

CONSTRUCTING LAW AND ORDER IN THE WEST

The new \$93 million Perth Police Centre constructed by BGC Construction will provide a 24-hour station and base operations for approximately 500 police officers and staff.

MAIN CONSTRUCTION COMPANY : BGC Construction
ARCHITECTS : Peter Hunt, Daryl Jackson Architects and
Guymer Bailey Architects
STRUCTURAL/CIVIL ENGINEER : BPA
QUANTITY SURVEYOR : Davis Langdon Australia
PROJECT VALUE : \$93 million

BGC Construction has been doing double-duty in Northbridge, with the construction of both the Perth Arena and – right across the road - the new Perth Police Centre. The \$93 million headquarters for law enforcement was designed by Peter Hunt in association with Daryl Jackson Architects and Guymer Bailey Architects. The design team all have a previous track record of justice sector projects, including courts, police stations and correctional facilities.

As one of Western Australia's leading integrated construction companies, BGC brought a level of coordination and skill to the task which enabled works on the meticulously detailed project to proceed smoothly, on time and within budget.

The 17,682m² Perth Police Centre will provide a 24-hour station and base of operations for approximately 500 police officers and staff, with specific elements including the Perth Police Station; a new Perth Watch House; various District Police Units; the Northbridge Magistrate's Court; and the Central Metropolitan District Office.

The new Watch House has been designed to provide facilities to hold up to 72 persons in custody, those who cannot be bailed and are awaiting an initial court appearance. Constructing these kinds of accommodations requires incredible attention to detail – all the finishes, fixtures and fittings must be completely safety-focused, right down to unpickable grouts. For BGC this made overall quality control a vital part of successful delivery, in order to ensure all the specifications were absolutely appropriate, and all applicable standards met.

The Magistrate's Court will operate six days a week. Courts have their own set of design and construction requirements, including secure entrances for both those being tried and for the Magistrates. The fit out of audio and lighting needs to be top-class, and accessibility issues for disabled persons addressed in both the court room and in the amenities. BGC's previous experience in both the ageing and health sectors gave them a solid background in the finer details which are required to ensure a safe, accessible court for all parties involved in the justice process.

The project also has a basement level, which provides secure parking facilities for police vehicles, and an entrance specifically for Perth Watch House vehicles.

The centre was built on a brownfields site. BGC commenced works after the demolition of the pre-existing buildings and bore piling, completed by the stage 1 early works Contractor.

The centre façade is constructed from coloured precast concrete panels, coloured in-situ concrete, aluminium and metal clad sunshades and extensive high-performance glazing. The roofline was challenging, having a stepped design which required a non-standard construction method.

BGC Construction was established in 1994, and has grown to become one of the leading builders across both commercial and civil construction. Other major projects have included The TVW Institute for Child Health Research, Armadale Health Campus, St John of God Hospital Redevelopment Subiaco, St John of

God Hospital Extension Murdoch, AK reserve Athletics and Basketball stadiums, Ear Science Institute Subiaco, UWA Motorla and University Club, UWA Chemistry Building, UWA Science Library and Business School, Curtin University Business and Physiotherapy School, Curtin University Resource and Chemistry Precinct, The Perth Arena and numerous retirement projects for providers such as Swan Care, RAFFA, RSL and Baptistcare.

The company's three main areas of operations are commercial construction across health, education, offices, manufacturing and the justice sector; medium and high density residential projects, including affordable housing projects for the Ministry of Housing; and aged care projects including retirement villages, Residential Care Facilities and nursing homes.

BGC also has a range of other divisions which complement the construction division's building activities, including construction products manufacture; civil engineering construction and maintenance; contract mining;

quarrying; road transport; property ownership and management; and insurance. BGC has operations in every mainland state of Australia, and a distribution network in East Asia and New Zealand.

