MINE TO PORT PRESSURES
Why infrastructure investment is needed

DEMAND FOR RESOURCES
Iron ore on the agenda in Western Australia

OPINION
A conversation with Pat O’Dwyer, GHD Global Leader Energy & Resources
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“Energy and resources are the lifeblood of economic development...The biggest challenge our clients face is efficiency - that is, finding ways to use energy and resources more efficiently.”
Pat O’Dwyer, GHD Global Leader, Energy and Resources
Welcome to the second issue of GHD NEWS for 2010, a publication that showcases our focus on clients and our commitment to accomplishing more together.

In this edition, we feature energy and resources, a sector that continues to garner attention around the world, as the demand for minerals and power is on the rise.

In the pages that follow you will hear from our leaders and respected professionals as they share insights and offer new perspectives on this burgeoning sector. From dealing with mine to port pressures, to generating wind energy and securing Victoria’s water supply, we are helping clients around the world realise their vision.

I continue to be proud of our people who make valuable contributions to global communities, and we include some of their stories.

I trust you enjoy reading this issue and look forward to your feedback.

Ian Shepherd
Chief Executive Officer

GHD has received the Best Workplace Health and Safety Management System – Private Sector Award by Safe Work Australia.

The award recognises GHD’s commitment to continuous improvement in workplace health and safety through the implementation of the firm’s global occupational health and safety management system. Our South Australian operation was instrumental in winning the state award, and qualifying the firm for national recognition.
Boost for water capabilities in China

GHD has acquired a major share in China Water International Engineering Consulting Company (CWIEC), an entity established by authorities within the Ministry of Water Resources (MWR). This move bolsters our capacity in water resources and hydropower, and will result in the formation of a new water consulting group in our expanding China operations.

This is believed to be the first such partnership of an Australian company in China’s water sector and is an indication that local authorities are keen to draw on GHD’s global water knowledge.

Now in the final stages of merger-rollout, GHD has integrated CWIEC’s 45 professional staff into its existing Beijing office.

Sydney Light Rail expansion

The NSW Government has awarded GHD the pre-construction tender for Sydney’s AUD500 million light rail expansion. The tender examines the costs, demand, technical issues, integration with other public transport, and economic factors.

The project is part of a fully funded AUD50.2 billion Metropolitan Transport Vision and includes up to 20 new stations and almost 10 kilometres of new track. Once the project is realised, it will double the existing light rail coverage in Sydney and help meet the city’s growing transport needs.

As a mode of transport, light rail is gaining considerable momentum due to its cost efficiency, accessibility and ability to make use of renewable energy.

GHD’s recent experience in passenger rail includes the Epping to Chatswood rail line and Mascot station in Sydney, as well as the new Metrorail in Perth and the Rapid Transit system on the Gold Coast.

Australia’s Defence Infrastructure Panel

GHD has been re-appointed to the new Defence Infrastructure Panel (DIP) for the period covering 2010 to 2014.

As a result, GHD will have the ability to continue providing infrastructure-related services to the Australian Department of Defence in disciplines including strategic and detailed business cases; project management; contract administration for development, delivery and property disposals; aircraft pavements and lighting; socio economic; town planning; acoustics; fuel farm works planning and appraisals; spatial information; facilities management investigations; high voltage; and fire engineering.

City of Barrie investigates water quality

GHD is undertaking a study for the City of Barrie in Ontario, Canada to optimise the aquatic health of Lake Simcoe.

Our team will investigate advanced nutrient removal process alternatives to meet the stringent effluent requirements for phosphorus removal and expanding treatment capacity for the City’s Water Pollution Control Centre (WPCC). Future phosphorus limits are expected to be in the range of 0.05 mg/l.

The Barrie WPCC is one of 14 plants expected to undergo assessment in order to comply with the Lake Simcoe Protection Plan, which specifies stringent phosphorus limits for all sewage treatment plants in the Lake Simcoe Basin. While phosphorus is essential to the growth of organisms, it can limit the primary use of a body of water and render it unsuitable for swimming, fishing and other recreational activities.

This is GHD’s second assignment for the City of Barrie, which is targeted as a high growth region. In 2009, GHD successfully completed a ‘whole of government’ asset management strategy for the City.

Wyaralong Water Treatment Plant

GHD has been commissioned to design the AUD140 million Wyaralong Water Treatment Plant, a signature project for Seqwater, the Department of Infrastructure and Planning, and the water industry in Queensland, Australia.

With an ultimate capacity of 180ML/day, the Wyaralong Water Treatment Plant will treat water from the Wyaralong Dam, which is currently being built and is due for completion in 2011.
Burj Khalifa opens in Dubai

The Burj Khalifa, formerly known as the Burj Dubai, opened in spectacular fashion earlier this year. Named after Sheik Khalifa bin Zayed Al Nahyan, the ruler of Abu Dhabi and President of the United Arab Emirates, the opening of the 828m high skyscraper dazzled thousands of spectators in the Burj precinct and millions worldwide.

GHD was the USD1 billion tower’s Independent Verification Testing Authority for concrete and steel work and consulted on foundation durability during the design and construction phases. Using 330,000m³ of concrete and 55,000 tonnes of steel rebar, Burj Khalifa took 200 million work-hours to construct. Holding numerous records including the world’s tallest structure, Burj Khalifa and GHD were also honoured by the Concrete Institute of Australia (CIA) with an Award for Excellence in pumping concrete to a world record 601 metres.

Recognition for our projects

Recent awards include:

- China National Flood Management Strategy Study
- 2010 Asian Development Bank Outstanding Achievement Award
- Coffs Harbour Water Reclamation Plant
- 2010 Institute of Public Works Engineering Australia (IPWEA) NSW award for Recovering, Recycling and Reusing
- Enhanced Land Force (ELF) Project
  (Stage 1 Blamey Barracks - Kapooka Military Area in Wagga Wagga, NSW)
- 2010 Coin of Excellence awarded by Kapooka Commandant Colonel Graeme Finney
- Hutt CBD New Zealand
- 2010 New Zealand Institute of Landscape Architects Resene Pride of Place Landscape Awards - Silver Award
- Sugarloaf Pipeline Alliance
- 2010 IQPC Alliance Contracting Excellence (ACE) Award for Excellence in Major Capital Projects

Creating a culture of innovation

GHD’s commitment to fostering an innovative and dynamic organisational culture through its innovations program was recently recognised with two awards in 2009 – The Engineering Excellence Award from the Victorian Branch of Engineers Australia in the Workplace Innovation category and the Asia-Pacific Innovation Excellence Award from Frost and Sullivan.

Launched in March 2008, the GHD innovations program provides a framework for the creation, identification and development of ideas in a collaborative climate. To extend the value of this program to clients, GHD has begun external deployment with a series of interactive workshops.

In March 2010, GHD’s New Zealand operations brought together 18 clients to discuss the role of innovation in the infrastructure industry in Auckland, Lower Hutt, Wellington and Christchurch. Facilitated by Jeremy Stone, Group Manager of Innovation, the sessions stimulated lively debate.

One area of consensus was the responsibility of an organisation’s leadership team to mitigate internal barriers to change as well as create a culture in which innovation thrives. Additional requirements for creating and supporting an innovative organisational culture were seen to include training, along with the implementation of appropriate systems and processes to engage with employees, and capture suggestions for change and improvement.

Shortly after, an Executive Forum on ‘Innovation in infrastructure, unlocking our potential’ was held by our Victorian operations. Attended by more than 100 senior managers representing clients in both the private and public sectors, the forum addressed the barriers and enablers of innovation in industry. The outcomes are currently being developed into an action plan to be submitted to state and federal government.

