

ISSUE 14

news



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A message from the Managing Director

It has been another exciting year for Cardno. We finished the 2008 financial year on a high note with another record performance, our revenue having grown to AU\$400 million annually. Since the close of the financial year we have added three new businesses, each of which gives us special new capabilities which allow us to better serve our clients. Our staff numbers have now grown to around 3,400.

I believe that Cardno's growth and diversification, coupled with our strong balance sheet, puts us in a unique position to weather the tougher conditions which could eventuate from the current challenging financial circumstances. Our expansion has come from organic growth of existing businesses coupled with mergers and acquisitions which have added to our diversity. I would like to tell you about our recent mergers.

In August, we welcomed The Ecology Lab and Spectrum Survey & Mapping into the Cardno group.

The Ecology Lab, now known as Cardno Ecology Lab, is a marine and freshwater ecology consultancy based in Sydney. This partnership will extend our environmental services capability in New South Wales to around 40 people. Cardno already has a history of working with The Ecology Lab on projects in both Australia and New Zealand, a trend I'm confident will continue.

Cardno has expanded its presence in Western Australia's resources and survey sector, acquiring Spectrum Survey & Mapping, which has become Cardno Spectrum Survey. Based in Perth and Kalgoorlie, the 51-person specialist survey firm's clients include some of Australia's major mining companies. Cardno Spectrum Survey also has a strong portfolio of urban development clients.

In September, Cardno announced the acquisition of US consulting engineering firm, TBE Group Inc. Comprising 450 staff located in 32 offices across 19 US states as well as China, the UK and Canada, TBE represents Cardno's largest merger to date. TBE primarily services transportation and municipal clients across the US. Other services include civil and environmental engineering, land resumption coordination, construction services, project management, transportation design and highway safety audits.

TBE also brings to the group their special expertise in Subsurface Utility Engineering (SUE). SUE is an advanced engineering process which identifies the location of existing services and utilities prior to commencing design or construction of major infrastructure projects. This skill set offers Cardno a great opportunity to promote and develop our skills around the US and internationally, especially in Australia and New Zealand.

With the addition of Cardno Ecology Lab, Cardno Spectrum Survey and TBE, Cardno now has approximately 3,400 staff, around half of whom are working outside Australia.

We also recently took the step to reaffirm our core values, which shape the way we work as an organisation. Demonstrating Cardno's commitment to our value of sustainability, our global head office and Brisbane office moved to the eco-friendly building Green Square in Brisbane's Fortitude Valley in late September. Cardno has experienced significant growth in the last 18 months and this relocation will accommodate this growth and our future expansion.

In addition to our recent mergers, in this issue you can also read about the great and innovative work we are doing in physical and social infrastructure across the world.

I hope you enjoy this issue of Cardno News.

Andrew Buckley
Managing Director



Cardno continues to expand internationally



In September Cardno announced a significant partnership with United States consulting engineering firm, TBE Group. With more than 450 staff located in 32 offices across 19 US states as well as China, the United Kingdom and Canada, TBE is Cardno's largest merger.

The engineering, environmental, survey and planning firm adds a major new component to Cardno's capacity to deliver and consult to some of the world's largest, multi-faceted infrastructure projects.

The latest merger continues Cardno's strategy of international expansion and will provide the group with greater access to domestic US government infrastructure projects, particularly in the transportation sector.

TBE has a blue chip client base, more than US\$100 million of work in hand, and a solid 24-year track record of servicing federal, state and municipal government projects.

Cardno's Managing Director Andrew Buckley said TBE provided exciting opportunities to cross-sell capabilities with Cardno's existing US-based businesses and also with its major operations in Australia

and other countries. He said the merger continued Cardno's strategy of diversifying its skills base and markets.

"TBE's business culture and growth potential make it an ideal partner for further organic expansion across North America, through providing a major infrastructure consulting capability," said Mr Buckley.

TBE is a market leader in Subsurface Utility Engineering (SUE) – an advanced engineering process which identifies the location of existing utilities prior to commencing design or construction of major infrastructure projects.

"I am confident the skills and experience of TBE – especially in the SUE space – will be in demand by Cardno's clients outside the US," said Mr Buckley.

The company primarily services the transportation sector with state and municipal clients across the United States. TBE's other services include civil and environmental engineering, land resumption coordination, construction services, project management, transportation design and highway safety audits.

TBE is active across many US states, and has major offices located in Florida, Arizona, Indiana, Texas, Georgia, Nevada, New Jersey and New York. These locations complement Cardno's existing operations in North America.

Mr Buckley said despite the slower US economy, demand for infrastructure services from TBE's key clients and geographic markets was expected to remain strong with the investment in transportation infrastructure in TBE's primary state markets reported to be around US\$29 billion per year for the next three years.

"The TBE merger has allowed Cardno to strengthen its position as a growing international business. Over the past three years we have expanded our international presence in the United States, the United Kingdom, New Zealand, Europe, Asia and the Middle East," Mr Buckley said.

With the addition of TBE, Cardno will have 3,400 staff, half of which are working outside Australia.

TBE's former owners and key management will remain active in the company and are committed to growing the business.

TBE is a market leader in Subsurface Utility Engineering (SUE) – an advanced engineering process which identifies the location of existing utilities prior to commencing design or construction of major infrastructure projects.

Founded in 1984 by the firm's President and CEO, Patrick (Pat) Beyer as Tampa Bay Engineering, TBE has expanded from one office in Clearwater, Florida to an international firm spanning three continents.

TBE President Pat Beyer said the merger marked an important step along TBE's growth path.

"Cardno's merger with TBE will help the business increase its service offerings and realise its own growth ambitions," Mr Beyer said.

"Our motivation to partner with Cardno was to provide our clients with a wider range of services and locations, provide our talented staff with additional opportunities for career development and accelerate TBE's growth across the US and internationally. The potential synergistic benefits from our combined companies are enormous for staff, clients and financial performance."

Mr Beyer said Cardno's leadership in social infrastructure work was a compelling reason for TBE to consider this relationship.

"Cardno provides opportunities for TBE to become part of a committed, global focus to help developing nations and countries adversely affected by natural disasters and conflict to build and implement social and physical infrastructure programs," Mr Beyer said.

