

Sustainability Report 2009

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# Sharing the Challenges

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# Gammon at a Glance



**Gammon** is a leading construction and engineering services group. We have been building a wide range of construction projects in Asia for more than 50 years.

We are the market leading construction contractor in Hong Kong, where we are headquartered, and also operate in Singapore, Macau and Mainland China. We also have group companies incorporated in – or with local presence in – Malaysia, Thailand, Vietnam, the Philippines and Indonesia and have operated in all of these countries.

With an annual turnover around US\$1 billion, we directly employ some 2,850 full-time staff, giving us one of the strongest construction teams in Asia.

We are a private company jointly owned by Jardine Matheson, an Asian-based conglomerate with extensive experience in the Region and Balfour Beatty, a world-class engineering, construction and services group.

With the support of our shareholders, we are able to deliver a unique combination of local experience, technical capability and financial strength.

## Our Brands

**Gammon**  
 Civil, foundations, building, E&M and construction services covering plant and equipment, concrete technology and steel fabrication

**Gammon Capital**  
 Public-Private Partnership business

**LAMBETH**  
 Engineering design services

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### How We Produce our Sustainability Report

Our aim is to create a sound, complete and relevant narrative that informs and provides a clear platform for engaging our stakeholders: shareholders, customers, workforce, supply chain and community. Using opinion and satisfaction surveys, and also through other methods, we engage directly with these groups to stay in tune with their expectations, encourage open dialogue and forge productive partnerships.

Each year, the internal discussions that take place around our Sustainability Report allow us to reflect on our sustainability strategy (see page 10). To this end, we make a particular point of involving top management in shaping content and messages. We also review direct stakeholder feedback in determining material issues.

# 2009 Performance Summary

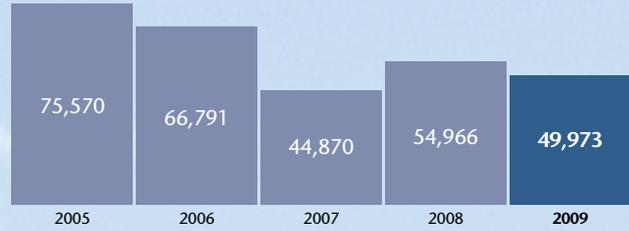
## Accident Incident Rate

per 1,000 workers



## Greenhouse Gas Emissions

tonnes CO<sub>2</sub> equivalent

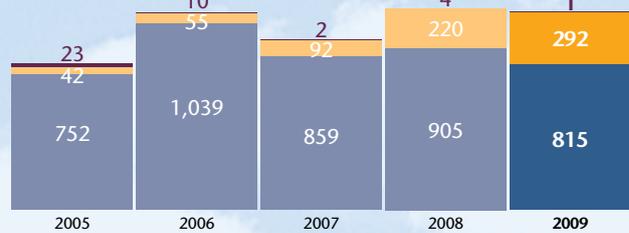


Scope 1 and 2 emissions

Calculated based on Greenhouse Gas Protocol published by WBCSD/WRI  
2005 to 2008 data adjusted to correct previous diesel omissions

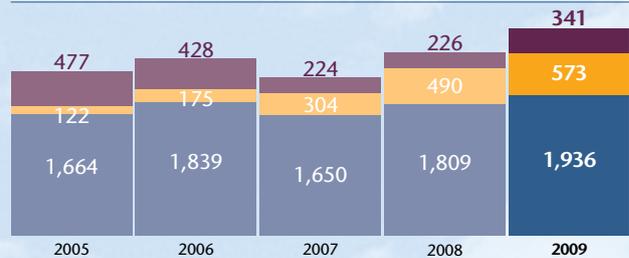
## Group Turnover by Region

US\$ millions



■ Hong Kong & Macau ■ Singapore ■ China

## Employment by Region



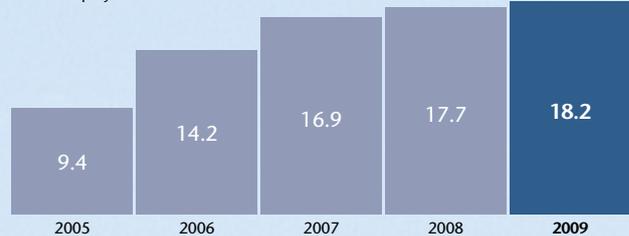
■ Hong Kong & Macau ■ Singapore ■ China

Represents number of monthly-paid staff

The total number of staff including daily-paid workers was 4,656. Including subcontractors working on our sites the number swells to 10,180 people

## Formal Training Investment

Hours/Employee



Formal training for monthly-paid staff

# Chief Executive's Statement

**At Gammon**, our mission is to build a better quality of life and living, and to do this in a safe and sustainable manner. This report captures our progress in pursuing this mission.

In 2009, we saw some very aggressive pricing in Singapore and increased volume and complexity of work in Hong Kong. In both markets, we kept to our strategy of working with clients that value sustainability, leveraging our technical capabilities to secure prestige projects and resisting the temptation to win on price alone.

The past year was a milestone for Safety in Gammon. All Gammon's senior managers are sharing in the challenge of Zero Harm by leading from the top. We are also urging clients to understand the strong influence they have in helping us lead in safety. The target of Zero Harm is to eliminate fatalities from our industry permanently. In this connection, we welcomed the strong endorsement in January 2010 at the Gammon Annual Safety Conference by our Guest of Honour, Mrs Cherry Tse, Commissioner for Labour.

Looking forward, the biggest issue we all face in Hong Kong is the urgent need to revitalize our industry's workforce. Put simply, all stakeholders must share the task of making construction a more worthwhile career so that we can attract younger workers and build the right balance of talent and experience. This could then be augmented if necessary by bringing in overseas specialists.

The future holds other challenges we must all share. What we are building today is a legacy which will determine whether we can achieve a low carbon future. For many years, we have helped clients achieve certification for green buildings. We believe green strategies must now extend beyond buildings and into infrastructure, into the very fabric of our lives. In Hong Kong, this can only happen if Government leads the way.

In November, Hong Kong is hosting the C40 Cities Workshop *Low Carbon Cities for High Quality Living*. This could be an excellent opportunity for Hong Kong, as a world-class city, to launch its plans for a low carbon future. In Singapore, the comprehensive 2030 blueprint entitled *A Lively and Liveable Singapore: Strategies for Sustainable Growth* is a good model.

One of our key stakeholders is the public, and as a contractor we are often an interface between them and our clients. With growing interest in Hong Kong's expanding infrastructure and concerns for better living, we are increasing engagement with communities impacted by our works. As an industry we must all go further in understanding the public's needs.

Mrs Carrie Lam, Hong Kong's Secretary for Development, touched on this at the Hong Kong Construction Association Conference in October 2009 when she said that development is not just economic progress. She urged the construction industry to pay more attention to lower carbon emissions, to be more green, and to show more respect for human scale.

We believe our mission aligns with this sentiment. Everyone – Government, clients, consultants, subcontractors and suppliers – has a role to play in meeting the challenges ahead of us. Our industry can do much to help secure a sustainable future and, by doing so, ensure its own health and prosperity.



**Thomas Ho**  
Chief Executive  
Gammon Construction Limited  
May 2010



# 2009 Highlights

## Gammon's Sustainable Year

### January

Clients are in a strong position to lead on safety. We emphasised this as we commenced the first year of Zero Harm, a new safety initiative that aims to eliminate fatalities and serious injuries, and remove the risks that cause them.



The Hong Kong Institution of Engineers held its 'Engineers' Responses to Climate Change' seminar. Our Chief Executive Thomas Ho was a key speaker.

### February

Our subcontractors and business partners continue to show a clear commitment to enhancing safety, innovation, business opportunities and competitiveness. Our annual Best Safety Subcontractor and Business Partner Awards, held in February, showcased the leading achievers.



Clients welcome the ability to test sustainable design options in a virtual environment. Our Building Information Modelling (BIM) tool provided this capability in key civil and building projects such as the North Satellite Concourse at Hong Kong International Airport, the Reconstruction and Improvement of Tuen Mun Road (Eastern Section), One Island East, iSQUARE and Hennessy Centre.

### March

An offset penalty system devised at Gammon Singapore strengthened the local sustainability culture. The idea was the brainchild of one of our graduates, who was subsequently recognized for his significant contribution to innovation in the Balfour Beatty Group worldwide.

Partners such as the Tung Wah Group help us deliver specific short-term projects and connect us to community stakeholders over the long term. Pictured here are senior managers from Tung Wah Group celebrating our relationship.



