ELEVATING THE HUNTER REGION TO NEW HEIGHTS

CLIENT : Newcastle Airport
MAIN CONSTRUCTION COMPANY : Construction Control
ARCHITECT : Cox Architects

Newcastle Airport's $250 million airport redevelopment represents a transformative leap for regional aviation and construction in the Hunter. Featuring eight gates, an expanded arrivals hall, streamlined passenger flows and a state-of-the-art aerobridge, the terminal more than doubles the airport's passenger capacity during peak periods. It has been designed to accommodate larger international aircraft opening the way for future services to major global hubs and sets a new benchmark for sustainable, high-capacity regional airports. The project was delivered in partnership with local contractors and businesses, ensuring economic benefits flow directly into Hunter communities.

Designed by Cox Architects and constructed by Construction Control, the Newcastle Airport Expansion provides an additional 50% increase to the airports footprint. Delivered through innovative staging, modular construction, and collaborative site management, the project boasts a sustainable design while providing long-term economic and operational benefits for the region.

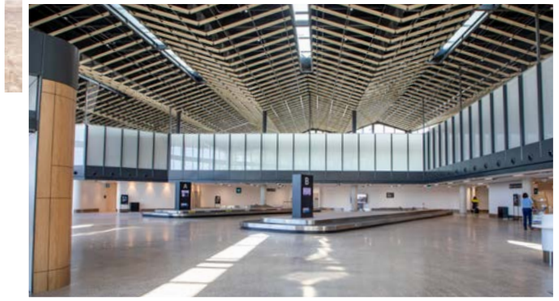
"This redevelopment positions Newcastle Airport as the region's international gateway," said Newcastle Airport CEO, Linc Horton. "It's about connecting the Hunter to global destinations, supporting local business and creating opportunities for the future. The project celebrates who we are as a region – from our beaches to our wineries – while ensuring we're ready for decades of growth."

"The terminal's footprint has now been expanded by 50% opening the Hunter Region to the world and making international travel from Newcastle easier and more accessible. We commenced direct flights to Perth and to Bali in October, have just announced Singapore via Bali commencing 29 March 2026 and are working on more exciting routes for our region," Linc said.

The architectural design of the terminal draws directly from the landscapes and light of the Hunter. "The vaulted ceiling takes its cues from the sand dunes; the textures of the walls reflect our vineyards; and the floor finishes mirror the tones of our coastline," Linc explained. "Every element celebrates our region's natural beauty, with the design allowing that unique 'Hunter Light' to fill the space."

Equally central to the design is a commitment to sustainability. The new terminal is targeting a 5 Star Green Star rating, reflecting a fusion of aesthetic excellence and environmental responsibility.

"We wanted to create something that doesn't just look beautiful, but also performs beautifully. This means energy efficiency, improved passenger comfort, and sustainable materials embedded from construction through to operations," explained Linc.



The benefits extend far beyond the airport boundary. The redevelopment is forecast to generate over 4,400 long-term jobs and contribute $12.7 billion in economic activity to the region over the next 20 years, including $6.2 billion in tourism and $6.5 billion in freight and logistics.

"Newcastle Airport is a key economic enabler for the Hunter," Linc said. "We're supporting tourism, trade and investment, but we're also inspiring confidence in regional business. When people and goods can move efficiently, the whole region thrives."

Newcastle Airport Executive GM Planning & Infrastructure, Ben Kochanski said during construction, the project created more than 500 local jobs, with procurement prioritising regional contractors and suppliers wherever possible. "This project has been about supporting our community from the ground up," Ben noted.

Delivering such an ambitious project on a live airport site required precision planning and collaboration. "Maintaining an exceptional passenger experience while doubling the footprint of the terminal was a complex challenge," Ben said. "Methodologies and sequencing strategies were crucial to keeping the site safe and efficient."

NAPL's key priorities included a build strategy that prioritised clear segregation between construction zones and passenger areas, allowing conventional construction activity to continue without the complexity of air side access requirements. This approach not only streamlined build sequencing but materially enhanced safety outcomes for both workers and the travelling public.

Above: Project stakeholders and airport executive signed the final steel beam which was lifted into place during the Airport's topping out ceremony.

"We undertook regular third-party audits across the construction site and deployed a dedicated airport superintendent to work directly with the construction contractor," explained Ben. "This ensured daily co-ordination with airport operations and protected the safety and experience of passengers at all times."

Milestones throughout the build reflected the project's deep ties to community and country. A Topping Out ceremony in October 2024 marked the completion of the structural phase, where the final beam was raised alongside a Banksia Ericifolia — Heath Banksia, supplied by the Worimi People, the traditional custodians of the land. "That moment symbolised our respect for local culture and our connection to place," Ben said.