Mr Beyer added he believes TBE can add value to Cardno's existing projects and provide a complementary set of services to clients, particularly in the area of SUE.

"TBE's skills in SUE save clients millions in construction costs," he said.

"Based on independent studies, for every dollar invested in SUE, savings in excess of four dollars are achieved in overall project costs," said Mr Beyer.

TBE has built a reputation with government agencies and private clients for being a firm that can save considerable money and time during construction, without compromising quality. The Minnesota Department of Transportation engaged TBE to help fast track the construction of a new bridge following the I-35 Mississippi River Bridge collapse.

Also, the Florida Department of Transportation credits TBE with helping them save more than US\$10 million on the Metro Parkway - State Route 739 project.

Some of TBE's major clients have included US government agencies including the state departments of transportation in Florida, Ohio, Kentucky, Georgia, Illinois, Indiana, Texas, Utah, Nevada and New Mexico.

Other key clients have included Pinellas and Hernando Counties in Florida, Kimley-Horn & Associates, the Port Authority of New York and New Jersey, Dulles Transit Partners, American Structurepoint Inc., Salt River Project, HDR Engineering and URS Corporation.

The addition of TBE to the Cardno group complements Cardno's existing US operations, which include WRG Design (a civil engineering, land use planning, land survey and landscape architecture consultancy), Emerging Markets Group (an international development assistance specialist) and XP Software (a software engineering provider). Cardno's North American operations (including their respective US and international offices) now have 1,150 staff.

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Addressing climate change at the grass roots

As the issue of climate change grows as a matter of urgency for worldwide governing authorities, proactive local councils are seeking the advice of infrastructure and transport planning experts to determine appropriate courses of action to take.

Manly Council, home to one of Sydney's most popular northern harbour and beach communities, is working with Cardno's New South Wales-based Sustainability and Climate Change team to conduct an independent analysis on the likely effects of climate change during the next century.

Cardno received an Excellence Award in August 2008 from the Stormwater Industry Association in New South Wales for its innovation with respect to the stormwater infrastructure and planning elements.

Cardno's Sustainability and Climate Change Manager Louise Collier said the Council's overriding objective was to develop a strategy to reduce the impact of climate change on the local community and its infrastructure over a 30-year period.

"Climate change has the potential to have huge and long-lasting financial and physical implications for local councils," Ms Collier said.

"Cardno has provided this proactive council with a prioritised list of actions that can significantly reduce the impact of that change and reduce Manly Council's carbon footprint."

Ms Collier said by seeking Cardno's advice, Manly Council has gone over and above its 'business as usual' program of funding

for general services, infrastructure, stormwater and the environment.

Cardno's analysis included evaluations on how councils can protect infrastructure assets such as roads, stormwater drainage, buildings, footpaths, bridges, walking trails, bus shelters, car parks, sporting fields and swimming pools.

Education was a vital component of the Cardno planning model, Ms Collier added.

"The key to preventing and adapting to the impact of climate change lies with the awareness and knowledge of the Manly community," Ms Collier said.

"Programs to educate the community about the potential effects and causes of climate change are essential in ensuring that concerns such as threats to life, health and safety are minimised."

Ms Collier said working with Manly Council on this unique project demonstrated that Cardno continued to lead in providing tangible solutions to a problem that is at the forefront of both local and global community concern.

"We have harnessed our multidisciplinary strength in the fields of infrastructure, transport planning and environmental services to provide the complete suite of services to assist the public and private sector prepare for climate change," Ms Collier said.

Manly Mayor Peter Macdonald said the Cardno report highlighted how the community needed to be ready for the adverse consequences of climate change.

Ms Collier said it was great to see local council taking these initiatives at the grass roots community level.

"Climate change is an issue which has had a lot of attention at the federal and state government level but it is just as important, perhaps in a more practical way, at a local level," she said.

"Manly Council was very involved and committed in this process and Cardno worked in close partnership with Council throughout the project."

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"Cardno has provided this proactive council with a prioritised list of actions that can significantly reduce the impact of climate change and reduce Manly Council's carbon footprint."



Delivering solutions for the world's urban poor



Finding innovative solutions to the problems of urban finance, and alleviating poverty and improving health, is one of the greatest challenges faced by developing countries in the new millennium.

The United Nations estimates approximately one billion people are currently living in urban slums, a figure which has risen by 75 million in three years¹.

The United Nations Human Settlements Program, UN-HABITAT, whose headquarters are in Nairobi, Kenya, mandates to improve the lives of at least 100 million of the world's urban poor by the year 2020. As large as 100 million may seem, it is only 10 per cent of the present worldwide slum population which UN-HABITAT predicts, if left unchecked, will multiply threefold to 3 billion by the year 2050¹.

Cardno's Emerging Markets Group (EMG) has fielded a Pilot Team to work with the financial division of UN-HABITAT's Slum Upgrading Facility (SUF) across four pilot countries – Ghana, Indonesia, Sri Lanka and Tanzania – to assist low income groups to improve their living environment.

Project Team Leader Lawrence Michel said EMG's role involved testing approaches to mobilise domestic private capital for slum upgrading initiatives and supporting local governments in leveraging domestic investment to develop financially sustainable slum upgrading projects.

"A major component of EMG's role has become supporting the set up of local finance facilities as independent not-for-profit organisations, with the specific remit

to support slum upgrading initiatives in the four pilot locations," he said.

"EMG facilitates linkages between local private individuals, including slum dwellers and their associations, community organisations, municipal authorities, development and financial partners to create effective public-private-people partnerships that sustain long-term projects and offer potential for significant up-scaling.

"The other major component of EMG's role is to develop upgrading projects that the local finance facilities will assess and potentially support alongside local financiers. The implementation of our pilot projects includes providing an assessment of the existing state of housing, infrastructure and amenities in slum areas including conditions such as flooding or drought. From this assessment, project objectives are set to specifically address issues and a business case is built to present to financiers to source credit.

"The overall aim of the pilot projects is to improve sanitation, housing, access to water, electricity and waste management, and infrastructure by facilitating access to commercial and public resources. In doing so, we can improve the well-being and livelihoods of people living in these communities.