### April

Modular air-conditioning ductwork delivers benefits in terms of enhanced safety, reduced waste and more efficient energy use. Our clients for iSQUARE and The One, two prominent retail developments, happily adopted this modular approach.



The Hennessy Centre Redevelopment project became the first building in Hong Kong to achieve Platinum pre-certification under the Leadership in Energy and Environmental Design (LEED) system of the US Green Building Council.



### May

Singapore's ITE College West was awarded Green Mark Platinum with a design that is 31% more energy efficient than other similar institutions in Singapore.

The Land Transport Authority emphasised the importance it attaches to innovative design and construction work with an award to the Gammon Singapore project team responsible for the upgrading of Woodsville Interchange.



## June

The Hong Kong Housing Authority (HKHA) welcomes any measures that cut noise during construction. Gammon developed a hydraulic hammer fitted with a 'quieter piling' acoustic enclosure and deployed it for an HKHA project in June.

The tunnelling required for upcoming projects calls for rigorous safety procedures. Gammon is applying wireless technology to develop an automated tunnel entry system that improves the tracking of personnel and major plant items.

## July

More than 60 organisations in Hong Kong are supporting the Carbon Reduction Charter. Gammon joined the scheme in July. A carbon audit at our Tseung Kwan O facility has identified further measures to improve our energy performance.

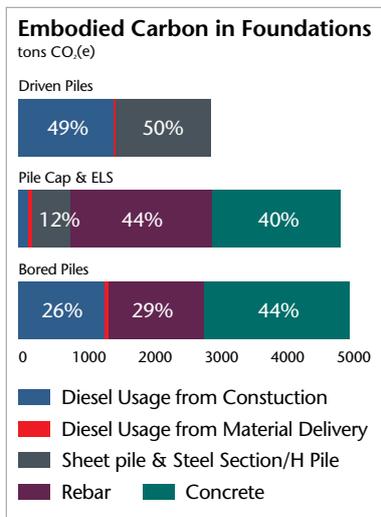


The Harbour Area Treatment Scheme (HATS) is a major civil engineering project for Hong Kong. At HK\$3.8 billion, HATS Stage 2A is the largest solo contract ever awarded to Gammon.

A group of 35 Graduate Trainees completes a three week induction programme in July in Hong Kong. These schemes allow participants to learn first-hand about Gammon's culture and operations.

## August

Our clients welcome our engineering input, particularly where modern construction methods can cut carbon. By capturing data from our projects, we have developed a method to calculate embodied carbon so that clients can evaluate lower carbon methods.



## October

For excellence in waste management, the team at Tamar Development Project, Hong Kong is awarded the Wastewi\$e label.



The annual Central Rat Race is a well-known charity fundraising event in Hong Kong. Gammon supported the race for the fourth year running and raised HK\$170,000 for a local mental health charity.

Staff from Gammon and the MTR Corporation volunteered to clean the shore near our Pokfulam project during the Hong Kong International Coastal Cleanup Challenge.



## November

Our clients benefit from innovative thinking. In 2009, we held our first Innovation Forum to review and encourage our efforts.

## December

Residents of Hong Kong are familiar with trees that have taken root in historic stone retaining walls. As part of work on the MTRC's Kennedy Town Station, Gammon's engineers are working with tree specialists to ensure these 'tree walls' at Forbes Street are preserved.



With green building criteria adopted widely throughout Hong Kong, Gammon decided to increase standards for its temporary site accommodation. Our Green Site Offices implement many measures for water and energy efficiency, office waste, greening, raising sustainability awareness and CSR.

Inert Waste Reused

267,129 tonnes



In 2009, Gammon exceeded its 20% inert waste diversion target to achieve 34% direct reuse.

Water usage was down 130,340 cubic metres from Gammon's 2008 peak and at 75 cubic metres per HK\$1 million of turnover, was our lowest in five years.

## Looking Forward

In Hong Kong, with the approval of over HK\$120 billion of public works and growing business confidence the economy is widely anticipated to turn around. Our industry is expected to grow strongly through to the end of 2013, after which – unless there is significant private sector demand – another downturn is probable.



Structural steelwork for new campus of Vocational Training Council, Hong Kong.

### Construction is a People Business

**Construction is particularly cyclical**, especially since this sector is frequently used as a conduit for injecting stimulus during an economic downturn. There are inevitable changes in demand and we are all accustomed to seeing significant variations in the quantity and type of work available. The ratio of public sector and private work changes from year to year too, as do the volumes of building, civil and renovation works.

To sustain our business model, we must adapt to these conditions. Appropriate financial systems provide the main tool for increasing or decreasing the quantity of materials and equipment required to meet changing demand. However, sourcing people with the right skills is a much greater challenge.

### More Work Needed in Attracting Talent

Our industry needs to attract and retain a variety of people, ranging from the professional chartered engineers to the many skilled labourers working on site.

Currently, our industry has an ageing workforce and has failed to attract young blood for the past decade. Data from August 2009 shows that 67% of construction industry workers are over 40 and less than 12% are under 30. Among carpenters the trend is even more pronounced, with more than 70% over the age of 50.

The talent war in Hong Kong has intensified with keen competition for experienced chartered engineers. This competition is likely to extend to supervisors and skilled labour in due course as recently awarded contracts commence. Action is required.

Edmond Lai, Director, Human Resources  
Gammon Construction



**Tradesmen**  
**>50** years of age

73% Carpenters  
 61% Steel Fixers  
 58% Concretors

This is leaving us with a shortage of the skilled trades we need for major infrastructure and tunnel projects: bar-benders and fixers, shot firers, shotcretors, drillers, tunnel workers, plumbers and metal workers.

Our industry is not doing enough to bring in the right people. While we welcome the Hong Kong 2010/2011 budget, which has already set aside HK\$100 million to support Construction Industry Council incentives to attract local young people to the industry and enhance skills, we feel more action is required. In this connection, Gammon is helping to address the situation a little by putting selected engineers and construction supervisors through training that will allow them to become authorised shot firers. But we feel training is only a partial solution. We believe there are two additional approaches required to finding a solution.

**Flexibility to Meet Peak Demand**

It would be beneficial to allow the construction market to bring in specialist skills as needed to meet excess demand. Since such labour would naturally move elsewhere after a job, this approach would have less social impact than training up local, younger workers with no guarantee over the duration or quality of their future careers.

**Making Construction More Attractive**

We need other initiatives too, some of which only Government can facilitate.

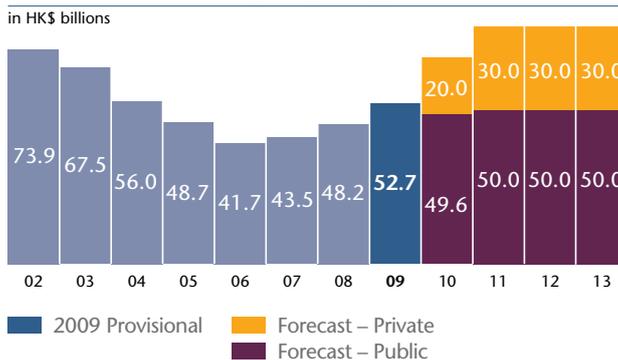
First, we believe it is time to consider a 5-day work week. This does not mean ending Saturday or night working; it simply means ensuring everybody in our industry works no more than 5 days. We will need to critically review the current methods and workflows in certain trades like tunnelling and bored piling to make the 5-day work week a consistent practice in the industry. We believe Government should take the lead by making the change in government projects first. The industry should address this throughout the entire supply chain.

Second, as an industry we must go further to improve skills and productivity, and ensure a reasonable wage and long-term prospects for livelihood. In Gammon, we already monitor the wage levels of our workers closely to ensure our pay is competitive in Hong Kong. We also endeavour to provide continuity of work.

Third, our industry should strive to be more respectful to workers by ensuring safe working conditions and assigning well-planned work. Workers must also be paid on time and receive their MPF contributions. Government could help workers recover wages and entitlements more quickly by reducing the lead-time required to complete legal procedures.

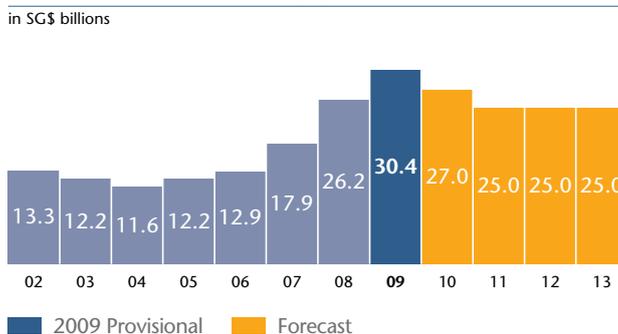
Ultimately, there is a strong need for long-term planning. Hong Kong's construction industry, supply chain, clients and Government must all work together to build a creative and skilled industry that is valued by society, contributes to a better quality of life and offers attractive employment.

