

MAIN CONSTRUCTION COMPANY : Hansen Yuncken
PROJECT INVESTMENT VALUE \$200 Million
ARCHITECTS : Woods Bagot
QUANTITY SURVEYORS : Turner + Townsend Pty Ltd
DESIGN CONSULTANTS : Sinclair Knight Merz (SKM)
DESIGN CONSULTANTS : Meinhardt
CLIENT : Cairns Airport Pty Ltd
PROJECT MANAGERS : Coffey Projects (Australia)



CAIRNS AIRPORT



REDEVELOPING 5TH BUSIEST AIRPORT

The largest regional airport in the country, Cairns is the fifth busiest airport in Australia. With 3 million visitors a year passing through the domestic terminal, in 2005 the Cairns Airport Pty Ltd committed \$200 million to redevelop the terminal over a period of five years.

This significant redevelopment project involved extending and reconfiguring the existing terminal building allowing for an extra 20,000m² of floor space, creating a common user check-in area with 36 counters and an expansion of the departures area with increased retail outlets. Common baggage handling and baggage claim areas have also been updated and expanded with new baggage screening technology. A new mezzanine Qantas Club and airline and administration office facilities have also been provided. The terminal now boasts five new aerobridges for all aircraft, as well as wider aircraft parking aprons and relocated airside roadways. In terms of infrastructure, public facilities such as car parks, roadways, pedestrian areas and the plaza have also undergone major redevelopment.

In 2007 Hansen Yuncken were awarded the contract to manage the design and construction of the redevelopment. As an established construction leader and multiple award winning company in NSW,

Victoria, Tasmania and South Australia, Hansen Yuncken have been operating in Cairns since 2007. Winning the tender for the Cairns Airport redevelopment was a significant boost for the company and aids its expansion strategy in the rapidly growing construction market of North Queensland.

The airport operates 24 hours a day, therefore the project created significant logistical challenges so works were completed in stages in order to minimise disruption to the airport operations during the construction and demolition phases. This included the need for temporary services to maintain systems and facilities in the terminal together with landside and airside operations.

Changes to legislated security requirements within airport operations also required considerable management, and resulted in an airport liaison person being appointed to manage the process with all the stakeholders and contractors involved. Hansen Yuncken had a total of 26 staff on site and up to 170 contractor workers daily.

Hansen Yuncken's expertise was evident in overcoming an issue with the electrical services to the new works. The design of the building

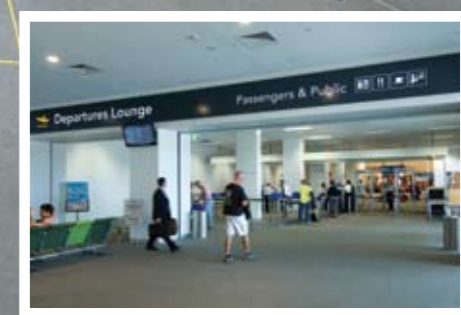
essentially had the electrical sub station servicing the first stage of the works constructed as a stand alone structure, which would not be joined to the main building until the final stages of construction. To overcome this problem, Hansen Yuncken proposed a redesign of the electrical reticulation that involved the design and installation of a main distribution board for the Southern extension to the terminal with sub mains run to this location under ground so as to have no impact on future stages of the works.

Founded in 1918, Hansen Yuncken are one of Australia's leading construction companies and they are renowned for their innovation and application of new technologies and construction techniques. They pride themselves on 'Building Value'—from their can-do attitude and collaborative approach through to utilising local subcontractors and developing strategies to accelerate project completion. After winning many awards for their involvement in the construction of Adelaide's Airport Terminal building, it is of no surprise that Hansen Yuncken won the contract for Cairns Airport Redevelopment.

Hansen Yuncken's core values encapsulate a philosophy of fair dealing, high quality client service and building value.



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COFFEY TAKES FLIGHT



INFLIGHT CONSULTANTS

Coffey Projects are global specialists in project management and their vision is to solve emerging challenges to improve the lives of the communities in which they work. It is their unique combination of experience, expertise and passion that allows them to deliver extraordinary outcomes and ensures they bring every client's vision to life – the best solutions are achieved when you combine talent with tenacity.