"Slum dwellers in cities of some of the world's developing countries number more than 50 per cent of the population and have little or no access to shelter, water and sanitation. In each of our project pilot counties this equates to approximately 25,500* in Ghana, 25,000* in Indonesia,

1,582* in Sri Lanka and 3,000* people in Tanzania."

UN-HABITAT's Slum Upgrading Facility contracted EMG in November 2006 and the projects are due for completion by the end of 2009.

Mr Michel said urban and shelter finance mechanisms, together with a collaborative effort from affected stakeholders, were essential to poverty reduction.

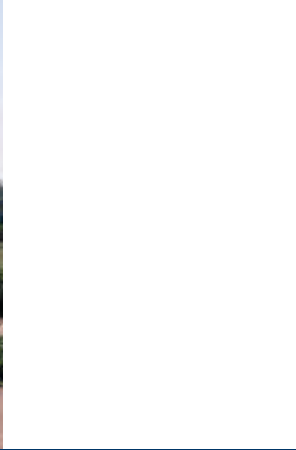
"The project is unique in terms of its methodology and approach; bringing together stakeholders from the affected communities, local government, the private sector and the financial sector," he said.

The Slum Upgrading Facility is also building an international network of interested stakeholders across the projects as well as with other communities that are observing the methodology of SUF and want to replicate it. Mr Michel said the pilot projects may make a significant fundamental difference to millions of the world's most underprivileged and impoverished people.

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1. United Nations Human Settlement Programme website www.unhabitat.org

*These population figures are approximate figures based on available data.



Innovation in New Zealand's urban landscape



Cardno's New Zealand Division, Cardno TCB, is currently devising a development proposal for a benchmark masterplanned residential community development in Christchurch.

Belfast Village will be the largest masterplanned development in Christchurch, spanning 94 hectares and comprising a mixture of 1,800 apartments, townhouses and conventional lots, plus one hectare containing a commercial town centre area with a supermarket, specialty shops and mixed-use office and apartment space.

Project Manager Richard Graham said the project was unique in that it stood outside traditional greenfield development guidelines.

"Development of greenfield land, which is semi-rural property that is undeveloped except for agricultural use, traditionally comprises 600 to 700 square metre sections with a lot yield of approximately 10 to 11 dwellings per hectare in Christchurch," he said.

"Belfast Village has about 19 dwellings per hectare, making a much more economical use of the land.

"Instead of having a single-storey dwelling on a 650 square metre site, the development proposes two-storey townhouses on a 200 to 300 square metre site along with approximately 850 apartment units."

Mr Graham said research of the demographics in the area showed this use of the land was better suited

to the lifestyles of home buyers in the community who would be attracted to the freedom and lifestyle provided by cleverly designed dwellings that incorporated low maintenance outdoor and garden areas.

"Significant provision for reserve areas within the development has been made to compensate for the smaller land parcels that will be created," he said.

"The development incorporates groundbreaking sustainable design elements through the treatment of stormwater in underground systems in place of above ground swales and detention basins, and the use of narrow roads to reduce traffic and speed."

The other significant aspect of the development is the requirement to construct 4.5 kilometres of new State Highway to bypass the existing Belfast township and reduce traffic pressure on the roads linking to the development site. The developer has entered into an agreement with the New Zealand Transport Agency to privately fund the new bypass in one of the first public/private roading projects in New Zealand.

Mr Graham said Belfast Village would adopt a European look from the roadside with the two to three-storey residences built up to boundaries and feature three metre-wide footpaths with landscaping.

"In terms of the urban layout, there is a large emphasis on walking tracks and connectivity between the different precincts of the development and to the wider amenities," he added.

"The development is positioned next to a large public recreation area known as The Groynes and Clearwater Resort which is a hotel/apartment resort with an 18-hole golf course," Mr Graham said.

"There is also a proposal to incorporate a large area of land to the immediate north of the site into a new regional park, which will provide a fantastic connection between Belfast Village and the Waimakariri River."

If approved by the Christchurch City Council, Belfast Village will be a benchmark integrated urban development project in Christchurch and Canterbury.

Environment Canterbury, the regional council, is currently assessing variations to the Regional Policy Statement, which will require all greenfield developments in the next 15 to 20 years to achieve a minimum density of 15 dwellings per hectare.

"Given the standard yield at the moment is about 10 to 11 dwellings per hectare, this will require a fundamental shift in both the thinking of the developers and the general public," Mr Graham said.

"This is certainly an exciting opportunity for Cardno TCB in establishing new boundaries in masterplanned developments in Christchurch and delivering our client's objective of reducing housing prices through innovative design."

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Expanding environmental capabilities



Cardno is set to increase its capabilities in the environmental sector following the company's recent merger with Sydney-based firm The Ecology Lab.

The specialist marine and freshwater ecology consultancy joined the Cardno team in August and is now known as Cardno Ecology Lab.

The Ecology Lab founder Marcus Lincoln Smith, who has moved into the role of Business Unit Manager of the business, said The Ecology Lab already had a strong working relationship with Cardno.

"We have a history of working with Cardno on projects in Australia and New Zealand and as a result understand the group," said Dr Lincoln Smith.

"The partnership creates opportunities for us to expand our geographic reach, in particular on the west coast of Australia, in the tropics of Australia and in the Indo-Pacific region.

"Having worked with aid agencies previously, we also see the potential to work with Cardno's development assistance businesses.

"The merger supports our future growth and provides real benefits to our staff who will have direct access to an international team of practitioners from a range of disciplines, as well as the opportunity to work and travel in new locations," he said.

Founded in 1985, The Ecology Lab's team of 16 staff are specialists in designing, implementing, analysing and interpreting

environmental studies and monitoring aquatic environments.

While a specialist firm, Cardno Ecology Lab's capabilities cover a broad spectrum within the environmental area. In particular, specialist services include monitoring the effects of urban and coastal developments on aquatic flora and fauna, studies of water and sediment quality in relation to the protection of aquatic ecosystems, bioaccumulation of contaminants in fish and invertebrates, stock assessments of fish and ecological risk assessments.

The business also has an ecological laboratory, compiled reference collection of preserved marine and freshwater fish and invertebrates, and photographic index of numerous species of fish and invertebrates.

