



CONTENTS

| Highlights | | Page |
|--|---|-------------|
| Introduction | | 1 |
| Message from the Chief Executive | | 2 |
| Awards Highlights | | 4 |
| New strategy for sustainability: Responsible Growth - 25 by 25 | | 6 |
| Safety | | 10 |
| Environment | | 12 |
| Value Chain | | 14 |
| People | | 16 |
| Contributing social value | | 18 |
| Green and Caring | | 19 |
| Innovation | | 20 |
| Part | Main Report | |
| 1 | Our Company | 22 |
| 2 | Safety – Zero Harm | 27 |
| 3 | Environment – Zero Waste | 32 |
| 4 | Value Chain – Co-creation | 39 |
| 5 | People – Caring | 43 |
| Appendices | | |
| A | Governance | 51 |
| B | Management Approaches – Safety, Environment, Value Chain, People | 54 |
| C | GRI Content Index | 67 |
| D | Key Performance Indicators | 71 |
| E | Other Initiatives – Awards | 77 |
| F | Green Building Projects | 84 |
| G | Verification Statement | 88 |
| H | Membership of Associations and Industry Bodies | 92 |

Our Brands:



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



Public-Private Partnership business



Engineering design services



External façades and general contractor



Technology and innovation



Interior fit-out and contracting

INTRODUCTION TO THE REPORT



TIME TO CELEBRATE

Welcome to the 17th edition of our sustainability report! 2018 was a very special year for Gammon, as we celebrated our 60th Anniversary. Since the inception of the business, Gammon has grown together with the development of Hong Kong – building some of its most important infrastructure and most iconic properties. Sustainable and responsible growth of the business has created a legacy of quality, safety, integrity, care for our people and the community, innovation and a commitment to excellence. It is for these reasons the company endures and to reflect that history, we have titled the report, ‘Continuing the legacy’.



The year was filled with various celebratory events including a ‘Run for 60’ (p.18), a special firing of the Noon Day Gun at Victoria Harbour (p.3) and a 60th Anniversary cocktail reception (above) which we were fortunate enough to hold at Tai Kwun Centre for Heritage and Arts. We had around 600 guests with many old friends including several former Gammon chief executives and family members of Gammon’s founder. The evening included a showcase of our latest technology applications, as well as a video highlighting many of the key Gammon projects since 1958. Hong Kong Chief Executive Carrie Lam and Secretary for Development Michael Wong also kindly shared their congratulations with the audience and our Chief Executive, Thomas Ho, saluted all staff and business partners who had contributed to Gammon’s success over the years.

CONTINUING RESPONSIBLE GROWTH

In 2018, we also commenced a new chapter in our sustainability journey, with the launch of our new sustainability strategy, Responsible Growth – 25 by 25. In the report Highlights, we outline the key aspects of the strategy and also share our sustainability efforts and achievements from 2018. Following the Highlights, our online Main Report presents other actions and case studies from the year and includes our formal management approaches and disclosures in line with the requirements of the Global Reporting Initiative (GRI) and Standards of the Global Sustainability Standards Board.

ALIGNMENT TO GRI STANDARDS

This report has been prepared in accordance with the GRI Standards: Core option. The full report with all our detailed performance data is available online only (www.gammonconstruction.com/en/html/sustainability/report.html) to reduce the use of natural resources. There are a limited number of hard copies of our Highlights section available for key clients, partners and other stakeholders. Should you wish to have a hard copy or provide any comments on the report or suggestions for us to pursue, please drop us an email at environment@gammonconstruction.com. We welcome your views.

MESSAGE FROM THE CHIEF EXECUTIVE



There were many highlights for Gammon in 2018, in particular the celebration of our 60th year of operation in Asia. We have a rich history but in no way have we clung to traditional practices and our drive to be a more sustainable business has fuelled our strength in innovation and pioneering use of new technology, and ultimately resulted in our longevity.

For us to continue the Gammon legacy, radical rather than incremental change is needed and we therefore set ambitious targets through our new sustainability strategy, Responsible Growth – 25 by 25 (p.6) which we launched in 2018. Improving efficiencies and safety through off-site construction is a vital part of the strategy, and one of our notable achievements throughout the year included delivering Hong Kong's first modular integrated construction (MiC) demonstration building that showcases the quality, productivity and safety benefits of building and fully fitting out volumetric modules off site in a controlled factory environment before delivering them as a unit for rapid installation on site. MiC needs enlightened customers and I hope this project helps encourage industry leaders to embrace this form of construction which offers so many sustainability benefits.

In Singapore, the success of our design for manufacture and assembly (DfMA) approach on our data centre project resulted in 70% of the structure and 69% of the MEP elements being precast and modularised off site respectively, and we received high praise from both the client and the Building and Construction Authority for our performance.

I am also proud our in-house developed software robot, Gambot™, held its own against international competition to win some major awards in 2018. Gambot is having a profound effect on safety reporting and monitoring on our sites and represents the innovative spirit we cultivate at Gammon and our capabilities at designing technology that makes us a more productive and safer contractor.

We continue to be a leader in the industry in safety performance, but improvement is incremental rather than remarkable and we must do more to make it part of the psyche of our people. We have begun exploring this area with psychologists and it will continue to be a focus.

Business wise, it was a challenging year but we successfully met our targets. What was particularly enjoyable to see, however, was how high morale was, and continues to be, throughout the company, helped by a strong Gammon brand, a number of significant project wins throughout the year and our 60th birthday.

Looking ahead, the market remains buoyant with many opportunities in the building sector. With 450,000 residential flats needed in the next decade, this is unlikely to change. This is a prime arena for the use of MiC but convincing major housing developers to further embrace this method of construction is vital, as this will provide the scale the industry needs to accelerate uptake.

The infrastructure market is also strong, with many prospects upcoming at Hong Kong International Airport as part of its new Third Runway System, as well as remaining contracts for the Central Kowloon Route.

The construction business environment, however, presented new challenges in 2018. The recent quality scandals that have plagued the industry stress the importance of proper procedures, documentation and records. We must examine how to make continued

improvements in construction processes, record-management and quality-checking mechanisms. We have already begun to address these challenges and in 2018 created a special quality unit that provides a further level of inspection on our projects.

We must also focus more on the diversity of our employees, which is emerging as an issue in Hong Kong, where we lag behind much of the world. Initially, we will be looking at how to attract and retain a greater number of females in our workforce and have already begun studying this issue in detail. Research shows a diverse and inclusive working environment boosts employee engagement, talent retention, job satisfaction and performance so it makes good business sense.

In the medium to short term we will continue to work to influence the industry, our clients and government to adopt more sustainable methods of construction, in particular off site, modularisation and standardisation using a 'kit of parts' approach. We understand we need to both push and support our subcontractors and supply chain to adopt more sustainable work practices and in 2018, we took one of our suppliers to the UK to see first-hand the benefits of a DfMA approach and more quickly understand its potential, and ultimately drive a more rapid change in mindset.

Internally, our focus will be on fostering digital thinking and a collaborative working spirit in our people, so that we can continue to transform the business through the use of digital tools that improve efficiencies, communication and co-operation.

Looking back at Gammon's 60-year history it is clear we have made, and continue to make, great strides in terms of sustainability and can enter our seventh decade confident the legacy of Gammon will continue.

Thomas Ho JP
 Chief Executive
 Gammon Construction Limited

GRI 102-14



Firing the noon day gun with Hong Kong SAR Financial Secretary Paul Chan, in celebration of Gammon's 60th anniversary

“ Sustainability is part of Gammon's DNA. Thomas Ho, Chief Executive ”



Proudly receiving an Outstanding Achievement Award from the Hong Kong Institute of Construction Managers for advocating green and innovative construction methods for the past 30 years

Our focus on safety was acknowledged at the Lighthouse Club Contractor Safety Awards in September, where we took to the stage 12 times.

The awards were received in the categories of Safe Project Team, Safe Subcontractor, Construction Manager Safety and Safe Foreman. The highest accolades consisted of two champion awards in the Safe Foreman and Construction Manager Safety categories.

The event follows on from our earlier success at the Lighthouse Club Safety Leadership Awards in March, when three of our civils projects received awards in the category of International Design for Safety, and Director Tony Small was Highly Commended for his Approach to Safety Leadership.



12 awards – The Lighthouse Club Contractor Safety Awards 2018

AWARDS HIGHLIGHTS



Four awards – The CIC Sustainable Construction Awards 2018

We were delighted to receive four awards at the Construction Industry Council's (CIC) first Sustainable Construction Awards in October.

Our Tuen-Mun Chek Lap Kok Link – Southern Connection Viaduct project was presented with Gold in the Contractor in New Works category, while our Ocean Park Tai Shue Wan Water World received a Merit in the same category.

Our Sammy Lai picked up the top Excellence award in the Construction Manager category for his focus on sustainability on the One Taikoo Place commercial project, and Tommy Choi received an Outstanding accolade in the Young Practitioner category for his work at our Urban Renewal Authority project in Ma Tau Wai.

Our in-house developed software robot with artificial intelligence caught the eye of four different judging panels throughout 2018. Functioning as a mobile virtual assistant, Gambot captures and analyses site activities and has significantly improved safety and progress reporting on our sites. The innovation was awarded:

- Gold in the Safety Management System, Training and Promotion category of CIC's 2018 Innovative Safety Initiative Award
- Regional winner at the International Data Corporation's Digital Transformation Awards 2018
- Innovate Jardines Grand Prize
- Gammon Innovation Competition Grand Prize

You can learn more about Gambot's capabilities in the main report.



Four Awards – In-house developed Gambot



Four Golds – Employers Appreciation Awards (CIC)

CIC also recognised our endeavours in training workers and nurturing young practitioners by presenting us with four gold awards at its Employers Luncheon cum Appreciation Ceremony in April.

The gold awards were for the following achievements:

- Contractor hiring the most number of graduates in 2017
- Contractor hiring the most number of trades in 2017
- Employer offering the most apprenticeship contracts in 2017
- Contractor’s participation in training skilled workers in 2017

Two of our employees were also named best instructors of collaborative training schemes in 2017.



Gammon values apprenticeships and training and strives to offer clear career paths and professional development opportunities for newcomers.

Edmond Lai, Executive Director



Two awards – Hong Kong Awards for Industries

We were also honoured at the 2018 Hong Kong Awards for Industries, receiving an Innovation and Creativity Award for our Integrated Building Quality Management System which includes 3D laser scanning, tapping hammers and infrared sensing for the early inspection of workmanship in flats.

Our E-Docket and Concrete Management System was also rewarded with a Smart Productivity Certificate of Merit as praise for its paperless production and data traceability, and 95% enhancement of productivity.



Bronze – BEC Sustainable Consumption Enterprise Award Scheme

Voting by members of the public resulted in a Bronze for Gammon at the Sustainable Consumption Enterprise Award Scheme run by the Business Environment Council. Our entry highlighted our efforts at working with our supply chain to encourage the use of B5 biodiesel, FSC timber formwork and doors, the use of recycled materials, regional sourcing, and many other sustainable products and services.

OUR **NEW** STRATEGY **FOR** SUSTAINABILITY: RESPONSIBLE **GROWTH** – **25** by **25**

BACKGROUND

In our 2017 Sustainability Report, we showed the progress we had made on our **Sustainability Roadmap 2020**. Given the many achievements on the roadmap and the new initiatives in our industry, we felt it was the right time to refresh our sustainability strategy, renew our focus and set targets that look to 2025 and beyond. After multi-stakeholder engagement, which started in late 2017, our new sustainability strategy was launched in mid-2018 and was shared externally at our Sustainability Conference in September.



CONTEXT

The strategy is based on strong **Governance** with clear support and commitment from our Chief Executive and Directors which is essential if we are to achieve our sustainability ambitions. It is aligned with the vision, mission and three core values of our **Gammon Way**: Safety, Integrity and Excellence.

The strategy has also been set within the context of our five high-level **business priorities** which are as follows:

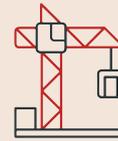
BUSINESS PRIORITIES



Engaging with and enhancing the wellbeing of our **people** and **helping communities**



Reducing **resource use** and **waste** and being ready for **climate change**



Optimising **off-site construction** and related standardisation, modularisation, mechanisation and design for manufacture and assembly (DfMA)



Expanding the use of and developing our skills in **building information modelling (BIM)**, not only in 3D but in all its potential dimensions to improve planning, quantification, sustainability, client facility management, collaboration, robotics and artificial intelligence



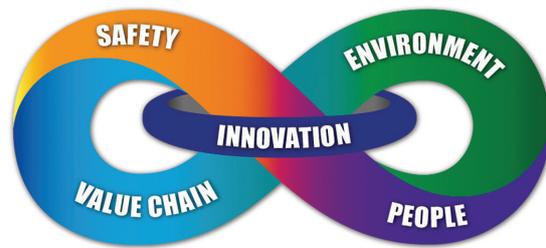
Continuation of our **digital transformation** journey and adoption of **integrated digital project delivery (IDPD)** to allow active collaboration of the value chain in a digital environment

FOCUS AREAS AND APPROACHES

Gammon does not treat sustainability and business operations as separate. We are committed to operating a socially responsible business that is able to deliver our clients’ projects to their satisfaction while minimising negative impacts on, and creating positive change for, society and the environment. Sustainability for businesses is a complex subject, however, and there are multiple touch points across functional areas and activities. Gammon is no different and we have therefore simplified our focus for the next few years into four areas and corresponding approaches in order to achieve our strategic goal of **responsible growth**.



As can be seen from our business priorities, achieving this goal will rely heavily on **innovation** and **digital transformation** which inspire new ways of thinking, as well as better construction methods and materials. Nurturing and encouraging creativity, innovation and digital transformation therefore forms an essential and integral part of the strategy. As a result, we have brought together the four focus areas and innovation into a representation of the strategy based on an infinity symbol that signifies the essence of sustainability.



SUPPORTING THE SUSTAINABLE DEVELOPMENT GOALS



During our internal and external engagement we also looked at how we could contribute to the United Nations Sustainable Development Goals (SDGs) and the following six goals and seven targets appeared to be most relevant. These targets have been integrated into objectives and actions under our focus areas.



| TARGET | 3-9 | TARGET | 7-2 | TARGET | 8-6 | TARGET | 8-8 | TARGET | 9-5 | TARGET | 12-5 | TARGET | 17-17 |
|--------|---|--------|--|--------|--|--------|---|--------|--|--------|---------------------------------------|--------|----------------------------------|
| | REDUCE ILLNESSES AND DEATH FROM HAZARDOUS CHEMICALS AND POLLUTION | | INCREASE GLOBAL PERCENTAGE OF RENEWABLE ENERGY | | PROMOTE YOUTH EMPLOYMENT, EDUCATION AND TRAINING | | PROTECT LABOUR RIGHTS AND PROMOTE SAFE WORKING ENVIRONMENTS | | ENHANCE RESEARCH AND UPGRADE INDUSTRIAL TECHNOLOGIES | | SUBSTANTIALLY REDUCE WASTE GENERATION | | ENCOURAGE EFFECTIVE PARTNERSHIPS |

OBJECTIVES, ACTIONS AND TARGETS

We have set objectives, high-level actions and numerical targets under each focus area to track and help drive improvement, with each area topped by a headline target to be achieved by 2025. The key targets are summarised below:



25%

reduction in turnover within the first year for new joiners



25%

reduction in the number of accidents on our sites



25%

reduction in carbon intensity



25%

increase in offsite construction

We outline the other objectives, actions and targets under each of the relevant sections in the main report. The baseline year taken for most targets is 2016 (or as defined in the individual targets). Given that most of the sustainability improvements identified are for a 25% improvement by 2025, we have called our new sustainability strategy **Responsible Growth – 25 by 25**.

Responsible Growth

Context

Governance

The Gammon Way

Vision Mission Values



Business Priorities

1. People and communities
2. Resource use and climate change
3. 10D BIM
4. Offsite construction and DfMA
5. Digital transformation and IDPD

“

*We hope our new sustainability strategy will chart a course for **Responsible Growth** that decouples business growth from negative environmental and social impacts and leaves a positive and lasting legacy for society in line with our mission ‘to build for a better quality of life and living environment in a safe and sustainable manner’.*

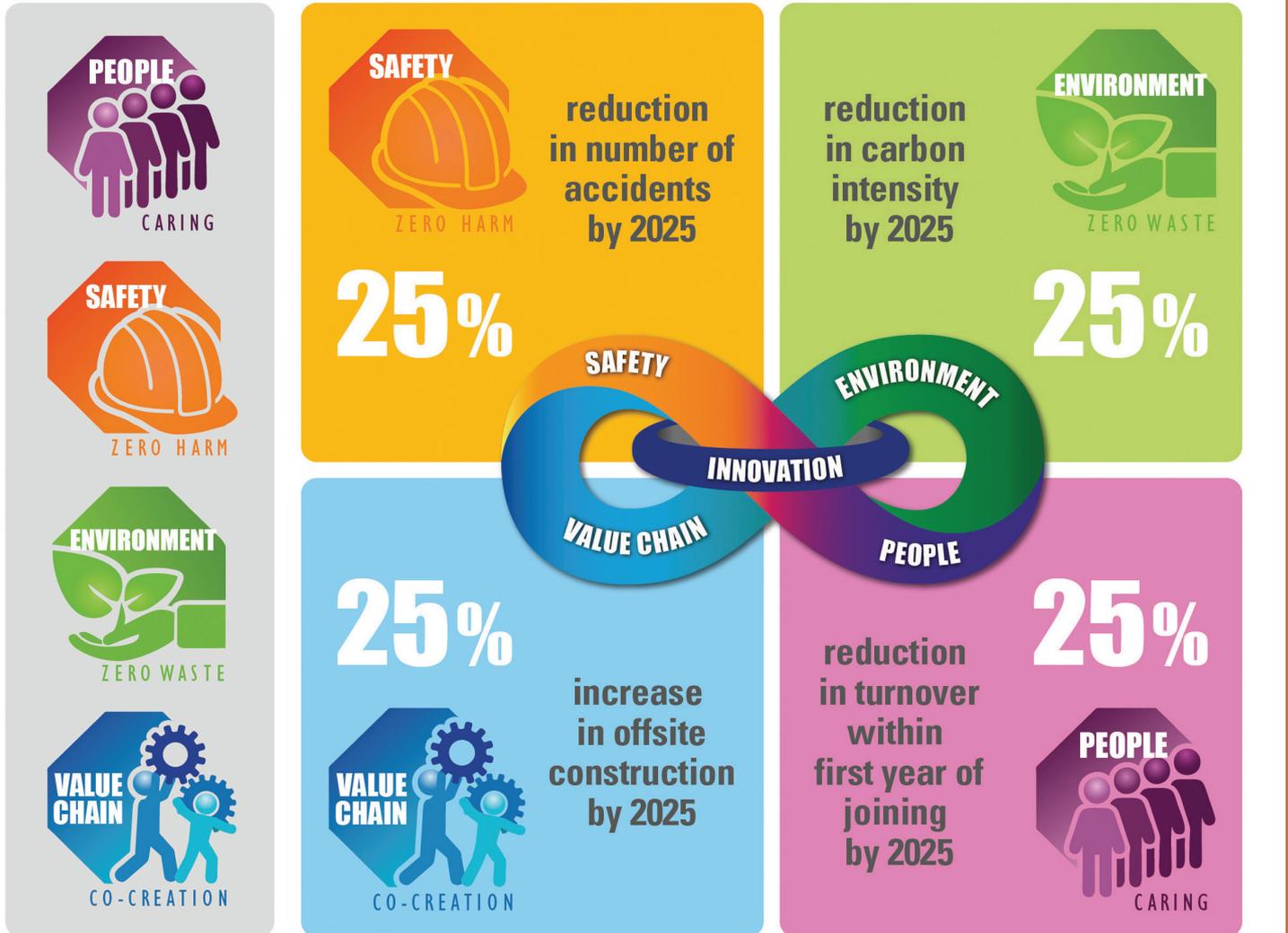
Thomas Ho, Chief Executive

”

- 25 by 25

Focus areas and approaches

Objectives, actions, 2025 targets



COMMUNICATING THE STRATEGY

Communicating the new sustainability strategy could arguably be considered just as important as the strategy itself. In addition to written communications in multiple languages across the business, there has been promotion at senior management level and incorporation into the induction process for every new member of staff. There has also been a sustainability roadshow travelling to every active site during which a briefing on the new strategy was given. At our sustainability conference in September, we also shared the new strategy with some of our external stakeholders including key clients and suppliers. The document outlining the strategy is also publicly available on our website here:



Director Tony Small sharing the new strategy at the sustainability conference

www.gammonconstruction.com/en/upload/doc/sustainability/Sustainability_Strategy.pdf

SAFETY

We have done much to reduce risk throughout 2018 by increasing our use of off-site construction, mechanisation, BIM for planning and new technologies, all of which form essential elements of our Zero Harm programme that seeks to make continuous improvements in safety on our worksites.

Our Singapore data centre project, which made extensive use of off-site construction for both precast structural columns and slabs and modularised MEP components, provides a perfect example of the enormous safety improvements such an approach can bring to a project. There were only two reportable accidents throughout the 16.5-month contract, which at peak employed a combined total of over 900 people on site and in the factory.

Our in-house developed software robot, Gambot, which uses artificial intelligence to collect, store and analyse site data, was enhanced with greater functions and capabilities throughout 2018 and can now predict what potential issues there may be on site based on past observations, current tasks, and the workers and trades employed. This gives the project teams tremendous insight into what is occurring on their worksites (Gambot's capabilities are discussed further in the main report).

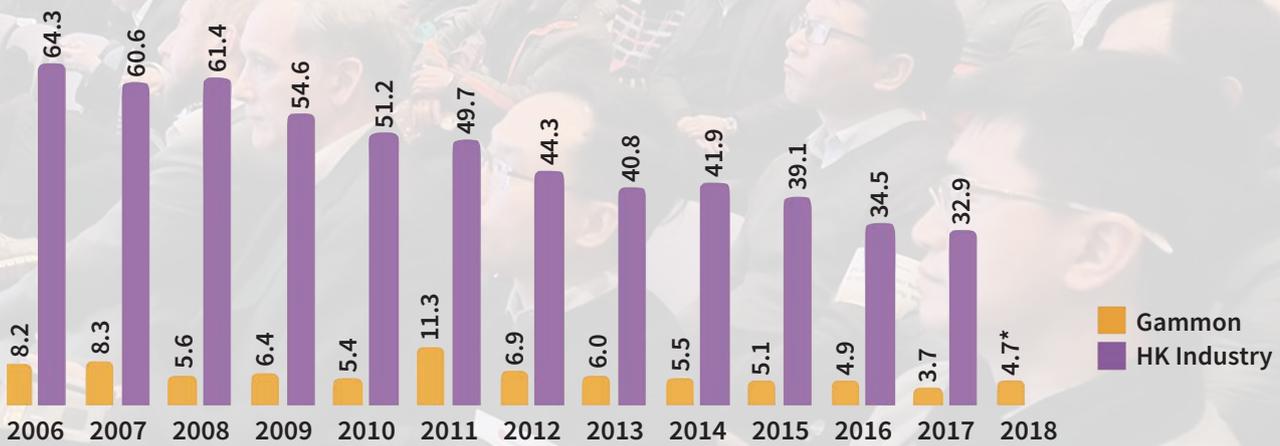
We also looked more closely at the integration of human factors in design and worked with an Environmental Resources Management psychologist from the UK who also spoke at our yearly safety conference. Together we carried out a study on our curtain walling installation procedures to understand more deeply how our people react with each other and the tools they use to reduce risk. This helped us review our procedures and improve the way we give instructions and train our teams to install panels. This is an area in which we will do more work, so that ultimately we are training for assembly and not just designing to be robust.

The danger of buried World War II bombs was thrust into the limelight earlier in the year when several unexploded ordinances (UXOs) were found on Hong Kong Island on other contractors' sites. We have responded proactively by engaging an international specialist to assist us in developing a clear UXO plan and procedures. Some changes in work processes have been adopted and these will be particularly implemented on projects within geographical areas considered to have the potential for UXOs, such as our new Kai Tak central project, part of the Central Kowloon Route.

More than 1,000 people attended our 2018 safety conference

ACCIDENT AND INCIDENT RATE GRAPH COMPARED WITH INDUSTRY

GRI 403-2



* Labour Department, HKSAR Government industry figure for 2018 not available

Typhoon Mangkhut caused serious and extensive damage throughout parts of Hong Kong in September and was the strongest test yet of our emergency procedures, which proved to be effective. There were no injuries on any of our projects and standby teams responded swiftly to maintain pumps and other equipment. The resilience of our sites also meant around 80% were back in full operation after only one day.

Our group accident rate remains better than our peers although we were disappointed our efforts did not allow us to achieve our target of 4.5. We ended the year at 4.7, which is a result we will be working to improve.

See the main report for further details.

ENVIRONMENT

From early in the year, we commenced a Zero Waste Programme on our projects and in our offices to stimulate deep cuts in waste in all its forms. Each new project was tasked with developing a Zero Waste Plan to focus attention, planning and commitment on actions that will achieve, or make a significant contribution towards achieving, our aspirational targets of zero waste to landfill, zero wasted energy and water, and zero loss in productivity. The Zero Waste Plan, in combination with our focus on DfMA, has resulted in more initiatives to take work off site, resulting in reduced waste and improved productivity. We also saw an increase in the use of in-house developed sensor applications that track plant performance and smart metres to monitor energy consumption.

For our permanent offices in Hong Kong, we ran a Zero Waste Office initiative from 1 May, with initial targets focused on reducing printing and copying by 5% per person per department, cutting paper purchases per head by 3% from 2017 levels, and increasing recycling. In addition to our existing paper recycling, waste reduction and recycling awareness was promoted and more waste separation bins were provided for metals, plastics and glass. Individual rubbish bins and plastic bag liners were removed from desks to encourage recycling and we strengthened our practice to avoid disposable cups and straws for company orders of refreshments. We were pleased to see that between May and December, we saw an average monthly reduction in waste to landfill of over 50%, indicating a pleasing reduction in total waste. We also exceeded our targets for lowering paper purchases and printing per head, with 16% and 14% reductions respectively. The programme was also rolled out at our Shenzhen office later in the year.



Solar panels on our Sai Sha Road widening project are earning feed-in-tariff from CLP



Our procurement team launched a dashboard that provides ready information on materials' country of origin and 'green' procurement status to help us monitor our progress at achieving our 25 by 25 objective of increasing our use of sustainable materials, and to facilitate reporting to our shareholders and to the GRI Standards.

We finished the year by achieving a renewable-energy first for Hong Kong. In December, our Sai Sha Road widening project successfully began earning China Light and Power (CLP) feed-in-tariff (FiT) from a solar power renewable energy system installed on site. The system was developed in collaboration with our project joint venture partners, Sanfield (Management) Ltd, and with the support of client Sun Hung Kai Properties. CLP confirmed this is the first temporary solar power renewable energy system installed on a construction site to sell power under its FiT scheme, which was launched in Hong Kong in October 2018.



**reduction
in head
office waste
generation**

(since 1 May)



VALUE CHAIN

Throughout 2018, we increased our focus on off-site construction and integrated digital project delivery (IDPD), approaches that underpin our Responsible Growth – 25 by 25 strategy and will help us to deliver projects more safely, productively, and to a higher level of quality while reducing waste and our environmental footprint.

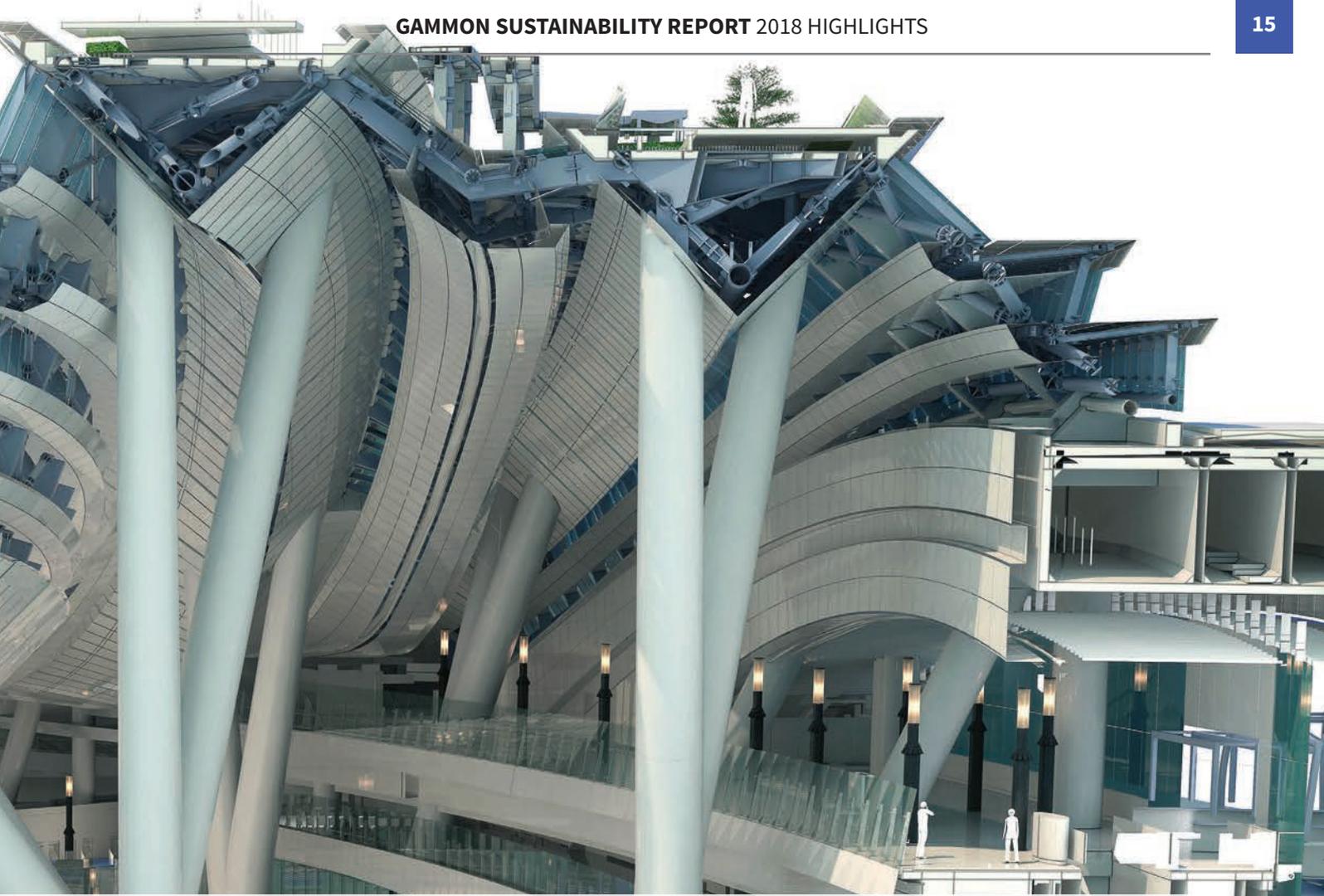
An excellent example of off-site construction and BIM integration comes from our Singapore branch, where the extent of our off-site DfMA approach during construction of a data centre received recognition from the Building and Construction Authority who described the site as an eye opener and credited the project with boosting “confidence in adopting prefabricated MEP systems for higher productivity and quality”. The results of our integrated ‘kit-of-parts’ approach is discussed further in the main report.

Our Digital Transformation Team began pilots on a number of sites, collecting information on how we are running our projects and subsequently developing digital platforms to help improve the efficiency of tasks ranging from tracking of excavation progress and concrete deliveries, through to labour attendance and barge movements (see the main report for further details).



As a further development of our e-procurement initiatives, we launched the first phase of our digitalised ordering system, DiMart. An electronic procurement catalogue of common products allows staff to quickly and easily select the materials they need, by mobile phone or computer, with approvals and orders to suppliers also carried out electronically to provide enormous savings in both time and paper. A dashboard allows project staff and suppliers to easily track delivery status, acknowledge orders and plan delivery times.

To help us achieve our commitments, our Virtual Design and Construction team, responsible for the implementation of BIM on our projects, doubled in size throughout the year to total 68. We also established



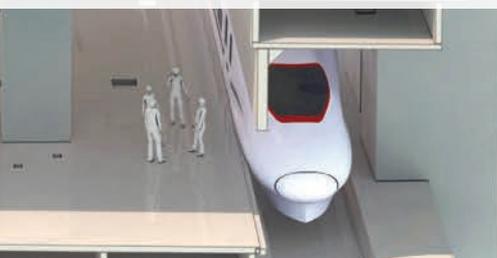
a roadmap defining how we will extend our use of BIM from traditional 3D applications of geometry through seven more dimensions – planning, quantification, sustainability, facilities management, design collaboration, automation and robotics and, finally, artificial intelligence – to the level of 10D. Revolutionary in scope, our 10D approach will allow us to work with our clients in a way that is open, transparent and far more cost-effective, adding value to both the project’s construction and operation. We also began developing a comprehensive 3D BIM object library that will enable faster delivery of projects by allowing engineers to pull from a catalogue of components. Each object is classified so we can also understand its commercial and environmental impacts.



Implementation of BIM on Ocean Park Tai Shue Wan Water World project

Collaboration is important to the success of our IDPD journey and we travelled internationally to countries including Scandinavia, Japan and the UK to establish strong relationships with companies on a similar path and to share learning and ideas, while closer to home we arranged presentations and discussions with the government, our customers and supply chain as we continued to influence the local industry to join us on the journey.

See the main report for further information.



A BIM-based graphic shows a cross section of the Hong Kong West Kowloon Station

PEOPLE

Although adopting more modern methods of construction provides solutions to make us a leaner operating model, we will always need skilled people to execute those solutions. Apprenticeships and continuous career and professional development for our people therefore remain essential.