Jeremy Stone says, “These forums demonstrate the interest that organisations have in wanting to harness the innovation potential of their people. An innovations program is a way of driving competitive advantage and providing a positive impact on the community.”
An interview with **Pat O’Dwyer**, GHD

Global Leader, Energy and Resources

**Around the world, the energy and resources sectors face ongoing challenges. Issues such as increasing demand for energy, reliance on fossil fuels, production efficiencies and sustainable development are widely debated. In this article, Pat talks about the opportunities for securing efficient energy supplies at a reasonable price and achieving production efficiencies for the resources sector.**

What are the challenges facing our clients in the energy and resources sectors?

Fundamentally, energy and resources are the lifeblood of economic development. From large cities to small communities, reliable access to affordable energy and the development of local resources is necessary to achieve long-term economic and social progress. Considering that world demand for energy is predicted to increase by 20 to 40 percent from 2007 to 2030 as population rises from 6.7 billion to almost 8 billion, the biggest challenge our clients face is efficiency - that is, finding ways to use energy and resources more efficiently.

In the developed world, this challenge will be about improving efficiency of generation, transmission, distribution and use of energy while achieving renewable energy targets. For developing nations, it will be about finding the most efficient and cost-effective energy sources to raise standards of living and economic growth.

On the resources front, the continuing rise in demand for iron ore and coal used to produce steel - which is a fundamental building block for raising living standards in developing nations - requires innovations to improve existing mining operations and encourage the development of new projects including associated infrastructure. So, the challenge is about achieving sustainability while improving competitiveness.

**What do you see as the opportunities and how can clients capitalise on them?**

In terms of energy, there are immense opportunities. Realistically, you cannot constrain the world’s demand for energy, without impacting prosperity. But you can work with government, industry and communities to improve efficiency and sustainability. And that’s where the opportunities lie.

At the moment, we rely on coal for much of our energy. While there are emerging alternative technologies available, they are still considerably more expensive than coal power.

Solar energy, for example, is up to five times the price of coal power. That’s because most photovoltaic cells can only convert about 20 percent of the sun’s energy into electricity and the cost of cells is relatively high. But new photovoltaic technologies are being developed, which are driving down the unit cost of systems (achieved by using less silicon in the cells or improving the rate of conversion of the sun’s energy). As a result, solar photovoltaics are becoming more efficient and therefore more affordable.

Wind power is another technology that is gaining ground. It is up to twice the cost of coal power due to high capital costs, but there are significant wind resources in the world, both onshore and offshore that can be tapped into. GHD has just finished a project with ACCIONA Energy, a world leader in the renewable energy sector (see page 17 of this newsletter). Our people managed the planning application for a 46 turbine, 70.5 MW wind farm at Allendale East near Mount Gambier in South Australia, which has just won approval. This development will potentially produce enough energy to power around 43,000 houses.

In the resources sector, there are opportunities in sustainable capital projects at mines and refineries, including infrastructure enhancements. Capitalising on these would enable our clients to reduce transportation costs and grow their export businesses further, but it will require capacity improvements for ports, railways, roads, energy, telecommunications and water networks. A good example of this is our work in Western Australia with a leading mining group wanting to develop an iron ore mine. Our team is conducting feasibility studies and concept designs for the operation’s port, power and water needs.

**What are some of the emerging technologies that are shaping the future?**

Solar technology is one to keep an eye on. There still needs to be a paradigm shift - not unlike the discovery of the transistor that effectively developed the computer industry - for solar to become generally affordable, but the potential exists. Wind, ocean and geothermal technologies are some of the other alternatives gaining momentum, but again their cost-effectiveness needs to improve considerably for adoption to increase.

Coal seam gas methane is an interesting proposition. It is extracted from coal beds and processed into Liquefied Natural Gas. The advantages are that it can be easily transported and produces substantially lower greenhouse gas emissions when compared to other fossil fuels. In recent years it has become an important global source of energy. Australia has rich deposits of coal seam gas and our proximity to Pacific Rim economies is highly advantageous.
GHD is at the forefront of this technology, and our people have been working on a groundbreaking project which involves the production of coal seam gas in the Surat and Bowen Basins, and a 435 km gas pipeline from the gas fields to Gladstone to access a gas liquefaction and export facility on Curtis Island. Our water team is also involved in designing a desalination plant to process the water removed from coal seams produced during the gas extraction.

**Australia has some of the lowest priced electricity in the world. Do you think this will affect our adoption of renewables?**

Globally there is a push to adopt renewables and step up our usage. We are seeing many countries mandate target levels for renewable power, including Australia. This is not a taxation regime but more a cooperative alliance through bodies such as the United Nations. The outcome of this approach is that our adoption of renewables will increase, which in turn will promote efficiencies and drive innovation, thereby reducing the cost of renewables.

Without legislated levels of renewable power, consumers will choose the lower cost alternative to ensure their aspirations for living standards and development are achieved. For Australia, an immediate solution is the conversion of coal-fired power plants to gas from our offshore and coal seam methane resources - as this contains significant hydrogen levels and therefore reduces the environmental impact.

**How can GHD add value to our clients’ projects in energy and resources?**

By working collaboratively with our clients, we can deliver sustainable and cost-effective solutions to the challenges they face. We have a history of forming long-lasting relationships with our clients and we work with them to ensure they derive real value. We also use an operational model that is reliant on having a local presence, which enables us to be right there, on the ground, with our clients. Plus, we have access to our global resource of 6000 professionals, so we can provide multi-disciplinary services with a true understanding of our clients’ businesses. This really is the GHD DNA and nowhere is this more important than in the energy and resources sectors.
GHD is playing a key role in the development of an iron ore mine in Western Australia’s north west.

A leading mining group plans to develop an iron ore mine to meet magnetite concentrate demand from Chinese steel mills.

Australia is the largest exporter of iron ore and the Australian Bureau of Agricultural and Resource Economics (ABARE) is predicting a positive outlook for the global steel industry thanks to continued industrialisation in developing economies such as China and India. In Western Australia, iron ore is predominantly mined in the Pilbara region, an area known for its vast mineral deposits.

For this project, GHD has partnered with a mining industry specialist to manage the feasibility study for the client. In addition, GHD is separately conducting studies for the operation’s port, power and water needs, and is also undertaking the study work and documentation for the project’s environmental approval.

Gavin Becker, GHD’s Mining & Metals Business Leader said GHD is well positioned to play a significant role in the delivery of the project, which requires multi-disciplinary skills.

“We have a strong track record in a number of key mining and resource
projects around the world and have in this instance partnered with a key process engineering specialist to progress this initiative. We have formed a multi-disciplinary team to leverage the specialist knowledge and leadership of our professionals in the mining, resources, water, port infrastructure, power and environmental sectors. The outcome will be a comprehensive feasibility study on the mine’s operations which will clearly articulate the project’s risks and opportunities, and enable the client to position this multi-billion dollar project effectively for a successful development phase.

The operation’s infrastructure needs are being studied by GHD so that port, power and water requirements are adequately addressed, both from an economic and environmental perspective. Gavin explains, “Our team is undertaking a detailed investigation of port options with infrastructure to support ship loading, workshops, warehousing, site offices and fire controls. The preferred deep-water port option is now being developed to feasibility level incorporating design and cost estimates, to allow the client to export product to their Chinese clients.

“The operation’s energy needs will be met by a power station with combined cycle and open-cycle gas turbines, whilst a desalination plant will provide potable water, process water, and water for power station cooling and steam generation, fire control and dust suppression.

“The environmental approval work involved significant terrestrial and marine studies, as well as extensive consultations with stakeholders.

