Renewing assets
Protecting a global wonder
Dialogue on infrastructure imperatives
Protecting a global wonder
Renewing assets
Need more productive infrastructure?

At GHD, we understand that maximising the performance of infrastructure assets requires imaginative ideas and innovative solutions.

That’s why we’ve established a subsidiary company: the Innovation Interchange. It’s where you’ll find online platforms to help you connect and deliver ideas within organisations, on projects and across industry.

To find out more, visit www.innovationinterchange.com
Welcome to Issue 138 of GHD News, the latest edition of our publication that showcases our clients’ successes, demonstrates our technical leadership and opens the dialogue on industry issues.

In this edition, we focus on the theme of rethinking infrastructure.

According to McKinsey Research, just to keep pace with projected global growth between now and 2030, governments around the world need to spend USD57 trillion on roads, bridges, ports, power plants, water facilities and other forms of essential infrastructure. That’s nearly 60 percent more than we have spent in the past 18 years. To address the growing issue of insufficient and under-performing infrastructure, we need to rethink the financing and delivery of these assets and, more importantly, their productivity.

In the pages that follow, we provide examples of how asset owners are streamlining the design, operation and delivery of their projects to get the most out of their existing infrastructure. One such example is our ongoing work with Chester Water Utility in the USA to renew and extend the life of the Octoraro Water Treatment plant for the next 50 years.

Also showcased are global projects where our clients – in the markets of water, energy and resources, environment, property and buildings, and transportation – are adopting new approaches and innovative ideas to optimise infrastructure solutions at lower costs, yet with a focus on increasing efficiency.

Contributing to the communities in which we live and operate is a key part of GHD’s culture. Our people’s involvement in a selection of causes is recognised here, and demonstrates our commitment to communities in need, including Indigenous people.

We hope you enjoy reading this issue. Take a look at our new GHD News mobile site, which can be viewed on your smart device: www.ghd.com/GHD_eNews138

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GHD News is now mobile

With this edition of our newsletter, we’re excited to launch the GHD News mobile site. Visit www.ghd.com/GHD_eNews138 to read all your favourite stories on a smartphone or tablet.

You can still view the newsletter as a PDF by visiting: http://www.ghd.com/PDF/GHDNews138_web.pdf

GHD’s Property & Buildings business has been strengthened with teams from Woodhead Architects and Protection Engineering Group joining us in April 2014.

These integrations will significantly enhance our architecture and engineering design capabilities.

Woodhead Architects
An Australian-based, international architectural firm, Woodhead has offices in Adelaide, Perth, Sydney, Brisbane and Melbourne. The company has enjoyed a strong presence in the health, transport (particularly aviation), defence and education sectors. In Australia, GHD has welcomed 45 people, whose knowledge and experience will expand our architecture, interior design and planning practice to meet the changing needs of the marketplace.

Protection Engineering Group
With broad capabilities in the buildings services sector, the Protection Engineering Group will bolster our fire, life safety, security and technology practices in the USA with 40 people joining us in offices in Washington DC, Baltimore and Atlanta. Our established relationship with the company is facilitating many operational synergies and providing added opportunities for our clients.

Commenting on the expansion, Ian Shepherd, GHD’s CEO says, “We share similar values and culture with both organisations and believe that together we can build long term success and continue to improve our position in the industry.”
Imaginative ideas facilitate new approaches to solving industry challenges

Through our Innovation program, GHD continues to help its people, clients and sub-consultants rethink their approach to infrastructure.

By using the Innovation Framework and fostering a culture of innovation, our people are improving the way we solve challenges through:

**Rethinking the products we use**
GHD has designed and developed StormDMT™, a stormwater treatment unit that was recently chosen for use on the site of a large mining client. It has resulted in operational savings of approximately AUD2 million and is now being implemented across other sites.

**Rethinking project approaches**
GHD’s Innovation Framework was used on a recent alliance tender to facilitate innovation workshops. It resulted in more than 20 ideas that were managed, evaluated and collaborated on using the online platform PIVOT (offered by GHD’s subsidiary, the Innovation Interchange). Eight of these ideas have progressed to the preliminary design phase and will provide significant value to our client.

**Rethinking asset management**
GHD has developed Pumpcheckr – a real-time energy monitoring and alert system for pumping stations. It was recently installed at a new station in Skaneateles (USA), where it identified at the onset that the new pumps were operating at 10 percent below their expected efficiency. The issue is being remedied, with significant operational savings expected.

*For more information, contact Jeremy Stone on +61 3 8687 8341 or email jeremy.stone@ghd.com*

Safety and the awareness of risk is at the forefront of GHD’s focus. For many years now, we have applied systematic approaches and proactive measurement systems to help manage the safety of our people, projects and clients.

**Driving safety improvements**
Clayton Harrison, GHD’s Group Manager – Health, Safety and the Environment believes that measurement is an important part of any management process and forms the basis for continuous improvement.

He says, “Measuring safety performance is key to identifying improvement efforts and validating the success of our approach to safety.”

**Focusing on the positives delivers results**
“Finding the perfect measure of safety is a difficult task,” says Clayton. “GHD achieves this by measuring both bottom-line results and our ability to prevent incidents. We do this by using a combination of lagging and leading indicators of safety performance.

“Leading indicators are focused on future safety performance and continuous improvement. These measures are proactive in nature and report what employees are doing on a regular basis to prevent injuries.

“Through GHD’s HSE Index, leading indicators are strategically embedded to engage our people in proactive activities – identifying areas of weakness in advance of adverse events and providing the ability to take necessary action to avoid losses. This is in contrast to purely focusing on lagging indicators, such as incident frequency rates, which give indications of past performance.

“This approach has served GHD well – as illustrated in the chart – enabling an 89 percent reduction in Total Incident Frequency Rate since 2007.”

### Positive Effect of Lead Indicators

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<th>Year</th>
<th>TFR (1million/200k)</th>
<th>Total Lead Interventions</th>
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In the news

01 Global ranking

US-based industry magazine Engineering News Record (ENR) has released its 2013 Global Sourcebook, which provides rankings for design and contractor companies.

GHD is ranked 38th in the Top 150 Global Design Firms list, climbing the highly-regarded annual ranking three places from 41st in 2012. Additionally, we performed particularly well in the sectors of Sewer (21st), Water Supply (27th) and Transportation (48th).

02 Top waste consultant, again!

GHD has been named Australia’s number one large waste consultant in 2014 by industry publication Inside Waste Magazine. This is the third year in a row that we have been awarded first place in the large consultancy category. The results come from the magazine’s annual Consultants Review. GHD led the field in a number of categories, including: facility design and engineering; environmental and greenhouse management; technology and infrastructure review; and tender development.

03 Indigenous employment

GHD’s ongoing commitment to creating Indigenous employment opportunities in Australia has recently been highlighted at the fourth Annual CareerTrackers Gala Awards. We were recognised as a Major Partner & Supporter for companies employing 10 or more Indigenous interns. One of our interns, Harley Gleeson, also received an Academic Excellence Award for achieving a distinction/higher average in the final year of his Bachelor of Construction Management degree at the University of Newcastle.