**Construction Market (Hong Kong)**



Construction work performed by main contractors (excluding repair, maintenance, alterations and special trades). Information up to 2009 from Report on the Quarterly Survey of Construction Output issued by Census and Statistics Department, HKSAR Government. Forecast based on government estimates from 2010/11 budget speech and internal estimate for private sector of HK\$20-30 billion.

**Construction Market (Singapore)**



Value of contracts awarded. Projected demand for 2010 is an upper bound figure published by the Building and Construction Authority, Singapore Government. The range is S\$21-27 billion for 2010, S\$18-25 billion for 2011-2012.

Source: Singapore Building & Construction Authority

## Clients Will Continue to Entrust Us to Manage Risk

Risk management remains a critically important discipline in our industry and for many years Gammon has been investing in systems and capabilities to better manage both risk and opportunity. We continue to retain and build on the strengths needed to address risks in a prudent and effective manner, to prevent surprises and give confidence to our stakeholders. 📌

Iain Wink, Risk & Opportunities Manager  
Gammon Construction

**Operating in the period following** the financial crisis might appear to present a heightened risk profile. Businesses of all kinds are finding credit and financing more difficult, so the ability of our partners and suppliers to continue trading throughout a project needs to be carefully monitored. While the private sector is recovering, in Hong Kong the government sector is awarding a high volume of work. This weighting towards the public sector should minimise risk and insulate successful contractors from some effects of the financial turmoil.

### Increased Scale and Complexity of Work

Over the next two to three years, the volume of our business will double. In addition, we are handling bigger and more technically complex projects. There is no doubt this will impact our operations and we know our task is to ensure we have the right resources to execute current and future work effectively. In addition to the workforce supply concerns, coming projects pose technical challenges and risks.

Clearly, the physical restrictions imposed by Hong Kong's dense urban environment heighten the challenges of already complex projects. There is no doubt that clients understand risk better than ever and are more prepared to recognise the inherent superior value of a tender that addresses risk comprehensively and professionally. Aided by our continual drive for innovation, and the expertise of Gammon staff both in our construction division and in the design of temporary works provided by Lambeth, we believe we can successfully and safely deliver the technically complex projects being built in Hong Kong in the next five years.



Top left: Tunnel excavation for West Island Line Underground Magazine at Victoria Road.



Top right and bottom: HATS stage 2A comprises the construction of three deep tunnels totalling 12km in length and eight shafts.





Above: Official signing of Contract 705 between Gammon and the MTR Corporation for construction of the new railway line, a technically demanding and complex project.

Right: MTR West Island Line stations at Bonham Road and Kennedy Town.



### Gammon's Role As Risk Custodian

Looking forward, we will continue to treat risk management as an integral part of our core management processes, giving particular attention to health and safety, quality, project delivery and supply chain risk.

Clients ultimately require certainty on delivery, price and quality. To deliver on these issues we need to understand our industry and our market, the availability of skills, resources and materials, and the market forces that will affect both demand and prices.

Our preferred approach is to manage risks out of our business altogether, rather than having to deal with the consequences of a risk that turns into an adverse event. We view risk and opportunity as two sides of the same coin. It is the ability to accurately assess both risk and opportunity in a balanced way that ensures success.

### The Hong Kong Pavilion at World Expo 2010 Shanghai, China



**Gammon Construction** welcomed the official opening of the Hong Kong Pavilion for the World Expo that got underway on 1 May 2010, shortly before this report was published. We look forward to one of the major highlights of Hong Kong's participation – 'Hong Kong Week' – which will be staged from 18-22 October. One of the ways Hong Kong has been positioned is as a 'Green City'. Another focus depicts Hong Kong as 'A City with Unlimited Potential'. Hong Kong's participation in Expo will promote the city as a vibrant and interconnected metropolis with a high quality city life built on creativity and innovation. We welcome this vision of Hong Kong as a world-class city that has the dynamism to meet future challenges.

# Sustainability Framework

Gammon has a unique quadruple bottom line that adds health and safety to the conventional 'people, planet, profit' framework. We publish reports in order to make a public commitment to environmental management and sustainability, and to show leadership. Our journey started with Gammon's *Staying Ahead on HSE*, a report produced in 2002 that discussed four targets. In these formative years, Gammon focused on alignment and its brand values and integrated aspects of sustainability in balanced scorecards, risk processes, codes of conduct and certified management systems. Benchmarking and engagement increased in subsequent years as we have evolved our sustainability agenda to what you see here.

We use our sustainability framework to identify important issues within our quadruple bottom line that need to be addressed. This applies at any scale whether it be for specific projects, particular methods or for a group-wide initiative.

Gammon's directors and senior managers drive the overall direction of our Sustainability Agenda. In 2009, we supported one of our shareholders in developing a Sustainability Roadmap for its worldwide businesses and as a result are closely aligned with the objectives of this initiative. Governance structure and code of conduct are disclosed in prior reports (from 2006 to 2008) and are available upon request or at: [www.corporateregister.com](http://www.corporateregister.com) or

[www.gammonconstruction.com](http://www.gammonconstruction.com).

## Our Agenda

### Health and Safety

**We promote construction safety to a standard of 'Zero Harm' in the workplace, and for those affected by our works. Our targets by the end of 2012 are:**

- Zero fatalities
- Zero permanently disabling injuries
- Zero injuries to members of the public

### Economic and Business

**We contribute with our supply chain to sustainable development and strong economic conditions in our markets. We do this by:**

- Maintaining good risk management and governance
- Upholding integrity in our supply chain
- Using our influence and leadership

Underpinning our agenda are:

**Excellence in engineering and design**



## Perspectives

In the following pages we share the views of representative stakeholders, including a sub-contractor, a supplier and staff at different levels. We asked them what they thought of Gammon's approach to sustainability and to what degree they feel involved in the company's strategy. While we are proud of what we have achieved, we know we still have work to do. Our sustainability journey continues and will grow stronger with each passing year.



Different people have different perspectives on sustainability. Some have a purely environmental perspective but we believe that the economic and social aspects of our business, such as 'Zero Harm' in safety, should also be a key aim of our sustainability programme. We are confident we are sowing the seeds of sustainability as widely as we can and that all our stakeholders are motivated to help us align and meet our objectives.

**Philco Wong**, Chief Operating Officer and Executive Director  
Gammon Construction



Thanks to the support of our top management, people throughout the company are encouraged to put sustainability into practice. I see this happening through value engineering, reducing waste, saving energy and water, reducing emissions or sustainable sourcing. Sustainability is about changing the way we value things and we engage everyone in our push to show leadership.

**Shirlee Algire**, Group Sustainability & CSR Manager  
Gammon Construction

# Protecting the Environment

By its very nature, construction is intrusive. Construction requires ground to be broken, whilst the use of energy, water and other resources inevitably creates waste. In the last century, the issue of building in a responsible manner was never high on the agenda. Now, care for the natural and urban environment, along with a focus on sustainable development, have become critically important.

For a construction company, the core issues in sustainability are the day-to-day use of resources and the immediate environmental impacts of the construction process. But we need to be aware too that construction leaves behind a longer term legacy. The energy demands of the buildings and infrastructure we create today will either set us on a path to a future low-carbon economy or become a burden that affects generations to come. In this connection, the December 2009 Copenhagen Accord in which world leaders pledged to limit the increase in the surface temperature of the earth to below 2° Celsius, helps define what is meant by a low-carbon future. We have already seen leaders setting targets to reduce green house gas emissions, such as China's 45% carbon intensity reduction target by year 2020.

## Success in Green Buildings

Hong Kong is responding to this global issue of low carbon. The prevalence of green buildings in Hong Kong – and the positive impact this has in terms of tendering, procurement, construction methods, specifications and assessment – is clear evidence that the building sector is moving forward. Gammon is proud to have been at the forefront of this green building movement, completing Hong Kong's first BEAM-certified building – Lincoln House – in 1998. Today, BEAM, Singapore Green Mark and other international assessment criteria such as LEED are becoming firmly embedded in our industry, as is evident from four key Gammon projects in 2009. By the end of 2009, and for the first time ever, every building project in our portfolio was being undertaken to meet green building standards. Moreover, the revenue value of our green building works portfolio in 2009 was 128% higher than the previous year and represented around 30% of our total turnover. It is widely thought that green buildings are laying the vital foundations – for a low-carbon economy.

