2008-09 Annual Review
Sustainability: seeking solutions.
Where we came from

SKM was founded in a suburban home in 1964 by Bruce Sinclair and Jack Knight. The firm was originally four people — a secretary, a draftsman, Bruce and Jack. While Bruce and Jack are now retired, they both maintain close contact with the firm — and the firm remains closely tied to the founding culture and values they gave us: openness, integrity, high professional standards and supporting one another to achieve outstanding results.

Where we are going

SKM has a plan for where it will be in a decade — our 2020 vision — when it will:
• be renowned for delivering a positive and enduring impact on the world
• still be fiercely independent and employee owned
• have a global reach based on client needs
• be a top 10 design and delivery firm, globally
• have balanced operations across the Asia Pacific, North and South America, Europe/Middle East/Africa
• still be delivering the edge that helps our clients achieve outstanding success.
SKM at a glance

TOTAL NUMBER OF EMPLOYEES
5,854 worldwide

GLOBAL REVENUE
A$1.136 billion

SOME EXAMPLES OF OUR MAJOR PROJECTS
Planning Approval, Wandylaw Wind Farm, United Kingdom (UK)
Tesco Supermarket, Cheetham Hill, Manchester, UK
Isle of Grain Combined Heat and Power Station with LNG re-gasification, UK
Regional Assistance Mission to Solomon Islands Infrastructure Program
Cadia Gold, New South Wales, Australia
Shepparton Irrigation Modernisation Project, northern Victoria, Australia
Hume Highway Southern Alliance, New South Wales-Victorian border, Australia
Cape Lambert Port Upgrade, Western Australia
El Teniente underground copper mine, Codelco, Chile

CASE STUDY 1
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El Teniente, Chile
South America
### Facts and figures

#### WATER AND ENVIRONMENT
- General Manager: Geoff Linke
- **No. of Employees:** 1,372
- **Earnings:** A$205m

#### BUILDINGS AND INFRASTRUCTURE
- General Manager: Michael Shirley
- **No. of Employees:** 1,795
- **Earnings:** A$280m

#### MINING AND METALS
- General Manager: Santo Rizzuto
- **No. of Employees:** 2,160*
- **Earnings:** A$381m

#### POWER AND ENERGY
- General Manager: Mark Clarke
- **No. of Employees:** 743
- **Earnings:** A$138m

*Includes 863 joint venture staff

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**CASE STUDY 2**
- page 15
- Hume Highway, Australia

**CASE STUDY 3**
- page 19
- Irrigation project
  - Victoria, Australia
Sinclair Knight Merz was established in Sydney, Australia in 1964.

Today it is a leading global engineering, sciences and project delivery firm.

Our common purpose is to deliver a positive and enduring impact on the world.

We aim to design and deliver innovative projects for clients, communities and environments that will shape our future together.
Sustainability: seeking solutions.

Chief Executive’s message

It has been a challenging year, yet one that has presented new opportunities and left SKM in remarkably good shape.

While the global financial crisis affected business activity in all of our sectors, we were helped by our strength and expertise in areas of strong demand, such as water and environmental work, and through new projects via government stimulus packages.

The importance of our client relationship strategy — where we have chosen the clients we want to work with, rather than the projects we want to work on — was demonstrated with strong demand for our services from these key clients.

I’m very pleased that the quality of our work as measured by an independent client satisfaction survey showed a strong improvement in the year, with 87 per cent of clients saying we are doing a good or very good job.

While our financial performance did not match 2007-08, we performed well, and importantly have very low debt. This has put us in a strong financial position as we consider merger and acquisition opportunities in the coming year to expand our already substantial global reach and build our skills.

During the year we began the rollout of a sustainability awareness program for all employees, with a view to integrating sustainability into everything we do. We regard looking at projects from an economic, social and environmental point of view as more important than ever, and clients are increasingly responsive to our innovative, sustainable ideas.

As part of this we need to walk the talk, and we made significant inroads into our own greenhouse gas footprint during the year, cutting our emissions by 11 per cent. This is the first year of our three year target to cut our emissions by 30 per cent per person.

We have set a clear vision on where we want to be when financial conditions improve and markets pick up and, as a result, we are investing in our people, systems and strengthening our key relationships.

We expect the coming year to offer further challenges and opportunities and we are in a strong position thanks to our robust business approach.

Paul Dougas
Managing Director
and Chief Executive Officer
2008-09 achievements:

- Increased overall client satisfaction to 87%
- Finalised our 2020 Vision – a vision of what we want the firm to be in a decade
- Maintained very low debt, despite the onset of the Global Financial Crisis
- Appointed 57 new owners of the business
- Revenue in excess of A$1.1 billion
Reducing our footprint

In late 2007, we committed to reducing our greenhouse gas emissions by 30 per cent per person over three years, from April 2008.

In April 2009, we completed our first year — and we cut our emissions by almost 11 per cent. This was a remarkable result, especially as many of our targeted reduction programs only began during the year.

The increasing quality of our data collection (which we began in 2004) led us to revise our starting figures — and reduce our starting base, making any dramatic reductions more difficult.

In Year One, our total overall emissions fell from 25,235 tonnes of carbon dioxide to 23,692 tonnes. Per full-time employee (FTE), our emissions fell from 5.249 tonnes to 4.688 tonnes.

We expect our data collection will continue to improve in the coming year, with better information on land travel in South America and Dubai, improved data on office energy consumption in the UK and South America and a better understanding of the number of staff working permanently off-site.

Sustainability in practice

Sustainability is a core business strategy. We now have 25 sustainability practitioners across the business, in every business unit and in most regions.

Their role is to work with clients and project teams to identify sustainability opportunities and embed sustainability into the design and delivery of projects.

Client response has been universally positive, welcoming the innovative approaches and clear benefits outlined in strong, articulated cases.

Virtual servers

One of the more effective ways of cutting our greenhouse emissions involves adapting our computer servers.

In the past, one server has been used for each application, database or project function — but by using more powerful equipment, one physical server can host several ‘virtual’ servers.

This can lead to a significant reduction in power consumption, most notably through the reduced cooling required to keep servers functional. It has been estimated that about 15 per cent of the energy in a standard commercial building goes into a server room.

Having fewer physical servers also means there is more space in an office building for other purposes.

During the year we dramatically reduced the amount of equipment used at our Sydney offices, which now have 15 machines hosting 161 logical servers. We are also using software that more effectively uses data storage capacity.

We have identified another 300 physical servers running globally and about 75 per cent of these could be virtualised.
Air travel

Air travel accounts for 35 per cent of SKM’s greenhouse gas emissions, second only to our buildings. With our global reach, many of our staff need to fly. However, in the past year we have worked hard to reduce our air travel (which we measure in kilometres flown).

One significant influence during the year was locating our Annual General Meeting in Sydney, rather than Kuala Lumpur. This single step cut total company emissions by 3 per cent.

There has also been a noticeable uptake in video conferencing across SKM, with higher quality technology rolling out globally likely to further increase its use.

Our buildings

Buildings make up 53 per cent of our greenhouse gas emissions. Being able to track these emissions is therefore central to our ability to meet our 30 per cent per person GHG reduction target. During the year, we opened new ‘green’ buildings in Brisbane and Auckland, which will deliver long term savings.

About 82 per cent of our building emissions eminate from our Australian operations, which house 60 per cent of our people. This is because of the high use of black and brown coal in Australia for energy generation.

We have invested in a range of measures to cut our power consumption, such as computers that turn off when not in use and lights with motion sensors that switch off when no one is nearby. We have also reduced the number of appliances such as printers.

In September 2008, we moved into a new building in Brisbane with a five-star fit-out. Energy saving features helped reduce our emissions in the Queensland region by 16 per cent.

In April 2009, our Auckland office officially opened, bringing together our 250 Auckland employees under the one roof. The base building has a four-star rating under New Zealand’s Green Star Office Design scheme, with SKM people working to achieve a five-star rating for the interior.