04 Consult Australia gongs

Our Indigenous Action Plan, Women in GHD program and youth initiatives were recently awarded a Consult Australia Award for Excellence in the Diversity category. The judges found these programs, “took a broad approach to diversity; with a variety of initiatives working to create a better working environment for Indigenous professionals, women and youth”. In addition, our Innovation team’s Smart Seeds program received a High Commendation in the People category.

05 Water boost

Anne Arundel County in Maryland, USA has engaged GHD to implement Enhanced Nutrient Removal (ENR) technology at its Mayo Water Reclamation Facility and to significantly expand its capacity. The major project is to be completed by January 2017 to meet the Maryland Department of Environment ENR compliance guidelines. This project follows on from our report in 2010 that investigated seven different upgrade alternatives for the County.
Sydney Olympic Park

Responsible for managing the sporting, cultural and parklands suburb in Sydney, the Sydney Olympic Park Authority has appointed GHD to its panel. Following a long relationship with the Authority, we will provide services including: asbestos and lead-based materials, accessibility, materials and corrosion, urban and public elements, building fabric, building services, drainage networks, road and pavements, structures, geotechnics, water treatment plant and equipment, as well as water quality control systems.

Light rail for Newcastle

Transport for New South Wales in Australia has engaged GHD to provide early scoping studies for the Newcastle Light Rail. As announced in September 2013, our team will undertake detailed analysis on the location for the new transport interchange, the most appropriate alignment for light rail in the city’s centre, and opportunities for future connections to link the light rail to surrounding suburbs, beaches and the broader Hunter region.

Electric vehicles

GHD is helping Humboldt County in California to plan for the future of electric vehicles. As part of the project, we are implementing a network of 10 electric vehicle plug-in charging stations at key locations throughout Humboldt County. The Redwood Coast Energy Authority and nine other public and private partners have provided support behind the project, which will add to the existing charging network in the county.

Vector Gas milestone

GHD’s team in New Zealand recently signed a five year agreement with the Distribution Operations Division of Vector Gas.

This is a significant milestone in our relationship with Vector Gas. The company’s natural gas distribution network supplies more than 30 towns and cities across the North Island in New Zealand.

Tsunami research

GHD has won a tender for the engineering design of a tsunami modelling laboratory in Chile. We will partner with Cornell University of New York to deliver the project to the National Hydraulics Institute (Instituto Nacional de Hidráulica – INH), located in Peñaflor near Santiago. This project will help understand and research tsunami impacts on the Chilean coastline.
GHD: Infrastructure development is one of the greatest challenges of the 21st century. How can governments keep pace with projected demand?

Brendan Lyon: The only way we can sustain an increased level of investment in infrastructure is through the recapitalisation of government budgets and the sale of existing public assets and businesses.

However, it is critical that privatisations are done well, with a focus on creating long-run efficiency of the market through the sale of assets. The windfall from privatisation also needs to be accompanied by an ongoing process to address the structural deficit of public sector budgets.

Conceptually, funding infrastructure is a simple issue. It requires governments to spend less than they earn on the recurrent side of the budget, with the operating surplus or profit used to fund capital borrowings and capital investment. Long term public debt is an important way to fund infrastructure, however it is financed.

GHD: What are some of the infrastructure challenges developed nations face?

Brendan Lyon: Governments in developed nations face similar problems to those in the developing world: both desire and require infrastructure beyond what is affordable, on current settings.

The biggest challenge we face in giving rise to much needed infrastructure is honesty about the lack of money to pay for it, and leadership towards reforms that offer funding capacity.

At the project level, another challenge is developing the frameworks and assessment tools to bring forward the most beneficial projects first, given the limited money available.

In Australia, we have to get on with the job of finishing the National Electricity Market, in terms of privatising the NSW, Tasmanian and Queensland electricity sectors. Reforming electricity should be relatively easy because we have a developed and well understood national regulatory and pricing framework; but this is not the case in urban water and wastewater markets. Water stands out as the last great unreformed public sector monopoly. Now that we are out of the drought conditions that created urgency over the security of urban water supplies, we should be examining how urban water markets can be refined and streamlined for efficiency.

These problems don’t hit any single infrastructure sector – they hit all of them, and they apply to many countries around the world. We just don’t have the funding to get the required transport, utilities and social infrastructure projects delivered in the time they are needed.

GHD: What are some of the solutions available to fix the infrastructure problems nations face?

Brendan Lyon: Governments can’t apply the same approach to infrastructure project selection, funding and delivery and expect a different result.

In terms of project selection, a key challenge is that we expect relatively unsophisticated assessment tools, like the direct benefit cost ratio, to inform very sophisticated decisions about priorities. We don’t yet have a consistent toolkit to provide the best possible decisions on project priorities, based on rigorous analysis.

GHD: What is the number one priority for change?

Brendan Lyon: It is about resolving how we get projects funded and started in the immediate term.

We absolutely need a mechanism to sustain immediate, medium and long term funding. Take any country as an example – the economy and the household sector cannot afford for lawmakers to keep talking about what’s needed – we have to consider how we get it.

GHD: If we don’t address this, what are the impacts?

Brendan Lyon: The whole discussion about productivity and the cost of living are the bookends of the same problem, which is that inefficient infrastructure markets lead to inefficient costs for consumers and businesses.

For example, services like transport, electricity, telecommunications and other utilities are key inputs for the production of goods and services, meaning unnecessarily high infrastructure services costs reduce the relative competitive advantage of a country’s business sector. This results in less money in the economy and, therefore, reduced prosperity across the board.
GHD: How can we increase the performance of assets?

Brendan Lyon: The imperative is to think about infrastructure assets in terms of markets, not projects.

If you consider transport, electricity, utilities and even social services as markets where demand meets supply, then you will start to get the right signals, proficient utilisation and efficient outcomes for new investment when it is economically feasible.

GHD: Financing obviously has a huge role to play in delivering infrastructure. Talk us through the options.

Brendan Lyon: The financing issue requires governments to create a structure that delivers signals for private investment, which in turn will provide a wealth of available debt and equity.

The purpose of a private capital structure is to align private profit and public benefits. This protects taxpayers from cost overruns or project failures and maximises competition in the cost, design and operational outputs of the infrastructure being procured. In developed nations, it is likely that over time we will see capital programs start to inject competition into the delivery of public services in areas like health, social housing, corrections and public transport.

I think the experiments we are seeing in Australia around full service health, corrections and social housing Private Public Partnership (PPP) models signal that we are on the edge of an exciting reform period for public administration broadly, and the procurement of infrastructure specifically.

GHD: What initiatives would you like to see adopted in Australia to facilitate key projects?

Brendan Lyon: In a tight fiscal climate, progress on infrastructure requires the Australian Government to invest alongside State Governments to get projects moving.

We need a smarter approach from the Australian Government to substantially increase debt funding for state-based projects in the short to medium term. However, this needs to be linked to the sale of state-owned assets with a broader realignment of revenues and operating costs.

The Australian Government must see its investment as a catalyst for state reforms, so states can restore their own capacity to fund major projects. This is the best immediate option, because poor infrastructure constrains economic activity, thereby reducing future revenues for the nation from both income and company taxes.

GHD: What can Australia learn about infrastructure management from the rest of the world?

Brendan Lyon: Australia has one of the most sophisticated infrastructure markets in the world. But we have become complacent about trialling new approaches, largely because we’ve enjoyed an economic super cycle which has reduced the drive on policymakers to seek more efficient approaches.