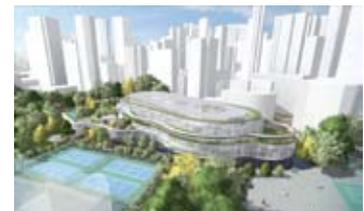
Gammon Construction secured the following green building projects in 2009:



Hong Kong University Centennial Campus  
LEED, BEAM



31 Queen's Road Central, BEAM



Victoria Park Swimming Pool Complex, BEAM

SUSTAINABILITY  
PERSPECTIVES

We are changing our production line to supply Gammon Construction with modular air-conditioning ductwork. They have told us how a pre-packaged E&M system affords better control of manufacturing and installation, which in turn creates the right environment for meeting international building standards such as BEAM and LEED that a green building is judged by. We are very happy that we can make changes in our business to deliver more sustainable solutions to Gammon Construction. We welcome their leadership and view this as a positive move.

H M Ngan, Managing Director, Hoi Ko Engineering (HK) Co. Ltd.



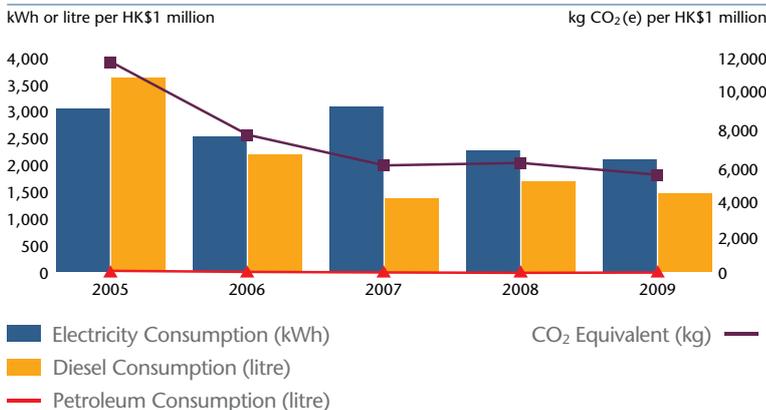


**The Tamar Development Project** won the Sectoral Award (Gold) for the construction industry in the 2009 Hong Kong Awards for Environmental Excellence. The judges cited the approach of the Gammon-Hip Hing Joint Venture, including energy saving, an innovative formwork strategy, and earthworks. The joint venture's project team also received praise for engaging with stakeholders to promote sustainable construction, while taking comprehensive steps to reduce waste and increase energy efficiency.

### Tamar: A Lesson in Excellence

Design and build contracts give us our best opportunity to influence the sustainability of a project because we can add technical input at an early stage. For the Tamar Development Project, The Government of the Hong Kong Special Administrative Region has set a high benchmark. Environmentally and socially aware, the design maximises urban ventilation, creates connectivity for people between the harbour and the hinterland and is considerate to surrounding building heights. Specific green features include solar-powered lighting, rainwater recycling, shading devices, natural lighting and double-layer ventilated facades. During construction, environmental merits have included sophisticated waste management and remediation of contaminated soil for reuse within the project.

### Group Energy Intensity



### Devising Sustainable Alternatives

Even when we do not have responsibility for design, we are still able to offer sustainable alternatives and to improve our own environmental performance. For example, at the Hong Kong Housing Authority Kai Tak Development Site (1A), we proposed five innovations, two of which were fully implemented during 2009. First, we successfully reused about 10,000 cubic metres of marine deposits on site as an alternative to simply disposing of the material. Second, we achieved significant noise reduction during H-piling work by installing an acoustic enclosure on the head of hydraulic hammers. In this way, we continue to optimise the use of natural resources and work with recycled materials on site as a way of contributing to a more sustainable built environment.

### Virtual Designs

Tools such as our Building Information Modelling (BIM) software can play a critically important role in influencing design work. BIM gives us a virtual construction site we can manipulate to understand the impact and synergy of a broad variety of sustainable options. We can use BIM to enhance the way we use materials, energy and other resources, and to enhance methods. For example, BIM can be used to design a complex construction sequence so that we can identify and remove potential conflicts and hazards. Or we can use BIM to calculate the quantity of materials required and – by refining design strategies – reduce materials usage. BIM is particularly well suited to demanding infrastructure work and even has value in a build-only project. We believe it is only a matter of time before all design work is conducted in a virtual environment.



Gammon's virtual designs allow many different sustainability options to be tested well in advance of implementation.

### Use Wisely, Waste Less, Emit Less

We focus increasingly on managing the direct impacts of our works, and on the indirect impacts through our designs, application of technology, and procurement strategies. A simple thing like GPS tracking of our concrete trucks for smarter delivery and planning avoids contributing to traffic congestion and reduces pollution from idling engines.

At our Mole 2 project in Singapore, which involves removing a 2-km-long and 20-metre-deep seawall, our sustainable design allowed us to reuse 8,500 tons of steel casings and 3,500 tons of steel trusses for temporary works. We also employed a unique method called 'Wet Excavation' which used more than 150,000 cubic metres of naturally available sea-water as a support for the cofferdam. This eliminated the need for four additional layers of strutting and 400,000 cubic metres of ground treatment by jet grouting which would have ordinarily been required in a conventional deep excavation.

We are looking to reduce the carbon footprint of our supply chain and made progress with rebar in 2009. At Hennessy Centre in Hong Kong, for example, 20% of the rebar, or the billet to produce the rebar, is sourced within 800km and 70% of the rebar is manufactured from recycled scrap steel.

### Water

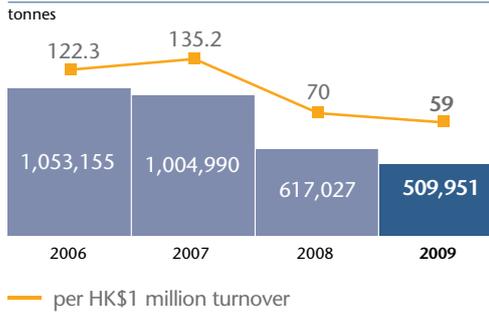
Rising water usage in the prior 3 years has been a concern, especially in light of shortages in southern China. In 2009 we succeeded in reducing the volume of potable water used. Many of our processes, such as piling or ground investigation, recycle water except where prevented by uncontrollable ground conditions. Processes such as concreting and grouting require water of a better quality than we can provide on site through recycling.

However, there are many uses where recycling, along with capturing surface and ground water, provides feasible sources such as for dust control, cleaning and irrigation. In 2009 we focused on more monitoring and challenging the ways in which we use water. Whilst there are limitations of what we can do in future, it is an area of continued focus.

We exceeded our 2009 targets for sourcing Forest Stewardship Council (FSC) certified materials.



### Group Waste sent to Public Fill



### Waste

In 2009, we concentrated on reducing waste to public fill in Hong Kong with a focus on minimising earth works and finding a direct beneficial use for excavated materials. We exceeded our 20% target to achieve 34% reuse in 2009 (equivalent to 267,129 tonnes). This has many benefits, such as eliminating multiple truck trips and transport pollution, reducing the burden on government fill banks.

Our waste sent to landfill increased in 2009, so in coming years we are focusing on how we can get suppliers to reduce or reuse packaging. We are also looking at how to reduce timber waste while exploring alternatives to tree-felling altogether.



**Tamar really embraces sustainability. During construction, we have partnered with universities to do bioremediation of soils and reduce our energy usage. We've also modified our work methods to enhance safety, cut waste and reduce carbon emission. Tamar is a world-class project with high standards of sustainability.**

Edward Yeung, Project Director, Tamar Development Project



## The Power of Innovation

We have to think and act differently if we are to realise our sustainability aspirations. Gammon continues to innovate to achieve greater safety, higher quality, and projects that are more environmentally friendly, socially responsive and cost effective.



*The judging panel for our Innovation Competition in 2008-2009 included some of our clients.*

**Thanks to continuing leadership** from our CEO, and as shown through internal surveys (see page 23), we have achieved a high level of engagement among our management and staff via our seven Innovation Centres\*. We set aside HK\$2 million specifically for research and development in 2009.