Our people are encouraged to ride to work and processes are in place to encourage waste recycling and energy monitoring.

rEvolutions at SKM

In March 2009 we launched rEvolutions, an internal program that gives our staff a better understanding of what sustainability means in their day-to-day work.

Feedback from the four-hour program has been very positive and has reaffirmed that leaving a positive legacy is a strong motivator for staff.

rEvolutions is designed as a starting point that encourages our people to think, discuss and apply sustainability principles in their work and projects. A project to ‘maintain momentum’ for those who had already been through the program began before the end of the financial year.

Some clients have expressed interest in a similar program for their employees.
How we work as a global team

Virtual teaming

The continued shortage of world-leading skills, and the large scale of projects in which we are engaged has driven us to find more collaborative ways to provide the depth of technical expertise and specialisation that our clients need.

We have developed an approach we call ‘virtual teaming’. Virtual teams are built on the principle of moving the work to where our people are. Using SKM’s centres of capability, we draw on pools of technology and skills and, using our global resources, put together the best team for each project.

We have enjoyed great success with virtual teaming, aided by modern technology that allows meetings by video or teleconference, and file-sharing that allows team members across the globe to access the latest project files.

In cases where there are tight timeframes and critical deadlines, virtual teams have worked around the clock across different time zones, speeding up the project delivery.

Whatever and wherever the project, we have proved that we can provide the best thinking and the most advanced knowledge, bringing together a diversity of views and experience.

Virtual teaming often brings cost benefits. It also allows SKM employees to work from their home cities, which contributes to their work/life balance. And it saves the time and expense of flying our specialists around the globe, reducing SKM’s overall greenhouse gas emissions.

Going for gold

SKM’s virtual teaming has contributed to the development of Newcrest Mining’s Cadia East project in central New South Wales.

The new underground mine is located east of the existing Cadia Hill open cut and Ridgeway mines, which have been producing gold and copper for almost a decade.

Newcrest decided the new mine should be underground after identifying two sizeable ore bodies about one kilometre and 1.5 kilometres below the surface.

SKM is employing skills from across the firm. This includes expertise in underground crushing (Adelaide), SKM’s practice leader technical support in underground crushing, conveying and materials handling (Brisbane), skilled drafting and electrical engineering (Newcastle), underground conveying expertise (Sydney) and underground mining experience and expertise (Chile).

The contribution from SKM team members in Chile has been integral to the project because of their comprehensive experience in hard rock underground mining.

Fluor is the Engineering, Procurement and Construction Management contractor appointed by Newcrest. Fluor has appointed SKM to provide engineering services for the underground crushing and conveying works.

The mine is scheduled to begin ore production in mid-2011. It will be one of Australia’s largest underground hard rock mines, and is expected to have a working life of at least 30 years.
Geothermal developments realised

SKM’s leading geothermal expertise has helped to develop and deliver geothermal projects on six continents.

Our geothermal team can claim to have been involved with the development of more than 2,500 MWe (Megawatt electric) of geothermal generating capacity which together avoid the production of about 12 million tonnes of carbon dioxide annually.

**Geothermal power has intrinsic benefits as a flexible and reliable source of electricity not subject to the vagaries of primary energy markets.**

So with the drive by many governments in developed and developing countries alike towards mandatory renewable energy targets it is unsurprising that geothermal power is enjoying a renaissance in traditional markets and becoming a hot topic for newer areas where lower temperature resources are now emerging as a competitive source of power.

This is a truly global industry extending well beyond the realms of the traditional markets in the ring of fire that are so familiar to our engineers and scientists. Exciting new developments are being considered in such diverse places as Iberia, Eastern Europe, Eastern Mediterranean, South America and beyond. Interest in the technology is attracting attention from new players whose challenge it is to grapple with exploration activities and evolving regulation as the same time. These new players must draw on the experience of service providers with the expertise to deliver technically sound, robust and commercially competitive outcomes worldwide.

The geographic diversity of this development effort poses challenges for us that we have addressed by using ‘virtual teams’. Geothermal developments are unique to their region and to the specific location. Knowledge of the local political and regulatory framework, geological, social and power network issues is vital to a positive outcome.

SKM has invested in the development of project leadership skills in a number of locations where we can communicate with our clients and channel services into projects. Our new centres of capability for these lead skills include London, Santiago, and Brisbane. The strength of our centre of capability in New Zealand can therefore be applied, secure in the knowledge that communication and responsiveness through local operations can be delivered.

**Earth power**

Geothermal power involves using the earth’s natural heat to generate power, and produces significantly less carbon dioxide than a traditional power plant (some CO2 is released in some processes).

The ability to have a smaller carbon footprint is proving attractive and is driving strong demand for geothermal power worldwide.

A project typically involves drilling between 1.5 kilometres and five kilometres into the earth’s surface (depending on the resource being targeted) into underground reservoirs of steam and hot water or into sedimentary aquifers or hot granite rocks. Heat is extracted through bringing geothermal fluid (brine) to the surface to drive a power plant.

SKM’s unique expertise and experience means we can support all aspects of a geothermal project, from resource assessments and drilling, to piping and connection of a power plant.

Our world-leading skills have evolved since our first geothermal project in the Philippines in the early 1970s. We have since worked in more than 50 countries that have suitable tectonic structure and volcanic ‘hot spots’ close to the surface.
How we work in the community

Corporate social responsibility

SKM is proud to support a range of organisations that substantially contribute to the wellbeing of our society.

During the year, we formalised this process by adopting a corporate social responsibility (CSR) charter that outlines our key principles and objectives. We also agreed our key areas of focus:

- Environment
- Disaster response
- Disadvantaged communities.

In the same way we have forged long-term relationships with our clients, we have pledged to continue long-term relationships with key partners in the areas we choose to support.

We have identified a small number of partners and themes we want to support, and we hope to grow and expand with them in coming years.

These include Engineers Without Borders, where we have developed a strong partnership. We continue to support the Beacon Foundation, which aims to tackle youth unemployment, with a secondary goal of combating indigenous youth unemployment.

We also support RedR Australia, which trains experienced technical experts to work voluntarily in disaster and humanitarian relief efforts. One of our founders, Bruce Sinclair, was a driving force behind the establishment of RedR Australia.

Our aim is to provide practical support using our knowledge and skills, and ensure we build the capacity of the organisations we support. This support is not limited to these organisations – we also support a large number of individual and regional initiatives that are driven by passionate people within SKM.

A sub-committee of the board meets monthly to review and evaluate our CSR activities, and will report each year to shareholders.

Another important initiative during the year was the development of a Reconciliation Action Plan (RAP). This plan will build a platform for SKM’s engagement with Australia’s indigenous communities.

Heritage innovation

An innovative rainwater harvesting system that features water tanks suspended under a historic wharf was developed pro bono by SKM for the Sydney Theatre Company (STC).

The water system minimised the visual and heritage impacts on the iconic timber finger wharf, which has undergone an extensive A$3.7 million redevelopment, demonstrating how even heritage-listed buildings can be made more sustainable.

Stronger ties

Engineers Without Borders (EWB) is an Australian-based organisation that works with disadvantaged communities to improve their quality of life through education and the implementation of sustainable engineering projects.

We have supported EWB for some time and during the year we strengthened our ties by continuing to support SKM staff working on EWB’s global projects and by helping EWB strengthen its governance systems.

EWB’s projects include training Cambodians to provide biomedical engineering support for land mine victims, and introducing water taps and basins into primary and secondary schools in East Timor. They work in many other counties, including Australia, Vietnam, Laos, Indonesia, India and Nepal.

EWB Chief Executive Officer, Daniel Almagor, said about 15 people worked in ‘the field’ at any one time, with others providing support from their home base.

“We also have a learning and change program that, for example, provides refurbished PCs for refugee families in Australia, allowing many people to volunteer their time locally,’ he said.

