

20  
22

# Sustainability Report

Committed to action



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## Our Brands:



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



Engineering design services



External façades and general contractor



Technology and innovation



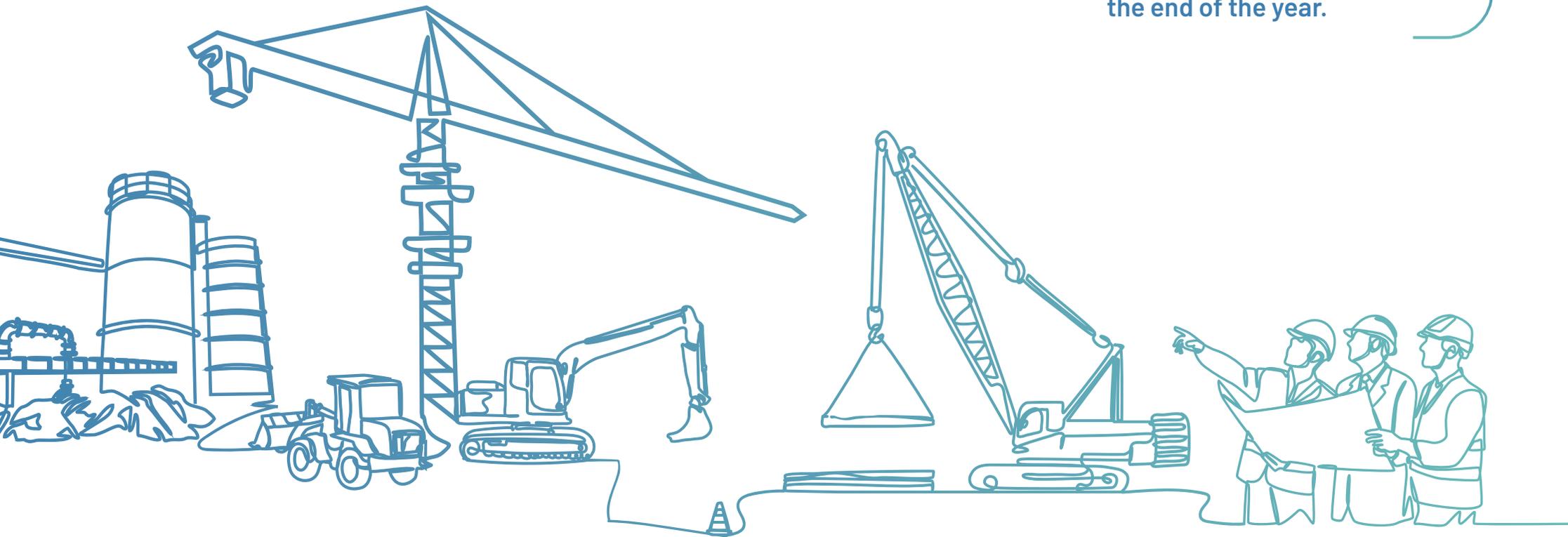
Interior fit-out and contracting

## Introduction

Welcome to our 20<sup>th</sup> sustainability report! We have called it 'Committed to action', as we believe we demonstrated in 2022 just how willing we are to move beyond talking and commit to action that will modernise the construction industry and help us on our journey to net zero. One of our most ambitious was a commitment to set Scope 1, 2 and 3 carbon emission reduction targets for 2033 that are in line with climate science and the Science Based Targets initiative (SBTi). Achieving our targets will be a considerable challenge but we also know it is one we cannot shy away from. Part of this challenge includes the conversion of some of our site diesel plant and equipment to electric so we were excited to bring Hong Kong's first electric crawler crane to the region at the end of the year.

We also carried out Hong Kong's first trials of CarbonCure technology which reduces cement content by injecting CO<sub>2</sub> into the concrete batching process to reduce carbon emissions. We continued to take a leading role in upskilling within the industry and encouraging the adoption of innovation and digital tools which we know will help make the construction industry more sustainable.

**We were excited to bring Hong Kong's first electric crawler crane to the region at the end of the year.**





An MiC unit is lifted into position on our CityU student hostel project

We held a flagship event on Building Belonging through Allyship, the first such event related to promoting inclusion in the construction sector in Hong Kong.

This included creating a syllabus and training programme for the Construction Industry Council on common data environments, guest lecturing at a university on digital twins, and jointly developing a professional diploma in modular integrated construction (MiC) for the Vocational Training Council. We held a flagship event on Building Belonging through Allyship, the first such event related to promoting inclusion in the construction sector in Hong Kong. We further bucked the Asia construction trend by announcing we would move to a five-day work week from January 2023 for all our Greater China monthly-paid employees on site. We hope you enjoy reading about these stories and the many others that demonstrate our commitment to effect real change in the industry by putting our words into action.

## Structure and alignment of the report

GRI 2-3

GRI 2-5

After the initial sections on the company, projects and highlights, the report is largely organised under the four focus areas of our sustainability strategy, Responsible Growth – 25 by 25 ([view here](#)). Governance information and management approaches for the operation of the business remain largely unchanged and are presented in the 'How we manage' section. The appendices include data disclosures (Appendix A) and greenhouse gas inventory verification statement (Appendix B). The report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards and has been verified against the latest GRI Standards from the Global Sustainability Standards Board and in accordance with AA1000 Assurance Standard v3 by an independent third party, as shown in Appendix C. The GRI Content Index (Appendix D) references the required general and material topic disclosures and locations where they can be found in the report. Appendix E details the stakeholder engagement exercise and materiality assessment and Appendices F, G and H contain a list of awards, green and healthy building projects and memberships of associations and industry bodies respectively.

This report is available online only through our website

[Find out more](#)

Should you wish to provide any comments on the report or suggestions for us to pursue, please drop us an email at [sustainability@gammonconstruction.com](mailto:sustainability@gammonconstruction.com). We welcome your views.



Kevin O'Brien,  
Chief Executive of Gammon  
Construction Limited

## Message from the Chief Executive

GRI 2-22

GRI 2-28

One of the ways Gammon distinguishes itself within the construction industry is by being a pioneer. We demonstrated this in 2022 by becoming the first contracting organisation in Hong Kong to commit to near-term company-wide emission reductions in line with climate science and the Science Based Targets initiative (SBTi). Specifically, we've committed to set carbon emission reductions of 55% for Scope 1 and 2 and 33% for Scope 3, by 2033. This will put us on the path to net zero and, crucially, we'll be taking our supply chain with us on the journey because we can't do it without them. There's no doubt our science-based targets (SBT) commitment will be a challenge but it's absolutely the right thing to do for our customers, our employees and the health of the planet, and we will be submitting our targets to SBTi for validation in early 2023.

Transitioning to lower carbon energy and using modern methods of construction and digitalisation will be pivotal to achieving our SBT and, ultimately, net zero ambitions so it was pleasing to see we won a slew of awards during the year in recognition of our work in some of these fields. At the Construction Innovation Expo 2022 alone we collected nine industry awards making us a standout contractor at the event. You can read more about this later in the report.

The year was also notable for our success in winning work with existing customers. This is important not just for business sustainability, but if we are to effect change in the construction industry, we need everyone on board - customers and supply chain.



**Speaking at the sustainable business forum and solutions expo, ReThink HK**

Repeat business will allow us to expand relationships and have greater ability for aligned interests. Together, we can achieve better results on future projects.

In terms of safety, I'm pleased with the company's direction during the year. We continued to improve our performance and push the boundaries of making our people understand the importance of the safety and wellbeing of our workforce. The pandemic restricted our ability to visit suppliers in mainland China which proved challenging but we addressed this constraint by using technology to help us better understand conditions and safety standards in the factories.

The provision of public housing remains one of Hong Kong's greatest challenges and we were able to advise the government during the year on approaches to reduce the waiting list. Improvement of procedures within government



**Taking on the mantle of Chairman of the Business Environment Council**

means we will be well-placed to benefit when projects come to market by being able to build more efficiently with a smoother and slicker approval process.

One of our main challenges of 2022 – and it will be an ongoing one in the years ahead – revolved around staff retention and attracting talent to the construction industry. We announced the introduction of a five-day work week in Hong Kong and Macau, to begin January 2023, which we believe will help combat these issues, as will our elevation of the importance of diversity and inclusion (D&I) within the business, embedding it as a criterion against which our leadership teams are assessed. Our objective is to also build a sense of belonging and listen to the views of the younger generation and their career aspirations. We need them to inform us of what they want the business to be when they arrive, and where they want to belong.

With our commitment to the SBTi forming part of our longer-term vision for the company, we will be updating the targets of our sustainability strategy in 2023 to reflect the incremental milestones we need to achieve. Education will form a key aspect of meeting these milestones, both within Gammon and for our supply chain, in terms of understanding the net zero journey, the consequences of our actions, and what we all need to do as individuals to reach our goal. I am not sure terms such as 'embodied carbon' are as well understood within the industry as we might think. We have started by rolling out training to improve the carbon literacy of all our senior leadership and have so far reached over 300 leaders.

**Our objective is to also build a sense of belonging and listen to the views of the younger generation.**

The end to 2022 was upbeat, with the achievement of a few more firsts that will ultimately help us meet our ambitious carbon targets.

We carried out Hong Kong's first trials of CarbonCure technology which reduces cement content by injecting and capturing CO<sub>2</sub> to ultimately reduce carbon. We also imported Hong Kong's first electric crawler crane.

The construction industry has been relatively stuck in its ways and not as fast changing as it could be. It's important that Gammon shows we are willing to push our organisation into the modern era of construction efficiency, safety, digitalisation and inclusion and onto a pathway towards net zero because the time for talking is long over. We are committed to action and this report demonstrates how this is already happening.

# 01 About us

## Organisation and report coverage

GRI 2-1

GRI 2-6

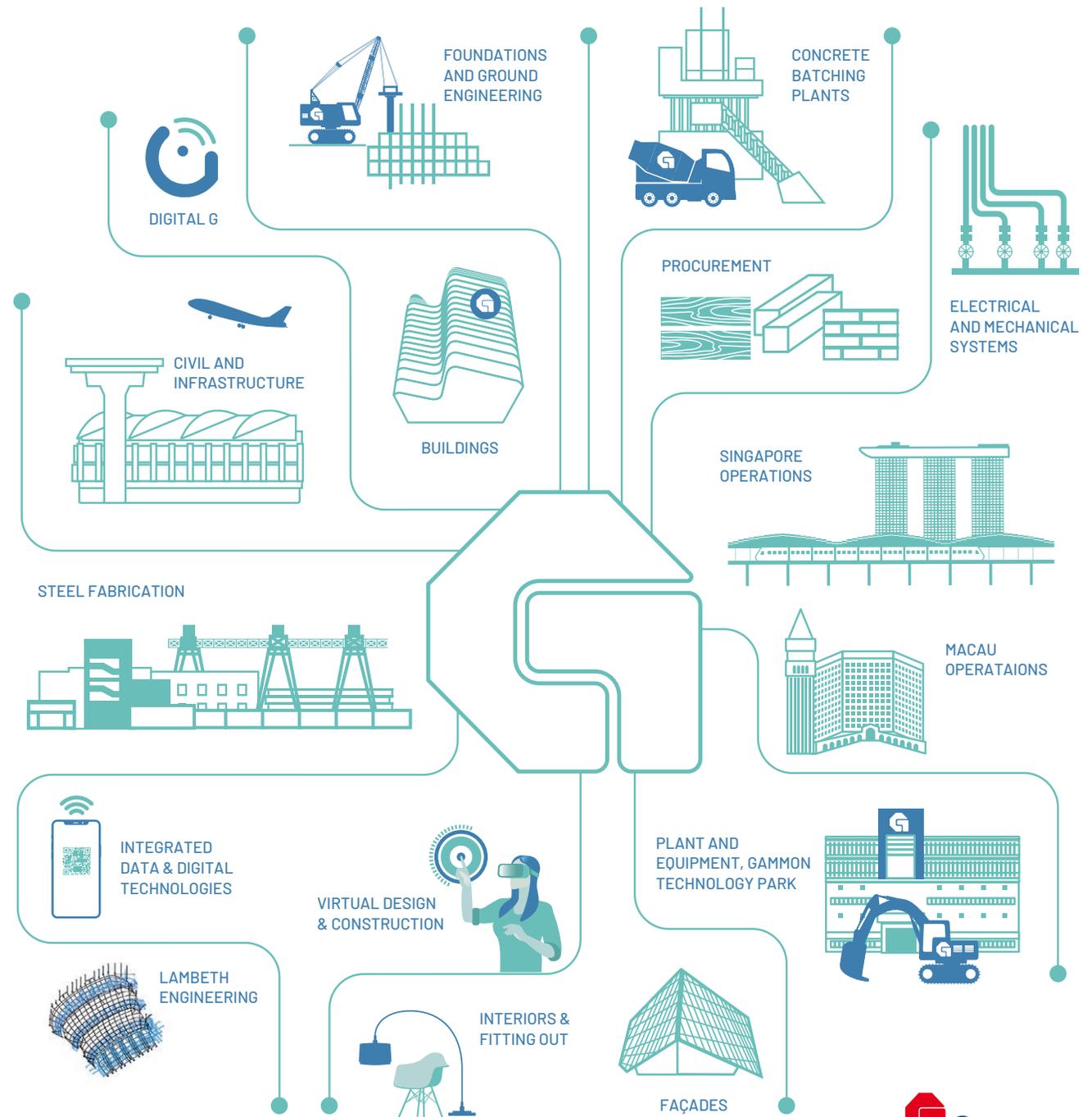
This annual sustainability report covers the operations of Gammon Construction Limited, its subsidiaries and associated companies in the construction business (hereinafter referred to as Gammon) in Hong Kong and Macau, mainland China and Singapore for the 2022 calendar year. The previous report for 2021 was issued in the second quarter of 2022.

## Organisational profile

The principal activities of Gammon are civil engineering, foundation works, buildings, 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.

Our clients include the following:

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



# 01 About us

## Scale of the business and operations overview

GRI 2-6

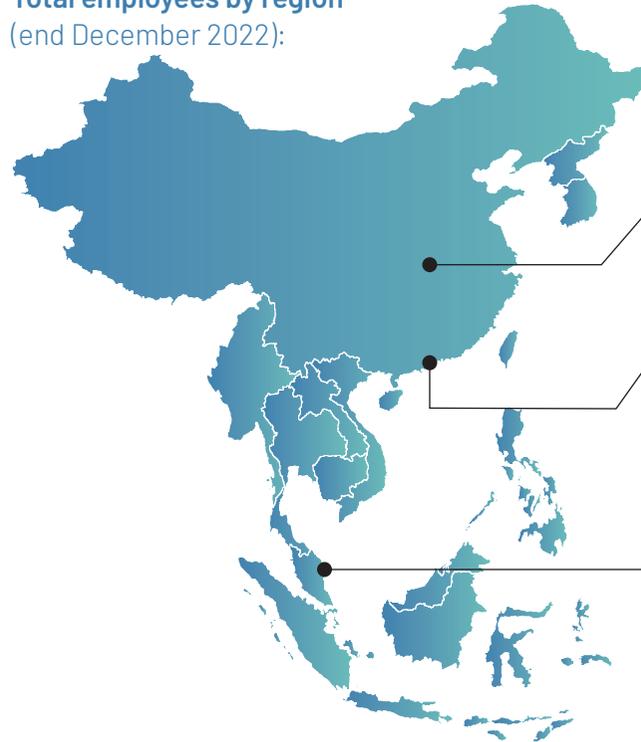
In 2022, we had 123 active projects across the business. The group turnover and workforce data broken down by region is presented to the right.

We describe major project completions and new projects during 2022 in 'Project spotlight and business outlook'. Further details of our operations, company information and performance can be found in the key performance indicators (KPI) table (Appendix A) as well as on our website ([www.gammonconstruction.com](http://www.gammonconstruction.com)). Quantifying our products or services is complex due to the varied and integrated nature of our business, however our current listing of all ongoing major projects is available on request.

## Ownership of the business is:



## Total employees by region (end December 2022):

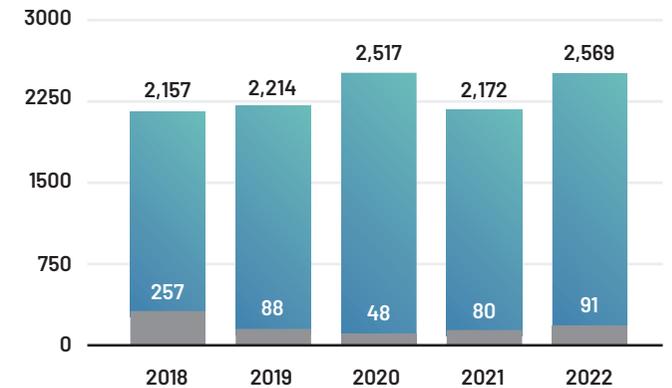


TOTAL EMPLOYEES **7,308**

MAINLAND CHINA **454**

HONG KONG & MACAU **6,420**

SINGAPORE **434**



Total turnover by region (US\$ millions)

■ Hong Kong & Macau  
■ Singapore

No revenue directly generated in mainland China as the Shenzhen office provides support functions and revenue generated through Pristine is included under Hong Kong and Macau.

# 02

## Project spotlight and business outlook

One-team delivery: diversified services  
united by a one-team approach



Noise covers at Tseung Kwan O - Lam Tin Tunnel

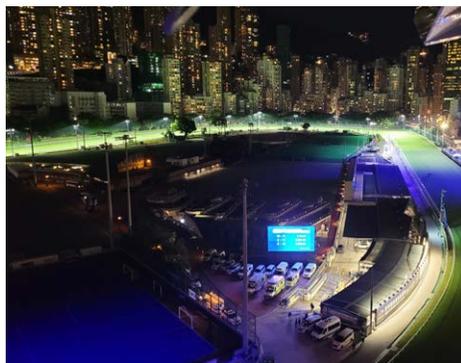
# Project highlights

- Electrical & Mechanical
- Civil
- Steel
- Foundations
- Concrete
- Digital G
- Buildings
- Façades / Entasis
- New project



## City University of Hong Kong (CityU) student hostel

We installed the first MiC units on our CityU student hostel project. A total of 1,344 prefabricated components will be manufactured off site.



## Floodlight replacement at Happy Valley Racecourse

We replaced the floodlights at Happy Valley Racecourse with LED types that will provide yearly energy savings of around 50,000kWh. Their lifespan is also 10 years compared with two for the original metal halide floodlights.



## Automatic People Mover (APM) and Baggage Handling System (BHS)

We began concreting the 1.8km-long eight-cell tunnel structures for the APM and BHS which forms part of the Three Runway System project at Hong Kong International Airport.



## Replacement of air-cooled chillers at MTR stations and depots

We completed the MTR chiller replacement programme which improves air-conditioning efficiency and reduces carbon emissions at 19 stations and three depots.



## Curtain wall prototype for MiC units

We designed and created a prototype of a unitised curtain wall system for our Tonkin St residential development MiC units.





### Kai Tak Area 2B1

Stringent measures to mitigate impact from piling activities were employed on our Hong Kong Housing Society project that sits above an MTR tunnel and beside a heritage path.



### Three Runway System batching plant

Our 400m-long aggregate conveyor system that runs from the quay to the 3RS concrete batching plant on airport island began operation.



### Noise covers and barriers for Tseung Kwan O - Lam Tin Tunnel

Our DfMA approach for the corner panels of the roof noise enclosures for the TKO - Lam Tin tunnel required less lifting and labour and no scaffolding.



### Yau Tong residential development

We commenced work on a contract to build a residential tower over an operating MTR ventilation building.



### Retrofit A&A, Singapore

We were awarded a contract to convert an old school into office space for the Ministry of Home Affairs in Singapore.



### Black Point Power Station

We completed the main structural steelwork for the gas turbine generator hall on our Black Point Power Station D2 project, as part of its transition from coal to natural gas.





Members of CIC view some of the advanced logistics technology installed on our AMC project

## Completed projects

We enjoyed better than expected profits in 2022, a trend expected to continue in the foreseeable future. Major projects completed during the year include the Advanced Manufacturing Centre (AMC) building, a state-of-the-art space dedicated to helping industrialists turn ideas into products for the market. Construction of the project involved installation of advanced logistics technology including automatic retrieval systems and pallet shuttles.

Work was essentially finished on two residential developments for long-standing customer, Wheelock Properties - one in Kai Tak and the other at the Peak. The Kai Tak contract was one of the projects that used the first green guarantee in Asia Pacific - a HK\$170 million performance bond.

In Singapore, we concluded Havelock MRT station, a design and build project, which was opened for use by the public in November.



Steel and concrete MiC will be used on our design and build Kwun Tong Composite Development project

## New project highlights

Highlights of 2022 include the award of a contract to design and build the Kwun Tong Composite Development which will contain the Civil Service College and a range of community and welfare facilities. Our design increased coverage of greenery, energy efficiency and conservation, while minimising visual impact to surrounding developments. We were awarded two residential developments, both of which will be situated over operating MTR stations and will require stringent safety standards and methods that minimise disturbance to the public. Additionally, we achieved a trifecta when we won a commercial building contract to redevelop a former Hong Kong landmark, the Excelsior Hotel, after having earlier carried out demolition of the original hotel and subsequent foundation works.



We won the contract to build a 25-story commercial development on the shoreline of Hong Kong Island

## Market outlook

In Hong Kong, major development plans are in the pipeline including those for road and rail and the establishment of new metropolitan districts. The Hong Kong Government has stated it expects the SAR's annual construction volume to grow to HK\$300 billion. Some risk does exist in the residential market, however, as high interest rates cause some uncertainty.

In Singapore, the industry is anticipated to expand supported by investment in infrastructure, in particular rail, while new data centres, including those for past customers, are also planned. Additionally, sea-level rise adaptation will require large-scale infrastructure improvements and re-provisioning.

In Macau, casino operators have pledged to invest around UK\$13.5 billion on non-gaming facilities over the next 10 years as part of their licence renewal requirements, providing considerable opportunities for new work.

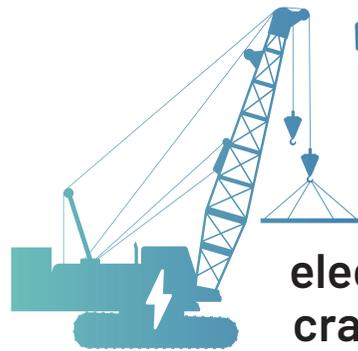
## Projects awarded in 2022

Division	Job Name
<b>Civil</b>	Contract No 08/HY/2021, High Speed Roads Maintenance in NT West and KLN West and Roads in Hong Kong Port Area
	Contract No 07/HY/2021, Maintenance of Roads in Tai Po and North District
<b>Buildings</b>	Nina Fossil Garden Revitalization
	Advance Works for LOHAS Park Package 13
	Design and Construction of Kwun Tong Composite Development for Architectural Services Department
	Ho Man Tin Station Package 1 Property Development
	Yau Tong Ventilation Building Property Development
	Proposed Development at 281 Gloucester Road, Causeway Bay (Former Excelsior Hotel)
<b>Façade</b>	Curtain Wall Visual Mockup for West Kowloon Station
	Comprehensive Curtain Wall Inspection for One Island East
<b>Foundations</b>	Basement Excavation and Pile Cap for Subsidized Sale Flats Project at Kai Tak Area 2B1
	Ground Investigation for Urban and Surrounding Islands
	Ground Investigation Works and Trial Pits at Deep Water Bay and Staunton Creek Nullah
	Ground Investigation Works for Phase 2 Redevelopment of Ming Wah Dai Ha, A Kung Ngam Road, and Shau Kei Wan
	Contract No HY/2018/02, Central Kowloon Route - Kai Tak East, Subcontract for Socketed Steel H-pile at Ring Road Underpass and Ventilation and E&M Adit
	Term Contract of Soil and Rock Testing Services for the Public Works Laboratories - New Territories West

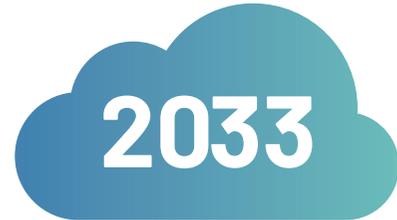
Division	Job Name
<b>Foundations</b>	Foundation Works for Commercial Development on IL 8945 Causeway Bay
	Ground Investigation Works near Tuen Mun Central
	Ground Investigation for Airport Railway Extended Overrun Tunnel
	Subcontract for Contract No NL/2021/01, Site Investigation for Road P1
	Foundation for Public Housing Development at Wah King Street, Pok Fu Lam South
	Ground Investigation Works for Drainage Improvement Works in Kwun Tong
	Trial Piles and Site Formation for Siu Ho Wan Depot Property Development - Phase 1
	Foundation works for proposed dedicated rehousing estate at Kwu Tung North Area 24 N.T.
	HMB GRP Pipe Reinstatement at HSBC Main Building
<b>Electrical &amp; Mechanical</b>	LED Track Floodlight System at Happy Valley Racecourse
	LED Floodlight System for Main Pitch at Hong Kong Football Club
	Advanced Manufacturing Centre Project C - Office Setup Work at GM1/F
	Advanced Manufacturing Centre - 2/F & 8/F FS Fit Out Works
	Advanced Manufacturing Centre - BPS FS Modification Works
<b>Interiors</b>	Food Factory Conversion at Harbour City
<b>Singapore</b>	Global Switch-China Telecom Asia Pacific (CTAP) Fit-Out 387 kW
	Global Switch Constructability & Planning Consultancy
	HLD Warehouse Facility Expansion Fit Out Works UPS
	China Square Central Structural BIM Model
	Additions and Alterations Works at Ministry of Home Affairs (Complex B) Phase B

# 03 Performance at a glance

750+ participants in the Sustainability Webinar Series



**1st**  
electric crawler crane imported



**2033**  
year of target commitment for Scope 1, 2 and 3 emissions



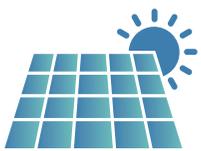
**1st**  
First HK contractor to move to a five-day week for monthly paid employees on site



**10%**  
of passenger car fleet are electric vehicles



**20**  
Enertainers in use up from 7 in 2021



**2**  
new solar systems installed on projects



**HK\$2m+**  
in donations



**68,693**  
hours of training



**94%**  
certified concrete mixes are Platinum or Gold for embodied carbon



**4,000**  
visitors to Gammon booth at Construction Innovation Expo



**30%**  
of projects using a common data environment (CDE)



**5,900**  
health screenings



**128**  
health talks and workshops



**40%**  
drop in reportable accidents since 2016



**3.6**  
Group Accident Incident Rate (target of 3.6)



**35**  
trained mental health first aiders

## 04

## Award Highlights

The breadth of our award successes in 2022 reflects both the extent of talent we have within the business, as well as the scope of our expertise. A small selection of highlights is provided on the following pages, while others can be found throughout the report. A full list is contained in Appendix F.



## AI safety monitoring

Our collaboration on an artificial intelligence (AI) safety monitoring system with researchers at Tsinghua University in Beijing won Grand Prize in the international category of the 2022 CIC Construction Innovation Awards. Called Besafe, it is based on a “leadership-culture-behaviour” approach with unsafe behaviours categorised into three types and effective detection methods deployed. Powerful computational software such as 3D skeleton algorithms and scene-understanding techniques are also embedded.



## Common knowledge

We were delighted to collect two awards for our achievements in the field of common data environments (CDE) at the Hong Kong Construction Common Data Environment Awards. We were presented with Gold under the organisation category while our Terminal 2 Expansion project received Bronze in the project category. The awards reflect our position as a leading organisation in the use of CDE in Hong Kong.

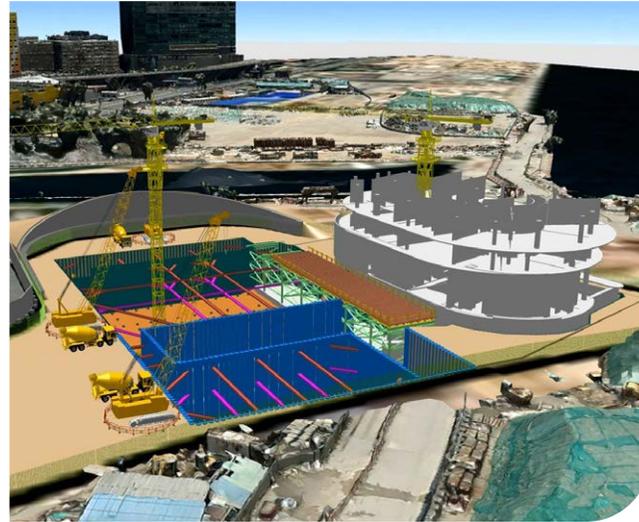
Behind every award is a team of innovative and hard-working professionals.



### Innovative in-pipe trimming method

A new method for underwater pile decommissioning devised by the Gammon Plant Department received the Champion award in the Institution of Mechanical Engineers (IMechE) Mechanical Innovation Award 2021–2022 competition. Called the abrasive waterjet cutting system (AWCS), it is a novel in-pipe trimming method for submerged clutch pipe piles used in the excavation works of underwater tunnel projects with trimming level below seabed. Traditionally, this would have been done by undersea divers using flame cutters or diamond wire saws after dredging.

The AWCS dramatically speeds up the trimming process, achieves smoother cutting edges, reduces material costs, and requires fewer dredging plant operations and divers. Worker safety is therefore also significantly increased. In addition to winning the IMechE award, we have been granted two patents for the AWCS.



### Appreciation for BIM

Gold was awarded to our Central Kowloon Route (CKR) - Buildings, Electrical and Mechanical (BEM) Works contract at the Hong Kong Institute of Building Information Modelling Award 2021 (in the BIM Project - Government Projects category).

The BEM project's extensive use of BIM encompasses design, 4D simulations, 5D estimation, interface coordination, asset and facilities management, existing condition modelling, life-cycle coordination and management. Models and 3D animation are also used during routine presentations with supervisors and frontline staff to raise their awareness of safety issues and better understand upcoming site work.



### Winning team

Our Advanced Manufacturing Centre contract received the prestigious Excellent Construction Team Award (large-scale project category) at the Construction Management Awards 2022 Presentation Ceremony. We also collected five Grand and two Merit awards for individual members of the team for their outstanding achievement in construction management. The awards are hosted by Hong Kong Institute of Construction Managers.

# 05 Materiality assessment

## Process of determining material topics

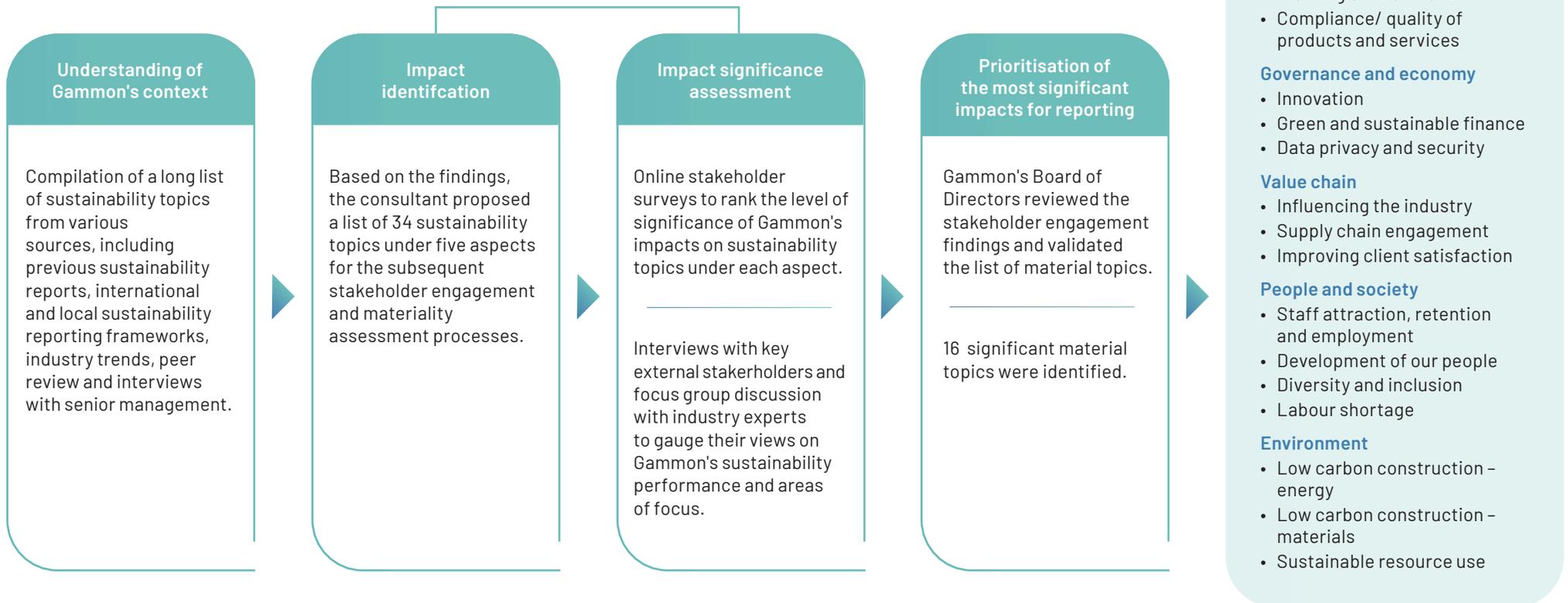
GRI 2-29

GRI 3-1

GRI 3-2

In preparing our Sustainability Report 2022, we appointed an independent consultant to conduct a stakeholder engagement exercise to determine the most significant material topics on sustainability for reporting. The process consisted of the following steps:

### Engage with relevant stakeholders and experts



Details of the stakeholder engagement and materiality assessment process are presented in Appendix E of this report.

# 06

## Safety - Zero Harm

Our goal is always Zero Harm



## Highlights of the year

Our safety performance was good in 2022 and we achieved our Group accident incident rate (AIR) target of 3.6. While we will continue to develop and seek out technology and modern methods of construction that help us improve safety on site, education remains one of our greatest weapons and we were very pleased to begin in-person training again during the year after a hiatus caused by social distancing measures.

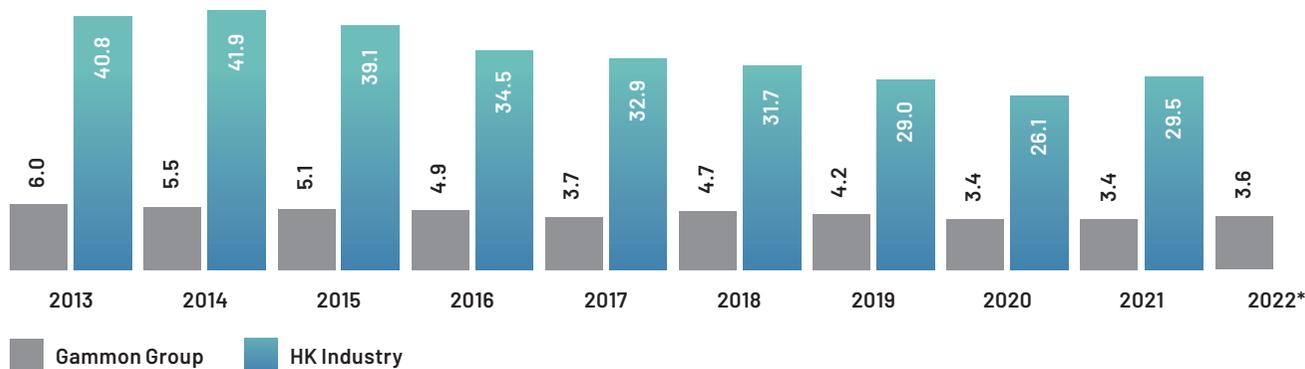
In September, we held Stand Up events across all sites, an initiative that encourages employees, consultants and subcontractors to down tools and engage in two-way communication about health and safety matters. The key messages in September were a reinforcement of our four golden rules – be fit for work; always receive a briefing before starting work; report all unsafe events and conditions; and stop work when anything changes – and the launch of 'What3Things?', an initiative that details the three key measures that must be considered and put in place on sites to address our 10 fatal risks. This approach allowed everyone to evaluate an activity on site without needing specialist knowledge of it.

We issued version two of our in-house developed chatbot application, Gambot, which provides a user-friendly AI-enabled virtual assistant to help monitor and record safety-related matters. Working with Guildhawk, a tech-led language services consultancy, its AI capabilities have been improved to better understand the nature of work being carried out on site and the potential associated risks, generating dashboard information that supports improved planning and monitoring.

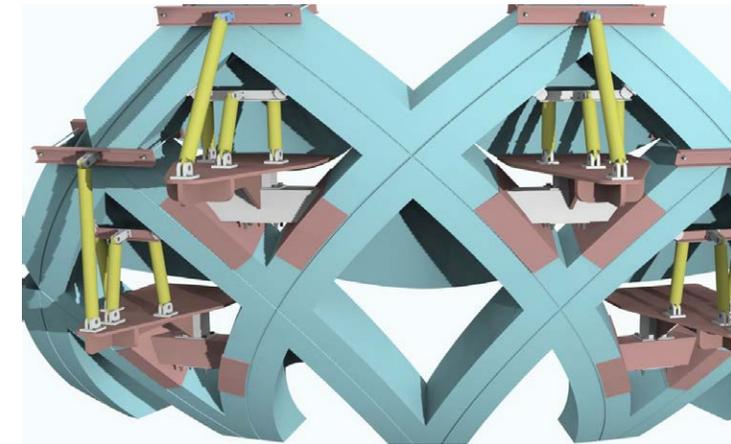
The ability to create heatmaps, for example, provides a simple graphical representation of areas with the most work and risk and whether inspections have taken place or not. Gambot 2 can now scan workers' registration cards to ensure competent persons are operating on site, keep track of training records, or register those working in confined spaces or demolition areas.

It can also scan near field communication (NFC) tags to ensure plant or lifting gear permits are valid. All information gathered can be used for data analytics that will ultimately help improve safety and the way we work.

## Accident and incident rate graph compared with construction industry



\* Construction industry figure for 2022 not available



**The self-supporting climbing bracket designed for our Sentosa project**

## On the stage in Singapore

In addition to the awards mentioned on page 15 and 16, our Singapore team collected bronze and merit at the Productivity & Innovation Awards organised by the Singapore Contractors Association. Taking the bronze prize was a self-supporting climbing bracket developed to eliminate reliance on extensive temporary work structures when constructing the precast structural vessels on our Sentosa project.

Picking up the merit prize was their flexible solution for installing jet fans in operational tunnels which combines a transport truck and hydraulic lifting platform to lift the jet fan and workers to a safe position. The Sentosa project was also presented with a Safety and Health Award Recognition for Projects at the Workplace Safety & Health Performance Awards 2022.



SHELi is fully customisable

### Showcasing the latest in safety

Our subsidiary Digital G was invited to showcase unique technologies that help enhance safety performance - particularly in terms of taking a proactive approach to monitoring, alerting or preventing unsafe situations - at CIC's Construction Safety Week in August.

The technologies we demonstrated included our self-developed G-Eye - a chargeable battery-powered mobile CCTV station with AI computer vision for active monitoring. G-Eye was expanded in 2022 to include a 'Lite' version which operates on solar power and can run 24/7.



We demonstrated our CCTV monitoring solutions, G-Eye and G-Eye Lite, at CIC's Construction Safety week

We also debuted Fallguard, a self-developed IoT sensor for temporary openings to help protect against falls. When a cover is opened, the plug-and-play sensor automatically updates the status on a dashboard. Additionally, we showcased a robotic dog called SHELi which we co-developed with local company ImageDeep to bring the next level of automation to safety and security inspections using AI.

Our presence at the event was successful, with numerous positive reviews and enquiries on all four products. Fallguard in particular piqued visitors' interest, as it is new to the Hong Kong market.

**Our presence at the event was successful, with numerous positive reviews and enquiries on all four products.**



A worker views a digital model of a steel structure overlaid on the physical site

### Mixed views

In Singapore, our trials of mixed reality technology to improve safety and planning caught the attention of a local television station who featured us on its news programme.

The trials are taking place on our Sentosa project, where works include installation of large vessel-like diagrid steel structures. Using iPads, workers scan QR codes to integrate and overlay the digital model with the physical site situation, providing greater understanding of both progress and safety.

Michael O'Connell, General Manager in our Singapore office explains further. "We're doing trial installations with the BIM model, broken down into different sequences, and a

mock-up installation in the actual location so the team can see how construction takes place, with the interfaces and constraints. We can then create refinements to make the method safer and more efficient.

"We find that allowing the workers to go through the installation virtually lets them understand a lot more about the work that's coming ahead. When you're in a site context, looking at the installation with adjacent structures and other works, you can foresee safety issues that you couldn't from a 2D drawing or from a traditional way of doing your method statement for installation procedures, or even from a BIM installation sequence carried out in the office."



Mixed reality technology provides greater insight into potential safety issues

Using the iPad, the model can be moved around from all angles and recorded for later viewing.

As it is highly accurate in terms of placement, it increases awareness and uplifts safety in operations. Results have also been shared with Singapore's Building and Construction Authority and Land Transport Authority safety department who have taken a keen interest.

## Words from the wise

**Project Safety Manager Johnny Yeung came to the safety industry via the Royal Navy and a stint as a mechanical supervisor. Twenty-two years later, he continues to share his considerable knowledge to make our construction sites safer places to work. We find out how he uses his experience to make a difference.**

### Why did you choose safety?

I retired after 23 and a half years in the navy and went to work as a mechanical supervisor on a new railway contract. I felt construction safety standards were quite low so I applied to do a safety supervisor course and then joined Gammon to see what difference I could make, to change mindsets and behaviours using the knowledge and experience I'd gained in the Royal Navy.

### We understand you mentor young safety officer trainees. What do you like about doing this?

As I fully trained as a marine engineering artificer, I like being able to share my technical knowledge, to teach them the correct way to carry out certain tasks, and tell them about lessons learned from accidents and incidents I have come across in my past. I can also teach them how to keep one step ahead of the operations teams.

### What's the biggest improvement you've seen regarding safety since you joined the industry?

A significant change is the Labour Department raising the safety bar so all site personnel must wear full body harness with double lanyards when working at height and Y-type chin harnesses on helmets, which Gammon implemented ages ago. Worker safety knowledge, mindset and behaviours are also better. It's very rare to see gambling, drinking alcohol or fights anymore on sites. And they are friendlier to safety practitioners. Gammon is also starting to implement a five-day week. This is the biggest improvement in the industry and I'm very happy with it!

### What is the most important advice you give to young safety officer trainees?

Follow the company Code of Conduct, be honest, faithful and treat everyone fairly on site no matter what their position. Report the truth to your immediate supervisor... no lies! Be loyal to the company.

### If you could change one thing in construction, what would it be?

I would ban the 'lowest price wins the contract' approach. If the price is too low without enough profit, do you think people will put money into safety? No, they will take short cuts and push workers to hurry. That's when accidents occur and the end product is of poor quality.

### Johnny (centre) and his safety team on our Sai Sha Road Widening project





Director Tony Small speaks at the International Conference on Construction Safety and Health in Hong Kong

### Influencing and sharing

Tony Small, Director Health and Safety Sustainability, Systems & Audit, presented on design for safety from a contractor's perspective at the International Conference on Safety and Health in Hong Kong in December, with a focus on design and planning for safety. Tony's takeaway message was we need to make structures easier to build using technology and standardisation. Care for our workers, in particular heat stress prevention as we experience more extreme climate events, also forms a key part of achieving a safe working environment.



We were recognised eight times at the Considerate Contractors Site Awards

### Considerate contractor

We picked up eight awards under the 28<sup>th</sup> Considerate Contractors Site Award Scheme which recognises efforts in promoting good site safety, health and environmental practices. Our three gold, one silver, three bronze and supervisor awards were spread between three projects: an office development on Queen's Road East, alteration and addition works at The Landmark, and a contract to replace air-cooled chillers at MTR stations and depots.

Tony also delivered several lectures on HSEQ for the University of Hong Kong's project managers course and became a professional advisor for programmes in occupational safety and health for Hong Kong Metropolitan University.

Gammon was the lead feature in an issue of The Lighthouse Club magazine, with Tony and Chief Executive Kevin O'Brien discussing how we were shaping the future of the industry through our adoption of digital technology and modern methods of construction to make our project sites cleaner, safer and more appealing places to work.



A total of 21 modules will form Terminal 2's roof structure

## Raising the Roof at Terminal 2

Initial lifts of modular roof trusses began on our Terminal 2 expansion project at Hong Kong International Airport, our largest solo contract win to date.

In total, 21 modules will create a complex undulating roof structure, each formed by steel truss frames that are assembled on temporary trestles and raised in phases to their final position. By the end of 2022, four had been raised to their initial position.

Measuring 45m x 73m and weighing in at an impressive 800 tonnes each, the modules were raised 2m using four lifting towers, each with two strand jacks. This initial lift allowed the trestles to be removed, providing a safe working area for installation of roof covering and MEP elements. Upon completion, which includes ABWF works, the modules will be raised to their final position approximately 18m from the floor.

The lifting process follows a predetermined sequence of assembly and erection. Careful staging allowing the temporary lifting towers to be removed and efficiently relocated with the temporary steel trestles to the next module as work progresses, while ensuring stability of the roof is maintained.

The modular roof erection system has been the result of extensive engineering and fabrication work by our in-house teams of Lambeth and Construction Services and was awarded a Merit in the safety category at the CIC Construction Innovation Award 2022.



Advanced Manufacturing Centre

## Progress on Responsible Growth - 25 by 25: Zero Harm targets

GRI 403-9

	Objectives	Target by 2025	Status	Progress in 2022
1	Improve safety on our sites and our methods to reduce the number of accidents	25% reduction in the number of reportable accidents on site / HK\$ billion of turnover <sup>1</sup>		There has been a 40% drop in the number of reportable accidents compared with 2016. The group AIR target of 3.6 was achieved and the number of reportable accidents compared to turnover is ahead of the target.
2	Achieve zero fatalities	Zero		While we are still seeing fatal incidents in our sector, Gammon thankfully had no fatalities in 2022.
3	Achieve zero permanently disabling injuries	Zero		We still have work to do but we believe modern methods of construction continue to be the right direction for Zero Harm in combination with digital tools.
4	Achieve zero injuries to our workers	Zero		
5	Achieve zero injuries to members of the public	Zero		



On track to meet target



Further improvement needed

<sup>1</sup> Based on total revenue for 2022

# 07

## In focus

### Bridging the divide





### Project Environmental Engineer Elena Lai

In December, we celebrated a milestone on our Intermodal Transfer Terminal – Bonded Vehicular Bridge (ITT-BVB) project as the final piece of deck was cast. The 570m-long bridge connects the two islands accommodating Hong Kong International Airport and the boundary crossing facilities for the Hong Kong-Zhuhai-Macao Bridge and will facilitate transit for passengers from the Greater Bay Area travelling abroad via the airport, and vice versa. Roads and ancillary buildings are also being built under the contract.

The project has racked up a number of achievements that are worth celebrating, including its alternative approach for marine pile cap construction.

“We designed Hong Kong’s first hanging cofferdam,” explains Project Environmental Engineer Elena Lai, “which meant

we reduced disturbance to the seabed and marine habitat, minimised sediment displacement and water pollution, and saved material and carbon through the shortened steel structure.”

The team also changed the contract design for the bridge deck from precast to in situ which, when combined with the use of 100% Gammon low carbon concrete, meant they achieved a total carbon reduction of 1,253 tonnes.

“Typically, we look for opportunities to take work offsite, but because ITT-BVB is quite short there were fewer repeating segments, therefore we knew we wouldn’t get sufficient use from a steel mould. By casting in situ, we could modify the travelling formwork to suit each segment. We also calculated our steel use would be greater if we were to make a mould.



### Our hanging cofferdam design avoided disturbance to the seabed

And because we didn’t have any cross-border trips to deliver segments from mainland China, we minimised impact of the shipping to the Chinese white dolphin and avoided any potential travel restrictions related to the pandemic.”

Additionally, the project enabled 100% reuse of land- and marine-based sediment which was an improvement to the original EIA proposal where offshore disposal would have been required.

“I think I’m personally most proud we were able to reuse all the land and marine sediment,” says Elena. “Zero dumping at sea means we avoided contamination to the marine environment and reduced potential ecological impacts from vessel movements. We also reduced travelling distances related to the transport of sediment by 88%.”

# 08

## Environment - Zero waste

Working towards zero waste in energy, water and resources



Our first electric crawler crane arrived in Hong Kong in December

### Highlights of the year

One of our standout achievements in 2022 was becoming the first construction and engineering company in Hong Kong and Mainland China to commit to set near-term company-wide carbon emission reductions in line with climate science and the Science Based Target initiative (SBTi). We have committed to set carbon emission reductions of 55% for Scope 1 and 2 and 33% for Scope 3, by 2033. This will be an enormous undertaking and one we discuss further in a special climate change feature on page 37.

