

NERVE CENTRE FOR ROY HILL'S MASSIVE OPERATION

MAIN CONSTRUCTION COMPANY : Perkins
CONSTRUCTION VALUE : \$50 million
COMPLETION DATE : November 2013
ARCHITECT : Peter Hunt Architect
STRUCTURAL ENGINEER : BPA Engineering
PROJECT MANAGER : Kooperman Project Management



Roy Hill Remote Operations Centre is a new corporate headquarters and remote operations centre at Perth International Airport.

Having a \$10 billion enterprise comprising a 55 million tonne per annum iron ore mine, plus rail and port facilities to run, Roy Hill Holdings required a state-of-the-art headquarters which combined functionality, security and connectivity to major transport links.

A site was chosen within the Perth Airport commercial precinct, and Perkins Builders, with their substantial track record of successful Western Australian projects, contracted to build Roy Hill's new \$50 million Headquarters and Remote Operations Centre (ROC).

Perkins were appointed in August 2011 on an Early Contractor Involvement (ECI) basis to deliver 6,800m² of office space over three levels, the adjoining 1,750m² data centre for the ROC, basement parking for 100 cars, on-grade parking for 250 cars with shade structures over, a staff canteen with alfresco break out space in a landscaped courtyard, and a \$1.5million landscaping component.

Perkins assisted the ROC project manager Kooperman Project Management and the design team to finalise the design by Peter Hunt Architects, which features extensive use of glazing for natural light, sunshading for thermal efficiency and effective natural ventilation for the office levels.

A key issue in design resolution and construction methodology was the challenge of the site's high water table, with ground water only 1m below natural ground level. Monitoring bores were used to measure the ground water level for six months prior to construction commencing.

During the ECI process, a major issue was identified in terms of the cost of dewatering, which was estimated to be in excess of \$1 million. To reduce this cost, BPA Engineering (the project's structural and civil engineers) suggested replacing the project's conventional column base design with a 'thin' raft design. This raised the dewatering draw down depth by 600mm with only a minor increase in construction cost, resulting in a significant saving to the project budget.

Perkins contracted dewatering specialists, Mobile Dewatering, to devise a dewatering management plan and MDW Environmental Services to prepare a dewatering environmental management plan to meet the requirements of the relevant authority, Perth Airport Pty Ltd (PAPL). The plan entailed the construction of temporary settlement and infiltration ponds on adjacent land, resulting in minimal water quantities being discharged to stormwater and, with the re-infiltration of water extracted from the site to adjacent land, minimizing environmental impacts on local wetlands.

As the site is under the control of Perth Airport and the Airport Building Controller, Perkins needed to prepare comprehensive environmental, safety and construction management plans and submit them to PAPL prior to construction commencing in May 2012. Approvals were also needed to be obtained from PAPL on a regular basis throughout the construction period for all excavations, crane lifts and hot work.

"Construction and commissioning of the ROC required close co-operation with Roy Hill's IT department for installation of the consoles, screens and data systems. The ROC is serviced as a standalone facility with separate services and stand-by power systems," commented Perkins Builders Spokesman, Rod Sproule.

Perkins' team of eight staff and ten plant operators, scaffolders, and labourers and a subcontractor workforce which peaked at 260 proved a model of effectiveness and efficiency. Though the contract construction period was set at 80 weeks, with a completion of February 2014 anticipated, the construction was finished 12 weeks ahead of schedule, and Roy Hill able to commence operations in the buildings in November 2013.

Established in 1965 in Bunbury, Perkins Builders is owned and managed by Dan Perkins and is now the largest regionally based builder in Western Australia. The company has successfully completed a diverse range of commercial and industrial building contracts and civil engineering projects throughout Perth and the South West of WA.