BGC holds certifications which reflect their commitment to excellence – the company's Quality Management System is certified to AS/NZS ISO 9001:2000; OH&S to AS/NZS 4801:2001; and Environmental Management to ISO 14001:2004. Additionally BGC have recently been awarded certification by the Federal Safety Commissioner under the Australian Government Building and Construction OHS Accreditation Scheme. The company is also accredited to the highest category of Category A Contractor by the Building Management and Works, 1S3 for the Water Authority and R20+, BC5+ for the Main Roads Department.

It can truly be said that BGC are a company that thrives on challenge, bringing to every project the kind of can-do spirit, practical abilities and intelligent innovation which get the job done – safely, and to the highest possible standard.

For more information contact BGC Construction,
PO Box 7223 Cloisters Sq WA 6850 Australia,
phone 08 92611700, fax 08 92611701,
website: www.bgc.com.au

GIVING THE LONG ARM OF THE LAW SOLID GROUND TO STAND ON



There's one key requirement for carrying out ground engineering works in close proximity to not one, but two, high pressure gas mains – a complete dedication to safe working practice. For Compile-Ryobi, this is a core commitment for all their projects, including the Perth Police Complex (PPC).

As specialists in piling, retaining and ground improvement works, their scope for the PPC project included the entire ground engineering package. Compile-Ryobi carried out underpinning works, constructed secant CFA pile retaining walls and installed ground anchors.

The challenges included high pressure gas mains on two sides under high traffic roads, and old masonry structures on the other boundaries.

“There were very strict criteria for construction and the performance of works due to the high pressure gas lines,” said Compile-Ryobi General manager, Luke Martin.

“However, having the complete ground engineering package under our responsibility meant we could carry out works in a seamless and co-ordinated manner, delivering a sound result on time and to the required standard without incident.”

Compile-Ryobi was formed in 2003, and is a subsidiary of Ryobi Kiso, Singapore. The capabilities they offer to both civil and built asset projects cover a broad spectrum of geotechnical engineering applications and piling requirements. In the pursuit of excellence, constant training is provided for staff to ensure their professional development in key areas including technical skills, plant operation, geotechnical knowledge and zero-harm work practices. Compile-Ryobi are also committed to the personal wellbeing of all their staff, recognising that their people are the company's greatest asset, and that the investment made in their workforce pays real dividends for clients and projects.

Compile-Ryobi operates a fleet of modern piling rigs and ground improvement plant for completing foundation piling, temporary and permanent retaining (including contiguous and secant piled walls along with soil-nail walls), ground improvement and marine piling. Techniques offered include large diameter bored piles, continuous flight auger piles, displacement piling, sheet piling, driven piles (pre-cast and steel tubes), diaphragm walls/barrettes and fully cased piles using oscillator/ grab techniques.

Other technologies include, jet grouting, ground anchoring, and ground improvement such as soil mixing using cutter soil mix technology and

vibro stone columns. They also provide hard rock drilling services using down-the-hole hammer techniques, and pile testing services.

Projects currently underway include the Esperance Port Access Corridor, a Main Roads WA (MRWA) project being built by John Holland Group. Compile-Ryobi is using a Bauer BG28 to construct 900mm diameter CFA piles for a new rail tunnel and is also installing driven CHS steel piles for new bridges. Other recently completed major projects have included the Zenith City Centro Apartments project in the Perth CBD. Here Compile-Ryobi installed over 200 temporary ground anchors and carried out extensive foundation piling works on a challenging site where the working platform was 5m below street level.

The company also contributed to the MRWA Reid Highway Extension Project for Macmahon. This project consisted of the construction of major road and bridge approach embankments and a new bridge over the Swan River in Middle Swan. Poor geotechnical conditions required ground improvement beneath the embankments and bridge abutments. Compile-Ryobi carried out Deep Soil Mixing (DSM) which was completed ahead of time, resulting in savings to the project that would not have been realised had other techniques been chosen. Extensive on-site testing and monitoring was undertaken and confirmed the high standard of performance of the DSM. The Reid Highway Extension project also involved CFA piling for a new bridge over Jane Brook, for which MRWA required a high level of QA. Compile-Ryobi's use of CFA rigs equipped with state-of-the-art monitoring equipment helped facilitate QA compliance and ensured they satisfied MRWA requirements.