New Zealand stands out for its bold approach to adopting new models that ensure new capital investments deliver outcomes. The recent Transmission Gully road PPP is a great example. It sees the operator fined a substantial amount for each fatality on the road. This creates a considerable incentive to design and operate the road in a way that reduces the tragedy of motor vehicle accidents, as well as the downstream cost to the public purse in terms of road trauma.

This is a smart approach that’s stretching the envelope on what’s possible through innovative approaches to delivery.
Tell us about yourself.
I’ve been working with the Chester Water Authority (CWA) since 1999, firstly in charge of capital projects and more recently as the Director of Engineering. I’m a civil engineer and have worked in the water industry all my life. It’s an industry that I love, because while the infrastructure is mostly buried and out of sight, every time you turn on the tap you get to see the results of your efforts. My passion for water is in my blood. My father is a civil engineer who also worked in the water industry his entire career, so I grew up with it.

CWA embarked on a large improvement program to modernise its plant 10 years ago. Tell us about it.
The treatment plant was built in 1951, and we have now tripled its capacity. While the general structure of the plant was in good shape, we needed to upgrade some of the ageing process and treatment equipment to meet water demand and to address increasing regulatory requirements for drinking water.

We engaged GHD to conduct a comprehensive study and establish a phased approach to modernise every aspect of the plant. To date, we’ve completed all but two of the phases. Our partnership with GHD has enabled us to achieve successful outcomes.

The improvement program included the construction of the new Octoraro Water Treatment Plant High Lift Pump Station, which is the largest capital project we’ve ever undertaken. The new facility has replaced ageing infrastructure and provides increased pumping capacity, full emergency generation capabilities, and flood protection.

Why renew assets instead of replacing them?
Renewing or rehabilitating assets instead of investing in new infrastructure is certainly more cost-effective, and it allows us to maximise the return on our original investment. For example, in the distribution system we are currently rehabilitating our older water mains, some of which date back to 1868, if they are deemed structurally adequate.

CWA is proactive, not reactive, in its approach to enhancing operations. We have performed significant distribution system rehabilitation projects each year since 1974, and renewal projects to improve water quality, fire flows, and overall system redundancy.

What are some of the challenges and opportunities you face?
As a municipal authority in Pennsylvania, we don’t have shareholders like investor-owned companies that are focused on earnings. Any surplus income is automatically reinvested in our infrastructure.

This structure enables us to provide water at 55 to 75 percent of the rates of neighbouring investor-owned water utilities. Since we’re tax exempt, our cost of capital is low, which allows us to economically invest in enhancing our operations.

The increasing regulations can be challenging at times, but this is the same for all other water treatment plants. Having said that, we have recently completed Phase IV Excellence in Water Treatment – the final and voluntary phase of the Partnership for Safe Water Treatment Program. CWA is one of only 13 water treatment plants in the USA to earn this designation, and we’re extremely proud of this achievement.

How are you financing projects?
With a combination of bonds and surplus net income.

How can water utilities keep pace with demand and population growth?
When it comes to water, we need to educate the public on the issue of affordability. After all, it’s the only utility product that people ingest, so we should value it accordingly!

Unfortunately, the only time people seem to value water is when it’s not available. As an industry, we need to get the message across that water is a valuable resource and, as such, is not free and has to be paid for.

People need to understand that municipalities have to invest in infrastructure and treatment operations in order to maintain the quality of drinking water to a high standard.

What’s next for CWA?
In 2016 through to 2018, we will be investing in additional auxiliary generators, architectural improvements and residuals handling at the treatment plant to streamline productivity. After this, we will be focusing on our transmission mains and related facilities.
In upstate New York, USA, the City of Rome is mitigating the risks of water shortages and securing the water supply for the next century by refurbishing its existing water supply tunnel, originally hand-cut in shale more than 100 years ago.

The 1.6 km (1 mile) long tunnel running at depths between 6 m (20 feet) and 37 m (120 feet) is the sole raw water supply for the City of Rome.

GHD’s unique tunnelling capabilities are helping evaluate the condition of the tunnel and design a new structural lining, which will consist of multiple layers of shotcrete applied robotically to the walls of the tunnel.

Robert Samuels, Maintenance Supervisor for the City of Rome, says, “Rehabilitating the City’s only raw water transmission tunnel without disrupting our water supply is a major challenge.

“GHD has certainly been up to the challenge in leaving no stone unturned to finding the best solution to our problem, and truly taking into consideration the financial impact this project will have on our taxpayers.”

In an example of working seamlessly irrespective of geographical borders, the GHD project team is comprised of people from our US (Cazenovia) and Australian (Melbourne) offices.

As the tunnel was determined to be unsafe to enter, GHD collected videos, sonar profiles and laser scans using remotely operated vehicles. The team also carried out geotechnical field investigations.

To keep the town supplied during the refurbishment, GHD is designing a temporary pipeline and pumping system that will bypass the tunnel. Rome residents will also apply water conservation measures during the work.

In addition, the project includes relining the dam that supplies the tunnel.

Kevin Castro, GHD’s Project Director, says, “Rome has relied on this tunnel for more than 100 years. Upon completion, the City is expecting another 100 years of service.

“With the latest technology and design, we plan to eliminate the need to physically enter the tunnel for future inspection and maintenance, and the City is saving considerable expense in not having to construct a new tunnel.”
In Queensland, Australia, significant flooding in recent years has wreaked havoc on essential infrastructure, economic prosperity and community wellbeing. In response, local councils have been examining their flood infrastructure assets to better manage future risks.

GHD is assisting a range of councils with flood-related projects including flood studies, floodplain management plans, and engineering and design work to develop flood mitigation infrastructure, and those responsible for floodplains in Bundaberg, Emerald, Roma, Gin-Gin, Kolan, and Chinchilla.

The outcomes are enabling councils to make smart investment decisions based on rigorous flood data and strong stakeholder feedback, which is minimising community resistance during construction.

Brooke Maki, GHD’s Queensland Principal Stakeholder Engagement Consultant, says, “Floods have impacted Queensland communities in the past few years with loss of life and extensive damage to private properties, businesses, vital utility services and transport networks.

“The councils we are working with are proactive in managing and mitigating flood risks. They are refreshing flood studies and developing floodplain management plans to improve floodplain resilience and community preparedness. This work is updating land use planning and reducing flood risk exposure.

“Best practice floodplain management is multi-dimensional, and the human and social element is essential to finding the most effective floodplain management measures.”

Public participation and communication is vital

Following the 2010/2011 floods that impacted 70 percent of Queensland, an independent Commission of Inquiry identified a requirement to improve the communication of flood-related information to the public.

Brooke explains, “We worked alongside Bundaberg Regional Council to plan and implement best-practice communication, public consultation and key stakeholder engagement to inform the development of the Burnett River Floodplain Management Action Plan.

“During the consultation, we wanted the community to understand how Council had undertaken a highly rigorous flood study to underpin a strong Floodplain Action Plan. Also, we asked people about their experiences of the devastating 2013 flood and what their aspirations were for Council’s next Action Plan.

“To ensure purposeful feedback, we established an independent Community Reference Group and a Technical Working Group, undertaking extensive public consultation including numerous information sessions and a community survey.