Throughout 2018, our Gammon Academy ran 143 courses (a 116% increase over 2017) which involved 4584 participants. Enhancing BIM competence was one of the focus areas and we ran a total of 11 different internal and external courses ranging from BIM for managers and engineers through to 4D SYNCHRO PRO for planning, and BIM for design in collaboration. We also collaborated with London's Imperial College, bringing out a number of professors including Vice President (Innovation) David Gann to run a BIM, DfMA and innovation training programme for our staff and partners at Wheelock Properties.

We continue to run our Tsinghua Summer Programme and in 2018 selected 19 high-potential engineers from across the business who engaged with directors and key stakeholders to understand business challenges, then took part in training including digital education, BIM, design, and presentation skills before pitching innovative ideas to our executive committee. Participants then attended a two-week construction management programme at Tsinghua University in Beijing.

In October, we ran our first Technician Apprentice Orientation Camp which included an overnight stay, discussions on career development within the company, team-building games and activities, and opportunities for socialising and building up a network of peers across our projects.

We also began a 'Soft Power' series training programme for managers, covering areas such as influencing, coaching, self-awareness and presentation skills, and launched a mobile version of our customised learning interface iLearn so that enrolling in courses and browsing the e-library became even easier for all our staff.

In April, we signed a Memorandum of Understanding with the Vocational Training Council to collaborate in nurturing interest in learning science, technology, engineering and mathematics (STEM) among the younger


 A group of young men, identified as Technician Apprentices, are participating in team-building exercises at an Orientation Camp. They are wearing yellow and purple life jackets and are gathered around a large blue inflatable pool. They are holding and working with several long, grey pipes, likely as part of a team-building activity. The background shows a blue metal fence and lush green foliage.

Technician Apprentices take part in team-building exercises at our first Orientation Camp

generation. Gammon Executive Director Edmond Lai also became a member of the STEM Alliance Steering Group, established in April by the Hong Kong Institute of Construction.

The well-being of those who work for us is a key business priority, and in December we enhanced our paid maternity and paternity leave allowance to provide more than the mandatory requirements of both Hong Kong and Macau in advance of the Hong Kong government's proposal to extend it. We increased our paid maternity leave allowance for females in Hong Kong from 10 weeks to 14 weeks, and paid paternity leave from three working days to five working days. In Macau, we raised the paid maternity allowance from 56 days to 70 days, and paid paternity leave from three to five working days.

Under our new sustainability strategy, we identified diversity and inclusion (D&I) as an area for more focused effort and late in the year, we established our first group of D&I champions who have begun to study issues surrounding gender as a starting point.

See the main report for more information.



High-potential engineers participate in a construction management programme at Tsinghua University

CONTRIBUTING SOCIAL VALUE

Gammon's strong community spirit was publically recognised by the CIC who presented us with four awards at its Volunteer Award Ceremony in July. These were:

- Most Active Participation Organisation Award
- Silver in the Excellent Volunteer category for KC Au
- Supportive Organisation Award
- Merit in the Excellent Volunteer category for the Gammon Walkathon

Of the nearly 150 events supported company-wide, we highlight below just a few of our initiatives in 2018.



Running for charity

We kicked off our 60th anniversary celebrations by holding a 'Run for 60 - Run for Charity' event in January that raised more than HK\$1.6 million for the Construction Charity Fund which provides financial assistance and support to families of workers who have died in construction-related accidents. Gammon donated HK\$1,000 for every staff member that participated, and contributions were also kindly provided from a number of our subcontractors and suppliers.

Supporting the good work of Tung Wah Group of Hospitals

Our Tuen Mun-Chek Lap Kok Link (TM-CLKL) Southern Connection Viaduct project team donated clothes, bags, books and toys which were given to lower income families at an Easter Friday event organised by staff from Tung Wah. Our KC Au (recipient of a CIC volunteer award in 2018) also provided an Easter basket of chocolates and treats for the children.



Our Information Management Systems (IMS) department also jointly organised with Tung Wah a 'Knowing Today's Lantau' event that targeted children from lower income families within the district. The children were taken to Lantau's Cup Noodle Workshop and Tung Chung Old Fortress with staff from IMS and TM-CLKL assisting throughout the day. Sponsorship for food and travel was provided by the TM-CLKL project shuttle bus provider, Hang Po, and canteen operator, Best Food.

Narrowing the digital divide

We continue our support of the Computer Refurbishment Project run by the non-government organisation Caritas and in 2018 donated 135 sets of office computers that no longer met our needs. The computers are refurbished for reuse and sold at an affordable price to disadvantaged people or non-profit making organisations with the ultimate aim of narrowing the digital divide and reducing electronic waste.



Granting Christmas wishes in Singapore

In December, Gammon Singapore organised a 'Grant-a-Wish' initiative that benefited 42 children from lower-income families in Fei Yue Student Care. There was an overwhelming response from Gammon staff keen to provide gifts on the children's wish lists, which were then distributed during a lunch party.

GREEN AND CARING

Launched in 2011, our Green and Caring Site Commitment (G&CSC) programme is designed to promote good sustainability practices on our construction sites. Bronze, Silver or Green Flags are awarded to sites based on the level of implemented measures that demonstrate care for the welfare of our workers, reduce environmental impacts, provide the highest level of safety, engage proactively with the community, and innovate for better performance.

In 2018, 97.8% of our sites held Silver or Green Flag status, with Green Flag projects representing a model site that has achieved a standard beyond what the client normally requires or the Government mandates.

The G&CSC programme is a long-term commitment to continual improvement rather than a one-time award and as standards increase and become the norm across projects, sites are challenged to ever higher levels of performance.

Some examples of initiatives from sites in 2018 can be seen below.



A 200m-long plastic hose arranged on the roofs of two site containers provided a solar hot water supply to a portable shower room on our foundations project in To Shek. On a sunny day, enough hot water is produced for five consecutive showers.

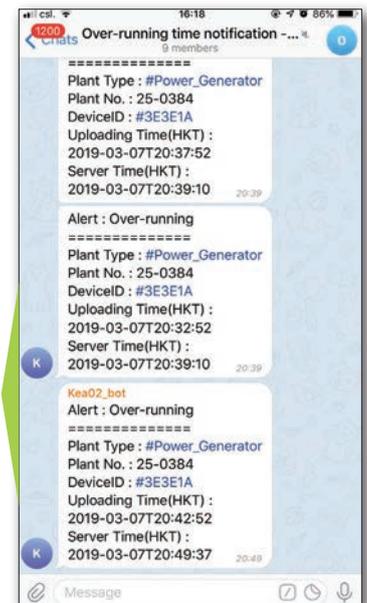


The Hong Kong Palace Museum team found a new use for more than 12,000 pavement blocks on both their own and other projects, and also saved an estimated 12 tonnes of steel by reusing existing features and facilities on the site including lamp posts, park fencing, rest area chairs and public toilet containers.



For the first time, we adopted real-time water quality monitoring with an SMS alert system in combination with a sand filter at our Plantation Road residential development site to protect the sensitive Pokfulam Reservoir and Country Park downstream.

At our Kai Tak foundations project, sensors are being used to track crane locations and monitor successful shut-down of generators at a predetermined time. For the generators, manual checking is no longer required prior to leaving site, as a mobile phone notification can be received.



Innovative initiatives by the E&M team on our Hang Seng Bank headquarters project included an intelligent fresh air intake system for the site office, where fresh air is drawn in automatically when CO₂ concentration reaches a predetermined level.

INNOVATION

Gammon became the first overseas partner invited to join the Infrastructure Industry Innovation Platform (i3P). i3P is an independent innovation community in the United Kingdom that shares best practice in order to develop new ideas that support safety, quality, environmental sustainability and productivity in the construction industry. We now have access to more than 1,000 online i3P innovations, and in return we will share our ideas – we highlight some of those from 2018 below – with the group in a collaborative and learning environment that benefits us all.

FLYING FACTORY

We set up a flying factory at our Hong Kong data centre project for modular MEP fabrication. Consisting of 13 containers and a roof structure that combine to form an 800m² workshop area, the factory is considered 'flying' because it can be easily demounted and moved from project to project.

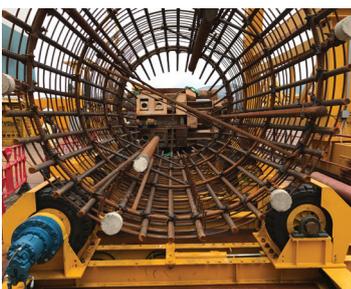
The flying factory provides the flexibility to assemble modules on site – almost 70% of the MEP works for the first three buildings were moved from the site to the factory where workers operated in a cleaner and safer environment. Quality checks are also carried out in the factory environment and any defects rectified before installation.



The flying factory and modular approach was a Grand Prize winner in the Gammon Innovation Competition 2018

CAGE FABRICATION STATION

Designed to increase worker safety and improve productivity, the Cage Fabrication Station



Cage rotator device

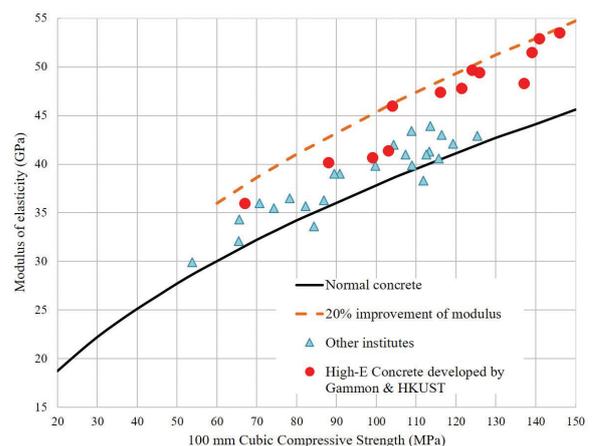
eliminates working at height and demanding manual lifting during the fabrication of bored pile rebar cages. The invention includes a simple swing jib derrick that lifts and repositions the rebar, a hydraulic wheeled mechanism that rotates the cage, and a platform module. The mechanical rotation of the cage ensures workers are not working in discomfort or at height. A service crane is no longer needed to turn the cages and the modular design of the invention also facilitates mobilisation on site and makes it suitable for various cage sizes.

STRONGER CONCRETE DEVELOPED

A research project involving our concrete technology department and Hong Kong University of Science and Technology, and supported by the CIC, has resulted in the development of a concrete with 20% more stiffness than that described in the Code of Practice.

Called 'high modulus of elasticity', or High-E, concrete it also shows excellent mechanical properties and outstanding dimensional stability and durability. Shrinkage, creep and weight loss all decrease compared with regular concrete. Large-scale beam tests also indicate that high-E concrete leads to a nearly 55% reduction of mid-span deflection to provide significant advantages in structural deformation control.

This means it is possible for thinner columns, beams and shear walls in tall buildings to carry the same loads as traditional designs. We calculate about 15-20% of materials could be saved while 2-5% more useable space can be gained if high-E concrete is utilised for tall buildings.



Comparison of High-E with other concretes

IoT-ENABLED CONCRETE QUALITY ASSURANCE

Gammon has partnered with fleet management experts Lead Fortune Technology Ltd to develop a solution that improves the temperature regulation and monitoring of ready-mixed concrete during production and transportation.

Smart sensors installed on raw material silos and concrete trucks measure the temperature of concrete



Screenshot of monitoring system

and transmit it to our Concrete Management System for monitoring and analysis. During production, these sensors enable our batching plant operators to make more timely and informed decisions on the ice quantity required for each batch.

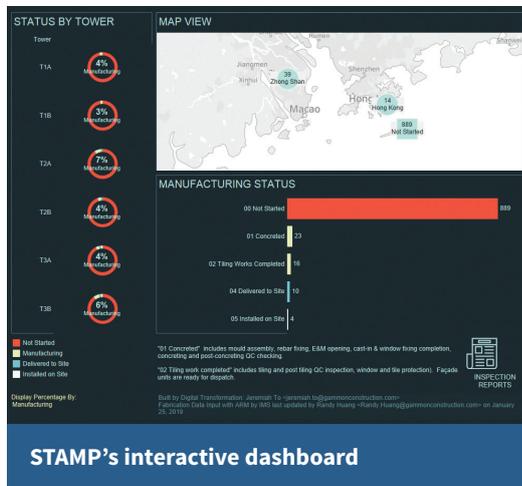
The relationship between concrete temperature during transportation and factors such as weather, mix type, raw material temperature, travelling time and the client’s needs can also be established and used to model more precise predictions of ice requirements. Artificial intelligence in our Concrete Management System can also analyse the data for compliance management and the transparency of data allows clients to more efficiently monitor, assess and accept the concrete. Optimising ice usage also reduces unnecessary electricity consumption and transportation, which are the largest contributors to greenhouse gas emissions in Hong Kong.

STAMP – GAMMON’S MARK OF QUALITY

As we increase our use of DfMA, so too increases the importance of off-site supply chain management and logistics. With this in mind, our procurement department worked with our Digital Transformation Team to

develop a supply chain management dashboard for off-site fabrication and on-site installation status monitoring. Using QR codes, it provides the procurement and project teams with greater insight into progress both in the factory and on site. Called STAMP, the system shows in real time which elements are being manufactured, have been manufactured, are being transported, and those that have been installed. It also monitors material stock further up the supply chain, with an alert programmed for when quantities fall below a predefined level. Labour headcount for production in the factory and delivery status can also be monitored and displayed.

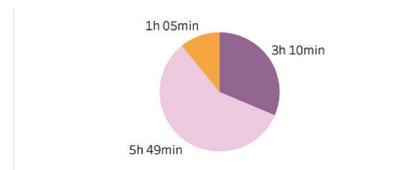
All these details are accessible via an interactive dashboard with options that allow users to display data to suit their needs. STAMP is currently being used on two of our high-rise residential development projects to manage curtain wall panels.



STAMP's interactive dashboard

REAL-TIME PRODUCTIVITY TRACKING OF PLANT

Using sensors and internet-of-things technology, we are tracking plant behaviour and productivity. Construction managers can access the real-time data on plant usage and operational status through a digital project management dashboard, allowing them to ensure productivity is achieved in line with programme requirements and that energy is not being wasted. This information can also be made available to clients for transparency and to ensure precise decision-making to the benefit of projects. Plant maintenance cycles are also refined, as we can identify when repairs or upkeep may be required and prevent unexpected mechanical failures on site.



| | | | | SCX2800 |
|---------------------|-------------|-----------|--|----------|
| Normal Working Time | CommonSense | Power Up | | 7h 16min |
| | Oyster | In Motion | | 3h 10min |
| OT Time | CommonSense | Power Up | | 1h 18min |
| | Oyster | In Motion | | 1h 05min |
| Normal Working + OT | CommonSense | Power Up | | 8h 35min |
| | Oyster | In Motion | | 4h 15min |

Data display of plant usage

OUR COMPANY

ORGANISATION AND REPORT COVERAGE

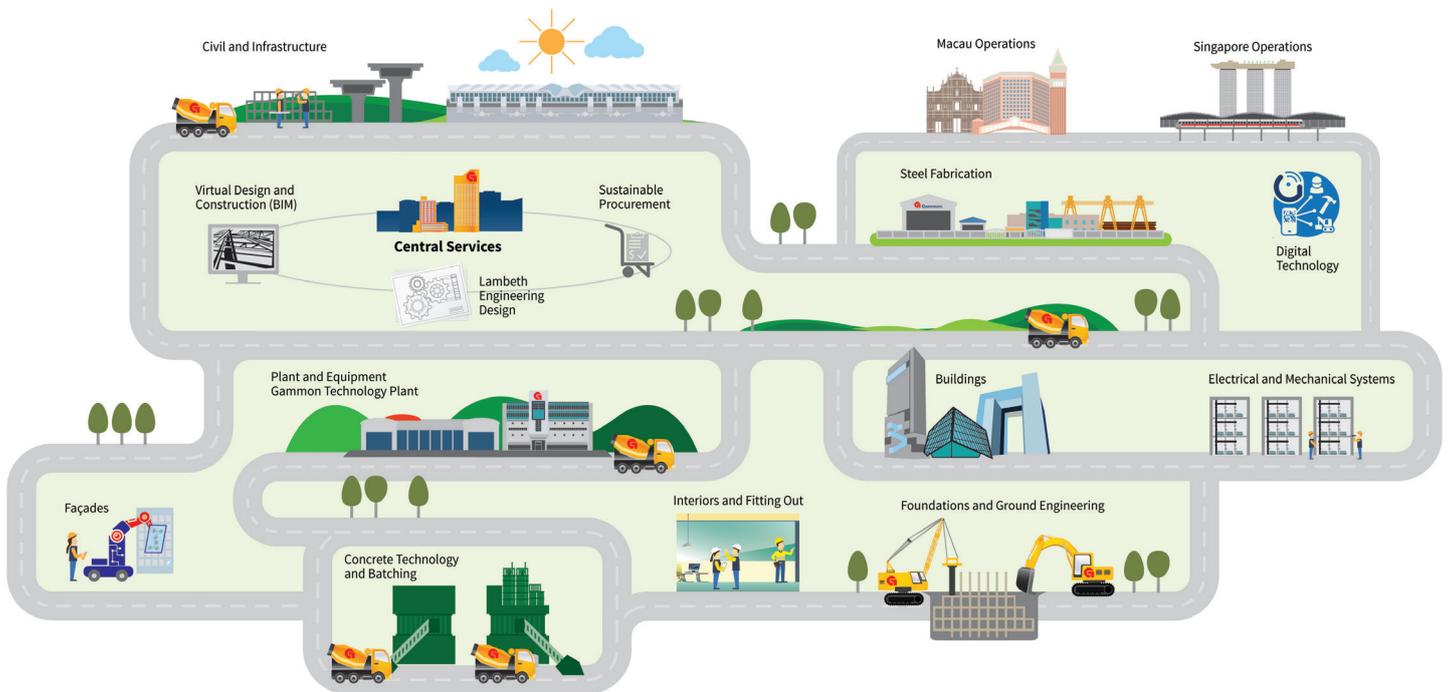
- GRI 102-1
- GRI 102-2
- GRI 102-4
- GRI 102-6
- GRI 102-10
- GRI 102-45
- GRI 102-50
- GRI 102-51
- GRI 102-52
- GRI 102-54
- GRI 102-55
- GRI 102-56

This annual sustainability report covers the operations of Gammon Construction Limited, its subsidiaries and associated companies in the construction business (the Gammon Group) in Hong Kong and Macau, Mainland China and Singapore for the 2018 calendar year. The previous report for 2017 was issued in the second quarter of 2018.

Organisational profile

The principle activities of the Gammon Group are civil engineering, foundation works, building, interiors and facade construction, electrical and mechanical installation, manufacturing and supply of fabricated steel, manufacturing and selling concrete, and plant and equipment development and operation.

Our business is divided into different divisions and departments, as is summarised in the illustration below.



Our clients include the following:

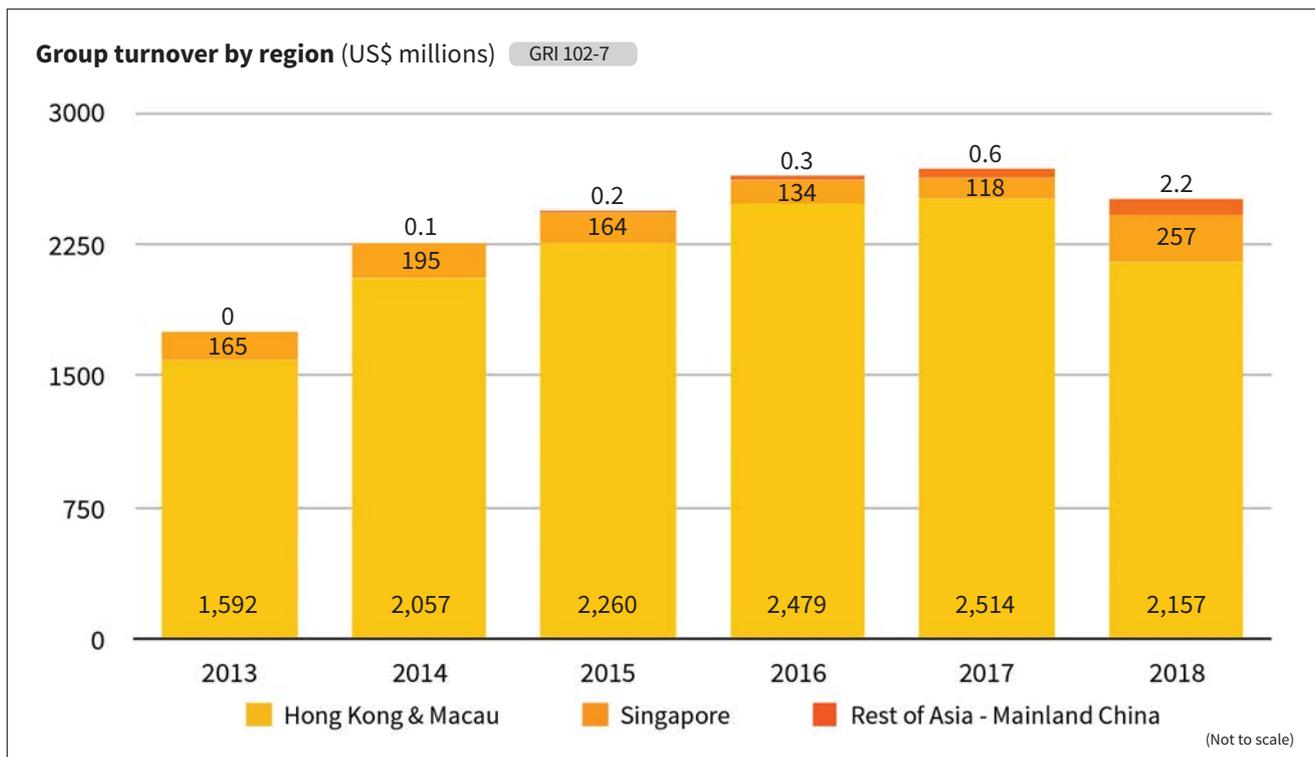
- Government works departments and other government authorities
- Commercial, residential and industrial property developers
- Other contractors
- Transport and utilities providers
- Property and other built asset owners

Scale of the business

- GRI 102-5
- GRI 102-7

In 2018, we had around 136 active projects across the business. The group turnover and workforce data broken down by region is presented below.

| Scale of business | |
|---------------------------|--------------|
| Scale of the organisation | |
| Total employees by region | 6,924 |
| Mainland China | |
| | 397 |
| Singapore | |
| | 488 |
| Hong Kong & Macau | |
| | 6,036 |
| Vietnam | |
| | 3 |



We describe major project completions and new projects during 2018 below. Details of our operations, as well as the number of active projects and employee information, is in our key performance indicators (KPI) table (Appendix D). Our current project listing of all ongoing projects can be found in our magazine, The Record, which is published every year and can be found on our website at: www.gammonconstruction.com/en/html/press/publications.html. Quantifying our products or services is highly complicated due to the varied and integrated nature of our business. We are not able to disclose details of our capitalization, as this information is commercially sensitive. Ownership of the business is 50% Jardines and 50% Balfour Beatty.

Report content

This report has been prepared in accordance with the GRI Standards: Core Option and has been verified against the GRI Standards and in accordance with AA1000AS (2008) by an independent third party, as shown in Appendix G. The Director for Health & Safety, Sustainability, Systems & Audit is responsible for commissioning the professional external body to undertake the assurance. Governance information and management approaches for the operation of the business are included in Appendices A and B respectively. The GRI Content Index (Appendix C) references the required general and material topic disclosures and locations where they can be found in the report.

There have been no significant changes during the reporting period regarding Gammon’s size, structure or supply chain. All active entities within the Gammon Group have been included in the coverage of this report. They include the following subsidiaries:

- Gammon Building Construction Limited (GBCL)
- Gammon E&M Limited (GEM)
- Gammon Construction Limited – Singapore Branch (GCL – Singapore)
- Dongguan Pristine Metal Works Ltd. (Pristine)
- Gammon Plant Limited (Gammon Plant)
- Entasis Limited (Entasis)
- Gammon Engineering & Construction Company Limited (GECCL)
- Gammon Pte. Limited (GPL)
- Lambeth Associates Limited (Lambeth)
- Into G Limited (Into G)
- Digital G Limited (Digital G)

Gammon also has a less than 25% investment in a leading Vietnamese construction company, COFICO (Construction Joint Stock Company No.1), but since the company is not under the direct operational control of Gammon, it is not included in the scope of the report.

MARKET POSITION AND PROJECT AWARDS GRI 102-7

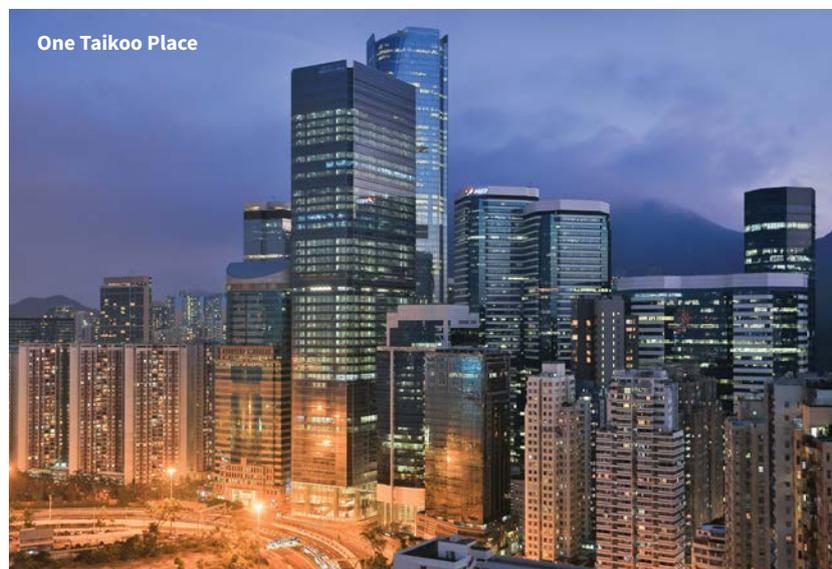
We met our targets for 2018 but there were a few challenges along the way. In addition to our 60th anniversary celebrations, some of the high points were winning the Lyric Theatre L1 (extended basement) and L2 (theatre complex and adjacent building) contracts, the Sai Sha Road widening project in joint venture with Sanfield, the LOHAS Park Package 9 residential project and, following on from our foundations contract, the building work on Sheung Shing Street in Homantin.

| Projects awarded in 2018 | Projects awarded in 2018 |
|---|--|
| Civil | Foundation, Pile Caps and ELS Works for the Proposed Residential & Commercial Development at 33-47 Catchick Street, Kennedy Town, Hong Kong |
| L1 Contract for Lyric Theatre Complex and Extended Basement Project | Main Contract for Proposed Demolition Works Subsection 3 of Section P of Tseung Kwan O Town Lot No. 39 and Extensions Thereto |
| The Sai Sha Road Widening Works for the Comprehensive Development at Shap Sz Heung, Sai Kung North, Hong Kong | Design and Construction of Foundation Works for Development of IE 2.0 Project C Advanced Manufacturing Centre at Tseung Kwan O Industrial Estate, New Territories, Contract No PD/WC/200 |
| Contract No CC/2018/3A/072 – Management Contractor Agreement for Construction of M+ Museum for the West Kowloon Cultural District Authority | Basement Perimeter Wall & Bored Pile Foundation Works for Proposed Office Development at 2 Murray Road, Central, Hong Kong |
| Civil & E&M | Advance Works Contract for Project Blue - Proposed Development at 281 Gloucester Road, Causeway Bay, Hong Kong |
| Tuen Mun – Chek Lap Kok Link Northern Connection Tunnel Buildings, Electrical and Mechanical Works | Contract No 18/8210 Ground Investigation for Slope Adjacent to Lamma Phase I Cable Landing Point |
| Building | Contract No PM 02/2018 Ground Investigation Works and Laboratory Testing for Relocation of Yau Tong Group Fresh Water and Salt Water Service Reservoirs to Caverns – Feasibility Study |
| Proposed Residential Development (LOHAS Park Package 9) at Site J of the Remaining Portion of TKO Town Lot No 70, Tseung Kwan O Area 86, Tseung Kwan O, New Territories | Ground Investigation Works for Proposed Development at NKIL 5805, 5806 & 5982, Kai Hing Road, Kowloon Bay, Kowloon |
| Sub-contract for Design and Construction of Modular Integrated Construction (MiC) Works for Demonstration Project at Zero Carbon Building, 8 Sheung Yuet Road, Kowloon Bay, Hong Kong for Hong Kong Construction Industry Council | Ground Investigation Works for Sai Sha Residential and Recreational Development at TPTL No 157, Shap Sz Heung (Site B1 and Site B2), New Territories |
| Main Contract for the Proposed Ancillary Block Extension for Central Plaza at 18 Harbour Road, Wanchai, Hong Kong | Purchase Order No 4501178193 for Offshore Site Investigation Works at BPPS Pipeline, LPS Pipeline and BPPS GRS for the Hong Kong Offshore LNG Terminal Project |
| Medical Complex Extension at No 21 Sassoon Road for the University of Hong Kong – Main Contract | E&M |
| Main Contract for the Proposed Residential Development at KIL 11257, Sheung Shing Street, Ho Man Tin, Kowloon, Hong Kong | Lam Lee Street, Fit Out Work |
| L2 Contract of Lyric Theatre Complex & Extended Basement | 16/F Design and Build Fitting Out with Concept Design and Specifications Contract Works at Hang Seng Headquarters, 83 Des Voeux Road Central, Hong Kong (Tender A) |
| Building & E&M | 16/F Design and Build Fitting Out with Concept Design and Specifications Contract Works at Hang Seng Headquarters, 83 Des Voeux Road Central, Hong Kong (Tender B) |
| Global Switch Hong Kong (GSHK1) – Building 3, 4 & 5 Data Centre at Tseung Kwan O | Replacement of Duct Insulation at Hang Seng Headquarters |
| Façade (Entasis) | Contract 17HHA049. Main Equipment Room (MER) Design and Build Contract Works at Hang Seng Headquarters, 83 Des Voeux Road Central, Hong Kong |
| Hang Seng Bank Headquarter Glass Curtain Wall Strengthening Works | Contract 18HHC043, 8/F Fitting Out Works and Swing Floor in 7/F & 15/F at Hang Seng Headquarters, 83 Des Voeux Road Central, Hong Kong |
| How Ming Street Defect Rectification Work at Proposed Hotel Development, 97 How Ming Street, KTIIL 805, Kwun Tong | Interiors (IntoG) |
| Hang Seng Headquarters (Long Term Facade Strengthening Works) | Contract Q060215, Off Site Mock-up Works for Retail Centre Fitting out for LOHAS Park Package 7 Property Development |
| 8/F Temporary Glass Replacement and Spandrel Cladding at Hang Seng Headquarters at 83 Des Voeux Road Central, Hong Kong | Wynn Macau Renovation, Minor Works for Wynn Club HL Gaming Space |
| Foundations | Steel Fabrication (Pristine) |
| Contract No. GE/2017/41, Provision of Soil and Rock Testing for Public Works Laboratories – NT East | Tung Chung 11 Linkbridge |
| Foundation Works for The Hong Kong Palace Museum for the West Kowloon Cultural District Authority (Contract No CC/2017/04/057) | OPUS Repainting Works |
| Design and Construction of Pipe Pile Wall and Foundation Works for Commercial Development at KTIIL 240, 98 How Ming Street, Kwun Tong, Kowloon | Lam Tin Tunnel Noise Barrier |
| Foundation for Public Rental Housing Development at Tuen Mun Area 54, Sites 3 & 4 (East), Contract No 20170110 | Singapore |
| Contract No. GE/2018/22, Provision of Soil and Rock Testing for Public Works Laboratories – Urban | Neste Singapore Expansion --Site Preparation Works |
| Excavation and Lateral Support and Foundation Works for Proposed Commercial Development at New Kowloon Inland Lot No 6556, Kai Tak Area 1F Site 2, Kai Tak, Kowloon | |

During the year, major project completions included the iconic Hong Kong West Kowloon Station (visit www.gammonconstruction.com/WK_Station/index.html) which serves as the terminus of the high-speed rail link to China and is Hong Kong's largest MTR station by far, as well as an adjoining contract for the approach tunnel and public



transport interchange. We also finished renovation works for the historic Central Police Station, now known as the Tai Kwun Centre for Heritage and Arts, and the triple Grade-A office tower One Taikoo Place was handed over the client. We also finished two major residential developments – the Papillons and Monterey – in Tseung Kwan O, as well as Phase 1 and 2 of a Housing Authority development in Tuen Mun which consisted of five tower blocks.



Looking ahead, there are good opportunities in both the civil and building sectors in Hong Kong. Contracts are still to be tendered or awarded on Government infrastructure jobs, within the West Kowloon Cultural District, and on Hong Kong Airport Authority’s Third Runway System projects. We expect the building market to remain strong with both high end commercial and residential projects anticipated in the private sector. The housing shortage continues to be a key issue and for the longer term a range of land development opportunities are being studied by Government including the ambitious Lantau Tomorrow proposal.