Coffey Projects provides a comprehensive Project Management service to Cairns Airport Pty Ltd for the works associated with the Redevelopment of the Domestic Terminal, as well as providing services for the commercial and retail tenancy coordination including Fixed Furniture and Equipment (FFE), and signage.

The complex and long term nature of this project has enabled the Coffey Projects team to create unique management solutions to ongoing challenges. Through the implementation of a record management system and the development of new communication forums the team created a dynamic communication matrix, a key tool in the ongoing functionality of the project.

The main challenge of the project is maintaining airport operations while undertaking the complete redevelopment of the domestic terminal (landside, airside and buildings). Coffey Projects coordinates a program of works which takes advantage of off-peak operational periods for significant works, minimising the impact on the travelling public. Coffey Projects also directly manages certain aspects of the works including delivery of the airports five new aerobridges.

With the increased focus on airport security in Australia, Cairns Regional Airport continually reviews and modifies security levels and protocols. The Coffey project team proactively manages these changes adapting

processes for the approval of works and tracking changes which impact the security blueprint for the completed terminal building. The airport has a large number of stakeholders who have a direct interest in the redevelopment, including retailers and service providers who need to be kept informed and involved as the project progresses. Through a staged approach to the redevelopment of the terminal buildings and the detailed scheduling of works 18 specialty retailers and food and beverage outlets will be integrated into the redeveloped terminal with minimal interruption to normal business during the life of the project.

Coffey Projects is a subsidiary of Coffey International Limited, one of the top 300 companies on the Australian Stock Exchange. Coffey has been operating for 50 years and has a range of specialist businesses working in the social and physical infrastructure markets. They have over 4000 specialist consultants working on projects in more than 80 countries and permanent offices throughout the Americas, Africa, Asia Pacific, Europe and the Middle East offering services in a range of disciplines and industries including project management, geotechnics, environmental services, mining, transaction advisory, training and laboratory testing.

The ongoing success of the Domestic Terminal Redevelopment demonstrates Coffey Projects' capability and expertise in delivering smart infrastructure solutions in urban communities. The right people in the right place with the right attitude – that's the Coffey Projects difference.

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Philip Chun is an international multi-disciplinary consulting firm with offices in Australia, the Middle East, Asia and the United States. Our services cover all aspects of fire safety, risk and disability regulation of the built environment. Philip Chun emphasise an innovative systemic approach, our aim being to facilitate successful planning, design and construction of commercial, industrial and residential developments including government projects while maintaining a responsible approach to building regulation.

The Cairns Airport Domestic Terminal redevelopment presented both building regulation, and accessibility challenges. Philip Chun, commissioned as Building Certifier and Accessibility Consultant for the project, drew on the wealth of experience gained in our role as the Airport Building Controller for Brisbane, Gold Coast, Sydney and Melbourne airports.

Our team successfully solved specific fire safety and accessibility challenges that impacted on the spatial and budget planning of the redeveloped terminal. Our accessibility advice focused on adaptation of the existing building and proposed design to provide the best possible non-discriminatory built environment. The building approval included a fire engineered solution to smoke management incorporating a practical system compatible with the overall building design and function.

A specific challenge was the requirement for continued operation during construction and staged handover of the terminal building. Working with the project team, Philip Chun identified the necessity for a phased implementation of fire safety systems and accessibility features to ensure the continued safety of occupants and that the owners building regulatory obligations during construction in and around an operational airport were maintained. This required familiarity of the fire safety systems and

accessibility features of the existing and new parts of the building, and understanding how to best utilise these features to provide a building safe to occupy. The result was the successful delivery of a project that achieves a balance between maintaining business continuity, security, accessibility and fire safety with functional use of the terminal building.