We reported our climate change information to CDP (formerly the Carbon Disclosure Programme) under a Business Environment Council (BEC) Low Carbon Charter programme and were pleased to receive a B rating<sup>1</sup> which is higher than both the Asia regional average and the construction sector average of C. The scoring process is designed to incentivise and guide companies and cities on a journey through disclosure towards becoming leaders on environmental transparency and action. The process has certainly given us insights where we need to focus our attention.

We carried out Hong Kong’s first trials of CarbonCure technology which reduces cement content by injecting and capturing CO<sub>2</sub> to ultimately reduce carbon. This and other achievements by our Concrete Technology Department are discussed in greater detail on page 31.

As the founding member of the Power Up Coalition (PUC) – and in collaboration with BEC and other PUC signatories – we created a guideline and tool for project proponents and their design teams to more easily forecast the peak power demand of future construction works. The guideline and tool is designed for use during the planning or design stage of a development to facilitate early application of temporary electricity supply from the power company and ensure that sufficient electricity is available before construction works start. Early electrifying of construction sites is one of the most effective means of decarbonising the construction



We began Hong Kong’s first trials of CarbonCure, an innovative technology that injects waste CO<sub>2</sub> captured from other industrial processes into fresh concrete in the mixing process

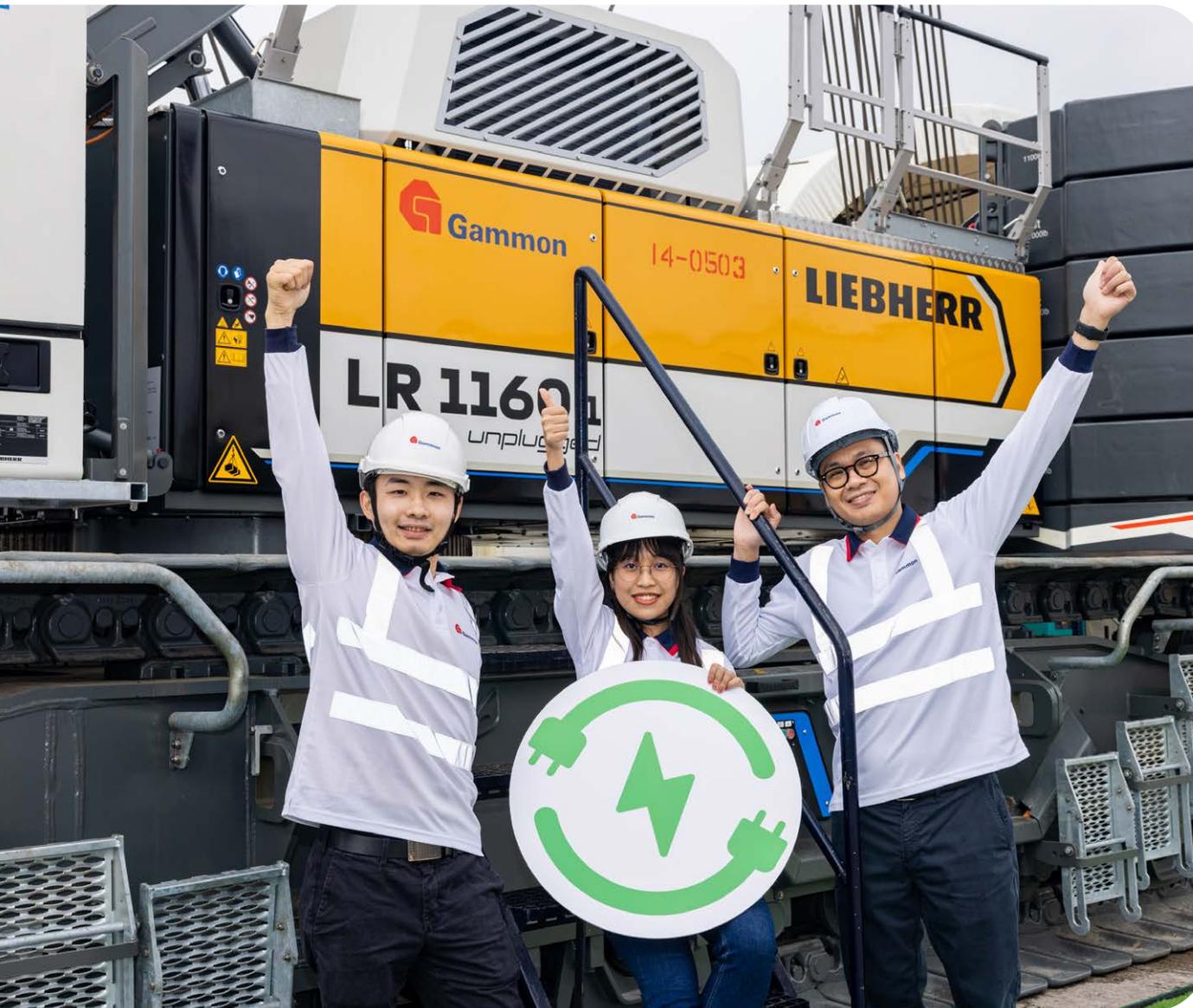
process, replacing diesel generators with temporary electricity supply. It also reduces the harmful diesel exhaust emissions on site and makes us a cleaner and quieter neighbour! The guideline is also intended to prepare for the transition to more electric plant and equipment in the future, as well as support the charging of electric vehicles we are already converting to.

We were very excited to have Gammon’s first electric crawler crane arrive in Hong Kong in December. You can read more about this on the following pages.



We became the first construction and Engineering company in Hong Kong and Mainland China to commit to set near-term company-wide emission reductions in line with climate science and the SBTi.

<sup>1</sup> While the CDP score report is not listed publicly on the CDP website under the programme, we are happy to provide details on request.



We estimate our electric crawler crane will result in net savings of nearly 76 tonnes of CO<sub>2</sub> emissions per year

### Going electric

One of our carbon reduction ambitions is to convert between 20-50% of site diesel plant and equipment to electric by 2033. This should enhance our energy efficiency by cutting emissions during idling, as well as allow us to take advantage of the committed decarbonisation of the electricity supply. In December, we celebrated an important step towards meeting that goal: the delivery of Gammon's first electric crawler crane to Hong Kong.

We estimate (based on 3,000 hours of operation per year) we will have a net saving of nearly 76 tonnes of CO<sub>2</sub> emissions per year compared with using a diesel counterpart. This is not only better for climate change, but also for the operators and others working or living nearby due to the zero direct emissions on site and reduced noise levels.

When plugged in, there are no performance limitations when compared with a diesel-drive version and unplugged, it can be operated for around four hours. The lithium-ion battery has an estimated operation life of around 10,000 hours and is also 95% recyclable.

A further SBT commitment is that new passenger vehicle purchases be electric from 2023 onwards. By the end of 2022, we already owned 17 electric vehicles – equating to 10% of our passenger vehicle fleet – and had installed 21 charging points.

## Mixing it up

**Concrete is the most widely utilised construction material globally. We talk to Ka Yan Chu, senior project engineer in our Concrete Technology Department (CTD), about why she likes to work with it and what Gammon has done in 2022 to improve its carbon footprint.**

### What's so special about concrete?

Working with concrete is like making a cake. You might think we only use cement, aggregate and water but there are many variations and that's why I like it. You can use different materials in different combinations and you end up with different results. It's an honour to walk on the street and point out to my friends and family that I designed the concrete for this building or that structure.

### CTD is seen as a cutting-edge concrete supplier. Did anything pioneering take place in 2022?

Yes, in May we began Hong Kong's first trials of CarbonCure, an innovative technology that injects waste CO<sub>2</sub> captured from other industrial processes into fresh concrete in the mixing process. This improves its compressive strength and allows us to reduce cement content, which ultimately reduces its carbon footprint. It enables a 5% reduction in cementitious materials. We found Grade 60 and 80 concrete quality remains satisfactory after adding the CO<sub>2</sub>. Of course, we need to ensure approval and consent from the Engineer is obtained. GGBS can also be used to replace up to 75% of the cement and we've developed a mix that we've already successfully used on one of our foundations' projects. We aim to widely implement it on a range of Gammon works in future.

### Were any improvements made to concreting efficiency?

We piloted the use of Hong Kong's first telescopic belt conveyor for massive pours of fresh concrete to box culvert base slabs on our tunnelling project for the Three Runway System(3RS)at the airport. The telebelt utilises an extendable boom to discharge concrete on site in hard-to-reach places. The machine enhances concreting efficiency while lowering CO<sub>2</sub> by reducing the placing and waiting time of trucks, as well as the number of concrete pumps and labourers. One telescopic belt achieves the same results as two to five pump trucks.

**We've calculated our telescopic belt results in 50% less CO<sub>2</sub> emissions compared with the use of tanker or tipper trucks.**

We also piloted and implemented the use of a tube conveyor for closed transportation of bulk cementitious materials from the barging point to our 3RS concrete batching plant, covering a distance of 400 metres. We've calculated it results in 50% less CO<sub>2</sub> emissions compared with the use of tanker or tipper trucks. We estimate the conveyor system should remove the need for more than 200,000 truck trips during the lifetime of our airport tunnelling project, or 400 per day. It can also reduce occupation time of the loading quay by 70% and requires less labour. Compared with pneumatic tube systems for cementitious materials delivery, the capacity of the tube conveyor is enhanced by 50% and the consumption of electricity is reduced by 84%.



The variety of mixes and results is one of the reasons Ka Yan enjoys working with concrete



Group Sustainability Manager Emma Harvey speaks at a BEC conference on committing to carbon targets in construction

### Spreading the word on decarbonisation

We enjoyed some excellent presentations with speakers from Gammon and our friends during our Sustainability Webinar Series. More than 750 people participated through four online sessions with shareholders, clients, business partners, stakeholders and Gammon employees from across Asia Pacific and Europe.

Decarbonisation was chosen as our main theme and our packed programme successfully managed to highlight the barriers affecting our industry and present possible solutions, as well as discuss environmental, social and governance (ESG) issues. Topics included material choices, ESG drivers, and design and project delivery.

To update key members of our supply chain on our commitment to the SBTi, we held a webinar where we stressed the importance of their role in reducing scope 3 emissions and the urgency for them to start making change now.

Chief Executive Kevin O'Brien shared his insights on the urgent action needed to address climate change, the use of smart tools and innovative building and digital technologies to enable the green and low-carbon transition of construction, the industry's role in the green development of Hong Kong, and the future of commercial spaces through the lens of a contractor at several major industry events. Our Group Sustainability Manager spoke at a BEC conference on committing to carbon targets in construction and how we would achieve them, while in Singapore, our Productivity and Sustainability Manager spoke on green construction methods and how to manage sustainability on major infrastructure projects at several industry association events.

**Over 750 people participated in our sustainability webinar series. Topics included material choices, ESG drivers, and design and project delivery.**

While there is still much to be done to transform and decarbonise our industry, the message is definitely positive and there are opportunities to be had. With the support of our senior management and dedicated colleagues, we will continue spreading the word about the importance of ESG and decarbonisation.

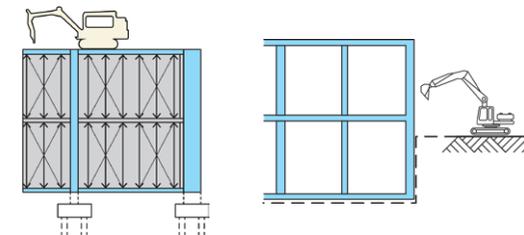
### Sustainability by design

The design stage of a project affords us the best opportunity to minimise the negative impact of construction. By considering sustainability from the early stage, we hope to be able to build more thoughtfully and without waste. Some of the successes we achieved in 2022 through our sustainability by design approach are shared below.

On one of our foundation and demolition projects, we changed the demolition method to improve safety and reduce our carbon footprint. Rather than sit the rig on top of the demolition zone, as is done usually, we used a breaker and crusher located on the ground to dismantle the building (see diagrams, left). This eliminated the need for thousands of props and struts, as well as the trucks to deliver them, providing savings in carbon and fuel.

We also researched a high-strength steel with Hong Kong Polytechnic University. Called S690, the material uses 50% less steel with comparable strength than the more commonly used S355. The product has been well received by Civil Engineering and Development Department who has promoted it to designers, and we began including it in several of our own tender submissions for new work.

We further reduced reclamation during Stage 2 of our Central Kowloon Route - Kai Tak West project which includes an underwater tunnel, by adopting our specially designed marine platform. We achieved a total reduction (Stage 1 and 2) in reclamation fill of 81% compared with the conforming design. Reuse of the marine platform in Stage 2 also avoided 6,525 tonnes of CO<sub>2</sub>e.



Original and revised demolition approach

Other sustainability by design highlights include:

- Utilising 1,790m<sup>3</sup> of demolished materials from an existing building structure to backfill the basement and avoid 50 tonnes of propping on our Causeway Bay foundations project.
- Using ground granulated blast-furnace slag (GGBS) concrete for 10 bored piles on a foundations project in Kowloon(Chun Tin Street)to reduce carbon emissions by 33% compared with ordinary pulverized fuel ash tremie concrete - this was the first project in Hong Kong to use GGBS for bored piles and required approval by Buildings Department, paving the way for greater savings in the future.
- Optimising the design on our Central Kowloon Route – Buildings, Electrical and Mechanical Works (BEM) project to reduce the extent of thermal barriers by 26,667m<sup>2</sup> but still meet the necessary fire-resistance requirements.
- Reducing the need for 12 jet fans on our BEM project to cut down on manufacturing and ultimately power usage (and carbon footprint) for the tunnel operator, Highways Department.



Core bit with teeth before welding tungsten carbide



Core bit with teeth after welding tungsten carbide

### Reducing impact

Our project team carrying out foundations work on the site of the former Excelsior Hotel in Causeway Bay developed an innovative approach to removing existing pile caps in one of the most densely populated areas of Hong Kong.

“With adjacent buildings only 2m away from the site boundary line, removing foundations using traditional down-the-hole hard driving would have created significant vibration and noise and invariably lead to complaints from residents which could potentially have stopped the works,” explains Project Manager KM Leung. “Many of the buildings were built over 60 years ago as well and are founded on friction piles which are more sensitive to vibration. To reduce impact to nearby stakeholders and lower the carbon footprint of the works, we developed an approach that reduced vibration, noise, diesel consumption, replacement of drill bits and duration.”

Called the ‘sustainable core-bide’ method, core bits are welded with tungsten carbide to enhance their durability and strength. The resulting hybrid is used to drill out and remove existing foundations, requiring no down-the-hole hammering or use of air compressors. The benefits have been considerable when compared with the traditional hard driving method.

“Due to the crowded nature of Hong Kong, we believe the core bide method will be widely used on redevelopment projects involving the removal of basements or old foundation structures,” adds KM. The innovation also caught the attention of judges at the CIC Construction Innovation Award 2022 where it was presented with a Merit in the sustainability category.

Description	Hard driving method	Sustainable core-bide method
Noise in dB(A)	90	73
Vibration (ppv)	20	5
Air Compressor	3	0
Productivity (days/pile)	4	2
Diesel Consumption (Litres)	916,800	57,300

We achieved a total reduction in reclamation fill of 81% on our KTW-CKR project.

## Reflections on the year

**Contracts Manager Michael Wong runs our Sai Sha Road Widening Project and oversees two highways maintenance contracts. He has distinguished himself in recent years through achievements that include installing solar panels to become the first temporary site office to sell power under CLP's Feed-in-Tariff scheme, as well as picking up Gold for the Construction Sector in the Hong Kong Awards for Environmental Excellence 2021. We asked him to share a few personal highlights from 2022.**

"A notable sustainability achievement was the installation of solar panels at the site offices of our two highways maintenance contracts, to take advantage of CLP's Feed-in-Tariff scheme. The technology has really advanced since we installed them on the Sai Sha Road project and the same size panel now gives us about 25% more output. This is advantageous when you consider Hong Kong's limited space, plus it makes the panels more financially feasible. However, we do make less money per kilowatt from CLP than when we first joined the scheme four years ago. Regardless, we feel it's our corporate responsibility to do whatever we can to promote sustainability and it also fosters good relationships with our clients by helping to improve their image.

The Smart Height Restriction System we developed for the Sai Sha Road project is also worth a mention. The system addresses the potential danger of over-height vehicles hitting our footbridge over the road. Height restriction posts before the footbridge trigger an alarm when hit by a vehicle, which sends a warning message for the driver to a digital signboard ahead. Members of the project team also get an instant SMS if the alarm is triggered and we can sign in to view the CCTV from anywhere to check whether it's a false



**Michael Wong, far right, attends a WinG-organised Christmas activity to make yule logs**

alarm or not. Then we can provide any immediate action, if required. We've successfully avoided four major incidents using the system since it was installed.

Something new for me personally was joining Gammon's Diversity and Inclusion (D&I) Council. I was inspired by the story from Gammon's Tony Cheung at the D&I Allyship event (see more on page 68) when he talked about helping his young daughter overcome bias and stereotyping. It made clear we need to give women equal chances and the opportunity to show their strength or talent. I'm really learning from this.

We also welcomed a young engineer from Malaysia to our team. We were keen to create an environment where he felt included, could get to know us better and make friends more easily so we reinstated our Friday happy hour which had been cancelled due to social distancing requirements. This has absolutely paved the way for him to establish relationships and shine on the project. The rest of us are enjoying the social hour again, too!"

## Industry sustainability awards

At the Hong Kong Awards for Environmental Excellence 2021, we were awarded Silver, Bronze and Merit respectively in the Construction Industry category for our Intermodal Transfer Terminal - Bonded Vehicular Bridge and Associated Works, Central Kowloon Route-Kai Tak West, and commercial development project at Queen's Road East, while our Concrete Technology Department received a Merit in the Manufacturing and Industrial Services category. Our AMC project received a Merit under the sustainability category in the CIC Construction Innovation Award 2022 and we also received an Environmental Merit Award from the Hong Kong Construction Association, an award we have received annually since they began.

## Digital reporting

We worked with Highways Department to develop a digital reporting system for inspections on our road maintenance contracts. With approximately 2,000 inspection reports per month, we calculate the submission process uses 70% less paper and is 20% faster to carry out.

## Progress on Responsible Growth - 25 by 25: Zero Waste targets

	Objectives	Target by 2025	Status	Progress in 2022
1	Reduce carbon emissions to mitigate the impacts of climate change (2016 as a baseline)  GRI 305-4	25% reduction in carbon intensity (kg CO <sub>2</sub> e / HK\$1 million turnover)		Carbon intensities are behind target but improved in 2022. Influences from airport projects and major foundations projects continued. Started to develop more targeted carbon reduction proposals to meet SBTi.
		25% reduction in carbon intensity (kg CO <sub>2</sub> e / days worked)		
2	Pursue zero waste to landfill to minimise resource wastage  GRI 306-2	25% reduction in landfill waste intensity (tonnes / HK\$1 million turnover) (2016 baseline)		Waste intensity in all regions continued to reduce and is on track.
3	Pursue zero wasted energy to reduce air quality impacts and carbon emissions  GRI 302-1	25% reduction in energy intensity (MJ / HK\$1 million turnover) (2016 baseline)		Energy intensity (energy efficiency) improved in 2022 but was still behind target, mainly due to heavy civil and foundation works.
4	Pursue zero wasted water to avoid resource wastage	25% reduction in water intensity (m <sup>3</sup> / HK\$1 million turnover) (2016 baseline)		Water intensity was behind target due to water-intensive heavy civil works, foundations and increased concrete batching plant operation, even with significant water treatment and recycling.
5	Increase renewable energy (RE) generation to reduce fossil fuel reliance and carbon emissions	50% increase in RE generation on project sites based on installed capacity (kWp) in 2018		In addition to Sai Sha Road and Kai Tak West, two new solar systems were installed at two highways maintenance contracts to produce an additional 108 kWp, for a total of 223 kWp <sup>2</sup>



On track to meet target



Further improvement needed

\*This is in addition to the 200 kWp permanent solar photovoltaic installation at the Gammon Technology Park in Tseung Kwan O

# 09

## In focus

Committed to climate change action

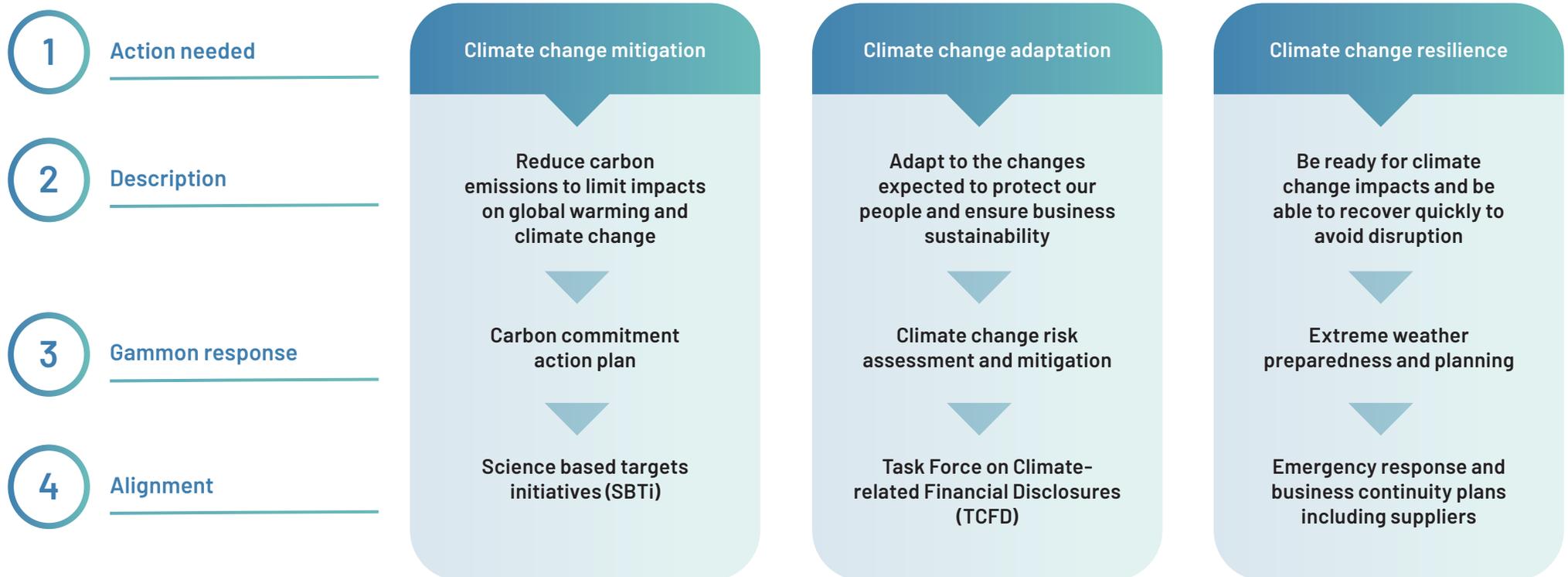
Science-based targets



## Background - Gammon's response to climate change

Gammon recognises that urgent action is needed to avoid the very worst impacts of climate change. As we have already seen from recent climate-related crises, we must limit global temperature rise to 1.5°C to avoid even more significant and long-lasting impacts on the health of the planet and humanity.

From a business perspective, Gammon has been developing a **climate transition plan** to respond to climate change in three ways: **mitigation**, **adaptation** and **resilience**, as presented below:





### Mitigation

Gammon recognises that every individual and organisation has a role to play in the battle against climate change. Rapid and deep emission cuts must be made to half global emissions before 2030 and achieve net zero before 2050. In November 2022, Gammon committed to set near-term company-wide emission reductions in line with climate science with the **Science Based Target initiative**<sup>1</sup> (SBTi). Our Carbon Commitment Action Plan below outlines how this will be achieved.



### Adaptation

Planning our transition to net zero carbon by 2050 is also essential to reduce risks to the business and ensure we minimise social impacts. Our business activities need to adapt and transition to the climatic changes expected. Our climate change risk assessment process considers those risks and how to mitigate them through adaptation (see page 91). In addition to our mitigation actions, we also need to continue to change our traditional construction practices to more modern methods of construction to protect everyone working on sites.



### Resilience

Given the expected increase in extreme weather events, especially in Hong Kong and southern China, it is important we are prepared to cope with such events and be resilient enough to recover quickly. This resilience planning needs to consider not only our project sites and any fixed assets, but also our critical supply chain partners. Emergency preparedness and recovery procedures, as well as business continuity planning and drills, are essential.

## Governance

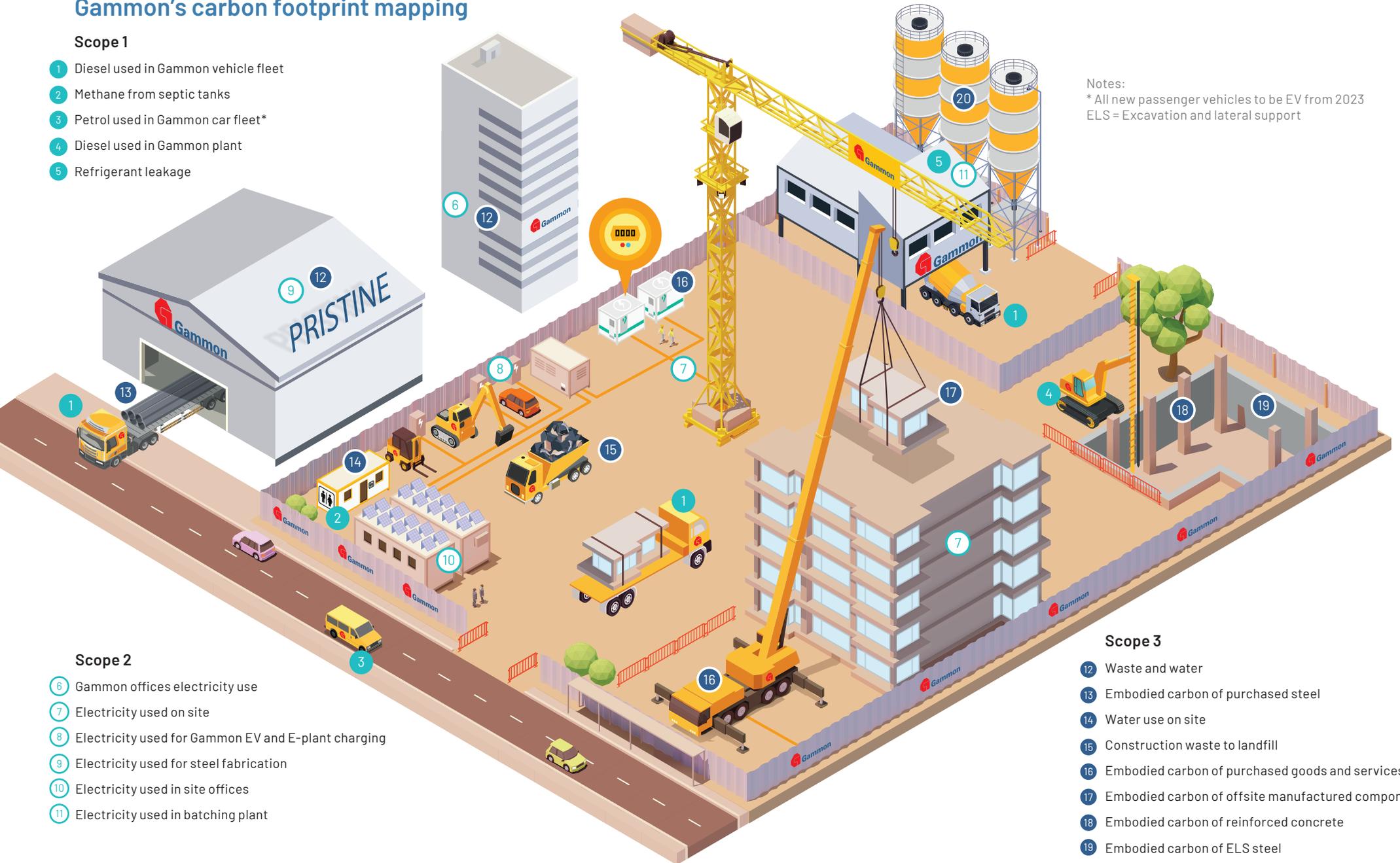
The Board of Directors has oversight of this climate transition plan and directors are responsible for the delivery of the various strategies, actions and commitments mentioned in this section and in the climate change risk assessment (see page 90).

<sup>1</sup> The SBTi defines and promotes best practice in science-based target setting, helps to reduce barriers to adoption, and independently assesses and approves companies' carbon reduction targets. The initiative is a collaboration between CDP, the United Nations Global Compact, World Resources Institute and the World Wide Fund for Nature and is one of the We Mean Business Coalition commitments.

# Gammon's carbon footprint mapping

## Scope 1

- 1 Diesel used in Gammon vehicle fleet
- 2 Methane from septic tanks
- 3 Petrol used in Gammon car fleet\*
- 4 Diesel used in Gammon plant
- 5 Refrigerant leakage



Notes:  
 \* All new passenger vehicles to be EV from 2023  
 ELS = Excavation and lateral support

## Scope 2

- 6 Gammon offices electricity use
- 7 Electricity used on site
- 8 Electricity used for Gammon EV and E-plant charging
- 9 Electricity used for steel fabrication
- 10 Electricity used in site offices
- 11 Electricity used in batching plant

## Scope 3

- 12 Waste and water
- 13 Embodied carbon of purchased steel
- 14 Water use on site
- 15 Construction waste to landfill
- 16 Embodied carbon of purchased goods and services
- 17 Embodied carbon of offsite manufactured components
- 18 Embodied carbon of reinforced concrete
- 19 Embodied carbon of ELS steel
- 20 Embodied carbon of concrete raw materials

### Our carbon reduction targets – Our science-based target commitment

In November 2022, Gammon committed to set near-term company-wide emission reductions in line with climate science with the SBTi. This commitment covers all the operations and locations of the Gammon Group. As part of this commitment, we have a baseline inventory from 2021 and have developed two targets for 2033, which are as follows:



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

### Carbon Commitment Action Plan

Our **Carbon Commitment Action Plan (CCAP)** is based on the following framework with a set of strategies and specific actions for all three scopes across all aspects of Gammon’s operations and with the intention to ramp up efforts year on year in line with our forecast decarbonisation trajectory.

#### Scope 1 and 2: mainly our energy-related emissions

We need to cut 55% of our absolute energy related carbon emissions in 10 years. As we know the grid supply will decarbonise, our primary focus is on switching from diesel power to electricity. We aim to achieve this through early electrification, adoption of electric plant and EVs (and introducing hydrogen power in future), energy efficiency, and modern methods of construction.

#### Scope 3: mostly supply chain related indirect emissions

We must reduce our other indirect emissions (mainly the embodied carbon in materials) by 33% by 2033. Our Scope 3 is dominated by carbon intensive materials such as steel and concrete. We must, therefore, modularise and reuse structural steel, produce even lower carbon concrete mixes, procure lower carbon steel, optimise material usage through design and construction methods and, finally, select alternative materials with a lower carbon footprint.

### Carbon Commitment Action Plan - Framework

Science-based carbon reduction targets

Overarching strategies for all operations and support functions

Specific proposals for all parts of the business

Data insights and responses

Scope 1 and 2  
55% reduction by 2033

Scope 1 & 2 strategies

Specific actions for all functions

Scope 3  
33% reduction by 2033

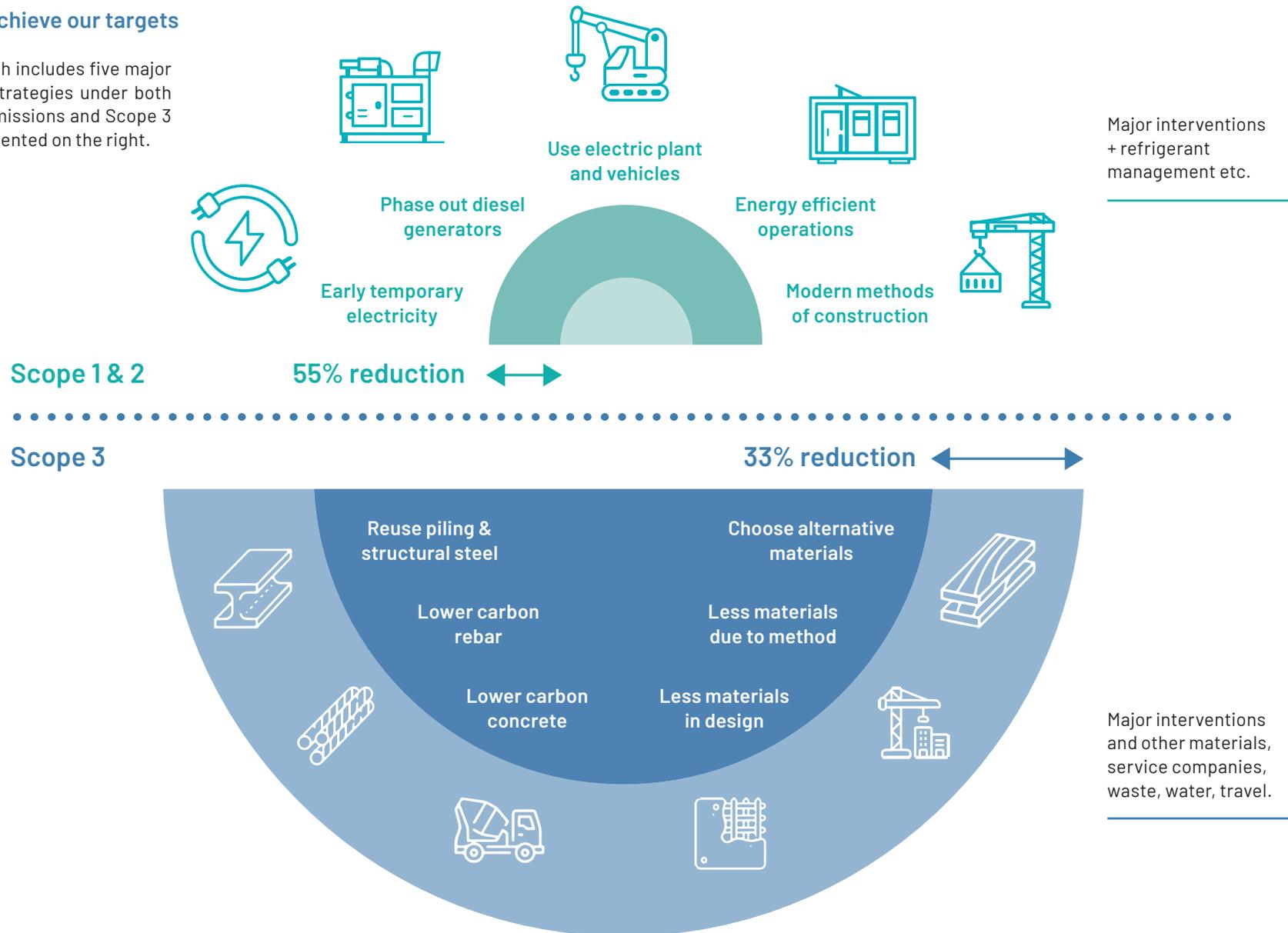
Scope 3 strategies

Carbon emissions limits

Performance measurement, review and annual disclosure

### Strategies to achieve our targets

Our CCAP approach includes five major interventions or strategies under both the Scope 1 & 2 emissions and Scope 3 emissions, as presented on the right.



In line with these strategies, we have identified specific actions for all operations teams and support functions under the following headings. These will be reviewed annually and the specific actions will be updated. Each division will also be allocated a Scope 1 and 2 emissions limit each year to keep below. These limits align with our planned trajectory which reflects the rate at which we expect to be able to decarbonise in each division. Communication and engagement with our supply chain will be an essential part of achieving our Scope 3 emissions.

Operations and production (for all locations)							
	 All tenders	 All projects	 Foundations	 Civils	 Buildings <sup>2</sup> & E&M	 Steel	 Plant
Scope 1	Promote early power application to all clients. Propose diesel avoidance.	Ensure early electricity connection. Phase out diesel use.	Phase out diesel plant. Optimise use of electric plant.	Phase out diesel plant. Optimise use of electric plant.	Phase out diesel plant. Optimise use of electric plant.	Optimise bolt and nut to reduce welding. Phase out diesel plant.	Phase out diesel plant. Procure electric plant and vehicles.
Scope 2	Optimise offsite construction.	Energy efficiency in site set up.	Optimise offsite construction. Energy efficiency.	Optimise offsite construction. Energy efficiency.	Optimise offsite construction. Energy efficiency, particularly for commissioning.	Use new energy transport. Energy efficiency.	Track and optimise energy efficiency. Expand PV and improve energy efficiency at GTP.
Scope 3	Forecast carbon footprint. Design optimisation. Propose MET in government projects.	Forecast carbon footprint for carbon intensive materials and optimise.	Lower carbon concrete and steel. Reuse structural steel.	Reuse structural steel. Lower carbon concrete and steel. D&B optimisation and LCA.	Reuse structural steel. Lower carbon concrete and steel. D&B optimisation and LCA.	Reuse structural steel temporary works. Source low carbon steel and other materials.	Source lower carbon footprint plant.

<sup>2</sup> Buildings includes facades and interior fit-out works.

**Key:** PV = photovoltaic; GTP = Gammon Technology Park; MET = mass engineered timber; D&B = design & build; LCA = lifecycle carbon assessment; GWP = global warming potential

Product and support functions (for all locations)							
	 Lambeth	 Procurement	 Sub-contracting	 Concrete	 Pristine Steel	 Digital innovation	 Corporate sustainability
<b>Scope 1</b>	Modern methods of construction.	Energy efficiency products.	Specify electric plant.	Reduce GWP of refrigerants and diesel plant.	Phase out diesel use.	Plant use optimisation technology.	Lobby for early electrification.
<b>Scope 2</b>	Optimise offsite construction.	Energy efficiency products / vehicles.	Energy efficiency and data collection requirements.	Use new energy mixer trucks.	Solar PV, automation, energy efficiency.	Drive energy efficiency.	Drive energy efficiency.
<b>Scope 3</b>	Modular / design optimisation, lower carbon materials and LCA.	Source low carbon rebar and cement and other materials. Training.	Specify low carbon materials. Require data reporting.	Use lower carbon cement and produce lower carbon concrete.	Use lower carbon steel and other products.	Carbon data automation and management. Technology to reduce material use.	Training for all staff and workers.  Data tracking and review.

**Key:** PV = photovoltaic; GTP = Gammon Technology Park; MET = mass engineered timber; D&B = design & build; LCA = lifecycle carbon assessment; GWP = global warming potential

Some of our early commitments include the following:

### Scope 1 and 2

- 1 From 2023, all new passenger car purchases to be EV.
- 2 Engage with Government and more associations for Power Up Coalition to accelerate early electrification.
- 3 Phase out all diesel (only) generators by 2033.
- 4 Introduction of electric crawler cranes and other electric plant.
- 5 Target to convert between 20-50% of site diesel plant and equipment to electric by 2033.
- 6 Provide training to all staff on the Carbon Commitment Action Plan and carbon / energy awareness for front line.

### Scope 3

- 1 Quantification of major carbon emissions for all carbon intensive project tenders.
- 2 Quantify the materials carbon and savings for design optimisations for all new projects (carbon intensive materials).
- 3 Improved management and modularisation of all structural steel to optimise reuse.
- 4 Use of more GGBS in foundations and sub / superstructure.
- 5 Ramp up the percentage of Gold or Platinum certified (or equivalent) low-carbon concrete mixes in all projects.
- 6 Supply chain engagement on tracking material quantities and encouraging decarbonisation.

We will continue with our performance measurement and undertake regular reviews and annual disclosures. We plan to continue to have our greenhouse gas emissions inventory verified annually based on ISO14064 and to disclose through our sustainability report as usual. We also expect to continue to submit a disclosure under **CDP Climate Change**.

In order to comply with the requirements of the SBTi, we will focus on emission reductions through direct action within our own boundaries and value chains. We shall not be purchasing any carbon offsets to achieve our targets, but in a worst-case scenario, we may need to supplement with Renewable Energy Certificates if there is any shortfall by 2033.

<sup>3</sup> GGBS = Ground granulated blast-furnace slag (a cementitious material that can be used to replace cement in concrete)

# 10

## Value Chain - Co Creation

We collaborate up and  
down our value chain



The Gammon booth at the Construction Innovation Expo was made of recycled timber which will be reused as interior decoration on one of our project sites

## Highlights of the year

One of the standout events of 2022 was our presence at the CIC Construction Innovation Expo. Our booth brought together construction technologies we are using on our projects in one space, for industry experts and students to learn from and enjoy. Check out the summary of the eight focus areas of our exhibit on pages 50 to 53. In addition to the Gold and Merit awards in CDE already mentioned on page 15, we also picked up first prize for our automation system for MiMEP and several MiC awards at the CIC Construction Innovation awards ceremony held during the expo.

In collaboration with Autodesk, we completed the first stage of streamlining the modular construction process connecting design to fabrication. This included the creation of a library of pre-approved parametric components that have an automatic linkage to the bill of materials and produce the associated shop drawings. In 2023, we will take the revised process and further connect to the factory and manage key data throughout the construction lifecycle of the module, such as the procurement of materials, factory works, logistics, testing and commissioning.

In response to the Development Bureau's mandate that in 2023 all public projects over HK\$30m use a smart site safety system, we developed our Digital Twin platform, GTwin. This was implemented on three of our projects for use in early 2023. For our external clients and in conjunction with the GTwin development, we released a lightweight version called Foresighttwin which we successfully sold to two government projects and plan to expand further to help small and medium enterprises (SMEs) prepare for this directive.

In Singapore, we have been developing BIM as a service to the market, opening up the opportunity for a new revenue stream.



**Our Digital Twin platform forms an intuitive way for anyone to understand the status of a project in real time**

We completed two scan-to-BIM projects which included 3D laser scanning existing buildings and using the cloud point data to build an as-built BIM model for customers' ongoing use. With the higher level of accuracy and clarity the model brings, spaces can be more easily redeveloped or assets integrated for ongoing enhanced facilities management.

In November, we were included in the top 20 innovative company list at the Corporate Innovation Index Awards Presentation Ceremony, an initiative launched by the Asia-Pacific Institute of Business with the Hong Kong General Chamber of Commerce as a strategic partner.

**In collaboration with Autodesk, we completed the first stage of streamlining the modular construction process connecting design to fabrication.**

# Doubling down

**Olivier Kwok, Digital Transformation Lead in our digital innovation team, is championing the development of Gammon's digital twin initiative. He explains where we're at, how he got involved, and what the future might hold.**

**Tell us about Gammon's digital twin solution, GTwin, and how it adds value**

GTwin's core value is to create a single source of truth for all digital solutions used on Gammon projects. Users don't need to leave the platform when they want information from the different applications, systems and processes we use on our sites - such as STAMP, Inspecto or G-Eye, our respective solutions for off-site fabrication, quality control and AI-enabled site monitoring, as an example. It forms an intuitive way for anyone to understand the status of a project in real time, a trusted tool engineers can rely on to visualise, analyse, predict, evaluate and explain anything associated with the project.

I think it can drive cultural change in the industry, in terms of reporting methods and maintaining a level of information transparency.

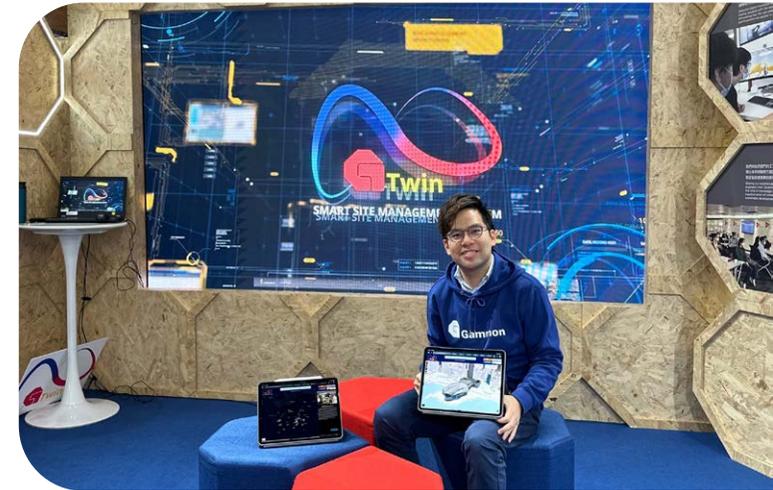
Digital G also wanted to help SMEs develop their own solution to manage their projects so we partnered with Esri China to develop Foresighttwin, which is basically a lighter version of GTwin, that predominantly collates and visualises data related to safety and site monitoring.

**How did you get involved in this world?**

Back in 2013 I was an assistant engineer on a Gammon project and was asked to provide daily reports on progress of a pile pipe wall. Instead of just providing numbers or percentages, I printed the sectional drawings and placed them on a partition board. Whenever a pile was drilled and grouted, I coloured it and wrote the completion date next to it. Pretty soon it wasn't just the project manager using it to understand progress, but also planning engineers, quantity surveyors and even the Registered Site Engineer. I'd basically created a digital twin prototype without even noticing.

**It forms an intuitive way for anyone to understand the status of a project in real time.**

I kept seeing gaps where digital solutions would help but the market and technology was not very mature, so I returned to university and studied computer science. I'm also currently doing my masters in urban analytics because creating in GTwin is not just about using data from a BIM model but also from geographic information systems (GIS). By putting BIM models on a GIS map, it forms a full picture of the data from a geospatial perspective.



**Olivier believes digital twins can drive cultural change**

We're currently working to optimise the logistics of DfMA component delivery from mainland China by enhanced tracking. Our GTwin platform has the capability to integrate with open data such as traffic condition live updates and black spots flagged up by the Transport Department. This helps us to improve the accuracy of arrival time estimation and better understand delivery conditions.

**What's your vision for GTwin?**

Firstly, GTwin is a never-ending journey! But I do have a particular vision that it may help address knowledge gaps as those coming to retirement age leave the industry. Can GTwin become a tool that records everything related to a project at every stage? A hub where we can reference preserved data from previous projects, using it to plan and estimate better, so we can continuously excel? I think this is possible and I look forward to playing my part in the team to realise this vision.

## Teaching and influencing

We have been taking a leading role in upskilling within the industry and encouraging the adoption of innovation and construction technologies.

Key achievements during the year include contributing to the syllabus and training programme on CDE for CIC. As well as joining CIC's CDE advisory committee, we provided trainers for the masterclass we helped develop. At Hong Kong Polytechnic University, we guest lectured on its Project Delivery Capability Programme, with Director Sammy Lai sharing practical experiences of digital twins, using our AMC project as a showcase.

At the Construction Innovation Expo 2022, Gammon speakers included our Chief Executive, Kevin O'Brien, who spoke on digital transformation across the construction lifecycle, while Paul Evans delivered a talk on smart and connected construction sites. Paul also spoke at the Hong Kong Institution of Engineers Building Division annual seminar where he explored how disruptive innovation can be applied to buildings to contribute to 'smart city' ambitions.

**We contributed to the syllabus and training programme on CDE for CIC.**



**Paul Evans delivers his Smart & Connected Construction Site talk at the Construction Innovation Expo 2022**

In February, Buildings Department approved the use of concrete strength sensors to monitor the early compressive strength of concrete. To support this change in regulations, Digital G - an early proponent of digital maturity systems in Hong Kong - ran a webinar to upskill BD officers on how to use the sensors and the technology underlying the system.

In Singapore, we spoke at a Ministry of Trade and Industry-organised occasion about our utilisation of digital technology for quality control, and at several Land Transport Authority occasions on integrated digital delivery implementation and our digitalisation transformation and innovation strategy surrounding BIM / CDE.

## Selling the benefits

Vincci Mok, Senior Manager, Innovation and Technology, is in charge of the business operations of our subsidiary Digital G. A former civil engineer, Vincci jumped onto the innovation bandwagon in 2015 and hasn't looked back since.

"I manage Digital G's sales and implementation team which provides professional advice to our projects, recommending what software or hardware to use to meet their specific needs. I like learning new things, which is lucky because constant learning is required with the speed technology changes these days!

"I also like connecting with people which is an important part of my job. The challenge is getting people to use technology. If they are hesitant to accept it, it's invariably because they don't fully understand it. In my team, we need to make sure we deliver understanding as well as the product. It's not just about sales, it's about explaining the benefits of the tech and creating an excellent customer journey."

"There are so many benefits to projects that use technology. In particular, our GTwin integrated platform is key. If I think back to my past as an engineer, it would take me hours to write up reports on paper. Now, if someone is doing, say, a defect report, it can be automated using AI via GTwin. So much time can be saved. Technology will keep on improving so there will continue to be opportunities to help site engineers. That's the great thing about my job."



Vincci with SHELi the robotic dog

## Putting on a show

In December, we exhibited at the Construction Innovation Expo. Around 4,000 visitors visited our environmentally friendly booth made of oriented strand board, where we and our subsidiary Digital G showcased a range of new and exciting construction technologies and tools used on our construction sites to enhance safety, quality, productivity and sustainability.

We also held 26 Tech Talks in the booth, covering topics such as MiC, MiMEP, IoT, AI and sustainable construction. We provide highlights on the following pages from each of the eight focus areas of our exhibition space.

