

Gammon Construction Limited

Project:

Redevelopment of
Hennessy Centre

Location:

Causeway Bay, Hong Kong

Type:

Commercial

**Scheduled Time of
Completion:**

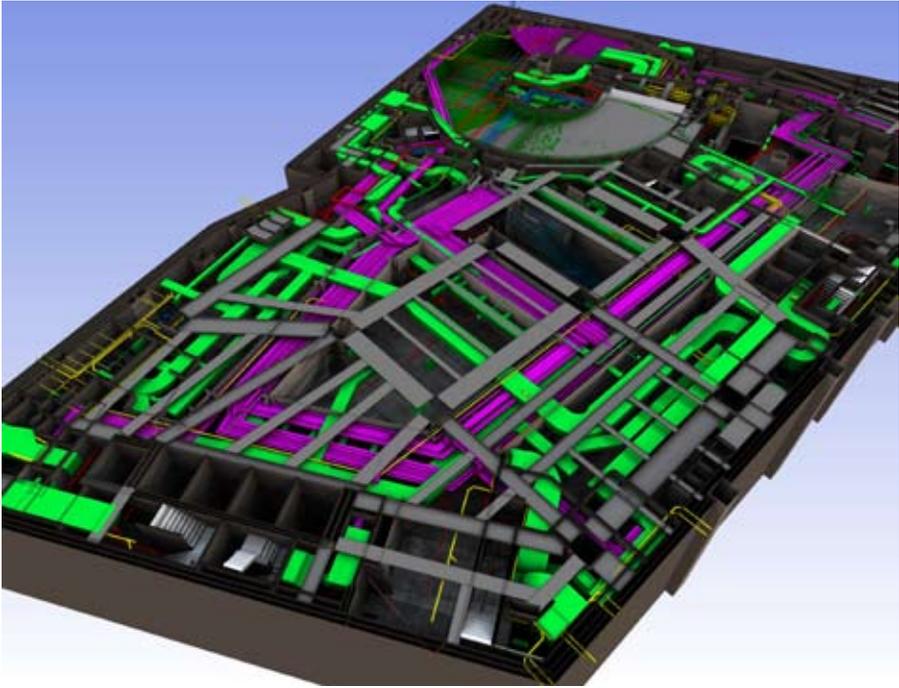
2012

Lean Practice – BIM Integrated Construction



The Hennessy Centre redevelopment project created with BIM.

In the Hennessy Centre redevelopment project, the Gammon team is constructing a 40-storey retail/office building comprising a concrete basement for retail stores and parking facilities, a retail podium and a 20-level steel Beam and Deck System Structure office tower. To coordinate between different disciplines under a tight timeline, the client, Hysan Development Company Limited, initiated the use of Building Information Modelling (BIM) for the project.



The base elements can be presented clearly with a 3D model.

Gaining the Client's Confidence

The client's confidence towards the safety planning for the main structure construction was gained through a virtual environment simulated with BIM. The project team used BIM to create drawings, images, schedules and coordination reports directly so that information could be dispatched to team members, business partners and the client without any need to transfer the data format among different software platforms. The BIM platform deployed in this project also allowed the team to filter out copyright related and sensitive information easily.

Ensuring a Safe Construction Site

"Safety is always placed as the topmost priority in our construction site," said Mr. Derek So, Director of Gammon. The importance to eliminate fatalities and injuries as well as possible risks is strongly emphasized in Gammon's construction environment. "BIM is one of our tools to achieve that goal," continued So. He also explained that the BIM model gave the construction workers an opportunity to preview and rehearse the construction method beforehand. Furthermore, the emergency evacuation drill could also be simulated virtually. This way the workers could better plan the workflow and

ensure they could circulate in the site more safely and efficiently. With advanced planning on the prefabricated E&M modular systems and construction sequencing, a safer and neater construction site could be maintained.