STAKEHOLDER ENGAGEMENT AND MATERIAL ISSUES

GRI 102-40 GRI 102-42 GRI 102-43

GRI 102-44 GRI 102-46 GRI 102-47 GRI 102-49 GRI 103-1

No formal stakeholder engagement exercise was conducted in 2018 and reference can be made to the Sustainability Report 2017, Appendix A for our Materiality Assessment (p.56). Our material issues have remained unchanged, as the following.

| | | | | |
|--|--|--|--|--|
|  |  |  |  |  |
| <p>Governance</p> <ul style="list-style-type: none"> • Anti-corruption • Innovation | <p>Safety – Zero Harm</p> <ul style="list-style-type: none"> • Safety management • Working environments • Customer health and safety | <p>Value Chain – Co-creation</p> <ul style="list-style-type: none"> • Compliance/ quality of products and services • Improving client satisfaction • Influencing the industry • Supply chain engagement | <p>People – Caring</p> <ul style="list-style-type: none"> • Labour shortage • Staff retention, turnover and development of our people | <p>Environment – Zero Waste</p> <ul style="list-style-type: none"> • Waste • Construction materials • Energy |

| Material issue and where it is addressed |
|--|
| Anti-corruption – GRI 205 Governance (Appendix A) |
| Compliance / quality of products and services – GRI 419 Safety – Zero Harm Management Approaches (Appendix B) Key Performance Indicator Table |
| Construction materials – GRI 301 Environment – Zero Waste (p.32-34) Environmental Management Approaches (Appendix B) Key Performance Indicator Table |
| Customer health and safety – GRI 416 Safety– Zero Harm Management Approaches (Appendix B) Key Performance Indicator Table |
| Energy – GRI 302 Environment – Zero Waste (p.38) Key Performance Indicator Table |
| Influencing industry – GRI 102-13 Governance (Appendix A) Value chain – Co-creation Management Approaches (Appendix B) Membership of Associations and Industry Bodies (Appendix H) |
| Innovation Innovation (p.20-21) Throughout the report |
| Improving client satisfaction – GRI 102-44 Our company (p.26) Governance (Appendix A) Key Performance Indicator Table Throughout the report |

| Material issue and where it is addressed |
|---|
| Labour shortage – GRI 404 People – Caring (p.16-17) People – Caring Management Approaches (Appendix B) Key Performance Indicator Table |
| Safety management – GRI 403 Safety – Zero Harm (p.10-11) Safety– Zero Harm Management Approaches (Appendix B) Key Performance Indicator Table |
| Staff retention, turnover and development of our people – GRI 401, GRI 404 People – Caring (p.16-17, p.46) People – Caring Management Approaches (Appendix B) Key Performance Key Performance Indicator Table |
| Supply chain engagement – GRI 102-9 Value chain – Co-creation Management Approaches (Appendix B) Key Performance Indicator Table |
| Waste – GRI 306 Environment – Zero Waste (p.12-13, 35-36) Environment Management Approaches (Appendix B) Key Performance Indicator Table |
| Working environment – GRI 403 Green and Caring Site Commitment (p.19) Safety– Zero Harm Management Approaches (Appendix B) Key Performance Indicator Table |

STRUCTURE OF THE REPORT

GRI 101

GRI 102-54

GRI 102-56

Following the Highlights and this section, the report presents additional key activities and case studies from 2018 and includes our formal management approaches (see Appendix A and B) and disclosures in line with the Global Reporting Initiative and our material issues mentioned above. The information is organised under the four focus areas of Gammon's new sustainability strategy: Responsible Growth – 25 by 25 as follows:

- Safety – Zero Harm
- Environmental – Zero Waste
- Value Chain – Co-Creation
- People – Caring

In addition to those appendices mentioned above, our GRI key performance indicator data is provided in Appendix D. Appendices E and F provide details of our awards in 2018 and an updated list of our green building projects respectively. Memberships of associations and relevant industry bodies are provided in Appendix H.

SAFETY – ZERO HARM

2018 ACTIVITIES AND CASE STUDIES

GAMMON'S ANNUAL SAFETY CONFERENCE

More than 1000 attendees consisting of colleagues, clients, government organisations, subcontractors, professional bodies and competitors attended our annual safety conference in January.

The theme – technology adoption and design for safety – was chosen to encourage both our project teams and the industry to innovate and use technologies that will reduce risk to workers, and to look to new methods such as DfMA for the safety opportunities that can be realised by increasing standardisation and carrying out work off site in factory-controlled environments.

In addition to a number of presentations from Gammon speakers, we also heard from Albert Wong, CEO of Hong Kong Science and Technology Parks Corporation, who

called for coordinated efforts to drive the industry forward and invited guests to visit and view some of the start-ups and innovations they have in the field of robotics. Yong Chuen Kang of Hilti shared some of the company's innovations in dust prevention and control.

International guest speakers included Associate Professor Goh from the University of Singapore who talked about the experience of developing a DfMA approach in the country, and psychologist Barry Davies from Britain's Environmental Resources Management, or ERM, who discussed the need for human factor integration in design, pointing out that while people may be our greatest asset, they do make mistakes and real leadership comes from building in appropriate and intuitive barriers to stop this from happening.



THE GROWING POWER OF GAMBOT

One of our most successful and widely used innovations is our software robot with artificial intelligence (AI) that collects, stores and analyses site-related data. Called Gambot™, it is not only being continually enhanced with new capabilities, it also gained industry recognition as the recipient of four major awards in 2018 (see p.4).

Gambot operates as a ‘mobile virtual assistant’ that, as well as being integrated with IT systems such as Site Diary for the collection of site photos, provides a function to allow operational staff to submit safety observations and dynamic risk assessments. Since its inception in 2017, further functions have been integrated such as i720 which focuses on quality checking, and Gammon’s concrete management system.

It also provides safety predictions for the day using AI based on current tasks, workers and trades onsite and past safety observations, providing staff with a better view of what is occurring in their job and what

to be mindful of. Gambot also reads the CIC database on a daily basis, automatically highlighting if safety cards have expired, or are near expiry, which frees up considerable staff resources previously spent checking and re-registering workers.



The application of a computer vision algorithm also allows it to detect objects including faces, vehicle plates, equipment and the like, allowing project teams to monitor productivity or safeguard against entry to secured zones.

Throughout 2018, use of Gambot became firmly entrenched on all our project sites, and it has proven to greatly improve the flow of management information and knowledge.

STAFF PLEDGE TO IMPROVE BODY MASS INDEX

Staff at our Kai Tak West foundations project have made a public pledge to improve their body mass index (BMI) to a healthier level. This is part of a 12-month project health initiative that aims to improve health and fitness and encourage a good work-life balance.

Just over 80% of the team, or 25 people, signed the pledge in May to achieve a BMI rating of 25. For a few, this means gaining weight but for the majority, shedding pounds is in order. Monthly measurements and weigh-ins track the group's progress.



To kick-start the initiative, activities were organised for the first three months such as yoga, football matches and green Monday to promote eating more vegetables and less meat. Self-led exercise routines were also recommended to the group and, to encourage participation, senior management sponsored half the cost of a sports tracking device for each member of the group.

Further encouragement comes in the form of a number of cash coupons that range from monthly improvements through to three grand awards for best improvement, highest frequency of exercise, and maintaining an already healthy BMI. Senior management also set themselves a financial penalty system should their BMI increase at the end of the 12 months!

A further bonus to this admirable initiative is that the participation, competition and encouragement involved has strengthened bonding among everyone on the project.

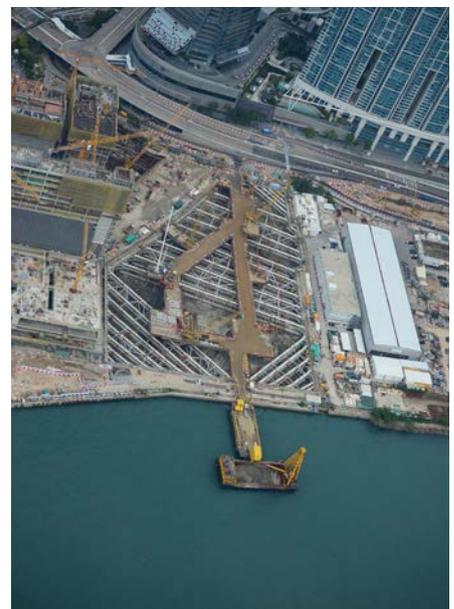


DFMA DELIVERY OF MODULAR ELS SYSTEM

While modular ELS was introduced in Gammon a few years ago, in 2018 our Lyric Theatre foundations and Kai Tak West projects took a DfMA approach to their ELS systems to more efficiently maximise off-site fabrication for improved safety and opportunities to re-use without modification. A modular system was developed which reduced site processes including rigging and working at height, and simplified lifting procedures through increased repeatability.

Gammon's in-house capabilities were used to provide total control over the design, fabrication and construction of the system. A pre-planned catalogue of strategically sized and compatible members was developed, with modelling and checking carried out using BIM. Tolerance and access for each stage of installation and removal was included, and an edge-protection system compatible with strut orientation and section sizes was also integrated.

Bolted connections remove the need for hot works onsite to further improve safety and also facilitate the re-use of struts on other projects.



MAN ON A SAFETY MISSION

Project Engineer Martin Man received a Silver Award at the Hong Kong Outstanding Employees in Occupational Safety and Health Award Scheme (Organisation/Company Management Category).

He shares his thoughts on safe construction methods.

I work for Gammon Steel, and spent 2018 dividing my time between our Lyric Theatre basement and M+ Museum mega truss projects, where I was responsible for safe construction methodology and erection schemes.

I'm a strong proponent of modular construction actually, as it creates a much safer erection process, as well as a faster one. On M+ I helped develop a safe erection scheme using modular towers as temporary support, integrated with worker access, during mega truss erection which greatly reduced working at height risks. A fully enclosed working platform also eliminated the risk of stray sparks during welding activities. On Lyric, I was involved in standardising strut sizes and arrangement for the ELS so we could apply a modular approach, which allows lifting works to be more easily controlled. The use of bolts and nuts for installation also reduces hot work and allows the struts to be re-used on other projects which reduces construction waste.

Taking a DfMA approach, using BIM, 3D printing and scanning, animation and robotics, are also great tools for creating safe construction methods. But safety innovations don't always require the latest technology. On M+, the team and I designed a magnetic heatproof blanket cover to protect workers from hot steel surfaces while welding the main structure. Simple but effective!

Whatever the approach, safe construction needs good planning and collaboration between all the different parties involved. It's a team issue, one engineer or one subcontractor can't ensure safety on their own, we need to work together.



TREE SENSORS TAKE ROOT

Falling trees have been known to injure and even kill residents in Hong Kong and there is a pressing need for an effective method to manage the risks they pose to public safety.

Working with our digital technology business, Digital G, we installed wireless tilt sensors that communicate with each other in a mesh network on 10 roadside trees on our Sai Sha Road widening project in the New Territories. The road experiences heavy traffic and is surrounded by villages.

The sensors have successfully detected movement and facilitated close monitoring of those trees for the protection of the public and the health of the trees. Tilt data is taken at five-minute intervals, is available online and is accessible on any mobile device by Gammon's arborists and any other stakeholders. An alert can be sent where the measured tilt exceeds a certain value to warn of increasing risk.

As well as enabling the identification and timely management or removal of hazardous trees, the data can

also facilitate the long-term preservation of those that are not imminent threats, ensuring timely risk management actions and effective use of resources.

The sensors also successfully demonstrated they can withstand extreme winds, as evidenced by their uninterrupted data flow when super typhoon Mangkhut hit Hong Kong in September 2018.



IMPROVEMENTS ON THE FACTORY FLOOR

Staff at Pristine, our steel fabrication yard in Dongguan, China, have improved safety on the factory floor through a number of mechanical innovations.

The team developed a robotic welding line that both improves safety by reducing the number of workers engaged in hot works on the factory floor, and also helps to address the current industry-wide shortage of skilled welders.

Working in collaboration with industrial machinery company All Fit, around six months of research and development went



Robotic welding line



Railed transporter

into its creation, which was tailor-made to weld clutched pipe piles for our current and upcoming projects. The production line consists of four welding machines working concurrently and is able to weld ten 12m-long clutched pipe piles per day. Previously, eight welders were required to complete eight piles of the same length in a day.

In addition, the team created a rail car, an electric platform that moves materials and finished products in and out of the workshop on a set of rails. The invention has resulted in reduced forklifts movements and subsequently a safer working environment.

RESPONSIBLE GROWTH – 25 BY 25 OBJECTIVES AND TARGETS

Zero Harm is a long-established initiative within Gammon and continues to be a focus area in our new strategy. A 25% reduction in the number of accidents based on the value of work we do by the year 2025 is the main target. The high-level action areas, other existing objectives and Zero Harm targets are detailed below.

SAFETY – ZERO HARM

Key target for 2025: 25% reduction in the number of accidents on our sites

| Objectives | Actions | Target by 2025 |
|--|--|---|
| 1. Improve safety on our sites and our methods to reduce the number of accidents | Undertake more modular, standardised and offsite construction to reduce accidents on site and the risk of heatstroke from climate change induced warming. Enhance resilience measures to reduce risks and injuries from increases in extreme weather events. | 25% reduction in the number of reportable accidents ⁵ on site / \$ value of turnover |
| 2. Achieve zero fatalities | | Zero |
| 3. Achieve zero permanently disabling injuries | Remove the risk of serious and fatal injuries from our business through modern methods of construction (e.g. offsite, mechanisation, and automation), detailed work sequencing, and planning for safe access. | Zero |
| 4. Achieve zero injuries to our workers | Ensure readiness for climate change induced extreme weather events. | Zero |
| 5. Achieve zero injuries to members of the public | | Zero |

⁵ Reportable accidents are defined as those accidents involving injuries resulting in more than 3 days sick leave. It includes both Gammon employees and non-employees for whom we are responsible on our work sites.

Baseline is 2016 or as indicated.

ENVIRONMENT

– ZERO WASTE

KIT-OF-PARTS MODULAR CONSTRUCTION IN SINGAPORE

Meeting the fast-track programme of our 25,000m² six-storey data centre project in Singapore required an intelligent building design that allowed for greater efficiency and certainty during construction.

Using DfMA concepts, the project team adopted an integrated kit-of-parts approach to the works that was applied throughout the project, from the structure through to the mechanical and electrical components and façade. BIM was used to drive the design, enabling the team to achieve efficiencies in sequencing, planning and construction, as well as to provide a detailed asset management system to the client.

For the structure, precast components included columns, beams, staircases, lift core walls, external walls and hollow core slabs. The only wet works on site involved topping up the slab with screed. All elements were fabricated off site and delivered to site for installation.

The façade was designed to be modular and to integrate the previously separate catwalk. This allowed the façade to be installed without the need for separate



Gammon's dedicated mechanical, electrical and plumbing factory for the project

THE RESULTS

- 70% of the structure precast offsite
- 70% of the facade consisted of prefabricated modules
- 69% of the mechanical and electrical works modularised in a factory off site
- Safer construction and less wastage of materials

additional steel support frames, leading to quicker and safer installation.

Mechanical and electrical works were modularised and assembled offsite in a factory specially set up by Gammon for the project. This provided significant programme savings and certainty in completing critical installation and testing and commissioning.

The extent of DfMA successfully delivered on this project strengthened Gammon's position in the industry and was lauded by the Building and Construction Authority (BCA) as Singapore's first large-scale prefabricated MEP project. The project was featured as a case study in the BCA's November Build Smart construction productivity publication: www.bca.gov.sg/Publications/BuildSmart/others/buildsmart_19issue40.pdf (page 4).

ENVIRONMENTAL EXCELLENCE AWARD FOR THE QUAYSIDE GRI 301-1

In May, our office tower project The Quayside received a silver award at the Hong Kong Awards for Environmental Excellence which aims to encourage local companies in different sectors to implement green strategies and improve overall environmental standards in Hong Kong.



香港環境卓越大獎
Hong Kong Awards for Environmental Excellence

We adopted a variety of techniques on the project to reduce environmental impacts, the most significant of which included:

- A reduction in embodied carbon through the use of alternative basement support – saving 678 tonnes of steel.
- Early installation of a temporary transformer room to reduce the use of diesel generators and minimise noise, exhaust emissions and carbon footprint – approximately 60% reduction in diesel consumption.
- Adoption of system formwork to reduce timber use and waste – about 500m3 of timber was saved.
- Use of offsite rebar cut and bend – only 1.9% rebar wastage.

10TH ANNIVERSARY SPECIAL AWARD



In addition to receiving a number of project and division-based accolades at the Hong Kong Awards for Environmental Excellence, we were also honoured with a 10th Anniversary Special Award in recognition of our continued support for the event over the past decade.



ONE TAIKOO PLACE – TOTAL SYSTEM FORMWORK GRI 301-1

In 2018, we completed work on Swire Properties' latest high-rise addition to the Taikoo Place business hub in Quarry Bay. A 48-story triple Grade A commercial property, One Taikoo Place has achieved Provisional Platinum for BEAM Plus New Buildings Version 1.2 green building standards and is Pre-Certified Platinum for both LEED BD+C: Core and Shell Version 2009 and WELL Building Standard Platinum level.

To achieve more sustainable construction and minimise timber waste, we adopted a metal self-climbing formwork for construction of the core wall and metal table formwork for the office area floors. We also developed a self-climbing formwork hoist for transferring system formwork between floors (see page



21 of the Sustainability Report 2017, www.gammonconstruction.com/uploads/files/sustainability/Sustainability%20Report%202017.pdf) Using this method, we achieved a rapid four-day working cycle (one reinforced concrete floor completed every four days) and the requirement for timber was significantly reduced.

A self-climbing safety screen system was also used that saved hundreds of deliveries of scaffolding materials and associated carbon dioxide emissions.

Benefits realised on the project:

- Aluminum table form and handset panels saved 1.14 man hour per m² and 7,754m² of plywood
- Climbing formwork saved 0.79 man hours per m² and 3,750m² of plywood
- Reduced 320 deliveries of scaffold materials to save 14.5 tonnes of carbon dioxide emissions

PUTTING THE RESPONSIBLE GROWTH – 25 BY 25 PRINCIPLES INTO ACTION

Senior Project Manager Jeffrey Lee oversees our luxury residential development project at Pak Shek Kok, Lot 214. Here, he explains a few of the initiatives introduced on the project in 2018 that support our Responsible Growth - 25 by 25 sustainability strategy.

Driving a DfMA approach:

We've provided modular subcontractor offices that can be reused, have standardised parts and design fittings for easy assembly, and require no welding which is a safety benefit. It took just four man days to install six units, as opposed to the three man days it takes to install one traditional corrugated iron-type unit. We also reused steel and aluminium to create neat scaffolding catch fans that would be suitable to use again on any metal scaffolding on a Gammon building site.



Improving efficiencies through digital project management:

Working with our IMS department, we have created an automatic QR-code based 'plant coordinator' that registers plant coming in and out of the site through Gambot (see page 28). It also connects with the plant management system and sends automatic reminders when permits are about to expire. We've also digitalised the system for our architectural builders work and finishes tracking so we can record work status data by mobile phone, which is then analysed and compared with our planning data to automatically generate instructions or reminders to subcontractors. Both initiatives considerably reduce administrative duties.

Pursuing zero wasted energy and zero waste to landfill:

We've insulated and built-in a skylight in our meeting room to reduce energy demands, and installed a sprinkler system on site office roofs decreases the temperature inside by almost 2°C during hot weather. The sprinkler system water is recycled, as is the condensate water from the air-conditioner units. We've also reduced the use of disposable cutlery by providing staff with a stainless steel set, and recycled 60% of the concrete from the demolition of a public toilet.

Enhancing work conditions:

We provide an air-conditioned rest area for workers, USB ports for phone charging, audio speakers, and modern vending machines.

During hot weather we provide blowers which we've adapted to provide water spray to make working conditions more comfortable.

Engaging with the community:

We hosted a City University site experience tour for engineering students, so they could experience first-hand life on a project site and see some of the environmental measures we've introduced, and I hope inspire them to have the same mindset when they are working.

Jeffrey introduces site practices to engineering students



ZERO WASTE CHAMPIONS

As we reported on page 12, our Zero Waste Office programme rolled out in permanent offices in Hong Kong in 2018 resulted in a printing reduction per head of 14%.

Connie Liu and Jeffrey Tse of our procurement department achieved some of the greatest individual reductions of any permanent-office based staff. From printing 829 pages in January 2018, Connie's monthly printing is now in the single digits, with only five pages recorded in December. She even managed a zero printing result in November.

Jeffrey's printing also plummeted to single numbers, dropping from 427 pages in January to only three in December. His best achievement has been one page in August. They explain the main reason behind this result, and some of the knock-on effects of the programme.

Connie: *In April, our procurement team introduced digitilisation of group/ project contracts which has had a hugely positive effect on how much we print. Previously, we were printing contract agreements, and each needed two copies. We were also printing copies for review and amendment purposes. But almost all contracts are electronic now.*

Jeffrey: *We also used to print hard copies for gaining approval, such as cost analysis sheets, scrap sales, and the like but now this is also done electronically. We also make use of dual computer monitors which reduces reliance on printing because you can have a reference document on one screen while you work on the other, for example.*

Connie: *And we make much better use of iPads and smart phones as well. These are great for things like reading meeting agendas and so on and we can share onto a presentation screen across Bluetooth. Now, I actually feel guilty when I print!*

Jeffrey: *Thinking about reducing waste has changed me outside of work, too. When I go shopping now I always take my own bag. And I prefer ebooks over buying paper ones. I'm also influencing my family at home, getting them to separate the recycling from the rubbish.*



Our Tuen Mun-Chek Lap Kok Link – Southern Connection Viaducts project was awarded a certificate of appreciation by Friends of EcoPark for their achievements in reducing, reusing and recycling waste.

GAMMON SUSTAINABILITY CONFERENCE 2018

In September, we held our third biennial sustainability conference. Entitled Co-Creating for the Future, the event brought together more than 80 government officials, clients, academia, suppliers, subcontractors and internal staff to address the current and future challenges of our industry, and facilitate further cooperation among our value chain.

Roundtable discussions were held to discuss the constraints and opportunities in three particular areas: early electrification to avoid the use of diesel generators, waste reduction through the design and construction process, and offsite construction.

We also gathered feedback on an early idea to reduce the proportion of youth not in employment, education or training (NEET) by offering a partnership programme of earn and learn opportunities that will recruit new blood to the industry. The initial view that we should partner with the supply chain and offer such a programme was well received and this will be considered further in 2019.



A number of actions were also identified throughout the conference that could be achieved in a spirit of co-creation with our value chain, for the benefit of a more sustainable industry. Some of the key points included:

- working with utility companies to consider temporary grid power during the planning and design stage to avoid using generators;
- earlier engagement between client and the value chain to understand risk and identify the opportunities for the proposed development;
- using BIM to enable clients and architects to visualise, co-ordinate and fix designs to reduce waste from rework;
- using modular and standardised approaches, and integrating BIM, DfMA and offsite construction;
- suppliers cutting down on packaging and considering a take-back programme where possible; and
- promoting construction in high schools and sharing news of innovations and the many employment opportunities that exist.

A TOOL TO MEASURE CARBON IMPACT

Gammon is supporting engineering consultancy Cundall to develop a web-based carbon assessment tool for the CIC that will standardise the assessment method for identifying and benchmarking the overall carbon performance of almost any construction project in Hong Kong.

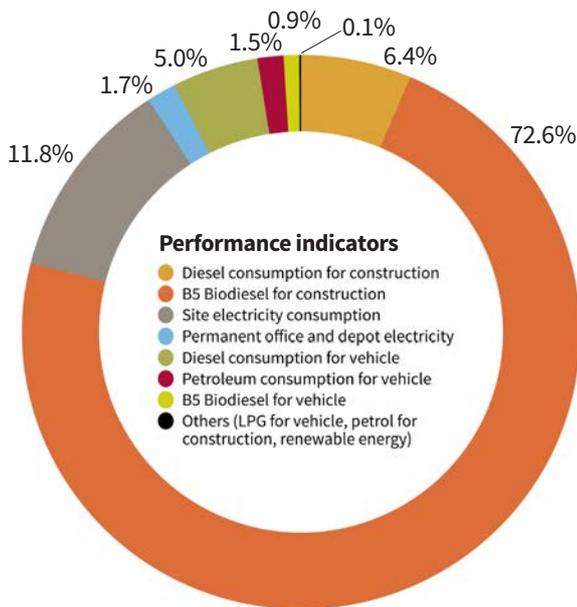
The tool will allow the construction industry to quantify the carbon impact of building and civil projects and this information can then be used to inform benchmarking, material sourcing and construction decisions. Gammon's Senior Environmental Manager Eddie Tse is using his considerable knowledge in carbon accounting and auditing to advise Cundall. Testing of the tool will take place on about 15 projects within Gammon throughout 2019.

ELECTRIFYING SITES

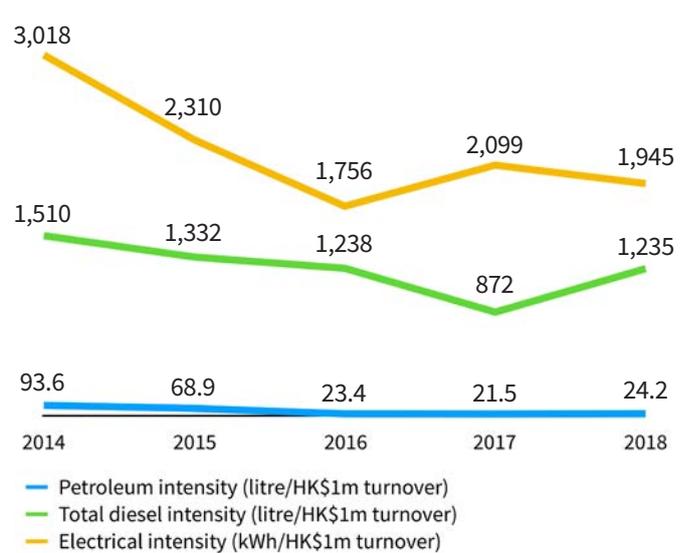
Early electrification has been a particular focus for us recently, as avoiding the use of diesel generators has multiple benefits and diesel remains our largest energy use as can be seen below, left.

Since electricity in Hong Kong has a lower carbon emission than diesel, replacing diesel combustion on sites can reduce carbon emissions as well as local air quality and noise impacts to surrounding neighbours and the workforce on site. Energy efficiency also improves using mains electricity and fuel costs reduce, although cabling costs and flexibility must be factored in. The trend in our energy intensity for major energy sources over the past few years is shown below, right.

Energy use (GJ) breakdown in 2018



Energy intensity GRI 302-3



RESPONSIBLE GROWTH – 25 BY 25 OBJECTIVES AND TARGETS

Our approach to improvements in the Environment focus area is called Zero Waste. Zero Waste represents our aspiration to cut waste in all its forms – carbon emissions (and increase renewable energy generation), water, energy (to drive air quality improvements in particular) and waste to landfill or incinerator. All the objectives, broad action areas and targets for 2025 are outlined below.

| Objectives | Actions | Target by 2025 |
|---|--|--|
| 1. Reduce carbon emissions to mitigate the impacts of climate change | Reduce carbon emissions from the business through offsite construction, early electrification, more efficient plant and operation practices | 25% reduction in carbon intensity (kg CO ₂ e ⁶ / HK\$1 million turnover and days worked) |
| 2. Pursue zero waste to landfill to minimise resource wastage | Reduce landfill (or incinerator) waste intensity through offsite construction, improved site management and changes along the supply chain | 25% reduction in landfill (or incinerator) waste intensity tonnes / \$ value of turnover |
| 3. Pursue zero wasted energy to reduce air quality impacts and carbon emissions | Reduce energy use through offsite construction, energy efficient site offices and power use, more efficient plant (with lower air-quality emissions) and operation practices | 25% reduction in energy intensity (MJ) / \$ value of turnover |
| 4. Pursue zero wasted water to avoid resource wastage | Reduce water use through improved efficiency, offsite construction, increased recycling, reuse and improved site practices | 25% reduction in water intensity (m ³) / \$ value of turnover |
| 5. Increase renewable energy generation to reduce fossil fuel reliance and carbon emissions | Implement solar photovoltaic panels where feasible (e.g. develop modular PV panel solutions as shading structures for sites and take advantage of the HKSAR Feed-in Tariff process for grid connected sites) | 50% increase in renewable energy generation on project sites based on installed capacity in 2018 |

⁶ Carbon emissions based on Scope 1 (direct fuel use) and Scope 2 (indirect electricity) emissions. Baseline is 2016 or as indicated.

VALUE CHAIN

2018 ACTIVITIES AND CASE STUDIES

DIGITAL PROJECT MANAGEMENT

Members of our Digital Transformation Team began working with select project sites in 2018 to gain a greater understanding of work processes, so they could then trial digital solutions that help improve management and reporting efficiency.

On our Lyric Theatre basement project, the team developed a dashboard that provides up-to-date progress status on a range of activities. Data provided by our concrete management system, for example, is captured and used to show past productivity rates for pouring to help the team better plan upcoming activities. Data from QR codes on modular struts provides real-time information on how many have been delivered and installed for greater understanding of progress status.

Excavation progress and barge tracking shows how much material is being disposed of and to where and enables engineers to instantly produce reports for the Environmental Protection Department or the client, a great improvement over previous methods that involved manually extracting the data. Sensors installed on barges send coordinates at set intervals, updating the dashboard instantly to provide real-time data on locations. The dashboard even displays information on daily labour statistics by linking with the site hand keys access control system.

At our Nan Fung commercial building foundations project, the Digital Transformation Team led a trial of GPS tracking devices and sensors on all crawler cranes to monitor idling rates. Signals from the sensor are transformed into graphics that allow project staff to easily assess crane productivity and make changes to ensure utilisation is maximised and energy is not wasted.

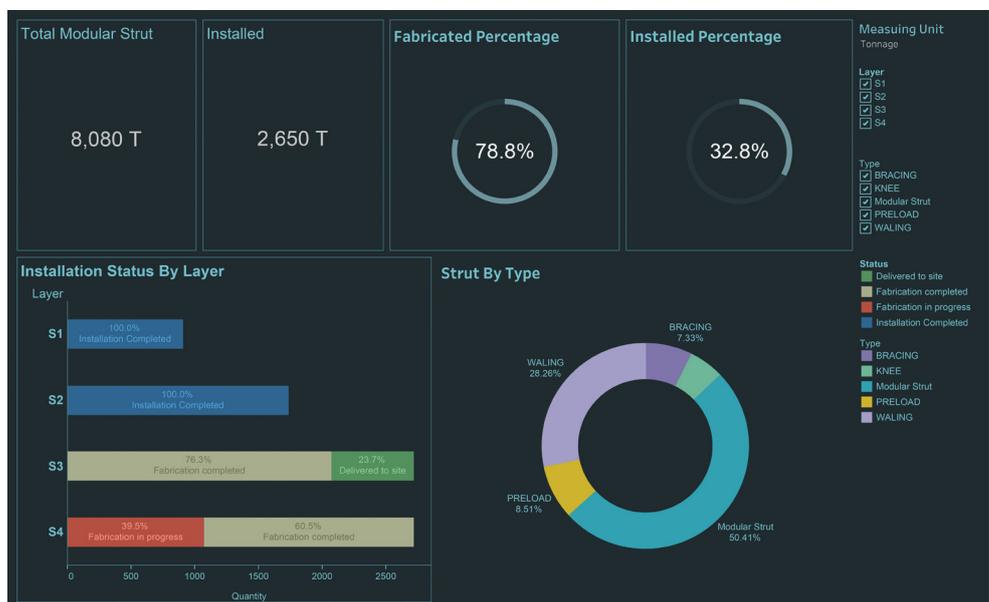
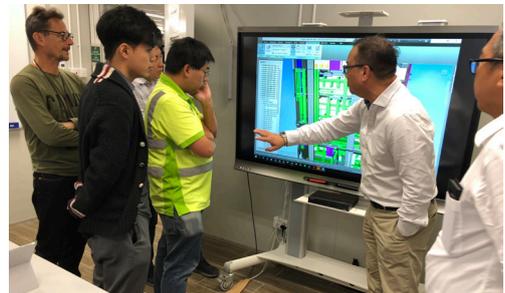
An artificial intelligence (AI) recognition system was also trialled by our IMS team to track the progress of rebar fixers. CCTV cameras capture video and computer vision technology then identifies workers, with the records captured in Gambot (for more on Gammon's internally developed software robot, see page 28) to provide total working minutes. This allows performance to be closely monitored and provides early notice to the management team if productivity falls behind schedule. Further trials will be taking place throughout 2019.

BIM COLLABORATION STATIONS PROMOTE ENGAGEMENT

A key element of our BIM strategy is granting access to the federated digital model (or digital twin) to all team members on project sites so they can review the latest metadata and geometries at any stage.

One of the ways we will achieve this is through collaboration stations, and our M+ Museum project became the first site to begin making use of them in 2018. The stations consist of a smartboard or large touchscreen display that acts as a focal point where engineers, designers and the client can collaborate using the BIM model.

The stations facilitate discussion and problem solving and have been well received by the project team at M+ Museum. The BIM virtual representation also allows more rapid understanding of issues and progress status.



DIGITAL G

Established in January 2018, our digital technology business, Digital G, was established to further the success of both Gammon's internal innovations and those of start-ups, specialist groups and universities by fostering their adoption in the wider construction industry.



In operation for only 12 months, the business has already received public recognition with a Hong Kong MIKE (Most Innovative Knowledge Enterprise) award which it received from Hong Kong Polytechnic University in December 2018.

Digital G Unit Head Andy Wong says the innovations the company promotes and supplies are geared towards transforming the construction industry.

“We have established a number of partnerships with international start-ups, including Converge (www.converge.io) from the UK, whose sensor products we are championing in Hong Kong for their power to capture and process data that enables more efficient and safer construction. Their use ranges greatly, from measuring

concrete strength, to monitoring groundwater movement or structural behavior such as tilt and strain. Recently, we've even been using sensors to monitor tree health.

“On a more local level, we are supporting Ampd, a battery-focused energy solutions provider, to reach a wider audience with its Enertainer product that provides a more efficient, cheaper and cleaner alternative to diesel generators.”

Digital G also works closely with Gammon departments, such as the Digital Transformation Team, to pool knowledge. An example of how this collected knowledge has been processed to form new knowledge is the Gammon-developed Automatic Resource Management app that digitises the traditional process of tracking materials and even labour.

The app is being increasingly adopted on Gammon project sites and is revolutionising material and resource management, enabling data analytics that measure productivity and inform better decision-making by the project teams.

Digital G is also working with a number of other companies to promote their innovations which include an AI security system, and a hybrid reality platform that layers different information forms with site photographs to aid operations.

These are the kinds of alternative solutions that will enable us, and the industry, to achieve higher rates of productivity and workplace safety, and reduce material and labour costs.



MiC FIRST FOR HONG KONG

In October, we completed Hong Kong's first modular integrated construction (MiC) demonstration project, a three-storey building consisting of 10 modules displaying rooms found in a typical hotel, hostel, three-bed home and an elderly home.