“This led to a refined, prioritised list of floodplain management projects, including major infrastructure projects such as a levee and floodgate. By keeping the community involved along the way, the projects gained widespread support. Bundaberg Regional Council is now seeking government funding in order to deliver the projects as soon as possible.”

For more information on community participation in floodplain management, contact Brooke Maki on +61 7 3316 3863 or email brooke.maki@ghd.com
Phoenix takes flight

As part of its Innovation program, GHD is providing technology consulting services to Phoenix Water in Australia to help commercialise a new wastewater treatment technology.

The patented Phoenix Water Technology (PWT) system is designed to achieve Zero Liquid Discharge (ZLD) treatment of saline wastewater using low temperature thermal distillation. It can also be used to recover valuable minerals such as lithium, magnesium and potassium from brine streams.

GHD has assisted Phoenix Water to obtain a grant from the Department of State Development, Business and Innovation in Victoria, Australia. Our team also provided advice on how the commercial and technical capabilities of PWT can be best articulated to potential clients.

Nicholas Wakim, Founder and CEO of Phoenix Water, says, “Unlike conventional ZLD systems – which are generally a compilation of several processes resulting in high capital and energy costs – PWT is designed to provide low capital and operational expenditure by running on low-grade waste heat and/or renewable energy sources. Another key design feature is that PWT functions at ambient pressure, removing the need for expensive pressurised systems.”

Commenting on supporting organisations in their commercialisation journeys, Chris Hertle, GHD’s Global Market Leader – Water, says, “Working closely with Phoenix Water and drawing on our extensive experience in water and resources markets, GHD has so far identified 50 opportunities, including projects where PWT could be trialled or implemented by large international clients. We recently travelled to Korea to discuss PWT with global manufacturing and water companies.”

In addition, GHD has delivered detailed costing analysis to help transition PWT from the current Test Rig to a Demonstration Unit suitable for commercial trials at major client sites in the mining and resource recovery sectors.

Chris adds, “Phoenix Water is a great example of a small enterprise pursuing novel ideas for wastewater treatment and resource recovery. By applying a structured approach, GHD is helping ‘de-risk’ this new technology for deployment across the globe.”
Rebuilding essential infrastructure

Designing resilient assets to mitigate earthquake risks

Following the earthquakes of 2010 and 2011, the Stronger Christchurch Infrastructure Rebuild Team (SCIRT) in New Zealand is tasked with repairing and rebuilding Christchurch’s horizontal infrastructure over a period of five years.

As leader of the Yellow team (one of the four SCIRT design teams), GHD is responsible for managing a revolving program of work.

The power of collaboration

Martin Dasler, one of GHD’s principal water engineers and leader of SCIRT’s Yellow Design team says, “Collaboration has delivered outstanding results to the projects undertaken to date.

“All four teams are comprised of people from many different consultancies, which provides a unique brains trust.

“In determining the most appropriate solution to a design challenge, we have broken down the barriers of competition amongst consultants and relaxed the notion of intellectual property. This ‘meeting of the minds’ allows us to deliver the most inventive, cost-effective and fit-for-purpose solution in a much faster timeframe.

“By sharing our intellectual property for the greater good of rebuilding Christchurch, we have evolved, refined and adapted processes to accelerate design delivery and enhance quality. In this way, collaboration trumps competition.”

Mitigating risks

In building resilience into the design of its projects – including pump stations, water and waste supply networks, roads, retaining walls and bridges – the Yellow team began by identifying how key assets were damaged and the difficulties in returning them to service. This led to the introduction of new technologies that hadn’t been used before in Christchurch.

Adaptive design

When SCIRT began, the designs incorporated a high level of resilience to earthquakes, as the probability of another event was high.

Martin says, “When you’re designing infrastructure to withstand storm events, for example, it’s quite easy to establish the return period for the event. With earthquakes, it’s more complex. Initially we did not have any real data on the number of significant earthquakes that could be expected during the life of the assets we were designing.

“That’s why, in the first two years, we compared alternative design solutions against scenarios for up to four future earthquake events. This resulted in designs that were robust, resilient and somewhat more expensive to construct. Now that we have had nearly two years without a significant earthquake, we have settled on comparing alternatives against only one future event. In short, we have adapted the level of resilience built into our designs.

“As to whether infrastructure should be replaced or fixed, the SCIRT team established a set of guidelines based around certain triggers. As construction progresses, there is an expectation that we should be challenging the very triggers that initially enabled us to complete designs without delay. Overall, by adapting designs, refining guidelines and streamlining delivery, we have delivered savings of NZD600-800 million in projected spend.”

Fast delivery

One of the benefits of SCIRT’s structure is faster delivery times. GHD is responsible for forming and managing a design team, primarily on a secondment basis. SCIRT is structured with clear demarcations between design and delivery roles.

Martin says, “As designers, we have to design solutions according to a strict timetable.

“While this is challenging in terms of achieving the best design possible, it enables services to be restored quickly, thereby benefiting the community. This approach has proved to be highly effective as an emergency response, where the timely restoration of services is imperative.

“Overall, the unique structure of the SCIRT organisation is an important element in restoring essential infrastructure quickly and increasing the morale of Christchurch’s residents.”

SCIRT construction is scheduled for completion in 2016.

Infrastructure to be restored by SCIRT includes 1000 km of wastewater and stormwater pipe, 300 retaining walls, 20 bridges and 800 km of water supply pipe.

For more information, contact Martin Dasler on + 64 3378 0938 or email martin.dasler@ghd.com
Developing water-sensitive cities in China

Faced with increasing resource constraints and deteriorating ecosystems, China’s 18th National Congress announced recently that promoting ecological progress is of vital importance to the future of the country.

The Ministry of Water Resources selected 45 cities across 28 provinces to pilot water ecological principles.

GHD is providing concept planning for 17 of these cities, based on analyses of existing water resources, river systems and ecological conditions.

The proposed integrated solutions include structural and non-structural measures, such as improved regulations and management systems.

As part of concept planning, GHD is introducing the principle of Water-Sensitive Urban Design (WSUD), which is widely adopted in Australian urban areas, but new to many cities in China. According to Xiaoming Shi, GHD’s Project Director and our Water Business Group Manager in China, “Depending on the circumstances of each city, there are opportunities to utilise stormwater to reduce environmental degradation, improve the appearance of urban areas and provide spaces for recreation.

“There are also opportunities to conserve both water and energy.”

In the historic city of Yangzhou, GHD has designed a new water landscape along the Grand Canal, an important transport artery throughout Chinese history. The solution also includes a high-efficiency water resources management system to control flooding and reuse stormwater.

In addition, the team identified the priority areas for Yangzhou city government to take action: water quality, ecological deterioration, potable water safety and water landscapes.

For more information, contact Xiaoming Shi on +86 10 5930 1628 or email xiaoming.shi@ghd.com
Environmental and stakeholder management informs debate

Considered one of the most iconic natural landmarks on the planet, the **Great Barrier Reef** remains at risk from a range of potential threats, including climate adaptation and coastal development. GHD collaborated with authorities on two projects to assess and report potential risks and to offer recommendations to ensure the region is protected for future generations.

**Future ship anchorage**

For the **first project**, GHD assembled a multidisciplinary team for the Australian Department of Sustainability, Environment, Water, Population and Communities and the Great Barrier Reef Marine Park Authority (GBRMPA). The team will conduct a study to inform future ship anchorage at the five major ports in the Great Barrier Reef World Heritage Area.