The new domestic terminal opened to passengers in July 2025. "It's exciting to think of the journeys that will begin here," Ben said. "For some, it will be their first overseas trip; for others, it's a gateway home."

Linc Horton said looking ahead, the Newcastle Airport expansion stands as a legacy project, one that will serve generations. "We're proud of the partnerships, craftsmanship, and community spirit that made this possible," Linc reflected. "This terminal is a physical representation of our commitment to delivering the airport our region deserves, connecting the people of the Hunter to the world and creating new pathways for trade, tourism and economic development."

Newcastle Airport currently serves around 1.3 million passengers each year. By 2036, this is forecast to grow to 2.6 million annually, with the capacity to ultimately support around 5 million passengers per year.

For more information contact Newcastle Airport, newcastleairport.com.au

Below Benmax delivered mechanical systems for Newcastle Airport's expansion, enhancing sustainability, and efficiency through precision HVAC integration.

SUSTAINABLE SYSTEMS FOR A MODERN GATEWAY

The Newcastle Airport Terminal Expansion represents a major step in transforming the Hunter Region's aviation gateway into a modern, sustainable transport hub.

As part of Construction Control's delivery team, Benmax was responsible for the mechanical services scope, managing detailed design coordination, prefabrication, installation, and commissioning to ensure seamless integration across all building systems. The company's work supported a smooth delivery process while enhancing comfort, sustainability, and operational resilience within the new terminal.

The scope included:

- Three chilled-water secondary pumps,
- Three heating-water secondary pumps,
- One air-cooled chiller,
- Two air-cooled multifunction heat pumps,
- Air-handling units servicing terminal zones,
- 50+ VAV terminals for localised climate control,
- Daikin VRF and standalone systems to support the communications and border-force areas.

Working with Johnson Controls, the team also delivered a new Building Management and Control System integrating energy sub-metering, CO_2-based demand ventilation, and future interfacing capability with flight-information systems.

Delivering high-performance HVAC systems within a live, operational airport required precise planning and close collaboration. Leveraging its experience in complex mechanical services delivery, Benmax adopted an integrated approach, combining design co-ordination, prefabrication, and commissioning, to minimise disruption, manage programme risk, and achieve building performance targets from day one.

"This project demanded meticulous sequencing, and extensive after-hours work to minimise disruption," explained Matt Browne, Construction Manager – Newcastle.

The Benmax team coordinated closely with Construction Control and airport operations to schedule shutdowns, adhere to aviation-security protocols and maintain airside access controls. Passenger comfort, safety and continuity of services were prioritised throughout construction and commissioning.

A key driver of the mechanical design was the project's sustainability target. The expansion aims to achieve a 5 Star Green Star "As Built" rating, shaping every major system decision.

"The target of achieving a 5 Star Green Star rating was central to every stage of design and delivery," Matt said. The installed systems utilise low-GWP refrigerants (R1234ze and R454B), high-efficiency EC fan air-handling units, and variable-speed drives across pumps and fans to reduce energy use. Ventilation rates were engineered to provide 50% more outdoor air than required by AS 1668.2 to enhance passenger comfort and indoor air quality.

To ensure ongoing operational performance, Benmax implemented comprehensive metering, commissioning, and building-tuning protocols. Airtightness testing, clean-air compliance to ASHRAE 62.1 and AIRAH hygiene standards, and staged performance verification were all documented to Green Star certification standards. The result is a flexible, efficient system built for long-term resilience.

One of the project's defining innovations was the simultaneous heating and cooling system configuration. "We developed a high-efficiency mechanical solution using air-cooled four-pipe multifunction heat pumps in tandem with a low-GWP screw chiller," Matt said. This arrangement enables heat rejected from one part of the terminal to be reused in another, significantly improving thermal efficiency and reducing electrical load. Combined with finely tuned BMCS control strategies, the system balances comfort, performance, and energy outcomes across varied terminal zones.

Coordination was critical to success. Benmax collaborated with Construction Control, multiple specialist trades, and airport management within a tightly governed interface framework designed to maintain passenger flow and operational continuity. Clear communication ensured every stage of work aligned with safety requirements and live terminal constraints.

Looking back on the project, Matt reflects on both its technical achievement and its regional significance. "We're most proud of delivering a high-performance system that has helped transform Newcastle Airport into a modern, sustainable gateway for the Hunter Region. The project represents not just an engineering achievement, but a demonstration of how regional capability can deliver infrastructure to metropolitan standards."

With the expansion now complete, the mechanical systems operate quietly behind the scenes — supporting comfort, efficiency, sustainability and the passenger experience.

For Benmax, the project stands as a high value reference point in delivering cutting edge HVAC infrastructure for aviation environments across Australia and beyond.

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