Commissioned by the CIC, the demonstration project was purpose-built to showcase the opportunities for enhanced quality, productivity, safety and sustainability that can be gained using a MiC approach to construction.

Working with supplier China International Marine Containers (CIMC), we constructed around 70% of the design-and-build project off site, in CIMC's mainland China factory, with only the structure's foundations, frame and stairwells built in situ. Modules, fully decked out with everything from electrical wiring through to fixtures, fittings and wallpaper, were then transported to Hong Kong for rapid installation on site.

In addition to programme benefits, the factory-controlled process improved quality and generated less waste, created fewer disturbances on site, and provided workers at the factory with an indoor environment in which to safely and comfortably carry out their duties.



GAMMON SHARES EXPERTISE AT GEOTECHNOLOGY FORUM

Laboratory Manager Eddie Lau from the Gammon Soil & Rock Laboratory joined international academics as a guest speaker at the Innotech Forum on Geotechnology, a one-day event organised by the Civil Engineering and Development Department. The forum was designed to share knowledge of recent developments in geotechnical engineering and speakers included internationally renowned experts, academics and geotechnical professionals.

Eddie's presentation on Automation in Triaxial Tests (used to determine rock and soil shear strength) demonstrated our efforts in digitisation and automation of facilities at our laboratory. The automated testing process allows a higher pressure range, is safer, more reliable and allows longer testing hours. Eddie also discussed how the facility has evolved over the past decade to take a leading position over other geotechnical laboratories in Hong Kong.

Engineering Development Manager Gavin Toh of our in-house engineering consultancy, Lambeth, was also invited to be a member of the panel discussing recent applications of innovations in geotechnical works. Gavin presented on Gammon's patented clutched pipe-pile innovation.



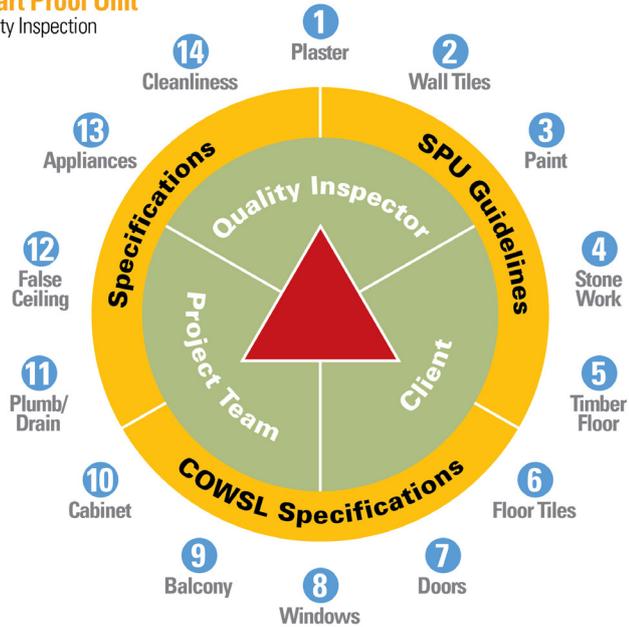
As with any offsite construction project, early contractor involvement was a must, with all parties in agreement and decisions made at an early stage. This applied particularly to design and procurement, as even small changes could have disrupted the entire production line. Our project team worked closely with CIMC, as well as Gammon subsidiaries IntoG (interiors) and Entasis (façade), in-house departments Construction Services and Virtual Design and Construction, logistics experts and design consultants, cooperating in a one-team approach right from the design stage.

ENSURING CUSTOMERS GET THE QUALITY THEY DESERVE

To provide an additional layer of internal quality control on our projects, we established a dedicated team to conduct extra inspections at the pre-handover stage of a project. Called the Smart Proof Unit (SPU), the team's remit is to verify the project quality control team's results and ultimately improve the quality of products delivered to our customers.

The SPU will be particularly beneficial on our residential building projects, which can be subject to public inspections by television personality and independent flat inspector Tsim Sir, whose rating is an important key performance indicator for new buyers.

Smart Proof Unit Quality Inspection



AI-ENABLED REMOTE VISUAL SURVEILLANCE TRIALLED

Our Ocean Park Water World project began trialling a security system that uses next-generation CCTV devices and an AI platform to provide a cost-effective and licensed service that functions without the need for onsite guards.

The detection system consists of two cameras and additional hardware including detection and video transmission systems located on the site that provides an overview of activity, and also captures registration plates of vehicles. The detection systems analyses images from the cameras to detect any unauthorised or out of the ordinary activity, all of which is managed from an offsite communication hub.

Remote visual access to the site is also available for selected team members via mobile phones and tablets.

RESPONSIBLE GROWTH – 25 BY 25 OBJECTIVES AND TARGETS

Co-creation with our value chain is one of our four focus areas under our new sustainability strategy. Our key target is to increase offsite construction by 25% by the year 2025. This and other objectives, actions and targets are outlined below.

| Objectives | Actions | Target by 2025 |
|---|---|---|
| 1. Increase offsite construction to increase efficiency in resource use, improve safety and programme | Work with suppliers, subcontractors, clients, architects and engineers to undertake more offsite construction, drive responsible consumption and production and use of DfMA | 25% reduction in on-site hours worked / \$ value of turnover |
| 2. Improve management and project delivery efficiency through integrated digital project delivery | Promote to clients, architects and consultants through demonstrated benefits of integrated digital project delivery. Increase number of projects managed and tracked through a Common Data Environment. Increase competence and numbers of users in BIM and other dimensions of BIM (up to 10D) | 25% of all projects delivered through integrated and collaborative digital project delivery system (using a Common Data Environment) with digital progress monitoring |
| 3. Increase production and use of more sustainable materials to reduce pressure on finite natural resources | Promote consumption of more sustainable materials from more sustainable sources Promote production and use of lower carbon concrete mixes (CIC Carbon Labelled Concretes of 'Outstanding' grade) produced as a proportion of overall concrete volume | 25% of procurement spend on more sustainable materials ⁷ 25% of concrete quantity produced is certified or equivalent to the 'Outstanding' grade of the CIC Carbon Labelling Scheme |
| 4. Collaborate with the value chain to support SDGs | Develop / participate in a partnership together with our value chain that will make a positive impact on the SDGs. | To launch a collaborative programme with our value chain and CSI partners in 2020 2025 target to be confirmed |

⁷ Defined as products with recognised 'green' labels e.g. for carbon or overall environmental performance, water or energy efficiency, or having high recycled content, regional sourcing etc. Baseline is 2016 or as indicated.

PEOPLE – CARING

The focus area of People under our new strategy covers caring for both our **employees** and the **community**. Below we highlight some of the many areas where we have been making improvements or driving new initiatives to enhance employees' wellbeing and development, as well other examples of corporate social activities to support local communities.

OUR EMPLOYEES

FAMILY FUN DAY

About 4,000 Gammon employees and family members, as well as relatives of subcontractors and suppliers, attended our Family Fun Day in December which was themed 'Zero Waste, Better Future'.



To support the theme, food was served in biodegradable boxes and no plastic cutlery was provided; instead, stainless steel



WORKING ON SOFT SKILLS

Our Gammon Academy began a new training course called '3Wins' that focuses on enhancing the customer service skills of our frontline staff who liaise with owners and management offices during the handover stage of residential flats.

Frontline supervisors of residential projects attended the half-day course which was tailor-made in association with an external consultant specialising in customer service.

Role play, mock interviews and discussions provided attendees with an opportunity to practice their communication skills and gain more confidence in their ability to interact with flat owners who have made not only a financial investment but often an emotional one.



reusable cutlery sets were given to participants as both a souvenir and to use on the day.

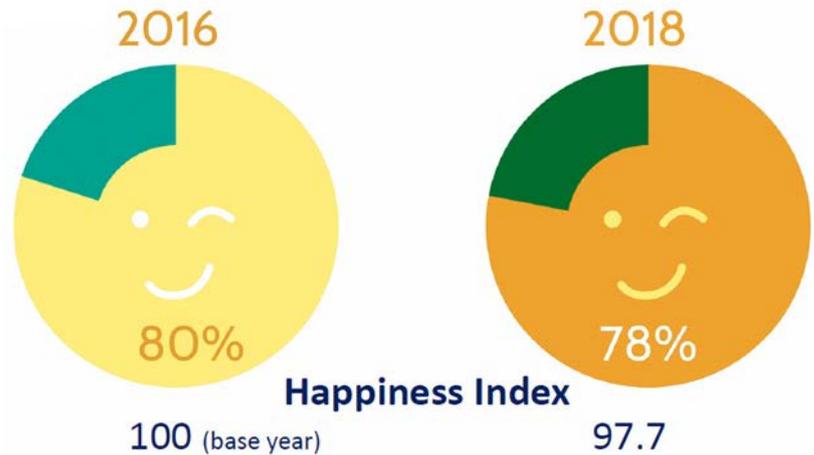
The environmental theme continued with workshops that included soap making and wind energy, and booths such as the used books and toys exchange. Games for the children included paddle boats, pedal carts and a giant inflatable slide, and live dance and music performances were also provided by a number of non-government organisations. Props and equipment were given to the Tung Wah Group of Hospitals for reuse after the event.

HOW HAPPY ARE WE?

We carried out our second biennial staff happiness survey to help us better understand and measure employee attitudes, motivation and satisfaction and ensure we are providing a positive work environment.

Questions included those related to staff happiness in nine different areas, as well sense of belonging and importance factors, and there was also the opportunity to provide open comments. The overall happiness index for the Gammon group saw a slight drop from 2016, from 80% to 78%, although in the age group of 25 and below, happiness increased by 3%, and in our Shenzhen and Dongguan divisions there was a 3% and 4% increase respectively. There was also a significant improvement in well-being, which increased by 27% from 2016.

The top three factors viewed as of most importance to our staff were learning and development, working relationships and compensation and benefits. Open comments showed us our staff were happy with aspects



such as team relationships, safety levels, good leadership from their managers and supervisory support, but less happy in areas including travel distance to remote sites, the working environment including the lack of a five-day week, and the number of systems and policies.

The results were cascaded to teams in 2018, with constructive comments and suggestions sought, and these will be developed into an action plan in 2019.

STUDY TOUR TO JAPAN

In order to further cultural understanding as well as knowledge of the construction industry beyond Hong Kong, our Young Professionals Group (YPG) organised a study tour to Japan in May.

Twenty YPG members spent five days in Tokyo, where they visited a number of projects including a cut-and-cover drill-and-blast tunnel, a contract using shield tunnel boring machines to minimise impact to the surrounding area, and an underground train station

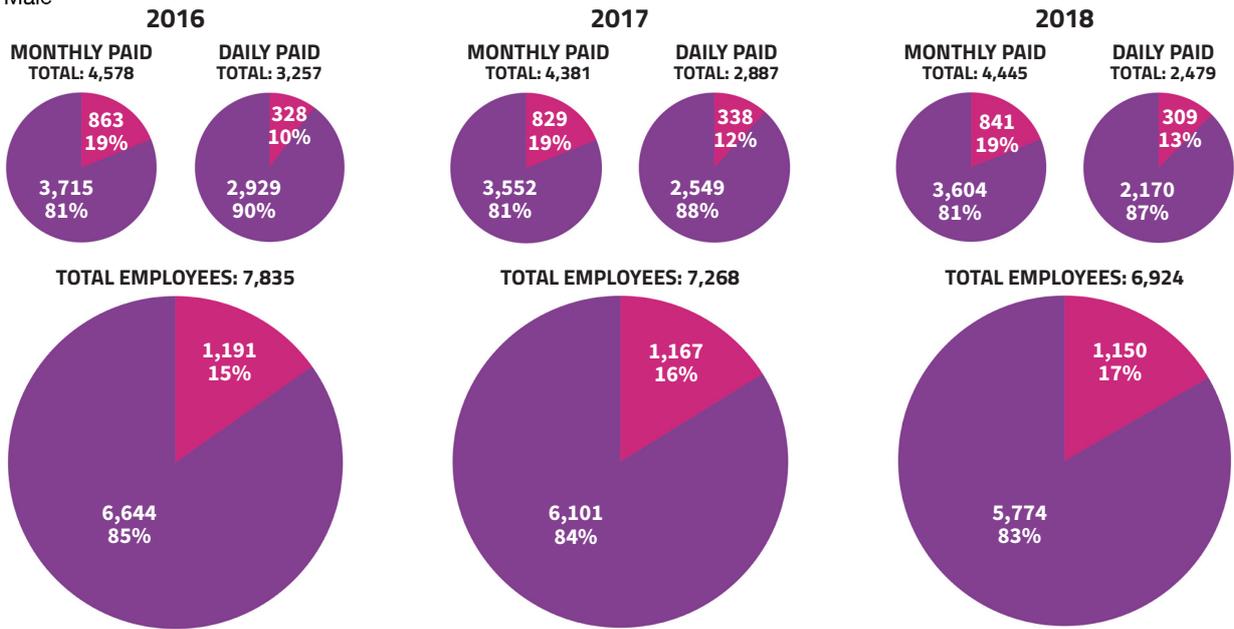
formed by cut-and-cover methods. They also visited a hotel project, cinema and shopping mall works, and the Panasonic Center to check out innovative technology including that for the 2020 Olympics.

YPG Chairperson Cecilia Tsui said Japan was chosen as the destination because of its culture: "After our visit, we all agreed that Japan is a clean, well-organised city filled with polite workers. All the sites we visited were so well organised and tidy which is something we must also aspire to improve on our job sites."



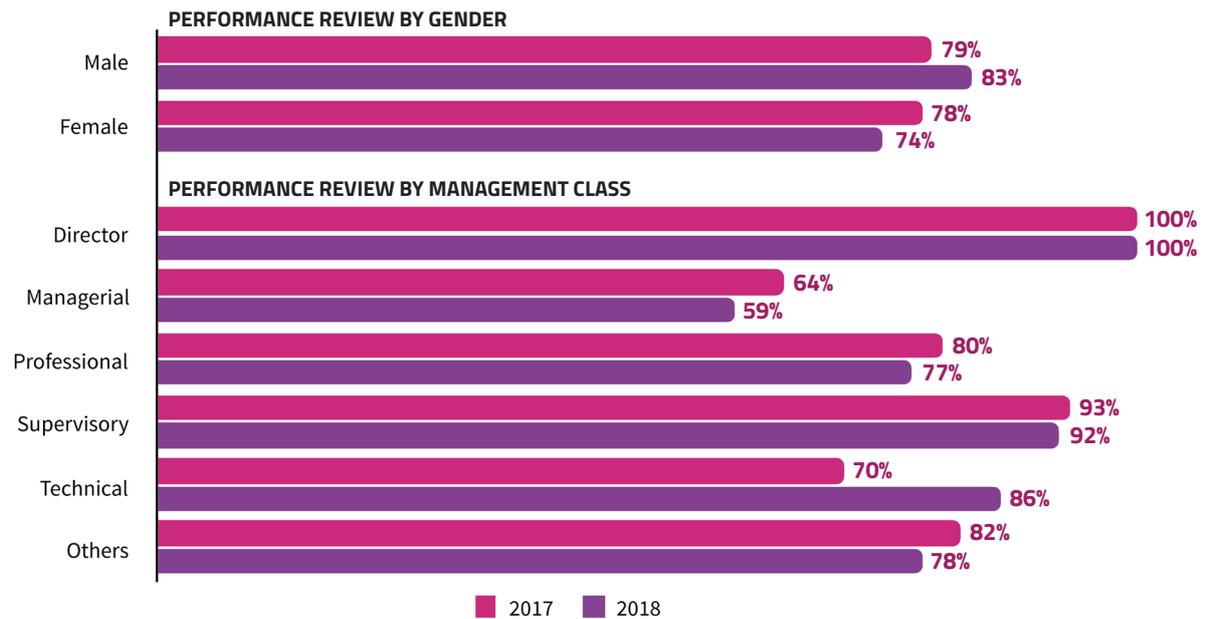
GENDER RATIO OF EMPLOYEES (ALL REGIONS)

● Female
● Male



CAREER & PERFORMANCE REVIEW (MONTHLY PAID EMPLOYEES) (EXCLUDES PRISTINE)

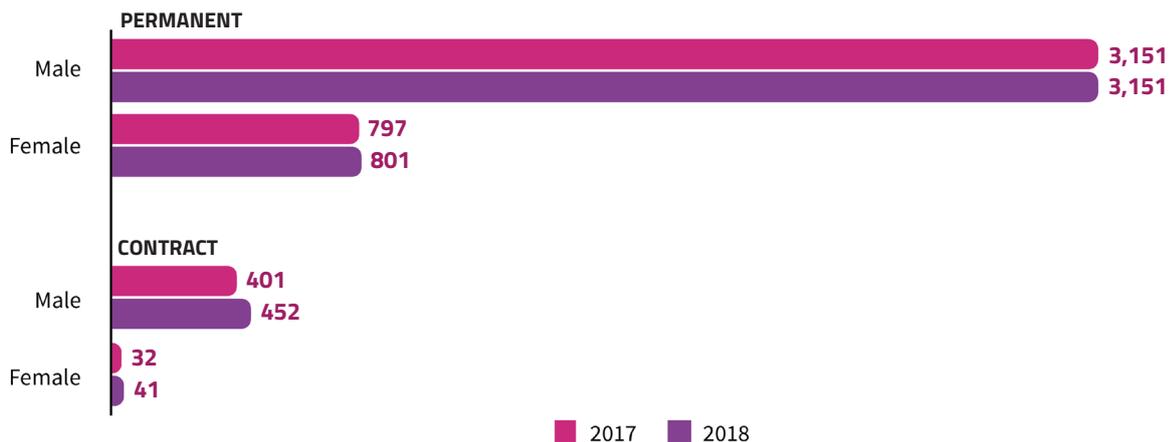
GRI 404-3



EMPLOYEES BY CONTRACT TYPE (DATA REPORTED SINCE 2017)

GRI 102-8-a

GRI 102-8-c



**NEW EMPLOYEE HIRES BY GENDER
(ALL REGIONS)**

GRI 401-1


18.4%
 (% of total male employees)


25.0%
 (% of total female employees)

**STAFF TURNOVER RATE BY GENDER
(ALL REGIONS)**

GRI 401-1


11.8%
 (Turnover rate – male)


18.9%
 (Turnover rate – female)

**DIVERSITY OF EMPLOYEES BY
MANAGEMENT CLASS^{1,2}**

GRI 405-1b

| | 2017 | 2018 |
|-----------------------------------|----------------|----------------|
| Director level (Total) | (20) | (18) |
| Male | 95.0% | 94.4% |
| Female | 5.0% | 5.6% |
| Under 30 years old | 0.0% | 0.0% |
| 30-50 years old | 20.0% | 5.6% |
| Over 50 years old | 80.0% | 94.4% |
| Managerial level (Total) | (534) | (544) |
| Male | 90.3% | 90.3% |
| Female | 9.7% | 9.7% |
| Under 30 years old | 1.1% | 0.9% |
| 30-50 years old | 65.9% | 64.3% |
| Over 50 years old | 33.0% | 34.7% |
| Professional level (Total) | (1,098) | (1,217) |
| Male | 75.8% | 75.7% |
| Female | 24.2% | 24.3% |
| Under 30 years old | 27.9% | 25.5% |
| 30-50 years old | 64.6% | 67.0% |
| Over 50 years old | 7.6% | 7.6% |

| | 2017 | 2018 |
|----------------------------------|----------------|----------------|
| Supervisory level (Total) | (906) | (833) |
| Male | 99.9% | 99.8% |
| Female | 0.1% | 0.2% |
| Under 30 years old | 10.5% | 11.2% |
| 30-50 years old | 52.2% | 51.6% |
| Over 50 years old | 37.2% | 37.2% |
| Technical (Total) | (1,301) | (1,253) |
| Male | 89.6% | 91.2% |
| Female | 10.5% | 8.8% |
| Under 30 years old | 52.2% | 49.0% |
| 30-50 years old | 33.4% | 35.0% |
| Over 50 years old | 14.4% | 16.0% |
| Others (Total) | (3,409) | (3,009) |
| Male | 79.1% | 71.1% |
| Female | 20.9% | 22.9% |
| Under 30 years old | 14.2% | 12.5% |
| 30-50 years old | 45.2% | 54.3% |
| Over 50 years old | 40.7% | 42.3% |

¹ Includes Executive Directors only but excludes shareholders board members

² Professional employees include engineers, quantity surveyors, safety and environment professionals etc. Technical employees are assistant professionals, trainees and apprentices etc. Others include clerical and administrative staff etc.

RESPONSIBLE GROWTH – 25 BY 25 OBJECTIVES AND TARGETS

Below we list our objectives, high-level actions and targets related to our employees.

EMPLOYEES

| Objectives | Actions | Target by 2025 |
|---|--|---|
| 1. Increase staff retention, particularly for new joiners by enhancing work experiences | Further enhance working conditions and employee wellbeing, strengthen mentoring and opportunities for employees. Consider flexible working arrangements for employees. Locate new joiners on projects in their home district as much as possible. | 25% reduction in staff turnover rate within the 1st year of joining the group |
| 2. Attract, retain and support life-long careers for workers and apprentices | Promote construction industry as a career at high schools and with parents / teachers / career counsellors. Improve working conditions, package and recognition. Provide upskilling / multi-skilling training to ensure life-long careers: <ul style="list-style-type: none"> • Unskilled to semi-skilled • Semi-skilled to skilled • Semi / Skilled to multi-skilled | 25% increase in the % of workers who have been upskilled from unskilled to semi skilled and semi-skilled to skilled ¹ 25% increase in the % of workers who are multi-skilled ² (HK only) |
| 3. Monitor and improve staff satisfaction / happiness and wellbeing | Conduct yearly or biennial staff satisfaction / happiness survey. Further develop healthcare and wellbeing programmes. | 75% of staff satisfied / happy based on overall mean |
| 4. Develop a culture of fairness, inclusion and respect | Understand issues related to diversity and inclusion and develop an agenda and plan to address e.g. awareness and training, network, and other initiatives | By 2020 develop an agenda for diversity and inclusion. 2025 target to be confirmed |

¹ Based on the CIC Construction Tradesman Collaborative Training Scheme (CTS) and CIC Advanced Construction Manpower Training Scheme (ACMTS) participants as a percentage of the total HK workers (daily and monthly) from Dec 2016 to Dec 2025).

² Based on the % of HK workers (daily and monthly) with more than one officially recognised trade certificate / total number of HK workers at Dec 2025, using an August 2016 baseline.

Baseline is 2016 or as indicated.

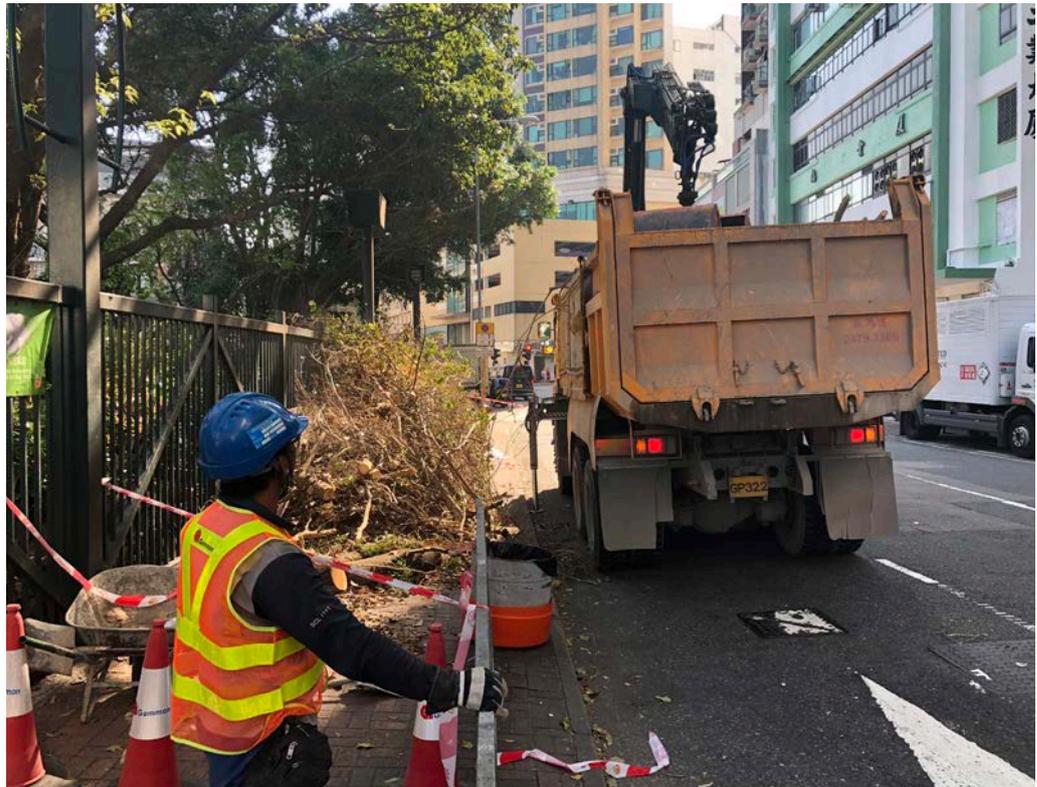
THE COMMUNITY

HELPING THE COMMUNITY AFTER TYPHOON MANGKHUT

Typhoon Mangkhut tore through Hong Kong with devastating effect in September. A number of the communities in which we work were badly affected by debris, fallen trees and blocked roads, and our site-based teams were quick to offer their assistance.

At our Central Kowloon Route – Kai Tak West project, members of the team were voluntarily removing trees and debris from the Kowloon City public roads immediately after the No. 8 signal was lowered, helping traffic lanes and pedestrian walkways return to normal operation.

In the north of Sai Kung, trees blocked one of the main roads in the district bringing a grinding halt to those



trying to get to work the following day. Taking the initiative, our Sai Sha Road team were able to clear the road to allow traffic to resume by noon. Concerted efforts were also taking place at our West Kowloon Station

project, where the team also cleared public roads of fallen trees.



Across the Special Administrative Region, staff from projects located at Tseung Kwan O in the east through to Tsuen Wan in the west and Sai Kung in the north, helped facilities and districts including Tseung Kwan O cycling trail, Shum Wan Road, Kadoorie Avenue, Whampoa Primary School and Pok Fu Lam return to normality. Our efforts were also recognised by several District Council members who expressed their gratitude via letters and in person.

PROACTIVELY ENGAGING IN THE COMMUNITY



Positively benefiting the communities in which we work is a key aspect of our Responsible Growth – 25 by 25 strategy and the actions of our To Shek Foundations project particularly demonstrated just how effective proactive engagement within the neighbourhood can be.

The project site is surrounded by village houses and children's charity Ronald McDonald House is located next door. Aware that some construction works could disturb the neighbourhood, the project team placed

great emphasis on maintaining close communication with villagers and Ronald McDonald House, in addition to regular noise mitigation measures. A direct public relations contact was established, regular coordination meetings were scheduled and real-time communication applications were used, all of which facilitated prompt response to any concerns from the neighbourhood.

The project team also voluntarily cleaned nearby drains to solve the recurring problem of flooding to the village car park and Ronald McDonald House during periods of

rain. Such was the success of their clean-up that even super Typhoon Mangkhut failed to cause any flooding issues, and the community was most appreciative.

The team also supported Ronald McDonald House through caring visits and providing donations for sick children, repaired damage and cleaned up after Mangkhut, and built a temporary dam to avoid potential stormwater ingress into the building.

The degree to which the team considered the needs of the local community has resulted in a very amicable relationship with the neighbourhood and no adverse complaints regarding construction works.



INSPIRING YOUNG MINDS

Staff from our Kai Tak foundations project volunteered their time to carry out a STEM workshop with young pupils at St Bonaventure Catholic Primary school in December.

The objective of the workshop was to not only enrich the pupils' knowledge of science and engineering, but also to enhance their problem-solving skills and creativity. It also gave the children an opportunity to meet with construction professionals and gain a greater understanding of the industry.

The first part of the visit consisted of a building activity, with Gammon volunteers working with the children to build a bridge using only basic materials such as newspapers, straws and marbles. This was followed



by a presentation on the daily work of an engineer with the objective of inspiring them to take an interest in construction.

The event was organised in collaboration with Teach for Hong Kong, a not-for-profit organisation that works to drive change in education through cross-sector collaboration, in particular in underprivileged schools.

RESPONSIBLE GROWTH – 25 BY 25 OBJECTIVES AND TARGETS

Our objectives and targets related to the community including promoting more volunteering, strengthening our impact objectives, and creating shared value, as shown below.

COMMUNITY

| Objectives | Actions | Target by 2025 |
|--|--|--|
| 1. Promote employee volunteering and engagement to provide a positive benefit to communities | Increase level of support for staff to encourage more volunteering in line with corporate objectives e.g. web platform, volunteering allowance, etc. | 25% increase in volunteer hours / person (during work hours) compared with 2018 baseline |
| | Establish a charity fund for match funding to match exact funds (1 to 1) raised directly by employees for donation to their supported charities | By 2020 establish matching fund to encourage employee donations. 2025 target to be confirmed |
| 2. Improve value and impact of charity / community activities | Establish social impact objectives for corporate social investment. Track achievement against social impact objectives and extent of positive impact on employees. | By 2020 establish corporate community impact objectives for corporate social investment 2025 target to be confirmed |
| 3. Create shared value (using skills and expertise to address a social need while enhancing competitiveness) | Provide learn and earn opportunities to economically disadvantaged and other marginalised social groups by attracting and training those from low income families, NEETs ³ , and other marginalised members of society. Identify and pursue other shared value opportunities. | 25% increase in new direct monthly paid workers from districts with the highest levels of poverty ⁴ (HK only) |

³ Youth (aged 16-24 years) not in education, employment or training.

⁴ Based on HKSAR Government's HK Poverty Situation Report 2016 these districts are Sham Shui Po, Kwun Tong, Kwai Tsing, Yuen Long and North Districts. Baseline is 2016 or as indicated.

APPENDICES

publicly available online and can be found here: www.gammonconstruction.com/en/upload/doc/sustainability/Sustainability_Strategy.pdf

ExCo is responsible for agreeing targets and reviewing performance every year. Day-to-day operational activities aimed at achieving the actions occur across the business units, encouraged and supported by the Environment and Sustainability Team and other supporting functions, as required.

Our shareholder Balfour Beatty reviews our sustainability progress annually. A third-party assessment is undertaken to audit our greenhouse gas emissions before they are submitted to CDP (formerly the Carbon Disclosure Project). Through forums and active roles



in industry associations and societies, we have taken a leadership role not just for the promotion of Gammon's interests but for the betterment of the industry as a whole (see the Value Chain section).

Values and norms of behaviour

GRI 102-16

GRI 102-44

Gammon has a set of core values that define our work ethic and guide our workforce in today's rapidly changing and challenging world. The core values – Safety, Integrity and Excellence – have been incorporated into a philosophy called The Gammon Way, which also outlines Gammon's Mission and Vision. Our Mission is 'to build for a better quality of life and living environment in a safe and sustainable manner' and our vision is 'to be the contractor of choice in Hong Kong, China and Southeast Asia'.

At Gammon, our ultimate goal is to deliver a high level of quality to our customers. This means not only the quality of our built products and service outcomes, but also in the way they are delivered: reliably, safely and responsibly. We believe we can best deliver the level of quality to which we aspire by concentrating on our three core values.

Our Code of Conduct¹ lays out the following principles for our business operations to which all employees must adhere:

- to instill a high standard of integrity, ethics and environmental responsibility in all aspects of our business dealings and operations;
- to abide by the legal and regulatory requirements in the countries where we operate;
- to observe the rights of our employees and the communities in which we work; and
- to create the means to make the Code of Conduct an integral part of daily practice.

The Gammon Way, our core values and our Code



of Conduct are clearly communicated to all staff at induction, as mentioned in the section on Training below. The Group General Counsel and Legal Director is responsible for overseeing governance and the Code of Conduct. The Code is publicly available on our website in both English and Traditional Chinese.

Through the Gammon Way and by operating our business responsibly, we hope to deliver the desired level of quality expected by our clients reliably, safely and responsibly. Indeed, to be the contractor of choice we must ensure our clients' satisfaction, and improving that level of satisfaction has been identified as a material issue by internal and external stakeholders. We trust the many efforts we are making as outlined in this and other sustainability reports, through engagement, leadership, collaboration and innovation, demonstrate our determination and commitment to more than satisfy our clients' expectations.

¹ See www.gammonconstruction.com/en/upload/doc/sustainability/Code_of_Conduct.pdf for our Code of Conduct

Managing Risk GRI 102-11

Our risk management approach covers all elements of our operations including tenders, projects, functions, and corporate level operations (e.g. through our Risk Management and Compliance Committee, as mentioned above). The process forms an integral part of our business management system and is formalised and documented in our Risk and Opportunity Management procedure. In addition to business, health, and safety-related risks, we pay particular attention to environmental risks and this is addressed in our Code of Conduct as follows: “We shall adopt a precautionary approach in our operations and conduct an environmental review for every new undertaking to identify the significance of impacts associated with the activities under our control. A risk management process will also be applied whereby actions will be taken to identify those potential threats of serious or irreversible environmental damage and to deal with them using best available technology taking into account what is technically feasible and economically viable within our influence and customer requirements.” We also have plans and procedures in place for extreme weather events, business continuity planning and crisis management.

Anti-Corruption GRI 103-2 GRI 103-3

‘Integrity’ is one of Gammon’s three core values and anti-corruption is taken very seriously by the business and is a fundamental part of our Code of Conduct, to which all employees must subscribe. It is also recognised by our stakeholders as a material issue. Our Legal Director and General Counsel along with our Executive Directors and shareholders are responsible for setting, approving and evaluating our anti-corruption policies, procedures and grievance mechanisms.