Dr Kerry Neil, GHD’s Service Line Leader for Water Sciences, says, “GHD assessed the environmental, social and economic impacts surrounding current and future use of ship anchorages servicing the ports of Cairns, Townsville, Gladstone, Abbot Point and Hay Point in Queensland.

“The objective was to provide a strategy to minimise impacts associated with anchorage use while maintaining efficient port operations. This is one of a series of reports that the Australian Government will draw upon for response to concerns raised by the UNESCO World Heritage Committee about impacts to the Great Barrier Reef.

“The project involved considerable stakeholder and industry consultation work. There is a wide number of stakeholders who have a vested interest in shipping and anchorage in the World Heritage Area, and not all share the same views. They do, however, all have valid perspectives and it was important to maintain their involvement.”

The project report, which is now finalised, has been logged with the National Library of Australia.

**Governance of the reef**

The first project report will be used to inform future planning in the region alongside a **second project** GHD supported: a complex strategic assessment of the governance of the Great Barrier Reef.

This strategic assessment was developed for the reef through combined works completed by the Queensland Government and the GBRMPA. GHD played an active role supporting the Queensland Government’s coastal zone assessment.

With the draft strategic assessment reports released for public comment, GHD assisted both the Queensland and Australian governments in a stakeholder engagement initiative to seek out international views.

The assessment responds to UNESCO’s concerns about risks to the health of the reef due to coastal development. It is the largest of its kind ever completed in Australia. It critically reviews the governance of factors having an impact on the reef and identifies areas for improvement.

Kerry explains, “Our people blended scientific knowledge, consultation skills, desktop publishing and graphic design, working for more than 10 months with multiple government departments. We are also managing the joint 13 week public consultation process for both the GBRMPA and the Queensland Government through a dedicated website.

“The strategic assessment and public consultation garnered wide media coverage around the world; the website had more than 26,000 views from people in 74 countries, and there were around 6500 submissions.”

The international consultation will help to inform the final reports. The Australian Minister for the Environment will consider findings from this project, and peer review, in responding to UNESCO’s concerns.
We also prepared a Dewatering Management Plan to reduce potential impacts of the dewatering process on groundwater and the receiving environment. Hydrodynamic modelling was used to predict the discharge plume and this model was validated during a trial discharge period. During the trial, we assessed potential contamination at key habitats during spring and neap tidal cycles. The plan was subsequently approved by the Ministry of Environment.

In addition, we prepared monthly Environmental Compliance Monitoring Reports to assess compliance with legislative guidelines and environmental permits.

Overall, the project is helping CHEC to mitigate the risks of environmental impacts of the new port.

Qatar’s new port

In the Middle East country of Qatar, the New Port Project will be the world’s largest greenfield port development, covering an area of 26.5 km².

Envisaged as one of the deepest seaports in the world, it is anticipated to have an annual cargo handling capacity of six million 20 foot equivalent units. The port will be constructed south of the capital, Doha, between Al Wakrah and Mesaieed Industrial City.

GHD was engaged to provide a range of environmental services for China Harbour Engineering Company (CHEC), the contractor delivering the port’s Basin and Breakwater Construction Package. As part of the project, we delivered a Construction Environmental Management Plan (CEMP) and Dewatering Permit Application.

According to Sindy Yong, GHD’s Project Director, “The CEMP comprised procedures to guide, mitigate, monitor and report on environmental management responsibilities to CHEC.

For more information, contact Sindy Yong on +974 4428 9510 or email sindy.yong@ghd.com

Above: Monitoring activities
For the first time in Australia, an Earth Pressure Balance (EPB) Tunnel Boring Machine (TBM) is being used to excavate access tunnels (drifts) for a coal mine in Queensland, Australia.

The new method is designed to help the mine owner, Anglo American, access the coal seam and commence production sooner.

The TBM methodology for Anglo American’s Grosvenor metallurgical coal mine in Moranbah, south-west of Mackay, has been developed with GHD’s assistance in providing detailed design and owner’s engineer services for the project.

Glen Tonkin, Anglo American’s Grosvenor Project Director, says, “The TBM tunnelling method will deliver advances in safety, higher quality drifts and faster project development.”

In terms of GHD’s involvement, Brendan Henry, one of our principal tunnel engineers, explains, “We are providing a range of services, from geotechnical investigations and detailed tunnel design, to reviewing the TBM specification, launch and excavation methodologies, and EPB operating pressures.

“This will enable Anglo American to access the coal seam in a fraction of the time a traditionally excavated drift would take and to provide a maintenance-free access tunnel structure for the life of the mine, expected to be 40 years.”

The 8 m diameter TBM will excavate two drifts – one km long each – from the surface to the coal seam. One drift will house the conveyor, while the other will be used to transport people and equipment into the mine.

Once the drifts are complete, the TBM components will be retained for use on other Anglo American projects.

For more information, contact Brendan Henry on +61 7 3316 3885 or email brendan.henry@ghd.com
In the past few years, the rivers and mountains of Laos in Southeast Asia have seen the development of major hydropower projects across the country.

More recently, small hydropower projects (1 MW – 15 MW) have been identified as a way to help achieve the government’s goals for electrification and poverty reduction, particularly in rural areas of low socio-economic development.

The Asian Development Bank engaged GHD to provide technical assistance to support small hydropower projects in Laos.

Following a detailed review of the potential for small hydropower initiatives, the project team progressed nine sites to pre-feasibility level and produced three full feasibility studies for the first batch of sites slated for rapid development.

Chris French, GHD’s Project Director, says, “In the past, proposed small hydropower schemes typically included reservoirs and tunnels, which resulted in economic, environmental and social impacts. Instead, this project adopted a ‘run of river’ model that did not require permanent reservoirs or tunnels. It enabled us to reduce the cost and complexity of the hydropower schemes as well as their environmental and social impacts.

“To achieve this, we developed a new systemised approach for standardised and efficient development of small hydropower. It included a transparent tariff structure and standard contracting agreements to reduce project costs and timelines.

“Overall, this will provide greater certainty to developers and investors, as well as ongoing benefits to the communities and provinces supported by the schemes.”

For more information, please contact Chris French on +61 3 8687 8122 or email chris.french@ghd.com
In Ontario, Canada, GHD is taking a lead role in facilitating the development of the new community of Seaton.

Located within the City of Pickering east of Toronto, Seaton has been designed to initially accommodate 60,000 people and 30,000 jobs, with construction of the residential community planned over the next 20 years. The lands, which are currently used for agricultural purposes, are owned by four major Toronto-based developers together with the Province of Ontario.

Consisting of land use planners, municipal and water management specialists, and environmental and transportation planners, the GHD team is playing a key role in coordinating the multiple landowners and other stakeholders and in facilitating the financing arrangements.

With more than 12 years of involvement in the project, the GHD team also brings significant value through increased project efficiency and continuity.

Recently, an important milestone was reached as 30 draft plans of subdivision, related conditions of approval, and the implementing of zoning bylaws were approved by the Ontario Municipal Board.

The approvals came after months of intensive mediation meetings with the City of Pickering, approval agencies and local residents.

The final milestone will be the completion of five implementing agreements, after which the construction of CAD1 billion (AUD973 million) in infrastructure can begin.