## Digital G showcased a range of new and exciting construction technologies and tools used on our construction sites



### Academy

Several masterclasses were held in our Academy zone throughout each day of the expo. Subjects included our self-developed GTwin, the use of AI in construction, our approach to decarbonising concrete and construction materials, internet of things, and the use of MiC on our Tonkin Street and CityU projects. Each class lasted around 15 minutes.



### Design and planning

The focus of this zone was our use of Revizto for design collaboration. We have had great success deploying Revizto on our Terminal 2 Expansion project, where it enables our teams to work co-creatively and removes the potential for siloed processes. In 2022, we had over 400 active users in Gammon with all project teams encouraged to make use of the platform.



3

**Safety wearables on show included smart helmets and smart watches for the tracking location as well as the health and wellbeing data of the wearer.**

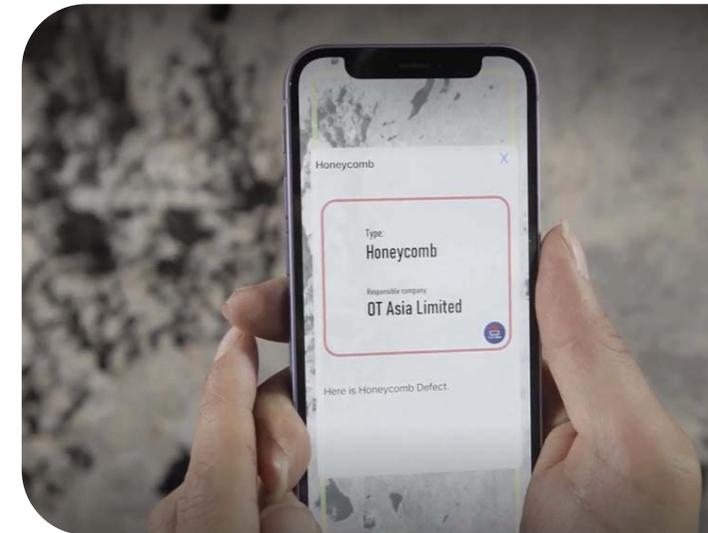
Safety

Tools on display included our self-developed G-Eye family, a suite of portable battery- or solar-powered mobile CCTV systems with AI computer vision for monitoring site safety concerns such as the wearing of PPE and protection of fatal zones. Safety wearables on show included smart helmets and smart watches for the tracking location as well as the health and wellbeing data of the wearer.

4

Quality

Our chatbot application, Gambot 2, which is predominantly used for reporting and recording safety matters, was used to demonstrate a quality-checking function developed by our Integrated Data Technologies (IDT) department. By combining a phone camera with AI function, Gambot 2 automatically identifies defect types and the responsible subcontractor. This approach is more time efficient and will be carried out by robotic process automation in the future.



## 5

## Sustainability and green construction

In our green corner, visitors learned how we have been carrying out Hong Kong's first trials of CarbonCure (see also page 31 for more on this carbon-reducing technology), and our co-development of the Enerainer, a mass battery storage device that can be used in lieu of diesel generators. We also displayed a model of the electric crane we imported in late 2022, the first of its kind in Hong Kong.



## 6



## Modern methods of construction (MMC)

Visitors were especially drawn to our MMC zone, where we showcased our latest MiC projects: Tonkin Street residential development and CityU student hostel (see more on our MiC approach on page 55). A model also demonstrated our use of multi-trade integrated mechanical, electrical and plumbing (MiMEP) modules which deliver a high level of quality while reducing the amount of site labour required.

Visitors were especially drawn to our MMC zone, where we showcased our latest MiC projects.



7

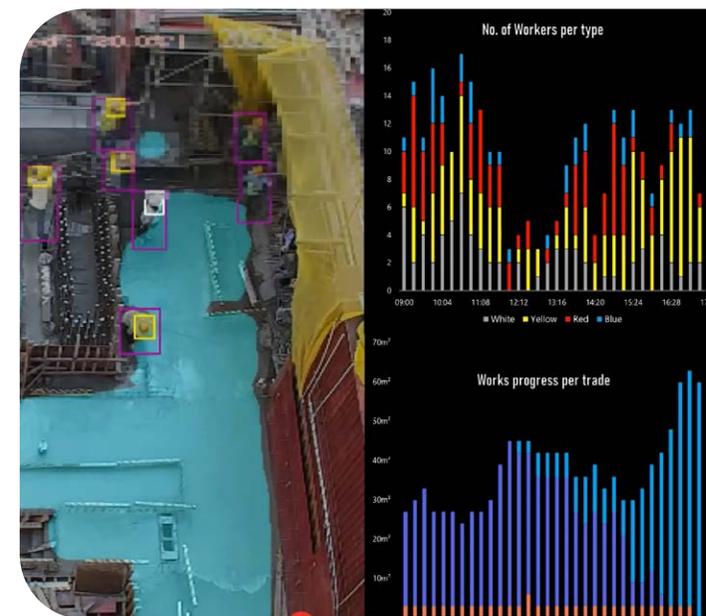
Digital G Experience

Highlights from our Digital G Experience zone included SHELi, a robotic dog we co-developed with local company ImageDeep to bring next-level automation to AI safety inspections. An immersive zone featured a BIM cave in a suitcase, allowing us to demonstrate safety training and

virtual rehearsals, while our Foresightwin digital twin platform showed how safety tools and gadgets can be integrated to form a total solution for sites in preparation for the Government's 2023 smart site safety system initiative.

8 Productivity

A programme developed by our IDT department was the main drawcard in our Productivity zone. Using our G-Eye CCTV monitoring station and an AI algorithm, we can identify how many workers of which trade are on site at certain hours and predict the percentage of work as they pour concrete and install rebar and formwork.





Executive Director & Chief Technology Officer Paul Evans (far left) and Head of Digital James Thompson (third from left) recreate the famous 'Lunch atop a skyscraper' image while at the Autodesk University annual conference. Four of the Gammon Digital Team joined other construction professionals from around the world in New Orleans at the Autodesk University event. With more than 10,000 in-person and 50,000 virtual attendees at the conference, it was a good place to better understand international best practice, collaborate with Autodesk across different levels, and gain greater insight into their plans to evolve BIM and how Gammon can benefit.

### Progress on Responsible Growth - 25 by 25: Co-creation targets

	Objectives	Target by 2025	Status	Progress in 2022
Employees				
1	Increase off-site construction to increase efficiency in resource use, improve safety and programme	25% reduction in on-site hours worked / HK\$1M turnover		Improved compared with 2021 but we still need to see greater support for the adoption of offsite construction in the industry
2	Improve management and project delivery efficiency through integrated digital project delivery	25% of all projects delivered through integrated and collaborative digital project delivery system (using a CDE <sup>1</sup> ) with digital progress monitoring		Exceeded target, with 30% of projects using a CDE.
3	Increase production and use of more sustainable materials to reduce pressure on finite natural resources	25% of procurement spend on more sustainable materials <sup>2</sup> <b>GRI 301-1</b>		Target just achieved, even with conflict in Europe disrupting availability of low carbon rebar
		25% of concrete quantity produced is certified or equivalent to 'Platinum' level under the CIC Green Product Certification Scheme <sup>3</sup> <b>GRI 301-2</b>		Over 50% was certified Platinum or equivalent. Other cement-reduction methods were investigated including the use of CarbonCure technology
4	Collaborate with the value chain to support SDGs	Support six events under the Power Up Coalition with the Business Environment Council		A guideline and tool were developed with release event. Planning started for remaining events



On track to meet target



Further improvement needed

<sup>1</sup> CDE = Common Data Environment

<sup>2</sup> 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.

<sup>3</sup> Previously termed 'Outstanding' grade in the now-replaced CIC Carbon Labelling Scheme

# 11

## In focus

### Modular integrated construction

The first MiC unit for the CityU student hostel in Ma On Shan is installed



## The complete package

Modular integrated construction (MiC) has been called a “game changer”, “disruptively innovative” and a “driving force” with regards to making the construction industry more sustainable. While adoption of this method in Hong Kong lags other parts of the world, within Gammon we experienced a definite uptick in 2022.

Installation of units began on our CityU student hostel which is currently the world’s largest, in terms of bed spaces, to be constructed using MiC. A total of 1,344 prefabricated components will be manufactured offsite to reduce noise and waste on site by an estimated 75% and 68% respectively for the MiC-constructed floor area. At 22 storeys above a six-storey podium, our Tonkin Street project is the tallest MiC building in Hong Kong at the time of construction and the first private residential development to deliver this approach in concrete. In addition to noise and waste improvements in line with those on CityU, we anticipate we will reduce onsite workforce requirements at peak by 70%. Tonkin Street was also named Outstanding MiC Project and Director Sammy Lai was named MiC Champion (Outstanding Team Member) for his achievements on the same contract at the International Conference on MiC 2022.

With a large proportion of works for CityU and Tonkin Street taken off site, we were presented with the challenge of carrying out quality assurance in factories we were unable to visit due to restrictions caused by the pandemic.



CityU student hostel units under construction at the factory



Director Sammy Lai was named MiC Champion (Outstanding Team Member) during the International Conference on MiC 2022 in Hong Kong

In response, we extended our quality management app, Inspecto, to include trade-by-trade inspections and handovers for MiC processes, helping projects keep track of any defects and rectification progress for each module to ensure zero flaws before delivery to site. Data analytics also provides insights, such as trends in defects, allowing the project to take early action and implement improvement measures.

Once inspections are complete, the data is integrated into our STAMP system which provides logistics and on-site installation tracking and monitoring. Other achievements of note during the year include increasing the steel and concrete MiC solutions in our winning proposal for the design and build Kwun Tong Composite Development project to 10%

beyond the contract requirement, and delivering 13 MiC units for a community vaccination centre in only seven days.

Understanding that increased adoption of MiC in Hong Kong requires a workforce with the necessary skillset, we also jointly developed Hong Kong's first Qualifications Framework Level 4 Professional Diploma in MiC with the Vocational Training Council. Consisting of five modules over 120 hours, the course additionally provides knowledge on how to utilise a range of technologies, as well as acquire an awareness of health, safety and the environment in the workplace.



Progress, inspection and defect information can also be reflected in the BIM model on the Inspecto dashboard to provide a real-time holistic view

We jointly developed Hong Kong's first Qualifications Framework Level 4 Professional Diploma in MiC.

# 12

## People - Caring

Caring for our employees





Members of our Human Resources Team collect two Grand prizes at the 2022 Best HR Awards ceremony: Best Innovative L&D Initiative, and Best Corporate Wellbeing Award

### Highlights of the year

We continued to digitalise our human resources operations to improve accessibility and launched two new platforms for learning and recruitment, both of which are accessed via Workday. The upgrade makes eLearning more assessable and allows us to more easily target individuals to carry out specific training. The benefits of this were made apparent by our resounding success promoting CIC's BIM viewer programme, with 1,284 employees completing the course by year's end, more than twice that of the closest contractor.

This success also resulted in the presentation of a Grand Award for Best Innovative L&D Initiative at the CTgoodjobs Best HR Awards 2022 ceremony. Additionally, we collected a Grand Award for our wellness and engagement programmes at the same event. During the year, a total of 409 virtual or classroom training and e-learning sessions were carried out, amounting to a notable 68,693 hours when staff were improving their competencies and skill sets. In addition to developing an MiC professional diploma with VTC

(see page 57), we ran our third Project Management Programme which was enhanced to include global megatrends and risks, increased knowledge of climate change risk, awareness of stakeholder and customer concerns environmental, social and governance (ESG) issues, the value of diversity, how to be an inclusive manager, and coaching lessons. New 'Carbon essentials and science-based targets' (SBT) learning was developed for all project managers and above to improve climate change literacy and understanding of our SBT ambitions.

409

virtual or classroom training  
and e-learning sessions

68,693

hours of training completed

35

mental health first aiders trained

1,248

staff completed CIC's  
BIM Viewer programme

We continued to connect with schools, running or taking part in a variety of initiatives designed to promote construction as a career option, and began hiring out of Malaysia and China at the beginning of the year to help address recruitment challenges in Hong Kong.

We held our first D&I event, 'Building belonging through allyship', which was a resounding success (see page 68), while our Women in Gammon and Allies Network (WinG) celebrated its one-year anniversary and continued to champion gender equality - you can read more about this on the following pages.

After a number of site trials, we finished the year by announcing the move to a five-day work week for our Hong Kong and Macau monthly paid employees on site, as of January 2023. While this may not sound very impressive for other industries, it is common practice in Asian construction to work at least part of the weekend. We hope this arrangement will allow our staff to enjoy a healthier work-life balance, while also help us recruit a more diverse workforce and improve staff retention.

**5,900**  
health screenings

**19**  
Heart2Heart advocates



**Head of Digital G, Andy Wong, takes a school group on a tour of one of our projects as part of the CIC Master Talk programme that aims to encourage youth to choose construction as a career**

### Racial D&I focus group

Following on from our signing of the Equal Opportunities Commission's Racial D&I Charter and releasing introductory D&I training in 2021, we held focus group discussions with staff from different countries and cultural backgrounds on several sites. We discussed how we can create a more ethnically diverse workplace where all staff thrive and feel they belong and collected valuable insights through an anonymous app. Recommendations were then presented to the D&I Council in four main areas: recruitment, onboarding, cultural inclusion



**We held our first D&I event which was called 'Building belonging through allyship' and welcomed guest speakers to share their experience**

and religious consideration. Proposals ranged from using an anonymous job application system to remove the potential for unintentional unconscious bias, through to implementing a buddy system for newcomers to Hong Kong and Gammon, accommodating different holidays and establishing prayer rooms on project sites. Some actions were implemented in 2022, with those requiring greater planning and coordination to be established in 2023.

## Building from the ground up

**We talk to Stanley Chen, our new Executive Director of the Building Division, about his journey through the ranks of construction, how he almost ended up in an entirely different career, and why it's good to be nosy.**

### Did you always want to be in construction?

Actually, when I was young, I wasn't sure what I wanted to do. I went to a technical secondary school and once I graduated, I applied for a few different higher diploma courses I thought suited my educational background. The first placement I was offered was studying textiles and I accepted and even started! But almost immediately I was offered another spot on a building course. After discussion with my family, I switched to the three-year Higher Diploma in Buildings.

This turned out to be a good move because I discovered construction and I am very well suited. So much so that after graduation I worked for a year to save the money to do a bachelor's degree because I realised this would be helpful if I wanted to climb the ranks. Once I got my degree, I joined Gammon and have been here ever since.

### You say you are well suited to construction, why is that?

I enjoy seeing the physical output of construction. I can create something visible, something my family can see. This sense of achievement is very appealing. It's also a people industry and I think the level of satisfaction is greater when you accomplish something together with a team compared with doing it alone.

### Is there a particular trait that helped you get to executive level?

I think one trait you need is commitment. In the construction industry, you need to deliver. I think this is a key characteristic of the mindset of people who do well in this industry.

### What career advice would you give to someone wanting to climb construction's corporate ladder?

Be nosy! There are many stakeholders and disciplines within construction... engineers, quantity surveyors, safety and environmental officers, human resources and so on. Running a project is like running a small business so my advice is, firstly, be nosy. Don't just focus on what you've been assigned. You should get to know what people around you are doing. Don't restrict yourself to the confines of your job description because the more you are exposed to, the more you gain.

**I enjoy seeing the physical output of construction. I can create something visible, something my family can see.**

If you keep thinking "this is not my job", you will hinder your learning opportunities. If you're assigned something outside your typical responsibilities or you can help someone else, be grateful for it and be proactive to offer help.

There's no limit to learning in this industry. No matter what post you are in, even when you're at the top, you're still learning.



## Health and wellbeing

With Hong Kong experiencing a fifth wave of COVID-19 early in the year we were encouraged to work from home wherever possible. Wellness Leader Jo Ling describes some of the tailored support offered during this time.

“We ran several webinars in both traditional and Chinese medicine, with doctors providing advice on vaccinations, maintaining health, and how to recover more quickly after COVID. Additionally, we offered a professional Mental Health First Aid course in which 35 Gammon employees became certified. The e-learning provided skills in identifying signs of common mental health issues and crisis and the skills to provide help and support. We also selected 19 staff members to be Heart2Heart advocates as part of our shareholder Jardine Matheson’s group-wide Key2Wellness programme. The advocates are available if any of our staff need someone to talk to. Psychiatric treatment coverage was also added to our medical insurance scheme.”

While we run health checks for workers on all our sites, we were keen to enhance the level of resources available to them. We therefore liaised with the government-run District Health Centres (DHC) to investigate the possibility of organising primary health promotions and workshops on Gammon sites throughout Hong Kong.

**Our Wellness Team carried out more than 5,900 health screenings and organised 128 health talks.**



**Colleagues learn the benefits of aromatherapy for stress relief at one of the many workshops held by our Wellness Team during the year**

“We focused our efforts initially in Tseung Kwan O and Kowloon City districts,” explains Jo, “organising DHC workshops on preventing back pain and stress relief at our Gammon Technology Park and some project sites. We will continue to liaise with the different district centres throughout Hong Kong so we can offer similar services on other sites.”

Our Wellness Team ran other initiatives during the year, carrying out more than 5,900 health screenings and organising 128 health talks and workshops on subjects ranging from heat stroke and auriculotherapy to the use of aromatherapy for stress relief.

## Promoting construction

We understand we must change the perception of construction if we are to address the skills shortage. Assistant Learning and Development Manager Mandy Tso shares some of the initiatives we organised or took part in during the year that aimed to nurture interest in younger children.

“In order to give students a greater understanding of construction as well as the different pathways that can be taken to enter the industry, we invited a number of schools to our head office and plant department. The visits included time in our Immersive Smart Lab where the students were able to try some of the latest digital technology, while those who opted to go to our plant department were able to try out the virtual reality (VR) welding simulator.

“We also visited a girls’ schools to promote construction as a viable career option and organised a series of BIM tutorials for Year 4 at a local technical school. Additionally, we were invited by the Jockey Club to nominate a female engineer to share her experiences online with youth, with the aim of overcoming stereotyped career choices.

We hope these initiatives will help attract more students to join the construction industry.”



School students try out our VR welding simulator during a visit to our Plant Department

## A world of difference

### Originally from the Philippines, Senior Engineering Manager Edwin Gutierrez shares some observations on D&I from his 30+ years in the construction industry.

“During my career, I’ve worked in the Philippines, China, Malaysia and Hong Kong SAR. I’ve unfortunately experienced discrimination over the years due to my ethnicity. I was interviewed for a job once which went well, the interviewer liked me and was happy with the money I was asking for. However, some days later he got back to me and said the company’s HR department had told him, ‘He can’t get that level of salary because he’s from the Philippines.’ I found that very depressing. I always look at a person’s capability not their ethnicity.

I think one of the biggest mistakes people make, though, when dealing with ethnic minorities, is underestimating their capability. Everyone has strong and weak points. As a manager you need to observe what these are and capitalise on them to get the best from your team. It’s important for people to speak up if they see or are the recipient of unfair treatment. Not just to their friends, but to the right authority in the company.

I’m a member of the D&I Council at Gammon. We were established in 2020 and we’re really starting to gain traction. We want to capitalise on diversity within the company. Often, people consider differences as a hindrance, but differences make a difference! Alternative views and approaches allow for greater creativity and better problem solving.

One of my targets as a D&I Champion was to organise a gathering for the Filipinos in the company, to make them aware of the council and inform them of an employee resource group we are forming for different ethnicities and to encourage them to join. We went out on a junk for the day which was excellent, everyone had a great time, they made connections with other compatriots, and felt appreciated by the company.

I would say Gammon is one of the most diverse companies I’ve worked for. I think what makes the company special is no matter what ethnicity you are, you belong to the Gammon family.”

Edwin enjoys the views in Hong Kong



## A year in WinG

WinG celebrated its one-year anniversary on International Women's Day with an online panel discussion that raised awareness about life as a working parent and what can be done to create a more family-friendly environment.

With the relaxation of COVID-19 restrictions mid-year, the group was finally able to hold in-person events, the first of which was an ArtJam session timed to celebrate International Women in Engineering Day. This was followed by a joint event held with the D&I Council and YPG network to embrace diversity through pasta-making. As well as learning about D&I and new culinary skills, the day finished with a taste test to guess different raviolis that represented cultures from around the world.

## WinG committee members took part in Gammon's inaugural D&I event.

WinG committee members took part in Gammon's inaugural D&I event, Building Belonging Through Allyship (see page 68), and the year ended with the group's first gathering where family members were also invited to share in the fun - baking a Christmas yule log to celebrate the festive season.



YPG members enjoy a day of kayaking and bonding after social distancing measures were relaxed

## YPG events

Our Young Professionals Group (YPG) supports the professional development and social engagement of its members, helping them to learn from each other and become all-round young professionals. Despite facing restrictions in early 2022 due to the pandemic, the group still managed to enjoy a few activities in the later part of the year, as Chairperson Michelle Tang reports.

"It was great to be able to come together and hold events again once COVID social distancing restrictions were relaxed. Some of the more social and fun activities we held were a pottery workshop, pasta making with WinG and the D&I council, and a kayak and snorkeling tour.

"YPG members visited our D2 power station project where they were able to see progress on construction of the cooling system and DfMA modules, and later in the year we were also invited by Kam Shing Construction to visit a helicopter service centre to see how their operation was run. Joint activities with other construction companies are important for fostering knowledge sharing and expanding our network.

"We finished the year with a joint Christmas party with professional youth groups from four other construction companies. We had great fun and it was an excellent opportunity to socialise with peers within the industry."

### Top of their game

We were delighted to see one of our craft apprentices, Budi Tandra, presented with Outstanding Apprentice Award by VTC. Budi joined Gammon in 2020 under VTC's Earn & Learn Scheme and is currently working at our Steel Fabrication department. You can see Budi in action in this short You Tube video.

[▶ Watch Now](#)

Recognition must also go to our steel craft apprentice Lam Man-Chun who won the Medallion for Excellence in Welding at the WorldSkills Competition 2022 Special Edition in USA. Man's attention to detail, physical endurance and steady hands saw him snatch victory against 20 contestants from around the world.

We were likewise rewarded for our efforts to upskill workers, picking up Gold for 'Actively Supporting Contractor and Outstanding Training Employer' (semi-skilled) from CIC.

**We were rewarded for our efforts to upskill workers.**

## 2021年傑出學徒獎勵計劃頒獎典禮

2021 Outstanding Apprentice Award Presentation Ceremony

6 July 2022



Budi (right) and Gammon mentor Mo Chan



### Authorized Signatory Carmen Ng

Congratulations go to Assistant Project Manager Carmen Ng who became an Authorised Signatory (Registered General Building Contractor) in November! As well as attending an external intensive course, Carmen spent a considerable amount of time studying codes and regulations before facing a panel of seven Buildings Department examiners. It was great to see one of our other senior women achieving this Government-recognised standard.

### Progress on Responsible Growth - 25 by 25: Caring targets

	Objectives	Target by 2025	Status	Progress in 2022
Employees				
1	Increase staff retention, particularly for new joiners by enhancing work experiences  GRI 401-1	25% reduction in staff turnover rate within the 1st year of joining the group		Thriving sector with many opportunities contributed to missing the target. We hope to see improvements after introducing the five-day work week
2	Attract, retain and support life-long careers for workers and apprentices	25% increase in the % of workers who have been upskilled from unskilled to semi-skilled and semi-skilled to skilled		Difficulty in recruiting labour in the market. Will continue to join CIC or other job fairs organised by different institutions
		25% increase in the % of workers who are multi-skilled (HK only)		
3	Monitor and improve staff satisfaction / happiness and wellbeing	75% of staff satisfied / happy based on overall mean		Results of the staff engagement survey indicated an 82% engagement score
4	Develop a culture of fairness, inclusion and respect	5% of monthly paid staff in apprenticeships or training (yearly)		Maintaining 6% monthly-paid staff in apprenticeships and training
		Establish at least two employee-led networks		In addition to WinG, starting to plan multicultural network



On track to meet target

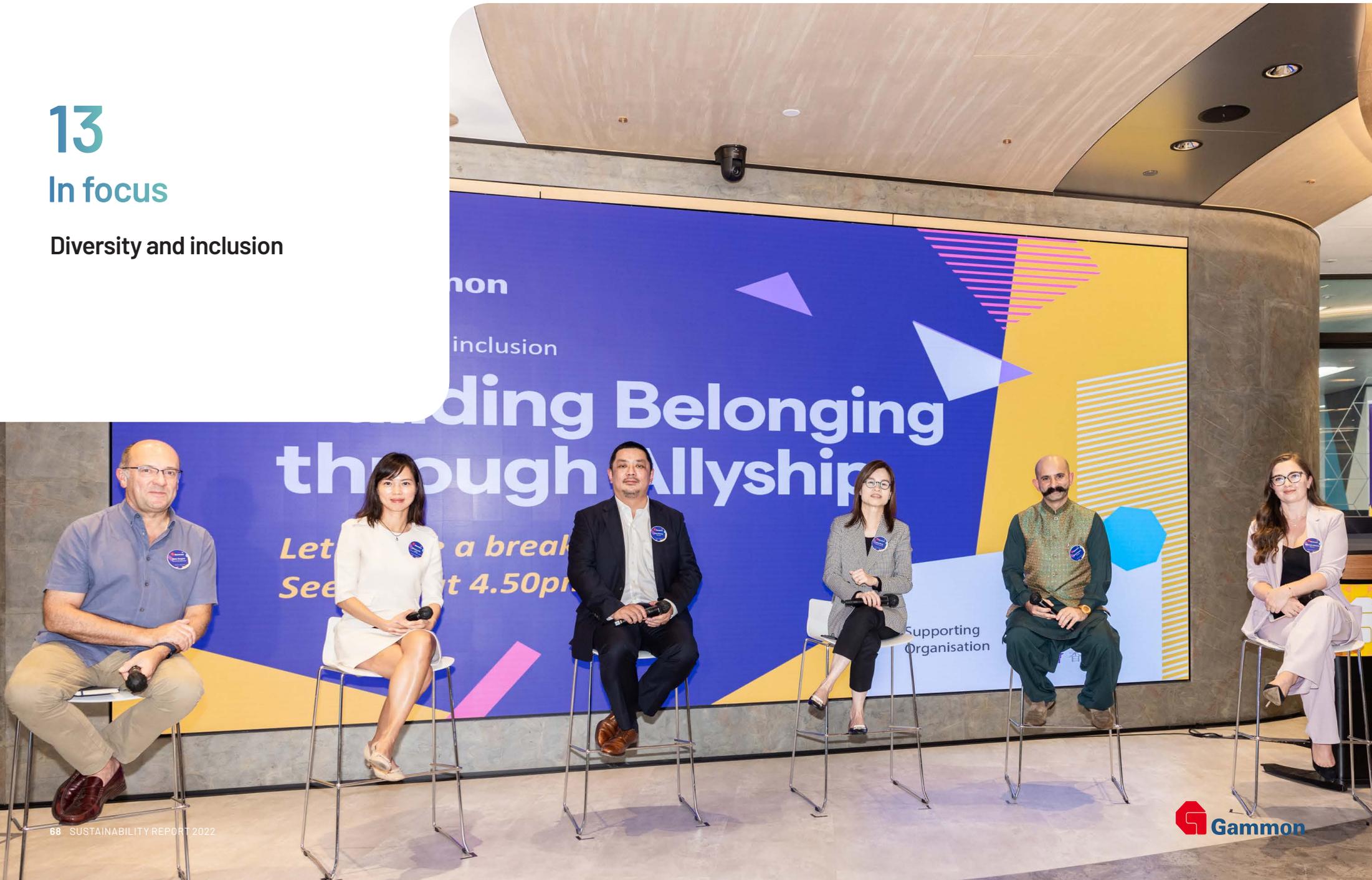


Further improvement needed

# 13

## In focus

### Diversity and inclusion





The event was live streamed and included attendees from external companies



Gammon colleagues presented several skits demonstrating how to be a good ally



Chief Executive Kevin O'Brien poses for a selfie with some of the attendees and participants of the event

## Building belonging through allyship

In mid-October, we held our inaugural Diversity & Inclusion event - 'Building Belonging through Allyship'. We chose 'allyship' as the theme because it plays such an important role in achieving an inclusive culture, and we therefore wanted to raise awareness about what an ally is, why they are needed, and how to become one.

The event was filled with interactive sessions, informative presentations and a panel discussion. Knowledgeable speakers gave talks explaining what allyship is and why it is important; the panel discussed the role of allies in construction; and colleagues from Hong Kong, Singapore and UK shared stories about allyship, while role plays by our Hong Kong colleagues demonstrated how to be a good ally.

We were fortunate to have The Lighthouse Club as the supporting organisation for the event, as well as speakers who were willing to share personal stories of the role of allyship in their lives. In his closing remarks, Kevin O'Brien highlighted the importance of making change by embarking on the D&I journey through steps including learning, training, data, collaboration and policy changes, and encouraged everyone in the industry to step up and take concrete action.

Throughout the event we invited feedback via an interactive polling app that allowed attendees to answer questions and provide opinions anonymously. Results showed that the need to listen and be inclusive were concepts that had the greatest impact upon them, and these were also two of the most

notable areas in which they would work to change in order to become an ally, or a better ally. It was rewarding to receive such positive and proactive feedback.

We intend for this event to be the first of many in raising awareness, starting conversations, and inspiring action so we can make construction an inclusive and welcoming industry where everyone can thrive and reach their full potential.

# 14

## People - Community

Caring for the community





Gammon runners begin what will be a combined total of 873 laps of an athletics track during the Lap Dog Challenge



Executive Director CC Hau during a charity bike ride

## Highlights of the year

With social distancing restrictions slowly relaxed throughout the year, we were better able to help our communities and by year's end had supported or organised a more than 60 events throughout Hong Kong, Singapore and China. These ranged from gifting COVID-19 testing kits and computers through to distribution of food parcels and taking part in mental health initiatives.

Our donations amounted to HK\$2 million dollars. This is in addition to more than HK\$1.5 million raised with our partners for the Lap Dog Challenge, The Lighthouse Club's annual charity event that requires participants to run as many laps as possible of a 400m athletics track within five hours. We were awarded a trophy for raising the most funds - 53% of the final total - all of which goes to The Lighthouse Club Hong Kong Benevolent Fund and Hong Kong Breast Cancer Association.

We were proud to have our volunteering efforts recognised by the CIC in its Construction Industry Volunteer Award

Scheme, where we received gold, silver and bronze accolades. Our Gold for Whole Year Activeness reflected the efforts of Gammon staff who took part in CIC programmes during 2021 such as beach clean-ups, blood donation and meal distribution to the underprivileged. Appreciation also went to Construction Manager Brian Ho who received Silver for Excellence in Construction Industry Volunteering, while our Central Kowloon Route - Kai Tak West contract received Bronze for Excellence in the Construction Industry Volunteering Project category.

Participation of Gammon staff in charitable events is boosted through our Dollars for Doers programme which matches donations for every hour employees volunteer. In 2022, this amounted to HK\$133,100. We were even able to combine waste reduction with community support by saving security safes and furniture during demolition works of a commercial building, which we then donated to those in the local area.

Donations amounted to  
**HK\$2 million**

Our Dollars for Doers  
programme amounted to  
**HK\$133,100**



Volunteers on a construction industry beach clean-up day



Volunteers distributed rice, fruit and other goods throughout the year to those in need, as part of a series of initiatives organised by social enterprise Gingko House

Progress on Responsible Growth - 25 by 25: Caring targets

	Objectives	Target by 2025	Status	Progress in 2022
Community				
1	Promote employee volunteering and engagement to provide a positive benefit to communities	25% increase in volunteer hours / person (during work hours) compared with 2018 baseline		Volunteering improved but opportunities continued to be affected by pandemic.
		By 2021 establish matching fund to encourage employee donations.		'Dollars to Doers' matching money donated for every hour of employee volunteering.
2	Improve value and impact of charity / community activities	By 2021 establish corporate community impact objectives for corporate social investment.		Aligning Gammon's activities with the Jardines Colleague Volunteering Programme, objectives, and online volunteering platform.
3	Create shared value (using skills and expertise to address a social need while enhancing competitiveness)	25% increase in newly recruited workers from districts with the highest levels of poverty		While we continue to join CIC hiring events, we were unfortunately behind our target for newly hired workers.



On track to meet target



Further improvement needed

## 15

## Green & Caring

Now in its 12th year, our Green and Caring Site Commitment (G&CSC) scheme is designed to promote sustainability on our construction sites. Bronze, Silver or Green Flag awards are given to sites based on the level of implemented measures that demonstrate:

- Care for the welfare of our workers.
- Reduced environmental impacts.
- The highest level of safety.
- Proactive engagement with the community.
- Innovation for better performance.

In 2022, over 90% 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.





Our Queen's Road East project progressing well with zero diesel generators

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.

Check out some of the project initiatives that led to the award of Green Flags in 2022. In our view, these high standards are made even more noteworthy, given the challenges presented by the waves of Covid infections experienced in both Hong Kong and Singapore.

**Our Queen's Road East commercial tower project impressed the Green Flag examiners with its decarbonisation initiatives.**

### Decarbonisation initiatives

Our Queen's Road East commercial tower project impressed the Green Flag examiners with its decarbonisation initiatives such as early electrification, the absence of diesel generators, solar power for hoarding lights, use of electric plant, and an increase in low-carbon rebar that went beyond contract requirements.

Their safety performance was also notable with initiatives including scaffold-less lift installation to reduce working in shafts, 360-degree photography to decrease on-site reviews, and weekly body checks by the site nurse.



**Well-planned logistics supported progress on our constrained Prince of Wales project site**

### Well-coordinated

Operating in close proximity to schools, public housing and the hospital and training facilities, our project team carrying out demolition and foundation works at the Prince of Wales Hospital impressed with their noise control measures and the optimisation of logistics on the congested site to allow concurrent excavation and pile cap works to expedite the programme. At the time of our examiners visit, they'd also achieved an overall 12.8% saving in CO<sub>2</sub> through methods including the use of Grade C60 concrete in lieu of C45, which reduces the need for rebar.



**Monthly communication meetings with neighbours helped maintain good relations on our Project Blue site**

### Show of appreciation

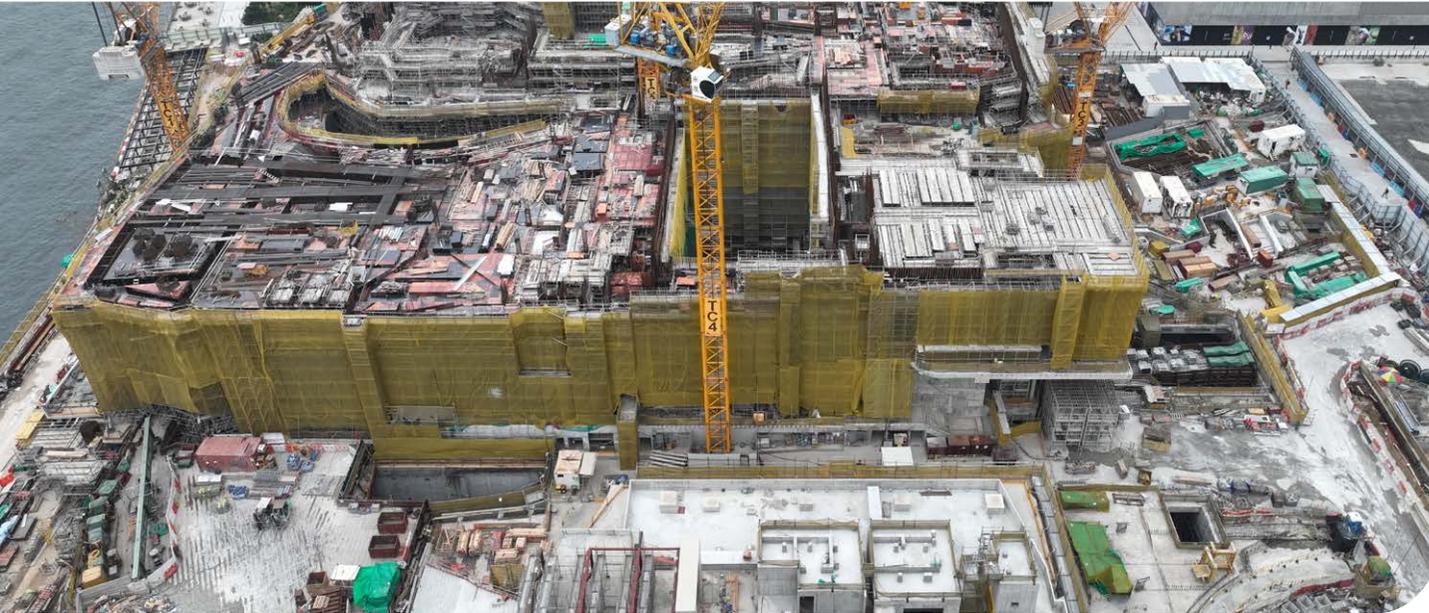
Key feedback from the Green Flag examiners for our Project Blue - ELS Works project included the noticeable team spirit, an immaculate site and exceptional green and caring efforts. A major challenge is the extremely close proximity of the site to the World Trade Centre and residential blocks. Proactive engagement with these stakeholders was essential and included cleaning air-conditioner units at residences, cleaning and maintenance works in public areas, and a raft of noise mitigation measures, all of which resulted in letters of appreciation.



**A complicated root system added challenges to transplantation of the ficus microcarpa on our Cyberport project**

### Reduce and protect

We are thrilled to be working on the next phase of the Cyberport development, constructing foundations for the future expansion. Highlights from the project's successful Green Flag assessment included changing the design to reduce the number of bored piles, the re-use of 200 tonnes of structural steel from other projects, and the transportation of inert waste by sea to save around 200,000 litres of diesel. As well as protecting 230 trees during construction, the team also successfully transplanted a 29-tonne ficus microcarpa.



The highly complex Lyric Theatre and Extended basement project used an impressive level of digitalisation

### The right culture

An excellent safety culture was just one of the reasons our Lyric Theatre Complex and Extended Basement project team were awarded a Green Flag. Included in their initiatives are biweekly heat stress assessments during summer and the elimination of hot work through the maximisation of DfMA and modular construction. This project is highly complex and the level of digitalisation and automated design in BIM is impressive. This site has hosted many visits for external stakeholders including Development Bureau, CIC, Hong Kong Institution of Engineers and University of Hong Kong, as well as the Girls Go Tech day with the Women's Foundation.

### A good sort

A bespoke double refuse chute was one of the stand-outs during the Kowloon Peak residential project's Green Flag assessment. The chutes facilitate better sorting, reducing the amount of inert material going to sorting facilities or landfills. We expect some savings in waste disposal costs in addition to offsetting the investment for installation and operation. The project was also praised for its adoption of digital solutions to reduce risk. Tilt sensors monitored settlement and movement of ELS and the nearby water reservoir in real time, while a fingerprint locking system controlled access to electrical distribution boards. Suspended platforms were used in all 13 lift shafts in lieu of scaffolding, minimising the amount of work required in confined spaces and at height.



The bespoke double refuse chute that facilitated better sorting

Our Kowloon Peak residential project was praised for its adoption of digital solutions to reduce risk.



Welding for our Sentosa project's prefabricated steel vessels was reduced

Our Singapore team achieved an excellent rating in the Building and Construction Authority's Green and Gracious Builder Scheme (GGBS) in recognition of their continued efforts to minimise the impact of construction on the neighbourhoods in which they operate. The objectives of the GGBS share many similarities with our G&CSC scheme.



Green Flag examiners found much to like about the performance of our Kai Tak 2B1 foundations team

### Less is more

Highlights from the evaluation of our Sentosa project in Singapore consisted of a reduction in site welding by taking a bolt and nut approach for the large, prefabricated steel vessels and linkways that form a key feature of the project. Energy saving measures included the use of grid power instead of diesel generators and solar power for CCTV and treated waste water monitoring, while noise reduction measures incorporated the use of full-height noise blankets during demolition works of the 37m-high Merlion statue. Accommodation is provided on-site for workers with good facilities for rest and relaxation in green surroundings!

### Foundations of success

Our foundations project at Kai Tak 2B1 impressed on a multitude of fronts. Key features included the use of ground granulated blast furnace slag (GGBS) to reduce the amount of cement required in marine deposit treatment, a modular grouting station that reduces work at height, and ground penetrating radar to locate underground utilities and voids. At the time of our examiners visit, the team was already halfway to its 15% carbon reduction target, achieved through initiatives such as an alternative design that reduced the number of bored and socket H-piles required, and use of electric vehicles, solar panels, grid power and Enertainer battery storage devices.

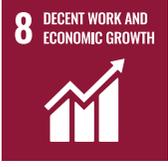
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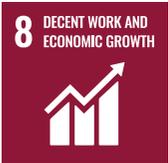
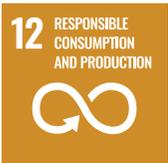
## Sustainable Development Goals



## Progress towards targets

In 2018, we selected six of the United Nation's Sustainable Development Goals (the Global Goals or SDGs) which we could contribute to. Given the nature of Gammon's business, seven specific targets under those SDGs were identified and incorporated into our sustainability strategy. The following table highlights our actions and progress in 2022.

Priority SDG	SDG Target	Gammon objectives	Gammon actions and progress	Relevant disclosure(s)
 <p><b>3</b> GOOD HEALTH AND WELL-BEING</p>	3.9 Reduce harmful impacts from air pollution emissions	Pursue zero wasted energy to reduce air quality impacts and carbon emissions	We actively supported the 'Power Up Coalition' under the BEC Low Carbon Charter. A guideline and simple power demand forecasting tool was developed to assist project proponents in the preparation of early temporary electricity applications for the power companies during the planning and design process. Gammon's Carbon Commitment Action Plan aims to phase out diesel use in place of electric plant. In 2022, we increased the number of Eentainers in use from seven to 20 to replace diesel generators and we purchased Hong Kong's first electric crawler crane.	<p>GRI 305</p> <p>GRI 403</p>
 <p><b>7</b> AFFORDABLE AND CLEAN ENERGY</p>	7.2 Increase substantially the share of renewable energy in the global energy mix	Increase renewable energy generation to reduce fossil fuel reliance and carbon emissions	Additional solar photovoltaic systems were installed at two depots for new high-speed road maintenance term contracts and the system at Gammon Technology Park is being expanded to double the capacity. Small-scale use of standalone solar lighting is used extensively on project sites.	<p>GRI 302</p>
 <p><b>8</b> DECENT WORK AND ECONOMIC GROWTH</p>	8.6 Substantially reduce the proportion of youth not in employment, education or training	Create shared value (using skills and expertise to address a social need while enhancing competitiveness)	We offer technical and craft apprenticeships and graduate training programmes. We also continued to connect with schools and provide school visits and took part in the CIC Master Talk programme and a variety of initiatives aimed at engaging young people and promoting construction as a career option.	

Priority SDG	SDG Target	Gammon objectives	Gammon actions and progress	Relevant disclosure(s)
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p>	8.8 Protect labour rights and promote safe and secure working environments for all workers	Zero Harm objectives - achieve zero fatalities, zero permanently disabling injuries, zero injuries to our workers and the public	By adopting design for safety, modern methods of construction and safe practices on sites, the Group accident incident rate (AIR) target of 3.6 was achieved, which was far below the industry figure of 29.5. We kept enhancing in-person safety education after a hiatus caused by social distancing measures. We continue to provide facilities to enhance wellbeing and committed to five-day working weeks in Hong Kong, Macau and the Mainland starting January 2023.	GRI 403
 <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	9.5 Enhance technological capabilities and encourage innovation and R+D	Improve management and project delivery efficiency through integrated digital project delivery	We kept pushing BIM and digital collaboration with all members of project teams including subcontractors. Currently 30% of our projects are using a common data environment to facilitate our operations. We have continued providing staff with training and carried out pilot trials to enhance technology capabilities with various digital tools and applications.	
 <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	12.5 Reduce waste generation through prevention, reduction, recycling and reuse	Pursue zero waste to landfill to minimise resource wastage	Other than fully using 4D BIM for digital construction rehearsal to avoid waste from rework, we continued to maximise MiC adoption and reuse of materials (e.g. structural steel struts) on site. A pilot to trial the use of double waste chutes commenced during the construction of typical floors of a high-rise residential development which aimed to increase waste separation and reduce the amount of inert material being sent to landfill or sorting facilities.	GRI 306
 <p>17 PARTNERSHIPS FOR THE GOALS</p>	17.17 Encourage public-private and civil society partnerships	Collaborate with the value chain to support SDGs	Continued pushing early electrification through 'Power Up Coalition' with BEC under the BEC Low Carbon Charter and use of battery energy storage system. A guideline and simple power demand forecasting tool was developed to assist project proponents in the preparation of early temporary electricity application to the power companies in the planning and design process. A webinar to explain the tool and provide case studies was also conducted.	

# 17

## How we manage



## Governance

GRI 2-6

GRI 2-9

GRI 2-11

GRI 2-12

GRI 2-13

GRI 2-14

GRI 2-15

GRI 2-17

GRI 2-19

GRI 2-20

### Governance structure and composition

The highest governance body for Gammon is the Board of Directors (the Board), which is chaired by the Chief Executive and comprised of Executive Directors and Directors. The overall management of Gammon's business is vested in the Board, with the day-to-day business managed by the Executive Committee (ExCom), which is composed of all Executive Directors and selected Directors and also chaired by the Chief Executive. The Board reports to the Board of the Holding Company (HoldCo Board) of Gammon China Limited (the HoldCo), which is the joint venture holding company set up by the shareholders to hold the Gammon business. Executive Directors also sit on the HoldCo Board, together with the shareholders' representatives. In addition, the shareholders are engaged in the HoldCo's Risk Management and Compliance Committee (RMCC) which meets four times a year to review the business from a risk and compliance perspective. Other members of the RMCC are select members of ExCom, our General Counsel, the risk assurance manager and relevant staff as required. In 2022, a Remuneration Committee (RemCom) was established under the HoldCo Board.

The Chief Executive is a senior executive but is not responsible for an individual business division, instead overseeing the entire business to prevent any potential conflict of interest. Conflicts of interest are to be declared and form part of our Code of Conduct<sup>2</sup> and are an identified risk in the corruption risk assessment for review and management. There are no independent directors on the Board, as all Executive Directors and Directors are full-time employees of Gammon and have specific defined responsibilities and authority within Gammon's operations. The organisation chart showing these responsibilities is presented on the next page. The ExCom is responsible for the strategy, policies, risk management and financial performance of the business, and is directly accountable to the Board. As all Directors are full-time staff members, there are no significant positions held by them outside Gammon and no independent directors or directors from under-represented social groups or external stakeholders. All directors have specific competencies related to Gammon's operations and impacts. Details of these can be found on the company website ([www.gammonconstruction.com/en/management.php](http://www.gammonconstruction.com/en/management.php)). The positions are permanent with no specific period of tenure, other than normal retirement at the age of 60, with the option of renewal.

<sup>1</sup> The names in brackets are English translations only and not official company names.