Corruption risk assessment GRI 205-1

Our business risk management programme covers corruption risk with a separate corruption risk assessment covering aspects such as bribery, fraud, fair competition, gifts, and conflicts of interest. The corruption risk assessment is undertaken for 100% of our operations in all locations. The assessment is based on various activities undertaken during the course of our business (e.g. bidding for work, selecting subcontractors and suppliers, seeking payment or approvals, etc.) and includes potential variation of risks outside Hong Kong. It is also a requirement of our shareholder Balfour Beatty that we follow their Ethics and Compliance Programme which includes corruption risk. The significant risks related to corruption identified through the risk assessments and addressed in the company procedures are:

- Two or more parties including staff, supply chain, other clients and /or competitors collude for fraud, business misconduct or release of sensitive information e.g. tender prices or ideas, financial data, innovation or other client’s information to gain an advantage.

- Employees soliciting or accepting any advantages from clients, consultants, contractors, subcontractors, suppliers or any person in connection with Company business.
- Employees having a conflict of interest where their judgement is affected by a vested interest
- Failure of the Company or employees to follow fair competition or anti-trust laws (e.g. bid rigging, price fixing, market sharing, abuse of a strong market position or other anti-competitive arrangements).

Conflict of interest

Conflicts of interest are to be declared and form part of our Code of Conduct and are an identified risk in the corruption risk assessment for review and management.

Charitable donations and sponsorships

Our Code of Conduct describes how we ensure that charitable donations and sponsorships are not used as a disguise for bribery, as follows: “The Company ensures that charitable contributions and sponsorships are not used as a subterfuge for bribery. All charitable contributions and sponsorships shall be subject to Chief Executive approval (or in accordance with the Group Delegation and Limits of Authority) with clear expressions of intent, shall be transparent to interested parties including all employees, shall be fully accounted for and made in accordance with applicable law.

“The Company, its employees or intermediaries shall not make direct or indirect contributions to political parties, party officials, candidates or organisations or individuals engaged in politics, as a subterfuge for bribery.”

Further guidance on charitable donations and sponsorships is provided in our Corporate Communications procedures within the business management system. Guidance is provided on the focus areas that Gammon wishes to support, the funding criteria, organisations that Gammon will not support, submissions of proposals for funding, and the assessment and approval process. The issue of gifts and hospitality is also included in our corruption risk assessment.

Training on Anti-corruption and Code of Conduct

As stated in our Code of Conduct (the Code), “Employees shall receive specific training on the Code tailored to relevant needs and circumstances. Where appropriate, subcontractors and suppliers shall also receive instruction or briefings on the Code. Training activities shall be assessed periodically for effectiveness.” Integrity (including anti-corruption) and our Code of Conduct are included in induction training and during orientation for all new staff members. We also have additional briefings with key staff associated with approvals, commercial aspects, procurement and estimating. We have Code of Conduct requirements for subcontractors and suppliers, and provide specific briefings as necessary.

SAFETY – ZERO HARM

MANAGEMENT APPROACHES

Health and Safety and Working Environment

GRI 403

GRI 103-2

GRI 103-3

From our stakeholder engagement process, not unsurprisingly, the topics of ‘safety management’ and ‘working environment’ were viewed as our most important material issues by both internal and external stakeholders who participated in the stakeholder engagement process at the end of 2017. We present below our approach to managing safety and providing an appropriate working environment. Key performance indicators are provided in Appendix D.

As stated in our Code of Conduct¹, ‘our vision is to have a workplace without injury or accident’ and our business adopts a ‘Zero Harm’ approach in the planning and implementation of all projects and operations, supported by senior management’s ‘Bold Commitments’². Every employee understands they have a clear duty to themselves, their fellow workers and, in many cases, the public to take every reasonable precaution to set up and maintain a safe and secure working environment free from hazards. The Company has set up management systems and resources to plan, implement, control and continually improve performance in these areas.

Gammon is committed to providing as safe a working environment as possible for its staff and others working on our sites (e.g. subcontractor workers, suppliers and client teams), and will ensure safety is always a priority over all else. As a minimum, we will comply with all applicable regulations, codes of practice and other guidelines issued by government authorities in the locations where we work. In addition, we have in-house rules (such as our Bold Commitments), standards and guidelines which often exceed the mandated requirements. Strict wearing of personal protective equipment (PPE) when on site and adherence to the policies, manuals, procedures and safe working rules are expected of all employees and subcontractor workers. The Company does not tolerate any unsafe work practices or serious infringements or the consumption of alcohol or taking of drugs during working hours.

Planning for safety usually starts during the tendering stage and potential occupational health and safety risks are addressed through temporary works design,

construction methods, or controlled by procedures for all major activities on site during operation. We use the ‘Swiss cheese model’ of safety management to provide four layers of protection, covering: design and engineering; materials, plant and equipment; process; and people. Our focus is always on designing out and avoiding risks completely rather than relying on the other three layers of protection.

Training and continual process improvement is an integrated part of Gammon’s approach. Prevention and risk control measures are promoted, including, among others:

- training and awareness raising on how to reduce injury, prevent disease, avoid heatstroke, manage stress and promote health and well-being
- providing safe plant, equipment and tools for worker use
- changing engineering design, programme and methods to reduce or eliminate risk during construction.

Should an incident occur on one of our projects or sites, we carefully record and investigate it, reporting to ExCo for review and follow-up improvement measures and to ensure we are adopting industry-standard best practices.

We operate a comprehensive Business Management System (BMS) which incorporates the requirements of an Occupational Health and Safety System that is certified under OHSAS 18001: 2007. This system, including the formal internal and external audits, as well as our in-house System Assurance Validation process, project assurance programme and management review process, allows us to evaluate our health and safety management system, its effectiveness and how to improve our practices. We have started the process of conversion to ISO45001 and this should be well under way in 2019.

Health and Welfare

Our site nurses provide voluntary health checks for both employees and subcontractor workers. They also hold health and well-being promotional talks which include prevention of diseases and health lifestyle guidance.

¹ See www.gammonconstruction.com/en/upload/doc/sustainability/Code_of_Conduct.pdf for our Code of Conduct

² Gammon’s ‘Bold Commitments’ are a set of actions exceeding mandatory requirements, designed to embed our Zero Harm approach into the workplace and make safety personal

Our human resources team conduct regular informal ‘caring visits’ to sites to give employees the chance to share their suggestions and to listen to their concerns. There are also mechanisms for staff to feed back to the company through various avenues such as periodic employee surveys, caring visits, email and telephone hotlines, mentors, and a formal grievance mechanism.

We try to go beyond compliance and the local industry norms in terms of worker facilities on site including good rest areas, lockers, cooled welfare facilities, phone charging, toilets, showers, refrigerators, microwaves, ice machines, snacks, meals and drink vending machines, canteens (where possible), and in some cases laundry services and recreational facilities on our projects. This is encouraged and incentivised through our in-house Green and Caring Site Commitment Scheme where sites try to set a leading example to achieve our highest ‘Green Flag’ status.



Workforce Represented in Formal Joint Management – Worker Health and Safety Committees

GRI 403-1

To improve the standards of safety at work, full cooperation and commitment of workers and foremen are absolutely essential. Hence, these employees must be able to participate in the implementation and monitoring of arrangements for safety at their place of work. The establishment of Site Safety Committees (SSC) in which these employees and the management of the contractor and sub-contractors are represented can increase the involvement and commitment of these employees

and workers and ensure the practicability of any new measures proposed. Gammon therefore sets up an SSC in each project and holds meetings at least once a month to drive improvement of occupational health and safety in the workplace and to listen to concerns raised. We ensure all the subcontractors’ representatives attend the monthly SSC meeting in our projects. This means 100% of workers are represented by formal joint management-worker health and safety committees.

Customer Health and Safety and Compliance of Products and Services

GRI 416

GRI 419

GRI 103-2

GRI 103-3

The two areas of ‘compliance of our products and services’ and ‘customer health and safety’ were raised as material issues for our business by our stakeholders. These issues are covered by our Code of Conduct and our BMS. One of our core business principles is to abide by the legal and regulatory requirements in the countries where we operate. We have established policies and procedures to guide the proper management of operational compliance issues, as well as systems dealing with financial, taxation and human resources management which enable employees to learn how to comply with all accountability standards, laws, rules and regulations. We maintain and continually improve these systems of management and ensure all employees have the information available

or are given instruction on the standards, laws and regulations applicable to them.

As also reiterated in our Code of Conduct, we treat compliance with health, safety and environmental protection regulatory requirements applicable to our business as a minimum standard to which all employees are expected to adhere. BMS processes ensure all applicable legal requirements are identified and actions put in place to ensure compliance, as well as to check for updates. Our staff are required to obey the law and follow all applicable regulations. We also require all employees to adhere to guidance, codes of practice and technical circulars issued directly by government departments that are not legally binding.

Our BMS includes all applicable regulations, guidance and codes of practice in relation to our products and services for the locations where we operate. Construction products and projects often have very stringent general and particular specifications in terms of design, material selection and quality so it is essential we comply with our customers' specifications as a minimum. In order to ensure we deliver what is required and that we operate in compliance with all laws and regulations, our BMS includes production controls for all work including rigorous checking, quality control and assurance, inspection and testing as well as internal and external audits. These controls extend to subcontractors and materials where relevant.

Procurement is a key area where we must be meticulous in ensuring the health and safety of the materials and products we use and avoid any products with harmful substances. Our Sustainable Procurement Policy and practices extend the Zero Harm approach to product and service sourcing to ensure the safety of our customers and the wider public.

We are constantly looking for improvement in the products and projects we deliver across many areas, including worker safety, productivity, product quality and durability, cost, resource use, waste generation, carbon footprint, programme, etc. We also strive to improve the health and safety aspects of the projects we construct for our customers, but this must be within the constraints of the customers' contract specifications. We will always propose alternative designs and materials where we believe customer health and safety can be improved. These opportunities for improvement are often identified through our risk and opportunity management process and we raise these with our clients as and when they are identified.

Operating with recognised management systems

Our BMS also includes our Quality Management System and Environmental Management System and is independently certified against ISO9001:2015 and ISO14001:2015. It also includes our Energy Management System which has been certified for selected project types against ISO 50001:2011. Our soil laboratory at the Gammon Technology Park in Tseung Kwan O is also certified to ISO/IEC 17025: 2005 and is a certified HOKLAS laboratory for construction materials and calibration tests, as listed in the HOKLAS Directory. Our steel fabrication department at our plant in Dongguan combined with Lambeth Associates engineering design consultancy was awarded a CE Mark in 2017, certified

against Execution Class 4 under the EN1090-1: 2009 + A1:2011. Our concrete batching facilities are also certified against QSPSC:2014. We are one of the first companies globally to have had our information management using BIM certified against PAS 1192-2:2013 and have been awarded the BSI Kitemark. We also verify our greenhouse gas emissions inventory against the ISO 14064-1:2006 guideline annually.

These standards, systems and the associated audits, as well as our in-house system assurance validation process and project assurance programmes, allow us to evaluate our BMS and management approaches, their effectiveness and how to improve our practices. The performance of the business, successes and shortcomings are normally communicated directly from senior management to the management teams through regular briefings where dialogue is encouraged. Management teams are then asked to cascade these findings to every level of staff and these are supplemented by other messages from the corporate communications team and staff circular emails. Every year, we have a formal 'Lessons to Learn' workshop where managers share insights and propose improvements through a yearly Lessons to Learn Action Plan. A summary version of our Sustainability Report is sent out in the form of a leaflet and posters on site to all key subcontractors and suppliers. Each year there is also a sustainability briefing provided by senior managers from the sustainability team to all main project sites and offices.



ENVIRONMENT

MANAGEMENT APPROACHES

Environmental Management GRI 103-2

Approach

As mentioned earlier, environmental management is an integral part of our BMS and our environmental management system has been independently certified against ISO14001:2015. Environmental aspects, risks and impacts are considered for each project and mitigation and improvement measures are applied to avoid or ameliorate potential issues. More importantly, we strive for proactive improvements that go beyond basic compliance whether it is to reduce water consumption, avoid waste, save energy or cut material use on site, or by alternative construction methods and reusable temporary works. This is encouraged and incentivised as part of our in-house Green and Caring Site Commitment (G&CSC) scheme. In 2018, we also started requiring new projects to develop a Zero Waste Plan to dive into the biggest sources of waste, energy and water consumption and cut waste in all its forms (see Highlights, page 12).

We are active Council members of the Business Environment Council (BEC) and remain a Patron



member of the Hong Kong Green Building Council (HKGBC). Gammon has been recognised as a Hong Kong Green Organisation for our commitment to proactive environmental management and has won several Hong Kong Awards for Environmental Excellence over the years.



Monitoring

We believe in the philosophy that ‘you can’t manage what you don’t measure’ so monitoring our data, which we have been collecting for over 10 years, is an important part of our environmental management process. We have a bespoke data system that uses both site inputs as well as automated links to other business systems such as Finance and Procurement. There is a significant amount of data collected each month and this is available across the business – where projects can respond and have the biggest impact through a dashboard system called ACE. There is also a sustainability dashboard (S-Dash) that combines all sustainability-related data (environment, social, financial, safety) into an easy-to-understand single summary which is available every month. This allows the opportunity to interrogate the data and compare project and divisional performance, as well as view ‘league tables’ of the best performing projects to encourage improvement.

Material issues

Our stakeholders have identified construction materials, waste and energy as the issues of most concern related to our business. In this section, we therefore describe the approaches we use to manage these issues.

Materials

GRI 103-2

GRI 103-3

Our approach

During our stakeholder engagement process, the issue of construction materials was identified as being material for Gammon and of most interest under the topic of the Environment, with particular interest from stakeholders, academic institutions and industry associations. We try to deliver products and services designed to use resources wisely and minimise negative social and ecological impacts. We are committed to the efficient use of resources and minimising impacts on environments affected by our operations. We have been recognised as one of the leaders in sustainable



procurement in the construction sector and have been awarded the Sustainable Consumption Enterprise by the BEC.

We adopt the widely accepted '3Rs' philosophy of 'reduce, reuse, recycle' and focus very strongly on avoiding material use in the first instance by rethinking designs and construction methods where at all possible. Often, when we are awarded a contract, design and material specification decisions have already been made and many times it is too late to change within the tight construction programme. However, we are trying to work with private clients more during the tender stage (and earlier through ongoing engagement) in order to find opportunities to achieve reduced impacts in resource use without affecting the client's programme or budget. Unless we are awarded a design element in a project, it is challenging to make a significant difference to projects where we are engaged later in the process or where direct communication during tendering is not permitted. We must continue to influence the industry through institutional involvement and promotion of best practice to get deeper and more significant change across what is a very traditional industry.

Stakeholders pointed out that while Gammon is making progress when it comes to the sourcing and use of sustainable construction materials in Hong Kong, they recommended we try to increase our influence with our business partners along the supply chain, especially subcontractors, so that we create positive wider impact. We believe we can better work with

and influence our whole value chain to maximise opportunities for materials savings and sustainable procurement with a less traditional contract procurement method. Earlier contractor involvement or design-and-build contracts can allow for the full use of BIM, a collaborative design approach using a common data environment, sufficient lead time for offsite construction and a leaner design overall with the use of integrated digital project delivery (IDPD).

Material use increases significantly when changes are made to the design, especially in the built construction, creating waste and requiring additional materials. Using a detailed BIM model can avoid clashes and mistakes, allow visualisation (with virtual reality) and fix designs earlier to reduce total material use and wastage. BIM can also facilitate off-site construction and data can be taken from the model directly into factory processes. Stakeholders also mentioned they would like us to encourage more use of green building materials (e.g. with high recycled content) and low carbon design, so early involvement in projects would also facilitate this.

However, until IDPD and earlier involvement is more widely adopted we also make proposals to clients and subcontractors for alternative materials when we have enough time in the programme, for example, the use of gypsum blocks (using gypsum waste products from coal-fired power stations' desulphurisation treatment) to replace concrete blockwork.

Steel and concrete GRI 301-1

As concrete and steel are the two most widely used materials in construction in Hong Kong (with the highest embodied energy / carbon), one of our main priorities is to optimise designs and construction methods for leaner construction, less material use, and increased re-use (for example in edge protection, reusable struts, and temporary works needed for the construction process). This makes good business sense as well, as it minimises natural resources and energy use. Detailed data on the construction of these materials in recent years is included in Appendix D.

Through different initiatives, we have encouraged alternative designs using mechanisation, modularisation (e.g. re-use of modular struts), standardisation, automation and offsite prefabrication solutions (e.g. E&M modularisation, precast concrete) which result in more efficient use of resources. Tools such as our ACE dashboard and the Concrete Management System combined with the use of BIM help us achieve greater efficiencies in material use and wastage reduction. We continue to increase our use of

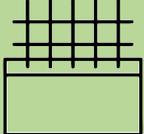
the offsite cut-and-bend factories established in Hong Kong in the past few years with good success. We also look for opportunities to reduce waste to public fill with a focus on minimising earth works and finding a direct beneficial use of excavated material.

Other materials GRI 301-2

In addition, we try to reduce material impacts through the procurement of more sustainable materials, for example, with higher recycled content, lower embodied carbon (e.g. use of pulverised fuel ash (PFA) as a cement replacement in concrete), sustainable sources, and the use of design alternatives to reduce material quantities. One example is our use of certified sustainable timbers (normally FSC or PEFC certified) under our Sustainable Timber Procurement Policy and Implementation Guideline (please see data in our KPIs in Appendix D). We also use sustainably certified A4 and A3 paper in all our permanent and site offices but are trying to convert to paperless approaches and systems where possible and work with clients to reduce paper-based submissions.

In addition to ongoing ad hoc communication with suppliers and subcontractors, we conduct regular sustainable procurement workshops in Hong Kong and Shenzhen to increase their capability in green procurement.

Our sustainable timber purchases for 2018 (HK)



Formwork

100%



Timber Doors

100%



FSC Certified Office Paper

100%

LOW CARBON READY MIX CONCRETE GRI 301-2

Our Concrete Technology Department continues to investigate new alternatives for more sustainable concrete mixes. The raw material types, sources (e.g. recycled content for cement replacements, see Appendix D), mix design and the plant production and management systems are all considered in the mix to try to reduce the carbon footprint of the concretes we produce in Hong Kong. We have assessed the ‘cradle to gate’ life cycle carbon footprint for concrete mixes and these have been verified against BSI PAS 2050 Product Carbon Footprint Verification. We were the first concrete producer to have Construction Industry Council (CIC) Carbon Labels for our ready-mix concretes. We started with just 10 mixes but renewed our application in early 2018 for 66 mixes. These were assessed and achievements included: 42 ‘Outstanding’, 22 ‘Highly commended’, 1 ‘Very good’, and 1 ‘Good’. By the end of 2018, we remained the only ready-mixed concrete supplier with CIC Carbon Labels for low carbon concrete mixes.



CIC GREEN
PRODUCT CERTIFICATION
CARBON LABELLING SCHEME

In 2019, two green labelling systems from the CIC and HKGBC were combined and the Carbon Labels were converted to CIC Green Product Certification Scheme labels. Our Carbon Labels have therefore been converted to 42 Platinum, 22 Gold, 1 Silver and 1 Bronze certified products. We are also recognised by the BEC as a Sustainable Product Supplier.



SUSTAINABLE
PRODUCT SUPPLIER
 可持續產品供應商

Effluent and Waste

GRI 103-2

GRI 103-3

GRI 306-2

Our approach

Gammon has developed a set of production procedures including water pollution control and waste management to guide our teams on managing these aspects. It is the responsibility of the project site environmental representative, site depot or workshop manager or environmental officer to ensure these procedures are implemented. The project team must ensure water pollution and waste management risks are identified and assessed and appropriate mitigation measures implemented and maintained to achieve compliance with the law, contract, Health, Safety and Environmental Policy commitments, objectives and targets. Most sites prepare a project-specific Waste Management Plan to define responsibilities and mitigation clearly from the beginning of the project.

Waste was identified as a material issue by our stakeholders with clients, academic institutions and industry associations all recognising this as particularly important. Aside from construction materials, stakeholders also brought up the topic of increasing site and planning efficiencies to reduce unintended waste. One example was to leverage the large number of construction sites to better plan overall logistics and materials allocation to decrease waste. We considered this several years ago and may revisit the options again in the near future. A second example was to centralise and strengthen Gammon's procurement and inventory database to reduce redundant purchasing. Our app, ARM (see Innovation section in the Sustainability Report 2017 Highlights) is being more widely used for inventory tracking. Our DiMart app also reduces the risk of over-ordering through our electronic procurement process.

We believe waste is probably our greatest environmental challenge (particularly in Hong Kong where there is very little support for the recycling sector) and also an area for opportunity. We need to think of waste as a resource and find ways to work up the supply chain to reduce it and look for chances to close material loops (circular economy thinking). Off-site construction and using a design for manufacturing and assembly (DfMA) approach present real opportunities for improvement both on material use (as mentioned above) and waste avoidance and we continue to promote these both internally and externally.

We developed a Waste Management Handbook that aims to provide project teams with practical and achievable guidelines for achieving our waste reduction targets. The Handbook includes:

- Project organisation structure setting out the roles and responsibilities of the respective project team member responsible for waste management and appropriate mitigation measures.
- An analysis of timing and types of construction and

demolition materials to be generated in the course of the execution of the works.

- The steps required to implement a site waste management plan.
- Suggestions of waste reduction measures.
- A monitoring and reviewing proposal to ensure the requirements of the site waste management plan are properly implemented.
- Contact details for waste recyclers in Hong Kong.

We advocate waste management improvement and policy support in Hong Kong through our role as a Steering Committee Member of the Waste Management Advisory Group at the BEC and work with our supply chain to try to reduce packaging waste where possible.

Reuse and recycling of construction waste

In Hong Kong, we continue to be challenged by waste reduction, as is the rest of the construction industry. Limited opportunities and high costs for recycling are combined with heavily constrained sites making waste separation difficult. Currently, the only widely recycled materials on sites in Hong Kong are waste metals, and this is largely due to the still strong market for scrap metal. However, we also recycle hard, inert material (e.g. demolition waste) where possible for use as aggregate for paving or concrete blocks or for drainage/compaction layers at landfills. We also recycle some wooden pallets and timber where possible, but the scope is limited. While we continue to look for cost-efficient recycling opportunities, more important is waste avoidance. Examples include:

- the use of metal system formwork instead of timber;
- re-usable packaging methods and packaging 'takeback' by suppliers;
- redesign, material substitution and supplier engagement for easier recycling (e.g. closing the loop on our HDPE safety and water barriers which was started in 2015); and
- the use of BIM with visualisation and early design freeze to avoid repeat work; and
- off-site factory construction where bespoke ordering and bulk production can avoid waste generation.

In Singapore, more of our waste is recycled due to the improved availability of sorting/recycling sites, and mandatory requirements for construction waste separation, recycling and disposal (e.g. waste to energy incineration). Data on our waste generation and disposal is shown in Appendix D.

Reducing and recycling office waste

For general (non-construction) waste, we already recycle all our office waste paper (on sites and in offices) and in 2017 we:

- stopped providing paper cups in our head office and switched to reusable tableware;
- stopped providing site visitors with individual single-use plastic bottles on almost all sites and switched to reusable cups and glasses;
- worked with vending machine suppliers to avoid any plastic bottles in machines on some sites;
- upgraded our IT in meeting rooms in head office to make it easier to hold paperless meetings; and
- redesigned our annual Gammon diaries with a reusable cover and a replaceable diary insert using FSC certified paper.

In 2018, we rolled out our Zero Waste Office programme for permanent offices (see the Highlights and Main Report) starting with the Hong Kong head office, Gammon Technology Park and then the Shenzhen office. This will be more widely promoted across the business in 2019. Several of our longer-term project sites and permanent offices also participate in the HK Green Organisation Certification Wastewi\$e programme.



Energy GRI 103-2

Energy mix

Energy was identified as a material issue during our stakeholder engagement process. Around three quarters of the energy we consume is in the form of B5 biodiesel (HK), marine vessel (ultra-low sulphur) diesel (HK) and diesel (Singapore) in plant and equipment used during construction operations, particularly foundations projects. The next largest significant energy type is electricity used in both our temporary projects and permanent operations, with a lower proportion of energy used for transport (e.g. concrete mixer trucks, site vehicles).

Responding to climate change

While the issue of climate change was not identified specifically as a standalone material issue in our previous stakeholder engagement, it is of course very closely related to energy consumption. Mitigating our contribution to global warming by reducing the carbon emissions associated with our energy consumption is a key intention. Reducing our carbon intensity and using

cleaner, lower carbon energy is part of that challenging journey.

Having started using B5 biodiesel in 2013, by 2015 we had already successfully converted 100% of our own site plant and equipment to its use. We prefer to use B5 sourced in HK from the re-processing of waste cooking oils if at all possible. We also introduced B5 biodiesel to our concrete mixer truck fleet at the end of 2015 and by 2018 around one quarter of the diesel used in these trucks was B5. As B5 becomes available at more gas stations in Hong Kong, we expect this percentage to increase. We have been advocating for wider uptake through seminars, in collaboration with energy suppliers, and with other truck fleet owners.

Every year we do a detailed inventory of our greenhouse gas emissions according to ISO 14064:2006 (Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals) which is externally verified. As many of the sources of information for this data are based on energy consumption, this provides us with good confidence the systems we have in place provide us with a reasonable level of data accuracy.



100% B5 Biodiesel
use in our plant and equipment (HK)



Energy on site

Our preference on site is to use mains-connected electricity from local power companies rather than diesel generators wherever possible. This improves our energy (and carbon) efficiency, reduces noise and air quality impacts to both people working on the site and surrounding neighbours, and reduces costs. However, in many cases the amount of electricity that can be supplied is often insufficient or cannot be connected quickly enough in the construction programme. It often takes several months or up to a year to supply sufficient power to the site, as well as get approval for and build a temporary transformer room, particularly if in a more remote or new development area. We therefore advocate for early application of sufficient electricity supply by our clients to avoid the need to use diesel generators and to allow for the use of more electric plant in the future.

In the meantime, temporary power is carefully planned on our sites, sizing generators and other equipment accurately with regular reviews and ensuring preventative maintenance is carried out to ensure plant is running efficiently. Operationally, we ensure equipment is being used efficiently with plant switched off instead of idling and planning work to avoid double handling. We are hoping to more widely adopt a DfMA and modular approach to construction in order to minimise impacts such as these.

Energy efficiency

We use LED lighting widely both on site for works lighting and in offices, with timer switches, smart metering, occupancy sensor controls, and smart controls being implemented gradually across projects. We also make use of renewable energy (solar photovoltaics, solar heating and some wind turbines) where possible, especially for lighting, fans and hot water for showers. New electrical appliances are purchased with Grade 1 or 2 energy efficiency labels and many new container

offices are insulated to reduce solar gain and thermal transfer. These measures are promoted and rewarded through our internal G&CSC scheme, Eco office programme (Singapore) and when projects participate in the Environmental Campaign Committee's Energywi\$e programme. We have energy efficiency targets for both our concrete batching facilities and our steel fabrication plant, Pristine, as well as an electricity intensity target for offices as part of our G&CSC scheme.

For public housing and other selected projects, we operate an ISO 50001 certified Energy Management System, with energy policy and associated energy purchasing standard procedures. We carefully track and monitor our energy consumption through our ACE dashboard and S-Dash.

For the most part, we do not have the opportunity to directly control or influence the design and equipment choice on our clients' completed projects. Where possible, however, we will recommend alternative designs for permanent facilities, plant, equipment and control system specifications where we believe improvements could easily be made. Opportunities for change, however, are often limited due to programme pressure. Where we are able to be engaged earlier during the project or for design-and-build contracts, we always look for opportunities to reduce consumption in the operation of the completed project.

We advocate energy efficiency improvement and policy support in Hong Kong through our roles as Chairman of the Energy Advisory Group and Member of the Climate Change Business Forum Advisory Group at the BEC.



節能證書
Energywi\$e
—Certificate—

VALUE CHAIN – CO-CREATION

MANAGEMENT APPROACHES

Influencing the industry and committing to change

Association memberships GRI 102-13

In order to support the industry, advocate for change, and drive improvement, Gammon's staff have memberships of various external industry, professional and business organisations and government bodies and support them in governance, advisory or participation in committees or initiatives, etc. Memberships of these organisations and

committees is particularly important as it provides an opportunity for the business to learn and share knowledge, promote best practices, and influence the industry for good. Our stakeholders view our role as influencers within the industry as a material issue and we take the same view that we must be proactive, challenge industry norms and strive for greater, more sustainable progress.

The list of the external organisation and association memberships is shown in Appendix H. We also regularly provide feedback and insight for academic research projects and consultancy studies, as well as support non-government organisations with their research and engagement. Other engagement activities where Gammon aims to influence both direct stakeholders and the broader industry include, among others:

- Safety, sustainability and innovation/digital construction conferences;

- Partnering lunches with CEO forums; and
- Various workshops and presentations.

External commitments and initiatives GRI 102-12

Gammon has also subscribed to and endorsed a range of externally developed economic, environmental and social charters, principles and other initiatives. These are all voluntary initiatives, applied in Hong Kong, and those from the past 10 years are listed below.

| Date | Principles/Chartered | Organisation | |
|------|--|--|---|
| 2008 | Carbon Reduction Charter | Environmental Protection Department (EPD) | www.epd.gov.hk/epd/tc_chi/climate_change/ca_partners.html#G |
| 2009 | Charter of Construct Our Future, Pledge and Prosper Campaign | Hong Kong Construction Association | |
| 2012 | WBCSD Manifesto for Energy Efficiency in Building | Business Environment Council | www.wbcsd.org/Projects/Energy-Efficiency-in-Buildings/Resources/ |
| 2014 | Hong Kong Green Purchasing Charter | Hong Kong Green Council | https://www.greencouncil.org/ |
| 2016 | No Car Day 2016 | Friends of the Earth (HK) | https://www.foe.org.hk/default.aspx |
| 2017 | Code of Practice against Discrimination in Employment on the Grounds of Sexual Orientation | Constitutional and Mainland Affairs Bureau | www.cmab.gov.hk/en/issues/code_of_practice.htm |
| 2017 | Pledge to Support the Development of Qualified Environmental Professionals | Hong Kong Institute of Qualified Environmental Professionals Limited | http://hkiquep.org/pledge-to-support-the-continuous-professional-development-of-qualified-environmental-professionals/ |
| 2017 | Biz Green Dress Day 2017 | Hong Kong Green Building Council & Construction Industrial Council | www.hkgbc.org.hk/eng/events/20170913.aspx |
| 2018 | Earth Hour 2018 | World Wildlife Fund for Nature (WWF) | |
| 2018 | STEM Alliance | Hong Kong Institute of Construction | www.hkic.edu.hk/eng/stem |
| 2018 | Biz Green Dress Day 2018 | Hong Kong Green Building Council & Construction Industrial Council | www.hkgbc.org.hk/eng/hkgbw2018.aspx |

Our supply chain GRI 102-9 GRI 103-2 GRI 103-3

Supply chain management and procurement approach

As one of the largest contractors in Hong Kong, Gammon has an extensive supplier base providing a variety of products and services for our business operations. We believe suppliers are valuable stakeholders within our business supply chain and we are committed to engaging with them to build a better and more responsible future together. Indeed, supply chain engagement was identified as one of our material issues in our stakeholder engagement exercise. We believe developing and maintaining good relationships with our suppliers and subcontractors is an integral part of being a sustainable business. In addition to ongoing regular dialogue, we hold workshops with our supply chain to communicate our expectations in a number of key areas, as well as provide an opportunity for the suppliers to discuss any issues they may have or propose alternative solutions

or products. We also invite both material or equipment suppliers and subcontractors to our safety, sustainability and other conferences and engagement sessions.

Gammon’s supply chain is predominantly made up of material suppliers, material manufacturers, subcontractors and service providers. The total number of suppliers, their region of origin and types of suppliers are provided in the KPI table in Appendix D. Below we describe the management of our supply chain and the procurement process.

Our procurement process is guided by our Sustainability Procurement Policy which is available on our website¹ and our process, practices and procedures are included within our BMS. Our subcontract procurement, management and administration procedures are also

¹ See www.gammonconstruction.com/en/html/sustainability/procurement-policy.html

defined in our BMS. It is our policy to act fairly in business dealings with vendors and subcontractors and at the same time to purchase responsibly and obtain the best possible value for money in procuring materials, services, plant and equipment.

A comprehensive supply chain management mechanism has been established to monitor a wide range of aspects for the suppliers and subcontractors, from product and service quality to ethical standards.

Our expectation of suppliers and subcontractors are incorporated in our tender invitations and supplier contracts. All suppliers and subcontractors should operate in accordance with local laws and regulations and are encouraged to conduct business with integrity and in accordance with our Codes of Conduct, Health, Safety, Environmental and Quality Policy, as well as strict standards for corporate governance. Our suppliers and subcontractors are given regular training every year to help them meet our standards. Risks in our supply chain, similar to our other operation risks, are subject to regular assessment through the Risk and Opportunity Management Procedure. Please refer to Managing Risk in the Governance section for details.

Local supply chain spending

Gammon is proud of delivering premium products and services to our clients. A key factor for our success is having the support from a diverse pool of suppliers and subcontractors. The proportion of spending on local suppliers (as identified under GRI 204-1) was not considered to be a material issue by our stakeholders.

Whenever possible, however, our procurement approach includes local suppliers to reduce carbon emissions arising from the transportation of materials and products, as well as targeting the creation of economic value in the local community. In 2018, we had a total of 1,819 suppliers and subcontractors. Of our HK\$3,579 million supplier spend, 19.9% was spent on Hong Kong suppliers, 53.8% was with those based in Mainland China and 26.3% was with overseas suppliers. Almost all subcontractors are based in the locality where we are operating, with the exception of only extremely specialised skills such as heritage brickwork restoration. Further information on our supply chain can be found in Appendix D002E.