Cardno Ecology Lab's specialist skill set in environmental services and ecology is in high demand from private companies and government. Key clients include BHP Billiton Illawarra Coal, Delta Electricity, Sydney Water, Department of Defence and the Commonwealth Department of Environment, Water, Heritage and the Arts.

The team recently worked on the expansion of the Port Botany port facilities for Sydney Ports Corporation and the ecological effects of mine water discharges into freshwater streams for the Australian Coal Association Research Panel.

Cardno Managing Director Andrew Buckley said the addition will complement Cardno's already strong position in the environmental services market.

"Cardno Ecology Lab can offer biological and ecological surveys of marine, coastal and freshwater ecosystems, as well as Environmental Impact Assessments, services we haven't previously been able to directly offer our clients," said Mr Buckley.

"The opportunities to cross-sell across the business are significant and we already have a presence in sectors and regions where Cardno Ecology Lab services are required," he said.

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Cardno Ecology Lab's specialist skill set in environmental services and ecology is in high demand from private companies and government.



Cardno grows presence in booming resources sector



Cardno has continued to increase its presence in Western Australia's thriving resources sector merging with specialist survey firm Spectrum Survey & Mapping.

The 51-person consultancy, which is now known as Cardno Spectrum Survey, has an office in Perth as well as an office in the hub of Western Australia's mining industry, Kalgoorlie.

Spectrum Survey & Mapping Director Paul Zadnik said the merger would benefit the business, clients and staff.

"The partnership with Cardno will help Spectrum Survey & Mapping realise its own growth aspirations," he said.

"I believe our clients will also benefit from the merger. With Cardno offices across Australia and internationally, and service offerings in numerous disciplines, we can now provide our clients with a broader range of services.

"Being part of a growing, international company also presents our staff with greater opportunities for career development.

"Culturally we saw a lot of synergies between our and the Cardno group's culture and I believe the partnership is a good match," added Mr Zadnik.

The company's directors and staff also recognise the mutual benefits of the partnership and are keen to remain with the business. Paul Zadnik will continue to have a key role in the business and has become the Business Unit Manager.

Cardno Spectrum Survey specialises in open cut and underground mine survey, GPS survey, engineering survey and cadastral survey. The firm also offers a range of mapping and specialised photography services to mining and urban development industries.

In addition, the business has worked on several international mining assignments in locations such as Eastern Europe, Africa and Asia.

Managing Director of Cardno, Andrew Buckley, said the acquisition is in line with the company strategy to increase the group's representation in regional areas, based on client needs.

"The addition of a Kalgoorlie office is a positive step for Cardno, enabling us to expand our geographic reach and better service our regionally-based clients," said Mr Buckley.

Mr Zadnik believes there are also numerous opportunities to cross sell Cardno Spectrum Survey's skill set to Cardno's existing client base, especially in Western Australia and Queensland's mining areas.

Cardno Spectrum Survey's client base comprises some of Australia's major mining companies in Western Australia, South Australia, Queensland and the Northern Territory.

The company has a diverse client base that includes a strong portfolio of urban development clients.

This merger consolidates Cardno's capabilities in Western Australia's resources sector and follows the group's purchase of Perth-based mining and structure consultancy Cardno Buckland in September 2007.

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"Being part of a growing, international company also presents our staff with greater opportunities for career development."



Inspiring leadership in the Asia-Pacific



Cardno Acil has embarked on a new program with AusAID designed to strengthen political governance and promote more effective and ethical leadership in several countries in the Pacific region.

A major new initiative arising from the Australian Government's review of its aid program, the Pacific Leadership Program (PLP) will initially focus on identifying suitable activities for funding in Papua New Guinea (PNG), the Solomon Islands, Samoa, Vanuatu, Tonga and East Timor.

PNG & Pacific Region Senior Consultant Louise Morrison said the Pacific Leadership Program would act as a vehicle for the Australian Government to work and engage with Pacific governments and regional organisations to identify areas to promote effective leadership and strengthen women's leadership in the region.

"One area where this will be achieved is through a partnership with the United Nations Development Fund for Women (UNIFEM) to enable the implementation of the Gender Equality in Pacific Governance Program," Ms Morrison said. "Women attaining leadership roles in politics and government is a crucial issue in Pacific countries."

According to UNIFEM, the Pacific Island countries have fallen behind the rest of the world having the lowest levels of representation of women in parliaments and local governments.

UNIFEM reports an average 2.5 per cent of members of parliaments in the Pacific region are women, compared with a world average of 17.7 per cent.

The Federated States of Micronesia, Nauru, Palau, Solomon Islands and Tuvalu are among five of the total of eight countries in the world with no women elected or appointed to sit in parliament.

Ms Morrison said the PLP was developed through a series of country missions, meetings with donors and regional institutions and a major consultation convened by the Pacific Islands Forum Secretariat in May 2007 with over 60 participants.

"A number of key principles and strategies for the Program emerged from an analysis of the context, review of lessons learnt from the literature and existing programs and feedback from stakeholders," Ms Morrison said.

"The Program, which is still in its planning phase, will focus on four key areas including policy engagement, leadership practices, research and analysis agenda and partnerships.

"The planning phase has involved extensive consultation with a broad range of stakeholders including the private sector, women, youth, the media, academics, parliamentarians and the public sector in the six target countries to identify suitable activities for funding through the Program."

Funding provided to UNIFEM's Gender Equality in Pacific Governance Program is an example of the type of activity that PLP will support.

Ms Morrison said there would also be two research grants for studies on youth and leadership.

"The Regional Partnerships component of the Program is currently developing relationships with UNIFEM's Pacific Regional office, PIANGO (the umbrella body for non-government organisations in the Pacific), PIPSO (the umbrella body for private sector organisations), the Pacific Youth Council and the Commonwealth Local Government Forum," she said.

"The Program will also support the 2008 Emerging Pacific Leaders Dialogue. The Dialogue is an intensive professional development program for men and women who are likely to become the people making decisions on the way their organisations, businesses, communities or nations respond and adapt to change. The bi-annual Dialogue is an initiative of the highly respected and long-established Commonwealth Study Conference".