“This is the client’s first major project in Australia as owner and developer. GHD’s global network has been particularly beneficial in both building the relationship with the client and adding value to the project. Our team has provided assistance from the development of the specification to tender documentation for the feasibility study. We have worked very closely with our Beijing office in preparing the final report and presentations.

“GHD now stands well placed to assist other Chinese mining industry clients as they seek to evaluate, and invest in Australian projects. The firm has four offices in China, and numerous Chinese technical specialists located in our Australian operations to assist with the cultural and language ‘bridge’ needed to facilitate such a process.”

Meet our business leader

Mining & Metals - Gavin Becker

As the global economy surges, keeping pace with growth in the commodities market presents both challenges and a unique set of opportunities. Operating in an environmentally, socially and fiscally acceptable manner is incumbent on the modern resources development business.

Building on more than 35 years of experience in this sector, Gavin oversees GHD’s delivery of projects for mining and metals operators, at a local, national and international level. He is focused on driving added value for our clients in this sector and works closely with our environmental team to facilitate sustainable solutions.

For more information, please contact Gavin Becker on +61 7 3316 3160 or email gavin.becker@ghd.com
Viability of coal mining explored

GHD is undertaking a mine feasibility study for Shenhua Watermark Coal Pty Ltd.

Watermark’s Project Director, Mr Joe Clayton stated that GHD had won selection through a stringent selection process which started in December 2009 and included proposals from all of the leading Australian consultants operating in this field.

“A key feature of GHD’s proposal was to generate significant gains in technical and economic efficiencies for the Watermark project while minimising environmental and community impacts,” said Joe. “This approach aligned with Shenhua’s core philosophy.

“Working within such an environmentally significant and sensitive area, we wanted to engage a company that had the depth of experience and knowledge to ensure the best outcome for both the Watermark project and the community.

GHD is undertaking a mine feasibility study for Shenhua Watermark Coal Pty Ltd.

Viability of coal mining explored

Feasibility studies are a key milestone for any mining project as they provide the information needed to define the scope and economic viability of a project.

“If a mine is not economically feasible then it will not progress to the approval stage.”

The feasibility study will include a coal marketing plan, wash plant and mine infrastructure design, the mining method, a comprehensive water model, geotechnical assessments, economic mining strip ratios and production rates, rail and port logistics as well as an economic model.

As part of the mine feasibility team, GHD will work closely with Watermark’s Environmental Assessment consultant, to ensure the mine plan takes into account all the environmental and community requirements of Part 3A of the Environmental Planning and Assessment Act 1979.

The Watermark project covers a 195 square kilometre area in New South Wales, approximately 35 kilometres out of Gunnedah towards Breeza and is Shenhua’s first major international project.

The feasibility study is due for completion by September 2010.

Meet our business leaders

Graeme Boyd
Coal

Rising energy demand, industrialisation trends and community expectations pose new challenges for the coal industry, as it seeks to increase production without compromising the environment. Considerable opportunities exist, particularly with new drying, gasification and liquefaction technologies as well as carbon capture and storage.

With more than 40 years’ experience, Graeme is enthusiastic about the industry’s future. He works closely with our scientists, engineers and clients to create practical solutions that enable projects to proceed to the satisfaction of all stakeholders.

For more information, please contact Graeme Boyd on +61 7 3316 3238 or email graeme.boyd@ghd.com

Jin Zhang Zou
China-Australia Relationships

With China’s strong economic growth and subsequent demand for Australian resources, there are many prospects for Australian and Chinese businesses to create commercial partnerships.

Leveraging more than 24 years of experience, Dr Zou plays a key role in supporting Chinese investment into Australia. He has a good understanding of the Chinese and Australian business environments as well as the key drivers to resources development.

For more information, contact Jin Zhang Zou on +86 10 5930 1618 or email jinzhang.zou@ghd.com
Innovative approach to managing rail safety

International mining company, Xstrata has completed a project to manage rail safety associated with longwall mining.

Located in the southern coalfields of New South Wales, the Tahmoor underground coal mine produces approximately 2.3 million metric tons of coking coal per year. While undergrounding longwall mining does not have the same impacts as open-cut mining on surface areas, it can nevertheless cause challenges for mine operators. For example, after the coal seam at a longwall operation has been removed, the earth above will generally shift to fill the void, causing the surface to slump – a situation known as longwall mine subsidence.

When Xstrata was faced with predicted subsidence of up to 600 mm in its Tahmoor operations, which would have an impact on a 950 metre stretch of the main southern railway, the company turned to GHD for help.

Graeme Robinson, GHD’s Group Manager – Strategic Rail Services, says that mining under railway lines is difficult and dangerous. “In this case, we knew that the railway lines would expand or contract on a daily basis between 500 and 800 mm impacting on about 950 metres of track affected by the longwall. We worked closely with Xstrata to develop an innovative management system to enable this to occur, while allowing normal train operations to continue on the tracks above the longwall during mining.”

GHD is only one of a few firms to have successfully carried out this technique, which involves repositioning the mining equipment underneath one side of the line and then the other.

Graeme adds, “Being able to mine straight under rail lines saves time and money. In this instance, it enabled Xstrata to access the coal immediately beneath the line - which would normally be ‘sterilised’ or inaccessible for mining - without affecting train operations or causing subsidence.”

Ian Sheppard, Xstrata’s Manager Environment and Community said that the ongoing mining of the whole of Tahmoor North Lease through the implementation of effective methods of managing mine subsidence beneath the Main Southern rail is extremely important to Tahmoor Colliery.

“Australia’s experience in longwall mining and subsequent mine subsidence beneath rail tracks and rail infrastructure is very limited, and much of the work to be completed is developmental. GHD has provided expertise and innovative solutions to what are essentially pioneering and unique engineering initiatives.”
Influencing the oil & gas industry

GHD’s involvement in the oil and gas industry is evolving with the firm taking on a global leadership role.

Barbara Jinks, GHD Business Development Manager for Oil and Gas in Queensland and Team Leader Pipelines and Facilities, has been selected by the International Gas Union (IGU) to lead two of its international research groups in the fields of gas distribution and gas transmission. Her voluntary involvement with IGU opens GHD’s clients up to a world of industry intelligence.

Drawing on her extensive experience in the industry and those of her GHD colleagues around the world, Barbara is currently coordinating more than 80 members over two IGU study groups. She describes the task as “the ultimate in project management” - influencing and leading members spread over 30 countries to align with the Union’s aspirations.

The research groups cover gas distribution and gas transmission, two areas of considerable interests to our clients, particularly in Australia and the Pacific region. Barbara drives industry professionals to embrace research into specific issues relating to gas such as Unaccounted For Gas (UFG), which is an accounting and gas loss issue affecting distribution companies around the world. The other area of research seeks to identify the impact of the skills shortage on the operation and maintenance of gas transmission systems, assess whether ageing gas transmission systems require more personnel or specialist skills and recommended solutions.

“The ongoing research provides strategic insights to help companies in the gas supply chain better understand and manage key issues in their businesses. Ultimately, it allows them to compete more effectively and capture new opportunities in the increasingly expanding gas world.”

The objective of IGU is to promote the technical and economic progress of the gas industry. Recognising that natural gas has an important part to play in the world’s future energy requirements, the IGU is carrying out research, which aims to enhance the role of gas. Specifically, it seeks to establish gas as an environmentally-friendly energy source that can meet our expanding energy needs, while helping cut greenhouse gas emissions.