Once these agreements are complete and the financing is obtained, GHD will continue to play a major role in coordinating, designing and implementing significant portions of the required infrastructure.
Dandenong LOGIS is a 150-hectare industrial development south-east of Melbourne in Victoria, Australia. A former treatment plant, the new site converts surplus Melbourne Water land into a high quality industrial space, with impressive sustainability goals. Further, it is located alongside major transport corridors that span across the city.

GHD’s Project Manager Sam Rowland explains the challenges associated with our role as Principal Engineer. He says, “Our team faced significant challenges in the development of the site including: handling water bodies created by the remediation process, realigning sewers and power lines to suit future road and infrastructure alignments, and managing changes in schedules to assist with development and tenancy requirements.”

To overcome these challenges, GHD played a leading role in providing development assistance through delivery of the infrastructure master plan, earthworks strategy, dewatering strategy, assistance with feasibility assessments and reporting, and design and documentation of roads, drainage, earthworks, water, electricity and telecommunications. We also provided superintendency services throughout construction.

Sam adds, “This was a complex renewal project, given the state of the land, the services that exist within it, and the nature of industrial development, which is highly responsive to market demand.

“Our team produced designs that were extremely flexible, as we adapted to changing requirements. The end result will offer a legacy to industry in this region. The project has also allowed us to incorporate more than a dozen service offerings from GHD across the lifecycle.”

Dandenong LOGIS has received the Victorian Environmental Excellence award from the Urban Development Institute of Australia (UDIA), and was nominated for the national UDIA award. It has also received a national Property Council of Australia award.

For more information, please call Sam Rowland on +61 3 8687 8923 or email sam.rowland@ghd.com
In 2011, the Chilean Ministry of Public Works engaged GHD to carry out several studies to assess the conditions of the facilities of the Vergara Pier in Viña del Mar (a famous Chilean resort city) and provide alternatives for restoring and rehabilitating this tourist attraction.

As part of the project, GHD delivered a range of services including: the study of the pier’s condition, a proposal to repair the foundations, the complete restitution of the metal structure and restoration of the existing crane.

We also provided the architectural design of the walkway area on the pier and designed a set of platforms at a different height (as can be seen above) for recreational fishing purposes with an access ramp, viewpoints, banks and lighting.

The studies and alternatives developed by our team took into account the unique heritage characteristics of this pier.

Paula Arias, GHD’s Project Director, explains, “The iconic pier has been closed for many years due to severe deterioration, and the approval of the restoration project had been delayed many times due to funding restrictions or the lack of an effective restoration plan.

“This situation has changed now that the Program for the Improvement of the Waterfront (of the Chilean Ministry of Public Works) has allocated resources for this purpose.

“In addition, there is an architectural and rehabilitation plan that has been agreed on by the city authorities.”

The Directorate of Public Works is currently assessing bids for the construction of the pier.

For more information, contact Paula Arias on +56 2 2433 5409 or email paula.arias@ghd.com
New way forward

Economical replacement of ageing bridges

In New South Wales, Australia, a new approach has helped Greater Taree City Council (GTCC) to replace ageing bridges as economically as possible.

The timber truss Duffs and Marlee bridges were load-limited and needed to be upgraded, rehabilitated or replaced. GTCC had a tight budget, and none of the tenders received were found to be compliant with the project requirements.

GTCC engaged GHD to carry out an options report to provide a new perspective on the project’s direction. We delivered demolition and replacement options that met the council’s needs and resources.

GHD was subsequently engaged to manage the detailed design, demolition and replacement of the two bridges under an ambitious two-year program.

“Not only did the project tick all the technical boxes; there are significant benefits to the communities served by these bridges that will last many decades,” says Paul Hogan, Greater Taree Mayor.

Value management workshops and a detailed design and demolition options report provided the basis for developing the preferred solution.

Wherever possible the team adapted or reused standard bridge details, drawings, precast elements, demolition and construction techniques.

The replacement structures were constructed using innovative staging and demolition techniques, including steel headstocks and integrated temporary works designs. The team developed virtually identical bridge designs, resulting in efficiencies and savings.

The project’s technical achievements were recognised with a 2013 Engineers Australia Excellence Award in the Regional category (Newcastle Division).

Mark Tilley, GHD’s Project Director, says, “The project has validated the benefits of good design and effective project management in delivering cost, quality and safety to the GTCC.”

Above: Marlee Bridge

For more information, contact Mark Tilley on +61 2 4979 9090 or email mark.tilley@ghd.com
As the operator and maintainer of a large proportion of the UK rail network, Network Rail faces ongoing challenges in delivering the enhancement programs necessary to accommodate the fastest growing rail network in Europe.

GHD’s engineers, transport planners and project managers are currently working with the company to help rethink infrastructure capacity and streamline delivery processes in a number of areas.

On a recent project phase, the GHD team looked to the entertainment industry to find a creative solution to the challenge at hand. Since the relocation of Eurostar international train services to St. Pancras in 2007, the infrastructure at Waterloo International Terminal (WIT) had remained unused.

In September 2013, Network Rail upgraded Platform 20 to allow use by domestic services. With plans for further redevelopment of the terminal in the next five years, the company decided to examine options to re-open WIT for a fixed time over the recent Christmas period and spring of this year (during periods of timetable fluctuation). Network Rail engaged GHD to undertake this study.

According to Stephen Hawkes, GHD’s Project Manager, “The existing WIT infrastructure had been developed for operational use and to engineering requirements that were no longer compatible with current standards.

“Our study identified that any alterations to the existing infrastructure would be very expensive, time consuming and potentially detrimental to the ultimate redevelopment.

“To overcome this challenge, we turned to the entertainment industry, where erecting and dismantling structures occurs in a very short timeframe, and the capability to host large numbers of people is commonplace.

“Solutions were subsequently proposed based on ‘off the shelf’ commercial staging products to provide safe walkways, stairs and ramps, together with marquee style roof coverings to maintain an acceptable environment for passengers.”

GHD’s report put forward options that did not negatively impact on any wider redevelopment schemes for the terminal. The options were ranked in priority and the preferred solution was costed and subjected to further risk and opportunities analysis.

“Thanks to Silver Stage Event Structures for assisting GHD with this project,” adds Stephen.

“The successful outcomes demonstrate that with a little creative thinking, assets can be optimised for safety and cost-efficiency.”

For more information, contact Stephen Hawkes on +44 20 3077 7927 or email stephen.hawkes@ghd.com
Interchange reconfigured

Resolving safety, operational and accessibility challenges

Pictured above, the Domain Interchange, is one of the busiest and most complex tram stops in Melbourne, Australia with approximately 1600 trams servicing more than 14,000 passengers every day. The existing track configuration, ageing infrastructure and small loading area for passengers presented safety, operational and accessibility constraints.

**Yarra Trams** engaged GHD to design a four-track configuration with overhead wiring and cabling. This included two new accessible platform tram stops, remodelling of road profiles, provisions for site drainage, and updates to traffic signals, street lighting, landscaping and urban design features.

David Leonard, GHD’s Principal Rail Consultant, says, “Developing track configurations for the multitude of arrival and departure tram route combinations necessitated an exceptionally complex design that combined local design excellence with technology.

“The innovative solution also needed to provide safe access for passengers and accommodate the general road traffic. The outcome was a safe and functional solution that addressed the requirements of multiple stakeholders.”