Cardno Acil currently has four contracted staff working in the PLP Secretariat Support office in Suva, the capital city of Fiji, as well as three staff working on the Program part-time from its Melbourne office.

This Program Secretariat team works closely with AusAID's Regional Program Director and Manager, who take high level strategic advice from a Pacific Leadership Panel and Research Steering Committee.

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Global mobility adds to Cardno's competitive edge

As gaining entry to work in various countries around the world becomes more accessible, international companies such as Cardno are able to tap into a huge pool of expertise as well as offer rewarding international opportunities for employees.

Cardno's Global Mobility Program, launched in May 2008, currently has numerous staff working in varying locations on large-scale projects around the world.

Cardno Global Human Resources Manager Bill Cadzow said the Program offered significant benefits for the company from both an operational perspective as well as adding to the company's appeal in attracting and retaining the most highly skilled and well-rounded professionals in the industry.

"The Program helps exceptional performers and future leaders fulfil career opportunities and obtain international experience," Mr Cadzow said.

"As the company continues to expand internationally, Cardno recognises the enormous value in supporting international assignments and diversifying resources.

"From a human resources perspective, international assignments in rapidly developing centres of the world such as Dubai or Abu Dhabi hold significant incentives for the company and our staff.

"With more than 3,400 staff located around the world, another strength of Cardno is our ability to handpick staff for projects," Mr Cadzow added.

"International postings help in the exchange of knowledge and expertise as well as share business cultures across borders and divisions," he said.

"They also help provide a solution for flexible interim resourcing demands and provide resources needed to meet client expectations for specific projects."

Cardno's WRG Division in the US is working in collaboration on a number of different projects in the United Arab Emirates (UAE), as well as with teams in Australia.

US-based, WRG Division Manager Darren Welborn said the Division was currently working in collaboration with Cardno's UAE counterparts, with WRG Planning Project Manager Trina Whitman and Senior Sustainability Consultant Seth Otto currently working on four major projects in Dubai and Abu Dhabi.

"WRG are managing the Leadership in Energy and Environmental Design (LEED) documentation process to assist the team in pursuing LEED New Construction certification for some of the projects including a large island resort complex and hotel, and the re-development of four mixed-use fishing harbours in Dubai," Mr Welborn said.

Mr Cadzow said Cardno is also looking at developing international scholarship and volunteer programs where employees can work overseas on international aid related projects.

"Opportunities to work overseas in infrastructure are extensive for employees looking to gain professional development and amazing life experiences."

Marcus Moore is another of Cardno's employees taking part in the Program, recently relocating from WRG Design's Las Vegas office to the Cardno Forbes Rigby office in Wollongong, Australia.

Mr Moore said one of the great things about the civil engineering field is the international opportunities.

"Cardno's been very supportive in the move. I was actually living at my boss' house at first so the transition was made as easy as possible," he said

A cluster of five projects in the Republic of Maldives was a considerable attraction to Structural Engineer Tim Page, who temporarily transferred from his permanent position in Melbourne.

Tim undertook a four-month posting on the island to review design and oversee construction of the new infrastructure projects including a primary school, two kindergartens, a community centre, hospital, sports centre and residential housing development.

Mr Page said his posting was a once in a lifetime opportunity that proved to be a great experience, both professionally and personally.

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Brookwater Estate applies best practise in urban design

Idyllically located on the Greg-Norman designed Brookwater Golf Course approximately 30 minutes west of Brisbane, Queensland, Brookwater Estate is one of south-east Queensland's most exclusive residential addresses with house and land packages selling from over AU\$1 million.

Established in 2001, Brookwater Estate has expanded to include a major masterplanned community comprising luxurious residential developments including The Gallery, Brookwater Rise and The Fairways.

Most recently the estate launched the new multi-million dollar Brookwater Village precinct featuring a state-of-the-art Community Facilities Leisure Centre.

Brookwater Estate incorporates masterplanned urban design concepts and has been recognised by the Urban Development Institute of Australia (UDIA) on two occasions as a leading residential development.

Cardno's Springfield Office was appointed consulting engineers on Brookwater Estate in 2006.

Business Unit Manager Robbie Marshall said Cardno's work incorporated civil design concepts integrated with architecture, as well as leading Water Sensitive Urban Design concepts.

"A highlight of this project is the implementation and use of the golf course area as a water treatment facility," Mr Marshall said.

"The masterplanned development including residential and non-residential areas has been structured around the golf course, with all stormwater drainage flowing into the golf course area for treatment before discharging into the local receiving waterways.

"In these times of climate change when the need to preserve water is vital it certainly helps in watering the golf course and keeping it green."

Mr Marshall added Cardno's successful management of the project over the past two years had resulted in an ongoing partnership with Springfield Land Corporation.

Brookwater Estate utilises a wide range of Cardno's capabilities including civil design, project management, water supply and sewerage, preparation of development approvals and environmental and structural engineering.

Springfield Land Corporation Managing Director Bob Sharpless said Cardno had provided innovative, economically viable infrastructure solutions across a range of

civil, structural and environmental urban development activities.

"Cardno's involvement has been crucial in negotiating development approvals associated with infrastructure such as roads, bridges, traffic and transport planning, water and sewer distribution networks and water quality management," Mr Sharpless said.

Mr Marshall said the team started with seven engineers, drafters and designers and had now increased to almost 30 full-time staff and continued to grow.

"Brookwater Estate is a challenging project because the client has very high standards," he said.

"The infrastructure cost of the total project is around AU\$50 million and when completed more than 1,400 people will call Brookwater Estate their new home."

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"Cardno provided innovative, economically viable infrastructure solutions across a range of civil, structural and environmental urban development activities."



Accuracy, the measure of materials testing specialists



Geotechnical engineering and construction materials testing business, Bowler Geotechnical, joined the Cardno group in February 2008 as Cardno Bowler.

Since starting operations in 1990, the business has contributed to more than 10,000 major infrastructure projects, predominantly in the Asia-Pacific region.

Cardno Bowler's Sydney Business Unit Manager Gerard Midgley said materials testing is an important part of the civil construction process and is often completed in tight turnaround times.