Compile-Ryobi also contributed their expertise to the Perth Metro Rail project, where soil mixing technology was utilised for the first time on a major civil project in WA. Grout mix piles and soil mix walls were constructed to form a 140m long x 9.0m deep cut and cover excavation for the rail tunnel on the Esplanade portion of the works. The overlapping grout mix piles created a base floor through which soil mix pile walls were constructed, to create a water tight chamber for tunnel construction. Grout mix piles were also installed at the TBM exit portal to allow for the TBM to be retrieved; and various sections of the works required temporary retaining using sheet pile and anchors for dive structures, cut and cover approaches and other excavations.

Compile-Ryobi's management and staff have many years experience in the foundation and ground improvement industry from both Australia and overseas. The Singapore Stock Exchange listed parent company, Ryobi Kiso, has extensive experience completing geotechnical works across the development spectrum, giving the Australian operation an extended knowledge base to draw on in developing innovative solutions to any geotechnical challenge.

Whether a project needs design and construct services, construct only, labour and plant only or Target Cost Contracting, Compile-Ryobi have the depth of technical expertise to provide clients with the exact package of works they require, completed to the highest standards of safety, quality and environmental consideration.

COMPILE-RYOB
COMPILE-RYOB AUSTRALIA PTY LTD

For more information contact Compile-Ryobi, PO Box 271, Maddington WA 6989, phone 08 9452 2199, fax 08 9452 8399, website: www.compile.com.au



A FORCE TO BE RECKONED WITH IN STEEL FABRICATION

When projects require the highest standards of craftsmanship and quality results in steel, OzWest Steel Fabricators (OWSF) take pride in achieving them. For the Perth Police Complex, OWSF fabricated and installed stainless steel and glass balustrading, the sliding gate for the Police vehicle entrance and other structural and architectural steel items.

For the balustrading, OWSF worked closely with Tough Glass to ensure a result which was both aesthetically pleasing and met the high safety and performance standards required in this kind of facility. Six of the company's workshop staff and three on-site installation staff completed the scope of works.

The biggest challenge for their fabrication team was the extensive polishing of the flatbar fabricated items, which was required to meet the design specifications. OWSF also had to resolve unique technical specifications for some items, such as spider fittings with 15 mm glass.

OWSF has been in the steel fabricating industry for approximately six years. Their strength lies in their strong focus on customer service,

combined with superior levels of applied skill in working with metals including standard steel, stainless steel and aluminium for both structural and architectural applications.

"We have fabricated steel or glass for a variety of projects ranging from small scale residential balustrading to large projects such as mild steel balustrades and handrails, stainless steel handrails and balustrades, glass balustrades, sliding gates and fencing in stainless steel, mild steel and aluminium. Our previous projects include Ashdale School, Mater Dei College for Emco Building; Manora Apartments, the Perth Athletic Stadium, and Perth Police Complex for BGC; the East Link project for Jaxon Construction; and many more commercial projects," said Ozwest Steel Fabricators Project Manager Navin Pitroda.

OWSF take pride in meeting their client's timeframes, even tight ones, without losing sight of quality or the human element of maintaining a good rapport with their clients. Their excellent working knowledge of the industry and of their materials allows them to work closely with clients to ensure every product is tailored to the exact purpose and placement, with no compromise to design goals, strength, safety or quality.

OWSF provides well-designed balustrading, fences, gates, steel stairs and all types of builder's metalwork for projects across the residential, commercial, government and general construction sectors throughout Perth. They are able to meet demanding design briefs, with the capability to provide finished products in a range of finishes including high polish stainless steel, powder coating, and wire forms.

Because excellent outcomes start with the raw materials used, OWSF use only the most reputable suppliers. Their trade staff takes pride in achieving the highest standards of workmanship in the resulting end products, which are then installed by a highly-trained and safety-focused site team. From beginning to end, OWSF are focused on the needs of the customer for reliable, timely and excellent outcomes.