In recent years the company has maintained an annual turnover of \$150M and an order book value of \$250–300M. Other recently completed projects include Manca College (\$30M), Smiths Beach Resort (\$25M), Bunbury Catholic Cathedral (\$20M), Next Generation Health Clubs (\$30M) and the \$10M State Reception Centre (CHOGM Leaders Retreat). Current major projects include a \$50M contract for NBN Co Earth Satellite Stations, Wyatt Grove Shopping Centre (\$20M), Wellard Square Shopping Centre (\$20M), Bunbury Regional Entertainment Centre (\$13M), Bunbury and Australind High Schools (\$14M) and Butler College Stage 2 (\$30M)

Perkins Builders take a collaborative and non-confrontational approach to contracting, and in 48 years has delivered every single project on time and without disputes. Their excellence has been recognised with over 50 MBA WA Excellence in Construction Awards, and a National MBA Excellence in Construction Award in 2011 for their outstanding achievement in building Bunbury Catholic Cathedral, which was the first new cathedral built in Australia for three decades.



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INTEGRATED EXPERTISE PROTECTS LIVES AND PROPERTY

Nothing is left to chance when One Fire Group undertake a project like the Roy Hill Iron Ore Head Office and Remote Operations Centre (RHROC), with every aspect of the project's state-of-the-art fire protection and suppression package delivered by direct employees using in-house expertise.

One Fire's involvement in the innovative and integrated fire protection and suppression solution for the RHROC included an occupant warning system; numerous VESDA (Very Early Smoke Detection Apparatus) Systems,

including VLS (VESDA Laser Scanning) and VESDA Laser Focus systems; gas suppression systems; fire sprinklers; fire hydrants; a fire mist system which activates at temperatures over 80°; and fire extinguishers. Unique to this project, drenchers were installed on the outside of the windows at the front of the building.

One Fire also provided design calculations along with some design drawings and undertook some of the fabrication. The company was able to complete the entire package from early design and specification through to commissioning using in-house resources and skills. For clients like Perkins Builders, this ability to deliver leading-edge, comprehensive turn-key packages is one of the company's unique advantages.

"One Fire was on site for the complete duration of the project. We were involved from the very beginning for design modifications and also for site preparations for the installation of hydrant system, and we will be one of the last to leave after conclusion of commissioning of fire panels," said One Fire Group Commissioning Supervisor, Joe Grace.

"A unique aspect of this project is that this fire protection system includes many in-built safety nets. By providing increased communication between various elements in the system, the system has the capacity to reliably diagnose the cause behind any issue or concern, and therefore respond appropriately."

"ProInert gas has been used in the gas suppression system. This is known as the 'green' gas, and is a globally-approved, environmentally friendly, safe and natural way to extinguish fires that protects systems and does not harm people – it also has zero ozone depleting chemicals."

"A distinctive aspect to this system in design terms is that drenchers have been installed on the front windows of the building, which is unique."

Delivering this state-of-the-art system involved the skills of up to 15 One Fire staff, with up to eight on site at any one time. The advanced technical nature of the system and large scale

of it necessitated mapping, sequencing and interfacing of several aspects of the system. Because of the system's high level of complexity, it required highly skilled installers with a very high level of expertise. One Fire also undertook all required liaison with FESA and other authorities to ensure the systems' compliance with all relevant codes and standards.

"It needs good thinking to lead to good practice, and requires careful and diligent testing," commented Joe Grace.

One Fire Group was formed by the merger of Axis Fire Solutions and AP Fire Systems, and is now one of Western Australia's largest fire protection and detection companies. They have a proven track record in complex and innovative projects which incorporate the best available technology to protect lives and property.

The company's collaborative style of working with clients, comprehensive capabilities and approximately 50 skilled staff, allow them to provide a broad range of services including all aspects of design; engineering and fabrication; project management; installation of detection, warning, suppression and protection systems; maintenance inspection and testing; passive fire system compliance audits; product advice; and commissioning.

One Fire is a strong, expanding business which works closely with property developers, construction companies, and fire engineers on projects across sectors including industrial, commercial, retail, education, health and residential developments, multistorey apartment complexes, refurbishments and resources.

