



SMARTER
HVAC
SOLUTIONS

Built in certainty



Airports Capability

July 2018

Our Airport Expertise

Airports are complex environments with tough challenges that demand a thorough knowledge of the risks associated with working both landside and airside. VAE has proven capability and a strong track record in working to deliver airport projects. We understand the unique environment and challenges involved in working in airports and particularly understand the critical need for:

- ✓ Security
- ✓ Safety for passengers, airport personnel and contractors
- ✓ Close coordination and communication with the broad range of stakeholders in the airport environment including appreciation of the public, airport operations personnel, security, and aircraft operations
- ✓ Risks associated with Airside related works, and particularly with Foreign Object Debris (FOD) risk management
- ✓ Minimizing downtime and providing swift response to issues
- ✓ The limited windows of time available for conducting work within the airport environment

Company Profile

VAE Group is a building services solutions company that started in 1997. Today, we have grown to over 300 employees and have six office locations in Australia, New Zealand and Papua New Guinea. As a Tier 1 building solutions company, we pride ourselves on trust and integrity. We work and engage with our clients so that together we develop solutions that always work and are delivered on time and on budget. At VAE, our expert staff have an authentic passion for delivering outstanding results. This energy drives innovative thinking, promotes efficient performance and results in positive relationships.

The company's promise is to provide '**Built in Certainty**' for all clients and stakeholders with a strong record of delivering high quality and innovative projects.

VAE specialises in delivering Smarter HVAC Solutions. Our capability and experience covers all facets of mechanical services including design, engineering, construction and management across mechanical systems, Building Management Systems (BMS), electrical systems and data management systems.

We ensure there's a link between design engineers and the frontline tradespeople who are responsible for the installation, commissioning and servicing of HVAC systems. Our experienced team of industry leading professionals have the expertise to tackle and add value to every job.

Our structure includes a team of in-house project managers, mechanical engineers, commercial managers, automation engineers, design engineers, draftsmen and commissioning engineers all ably supported by our administration staff, account managers, refrigeration, BMS and service technicians.

VAE can remotely monitor all projects via our VAE Bureau. The Bureau is a team of BMS and HVAC experts that work with our clients to actively monitor buildings from our central Brisbane facility. By utilising alarms, energy monitoring and identifying potential changes in the way those buildings are operating, our service teams can attend potential issues before they become a major problem. We are able to provide airport management with extensive analytics and reporting that can be used to reduce operational expenditure (OPEX) by providing data driven maintenance aimed at streamlining maintenance activity and hence costs.



Capabilities

VAE engineers, constructs and manages 'Smarter HVAC Solutions'. Our methodology is based on our value of **'Built in Certainty'**. This means that we have the people and technology to thoroughly assess the challenge and identify the smartest ways to build in certainty into your project and building assets.

We have the capability, the experience and the scalability to deliver complex mechanical services projects. We have successfully delivered numerous projects within Australia, Papua New Guinea, New Zealand and Macau, China. We are currently delivering and managing in excess of \$100 million of projects and have a depth of in-house resources and subcontractor relationships to effectively deliver your project.



Areas of Expertise

We deliver a fit-for-purpose solution that achieves optimum performance and maximises value throughout your project and asset's lifecycle. Our capabilities and expertise allow us to provide a wide array of services through our solution streams of Engineer / Construct / Manage.

Engineer

- Design
- Drafting: Utilising Revit and 3D drafting
- Advisory Services
- Building Audits
- Independent Commissioning Agents

Construct

- Prefabrication: Controlled quality, lower on-site costs and a reduction in peak on-site resources
- Installation
- Automation
- Electrical
- Commissioning
- Dedicated Warranty Manager

Manage

- Mechanical, Electrical and BMS Maintenance
- Compliance
- Upgrades, Refurbishments and Fit-outs
- VAE Bureau

Safety



VAE are the leaders in safety across our industry. We monitor both our Lost Time Injuries, our near misses and have an enviable health and safety performance record.

We are conscious of the fact that construction is traditionally one of the most dangerous industries - not just from a physical perspective. As an active participant in 'Mates in Construction' we know that mental health is everyone's business.

VAE takes every measure to ensure employees and sub-contractors are never exposed to unnecessary risk. This is managed via our three-cornered approach to safety – **Safe at Work, Safe at Home and Safe Mental Health.**

Our employees are well-trained, well-equipped and competent. We ensure our staff can identify and treat risk before it happens. It's critical and a fundamental requirement that our employees get to and from their place of work and back home again safely. VAE emphasises vehicle maintenance, proper licenses and ensures that our staff are fit and capable no matter where they are. We encourage that safety skills learned on the job are also life skills used both at work and at home.

We are committed to this safety philosophy and have implemented an accredited OHS Management System that complies with AS: 4801 OHSMS and OHSAS 18,001. This system is audited by SAI Global and is integrated with our Quality Management System to ensure policy consistency.



Prefabrication & Modularisation

VAE has successfully undertaken extensive off-site prefabrication and modularisation on numerous projects in Australia, Papua New Guinea and New Zealand. As a business, we are fully committed to the modular approach due to the benefits such as improved overall quality, reduces on-site peak labour resource, reduces on-site safety risks and facilitates a general resequencing of the traditional construction program.