<sup>2</sup> Our Code of Conduct can be found on our website at:  
[www.gammonconstruction.com/uploaded\\_files/files/en/Code\\_of\\_Conduct\\_EN.pdf](http://www.gammonconstruction.com/uploaded_files/files/en/Code_of_Conduct_EN.pdf)

### Coverage of the report

GRI 2-2

There were 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:

#### Hong Kong

- Gammon Construction Limited (GCL)
- Gammon Building Construction Limited (GBCL)
- Gammon Engineering & Construction Company Limited (GECCL)
- Gammon E&M Limited (GEM)
- Digital G Limited (Digital G)
- Entasis Limited (Entasis)
- Into G Limited (Into G)
- Lambeth Associates Limited (Lambeth)

#### Macau

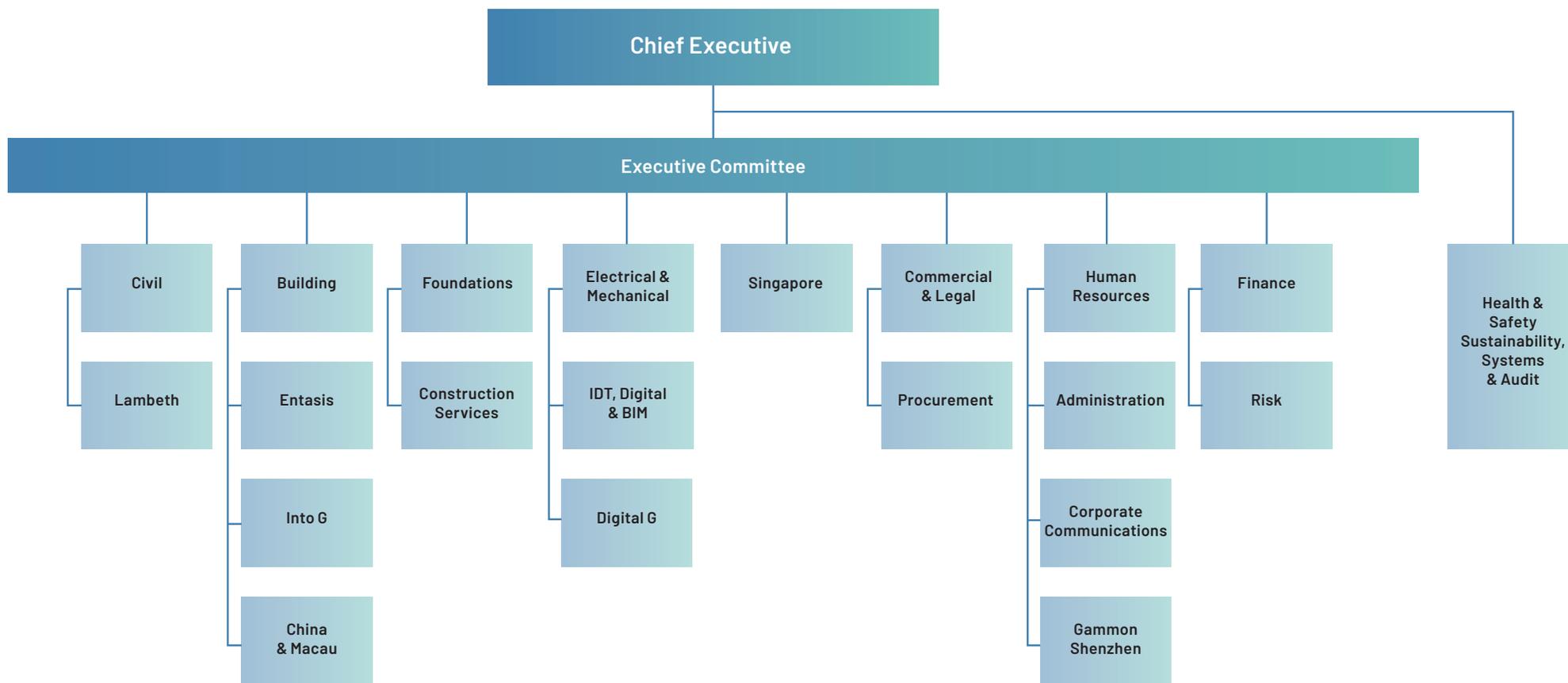
- Gammon Building Construction (Macau) Limited (GBCML)
- BBE&M (Macau) Limited BBE&M (BBEMML)

#### PRC<sup>1</sup>

- 金门建筑信息顾问(深圳)有限公司 (Gammon Construction Consultants (Shenzhen) Limited) (Gammon Shenzhen)
- 东莞原创金属结构有限公司 (Dongguan Pristine Metal Works)(Pristine)

#### Singapore

- Gammon Pte. Limited (GPL)
- Gammon Construction and Engineering Pte. Ltd. (GCE)



**Notes**

**Lambeth** provides engineering design services

**Entasis** provides external facades and general construction works

**Into G** provides interior fit-out and contracting

**Digital G** provides technology innovations

**Construction Services** includes plant and equipment, steel fabrication and concrete technology

**IDT, Digital & BIM** includes Integrated Data Technologies, Digital / CDE / BIM and digital innovations

The ExCom has overall authority for Gammon's corporate governance through the compilation and implementation of required standards and controls set out within our Business Management System (BMS). This set of documents details the mandatory internal controls across all aspects of our business, covering all projects and head/regional offices in Hong Kong, Macau, Singapore and mainland China. The main principles of corporate governance are set out within the group-wide section of the BMS and include mandatory requirements such as Gammon's code of conduct, delegation and limits of authority, control of documented information, information risk and security policy, corporate communications, etc. Other areas of our BMS cover mandatory controls for project-based activities, head and regional office functions, and pre-contract activities. The BMS is continually reviewed and updated for improvement and to incorporate latest developments from both internal and external influences. To ensure compliance with all areas of the BMS, Gammon's operations are subject to regular audits from our internal assurance teams, as well as external audits undertaken directly by our shareholders or specialist companies.

Gammon is a private construction company, jointly owned by Jardines and Balfour Beatty. As we are not a publicly listed company, the reporting requirements for the financial year stipulated in the Listing Rules are not compulsorily disclosed to the public. All information and data in this report are presented on a voluntary basis. We are not able to disclose details of our capitalisation, as this information is commercially sensitive.

## Remuneration policy, principle and process

The RemCom is comprised of representatives from shareholders along with the Chief Executive and Human Resources Director of Gammon and meets regularly to review and approve the remuneration policies for Gammon employees and other remuneration matters.

### Fixed pay and variable pay

Gammon provides fixed pay and variable pay to the Board and permanent monthly-paid employees. Directors' variable pay will be in the form of short-term incentives, and Executive Directors will be eligible for both short-term and long-term incentives. Short-term incentives are linked to financial, safety and personal objectives which may relate to sustainability, diversity and inclusion, talent development and succession planning. Long-term incentives are linked to long-term financial return and growth. Both objective settings of short- and long-term incentives are required to be approved by the RemCom. Termination payments (if of a discretionary nature) will be subject to approval of our shareholders.

## Retirement benefits

All employees are covered under the Gammon Group Staff Retirement Plan or a Mandatory Provident Fund Scheme (MPF) as specified in the employment contract and the appropriate contributions will be deducted monthly from their payroll. Directors and above in Hong Kong are eligible to get one-time selection to choose to join either the MPF or Occupational Retirement Schemes Ordinance scheme upon their joining or promotion during their employment with Gammon. Different arrangements will be offered in different business locations subject to the legal requirements and eligibility criteria.

**Long-term incentives are linked to long-term financial return and growth.**

## Sustainability governance

The Board has delegated responsibility for managing Gammon's impacts on the economy, environment and people to ExCom. ExCom is responsible for decision-making on sustainability issues that are addressed at weekly ExCom Meetings, monthly Directors Meetings and weekly Safety and Environmental Action Committee (SEAC) Meetings which are led by the Director for Health & Safety, Sustainability, Systems & Audit. At operations level, actions are mainly driven and supported by the Group Sustainability Manager, the Environment & Sustainability Team, the Operations Environmental Committee, and the Sustainability Action Group, as shown below.



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

Sustainability aspects and impacts are included in reports to the Board and are also presented and discussed during Risk Management and Compliance Committee meetings. Both our shareholders, Balfour Beatty and Jardines, review our sustainability progress every six months for key metrics. As part of that review, a third-party assessment is undertaken to audit our greenhouse gas emissions and other parameters. Balfour Beatty includes Gammon's data in its submission to CDP (formerly the Carbon Disclosure Project).

**Day-to-day operational activities aimed at achieving the objectives and targets occur across the business units.**

### Review and approval for sustainability reporting

The Board has delegated the Director for Health & Safety, Sustainability, Systems & Audit to be responsible for reviewing and approving the Sustainability Report as well as commissioning the professional external body to undertake the assurance. Either ExCom or the Board is responsible for reviews of the stakeholder engagement process and material topics, and topic validation.

<sup>3</sup> <https://www.gammonconstruction.com/en/sustainability-framework.php>

## Sustainability strategy

Guided by the vision, mission and values of The Gammon Way and our business priorities, our sustainability strategy, Responsible Growth – 25 by 25, outlines objectives, actions and targets for improvements under our four focus areas up to the year 2025, for which the ExCom has overall responsibility. The selection of targets includes some chosen from our six priority United Nations Sustainable Development Goals (SDGs) that we hope to support. These are shown on pages 79 to 80.



Achievement of the targets under our four focus areas along with their corresponding approaches are intrinsically linked to innovative solutions 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. The strategy is publicly available online<sup>3</sup> on our website and is summarised on the following page. Our current sustainability strategy is for actions and targets up to 2025, however, given our commitment to set a science-based carbon reduction target for 2033, we plan to refresh our strategy and targets in 2023.

Responsible Growth - 25 by 25 sustainability strategy



# 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

**PEOPLE**  
CARING

**SAFETY**  
ZERO HARM

**ENVIRONMENT**  
ZERO WASTE

**VALUE CHAIN**  
CO-CREATION

**SAFETY**  
ZERO HARM

reduction in number of accidents by 2025

## 25%

**ENVIRONMENT**  
ZERO WASTE

reduction in carbon intensity by 2025

## 25%

**VALUE CHAIN**  
CO-CREATION

increase in offsite construction by 2025

## 25%

**PEOPLE**  
CARING

reduction in turnover within first year of joining by 2025

## 25%

## Collective knowledge of highest governance body

To ensure the members of the highest governance body as a whole have knowledge, skills and professional experience required to properly perform their duties, briefings or training related to sustainability issues are organised from in-house specialists or industry experts. The Board is kept abreast of developments related to climate change risk during each Risk Committee Meeting.

In 2022, we developed a “Carbon Essentials and Science Based Targets” training session to improve the carbon literacy of Directors and senior managers and ensure a clear understanding of how to develop and deliver a meaningful and credible carbon reduction plan. Directors also joined a diversity and inclusion (D&I) programme organised by Jardines starting from November 2022. The programme aimed to provide the leadership team with knowledge and tools to build and role-model an inclusive culture.

## Values and norms of behaviour

GRI 2-23

GRI 2-24

GRI 2-25

GRI 2-26

Embodied within our BMS, 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 smart and digital 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 Conduct lays out the following principles for our business operations to which all employees must adhere:

- To instil 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 is responsible for overseeing governance and the Code of Conduct. The Code is publicly available on our website in both English and Traditional Chinese. Members of the organisation can seek advice from the General Counsel, Legal Team or ExCom on implementing policies and practices for responsible business conduct.

## Managing impacts and addressing grievances

We are committed to operating a responsible business and will cooperate on and remediate any significant negative impacts we have caused or contributed to. Our Code of Conduct details our commitments to ensure the rights of our employees are protected. It also provides an avenue to raise grievances related to business conduct or human rights. Other than reaching out to our corporate communications or legal teams directly, our sub-contractors, suppliers, Gammon employees and other stakeholders can email: [concerns@gammonconstruction.com](mailto:concerns@gammonconstruction.com)

The email will be handled by the legal team in the strictest of confidence. Gammon employees can also use our independent and confidential 'Speak Out' whistleblowing service, details of which can be found on the company intranet or in the employee handbook. On joining, Gammon employees are made aware of the grievance mechanisms available during their orientation.

A proper investigation and report will be completed after a whistleblowing complaint or grievance. There may be follow-up and remedial actions taken. The report will be reviewed by relevant directors. It will also be reported to the shareholders and feedback will be given. Where the reporting or the individual(s) involved have raised any suggested improvements as to the effectiveness of the process, these will be considered and incorporated where necessary.

## Managing risk

GRI 2-16

GRI 2-23

Our risk management approach covers all elements of our business including tenders and projects, supporting functions and departments, and corporate level (e.g. through our Risk Management and Compliance Committee (RMCC)). The risk and opportunity management procedures consist of roles and responsibilities, processes, communication and reporting, and the internal controls that form an integral part of our BMS. We use KPIs at operational level and key risk indicators at corporate level to provide an early warning system and target performance. This is reflected in both project and corporate risk and opportunity registers, which have a rating system (red, amber, yellow and green) reflecting our appetite such as critical, concerned, cautious or comfortable risk attitude.

ExCom attend quarterly Risk Committee Meetings (RCM) where we review risk trends, top ten risks (typically covering staff/resources, supply chain, safety, finance, reputation, project delivery, cyber security, business disruption, market situation and climate change) and Gammon's risk profile to allow us to report to the Board and respond to rapid changes. Project KPIs allow for quick reviews and actions of project performance. Additionally, project risk control compliance, effectiveness and efficiency are audited through our Assurance Department, who review the Project Delivery System using another traffic light system (red, amber and green) to represent the overall findings of the audit.

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.

**Gammon's risk profile to allow us to report to the Board and respond to rapid changes.**

## Data privacy and security

GRI 418

The matter of data privacy and security has been identified as a material issue by our stakeholders and was defined as 'Gammon's policies and practices to protect data privacy and information security, including any breaches or complaints received, and their responses'. Gammon strictly follows all the legal and regulatory requirements in the countries where we operate related to customer and other data privacy and security. We have established an Information Risk Security Policy and Acceptable Use Policy which includes data related to our customer's privacy.

The implementation guidance is integrated into our BMS, including control of documented information, information security classification and handling, web and internet usage, mobile device management and cyber incident response.

To protect the best interests of Gammon employees and our customers, as well as various stakeholders, a Data Protection Committee has been formed to ensure the policies and controls are being enforced across the business and projects. In the reporting period, we engaged an independent competent organisation to conduct a data privacy impact assessment to identify potential areas where we may be vulnerable to data security risks and ensure the necessary controls are in place. The total number of substantiated complaints received concerning any breach of data security including customer privacy and the total number of identified leaks, thefts or losses of customer data are provided in the KPI table in Appendix A.

## Anti-corruption

'Integrity' is one of Gammon's three core values and anticorruption is taken very seriously by the business and is a fundamental part of our Code of Conduct, to which all employees must subscribe. Our Group 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 encompassing 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 shareholders that we follow their Ethics and Compliance Programmes 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).

### 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, during orientation and/ or in e-learning for all new staff members. Refresher training is provided through e-learning every one to two years to monthly paid staff.

Training materials are updated periodically or whenever changes occur in the Code of Conduct, anti-corruption or associated practices. 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.

## Charitable donations and sponsorships

Our Code of Conduct describes how we ensure 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.

## Climate change-related risk management

GRI 201-2

### Background

As we know, climate change is bringing a range of new risks, as well as opportunities for all businesses. We have therefore further integrated and formalised the management of climate change-related risks and opportunities into our risk management process. We have set up a Taskforce on Climate-Related Financial Disclosures (TCFD) working group consisting of representatives from sustainability, finance and risk management disciplines, which is led by the Finance Director, with an overview by the Gammon ExCom through the RCM. This working group is providing input to our shareholders for their reporting, as well as for Gammon's own sustainability reporting.

Referencing the TCFD recommendations from the international Financial Stability Board, we continue to review and develop actions and mitigation measures to better position ourselves to manage climate-related risks and capture opportunities for sustainable development and carbon reduction.

**We continue to review and develop actions and mitigation measures to better position ourselves to manage climate-related risks.**

### Governance

The HoldCo Board meets quarterly through the RMCC where all risk management, compliance, assurance and effectiveness of controls are discussed, and oversight provided. We communicate the climate-related risks and opportunities through the Key Risks and Corporate Risk heat map with further details and updates provided in the TCFD & Shareholder Sustainability report.

Preceding the RMCC meeting, we have a quarterly RCM where ExCom and other Directors assess and discuss corporate risks and review emerging risks. This is fed back into the RMCC meetings. Climate change-related updates are provided by the TCFD working group which covers topics such as client specifications, new or changing policies and regulations, emerging sustainability trends, potential future carbon pricing, and the PRC Emissions Trading Scheme. From this meeting, Directors then integrate the guidance and recommendations into their own business and operations strategies.

## Management integration

Based on the register prepared during the risk identification and assessment process and updates from the TCFD working group, mitigation measures and action plans are being continually developed by the divisions and departments through their business strategies and budget plans. Climate change risks are included in the corporate and project risk registers for ongoing review and treatment. Targets have been including energy and carbon emissions under the Responsible Growth – 25 by 25 strategy but are being intensified towards a net zero carbon target. Initially, we have a commitment to set near-term company-wide emission reduction targets in line with climate science with the SBTi (see section on 'Committed to climate change action').

Feedback on climate change-related risk management has been included in the risk management and sustainability reports for the RMCC and updates are presented to the RCM meetings. The Finance Director and Risk Manager are responsible for convening the TCFD working group to review the climate change-related risk register annually.

## Climate change-related risk management approach

### Identification and Assessment

We used the TCFD recommendations as the framework for identifying risk and opportunities previously, as recorded in the climate change risk register. In 2022, several workshops were held with the TCFD working group to review the existing risk and opportunities related to extreme heat, after one of the hottest years on Hong Kong's record and more hot days expected as advised by the Hong Kong Observatory, being assessed as an additional top physical risk as listed next.

## Scenario Analysis

Scenario analysis is a well-established method for developing strategic plans to identify and prepare for climate risks presented by a range of plausible future states. Two scenarios were explored to assess plausible impacts of the climate transition to Gammon in Hong Kong, Macau, Mainland China, and Singapore. The scenarios were as follows:

- A high emissions 'Brown' scenario where only current policies and Nationally Determined Contributions are implemented with limited investment and climate action. This scenario assumes there may be setbacks in climate policies and action, and the prevalence of a business-as-usual mindset. The physical impact of climate change would be expected to be persistent, severe and unpredictable due to feedback loops and systemic collapse of the ecosystem. Businesses are expected to focus on climate adaptation and the risk from the transition is limited.
- A lower emissions 'Turquoise' scenario aiming to limit the increase in global mean temperature to 2°C. The reduction in CO2 emissions is assumed to occur gradually with an accelerated global push for decarbonisation in the current decade by governments and businesses. This would be achieved by an immediate and smooth policy reaction decarbonising the energy supply, accelerating electrification and switching to low-carbon fuels in industry, transport and buildings, deploying bioenergy with carbon capture and storage, and increasing afforestation and reforestation.

The climate change impacts from these scenarios were reviewed against Gammon's business operations in the short, medium and long term, that is 2030, 2040 and 2050. The findings were used to review and update the climate-change risk and opportunities register. The summary of top transition risks and opportunities are listed in the next section below.



## Strategy

Although a wide range of risks were identified, this section summarises only the priorities. Other likely impacts, mitigation actions and opportunities were identified. We also outline some of the approaches that Gammon will adopt in business strategy, site operations and financial planning in the coming years to reduce our exposure, as well as to capitalise on opportunities. The TCFD working group has also held discussions with both shareholders to collaborate and provide input for their TCFD reporting. This collaboration will continue regularly.

## Physical risks

Climate-related physical risks were identified at a regional level at locations where Gammon has key assets and projects, including Hong Kong, Singapore and Guangdong. Each region was assessed qualitatively, based on climate projections for risk exposure to extreme heat, sea level rise, wildfires, water scarcity, extreme rainfall / flooding and typhoons. Looking at the more severe medium- to long-term impacts, we identified the following as priority risks:

No.	Risk and impacts	Mitigation actions
1	<p><b>Extreme wind, rainfall and typhoons</b></p> <p>Increased severity and frequency of extreme weather events could lead to project delays as a result of damage to temporary or completed works, power outages, damage to roads and infrastructure, and damage to plant and equipment. Also, regional transport routes may become impassable for the delivery of materials.</p>	<ul style="list-style-type: none"> <li>a) Review of sites to identify highest risks projects and prepare enhanced designs and contingency plans.</li> <li>b) Pre-checks and mitigating actions, including plant, equipment, drainage plans and temporary works before T8+ typhoons arrive.</li> <li>c) Contingency plan for emergency teams and equipment.</li> <li>d) Design temporary works for extreme weather, waves and windspeed conditions.</li> <li>e) Ongoing enhancement of high-risk assets and leases against extreme weather.</li> </ul>
2	<p><b>Extreme heat</b></p> <p>Higher temperatures in southern China place additional risks on operatives on site e.g. heat stroke risk and heat exhaustion. Prolonged periods of hot days and hot nights exacerbating safety risk.</p>	<ul style="list-style-type: none"> <li>a) Active promotion of modern methods of construction (e.g. offsite fabrication and MiC / MiMEP, etc.).</li> <li>b) Follow hierarchy of controls in adopting measures given in CIC Guideline 2 to protect personnel from heat stress.</li> <li>c) Provision of adequate ventilation with cooling systems.</li> <li>d) Extended / additional rest periods during the hottest periods of the day or during periods of persistently extreme temperatures to reduce risks.</li> <li>e) Physical checks for workers to ensure they are fit for work.</li> </ul>

## Transition risks

In accordance with the transition risk categories presented in the TCFD recommendations, policy and legal changes, market and technology shifts, and reputational damage, we have identified the following as priority risks which are likely to occur over the short- to medium-term.

No.	Risk and impacts	Mitigation actions
1	<p><b>Carbon price</b></p> <p>Potential increase of material costs resulting from mainland China's Emission Trading Scheme, supply chain, change of policy/ regulation to meet carbon neutrality and net zero carbon demands.</p>	<ul style="list-style-type: none"> <li>a) Work with the supply chain to support and promote the transition to lower carbon materials.</li> <li>b) Reduce procurement of new structural steel temporary works elements and reuse as much as possible (e.g. strutting, modular steel towers, etc.).</li> <li>c) Source other low carbon materials (e.g. low carbon certified rebar).</li> <li>d) Explore methods to reduce the carbon footprint in our concrete mixes (e.g. GGBS and CarbonCure).</li> <li>e) Promote and adopt offsite construction methods, BIM, digital twins and collaborative working to improve construction efficiency, reduce abortive work, and minimise wasted energy.</li> </ul>
2	<p><b>Cost of low carbon plant</b></p> <p>Increased plant replacement costs for lower carbon options of Gammon-owned plant and equipment.</p>	<ul style="list-style-type: none"> <li>a) Explore cost-effective alternative energy sources for diesel plant and equipment e.g. take advantage of electric motor efficiency and idling avoidance.</li> <li>b) Work with the supply chain to support and promote the transition to lower carbon energy sources e.g. the Power Up Coalition, plant suppliers, and customers.</li> <li>c) Develop plant replacement plan that matches anticipated development and production ramp-up of non-fossil fuelled plant.</li> <li>d) Plan electric vehicle transition.</li> </ul>

## Opportunities

The transition to a low-carbon economy also presents significant opportunities, and we have identified the following list, for the short to medium term:

No.	Opportunity	Actions
1	<p><b>Low carbon building market</b></p> <p>Expanding our existing revenue streams for green / sustainable / low carbon infrastructure and buildings.</p>	<p>a) Continue to demonstrate leadership in terms of delivering certified green building projects.</p> <p>b) Installation of new solar PV systems at Gammon facilities and supply and installation of PV solar systems for clients.</p> <p>c) For clients, we have also developed lower carbon high-performance concrete mixes with CIC Green Product Certifications.</p>
2	<p><b>Potential energy and construction savings</b></p> <p>As a result of using low carbon alternatives, we may reduce energy consumption and waste, and increase material re-use, which reduces costs and also enhances reputation.</p>	<p>a) Structural steel reuse, e.g. ELS for cofferdam, etc. to reduce new purchases</p> <p>b) Offsite MiC fabrication in a potentially more energy efficient environment</p> <p>c) Alternative energy e.g. solar panels on site offices connected to a Feed-in Tariff.</p> <p>d) Explore cost-effective alternative energy sources for diesel plant and equipment e.g. take advantage of electric motor efficiency and idling avoidance</p> <p>e) Power up coalition to accelerate early electrification</p>

## Resilience

Gammon already has business continuity plans to manage acute physical risks and ensure rapid and continued operation. Based on the experience of Typhoon Manghut (T10 typhoon), we were able to recover most business operations within a matter of days. As we continue to increase offsite construction, the business's resilience will continue to improve. The experience gained from the restriction on river sand supply and, later, the availability of materials early in the COVID pandemic has also taught us to adapt quickly and diversify supply chains, transportation routes and material sources. We have also seen rolling closures of factories in southern China to meet energy efficiency / carbon reduction targets. However, we were able to quickly arrange alternative sources of supply in many cases. We have also started to investigate alternative energy sources for heavy plant and equipment.

## Metrics and targets

Reducing our carbon emissions and energy consumption are key to our climate-related transition and long-term resilience. We have strong commitments to the continual improvement of our environmental performance through carefully considered metrics. We have been reporting on these for a number of years with our greenhouse gas inventory being independently verified annually. Under our Responsible Growth - 25 by 25 strategy, we have targets to reduce carbon emissions intensity (scope 1 and 2) and energy intensity by 25% by 2025 compared with a 2016 baseline. We will be reviewing and refreshing these targets in 2023 and will include a target for scope 3 emissions in line with our SBTi commitment.

With reference to the 'Implementing the Recommendations of the Taskforce on Climate-related Financial Disclosures' report, our industry best fits in the 'Materials and Buildings' non-financial group. We have selected the most relevant performance metrics to report in Appendix A of this report, as follows:

- Total energy consumed, broken down by source (non-renewable and renewable) (see data under GRI 302-1)
- Energy consumed outside the organisation (see GRI 302-2)
- Total energy intensity by revenue (see GRI 302-3)
- Scope 1, 2 and 3 greenhouse gas emissions (see GRI 305-1, GRI 305-2, and GRI 305-3) and
- Greenhouse gas emissions intensity based on revenue (see GRI 305-4).

## Safety - Zero Harm

GRI 403

### Commitment to safety

From our stakeholder engagement process, not unsurprisingly, the topics of 'safety management' and 'working environment' were viewed as important material issues by both internal and external stakeholders who participated in the stakeholder engagement process. We present below our approach to managing safety and providing an appropriate working environment in accordance with GRI 403: Occupational Health and Safety 2018. Key performance indicators are provided in Appendix A.

Gammon is committed to providing a working environment that is as safe as possible for its staff and others working on our sites (e.g. subcontractors workers, suppliers, client teams and other business partners), 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.

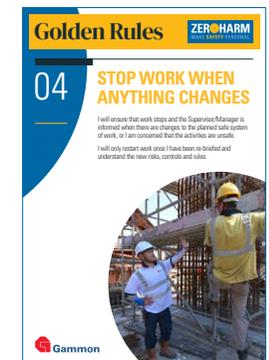
## Occupational health and management approach system

To protect our people and those working for us, we abide by all the legal and regulatory requirements in the countries where we operate. However, for Gammon, this is considered to be the bare minimum. As stated in our Code of Conduct, 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. No exception is allowed.

The Zero Harm philosophy is supported by senior management's 'Bold Commitments', our HSEQ Policy' and a comprehensive integrated BMS. The BMS incorporates the requirements of an Occupational Health and Safety Management System (OHSMS) which covers 100% of our operations. Our whole OHSMS is third-party certified under 'ISO 45001:2018 Occupational health and safety management systems - Requirements with guidance' for use for all our operations, including subcontractors in each construction site and workplace such as workshop, storage and fabrication yard.

We implemented the original OHSMS several years ago, voluntarily. The scope of the OHSMS covers all our works, activities and workplaces and both our own employees and those in workplaces controlled by Gammon. It also covers any potential health and safety (H&S) impacts associated with our products and services. While there is an expectation that safety is a shared responsibility for all employees, Gammon also directly employs qualified occupational H&S professionals to support the management of occupational H&S for our operations.

In addition to the OHSMS, we have in-house rules, standards and guidelines – such as our four Golden Rules (see below), Bold Commitments which are reviewed and updated regularly and safety standards – 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, serious infringements, the consumption of alcohol or taking of drugs during working hours.



1. [www.gammonconstruction.com/uploaded\\_files/files/en/HSEQ\\_EN.pdf](http://www.gammonconstruction.com/uploaded_files/files/en/HSEQ_EN.pdf)

## Hazard identification, risk assessment and incident investigation

We operate a process of risk and opportunity management at all levels and in all divisions to address risk. A key part of this process is obviously hazard identification and planning for safety to mitigate potential risks related to H&S.

Planning for safety usually starts during the tendering stage and potential occupational H&S 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 (hierarchy of controls) for 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. Therefore, we always try to adopt a 'safety-by-design' approach to reduce safety and health risks throughout the project life cycle. This often includes digitalisation and standardisation where possible so that DfMA can be used and work can be taken offsite into more easily controlled factory working environments.

At the very beginning of a project, HSE hazards that present significant risk in routine and non-routine work activities will be identified at outset and review workshops – the risk is quantified by considering its probability and impact severity and mitigation is examined. The risk is logged in an active register held at project level but should proposed mitigation measures prove to be unsatisfactory, it will be raised to a divisional or ultimately corporate level register. The register is reviewed monthly at subsequent review workshops with a view to removing or lowering the impact of existing risks and to include new risk entries. Project leaders will hold a bi-weekly 'Real Risk Meeting' on projects to look ahead and identify issues related to programme, method, resources and changes to work plans that will impact safety.

At the operational working level a Dynamic Risk Assessment (DRA) process is implemented to identify what might go wrong on a daily basis at the frontline and to ensure risks are eliminated or properly managed in accordance with method statements. Our in-house developed app, Gambot, provides prompts to assist the works supervisor with the digital version of this process, known as iDRA.

Training and continual process improvement is an integral 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 wellbeing;
- Providing safe plant, equipment and tools for worker use; and
- Changing engineering design, programme and methods to reduce or eliminate risk during construction.

A safety and quality KPIs assessment was introduced to benchmark managers and ensure they drive the correct leadership behaviours. The assessment is carried out on a monthly basis and action areas will be identified for individuals, as well as divisions and the company. The results are presented to ExCom monthly to review, identify trends, and provide feedback or direction for improvement.

The risk management and KPI assessment systems, as well as the formal internal and external audits, and our in-house system assurance validation process, project assurance programme, and management review process, all contribute to the evaluation of our H&S management system, its effectiveness and how to improve our practices.

Through our four Golden Rules, particularly "Report all unsafe events and conditions", our staff and all workers are empowered to report work-related hazards and for workers to remove themselves from situations they believe could cause injury or ill health. They can inform their supervisors or use our Gambot app to report a 'safety observation'. We have a formal whistleblowing procedure to protect employees and workers against reprisals. This includes Speak Out which is a confidential service managed by an independent third party to help foster an inclusive, safe and caring workplace and allow reporting in situations where it is inappropriate or not possible to disclose a matter of concern to a direct supervisor, HR or our Legal team.

Should an incident occur on one of our project sites or other premises, we have in place a procedure on 'Reporting and Investigation of Incidents and Complaints'. The procedure details the roles and responsibilities of key staff members and outlines the process of notifications / reporting depending on the severity of the incident. It also describes the incident investigation process including the actual and potential severity rating, detailed observations, and the use of a Human Factors Analysis Classification System. Finally, the investigation would identify any requirement for a review of the risk assessment and method statement and any recommendations to prevent reoccurrence and improve the safety management system, with follow-up responsibilities and target completion dates identified. The investigation is submitted to Directors and is normally reviewed by ExCom at the SEAC meeting and improvement measures are presented in Divisional Meetings. Any significant incidents (related to Gammon or other contractors) are also shared at a weekly core brief for all managers so that lessons can be learned.

## Worker training on occupational H&S

All employees and workers from our supply chain go through Zero Harm Induction training and this is refreshed every five years. The Four Golden Rules are a key part of this training, as well as addressing the major hazards on construction sites. Every site has its own induction training when employees or workers come to the site for the first time. During that induction, the particular hazards of the site and mitigation approaches are explained. There are statutory training and certification requirements for workers established in the jurisdictions where we work, so that higher risk operations are only conducted by properly trained staff. However, on-the-job training is also delivered by our experienced operatives who provide mentoring and ensure competency. We provide further bespoke training on selected roles e.g. traffic controllers, riggers, scaffolding, temporary works etc. Workers who are employees are encouraged to join further skills training and achieve trade certificates to ensure they understand the occupational and safety hazards and prevention methods associated with their particular trades.

Prevention and risk control measures are promoted to our staff and workers in day-to-day operations through morning assemblies, tool box talks and pre-work briefings at the frontline in accordance with DRAs. There are also regular safety promotion campaigns on sites with safety briefings provided by safety personnel.

## Occupational health services and worker health promotion

We allocate sufficient resources to maintain occupational health services at our workplaces, which include registered HSE officers, enrolled site nurses, qualified first aiders, trained mental health first aiders and healthcare leaders to ensure both the statutory requirements and Gammon's voluntary commitments are being met. Gammon's site nurses and our healthcare leaders provide a range of health and wellbeing services for employees and subcontractor workers. These include:

- Proactively reaching out to staff and workers via regular health visits
- Voluntary health checks for both employees and subcontractor workers
- Free, on-site and during working hours
- Includes blood pressure, blood sugar and cholesterol to help prevent and provide early treatment of non-communicable diseases
- Follow-up recommendations for health issues identified
- Health data collected is kept confidential and used for planning of health promotion events
- Referring or providing information about access to health services provided by the Government or Gammon
- Medical and dental plans subsidised (or offered at a discounted price) by the company
- Health talks and promotion on smoking cessation and alcohol consumption
- Incentive programme of smoking cessation
- Provision of free flu vaccination to staff and workers annually
- Providing advice and updated information on disease outbreaks, epidemic or pandemic
- Health and wellbeing promotional talks which include prevention of diseases and healthy lifestyle guidance, examples include:
  - Heat stroke prevention
  - Disease prevention
  - Avoidance of musculoskeletal disorders
  - Stress management and mental health
  - Resilience exercise
  - Financial wellness

Some workers for specific roles such as plant operators and drivers are also required to carry out formal health checks but most health and wellbeing activities are voluntary, with promotion through morning assemblies and Site Safety Committees and sometimes with small incentives offered such as souvenirs or provision of lunches.

### Employee assistance programme

All Gammon staff, as well as their spouses and children up to the age of 23, have access to a professional, independent and confidential employee assistance programme we call 'Care Line'. This 24-hour hotline service has professional counsellors who can help callers manage stress and emotional disturbances with work, family, social and other possible challenges encountered in daily life. Care Line provides services in English, Cantonese or Mandarin. The service includes face-to-face counselling and referral to a clinical psychologist. Critical incident support and management is also provided to develop interventions to help with emotional reactions and negative consequences of involvement in or exposure to a critical incident.

## Worker welfare

We try to go beyond compliance and the local industry norms in terms of worker facilities on site. We provide ventilated or cooled rest / welfare areas, lockers, phone charging, toilets, showers, refrigerators, microwaves, ice machines, snacks, meals and drink vending machines, canteens (where possible), and in most cases laundry services or machines 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.



## Worker participation, consultation and communication on occupational H&S



### Discussion is encouraged at the Safety Stand Up event

Our leaders are mindful of risks and maintain a fair and just culture that allows all our stakeholders, including employees and workers, to engage in the delivery of the HSEQ Policy and promote a mindset and culture for implementation and continual improvement of health, safety, environmental and quality performance. 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 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 H&S in the workplace and to listen to concerns raised. We ensure all the subcontractors' representatives attend the



### We launched "What3Things" – a short summary of three key measures that must be in place for each of our fatal risks

monthly SSC meeting in our projects. This means 100% of workers are represented by formal joint management-worker H&S committees.

We engage all workers in safety engagement events (called 'Stand Up' in 2022) which are held periodically on all sites. At the events, we engage with workers, review and discuss issues, incidents, risks and prevention. Subcontractors are also invited to our annual Safety Conference, as well as stakeholder engagement exercises. Regular toolbox talks and field control briefings (pre-work briefing) are delivered by frontline supervisors and engineers. Pictorial method statements are used to illustrate how to undertake tasks safely and to discuss with all workers at the actual work location. Close communication is maintained between our site management and subcontractors' managers and supervisors (the 'real guys') and various measures are taken to promote safe working and to eliminate risks (e.g. awards and prizes).

## Prevention and mitigation of occupational H&S impacts directly linked by business relationships

The process of prevention of occupational H&S impacts starts at the vendor assessment stage. All suppliers and/or subcontractors are required to declare their broad practices on safety management and adherence to Gammon's Code of Conduct as part of the vendor assessment process. For major new vendors, desk-top vetting may be undertaken to check for any historic violations or H&S concerns. Where possible, for selected suppliers our staff will do an on-site check of factory facilities and conditions (see also section on Value Chain).

During production processes, our quality control team will be in the supplier's premises and will raise any further concerns and identify opportunities to mitigate risks. Commercial terms will be used where necessary to drive better performance by our suppliers. Where we have formed a strategic relationship with a factory that is operated by a supplier, but production is planned and supervised by Gammon, there is also oversight of occupational H&S and our staff will work with the factory manager to proactively prevent and mitigate impacts.

## Customer H&S and compliance of products and services

GRI 204

GRI 416-2

The two areas of 'compliance of our products and services' and 'customer H&S' are important to our business, and were raised as a material issue by stakeholders under the topic 'compliance and quality of products and services'. 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 Code of Conduct extends to our supply chain partners to ensure the same level of governance is being propagated to our supply chain.

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 H&S 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 H&S 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 H&S 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 50001:2018. Our soil laboratory at the Gammon Technology Park in Tseung Kwan O is also certified to ISO/IEC 17025:2017 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 have also been awarded a BSI Kitemark™ for innovation management based on ISO 56002.**

We have also been awarded a BSI Kitemark™ for innovation management based on ISO 56002. As part of our approach to carbon measurement and management, we also verify our greenhouse gas emissions inventory against the ISO 14064-1: 2018 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 meetings and 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. Our Sustainability Report notification is sent out to key subcontractors and other announcements are made through regular communication channels. Each year there is also a sustainability briefing provided by senior managers from the sustainability team to all main project sites and offices or online.



## Environment - Zero Waste

GRI 301

GRI 302

GRI 303

GRI 305

GRI 306

### Environmental management



### Approach

As mentioned earlier, environmental management is an integral part of our BMS and our environmental management system has been independently certified against ISO 14001:2015. 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 modern methods of construction (MMC) 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, identify the carbon

reduction potential and cut waste in all its forms (refer to Sustainability Report 2018, page 12). There was a further update in 2021 to incorporate a Zero Waste Champion from the production team responsible for supporting the waste reduction proposals.

We are active Council members of the Business Environment Council (BEC) and remain a Patron member of the Hong Kong Green Building Council (HKGBC). We have representatives on BEC Advisory Groups and HKGBC Standing Committees. 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 15 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 and a Smart Waste Accounting system that retrieves construction waste data from the HKSAR Government's system. 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 MyAce. In particular, there is a sustainability dashboard (S-Dash) that combines several sustainability-related data (environment, social, costs, safety) into an easy-to-understand single summary which is available through MyAce. 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. Data on the overall annual environmental performance of the group and divisions against our sustainability strategy targets is also captured in our 25 by 25 dashboard.

## Material issues

Our stakeholders have identified ‘Sustainable resource use’, ‘Low carbon construction – materials’ and ‘Low carbon construction – 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.

## Sustainable resource use and low carbon materials

GRI 301

### Our approach

During our stakeholder engagement process, the issues of low carbon construction materials and the sustainable use of resource were identified as being material for Gammon and of most interest under the topic of the Environment, with particular interest from clients, academic institutions, and industry associations. We try to deliver products and services according to their designs using resources wisely and minimising negative social and ecological impacts. We are committed to the efficient use of resources and minimising impacts on environments affected by our operations.

We adopt the widely accepted ‘3Rs’ philosophy of ‘reduce, reuse, recycle’ and focus very strongly on reducing material use to avoid waste generation in the first instance by rethinking designs and construction methods and avoiding rework or abortive work where 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 and reducing embodied carbon 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, advocacy, communication and promotion of best practice to get deeper and more significant change across what is still a traditional industry.

Stakeholders have pointed out that while Gammon is making progress when it comes to the sourcing and use of sustainable and low carbon construction materials in Hong Kong, they recommended we try to increase our influence

**BIM can also facilitate off-site construction and data can be taken from the model directly into factory processes.**

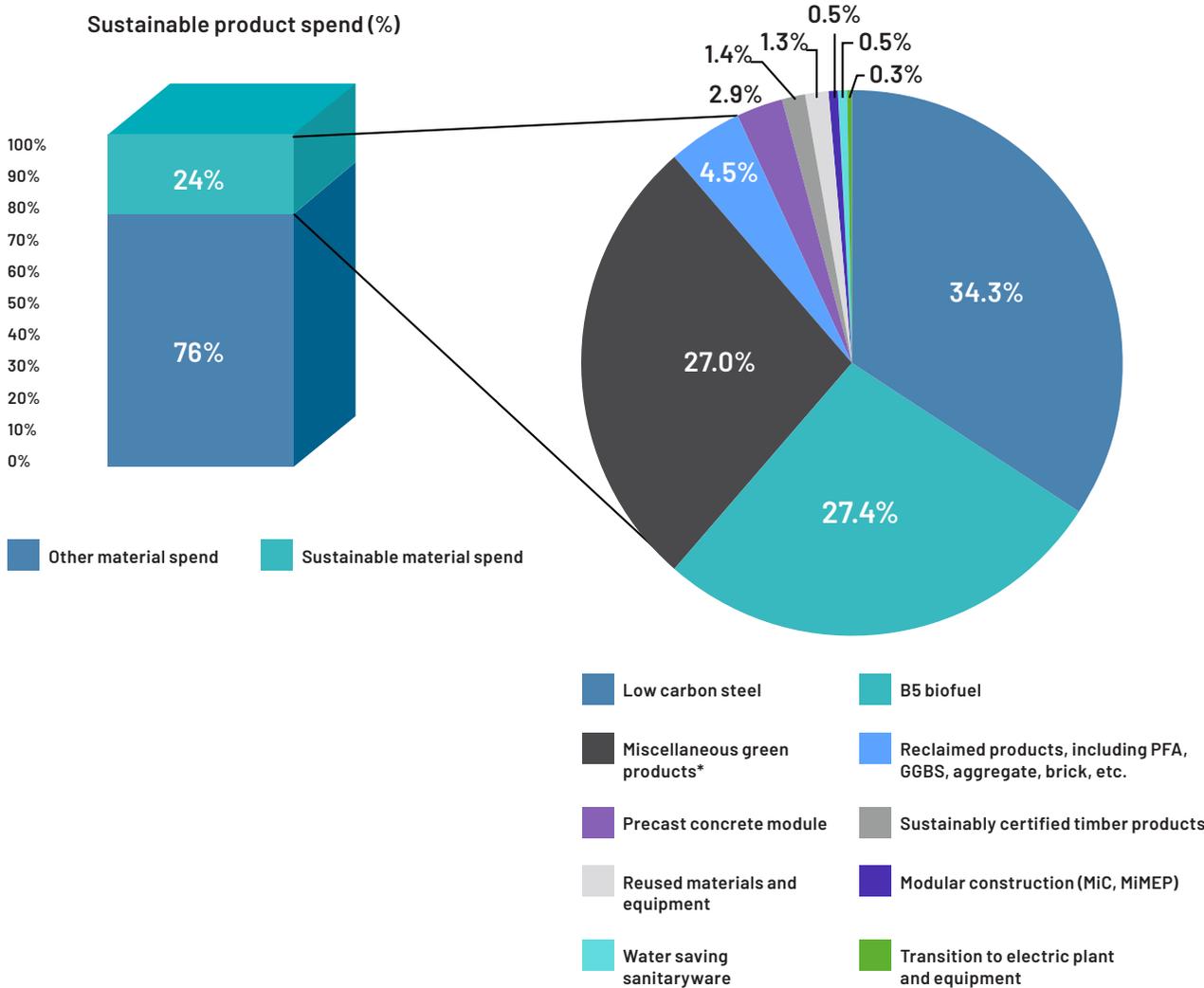
with our business partners along the supply chain, especially subcontractors, so that we create wider positive impact.

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 facilitate early use of BIM with a high level of detail, a collaborative design approach using a common data environment, sufficient lead time for offsite construction and a leaner design overall using an integrated digital project delivery approach.

Material use increases significantly when changes are made to the design, especially in the built construction, creating waste and requiring additional materials and energy use. Using a detailed BIM model and 4D work sequencing can avoid clashes and mistakes, allow visualisation (with virtual reality) and fix designs earlier to reduce total material use and wastage as well as improve buildability and safety. 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. rapidly renewable or with high recycled content) and low carbon design, so early involvement in projects would also facilitate this.

However, until early contractor involvement is more widely adopted we also make proposals to clients and subcontractors for alternative and low carbon 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.

Below is a breakdown of spend on 'green' products which have characteristics such as lower embodied carbon, being recycled, reclaimed or reused materials, using modular and offsite construction approaches, or improving energy or carbon efficiency, or water saving, etc. These materials accounted for around 24% of total spend in Hong Kong.



Note: \* Low carbon cement, EV, HDPE safety barriers etc.

### Steel and concrete

As concrete and steel are the two most widely used materials in construction in Hong Kong (with the highest embodied 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, for modular reusable structural steel struts, in edge protection and other temporary works needed for the construction process). This not only minimises natural resources and embodied carbon but also reduces costs. Detailed data on the construction of these materials in recent years is included in Appendix A.

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, MiC and MiMEP for plant rooms) which result in more efficient use of resources or energy and waste during installation. Tools such as our MyACE 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. Recently we have been looking for lower carbon steel options with supplies often coming from electric arc furnaces which use higher recycled steel percentages. 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.

## Low carbon ready-mix concrete

Our Concrete Technology Services (CTS) continues to investigate new alternatives for more sustainable concrete mixes. The raw material types, sources (e.g. recycled content for cement replacements, such as use of pulverised fuel ash (PFA), ground granulated blast-furnace slag (GGBS) or silica fume, see Appendix A), 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 site' life cycle carbon footprint for concrete mixes using the ISO 14067:2013 approach. We were the first concrete producer to have Construction Industry Council (CIC) Carbon Labels for our ready-mix concretes which have since been changed to CIC Green Product Certification Scheme labels as the scheme has developed. At the end of the year we had around 340 mixes with CIC Green Product Certification with over 90% performing at Platinum or Gold level. In 2022, CTS further investigated and trialled further embodied carbon reduction options including the use of ground granulated blast-furnace slag (GGBS) as a cement replacement and Carbon Cure technology which injects waste carbon dioxide into the concrete mixing process to increase mineralisation and strength and enable a reduction in cement content (see page 31 for details).



## Other materials

In addition to reduction in steel and cement use, we try to reduce material impacts through the procurement of more sustainable materials, for example, with higher recycled content, lower embodied carbon, from sustainable sources, and the use of design alternatives to reduce material quantities. One example is our use of certified sustainable timber (normally FSC or PEFC certified) for all our formwork purchases (and timber doors if needed) under our Sustainable Timber Procurement Policy and Implementation Guideline (please see data in our KPIs in Appendix A). 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 the amount of paper-based submissions. More recently, we have also been sourcing certified sustainable timber in cabinetry and furniture when required. In addition to ongoing ad hoc communication with suppliers and subcontractors, we often conduct sustainable procurement workshops in Hong Kong and Shenzhen or online to increase their capability in green procurement.



Formwork



Office paper

Our sustainable timber purchases for 2022 (HK)

## Waste and circularity

GRI 306

'Waste and circularity' was not a topic identified as a material issue by our stakeholders. However, as it continues to be a concern for our industry and circularity relates closely to the sustainable use of resources, we continue to report how we manage and aim to reduce waste generation across the business and increase material circularity.

### Our approach

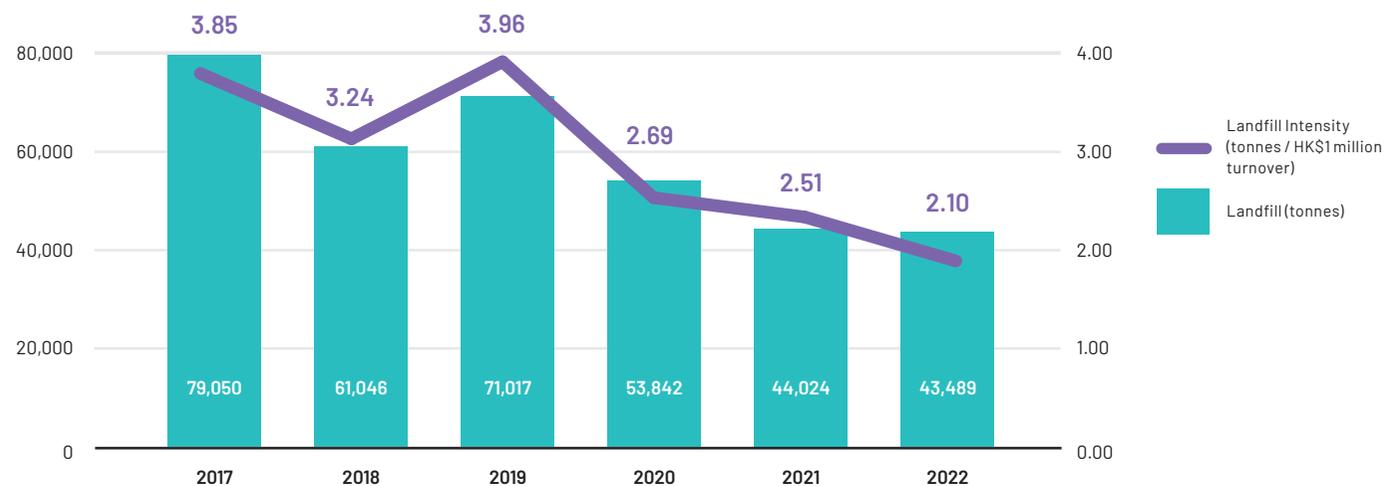
Gammon has developed a set of production procedures including waste management to guide our teams on managing these aspects. It is the responsibility of the project site environmental representative, site depot or workshop manager or environmental officer to ensure these procedures are implemented. The project team must ensure waste management risks are identified and assessed and appropriate mitigation measures implemented and maintained to achieve compliance with the law, contract, commitments of the Health, Safety and Environmental Policy, Sustainable Procurement Policy<sup>1</sup>, and environmental objectives and targets. Most sites prepare a project-specific Waste Management Plan to define responsibilities and mitigation clearly from the beginning of the project. The mitigation measures and controls also extend to suppliers, subcontractors, and materials where relevant.