During the year SKM also donated A$20,000 to EWB from money that had been raised from the sale of SKM merchandise, such as key rings and water bottles, for the undergraduate recruitment program. Feedback from undergraduates about where the money had gone was exceptionally positive.

School’s in

SKM’s Rosemary Green has been honoured as a Member of the Order of Australia (OAM) in recognition of her outstanding work in humanitarian aid programs. Most recently, Rosemary has worked in the autonomous region of Muslim Mindanao in the Philippines, where SKM is delivering a contract supported by the Australian Government to improve access to basic education for the region’s children.
How we work together

A changing market

For the first time in many years, our overall employee numbers fell from the previous year, from a peak of about 6,500 during the year to just under 6,000 at 30 June 2009.

Recruitment experienced a decline, from about 300 people in 2008-09, compared with 2,800 people a year earlier.

Like most professional services firms, voluntary employee departures had traditionally been high, but this fell sharply to about 8 per cent, from 18 per cent a year earlier.

Despite these changes, we continued to recruit graduates and specialists in key areas.

During the year, our employee satisfaction survey gave us the highest employee engagement score we have ever achieved.

All our indicators in the survey went up, despite the changes in market conditions.

Employees say they believe SKM has a strong, values-driven culture, and they enjoy their work, enjoy the projects and clients, are very committed to what we do and enjoy their working environment.

The survey helps us shape and plan future change and initiatives, better understand and address staff concerns and collect data for future comparisons.

All permanent employees shared in our staff bonus scheme (the Performance Excellence Plan) in 2008-09, after a successful trial the previous year. Under the scheme employees can get up to 10 per cent of their base salary as a bonus.

The scheme is aimed at rewarding our employees for their contribution and has been well received. Despite challenging trading conditions during the year, most employees earned a bonus of between 4 per cent and 10 per cent, with outlays of more than A$40 million on staff bonuses and incentives.

Safety first

The health and wellbeing of all our employees is a fundamental SKM commitment.

In 2008-2009 we have continued our safety leadership and culture through the Liveit program. We have continued to build our health and safety standards, practice and governance. Safety commitment and practice is driven by our business leaders, with engagement across the management team. Our reported injury rate continues to improve, and now is best practice at 0.4 Lost Time injuries, for every 1 million hours worked.

Staff awards

The company has five excellence awards that give our staff the opportunity to nominate and recognise their peers.

The awards are a focus for us, as they represent the central themes that drive SKM’s success. The overall global winners are selected from the regional winners. Of the five awards, two are named after SKM’s founders Bruce Sinclair and Jack Knight.

The Jack Knight Medal for demonstrating SKM’s Shared Values: Consulting/Project Delivery. Winner: Blair Thornburrow, Water Resource Scientist, Water and Environment, Auckland

The Chairman’s Medal for Leadership in Health, Safety, Environment or Community. Winner: The Wells Crossing to Iluka Road Team consisting of Ken Robinson, Leigh Finlay, Andrew Spinks, Rachel Heath, Water and Environment and Richard Davies, Buildings and Infrastructure

The CEO Medal for Client Service Orientation. Winner: Dechlan Ellis, Buildings and Infrastructure, Melbourne


How we work with our clients

Our clients

Six years ago, we made a decision about the sort of company we wanted to be.

Central to the decision was that we would choose the clients we wanted to work with, learning their business and expanding with them into new projects and territories. We called this our Relationship Clients First Strategy, and it has proved a successful strategy, both for our clients and for SKM.

Today, more than 80 per cent of our work is with these key clients. This means we can focus on what our key clients need and how we deliver this for them.

This has led to closer working relationships with these clients — we understand their business, their culture and what they want to achieve. In turn, we have learned what is most efficient and effective for our clients.

We have challenged the conventional norms on how large projects are structured and delivered, and continue to explore innovative ideas, such as building larger components off-site and delivering them ready for assembly.

This is resulting in considerable gains for clients in quality, safety, speed and economy. We have also adopted a sustainability perspective in the work we do, in an effort to find innovative solutions.

Thought leadership

A key element of our relationship with clients is our ability to provide ‘thought leadership’, a process we strengthened during the year with an expansion of our achieve program.

The achieve program is an integrated, branded, multi-channel client engagement program, at the core of which are ‘big picture’ issues and thinking relevant to our client base, globally.

Such issues include:
- Global factors affecting industries and organisations
- Trends and innovations in specific industries
- Client goals
- How clients compete and make important decisions
- Who and what influences clients
- How clients can deliver their services more effectively
- What to do with technical lessons learned on a project.

The program includes online articles, targeted emails to distinct clients, achieve branded videos using our leading thinkers, global events, and the quarterly achieve magazine (in print and online).

An important element of the achieve program is monitoring and tracking how we are doing, to ensure the service we provide matches our clients’ needs.

One method is through our annual client satisfaction survey, which showed that satisfaction with our provision of thought leadership rose to 82 per cent in 2008-09, up from 77 per cent in 2007-08.

The CEO Medal for Client Service Orientation

The CEO Medal was awarded to Dechlan Ellis from our Melbourne office for his achievements in establishing and growing our Defence business. He was instrumental in doubling the South East Australia region’s Defence business income, building excellent client relationships and contributing to the success of the Hardened and Networked Army (HNA project), one of the Australian Defence Force’s largest buildings and infrastructure projects. Dechlan is pictured, right, receiving his award from CEO Paul Dougas.
CASE STUDY:
El Teniente, Chile.

In the core of a volcanic mountain about 2,500 metres above sea level, new technologies are set to extend the mine life of El Teniente by 50 years.

Sustainable objectives:
1. The use of automation with remote control to significantly decrease the risk to miners working inside the mine.
2. Tunnel boring machine technology to eliminate the risks of explosives handling.
3. Innovations in energy efficiency to include the intelligent monitoring of mine ventilation.
SKM is working with Codelco in Chile on the New Mine Level Project (NMLP) for the world’s largest underground copper mine — El Teniente.

Situated 80 kilometres south of Santiago, the site has been mined on many levels around an intrusive, volcanic, non-mineralised formation called the Braden Pipe, where the mining infrastructure for each level is located.

The project aims to access a rich copper deposit under the current operational ore body. Reserves of 2,000 million tonnes have been identified, which will be extracted from 2017, using the panel caving and progressive sinking method, with an end date of 2070. There is a ramp-up period of 13 years to reach the maximum throughput of 180,000 tonnes per day, which will be maintained for 18 years.

The project will totally transform the way the mine has operated, making it, in effect, a greenfields project. The plan is to harness new technologies and operations to reduce operational risks and take advantage of opportunities such as remote, automated mining.

Project efforts have concentrated on maximising the use of new technologies for construction and operations, and choosing the best mine infrastructure to keep El Teniente operational for the next 50 years.

Harnessing innovation to constantly improve the way in which mines are developed for long-term sustainability is one of the greatest challenges facing mining operations.

Existing mine infrastructure

The existing underground mine includes six mining sectors at different elevations around an intrusive volcanic, non-mineralised formation that houses the mining infrastructure.

Access to the mine is via a 3.5 kilometre tunnel and ore is hauled to the surface through a railroad system. Once on the surface, the ore is dumped into crushing plants and conveyed to a concentrator where copper concentrate is produced. From there it is sent to a smelter.

An expansion of the mine in the 1960s identified the Level 8 railroad as the main material handling system, constraining much subsequent development that had to consider the railroad as the main haulage system.
Economic

Time efficiency. Centralising services on a single, undercut level will result in time savings, more effective maintenance, simplification of access, and a reduction in personnel.

Operational efficiency. Locating the new mine level below the current transportation level, with access via a new road, and moving ore via conveyor will not interfere with current operations and significantly enhance productivity levels.

Improved access. A new access road to the mine at a lower elevation will reduce travel time for personnel and materials from two hours to one hour in each direction, thereby improving effective working time and productivity.