Airport Project Experience

Listed below is a summary of the projects we have undertaken at airports within the last five years. Because the projects we undertake at airports involve HVAC, Fire, Electrical, Security and access to secure areas, we need to be always mindful of our actions. From these projects we have learnt that there is a daily requirement to be aware of the possible consequences of lack of attention to detail. Consequences may include:

- Breach in security
- Failure or incorrect operation of smoke management systems
- Loss of income to an airport stakeholder
- Injury to the public or airport employee
- Damage to aircraft for Foreign Object Debris (FOD)

Brisbane & Cairns Control Tower - Air Handling Unit (AHU) Replacements

LOCATION / Brisbane, Cairns	CONTRACT VALUE / \$ 4.4M	COMPLETION DATE / 2017
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Key Project Requirements:

Remove AHUs in Control Towers in Brisbane and Cairns without disruption to Air Services Australia and without loss of conditions in the operations room and associated equipment room

VAE Solution:

- Develop removal/installation procedures acceptable to Air Services Australia.
- Break down air handling units so they can be transported up the building in the lift and reassembled on site.
- Organise disassembly of existing units and re-assembly of new units to minimise downtime but also maintain conditions.



Achievements:

- No interruption to airport operations
- No loss of conditions at either site
- Awarded the chiller replacement projects at Cairns and Melbourne airports



Brisbane & Melbourne Air Traffic Operations Building Chiller Replacements

LOCATION / Brisbane, Melbourne	CONTRACT VALUE / \$ 3.69 M	COMPLETION DATE / 2018
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Key Project Requirements: Replacement of chillers and cooling towers at Brisbane and Melbourne airports

VAE Solution:

Plan and fabrication off site to allow the removal and replacement of the chillers in each location over two nights to ensure no disruption to airport operations

Achievements: Project in progress

Brisbane International Terminals - Fire System Review

LOCATION / Brisbane	CONTRACT VALUE / \$2.2M	COMPLETION DATE / 2016
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Key Project Requirement:

Conduct a total function test on the fire and smoke management systems to ensure AS1851-2012 compliance. In instances of non-compliance, provide and implement a solution. Daily co-ordination with airport personnel (especially Customs and Security) essential.

VAE Solution:

- Because of the numerous interfaces between the fire, mechanical and electrical systems, VAE provided a multi-disciplinary team of project manager, engineers, tradesmen and commissioning technicians.
- As built drawings and schedules were completed and reviewed as the project progressed to ensure documentation was 100% accurate.
- Daily start up meetings to ensure total co-ordination between trades and effective communication with airport, Customs and Security

VAE Achievements:

- Project completed on time and on budget
- Lead co-ordination of BMS, electrical, fire and security contractors.
- Provision of co-ordinated drawings and schedules including fire matrix.
- Provision of a AS1851-2012 compliant system
- Consistently won best contractor on site during the duration of the project



Brisbane Domestic Terminal Building (DTB) – RV4 & 5 Air Handling Unit Replacement

LOCATION / Brisbane	CONTRACT VALUE / \$ 2.1M	COMPLETION DATE / Sept 2018
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Key project requirements:

Removal of seven air handling units serving Virgin terminal space, replace with new units and upgrade existing ductwork, BMS and plantroom power and lighting. No disruption to airport operations essential

VAE Solution:

- Disassembly of AHU's in situ to allow removal off site through the building rather than use a crane airside, which had operational limitations



VAE Achievements:

- Project completed on time and on budget
- No disruption to airport operations or Virgin Australia.
- Lead co-ordination of electrical and BMS trades
- No lost time injuries

RAAF Tindal (Defence) Air Traffic Control Stage 14

LOCATION / Tindal, Northern Territory	CONTRACT VALUE / \$ 3.3M	COMPLETION DATE / 2018
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Project Requirements:

Provide stand-alone air conditioning system to a new control tower at RAAF Base Tindal located 15km outside Katherine, NT.

VAE Solution:

- Pre-fabrication to minimise on site labour
- Plan for program disruptions
- Provide easy to use BMS graphics to assist in remote diagnosis.



VAE Achievements:

Project still under construction



Brisbane Domestic Terminal Building (DTB) – Fire Control Upgrade Project

LOCATION / Brisbane	CONTRACT VALUE / \$ 1.5M	COMPLETION DATE / 2018
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Key Project Requirements:

Upgrade essential services systems from a 7 zone strategy to a 22 zone strategy. Scope of audit, redesign and modification includes 46 switchboards, 480 HVAC devices, 400 access control devices and associated switchboards and interfaces to the BMS. No disruption to airport operations essential.

VAE Solution:

- Development of a Master Fire Matrix to allow compliant testing and recording
- Off-site pre-fabrication of wiring assemblies to minimise on site installation and testing
- Daily start up meetings with all trades to ensure adherence to procedures and the program

VAE Achievements:

- No lost time injuries
- No interruption to airport operation
- Lead co-ordinator of BMS, fire and electrical trades
- Fully functional, compliant smoke management system

CONTACT

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