"The speed and accuracy of construction material testing is an important part of our service as the materials incorporated in major civil works, such as road and rail upgrades, must meet specified requirements and be placed and applied in accordance with the project specifications," he said.

"The contractors require an efficient testing service that does not impede the smooth operation of the construction plant. The testing services must also be reliable in terms of technicians being at the test sites as and when requested, and the accuracy of the test results must be above question.

"The most common tests we perform are for compaction and quality testing of materials such as soil, concrete and aggregates."

The Division is currently providing testing services for upgrades to sections of the Pacific Highway in New South Wales

between Karuah and Bulahdelah and Bonville near Coffs Harbour.

The Sydney testing laboratory performs nearly a hundred different types of tests for clients to measure the quality of certain construction materials.

Cardno Bowler currently has more than 230 staff working in office locations across Australia including approximately 150 staff in Queensland, 40 in New South Wales and 30 in Victoria. The Division is managed by base offices in most regional cities in Queensland, as well as Sydney, Melbourne, Deniliquin, Dandenong and Bendigo, and several temporary offices set up on-site as required by clients. Cardno Bowler also has 16 permanent laboratories and 16 mobile laboratories throughout Australia.

Cardno Bowler Division Manager David Bowler said the key to the Division's success had been its ability to deliver accurate results within an agreed timeframe.

"We work with the biggest operators in the business and they trust the results we provide to them," he said.

"The majority of our specialist teams comprise geotechnicians who provide test results to quality assurance engineers who then collate information for a project to meet specifications. Other specialists in Cardno Bowler include environmental scientists, geotechnical engineers and geologists."

Cardno Bowler provides a range of services to major civil contractors including Abigroup Contractors, Boulderstone Hornibrook, John Holland, BMD Group and Leighton Contractors.

For a full list of Cardno Bowler offices visit www.cardnobowler.com.au

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"We work with the biggest operators in the business and they trust the results we provide to them."



Shopping centres of the future

W R G
DESIGN INC.

A major shopping, dining and entertainment complex, the size of 10 football stadiums, is one of the major projects Cardno's WRG Design Division is currently working on in its Phoenix, Arizona office in the United States.

The 170-acre, Marana Spectrum development, is a joint venture between Barclay Group and Kimco Development and will comprise one of the largest regional shopping centre projects in Arizona.

WRG Vice President of Operations Steve Hader said one of the main challenges with this project was coordinating with the multidisciplinary consulting team and integrating with adjacent projects, including a major highway interchange and a large scale residential development.

"Marana Spectrum must integrate with these adjacent infrastructure projects and we have spent a great deal of effort coordinating with neighbours and agencies relating to these projects," Mr Hader said.

"Since the project started in early 2006, Marana Spectrum has required the full-time services of six to eight WRG staff members."

Marana Spectrum comprises 1.6 million square feet of retail, dining and

entertainment options for residents of Marana, Oro Valley and North Tucson, Arizona.

Mr Hader said the development featured three distinct districts including perimeter 'big-box' tenants such as Super Target and The Home Depot, a main street night life scene and a village green entertainment zone, creating a dynamic shopping destination in the region.

"Marana Spectrum is billed as the first full-scale lifestyle mall in southern Arizona," he said.

Mr Hader said the lifestyle mall concept is one that has gained popularity in the US among developers.

"Our designs incorporate concepts such as paved entry patterns, roundabouts, date palms, trellises with planting, water features, fireplaces, seating areas and landscaped entry which inspire a romantic Spanish-style setting.

"Well-known stores such as Super Target, The Home Depot and JCPenney are some of the big brands which have confirmed tenancy, occupying at least 350,000 square feet in retail space."

The entire development will feature at least three anchor stores, several major national retailers and over 100 specialty stores creating a major retail and leisure destination in the area.

WRG Design provided legal surveying, feasibility and preliminary engineering on the project in early 2006.

In 2007, WRG assisted the owner in rezoning the property and negotiating a US\$30 million dollar tax incentive agreement with the governing agency.

Mr Hader said WRG completed the first submittal of the development plan in August 2008 and the construction documents are currently being preparing.

"The project is expected to be under construction within the next 12 months and the complex is anticipated to be opened in early 2011."

"Projects of this scale are exciting to work on as they incorporate a high degree of creativity and team work with the owner, agencies and co-consultants.

"The project experience Cardno gains will differentiate our operation from the firms that simply make plans and will establish us as a significant player in the provision of consulting services for projects of this scale."

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The 170-acre, Marana Spectrum development will comprise one of the largest regional shopping centre projects in Arizona.



Cardno recognised for industry excellence

Cardno has recently been recognised with a number of awards for excellence including the Urban Development Industry of Australia's (UDIA) Queensland 2008 Consultant's Excellence Award, marking significant achievements for various projects.

In Queensland, Business Unit Manager – Environment Michael Chessells and his team received the Consultant's Excellence Award for their work on the Beach Road Holiday Homes project on Noosa North Shore. Cardno's involvement included gaining the approvals of development, environmental and engineering plans, as well as working jointly with Council to deliver the desired outcomes, innovatively designed stormwater management and self-contained water supply and wastewater treatment.

Urban Discipline Leader Graham Tamblyn said Mr Chessells' involvement was crucial in obtaining the approvals by providing leading edge technical reports and environmental solutions.

"The project involved the Brisbane office's Environmental, Civil Infrastructure and Water Engineering teams working together to develop environmentally sustainable solutions for a highly sensitive site," he said.

"The teams' innovative approach to creating the infrastructure and homes dispersed throughout the natural bushland, along with the sustainable environmental

solutions, has led to the constructed project being recognised as world's best practise."

Cardno consulted on a number of other projects which won UDIA Queensland Awards including the Seaspray development at Yeppoon in central Queensland which won the Environmentally Sustainable Development – Land Based award; the Forest Ridge Project for the Best Master Planned Development Award; the Waterline at Bulimba project for Best Residential Design Award; and Visage at Hyatt Coolom on the Sunshine Coast which received the Large Medium Density Development Award.

Cardno was a major sponsor of the UDIA Queensland Awards, sponsoring the Environmentally Sustainable Development – Land Based Award category and donating the grand prize of the night, a return trip for two to Shanghai, China.