1. [https://www.gammonconstruction.com/uploaded\\_files/files/en/Procurement\\_Policy\\_EN.pdf](https://www.gammonconstruction.com/uploaded_files/files/en/Procurement_Policy_EN.pdf)

We believe waste is one of our greatest environmental challenges (particularly in Hong Kong where there is limited 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). An example is turning waste cooking oil into a feedstock for biodiesel and this was an area that we started to work on within the Jardines group. We believe off-site construction and using a design for manufacturing and assembly (DfMA) approach present the best opportunities for improvement both on material use (as mentioned above) and waste avoidance and we continue to promote these both internally and externally. Offsite approaches such as MiC and MiMEP (and improved onsite works) are facilitated through detailed BIM application, full co-ordination of all design disciplines, and construction sequencing using 4D rehearsals in a digital twin environment with early design freeze. This approach further reduces the risk of abortive works or rework and improves the accuracy of material quantities ordering and timing for deliveries.

For traditional in situ construction, the large numbers of suppliers and subcontractors (some of which are client-specified) make it difficult to centralise logistics and minimise unintended waste (e.g. from surplus ordering). Digital approaches, however, are helping to improve the timing of deliveries to reduce waste from damage or losses. We have also centralised Gammon's procurement and inventory database to reduce redundant purchasing. Our DiMart centralised procurement app has been enhanced further and also reduces the risk of over-ordering through our electronic procurement process.

### Landfill waste quantities (absolute and intensity)



Notes: includes incineration waste and 50% of HK waste sent to sorting facilities

At the individual project level, every new project in all divisions must complete a Zero Waste Plan to identify major potential upstream and downstream waste streams and opportunities to improve in terms of solid waste, energy, water and carbon. Each project is asked to forecast the major types / sources of solid waste (for landfill or incinerator) that will be generated and to select some key wastes on which to focus initiatives, monitor and set targets for reduction. We also have a Waste Management Handbook for the Buildings Division that aims to provide project teams with practical and achievable guidelines for achieving our waste reduction targets. The Handbook includes guidance on roles and responsibilities, timing of waste generation, monitoring, and suggested waste reduction measures.

Hazardous waste is avoided where possible through the procurement system and any residual hazardous or chemical waste (e.g. lubricant oil and paint related wastes) are handled in accordance with the local regulations and requirements.

We advocate waste management improvement and policy support in Hong Kong through our role as a Steering Committee Member of the Circular Economy Advisory Group at the BEC and work with our supply chain to try to reduce waste through direct dialogue, workshops or online engagement.

## Reuse, recycling and disposal of construction waste

In Hong Kong, we continue to be challenged by waste reduction, both upstream and downstream, as is the rest of the construction industry. All construction waste disposal in Hong Kong is tracked through a Government tripticket system for inert and non-inert materials. All our inert excavated materials (which make up the majority of the waste) are directly re-used for backfilling on site, transferred to other sites (e.g. for backfill or ongoing reclamation) or re-used through the Government or public fill sites. Limited opportunities and high costs for recycling are combined with heavily constrained sites making non-inert waste separation difficult. Currently, the only widely recycled materials on sites in Hong Kong are waste metals, and this is largely due to the market for scrap metal. However, we also recycle other hard, inert material (e.g. demolition waste) where possible for use as aggregate for paving or concrete blocks or for drainage/compaction layers / haul roads at landfills. We also recycle electrical wastes, plastic bottles, safety helmets and some wooden pallets and timber where possible, and use the new facility, Y-Park for yard waste such as felled trees. Wastes sent for reuse or recycling are tracked through a tailored trip ticket / receipt approach with third parties e.g. reuse as backfill on alternative site. A list of recommended recyclers is maintained for typical materials. 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;
- The use of modular steel struts which are designed for reuse on multiple projects;
- Off-site factory construction where accurate ordering, bulk production and easier materials management and recycling can reduce waste generation;
- The use of BIM with visualisation and early design freeze to avoid abortive and repeat work;
- Re-usable packaging methods (e.g. curtain wall unit frames / stillages) and packaging 'takeback' by suppliers (e.g. cable drums);
- 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).

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). Each recycler provides evidence of waste managed through invoices. Data on our waste generation and disposal is shown in Appendix A.

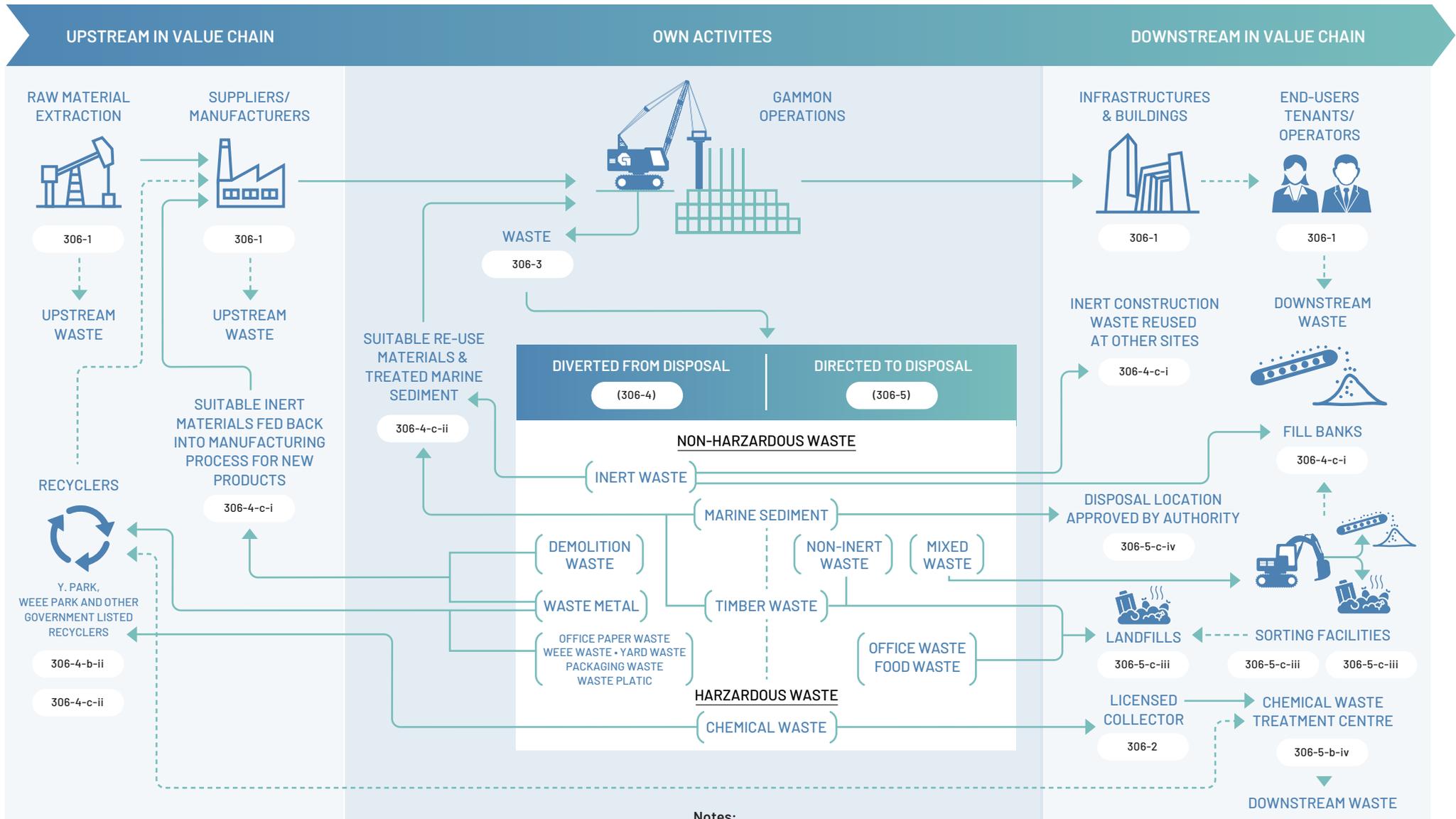
## Reducing and recycling office waste

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 plastic bottles in machines where possible;
- 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 starting with the Hong Kong head office, Gammon Technology Park and then the Shenzhen office. We continue to promote this across the business. Several of our longer-term project sites and permanent offices also participate in the HK Green Organisation Certification WastewiSe programme. The distribution of refillable drinking bottles and reusable tableware is common on our sites for staff and in some cases we have also worked with local restaurants to provide reusable lunchboxes for staff lunch meetings / lunch and learn sessions which are then returned to the restaurant.

## GRI 306 - Process Flow of inputs, activities, and outputs that lead or could lead to significant waste-related impacts (HK-based)



[Offsite] [Onsite]   
 ———> Movement of inputs and outputs through the organisation's value chain   
 - - - - -> Limited information available to the organisation

**Notes:**

1. The size of the icons is not-to-scale, the data is presented in Appendix A.
2. Waste management in Singapore is largely the same but less complex. Construction waste is first sent to licensed recycling centres for central separation and recycling and fully complies with local regulations.

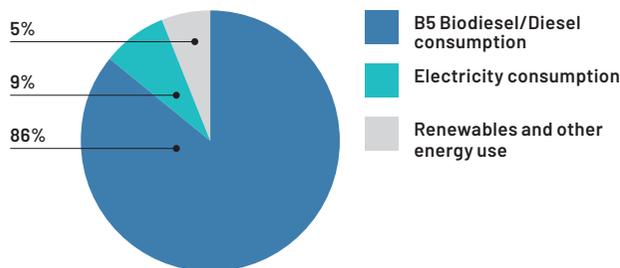
## Low carbon construction - energy

GRI 302

### Energy mix

'Low carbon construction - energy' was identified as a material issue during our stakeholder engagement process. The majority 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 and heavy civil engineering works. 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, crane lorries etc.).

2022 Group energy mix



### Responding to climate change

While the issue of climate change was not identified specifically as a standalone material issue in our stakeholder engagement, it is of course directly related to low carbon construction under the topic of energy consumption. We aim to mitigate our contribution to global warming and climate change by reducing the carbon emissions associated with our energy consumption and improve our energy efficiency. Reducing our carbon intensity and using cleaner, lower carbon energy is part of that challenging journey. In 2022,

we also made a commitment to set science-based carbon emission reduction targets as mentioned in the earlier section on 'Committed to climate change action'. In the following sections, we discuss how we are managing and taking action on energy-related carbon emissions.

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 Hong Kong from the re-processing of waste cooking oils if at all possible. For our concrete mixer trucks, we also used some B5 biodiesel from 2015 but we believe a hybrid mixer truck will provide more carbon and health-related benefits so we are following their development closely and will be focusing more on reducing the embodied carbon in concrete in the interim. More information on our other efforts to transition to lower carbon energy sources is presented in the section below.



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

Every year we do a detailed inventory of our greenhouse gas emissions according to ISO 14064:2018 (Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals) which is externally verified (see Appendix B). 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.



### Energy and carbon reduction on site

Our preference on site is to use mains-connected electricity from local power companies rather than diesel generators wherever possible. This generally improves our energy efficiency, reduces noise and air quality impacts to both people working on the site and surrounding neighbours, and reduces costs. It also helps us to decarbonise, as the HKSARG Government has set a commitment of carbon neutrality by 2050 in its Climate Action Plan 2050 and is targeting net zero carbon electricity supply. Singapore, too, has a commitment to be net zero by 2050 so a similar principle applies, and mainland China also has a 2060 target to be carbon neutral.

However, in many cases the amount of electricity that can be supplied at the beginning of the project 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, and / or get approval for and build a temporary transformer room (if a high voltage supply is needed), particularly if in a more remote or new development area. We therefore advocate for early application of sufficient electricity supply by our clients, particularly through the Power Up Coalition (as mentioned in the 2021 report and in the earlier chapter on Environment) to avoid the need to use diesel generators and to allow for the use of more electric plant and vehicles in the future. In the interim, or where there is insufficient electricity supply, we also adopt battery energy storage systems (BESS) called Enertainers, especially for applications where large intermittent power supplies are needed. These typically involve tower cranes, passenger and material hoists. Further details can be found on page 10 of the 2019 Sustainability Report and on our website<sup>1</sup> and YouTube channel<sup>2</sup>.

1. [https://www.gammonconstruction.com/en/sustainability-case-studies-details.php?sustainability\\_highlights\\_id=9](https://www.gammonconstruction.com/en/sustainability-case-studies-details.php?sustainability_highlights_id=9)

2. <https://youtu.be/yQZMA365tDg>



### Using a battery energy storage system – the Enerainer

Where the use of electricity or BESS is not feasible, 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 and vehicles switched off instead of idling and planning work to avoid double handling and additional lifts. We are hoping to more widely adopt MMC in order to minimise energy use on building projects.

Our aim of electrification for construction sites is still very difficult to achieve for foundations and heavy civil works where alternatives to the use of diesel power for drilling, piling, and earth works, etc, are still at the pilot stage but we expect these to become commercially viable in the next few years and have already started this journey with the electric crawler crane mentioned earlier. We are keeping a close eye on technological developments and alternative energy sources internationally with the aim of transitioning to cleaner sources of energy as soon as possible.

Our vision of an emission-free site of the future (see right) is likely to have a blend of solutions relying mainly on electricity but with the introduction of alternative, lower carbon energy sources for the hard to-abate heavy machinery. Changes in construction methods and lighter weight structures are also likely to have benefits for energy use in the future.



### Key

- 1 Low carbon power supply
- 2 Grid connection, possibly with temporary transformer
- 3 Battery energy storage system
- 4 Electric powered machinery and equipment
- 5 Charging for electric vehicles and plant
- 6 Renewable energy for Feed-in-Tariff or to power site offices
- 7 Mobile electric plant or charge while stationary
- 8 Electric / non-fossil fuel foundations equipment
- 9 Hydrogen / other fuel cell technology
- 10 Non-fossil fuel heavy vehicles
- 11 Offsite construction to reduce onsite energy use

## 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 widely 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 or shaded 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 MyACE 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.

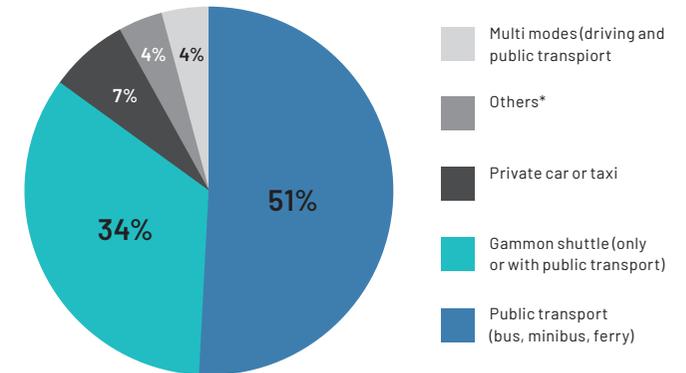
We advocate energy efficiency improvement and policy support in Hong Kong through our membership of the Climate Change Business Forum Advisory Group at the BEC and the British Chamber of Commerce's Environment and Energy Committee.

## Staff commuting

Although not directly under our control, we can influence the energy used by our employees during their commute to work in various ways. While we have introduced digital ways of working to minimise the need to travel, commuting to construction sites is still inevitable for most employees. To improve convenience and reduce fuel use, we provide shuttle bus services to projects from various locations. We also provide fuel subsidies for some staff members (but will be looking at ways to promote the use of EVs instead). To improve our understanding of the ways that staff reach their daily place of work in 2021, we undertook the first comprehensive staff commuting survey for the whole Group during Sustainability Month.

**We advocate energy efficiency improvement and policy support in Hong Kong through our membership of the Climate Change Business Forum Advisory Group.**

## Breakdown of staff commuting modes 2021



\* Others: on foot / bicycle / EV / e-bike / car pool

The results showed that of the nearly 1,300 who responded, over 80% take some form of public or shuttle bus transport. We will be using the data collected to further study and identify opportunities to support and influence employees on their daily commute to reduce energy usage and will further refine the survey methodology to provide fully representative results that we can track on a regular basis. We expect to collect data every few years.



200 kW capacity solar installation at Gammon Technology Park in Tseung Kwan O

## Renewable energy

As mentioned in our 2018 and 2019 Sustainability Reports, we have installed several solar photovoltaic (PV) arrays that are connected to the grid and receive the feed-in tariff (FiT) in Hong Kong. The largest is on the roof of the Gammon Technology Park in Tseung Kwan O and we have smaller installations on the Sai Sha Road and Kai Tak West project sites as well as new installations in 2022 on the depots of our two highways maintenance projects. We continue to look for opportunities for more solar PV projects where projects last several years and grid connection has already been or can be established. These installations contribute to the HKSAR Government's ambition to increase the proportion of renewable energy in the energy mix.

## Green & sustainable finance

According to the recent stakeholder engagement exercise, green and sustainable finance was identified as one of the material topics under the aspect of Governance and Economics. Stakeholders were interested to know more about Gammon's involvement in emerging financial tools to drive sustainability.

Gammon is in the enviable position of not needing significant ongoing financing arrangements for the operation of its business. Where we might need financing or performance bonds (guarantees) due to contract specifications, however, we have chosen to seek green and sustainable financial products where possible.

This helps to keep the pressure on for sustainability performance in the business, as well as reduce the banking charges associated.

In 2022, the Gammon Finance team worked together closely with the Environment and Sustainability team and with various financial institutions to convert some existing revolving loans, as well as those newly setup, into sustainability-linked loans for general working capital, the total size of which is HKD1 billion. They also arranged several sustainability-linked bank guarantees for building and foundation projects with a total issuance size of HKD59.5 million. In accordance with the Sustainability-Linked Loan Principles, all these financial instruments were aligned with Gammon's ambition to set and achieve sustainability performance targets and the selected key performance indicators including carbon and energy, waste and water, as well as the use of low carbon concrete. We have also been discussing how we can make use of green and sustainable finance to encourage better performance in our supply chain and hope to progress this further in the future.

**The Gammon Finance and Sustainability teams work together to seek green and sustainable finance opportunities where possible**

## Value Chain - Co-Creation

### Influencing the industry and committing to change

GRI 2-28

#### Industry participation and engagement

Influencing the industry was identified as one of our material issues during stakeholder engagement and given the continued need for modernisation within the sector and to drive improvement, we view engagement with clients, Government, industry associations, consultants, academia and other contractors as being an essential part of the development of our business. We believe we must be proactive, advocate for change, challenge industry norms and strive for greater, more sustainable progress. To this end, Gammon's staff have memberships of various external industry, professional and business organisations and government bodies. Our staff provide governance support, advisory or participation in committees or other initiatives, etc. Memberships of these organisations and committees is particularly important, not just for the promotion of Gammon's interests but also it provides an opportunity for the business to show leadership, learn and share knowledge, promote best practices, and influence the industry for good. Appendix H contains the list of memberships of external organisations, associations and relevant industry bodies that form part of our interaction with key industry players to help shape the future of the industry.



#### Collaborating and celebrating with other businesses in the Business Environment Council

In addition to association memberships, we also advocate for change through speaking engagements externally and our own events and webinars. We aim to inspire our teams, our subcontractors and suppliers through participation in reputable award schemes to continue to raise the bar (see Appendix F) as well as celebrate achievements. We also make sure we have the in-house expertise and capabilities to help our clients achieve their sustainability aspirations for their projects. For example, we are proud to have been involved in some of the greenest and healthiest buildings in Hong Kong (see Appendix G for an updated list). We also regularly provide

feedback and insight for government consultation, 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 or briefings;
- Partnering lunches; and
- Various exhibitions, workshops and presentations.

## External commitments and initiatives

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.

## Our supply chain

GRI 2-6

GRI 204

### Supply chain management and procurement

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, webinars and engagement sessions.

Date	Principles/Chartered	Organisation	
2012	WBCSD Manifesto for Energy Efficiency in Building	WBCSD / Business Environment Council	<a href="https://www.wbcd.org/Programs/Cities-and-Mobility/Resources/Manifesto-for-EEB">https://www.wbcd.org/Programs/Cities-and-Mobility/Resources/Manifesto-for-EEB</a>
2014	Hong Kong Green Purchasing Charter	Hong Kong Green Council	<a href="https://www.greencouncil.org/">https://www.greencouncil.org/</a>
2016	No Car Day 2016	Friends of the Earth (HK)	<a href="https://www.foe.org.hk/default.aspx">https://www.foe.org.hk/default.aspx</a>
2017	Code of Practice against Discrimination in Employment on the Grounds of Sexual Orientation	Constitutional and Mainland Affairs Bureau	<a href="http://www.cmab.gov.hk/en/issues/code_of_practice.htm">www.cmab.gov.hk/en/issues/code_of_practice.htm</a>
2017	Pledge to Support the Development of Qualified Environmental Professionals	Hong Kong Institute of Qualified Environmental Professionals Limited	<a href="https://hkiqep.org/pledge-to-support-the-hkiqep-qualification/">https://hkiqep.org/pledge-to-support-the-hkiqep-qualification/</a>
2018	STEM Alliance	Hong Kong Institute of Construction	<a href="http://www.hkic.edu.hk/eng/stem">www.hkic.edu.hk/eng/stem</a>
2019	BEC Low Carbon Charter	Business Environment Council, Climate Change Business Forum	<a href="https://bec.org.hk/en/bec-low-carbon-charter">https://bec.org.hk/en/bec-low-carbon-charter</a>
2021	Power Up Coalition	Business Environment Council, Climate Change Business Forum	<a href="https://bec.org.hk/en/bec-low-carbon-charter">https://bec.org.hk/en/bec-low-carbon-charter</a>
2021	Racial Diversity and Inclusion Charter for Employers	Equal Opportunities Commission	<a href="https://www.eoc.org.hk/en/news-and-events/events-and-programmes/eoc-events/inclusion-charter">https://www.eoc.org.hk/en/news-and-events/events-and-programmes/eoc-events/inclusion-charter</a>
Annually	Biz Green Dress Day	Hong Kong Green Building Council & Construction Industrial Council	<a href="https://www.hkgbc.org.hk/eng/engagement/public-initiatives/hkgbw/index.jsp">https://www.hkgbc.org.hk/eng/engagement/public-initiatives/hkgbw/index.jsp</a>
Annually	Earth Hour	World Wildlife Fund for Nature	<a href="https://earthhour.wwf.org.hk/en">https://earthhour.wwf.org.hk/en</a>

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 A. Below we describe the management of our supply chain and the procurement process.

Our procurement process is guided by our Sustainable Procurement Policy, and our process, practices and procedures are included within our BMS. Our subcontract procurement, management and administration procedures are also defined in our BMS. 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. It is our policy to act fairly in business dealings with suppliers 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.

Our expectations 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 our Code of Conduct. They are encouraged to conduct business with integrity and in accordance with our Health, Safety, Environmental and Quality Policy, as well as strict standards for corporate governance. Our suppliers and subcontractors are given regular training 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 the earlier Managing Risk section.

### 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 during our stakeholder engagement process. 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. Appendix A provides details of our total number of suppliers and subcontractors for the year. Of our total supplier spend, 92% is typically on those from Hong Kong, 3% on those based in mainland China, and 5% on those overseas. 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 A.

Over 90% of spend is with Hong Kong suppliers.



### Supply chain assessment

Gammon has a structured process and database for managing its supply chain. Our Supply Chain Management System includes assessment and 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' H&S, workers' training 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

GRI 401

GRI 404

GRI 405

### Introduction

Under the topic of 'People', 'staff attraction, retention and employment', 'development of our people' and 'diversity and inclusion' were identified in our stakeholder engagement exercise as being material issues for the sustainability of our business. 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. Here, we outline our management approaches to these essential issues that are critical to the long-term success of the business.

### Staff attraction, retention and employment

We attract employees by being a reputable business, with exciting projects, and good staff welfare and development opportunities. We offer employment conditions that meet or exceed the minimum legislative requirements and accepted conventions and do not use forced 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.



**Long Service Awards Presentation Ceremony to show appreciation to staff for their loyalty and service**

In order to attract, motivate and retain employees, we ensure our remuneration packages, pay levels and fringe benefits match or even exceed the industry market 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 public holidays, 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.

From 2023, all monthly paid staff (except for Singapore, currently) have a five-day work week. 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 A.

## Training and education

Gammon believes the development of our people and investing in their training and career development is an important factor in retaining and developing high-quality human capital. Since 2003, Gammon Academy has provided structural development programmes to cater for the development needs of different career stages.

We provided over 100 training sessions including that for technical and soft skills, and different wellbeing 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, DEI, and soft / managerial skills development. In addition to classroom training, we offer e-learning, virtual classes, seminars, webinars, sharing sessions and site visits.

We support our employees learning-related skills by developing and promoting BIM training programmes. For overall operational employees, we facilitate the BIM Viewer eLearning programme and other BIM software training to strengthen their knowledge. For qualified employees who are working in BIM design work, we sponsor and support them to become a certified BIM Coordinator/ BIM Manager. A Project Management Programme has been established for middle-level managers to better equip them with the necessary skills and knowledge for their future promotion and to be in charge of a project. For the development of senior managers and executives, they join different specialised leadership programmes organised by shareholders.

In addition, we have developed the Technician Apprentices (TA) and Craft Apprentices (CA) programmes which provide



Supporting the Jardines' Learn Fest

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.

Training is backed up through our annual performance appraisal process which includes objectives and a learning and development plan / goals to guide each individual employee. Further information on training and education, including hours of training per year per employee, can be found in the KPI Appendix A.

## 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 when possible.

**Through multiskilling, we have a more productive and flexible workforce suited to the mix of works being performed.**

## Development and support

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 to become a professional engineer or quantity surveyor with structured on-the-job training and exposure such as site visits, induction programme and engagement activities to expand their network. Our comprehensive training programme has been identified as one of the key reasons new graduates select Gammon and construction as a career. 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 as Gammon assists with necessary fees. 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 and support disciplines such as procurement, finance, safety, occupational health, quality, legal, HR 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, the Hong Kong Institute

of Qualified Environmental Professionals, and other institutes. 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 A.

CAs and TAs join training programmes and are supported by the company financially to cover their education costs while they work for Gammon. They attend relevant courses during part-time day release or 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.

But it's not all about formal training and career development! Caring for the health and wellbeing of employees is an essential part of staff development and retention. This is discussed in the earlier sections on Zero Harm. We also support social and recreational activities through the Gammon Staff Recreation Club, and we have an active Young Professionals Group which provides opportunities for additional knowledge-based and, just as important, social activities. The diversity, equity and inclusion (DEI) Council (mentioned below) is also committed to supporting the development of other employee-led networks or resource groups, which started with WinG (Women in Gammon and Allies).

1. In certain cases, however, the requirements of safety regulations relating to specific positions within a construction business will take precedence.

## Employee rights – collective bargaining

GRI 2-6

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.

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. 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.

## Diversity, equity and inclusion

As stated in our Code of Conduct, discrimination against any job applicant or employee on the grounds of colour, race, religion, age, nationality, sex, marital or family status, ethnic affiliation, pregnancy, sexual orientation, disability or other reason is prohibited<sup>1</sup>. Gammon, however, wishes to go beyond these fundamentals and be an employer that is recognised for its strong culture of fairness, inclusion and respect. We believe actively promoting diversity, equity and inclusion (DEI) and ensuring equal opportunity is important for a forward-looking business that wishes to retain, support and nurture its talent, whoever they may be. DEI has therefore been included as one of the action areas in our Responsible Growth - 25 by 25 sustainability strategy and has seen a growing level of focus in recent years. The value of diversity and the importance of equity and inclusion were also recognised in our stakeholder engagement exercise as being material issues for Gammon.



YPG, WinG and the DEI Council joined together for diversity-themed pasta making

In late 2018, we started to formalise our approach to DEI with a group of Champions and in 2019, we did some research focusing initially on gender equality and also engaged an expert to provide an introductory briefing to all Directors. The Champions provided recommendations to ExCom regarding the establishment of a D&I (now DEI) Council, and this was set up in 2020, along with the inception of our first employee-led network, Women in Gammon and Allies (WinG) following a focus group on gender equality. At the end of the year, Gammon's Building Belonging statement was endorsed.

We believe that a diverse and inclusive workplace delivers better customer solutions. We value and encourage unique views, perspectives and opinions of a diverse group.



The statement provides our position, governance and targets on DEI and the targets have been integrated into our overall sustainability strategy. In early 2021, the Building Belonging statement was promoted widely within the organisation in multiple languages as a statement of intent and commitment. Also that year, in addition to the official launch of WinG, we rolled out DEI and unconscious bias training to senior managers by external professionals, and also created our own e-learning video to reach all staff. All employees are encouraged to complete this e-learning which includes an introduction to unconscious bias, and the behaviours we want to encourage in Gammon.



The Singapore team support Dress Pink Day to raise awareness of Breast Cancer

Each DEI Council member works towards their own individual target, such as celebrating a minority group's festive day, obtaining funding for DEI events, mentoring female colleagues, giving talks to high-school girls, adopting trials for flexible working and many more. Most importantly, the Council considered the move towards a five-day work week as a way to create a more inclusive work environment, particularly benefitting those who are primary carers for children or elderly family members. Having signed up to

the Equal Opportunities Commission's Racial Diversity and Inclusion Charter for Employers in the previous year, the DEI Champions held a focus group in 2022 to discuss some of the issues and opportunities related to racial diversity and inclusion and in connection to the charter goals.

We started to develop an onboarding information pack for new joiners from overseas as well as initiated some e-learning about cultural sensitivity. Towards the end of the year, we held our first flagship DEI event, 'Building Belonging through Allyship' which features earlier in this report. Finally, a women's-fit uniform was also developed with our supplier and has started to be released on sites.



# Appendices



# Appendix A

## Key performance indicators

The GRI Universal Standards used are the 2021 version and all Topic Standards used are 2016 versions, except GRI 303 - Water and Effluents (2018 version), GRI 403 - Occupational Health and Safety (2018 version) and GRI 306 - Waste (2020 version). 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 provided. While this data is generally reported according to GRI Standards it may not fully comply with disclosure requirements.

Gammon-only projects follow an operational control approach to data reporting. Joint Venture projects are included and follow an equity share approach. The greenhouse gas emission inventory (GRI 305) follows an equity share approach and has been verified based on ISO 14064-1:2018.

For all data, subcontractors' is excluded where data is not available. All data is the total for the year or data extracted from various systems as at December 2022.



Terminal 2 expansion works at Hong Kong International Airport

# Organisation

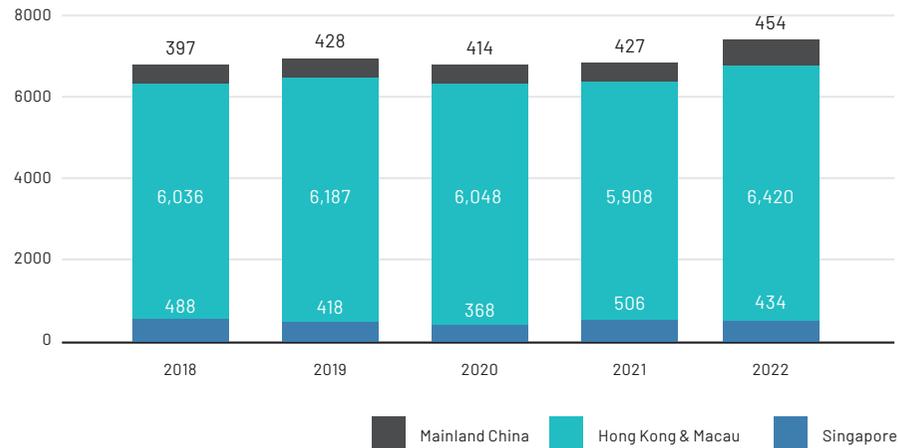
## GRI 2 General Disclosures

### GRI 2-6 Activities, Value chain and other business relationships

Active projects (including subcontracts and pre-construction projects)



### GRI 2-7-a Total employees (by region)<sup>1</sup>



1. Due to changes in GRI 2-7 (2021 version), total employee is defined as all permanent and temporary employees starting from 2022. For 2021 and before, it is defined as all monthly paid and daily paid employees.

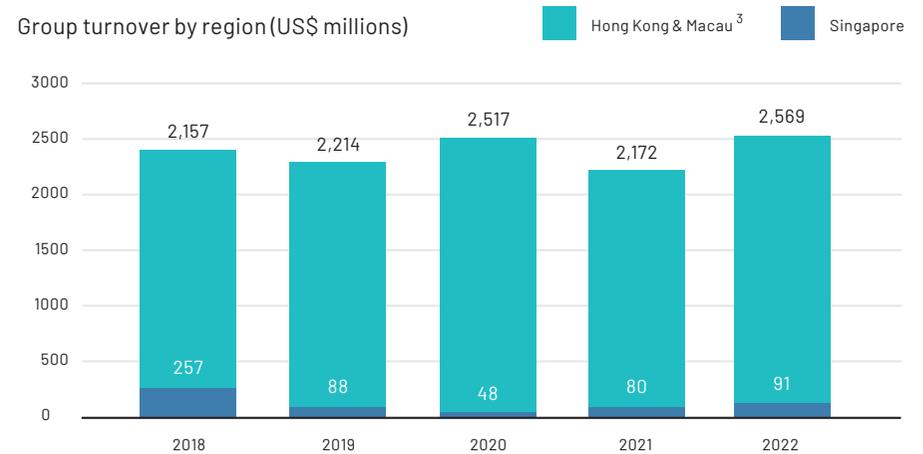
## G4-CRE8 Product and service labelling

Sustainability certification, rating and labelling schemes for new construction (HKBEAM, BEAM Plus, LEED and Green Mark)<sup>2</sup>



2. Cumulative count of projects, based on number of contracts awarded and certification/ registration under the certifications.

### Group turnover by region (US\$ millions)



3. Mainland China revenue included under Hong Kong and Macau

# Safety - Zero Harm

GRI 403-8, GRI 403-9

## GRI 403 Occupational Health and Safety

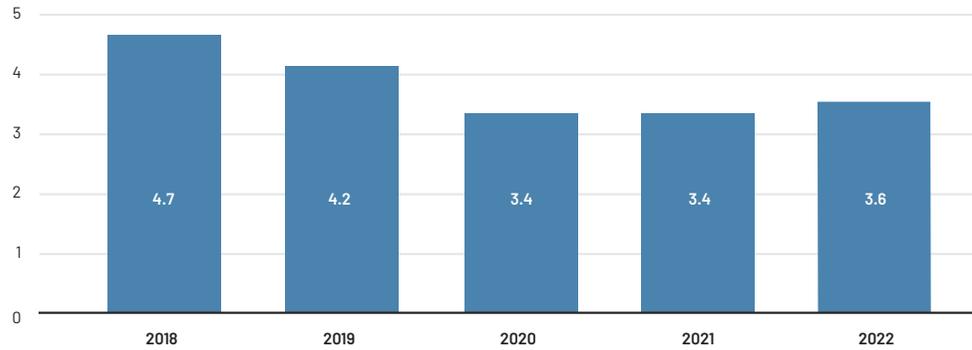
GRI	Performance Indicators	Units	2018	2019	2020	2021	2022
GRI 403-8	Workers covered by an occupational health and safety management (OH&SM) system (OHSAS 18001 or ISO 45001)						
GRI 403-8-a-i	Employees and workers covered by OH&SM system	number	-	-	20,245	16,685	16,481
		%	-	-	100	100	100
GRI 403-8-a-ii	Employees and workers covered by OH&SM system that has been internally audited	number	-	-	17,799	15,736	16,481
		%	-	-	87.9	94.3	100
GRI 403-8-a-iii	Employees and workers covered by OH&SM system that has been audited or certified by external party <sup>1</sup>	number	-	-	17,799	15,736	16,481
		%	91.9	95.6	87.9	94.3	100
GRI 403-8-b & c	All workers and employees are covered by our OH&SM system certified under ISO 45001, excluding those mentioned above. No workers have been excluded from the system.						
GRI 403-10	Occupational disease rate <sup>2</sup>	rate	0	0	0	0	0

1. For 2019 and before, projects reported based on G4-CRE6. Since 2020, percentage is calculated based on number of workforce on sites. ISO 45001 includes all employee and workers in 2022.

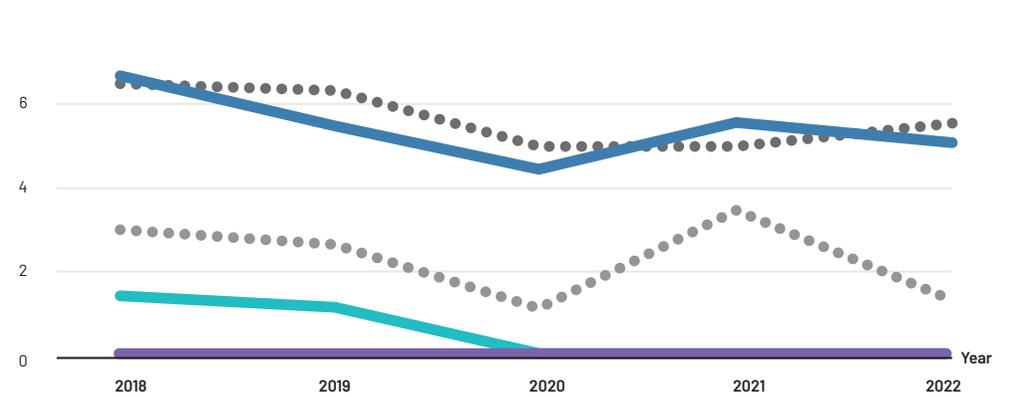
2. The definition of occupational disease is stated in the Employees' Compensation Ordinance Cap. 282. The number of reportable occupational disease cases is stated in the OSH Statistics 2020 (labour.gov.hk). No data is available for the construction industry in 2022 and no cases have been attributed to Gammon in recent years

GRI	Performance Indicators		2021	2022
GRI 403-9	Work-related injuries			
GRI 403-9-a-i & 403-9-b-i	Fatalities as a result of work-related injury			
	Employees (location)(Gender: M/F)	number	0	0
	Workers (location)(Gender: M/F)	number	1(HK) F	0
	Employees (location)(Gender: M/F)	per 200,000 hours worked	0	0
	Workers (location)(Gender: M/F)	per 200,000 hours worked	0.00685 (HK) F	0
GRI 403-9-a-ii & 403-9-b-ii	Number of high-consequence work-related injuries (excluding fatalities) with recovery time > 6 months			
	Employees	number	12	7
	Workers	number	30	27
	Employees	per 200,000 hours worked	0.115	0.065
	Workers	per 200,000 hours worked	0.206	0.189
GRI 403-9-a-iii & 403-9-b-iii	Number of recordable work-related injuries (including fatalities)			
	Employees	number	177	223
	Workers	number	411	432
	Employees	per 200,000 hours worked	1,699	2.063
	Workers	per 200,000 hours worked	2.816	3.019
GRI 403-9-a-v & 403-9-b-v	Number of hours worked (assume 26 working days a month and 10 hours a day)			
	Employees	number	20,830,680	21,620,040
	Workers	number	29,189,420	28,618,200

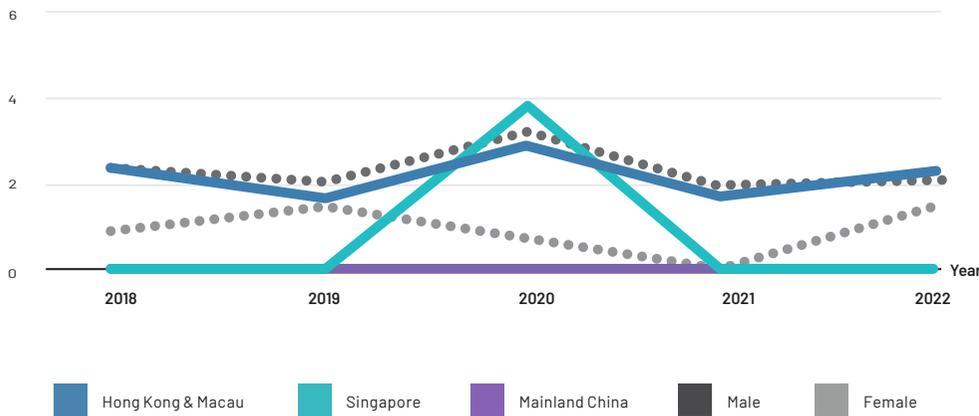
Group operations - all workforce



Accident Incident Rate - Workers<sup>1</sup>(excludes employees)(per 1,000 workers)



Accident Incident Rate<sup>1</sup> - Employees (per 1,000 workers)



1. AIR is total number of reportable accidents / average workforce \* 1000 (excluding first aid cases). Reportable accident is defined as an incident resulting in 3 days or more of sick leave

# Environment - Zero Waste

## Low carbon construction - Materials & Sustainable resource use

### GRI 301 Materials

GRI 301	Materials	Units	2018	2019	2020	2021	2022
GRI 301-1	Materials used (purchased) - non renewable materials <sup>1</sup>						
	Major materials used (rebar)	tonnes	120,956	113,156	107,326	98,410	174,619
	Major materials used (structural steel)	tonnes	-	-	-	60,640	30,990
	Temporary work	tonnes	-	-	-	-	19,773
	Permanent work	tonnes	-	-	-	-	10,785
	Major materials used (concrete)	m <sup>3</sup>	582,398	550,020	687,648	501,426	642,382
	Major materials used (piling material)	tonnes	-	-	-	-	29,966
	Temporary work	tonnes	-	-	-	-	11,215
	Permanent work	tonnes	-	-	-	-	18,565
	Major materials used bagged cement)	tonnes	-	-	-	-	13,673
	Materials used - renewable materials						
	Major materials purchased (timber, formwork)	m <sup>3</sup>	2,814	1,641	969	2,373	3,611
	% of timber originated from sustainable forestry (certified by the Forest Stewardship Council (FSC) or equivalent)						
	By spend	% of cement replaced	100	100	100	100	100
GRI 301-2	Recycled input materials used						
	Cement replacements	%	24.2	23.6	18.6	17.0	21.4
GRI 301-3	Reclaimed products and their packaging materials <sup>2</sup>						
	Percentage of reclaimed products	%	-	-	-	-	1.76

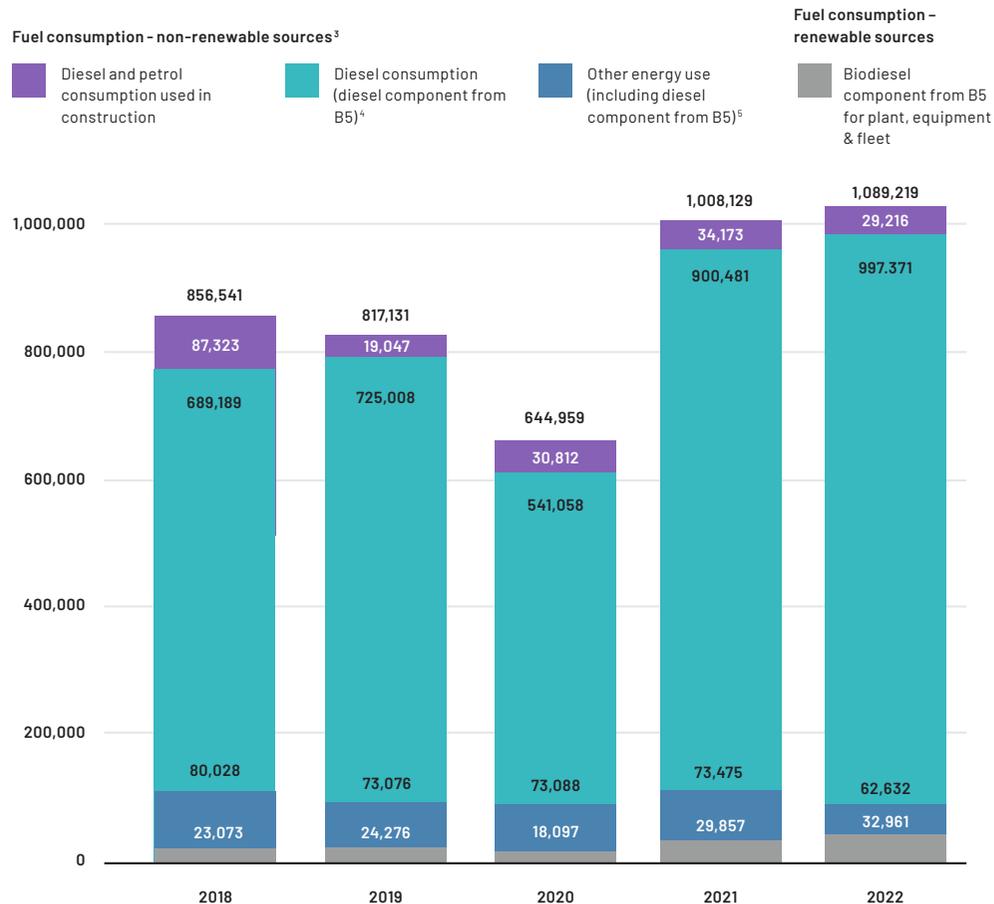
1. The types and details of major materials gradually expanded. Structural steel reported since 2021. Piling material and bagged cement added in 2022. Breakdown between materials used for temporary and permanent works for structural steel and piling material added in 2022.

2. Reported since 2022, mainly including pulverised flying ash and granular material.

## Low carbon construction - energy

### GRI 302 Energy

#### GRI 302-1-a & b Total fuel consumption (gigajoules)



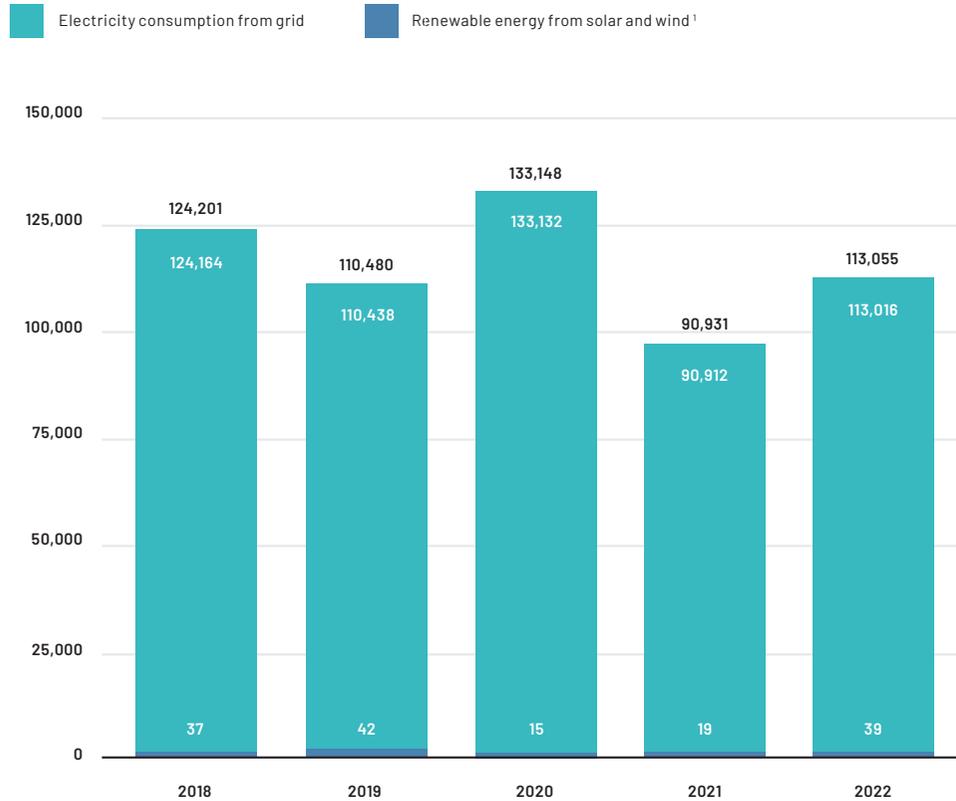
3. 1 Gigajoule = 1000 Megajoule, MJ. Conversion fuel to energy unit: Diesel oil 1 kg = 43 MJ, Petrol 1 kg = 44.3 MJ, B100 Biodiesel oil 1 kg = 27 MJ. Source: '2006 IPCC Guidelines for National Greenhouse Gas Inventories' Density of fuel: Diesel: 0.84 kg/litre, Petrol: 0.74 kg/litre. Source: 'GHG Protocol Emission Factors from Cross-Sector Tools March 2017'

4. Used in HK only. Increased due to major airport and heavy foundation jobs

5. Reported since 2019. Mainly includes propane, butane, acetylene, fleet fuel use and Tonwgas

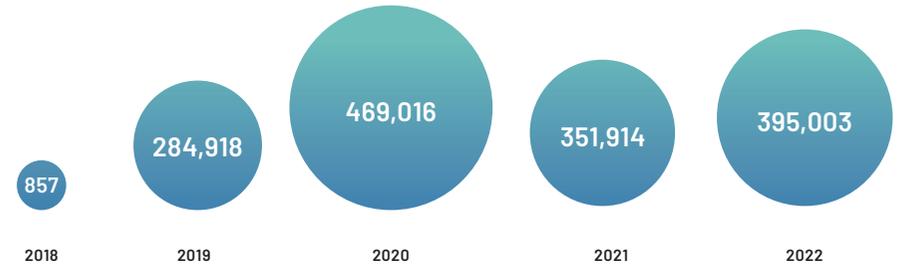
**GRI 302-1-c Total electricity / other energy consumption (gigajoules)**

Total electricity / other energy consumption



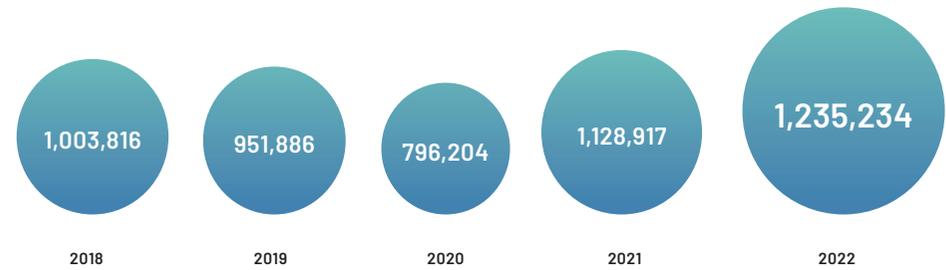
1. Excludes grid connected renewables making use of the HK Feed-in Tariff. Solar power includes PV panel and solar water heater. Estimated based on equipment specification and local conditions.

