



# HKNOG

**TKO**  
EXPRESS

UNDERSEA CABLE SYSTEM

Superloop has built advanced networks in Australia, