the front, staff entry to the rear, access and egress to all clinical modules and housing lifts, motor and hub rooms, public toilet and phone facilities.

All visitors immediately encounter a prow-shaped greeter station fashioned from laminated matai and staffed by friendly people to greet you in your own language and direct you to the appropriate module.

The atrium is intended to be as full of light and welcoming as possible with careful sizing and placement of double height spaces and skylights glazed with high performance solar control glass.



•Upper level atrium

Construction Features

Structurally, the building is a 2-way moment resisting reinforced concrete frame, avoiding shear walls and braces which limit the adaptability of the spaces, with structural steelwork and timber trusses to the roofs.

Seismic movement is accommodated in 20mm joints to block veneer corners and at framing and concrete junctions.

The design of the building contributes to energy efficiency of the mechanical plant by balancing the amount of glazing with space volume, building mass and insulation, rather than an emphasis on curtain wall glazing,

All access and egress is through the atrium which also functions as a smoke reservoir and extraction zone in the event of a fire.

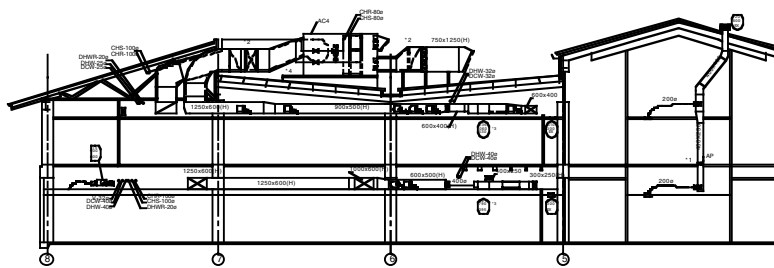
Acoustic treatment is an important feature of the *SuperClinic*[™] - plywood lining is installed below roofing throughout to mitigate the effects of nearby aircraft noise on consulting areas.

Room-to-room crosstalk is minimised between treatment spaces by a combination of selected framed, lined & insulated partition systems, careful location of services outlets, solid core doors in steel frames with acoustic seals, heavy duty mineral fibre suspended ceiling tiles and, within the ceiling spaces, spun polyester acoustic baffles suspended from the roof or floor above for the perimeter of each room, closing the ceiling space into a series of baffled cells.

Tight control was asserted on the layout and position of all services, especially main runs, throughout the building to provide the client with the same degree of certainty and logic on services locations as other modular elements and to allow for future adaptability as much as possible.



•Day surgery operating theatre



•Cross section showing Mechanical services

An 850mm minimum depth ceiling space is provided and all main services are kept in specific zones within the corridor ceiling spaces with branches into rooms as required - there was a policy of needing approval to leave the service zone assigned to a particular cable, pipe or duct.

Within walls, all services run vertically, unless specifically allowed otherwise in exceptional circumstances, allowing easy location of services for future adaptability and fixing medical equipment.

While this may seem heavy handed, South Auckland Health now has a building with a consistent and clear framework and a high degree of modularity - all of which have clear operational, maintenance and adaptability advantages.

Many of the architectural and building services features of the *SuperClinic*[™] are subtle and hidden, but contribute enormously to the effectiveness and success of the facility.

The *SuperClinic*[™] Team

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Rayner Cameron
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Chow:Hill Architects have developed expertise on a wide range of recent healthcare projects including:

- Extended Care Mental Health Unit, Otago, Auckland
- Development Planning for Middlemore Hospital, Auckland
- Taumurunui, Tokoroa, Te Kuiti Hospitals reconfigurations
- Emergency Suite & Trauma Centre, Waiora Waikato
- Laboratory Redevelopment, Waiora Waikato
- A variety of general practice and specialist clinics for public and private providers

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