The designs and materials used by OWSF for each project are carefully considered in terms of the environment they are being fabricated for. Resistance to corrosion and other weather effects is accounted for, as is the degree of stress inherent in the eventual placement. Context is everything when it comes to ensuring their workmanship will provide lasting value and function.

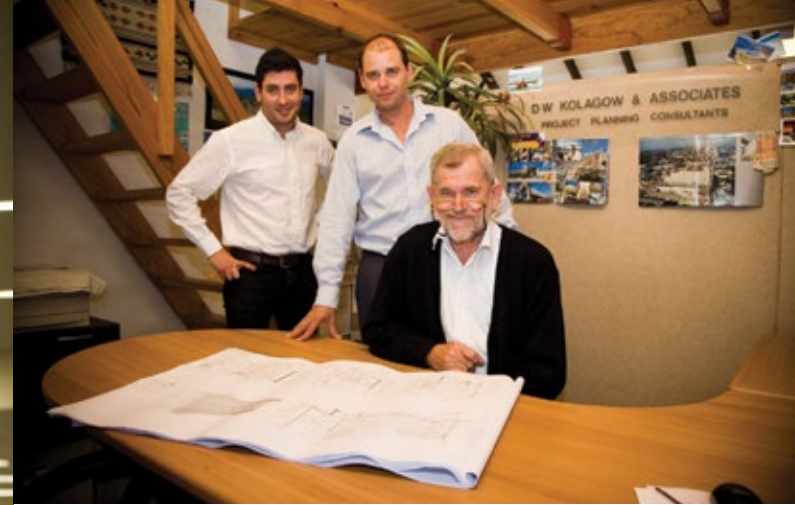


The in-house talent which drives the company's excellent reputation in the Perth construction industry includes Project Managers, Estimators and trade-qualified boiler makers. Their combined experience exceeds 80 years of working with steel, and from the company's Wangara workshop they install the results of this skill at projects across Perth.

The company's workshop is equipped with the latest equipment for steel fabrication, including stainless steel polishing equipment, CNC bending machine and CNC guillotine. This allows them to control the quality of the finished result to the highest level, which means they can promise clients results which meet or exceed their expectations.

Whatever shape or style of steel items a project requires, OzWest Steel Fabricators have the capability and the passion to craft a lasting successful outcome.

For more information contact Ozwest Steel Fabricators, 1/33 Dellamarta Road Wangara WA 6065, Phone 08 9309 2581, Fax 08 9309 6582, Email: info@ozweststeel.com.au, Website: www.ozweststeel.com.au



PLANNING TO SUCCEED

Because time is money, accurate planning of the progress of a major project is essential. D.W. Kolagow & Associates have over 30 years experience in project planning, ensuring complex construction efforts like the Perth Police Complex have a detailed, accurate and comprehensive program in place before they break ground, with on-going monitoring and reporting to ensure everything stays on track towards contracted completion dates.

Dick Kolagow commenced developing the initial timeframes for the project at the pre-tender stage, analysing the schematics and drawings to map out the expected progress. Post-tender, he developed the construction program for BGC Constructions, including guidance for timings of the subcontractors, and carried out an audit every four weeks throughout construction, producing progress reports and advising if any time losses needed to be recovered.

“The contractor has done an excellent job,” said Principal Time Planner, Dick Kolagow.

“There was one big challenge with this project, which comes back to the design of the building. Some buildings are just difficult to put together, but we sorted out a lot of the constructability issues during the documentation stage. The project has been very intense in terms of the timing of trades and services.”

Other BGC projects D. W. Kolagow have recently provided planning services for include the Pathwest Pathology Service and Cancer Centre Stage 2 at Sir Charles Gardiner Hospital, and the new Perth Rectangular Stadium.

The company have been one of the West Australian Building Management Authority’s approved Project Planning Consultants since 1980. D. W. Kolagow have provided project planning services for projects with construction costs of up to \$300 million across the residential, aged care, commercial, retail, Defence, hospitality, industrial, government, health care and specialist construction sectors.

“We undertake approximately 100 new jobs every year, so we see all sorts of issues in terms of constructability,” said Dick Kolagow.