Leveraging knowledge and experience

Competent in four languages, Barbara says, “One of the strengths I have brought to the study groups is my ability to adapt to and communicate across multiple cultures. Working within the GHD global network of professionals has helped me gain an understanding of how to communicate more effectively across geographical and cultural borders and how to work as a truly global team. This enables me to better leverage both industry knowledge and GHD’s experience for the benefit of both research and project outcomes.”
For example, the recent development of multiple coal seam methane to liquefied natural gas projects in Queensland has brought with it special engineering and construction challenges. Long distance high pressure pipelines with larger diameters up to 1067 mm are new to Australia and it is through the IGU network that Barbara has been able to share knowledge and ideas with others around the world that already have such pipelines operating in their countries.

**Contributing to the industry’s future**

Barbara always wanted to work in the gas industry, and did so initially offshore in the North Sea. She chose pipelines because large scale, linear projects mean the landscape changes on a daily basis. With a sparkle in her eye, Barbara says, “It is exciting to work on projects that literally take you across the continent. Working on a 1,500 km pipeline project allows you to physically follow the progress of the project across many landforms from concept to construction.”

When asked how she got involved with the IGU, Barbara recounts her attendance at the World Gas Conference in 2006 in Amsterdam, a prize she was given when she received the prestigious 2006 Award of Excellence by the Australian Gas Industry Trust (AGIT). Upon arrival at the conference, she immediately got a feel for the scope for the research being conducted globally.

“I was astounded by the sheer scope, depth and breadth of research occurring around the globe and IGU’s unique success in coordinating harmonious research across 73 countries,” Barbara recalls. “I immediately felt a strong urge to contribute personally, and to bring Australia into the loop of this global forum. After discussion with IGU representatives it was obvious GHD and I had a lot to offer.”

Following the conference, Barbara began her active involvement with the IGU, recognising the value of the not-for-profit organisation and the vital importance of ongoing industry-based research. Barbara’s involvement has now grown to a point where the AGIT funds her participation as Australia’s representative on the two committees at bi-annual summits.

“Barbara’s enthusiasm and 27 years of experience in high pressure gas pipelines in Europe and Australia is invaluable,” comments Pat O’Dwyer, Global Leader Energy & Resources. “Her contribution at both industry and client level is much sought after. This year she was appointed President of the Queensland Petroleum Exploration Association and she is our national representative for the Australian Pipeline Industry Association, which itself conducts extensive research into energy pipelines.”

**Looking Ahead**

Looking to the future Barbara aims to continue contributing to the gas industry with her passionate vision. She aims to carry on supporting the IGU and is keenly focused on combining global insights with local project experience, to co-create solutions with our clients. Now that’s ‘cooking with gas’!

To continue this dialogue or to obtain more information, contact Barbara Jinks on +61 7 3316 3473 or email barbara.jinks@ghd.com
The unquenched appetite for our minerals from nations such as China and India represents a tremendous opportunity for Australia to increase its export capacity.

In this Q&A, Phil Baker, GHD’s Environment Business Leader – Mining, Oil & Gas, discusses the challenges in bringing Australia’s resources to market in a bid to increase exports and capitalise on rising commodity demand.
Q: What does the renewed resources boom mean for Australia?

A: A return to resources boom conditions means increased export potential for Australian resources and increased export dollars reaching our shore. In short, it means continued prosperity for Australians. Mineral exports represent a substantial component of the Australian export-earning dollar. In fact, iron ore and coal products alone generated approximately AUD70 billion in export revenue in 2009.

The trend towards industrialisation places significant demand on steel resources. China’s already large demand for steel is expected to double over the next decade. Australia’s iron ore and coking coal resources are key components in steel manufacture, and these are well placed to underpin increases in global steel production. However, getting our resources from the ground to market is a major challenge.

Q: What are the core challenges facing the Australian Mining Industry today?

A: Australia is a key player on the global resources stage. We are quite unique in that we have a huge amount of resources, are geographically close to key markets – namely China and India, and yet we are faced with capacity constraints. What this means is that our export earnings have and continue to be hampered by port and rail infrastructure, skills shortages and approval complexities. Industry commentary indicates that had Australia maintained its global market share between 2002 and 2007, it is estimated that we would have earned an additional AUD17 billion.

Whilst capacity constraints have been on the national agenda for some time, Australia’s global market share of the resources market has slid backwards and needs increased attention to avoid slipping further. Let’s look at the state of play.

We have a situation where blue and white collar skills shortages seen in the 2002 to 2007 boom period are forecast to continue and are in fact likely to worsen. Plus our complex regulatory environment means that approval processes can be lengthy, which in turn further depletes us of export revenue. And finally, our rail and port networks have struggled to keep pace with production capacity, let alone predicted growth from the mining and resources sector. This is further exacerbated by what are effectively different user systems and commercial drivers applied by asset owners/operators.

On the eastern seaboard we have a predominantly multi-user rail and port infrastructure system and on the western seaboard a largely single user system. Whilst there are merits in both, matters of joint user needs, competition policy and interface with government functions present challenges for either model.

Q: What are the opportunities and how can we capitalise on them?

A: Optimising export volumes to meet production is surely a key to success.

Higher revenue through increased export capacity provides opportunity for business and government to boost spending on production, improve skills training and development and address infrastructure constraints.

Deliberate, effective and time efficient improvements to Australian export infrastructure will also demonstrate Australia’s willingness to underpin production expansion and product to market performance. This will improve investor confidence in Australia and major resource development projects. It can be achieved through single and multi user business and government investment.

Q: How can GHD assist?

A: As a leader in rail, port, freight and infrastructure development, with proven experience in mine to port infrastructure, GHD provides strategic planning, environment, social impact assessment skills, as well as engineering services for multi-modal transport development.

Having worked closely with key stakeholders - federal and state governments, and their agencies, port authorities, mining operators, non government agencies (NGO) - we understand the issues and can help accelerate programs that alleviate capacity constraints, particularly when it comes to environmental and social matters. Our broad industry perspective enables us to offer responses to complex developments and support valuable and innovative outcomes for business communities and the environment in which we operate.

Recently GHD has provided environmental support services to help organisations expand mine to port accessibility. In Queensland, these include North QueenslandBulk Ports’ X110 and multi-cargo facility developments, and in Western Australia, an assessment for the Karara to Tilly railway for Gindalbie Metals, and the Jack Hills railway for Crosslands Resources.

Q: What does the future hold?

A: I believe the time is ripe for all stakeholders, including consultants such as GHD, to form collaborative relationships to increase infrastructure development and improve regulatory processes that streamline approvals. This would springboard Australia to capture a greater share of the resources market that balances our mine capacity with export demand.

To obtain more information or provide your views on this topic, contact Phil Baker on +61 3 8687 8983 or email phil.baker@ghd.com
Thanks to BIM, mine operators can view and interact with the proposed facility’s life cycle, including the processes of construction and facility operation. This is achieved by linking three dimensional model elements with data for infrastructure elements of the plant, right to individual nuts and bolts.

When linked with the fourth dimension - time - the model elements can be integrated with schedule tools to provide earned value reporting during construction as well as maintenance scheduling during the operational phase of the mine.

Traditionally, mine operators have had to overcome the challenges associated with integrating the components of the design in real-time during construction or operation. As BIM provides an integrated three-dimensional model from which to operate, it can greatly reduce the time and cost that goes into site exploration, design, planning and development.

Furthermore, the model can simulate the facility’s operations to identify its future asset management needs and upgrades, without starting from scratch. It can be applied to the whole site infrastructure, not just buildings.

BIM allows mine operators to extract design quantities, understand the shared properties of the development including any ‘clashes’ and identify additional scopes of work prior to construction. At the same time, users gain greater awareness of the systems, assemblies and sequences in a relative scale with the entire facility to avoid expensive re-working.