The design took advantage of the latest advancements in the fabrication of points and crossings, which provide greater durability and reduce maintenance. Fabricated in the Czech Republic, the new points and crossings were thermit® welded into the junction, a first for the Melbourne tram network.

The major benefits were:

- Increased safety and comfort of passenger interchange from accessible platforms
- Enhanced segregation of tram services to reduce travel time and improve reliability
- Improved track geometry to prolong asset life and reduce track related incidents and derailments

David adds, “One of the most rewarding aspects of this project was that the demolition of the existing facilities and construction of the new infrastructure took place over a 14 day site occupation period.

“This could not have been achieved without a complete and unambiguous design.”

* thermit welding is a welding process for joining materials. The procedure employs molten metal to permanently join the conductors
The need for essential infrastructure in remote Australia is an issue of critical importance.

Tasked with rethinking infrastructure for Indigenous communities, **Infrastructure Australia (IA)** engaged GHD to develop the Remote Indigenous Infrastructure Policy Framework (Framework). The objective is to deliver significant national reform of the planning, prioritisation, funding and delivery of essential infrastructure in remote Australia.

The Framework was developed by IA to address three significant national challenges to Indigenous communities. These are value for money for government investment in infrastructure, and the ability of Indigenous people in remote Australia to enjoy the same standards of service, and reliability of essential infrastructure when compared with other communities of similar size and location – and for that infrastructure to underpin wealth creation in remote Australia.

The Framework establishes new approaches for governance and Cost Benefit Analysis (CBA), recognising that a traditional CBA will always identify a cost and the investment will not proceed. As a result, GHD developed a fit-for-purpose CBA tool incorporating a Multi-Criteria Analysis (MCA) that ensures robust, evidence-based decision-making by being able to rank proposed infrastructure investments by community and infrastructure type. The MCA incorporates a range of criteria and measures of risk, the link between infrastructure delivery and social benefit when compared with a baseline and cost-effectiveness analysis.

According to Michael Bissell, GHD’s Principal for Indigenous, Environment and Water Services in Canberra, “The Framework, which was developed through extensive consultation with the public, private, community and academic sectors, has now been endorsed for implementation by the IA Council.

“All jurisdictions applying for funding for essential infrastructure in remote Indigenous communities are required to use the Framework.”

To date, the Framework has been used to develop funding applications for diverse projects including the AUD106 million road, aerodrome and power upgrade in South Australia (Anangu Pitjantjatjara Yankunytjatjara Lands (APY)), an AUD306 million road upgrade in the Northern Territory (Tanami Road), AUD210 million in upgrades to road, wharves, bridges and water infrastructure in the Cape York Peninsula, and AUD525 million to upgrade power, water and waste water infrastructure in 72 communities and 66 homelands in the Northern Territory.

Funding has been awarded for the APY Lands road and the Cape York package. The Tanami Road is included in IA’s National Infrastructure Priority List.

“The Framework has further strengthened IA’s partnership with GHD and our growing reputation as a key player in solving infrastructure issues of a complex nature on a national scale,” says Michael.
In June 2013, GHD introduced key representatives from the Parramatta Eels National Rugby League (NRL) team to the Northern Territory (NT) Government. We facilitated several introductory meetings that established a long term partnership to benefit the NRL, Parramatta Eels, the NT Government and remote Indigenous communities in the region.

The Hon. Matt Conlan, NT Minister for Sport, Recreation and Racing led detailed negotiations on a four year partnership agreement with the Parramatta Eels and the NRL.

The agreement has already delivered a number of significant social and community benefits, including a commitment to bring the Eels to Alice Springs for competitive matches each year until 2018. It also involves the club in community programs throughout the Territory, including visiting remote communities and schools to raise awareness for healthy lifestyles, tackle issues such as bullying, and promote the importance of numeracy and literacy.

On the launch of the partnership, Parramatta Eels Interim CEO Matt Phelan said, “The new partnership will display the impact that the Rugby League can have, not just as a major sporting spectacle, but also as a vehicle for positive community outcomes.”

GHD has recently formalised its association with RedR Australia under the umbrella of our GHD in the Community program. Our involvement will provide opportunities for GHD people in Australia to support RedR across a range of activities.

RedR Australia is a leading humanitarian agency for international emergency relief that provides skilled people and training to help communities rebuild and recover in times of crisis. When disaster strikes, RedR mobilises the right people with the right skills to make a difference. The organisation’s internationally recognised training courses prepare aspiring aid workers for life in the field and help experienced humanitarian workers further hone their skills.

GHD has had a long-standing relationship with RedR in Australia. Since the organisation was established in 1992, we have provided financial assistance and lent our support to corporate activities. More importantly, our people have contributed to RedR’s core activities of humanitarian and disaster relief training and deployment.

This new partnership continues GHD’s relationship with RedR Australia and takes it one step further. Our commitment builds on our ongoing partnership to provide field support for GHD RedR deployees and helps our people in their deployment training.
Following the devastating Yarnell Hill Fire in Arizona, USA which destroyed more than 100 homes and claimed the lives of 19 elite firefighters, GHD and local water providers worked together to get the water flowing again.

After the flames were out, not-for-profit agency Yarnell Water Improvement District (YWID) was challenged with restoring safe, clean water to the community, on top of a significantly reduced revenue base caused by the loss of homes it services. As a result, a water response team comprised of GHD, EPCOR Water and Global Water Resources was assembled to assess the water system, develop an action plan and fix the damage.

James Taylor from GHD’s Phoenix office took on the role of project manager during the assessment and repair. He says, “The fire and recovery effort affected everyone in Yarnell. Responding to the needs of the YWID with our partners was the best way we could help get this community back on its feet.”

Overall, more than 400 hours were contributed by GHD, in addition to the equipment, meters and pipe materials donated to complete the repairs. The team also coordinated repairs to YWID’s damaged backhoe, transporting it to Phoenix and arranging for a reduced-cost repair.

As a long term supporter of CANstruction, an annual charity design and build competition of structures made entirely out of canned food, GHD people recently got creative.

Our people on opposite sides of the world – in Darwin, Australia and Toronto, Canada – built some impressive structures from canned food which was later donated to a range of charities.
Awards
NOVEMBER 2013 – MARCH 2014

RANKINGS

BUSINESS REVIEW WEEKLY (BRW) AUSTRALIA
2013 GHD ranked 44th in the 2013 BRW Top 500 Private Companies Listing

CAREERTRACKERS
• 2014 Major Partner & Supporter Award, CareerTrackers Student Association
• 2014 Academic Excellence Award – Harry Gleeson

CONSULT AUSTRALIA
• 2013 Excellence Award – Diversity – GHD’s Indigenous Action Plan, Women in GHD and Youth Programs
• 2013 High Commendation – Development of People – GHD Innovation Team’s Smart Seeds Program

INSIDE WASTE MAGAZINE AUSTRALIA
2014 Best Large Waste Consultant

ENGINEERING NEWS RECORDS
• 2013 GHD ranked 38th in the Top 150 Global Design Firms list
• 2013 GHD ranked 73rd in Top 225 International Design Firms
• 2013 GHD ranked 48th in Transport
• 2013 GHD ranked 27th in Water Supply
• 2013 GHD ranked 21st in Sewer