Innovative technology. New management information systems, including online and real-time information, GPS and radio frequency identification, have been included to facilitate agile decision-making, condition monitoring based maintenance and logistics plans that optimise the maintainability of equipment and facilities.

Efficient materials handling. The new mine level will allow ore to be stockpiled on the surface, close to the concentrator, opening up the potential for future expansion up to 240,000 tonnes per day.

Reducing risks. Tunnel boring machine technology will replace drilling and blasting to simultaneously excavate and ground-support the access and main belt conveyor tunnels. This eliminates the risk of explosives handling and results in a reduction in ventilation requirements due to the non-use of blasting gases. The use of automation with remote control will significantly decrease the workforce exposure inside the mine and allow the monitoring of real-time rock mass behaviour. The remote operation will be controlled from a new corporate building 50 kilometres from the mine site.

Social

Smarter ventilation. Intelligent monitoring of ventilation in the mine will safeguard personnel.

Health and safety. Upskilling personnel to use robotics, automation and technological innovation will provide a safer, healthier outcome for employees and also deliver improved productivity.

Historical preservation. Preserving the original mine camp at Sewell is an important aspect of the El Teniente mining operations. Established in 1906 to house mine works, Sewell had a population of about 15,000 at its peak. In the 1980s it closed when the workers moved to Rancagua. Sewell is now a UNESCO World Heritage site, and a National Monument for Chile. While preservation activities are not directly connected with the NMLP project, ongoing mining operations continue to be respectful of the site’s historical significance.

Environmental

Water management. The project is investigating the introduction of an additional drainage level to collect water, separate solid particles and pipe it along the main conveyor belt to the surface, which will result in greater efficiencies.

Energy efficiency. This concept will be widely used in the project, e.g., in the case of mine ventilation. The application of a main fan control system using frequency convertors in the ventilation drives will deliver energy and operating cost savings. In addition, intelligent monitoring of ventilation in the mine through a system that quantifies the amount of air required will introduce further energy efficiencies.
This is the largest underground copper mining project in the world and described by Codelco as ‘environmentally, economically and socially sustainable — set in the future and utilising new technologies within the context of ore production’.

The involvement of SKM in the El Teniente project demonstrates:

- Incorporating Sustainable Development principles into mine design
- Innovative thinking to identify opportunities for improved mine operations
- Working with clients to meet their business objectives
CASE STUDY:
Hume Highway, Australia

The construction of 32 kilometres of road duplication between Woomargama to Table Top on Australia’s busiest freight route has set new benchmarks in environmental management, sustainable design and innovative construction ideas.

Sustainable objectives

1. To construct a safe, efficient new road with minimal disruption to freight and passenger transport, and minimal environmental and social stress.

2. To achieve excellent environmental outcomes through design, such as realigning Mullengandra Creek and installing a range of flow and habitat structures.

3. To recycle and reuse materials during construction, such as sourcing industrial waste water, and crushing and reusing unused concrete paving materials.
On time, under budget

The Hume Highway Southern Alliance (HHSA) project was completed in August 2009, four months ahead of schedule and within its A$377 million budget.

The alliance undertook planning, design and construction of new highway infrastructure, which included duplication next to existing sections of highway and a ‘greenfield’ section on a new alignment. SKM provided road, bridge and drainage engineering design, as well as leading the environmental approvals and management, as part of the alliance alongside the NSW Roads and Traffic Authority (RTA) and Abigroup Contractors.

‘The greatest measure of client satisfaction is repeat business. And recently the HHSA team was selected by the RTA to deliver the adjacent Woomargama Bypass Alliance.’

Michael Shirley
Innovative construction

When the project was commissioned, it was conditional on it being completed within two-and-a-half years, meaning it could not be achieved by traditional design, construct and maintain (DCM) procurement. Through the alliance approach the process was accelerated with parallel activities occurring across planning approvals, property acquisition, detail design and construction. This included establishing a project site earthworks testing laboratory, single concrete deck pours of two-span bridges, a GPS-guided compaction system for earthwork rollers and concrete paving techniques that were adjusted to harsh seasonal climatic conditions.

In addition, the alliance met the RTA’s challenge to achieve a ‘step change’ in quality for concrete paved roadways through its focus on measuring of quality throughout all stages of construction of earthworks and specific pavement layers.
Recycling water
Large amounts of water are used in road construction and the project took place in drought conditions, with stressed local water resources. The solution was to build a 10-kilometre pipeline from a nearby paper mill, which supplied half of the project’s water from its surplus of treated effluent and cooling water.

Rehabilitation
The best design option took the road through an established landfill. The Alliance decided to excavate, sort, relocate and dispose of the landfill waste, and rehabilitate the site. Recycling included 1,056 tyres and 82 tonnes of steel. More than 4,000 tonnes of suitable waste went to a regional landfill and asbestos was appropriately treated and removed.

Efficient traffic flow was maintained on the Hume Highway during construction, with effective construction staging limiting the number of ‘reduced speed’ areas through the construction zones. Safety was a priority for road users and for construction staff, including adaption of SKM’s ‘Live-It’ behavioural safety training program.

Enhancing biodiversity
Biodiversity in the region will be helped by extensive revegetation of the median and road verges using local native plant species, coupled with rehabilitation of nearby waterways and woodland habitat.
A range of environmental initiatives were incorporated, including:
- 254 nesting boxes were installed to replace hollows in trees that were removed.
- Two aerial rope crossings over both lanes of the highway were installed to allow animals such as squirrel gliders to safely cross the highway above traffic.
- Six squirrel glider pole crossing points were installed, high enough to allow the animals to ‘glide’ safely from one side of the highway to the other.
- Fauna underpasses were installed to allow fish, mammals and reptiles to safely cross under the highway.
Trees felled during construction made 800 logs for the Murray River Re-snagging Program, which is using logs to recreate sufficient habitat for the threatened native fish population.
Other logged material was reused for local forest floor habitat or mulched for landscaping. By-product biosolid materials from a nearby paper mill were used for roadside hydro-mulch, saving money and creating a positive environmental outcome.
Sustainable objectives

1. To secure efficient water supplies to one of Australia’s most important agricultural regions.

2. To stem the massive 30 per cent water loss along the 100-year-old system by updating water channels and delivery infrastructure, thereby making more water available to the environment in the Murray Darling Basin.

3. To engage all stakeholders along the 2,000 kilometres of irrigation channel and ensure no disruption to water supply during the project.

CASE STUDY:
Irrigation project, Victoria, Australia

Outstanding innovation and environmental elements drove the rapid construction of the world’s largest channel automation control project.
Project outline

Following 12 years of drought, farmers’ reliance on an out-of-date irrigation system was threatening the productivity of this key food region.

Over 15 months, the A$290 million project replaced outdated irrigation infrastructure with a new integrated water management system in record time, using innovative approaches to project delivery. The project was a collaboration between Goulburn-Murray Water’s alliance Futureflow (which includes SKM, Transfield Services Australia and Comdain) and a number of suppliers, including Rubicon Systems Australia.

The project was approximately 80 per cent complete by the end of June 2009, with 2,000 kilometres of channel and thousands of irrigation infrastructure assets integrated into an automated water distribution network. The size and scale of the project is a world first.

An efficient approach

The FutureFlow consortium worked under a tight timeline to deliver a significant range of work. It employed a staged and systemic approach to ensure the project was delivered as efficiently as possible, including:

• Negotiating with customers to decommission unsustainable infrastructure and 50 kilometres of under-utilised channels.
• Upgrading the communication network to enable the thousands of new electronic assets to communicate via radio.
• Replacing manual drop bar regulators with more than 1,700 automated regulating structures, known as FlumeGates™, to automate flows and provide information on channel performance.
• Upgrading high loss pools through plastic lining or replacing channels with pipelines.
• Replacing or rationalising 3,500 Dethridge wheels — a 100-year-old technology — with accurate electronic meters.