Committing to a Sustainable Environment

Besides safety concerns, Gammon is also committed to build a quality living environment in a sustainable manner. "Even when we are not directly responsible for the design, we are still able to offer sustainable alternatives and to improve our own environmental performance with BIM." BIM software played a critical role in influencing design and construction planning work. BIM gave the team a virtual construction site within which they could manipulate to understand the impact and synergy of a broad variety of sustainable options. BIM was used to enhance the way the project team used materials, energy and other resources. For example, BIM can be used to visualize a complex construction sequence by a 4D simulation so that the team can identify and remove potential conflicts and hazards. In addition, BIM can also be used to measure the quantity of materials required and – by refining design strategies – reduce the usage of materials.

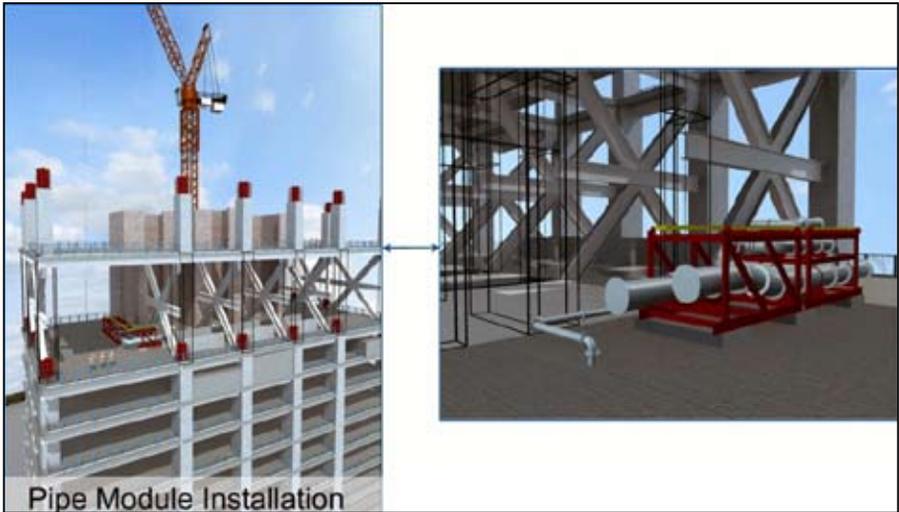
Gammon is likely to be the first major contractor in Hong Kong to use BIM technology in such a comprehensive scale. This Hennessy Centre redevelopment was not the first project where BIM was employed. BIM tool had demonstrated its capability in a number of key civil and building projects. The team believed that it is only a matter of time before all design work can be conducted in a

virtual environment. Gammon has targeted to implement BIM in most of the construction projects by 2012.

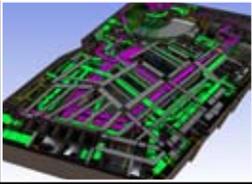
Enhancing the RFI Process

Request for Information (RFI) is a widely adopted procedure for design information communication between design team and construction team. With the introduction of BIM, the RFI process was speeded up through the expedite conduction of 3D workshop. As the BIM platform is compatible with traditional digital 2D drawing, re-working and double handling of design data were greatly reduced. Production process was enhanced as a result of good combination of RFI and BIM. Coordination between different E&M sub-contractors was hugely enhanced and the constructability issues were identified in advance to avoid abortive works. Design conflicts and constructability issues were quickly resolved because of the good coordination.

So believes that BIM technology, especially Revit, is becoming the dominating trend in the industry. He predicts that the BIM technology will become more and more mature in the coming decade. "Revit is definitely a user-friendly platform. With the accuracy that it provides, BIM will definitely be a part of our future projects. We look forward to the coming of more successful projects in the future." So added.



Detailed models are created in BIM to assist the building process.



ABOUT GAMMON

Gammon has been building a wide range of construction projects in Southeast Asia for over 50 years. With an annual turnover of more than US\$1billion, Gammon employs 3,000 full-time staff, giving them one of the strongest technical teams in Southeast Asia. They are a private company jointly owned by Jardine Matheson, an Asian-based conglomerate with extensive experience in the Region and Balfour Beatty, a world-class engineering, construction and services group. As stated in their slogan “with local presence, but global strength”, Gammon is the market leading construction contractor in Hong Kong, where they are headquartered, and also operate in China and Southeast Asia.

Gammon focuses on customers' needs by developing innovative and sustainable solutions and managing risk. Gammon aimed to work “with” rather than just “for” their customers and pride themselves on the imagination, skill and high standards that they applied to all the projects.