**GRI 302-1-d Total electricity sold (under FiT)(kWh)<sup>2</sup>**



2. Four project sites (Kai Tak West, Sai Sha Road, High Speed Road Maintenance and Road Maintenance in Tai Po and North District) + Gammon Technology Park + Hang Tau depot in 2022. FiT = Feed in Tariff offered by electricity utilities in Hong Kong.

**GRI 302-1-e Total energy consumption within the organisation (gigajoules)**



**Energy productivity (revenue/ gigajoules)<sup>3</sup>**



3. Revenue unit = HK\$100k

**GRI 302-2 Energy consumption outside the organisation**

GRI	Performance indicators	Units	2018	2019	2020	2021	2022
GRI 302-2	Business air travel - aircraft fuel <sup>1</sup>	litres	67,680	63,684	6,358	513	6,994
	Staff cars - petrol consumption	litres	534,081	459,946	327,960	348,148	288,121
	Staff cars - diesel consumption	litres	5,379	838	4,375	3,458	2,878
	Staff cars - B5 biodiesel consumption	litres	0	0	0	0	0

1. Fuel conversion factor related to type of aircraft.

**(GRI 303) Water and Effluents**

GRI 303	Water and Effluents	Units	2018	2019	2020	2021	2022
	Municipal water consumption based on bills from authorities / local water suppliers. The consumption is minimised by using recycled or treated water from other sources (groundwater, surface water) for piling works, dust control, wheel washing etc.						
GRI 303-3-a	Water withdrawal						
	Municipal water consumption <sup>1</sup>	m <sup>3</sup>	1,412,616	938,867	918,847	1,187,651	1,757,787
	Municipal water intensity	m <sup>3</sup> /HK\$1m turnover	75	52	46	68	85
	Total volume of recycled water <sup>2</sup>	m <sup>3</sup>	2,989,052	1,534,787	597,717	6,219,670	7,628,212
	% of water recycled based on total demand	%	68	62	39	84	81

- 1. Increase caused by heavy civil and foundation works and new concrete batching plant operation.
- 2. Including treated groundwater and surface water.
- 3. % of recycled water used based on total demand (municipal water consumption + recycled water used).

**GRI 302-3 Energy intensity**

GJ / HK\$ 1M turnover

■ Within the organisation ■ Outside the organisation

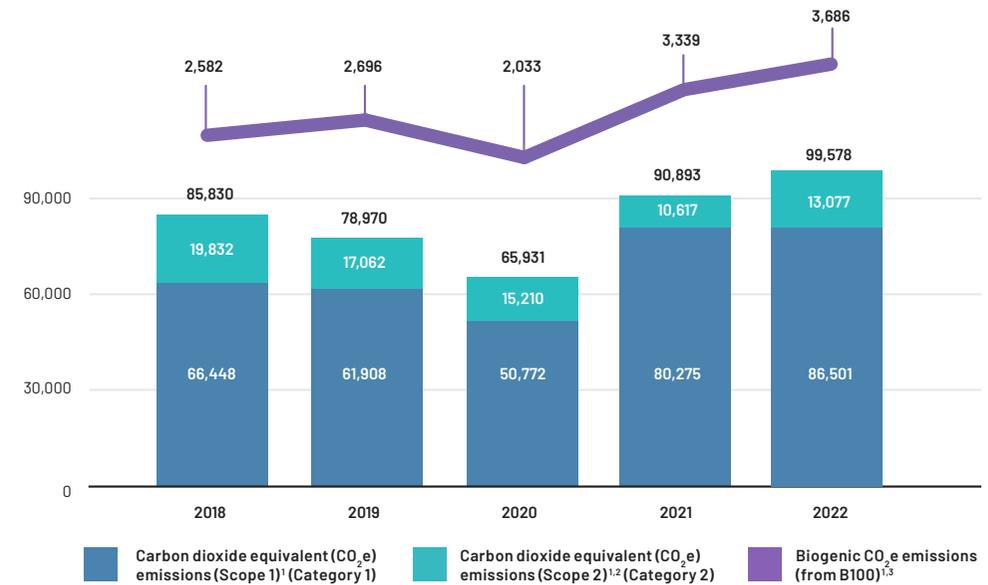


**(GRI 305) Emissions**

The 2022 greenhouse gas emission inventory (indicated with Category numbers) has been verified as meeting the requirements of ISO 14064-1:2018 by an independent verifier (SGS Hong Kong Limited) based on an equity share approach. See Appendix B for statement. Calculation methodology follows ISO 14064 standard, IPCC AR6 report for Global Warming Potential and the latest emission factors available in the industries, including greenhouse gas type (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs). Data revised to align methodology for all years for Scope 1 and 2 emissions. Equity share approach used.

**(GRI 305-1 & 305-2) Direct (Scope 1) and Indirect (Scope 2) GHG emissions**

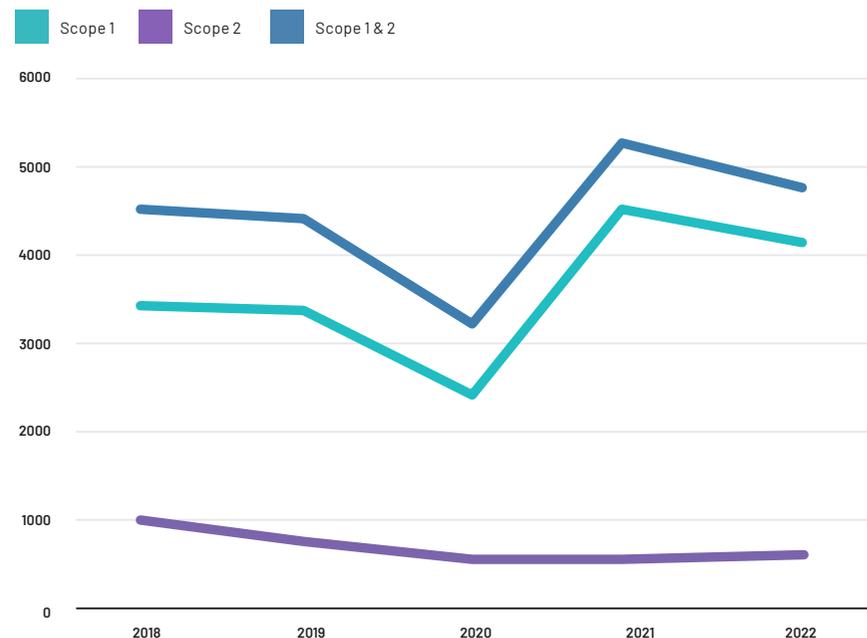
**Total Scope 1 and 2 GHG emissions**



- 1. Data for Scope 1 and 2 emissions reported based on equity share approach since 2019.
- 2. Emission factors from 生态环境部企业温室气体排放核算方法与报告指南 发电设施 (2022 年修订版), Macau CEM Sustainability Report, Singapore Energy Market Authority, CLP and HKE Sustainability Reports based on the most recent relevant year.
- 3. Emissions from B100 biodiesel (contained in B5 used)

**(GRI 305) Emissions**

GRI	Performance Indicators	Units	2018	2019	2020	2021	2022
(GRI 305-3)	Other indirect (Scope 3) GHG emissions: Excludes emissions produced when Gammon is in a subcontracting role or where energy, water or materials are provided by others.						
	Total verified carbon dioxide equivalent (CO <sub>2</sub> e) emissions (Scope 3) based on ISO14064 Inventory	tonnes	-	-	-	-	896,435
	Total reported carbon dioxide equivalent (CO <sub>2</sub> e) emissions (Scope 3) <sup>1,2</sup> - Including estimates for water use in Macau, Singapore and Mainland China	tonnes	22,421	77,935	46,585	651,045	896,443
	Staff cars use (Category 3)	tonnes	1,228	869	856	817	663
	CO <sub>2</sub> e from business air travel <sup>3</sup> (Category 3)	tonnes	354	325	31	2	16
	Landfill disposal (Hong Kong)(Category 4)	tonnes	20,264	28,474	20,218	14,620	16,675
	Waste incineration (Singapore) <sup>4</sup> (Category 4)	tonnes	3.24	1.27	0.14	0.63	0.29
	Water consumption (Hong Kong) <sup>5</sup> (Category 4)	tonnes	419	345	373	449	742
	Water consumption (Singapore) <sup>6</sup> (Category 4)	tonnes	150	26	5	8	6
	Water consumption (Mainland China) <sup>6</sup> (Category 4)	tonnes	2.4	2.1	2.0	2.1	2.4
	Water consumption (Macau) <sup>6</sup> (Category 4)	tonnes	-	1.3	0	0	0
	Fresh water and raw water processing from tanker (Hong Kong)(Category 4)	tonnes	-	0.02	0.29	36	2.02
	Sewage from restaurants and catering services <sup>7</sup> (Category 4)	tonnes	0.7	0.4	0.7	0.5	0.6
	Temporary works material - Structural steel (Hong Kong)(Category 4)	tonnes	-	47,309	21,257	56,088	69,177
	Temporary works material - Timber formwork (Hong Kong)(Category 4)	tonnes	-	581	350	1,338	1,741
	Temporary works material - Piling materials (Hong Kong) <sup>8</sup> (Category 4)	tonnes	-	-	-	-	49,062
	Temporary works material - Concrete (Hong Kong)(Category 4)	tonnes	-	-	3,492	38,585	24,889
	Permanent works material - Structural steel (Hong Kong)(Category 4)	tonnes	-	-	-	99,579	39,349
	Permanent works material - Reinforcement bar (Hong Kong)(Category 4)	tonnes	-	-	-	205,682	373,851
	Permanent works material - Concrete (Hong Kong)(Category 4)	tonnes	-	-	-	233,838	258,195
	Permanent works material - Piling material (Hong Kong) <sup>8</sup> (Category 4)	tonnes	-	-	-	-	51,656
	Permanent works material - Bagged cement (Hong Kong) <sup>8</sup> (Category 4)	tonnes	-	-	-	-	10,414

**(GRI 305-4) GHG emissions intensity (kgCO<sub>2</sub>e/HK\$1m turnover)**Carbon dioxide equivalent (CO<sub>2</sub>e) emissionsScope 3 CO<sub>2</sub>e intensity (refer to the left table for absolute CO<sub>2</sub>e emission)

2018	2019	2020	2021	2022
1,189	4,342	2,328	37,051	43,203

- Carbon emissions are estimated for water consumption in Macau, mainland China and Singapore and are therefore excluded from total indirect GHG emissions from the products used in the ISO14064 verification.
- Starting from 2019, more Scope 3 items added - selected temporary and permanent works material purchases only.
- Emission factor from 'WBCSD Greenhouse Gas Protocol Mobile Combustion GHG Emission Calculation Tool' version 2.6
- NEA Singapore's Fifth National Communication and Fifth Biennial Update Report (Update 2022 Oct) under UNFCCC, (emission factor derived from wet weight - 4C1 - Solid Waste Incineration). Excluded CO<sub>2</sub> emission factor of Biomass and only includes CH<sub>4</sub> and N<sub>2</sub>O after clarifying with Singapore NEA, because the incineration CO<sub>2</sub> emission factor is not suitable for food waste incineration.
- Emission factor source: 'Hong Kong Water Supplies Department Annual Report 2020/2021'.
- Based on Hong Kong emission factor for water processing.
- Source: 'Drainage Services Department Annual Report 2020/21', 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'
- Started reporting in 2022.

# Environment - Zero Waste

## (GRI 306) Waste & circularity

Quantities determined from EPD Construction Waste Disposal Charging Scheme, receipts from waste management service providers or recyclers. Wastes generated from sites where Gammon is a subcontractor only are excluded as these are handled by the main contractor on site. Disposal method is determined based on compliance with local government requirements.

### (GRI 306-3) Waste generated

GRI	Performance Indicators	Units	2018	2019	2020	2021	2022
(GRI 306-3-a)	Total weight of waste generated	tonnes	1,738,268	1,922,536	1,613,624	695,576	1,512,380
	Total quantity of inert waste	tonnes	1,661,716	1,838,548	1,547,801	623,767	1,446,104
	Total quantity of non-inert waste	tonnes	57,176	69,837	60,188	42,331	47,649
	Total quantity of mixed waste	tonnes	30,488	25,098	23,512	29,353	18,627

### (GRI 306-4) Waste diverted from disposal

#### (GRI 306-4-a) Total weight of waste diverted from disposal (tonnes)



#### Waste diversion rate (% of waste diverted from disposal)



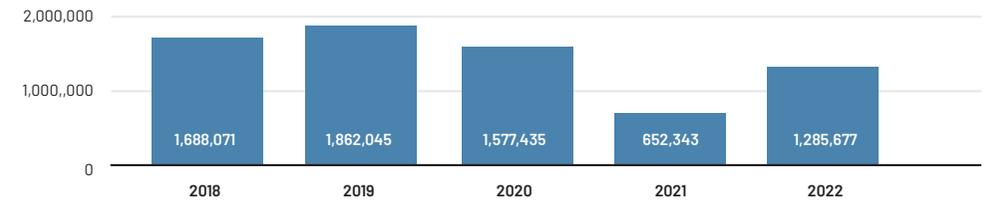
### (GRI 306-4-b) Total weight of hazardous waste diverted from disposal

#### (GRI 306-4-b-ii) Total hazardous waste recycled (offsite)(tonnes)

Started reporting in 2022, including recycled waste batteries and other chemicals from Gammon Technology Park and project sites.

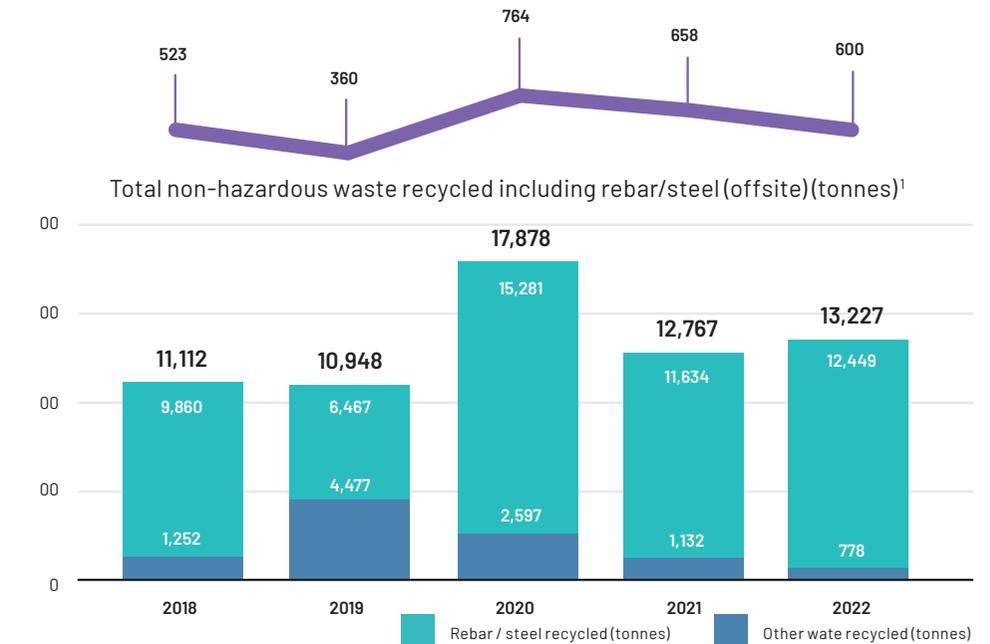


### (GRI 306-4-c) Total weight of non-hazardous waste diverted from disposal (tonnes)



### (GRI 306-4-c-ii) Non Hazardous Waste Recycling - diverted from landfill (offsite)

#### Rebar/steel recycled intensity (kg / HK\$1m Turnover)



1. New waste types such as yard waste and water barrier and other plastics are counted since 2022.

**Recycling rate (including rebar / steel)<sup>1</sup>**



1. Recycling rate = (Total waste recycled / (Total waste recycled + Total waste sent to landfills and sorting facilities)) x 100%. Starting from 2019, total waste to landfill includes 50% of the waste disposed of at Government sorting facilities.

**(GRI 306-4-c-i) Non hazardous waste reuse**

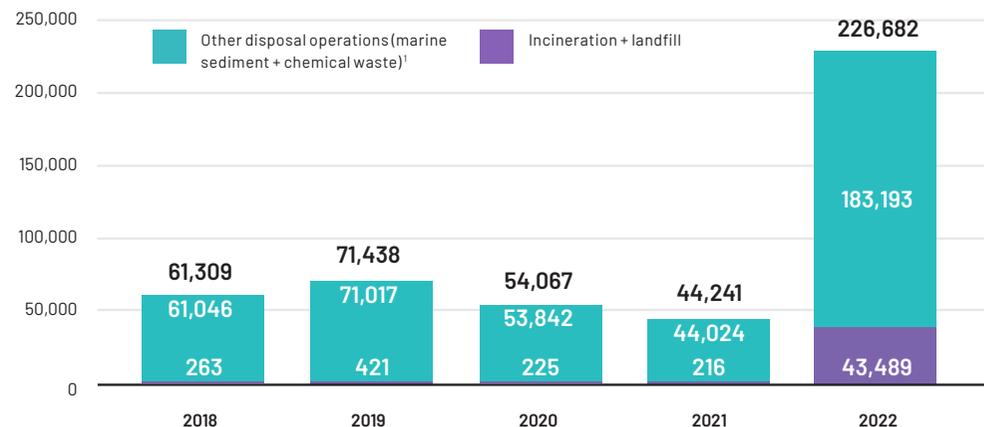
(Inert wastes generated in Hong Kong and Singapore only)

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

Performance Indicators		Units	2018	2019	2020	2021	2022
Total quantity of inert material to public fill (offsite)		tonnes	952,314	841,643	1,049,576	513,485	881,498
By region	Hong Kong (direct to public fill) <sup>1</sup>	tonnes	937,071	829,094	1,030,466	496,240	872,184
	Hong Kong (sorting facilities portion) <sup>2</sup>	tonnes	15,244	12,549	11,756	14,677	9,314
	Singapore	tonnes	-	-	-	-	-
	Macau <sup>3</sup>	tonnes	-	-	7,355	2,568	-
Total quantity of direct inert material reused on site (onsite) - HK only		tonnes	21,490	76,723	148,494	85,558	98,570
Total quantity of direct inert material reused at other sites (offsite)		tonnes	703,155	932,731	361,487	39,401	286,511
By region	Hong Kong <sup>4</sup>	tonnes	702,620	932,356	361,391	39,284	286,430
	Singapore	tonnes	535	375	96	117	81
HK treated marine sediment reused for backfill (onsite) <sup>5</sup>		tonnes	-	-	-	-	5,872
Direct inert material reused percentage <sup>6</sup>		%	43	55	33	20	31

1. Mainly from airport T2 expansion, Kai Tak West undersea tunnel, and BEM project.  
 2. Assumed 50% of waste sent to sorting facilities is diverted to public fill.  
 3. No project in 2022.  
 4. Mainly from Prince of Wales Hospital Foundation project, sent to Tung Chung, SENT, WENT for backfill.  
 5. Started reporting in 2022.  
 6. Direct reuse and reception site arrangement initiated by Gammon.

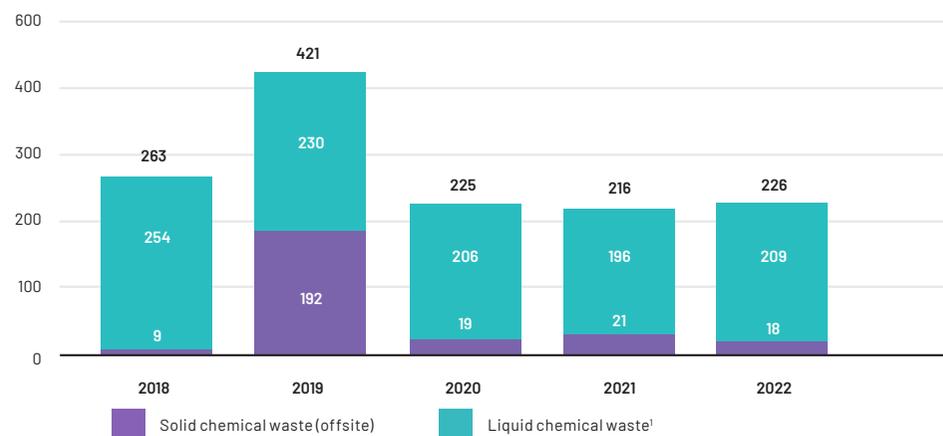
**(GRI 306-5-a) Total weight of waste directed to disposal (tonnes)<sup>1</sup>**  
 (incineration, landfill and other disposal)



1. Started reporting marine sediment in 2022.

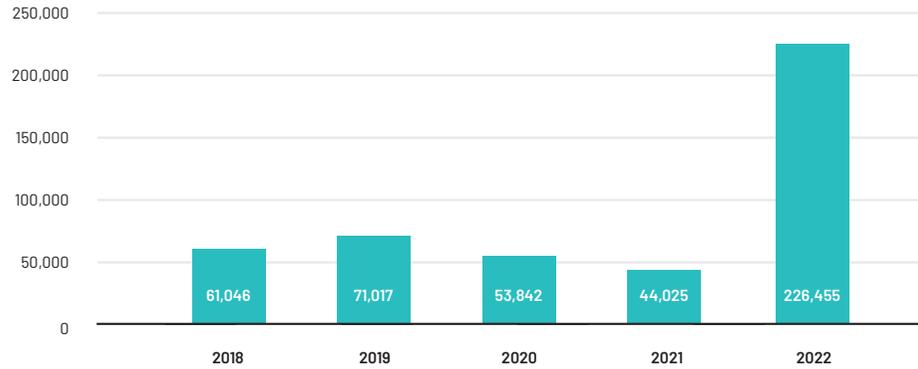
**(GRI 306-5-b) Total weight of hazardous waste directed to disposal - HK only (tonnes)**

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



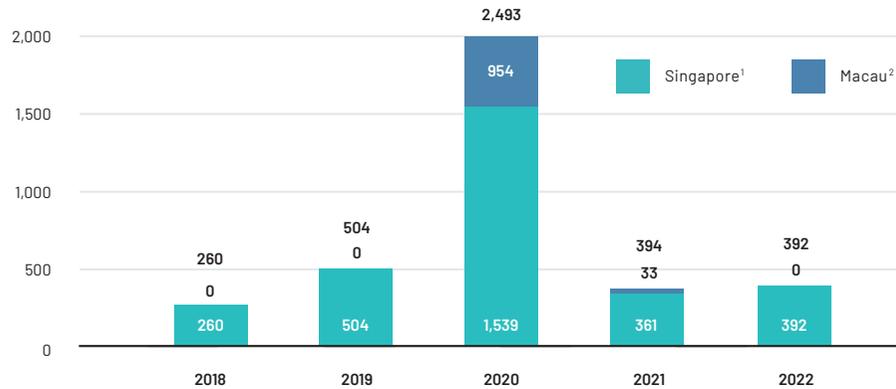
1. The majority is spent lubricant oil. Density of 0.96 kg/L is used, based on 'Used Motor Oil Treatment: Turning Waste Oil Into Valuable Products' by R. Abu-Ellela et al

**(GRI 306-5-c) Total weight of non-hazardous waste directed to disposal (tonnes)<sup>1</sup>**



1. Started reporting marine sediment in 2022.

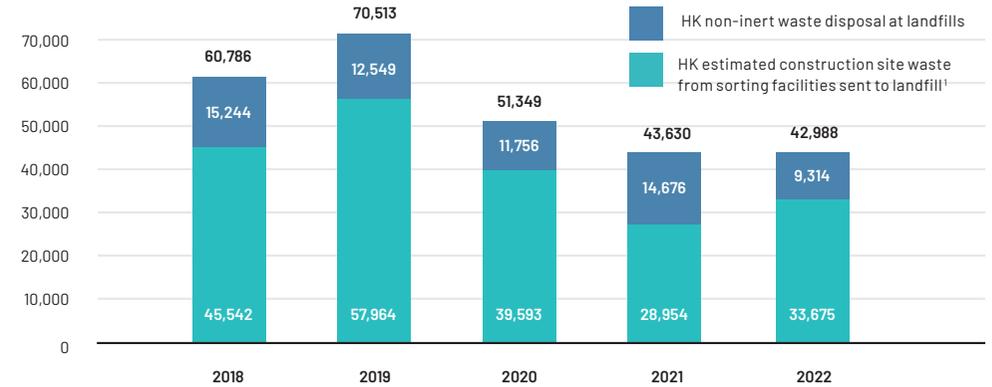
**(GRI 306-5-c-i) Total weight of non-hazardous waste directed to disposal (tonnes)<sup>1</sup>**



1. Singapore construction waste incineration reported in SGP in addition to food waste incineration since 2019. Started reporting Singapore head office waste in 2022.

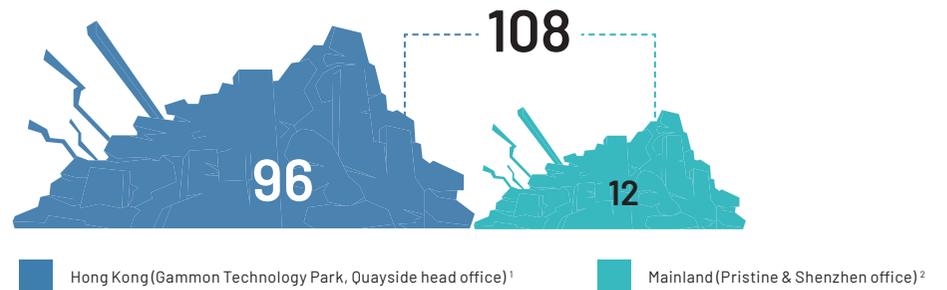
2. Macau construction waste incineration reported since 2020. No Macau project in 2022.

**(GRI-306-5-c-iii) Total non-inert waste sent to landfill (offsite)(tonnes)**



1. Assumed 50% of waste sent to sorting facilities is residual waste sent to landfill.

**(GRI-306-5-c-iii) Total waste generated from permanent office and facility sent to landfill 2022 (offsite)(tonnes)**



1. Started reporting in 2022, including waste generated at the workshop, canteen, office at Gammon Technology Park and Quayside head office.

2. Started reporting in 2022, including waste generated at Pristine factory and Shenzhen office.



**(GRI-306-5-c-iv) HK marine sediment sent to designated disposal sites (offsite)(tonnes)<sup>1</sup>**

# Value Chain - Co-Creation

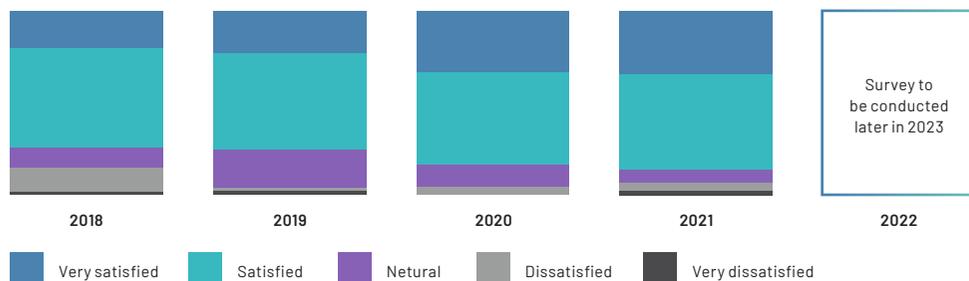
## GRI 204 Procurement practices

GRI	Performance Indicators	Units	2018	2019	2020	2021	2022
GRI 2-6 GRI 204-1	Supply chain / Procurement practice Subcontractors are taken to be external parties providing services and/or labour. Suppliers are taken to be external parties supplying equipment or materials.						
	Active subcontractors and suppliers	number	1819	1,912	1,985	1,985	1,994
	Location of suppliers / subcontractors by country or region						
	Hong Kong (considered to be local)	% by number	97	96	94	98	92
	Mainland China (considered to be local) <sup>1</sup>	% by number	-	-	-	-	3
	Overseas	% by number	3	4	6	2	5
	Payment to suppliers / subcontractors by country or region						
	Hong Kong (considered to be local)	HK\$1M	3,171	3,262	3,252	4,109	4,480
	Mainland China (considered to be local) <sup>1</sup>	HK\$1M	-	-	-	-	136
	Overseas	HK\$1M	105	214	218	87	91

1. Mainland China reported separately in 2022

### Key topics and concerns raised

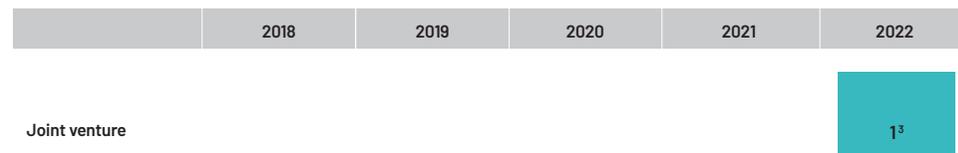
Yearly customer satisfaction survey (%)



## Supply chain category (number)



## Other business partners (number)



1. Category names revised in 2022.

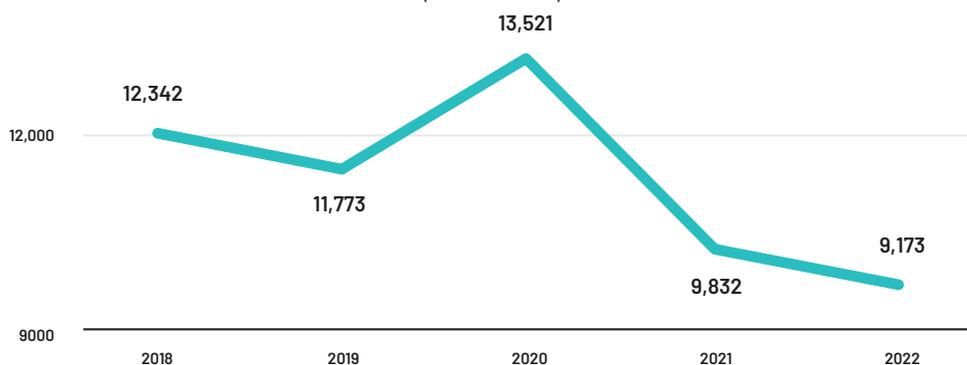
2. Reported since 2022. Joint venture at Sai Sha Road Widening project.

## People – Caring

GRI 2	General disclosures			
2-7 Employees				
GRI 2-7-c	Data compiled using headcount at the end of the reporting period. Temporary employees are contract employees.			
	Due to changes in Disclosure 2-7 in GRI version 2021, reporting structure has been revised showing 2022 data only. Data for 2021 or before can be found at <a href="https://www.gammonconstruction.com/en/sustainability-report.php">https://www.gammonconstruction.com/en/sustainability-report.php</a>			
GRI 2-7-a	<b>Total number of employees</b>		<b>number</b>	<b>7,308</b>
	By Gender	Men	number	<b>6,010</b>
		Women	number	<b>1,298</b>
	By Region	Mainland China	number	<b>454</b>
		Singapore (SGP)	number	<b>434</b>
		Hong Kong (HK) & Macau	number	<b>6,420</b>
GRI 2-7-b-i	<b>Total number of permanent employees</b>		number	<b>6,503</b>
GRI 2-7-b-ii	<b>Total number of temporary employees</b>		number	<b>805</b>
GRI 2-7-b-iii	<b>Total number of non-guaranteed hours employees<sup>1</sup></b>		number	<b>1</b>
GRI 2-7-b-iv	<b>Total number of full-time employees</b>		number	<b>7,297</b>
GRI 2-7-b-v	<b>Total number of part-time employees</b>		number	<b>11</b>

1. Number included under temporary part-time women employees.

### GRI 2-8 Total subcontractors workers (all locations)<sup>1</sup>

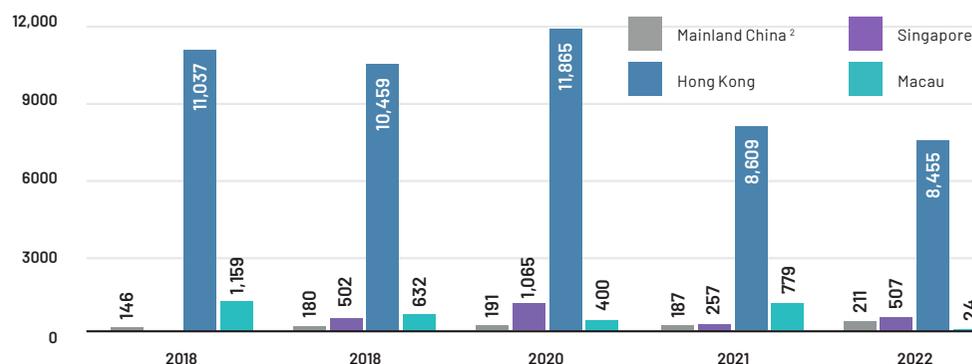


1. Subcontractors are defined as workers providing services or labour to support construction works on site or at Pristine providing services and/or labour.

Permanent, Full-time	Women	Men	Total
Hong Kong (HK) & Macau	993	4,630	5,623
Mainland China	168	286	454
Singapore (SGP)	50	373	423
Permanent, Part-time			
Hong Kong (HK) & Macau	1	0	1
Mainland China	0	0	0
Singapore (SGP)	2	0	2
Temporary, Full-time			
Hong Kong (HK) & Macau	83	705	788
Mainland China	0	0	0
Singapore (SGP)	0	9	9
Temporary, Part-time			
Hong Kong (HK) & Macau <sup>2</sup>	1	7	8
Mainland China	0	0	0
Singapore (SGP)	0	0	0

2. Including one non-guaranteed hour part-time women employee at HK

### GRI 2-8 Total subcontractors workers (by locations)



2. Started reporting subcontractors at Pristine in 2018.

## GRI 401 Employment

### GRI 401-1 New employee hires and staff turnover

Data covers all regions, based on year end. Scope: permanent employees in 2022; monthly-paid employees for 2021 and before.

#### GRI 401-1a New employee hires (by age group)



	% of total employees by age group (years old)		
	Under 30	30-50	Over 50
2019	9.4	8.8	2.6
2020	7.5	6.6	2.1
2021	11.5	16.4	6.8
2022	9.5	16.1	4.8

	No. by gender		% of total employees by gender		Turnover rate	
	Male	Female	Male	Female	Male (% of total males)	Female (% of total females)
2018	-	-	-	-	19	24
2019	758	200	16.5	4.4	20	23
2020	573	154	12.8	3.4	16	18
2021	1,266	275	28.5	6.2	36	31
2022	1,574	401	24.2	6.2	29.8	33

	No. by region			% of total employees		
	Hong Kong & Macau	Singapore	Mainland China	Hong Kong & Macau	Singapore	Mainland China
2019	762	78	118	16.6	1.7	2.6
2020	624	49	54	13.9	1.1	1.2
2021	1,243	233	65	28.0	5.3	1.5
2022	1,765	125	85	27.1	1.9	1.3

# People - Caring

GRI 401-1-b Staff turnover (by age group)



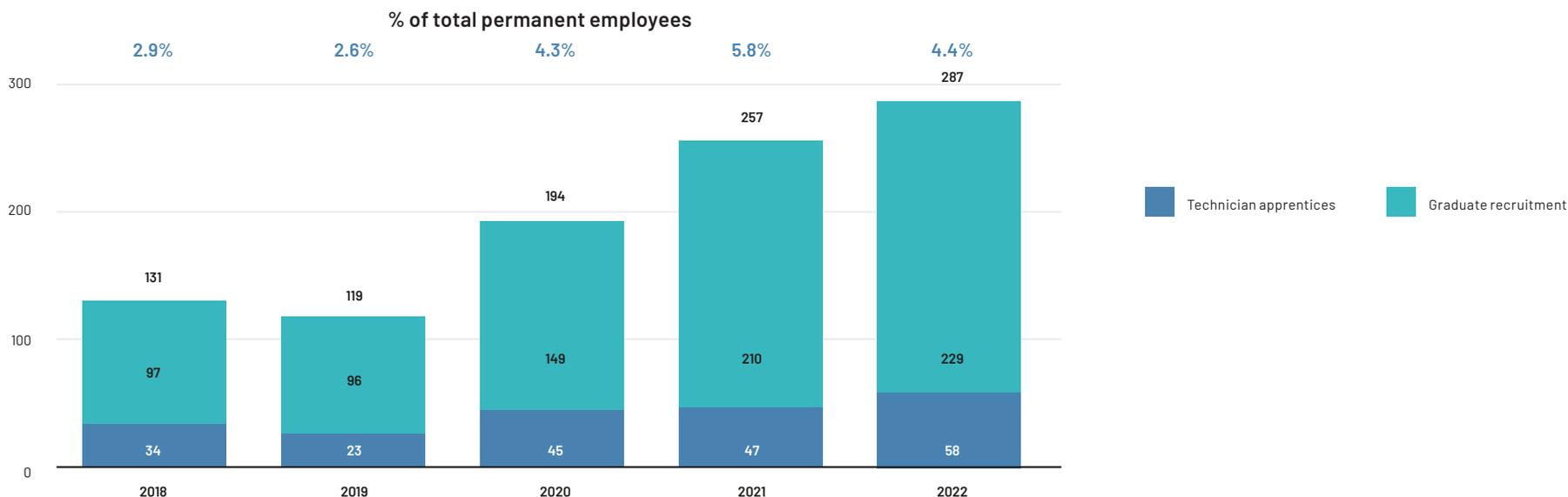
	% of total employees by age group (years old)		
	Under 30	30-50	Over 50
2019	4.9	6.6	1.2
2020	5	6.3	1.1
2021	7.7	11.2	1.9
2022	5.8	14.4	4.1

	No. by gender		% of total employees by gender		Turnover rate	
	Male	Female	Male	Female	Male (% of total males)	Female (% of total females)
2018	-	-	-	-	12	19
2019	449	135	9.8	2.9	12	15
2020	448	106	10	2.4	13	12
2021	731	193	16.5	4.4	21	22
2022	1,285	295	19.8	4.5	24.3	24.3

	No. by region			% of total employees		
	Hong Kong & Macau	Singapore	Mainland China	Hong Kong & Macau	Singapore	Mainland China
2019	479	48	57	10.4	1	1.2
2020	462	49	43	10.3	1.1	1
2021	789	80	55	17.8	1.8	1.2
2022	1,336	194	50	20.5	3.0	0.8

# People - Caring

## GRI 401-1-a Graduate and apprentice recruitment<sup>1</sup>



1. 5.6% of the monthly-paid staff are in apprenticeships or training in 2022.

## GRI 404-4 Training and education

**GRI 404-1 Average training hours** (monthly paid employees) Since 2017 data excludes mainland China. From 2019 all regions are included.

### GRI 404-1-a-i Training hours per employee (by gender)

	2018		2019		2020		2021		2022	
Training hours per employee	14.3		16		10.1		16.2		14.6	
Training by gender	Male	Female								
% of training hours <sup>2</sup>	88.9	11.1	86	14	84.4	15.6	85.6	14.4	83.5	16.5
Hours / employee <sup>3</sup>	13.9	7.4	16.5	11.7	10.6	8	17.2	11.8	15.1	12.3

2. Percentages reflect the male:female proportion in the company

3. More training is provided to operations-based roles where there is a higher % of males, hence the number of hours is higher for males

# People - Caring

**GRI 401-3 Parental leave** (Started reporting in 2022. Leavers included).

GRI		Hong Kong	Macau	China	Singapore	Total
<b>GRI 401-3-a</b>	<b>A. Total number of employees that were entitled to parental leave, by gender in 2022</b>					
	Male	7,030	17	215	2	<b>7,264</b>
	Female	1,419	6	97	0	<b>1,522</b>
	Total	8,449	23	312	2	<b>8,763</b>
<b>GRI 401-3-b</b>	<b>B. Total number of employees that took parental leave, by gender in 2022</b>					
	Male	84	1	14	2	<b>100</b>
	Female	20	0	9	0	<b>29</b>
	Total	104	1	23	2	<b>129</b>
<b>GRI 401-3-c</b>	<b>C. Total number of employees that returned to work in the reporting period after parental leave ended, by gender in 2022</b>					
	Male	84	1	14	2	<b>100</b>
	Female	20	0	6	0	<b>26</b>
	Total	104	1	20	2	<b>126</b>
<b>GRI 401-3-c</b>	<b>D. Total number of employees that returned to work in the reporting period after parental leave ended, by gender in 2021</b>					
	Male	76	1	3	2	<b>81</b>
	Female	16	1	8	0	<b>24</b>
	Total	92	2	11	2	<b>107</b>

## People - Caring

**GRI 401-3 Parental leave** (Reported in 2022. Terminated staff included).

GRI		Hong Kong	Macau	China	Singapore	Total
<b>GRI 401-3-d</b>	<b>E. Total number of employees that returned to work after parental leave ended that were still employed 12 months after their return to work, by gender (those who took leave in 2021)</b>					
	Male	57	1	3	2	<b>62</b>
	Female	13	0	8	0	<b>21</b>
	Total	70	1	11	2	<b>83</b>
<b>GRI 401-3-e</b>	<b>F. Return to work rates of employees that took parental leave, by gender in 2022 (C ÷ B)</b>					
	Male	100%	100%	100%	100%	<b>100%</b>
	Female	100%	100%	67%	NA	<b>90%</b>
	Total	100%	100%	87%	100%	<b>98%</b>
<b>GRI 401-3-e</b>	<b>G. Retention rates of employees that took parental leave, by gender (those who took leave in 2021) (E ÷ D)</b>					
	Male	75%	100%	100%	100%	<b>77%</b>
	Female	81%	0%	100%	NA	<b>88%</b>
	Total	76%	50%	100%	100%	<b>78%</b>

## People - Caring

### GRI 404-1-a-ii Training hours per employee (by management class)

Training hours (by management class, %)	2018		2019		2020		2021		2022	
	% of total training	Hrs / employee	% of total training	Hrs / employee	% of total training	Hrs / employee	% of total training	Hrs / employee	% of total training	Hrs / employee
Director	1.6	52.8	0.4	16.4	1	21.2	0.4	13.7	0.5	20.4
Managerial	15.1	15.7	19	24.2	19.1	14.8	24.2	28.7	21.4	23.6
Professional	26.3	12.3	31.6	18.3	34.5	11.9	37.5	20.3	40.3	20.3
Supervisory	13.5	8.8	15.3	13	15.6	8.3	12.4	10.2	14.0	9.5
Technical	41.5	17.7	28.6	17.2	25.2	9.4	18.2	11.7	19.9	11.8
Others	2.1	2.2	5.1	7.4	4.1	3.7	7.3	10.9	3.8	4.8

### GRI 404-3 Career & performance review (monthly paid employees excluding Pristine)

Performance review (by gender, %)	2018		2019		2020		2021		2022	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	83	74	92	92	98.2	98.2	93.3	91.1	94.5	93.6
Performance review (by management class, %)										
Director	100		100		100		100		100	
Managerial	59.0		79.0		92.8		96.8		96.7%	
Professional	77.0		93.0		98.5		91.8		94.0%	
Supervisory	92.0		95.0		98.1		95.4		95.6%	
Technical	86.0		96.0		99.2		93.7		93.1%	
Others	78.0		91.0		99.8		92.0		95.3%	

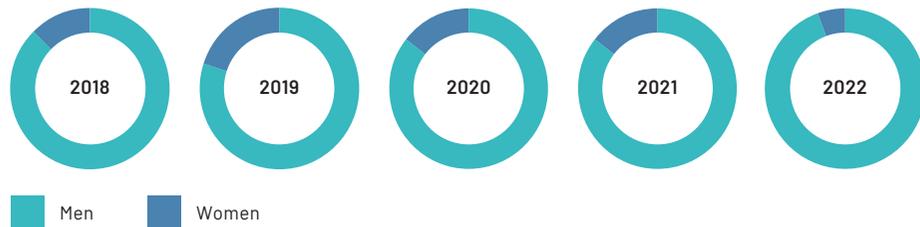
# People - Caring

## GRI 405-1 Diversity of governance bodies and employees

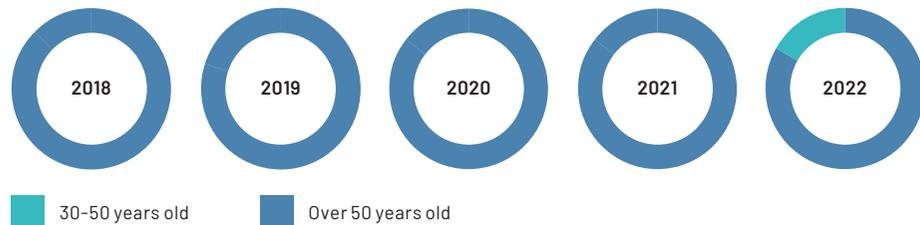
### GRI 405-1-a Diversity of governance bodies

Includes all directors in 2022. For 2021 and before, only Executive Directors considered.

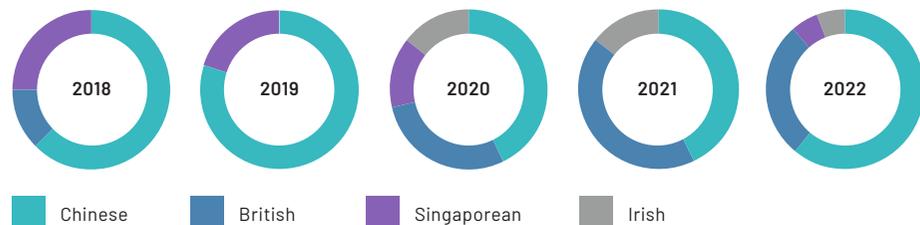
#### Employees in governance bodies by gender



#### Employees in governance bodies by age



#### Employees in governance bodies by nationality<sup>1</sup>



1. Nationality refers to the issued country of the passport holding by the directors.

## GRI 405-1-b Diversity of Governance Bodies and Employees (permanent employees) Started reporting in 2022. Employee category based on staff grading.