Many of the new electronic meters are fully automated, meaning they supply water to customers’ farms at the flow rate and times requested by the irrigators. These meters interact with the FlumeGates™ to provide a fully integrated and efficient system, and can also interact with on-farm automation.

The next stage is providing on-farm efficiencies such as the use of soil moisture probes, drip irrigation and high surface irrigation, which have the potential to raise application efficiency from the current 70 per cent to 90 per cent.
Radio waves

The new system includes solar-powered channel control gates and water meters, which are integrated into a radio network controlled by Goulburn-Murray Water’s Operations Support Centre. The water authority expects to have more than 15,000 radio sites over its five water districts by 2012.

Instant water

The new system can automatically process customer orders and deliver the exact amount of water when and where it is required; previously it could take four days for a request to be delivered. Because the system measures inflows and outflows in real time, the performance of each channel can be evaluated and areas with high water loss identified.

Water savings

The project will save more than 94 billion litres of water each year, with most of the water returned to northern Victoria’s stressed rivers and wetlands via environmental flows. The automated channel system will also pass flows into receiving rivers and wetlands in a more controlled fashion, better mirroring natural flow patterns. A proportion of the savings will be returned to local irrigators to increase their water entitlements, further enhancing the viability of their individual enterprises.

Energy smart

The gravity irrigation system is an extremely low energy system. The exclusive use of solar power on the irrigation infrastructure maintains this low energy profile. It is estimated that 215 kilowatts of renewable power is generated from the solar powered system.

Local consultation

A key challenge for the project was to build an excellent relationship with the irrigation community.

In large part this was due to the size of the project, the complex logistics and the tight timeframe in which the project had to be delivered.

Twenty full-time customer consultation officers were employed to meet irrigators, explain the project and help with the commissioning and operation of their new irrigation assets. More than 2,500 individual irrigators and landowners were consulted, and the project’s final design was influenced by the individual requirements of each customer.

Independent farm designers were also employed to provide irrigators with advice about meter size and flow rate. As a consequence the design was continually evolving, requiring excellent cooperation within the alliance as the construction team implemented work in stages.

As a result of this consultation, all customers agreed to works on their property and there was no need to use legal powers to access land.

The local area benefited from employment as most members of the work crews were local and where possible supplies were procured in the region. Rubicon upgraded its manufacturing plant in Shepparton to produce the automated irrigation gates required for the project, providing significant local employment.
SKM’s involvement in the Futureflow alliance demonstrates:

- Delivering a project in record time.
- Flexible engineering solutions for multiple customers.
- A sustainable and environmentally positive outcome.

‘A project is special when it tests the boundaries of what’s been done before. And a project is special when it looks at the broader community context that the project is in.’

Paul Douglas, SKM’s Chief Executive Officer and Managing Director
Client satisfaction

Each year SKM commissions an independent survey of clients to assess our performance and identify areas where we can improve.

In April and May 2009, 775 clients in Australia, New Zealand, Asia, the United Kingdom and South America were interviewed.

In general the results were pleasing, with a strong improvement in overall client satisfaction, up from 82 per cent last year to 87 per cent this year.

Client satisfaction in 11 out of our 12 benchmarks improved on the previous year. The biggest improvement was in SKM’s ability to provide sufficient skilled technical staff, which came in at 91 per cent of clients satisfied.

There were strong improvements in client approval for the diverse range of skills we offer, our flexibility to meet challenges, strong local relationships and our ability to provide thought leadership.

The survey results showed improvement in our flexibility to meet challenges, project delivery and overall engagement.

Our aim is to achieve more than 80 per cent satisfaction in all areas, and we fell short only in one area, project succession planning.

As a result of the survey we have developed initiatives to further improve our client service delivery in the coming year.

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**SURVEY OUTCOMES — OVERALL RESULTS (%)**

<table>
<thead>
<tr>
<th>Category</th>
<th>2007-08</th>
<th>2008-09</th>
</tr>
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<tbody>
<tr>
<td>DIVERSE RANGE OF SKILLS</td>
<td>93</td>
<td>87</td>
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<tr>
<td>EASY TO DO BUSINESS</td>
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<td>87</td>
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<tr>
<td>FLEXIBILITY TO HELP MEET CHALLENGES</td>
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<tr>
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<td>82</td>
</tr>
<tr>
<td>SUFFICIENT SKILLED TECHNICAL STAFF</td>
<td>91</td>
<td>82</td>
</tr>
<tr>
<td>PROPOSALS/ENGAGEMENT OVERALL</td>
<td>86</td>
<td>82</td>
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<tr>
<td>RELATIONSHIP OVERALL</td>
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<tr>
<td>COMMITMENT TO SUSTAINABILITY</td>
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<tr>
<td>PROJECT DELIVERY OVERALL</td>
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<td>PROVIDING THOUGHT LEADERSHIP</td>
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</tr>
<tr>
<td>PROJECT SUCCESSION PLANNING</td>
<td>75</td>
<td>73</td>
</tr>
<tr>
<td>OVERALL CLIENT SATISFACTION</td>
<td>82</td>
<td>87</td>
</tr>
</tbody>
</table>

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‘We are very much wedded to a partnership approach in this type of business. Success requires that we work more closely together.’

Bill Wild, COO, Leighton Holdings
BUILDINGS AND INFRASTRUCTURE
General Manager: Michael Shirley

NO. OF EMPLOYEES 1,795  EARNINGS A$280m

‘Clients want to get more from their existing assets through smarter solutions.’

Rail is a core element of SKM’s transport infrastructure practice and during the year we continued to work on significant projects, particularly in the enhancement of rail corridors to improve efficiency and passenger capacity.

In Sydney, we are part of an alliance team delivering the Kingsgrove to Revesby Quadruplication Project, which involves delivery of two additional tracks (each 6.5 kilometres long) between Kingsgrove and Revesby in south-west Sydney.

In addition to bridge and station works on Sydney’s CityRail Network, we are also working to deliver the A$236 million Richmond Line Duplication in Sydney’s north-west as part of the Richmond Line Alliance.

These projects are part of the NSW Government’s Rail Clearways Program.

During the year we provided extensive support to BHP Billiton’s Rapid Growth Projects in the Pilbara, Western Australia including track works, signalling, communications, locomotive preparation facilities and car repair workshops.

Our rail expertise extends to strategic advisory work that maximises operational efficiencies, demonstrated by our work in Melbourne examining the city’s train timetables, route selection and platform use, which resulted in the train operator changing the routes and times of some trains to produce better outcomes for peak-period passengers.

In the UK, we completed a strategic transport study for Transport for London and the Greater London Authority associated with plans to add 40,000 new residents and 27,000 jobs to the Vauxhall Opportunity Area.
The year presented some significant project developments in transport infrastructure and social infrastructure. While there was some slowdown in activity due to global economic conditions, government stimulus packages provided a strong new flow of work across a number of sectors.

In Brisbane, we helped complete the first section of the Eastern Busway, a 2.1-kilometre busway that is helping the Queensland city improve public transport efficiency and manage congestion.

SKM provided engineering design services to the busway as part of the Boggo Road Busway Alliance with the Queensland Department of Transport and Main Roads and Thiess Pty Ltd. The alliance completed the challenging A$366 million project on time and budget. We continue to work on the next stage of the busway.

In Melbourne, we are working on an alliance with John Holland, Vic Roads and UK design firm Flint & Neil to strengthen the Westgate Bridge, a unique cable-stayed box-girder design, to ensure it has effective capacity for future traffic.

SKM was also a member of the Monash Freeway Upgrade Alliance with Vic Roads and Abigroup, to provide extra lanes and accommodate the introduction of an intelligent freeway management system to help ease congestion and improve the flow of traffic.

Our successful delivery of 32 kilometres of highway as part of the Hume Highway Southern Alliance (see centre spread pages) helped us win a further project improving the main Sydney-Melbourne road corridor.

In New Zealand, SKM is lead design consultant working with the Leighton Works joint venture to undertake the engineering detail design and construction monitoring for the 4.5-kilometre section known as the SH20 Manukau Extension.