Supply Chain Assessment

Gammon has a structured process and database for managing its supply chain. Our Supply Chain Management System includes approvals of subcontractors and suppliers onto our Approved Subcontractors and Suppliers List, conducting performance appraisals half yearly for active subcontractors and suppliers, monitoring trade performance Key Performance Indicators with access for our subcontractors and suppliers on the Gammon supply chain extranet, and selection and evaluation of preferred/strategic subcontractors and suppliers. We ask and expect that our supply chain abides by our Code of Conduct at all times. For major material suppliers, we undertake on-site assessments of factories' health and safety and worker facilities and amenities including staff quarters, washroom hygiene condition, canteen facilities, resting area, recreation area, drinking water, personal protection equipment, etc.

PEOPLE – CARING

MANAGEMENT APPROACHES

GRI 103-2

GRI 103-3

Our people

Attraction, retention and the development of our people and providing the right working environment for staff to thrive is critical to the success of our business and were identified as such in our stakeholder engagement

exercise. How we responsibly manage and support our people also affects our ability to influence the industry, engage with our supply chain, and make a positive impact on industry-wide issues such as the labour shortage.

Employment

GRI 401-1

GRI 404-2

We offer employment conditions that meet or exceed the minimum legislative requirements and accepted conventions and do not use involuntary labour or restrict free movement of our employees. We do not allow discrimination or harassment and provide equal opportunities, with recruitment and career progression based on objective criteria, individual performance and merit. As mentioned in the Zero Harm section, we

observe the rights of employees and subcontractors to a safe and healthy work place.

In order to attract, motivate and retain employees, we ensure our remuneration packages, pay levels and fringe benefits match or even exceed our principal competitors for talented employees.

For new employees, competitive packages are offered that recognise their individual academic and professional qualifications, relevant years of experience, job scope and responsibilities, and the appropriate grades for which they are appointed.

Depending on the specific employment terms and conditions, we offer different benefits including statutory holidays, alternative Saturdays off (or a five-day working week), annual leave, sick leave, maternity leave, paternity leave, jury service leave, study leave, marriage leave, compassionate leave, medical benefits, optional dental scheme, group life insurance, accident insurance, retirement scheme, reimbursement of professional bodies membership fee, club membership and long service awards. In late 2018, we increased our maternity and paternity leave for Hong Kong and Macau in line with

HKSAR Government recommendations and ahead of any mandatory requirement to do so.

The normal retirement age of all employees is 60. However, Gammon may consider offering post-retirement employment where the employee has acquired specialised knowledge and skills, and is willing and capable of making a continued contribution to the Company.

Our employment practices and procedures are governed by our BMS and are reviewed as part of our management system review process. Our policies are outlined in employee handbooks for different locations and are available for both workers and staff.

Details of our employee hires and turnover by age group, gender and region are shown in Appendix D.

Training and education

GRI 404-1

GRI 404-2

Gammon believes investing in training is an important factor in retaining and developing high-quality human capital. Therefore, since 2003, Gammon Academy has provided a diverse range of training programmes to develop our employees and assist them along their career path. Our training roadmap strategically divides staff into four groups: new recruits (including graduate engineers), administrative staff, middle managers, and senior management and above.

Each year, we run an average of over 150 sessions in our training programmes. Subjects include health, safety and environmental management, quality management, engineering capabilities development, BIM, DfMA, commercial awareness, contract management, strategy for tendering, project planning and controlling, procurement and legal requirements, and managerial skills development. In addition to classroom training, we offer seminars, sharing sessions and site visits. With the revamp of our Gammon Academy programme in 2017, training curricula have been further refined to provide greater relevance to each business division.

Training is backed up through our annual performance appraisal process which includes objectives and a learning and development plan to guide each individual employee. Our comprehensive training programme has been identified as one of the key reasons new graduates select Gammon and construction as a career.

In addition, we also developed the Technician Apprentices (TA) and Craft Apprentices (CA) programmes which provide comprehensive training in various disciplines including civil, building, building services,

electrical and mechanical and quantity surveying. We provide on-the-job training, skills-based training, mentorship and further education sponsorship for frontline workers and staff.

Our employees can also apply for and are financially supported to attend external training courses to meet training needs that have been identified or are mandatory to their current jobs in preparation for future roles.

We have an active Young Professionals Group and a Construction Supervisor and Technician Apprentice Group which provide opportunities for additional knowledge-based and social activities. Further information on training and education, including hours of training per year per employee can be found in the KPI Appendix D.

Skilling workers

Gammon has adopted a three-pronged approach to meet labour shortage challenges in Hong Kong and at Pristine: self-performing, upskilling / multiskilling, and new blood training. Having a permanent workforce ensures we have the necessary skilled manpower to take on new projects. Through multiskilling, we have a more productive and flexible workforce suited to the mix of works being performed. It reduces the risk of labour shortage in key skills, while empowering workers with a broader set of skills that can be used throughout their careers to assist with continued employability and life-long careers. We collaborate with HK's Construction Industry Council to hold formal training programmes and provide training to both our own and subcontractor workers.

Career development and support

GRI 404-2

GRI 404-3

Gammon supports staff in the pursuit of technical and professional qualifications. Engineering and quantity surveying employees are encouraged to pursue professional memberships with the Institution of Civil Engineers, the Hong Kong Institution of Engineers and the Hong Kong Institute of Surveyors. Fresh graduates are encouraged to enrol in the approved training schemes provided by Gammon, in preparation for the professional examinations. Experienced employees can apply for professional and institutes' membership via the mature routes. Fresh graduates may be required to sign an undertaking with Gammon upon enrolment to the approved training scheme. They should understand the commitment they have undertaken to satisfactorily complete the training. The obligation to complete the institutions' requirements is linked to career progression within Gammon.

Other professional qualifications are also supported by the business in construction-related disciplines such as BIM, procurement, finance, safety, occupational health, quality and the environment. For example, environmental staff are encouraged and financially supported to qualify as members of the Chartered Institute of Waste and Environmental Management and the Hong Kong Institute of Qualified Environmental Professionals.

CAs and TAs are hired for training programmes and are supported by the company financially to cover their education costs while they work full time for Gammon. They attend relevant courses during part-time day release or during evenings. Gammon monitors their performance at work and their academic achievements, and they will be promoted within the company subject to satisfactory performance and job requirements. Upon completion of their apprenticeships, CAs are normally transferred to monthly or daily paid workers such as mechanics, electricians and levellers, and TAs would be promoted to permanent employees as construction supervisors or technicians.

We have regular performance and career development reviews, normally held annually and targeting all employees and the data relating to these reviews is shown in Appendix D.

Diversity and inclusion

Gammon wishes to be an employer that is recognised to have a strong culture of fairness, inclusion and respect. The issue of diversity and inclusion (D&I) has therefore been included as one of the action areas in our Responsible Growth - 25 by 25 sustainability strategy. In late 2018, we started to formalise our approach with a group of D&I champions who are looking into this issue and considering how it is best supported. We believe D&I is important for a forward-looking business that wishes to retain, support and nurture their best talent, whoever they may be.

Employee rights – collective bargaining GRI 102-41

The majority of Gammon's employees are based in Hong Kong, Macau, Mainland China and Singapore. There is no statutory recognition of collective bargaining agreements in Hong Kong or Macau. In respect of Mainland China and Singapore, there is statutory recognition of collective bargaining agreements and, if applicable to the construction industry, any collective bargaining agreements would be complied with. To the best of our knowledge, there are no Gammon employees covered by collective bargaining agreements in Mainland China and Singapore.

Our Code of Conduct details our commitments to ensure the rights of our employees and provide an avenue to raise grievances. Our Code of Conduct is publicly available and can be viewed on our website¹. Employees are allowed the freedom to join any union of their choice and the Company will not interfere in this regard. Due to reasons of privacy, we do not take records of who in our company are members of unions.

¹ See www.gammonconstruction.com/en/upload/doc/sustainability/Code_of_Conduct.pdf

Appendix C – GRI Content Index

General Notes

GRI numbers in parenthesis '(GRI XXX)' indicate that this has not been identified as a material issue but data is available, has historically been disclosed, and is therefore reported. While data are generally reported according to GRI principles they may not fully comply with disclosure requirements.

All GRI standards are 2016 version.

| GRI Standard Number | Disclosure Number | Disclosure Title | Page number(s) and/ or URL(s) | Content reference |
|-------------------------------|-------------------|--|--|---|
| Foundation | | | | |
| GRI 101 | 101 | | 1 27 | Introduction to the report Structure of the report |
| General Disclosures | | | | |
| Organisational Profile | | | | |
| GRI 102 | 102-1 | Name of the organisation | Cover page Inside front cover 22 | Gammon Construction Limited Our Brand Organisation and report coverage |
| | 102-2 | Activities, brands, products, and services | Inside front cover 22 | Our Brand Organisation and report coverage |
| | 102-3 | Location of headquarters | Back cover | Headquartered in Hong Kong |
| | 102-4 | Location of operations | 22 Back cover | Organisation and report coverage Location of offices |
| | 102-5 | Ownership and legal form | 22 | Jointly and equally owned by Jardines and Balfour Beatty |
| | 102-6 | Markets served | 22 | Organisation and report coverage |
| | 102-7 | Scale of the organization | 22 23 71 | Organisation and report coverage Market position and project award Key Performance Indicators |
| | 102-8 | Information on employees and other workers | 45 64 75 | Employees by contract type (Data reported since 2017) People - Caring Key Performance Indicators No significant changes to the organisation and subcontractor worker arrangement |
| | 102-9 | Supply chain | 14 41 63 75 | Value Chain MiC first for Hong Kong Our supply chain Key Performance Indicators |
| | 102-10 | Significant changes to the organization and its supply chain | 22 | Organisation and report coverage No significant changes to the organisation and supply chain |
| | 102-11 | Precautionary Principle or approach | 53 | Value Chain - Managing Risk |
| | 102-12 | External initiatives | 63 | External commitments and initiatives |
| | 102-13 | Membership of associations | 62 | Association memberships |
| Strategy and Analysis | | | | |
| GRI 102 | 102-14 | Statement from senior decision-maker | 2-3 | Chief Executives Statement |
| Ethics and Integrity | | | | |
| GRI 102 | 102-16 | Values, principles, standards, and norms of behaviour | 52 | Values and norms of behaviour |
| Governance | | | | |
| GRI 102 | 102-18 | Governance structure | 51 | Governance Management Approach - Governance Structure |

| GRI Standard Number | Disclosure Number | Disclosure Title | Page number(s) and/ or URL(s) | Content reference |
|-------------------------------|-------------------|--|---|---|
| General Disclosures | | | | |
| Stakeholder Engagement | | | | |
| GRI 102 | 102-40 | List of stakeholder groups | 26 and Appendix A of 2017 Sustainability Report | Stakeholder engagement and material issues Appendix A - Materiality Assessment |
| | 102-41 | Collective bargaining agreements | 66 | Employee rights - collective bargaining |
| | 102-42 | Identifying and selecting stakeholders | 26 and Appendix A of 2017 Sustainability Report | Stakeholder engagement and material issues Appendix A - Materiality Assessment |
| | 102-43 | Approach to stakeholder engagement | 26 and Appendix A of 2017 Sustainability Report | Stakeholder engagement and material issues Appendix A - Materiality Assessment |
| | 102-44 | Key topics and concerns raised | 26 52 Annex 1 of 2017 Sustainability Report | Stakeholder engagement and material issues Values and norms of behaviour Annex 1 - Response to Stakeholders from the Workshop |
| Reporting Practice | | | | |
| GRI 102 | 102-45 | Entities included in the consolidated financial statements | 22 | Organisation and report coverage |
| | 102-46 | Defining report content and topic boundaries | 26 and Appendix A of 2017 Sustainability Report | Stakeholder engagement and material issues Appendix A - Materiality Assessment |
| | 102-47 | List of material topics | 26 and Appendix A of 2017 Sustainability Report | Stakeholder engagement and material issues Appendix A - Materiality Assessment |
| | 102-48 | Restatements of information | - | The restatements of information given in previous reports, as explained in the KPIs, have a negligible or insignificant effect on Gammon's performance. |
| | 102-49 | Changes in reporting | 26 and Appendix A of 2017 Sustainability Report | Stakeholder engagement and material issues Appendix A - Materiality Assessment |
| | 102-50 | Reporting period | 22 | Organisation and report coverage |
| | 102-51 | Date of most recent report | 22 | Organisation and report coverage |
| | 102-52 | Reporting cycle | 22 | Organisation and report coverage |
| | 102-53 | Contact point for questions regarding the report | 1 | environment@gammonconstruction.com |
| | 102-54 | Claims of reporting in accordance with the GRI Standards | 1 22 27 | Alignment to GRI Standards Organisation and report coverage Structure of the report |
| | 102-55 | GRI content index | 22 67 | Organisation and report coverage Appendix C GRI Content Index |
| | 102-56 | External assurance | 22 27 89 | Organisation and report coverage Structure of the report Appendix G Verification Statement |
| Management Approach | | | | |
| GRI 103 | 103-1 | Explanation of the material topic and its boundary | 26 61 of 2017 Sustainability Report | Stakeholder engagement and material issues Appendix A - Materiality Assessment |
| | 103-2 | The management approach and its components | Appendix B | See management approach and its comment in each section for details |
| | 103-3 | Evaluation of the management approach | Appendix B | See management approach and its comment in each section for details |

| GRI Standard Number | Disclosure Number | Disclosure Title | Page number(s) and/ or URL(s) | Content reference |
|------------------------------|---------------------|--|-------------------------------|---|
| Economic Topics | | | | |
| Procurement Practices | | | | |
| | 103-2, 103-3 | Management approach | 63 | Our supply chain |
| (GRI 204) | 204-1 | Proportion of spending on local suppliers | 64 75 | Local supply chain spending. Not a material issue but data available. Key performance indicators |
| Anti-corruption | | | | |
| | 103-2, 103-3 | Management approach | 53 | Anti-corruption |
| GRI 205 | 205-1 | Corruption risk assessment | 53 | Training on anti-corruption and code of conduct |
| Environmental Topics | | | | |
| Materials | | | | |
| | 103-2, 103-3 | Management approach | 6-7 12-13 57 58 | Responsible Growth 25 by 25 Environment Environmental management Materials |
| GRI 301 | 301-1 | Materials used by weight or volume | 33 34 58 72 | Environmental excellence award for The Quayside One Taikoo Place - total system formwork Steel and concrete Key performance indicators |
| | 301-2 | Recycled input materials used | 59 72 | Other materials Key performance indicators |
| Energy | | | | |
| | 103-2, 103-3 | Management approach | 6-7 12-13 60 | Responsible Growth 25 by 25 Environment Energy |
| GRI 302 | 302-1 | Energy consumption within the organisation | 72 | Key performance indicators |
| | 302-2 | Energy consumption outside of the organisation | 73 | Key performance indicators |
| | 302-3 | Energy intensity | 38 | Electrifying sites |
| | 302-5 | Reductions in energy requirements of products and services | 13 | Environment |
| Water | | | | |
| | Management Approach | | | Not a material issue but data available and historically reported |
| (GRI 303) | 303-1 | Water withdrawal by source | 71 | Key performance indicators |
| | 303-3 | Water recycled and reused | 71 | Key performance indicators |
| Emissions | | | | |
| | Management Approach | | | Not a material issue but data available and historically reported |
| (GRI 305) | 305-1 | Direct (Scope 1) GHG emissions | 73 | Key performance indicators |
| | 305-2 | Energy indirect (Scope 2) GHG emissions | 73 | Key performance indicators |
| | 305-3 | Other indirect (Scope 3) GHG emissions | 73 | Key performance indicators |
| | 305-4 | GHG emissions intensity | 74 | Key performance indicators |
| Effluent and Waste | | | | |
| | 103-2, 103-3 | Management approach | 60 | Effluent and waste |
| GRI 306 | 306-2 | Waste by type and disposal method | 12-13 35 36 60 74 | Environment Putting the responsible growth - 25 by 25 principles into action Zero waste champions Effluent and Waste Key performance indicators |

| GRI Standard Number | Disclosure Number | Disclosure Title | Page number(s) and/ or URL(s) | Content reference |
|--|-------------------|---|-------------------------------|---|
| Environmental Compliance | | | | |
| Management Approach | | | | Not a material issue but data available and historically reported |
| (GRI 307) | 307-1 | Non-compliance with environmental laws and regulations | 77 | Key performance indicators |
| Social Material Topics | | | | |
| Employment | | | | |
| | 103-2, 103-3 | Management approach | 64 | Employment |
| GRI 401 | 401-1 | New employee hires and employee turnover | 64 46 | Employment New employee hires by gender |
| Occupational health and Safety | | | | |
| | 103-2, 103-3 | Management approach | 54 | Safety - Zero Harm Management Approach |
| GRI 403 | 403-1 | Workers representation in formal joint management-worker health and safety committees | 55 | Safety - Zero Harm Management Approach - Workforce represented in formal joint management - worker health and safety committees |
| | 403-2 | Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities | 11 70 | Safety - Accident and incident rate graph compared with industry Key performance indicators |
| Training and Education | | | | |
| | 103-2, 103-3 | Management approach | 65 | Training and education |
| GRI 404 | 404-1 | Average hours of training per year per employee | 76 | Key performance indicators |
| | 404-2 | Programs for upgrading employee skills and transition assistance programs | 16-17 43 65-66 | People Working on soft skills Career development and support |
| | 404-3 | Percentage of employees receiving regular performance and career development reviews | 45 66 | Career and performance review (monthly paid employees) (excludes Pristine) Career development and support |
| Diversity and Equal Opportunity | | | | |
| Management Approach | | | | Not a material issue but data available and historically reported |
| (GRI 405) | 405-1 | Diversity of governance bodies and employees | 64-66 46 77 | People - Caring Diversity of employees by management class Diversity of governance bodies (data reported since 2017) |
| Customer Health and Safety | | | | |
| | 103-2, 103-3 | Management approach | 54 55 | Safety - Zero Harm Management Approach Customer Health and Safety and Compliance of Products and Services |
| GRI 416 | 416-2 | Incidents of non-compliance concerning the health and safety impacts of products and services | 77 | Key performance indicators |
| Product and Services | | | | |
| | 103-2, 103-3 | Management approach | 54 55 | Safety - Zero Harm Management Approach Customer Health and Safety and Compliance of Products and Services |
| GRI 419 | 419-1 | Non-compliance with laws and regulations in the social and economic area | 77 | Key Performance Indicators |

Appendix D – Key Performance Indicators

General Notes

All GRI Standards used are 2016 versions. GRI numbers in parenthesis '(GRI XXX)' indicate that this has not been identified as a material issue in the stakeholder engagement exercise but data is available, has historically been disclosed, and is therefore reported. Whilst data are generally reported according to GRI Standards they may not fully comply with disclosure requirements.

Gammon-only projects follow an operational control approach to data reporting. Joint Venture (JV) projects are included and follow an equity share approach. For all data, subcontractors' are excluded where data is not available.

| GRI Standard | Performance Indicators | Units | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---------------------|---|--------------------------------|-------|-------|-------|--------------------|-------|-------|
| ORGANISATION | | | | | | | | |
| GRI 102 | General disclosures | | | | | | | |
| <i>GRI 102-7</i> | <i>Scale of the organization</i> | | | | | | | |
| | Active project sites | number | 117 | 109 | 116 | 129 | 139 | 136 |
| | Total employees (by region)¹ | number | 8,160 | 9,062 | 8,334 | 7,835 | 7,268 | 6,924 |
| | Mainland China | number | 507 | 517 | 530 | 524 ² | 474 | 397 |
| | Singapore | number | 1,076 | 1,322 | 1,158 | 1,027 ² | 595 | 488 |
| | Hong Kong & Macau | number | 6,577 | 7,223 | 6,643 | 6,281 ² | 6,196 | 6,036 |
| | Vietnam | number | 0 | 0 | 3 | 3 | 3 | 3 |
| | Group turnover (by region) | US\$ millions | 1,757 | 2,252 | 2,425 | 2,613 | 2,633 | 2,417 |
| | Mainland China & Rest of Asia | US\$ millions | 0 | 0.1 | 0.2 | 0.3 | 0.6 | 2.2 |
| | Singapore | US\$ millions | 165 | 195 | 164 | 134 | 118 | 257 |
| | Hong Kong & Macau | US\$ millions | 1,592 | 2,057 | 2,260 | 2,479 | 2,514 | 2,157 |
| <i>G4-CRE6</i> | <i>Product and service labelling</i> | | | | | | | |
| | Sustainability certification, rating and labelling schemes for new construction (HKBEAM, BEAM Plus, LEED and Green Mark) ³ | number of projects, cumulative | 49 | 62 | 75 | 87 | 98 | 128 |

SAFETY-ZERO HARM

| | | | | | | | | |
|---|---|-------------------|---------------------|---------------------|---------------------|----------------------|---------------------|-----|
| GRI 403 Occupational Health and Safety | | | | | | | | |
| <i>GRI 403-2</i> | <i>Types of injury and rates of injury, occupational diseases, lost days and absenteeism, and number of work-related fatalities</i> | | | | | | | |
| | Fatalities (employees) (location) | number | 0 | 0 | 1 (HK) ⁺ | 2 (SGP) ⁺ | 0 | 0 |
| | Fatalities (subcontractor workers) (location) | number | 1 (HK) ⁺ | 1 (HK) ⁺ | 0 | 1 (HK) ⁺ | 1 (HK) ⁺ | 0 |
| | Accident Incident Rate⁴ | per 1,000 workers | 6 | 5.5 | 5.1 | 4.9 | 3.7 | 4.7 |
| | Employees | per 1,000 workers | 3.2 | 3.0 | 3.7 | 4.0 | 2.5 | 2.3 |
| | <i>by region</i> | | | | | | | |
| | HK & Macau | per 1,000 workers | 3.3 | 3.2 | 4.1 | 4.0 | 2.6 | 2.5 |
| | Singapore | per 1,000 workers | 0 | 1.8 | 1.0 | 4.4 | 1.9 | 0 |
| | Mainland China & Rest of Asia | per 1,000 workers | 0 | 0 | 0 | 0 | 0 | 0 |
| | <i>by gender</i> | | | | | | | |
| | male | per 1,000 workers | 10.6 | 3.1 | 3.3 | 3.8 | 2.5 | 2.5 |
| | female | per 1,000 workers | 0 | 0 | 9.9 | 8.4 | 3.2 | 1.1 |
| | Workers (excludes employees) | per 1,000 workers | 10.1 | 8.8 | 6.9 | 5.9 | 4.6 | 6.2 |
| | <i>by region</i> | | | | | | | |
| | HK & Macau | per 1,000 workers | 10.5 | 10.0 | 7.4 | 6.2 | 4.9 | 6.7 |
| | Singapore | per 1,000 workers | 2.9 | 0.8 | 0 | 0 | 0 | 1.7 |
| | Mainland China & Rest of Asia | per 1,000 workers | 0 | 0 | 0 | 0 | 0 | 0 |
| | <i>by gender</i> | | | | | | | |
| | male | per 1,000 workers | 3.1 | 10.6 | 7.5 | 6.3 | 4.4 | 6.6 |
| | female | per 1,000 workers | 0 | 0 | 5.9 | 3.7 | 15 | 3.1 |
| | Occupational disease rate⁵ | rate | 0 | 0 | 0 | 0 | 0 | 0 |

+ Gender: male

1. Includes monthly and daily paid employees.

2. Data adjustment, due to redefinition of staff location.

3. Cumulative count of number of projects joined HKBEAM, BEAM Plus, LEED, Singapore Green Mark scheme. Minor data correction for 2017.

4. Accident Incident Rate is total number of reportable accidents / average workforce * 1000 (excluding first aid cases). Data for 2016 amended due to late reporting adjustment.

5. No data available as reported directly to local governments.

| GRI Standard | Performance Indicators | Units | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|-------------------------|---|-------------|------|------|------|------|------|------|
| SAFETY-ZERO HARM | | | | | | | | |
| GRI 403 | Occupational Health and Safety (continued) | | | | | | | |
| GRI 403-2 | Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities | | | | | | | |
| | Lost day rate¹ | rate | 3.3 | 2.9 | 3.3 | 4.5 | 4.7 | 4.6 |
| | Employees | rate | 2.8 | 2.3 | 3.3 | 4.9 | 7.6 | 2.1 |
| | <i>by region</i> | | | | | | | |
| | HK & Macau | rate | 2.9 | 2.6 | 3.8 | 5.6 | 8.3 | 2.3 |
| | Singapore | rate | 0 | 0.2 | 0.1 | 0.4 | 0.2 | 0 |
| | Mainland China & Rest of Asia | rate | 0 | 0 | 0 | 0 | 0 | 0 |
| | <i>by gender</i> | | | | | | | |
| | male | rate | 3.5 | 2.8 | 3.7 | 6.1 | 9.8 | 2.3 |
| | female | rate | 0 | 0.3 | 1.8 | 2.0 | 2.4 | 0.6 |
| | Absentee rate (all employees)² | rate | - | - | 0.98 | 1.07 | 1.06 | 1.07 |
| | <i>by gender</i> | | | | | | | |
| | male ³ | rate | - | 0.25 | 0.07 | 0.16 | 0.98 | 1.02 |
| | female | rate | - | - | 1.39 | 1.53 | 1.45 | 1.32 |
| | <i>by region</i> | | | | | | | |
| | HK & Macau ³ | rate | - | - | 0.97 | 1.06 | 1.05 | 1.03 |
| | Singapore ⁴ | rate | - | - | 1.02 | 1.15 | 1.30 | 1.78 |
| | Mainland China & Rest of Asia | rate | - | - | 1.04 | 0.99 | 0.99 | 1.10 |
| G4-CRE6 | Management system verification | | | | | | | |
| | % of Gammon operations operating in verified compliance with OHSAS 18001 ⁵ | % | 100 | 100 | 99.3 | 98.9 | 98.4 | 91.9 |

ENVIRONMENT-ZERO WASTE

| | | | | | | | | |
|----------------|--|----------------------------------|---------|-----------|-----------|---------|---------|---------|
| GRI 301 | Materials | | | | | | | |
| GRI 301-1 | Materials used - non renewable materials | | | | | | | |
| | Major materials used (rebar/steel) | tonnes | 68,803 | 86,841 | 99,700 | 151,230 | 111,376 | 120,956 |
| | Major materials used (concrete) | m³ | - | - | 1,026,718 | 991,747 | 682,040 | 582,394 |
| GRI 301-1 | Materials used - renewable materials | | | | | | | |
| | Major materials purchased (timber formwork) | m³ | 4,084 | 3,220 | 2,271 | 5,796 | 1,484 | 2,814 |
| | % of timber purchases that were Forest Stewardship Council (FSC) certified | % of spend | 97 | 99 | 98 | 98 | 100 | 100 |
| GRI 301-2 | Recycled input materials used | | | | | | | |
| | Cement replacements | % of cement replaced | 26.3 | 27.9 | 29.2 | 27.8 | 26.8 | 24.2 |
| GRI 302 | Energy | | | | | | | |
| GRI 302-1 | Energy consumption within the organisation⁶ | | | | | | | |
| | Fuel Consumption - non renewable sources | | | | | | | |
| | Total fuel consumption ³ | gigajoules | 624,940 | 883,699 | 843,399 | 841,758 | 581,309 | 774,296 |
| | Diesel consumption ⁷ | gigajoules | 455,020 | 298,705 | 127,056 | 141,458 | 135,681 | 62,309 |
| | B5 Biodiesel ⁸ | gigajoules | 169,867 | 584,924 | 716,014 | 700,214 | 445,367 | 711,966 |
| | Petroleum consumption ⁹ | gigajoules | 53 | 71 | 329 | 86 | 262 | 22 |
| | Electricity Consumption ^{3,10} | gigajoules | 179,639 | 190,855 | 157,252 | 128,845 | 155,179 | 131,995 |
| | Energy productivity ¹¹ | Revenue/gigajoules | 0.151 | 0.147 | 0.172 | 0.195 | 0.255 | 0.192 |
| | Fuel Consumption - renewable sources¹² | | | | | | | |
| | Renewable electricity generated ^{3,13} | kWh | 8,873 | 4,549 | 5,487 | 5,833 | 10,622 | 10,349 |
| | | gigajoules^{3,10} | 32 | 16 | 20 | 21 | 38 | 37 |
| | Energy Consumption - total within organisation | | | | | | | |
| | Total energy consumption within the organisation ³ | gigajoules | 804,611 | 1,074,570 | 1,000,670 | 970,624 | 736,527 | 906,329 |

1. Lost day rate = Total labour days lost / Total hours worked in the period *10,000.
2. Absentee rate = Days absent / Total normal working days. Formula correction in 2018.
3. Additional data collected, principally due to year-end account reconciliation.
4. Monthly paid workers only. Daily paid workers to be included starting from 2020.
5. OHSAS 18001 certification does not include JV projects. Calculation on the basis of employee numbers - Entasis and IntoG operate in accordance with our OHSAS policy and procedures, but are currently excluded from the scope of certification (to be included and migrated to ISO 45001 in 2019).
6. Conversion fuel to energy unit (Megajoules, MJ): Diesel oil 1 kg = 43 MJ, Petrol 1 kg = 44.3 MJ, B100 Biodiesel oil 1 kg = 27 MJ. Source: '2006 IPCC Guidelines for National Greenhouse Gas Inventories'. Density of fuel: Diesel: 0.84 kg/litre, Petrol: 0.74 kg/litre. Source: 'GHG Protocol Emission Factors from Cross-Sector Tools March 2017'.
7. Most of the diesel consumption in HK is marine ultra low sulphur diesel used at our Tuen Mun Chek Lap Kok project. Other diesel used in Singapore operations.
8. Used in HK only.
9. Petrol used for construction purposes only.
10. 1 watt is defined as 1 joule/second. Values corrected over all years to account for redefinition of project operational control.
11. Revenue unit = HK\$100k.
12. Excludes grid connected renewables making use of the HK Feed in Tariff.
13. Renewable energy includes solar power (PV panel and solar water heater) and wind power. Estimated based on equipment specification and local conditions.

| GRI Standard | Performance Indicators | Units | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---------------------------------|---|---------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| ENVIRONMENT – ZERO WASTE | | | | | | | | |
| GRI 302 | Energy (continued) | | | | | | | |
| <i>GRI 302-2</i> | <i>Energy consumption outside the organisation</i> | | | | | | | |
| | Business air travel - aircraft fuel ¹ | Litres | - | - | - | - | 49,940 | 67,680 |
| | Staff cars petrol consumption ² | Litres | - | - | - | 667,080 | 595,896 | 534,081 |
| | Staff cars diesel consumption | Litres | - | - | - | 8,394 | 9,970 | 5,379 |
| | Staff cars B5 biodiesel consumption | Litres | - | - | - | 1,334 | 155 | 0 |
| | <i>Renewable energy generation under FiT³</i> | | | | | | | |
| | Renewable energy supplied to grid from project sites | kWh | - | - | - | - | - | 1,987 |
| GRI 303 | Water | | | | | | | |
| (GRI 303-1) | Municipal water consumption ⁴ | m ³ | 1,240,833 | 1,541,394 | 1,362,646 | 1,118,242 | 1,387,742 | 1,413,602 |
| (GRI 303-1) | Municipal water intensity ⁴ | m ³ /HK\$1m turnover | 90.6 | 87.7 | 72.1 | 54.7 | 67.6 | 75 |
| (GRI 303-3) | Recycled water | m ³ | 2,129,860 | 1,338,533 | 436,636 | 5,523,201 | 1,788,216 | 2,989,052 |
| | % of water recycled based on total demand ^{4,5} | % | 63 | 46 | 24 | 83 | 56 | 68 |
| | % of water recycled of total water withdrawal ⁴ | % | 172 | 87 | 32 | 494 | 129 | 211 |
| (GRI 305) | Emissions⁶ | | | | | | | |
| <i>(GRI 305-1)</i> | <i>Direct (Scope 1) GHG emissions</i> | | | | | | | |
| | Carbon dioxide equivalent (CO ₂ e) emissions (Scope 1) ^{2,4,7} | tonnes | 54,113 | 75,218 | 69,378 | 68,650 | 49,092 | 64,234 |
| | Biogenic CO ₂ e emissions (from B100) ^{7,8} | tonnes | 608 | 2,093 | 2,565 | 2,527 | 1,627 | 2,582 |
| <i>(GRI 305-2)</i> | <i>Direct (Scope 2) GHG emissions</i> | | | | | | | |
| | Carbon dioxide equivalent (CO ₂ e) emissions (Scope 2) ^{4,7} | tonnes | 36,142 | 37,966 | 26,736 | 21,079 | 24,711 | 21,101 |
| <i>(GRI 305-3)</i> | <i>Indirect (Scope 3) GHG emissions¹⁰</i> | | | | | | | |
| | Total reported carbon dioxide equivalent (CO₂e) emissions (Scope 3)^{4,7} | tonnes | 49,349 | 56,955 | 66,676 | 77,618 | 24,118 | 22,754 |
| | CO ₂ e from business air travel ¹¹ | tonnes | 289 | 245 | 256 | 297 | 268 | 354 |
| | Landfill disposal (Hong Kong) ^{4,12} | tonnes | 49,053 | 56,685 | 66,377 | 75,777 | 22,017 | 20,264 |
| | Waste incineration (Singapore) ¹³ | tonnes | 7 | 25 | 43 | 3 | 8 | 221 |
| | Water consumption (Hong Kong) ^{4,14} | tonnes | - | - | - | - | 443 | 419 |
| | Water consumption (Singapore) ¹⁵ | tonnes | - | - | - | - | - | 150 |
| | Water consumption (Mainland China) ¹⁵ | tonnes | - | - | - | - | - | 2 |
| | Sewage from restaurants and catering services ¹⁶ | tonnes | - | - | - | - | - | 1 |
| | Canteen electricity usage ¹⁷ | tonnes | - | - | - | - | - | 81 |
| | Canteen Towngas usage ¹⁷ | tonnes | - | - | - | - | - | 36 |
| | Staff cars use ² | tonnes | - | - | - | 1,541 | 1,381 | 1,228 |