In New South Wales, Cardno received eight awards at the 2008 Stormwater Industry Association of New South Wales (NSW) Awards for Excellence held in July on the Gold Coast.

Winning award categories included Stormwater Research for the Manly Council Climate Change Adaptation and Mitigation Plan, project managed by Cardno Lawson Treloar; Stormwater Education for the Fairfield City Council Water Management Plan, project managed

by Cardno Willing; and Stormwater Software Development for the Water Sensitive Urban Design Tools project, also project managed by Cardno Willing.

Cardno's NSW team, XP Software, Cardno Forbes Rigby and Cardno Young received High Commendation or Merit Awards in the following categories:

- Stormwater Software Development (xpswmm2D software)
- Stormwater Measure / Device (Haywards Bay Wetlands and the Rehabilitation of Kenny Creek in the Smeaton Grange projects)
- Stormwater Management (Tullimar Village and the Canberra International Airport Stormwater Drainage Review projects).

Also in NSW, Cardno Forbes Rigby won a major award at the Shoalhaven City Council's bi-annual Awards for Excellence in Design in August for its work on Stockland's stage one completion of Bayswood, a coastal bushland masterplanned community next to a National Park on the NSW coast. The team received the award in the Subdivision Design category.

Cardno Forbes Rigby Director, David Laing, said the project was the first of its kind in the Shoalhaven region to adopt a wide range of water sensitive urban design principles.

Cardno received eight awards at the 2008 Stormwater Industry Association of New South Wales Awards for Excellence.



Growing sustainable physical infrastructure

While large-scale industrial developments and sustainability have not always been traditional bedfellows, one development on Sydney's outskirts has proven the two concepts can work together with outstanding results.

Investa's 58.8 hectare Iron Bark industrial development, located south-west of Sydney, is a benchmark in smart and sustainable development.

Located within a 200 hectare estate at Smeaton Grange, the innovative new precinct has combined contemporary industrial design with environmental rehabilitation to create a showcase infrastructure development.

Cardno has worked in close partnership with Investa to achieve this result, demonstrating the group's multidisciplinary expertise across the specialist areas of civil design, construction management and project management services.

Cardno Senior Project Manager Chris Gantt said Cardno was responsible for the design and planning for the entire development, including bulk earthworks, road and pavement designs, sewer and water designs and bridge design.

"These works encompass civil design, structural design of retaining walls, traffic design and full service project management for the precinct's subdivision, as well as liaison with local planning authorities," Mr Gantt said.

"Our industry expertise and ability to deliver a coordinated, multidisciplinary service proved a key advantage during this period, enabling us to alert the client of a change in development fees which achieved a cost saving of AU\$3 million.

"Furthermore, we identified use of a block of land not scheduled in the original development plan, expanding the available space in the precinct."

Much of the site had been significantly degraded prior to Investa's acquisition and a considerable amount of activity focused around the restoration of key environmental areas.

"A key part of Cardno's work was preserving and enhancing the precinct's 9.3 hectare riparian zone, which comprises a natural creek that runs through the heart of the precinct and acts as a refuge corridor for local fauna and flora," he said.

"In the process, we've been able to take a fallow and degraded piece of land and turn it into a precinct where world-class industrial operations can sit alongside a rejuvenated, thriving wildlife corridor.

"The creek design and rehabilitation has proved so successful that it has been established as a benchmark by the New South Wales Department of Energy and Water, as well as local councils, for similar works."

Mr Gantt said the newly-rejuvenated precinct, which comprised more than one million new plants, would also be used by the nearby Botanical Gardens as a seed bank.

Cardno's project management, civil, traffic, structural, hydraulic and environmental teams in New South Wales are currently working with Investa in the building construction phase of the development.

Mr Gantt said the Iron Bark project further strengthened the company's excellent partnership with Investa.

Investa's Development Manager New South Wales Richard Harris said Iron Bark represents a dynamic shift away from the traditional perception of industrial estates.

"Iron Bark is modern, sustainable and sleek," Mr Harris said.

"The large riparian area, together with integrated amenities including a gym, squash courts, pool, childcare centre and day spa, provides everything employees need within the precinct."

Mr Harris said working in close partnership with Cardno, rather than simply a contractor-consultant relationship, has delivered outstanding results.

"Cardno's ability to not only project manage, but also to deliver, all our design and construction needs made the smooth delivery of this innovative project possible," he said. "Without them, it wouldn't have worked."

The Iron Bark industrial precinct is due for completion in 2009.

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**"Without Cardno,
it wouldn't have
worked."**

News at Cardno

Cardno Grogan Richards wins major design contract with Citywide

Australian physical services company Citywide has appointed Cardno Grogan Richards as the Design Services Provider to Citywide for the City of Melbourne's annual maintenance works.

The contract is for the next three to five years and incorporates three main types of services – Routine Maintenance Services, Design Services and Construct Services. Cardno Grogan Richards will service the design component and assist with the construction advice and certification aspects.

Ralph Lowe, Business Unit Manager of Cardno Grogan Richards' civil team, said Cardno Grogan Richards is thrilled to have the opportunity to work with Citywide on such a major contract.

"The works will be undertaken on a project basis and include infrastructure such as road and footpath pavements, signs, street furniture, stormwater drains, pavement markings and parking metres."

"Our services will involve survey, design, preparation of cost schedules to identify the value of works for each project, quality

assurance and certification of the design works," he said.

Seven Cardno Grogan Richards staff will co-locate with Citywide at the Citywide Civil Infrastructure Services office in North Melbourne for the duration of the contract.

Mr Lowe said given the nature of the contract Cardno is keen to form a strong working relationship with the Citywide team.

"We believe co-locating some of our staff will help to achieve this," he said.

Micro Drainage celebrates 25th anniversary

In June, Cardno's software business Micro Drainage celebrated 25 years of providing leading drainage design software to engineering consultants and water companies across the UK and Ireland by hosting a 25 Year Conference.

The one-day conference was held in Reading, England and attended by more than 200 delegates.

Micro Drainage Managing Director Aidan Millerick said the conference was an opportunity for civil engineering professionals to discuss industry issues and review and receive training in using Micro Drainage's recently updated software.

