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HOSPITAL HEALTHCARE



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Gold Coast University Hospital

The creation of a “place” and vision that will allow for future expansion.

As well as skyscrapers and dazzling tourist attractions the Gold Coast is now home to a new hospital. The \$1.76 billion 750 bed Gold Coast University Hospital (GCUH) will service the Gold Coast region. With a total floor area of 175,000sqm, this major hospital development is one of the most significant of projects in the Queensland Government's Health Capital Works program. A PDT+ STH+HASSELL joint venture, the hospital establishes a new benchmark for the delivery of health care facilities in Queensland and Australia. It is one of the first fully integrated Urban Design, Landscape and Architecture health projects to incorporate a precinct strategy.

The hospital precinct incorporates an integrated:

- Clinical services building, incorporating:
 - A 50 bed Neonatal Intensive Care Unit, Paediatric Ambulatory Care and Inpatient Services;
 - Birthing Suites with Women's Ambulatory Care Services;
 - Hot floors for Intensive Care and Surgical Services.

- Pathology and Education Building;
- A 72 bed Mental Health Unit;
- A Comprehensive Cancer Care Centre;
- A covered elevated pedestrian link to the Multi-storey Car park directly to the Main Foyer; and
- Retail precinct.

The site master plan promoted the creation of “place” and a vision that would allow for future expansion. The Master Plan was produced with maximum flexibility for future proofing, both within the building envelope and within the site. Future expansion zones have been designed to minimise impact on the operational Hospital.

A parkland setting has been created around the hospital which incorporates connections with light rail, enabling the public to reach the site via public transport, addressing access issues. Throughout the design and development of GCUH the design team collaborated closely with Queensland Health and multiple stakeholder groups, instigating an interactive process from the outset. From this, the design team were able to develop strategic and detailed design directions for the hospital, while resolving complex technical issues and the



challenges of working with multiple, stakeholders and interest groups.

Several studies were undertaken during the design of GCUH which involved benchmarking against international and local precedents. Modelling various scenarios assisted in making design decisions which could then be clarified with stakeholders. Prototyping was also undertaken to establish the most appropriate balustrade height, sunshade extents and fit out of a typical inpatient bedroom.

When designing the physical arrangement of departments, careful consideration was given to the connections between areas. Layout has been developed around the journey of a typical visitor/patient with journeys between lifts, receptions and major journey decision points occurring within a 60 metre radius. To achieve this, time and motion studies were undertaken to study the journey of different client groups across three minutes.

This led to a design which provides signage every 60 metres and rest stops or places to dwell along some of the major corridor areas. The impact of this key consideration was to generate a compact design, augmented by a seven storey atrium space which enabled visual connections from lifts and entry points into the hospital. Intuitive way finding has led to the arrangement of hospital departments around this atrium space.

The number of single bedrooms increased to 75% as a state benchmark that recognised the need for improved health care delivery including the need to reduce hospital acquired infections, noise and disruption to patients.

The reduction of pain relief and patient stay through preservation of outlook to natural landscapes also became a key reference point for the project. The project's aim was to celebrate the environment of the Gold Coast locality by creating significant areas of functional landscape that sought to engage patients in the positive benefits of the external environment as part of their treatment.

The design team have maximised connections from bedrooms to the outdoors through the use of decks and high level courtyards. Access to daylight and the outdoors is integral to the design. Some outdoor spaces also serve as clinical spaces and provide important 'breakout spaces' for patients and family from intense clinical environments such as Day Chemotherapy and Neonatal Intensive Care.

Court yard spaces are varied and large

allowing for flexibility of use and a degree of choice for the clients. Court yard spaces include mental health court yards, paediatrics and cancer healing gardens, and mobility and dementia gardens. All court yards are at grade and readily accessible from activity spaces.

Major artwork commissions have been installed in parkland and courtyard spaces. This was maximised in the Mental Health Care precinct, ensuring every bedroom had a courtyard outlook; even seclusion areas have their own secure courtyard area. Lounge and dining areas open directly onto courtyard spaces via stack doors which open up the entire lounge area to the courtyard.

Pathology and Education Building

The Gold Coast University Hospital is collocated with a high tech pathology and education, training facility connected via a pedestrian link bridge which also conveys pneumatic tube links for efficient reticulation of samples to and from the Pathology Building. Equipped with state of the art technology, the Pathology and Education Building covers 11,929 sqm of the new Gold Coast University Hospital.

The building is divided into two distinct sections of pathology and education, which are linked by a joint support area. The lower ground floor incorporates a mortuary, storage area and service tunnel linking with the main hospital which provides a discrete passage to the mortuary and facilitates the delivery of consumables to the pathology section. The design of the mortuary has taken into account both practical and teaching requirements as well as the cultural needs of the community.

Pathology is spread over two floors incorporating a main pathology reception, pathology offices, testing facilities, a clean room facility, haematology, tissues and an incubation room. Flexibility and future proofing of the laboratories spaces has been addressed in the design of the services. Major services are installed outside the building envelope allowing for modifications to occur with minimal disruption to the working laboratories. Other considerations in the pathology fit out were the selection of appropriate materials for use in the clean room to avoid cross contamination.

When designing the education section, flexibility was the key. The building incorporates a large foyer where seminar participants can meet and register, an auditorium which provides multi-level access, flexible meeting



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rooms with operable walls, open plan and individual offices as well as extensive training facilities. Simulated medical scenarios are performed for training purposes and there is live streaming of procedures in operating rooms to lecture areas.

Mental Health Unit

The Mental Health Unit is a single storey inpatient building connected to the main hospital on three levels. At basement level there is a service tunnel which facilitates food, waste and linen reticulation into the Mental Health Unit. The Emergency department is connected at ground level to the Mental Health Unit so patient transfers and admissions can occur discretely and safely. One level above, a bridge link assists family members and carers to reach the Mental Health Unit if they have come via the main hospital.

The main objective for the Mental Health Unit was to create a comfortable, domestic style environment that achieved a balance between the provision of a safe, secure and durable environment and the provision of areas of privacy for patients. The integration of architecture and landscaped design was integral to this with lounge and activity spaces merging with courtyard spaces. The design integration created natural outlooks and protected shaded nooks. On the northern side of the facility four metre high retaining walls were incorporated into the courtyard areas forming a natural barrier without suggesting containment. The Mental Health Unit forms a new benchmark for future mental health facilities across Australia and won the “Building of the Year” and a Commendation at the Regional AIA Awards for 2013.

Addressing health, education, community and sustainability considerations has enabled the creation of a well-considered major regional hospital campus which meets the needs of its many stakeholder groups and provides a new benchmark in tertiary hospital facilities in Australia.

The people in these photographs are not patients and are used to provide context only.

Photography courtesy of Christopher Frederick Jones.

GCUH ARCHITECTURE
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