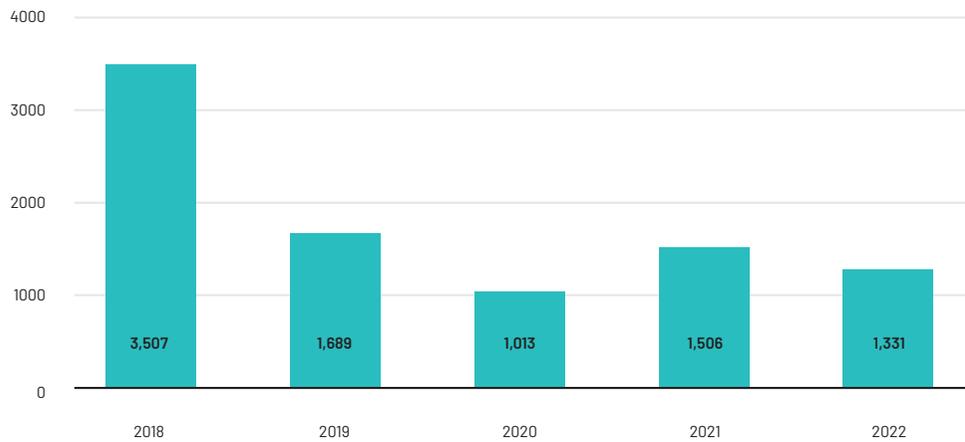
Employee Category	Gender	Percentage	Age Group	Percentage
Senior Leadership Hrs / employee	Men	92.3%	Under 30 years old	0.0%
			30-50 years old	23.1%
	Women	7.7%	Over 50 years old	76.9%
Executives and Senior Executives Hrs / employee	Men	86.8%	Under 30 years old	0.3%
			30-50 years old	68.6%
	Women	13.2%	Over 50 years old	31.1%
Junior Executives Hrs / employee	Men	79.5%	Under 30 years old	19.0%
			30-50 years old	67.5%
	Women	20.5%	Over 50 years old	13.5%
General Staff Hrs / employee	Men	81.1%	Under 30 years old	22.3%
			30-50 years old	49.7%
	Women	18.9%	Over 50 years old	28.0%

Employee Category	Nationality	Percentage
Executives and Senior Leadership	- HKSAR	63.4%
	- Chinese Mainland	24.1%
	- British	1.8%
	- Malaysian	1.7%
	- Indonesian	0.1%
	- Vietnamese	0.0%
	- Others	9.0%
General Staff	- HKSAR	52.0%
	- Chinese Mainland	30.1%
	- British	0.2%
	- Malaysian	0.3%
	- Indonesian	0.1%
	- Vietnamese	0.0%
	- Others	17.3%

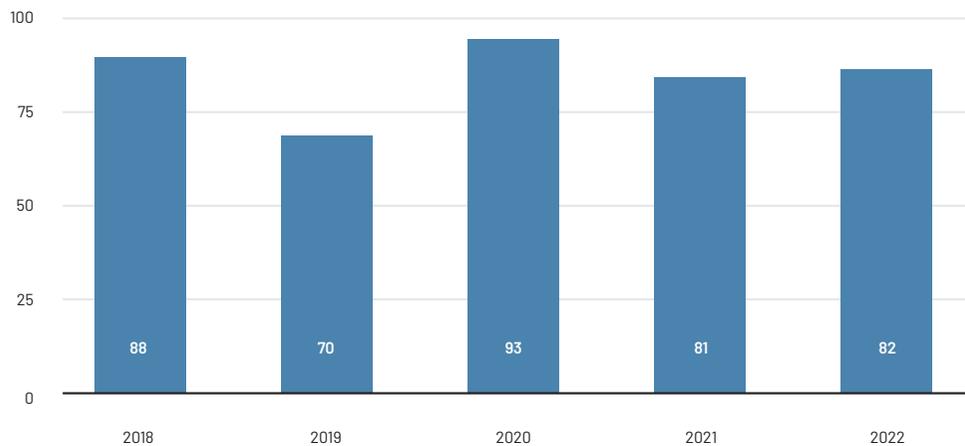
## People - Caring

### Corporate social initiatives

Volunteer hours (preparation and participation time)



### Number of community activities



## Governance

### GRI 2-27 Compliance with laws and regulations

GRI	Units	2018	2019	2020	2021	2022
GRI 2-27-a, c & d	<b>Total number of significant instances of non-compliance with laws and regulations during the reporting period</b>					
	i. instances for which fines were incurred (significant fines are defined as over HKD100,000)	number	0	0	0	0
	ii. instances for which non-monetary sanctions were incurred (significant instances include tender suspensions)	number	1	0	0	0
GRI 2-27-b	<b>Total number and the monetary value of fines for instances of non-compliance with laws and regulations that were paid during the reporting period</b>					
	i. fines for instances of non-compliance with laws and regulations that occurred in the current reporting period	number	-	-	-	0
	ii. fines for instances of non-compliance with laws and regulations that occurred in previous reporting period	number	0	0	0	-

# Governance

## GRI 418 Customer Privacy<sup>1</sup>

GRI		Units	2022
GRI 418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data		
GRI 418-1-a	<b>Total number of substantiated complaints received concerning breaches of customer privacy</b>		
	i. complaints received from outside parties and substantiated by the organization	number	0
	ii. complaints from regulatory bodies	number	0
GRI 418-1-b	<b>Total number of identified leaks, thefts, or losses of customer data</b>		
		number	0

1. Reported since 2022 as a new material topic.

## GRI 416 Customer health and safety

GRI	Performance Indicators	Units	2018	2019	2020	2021	2022
GRI 416-2	Incidents of non-compliance concerning the health and safety impacts of products and services						
	Product and services non-compliance in terms of health and safety <sup>1</sup>	number	0	0	0	0	0

1. Only reporting incidents of non-compliance where customers' health and safety could be affected.

## Summary of sustainability KPIs with year-on-year targets

Item	KPI Description	Units	Base Year (2016)	2021		2022		2023	2024	2025
				Annual Target	Actual Performance	Annual Target	Actual Performance	Annual Target	Annual Target	Annual Target
1	25% reduction in Group carbon intensity by 2025 (carbon emissions based on Scope 1 (direct fuel use) and Scope 2 (indirect electricity) emissions)	kg CO2e / HK\$ 1 million turnover	4,378	3,770	5,173	3,648	4,799	3,526	3,405	3,283
2	25% reduction in landfill waste intensity for Hong Kong by 2025	tonnes / HK\$ 1 million turnover (HK & Macau only)	3.66	3.16	2.57	3.05	2.15	2.95	2.85	2.75
3	25% reduction in Group water intensity by 2025 <sup>1</sup>	m <sup>3</sup> / HK\$ 1 million turnover	54.96	47.33	67.59	45.80	84.71	44.27	42.75	41.22
4	25% reduction in Group energy intensity by 2025	MJ / HK\$ 1 million turnover	51,215	44,102	64,247	42,679	59,531	41,257	39,834	38,411
5	Improving year-on-year Group safety performance	Reduction in AIR <sup>2</sup>	N/A	<3.8	3.4	<3.4	3.6	<2022 figure	<2023 figure	<2024 figure
6	25% of concrete quantity produced is certified or equivalent to the 'Platinum' grade of the CIC Green Product Certification Scheme - Carbon Labelling Scheme <sup>3</sup>	Percentage (%)	N/A	25	29.5	25	57.9	25	25	25

1. Although water use is not a material issue, it has been included to reflect our precautionary approach and reduce environmental impact, drive efficiency (especially in Singapore where there is a high level of water stress), and to support our priority SDG Target 6.4.

2. AIR in 2021 is 3.4 = (No. of reportable accident / average workforce) \* 1,000.

3. Certified concrete products are verified against CIC Green Product Certification Assessment Guide - Ready-mixed Concrete (Version: 1.4, Issued: July 2020).

# Appendix B

## Greenhouse gas inventory verification

Based on the approach under ISO14064, estimates of GHG emissions cannot be included in the verification process. Therefore, when Gammon is in a subcontracting role or where energy or water is provided by others, the corresponding estimated emissions have been excluded.



Advanced Manufacturing Centre



Opinion HK23/00000108



## Verification Opinion

To Gammon Construction Limited,

SGS has been contracted by Gammon Construction Limited (hereinafter referred to as "CLIENT"), 22/F, Tower 1 & 2, The Quayside, 77 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong, for the Greenhouse Gas (GHG) verification in accordance with

### ISO 14064-3:2019

as provided by Gammon Construction Limited (hereinafter referred to as "RESPONSIBLE PARTY"), 22/F, Tower 1 & 2, The Quayside, 77 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong, in the GHG Statement in the form of *Greenhouse Gas (GHG) Report Year 2022* (Date: 29<sup>th</sup> March 2023, Revision no. 0) covering GHG emissions of the period 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022.

### Roles and Responsibilities

The management of Gammon Construction Limited was responsible for the organization's GHG information system, the development and maintenance of records and reporting procedures in accordance with that system, including the calculation and determination of GHG information and the reported GHG emissions. This responsibility includes designing, implementing and maintaining a data management system relevant to the preparation and fair presentation of a GHG statement in accordance with ISO 14064-1:2018.

SGS's responsibility was to express an independent GHG verification opinion on *Greenhouse Gas (GHG) Report Year 2022* (Date: 29<sup>th</sup> March 2023, Revision no. 0) as provided by Gammon Construction Limited for the period 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022 against the principles and requirement of ISO 14064-1:2018.

SGS conducted a third party verification of the provided GHG Statement in the period 7<sup>th</sup> March 2023 to 29<sup>th</sup> May 2023 in accordance with ISO 14064-3:2019.

### Verification Objectives

The purposes of this verification exercise were, by review of objective evidence, to independently review:

- Conformance with agreed verification criteria, including the principles and requirements of relevant standards or GHG programmes, if applicable, within the scope of the verification;
- Whether the GHG emissions were as declared by the organization's GHG Statement.



**Verification Scope**

This engagement covered verification of emissions from anthropogenic sources of GHGs included within the scope outlined below.

- The organization boundary was established following equity share approach
  - Location/boundary of the activities:
- Offices
- Gammon Head Office:  
22/F, Tower 1 & 2, The Quayside, 77 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong;
  - Airport Freight Forwarding Center (Rental Office):  
Unit 8, 12/F, Airport Freight Forwarding Centre, 2 Chun Wan Road, Chek Lap Kok, Lantau, New Territories, Hong Kong;
  - Zero Harm Induction Centre:  
4 Muk Long Street, CKR-BEM Office, Kai Tak, Hong Kong;
  - Gammon Shenzhen Office:  
8/F, Tower A, Sunhope E Metro 7018 Caitan Road, Futian District Shenzhen 518035 People's Republic of China;
  - Gammon Singapore Office:  
1 International Business Park #10-01, The Synergy, Singapore 609917;
- Construction Services Division (CSD) Facilities
- Gammon Technology Park:  
21 Chun Wang Street, Tseung Kwan O, Hong Kong;
  - Tsing Yi Concrete Batching Plant:  
TYTL 108 RP, Sai Tso Wan Road, Tsing Yi, Hong Kong;
  - Tuen Mun Concrete Batching Plant (Rental Plant):  
Lam Tei Quarry, Tuen Mun, New Territories, Hong Kong;
  - Yau Tong Concrete Batching Plant (Rental Plant):  
20 Tung Yuen Street, Yau Tong, Kowloon, Hong Kong;
  - 3RS Batching Plant (Three Runway System Project):  
Concrete Batching Facility B1, Short Term Tenancy No. CX2600, Hong Kong International Airport, Chek Lap Kok, Hong Kong (Airport Authority Contract 3901B);
  - Dongguan Pristine Metal Works:  
Fu Lu Sha Region, Sha Tian Town, Dongguan, China (Postal code 523990);
- Warehouses
- Hang Tau Warehouse:  
DD100 Lot 789, Hang Tau Village, Sheung Shui, New

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Territories, Hong Kong;

- Sha Tau Kok Warehouse:  
DD38 Lot 120, Sha Tau Kok Road, Wo Hang North, New Territories, Hong Kong;
  - Fung Ka Wai Warehouse:  
DD126 Lot 202RP, 203RP, 204PR, 205-207, 209, 217-221, 224, 225-231, 236-240, Ping Shan, Yuen Long, New Territories, Hong Kong;
  - Ping Che Warehouse:  
Lot 925-928, 931, 1531, Portion of Lot 929, 930, 932 RP and 1530 all in DD 77, Ping Che, New Territories, Hong Kong
  - Gammon Singapore Plant Yard:  
60 Tuas Crescent Open Space, Singapore 638470;
- Hong Kong and Singapore Construction Sites
- 99 sites (address details to Appendix)
- Physical infrastructure, activities, technologies and processes of the organization:
- The carrying out of design, construction and maintenance of civil engineering works (site formation, roads and drainage, tunnels, viaducts, port works and waterworks and box culverts);
  - The carrying out of design and construction of landslip preventive and remedial works to slopes and retaining walls;
  - The carrying out of ground investigation works;
  - The carrying out of design and construction of foundations including predrilling works, pile caps, substructure works, excavation and lateral support, grout curtain, pipe piles, permeation grouting, post construction core test, diaphragm wall, bored, driven and percussive piling (barrette pile, hand dug caisson, large diameter bored piles, large diameter bored piles with bell-out, minipiles, non-percussion cast-in-situ concrete pile, percussive cast-in-situ concrete pile, precast concrete piles, precast prestressed tubular piles (PPTP), rock-socketed steel H-pile in prebored hole, percussive driven steel H piles, percussive driven steel sheet piles, nondriven steel sheet piles and steel tubular piles);
  - The carrying out of design and construction of buildings;
  - The carrying out of building activities to keep, restore and improve the facilities of buildings and surroundings;
  - The carrying out of design, supply, installation and manage contracting of façade systems;
  - The carrying out of design, installation, maintenance and project management of heating, ventilation and air-conditioning, "high voltage electrical, "low voltage electrical, "extra low voltage electrical, fire services, plumbing and

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drainage systems,"as defined in Electricity Ordinance Chapter 406";

- The carrying out of demolition of buildings and structures with demolition design;
  - The carrying out of design, fabrication and installation of structural steelwork;
  - The carrying out of mechanical plant equipment supply services for construction;
  - The carrying out of plant and equipment maintenance;
  - The carrying out of project and design management;
  - The carrying out of concrete supply services;
  - The carrying out of calibration services & testing services of construction materials;
  - The carrying out of design, supply, installation and manage contracting of interior fitting out, alternation and addition works.
- GHG sources, sinks and/or reservoirs included: GHG sources as presented in the *Greenhouse Gas (GHG) Report Year 2022* (Date: 29<sup>th</sup> March 2023, Revision no. 0) of the RESPONSIBLE PARTY, which comprises the following emission categories:
- Direct GHG emissions
  - Indirect GHG emissions from imported energy
  - Indirect GHG emissions from transportation
    - Mobile Vehicles for Staff Commuting with Fuel Card
    - Business Air Travel
  - Indirect GHG emissions from products used by the RESPONSIBLE PARTY
    - Temporary works material - Structural Steel (Cradle to gate) (Hong Kong)
    - Temporary works material - Timber Formwork (Cradle to gate) (Hong Kong)
    - Temporary works material - Pile Material (Cradle to gate) (Hong Kong)
    - Temporary works material - Concrete supplied by Gammon for Internal use (with CIC Green Product Certification Label, raw materials acquisition & delivery to plant) (Hong Kong)
    - Temporary works material - Concrete supplied by Gammon for Internal use (by CIC Carbon Assessment Tool, raw materials acquisition & delivery to plant) (Hong Kong)
    - Temporary works material - Concrete supplied by Gammon for External use (with CIC Green Product Certification Label, raw materials acquisition &

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- delivery to plant) (Hong Kong)
- o Temporary works material - Concrete supplied by Gammon for External use (by CIC Carbon Assessment Tool, raw materials acquisition & delivery to plant) (Hong Kong)
- o Temporary works material - Concrete supplied by External Supplier for Internal use (by CIC Carbon Assessment Tool, raw materials acquisition & delivery to plant) (Hong Kong)
- o Permanent works material - Structural Steel (Cradle to gate) (Hong Kong)
- o Permanent works material - Reinforcement Bar (Cradle to gate) (Hong Kong)
- o Permanent works material - Pile Material (Cradle to gate) (Hong Kong)
- o Permanent works material - Concrete supplied by Gammon for Internal use (with CIC Green Product Certification Label, raw materials acquisition & delivery to plant) (Hong Kong)
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- o Permanent works material - Concrete supplied by Gammon for External use (by CIC Carbon Assessment Tool, raw materials acquisition & delivery to plant) (Hong Kong)
- o Permanent works material - Concrete supplied by External Supplier for Internal use (by CIC Carbon Assessment Tool, raw materials acquisition & delivery to plant) (Hong Kong)
- o Permanent works material - Bagged Cement (Cradle to gate) (Hong Kong)
- o Landfill Disposal in Hong Kong
- o Electricity Used for Processing Fresh Water by Water Supplies Department in Hong Kong
- o Electricity Used for Processing Sewage by Drainage Services Department in Hong Kong
- o Waste Incineration - food waste (wet weight) (Singapore)
- Types of GHGs included: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, NF<sub>3</sub>, SF<sub>6</sub>, HFCs, PFCs and HCFCs

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- GWP adopted: IPCC Sixth Assessment Report (AR6)
- GHG information for the following period was verified: 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022
- Level of assurance: Reasonable assurance
- Materiality thresholds: without major non-conformance to the agreed criteria in GHG quantification and reporting, and less than 5% error in misclassified GHG emissions of misapplication of calculations

**Criteria**

Criteria against which the verification assessment undertaken were the requirements of:  
ISO 14064-1:2018

**References**

- Guidelines to Account for and Report on Greenhouse Gas Emissions for Buildings (Commercial, Residential or Institutional Purposes) in Hong Kong, 2010 Edition

**GHG Statement**

The GHG emission results presented in 2022 GHG Statement in the form of *Greenhouse Gas (GHG) Report Year 2022* (Date: 29<sup>th</sup> March 2023, Revision no. 0) of the RESPONSIBLE PARTY were listed below.

- Direct GHG emissions: 86,501.43 tonnes of CO<sub>2</sub>e
- Indirect GHG emissions from imported energy: 13,077.01 tonnes of CO<sub>2</sub>e
- Indirect GHG emissions from transportation: 679.71 tonnes of CO<sub>2</sub>e
- Indirect GHG emissions from products used by the RESPONSIBLE PARTY: 895,754.86 tonnes of CO<sub>2</sub>e
- CO<sub>2</sub> Emissions from Combustion of Biomass: 3,866.44 tonnes of CO<sub>2</sub>e

**Conclusion**

The RESPONSIBLE PARTY provided the GHG Statement based on the requirements of agreed criteria. The GHG information for the period 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022 were verified by SGS to a reasonable level of assurance, consistent with the agreed verification scope, objectives and criteria.

SGS planned and performed works to obtain the information, explanations and evidence which SGS considered necessary to provide a reasonable level of assurance that the GHG emissions for the period 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022 were fairly stated. The verification included review of the RESPONSIBLE PARTY's GHG information, assessment of the GHG

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information system and its controls, assessment of GHG data and information, assessment against verification criteria, as well as evaluation of the GHG Statement of the RESPONSIBLE PARTY through site visit, interview, document review and data verification in sampling. The data and information supporting the GHG Statement were historical and hypothetical in nature.

In SGS's opinion the presented GHG Statement

- is materially correct and is a fair representation of the GHG data and information, and
- is prepared in accordance with the agreed criteria on GHG quantification and reporting.

Authorised by



Date: 0<sup>th</sup> June 2023

SGS Hong Kong Limited, Energy and Carbon Services  
Unit 203 & 204, 3<sup>rd</sup> Floor, Building ZEE, Phase 2, Hong Kong Science Park, New Territories, Hong Kong  
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Note: The findings recorded herein are based upon a verification performed by SGS. The opinion does not relieve Client from compliance with any bylaws, federal, national or regional acts and regulations or with any guidelines issued pursuant to such regulations. Specifications to the contrary are not binding on SGS and SGS shall have no responsibility vis-à-vis parties other than its Client.

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## Appendix C

### Report verification statement

The verification statement has been updated to include the carbon related data following the completion of the ISO 14064:2018 third party verification and issuance of the verification opinion.



Staff hone their practical skills using a welding simulator



## ASSURANCE STATEMENT

### SGS HONG KONG LTD'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE GAMMON CONSTRUCTION LIMITED'S SUSTAINABILITY REPORT FOR 2022

#### NATURE OF THE ASSURANCE/VERIFICATION

SGS Hong Kong Limited (hereinafter referred to as SGS) was commissioned by Gammon Construction Limited (hereinafter referred to as Gammon) to conduct an independent assurance of the Sustainability Report 2022 (hereinafter referred to as the Report).

#### INTENDED USERS OF THIS ASSURANCE STATEMENT

This Assurance Statement is provided with the intention of informing all Gammon's Stakeholders.

#### RESPONSIBILITIES

The information in the Report and its presentation are the responsibility of the directors or governing body (as applicable) and the management of Gammon. SGS has not been involved in the preparation of any of the material included in the Report.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification with the intention to inform all Gammon's stakeholders.

#### ASSURANCE STANDARDS, TYPE AND LEVEL OF ASSURANCE

The SGS ESG & Sustainability Report Assurance protocols used to conduct assurance are based upon internationally recognised assurance guidance and standards.

The assurance of this report has been conducted according to the following Assurance Standards:

Assurance Standard Options	Level of Assurance
SGS ESG & SRA Assurance Protocols (based on GRI Principles and guidance in AA1000)	N/A
AA1000ASv3 Type 2 (AA1000APS Evaluation plus evaluation of Specified Performance Information)	Moderate

#### SCOPE OF ASSURANCE AND REPORTING CRITERIA

The scope of the assurance included evaluation of quality, accuracy and reliability of specified performance information included the text and 2022 data in accompanying tables contained in the Report. Data and information of subsidiaries of Gammon were included in this assurance process, which covered China, Hong Kong, Macau and Singapore during the period from 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022.

Reporting Criteria Options
Global Reporting Initiative, GRI Standards (2021) (In Accordance with)
AA1000 Accountability Principles (2018)

#### ASSURANCE METHODOLOGY

The assurance comprised a combination of pre-assurance research, interviews, documentation & record review and validation with external bodies.

#### LIMITATIONS AND MITIGATION

Financial data drawn directly from Gammon that has not been checked back to source as part of this assurance process.

Some statements and information that were not identified as material issues were excluded from the scope of the assurance within the timescale allowed.

#### STATEMENT OF INDEPENDENCE AND COMPETENCE

The SGS Group of companies is the world leader in inspection, testing and verification, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS affirm our independence from Gammon, being free from bias and conflicts of interest with the organisation, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors registered with IRCA EMS Principal Auditor, auditor of ISO 37001, ISO 26000 & ISO 45001 and nominated trainer of GRI Standards.

#### ASSURANCE OPINION

On the basis of the methodology described and the verification work performed, we are satisfied that the specified performance information included in the scope of assurance is accurate, reliable, has been fairly stated and has been prepared, in all material respects, in accordance with the reporting criteria.

#### QUALITY AND RELIABILITY OF SPECIFIED PERFORMANCE INFORMATION

Gammon has developed good measuring tools to record all the need data and with sufficient resources on data collection. The quality of the information disclosed in Gammon's Sustainability Report was found satisfaction. The data were accurate and reliable.

#### ADHERENCE TO AA1000 ACCOUNTABILITY PRINCIPLES (2018)

**INCLUSIVITY:** Stakeholder engagement has been completed and the engagement frequency is determined clearly.

**MATERIALITY:** Referring to the structured stakeholder engagement & materiality assessment, 16 material topics were prioritized and confirmed.

**RESPONSIVENESS:** Gammon took actions to address these material topics in a timely manner.

**IMPACT:** The impacts of Gammon caused, contributed to and mitigated were clearly explained.

Signed:

For and on behalf of SGS Hong Kong Limited

Miranda Kwan  
Director  
Knowledge Solutions  
12 July 2023  
WW.SGS.COM



AA1000  
Licensed Report  
000-8/V3-CBZDT

# Appendix D

## GRI content index



Recently completed LOHAS Park 9 project consisting of Marini, Grand Marini and Ocean Marini

<b>Statement of use</b>	Gammon Construction Limited has reported in accordance with the GRI Standards for the period of the 2022 calendar year
<b>GRI 1 used</b>	GRI 1: Foundation 2021
<b>Applicable GRI Sector Standard(s)</b>	Not applicable Stakeholder engagement process was conducted in 2022 by independent consultant (i.e. Business Environment Council), 16 material topics were determined and validated by the Executive Committee members, details can be found in Appendix D.
<b>General notes</b>	1. 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.
	2. The Universal Standards used are the 2021 version. All Topic Standards used are 2016 version, except GRI 403 - Occupational Health and Safety (2018 version), GRI 303 - Water and Effluents (2018 version) and GRI 306 - Waste (2020 version).
	3. * Indicates that the topic has been identified as a material issue in the stakeholder engagement process
	4. A copy of the Sustainability Report 2021 referred to in the table below can be found online here: <a href="http://www.gammonconstruction.com/en/sustainability-report.php">www.gammonconstruction.com/en/sustainability-report.php</a>
	5. Individual disclosure items ('a', 'b', 'c', etc.) are not listed here

GRI Standard number	Disclosure number	Disclosure title	Page number(s)	Content reference and remark
<b>General disclosures</b>				
GRI 2: General disclosures 2021	2-1	Organizational details	7 81 Back cover	About us How we manage Headquartered in Hong Kong Jointly and equally owned by Jardines and Balfour Beatty
	2-2	Entities included in the organization's sustainability reporting	81	How we manage: Coverage of the report [No mergers, acquisitions and disposal in recent years and there is no minority interest for non-100% subsidiary]
	2-3	Reporting period, frequency and contact point	7 4 Back cover	About us Structure and alignment of the report Publication date of the report Description under the list of office addresses [sustainability@gammonconstruction.com]
	2-4	Restatements of information	--	Any restatement of data in the report are highlighted individually with relevant explanation
	2-5	External assurance	4 146	Structure and alignment of the report Appendix C: Report verification statement
	2-6	Activities, value chain and other business relationships	4 7 9 82 112 120	Structure and alignment of the report About us Project spotlight and outlook How we manage: Governance How we manage: Our supply chain Appendix A: Key performance indicators
	2-7	Employees	7 120	About us Appendix A: Key performance indicators
	2-8	Workers who are not employees	120	Appendix A: Key performance indicators [No significant variations during the year (e.g. seasonal variations). Daily paid employees and subcontractor worker numbers vary in response to project numbers, types and project delivery cycles.]
	2-9	Governance structure and composition	82	How we manage: Governance
	2-10	Nomination and selection of the highest governance body	--	Omitted. Please see explanations at the end of this Appendix
	2-11	Chair of highest governance body	82	How we manage: Governance
	2-12	Role of the highest governance body in overseeing the management of impacts	82	How we manage: Governance

General disclosures Continued				
GRI 2: General disclosures 2021	2-13	Delegation of responsibility for managing impacts	82	How we manage: Governance
	2-14	Role of the highest governance body in sustainability reporting	82	How we manage: Governance
	2-15	Conflicts of interest	82	How we manage: Governance
	2-16	Communication of critical concerns	88	How we manage: Managing risk
	2-17	Collective knowledge of the highest governance body	82	How we manage: Governance
	2-18	Evaluation of the performance of the highest governance body	--	Omitted. Please see explanations at the end of this Appendix
	2-19	Remuneration policies	82	How we manage: Governance
	2-20	Process to determine remuneration	82	How we manage: Governance
	2-21	Annual total compensation ratio	--	Omitted. Please see explanations at the end of this Appendix
	2-22	Statement on sustainable development strategy	5	Message from the Chief Executive
	2-23	Policy commitments	87 88	How we manage: Values and norms of behaviour How we manage: Managing risk
	2-24	Embedding policy commitments	87	How we manage: Values and norms of behaviour
	2-25	Processes to remediate negative impacts	87 112	How we manage: Values and norms of behaviour How we manage: Our supply chain
	2-26	Mechanisms for seeking advice and raising concerns	87	How we manage: Values and norms of behaviour
	2-27	Compliance with laws and regulations	120	Appendix A: Key performance indicators
	2-28	Membership associations	111 172	How we manage: Influencing the industry and committing to change Appendix G: Membership of associations and industry bodies
	2-29	Approach to stakeholder engagement	5 159	Materiality assessment Appendix E: Stakeholder engagement and materiality assessment
	2-30	Collective bargaining agreements	116	How we manage: Employee rights – collective bargaining

Materials topics				
GRI 3: Material Topics 2021	3-1	Process to determine material topics	5 159	Materiality assessment Appendix E: Stakeholder engagement and materiality assessment
	3-2	List of material topics	5 159	Materiality assessment Appendix E: Stakeholder engagement and materiality assessment
Governance & economics				
Data privacy & security*				
Gammon's policies and practices to protect data privacy and information security, including any breaches or complaints received, and their responses				
GRI 3: Material Topics 2021	3-3	Management of material topics	89	How we manage: Data privacy and security
GRI 418: Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	120	Appendix A: Key performance indicators
(Climate change adaptation & resilience)				
Gammon's adaptation & resilience plans in response to climate change risks beyond reducing the emissions of its own operations				
(GRI 201: Economic Performance 2016)	(201-2)	Financial implications and other risks and opportunities due to climate change	90	How we manage: Climate change-related risk management
(Anti-corruption)				
Gammon's policies & practices to ensure integrity among its own staff & other stakeholders such as sub-contractors & suppliers				
(GRI 3: Material Topics 2021)	3-3	Management of material topics	89	How we manage: Anti-corruption
(GRI 205: Anti-corruption 2016)	(205-1)	Operations assessed for risks related to corruption	89	How we manage: Corruption risk assessment
Value chain				
Influencing the industry*				
Gammon's efforts to share best practices (e.g., safety and environment) and work with regulators to promote improved performance of the industry				
GRI 3: Material Topics 2021	3-3	Management of material topics	111	How we manage: Influencing the industry and committing to change

Supply chain engagement*				
Gammon's actions to build strong relationships and provide open channels of communication with suppliers and sub-contractors				
GRI 3: Material Topics 2021	3-3	Management of material topics	112	How we manage: Our supply chain
GRI 204: Procurement Practices 2016	204	Procurement Practices	120	Appendix A: Key performance indicators
Improving client satisfaction*				
Gammon's approach to understanding client expectations and enhancing client satisfaction				
GRI 3: Material Topics 2021	3-3	Management of material topics	111	How we manage: Influencing the industry and committing to change
	--	Yearly customer satisfaction survey	120	Appendix A: Key performance indicators
Environment				
Low carbon construction – materials*				
Gammon's approach to reduce the embodied carbon on projects, e.g., use of low carbon materials, design optimisation, off-site construction, high recycled content materials, etc.				
GRI 3: Material Topics 2021	3-3	Management of material topics	101	How we manage: Sustainable resource use and low carbon materials
GRI 301: Materials 2016	301-1	Materials used by weight or volume	--	Incomplete. Please see explanations at the end of this Appendix
	301-2	Recycled input materials used	120	Appendix A: Key performance indicators
	301-3	Reclaimed products and their packaging materials	120	Appendix A: Key performance indicators
(GRI 305: Emissions 2016)	(305-3)	Other indirect (Scope 3) GHG emissions	120	Appendix A: Key performance indicators

Low carbon construction – energy*				
Gammon's approach and initiatives to reduce greenhouse gas emissions from energy used in its operations (e.g., switch from diesel to electricity, improve energy efficiency, and use energy efficient equipment, etc.)				
GRI 3: Material Topics 2021	3-3	Management of material topics	107	How we manage: Low carbon construction - energy
GRI 302: Energy 2016	302-1	Energy consumption within the organization	120	Appendix A: Key performance indicators
	302-2	Energy consumption outside of the organization	129	Appendix A: Key performance indicators
	302-3	Energy intensity	120	Appendix A: Key performance indicators
	302-4	Reduction of energy consumption	--	Omitted. Please see explanations at the end of this Appendix
	302-5	Reductions in energy requirements of products and services	--	Omitted. Please see explanations at the end of this Appendix
(GRI 305: Emissions 2016)	(305-1)	Direct (Scope 1) GHG emissions	120	Appendix A: Key performance indicators
	(305-2)	Energy indirect (Scope 2) GHG emissions	120	Appendix A: Key performance indicators
	302-5	Other indirect (Scope 3) GHG emissions	120	Appendix A: Key performance indicators
	302-5	GHG emissions intensity	120	Appendix A: Key performance indicators
Sustainable resource use*				
Gammon's approach to efficiently use construction materials & selection of more sustainable materials (e.g., timber with sustainability certifications, rapidly renewable materials, etc.)				
GRI 3: Material Topics 2021	3-3	Management of material topics	101	How we manage: Sustainable resource use and low carbon materials
GRI 301: Materials 2016	301-1	Materials used by weight or volume	--	Incomplete. Please see explanations at the end of this Appendix
	301-2	Recycled input materials used	120	Appendix A: Key performance indicators
	301-3	Reclaimed products and their packaging materials	120	Appendix A: Key performance indicators

(Water use)				
Gammon's approach & initiatives to monitor & reduce the potable water consumption of Gammon's offices & construction sites, & efforts to recycle water				
GRI 403: Water and Effluents 2018)	(303)	Water and effluents	120	Appendix A: Key performance indicators
(Waste & circularity)				
Gammon's approach & initiatives to manage & reduce solid waste generation & promote circularity at Gammon's offices & construction sites				
GRI 3: Material Topics 2021	3-3	Management of material topics	103	How we manage: Waste and circularity
(GRI 306: Waste 2020)	(306-3)	Waste generated	120	Appendix A: Key performance indicators
	(306-4)	Waste Diverted from Disposal	120	Appendix A: Key performance indicators
	(306-5)	Waste Directed to Disposal	120	Appendix A: Key performance indicators
Safety & wellbeing				
Safety management*				
Managing all aspects of safety on construction sites to reduce the risk of accidents and meet Gammon's Zero Harm objective				
GRI 3: Material Topics 2021	3-3	Management of material topics	94	How we manage: Commitment to safety
GRI 403: Occupational Health and Safety 2018	403-8	Workers covered by an occupational health and safety management system	120	Appendix A: Key performance indicators
	403-9	Work-related injuries	120	Appendix A: Key performance indicators
Working environment*				
Providing a healthy and caring work environment to promote the wellbeing of Gammon's employees and construction workers				
GRI 3: Material Topics 2021	3-3	Management of material topics	94	How we manage: Zero Harm
GRI 403: Occupational Health and Safety 2018	403-10	Work-related ill health	120	Appendix A: Key performance indicators

Compliance/ quality of products & services*				
Gammon's statement of compliance and its approach to ensure compliance with laws and regulations applicable to its own operations				
GRI 3: Material Topics 2021	3-3	Management of material topics	98	How we manage: Customer health and safety and compliance of products and services
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	---	Omitted. Please see explanations at the end of this Appendix
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	120	Appendix A: Key performance indicators
People & society				
Staff attraction, retention & employment*				
Gammon's approach and initiatives to attract talent and reduce staff turnover				
GRI 3: Material Topics 2021	3-3	Management of material topics	114	How we manage: Staff attraction, retention and employment
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	120	Appendix A: Key performance indicators
	401-2	Benefits provided to full-time employees that are not provided to temporary or parttime employees	114	How we manage: Staff attraction, retention and employment
	404-3	New employee hires and employee turnover	120	Appendix A: Key performance indicators

Development of our people*				
Gammon's approach and initiatives to develop the competencies, skills and careers of its people				
GRI 3: Material Topics 2021	3-3	Management of material topics	115	How we manage: Training and education
GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee	120	Appendix A: Key performance indicators
	404-2	Programs for upgrading employee skills and transition assistance programs	114	How we manage: People
	404-3	New employee hires and employee turnover	120	Appendix A: Key performance indicators
Diversity & inclusion*				
Gammon's policies, initiatives and performance in promoting workplace diversity, equity and inclusion				
GRI 3: Material Topics 2021	3-3	Management of material topics	117	How we manage: Diversity, equity and inclusion
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	120	Appendix A: Key performance indicators
	405-2	Ratio of basic salary and remuneration of women to men	---	Omitted. Please see explanations at the end of this Appendix
Labour shortage*				
Gammon's ability to impact the skilled labour shortage in Hong Kong's construction industry				
GRI 3: Material Topics 2021	3-3	Management of material topics	63 115	Promoting construction How we manage: Skilling workers

## Explanation for omissions

GRI Standard number	Disclosure number	Disclosure title	Page number(s)	Requirement(s) omitted	Reason	Explanation
<b>General disclosures</b>						
GRI 2: General disclosures 2021	2-10	Nomination and selection of the highest governance body	-	2-10-a & b	Confidentiality constraints	As a private company, details about the board of directors, their selection process and the board's composition are considered confidential and are not disclosed publicly.
	2-18	Evaluation of the performance of the highest governance body	-	2-18-a, b & c	Confidentiality constraints	The board of directors are assessed based on a number of factors including sustainability considerations. As a private company, however, exact details about board members' performance evaluation, are considered confidential and are not disclosed publicly.
	2-21	Annual total compensation ratio	-	2-21	Confidentiality constraints	As a private company, Gammon views all salary information as confidential and therefore does not publicly disclose any salary-related information.
<b>Environment</b>						
GRI 301: Materials 2016	301-1	Materials used by weight or volume	118	301-1	Data incomplete	We only disclose quantities of major materials which are directly procured by Gammon (see Appendix A: Key performance indicators). Data for materials procured by subcontractors is unavailable. Gammon has limited influence on the choice or quantities of materials used as they are predominantly specified by clients and the engineering requirements of the design to meet local regulations.
GRI 301: Materials 2016	302-4	Reduction of energy consumption	-	302-4	Data incomplete	The number and nature of projects vary every year and each site is very dynamic with construction and energy consumption activities changing through the construction programme. Measurement for energy reduction solely as a direct result of conservation or efficiency initiative is therefore currently not possible to calculate.
	302-5	Reductions in energy requirements of products and services	-	302-5	Not applicable	Gammon is generally not directly responsible for the energy requirements of the projects delivered. Projects are built to the customers' specifications and the architect / engineers' designs to meet local regulations. We do not have responsibility for reducing the energy requirements of projects but will propose improvements where any are identified.
<b>Safety &amp; wellbeing</b>						
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	-	416-1	Not applicable	Gammon strives to ensure the health and safety of the projects we construct but the products used are generally defined by the customers' contract specifications. As the selection of materials is not the direct responsibility of Gammon, we do not specifically assess products used for the improvement of their health and safety. However we do screen out any potentially hazardous materials, as mentioned in page 98.
<b>People &amp; society</b>						
GRI 405: Diversity and Equal Opportunity 2016	405-2	Ratio of basic salary and remuneration of women to men	-	405-2	Confidentiality constraints	As a private company, Gammon views all salary information as confidential and therefore will not publicly disclose any salary-related information at this stage.

# Appendix E

## Stakeholder engagement & materiality assessment



A forest of steel at Lyric Theatre Complex

## Stakeholder engagement and materiality assessment summary report

GRI 2-29

GRI 3-1

GRI 3-2

Gammon Construction Limited (“Gammon”) has commissioned Business Environment Council Limited (“BEC”) to deliver a stakeholder engagement and materiality assessment to identify actual and potential impacts and determine the most significant material topics on sustainability for inclusion in its Sustainability Report 2022 (“SR2022”). The stakeholder engagement and materiality assessment process consisted of the following steps:

1. Understanding of Gammon’s context
2. Impact identification
3. Impact significance assessment
4. Prioritisation of the most significant impacts for reporting

These steps are described in more detail below.

### 1. Understanding of Gammon’s context

A long list of sustainability topics was compiled from various sources:

- Review of sustainability topics and issues identified and included in Gammon’s past sustainability reports as well as other relevant documents such as Gammon’s Sustainability Strategy “Responsible Growth – 25 by 25”;
- Making reference to international and local sustainability / environmental, social and governance (ESG) reporting frameworks, including the ESG Reporting Guide issued by the Hong Kong Exchanges and Clearing Limited and G3: Material Topics 2021 of the Global Reporting Initiative (GRI) Standards;
- Benchmarking against peer companies of Gammon; and
- Interviews with Gammon’s senior management to understand its operating environment, business strengths, risks and opportunities.

### 2. Impact identification

A list of 34 sustainability topics under five aspects was identified where Gammon has impacts on the economy, environment and people (including impacts on their human rights) across its activities and business relationships. The impacts could be actual or potential, covering both negative and positive ones. The list of sustainability topics is presented in Table 1.

Table 1: Long list of sustainability topics

Topic	Definition
<b>Aspect: Safety &amp; wellbeing</b>	
1. Safety management	Managing all aspects of safety on construction sites to reduce the risk of accidents and meet Gammon’s “Zero Harm” objective.
2. Working environment	Providing a healthy and caring work environment to promote the wellbeing of Gammon’s employees and construction workers.
3. Compliance/ quality of products & services	Gammon’s statement of compliance and its approach to ensure compliance with laws and regulations applicable to its own operations.
4. Customer health & safety	Providing safe products and services that do not negatively impact the health and safety of end-users.
<b>Aspect: Governance &amp; economics</b>	
5. Innovation	Creating a culture of innovation and encouraging employees, suppliers and business partners to create ideas to improve process efficiency, safety and environmental performance.
6. Green & sustainable financing	Gammon’s involvement in emerging financial tools to drive sustainability.
7. Data privacy & security	Gammon’s policies and practices to protect data privacy and information security, including any breaches or complaints received, and their responses.
8. Economic performance	Economic value generated and distributed by Gammon, such as revenue, costs/ expenditure, value retained, etc.
9. Intellectual property rights	Gammon’s policies and practices to respect and protect intellectual property rights for itself and those of others.
10. Anti-corruption	Gammon’s policies and practices to ensure integrity among its own staff and other stakeholders such as sub-contractors and suppliers.
11. Prevention of anti-competitiveness behaviour	Gammon’s policies and practices to ensure fair market competition.

## Aspect: Value chain

12. Influencing the industry	Gammon's efforts to share best practices (e.g., safety and environment) and work with regulators to promote improved performance of the industry.
13. Supply chain engagement	Gammon's actions to build strong relationships and provide open channels of communication with suppliers and sub-contractors.
14. Improving client satisfaction	Gammon's approach to understanding client expectations and enhancing client satisfaction.
15. Supplier environmental assessment	Gammon's policies and practices regarding assessing the environmental performance for suppliers and sub-contractors.

## Aspect: People &amp; society

16. Staff attraction, retention & employment	Gammon's approach and initiatives to attract talent and reduce staff turnover.
17. Development of our people	Gammon's approach and initiatives to develop the competencies, skills and careers of its people.
18. Diversity & inclusion	Gammon's policies, initiatives and performance in promoting workplace diversity, equity and inclusion.
19. Labour shortage	Gammon's ability to impact the skilled labour shortage in Hong Kong's construction industry.
20. Impact of operations on the local community	Gammon's approach and initiatives to monitor the impact of its operations on local communities with a view to promoting positive impacts (e.g., job creation) and reducing negative impacts (e.g., noise).
21. Aging workforce	Gammon's management approach towards addressing the issues of aging workforce.
22. Human rights	Gammon's policies and practices to respect human rights in its operations and along its value chain.
23. Corporate community investment	Gammon's voluntary actions and financial contributions that support the needs of the local community, in line with Gammon's business objectives.
24. Non-discrimination	The mechanisms by which Gammon manages and combats discrimination in its operations.
25. Prevention of child labour & forced labour	Gammon's policies and practices to prevent child labour and forced labour in its operation and along its value chain.

## Aspect: Environment

26. Low carbon construction - materials	Gammon's approach to reduce the embodied carbon on projects, e.g., use of low carbon materials, design optimisation, offsite construction, high recycled content materials, etc.
27. Sustainable resource use	Gammon's approach to efficiently use of construction materials and selection of more sustainable materials (e.g., timber with sustainability certifications, rapidly renewable materials, etc).
28. Low carbon construction - energy	Gammon's approach and initiatives to reduce greenhouse gas emissions from energy used in its operations (e.g., switch from diesel to electricity, improve energy efficiency, and use energy efficient equipment, etc).
29. Waste & circularity	Gammon's approach and initiatives to manage and reduce solid waste generation and promote circularity at Gammon's offices and construction sites.
30. Climate change adaptation & resilience	Gammon's adaptation and resilience plans in response to climate change risks beyond reducing the emissions of its own operations.
31. Air pollution	Efforts to measure and reduce the air pollutants emitted due to Gammon's operations.
32. Effluent (liquid waste)	Gammon's approach and initiatives to monitor, manage and reduce wastewater discharged from Gammon's construction sites.
33. Water use	Gammon's approach and initiatives to monitor and reduce the potable water consumption of Gammon's offices and construction sites, and efforts to recycle water.
34. Land degradation, pollution & restoration	Gammon's policies and practices to plan and/or manage land contamination and remediation.

### 3. Impact Significance Assessment

Online surveys, phone interviews and an in-person focus group were conducted to gauge Gammon's stakeholders' views on the significance of its impacts, both quantitatively and qualitatively. Gammon's key stakeholders include members of clients, employees, subcontractors, suppliers, service providers, shareholders, financial institutions, governments or regulators, industry associations, academic institutions, and non-government organisations ("NGOs"). Table 2 sets out Gammon's key stakeholder groups, engagement frequencies and engagement methods.

Table 2: List of Stakeholder Groups, Engagement Frequencies and Engagement Methods

Stakeholder Group	Engagement Frequency	Engagement Method
<b>Internal Stakeholders</b>		
Gammon employees	< 6 months	Meetings, workshops, training, surveys, eDM and videos, briefings
	Annually/ad hoc	Conferences / webinars, focus groups
<b>External Stakeholders</b>		
Academic institutions	< 6 months	Meetings, industry events, job fairs
	Annually/ad hoc	Forums, training, conferences
Industry associations, NGOs	< 6 months	Meetings, industry events, focus groups, webinars
	Annually/ad hoc	Conferences, events, webinars, surveys
Clients	< 6 months	Workshops, meetings, site inspections
	Annually/ad hoc	Surveys, webinars, focus groups
Suppliers, service providers, subcontractors	< 6 months	Meetings, site inspections, workshops, visits
	Annually/ad hoc	Training, webinars, focus groups, surveys
Shareholders, Governments/ regulators, financial institutions	< 6 months	Meetings
	Annually	Conferences, webinars, surveys

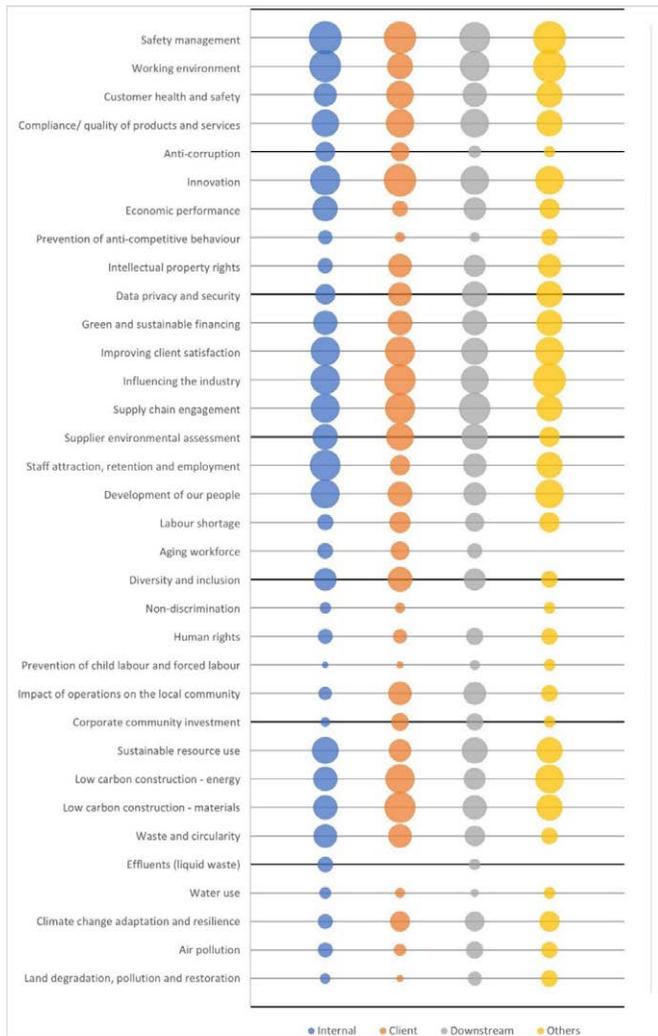
#### 3.1 Engagement with key external stakeholders and industrial experts

Ten interviews were carried out with Gammon's key external stakeholder groups to gauge their views on Gammon's sustainability performance and areas of focus. A focus group on embodied carbon, one of Gammon's key focus areas, was also organised to gather insights from subject experts who are familiar with the construction industry or embodied carbon.

#### 3.2 Online survey

Two anonymous online surveys were conducted including one targeting Gammon's employees and the other one for external stakeholders. The surveys aimed to allow stakeholders to rank the level of significance of Gammon's impacts on sustainability topics by selecting the top three most important topics under each of the five aspects. A total of 549 completed responses from Gammon's internal and external stakeholders was received. A summary of the results of the online surveys is presented in Figure 1 which indicates the level of importance of each topic for the various stakeholder groups.

Figure 1: Online Survey Result



**Notes:**

The size of the bubble indicates the level of significance of the topic for each of the four stakeholder groups (larger size = greater significance)

'Downstream' stakeholder group includes suppliers, subcontractors, service providers

'Others' stakeholder group includes NGOs, industry associations, financial institutions, academic institutions, insurers, shareholders, Governments etc.

**4. Prioritisation of the Most Significant Impacts for Reporting**

The results from the steps above, along with the key points discussed during stakeholder phone interviews were presented to Gammon's Board of Directors. The top three priority topics, as determined from the surveys under each aspect, were proposed as Gammon's significant material topics for validation and inclusion in SR2022. During the validation meeting, the Board decided to add 'Labour shortage' as a material issue, as they considered this to be of significant relevance to the achievement of Gammon's strategic business objectives. Therefore, a total of 16 sustainability priority material topics were identified as summarised:

Aspects	Material topics
Safety & wellbeing	<ol style="list-style-type: none"> <li>1. Safety management</li> <li>2. Working environment</li> <li>3. Compliance/ quality of products and services</li> </ol>
Governance & economics	<ol style="list-style-type: none"> <li>4. Innovation</li> <li>5. Green and sustainable financing</li> <li>6. Data privacy and security</li> </ol>
Value chain	<ol style="list-style-type: none"> <li>7. Influencing the industry</li> <li>8. Supply chain engagement</li> <li>9. Improving client satisfaction</li> </ol>
People & society	<ol style="list-style-type: none"> <li>10. Staff attraction, retention and employment</li> <li>11. Development of our people</li> <li>12. Diversity and inclusion</li> <li>13. Labour shortage</li> </ol>
Environment	<ol style="list-style-type: none"> <li>14. Low carbon construction - materials</li> <li>15. Sustainable resource use</li> <li>16. Low carbon construction - energy</li> </ol>

**Annex: Responses to Stakeholders**

Major feedback from stakeholders and Gammon's responses are summarised in Table 3.