To be effective at time planning, you need to have a real eye for detail and understand the building process, and you have to understand the sub contracting process. Effective planning is all about introducing the subsequent trades at the earliest possible time, looking at the interrelationships between trades. We also look at the offsite processes involved and the materials procurement lead times.

“Time planning gives everyone a highly accurate road map. We update the program every four weeks and re-issue it. Each project needs to be individually and systematically analysed, no two jobs are the same – they all have their complexities.”

For more information contact D. W. Kolagow & Associates, Unit 14 24-26 Thorogood Street Burswood WA 6100, phone 08 9470 5035, fax 08 9470 5036, email: dwkassoc@iinet.net.au

PUTTING EXTRA SKILLED HANDS ON DECK

For any Perth project, securing a reliable source of skilled construction and trades labour is easier when Hays are on the team.

As the largest specialist recruiter in the Australasian region, they have some of the industry’s best contract workforce available for fast deployment to a project like the Perth Police Complex.

At the peak of works, Hays had ten of their direct employees assigned to the project. This flexible labour force included tower crane operators, welders, riggers/dogmen and general labourers, all fully conversant with the latest OH&S requirements, appropriately ticketed and highly skilled in their fields.

“All the workers we send to a site have to have their White Card, and where appropriate, their High Risk Work license,” explained Hays Perth Manager, Mark Lawton. “They also join in with the client’s OH&S management plan.”

Hays began supplying labour to the project in January 2011, with their involvement continuing until practical completion. The firm’s relationship with BCG is an ongoing one, with Hays also supplying labour to BCG’s Perth Arena project for a four year period, to the Sir Charles Gardiner Hospital project and to the NIB Stadium (Perth Glory Stadium) project.

“We undertake ongoing recruitment, so we are able to supply the right labour for our clients’ ongoing requirements. We recruit people who are technically qualified, and we are currently supplying 1,300 temporary workers across construction, mining, manufacturing and logistics here in WA,” said Mark.

“Regional construction such as mining absorbs a lot of skilled labour from Perth. In many ways Perth is very transient from a labour point of view, so

companies rely on us. But not everyone wants to work on a mine, many of our staff are skilled tradesmen who are settled in Perth.”

Hays have been established in Australia for 36 years and at any one time employ over 12,000 temporaries and contractors around the Australasian region. There are two specialist business units which service the needs of the major project construction sector: Hays Trades and Labour, and Hays Construction. Hays Trades and Labour is focused on ensuring clients can access the skills and manpower they need flexibly and quickly, whether it is for permanent, contract or temporary work. The high calibre tradespersons on-call include electricians, mechanical fitters, scaffolders, forepeople, boilermakers, welders, carpenters, bricklayers, trades assistants and also general trades labour.

Hays Construction supplies the full range of construction professionals within both built asset and civil sectors, whether for a week, the duration of a project or long-term recruitment.

Hays were the first recruitment consultancy in Australia to be accredited in 1994, and currently hold third party accredited Quality Assurance to AS/NZ ISO 9001:2008. Their integrated management system ensures clients can rely on being presented with high calibre people who can step on site and get on with the job safely, skilfully and reliably.

HAYS Recruiting experts in Trades & Labour

For more information contact Hays Trades and Labour (WA), phone 08 9254 4513, website: www.hays.com.au



SOLID HANDIWORK DELIVERS STUNNING RESULTS

When a high level of craftsmanship is applied to a facade like the Perth Police Complex, it shows. The Precast Company had the challenging task of producing the 370 precast coloured concrete panels for the facade, meeting unique design specifications which included the rounding of all panel edges and the building corner panels having mitred ends set at a variety of different angles.

To achieve the radius edges, one of the company's skilled technicians had to literally apply beads of silicon by hand into the moulds. The tolerances were so tight, the same staff member had to work on every panel used in the facade, to ensure no variations in size.

In all, the task took twelve months. Close liaison was required with BGC Constructions so the finished panels could be supplied in coordination with the floor works program, and a degree of flexibility also needed to respond to design adjustments.