GHD recently applied a BIM approach to the Boggabri Mine Expansion Feasibility Study, a project to assess potential for expanding mine product coal from 1.5 Mtpa and 6.5 Mtpa. Our team provided a broad range of services including the design of mine facilities (administrative offices, bath house and related amenities, workshops, stores, fuel systems, heavy and light vehicle wash facilities) and coal handling plant (hoppers, conveyors, bins, stockpiles, structures, reclaim tunnels), heavy vehicle pavements and light vehicle roads as well as a 20 km rail link and loop with related bridges.

According to Tim Kirkness, a Principal Mechanical Engineer with GHD’s Newcastle office, “As illustrated in the photo above, the entire project was modelled using BIM, providing multi-disciplinary coordination both internally (within the design team) and externally (with our client). Fortnightly model updates were issued for coordination and reviews. The 3D models facilitated a very collaborative approach, with true alignment achieved between technical staff, designers and the client. This approach also enabled the client to cost effectively assess various layout options for the project. Plus, the level of confidence of the capital estimates was very high as critical issues were clearly identified and resolved.”

Pictured above is a BIM perspective view of the Boggabri Mine’s ROM dump hopper, with primary sizer and feed conveyor.

For more information on BIM in mining, contact Tim Kirkness on +61 2 4979 9999 or email tim.kirkness@ghd.com
Infrastructure

Winds of change

With abundant wind resources, Australia is a fertile ground for wind energy installations. Recognising these opportunities, Spanish company, ACCIONA Energy, has been active in Australia since 2002.

The company has two wind projects in operation, a 65 MW farm at Cathedral Rocks on the South Australia Eyre Peninsula and a flagship 192 MW project at Waubra, north west of Ballarat.

GHD’s Mount Gambier office was recently engaged by ACCIONA Energy to manage the preparation of a planning application and a number of technical studies for the company’s latest project – a 47 turbine 70.5 MW wind farm at Allendale East, 17 km south of Mount Gambier.

Once operational, the wind farm is expected to generate enough power to supply 43,000 homes and offset more than 180,000 tonnes of carbon dioxide each year.

According to Tim Beumer, GHD Office Manager for Mount Gambier, “Engaging a local team that has multi-disciplinary skills and access to a global network has been extremely advantageous for ACCIONA Energy, given the broad nature of services required.

“We completed numerous technical studies including planning, landscape and visual assessment, environmental impact (flora and fauna), cultural heritage, traffic and transportation, geology, geotechnical and hydrology as well as electromagnetic interference assessment. Plus, we coordinated input from multiple specialist sub-consultants with our own, and liaised with stakeholders and the community.

“Our work culminated in the preparation and lodgement of a development application to meet various legislative and council requirements, which received approval in April 2010.”

Iain Lawrie, Acting Senior Manager Development for ACCIONA Energy praised GHD’s involvement and said, “Throughout the 12 month process of this project, staff at GHD Mount Gambier worked in a highly professional and genuinely client focused manner to make sure our project deliverables were met. In particular, their approach to dealing with sub-consultant variations was handled in a manner that allowed us to be forewarned and have these approved prior to work being undertaken. Additionally, GHD staff worked in a highly co-operative manner in dealing with the always challenging process of bringing the final application document together. This included productively working through differing approaches and opinions on wording of key elements of the planning submission and addressing minor conflicts with sub-consultants.

“Importantly, GHD was not responsible for any cost or time overruns on the project. Any time variations were driven by ACCIONA Energy, and the resulting cost variations were proactively managed through solid communication between ACCIONA Energy and GHD Mount Gambier.

“I would be happy to recommend GHD Mount Gambier for any similarly structured work.”
Over the last five years GHD has played a significant role in helping the Victorian Government implement its Our Water, Our Future plan. Faced with critical water shortages, the Victorian Government released the second stage of the plan in 2007, detailing key actions to achieve sustainable water management. GHD led three major Our Water, Our Future projects between 2006-2010. The Victorian Desalination Plant, the Sugarloaf Pipeline and the Tarago Water Treatment Plant are all key steps on Victoria's path to water security, needing to be delivered in short timeframes.

**Victorian Desalination Project**

In early 2007, GHD was selected to complete a feasibility study for the AUD3.5 billion Victorian Desalination Project (VDP) - identified by the Victorian Government as a suitable option to augment Melbourne’s water supply at the time. The firm’s experience in pioneering desalination projects, particularly in Australia, provided an opportunity to ‘flex our consulting muscle’ and further demonstrate the benefits of a collaborative, integrated approach.

Original estimates of an 18 month completion timeframe were greatly fast tracked with GHD providing findings in just six months.

Based on a competitive engagement process, GHD was selected to help secure key environmental approvals that would allow the project to proceed. GHD informed the Environmental Effects Statement (EES) and obtained environmental approvals in an unprecedented 12-month timeframe. Further imparting technical knowledge, the 500-strong project team dispensed technical advice during tender evaluation, developed a reference design, and provided ongoing environmental services for marine works, a treatment plant, an 85km pipeline and power supply. In 2010 the Victorian Government selected the AquaSure consortium, consisting of Suez Environment, Degremont, Thiess and Macquarie Capital Group to build and operate the plant, which is scheduled to start delivering water by the end of 2011. Collaboration was once again key to our approach, with GHD and our alliance partners developing several joint initiatives to ensure the project’s successful delivery. These included a customised organisational structure and protocols for communication, documentation review and decision making. GHD sourced the requisite technical expertise from our network of Australian and international professionals. The Sugarloaf Pipeline was opened in March 2010.

GHD’s John Ware, Design Engineering Manager for the Sugarloaf Pipeline Alliance said, “The project’s alliance model facilitated the delivery of the pipeline five months ahead of schedule and under budget. This is a great outcome for taxpayers.”

**Sugarloaf Pipeline Alliance**

Building on the momentum of previous alliance programs in Victoria and around Australia, Melbourne Water, John Holland, SKM and GHD began working on the AUD625 million Sugarloaf Pipeline Alliance, Our Water Our, Future project in 2007 to provide an extra 75 GL of water to Melbourne Water’s Sugarloaf Reservoir. GHD’s breadth of experience allowed us to supply the Alliance with a wide range of consulting services ranging from studies to planning services, environmental and geotechnical investigations as well as modelling, analysis, detailed design and more. Collaboration was once again key to our approach, with GHD and our alliance partners developing several joint initiatives to ensure the project’s successful delivery.

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**Tarago Water Treatment Plant**

In June 2007 GHD was selected as the lead designer on the AUD97 million Tarago Water Treatment Plant (WTP). Our team was involved in the 70 ML/d Tarago WTP from its inception, undertaking earlier siting studies, the functional design and project approvals in 2007, through to the detailed design phase and successful completion of commissioning in June 2009. Tarago’s delivery model took on principles common to alliance contracts and was hailed as an example of successful
Solar energy is fast emerging as a sustainable alternative to satisfy our increasing demand for energy. GHD has been awarded a contract to provide the Australian Solar Institute (ASI) with ongoing communications support.

The work involves the delivery of a long-term communications plan, a variety of materials and the provision of ongoing communications support. Members of our Sydney and Newcastle Stakeholder Engagement teams collaborated with our Renewable Energy team to win the contract.

ASI Executive Director, Mark Twidell, said, “GHD was awarded the project because of the company’s local and national presence, technical capability and commitment to deliver material on time and within budget.”

Believing that simplifying technical information is key to understanding complex concepts such as solar energy technologies, GHD’s communications professionals and renewable energy specialists will work together to implement a thorough awareness campaign.

Commenting on the project, Michael Ulph, GHD Senior Communications Specialist said, “We are thrilled to be working with ASI, a nationally significant organisation that is helping Australian solar researchers to solve one of the world’s most pressing problems.”