In South Australia, we continued our principal role as project manager on the A$624 million Hardened and Networked Army Edinburgh Defence Precinct, a strategic military base that will be home for 1,200 soldiers. Construction commenced during the year and the project is expected to be completed by late 2011.

Our role on the A$600 million Port of Melbourne Corporation channel deepening project reached a conclusion during the year. The project allows access to deep draught container ships to the port’s container terminals.

In social infrastructure we are delivering Building Education Revolution programs in four Australian states during the year as a result of a substantial stimulus package announced by the federal government. Our roles are varied across the projects and encompass project management, structural and building services, engineering and architecture.

In health, the Stobhill Hospital in Glasgow, Scotland opened in May 2009. SKM provided the civil, structural, geotechnical and geo-environmental engineering for the project. SKM is providing fully integrated design services of the new A$1.76 billion Gold Coast University Hospital and during the year our project wins in the sector included building services and civil engineer for the A$250 million redevelopment of the Wagga Wagga Hospital in NSW.

Completed during the year was the innovative A$80 million Queensland Tennis Centre. SKM provided structural engineering services as part of a collaborative team that included architects Populous and Mirvac Design, Mirvac Construction and the state government-owned authority Stadiums Queensland.

The S3 stadium in the Dubai Sports City complex, a 25,000 seat cricket arena, opened with the series between Australia and Pakistan. SKM provided a range of design and independent verification services in architecture as well as structural and building services engineering disciplines for all arenas in the complex.

In Asia and India, our program management of ExxonMobil and Shell’s retail fuel network developments continued to operate with an outstanding safety record. Our work with Shell expanded to include sites in Indonesia and New Zealand.

A low-carbon supermarket

In January 2009, UK retailer Tesco opened its first low-carbon-footprint store, with significant energy savings during construction and operation.

During the design phase, SKM used its leading skills in elegant long span timber frames to design supporting columns, rafters, beams and purlins built with glue laminated (Glulam) timber rather than steel.

This significantly reduced the carbon footprint, because timber is less energy intensive to produce (the timber came from sustainable spruce forests). For every cubic metre of steel replaced by timber, the store saved almost one tonne of carbon emissions.

This new sustainable architectural approach delivered an aesthetic, economic and innovative result, which has a host of energy-saving and sustainable features. As a result, the Cheetham Hill, Manchester, store emits 70 per cent less carbon than a similar building constructed three years earlier.

The roof allows more natural light into the store creating less need for artificial light and electricity usage. A sophisticated lighting system automatically dims individual lights when natural light increases. The design included more efficient heating and ventilation systems, a combined heating and power (CHP) plant to generate electricity and a more environmental shop fit-out.

Carbon dioxide is used in the fridges and freezers as it has a much lower environmental impact than the gases traditionally used in these units. Energy is then saved by using LED lighting in the fridges and freezers instead of fluorescent bulbs.
Innovative iron ore upgrade

The A$1.1 billion upgrade to the Cape Lambert iron ore facility in Western Australia was completed during the year, under budget, ahead of schedule and with an outstanding safety record.

SKM was the Engineering, Procurement and Construction Management contractor for the project, which expanded the iron ore shipping capacity of the Rio Tinto facility from 55 million tonnes per annum to 80 million tonnes per annum.

The project included a stockyard expansion, 256-metre extension to the ore wharf and new ship-loader to create four shipping berths.

SKM used innovative modular wharf construction to deliver seven wharf deck modules which were fabricated in China, shipped to the Australian Maritime Complex, south of Perth, fitted out with all mechanical and electrical equipment and then shipped to site for off-loading by heavy lift ship.

About four million man hours were worked on the project, during which time one million man hours lost time injury free was achieved in two separate periods.

The upgrade takes Rio Tinto’s iron ore shipping capacity from the Pilbara region of Western Australia to 220 million tonnes per annum.
The mining and metals industry is a cyclical business. After two or three years of substantial growth in a hot market, the industry slowed markedly in 2008-09 and returned more to its ‘normal’ level of activity.

Our relationship client strategy proved its importance during this change as we suffered less volatility than many of our competitors.

Our ability to work in effective, global teams, using expertise from SKM offices across the world, provides added value to our clients’ projects. For example, we have teams in South America providing work for iron ore projects in Western Australia and underground mines in New South Wales. In turn, we have people in Brisbane and Perth providing work for projects in Brazil. Our expertise includes underground mining, which is a worldwide trend and gaining favour ahead of open pits.

Because mining companies are well aware of the effects their projects can have on the environment and local communities, they understand that SKM can provide comprehensive support sustainability issues. Our clients want smarter solutions when it comes to building new projects and updating current equipment, particularly with more efficient use of water and energy.

Our innovative approach extends to pre-assembly and modular on-site construction in new projects — a practice that is cheaper and safer. This has been common in the gas sector and is becoming increasingly common in the mining sector.

During the year we worked on approximately US$20 billion of projects across Australia, Chile, Peru, Brazil and Africa, delivering studies and EPCM projects for work in commodities such as iron ore, coal, copper, mineral sands and aluminium.

Other developments during the year included:
- Completion of negotiations with BHP to finalise iron ore development agreements with SKM-Fluor, in one of the largest contracts in which SKM has participated.
- A new umbrella agreement with Rio Tinto for all our works on the company’s iron ore expansion.
- A A$94 million contract in joint venture with SNC-Lavalin to provide EPCM services for Rio Tinto Alcan’s Boyne Smelter Major Sustaining Projects in Queensland.
- Winning top engineering honours from Engineers Australia for Rio Tinto’s Dampier Port Upgrade in Western Australia.
- The major expansion of Codelco’s Andina mine, which will increase output by 23 per cent.
- Development of our UK office, which is expanding our work in Africa, Europe and the Middle East.

We have performed well in a difficult year and held on to our best people. We have continued to recruit graduates because we believe we need to keep feeding the new blood into the system. The coming year is unlikely to be as bullish as recent years as the market consolidates. However with our high-level skills, knowledge and ability to find solutions, SKM is well placed for success.

Because we have long-term relationships with our clients — mining houses such as Anglo American, BHP, Codelco, Rio Tinto, Newcrest, Vale and Xstrata — we have developed a deep knowledge of their businesses and can work with them to define and solve their problems.

Our clients want smarter solutions when it comes to building new projects and updating current equipment.

Made in China

In August 2008, SKM opened a China office, which is designed to support our procurement processes for major projects around the world.

SKM has managed global procurement for many large projects, such as the Cape Lambert iron ore upgrade, which required wharf deck modules (3,500 tonnes of fabricated steel), wharf deck pre-cast concrete modules (1,000 tonnes of concrete) and dolphin top modules (3,200 tonnes of fabricated steel).

Because China is now an integral part of the global supply chain for these types of projects, our office was set up to support clients who use Chinese contractors, ensuring what is made in China meets our clients’ expectations.

The office, with engineers and expatriate staff, supports procurement and inspection of fabricated steelwork and pre-cast concrete.

During the year this included the inspection of a major fence fabrication for a Solomon Islands project and the inspection of ash silo system fabrication, as well as design support work for major client projects in Australia and South America.

The office’s engineering design support services include material handling, bridge structures, earthworks and drainage, supply and fabrication program management, material expediting/fabrication inspection and logistics.
Growing a renewable outcome

The Sunshine Electricity project is a joint venture between NSW Sugar Milling Cooperative and Delta Electricity.

The power plants are fuelled by bagasse, the fibrous residue left from sugarcane processing, which was previously burnt in the open during the sugarcane harvesting season. The bagasse is now used to produce electricity, which powers neighbouring sugar mills. Any excess electricity is supplied to the grid.

The use of additional bagasse fuel, available through the change to green harvesting and whole cane milling, improves the local air quality because burning the cane prior to harvesting is no longer required.