1. Data reported since 2017, fuel conversion factor related to type of aircraft. Only business air travel was counted, emission factor from WBCSD Greenhouse gas protocol Mobile Combustion GHG Emission Calculation Tool version 2.6. Data correction in 2017 due to omission of one region.
2. Staff car use reporting moved from direct (Scope 1) to indirect (Scope 3) from 2016.
3. Feed in Tariff offered by electricity utilities in Hong Kong.
4. Additional data collected, principally due to year-end account reconciliation.
5. % of recycled water used based on total demand (municipal water consumption + recycled water used).
6. The 2018 greenhouse gas emission inventory for Scope 1, Scope 2 and limited Scope 3 has been verified as meeting the requirements of ISO 14064-1:2006 by an independent verifier (SGS Hong Kong Limited), statement ref: HK19/00110 dated 7th May 2019.
7. Calculation methodology follows ISO 14064 standard and IPCC AR5 report for Global Warming Potential, including greenhouse gas type (CO₂, CH₄, N₂O, HFCs).
8. Emissions from B100 biodiesel (contained in B5 used).
9. Emission factors from 中國區域電網基準線排放因子, Macau CEM Sustainability Report, Singapore Energy Market Authority, CLP and HKE Sustainability Reports based on the most recent relevant year. Values corrected over all years to account for redefinition of project operational control.
10. Only significant Scope 3 emissions for which data is available are included. e.g. excludes fuel supplied by subcontractors.
11. Emission factor from 'WBCSD Greenhouse Gas Protocol Mobile Combustion GHG Emission Calculation Tool' version 2.6.
12. Emission factor: 2013-2016 from 'Carbon Audit Toolkit for Small and Medium Enterprises in Hong Kong' published in 2010 by The University of Hong Kong; since 2017 changed to determination by reverse calculation of 2016 data from 'Environmental Protection Department - Hong Kong 2016 Waste Statistics and Greenhouse Gas Emissions in Hong Kong by Sector' (updated August 2018).
13. Emission factor from: NEA Singapore's 'Fourth National Communication and Third Biennial Update Report 2018' under UNFCCC, (emission factor derived from wet weight - Table 6C, CO₂ only) Methodology changed in 2018 to include N₂O and CH₄ emissions.
14. Source: 'Hong Kong Water Supplies Department Annual Report 2017/2018'.
15. Data reported from 2018. Based on Hong Kong emission factor for water processing.
16. Source: 'Drainage Services Department Annual Report 2017-18', electricity emission factor from 'Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings (Commercial, Residential or Institutional Purposes) in Hong Kong 2010 Edition'. Reported since 2018.
17. From direct (Scope 1) moved to indirect (Scope 3) from 2018.

| GRI Standard | Performance Indicators | Units | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|-------------------------------|--|--------------------|-----------|-----------|-----------|-----------|---------|---------|
| ENVIRONMENT-ZERO WASTE | | | | | | | | |
| GRI 305 | Emissions (continued) | | | | | | | |
| <i>(GRI 305-4)</i> | <i>GHG emissions intensity</i> | | | | | | | |
| | Carbon dioxide equivalent (CO ₂ e) emissions (Scope 1) ^{1,2,3} | kg/HK\$1m turnover | 3,949 | 4,282 | 3,669 | 3,368 | 2,390 | 3,408 |
| | Carbon dioxide equivalent (CO ₂ e) emissions (Scope 2) ^{2,3,4} | kg/HK\$1m turnover | 2,637 | 2,161 | 1,414 | 1,034 | 1,203 | 1,120 |
| | Carbon dioxide equivalent (CO ₂ e) emissions (Scope 3) ^{1,2} | kg/HK\$1m turnover | 3,643 | 3,277 | 3,554 | 3,829 | 1,176 | 1,199 |
| GRI 306 | Effluent and Waste | | | | | | | |
| <i>GRI 306-2</i> | <i>Waste by type and disposal method⁵</i> | | | | | | | |
| GRI 306-2a | Hazardous Waste Disposal⁶ | | | | | | | |
| | Chemical waste disposal - liquid ⁷ | litres | 234,314 | 306,326 | 202,889 | 283,429 | 260,920 | 264,730 |
| | Chemical waste disposal - liquid ⁸ | kg | 224,942 | 294,073 | 194,774 | 272,092 | 250,483 | 254,141 |
| | Chemical waste disposal - solid ⁹ | kg | 11,085 | 9,985 | 9,963 | 8,840 | 7,833 | 8,519 |
| GRI 306-2b: i | Non Hazardous Waste Reuse¹⁰ | | | | | | | |
| | Total inert material to public fill ¹¹ | | | | | | | |
| | Hong Kong and Singapore ³ | tonnes | 961,273 | 1,100,769 | 1,746,608 | 1,447,808 | 932,318 | 937,071 |
| | Direct inert material reused ^{3,12} | % | 52 | 42 | 29 | 9 | 31 | 71 |
| | Total quantity ³ | tonnes | 1,048,959 | 790,636 | 730,029 | 148,125 | 410,833 | 724,645 |
| | Hong Kong ³ | tonnes | 1,031,646 | 722,192 | 702,774 | 112,542 | 191,833 | 724,110 |
| | Singapore ¹³ | tonnes | 17,314 | 68,444 | 27,255 | 35,583 | 219,000 | 535 |
| GRI 306-2b: ii | Non Hazardous Waste Recycling | | | | | | | |
| | Total waste recycled excluding rebar/steel (diverted from landfill) ⁵ | tonnes | 2,160 | 3,880 | 1,819 | 3,373 | 1,792 | 1,185 |
| | | % | 6 | 9 | 4 | 6 | 4 | 3 |
| | Total waste recycled including rebar/steel (diverted from landfill) ⁵ | tonnes | 9,985 | 22,932 | 16,429 | 40,139 | 34,394 | 10,614 |
| | | % | 23 | 38 | 27 | 44 | 41 | 19 |
| | Rebar/steel recycled | kg/HK\$1m Turnover | 571 | 1,085 | 773 | 1,804 | 1,587 | 500 |
| | | tonnes | 7,825 | 19,052 | 14,610 | 36,767 | 32,602 | 9,429 |
| GRI 306-2b: iv | Non Hazardous Waste Incineration (waste to energy)¹⁰ | | | | | | | |
| | Total construction site waste incinerated | | | | | | | |
| | Singapore ¹⁴ | tonnes | - | - | - | 241 | 675 | 260 |
| GRI 306-2b: vii | Non Hazardous Waste Landfill Disposal¹⁰ | | | | | | | |
| | Total construction site waste landfilled | | | | | | | |
| | Hong Kong ³ | tonnes | 32,702 | 37,790 | 44,251 | 50,518 | 49,483 | 45,542 |

1. Staff cars use reporting moved from direct (Scope 1) to indirect (Scope 3) from 2016.

2. Calculation methodology follows ISO 14064 standard and IPCC AR5 report for GWP, Include Greenhouse gas type (CO₂, CH₄, N₂O, HFCs)

3. Additional data collected, principally due to year-end account reconciliation

4. Emission factors from 中國區域電網基準線排放因子 ('China's Regional Electricity Grid Baseline Emission Factors') and Macau CEM, Singapore Energy Market Authority, CLP and HKE sustainability reports, based on the most recent relevant year.

5. Quantities determined from EPD Construction Waste Disposal Charging Scheme, receipts from waste management service providers or recyclers. For hazardous waste, we send it to licensed collectors and we do not reuse, recycle, compost, recover, incinerate, deep-well inject or store on-site. For non-hazardous waste, we do not compost, recovery, deep-well inject or store on-site. Wastes generated from sites where Gammon is a subcontractor only are excluded as these are handled by the main contractor on site.

6. Disposal by licensed contractor. Disposal method determined based on compliance with local government requirements.

7. The majority is spent lubricant oil.

8. Density of 0.96 kg/L is used, based on 'Used Motor Oil Treatment: Turning Waste Oil Into Valuable Products' by R. Abu-Ellella et al.

9. The majority is absorbent material from cleaning machinery.

10. Disposal method determined based on compliance with local government requirements. Inert wastes were generated in Hong Kong and Singapore only.

11. Public fills are managed by local Governments and materials are reused for backfill/land formation etc.

12. Direct reuse and reception site arrangement initiated by Gammon.

13. Limited excavation work in Singapore during 2018.

14. Incineration data represents food waste only. Other incinerated waste will be included in coming years.

| GRI Standard | Performance Indicators | Units | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|----------------------------------|--|--------------------|------|------|-------|-------|-------|------------------------------|
| VALUE CHAIN – CO-CREATION | | | | | | | | |
| GRI 102 | General disclosures | | | | | | | |
| <i>GRI 102-9, (GRI 204-1)</i> | <i>Supply chain/Procurement practice</i> | | | | | | | |
| | Active subcontractors and suppliers¹ | number | - | - | 1,813 | 1,708 | 1,677 | 1819 |
| | Location of suppliers by country or region | | | | | | | |
| | Hong Kong & Mainland China (Local) | % by number | - | - | 96 | 97 | 95 | 97 |
| | Overseas | % by number | - | - | 4 | 3 | 5 | 3 |
| | Payment to suppliers by country or region | | | | | | | |
| | Hong Kong & Mainland China (Local) | HK\$1M | - | - | - | - | 2,634 | 2,640 |
| | Overseas | HK\$1M | - | - | - | - | 75 | 939 |
| | Supply chain category | | | | | | | |
| | Subcontractors | number | - | - | 967 | 905 | 919 | 939 |
| | Distributors/Traders/Stockists | number | - | - | 674 | 645 | 621 | 753 |
| | Manufacturers | number | - | - | 106 | 101 | 85 | 69 |
| | Licensees | number | - | - | 31 | 28 | 26 | 32 |
| | Professional | number | - | - | 34 | 13 | 2 | 2 |
| | Contractors | number | - | - | 1 | 2 | 1 | 3 |
| | Service companies | number | - | - | - | 12 | 23 | 21 |
| | NGO/Charitable organisations ² | number | - | - | - | 2 | 0 | 0 |
| <i>GRI 102-44</i> | <i>Key topics and concerns raised</i> | | | | | | | |
| | Yearly customer satisfaction | | | | | | | |
| | Very satisfied | % | 17 | 14 | 13 | 20 | 17 | To be updated in August 2019 |
| | Satisfied | % | 63 | 77 | 77 | 60 | 66 | |
| | Neutral | % | 16 | 8 | 5 | 17 | 11 | |
| | Dissatisfied | % | 4 | 2 | 4 | 3 | 6 | |
| | Very dissatisfied | % | 0 | 0 | 1 | 0 | 0 | |
| | Innovation | | | | | | | |
| | Innovation entry ³ | | | | | | | |
| | Entry for in-house "Innovation of the month" | number | - | - | 181 | 158 | 122 | 87 |
| | Entry for in-house "Innovation competition" | number | - | - | 102 | 106 | 100 | 117 |
| | Entry for external competitions | number | - | - | 6 | 3 | 10 | 1 |
| | Entry for 'Innovate Jardines' event ⁴ | number | - | - | - | - | 55 | 6 |

PEOPLE – CARING

| | | | | | | | | |
|--------------------|---|---------------|-------|-------|-------|-------|-------|-------|
| GRI 102 | General disclosures | | | | | | | |
| <i>GRI 102-8</i> | <i>Information on employees and other workers</i> | | | | | | | |
| <i>GRI 102-8-b</i> | Total monthly-paid staff (by location) | number | 5,069 | 5,397 | 4,915 | 4,578 | 4,381 | 4,445 |
| | Mainland China | | | | | | | |
| | permanent ⁵ | % | - | - | - | - | 100 | 100 |
| | contract ⁵ | % | - | - | - | - | 0 | 0 |
| | Singapore⁵ | | | | | | | |
| | permanent ⁵ | % | - | - | - | - | 92 | 93 |
| | contract ⁵ | % | - | - | - | - | 8 | 7 |
| | Hong Kong & Macau⁶ | | | | | | | |
| | permanent ⁵ | % | - | - | - | - | 89 | 87 |
| | contract ⁵ | % | - | - | - | - | 11 | 13 |
| | Vietnam | | | | | | | |
| | permanent ⁵ | % | - | - | 3 | 3 | 3 | 3 |
| | contract ⁵ | % | - | - | - | - | 0 | 0 |

1. Subcontractors are external parties providing services and labour. Suppliers are external parties supplying equipment or materials.

2. Excludes company events.

3. Excludes subcontractor entries.

4. Major competition held during 2017 only.

5. Data reported since 2017.

6. Data adjustment, due to redefinition of staff location.

| GRI Standard | Performance Indicators | Units | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|------------------------|--|--------------|-------|--------|--------|--------|--------|--------|
| PEOPLE – CARING | | | | | | | | |
| GRI 102 | General disclosures (continued) | | | | | | | |
| GRI 102-8 | Total daily-paid workers (all locations) | number | 3,091 | 3,665 | 3,419 | 3,257 | 2,887 | 2,479 |
| | Total subcontractor workers (all locations)¹ | number | 7,528 | 10,536 | 12,881 | 10,690 | 13,381 | 12,196 |
| | Hong Kong | number | 7,015 | 9,711 | 12,331 | 10,198 | 12,477 | 11,037 |
| | Mainland China ² | number | - | - | - | - | - | 146 |
| | Singapore | number | 513 | 825 | 550 | 492 | 904 | 1,159 |
| GRI 401 | Employment | | | | | | | |
| GRI 401-1 | <i>New employee hires and staff turnover^{3,4}</i> | | | | | | | |
| | New employee hires | number | - | - | - | 651 | 719 | 779 |
| | <i>By age group</i> | | | | | | | |
| | Under 30 years old | number | - | - | - | 338 | 339 | 355 |
| | 30-50 years old | number | - | - | - | 248 | 270 | 289 |
| | Over 50 years old | number | - | - | - | 65 | 110 | 135 |
| | <i>By region</i> | | | | | | | |
| | Hong Kong & Macau | % | - | - | - | 74 | 77 | 82 |
| | Singapore | % | - | - | - | 7 | 10 | 8 |
| | Mainland China & Rest of Asia | % | - | - | - | 19 | 13 | 10 |
| GRI 401-1 | Staff turnover | | | | | | | |
| | <i>By age group</i> | | | | | | | |
| | Under 30 years old | number | - | - | - | 290 | 282 | 203 |
| | 30-50 years old | number | - | - | - | 318 | 298 | 250 |
| | Over 50 years old | number | - | - | - | 55 | 55 | 71 |
| | <i>By region</i> | | | | | | | |
| | Hong Kong & Macau | % | - | - | - | 13 | 13 | 12 |
| | Singapore | % | - | - | - | 14 | 12 | 20 |
| | Mainland China & Rest of Asia | % | - | - | - | 19 | 22 | 28 |
| | Graduate and apprentice recruitment⁵ | | | | | | | |
| | Graduate recruitment | number | 117 | 116 | 83 | 65 | 70 | 97 |
| | Technician apprentice recruitment | number | 65 | 58 | 34 | 55 | 44 | 34 |
| GRI 404 | Training and Education | | | | | | | |
| GRI 404-1 | <i>Average training hours (monthly paid employees)⁶</i> | | | | | | | |
| | Training hours per employee | hrs/employee | 22.3 | 21.2 | 19.7 | 16.2 | 12.8 | 14.3 |
| | Training by gender | | | | | | | |
| | Male | % | 85.8 | 85.7 | 82.1 | 84.9 | 83.8 | 88.9 |
| | Female | % | 14.2 | 14.3 | 19.9 | 15.1 | 16.2 | 11.1 |
| | Male ⁷ | hours | - | - | - | 17.2 | 12.8 | 13.9 |
| | Female | hours | - | - | - | 11.3 | 12.3 | 7.4 |
| | Training by management class | | | | | | | |
| | Director | % | 0.7 | 0.6 | 0.5 | 1.1 | 1.3 | 1.6 |
| | Managerial | % | 16.6 | 13.6 | 14.6 | 15.1 | 14.3 | 15.1 |
| | Professional | % | 26.0 | 27.3 | 28.0 | 32.3 | 29.0 | 26.3 |
| | Supervisory | % | 17.7 | 16.7 | 13.9 | 14.8 | 15.9 | 13.5 |
| | Technical | % | 33.7 | 36.3 | 36.6 | 32.4 | 35.2 | 41.5 |
| | Others | % | 5.4 | 5.5 | 6.5 | 4.3 | 4.2 | 2.1 |
| | Training hours by management class³ | | | | | | | |
| | Director | hrs/employee | - | - | - | 37.6 | 36.0 | 52.8 |
| | Managerial | hrs/employee | - | - | - | 16.1 | 14.3 | 15.7 |
| | Professional | hrs/employee | - | - | - | 15.8 | 14.6 | 12.3 |
| | Supervisory | hrs/employee | - | - | - | 9.6 | 8.8 | 8.8 |
| | Technical | hrs/employee | - | - | - | 11.5 | 15.0 | 17.7 |
| | Others | hrs/employee | - | - | - | 4.5 | 5.0 | 2.2 |

1. Subcontractors defined as workers supporting construction works on site or at Pristine.

2. Started reporting subcontractors at Pristine in 2018.

3. Data reported since 2016.

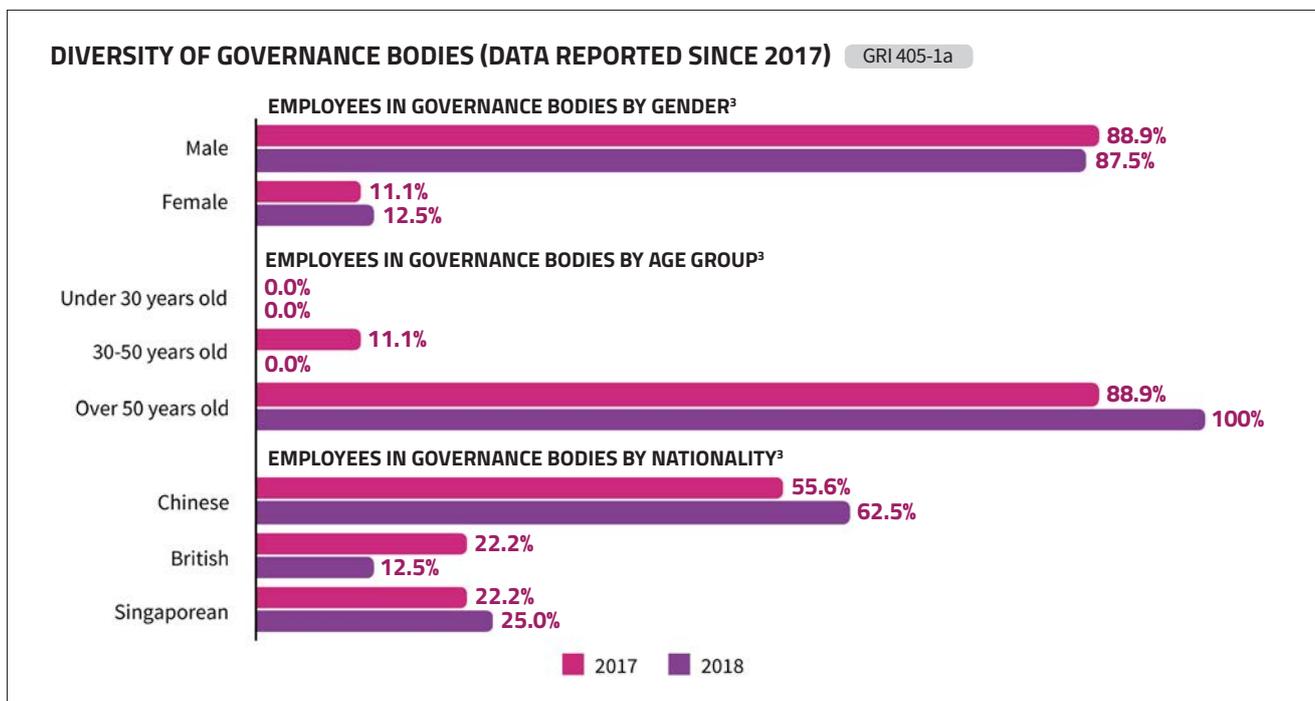
4. All regions, excluding daily-paid workers who have the option to choose their own schedules.

5. Hong Kong only. Includes both degree and higher diploma holders.

6. Since 2017 data includes HK, Macau and Singapore, excludes China. 2016 and previous data includes HK and Macau only.

7. Most training in 2018 was for frontline employees who are predominantly male.

| GRI Standard | Performance Indicators | Units | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|--|---|--------|-------|-------|-------|-------|-------|-------|
| PEOPLE – CARING | | | | | | | | |
| Corporate social initiatives | | | | | | | | |
| | Volunteer hours ¹ | hours | 4,974 | 3,658 | 1,649 | 2,487 | 4,359 | 3,507 |
| | Number of community activities | number | 126 | 106 | 72 | 102 | 147 | 88 |
| (GRI 405) Diversity and equal opportunity | | | | | | | | |
| (GRI 405-1) | Diversity of governance bodies and employees^{2,3} | | | | | | | |



GOVERNANCE

| | | | | | | | | |
|---|--|--------|--------|---|---|---|---|---|
| (GRI 307) Environmental compliance | | | | | | | | |
| (GRI 307-1) | <i>Non-compliance with environmental laws and regulations</i> | | | | | | | |
| | Environmental convictions | number | 1 (HK) | 0 | 0 | 0 | 0 | 0 |
| GRI 416 Customer health and safety | | | | | | | | |
| GRI 416-2 | <i>Incidents of non-compliance concerning the health and safety impacts of products and services⁴</i> | | | | | | | |
| | Product and services non-compliance in terms of health and safety | number | - | - | - | - | 0 | 0 |
| GRI 419 Socioeconomic compliance | | | | | | | | |
| GRI 419-1 | <i>Non-compliance with laws and regulations in the social and economic area</i> | | | | | | | |
| | Significant socioeconomic related fines ⁵ | HKD | - | - | 2 | 0 | 0 | 0 |
| | Total number of non-monetary sanctions ⁶ | HKD | - | - | - | - | - | 1 |

1. Includes HK + SGP preparation and participation time; Activities during working hours: 2002 hours; during non-working hours: 1505 hours.
 2. Year 2017 data updated due to data extraction period corrected to year-end.
 3. Includes Executive Directors only but excludes shareholders board members.
 4. Data reported from 2017 only.
 5. Significant fines are defined as over HKD100,000.
 6. 9 month suspension from tendering for related business relating to the fatality in 2017.

Appendix E – Other Initiatives – Awards

| Date | Name of Award | Issued by | Name of Project / Division |
|-----------|---|--|--|
| 7-Jan-18 | Construction Plant Operation Competition Crawler Crane - Champion | CIC | Gammon Construction Limited |
| 7-Jan-18 | Construction Plant Operation Competition Crawler Crane - Best Operator | CIC | Gammon Construction Limited |
| 7-Jan-18 | Construction Plant Operation Competition Gantry Crane, 1st Runner Up | CIC | Gammon Construction Limited |
| 12-Jan-18 | "CarbonCare® Label Scheme 2017 CarbonCare® Label | CarbonCare Inno Lab | Gammon Construction Limited 13660 Foundation Works for Tin Wing Stop Property Development at TSWTL no.23, Tin Shui Wai, N.T. |
| 15-Mar-18 | Merit Award of Prevention of Pneumoconiosis Best Practices Award | Occupational Safety and Health Council (OSHC) | Gammon Construction Limited 13660 Foundation Works for Tin Wing Stop Property Development at TSWTL no.23, Tin Shui Wai, N.T. |
| 15-Mar-18 | Certificate of participation of Hearing Conservation Best Practices Award | Occupational Safety and Health Council (OSHC) | Gammon Construction Limited 13669 Foundation Works for Sheung Shing Street, Ho Man Tin |
| 15-Mar-18 | Outstanding Award of Joyful@Healthy Workplace Best Practices Award (Enterprise /Organisation Category) | Occupational Safety and Health Council (OSHC) | Gammon Construction Limited |
| 15-Mar-18 | Excellence Award of Joyful@Healthy Workplace Best Practices Award (Enterprise /Organisation Category) | Occupational Safety and Health Council (OSHC) | Gammon Construction Limited 13468 - Contract P533 Midfield Concourse Works |
| 16-Mar-18 | The Lighthouse Club Health & Safety Awards International Design for Safety Awards - Highly Commended | The Lighthouse Club | Gammon Construction Limited 13518 - Contract No HY/2012/07, Tuen Mun - Chek Lap Kok Link, Southern Connection Viaduct Section |
| 16-Mar-18 | The Lighthouse Club Health & Safety Awards International Design for Safety Awards - Highly Commended | The Lighthouse Club | Gammon Construction Limited 15207 - XRL Contract 810A West Kowloon Terminus Station North |
| 16-Mar-18 | The Lighthouse Club Health & Safety Awards International Design for Safety Awards - Bronze | The Lighthouse Club | Gammon Construction Limited Tony Small |
| 16-Mar-18 | The Lighthouse Club Health & Safety Awards Highly Commended Approach to Safety Leadership | The Lighthouse Club | 13468 - Contract P533 Midfield Concourse Works |
| 16-Mar-18 | The Lighthouse Club Health & Safety Awards Commended Approach to Safety Leadership | The Lighthouse Club | Lambeth Associates Ltd |
| 18-Mar-18 | Silver Award in Building Sites - Sub-contractors of 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | 大師有限公司 灣仔軒尼詩道 1 號寫字樓發展工程 Entasis Limited Proposed Office Development at 1 Hennessy Road, Wanchai |
| 18-Mar-18 | Gold Award in Building Sites (Private Sector) of 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | Gammon Engineering and Construction Company Limited 將軍澳工業邨數據中心二期發展項目 13593 Proposed Data Centre at Tseung Kwan O Main Contract Works |

| Date | Name of Award | Issued by | Name of Project / Division |
|-----------|---|--|---|
| 18-Mar-18 | Best Performance in Building Sites (Private Sector) Work-at-height Safety prize 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | Gammon Engineering and Construction Company Limited 將軍澳工業邨數據中心二期發展項目 13593 Proposed Data Centre at Tseung Kwan O Main Contract Works |
| 18-Mar-18 | Merit in Safety Team of 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | Gammon Engineering & Construction Company Limited 13628 太古坊第 2A 期發展項目 |
| 18-Mar-18 | Merit Performance in Building Sites (Private Sector) Work-at-height Safety prize 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | 金門建築有限公司 觀塘新九龍內地段第 6512 號商業發展項目 13638 Main Contract for Proposed Commercial Development at NKIL No. 6512 Kwun Tong |
| 18-Mar-18 | Merit Performance in Building Sub-contractors Work-at-height Safety prize 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | 金門機電工程有限公司 13638 觀塘新九龍內地段第 6512 號商業發展項目 |
| 18-Mar-18 | Merit in Safety Team of 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | 金門機電工程有限公司 13641 黃竹坑道 8-10 號商業發展工程 |
| 18-Mar-18 | Bronze Award in Renovation and Maintenance Works of 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | 金門機電工程有限公司 港鐵站及車廠更換風冷制冷機 Gammon E&M Limited 13663 MTR Contract K1847-16E(B) Replacement of Air-Cooled Chillers at MTR Stations and Depots |
| 18-Mar-18 | Gold Award in Building Sites - Sub-contractors of 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | 金門機電工程有限公司 灣仔軒尼詩道 1 號寫字樓發展工程 - 冷氣及電器安裝工程 Gammon E&M Limited 13642, 13646 Electrical and MVAC Installation NSC for Proposed Office Development at 1 Hennessy Road, Wanchai |
| 18-Mar-18 | Merit in Safety Team of 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | 金門機電工程有限公司 13642, 13646 灣仔軒尼詩道 1 號寫字樓發展工程 - 冷氣及電器安裝工程 |
| 18-Mar-18 | Safety Worker of 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | 梁永基 金門建築有限公司 |
| 18-Mar-18 | Safety Worker of 2017/2018 Construction Industry Safety Award Scheme | jointly organised by the Labour Department and key stakeholders of the industry. | 陳志秋 金門建築有限公司 |
| 20-Apr-18 | 2017 年聘用最多畢業學員之僱主 (承建商) - 金獎 Contractor Hiring the Most Number of Graduate Apprentice | Construction Industry Council (CIC) | Gammon Construction Limited |
| 20-Apr-18 | 2017 年聘用最多工種之承建商 (承建商) - 金獎 Contractor Hiring the Most Number of Trades | Construction Industry Council (CIC) | Gammon Construction Limited |
| 20-Apr-18 | 2017 年簽署學徒合約最多之僱主 - 金獎 Employer Signing the Most Number of Apprentice Contracts | Construction Industry Council (CIC) | Gammon Construction Limited |
| 20-Apr-18 | 2017 年合作計劃 - 積極參與承建商 (培訓大工) - 金獎 Contractor Actively Participates in Cooperative Training Scheme (Construction Craftsmen Training) | Construction Industry Council (CIC) | Gammon Construction Limited |

| Date | Name of Award | Issued by | Name of Project / Division |
|-----------|---|---|---|
| 20-Apr-18 | Most Outstanding Trainers in Cooperative Training Scheme 合作培訓計劃最優秀導師 | CIC | So Kam Yuen, Superintendent Chung Hing Choy, Senior Construction Superintendent 總管鍾慶財及高級建造總管蘇錦源 |
| 24-Apr-18 | The 4th Year Best Project Award DfMA in Construction | Institution of Mechanical Engineers (Hong Kong Branch) | Gammon Construction Limited |
| 27-Apr-18 | 10th Hong Kong Outstanding OSH Employee Award Scheme 2018 - Silver Award | Occupational Safety and Health Council, Labour Department, members of the Labour Functional Constituency of the Legislative Council and employee representatives of the Labour Advisory Board | Gammon Construction Limited Man Chi Hang, Martin |
| 4-May-18 | 2017 Hong Kong Awards for Environmental Excellence Construction Industry - Silver Award | Environmental Campaign Committee | Gammon Construction Limited 13638 Main Contract Works for Proposed Commercial Development at NKIL No. 6512 Kwun Tong |
| 4-May-18 | 2017 Hong Kong Awards for Environmental Excellence Outstanding Green Leadership Award | Environmental Campaign Committee | Gammon Construction Limited 13638 Main Contract Works for Proposed Commercial Development at NKIL No. 6512 Kwun Tong |
| 4-May-18 | 2017 Hong Kong Awards for Environmental Excellence Construction Industry – Certificate of Merit | Environmental Campaign Committee | Gammon Construction Limited 13660 - Foundation Works for Tin Wing Stop Property Development at TSWTL No. 23, Tin Shui Wai, New Territories |
| 4-May-18 | 2017 Hong Kong Awards for Environmental Excellence Outstanding Green Leadership Award | Environmental Campaign Committee | Gammon Construction Limited 13660 - Foundation Works for Tin Wing Stop Property Development at TSWTL No. 23, Tin Shui Wai, New Territories |
| 4-May-18 | 2017 Hong Kong Awards for Environmental Excellence - 10th Anniversary Special Award | Environmental Campaign Committee | Gammon Construction Limited |
| 4-May-18 | Hong Kong Green Organisation Certificate | Environmental Campaign Committee | CSD |
| 21-May-18 | Safety Video Competition 2018 Cat.2 - Lifting and Plant Operation of Specific Works - Bronze | Development Bureau and Construction Industry Council | Gammon Construction Limited S2-08 S2-08 Mission Intelligent - Lifting https://www.youtube.com/watch?v=WxO_OX-fQWw |
| 21-May-18 | Safety Video Competition 2018 Cat.1 - Working at Height - Silver | Development Bureau and Construction Industry Council | Gammon Construction Limited S1-10 Gammon Golden Rule no.3 |
| 21-May-18 | Safety Video Competition 2018 Cat.1 - Working at Height - Bronze | Development Bureau and Construction Industry Council | Gammon Construction S2-08 Loading & Unloading of Excavator |
| 21-May-18 | Safety Video Competition 2018 Cat.1 - Working at Height - Bronze | Development Bureau and Construction Industry Council | Gammon Construction Limited S2-08 Mission Intelligent - Lifting |
| 21-May-18 | Safety Video Competition 2018 Cat.4 - Electrical Installations Works - Bronze | Development Bureau and Construction Industry Council | Gammon E&M Limited S4-03 Prove Electricity is Safe |
| 21-May-18 | Safety Video Competition 2018 Cat.7 - Construction Safety Related Innovation Video - Merit | Development Bureau and Construction Industry Council | Gammon E&M Limited G7-13 Report All Unsafe Event & Conditions |

| Date | Name of Award | Issued by | Name of Project / Division |
|-----------|---|--|--|
| 21-May-18 | Innovation Safety Initiative Award 2018 健康與福利類別 - Bronze | Development Bureau, CIC and Hong Kong Construction Association | Gammon Construction Limited Smart Hoist, 3D Scen & Off-site Bending |
| 21-May-18 | Innovation Safety Initiative Award 2018 安全運作設施類別 - Silver | Development Bureau, CIC and Hong Kong Construction Association | Gammon Constructio Limited GamBot & VR Application |
| 21-May-18 | Innovation Safety Initiative Award 2018 安全管理制度、培訓與宣傳類別 - Gold | Development Bureau, CIC and Hong Kong Construction Association | Gammon Construction Limited Foundation Works for Lyric Theatre Complex and Extended Basement in Zone 3B at the West Kowloon Cultural District |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Non-Public Works - New Works - Gold Award | Development Bureau and Construction Industry Council | Gammon Construction Limited 13628 Taikoo Place Phase 2A Development (One Taikoo Place) |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Non-Public Works - New Works - Silver Award | Development Bureau and Construction Industry Council | Gammon Construction Limited 13586 Foundation for Public Housing Development at North West Kowloon Reclamation Site 6 Phases 1,2 and 3 and Fat Tseung Street West |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Non-Public Works - New Works - Merit Award | Development Bureau and Construction Industry Council | Gammon Construction Limited 13661 Ground Investigation - Urban and Surrounding Islands (Term Contract) |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Public Works - RMAA - Gold Award | Development Bureau and Construction Industry Council | Gammon Construction Limited 13629 Development of Kwu Tung North and Fanling North New Development Areas - Advance Works and First Stage Works - Stage 2 Ground Investigation Works |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Public Works - New Works - Bronze | Development Bureau and Construction Industry Council | Gammon Construction Limited 13518 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Public Works - New works - Merit Award | Development Bureau and Construction Industry Council | Gammon Construction Limited 13637 Marine Ground Investigation and Geophysical Survey (Term Contract) |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Public Works - RMAA - Merit Award | Development Bureau and Construction Industry Council | Gammon - Welcome Joint Venture Management and maintenance of High Speed Roads in NT East and HK Island (2013-2019)" |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Public Works - RMAA - Merit Award | Development Bureau and Construction Industry Council | Gammon Construction Limited 文國強先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Best Model Frontline Supervisor Award | Development Bureau and Construction Industry Council | Gammon Construction Limite Yiu King Hong 饒競康先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Frontline Supervisor Award | Development Bureau and Construction Industry Council | Gammon Construction Li Kam Fuk 李金福先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Frontline Supervisor Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Jason Leung Wai Chun 梁璋駿先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Frontline Supervisor Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Cheung Kai Hung 張啟洪先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Frontline Supervisor Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Yan Tsz Wing 任梓榮先生 |