Table 3: Major Feedback from Stakeholders and Gammon's Responses

Major Issues/ Feedback from Stakeholders	Gammon's Responses	Major Issues/ Feedback from Stakeholders	Gammon's Responses
Take the lead and promote diversity in the construction industry, including its sub-contractors	<p>Diversity and inclusion ("D&amp;I") has been included as one of the action areas in our Sustainability Strategy "Responsible Growth – 25 by 25" and we started on this journey in 2018. We have certainly made progress on raising awareness on the value of diversity and the importance of creating an inclusive culture, however, we still have much work to do.</p> <p>With the support of our D&amp;I Council, we are promoting employee-led networks, the first of which was "Women in Gammon and Allies ("WinG") and have rolled out training on unconscious bias and how to be an inclusive manager. In 2022, we also had our inaugural D&amp;I event on the topic of allyship to which members of our value chain were invited. We hope to lead by example and in time will promote and support our subcontractors to do the same.</p>	Focus on cyber security at the project- level to protect Gammon's data privacy and information security	We continue to make our cyber security systems more robust and provide the necessary training to all levels. How we manage this issue is outlined for the first time in this year's report.
Early and proactive engagement with clients and sub-contractors on adoption of low-carbon construction methodology and materials	We agree we need to have more collaboration with our overall value chain but we believe our focus should be directed to our suppliers and subcontractors first. Then we can help them to prepare and ensure we are all ready to deliver on our clients' expectations. More engagement work is anticipated in 2023 in this area.	Mitigate climate-related risks to construction sites	We are considering climate change risks in project risk registers and identifying higher risk sites and mitigation measures. We will continue to review and strengthen emergency preparedness and response plans.
Facilitating the implementation of a five-day work week to attract and retain staff and labour	We agree it is essential to move to a five-day work week in order to attract and retain talent in our industry and have made the commitment to move to five day working from 1st January 2023 for all Greater China operations.	Further raise the operation/ site staff's awareness on sustainability, and safety performance in the construction industry	<p>With competing pressures on site, it can sometimes be a challenge to ensure workers don't take safety shortcuts. Removing a risk entirely is our aim (e.g. taking work off site) and making sure the work sequence is clearly understood (including the use of pictorial method statements) have been some recent areas of focus.</p> <p>It's true that much of our sustainability-related promotion and training is aimed at monthly paid staff who may not always be at the frontline so we will consider how we can further raise awareness at the site level. And we will use mechanisms in the Green and Caring Site Commitment scheme to help.</p>

# Appendix F

## Other initiatives – awards

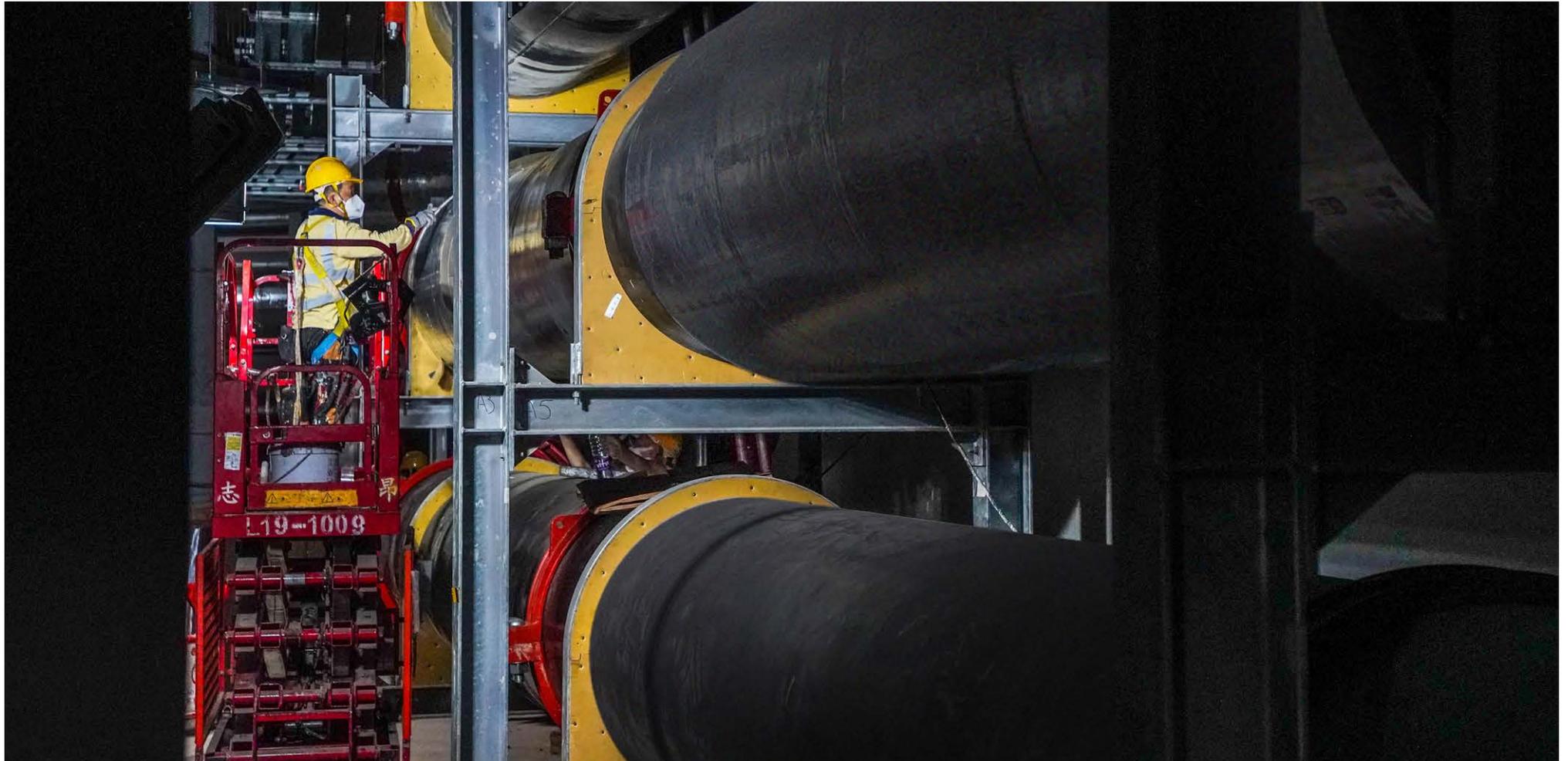


Mobile tower crane at APM/ BHS project at Hong Kong International Airport

Date	Name of award	Issued by	Name of project / division
01-Mar-22	15 years + Caring Company	The Hong Kong Council of Social Service	Gammon Construction Limited
13-Jun-22	Capital Works Outstanding Safety Performance in AA Capital Works and Technical Services Contractors Safety Campaign Award - Gold Award	Hong Kong International Airport	Intermodal Transfer Terminal - Bonded Vehicular Bridge and Associated Works
13-Jun-22	Occupational Health and Safety Quiz in AA Capital Works and Technical Services Contractors Safety Campaign Award - Gold Award	Hong Kong International Airport	Intermodal Transfer Terminal - Bonded Vehicular Bridge and Associated Works
17-Jun-22	HKCA Hong Kong Construction Environmental Awards 2021 - Merit Award	Hong Kong Construction Association	Gammon Construction Limited
27-Jun-22	Construction Industry Safety Award Scheme 2021/2022 - Construction Sites in Building Sites (Private Sector) - Certificate of Good Performance	Labour Department	LOHAS Park Package 12
27-Jun-22	Construction Industry Safety Award Scheme 2021/2022 - Building Sites (Private Sector) - Bronze	Labour Department	Lyric Theatre Complex and Extended Basement
27-Jun-22	Construction Industry Safety Award Scheme 2021/2022 - Safety Teams - Certificate of Good Performance	Labour Department	LOHAS Park Package 12
27-Jun-22	Construction Industry Safety Award Scheme 2021/2022 - Safety Teams - Meritorious	Labour Department	Terminal 2 Expansion Works
27-Jun-22	Construction Industry Safety Award Scheme 2021/2022 - Safety Teams - Outstanding Performance Certificate	Labour Department	LOHAS Park Package 12
27-Jun-22	Construction Industry Safety Award Scheme 2021/2022 - Safety Worker	Labour Department	Chan Wun Kiu
27-Jun-22	Construction Industry Safety Award Scheme 2021/2022 - Safety Worker	Labour Department	Leung Ka Kei
28-Jun-22	Mechanical Innovation Award 2021-2022 - Champion	Institution of Mechanical Engineers	Abrasive Waterjet Cutting System for Underwater Pile Decommissioning
06-Jul-22	2021 Outstanding Apprentice Award	Vocational Training Council	Tandra Budi
17-Jul-22	Construction Industry Volunteering Award Presentation - Whole Year Activeness - Gold	Construction Industry Council	Gammon Construction Limited
17-Jul-22	Construction Industry Volunteering Award Presentation - Excellence in Construction Industry Volunteering - Silver	Construction Industry Council	Brian Ho

Date	Name of award	Issued by	Name of project / division
17-Jul-22	Construction Industry Volunteering Award Presentation - Excellence in Construction Industry Volunteering Project - Bronze Award	Construction Industry Council	The Kai Tak West team STEM Young Carpenter Workshop
24-Jul-22	Construction Industry Machinery Operation Competition 2021 - Mini / Skid Loader Operation - Champion	Construction Industry Council	Gammon Plant Department
24-Jul-22	Construction Industry Machinery Operation Competition 2021 - Mini / Skid Loader Operation - Best Operator	Construction Industry Council	Lau Kiu Tung
24-Jul-22	Construction Industry Machinery Operation Competition 2021 - Best Operator Overall	Construction Industry Council	Lau Kiu Tung
27-Jul-22	Workplace Safety & Health Performance Awards 2022 - Silver	The Workplace Safety and Health Council	Gammon Pte. Limited
27-Jul-22	Workplace Safety & Health Performance Awards 2022 - Safety and Health Award Recognition for Projects (SHARP)	The Workplace Safety and Health Council	Redevelopment of North-South Link Precinct, Sentosa
29-Aug-22	Life First 2022 Awards- Life First Campaign - Excellence	Construction Industry Council	LOHAS Park Package 11
02-Sep-22	28th Considerate Contractor Site Award Scheme - Non-Public Works - New Works - Group B -Gold	Development Bureau and Construction Industry Council	Office Development at 54 Queen's Road East
02-Sep-22	28th Considerate Contractor Site Award Scheme - Outstanding Environmental Management Performance Awards - Non-Public Works - New Works - Group B - Silver	Development Bureau and Construction Industry Council	Office Development at 54 Queen's Road East
02-Sep-22	28th Considerate Contractor Site Award Scheme - Model Worker	Development Bureau and Construction Industry Council	Siu Wai-man
02-Sep-22	28th Considerate Contractor Site Award Scheme - Model Frontline Supervisor	Development Bureau and Construction Industry Council	Leung Kam-hung
02-Sep-22	28th Considerate Contractor Site Award Scheme - Model Subcontractor Frontline Supervisor	Development Bureau and Construction Industry Council	Lam Yeung-bun, Ben
02-Sep-22	28th Considerate Contractor Site Award Scheme - Non-Public Works - RMAA Works- Gold	Development Bureau and Construction Industry Council	Alterations and Additions Works at Gloucester Tower, The Landmark

Date	Name of award	Issued by	Name of project / division
02-Sep-22	28th Considerate Contractor Site Award Scheme - Outstanding Environmental Management Performance Awards - Non-Public Works - RMAA Works - Bronze	Development Bureau and Construction Industry Council	Alterations and Additions Works at Gloucester Tower, The Landmark
02-Sep-22	28th Considerate Contractor Site Award Scheme - Model Worker	Development Bureau and Construction Industry Council	Gurung Hom Raj
02-Sep-22	28th Considerate Contractor Site Award Scheme - Model Frontline Supervisor	Development Bureau and Construction Industry Council	Fan Wai-hon
02-Sep-22	28th Considerate Contractor Site Award Scheme - Model Subcontractor Frontline Supervisor	Development Bureau and Construction Industry Council	Wong Wai-king, Warren
02-Sep-22	28th Considerate Contractor Site Award Scheme - Non-Public Works - RMAA Works - Bronze	Development Bureau and Construction Industry Council	Replacement of Air-Cooled Chillers at MTR Stations and Depots
02-Sep-22	28th Considerate Contractor Site Award Scheme - Model Frontline Supervisor	Development Bureau and Construction Industry Council	Tong Chiu
16-Sep-22	BCI Asia Top 10 Contractor Awards 2022 - Hong Kong	BCI Central	Gammon Construction Limited
21-Sep-22	AEE's 2022 International Award - Innovative Energy Project of the Year	Association of Energy Engineers	Battery Energy Storage System
28-Sep-22	Employers Appreciation Ceremony - Actively Supporting Contactor - Gold Award	Hong Kong Institute of Construction	Gammon Construction Limited
28-Sep-22	Employers Appreciation Ceremony - Outstanding Training Employer (semi-skilled)	Hong Kong Institute of Construction	Gammon Construction Limited
28-Sep-22	Employers Appreciation Ceremony - Outstanding Trainers (semi-skilled)	Hong Kong Institute of Construction	Chan Kai-chi Kwok Kam-hing
07-Oct-22	Hong Kong Institute of Building Information Modelling Award 2021 - Government Projects- Gold for BIM Project	The Hong Kong Institute of Building Information Modelling	Central Kowloon Route - Buildings, Electrical and Mechanical Works
13-Oct-22	Green and Gracious Builder Scheme - Excellent rating	Building Construction Authority	Gammon Pte. Limited
19-Oct-22	Celebration of BIM Achievement 2022 - BIM Project 2022	Construction Industry Council	Lyric Theatre Complex
19-Oct-22	Celebration of BIM Achievement 2022 - BIM Organisation 2022	Construction Industry Council	Gammon Construction Limited
22-Oct-22	Productivity & Innovation Awards 2022 - Bronze	The Singapore Contractors Association Ltd	Self-Supporting Climbing Bracket



#### Our Lyric Theatre Project was named a BIM Project at the Celebration of BIM Achievement 2022

Date	Name of award	Issued by	Name of project / division
22-Oct-22	Productivity & Innovation Awards 2022 - Merit	The Singapore Contractors Association Ltd	Tunnel Maintenance Working Platform
22-Oct-22	WorldSkills 2022 - Medallion for Excellence in Welding	WorldSkills International	Lam Man Chun
02-Nov-22	Construction Site Safety Award 2021 - Specialist	Civil Engineering and Development Department	Ground Investigation - Urban and Surrounding Islands

Date	Name of award	Issued by	Name of project / division
08-Nov-22	23rd Construction Safety Award - Best Method Statement - Certificate of Attainment	Occupational Safety Health Council	Office Development at 54 Queen's Road East
08-Nov-22	23rd Construction Safety Award - Safety Culture - Certificate of Attainment	Occupational Safety Health Council	Development at 54 Queen's Road East
08-Nov-22	14th Outstanding OSH Employee Award - Management - Silver	Occupational Safety Health Council	Alex Fung
08-Nov-22	14th Outstanding OSH Employee Award - Foreman - Merit	Occupational Safety Health Council	Wong Wing Wa
08-Nov-22	23rd Construction Safety Award - Best Method Statement - Gold	Occupational Safety Health Council	Ho Man Tin Station Package Two Property Development
08-Nov-22	23rd Construction Safety Award - Best Lifting Operation Enhancement Program - Silver	Occupational Safety Health Council	Ho Man Tin Station Package Two Property Development
08-Nov-22	23rd Construction Safety Award - Model OSH Metal Scaffolder - Gold	Occupational Safety Health Council	Man Tsz Chung
08-Nov-22	23rd Construction Safety Award - Best Method Statement - Certificate of Attainment	Occupational Safety Health Council	Queensway Footbridge Two Harcourt Garden and Adjoining Areas at Pacific Place
08-Nov-22	23rd Construction Safety Award - Safety Culture - Certificate of Attainment	Occupational Safety Health Council	Queensway Footbridge Two Harcourt Garden and Adjoining Areas at Pacific Place
18-Nov-22	Construction Management Awards 2022 - Young Construction Manager - Merit	Hong Kong Institute of Construction Managers	Man Ka Chun, Vincent
18-Nov-22	Construction Management Awards 2022 - Excellent Construction Team (Large Scale Project) - Grand Award	Hong Kong Institute of Construction Managers	Advanced Manufacturing Centre
18-Nov-22	Construction Management Awards 2022 - Construction Manager (Large Scale Project) - Merit	Hong Kong Institute of Construction Managers	Lee Chi Wah, Walter
18-Nov-22	Construction Management Awards 2022 - Site Manager (Large Scale Project) - Grand Award	Hong Kong Institute of Construction Managers	Lo Bing Fun, Felix
18-Nov-22	Construction Management Awards 2022 - Building Services Coordinator (Large Scale Project) - Grand Award	Hong Kong Institute of Construction Managers	Li Ching Tin, James

Date	Name of award	Issued by	Name of project / division
18-Nov-22	Construction Management Awards 2022 - Engineer (Large Scale Project) - Grand Award	Hong Kong Institute of Construction Managers	Po Man Yuen, Issac
18-Nov-22	Construction Management Awards 2022 - Quantity Surveyor (Large Scale Project) - Grand Award	Hong Kong Institute of Construction Managers	Kwok Long Kan, Ken
18-Nov-22	Construction Management Awards 2022 - EHS Officer Award (Large Scale Project) - Merit	Hong Kong Institute of Construction Managers	Law Ka Yan, Sam
18-Nov-22	Construction Management Awards 2022 - Construction Supervisor (Large Scale Project) - Grand Award	Hong Kong Institute of Construction Managers	Ng Wai Ming
13-Dec-22	Ctgoodjobs Best HR Awards 2022 - Best Corporate Wellbeing Programme - Grand Award	CTgoodjobs	Gammon Construction Limited
13-Dec-22	Ctgoodjobs Best HR Awards 2022 - Best Innovation L&D Initiative - Grand Award	CTgoodjobs	Gammon Construction Limited
13-Dec-22	2022 CIC Construction Innovation Award - International - Grand Prize	Construction Industry Council	Besafe (AI Safety Monitoring system)
13-Dec-22	CIC Construction Innovation Award 2022 - Local - Productivity - 1st Prize	Construction Industry Council	Automation System for MiMEP Production for L2
13-Dec-22	CIC Construction Innovation Award 2022 - Local - Safety - Merit	Construction Industry Council	Modular Roof Erection System for Terminal 2 Expansion
13-Dec-22	CIC Construction Innovation Award 2022 - Local - Construction Sustainability - Merit	Construction Industry Council	Advanced Manufacturing Centre
13-Dec-22	CIC Construction Innovation Award 2022 - Local - Construction Sustainability - Merit	Construction Industry Council	Sustainable Core-Bide Method
14-Dec-22	MiC Achievement Ceremony - Outstanding MiC Project	Construction Industry Council	Tonkin Street
14-Dec-22	MiC Achievement Ceremony - Outstanding Team Member - Champion	Construction Industry Council	Sammy Lai
14-Dec-22	Common Data Environment Award - Gold Organisation	Construction Industry Council and Development Bureau	Gammon Construction Limited
14-Dec-22	Common Data Environment Award - Bronze Project	Construction Industry Council and Development Bureau	Terminal 2 Expansion
14-Dec-22	CarbonCare Star Label 2022	Carboncare InnoLab	Gammon Construction Limited
14-Dec-22	CarbonCare Label 2022	Carboncare InnoLab	Gammon Construction Limited

# Appendix G

## Green and healthy building projects



Renovation of the St Regis, Macau

## Gammon's Green and Healthy Building Projects

Gammon has completed many certified green building projects under BEAM Plus, LEED, WELL, China Green Building Label (CGBL) and SITES in Hong Kong and Singapore. The table below provides a partial listing of the projects we have been involved with:



Project	Rating	Client
<b>BEAM Plus NB V2.0 Projects – Hong Kong</b>		
Proposed Composite Development at New Kowloon Inland Lot No. 6627, Tonkin Street & Fuk Wing Street	BEAM Plus NB V2.0 Provisional Platinum (2022)	Urban Renewal Authority / Wider Loyal Ltd
ELS, Foundation, Pile Caps, Road Improvement and Utilities Diversion Works for Project KC-008(A) at Chun Tin Street / Sung Chi Street, Kowloon	BEAM Plus NB V2.0 Provisional Platinum (2022)	Urban Renewal Authority
Office Development at 54 Queen's Road East	BEAM Plus NB V2.0 Provisional Platinum (2020)	Cherish Shine Ltd (subsidiary of Swire Properties Ltd)
SS L501 Design and Construction of Kwun Tong Composite Development	BEAM Plus NB V2.0 Ongoing	Architectural Services Department, HKSAR
Caroline Hill Road, Causeway Bay	BEAM Plus NB V2.0 Ongoing	Best Epoch Holdings Ltd
HKU Medical Complex Extension, Pok Fu Lam	BEAM Plus NB V2.0 Ongoing	The University of Hong Kong
Contract No. HY/2019/13, Central Kowloon Route – Buildings, Electrical and Mechanical Works (Central Kowloon Route Administration Building)	BEAM Plus NB V2.0 Ongoing	Highways Department, HKSAR
HKU Pokfield Road Advanced Works	BEAM Plus NB V2.0 Ongoing	The University of Hong Kong
LOHAS Park Package 13 Property Development	BEAM Plus NB V2.0 Ongoing	Dynamic Wish Ltd
<b>BEAM Plus NB V1.2 Projects – Hong Kong</b>		
eResidence, Ma Tau Wai	BEAM Plus NB V1.2 Final Platinum (2020)	Urban Renewal Authority
Central Plaza Annex, Wan Chai	BEAM Plus NB V1.2 Final Platinum (2020)	Cheer City Properties Limited & Protasan Ltd

Project	Rating	Client
<b>BEAM Plus NB V1.2 Projects – Hong Kong Continued</b>		
One Taikoo Place, Quarry Bay	BEAM Plus NB V1.2 Final Platinum (2020)	Swire Properties Ltd
The Quayside, Kwun Tong	BEAM Plus NB V1.2 Final Platinum (2020)	Link Properties Ltd / Nan Fung Development Ltd
Lee Garden Three, Causeway Bay	BEAM Plus NB V1.2 Final Platinum (2019)	Alpha Ace Ltd (subsidiary of Hysan Development Co Ltd)
Citygate Outlet New Extension (Foundation Works for Proposed Commercial Development at Tung Chung Town Lot No.11, Tung Chung)	BEAM Plus NB V1.2 Final Gold (2022)	Newfoundworld Project Management Ltd
M+ Museum for Visual Culture	BEAM Plus NB V1.2 Final Gold (2022)	West Kowloon Cultural District Authority
WKCDA Tower	BEAM Plus NB V1.2 Final Gold (2022)	West Kowloon Cultural District Authority
Hoi Tak Court (Foundation for Public Housing Development at North West Kowloon Reclamation Site 6 Phases 1,2 and 3 and Fat Tseung Street, West)	BEAM Plus NB V1.2 Final Gold (2022)	Hong Kong Housing Authority
Global Switch Hong Kong Data Centre	BEAM Plus NB V1.2 Final Gold (2022)	Global Switch Hong Kong Ltd
LOHAS Park Package 9	BEAM Plus NB V1.2 Final Gold (2022)	Wheelock Properties Ltd
Yan Tin Estate, Tuen Mun	BEAM Plus NB V1.2 Final Gold (2021)	Hong Kong Housing Authority
LOHAS Park 6 (Construction of Pile Cap for Proposed Residential Development at Site N of TKO TL 60PR)	BEAM Plus NB V1.2 Final Gold (2021)	MTR Corporation Ltd / Great Team Development Ltd
ONTOLO, Pak Shek Kok	BEAM Plus NB V1.2 Final Gold (2021)	Great Eagle Holdings Ltd
Monterey, Tseung Kwan O	BEAM Plus NB V1.2 Final Gold (2020)	Precise Treasure Ltd (subsidiary of Wheelock Properties Ltd)
The Papillons, Tseung Kwan O	BEAM Plus NB V1.2 Final Silver (2019)	Chinachem Group
The Murray Hong Kong, Central	BEAM Plus NB V1.2 Final Unclassified (2020)	Smart Event Investments Ltd (subsidiary of The Murray Ltd)

Project	Rating	Client
<b>BEAM Plus NB V1.2 Projects – Hong Kong Continued</b>		
Solaria, Pak Shek Kok	BEAM Plus NB V1.2 Final Unclassified (2020)	K. Wah International Holdings Ltd
KAI B0 22, 22 Wing Kin Road, Kwan Chung	BEAM Plus NB V1.2 Final Unclassified (2020)	Keen Really Development Ltd
Le Cap, Kau To	BEAM Plus NB V1.2 Final Unclassified (2019)	Bravo Partner Ltd
AIA Building (Foundation Works for AIA Urban Campus Redevelopment at No. 1 Stubs Road)	BEAM Plus NB V1.2 Provisional Platinum (2022)	AIA Company Ltd
New Acute Hospital at Kai Tak Development Area (Foundation, Excavation and Lateral Support and Basement Excavation Works for Site A, Subcontract for Construction of Bored Pile Works at Staff Education Building)	BEAM Plus NB V1.2 Provisional Platinum (2022)	Hospital Authority, HKSAR Government
Design and Construction of Immigration Headquarters in Area 67, Tseung Kwan O, Subcontract for Bored Pile Works	BEAM Plus NB V1.2 Provisional Platinum (2022)	Immigration Department/Architectural Services Department, HKSAR
Proposed Residential Development at Ho Man Tin Station Package Two Property Development at KIL 11264	BEAM Plus NB V1.2 Provisional Platinum (2021)	Grace Castle Corporation Ltd
The Three-Runway System of Hong Kong International Airport – Terminal 2 Expansion	BEAM Plus NB V1.2 Provisional Platinum (2020)	Airport Authority Hong Kong
Foundation works for Grade A Office & retail Development at NKIL 6556, Kai Tak Area 1F Site 2	BEAM Plus NB V1.2 Provisional Platinum (2020)	Rich Union Development Ltd
Foundation works for Proposed Office Development at 2 Murray Road	BEAM Plus NB V1.2 Provisional Platinum (2020)	Century Base Development Ltd
Foundation works for Proposed Office Development at 2 Murray Road	BEAM Plus NB V1.2 Provisional Platinum (2020)	Century Base Development Ltd
Demolition and Associated A&A Works for Taikoo Place 2B Development, Quarry Bay (Two Taikoo Place)	BEAM Plus NB V1.2 Provisional Platinum (2019)	Taikoo Place Holdings Ltd
NKIL 6602, MTR Yau Tong Ventilation Building Property Development Superstructure Main Contract	BEAM Plus NB V1.2 Provisional Gold (2022)	TOP OASIS Ltd (Sino – CSI JV)
Cyberport 5 (Foundation, Excavation and Lateral Support and Pile Cap Works for Cyberport Expansion Project)	BEAM Plus NB V1.2 Provisional Gold (2022)	Hong Kong Cyberport Management Co Ltd

Project	Rating	Client
<b>BEAM Plus NB V1.2 Projects – Hong Kong Continued</b>		
Demolition and Foundation Works at Prince of Wales Hospital for Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1)	BEAM Plus NB V1.2 Provisional Gold (2022)	Hospital Authority
Advanced Manufacturing Centre, Tseung Kwan O Industrial Estate	BEAM Plus NB V1.2 Provisional Gold (2022)	Hong Kong Science & Technology Parks Corporation
Proposed Residential Development at Ho Man Tin Station Package One Property Development at KIL 11264	BEAM Plus NB V1.2 Provisional Gold (2022)	Great Eagle Holdings Ltd
LOHAS Park Package 12	BEAM Plus NB V1.2 Provisional Gold (2022)	Wheelock Properties Ltd
LOHAS Park Package 11	BEAM Plus NB V1.2 Provisional Gold (2022)	Sino Group
CityU Student Hostel at Whitehead, Ma On Shan	BEAM Plus NB V1.2 Provisional Gold (2022)	City University of Hong Kong
Proposed Residential Development at West Rail Kam Sheung Road Station Phase 1 Development, Yuen Long, NT Lot No1040 in Demarcation District No103	BEAM Plus NB V1.2 Provisional Gold (2021)	Kam Sheung Property Development Ltd
Nina Fossil Garden Revitalisation	BEAM Plus NB V1.2 Provisional Gold (2021)	Ying Ho Company Ltd (subsidiary of Chinachem Group)
Proposed Residential Development at New Kowloon Inland Lot No. 6579, Lung Cheung Road	BEAM Plus NB V1.2 Provisional Gold (2020)	Wheelock Properties Ltd
Proposed Residential Development at NKIL 6564, Kai Tak Area 1L, Site 1, Kai Tak	BEAM Plus NB V1.2 Provisional Gold (2019)	Top Genius Holdings Ltd
Proposed Residential Development at NKIL 6563, Kai Tak Area 1L, Site 2, Kai Tak	BEAM Plus NB V1.2 Provisional Gold (2018)	Wheelock Properties Ltd
Foundations works for Proposed Residential & Commercial Development at 33-47 Catchick Street, Kennedy Town	BEAM Plus NB V1.2 Provisional Gold (2018)	Shanghai Commercial Bank Ltd
Foundation, Pipe Pile and Sheet Piling Works for West Rail Yuen Long Station Property Development	BEAM Plus NB V1.2 Provisional Gold (2017)	Success Keep Ltd
Foundation works for Commercial Development at KIL 240, 98 How Ming Street, Kwun Tong	BEAM Plus NB V1.2 Provisional Sliver (2021)	Turbo Result Ltd., KT Real Estate Ltd
Main Contract for Proposed Redevelopment at RBL 279, Shek O Residence, Big Wave Bay Road, Shek O	BEAM Plus NB V1.2 Ongoing	Jardine Matheson & Co Ltd

Project	Rating	Client
<b>BEAM Plus NB V1.2 Projects – Hong Kong Continued</b>		
Foundation for Public Housing Development at Hang Tai Road, Ma On Shan Area 86B Phase 2	BEAM Plus NB V1.2 Ongoing	Hong Kong Housing Authority
Lyric Theatre Complex, West Kowloon Cultural District	BEAM Plus NB V1.2 Ongoing	West Kowloon Cultural District Authority
Design and Construction of Piling Foundation, Excavation and Lateral Support (ELS) and Pile Cap Works, TWTL 160 at 13-23 Wang Wo Tsai Street, Tsuen Wan	BEAM Plus NB V1.2 Ongoing	Sun Hung Kai Properties Ltd
Provision of Fire Services Facilities to Support the Three-Runway System at The Hong Kong International Airport	BEAM Plus NB V1.2 Ongoing	Fire Service Department, HKSAR
Provision of Police Facilities to Support the Three-Runway System at The Hong Kong International Airport	BEAM Plus NB V1.2 Ongoing	Hong Kong Police Force, HKASR
Project Blue – Proposed Development at 281 Gloucester Road, Causeway Bay	BEAM Plus NB V1.2 Ongoing	Excelsior Hotel (BVI) Ltd (subsidiary of Hong Kong Land)



**Le Cap residential development**

Project	Rating	Client
<b>BEAM Plus NB V1.1 Projects – Hong Kong</b>		
BEAM Plus NB V1.1 Projects – Hong Kong	BEAM Plus NB V1.1 Final Silver (2020)	Market Prospect Ltd
Parc City / Nina Mall 2, Tsuen Wan	BEAM Plus NB V1.1 Final Gold (2019)	Denny Investment Ltd (subsidiary of Chinachem Group)
No. 17 Cheung Shun Street, Cheung Sha Wan (Maxim's Centre)	BEAM Plus NB V1.1 Final Platinum (2019)	Luk Yeung Restaurant Ltd
ALTAMIRA, Mid-Levels	BEAM Plus NB V1.1 Final Platinum (2018)	Majestic Elite Property Development Ltd
Whitesands, Cheung Sha, Lautau Island	BEAM Plus NB V1.1 Final Platinum (2016)	Bao Wei Enterprise Ltd (subsidiary of Swire Properties Ltd)
Arezzo, Mid-Levels	BEAM Plus NB V1.1 Final Platinum (2016)	Excel Free Ltd (subsidiary of Swire Properties Ltd)
CIC Zero Carbon Building, Kowloon Bay	BEAM Plus NB V1.1 Final Platinum (2015)	Construction Industry Council
Science Park Phase 3, Building 12W, 15W and 16W, Shatin	BEAM Plus NB V1.1 Final Platinum (2015)	Hong Kong Science & Technology Parks Corporation
Hysan Place, Causeway Bay	BEAM Plus NB V1.1 Final Platinum (2013)	Hysan Development Co. Ltd
Parc City / Nina Mall 2, Tsuen Wan	BEAM Plus NB V1.1 Final Gold (2019)	Denny Investment Ltd (subsidiary of Chinachem Group)
Proposed Residential & Commercial Development No. 33 Tong Yin Street	BEAM Plus NB V1.1 Final Gold (2019)	Amblegreen Company Ltd (subsidiary of Wheelock Properties Ltd)
The Parkside, Tseung Kwan O	BEAM Plus NB V1.1 Final Gold (2018)	Fortune Precision Ltd (subsidiary of Wheelock Properties Ltd)
The Morgan, Mid-Levels (foundations works)	BEAM Plus NB V1.1 Final Gold (2017)	Majestic Elite Property Development Ltd
Midfield Concourse	BEAM Plus NB V1.1 Final Gold (2017)	Airport Authority Hong Kong

Project	Rating	Client
<b>BEAM Plus NB V1.1 Projects – Hong Kong Continued</b>		
Mount Nicholson, The Peak	BEAM Plus NB V1.1 Final Sliver (2020)	Market Prospect Ltd
Castle One, Mid-Levels	BEAM Plus NB V1.1 Provisional Sliver (2014)	Best-Rights Company Ltd
One South Lane, Sai Ying Pun	BEAM Plus NB V1.1 Final Bronze (2017)	Both Talent Ltd (subsidiary of Chinese Estates Holdings Ltd)
Shanghai Commercial Bank Tower, Central	BEAM Plus NB V1.1 Provisional Gold (2015)	Shanghai Commercial Bank Ltd
The Forum, Central	BEAM Plus NB V1.1 Provisional Unclassified (2013)	Hong Kong Land Ltd
<b>HK BEAM Projects – Hong Kong</b>		
Chater House, Central	Chater House, Central	Chater House, Central
Jardine House, Central	HK-BEAM 5/04 Platinum	Hongkong Land Ltd
One Exchange Square, Central	HK-BEAM 5/04 Platinum	Hongkong Land Ltd
Lincoln House, Quarry Bay	HK-BEAM 5/04 Platinum	Swire Properties Ltd
Dorset House, Quarry Bay	HK-BEAM 5/04 Excellent	Swire Properties Ltd
LHT Tower, Central	HK-BEAM 4/04 Platinum	HK-BEAM 4/04 Platinum
Mount Davis 33, Kennedy Town	HK-BEAM 4/04 Platinum	Urban Renewal Authority / Kowloon Development Co Ltd
Opus Hong Kong, The Peak	HK-BEAM 4/04 Platinum	Swire Properties Ltd
Fire Station with Ambulance Depot and Police Post at Penny's Bay, Lantau	HK-BEAM 4/04 Platinum	Architectural Services Department, HKSAR
Centennial Campus, The University of Hong Kong	HK-BEAM 4/04 Platinum	The University of Hong Kong
One Island East, Quarry Bay	HK-BEAM 4/04 Platinum	Swire Properties Ltd
Redevelopment of Kwun Tong Swimming Pool Complex and Kwun Tong Recreation Ground	HK-BEAM 4/04 Platinum	Architectural Services Department, HKSAR
Serenade, Causeway Bay	HK-BEAM 4/04 Platinum	Hongkong Land Ltd
Tamar Development Project, Admiralty	HK-BEAM 4/04 Platinum	Architectural Services Department, HKSAR
York House, Central	HK-BEAM 4/04 Platinum	Hongkong Land Ltd

Project	Rating	Client
<b>HK BEAM Projects – Hong Kong Continued</b>		
Redevelopment of Victoria Park Swimming Pool Complex, Causeway Bay	HK-BEAM 4/04 Gold	Architectural Services Department, HKSAR
Ko Shan Theatre New Wing, Hung Hom	HK-BEAM 4/04 Gold	Architectural Services Department, HKSAR
Man Yee Building, Central	HK-BEAM 2/99 Excellent	Man Hing Hong Kong Land Investment Co. Ltd
Cyberport 4 (Phase CIIIA), Pok Fu Lam	Cyberport 4 (Phase CIIIA), Pok Fu Lam	Cyber-Port Management Ltd
One Peking Commercial Development, Tsim Sha Tsui, Kowloon	HK-BEAM 1/99 Excellent	Glorious Sun Holdings Ltd
Three Pacific Place Commercial Development, Quarry Bay	HK-BEAM 1/99 Excellent	Swire Properties Ltd
Devon House, Quarry Bay	HK-BEAM 2/96 Excellent	Swire Properties Ltd
1063 King's Road Commercial Development, Quarry Bay	HK-BEAM 1/96 Excellent	Hongkong Land Ltd
Hongkong Land Ltd	HK-BEAM 1/96 Excellent	Swire Properties Ltd
<b>LEED Projects – Hong Kong</b>		
Central Plaza Annex, Wan Chai	LEED BD+C Core & Shell v4 Final Platinum (2021)	Cheer City Properties Ltd & Protasan Ltd
Office Development at 54 Queen's Road East	LEED BD+C Core & Shell v4 Ongoing	Swire Properties Ltd
Project Blue – Proposed Development at 281 Gloucester Road, Causeway Bay	LEED BD+C Core & Shell v4 Ongoing	Excelsior Hotel (BVI) Ltd (subsidiary of Hong Kong Land)
Excelsior Hotel (BVI) Ltd (subsidiary of Hong Kong Land)	LEED ID+C Commercial Interior v4 Ongoing	Sino Land Co Ltd
Foundations works for Commercial Development at KIL 240, 98 How Ming Street, Kwun Tong	LEED BD+C Core & Shell v4 Ongoing	Sun Hung Kai Properties Ltd
Foundation works for Grade A Office & retail Development at NKIL 6556, Kai Tak Area 1F Site 2	LEED BD+C: Core & Shell v4 Ongoing	Nan Fung Group
One Taikoo Place, Quarry Bay	LEED BD+C: Core & Shell v2009 Final Platinum (2020)	Swire Properties Ltd
The Quayside, Kwun Tong	LEED BD+C: Core & Shell v2009 Final Platinum (2020)	Link Properties Ltd / Nan Fung Development Ltd
Global Switch Data Centre, Tseung Kwan O	LEED BD+C: Core & Shell v2009 Final Platinum (2018)	Global Switch Hong Kong Ltd
Lee Garden Three, Causeway Bay	LEED BD+C: Core & Shell v2009 Final Gold (2018)	Hysan Development Co Ltd
Foundation Works for Sha Tin Communication and Technology Centre	LEED BD+C: Core & Shell v2009 Final Gold (2016)	The Hong Kong Jockey Club

Project	Rating	Client
<b>LEED Projects – Hong Kong Continued</b>		
China Mobile Global Network Centre, MEP1, Tseung Kwan O	LEED BD+C: Core & Shell v2009 Final Gold (2016)	China Mobile International Ltd
The Forum, Exchange Square	LEED BD+C: Core & Shell v2009 Final Platinum (2015)	Hong Kong Land Ltd
Science Park Phase 3, Building 12W, Shatin	LEED BD+C: Core & Shell v2009 Final Platinum (2014)	Hong Kong Science & Technology Parks Corporation
HKU Centennial Campus	LEED BD+C: Core & Shell v2009 Final Platinum (2013)	The University of Hong Kong
Proposed Residential Development at 38-44 Caine Road, Central	LEED BD+C: New Construction v2.2 Certified (2013)	Fine Mean Ltd
Fine Mean Ltd	LEED BD+C: Core & Shell v2.0 Final Platinum (2012)	Hysan Development Co. Ltd
HSBC Shek Mun Data Centre Project Symmetry - BS Works	LEED ID+C v2009 Certified	HSBC Shek Mun Data Centre Project Symmetry - BS Works
HSBC Project Bridge, Central	LEED CI v2.0 Gold	The Hong Kong and Shanghai Banking Corporation Ltd
<b>WELL Building Standard (Version 2) Projects – Hong Kong</b>		
Proposed Composite Development at New Kowloon Inland Lot No. 6627, Tonkin Street & Fuk Wing Street	WELL V2 Pilot (Multifamily Residential) Pre-certified (Q1 2021)	Urban Renewal Authority / Wider Loyal Ltd
Proposed Residential Development at Ho Man Tin Station Package Two Property Development at KIL 11264	WELL V2 Pilot Dwelling Units Pre-certified (2021)	Grace Castle Corporation Ltd
Grace Castle Corporation Ltd	WELL V2 Pilot (Hospitality) Pre-certified (2021)	Parkland (HK) Ltd
Proposed Residential Development at 139-147 Argyle Street, Kowloon (clubhouse and residential towers)	WELL V2 Pilot (Dwelling Units) Pre-certified (2020)	Sino Land Co Ltd
HKU Pokfield Road Advanced Works	WELL V2 (Core & Shell) Ongoing	The University of Hong Kong
Project Blue – Proposed Development at 281 Gloucester Road, Causeway Bay	WELL V2 (Core & Shell) Ongoing	Excelsior Hotel (BVI) Ltd (subsidiary of Hong Kong Land)
<b>WELL Building Standard (Version 1) Projects – Hong Kong</b>		
One Taikoo Place, Quarry Bay	WELL V1 (Core & Shell) Certified Platinum (2019)	Swire Properties Ltd
The Quayside, Kwun Tong	WELL V1 (Core & Shell) Certified Gold (2021)	Link Properties Ltd/ Nan Fung Development Ltd

Project	Rating	Client
<b>WELL Building Standard (Version 1) Projects – Hong Kong Continued</b>		
Gammon Head Office at The Quayside	WELL V1(New & Existing Interiors) Pre-certified (2021)	Gammon Construction Ltd
Office Development at 54 Queen's Road East	WELL V1(Core & Shell) Pre-certified (2020)	Swire Properties Ltd
<b>LEED Projects – Singapore</b>		
Diaphragm Wall and Piling Works to Singapore Innovation Centre	LEED New Construction v2009 – Gold	CH2M Hill Singapore Pte Ltd



Mayflower Station, Singapore

Project	Rating	Client
<b>LEED Projects – Singapore Continued</b>		
P&G Singapore Innovation Centre	LEED Commercial Interior v2.0 – Gold	P&G
Design and Construction of 6-Storey Data Centre at Woodlands, Singapore	LEED – Gold	Global Switch
<b>Green Mark Projects – Singapore</b>		
Arkema Symphony Project - Design & Build Building Package 01	Green Mark Ongoing	WOODS
CR116 - AMK Station and Tunnels	Green Mark Ongoing	Land Transport Authority
Proposed Erection of New ITE College West PPP Project	Green Mark Platinum	Gammon Capital (West) Pte Ltd
Design and Construction of 6-Storey Data Centre at Woodlands	Green Mark Platinum	Global Switch
Nanyang Polytechnic Extension	Green Mark Platinum	Nanyang Polytechnic
WDL2 Woodlands Sleepers Installation works	Green Mark Platinum	SMRT Trains Ltd
Design and Construction of Mayflower Station	Green Mark Gold	Land Transport Authority
LTA Contract T221 - Construction of Havelock Station for Thomson Line	Green Mark Gold	Land Transport Authority
Mandai Depot	Green Mark Gold	Land Transport Authority
P&G Singapore Innovation Centre (SgIC)	Green Mark Gold	CH2M Hill Singapore Pte Ltd
Design and Construction of Chevron Building	Green Mark Certified	Chevron Oronite Pte Ltd
Construction of 3 Intra-Island Cableway Stations, 8 Cableway Tower Foundations and a Fort Siloso Pedestrian Bridge with Lift Tower at Sentosa	Green Mark Certified	Sentosa Development Corporation
Grace Assembly of God Church	Green Mark Certified	Grace Assembly of God Church
<b>China Green Building Label Projects – Hong Kong</b>		
Lee Garden Three, Causeway Bay	CGBL (GB/T 50378 – 2014) 2-stars	Hysan Development Co Ltd
<b>SITES Rating System – Hong Kong</b>		
Nina Fossil Garden Revitalisation	SITES V1 Ongoing	WOODS

# Appendix H

## Membership of associations and industry bodies



Gammon colleagues pay homage to Lo Pan, the construction industry's patron god of builders, carpenters and engineers

1. Hong Kong Government		
Association/ Body	Group/ Committee	Appointment
<b>A. Statutory Bodies</b>		
Construction Industry Council	Construction Innovation and Technology Application Centre Construction Industry Sports and Volunteering Programme (CISVP) Task Force on Construction Expenditure Forecast under the committee on Construction Procurement Steering Group of STEM Alliance under Hong Kong Institute of Construction	Board Member Committee Member Member  Member
Development Bureau	Building Contractors Committee Builders' Lift and Tower Working Platforms (Safety) Ordinance - Disciplinary Tribunal Panel Registered Contractors' Disciplinary Board Panel (Planning and Lands Branch) Panel of Enquiry-Site Safety	Member Panel Member  Panel Member Panel Member
<b>B. Permanent Non Statutory Bodies</b>		
The Hong Kong Construction Association, Limited (HKCA)	HKCA Council Civi Engineering Committee Environmental Committee Piling Contractors Committee Site Investigation Committee Young Members Society	Council Member Vice Chairman Vice Chairman Vice Chairman Vice Chairman Chairman



Chief Executive Kevin O'Brien, centre, becomes a Fellow of the VTC

### C. Tertiary Institution

The Hong Kong Polytechnic University	Department of Civil & Environmental Engineering Advisory Committee	Member
Vocational Training Council	Building Civil Engineering & Built Environment Training Board	Member

### 2. Non Government Organization

Association/ Body	Group/ Committee	Appointment
British Chamber of Commerce in Hong Kong	General Committee Construction Industry Group Construction Industry Group Environment and Energy Committee Future Leaders Committee Innovation and Technology Committee International Infrastructure Forum Social Sustainability Committee	Sub-Committee Chair Chair Member Vice-Chair Member Member Member Member
Business Environment Council	Executive Committee Climate Change Business Forum Advisory Group Circular Economy Advisory Group Sustainable Living Environment Advisory Group	Deputy Chainman Ordinary Member Steering Committee Member Steering Committee Member
Chartered Institute of Building (Hong Kong)	Council	Council Member
Chartered Institution of Highways and Transportation, HK Branch	CIHT HK Branch Committee	Committee Members
Hong Kong Computer Society	CIO Board Policy & External Liaison Council IT Leadership Accelerator Platform (iLEAP) Standing Committees (Construction Industry) Talent Cultivation Standing Committee	Board Member Director Executive Committee Member Member Member
Hong Kong Green Building Council	Industry Standards and Practices Committee Infrastructure Rating System Committee Sustainable Development Committee	Co-opted Member Co-opted Member Co-opted Member
Hong Kong Institute of Construction Managers	Dispute Resolution Committee	Chair

## 2. Non Government Organization Continued

Association/ Body	Group/ Committee	Appointment
Hong Kong Institution of Engineers	Building Division Electrical Division Geotechnical Division Manufacturing, Industrial & Systems Division Mechanical, Marine, Naval Architecture & Chemical Division Structural Division Safety Specialist Committee Young Members Committee	Committee Member Committee Member Committee Member Ex-officio Member Affiliate Member Committee Member Committee Member Co-opted Member



Chief Executive Kevin O'Brian greets guests at a Business Environment Council function, in his role as Chairman

## 2. Non Government Organization

Association/ Body	Group/ Committee	Appointment
Hong Kong Institute of Environmental Impact Assessment	Executive Committee	Committee Member
Hong Kong Institute of Surveyors	Young Surveyors Group Committee	Committee Member
Hong Kong E&M Contractors' Association	Council	President
Hong Kong Federation of Electrical and Mechanical Contractors Ltd	Council	Vice President
International Powered Access Federation	Hong Kong Regional Council	Chair
Lighthouse Club	Main Committee Safety Committee	Member Chair
The Hong Kong General Chamber of Commerce	Environment & Sustainability Committee Manpower Committee Real Estate & Infrastructure Committee	Member Member Member
The Women's Foundation	Girls Go Tech Programme Steering Committee	Member
The Hong Kong Management Association	People Management Committee	Member
The Institution of Occupational Safety and Health	Hong Kong Branch Committee	Chair
The Singapore Contractors Association Limited	Council Productivity and Technology Sub-Committee	Assistant Treasurer Chair



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We value and encourage dialogue on our sustainability initiatives. 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: [sustainability@gammonconstruction.com](mailto:sustainability@gammonconstruction.com)  
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