"The highlight of the event was a conference on integrated surface water management. During the conference industry speakers and delegates discussed the impact of climate change and surface water flooding on infrastructure," Mr Millerick said.

Micro Drainage presented two case studies that highlighted the realities of flooding on critical infrastructure as well as design solutions. One case study

showed the impact of flooding on the town of Thatcham in England, the other demonstrated how sustainable systems now in place in Upton, England appear to be controlling flood waters and protecting critical infrastructure.

Mr Millerick said Micro Drainage's *WinDes* software was used to model the events and assess the effects of flooding.

"Using *WinDes* we presented the impacts of the events in a way that was graphically compelling and showed the reality of what can happen," Mr Millerick highlighted.

At the conference, delegates could also discuss their specific projects and software requirements with the Micro Drainage team at technical helpdesks.

WinDes is currently used by almost every water services company in the UK and helps engineers analyse the environmental impact of extreme rain and climate change and design sustainable and cost-effective drainage systems.

For more information on Micro Drainage visit www.microdrainage.co.uk

Inaugural Harold Davies Professional Scholarship awarded

Cardno has named Emerging Markets Group Accountant Girum Admassu as the inaugural winner of the Harold Davies Professional Scholarship.

The Scholarship aims to recognise and reward a standout performer in a non-engineering role and further enhance the winner's strengths by encouraging and providing support for personal and professional development.

Mr Admassu, who has been with the Emerging Markets Group for three years and is the team's financial analyst, said he was surprised but pleased to be named the winner of the Scholarship.

"Cardno is a diverse company with many opportunities to learn and grow every day," he said.

"Winning this scholarship will allow me to further my education or participate in professional development programs, ultimately helping me and Cardno in the future," said Mr Admassu.

The Scholarship is named in honour of Cardno's co-founder, Harold Davies, who had a vision of building a company committed to innovation and high quality operations.

Cardno also recently launched the Gerry Cardno Services Scholarship, which aims to recognise a member of staff in a services role who has made a significant contribution to the company.



Record results and continued growth for Cardno

In August, Cardno announced its 2008 financial year results including a 50.4 per cent increase in revenue to AU\$399 million over the previous financial year.

Managing Director Andrew Buckley said the company has put considerable effort into the integration of recent merger partners and building the business via cross selling.

“During the year we acquired Perth-based structural and civil engineering firm Buckland Engineers Australia, geotechnical engineering and construction materials testing business Bowler Geotechnical and leading UK-based water engineering software company Micro Drainage,” he said.

Cardno management plan helps ensure the future of coastline

A Cardno foreshore management plan is helping to ensure the conservation of the natural environment and biodiversity of the Burns Beach coastline in Western Australia.

The West Australia Division’s Environmental Services Business Unit was engaged to assess and provide a management plan for all environmental aspects of the Burns Beach Estate, a significant coastal residential development in Perth’s northern suburbs.

“These additions have expanded our geographic and technical capabilities and are already making positive contributions to Cardno,” said Mr Buckley.

Cardno remains committed to its strategy of growth through organic growth and via the acquisition of businesses that complement the group’s existing service offering.

Mr Buckley said “The outlook for Cardno is strong and we will continue to consider strategic opportunities in Australia and internationally while ensuring all acquisitions are well integrated.”

Since the full year results announcement Cardno has made three acquisitions:

Cardno Ecology Lab – August 2008

The Ecology Lab is a specialist Sydney-based marine and freshwater ecology

The Business Unit’s Manager, Jason Hick said a key component of the Burns Beach Foreshore Management Plan was a comprehensive framework for the integration of the development area with the coastline.

“It also set out a plan for revegetation and stabilisation, access control, path layout, monitoring and management practices,” Mr Hick said.

“In developing the Management Plan, we undertook extensive consultation with key stakeholders including the City of Joondalup, Department for Planning and Infrastructure Western Australia and local community and environmental groups.

consultancy. The acquisition expands Cardno’s environmental services capabilities in New South Wales to around 40 people.

Cardno Spectrum Survey – August 2008

The acquisition of Perth and Kalgoorlie-based Spectrum Survey & Mapping complements Cardno’s growing presence in the resources and survey sectors. Spectrum Survey & Mapping specialises in open cut and underground mine survey, GPS survey, engineering survey and cadastral survey.

TBE Group Inc – September 2008

TBE is a US-based consulting engineering firm and represents Cardno’s largest acquisition. Comprising 450 staff located in offices across 19 US states, TBE primarily services transportation and municipal clients and is also a market leader in subsurface utility engineering.

“We were also responsible for securing environmental approvals and providing input into structure planning,” Mr Hick added.

Cardno’s Foreshore Management Plan was central to the Burns Beach Estate being awarded a Special Commendation at the 2007 Western Australian Coastal Management Awards of Excellence.

The Burns Beach Estate will be developed in nine stages over the next four to five years. Cardno is currently project managing the revegetation of the site, which is into its third year.

Cardno’s head office relocates to green building



In response to Cardno’s rapid growth the company’s global head office and Brisbane office have relocated to the eco-friendly building Green Square in Brisbane’s Fortitude Valley.

Green Square is the first 6 Star GreenStar rating building to be completed in Queensland and is located in one of Brisbane’s emerging commercial hubs.

Cardno Managing Director Andrew Buckley said the move was an ideal opportunity to house the company’s global head office and Brisbane team in a modern, sustainable building.

“Cardno has experienced significant growth in recent years, both organically and via acquisition. Over the last five years Cardno’s organic growth has averaged between 7 and 9 per cent annually, and even higher in Queensland. Our relocation to Green Square can accommodate our future expansion.”

“With significant work assured across a range of physical, social and economic infrastructure services the outlook is bright for Cardno,” he said.

The relocation represents an opportunity to increase cross selling and the ongoing integration of Cardno’s acquired businesses.

Mr Buckley said the move to Green Square also demonstrates Cardno’s commitment to the environment, given sustainability is a core value across the group.

In addition to a 6 Star GreenStar rating, the building delivers environmental initiatives consistent with a 4.5 Star Australian Building Greenhouse Rating. Green Square’s environmentally sustainable design attributes include floor to ceiling perimeter glass on all exterior surfaces to optimise natural light.



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