The Australian Solar Institute carries an AUD100 million commitment by the Australian Government to support solar thermal and solar photovoltaic research and development, which have the potential to significantly reduce the levelised cost of solar energy when compared to existing energy sources and the current global solar energy cost benchmarks.

GHD’s contribution to these three projects has produced a raft of benefits. Melbourne’s water supply has been radically updated, allowing state and private enterprises to focus on future investment and development opportunities.

Speaking of the positive outcomes of these projects, Victorian Manager Phil Duthie said, “To see such exemplary project execution on issues critical to a sustainable future within the region is heartening. It is reassuring that the collaborative project delivery model we employ globally helps create enduring relationships that deliver exceptional results for the communities in which we operate.”
Organisations traditionally monitor quality, schedule and cost metrics as necessary vital signs to gauge the progress and success of a project. However, there is a shifting trend towards including short and long-term project impacts on the surrounding community and environment to assess a project in terms of sustainability factors.

York Region, a municipality forming part of the Greater Toronto Area, is one organisation that has recognised these trends.

According to Colin James, GHD Operating Centre Manager Canada, “If you know how project risks impact the triple bottom line on the environment, the community and costs, you are in a better position to mitigate these risks and consequently better manage stakeholder expectations to deliver the project in line with corporate sustainability objectives.”

In response to predicted population growth in excess of 50 percent to 1.5 million residents by 2031, York Region developed an Infrastructure Master Plan with large capital investments in water, wastewater and solid waste infrastructure. This year alone, the capital delivery budget for these types of infrastructure is CAD650 million.

Our team in Canada has been assisting York Region to enhance its Capital Delivery Improvement Process (CDIP) by integrating principles of sustainability at key junctures throughout the process. Once complete, our work will serve as a platform for providing guidance to project managers for making informed decisions considering the triple bottom line. Specifically, we will translate the region’s corporate sustainability strategies into day-to-day decision-making processes involved with delivering capital projects.

GHD will also provide practical recommendations for improvement to the capital delivery process focusing on sustainability actions during the planning stages of a project.

According to Lee Weiss, Project Manager The Regional Municipality of York, “The goal of this project is to integrate the principles of project management (quality, cost and schedule) with those of sustainability (community, environment and cost). Through consultation with key stakeholders, GHD effectively addressed this goal and customised the project to align with our corporate objectives that relate to project management and sustainability. The end result is an enhanced and dynamic decision-making framework that will help project managers deliver the most sustainable projects possible.”

To complete the project, GHD leveraged its global network, assembling a collaborative team with professionals from Canada, Australia and the USA.
Point Cook, a suburb in Melbourne’s west, now boasts the first section of the Bay Trail, which will extend as a 253 km trail circumnavigating Port Philip Bay when complete.

GHD’s landscape architects and urban designers worked with our client, Parks Victoria, to define the conceptual vision for the section of the trail.

GHD provided the diverse range of services required to minimise environmental impacts on the adjacent 420 ha wetland conservation reserve of Cheetham Wetlands. The landscape architecture team collaborated with members of our bridges, geotechnical, civil, environmental, fauna and flora, risk, planning, materials and program management groups to deliver the project.

The finished project incorporates diverse materials including coloured concrete pathways, perforated aluminium panels with ‘picperf’ images of migratory birds, as well as corten steel, rock gabion baskets and composite decking made from locally sourced recycled plastics and wood by-products.

The Point Cook Bay Trail was officially opened on 2 March 2010 by Gavin Jennings, Minister for Environment and Climate Change and Jill Hennessy, Member for Altona.
Securing Can Tho’s future

Widey regarded as Vietnam’s Western Capital, Can Tho is the biggest city in the Mekong Delta, located 169 km from Ho Chi Minh City.

With an estimated population of 1.1 million, the government of Vietnam has been working to alleviate poverty in urban areas such as Can Tho, by ensuring better access to basic infrastructure and utility services.

The Can Tho Urban Programming Project is set to provide dramatic improvements to the community’s health, environment and economic development.

Funded by multilateral development assistance, the initiative is developing infrastructure and utility services through the implementation of the city’s Project Management Unit (PMU).

As part of the city’s master plan, the construction and upgrade of primary and secondary infrastructure has focused on the area of Xang Thoi Lake and Canal, as well as surrounding areas.

GHD was engaged as the Project Manager to provide support to the Can Tho PMU in contract administration and construction management services.

The extensive upgrades include the dredging and cleaning of a four hectare area of the Can Tho Canal and Lake, which will boost environmental outcomes.

A 2 kilometre sewerline and two pump stations with a design capacity of 7,000 cubic metres per day will provide enhanced sanitation, while construction of embankments, roads, and lighting have greatly improved traffic and access to the area.

The project showcased excellent collaboration between our operations in Vietnam and the Philippines.

GHD Project Director Paul Hansford believes the project will contribute to socio-economic development, trade and tourism of the city saying, “The critical development of urban infrastructure in Can Tho will make a huge difference to the community’s future.”

Photos:
Top: Xang Tho Lake after development
Bottom: A revamped Xang Tho Canal

The potential for trade, tourism and socio-economic development in the Mekong Delta has been boosted following the construction and upgrade of core infrastructure in the City of Can Tho.
Green airport for Lydd

Plans to expand Lydd Airport in the UK have been backed by Shepway District Council, thanks in part to the work undertaken by the local GHD Team.

Lydd Airport is located in the county of Kent on the Dungeness Peninsula, a socially and environmentally sensitive area comprising fishing, shipping, farming, quarrying, power generation and military activity, as well as reclaimed marshlands that provide a rich habitat for unique flora and fauna.

The planned expansion is required to address increasing demand and includes a new terminal building and a 300 metre runway extension. Concerns over the proposal centred around the effect on conservation areas and the impact of noise on local residents.

According to David Marsden, GHD’s Operating Centre Manager in the UK, “This project has certainly challenged us, but it has also enabled us to provide strong outcomes to address all of the environmental issues raised. In a small country like ours, competing land uses are a fact of life. As a result, sustainable aviation is about being a good neighbour to communities and wildlife, and managing its environmental impacts in a responsible way.”

Despite the positive vote by council to back the project, Lydd Airport won’t be laying new asphalt just yet. Opposition groups are calling for a public inquiry, and the list of approvals and consent needs more work. David adds, “Additional planning and legal work is required, and we are looking forward to working with our client for years to come.”

Jonathan Gordon, Chief Executive of Lydd Airport, is delighted with the progress. “Since I took over as CEO last September, the GHD team has worked tirelessly to overcome, against the odds, a series of really difficult challenges. I have been really impressed with their commitment and intelligence.”

David adds, “The GHD team is proud of its achievements to date for the community and the client. We will continue to work tirelessly to demonstrate that expanding the airport can be achieved in a sustainable manner.”
Since early 2009, the GHD Foundation has sponsored a project in Tanzania, spearheaded by Dale Young, a former GHD water and wastewater engineer.

In 2007, Dale took leave of absence from GHD to live in the rural Tanzanian town of Ifakara with his partner Tanya, who is a researcher in the prevention of malaria.

After visiting the regionally remote villages of Idete and Namawala to investigate reports of a serious cholera and typhoid outbreak, Dale realised the problem was serious, widespread and prolonged. At the time, local residents were restricted to collecting water from polluted, shallow hand-dug wells. Polluted sources included surface run-off during seasonal rains, and subsurface contamination of the water table from latrines, rubbish pits and animal pens. With limited formal education and a lack of knowledge of water sanitation, the village residents were suffering.