In addition to Building Certification and Accessibility Consultancy, Philip Chun provides the following services:

- Philip Chun Fire & Risk – developing solutions that are practical and based on a combination of fire engineering techniques as well as being pragmatic making sure the solutions are not overly complex, can be integrated into the design and delivers value. We have experience in developing and delivering complex fire safety strategies and solutions extending across a range of market sectors including property, transport, infrastructure, industrial and environmental.
- Philip Chun Essential Services – delivers thorough and professional management of essential services maintenance for annual certification to ensure building owners are meeting statutory obligations.
- Philip Chun Advanced Technology – providing 3D modelling and photorealistic rendering, physical accurate rendering for Green Star submissions and computational fluid dynamics simulations for a great variety of industries.

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SUSTAINABLE HVAC SOLUTIONS

Originally established in England in 1816, Haden, a Norfolk Group company, is proudly celebrating its 40th year of trading in Australia. Haden's specialised mechanical engineering has been relied on for many major iconic buildings including their first major project in 1969—The Sydney Opera House, as well as the National Museum in Canberra in 2001.

Haden's airport expertise has evolved through many years of experience in major projects at many of Australia's busiest airports including Canberra Airport Brindabella Centre, Qantas Domestic Terminal Sydney and Terminal B, Canberra International Terminal, as well as baggage handling facilities at various terminals.

One of Australia's largest mechanical engineering companies, Haden has over 1100 employees situated in over 37 branches nationwide, spread across their mechanical services design, construction and maintenance teams. This includes Greenstar accredited professionals and engineers who are members of Engineers Australia.

Haden specialises in the design, construction, installation and maintenance of 'Whole of life' mechanical engineering solutions, applying Ecologically Sustainable Design (ESD) principles. Within airports, this includes expertise in heating, air conditioning, lighting, ventilation, security, utilities, access and the many airport systems needed to operate a modern airport, while assisting airports in their environmental goals as stated in the aviation industry's International Declaration on Climate Change.

Haden's approach enables them to plan, design and construct mechanical services specifically for the unique applications of airport requirements, where 24 hour, 365 days a year operation is required. These activities are supported by excellence in design and construction of terminal buildings, hangars, control rooms and all other airport administration and service areas.

Haden's engineering team take a collaborative approach to the design phase of projects, by either undertaking the design brief or actively working with the design consultants at each stage to maximise the energy and cost efficiency of the installation. This is particularly important in achieving predictability of output in respect of cost, time, quality and safety.

In addition to being able to tender individual mechanical works in the traditional manner, Haden Engineering is in the unique position through its sister Norfolk Group companies of being able to provide to its clients a true multi service approach to the delivery of mechanical, electrical, plumbing and fire engineering services during construction and on going



maintenance. This affords Haden the opportunity to allow the smooth and seamless operations on a multi facet project.

The Cairns airport project involved the redevelopment of the two level domestic terminal and new departures area with ticketing and baggage handling facilities and the Qantas lounge. It has been developed in three stages. The scope of Mechanical Services for the Domestic Terminal Redevelopment includes the additional plant upgrading in the Central Services Building as well as chilled water air conditioning systems located in three separate plant rooms; mechanical ventilation systems; smoke spill systems; air conditioning and ventilation to the "fixed links" to the aeroplanes; and, interface with the Building Management System. All of the equipment used in this job was selected for its ability to improve energy efficiency.

The tropical weather of far north Queensland presented a challenge for Haden as the channels and ground works for installing the 150m of underground mains to pipe the chilled water to the domestic terminal kept filling up with water and delaying progress. However, the Haden team continued to meet their targets.

An added challenge presented to Haden was the security issues of working "airside" and the safety of people movement. Working in conjunction with Hansen Yuncken many tasks were undertaken over night with the terminal re-established to pristine condition for trading the following day.

Providing air conditioning in the tropics is of major importance and Haden had to ensure that the new air conditioning system was completed to the extent that comfortable conditions were maintained within the terminal, so the existing air conditioning could be made redundant to make way for further works.

Having worked on a number of projects with Hansen Yuncken over the years, including the Prince of Wales Hospital and Sydney Domestic Terminal 2, Haden's aligned values and commitment to quality and safe work practices have helped them to develop a great rapport with each project team.

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