### A Culture of Innovation

Each year, we hold an innovation competition for staff, subcontractors and sponsored students, and external stakeholders are invited to join the judging panel. Past distinguished guests have included: Mr Russell Black, former Projects Director, MTR Corporation Limited; Mr James Robinson, Executive Director, Hongkong Land Limited; Mr Michael Lee, Chief Executive, Zung Fu Company Limited; Mr Ma Lee Tak, JP, Director of Water Supplies, Water Supplies Department. The competition was especially fruitful in 2008-2009 with 64 entries and many ideas were quickly implemented in projects. A notable submission was the temporary works online control system which improves safety by keeping track of day-to-day changes on a construction project so that all personnel have access to the latest status of works.

We also look to identify leading-edge technology and expertise from outside the construction industry. In 2009, for example,

we engaged UK telecommunications company BT to help us evaluate underground tracking technologies being used in mining for application in civil engineering. These were introduced to the MTR Corporation and the Highways Department in Hong Kong.

### Communicating Via Our Think Bank

Our Construction Services Division, which supplies concrete, plant and steelwork, devised its 'Think Bank' communication channel to encourage wide participation in developing creative ideas and practical solutions.

In 2009, two initiatives stood out. While our cranes have carried CCTV cameras since 2006, we enhanced the system in 2009 by replacing the manual focusing with an auto focusing system. The prototype showed this eliminates the need for operators to take their hands off the crane controls and, by giving crane operators a sharp image, we have reduced their stress.

The Gammon Air Supply System – GAS – significantly improved indoor air quality at our Tsing Yi Batching Office. Used in conjunction with other equipment, the GAS enhances filtration and has achieved an 82% reduction in Respirable Suspended Particles (RSPs). This is well suited to our urban sites where there is a high air pollution index and we have encouraged usage via our Gammon Green Site Office programme.

\*See Sustainability Report 2007

## Carbon Audit

At our Tseung Kwan O Office, we have already implemented many energy saving measures and identified additional opportunities through a carbon audit in June 2009. As a result of the audit, we reduced emissions by installing motion sensors and light dimming, and commenced rainwater collection.

We also developed methods using actual project data to calculate embodied carbon of different designs and methods. By studying the embedded carbon for steel, concrete and fuel under different piling schemes, as well as for formwork and earthworks, we created valuable data that Gammon can use to suggest the most suitable design for clients in terms of time, cost and embodied carbon performance. In 2009, we used this successfully for Tuen Mun Road Eastern Section as well as the Hoi Shing Street development in Tsuen Wan.

## Quieter Piling

A winner in our 2008-2009 Innovation Competition, quieter piling involves enclosing the piling hammer in a special envelope. This delivers a clearly noticeable 6db to 8db suppression of noise which assists in reduction of hearing loss among workers. We used quieter piling for the first time in 2008 at Swire Properties' Seymour Road Development and at a Hong Kong Housing Authority project in 2009. All Gammon-owned hydraulic hammers are fitted with this capability and we are engaging with the industry to make this a standard practice in Hong Kong.



Acoustic enclosures for piling hydraulic hammers cut noise pollution significantly and reduce disturbance to local communities.

## Modular Electrical and Mechanical

Modular E&M systems provide improved quality, allow for pre-testing and can be installed on a turnkey basis. For these reasons, we are increasingly manufacturing our E&M systems on a modular basis away from construction sites, and working with our supply chain to implement this approach as widely as possible. This solution reduces the safety risks that arise when multiple trades work in confined spaces. It also allows for E&M systems to be replaced more easily when such equipment needs upgrading.

In 2009, we successfully adopted large-scale pipework modularisation at i SQUARE and The One – two prominent retail developments in Kowloon. We are also deploying modularisation at the Hennessy Centre and the Tamar Complex.



Wireless tags will send an alert if a worker stops moving for a set period of time. They can also alert workers if they are too close to the moving plant, or sound a warning if unauthorised personnel enter hazardous zones, such as a storage area for explosives.

## Tracking Tunnel Workers

To enhance safety in the potentially dangerous environments of tunnel construction, Gammon is applying wireless technology to develop an automated tunnel entry system to track personnel and major plant items. The system works by requiring all workers to carry a rechargeable wireless tag with optional features such as an emergency alert button, an audible alarm and LCD display screen for text messages. Wireless detectors can be added that show the presence of hazardous gases, such as after blasting.

This technology will be enormously valuable as Gammon executes Stage 2A of Hong Kong's Harbour Area Treatment Scheme (HATS), a sewage infrastructure project involving 12 kilometres of tunnels up to 165m in depth, and West Island Line contracts with the MTR Corporation for construction of three stations and several kilometres of tunnels.

I'm encouraged by how our sustainability message is engaging employees. One of our 2007 graduate intake – Havesh Nagarajan – won our Chairman's Graduate Prize 2009, a scheme focusing on innovation in the wider Balfour Beatty Group. His idea was the Environmental Corpus Fund, an offset penalty system designed to address the 'unavoidable' environmental impacts caused by projects. I hope we can extend this idea beyond Singapore and right across Gammon in 2010.

Jon Button, Executive Director, Gammon Construction (Singapore)



## Mindful Leadership

Safety is fundamental to our sustainability objectives and we give it special attention. Our Zero Harm Roadmap is building Gammon's safety culture to make our company a truly Zero Harm organisation. Above all, we are urging our clients to recognise the strong influence they have over our push for even greater safety.



*Gammon launched a major new safety initiative in 2009 called Zero Harm with the aim of removing fatalities and serious injuries altogether.*

**The elimination of fatalities** and serious injuries, and the removal of risks leading to their occurrence, remain a cornerstone of our business strategy. Yet as contractors, we have delegated much of our safety responsibility to our workers and supply chain. Gammon is now changing that; we are ensuring that safety is led from the top and carefully managed. That is what we mean when we talk about 'Mindful Leadership'.

### Our Zero Harm Roadmap

In 2009, we took a key step in creating a new safety culture of mindful leadership by introducing our Zero Harm Roadmap in alignment with a similar Balfour Beatty worldwide programme. Zero Harm calls for a radical re-think on how to engineer a process to remove risk. We aim to do this by recognising our responsibility to look at construction processes, understand the risks they involve and take positive steps to remove those risks.

Our Zero Harm Roadmap was published in 2009 and details how we will achieve Zero Harm by 2012. In 2009, we set the strategy and defined how we will engage stakeholders to develop a Gammon safety culture to make Gammon a truly Zero Harm organisation. We also defined the tools we intend to use. Each operating unit in Gammon has set out

detailed plans and metrics and published these in the Zero Harm Roadmap. We have identified our target of 5 fatal risks to be managed: working at height, falling objects, electrical equipment, moving plant and people, and drowning. As 2009 closed, we were one year into our four-year journey.

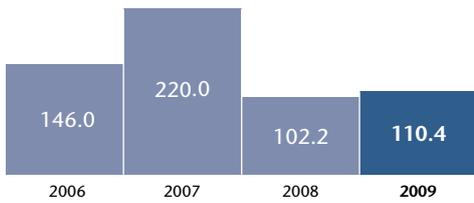
### Four Layers of Protection

Leadership from our top management is key to the success of Zero Harm, as is our Safety Management Process, which calls for four specific layers of protection: Engineering, Equipment, Process, People. Directors, senior managers and project managers must see it as their responsibility to remove risks at the design and engineering stage by making it easier to build safely. They should also take responsibility for materials, plant and equipment by developing the safest work system. Site staff and front-line supervisors need to focus on the construction process and prove that it is safe, while encouraging workers to make safety a personal issue.

Ultimately, Zero Harm recognises that people are prone to making mistakes. Yet with each of the four layers of protection working together, there is much greater confidence that the likelihood of an accident happening is significantly reduced.

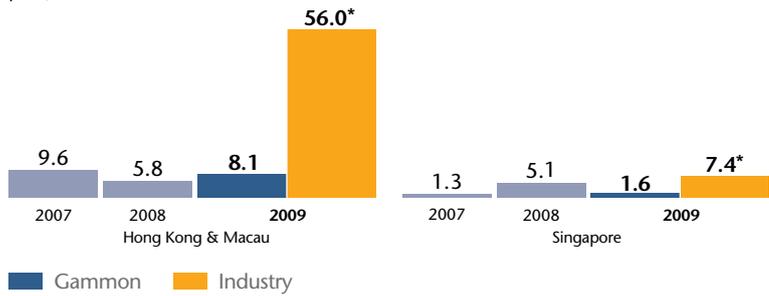
### Accident Severity Rate

total man-days lost/number of accidents



### Accident Incident Rate by Region

per 1,000 workers



\*Industry accident incident rates are those reported as tentative for 2009 by the Hong Kong Construction Association and for all 2009 by the Singapore Government's Ministry of Manpower.