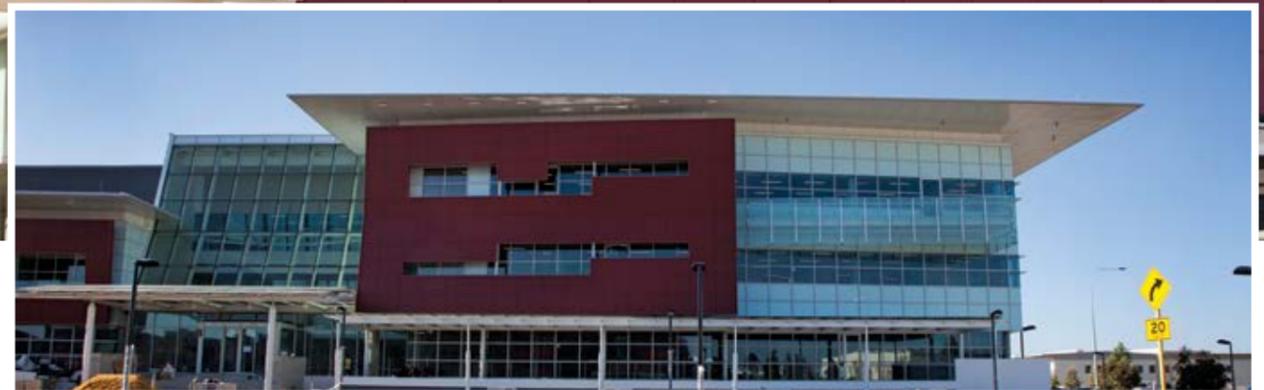
Recent projects have taken the company's teams as far north as Kununurra and Wyndham, east to Laverton, and down to Albany and Esperance in the South West. On all the projects they undertake One Fire Group's goal is to provide a best-practice solution, ensuring the highest possible level of protection and safety.

For more information contact One Fire Group Director Garth Delavale, phone: 08 9240 4555, email admin@onefire.com.au, website www.onefire.com.au





Roy Hill Operations Centre, WA



LEADING-EDGE FACADE PACKAGES DESIGNED AND DELIVERED

Project facades are becoming increasingly complex in design and highly specified in terms of performance, like the Roy Hill Remote Operations Centre, for which Alcom Fabrications provided a complete design and construct package including curtain walling, cladding and window framing.

The facade elements included Thermally Broken SAPA Elegance 52 Curtain Walling system, which was ordered from Europe and powder coated locally, and Swiss Pearl cladding systems.

The installation was challenging due to limited access, which Alcom Fabrication's site team overcame by using EWP's for the at-heights element of works.

Alcom Fabrications have comprehensive capabilities including an in-house design team equipped with Autocad 3D and finite modeling capabilities, and 2800m² of factory space over three Australian-based factories as well as additional offshore fabrication capacity. The factory workshops have leading-edge fabrication equipment including state of the art CNC machines for both curtain walling and cladding systems.

The company capabilities encompass full facade designs, bespoke curtain walling systems from Europe and Asia, blast-resistant facade design and installation, and cladding systems including Alucobond,

Alpolic and Ultrabond. For projects which present unique engineering challenges, Alcom Fabrications partners with world-renowned engineers such as Arup Facades and B G & E to develop and deliver complete solutions for clients.

Showcases of their expertise include the Perth Arena, which won the company the 2013 MBA Award for Subcontractor of the Year – Cladding and Curtain Walling, and the WA Basketball Arena which won them the 2010 MBA Subcontractor of the Year Award. Other outstanding projects include the Health and Wellness Building at ECU Joondalup, Maylands Centre, Brighton 1 Apartments and Perth Airport TWA.

Alcom Fabrications bring over 20 years of experience to the growing facade sector, which means every client's project benefits from the company's high level of experience and understanding of the latest innovations in materials, sustainability and construction methodology. By bringing all these resources to the table and working closely with architects, builders and engineering consultants, Alcom Fabrications can be relied on to develop and deliver solutions which are on time, within budget and meet the highest standards of quality and performance.

For more information contact Alcom Fabrications, 64 Christable Way, Landsdale WA 6065, phone 08 9303 9870, fax 08 9303 4564, email colinniland@alcomfabrications.com, www.alcomfabrications.com