"We met the highest of concrete quality expectations on this project," said the Precast Company's Director, John O'Connor.

"This was very high specification work to produce a Class One Finish coloured product. The average panel size was 3m X 6m X 175mm-200mm thick, and we needed to minimise any surface patching works, so handling the panels carefully was crucial to avoid causing any chips or other imperfections.

"There were also a lot of cast-in elements. These included cast-in plates, and the ANCON coupler system connectors. We were using computer aided design for our shop detailing, taking the architectural drawings and the engineering drawings as our basis to produce individual drawings for each panel."

The Precast Company made full use of their in-house talents including management, concreters, steel-fixers, concrete labourers, boilermakers and carpenters to achieve the outstanding result. The company has its own qualified civil engineer who signs off on quality and fitness for purpose, carrying out both pre-pour and post-pour checks.

"By definition, Class One concrete can't be produced in mass. It is generally used for monolithic one-off elements," said John. "There are a multitude of elements that can create variations in colour and finish, from temperature to the amount of form oil used. We agreed on a workable definition of Class One for this project, and the result is of very, very high quality – these panels are among the best in Australia."

The Precast Company supply their high quality workmanship to projects across Western Australia for commercial, retail, residential, hospitals, education, government and civil infrastructure projects, producing quality products from panels to bridge beams.

Other current projects include producing coloured Green Star rated precast concrete elements for the Balcatta Wastewater Treatment Plant project; panels for Gina Reinhart's Roy Hill Project office; precast for multi-storey residential projects in the remote North West; and a current contract producing 2,000 precast elements including grey, coloured and sandwich panels for the Acacia Prison Expansion project.

For more information contact The Precast Company (Perth), phone 08 9353 3633, website: www.theprecastco.com.au

DELIVERING THE VITAL STRENGTH WITHIN

Having the capability to meet precise specifications and adjust rapidly to revised plans is a major advantage ARC (The Australian Reinforcing Company) brings to projects like the Perth Police Project. ARC manufactured and supplied all the project's reinforcing steel, including specialised couplers, rebars and dowels.

The complexity of the project required close coordination between the schedulers, the site and the up-line suppliers to ensure production could meet the supply schedule correctly. An added challenge was created by a number of changes that were made during the construction program, and by tight lead times on some areas. Management had to react quickly to these imperatives, amending plans accordingly so that timelines were not compromised.

Teamwork was the key, with management and administration supporting the five ARC schedulers and numerous production staff who worked directly on meeting orders for the project. Planning and production commenced in December 2010, with the final orders delivered in September 2012.

"This was a very challenging but enjoyable project. The schedulers built a good relationship with the customer on site, and worked together for a successful outcome," said Steve McInerney, ARC WA State Manager.

ARC has two branches in Western Australia, a production site and a service centre, both located in Forrestfield. The combined manpower across both sites is approximately 100 persons, including production, scheduling and administration.

With more projects requiring sound environmental management credentials from their suppliers, ARC is in a position to deliver the goods. ARC sources their steel from suppliers which have a certified ISO 14001 Environmental Management System in place; are members of the World Steel Associations Climate Action Program; and utilise polymer injection technology.

An all-Australian manufacturer since 1920, ARC is independently certified by ACRS for rebar processing and the manufacture of wire and mesh, including square mesh, rectangular mesh and trench mesh. All major ARC processing sites throughout Australia operate to Quality Management Systems certified by SAI Global to ISO 9001, and all mesh and bar products are tested in ARC's own NATA-accredited laboratories.

ARC meets the steel reinforcing and fencing products needs of projects across sectors nation-wide. The West Australian operation has recently provided products both direct to commercial, civil and residential projects across the state, and to precasters. Other noteworthy major projects include supplying reinforcing steel products to McConnell Dowell for mining projects; to BCG for a range of commercial and residential projects; to Pindan for commercial projects; and for Leighton Constructions work on the Gorgon project.

For more information contact ARC-The Australian Reinforcing Company, 86 Harrison Road Forrestfield WA 6058, phone 131 557, fax 08 9352 1501, website: www.arcro.com.au