PROPERTY COUNCIL OF AUSTRALIA
2013 Innovation Award for Indigenous Internship Program – CareerTrackers and GHD

PROJECTS

AUSTRALIA

BARWON WATER ALLIANCE (INC. GHD)
• 2013 Pinnacle Award for Excellence in Workplace Health and Safety – National Safety Council of Australia
• 2013 Best Safety Leadership Program Award – National Safety Council of Australia
• 2013 High Commendation Best Health and Wellbeing Program Award – National Safety Council of Australia

BULK WATER ALLIANCE (INC. GHD): ENLARGED COTTER DAM
• 2013 Award for Excellence – Engineers Australia (Canberra)

CITY EAST ALLIANCE (INC. GHD): GREAT EASTERN HIGHWAY UPGRADE
• 2013 Earth Award (WA) – Civil Contractors Federation Earth Awards
• 2013 Earth Award (National) – Civil Contractors Federation Earth Awards

COASTAL HAZARDS ADAPTATION STUDY IN NORTH QUEENSLAND
2013 Award for Excellence – Reports, Procedures and Systems Category – Engineers Australia (Queensland)

DANDELING LOGIS
2013 Environmental Excellence award – Urban Development Institute of Australia

DUFFS AND MARLEE BRIDGE REPLACEMENT PROJECT – GREATER TAREE CITY COUNCIL
2013 Regional Award for Excellence – Engineers Australia (Newcastle)

FRASER COAST CULTURAL CENTRE
• 2013 Project of the Year – Wide Bay Burnett Master Builders Housing and Construction Awards

HASTINGS PARK STAGE 3 EXPANSION
2013 Award for Excellence (North Queensland) – Buildings and Structures Category – Engineers Australia

HOXTON PARK RECYCLED WATER SCHEME S1
2013 Infrastructure Innovation Award NSW, Australian Water Association – Highly Commended (GHD, John Holland and Sydney Water Corporation)

LEGACY WAY TUNNEL
2013 Major Tunnelling Project of the Year – International Tunnelling Awards

PERTH CITY LINK ALLIANCE (INC. GHD)
2014 Government Partnership Excellence Award – Infrastructure Partnerships Australia

RACV INVERLOCH RESORT (GHD DESIGN)
2013 Best Deluxe Accommodation Award – Victorian Tourism Awards

REGIONAL RAIL LINK ALLIANCE (INC. GHD)
2014 Project of the Year – Infrastructure Partnerships Australia Awards

NEW ZEALAND

PROJECT NEW GRAD PROGRAM – AUCKLAND TRANSPORT, FULTON HOGAN AND GHD
2013 Commendation for Best Practice Award – People Category – Roading Excellence

STRONGER CHRISTCHURCH INFRASTRUCTURE REBUILD TEAM (INC. GHD)
2013 Brunel Medal for Engineering Excellence – Institution of Civil Engineers

CANADA

CITY OF BARRIE – STORMWATER ASSET MANAGEMENT PLANS
2013 Capacity Building Award – Association of Municipalities Ontario (AMO)

MIDDLE EAST
ALILA JABAL AKHDAR RESORT (GHD DESIGN)
2013 Best Project Design, Dossier Construction Awards and Summit

USA

BRANNAN STREET WHARF, CALIFORNIA
• 2014 Airports and Ports Project Award – American Society of Engineers (ASCE)
• 2013 Outstanding Airports and Ports Projects – Port of San Francisco and GHD, American Society of Civil Engineers San Francisco Chapter
• 2013 Merit Award (California) – American Council of Engineering Companies

CHATHAM WATER POLLUTION CONTROL FACILITY (WPCF) – PHASE I IMPROVEMENTS
2014 Bronze Award – American Council of Engineering Companies, Massachusetts Div.

ONONDAGA COUNTY WATER AUTHORITY THURBER STREET AND SENeca PUMP STATION IMPROVEMENTS, NEW YORK
2013 Environmental Project of the Year – American Public Works Association, Central New York Branch
01 PEMAC life member

Roop Lutchman, GHD’s Leader of Business Consulting for the Americas, has recently received the Life Membership Award from the Plant Engineering and Maintenance Association of Canada (PEMAC). This membership recognises Roop’s contribution to the association, which provides leadership, education and certification in world class maintenance and asset management practices in Canada. Roop is based in our Mississauga office.

02 Outstanding commitment

Jon Putnam, Project Manager in our Cazenovia office, was recently honoured for outstanding commitment to his profession and community at the Genesis Group of the Mohawk Valley Region’s 2014 Striving for Success Young Professionals Awards. Jon was presented the award at a ceremony in New Hartford, New York recently. He was selected from a group of more than 60 candidates.

03 Movember madness

In November 2013, GHD people in Australia, New Zealand, Canada, the UK, Asia and the Middle East showed their commitment to making a difference to men’s health by participating in Movember. In total, we raised AUD28,842 across our operations around the world. This is the fourth year that GHD has been involved in Movember, and each year our participation has increased.

04 EA Fellows

Two of our senior leaders in Sydney were recently named Fellows of the Institution of Engineers Australia (EA). May Ngui, GHD Director and Manager of our Industrial Electrical & Automation Service Group in Sydney, and David Gamble, Service Line Leader for Waste Management, were inducted among 61 new Fellows appointed.

05 Business woman of the year

Anita Borella, Senior Project Manager in our Canberra office, was named Young Business Woman of the Year and received the Private and Corporate Sector Award at the 2013 Telstra ACT Business Women’s Awards. Anita was recognised for her passion in supporting women in engineering and project management careers.

06 Future leader

Christina West, Senior Chemical Engineer in our Canberra office, was named the Future Leader of the Year at the 2013 ACT National Association of Women in Construction (NAWIC) Awards for Excellence. Christina joined GHD in 2007 and leads our Environment and Water team in Canberra. She is passionate about giving back to the industry and is involved in a number of organisations, including Young Engineers, Young Water Professionals and Women in Engineering.
07 Engineer of the year

Russell Olsen, GHD’s Manager of Buildings & Structures in our Townsville office, was named Professional Engineer of the Year at the 2013 Townsville Engineering Excellence Awards. The award recognises Russell’s contribution and achievements in engineering within the region, spanning more than 16 years.

08 Volunteer award

Along with his family, Sean Anderson, Structural Engineer in our Raleigh office in the USA, was awarded the 2013 Fred Fletcher Outstanding Greenway Volunteer Award from the City of Raleigh recently. The Andersons received the award for their dedicated work in ‘adopting’, cleaning up and caring for a local walking trail. In addition, a rubbish bin was added to one of the trailheads and fittingly named ‘Avery’s Can’ after Sean’s passionate six year old daughter.

09 Administration professional

Jenny Miller, GHD’s Markham Office Manager in Canada, has recently qualified as a Certified Administrative Professional. Awarded by the International Association of Administrative Professionals, this certification is highly recognised in North America. Jenny started with GHD in Canada in 2008 in the role of Administration Manager after coming from Australia on a working holiday.

10 Technology leader

Elizabeth Harper, GHD’s Chief Information Officer (CIO), has won the InfoTech Outstanding Achievement Award at the 16th Annual Women in Technology Awards in Australia. The 27 judges selected Elizabeth as the standout winner of the award, recognising her long and distinguished career in information technology.

GHD Annual Review 2013 out now!

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