| Date | Name of Award | Issued by | Name of Project / Division |
|-----------|---|--|--|
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Frontline Supervisor Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Ho Tak Ka 何德家先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Frontline Supervisor Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Cheng Ka Wai 鄭嘉威先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Frontline Supervisor Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Li Yi Dao 李义導先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Worker Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Lam Hung Kee 林雄記先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Worker Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Lai Tai Hei 黎帶喜先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Worker Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Cheung Shing Ching 張成青先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Worker Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Pang Kin Lung 彭堅龍先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Worker Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Wong Kwok Kwan 黃國堃先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Worker Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Lo Chun Chun 羅圳津先生 |
| 29-May-18 | 24th Considerate Contractors Site Award Scheme 2018 Model Worker Award | Development Bureau and Construction Industry Council | Gammon Construction Limited Yip Chi Kit 葉志傑先生 |
| 15-Jun-18 | Quality Building Award 2018 Hong Kong Residential (Single Building) Category - Merit Award | HKIS; HKAC; HKIA; HKIH; HKIE | Gammon Construction Limited 13456 - Proposed Residential Development at 33 Seymour Road, Hong Kong |
| 15-Jun-18 | Quality Building Award 2018 Hong Kong Residential (Multiple Buildings) Category - Grand Award | HKIS; HKAC; HKIA; HKIH; HKIE | 1. Contract No. 20100096, Foundation for Public Rental Housing Development at Hung Shui Kiu Area 13, Phase 3 2. Contract No. 20100093, Foundation for Public Rental Housing Development at Hung Shui Kiu Area 13, Phase 1 and 2 |
| 27-Jul-18 | BEC Fostering Sustainable Consumption for Hong Kong Business and the Community Programme - Bronze Award | Business Environment Council | Gammon Construction Limited |
| 27-Jul-18 | Sustainable Consumption Award | Business Environment Council | Gammon Construction Limited |
| 1-Aug-18 | 2018 Hong Kong Law Awards The Construction and Real Estate In-House Team of the Year award | The Macallan ALB | Gammon Construction Limited Legal Department |
| 14-Sep-18 | Safe Project Team Award 2018 Merit Award | The Lighthouse Club | Gammon Construction Limited 13683 Main Contract for the Proposed Residential Development at TPTL 214 at Fo Yin Road, Pak Shek Kok, Tai Po, New Territories |
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Safe Subcontractor Award - Commended Award | The Lighthouse Club Hong Kong | Gammon Steel Department Mega Truss Erection Works at Museum Plus (M+) |

| Date | Name of Award | Issued by | Name of Project / Division |
|-----------|---|--------------------------------------|--|
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Safe Subcontractor Award - Certificate of Appreciation | The Lighthouse Club Hong Kong | Gammon E&M Limited The Happy Valley Club House Extension - M&E Installation |
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Safe Project Team Award - Commended Award | The Lighthouse Club Hong Kong | Gammon Construction Limited Foundation Works for The Hong Kong Palace Museum for West Kowloon Cultural District Authority |
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Safe Project Team Award - Certificate of Appreciation | The Lighthouse Club Hong Kong | Gammon E&M Limited MTR Shatin to Central Link Contract 1164 - Building Services for Diamond Hill Station |
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Safe Project Team Award - Certificate of Appreciation | The Lighthouse Club Hong Kong | Gammon Engineering & Construction Company Limited Proposed Residential Development at Tai Po Town Lot No. 214 at Fo Yin Road, Pak Shek Kok |
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Safe Project Team Award - Certificate of Appreciation | The Lighthouse Club Hong Kong | Gammon Construction Limited Excavation and Lateral Support and Foundation Works for Proposed Commercial Development at New Kowloon Inland Lot No 6556, Kai Tak Area 1F Site 2, Kai Tak, Kowloon |
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Safe Project Team Award - Certificate of Appreciation | The Lighthouse Club Hong Kong | Gammon Construction Limited HY/2014/07 Central Kowloon Route Kai Tak West |
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Construction Manager Safety Award - Champion | The Lighthouse Club Hong Kong | Gammon Construction Limited Chan Chi Fat |
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Construction Manager Safety Award - Highly Commended Award | The Lighthouse Club Hong Kong | Gammon Construction Limited Fung Tsz Tuen, Ashley |
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Construction Manager Safety Award - Certificate of Appreciation | The Lighthouse Club Hong Kong | Gammon Construction Limited Wong Wai Hung, Ernest |
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Safe Foreman Award - Champion | The Lighthouse Club Hong Kong | Gammon Construction Limited NG Kin Man |
| 14-Sep-18 | Lighthouse Club Hong Kong Contractor Safety Awards 2018 - Safe Foreman Award - Runner-up | The Lighthouse Club Hong Kong | Gammon Construction Limited Sze Kai Yat |
| 20-Sep-18 | IDC Digital Transformation Awards 2018 – Hong Kong - Operating Model Master | IDC | Gammon Construction Limited |
| 2-Oct-18 | "Friends of EcoPark" Award Certificate of Appreciation" | Environment Bureau | Gammon Construction Limited |
| 11-Oct-18 | BIM Awards 2018 Award Winners | Autodesk Hong Kong | Link Real Estate Investment Trust & Nan Fung Development Limited The Quayside Proposed Commercial Development at NKIL No. 6512 Kwun Tong, Hong Kong |
| 11-Oct-18 | BIM Awards 2018 Award Winners | Autodesk Hong Kong | Urban Renewal Authority Project TKW1/002 Ma Tau Wai Main Contract Works for Residential Redevelopment at Ma Tau Wai Road |
| 25-Oct-18 | OSH Excellence Award | Occupational Safety & Health Council | Gammon Construction Limited |

| Date | Name of Award | Issued by | Name of Project / Division |
|-----------|---|--|--|
| 25-Oct-18 | OSH Excellence Award | Occupational Safety & Health Council | Gammon E&M Limited |
| 26-Oct-18 | CIC Sustainable Construction Award Developer (Private Sector) - Top Winner | CIC | Swire Taikoo Place Phase 2A Development |
| 26-Oct-18 | CIC Sustainable Construction Award Contractor in all tiers New Works - Top Winner | CIC | Gammon Construction Limited Tuen Mun Chep Lap Kok Link - Southern Viaduct Connection |
| 26-Oct-18 | CIC Sustainable Construction Award Contractor in all tiers New Works - Merit | CIC | Gammon Construction Limited Ocean Park TWS Waterpark |
| 26-Oct-18 | CIC Sustainable Construction Award Industry Practitioners Category - Construction Manager | CIC | Sammy, Lai Kwok Hung from Taikoo Place Phase 2A |
| 26-Oct-18 | CIC Sustainable Construction Award Industry Practitioners Category - Young Practitioner | CIC | Tommy Choi from Redevelopment at Ma Tau Wai Road |
| 5-Nov-18 | Secretary for Home Affairs' Commendation Scheme Presentation Ceremony 2018 Certificate of Commendation | Home Affairs | Gammon Construction Limited |
| 16-Nov-18 | Construction Management Awards (CMA) 2018 Excellent Construction Team Award - New Works - Merit Award | Hong Kong Institute of Construction Managers (HKICM) | Gammon Construction Limited Le Cap |
| 16-Nov-18 | Construction Management Awards (CMA) 2018 Construction EHS Administrator Award - New Works - Merit Award | Hong Kong Institute of Construction Managers (HKICM) | Gammon Construction Limited Le Cap Mr Chan Man Chun, Peter |
| 16-Nov-18 | Construction Management Awards (CMA) 2018 Construction Contract Administrator Award - New Works - Merit Award | Hong Kong Institute of Construction Managers (HKICM) | Gammon Construction Limited Le Cap Mr Tam Tai Chi, Johnny |
| 16-Nov-18 | Construction Manager Award - New Works - Merit Award | Hong Kong Institute of Construction Managers (HKICM) | Gammon Construction Limited Le Cap Mr Yuen Man Dick, Dick |
| 16-Nov-18 | Construction Management Awards (CMA) 2018 Construction Site Agent Award - New Works - Merit Award | Hong Kong Institute of Construction Managers (HKICM) | Gammon Construction Limited Le Cap Mr Lau Ho Sing |
| 4-Dec-18 | Label Award 2018 Carbon Care Star Label 2018 Continuous Commitment on Carbon Reduction | CarbonCare InnoLab | Gammon Construction Limited |
| 4-Dec-18 | Label Award 2018 Carbon Care Star Label 2018 Physical Boundary | CarbonCare InnoLab | Gammon Construction Limited |
| 11-Dec-18 | Hong Kong Awards For Industries Awards 2018 Smart Productivity Certificate of Merit | Hong Kong Productivity Council | Gammon Construction Limited |
| 11-Dec-18 | Hong Kong Awards For Industries Awards 2018 Innovation and Creativity Innovation and Creativity Award | Hong Kong General Chamber of Commerce | Gammon Construction Limited |
| 19-Dec-18 | Good Housekeeping Plan 2018 Construction Industries - Silver Award | Occupational Safety & Health Council | Gammon Construction Limited Foundation Works for the Hong Kong Palace Museum for West Kowloon Cultural District Authority |
| 20-Dec-18 | Hong Kong Construction Environmental Awards 2018 Environment Merit Award | Hong Kong Construction Association (HKCA) | Gammon Construction Limited |

Appendix F – Green Building Projects

G4 – CRE8



Gammon has completed many certified green building projects under HK-BEAM, LEED and WELL in Hong Kong and Green Mark in Singapore. The table below provides a partial listing of the projects we have been involved with:

| Project | Rating | Client |
|---|--|--|
| HK-BEAM – Hong Kong | | |
| HKU Medical Complex Extension | BEAM Plus NB V2.0 Pilot (on-going) | The University of Hong Kong |
| Central Plaza Podium Extension | BEAM Plus NB V1.2 (on-going) | Central Plaza Management Co. Ltd |
| 1 Plantation Road | BEAM Plus NB V1.2 Provisional Gold | Wharf Peak Properties Limited |
| Fullerton Hotel at Ocean park | BEAM Plus NB V1.2 On-going | Parkland (HK) Limited |
| Proposed Residential Development at T.P.T.L.226 Pak Shek Kok, Tai Po | BEAM Plus NB V1.2 Provisional Gold | K. Wah International Holdings Limited |
| Proposed Residential Development at T.P.T.L.2214 at Fo Yin Road, Pak Shek Kok, Tai Po | BEAM Plus NB V1.2 On-going | Ease Treasure Investment Limited |
| Residential Redevelopment at Ma Tau Wai Road | BEAM Plus NB V1.2 Provisional Platinum | Urban Renewal Authority |
| Hong Kong Palace Museum | BEAM Plus NB V1.2 On-going | West Kowloon Cultural District |
| Foundation works at Kai Tak Area 1F Site 2 (Lot No. 6556) | BEAM Plus NB V1.2 On-going | Nan Fung Group |
| Foundations works at 98 How Ming Street (KTIL 240) | BEAM Plus NB V1.2 On-going | Sun Hung Kai Properties |
| Tuen Mun Area 54 Sites 3 & 4 | BEAM Plus NB V1.2 (on-going) | Hong Kong Housing Authority |
| Foundations works at 33-47 Catchick Street | BEAM Plus NB V1.2 On-going | Shanghai Commercial Bank |
| Foundation works for IE 2.0 Project C | BEAM Plus NB V1.2 On-going | Hong Kong Science & Technology Parks Corporation |
| Foundation works for 2 Murray Road | BEAM Plus NB V1.2 On-going | Henderson Land Development Co. Ltd |
| Foundation works for IE 2.0 Project A | BEAM Plus NB V1.2 On-going | Hong Kong Science & Technology Parks Corporation |
| Proposed Residential Development at KIL No.11257 Sheung Shing Street, Homantin | BEAM Plus NB V1.2 On-going | Goldin Financial Holdings Ltd |
| Foundation Works for Tin Wing Light Rail Stop Property Development | BEAM Plus NB V1.2 On-going | Best Vision Development Ltd |
| Foundation, Pipe Pile and Sheet Piling Works for West Rail Yuen Long Station Property Development | BEAM Plus NB V1.2 Provisional Gold | Sun Hung Kai Properties |

| Project | Rating | Client |
|--|--------------------------------------|--|
| HK-BEAM – Hong Kong <i>continued</i> | | |
| Foundation, Piling and ELS Piling Work for Proposed Residential Development at To Shek Street, Shatin | BEAM Plus NB V1.2 On-going | Sun Hung Kai Properties |
| Demolition and Associated A&A Works for Taikoo Place 2B Development | BEAM Plus NB V1.2 On-going | Swire Properties Limited |
| Property Development at Tseung Kwan O Town Lot No. 93, Hong Kong | BEAM Plus NB V1.2 Provisional Bronze | Chinachem Group |
| Proposed Commercial Development at NKIL No. 6512 Kwun Tong (Quayside) | BEAM Plus NB V1.2 On-going | Link & Nan Fung Group |
| Lee Garden Three | BEAM Plus NB V1.2 On-going | Hysan Development Co Ltd. |
| One Taikoo Place | BEAM Plus NB V1.2 On-going | Smart Event Investments Limited |
| | BEAM Plus NB V1.1 Provisional Gold | Amblegreen Company Limited (Subsidiary of Wheelock Properties) |
| | BEAM Plus NB V1.2 Silver | Bravo Partner Limited |
| | BEAM Plus NB V1.2 On-going | Taikoo Place Holding Ltd. |
| One South Lane | BEAM Plus NB V1.1 Provisional Gold | Denny Investment Limited (Chinachem Group) |
| | BEAM Plus NB V1.1 Gold | Both Talent Ltd. |
| Lohas Park Package 9 | BEAM Plus NB V1.2 On-going | Wheelock Properties Limited |
| Construction of Pile Cap for Proposed Residential Development at Site N of TKO TL 80RP, Lohas Park Package 6 | BEAM Plus NB V1.2 On-going | Nan Fung Group |
| Lyric Theatre Complex | BEAM Plus NB V1.2 On-going | West Kowloon Cultural District Authority |
| Global Switch Data Center Phase 1-5 | BEAM Plus NB V1.2 On-going | Global Switch Hong Kong Limited |
| Proposed Residential and Commercial Development at TKOTL No.126, Area 69B2 Tseung Kwun O, New Territories | BEAM Plus NB V1.2 On-going | Wheelock Properties Ltd |
| Murray Building Hotel Development | BEAM Plus NB V1.2 On-going | Smart Event Investments Limited |
| Proposed Residential and Commercial Development at 33 Tong Yin Street, TKO TL 125, Area 68A1, Tseung Kwan O, N.T. (Capri) | BEAM Plus NB V1.1 Provisional Gold | Amblegreen Company Limited (Subsidiary of Wheelock Properties) |
| Proposed Residential Development at STTL 565, Area 56A, Kau To Sha Tin, N.T. | BEAM Plus NB V1.2 Silver | Bravo Partner Limited |
| Foundation for Public Housing Development at North West Kowloon Reclamation Site 6 Phases 1, 2 and 3 and Fat Tseung Street, West, Contract No 20140553 | BEAM Plus NB V1.2 On-going | Hong Kong Housing Authority |
| West Rail Tsuen Wan West Station TW5 Cityside Property Development | BEAM Plus NB V1.1 Provisional Gold | Denny Investment Limited (Chinachem Group) |
| Proposed Residential Development at Area 54, Siu Hong, Tuen Mun, NT | BEAM Plus NB V1.2 On-going | Pacific Good Investment Limited |
| Castle One | BEAM Plus NB V1.1 Provisional Silver | Best-Rights Company Limited |

| Project | Rating | Client |
|--|---|--|
| HK-BEAM – Hong Kong continued | | |
| Maxim's HQ, No. 17 Cheung Shun Street | BEAM Plus NB V1.1 Provisional Platinum | Luk Yeung Restaurant Limited |
| Science Park Phase 3c building 20E and 22E | BEAM Plus NB V1.2 Gold | Hong Kong Science & Technology Parks Corporation |
| TKO Area 66A | BEAM Plus NB V1.1 Provisional Silver | Crown World Investment Limited (Sun Hung Kai Properties Group) |
| Foundation and Earth Retaining Structure Works for Proposed Hotel Development at TCTL 38, Tung Chung, Lantau Island, Hong Kong | BEAM Plus NB V1.2 Provisional Silver | Shimao Property Holdings Ltd. |
| Foundation Works for Proposed Development at Tung Chung Town Lot No.11 at Junction of Tat Tung Road and Mei Tung Street | BEAM Plus NB V1.2 Provisional Silver | Newfoundworld Project Management Limited |
| No 24 Po Shan Road | BEAM Plus NB V1.1 Provisional Gold | Majestic Elite Property Development Ltd. |
| 18 Tong Chun Street Development | BEAM Plus NB V1.1 Provisional Gold | Fortune Precision Limited (Wheelock) |
| No 8 Mount Nicholson Road | BEAM Plus NB V1.1 Provisional Gold | Market Prospect Limited |
| Midfield Concourse Works | BEAM Plus NB V1.1 Gold | Airport Authority Hong Kong |
| Shanghai Commercial Bank | BEAM Plus NB V1.1 Provisional Gold | Shanghai Commercial Bank |
| House Dev at No 724 Cheung Sha (Whitesands) | BEAM Plus NB V1.1 Platinum | Bao Wei Enterprise Ltd (Subsidiary of Swire) |
| TKO Area 66C1 | BEAM Plus NB V1.1 Provisional Silver | Winbox Investment Ltd. (Sun Hung Kai Properties Group) |
| Proposed resident tower at 33 Seymour road, Hong Kong (Arezzo) | BEAM Plus NB V1.1 Platinum | Excel Free Limited (Swire Properties Limited) |
| Science Park Phase 3 a&b building 12W, 15W and 16W | BEAM Plus NB V1.1 Platinum | Hong Kong Science and Technology Parks Corporation |
| Central Police Station Conservation and Revitalisation Project | BEAM Plus NB V1.1 Provisional Bronze | Hong Kong Jockey Club |
| CIC Zero Carbon Building | BEAM Plus NB V1.1 Platinum | Construction Industry Council |
| Hysan Place | BEAM Plus NB v1.1 Platinum | Hysan Development Co Ltd |
| LEED Project – Hong Kong | | |
| Global Switch Phase 1&2 | LEED CS V2009 Platinum | Global Switch |
| Foundation works at Kai Tak Area 1F Site 2 (Lot No. 6556) | LEED BD+C: Core and Shell v4 - LEED v4 (on-going) | Nan Fung Group |
| Foundations works at 98 How Ming Street (KTIL 240) | LEED BD+C: Core and Shell v4 - LEED v4 (on-going) | Sun Hung Kai Properties |
| Hang Seng Headquarter 8/F & 16/F | LEED ID+C V4 On-going | Hang Seng Bank Ltd |
| One Taikoo Place | LEED CS v2009 On-going | Taikoo Place Holding Ltd. |
| Lee Garden Three | LEED CS v2009 Gold | Hysan Development Co Ltd. |
| Proposed Commercial Development at NKIL No. 6512 Kwun Tong (Quayside) | LEED CS v2009 On-going | Link & Nan Fung Group |

| Project | Rating | Client |
|---|---|--|
| LEED Project – Hong Kong <i>continued</i> | | |
| Science Park Phase 3 a&b building 12W | LEED CS v2009 Platinum | Hong Kong Science and Technology Parks |
| HKU Centennial Campus | LEED NB v2009 – Platinum 2013 | The University of Hong Kong |
| 500 Hennessy Road Redevelopment Causeway Bay | LEED BD+C: Core and Shell (v2.0) Platinum 2012 | Hysan Development Co Ltd |
| Proposed Residential Development at 38-44 Caine Road, Central | LEED BD+C: New Construction (v2.2) Certified 2013 | Fine Mean Limited |
| HSBC Project Symmetry BS Works | LEED ID+C: v3 – LEED 2009 – Certified | The Hong Kong and Shanghai Banking Corporation Ltd. |
| HSBC Project Bridge | LEED CI v2.0 Gold | The Hong Kong and Shanghai Banking Corporation Ltd. |
| China Mobile Data Centre, MEP1 | LEED BD+C: Core and Shell v3 – LEED 2009 – Gold | China Mobile International Limited |
| Proposed Redevelopment – The Forum, Exchange Square | LEED NC v2009 – Platinum | Hong Kong Land Limited |
| WELL Project – Hong Kong | | |
| One Taikoo Place | WELL 1.2 | Taikoo Place Holding Ltd. |
| Proposed Commercial Development at NKIL No. 6512 Kwun Tong (Quayside) | WELL 1.2 | Link & Nan Fung Group |
| LEED Project – Singapore | | |
| Design and Construction of 6-Storey Data Centre at Woodlands, Singapore | LEED - Gold | |
| P&G Singapore Innovation Centre SgIC Project, Singapore | LEED CI v2.0 - Gold 2009 | P&G |
| Diaphragm wall and Piling works to Singapore Innovation Centre (SgIC) | LEED NC 2009 - Gold | CH2M Hill Singapore Pte Ltd |
| Green Mark – Singapore | | |
| Proposed Erection of New ITE College West PPP Project | GreenMark – Platinum | Gammon Capital (West) Private Limited |
| Nanyang Polytechnic Extension | GreenMark – Platinum | Nanyang Polytechnic |
| Design and Construction of Mayflower Station | GreenMark – Gold | Land Transport Authority (LTA) |
| LTA Contract T221 - Construction of Havelock Station for Thomson Line | GreenMark – Gold | Land Transport Authority |
| Construction of 3 Intra-Island Cableway Stations, 8 Cableway Tower Foundations and a Fort Siloso Pedestrian Bridge with Lift Tower at Sentosa | GreenMark – Certified | Sentosa Development Corporation |
| Grace Assembly of God Church | GreenMark – Certified | Grace Assembly of God Church |
| Mandai Depot | Greenmark | Land Transport Authority |
| Design and Construction of 6 storey Data Centre at Woodlands | Greenmark - Platinum | |

Appendix G – Verification Statement



INDEPENDENT ASSURANCE OPINION STATEMENT



By Royal Charter

Statement No.: **SRA-HK-710633**

Gammon Construction Limited Sustainability Report 2018

The British Standards Institution is independent to Gammon Construction Limited (hereafter referred to as "Gammon" in this statement) and has no financial interest in the operation of Gammon other than for the assessment and assurance of this report.

This independent assurance opinion statement has been prepared for Gammon only for the purposes of assuring its statements relating to its sustainability report, more particularly described in the Scope, below. It was not prepared for any other purpose. The British Standards Institution will not, in providing this independent assurance opinion statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used, or to any person by whom the independent assurance opinion statement may be read. This statement is intended to be used by stakeholders & management of Gammon.

This independent assurance opinion statement is prepared on the basis of review by the British Standards Institution of information presented to it by Gammon. The review does not extend beyond such information and is solely based on it. In performing such review, the British Standards Institution has assumed that all such information is complete and accurate.

Any queries that may arise by virtue of this independent assurance opinion statement or matters relating to it should be addressed to Gammon only.

Scope

The scope of engagement agreed upon with Gammon includes the following:

1. The assurance covers the whole Sustainability Report 2018 of Gammon prepared "In accordance" with GRI Sustainability Reporting Standards ("GRI Standards") – Core option, and focuses on systems and activities of Gammon and its subsidiaries in Hong Kong, Macau, Mainland China, and Singapore during the period from 1st January 2018 to 31st December 2018.
2. The AA1000 Assurance Standard, AA1000AS (2008) Type 1 engagement evaluates the nature and extent of Gammon's adherence to all three AA1000 AccountAbility Principles: Inclusivity, Materiality and Responsiveness. The specified sustainability performance information/data disclosed in the report has been evaluated.

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Opinion Statement

Our work was carried out by a team of sustainability report assurors in accordance with the AA1000 Assurance standard, AA1000AS (2008) and GRI Standards. We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that Gammon's description of their self-declaration of compliance with the GRI Standards were fairly stated.

We conclude that the Gammon Sustainability Report 2018 review provides a fair view of the Gammon CSR programmes and performances during 2018. We believe that the economic, social and environment performance indicators are fairly represented in the Report. The sustainability performance indicators disclosed in the report demonstrate Gammon's efforts recognized by its stakeholders.

Methodology

Our work was designed to gather evidence on which to base our conclusion. We undertook the following activities:

- A top level review of issues raised by external parties that could be relevant to Gammon's policies to provide a check on the appropriateness of statements made in the report
- Discussion with senior executives on Gammon's approach to stakeholder engagement. We had no direct contact with external stakeholders
- Interview with staff involved in sustainability management, report preparation and provision of report information were carried out
- Review of key organizational developments
- Review of supporting evidence for claims made in the reports
- An assessment of the company's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality and Responsiveness as described in the AA1000 AccountAbility Principles Standard (2008)

Conclusions

A detailed review against the AA1000 AccountAbility Principles of Inclusivity, Materiality and Responsiveness and the GRI Standards is set out below:

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By Royal Charter

Inclusivity

This report has reflected the fact that Gammon is seeking the engagement of its stakeholders through numerous channels such as survey; workshop; biennial staff happiness survey; 'Lessons to Learn' workshop, sustainable procurement workshops; Director workshops; Safety, sustainability and innovation / digital construction conferences; Partnering lunches with CEO forums; meeting.

Being a construction company, the principle activities of Gammon are civil engineering, foundation works, building, interiors and façade construction, electrical and mechanical installation, manufacturing and supply of fabricated steel, manufacturing and selling concrete, rental of plant and machinery. This report covers the stakeholder issue together with fair reporting and disclosures for economic, social (including safety) and environmental information. In our professional opinion, the report covers the Gammon inclusivity issues. Our view of an area for improvement for the report was adopted by Gammon before issue of this opinion statement. The above channels help Gammon in stakeholder engagement and we recommend Gammon to keep these numerous stakeholder engagement channels.

Materiality

Gammon publishes sustainability information that enables its stakeholders to make informed judgments about the company's management and performance. In our professional opinion the report covers Gammon's material issues by using Gammon's materiality matrix and boundary mapping. Our view of an area for improvement for the report was adopted by Gammon before issue of this opinion statement.

Responsiveness

Gammon has implemented the practice to respond to the expectations and perceptions of its stakeholders. It includes client survey and different feedback mechanisms to external stakeholders and internal stakeholders. In our professional opinion the report covers Gammon's responsiveness issues. Our view of an area for improvement for the report was adopted by Gammon before issue of this opinion statement.

GRI-reporting

Gammon provided us with their self-declaration of compliance with GRI Standards and the classification to align with "In accordance" - Core.

Based on our verification review, we are able to confirm that social responsibility and sustainable development indicators in all 3 categories (Environmental, Social and Economic) are reported with reference to "In accordance" with the GRI Standards – Core option.

In our professional opinion the self-declaration covers Gammon's social responsibility and sustainability issues. Our view of an area for improvement for the report was adopted by Gammon before issue of this opinion statement.

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By Royal Charter

Competency and Independence

The assurance team was composed of Lead auditors experienced in industrial sector, and trained in a range of sustainability, environmental and social standards including GRI G3, GRI G3.1, GRI G4, GRI Standards, AA1000, HKEx ESG Guide, UNGC's Ten Principles, ISO20121, ISO10002, ISO 14001, OHSAS 18001, ISO45001 and ISO 9001, etc. BSI is a leading global standards and assessment body founded in 1901. The assurance is carried out in line with the BSI Fair Trading Code of Practice.

Assurance Level

The moderate level of assurance provided is in accordance with AA1000 Assurance standard, AA1000AS (2008) in our review as defined by the scope and methodology described in this statement.

Responsibility

It is the responsibility of Gammon's senior management to ensure the information presented in the Sustainability Report is accurate. Our responsibility is to provide an independent assurance opinion statement to stakeholders giving our professional opinion based on the scope and methodology described.

For and on behalf of BSI:

Mr. Wilfred Chan
Head of Operations, BSI Asia Pacific

Hong Kong
11 July 2019



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Licensed Assurance Provider
000-157

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Appendix H – Membership of Associations and Industry Bodies

| 1. Hong Kong Government | | |
|---|--|---|
| Association/ Body | Group/ Committee | Appointment |
| A. Statutory Bodies | | |
| Construction Industry Council | - | Member |
| | Task Force on NEC3 Collaborative Contracts | Member |
| | Construction Industry Sports and Volunteering Programme (CISVP) | Committee Member |
| | Construction Innovation & Technology Application Centre | Board Member |
| Development Bureau | Panel of Enquiry-Site Safety | Member |
| | Registered Contractors' Disciplinary Board Panel Planning and Lands Branch | Member |
| Development Bureau (Planning and Lands Branch) | Registered Contractors' Disciplinary Board Panel | Member |
| Hong Kong Council for Accreditation of Academic & Vocational Qualifications | - | Subject Specialists (Construction and Building Service) |
| Town Planning Board | - | Member |
| | Metro Planning Committee | Member |
| B. Permanent Non Statutory Bodies | | |
| The Hong Kong Construction Association, Limited (HKCA) | Piling Contractors Committee - GECCL | Member |
| | Tripartite Committee on Construction Industry under Labour Department | Member |
| | GBCL | Representative |
| | GCL | Representative |
| | GECCL | Representative |
| | Piling Contractors Committee - GCL | Vice Chairman |
| | Site Investigation Contractors Committee - GCL | Vice Chairman |
| | Young Members Society | Vice Chairman |
| Environment Committee | Vice Chairman | |
| C. Tertiary Institution | | |
| The University of Hong Kong | MSc Integrated Project Delivery | External Examiner |
| Vocational Training Council | Apprenticeship Training Board | Chairman |
| | Building Civil Engineering & Built Environment Training Board | Member |
| | Electrical and Mechanical Services Training Board | Member |
| | Engineering Discipline Advisory Board | Member |
| 2. Non Government Organisation | | |
| Association/ Body | Group/ Committee | Appointment |
| Business Environment Council | Board of Directors | Director |
| | Energy Advisory Group | Chairman |
| | Transport and Logistics Advisory Group | Steering Committee Member |
| | Waste Management Advisory Group | Steering Committee Member |
| | Climate Change Business Forum Advisory Group | Member |
| | Environment, Social and Governance Advisory Group | Member |
| Hong Kong Green Building Council | - | Patron Member |
| | Green Building Faculty | Member |

2. Non Government Organisation (continued)

| Association/ Body | Group/ Committee | Appointment |
|--|---|------------------------------------|
| Hong Kong Institution of Engineers | Building Services and Mechanical Marine Naval Architecture & Chemical Division Safety Specialist Committee | Ex-officio member Past Chairman |
| | Geotechnical Division | Chairman (18-19 Term) |
| | HKIS Quantity Surveying Division | Council Member |
| | HKIS Committees/Working Group/Task Forces: Admin Committee; Community & Charity Services Committee; HKIS Task Force on Lantau Development; HKIS/SPRA Liaison Group IT Committee; Public & Social Affairs Committee; Sports & Recreation Committee | Members |
| | | |
| Chartered Institute of Building (Hong Kong) | - | Vice President |
| | - | Council Member |
| Chartered Institution of Highways and Transportation, HK Branch | - | Committee Member |
| Temporary Works Forum | - | Co-founder and Member |
| Engineers Australia Singapore Chapter | - | Committee Member |
| Hong Kong Institute of Construction | STEM Alliance Steering Group | Member |
| Tunneling and Underground Construction Society of Singapore | - | Corporate Member |
| Hong Kong Institute of Human Resource Management | Membership Evaluation Committee | Member |
| Hong Kong E&M Contractors' Association | - | President |
| Construction Workers Registration Authority | Appeal Board Panel | Committee Member |
| Registered Contractors' Disciplinary Board Panel | - | Member |
| Hong Kong Federation of Electrical and Mechanical Contractors Ltd | - | Vice President |
| | Government Liaison Committee | Member |
| The Singapore Contractors Association Limited | - | Corporate Member |
| The Hong Kong General Chamber of Commerce | Manpower Committee | Member |
| | Real Estate & Infrastructure Committee | Vice Chairman |
| The Hong Kong Management Association | The HKMA Operations Management Committee | Member |
| | Environment and Sustainability Committee | Member |
| British Chamber of Commerce in Hong Kong | - | Corporate member |
| | Construction Industry Group | Chairman |
| | Healthcare Committee | Member |
| | Innovation and Technology Committee | Member |
| | Environment and Energy Committee | Member |
| CSR Steering Group | Member | |
| Lighthouse Club | - | Member |
| | Safety Committee | Chairman |
| New Life Psychiatric Rehabilitation Association | Human Resources Task Group | Member |
| English School Foundation | Audit Committee | Member |
| Society of Operations Engineers (HK Region) | Executive Committee | Past President |
| | Council Board | Vice Chairman |
| The Society of Construction Law Hong Kong | - | Vice Chairman |
| International Powered Access Federation (IPAF) | Hong Kong IPAF Council | Chairman |

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We value and encourage dialogue on our sustainability reporting. Feedback provides insight that helps us to better communicate what is important and of interest to our stakeholders.

We encourage questions or comments by contacting environment@gammonconstruction.com GRI 102-53

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