In response, Dale established the MSABI project - a Swahili acronym meaning ‘safe water for better health’. He explains, “MSABI is a water, sanitation and hygiene initiative intended to empower and educate local Tanzanians, and facilitate the provision of water related resources. Our local team of 25 staff, in collaboration with the community, is developing the capacity to install new, safe water points and environmentally safe compost pit latrines.

“By using local materials, local skills and adapted low-cost technologies, MSABI staff can install water infrastructure for as little as one fifteenth of the usual cost. In short, this project is improving the health and economic status of rural villages.”

To receive a new water point or latrine, a community group must contribute money, materials and labour – around fifty percent of the total cost. “A commitment from the community is vital to ensuring the people have a strong sense of ownership of their assets. We encourage group owners to sell water back to their community. With 100 users and at 2 cents per bucket, communities are seeing pay-off times of less than three months. We believe this business model is creating a responsible and sustainable community management culture.”

The MSABI team utilises low-cost and repairable technologies to improve sustainability. ‘Rota Sludge’ manual borehole drilling is the primary technology employed for excavation of bore holes, a technique that enables drilling to depths of up to 40 m using human power.

Today, MSABI owns five ‘rota sludge’ drill rigs and is investigating other potential drilling technologies that will enable drilling to greater depths and through soft rocks. Rope pumps are installed above the bore holes to draw water. The drill rigs and pumps are manufactured locally in Ifakara as a way of providing economic returns to the local community.

To create opportunities for other young professionals to gain exposure to engineering, scientific and project management tasks in the aid and development field, Dale has developed partnerships with Engineers Without Borders (UK Chapter), the Swiss Institute for Tropical Public Health, as well as the GHD Young Professionals group.

Safe water for better health

One of the poorest countries in the world is benefiting from access to clean and safe water and sanitation.
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Communities and People

GHD has become a member of the United Nations (UN) Global Compact – the world’s largest corporate responsibility initiative, with more than 7700 business participants and stakeholders in 130 countries.

Launched in July 2000, the UN Global Compact is both a policy platform and a practical framework for companies that are committed to sustainability and responsible business practices.

As part of this commitment, GHD will embrace, support and enact, within its sphere of influence, a set of ten principles.

Keith Christiansen, GHD Group Manager, International Development Assistance believes that our engagement with the program is an important step for the firm. “For more than 50 years, we have helped developing communities by providing life-changing services. Becoming a participant in the UN Global Compact reinforces our commitment to developing communities and the UN’s ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption.

“The UN Global Compact provides us with a unique platform to advance our commitment to sustainability and corporate citizenship. It allows us to collaborate with other organisations and stakeholders on a global scale and discuss social, political and economic challenges and opportunities. More importantly, we now have an avenue to contribute to the initiative’s overarching mission of helping to build a more sustainable and inclusive global economy.”

GHD has begun its engagement with the program and at time of publication, Keith was attending the UN Global Compact Global Leaders Summit in New York - a historic gathering of 1,500 leaders from business, civil society, labour, the investment community and academia, as well as Government and the United Nations.

For more information, visit www.unglobalcompact.org/

This partnership enabled Toby Turner, a Civil Engineer from our Brisbane office to spend a month in Ifakara with Dale recently to learn more about the project. Toby’s unique experience demonstrated the need for vital sustainable development in disadvantaged communities.

To date, MSABI has undertaken community education in four villages, completed 61 rope pumps installations including 43 new boreholes, nine open well conversions and nine replacements of broken pumps. Thirteen new split system compost latrines have been installed and the team is currently developing a prototype clay pot water filter in collaboration with a local women’s pottery group.

Dale adds, “We are fortunate to have strong support from our partners, particularly GHD and the Young Professionals group, who donated funds for the installation of three new water points and the supply of textbooks to a remote rural school who previously shared four books amongst 200 children.”

MSABI is a registered Non Government Organisation in Australia under the Global Development Group. A tax deductible donation of AUD600 will provide a new safe water point (borehole and rope pump). More information on the project is available at www.msabi.org and from Dale Young’s Blog, http://tanzaniawater.blogspot.com

United Nations

Global Compact

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Indigenous Development in Australia

Addressing the needs of Indigenous people living in urban, regional and remote areas to improve health, housing, early childhood, education and employment outcomes is increasingly sought by the Australian Government. Peter Dunn, GHD’s Federal Government Business Group Leader in Canberra, says that a comprehensive approach to development is now being adopted, in partnership with Aboriginal communities.

He says, “The government is committed to investing in infrastructure developments in Aboriginal communities, with a focus on incorporating meaningful training and employment opportunities to retain youth and provide an economic platform to secure their future.

“For many years, GHD has been working hand-in-hand with government and communities around Australia to bring this vision to life. Our work in this sector is characterised by the belief that such projects require a unique approach - one that is underpinned by local Aboriginal community engagement and consultation protocols.

“Our experience in facilitating effective consultations in relation to environmental, social and cultural impact assessments with respect to remote, urban and industrial development has assisted many Aboriginal communities to address the modern day challenges they face. Our people understand the cultural sensitivities and are focused on listening, communicating, interacting and collaborating with the traditional land owners to achieve positive outcomes.”

Maria Fantasia, a Senior Planner in GHD’s Adelaide office, is one of our practitioners dedicated to working with and within Aboriginal communities. She values her work in this sector, saying that it is both technically and culturally challenging yet extremely rewarding.

“Being involved in a range of land planning projects, many of which are located in remote Aboriginal communities, is an enriching experience. Working at the grass roots level, consulting with traditional landowners, and helping them define their needs, enables us to incorporate cultural elements into development initiatives. In short, it allows us to empower the community to have some ownership in the project, which helps drive a higher level of success.

“Working with these communities is very much about establishing trust and stepping outside your comfort zone to look at challenges and opportunities from a different perspective. Given GHD’s multi-disciplinary nature and core values of teamwork, respect, and integrity, we are well equipped to help Indigenous communities in Australia and around the world, with planning and urban development services.”

Many of GHD’s projects have been recognised for their inclusive approach to development in Aboriginal communities. The Kaurna Cultural Heritage Survey was the winner of the 2007 Planning Institute of Australia (PIA) Social and Community Planning Award (South Australia) and received a Commendation Award in PIA’s National 2008 Social and Community Planning Category. Additionally, the Ltyentye Apurte Community Land Use Structure Plan and Development Strategy received the 2006 PIA Social and Community Planning Award (SA), while the Murdi Paaki Regional Plan was the winner of the 2004 PIA Community Based Planning Award, also in South Australia.

Peter says that GHD’s role in this sector continues to expand. “We are a member of the Indigenous Economic
Development and Business Support Panel funded by the Australian Government Department of Education, Employment and Workplace Relations (DEEWR) which has recently resulted in a two year project in 16 Western NSW communities. In addition, we became a signatory to a Regional Partnership Agreement (RPA) with local Aboriginal Elders in Port Macquarie. The government has allocated AUD1.8 million to support this initiative and GHD is assisting with the establishment of the Green Team Business Unit, which will seek employment and training opportunities for local Aboriginal people in the environmental field.

“Overall, we are focused on leveraging the capacity of Aboriginal communities to help foster an inclusive development process – one that works from the inside out, rather than the usual external mechanism of prescribing solutions from the outside in. Ultimately, our aim is to improve the development outcomes of global Indigenous communities, not just today, but well into the future.”

A group of GHD Young Professionals (YPs) gathered at a Melbourne art gallery recently to discuss career development opportunities with clients.

The event was set against the backdrop of works from Indigenous Australian artist John Mawurndjul.

Considered one of the country’s most collectible artists, John uses traditional motifs in innovative ways to express spiritual and cultural values.

