

Press Release

Hong Kong's First 5G Smart Control Centre enables the building of 700 Quarantine Units in 87 Days

(Hong Kong, 6 October 2020) Gammon Construction Limited ("Gammon") has established the Hong Kong construction industry's first on-site 5G Smart Control Centre to support the design and fabrication of 700 quarantine units in only 87 days at Penny's Bay, ahead of the 90-day contract period.

Back in mid-June, the Architectural Services Department awarded temporary quarantine facilities Phase II at Penny's Bay to Gammon. The HK\$418m contract comprises construction of 700 habitable units, medical and command posts, a satellite medical post, accommodation for operations staff and other supporting facilities.

From this project, there are a number of firsts for the industry:

- ✧ First on-site 5G smart control centre (using AI to monitor factory production, delivery, assembly and safety zones)
- ✧ Installation of 707 units in one month
- ✧ Completion of 56 units in one day
- ✧ More than 95% of works completed using MiC, including pre-installed MEP
- ✧ MiC units equipped with plumbing and drainage DfMA module in factory
- ✧ Using flying factory for MEP and precast trenches

Gammon Construction is taking an approach that combines Construction 2.0 with Industry 4.0 to meet the fast-track programme, resulting in a project site that fully reflects the company's integrated digital project management aspirations. The first on-site 5G Smart Control Centre played a vital part in becoming a centralised pool of intelligence and giving the project management team maximum control over all aspects of the works at all phases whether on-site or off-site. At its heart is a real-time common data environment that ensures all members of the team have access to the latest design, enhancing collaborative working and driving efficiencies.

Over 95% of the works were completed using Modular Integrated Construction (MiC) methods. The quarantine units were fully fitted out in mainland China while a flying factory on site was used to fabricate underground pipe modules to help meet the extremely tight project deadline. Information flowing into the 5G Smart Control Centre included that from Gammon's digital monitoring solution for off-site construction, STAMP, which allowed the team to remotely oversee all aspects of MiC unit production at the factory. Manufacturing, logistics and testing and commissioning status such as that for quality checks, location of MiC unit delivery and testing results are available at the touch of a key, and data relayed from detection systems on the site – including those monitoring the wearing of safety helmets, demarcation of danger zones and the presence of fire or smoke – enhances site safety. Quality control both at the factory and on site was monitored via the in-house developed system, Inspecto, which



provided transparency to inspection processes. A digital attendance system at the site entrance also carried out temperature screening, giving the team in the 5G Smart Control Centre an instant snapshot of the general health of everyone entering the site.

The digital wi-fi network featured the latest wi-fi 6 protocol and covered the entire working area. To ensure responses were instant, 5G technology was also applied, including transmission of information to the servers and a trial of 5G cameras.

Gammon is grateful for the support and commitment of all stakeholders involved in the contract under the ArchSD's leadership, from relevant government departments through to suppliers, subcontractors and the project management team. The Lion Rock spirit demonstrated by all stakeholders played a huge role in helping to overcome the challenges associated with delivery of the works within such a short timeframe.

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