### Training and Engagement

Zero Harm has also established a comprehensive engagement strategy. Directors are taking responsibility for developing the overall safety culture and removing risk, while other senior staff and project managers are to set standards and also share in the task of removing risk. Site and front-line staff will deliver safe and tidy construction sites. A core engagement initiative is our Safety Leadership Programme (SLP), with top management setting aside time for training that aims to develop the right mindset for safety. In 2009, this training involved over 1,000 of managers and supervisors.

### Our 2009 Accident Incident Rate

In 2009, Gammon's Group Accident Incident Rate (AIR) was 6.4 (Hong Kong & Macau was 8.1, Singapore was 1.6). This was a small rise from our previous historic low in 2008 of 5.9, but we have maintained a 74% reduction from our 2001 baseline of 24.5. Our performance shows a clear downward trend as we aim for our 2012 Zero Harm target of 3.0. Analysing our accident records in 2009, the majority (75%) of incidents recorded were minor and typically involved sprains and strains rather than fractures or more serious events.

Tragically, we suffered a fatality in July 2009 when one of our workers fell into a reservoir and was drowned. We had numerous systems and processes in place but in this instance they proved inadequate to prevent this loss of life. This painful experience has

### Attendance to Safety Leadership Programme

- Directors**  
18 Directors
- Managers**  
366 Managers and 156 Staff
- Supervisors**  
7 Managers and 544 frontline staff



Suppliers and Subcontractors signed the ZERO HARM Charter in our Foundations Safety Workshop.

caused us to re-examine our approach to Safety Management and our commitment to Zero Harm. Any fatality in construction should be preventable and while the number of fatalities in our business has declined sharply in recent years this is still not acceptable. The only acceptable goal is to eliminate fatality and serious injury from our business altogether. We are fully committed to achieving this.



**Gammon is serious about safety and cares for its workers. I welcome the way the company continually encourages us to improve our safety practices and awareness. There's a real safety mindset at Gammon. It's what sets us apart.**

Ng Kam Fuk, 'Gammon Best Worker 2009'



### The Client Role

Research shows clearly that engaged clients are in the most influential position to lead on safety, and client engagement in Zero Harm is critical. Designers must also understand they have major opportunities to influence safety by removing risk from the construction process.

At our Annual Safety Conference, Mr Mike Evans from the British Airports Authority (BAA) drew valuable lessons from the construction of Heathrow Airport's Terminal 5 in the United Kingdom. He explained how BAA, as a proactive client, sought to drive the safety agenda. Mr Evans emphasised the importance of pre-construction planning and how the client can influence the construction team's approach together with the strong role front-line managers can play in ensuring safe systems of work.

In Hong Kong, we have seen some clients taking a value-oriented approach to tenders, as opposed to lowest cost. Technical submissions are more frequently being scored and evaluated using a variety of factors alongside price to determine a best-value bid. We welcome this and strongly believe high levels of safety should be seen as an integral part of the overall value of a project and that more clients should recognise this when evaluating tenders.



“We can achieve Zero Harm tomorrow. Everyone must apply this and practise personal responsibility for safety.”

Mr James Blake  
Chief Officer of KCRC

“In order to achieve continual improvement in safety performance organisations have to recognise that they need to do something different, rather than simply more of the same. Leadership in safety is key in creating raised expectations and engaging everyone in the process.”

Mr Mike Evans  
Head of Health and Safety  
British Airports Authority (BAA)

### Looking Ahead

Even at this early stage, as our Sustainability Report went to print in May 2010, there was evidence of a significant change in how we approach the concept of risk. We welcomed the strong endorsement in January 2010 at the Gammon Annual Safety Conference by our Guest of Honour, Mrs Cherry Tse, Commissioner for Labour, who said, ‘Gammon has practised safety by design with success for five years. Their pioneering experience sets a good example for the industry to emulate. Gammon is a model test bed.’

Good performance is rarely initiated at the workplace. It takes leadership and Gammon's top management is determined to deliver. With a concerted effort from every part of our industry in Hong Kong, there is nothing to prevent us from eliminating fatalities and finally removing this dark and unwanted cloud from our horizon.

SUSTAINABILITY  
PERSPECTIVES

My job is to run a project smoothly and safety is a critically important requirement. I feel the company has empowered me really to take ownership of safety at both the planning level and during the day-to-day works so that we can implement our Zero Harm policy to the very best of our ability.

Leung Chi Shing, ‘Gammon Best Site Agent 2009’



## Engaging Our Staff and Suppliers

Our Sustainability Agenda promotes construction safety to a standard of Zero Harm, environmental stewardship, strong community relationships and economically viable markets. We actively communicate these messages to staff, suppliers and other stakeholders.



**To build a shared commitment** to sustainability requires clarity of what we are trying to achieve and how we plan to get there. We also believe it calls for active engagement and consistent communication from top management down to our employees, and onwards to our customers and supply chain. In 2009, we made excellent progress in both respects.

### Sustainability Champions

Our sustainability champions are especially important. Senior managers fill these roles in Building, Civil, Foundations, Concrete, Pristine (our steel business), Plant, Procurement, E&M, Lambeth, and also in our Singapore business. Reporting to Gammon's Directors, and connecting through our projects to staff and our supply chain, they provide a vital two-way channel that facilitates communication and follow-up action. Our sustainability champions set and track objectives and targets, facilitate workshops and initiatives, and co-ordinate appropriate activities with community partners. Monthly meetings or focused workshops provide a

platform for reviews and this regular feedback ensures that our collective agenda remains fresh and relevant.

Our staff magazine *The Record* is an ideal platform for explaining our sustainability policies, tracking achievements, and educating our employees about key issues such as climate change and the need to reduce carbon emissions. We include sustainability topics in Gammon Academy courses, which are free for all staff. Customers, suppliers and subcontractors are engaged by a variety of means – during tendering, through industry association, surveys and routine business contacts.

### Aligning with Our Supply Chain

As in previous years, we engaged our supply chain around sustainability. An important initiative in 2009 was our introduction of sustainability as a criterion in our pre-qualification of vendors. To strengthen this, we ran a supplier survey to identify their interest in developing more sustainable products with us. The results were encouraging with more than 50% of our suppliers indicating they would support us.

*Winning entry from Gammon annual photo competition 2009.*

All our subcontractor and supplier surveys are reviewed by senior staff who ensure actions are taken to address concerns. The survey results are also posted online so that they are accessible to all relevant stakeholders. This in turn improves supply chain transparency. The 2009 results showed clearly that the people outside Gammon who participate in our construction projects have a positive attitude to working with us. We believe subcontractors and suppliers understand what we are trying to achieve and support us.

### Communicating in New Ways

Our monthly bilingual CEO Message provides commentary and updates on our sustainability agenda and averages 1,580 hits each month on our staff intranet. A supplementary hard copy is posted at all our construction sites. In July 2009, our CEO commenced a regular blog and this met with an even better hit rate of an average of 2,408 hits per month. In August, we introduced the Gammon-Wiki, an online resource that seeks to stimulate interest and discussion of our sustainability aims and initiatives. The Gammon-Wiki achieves an average of more than 15,000 monthly hits.



Chief Executive Thomas Ho's blog.

### From the Grassroots Upwards

Gammon makes sure that communication about sustainability is a two-way street. We encourage everybody to push their ideas about how Gammon can enhance its practices up through our organisation. There was an excellent example of this in 2009 when a young graduate working with Gammon in Singapore proposed an offset penalty system for addressing the unavoidable environmental impacts of construction projects. We recognised the value in his suggestion and quickly implemented it in Singapore, where it has enhanced the local sustainability culture. His idea received further recognition as the winner of the Chairman's Graduate Prize from our shareholder Balfour Beatty.

### Showcasing Our Role Models

Our Employee of the Month programme focuses on a variety of staff attributes, many of our people are singled out for achievements in safety, connection with the local community, the environmental impact of our projects, or their efforts to reduce consumption of energy and other resources.



The 2009 Chairman's Graduate Prize, given by Mr Steve Marshall, non-Executive Chairman of Balfour Beatty, and awarded to the graduate making the greatest innovation in the worldwide Balfour Beatty Group, went to Havesah Nagarajan at Gammon in Singapore.

I joined Gammon Construction in the middle of 2008 and formed part of the Design Department for the new ITE College West. I have been really motivated by Gammon's clear push for sustainability. As one of the pioneer members of the Green Group, which consists of environmental champions for each Gammon site in Singapore, I regularly think of ways for builders to incorporate environmentally friendly methods of construction in their projects. I also led my project's submission for Singapore's Green Mark Award and submitted a personal entry to a big internal prize on innovation. It is extremely rewarding to be part of a company whose core values on sustainable development are in line with my personal interests on environmental issues.