SKM supplied engineers for the project with detailed knowledge in electrical systems, instrumentation and control, civil and structural, materials handling, steam turbines and performance modelling.

The project generates Renewable Energy Credits under the Australian Federal Government’s Mandated Renewable Energy Target legislation. The Condong cogeneration plant uses tertiary treated effluent from the Tweed Valley Waste Water Treatment Plant.
Power and Energy continued to be a dynamic sector in 2008-09, with growth in demand for renewable energy and significant investments underway in Australia’s gas industry.

**Our teams were engaged in a wide range of activity in countries including Oman, the United Kingdom, Australia, Papua New Guinea, Indonesia and Vietnam.**

During the year we were involved in a range of projects including hot rock exploration in Australia, geothermal developments in Indonesia for Chevron, mining related power projects for Xstrata in Papua New Guinea and coal seam gas based LNG facilities for Santos.

While we saw some slowdown in activity during the year due to the global financial crisis, we expect another busy year ahead. In **Belgium**, we began a project to provide comprehensive owner’s engineer services for the new €450 million T-Power 400 MW Combined Cycle Gas Turbine power plant. T-Power is a consortium of Tessenderlo Chemie NV, Siemens Project Ventures and International Power plc.

In **Chile**, SKM is set to establish itself firmly as a centre for excellence in hydropower, wind, geothermal and solar energy. The need for new capacity to replace diminishing gas imports from Argentina has created strong international interest from key clients.

In the **United Arab Emirates** and **Oman** during the year we completed network development plans.

In the **UK**, power transmission development is dominated by the combined requirements of asset replacement and the shift towards offshore wind power generation.

SKM has established a niche reputation in offshore wind farm transmission and distribution, with our most significant project to date being the provision of design services for Greater Gabbard, the world’s biggest offshore wind farm.

We also provide a full range of environmental and technical services for onshore and offshore connections. This complements our global expertise in renewable technologies, including geothermal, hydro, biomass, and our in-demand skills in climate change and sustainability engineering.

**During the year, the global trend towards renewable energy continued, boosted with incentives and stimulus packages.**

In **South Australia**, our leading owner’s engineering services were used on the combined Hallett area Wind Farm projects development, which will be operated by AGL Energy Limited. These projects are being delivered in a number of stages.

Forty-five turbines are in operation, with another 34 due to be in operation late in 2009. During the year we acted as owner’s engineer on a number of projects in the Hallett area, with a combined total of 90 turbines. On completion the Hallett area Wind Farm projects will have over 190 wind turbines, with a combined capacity of more than 390 MW.

We are also working on projects that reduce carbon emissions from coal-fired power stations (which create about 80 per cent of Australia’s electricity) including technologies to increase the amount of power extracted from each piece of coal.

Significant investment is under way in gas projects in **northern Australia**. Gas is less carbon-intensive than other technologies, such as coal, so we expect to use our expertise and experience to become increasingly involved in these projects in the future.

We expect a resolution to the political debate in Australia and elsewhere on emissions trading rules in the near future will provide certainty for investors and create a further pipeline of new work.

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**Smarter energy use**

An innovative, more efficient way of transferring liquefied natural gas (LNG) into the gas grid in the UK is being delivered at the Isle of Grain in Kent.

EON.UK is building a new 1275 MW gas fired CCGT power station that includes an innovative combined heat and power scheme (CHP), which has the capacity to transfer up to 340 MW of ‘waste heat’ recovered from the steam condensation process to the nearby National Grid LNG terminal.

This heat will be used by the LNG terminal vapourisers to convert LNG into a usable form.

Currently the LNG terminal uses up to 5 per cent of the natural gas produced to transform the LNG to its gaseous state. The project will reduce carbon emissions by up to 350,000 tonnes a year.

SKM is providing owner engineer services for the CHP element of the project, including project management, stakeholder management, design review, micro-tunnelling technical support, site management and commissioning supervision. The project is due for completion in late 2010.
The power of wind

In the UK, where Government targets have propelled strong growth in renewable energy, SKM has worked extensively on wind farm projects, both onshore and offshore. One such project is the Wandylaw Wind Farm in north east England, which is being developed by RidgeWind. The wind farm will have 10 turbines producing between two and three megawatts each. A wind farm of this size, according to the British Wind Energy Association (BWEA), will pay back the energy used in its manufacture in six to eight months.

Wandylaw has the potential to provide renewable electricity to up to 16,700 homes, while eliminating up to 29,100 tonnes per year of carbon dioxide produced by conventional power stations. The reduction is equivalent to removing up to 6,500 cars from the road. In February 2009, planning permission was granted for the wind farm following public inquiry. SKM undertook the Environmental Impact Assessment, which included studies that assessed the project’s potential impact on the surrounding landscape, archaeology and ecology, and other environmental aspects, both during construction and operation.

A proportion of the revenue from the wind farm will be offered to establish a trust fund for local community programs. The amount will be based on the yearly energy output achieved during the lifetime of the development — estimated to be about 25 years.
It has proved another exceptionally busy year with strong demand for our expertise across a number of areas, particularly climate change, water security and environmental issues.

While most of our business unit is based in Australia and New Zealand, our practice in South America grew noticeably during the year, with strong work flow also in the UK and US.

In Australia, Government stimulus packages have prompted a resurgence in demand for upfront environmental impact assessment and planning work, including significant road and rail infrastructure projects along Australia’s eastern seaboard.

Demand is also increasing in niche areas such as sustainability, climate change and greenhouse gas advice, and social studies, such as developing community partnership models for mining companies. **During the year, our water engineering business continued its outstanding work on desalination plants, which are providing part of the solution to critical water shortages.**

We completed a 125 megalitre per day desalination plant on Queensland’s Gold Coast, which drew on 40 operations centres across SKM, indicating the depth and range of skills available to clients.

**SKM worked as a member of the engineering design team as part of the alliance with John Holland, Veolia Water and Cardno. The project won a key award at the Global Water Awards held in Zurich, representing the most impressive technical achievement in the industry.**

During the year we worked on a desalination plant in **Sydney**, which is capable of producing 250 megalitres per day. Our expertise in desalination is attracting new work, with a contract won during the year to investigate options for a desalination plant in **Florida, USA.** Continuing drought, particularly in Australia, has pushed demand for leading edge skills in the delivery of irrigation modernisation programs of work, particularly in Australia’s foodbowl regions.

During the year we worked on a number of projects that involved **securing and improving water supplies.** Some of this work involved upgrading water channel infrastructure with the integrated delivery of new infrastructure (see irrigation case study).

Global demand for our expertise in the climate change field, where we have world-leading skills, continued to grow strongly.

We provided specialist work during the year in managing the closure of mines. This is not simply when the mine comes to the end of its working life — most mines do not get approved and built unless there is a plan to ultimately close them.

**Highlights during the year include:**

- **Winning the Gold Medal for Business Achievement** from the highly respected industry publication the Environmental Business Journal in recognition of SKM’s growing global ability to service clients dealing with significant environmental issues.
- **A Global Water Award** for Gold Coast Water’s Waterfuture strategy, which SKM helped develop to address drought and rapid population growth in South East Queensland.
- **Development by SKM of CarbonEasy,** a new tool and service to help organisations track and report on their carbon emissions.
- **An award for SKM in recognition of the excellent work as principal designer for NZ’s Thames-Coromandel Peninsula’s wastewater plants** at the Innovate New Zealand 2009 Awards of Excellence.
- **Our client Woodside Petroleum won the Australian Petroleum Production and Exploration Association’s 2008 Environment Award** for its pioneering research on the marine environment at Scott Reef, 430 kilometres north of Broome in Western Australia. Much of the project was managed by SKM.

The emerging oil and gas market on Australia’s North-West Shelf is likely to require large environmental studies and we expect growth in that area. Our marine science team is the biggest in Australia and has an exceptional record working with clients on environmental assessments and monitoring. We also expect increased work in water treatment and impact assessments related to plans to develop coal bed methane/carbon capture and storage projects. Coupled with work in the water and transport infrastructure areas, we are well positioned for the coming year.

