Paul Y. Engineering Group Limited

ACCELERATING SMART CONSTRUCTION

Unfolding a New Data Technology Hub

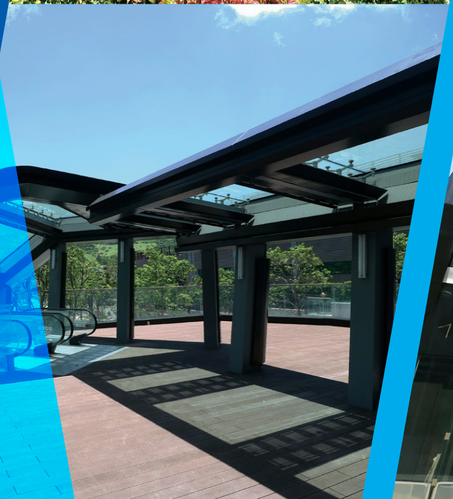
As the main contractor of Data Technology Hub at Tseung Kwan O Industrial Estate for Hong Kong Science and Technology Parks Corporation, Paul Y. Engineering Group (the Group) has successfully delivered an all-new infrastructural platform with high-standard digital facilities and a world class exhibition and conference venue to satisfy growing demand for new technology zones in Hong Kong and the Greater Bay Area.

Client

HKSTP 香港科技園

Smart and Sustainable Design

The form and orientation of the building was meticulously designed with appropriate and carefully selected building façade materials. Energy-efficient and renewable energy systems, such as solar panels on rooftops, are used in order to achieve an iconic yet harmonious green building design.

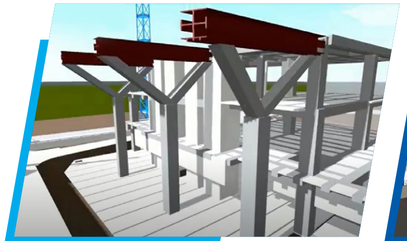


Advanced Construction Technology

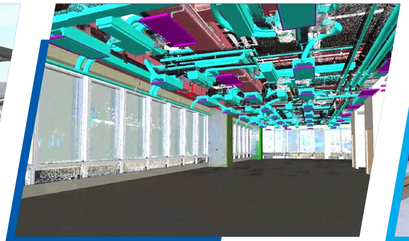
Leveraging our construction experience and expertise, our project management team has effectively overcome immense technical challenges with the use of various advanced innovative intelligent technologies, including a cloud-based drawing management system and 3D laser scanning, to capture real environment information and create Building Information Modelling (BIM) data. These technologies provide a more accurate, comprehensive and efficient simulation and preview of the project's design and construction.

In addition, smart helmets are used to ensure the safety of workers on site through Internet of Things (IoT) technology. The project team can automatically save and retrieve real-time safety data on workers and the site environment to facilitate the implementation of on-site manpower management and risk management measures. This pioneering use of IoT technology allows real-time collection and review of site information, including data on manpower, site equipment and the environment.

4D Simulation



Reality Capture by 3D Laser Scanning

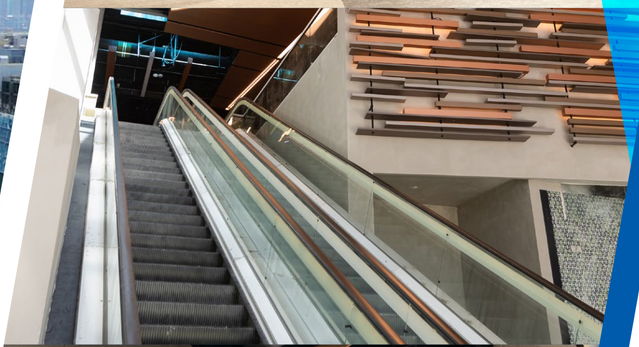


Virtual Reality (VR)

Cloud-based Drawing Management System

Radio Frequency Identification (RFID) Technology

Smart IoT Safety Helmet



The Collaboration

The building comprises three large Y-shaped steel structures that required around 1400 tonnes of steel during construction. Due to the scale of work and a tight construction schedule, several construction procedures were carried out simultaneously to enhance efficiency. Our project team coordinated with suppliers to deliver all construction materials on time and collaborated with related Government departments for smooth logistics. All the steel was successfully transported to the site within five months.

Sheet piling was required around the garden area outside the building that was surrounded by sensitive structures. Neighbourhood buildings were closely monitored and detailed records were kept to ensure that there was no adverse impact on surrounding sensitive structures.

As the works area was in close proximity to site boundary, excellent control of site logistics was required to overcome the difficulties.

The Way Forward

Paul Y. is committed to continuing to invest in research, development and implementation of existing and future forefront construction technologies with the aim to optimise safety, quality and project management in the years to come.

Awards Highlights of the Group

Project	Campaign	Award
Main Works Contract of Development of Data Technology Hub	Construction Manager Safety Award 2019	Highly Commended
	HKCA Safety Awards 2019	2019 HKCA Safe Person-in-Charge Award
		2019 HKCA Safe Supervisor Award
	Good Housekeeping Competition	Certification of Participation
Paul Y. Engineering Group Limited	HKIBIM Awards 2019	Grand Award - Contractor Category
The Hong Kong Jockey Club University of Chicago Academic Complex | The University of Chicago Francis and Rose Yuen Campus in Hong Kong	HKIA Annual Awards 2018/19	HKIA Medal of the Year of Hong Kong
		Special Architectural Award - Heritage & Adaptive Re-use
The Mills	HKIA Annual Awards 2018/19	HKIA Medal of the Year of Hong Kong
		Special Architectural Award - Heritage & Adaptive Re-use
Contract 3303 Third Runway and Associated Works	Site Safety Award – Fourth Quarter 2019	Site Safety Award
Redevelopment of Queen Mary Hospital (Phase 1)	2019 Green Contractor	Gold Award
	Innovative Safety Initiative Award 2020	Gold Award - Health and Welfare Category
		Silver Award - Safety Management System, Training & Promotion Category
	Construction Industry Safety Award Scheme 2019/2020	Gold Award - Safety Teams
		Meritorious Award - Building Sites (Public Sector)
	26th Considerate Contractors Site Award Scheme	Silver Award - Considerate Contractors Site Award (Public Works - New Works)
		Bronze Award - Outstanding Environmental Management & Performance Award (Public Works - New Works)
Lamma Power Station Extension Civil and Building Works for Unit 11	Innovative Safety Initiative Award 2020	Silver Award - Safety Management System, Training & Promotion Category
		Bronze Award - Safety Operation Device Category
	26th Considerate Contractors Site Award Scheme	Silver Award - Considerate Contractors Site Award (Non-Public Works - New Works - Group A)
		Bronze Award - Outstanding Environmental Management & Performance Award (Non-Public Works - New Works - Group A)
Central Kowloon Route - Kai Tak East	Construction Industry Safety Award Scheme 2019/2020	Certificate of Good Performance - Safety Teams
Subsidised Sale Flats Development at Tung Chung Area 27	Construction Industry Safety Award Scheme 2019/2020	Certificate of Good Performance - Safety Teams
		Certificate of Good Performance - Building Sites (Public Sector)
Public Rental Housing Development at Queen's Hill Site 1 Phase 2, 4, 5 & 6 (Portion) cum A&A Works at Ching Ho Estate	Hong Kong Green Organisation Certification	Energywi$e Certificate (Basic Level)