Siti Hajrah, Site Engineer, Gammon Construction (Singapore)



## SUSTAINABILITY PERSPECTIVES

**With Gammon Construction, I have the confidence of working with a partner that genuinely cares about sustainability. We have partnered successfully on the Tamar project to secure a good source of high quality timber that is FSC (Forest Stewardship Council) certified. I welcome this way of doing business.**

Cheung Yau Sing, Director, CYS Engineering Company Limited



There are many examples of how our employees understand our commitment to sustainability. In Singapore, for example, a team of employees working on our Mole project showed dedication in a challenging contract that involved removing a buried seawall. Our employees demonstrated their sustainability credentials by reusing nearly all of the excavated materials.

In Shenzhen, a staff member running our Innovation Group launched environmental campaigns in 2009 aimed at cutting consumption of electricity, water and paper. Colleagues have rallied enthusiastically around her promotional work.

There were many other examples in 2009 of exemplary staff who had practised Gammon's core sustainability values. These included our Engineering Development Manager with Lambeth who reconfigured key operations at Tamar to make them safer, faster and cheaper. A Senior Engineer working on the Chinatown Project in Singapore found an innovative way to remove bored piles in a manner that reduced risk to the public and also saved costs. A Quality Assurance Assistant and an Environmental Control Officer played an important role in Gammon winning Singapore's inaugural BCA Green and Gracious Award (Excellent Grade). A Concrete Technology Supervisor working on projects such as Tamar and Hong Kong University led his department in pursuit of their 'zero waste' target, with a focus on more efficient and accurate concrete supply. The team at our Foundations Technology Centre at Tseung Kwan O in Hong Kong sourced a hydraulic pressure system as a more sustainable alternative to the earlier conventional compressed air system.

### Seeking the Views of Our Staff

In November 2009, our staff surveys included questions on sustainability for the first time. The results were encouraging, with 73% of respondents 'agreeing' that they see Gammon as a company supporting volunteerism and 72% taking the same view on Gammon in respect of its willingness to engage with the community through donations and sponsorship. 74% feel strongly that Gammon addresses environmental requirements in new projects. 71% strongly agree they are motivated to practise environmental responsibility in their own job. We believe the high level of satisfaction shown in our survey contributed to our low 2009 voluntary staff turnover rate of just 7.72%.

### Sustainability in Staff Appraisals

In 2009, we also added criteria on safety, sustainability and the environment into all staff appraisals, both junior and senior. Individual appraisals were conducted on 100% of staff in 2008 and 90% in 2009. This underlines Gammon's belief that a commitment to best practice and a culture of continuous improvement in the fields of safety, sustainability and the environment is the key to achieving operational excellence.



*Gammon is the first contractor in Singapore to obtain Green Office certification for its construction site offices in 2009-2011. The certification is provided by the Singapore Environment Council. [www.sec.org.sg](http://www.sec.org.sg)*

## Investing in Tomorrow



We have a strong and visible commitment to our workforce, our supply chain and the communities in which we operate. We recognize our obligation to support industry professional development, and to develop a caring culture.

**We believe** in putting something back into the communities in which we operate, beyond the obvious benefits created by our projects. Interaction with staff, business partners, the community and the environment are core business issues for Gammon.

### Professional Development

We have a deep commitment to professional development and will not allow challenging economic conditions such as those we saw in 2009 disrupt investment in our people. This was how we felt when we set up Gammon Academy in 2003 and this is the way we still feel. We believe our focus on training benefits Gammon and the wider construction industry. The number of hours of formal training per member of staff continue to rise year on year. We also introduced training roadmaps to support career development. For example, we aim to train Technician Apprentices so they can become all-round Construction Supervisors and eventually fill the vital roles of Sub-Agents and Site Agents. We also arrange job rotations, international assignments and talent exchange with clients and partners to foster personal growth and challenging career paths.

In 2009, I was seconded to work as safety manager on the prestigious 2012 Olympic Aquatics Centre Project in London. During this three-month programme, I really discovered what 'Safety Culture' means! Zero Harm is not just about implementing a safety management system or asking people to comply with various rules or standards. It's about creating an environment on site that encourages distinct safety behaviour and gets people to believe in the system. With strong safety leadership, and a willingness to be sympathetic to workers' ideas and desires, a Zero Harm project is definitely achievable. 📌

Eric Wong, Unit Safety Manager  
Gammon Construction



## SUSTAINABILITY PERSPECTIVES

**Sustainability can be a route to immense job satisfaction. Having joined Gammon Construction in 1995, I have seen my company's sustainability programmes take root and really grow. And I get the chance to put our various sustainability policies into practice every day, applying them in safety, in project management, in customer relations, and above all in the field of innovation.**

Alan Yan, 'Gammon Best Project Manager 2009'



Gammon maintains a proactive strategy in attracting, developing and retaining talent to meet future business needs. In 2009, we added 52 graduates to our workforce, including five quantity surveying scholarship students. Gammon also launched engineering scholarships with Tsinghua University, Tongji University and South China University of Technology. We continued to enjoy strong links during the year with Chu Hai College, the Hong Kong Institute of Vocational Education and the Construction Industry Council Training Academy.

### Building Capabilities

We continued our unique fellowship programme – a one-year work experience scheme for final-year students – and in 2009 hired 80% of the people we took on as fellows. In 2009, we extended this programme to the Hong Kong Institute of Vocational Education graduates and launched the programme in Singapore.

Tapping into China's talent, our Shenzhen Office is a resource centre offering key capabilities to our Group businesses. In line with this, we set up an AutoCAD Centre to develop experts in new technologies such as Construction Model Control Plans (CMC) that are key requirements for any contractor competing for demanding design and build jobs.

Extending our focus on education, Gammon was one of the sponsors of 'Corporate Sustainability 4 Schools', a school-business bridging programme that helps students understand the triple bottom line – profit, people and planet – driving the sustainable growth of business. We have arranged site visits and held talks for schools as part of our involvement.

### Caring for Community

Gammon continues to build a genuinely caring employee culture and received the Caring Company logo for the fourth consecutive year. This culture starts with staff then extends to workers and the community. The Frontline Safety Committee held

30 lunch box meetings with workers on improving safety and site environment. In 2009, 78% of the 85 issues raised were resolved.



*Pictured here are Graduate Trainees in a team-building exercise at one of our induction programmes.*

In 2009, we increased the volume and variety of our community projects by supporting 41 formal community events, a more than three-fold increase on the previous year. We also engaged more staff and supply-chain partners, and strengthened core partnerships. Our key long-term partners include the Tung Wah Group of Hospitals, local care groups such as the Hong Chi Association, Hong Kong Wheelchair Aid Service Ltd, and Haven of Hope.

Founded in 1999, our Young Professionals Group (YPG) supports professional development and encourages a commitment to social responsibility. The YPG has 311 members in Hong Kong, 170 in Singapore, and 64 in Mainland China. YPG members join workshops, seminars, outdoor activities and visits, some of which are associated with global issues such as climate change and sustainable economies. They also participate actively in CSR activities such as golfing fun days with mentally handicapped students, social services for handicapped pre-school children, charity fund raising and beach cleaning.

### Charitable Organisations supported by Gammon





Gammon volunteers participated in the Coastal Cleanup at Tuen Mun Road East.



Thomas Ho addressed the Hong Kong Institution of Engineers' Conference – Engineers' Responses to Climate Change in January 2009.

### From Heart to Hand

Our staff willingly support worthy causes on behalf of Gammon as is evident from our busy 2009 programme of charity fund-raising and community awareness events. For the 23rd year running, we participated in Hong Kong's Sedan Chair Race which raises funds for charity, and a Gammon team joined 38 other companies in the Outward Bound Corporate Challenge. For the fourth year running, we participated in the annual Central Rat Race in Hong Kong to raise HK\$170,000 for a local mental health charity. Our staff raised valuable funds to help Zhong Hua Construction Foundation Ltd provide building and engineering services to NGOs coordinating post-earthquake reconstruction in China's Sichuan province. They also raised money for the Children's Cancer Foundation (Hong Kong), and supported typhoon relief after August's Typhoon Morakot in Taiwan.

Gammon also sponsored the Hong Kong International Coastal Cleanup Challenge (HKICC) for the second year running. This hugely popular event drew 105 volunteers from Gammon to clean-up two coastal areas near our works. This year we invited clients to join us.