We continued our overseas aid work, including delivering infrastructure and capital works in the Solomon Islands for AusAID.

**Treatment plants ensure healthy waterways**

Protecting public health and preserving the environment were the key aims of three wastewater treatment plants built for the New Zealand resort towns of Whangamata, Whitianga and Paunui/Tairua.

The growing popularity of the area had put significant pressure on existing wastewater facilities and the Thames Coromandel District Council sought a rapid renewal of existing plants at the three locations as part of a NZ$85 million program.

SKM worked as principal designer, alongside constructor Downer EDI Works and project manager Opus International Consultants, to produce on time three new, near-identical plants under a single design/build/operate contract.

The project has secured the future growth of the peninsula for at least three decades and has improved the quality of wastewater effluent, significant for the protection of the region’s waterways, estuaries and harbours that are popular for recreation and fishing.

The project won a silver award for innovation at the Innovate New Zealand 2009 Awards of Excellence presentation in Queenstown. The judges commented that the treatment plants were the best they had seen.
Finance: another strong year

SKM has experienced another strong year, with our revenue and profit for 2008-09 ahead of budget.

For the second year, our income was more than A$1 billion. This is a direct reflection on how busy we were during the year and how many hours we worked on projects.

Our Water and Environment business was the strongest performing of our four business units in a market that is especially strong. The need for water security is increasingly important, especially in drought-affected parts of Australia, and we have found strong demand for our expertise in climate change issues.

Mining and Metals remains our largest business unit, and it produced a solid result following an outstanding result in 2007-08. The strength of the business is due to our strong association with our relationship clients, particularly in Australia, Chile and Brazil.

Buildings and Infrastructure benefited from government stimulus packages, both in Australia and the United Kingdom, and Power and Energy performed well.

Central to our success in 2008-09 was our relationship client strategy, which again proved its importance. We have worked hard in recent years to better understand and serve these clients and, in turn, they were responsible for more than 80 per cent of our income.

The global financial crisis affected us during the year, with the majority of our business units posting a fall in profitability compared with the previous year.

In line with the tougher business conditions, SKM reviewed all overhead structures during the year. We recorded a big reduction in travel, notably airline travel, and an increased use in video conferencing. Less airline travel not only saves SKM money, but is environmentally positive and had helped us meet our first year goals in cutting our carbon emissions.

We completed the year in a healthy financial position, and with a strong balance sheet. We have little debt and have managed our businesses through the global financial crisis by concentrating on service delivery to our clients and managing our working capital.

SKM does not own many investment and fixed assets, with our strategy to keep our debt low. During the year we entered into a number of significant long-term building leases, notably in Auckland, New Zealand; Brisbane, Australia and Santiago, Chile.

We also clarified aspects of our 2020 vision, our strategy of where we want the firm to be in a decade. This includes substantial growth, so we have begun the staged replacement of financial and management systems across the firm.

If we are to meet the 2020 vision, we will be a firm of 30,000 people and our systems and procedures need to meet this growth. The existing systems have been operating for a long time so these changes represent a significant investment over the next 10 years.

During the year we committed to build a new business intelligence system to replace our existing data warehouse.

We expect this to come online in the 2009-10 financial year.

Our strong balance sheet has put us in a sound position to expand, and we are actively seeking merger and acquisition opportunities. For us, one benefit of lower share markets due to the global financial crisis is that listed companies that were out of our financial reach have become available to us.

We have been cautious and set our budgets lower for 2009-10, although there are positive signs of economic improvement and improved optimism.

SKM’s inner strength

SKM is owned by about 580 of its employees, with no staff member owning more than one per cent of the firm. When an employee leaves they are required to sell their shares.

As a business, our employees share in our success and, being fiercely independent, SKM can make long-term decisions that many public companies cannot make.

This has especially been the case in 2008-09, when we have been able to develop and execute the first stage of our 2020 vision, while listed companies have been subject to the vagaries of share markets.
From the chairman

In recent years we have experienced strong growth and an extraordinary purple patch in our industry. But markets can change very quickly, and 2008-09 proved a challenging year, with a tightening of conditions in the second half.

While our business structure proved sound and our financial performance was good, future expectations of the organisation’s profitability and dividends may need to be tempered.

It is important that both shareholders and employees recognise that we must ensure we are well positioned for any sudden market changes in future.

To this end, the board and senior management worked hard during the year to develop our vision for the SKM’s future. This 2020 vision strategy is aspirational and a ‘stretch’, yet is a very positive step.

We have articulated this vision and engaged the organisation in a comprehensive conversation about where we want to go. To meet the 2020 vision we face a lot of work to build both the organisation and particularly its governance, with many questions to resolve as the company grows — such as issues around shareholdings, share values and capital management.

Answering these complex questions is a work in progress; in the meantime we are building the organisation’s capabilities with improved business and IT systems.

In the coming year we will maintain our focus on our business model, while keeping an eye on the changing dynamics of the market place as we steer the organisation towards 2020.

Peter Scott
Chairman

1. Peter Scott Chairman
Peter Scott was elected Chairman of Sinclair Knight Merz Management Pty Ltd in October 2007. An engineer by training, he joined the board in 2005.

2. Paul Douglas CEO
Paul Douglas was appointed Chief Executive of Sinclair Knight Merz in 1996. He has direct responsibility for leading, managing and charting SKM’s future direction.

3. Binu Katari Finance Director and Company Secretary
Binu Katari has been Finance Director and Company Secretary for Sinclair Knight Merz, and its predecessor Sinclair Knight, since 1981.

4. Lesley Morris Group Manager, Water and Environment
Lesley Morris is Group Manager Client Portfolios, responsible for the delivery of water and environmental services to our clients in the mining, energy, and infrastructure sectors across Australia, New Zealand, Asia, Europe and America.

5. Santo Rizzuto General Manager, Mining and Metals
Santo Rizzuto is the General Manager of SKM’s Mining and Metals business unit. He joined SKM in 1997 in Australia and was instrumental in developing SKM’s presence in South America.

6. Mark Clarke General Manager, Power and Energy
Mark is the General Manager for the Power and Energy business unit. He has 25 years experience in the power, heavy industrial, mining and water industries.

7. Rory Nathan General Manager, Technology and Practice.
As General Manager Business Processes, Rory is responsible for the global integration of the firm’s functional support.

8. Elizabeth Proust Non-Executive Director
Elizabeth Proust joined the Board of Sinclair Knight Merz as a non-executive director in April 2007. She has more than 20 years experience as a senior executive in the private and public sectors.

9. Rob Sauer Non-Executive Director
Rob Sauer is a non-executive director and Chairman of the Audit Committee of Sinclair Knight Merz Management Pty Limited — the ultimate holding company of Sinclair Knight Merz. Rob is qualified in law and accounting.

Detailed biographies are available at www.skmconsulting.com
Our 2008-09 Annual Review is just that; a review of our 2008-09 financial year. In producing it our aim is to provide a broad snapshot of our aspirations, activities and performance to a range of stakeholders.

Through this Annual Review we aim to reach our clients, people and the communities in which we live and work.

As a private, employee-owned business we provide additional, more detailed reporting to our shareholders. We do not aim to reach stock market analysts who study the performance of publicly-listed companies.

It is printed at an environmentally sustainable printing plant with Forest Stewardship Council Chain of Custody (FSC COC) certification.

FSC credentials ensure that all the steps in the production process have been certified — from plantation to pulp, mill, paper, merchant and printer.

The paper chosen has been manufactured with a carbon-neutral manufacturing process and consists of 100% recycled stock.

Online
This year we’ve again taken the Annual Review online via a purpose-built microsite.

SKM’s Annual Review can be viewed at www.skmconsulting.com/2008-09 AnnualReview

We invite your feedback
SKM welcomes your feedback on our performance and the content of this report.
Email: information@skmconsulting.com