The works on display during the event featured a common theme of energy, which along with innovation, are two topics of great interest to the group.

Speaking at the event, GHD Economics and Policy Consultant and YP Member, Ed Tiplady, said that relationships created at the early stages of one’s career are often the most enduring and fruitful.

“In today’s competitive economy, where you often need to collaborate to achieve goals faster, developing a strong professional network is critical to success. It is also a great way for bright young minds to leverage their energy and vibrancy to think outside the square and innovate.”

Established in 2002, the GHD Young Professionals is a networking group for people during their first 10 years’ professional work experience. Through a range of diverse social, community and professional development activities, it provides a unique opportunity for GHD people to build strong working relationships while gaining necessary workplace skills.
GHD has long embraced a model of offering a local presence backed by a global footprint. The benefit of such an approach is evidenced by our achievements in Roxby Downs, a mining town located in northern South Australia, and originally created to service the BHP Olympic Dam Mine.

Since opening in 2007, our local office has forged close relationships with clients including BHP Billiton, BAE Systems and the Department of Defence, while having a great rapport with the Roxby Downs Council and surrounding community.

Commenting on our local presence, Amanda Hudson, Principal Advisor – Public Affairs, Government, and Community Relations BHP Billiton Olympic Dam, noted in a recent letter, “…GHD has cemented itself as a local business supporting the local communities of Roxby Downs, Woomera and Andamooka. BHP Billiton’s charter says we will seek to be valued by the communities in which we operate, and we see synergies with the way GHD conducts itself in Roxby Downs.”

The Administrator of Roxby Downs Council, Bill Boehm, shares this view. He said, “GHD has been a welcome addition to our town both for its professional experience but also for its positive community interaction on a variety of levels. The community is certainly the better for having you here and hopefully the partnership will continue in the long-term.”

Apart from its professional involvement, the GHD team at Roxby Downs participates in many community initiatives. Darren explains, “Our people are part of the local community, so they share a common interest. They actively contribute to community boards and forums, coach local sporting teams and volunteer on the local radio station RoxFM every week.”

Recently, the team created a centrepiece for use by the town in ceremonies for the Returned Soldiers League (RSL) Community Memorial. “We put initial ideas on paper and collaborated extensively with the stakeholders and community members to create a memorable area for reflection - where our service men and women can be remembered,” says Darren.

“We have also provided pro-bono concept designs for an ongoing community garden development, run by a group of volunteers with a vision to create a family-friendly walk-through garden in the town. Feedback has been extremely positive and our people’s skills in outdoor environments and concept visualisation were well received. Further to this, the team is ready to assist with subsequent phases of the project.”

Commenting on GHD’s local representation model, Ian Shepherd GHD CEO said, “To have a local presence is part of our global strategy and we are committed to expanding our regional footprint. Having our people live and work in the communities in which we operate is important to us, particularly as it enables us to be close to our clients and work effectively in a collaborative setting.”
Despite Papua New Guinea’s (PNG) vast resources, the country’s geography and high cost of infrastructure development have impeded its efforts to transform surrounding natural resources into sustainable energy.

David Hill, GHD Project Director says, “With high population growth rates (2.3% per annum) and increasing urbanisation, the government is facing the challenges of distributing energy resources equitably, particularly to rural areas, and moving the country towards a more sustainable future.

“PNG is a typical developing nation struggling to find a way to escape the ‘paradox of plenty’, which theorises that countries with abundant natural resources tend to grow less rapidly. This is a common issue amongst many of the developing countries that GHD has previously assisted. For PNG, the key to success is to find the necessary linkage between its rich environment and economic growth.”

GHD was recently selected by the Asian Development Bank (ADB) to lead an AUD1.1 million technical assistance project in PNG. This project intends to initiate a comprehensive feasibility study of six hydropower sites and two bio-fuel plants to determine future loan funding from the ADB.

The team consists of Bob McKelvey, a geotechnical engineer from GHD’s Manukau office in New Zealand and Ricky Kwan, a hydrologist from GHD’s Sydney office in Australia. “This project has been very interesting,” explains Bob. “The working environment can be quite challenging, particularly when making site visits. However, we have been well supported by our newly established office in Port Moresby.”

GHD’s findings will help PNG formulate the foundation for new energy efficiency policies and initiatives that will help distribute energy to provincial centres at a reasonable economic cost. In addition to good governance, community stakeholders will be empowered to participate in awareness campaigns to make affordable electricity a reality. These initial steps will prepare the country to harness new power opportunities and eventually shift away from a reliance on diesel generation.

David adds, “We recognise PNG’s unmet demand for affordable and accessible energy. As a result of our involvement, the PNG government will receive the necessary tools and information needed to make informed decisions about its environment and become more cognisant of other feasible options for potential growth. Upcoming developments in the country will undoubtedly bring forth a more efficient power source for many rural households.”

Towards sustainable energy
One of GHD’s signature projects in the US, the Downtown Scottsdale Booster Station is the recipient of the Public Works Project of the year in the Environment category (less than USD5 million). The station serves the entire downtown Scottsdale area, including new residential and commercial high-rise developments along the Scottsdale Waterfront. This project has received numerous awards including Best of 2009 by McGraw-Hill – Southwest Contractor, Honor Award by the Arizona Masonry Guild and an Engineering Excellence Award by the American Council of Engineering Companies of Arizona.

Alix Campbell recognised

Alix Campbell, a Civil Engineer in our Water Group in Canberra, has received the 2010 Australian Water Association Young Water Professional of the Year Award. The award recognises Alix’s commitment to the water profession, and her contribution to the water industry as well as the general community. Alix has worked on numerous projects in Australia and around the world, including the Three Delta Towns Water Supply and Sanitation initiative in the Mekong Delta of Vietnam.

Photo: Alix Campbell, pictured to the right with Nick Apostolidis, GHD’s GM Client Development.

Asian Development Bank award

The National Flood Management Strategy Study for China undertaken by GHD was recently presented with the Outstanding Achievement Award by the Asian Development Bank (ADB). This represents ADB’s top award, selected from 88 projects carried out in China over the past five years.

Shaping the future of architecture

Sheila Hughes, GHD Principal Architect in Canberra has been elected ACT Chapter President of the Australian Institute of Architects. Sheila has 25 years’ experience in architecture with particular interest in the education, research, urban design and master planning sectors. She has a long involvement in the Institute and has been active in the ACT Planning Committee and Chapter Council.
Children with autism are now pedaling on brand new bicycles built by GHD’s graduates in Sydney. As part of a 3-day graduate induction program, 16 new starters from the Sydney Operating Centre took part in a team building challenge held at Sydney’s Royal Botanic Gardens. The event brought joy to four young boys who are supported by Northcott Disability Services’s Bikes for Tykes program.

The GHD Gurus have done it again! Our team was named Industry Champion and B Final Winner at the 2010 Chinese New Year Dragon Boat Races in Sydney.

Our people in Melbourne and Canberra threw their support behind the Multiple Sclerosis (MS) Society’s 24 hour swim. In Melbourne, 15 people from Melbourne Water and GHD completed the swim at the Fitzroy pool. The team swam the equivalent of the English Channel and back, and raised over AUD3,000. In Canberra, our team was the overall winner of the ACT leg of the event, and raised the most amount of funds in the state with AUD14,300.

GHD Principal Engineer, James Aldred, has been appointed as a fellow of the American Concrete Institute. His 20+ years’ experience with concrete was highlighted recently in his work on the world’s tallest tower, Burj Khalifa, which opened in early 2010. James is a highly sought after professional in the concrete field and we congratulate him on his achievement.