### Engaging our Industry on Climate Change

Climate change is a major issue in our industry. New regulations in the property and power generation sectors will have significant impacts on the construction industry, especially in connection with new build techniques and materials. In 2009, we continued our efforts at reducing our own climate change impacts and also joined leading local businesses in the Hong Kong Climate Change Business Forum (CCBF) to advocate further measures and debate.

To this end, we supported key climate change conferences. In January, for example, our Chief Executive Thomas Ho spoke at a climate change seminar organized by the Hong Kong Institution of Engineers. In April, he spoke on sustainability at the Business Environment Council's CEO Forum. In November, Gammon sponsored the Hong Kong International Conference on Climate Change 2009. We will continue to be part of the debate in 2010 and beyond.

What I find most refreshing about sustainability is that it sits so well with good business practice. To be sustainable your company has to have integrity and it must be profitable. We pursue technically difficult work with clients that value sustainability and, by focusing on technical capabilities and resisting the commercial pressure to win on price, we've gained a clear competitive edge. A new focus is how – in a highly cyclical industry – we deliver a long, stable and fulfilling career path to our employees.

Sam Houston, Executive Director, Gammon Construction



# Verification Statement

The Business Environment Council (BEC) was commissioned by Gammon Construction Ltd (Gammon) to verify its 2009 Sustainability Report "Sharing the Challenges" (the Report) which involved checking the completeness of report scope and adequacy of data, as well as the accuracy and credibility of the information presented. BEC conducted sample checks of representative group-wide data and claims in the Report through document and data review and interviews with responsible personnel at the Hong Kong head office. Our findings are set out as below.

## Completeness of the report scope

'Sharing the Challenges' provides a fair and balanced account of Gammon's sustainability commitments, performance and challenges in relation to its core business activities and key markets for the reporting period. The Report covers Gammon's approach to sustainability in managing significant health and safety, social, environmental and economic issues. Risk management, sustainability innovation, protecting the environment and building a caring culture are highlights of the report. The Report also demonstrates how Gammon is remaining focussed and taking the leadership to promote a more sustainable construction industry and society in the long run, particularly on the issues arising from the foreseen construction boom in near-term.

## Adequacy of data

The relevance and clarity of the Report's presentation of economic and business, social, health and safety, and environmental performance is considered adequate. In particular, the presentation of industry statistics is useful in presenting the sustainability challenges confronting Gammon and the construction industry. Indicators in the Report provide a useful insight into Gammon's sustainability performance monitoring and enable readers to compare performance over time as well as support analysis relative to other organisations.

## Accuracy of data

BEC is satisfied that the information presented in this Report is substantiated by the documents and data reviewed and interviews conducted during the verification process. The methods used and underlying assumptions adopted to calculate quantitative data are adequately explained in the Report. Gammon is proactive in ensuring the accuracy of data and makes adjustment when deemed necessary. Recommendations to correct minor errors identified during verification and to improve consistency and clarity in the information presented have been incorporated into this Report to BEC's satisfaction.

## Opinion

**BEC considers this Report an accurate and reliable presentation of Gammon's initiatives and achievements towards corporate sustainability in 2009. BEC encourages Gammon to consider the inclusion of the following aspects in the preparation of its future reports:**

- To report the material issues expressed by key stakeholders in a systematic manner.
- To present clearly Gammon's sustainability objectives and targets in both the short term and long term, as well as their progress status.
- To improve the coverage of appropriate performance indicators with reference to GRI G3 Guidelines, particularly on corporate governance, human rights and society.

**Dr Andrew Thomson**



Chief Executive Officer  
Business Environment Council

# Performance Data

Independently verified performance data scope throughout this report includes activities within our operational control. Joint Venture data is reported based on financial share. Following data is supplementary to that found elsewhere in this report.

	Units	2009	2008	2007
<b>Economic</b>				
Sustainable sourced timber, all sources <sup>1</sup>	% by value	<b>81%</b>	51%	—
Forest Stewardship Council Certified	% FSC	<b>all</b>	4%	—
<b>Social</b>				
Total monthly-paid staff (by location)		<b>2,850</b>	2,525	1,983
China	number	<b>341</b>	226	224
Singapore	number	<b>573</b>	490	304
Hong Kong & Macau	number	<b>1,936</b>	1,809	1,650
Total daily paid workers (all locations)	number	<b>1,806</b>	1,676	1,455
Total subcontract workers (by location)		<b>5,524</b>	4,533	3,491
Hong Kong & Macau	number	<b>3,733</b>	3,350	2,827
Singapore	number	<b>1,791</b>	1,183	664
Gender, monthly-paid staff	% male	<b>79.5%</b>	79%	76%
	% female	<b>20.5%</b>	21%	24%
Graduate recruitment	number	<b>52</b>	89	40

2005 baseline

<b>Environmental<sup>2</sup></b>					
CO <sub>2</sub> (e) intensity <sup>3</sup>	kg/HK\$1m turnover	<b>5,784</b>	6,238	6,034	11,796
CO <sub>2</sub> from air travel	tonnes	<b>308</b>	369	493	433
Electricity intensity	kWh/HK\$1m turnover	<b>2,104</b>	2,300	3,084	3,039
Diesel intensity	litres/HK\$1m turnover	<b>1,555</b>	1,697	1,357	3,603
Petroleum intensity	litres/HK\$1m turnover	<b>59</b>	47	69	160
Total potable water withdrawn					
Hong Kong & Macau	cubic metres	<b>501,056</b>	655,970 <sup>4</sup>	630,456	593,438
Singapore	cubic metres	<b>138,667</b>	110,863	34,399	8,842
China	cubic metres	<b>7,193</b>	10,423	20,205	58,104
Water intensity	m <sup>3</sup> /HK\$1m turnover	<b>75</b>	100.3 <sup>4</sup>	92	104
Total waste landfilled	tonnes	<b>30,486</b>	19,564 <sup>4</sup>	26,236	222,705
Hong Kong, Macau & China		<b>28,205</b>	17,392	25,879	218,536
Singapore		<b>2,281</b>	2,172	357	4,169
Total inert material to public fill (Hong Kong)	tonnes	<b>509,951</b>	617,027 <sup>4</sup>	1,004,990	241,534
Compliance convictions – environmental	number	<b>0</b>	2 (HK)	1 (HK)	

**Footnotes:**

1. Softwood and plywood for formworks. Reporting started 2008.
2. 2005 is our reference baseline. For Gammon-Hip Hing JV, only our part (50% of JV) is taken into account in 2008/9.
3. Scope 1 and 2 emissions from activities in our operational control.
4. Water and Waste for 2008 corrected to reflect JV share.

# Major Awards and Recognition

- **2009 Jardines Pride in Performance Awards Category Winners**  
**Customer Focus**  
 Gammon Hong Kong - Nam Wan Tunnel project

**Innovation and Creativity**  
 Gammon Singapore – The ‘Mole’ project
- **The Lighthouse Club Hong Kong Branch**  
**Safety Foreman Award 2009**  
 Au Wan Fung
- **The Labour Department, Hong Kong**  
**Construction Industry Safety Award Scheme**  
**Gold Award – Building Category (Public Works)**  
 Tamar Development Project

**Gold Award – Retrofitting and Maintenance Category**  
 Term Contract for Waterworks District E, New Territories East

**Gold Award – Subcontractor Category**  
 Tamar Development Project – Foundations

**Gold Award – Safety Team**  
 Term Contract for Waterworks District E, New Territories East
- **2009 Hong Kong Awards for Environmental Excellence – Construction Industry**  
**Gold Award**  
 Tamar Development Project
- **Building and Construction Authority, Singapore**  
**BCA Awards 2009**  
**Excellent – Green and Gracious Builder Awards**  
 Gammon Pte Ltd
- **Occupational Safety & Health Council, Hong Kong**  
**The 8th Hong Kong Occupational Safety & Health Award**  
**Gold Award – Safety Management System Award – Construction**  
 Gammon – Hip Hing Joint Venture
- **Occupational Safety & Health Council, Hong Kong**  
**Construction Safety Forum and Award Presentation 2009**  
**Gold Award – The Best Refurbishment and Maintenance Contractor in OSH**  
 Term Contract for Waterworks District E, New Territories East
- **Development Bureau, Hong Kong**  
**Considerate Contractor Site Award Scheme 2008**  
**Gold Award (Non-Public Works – New Works)**  
 North Satellite Concourse Building Works
- **Singapore Environment Council**  
**Green Office Certification 2009-2011**  
 Sentosa Board Walk Project Site Office



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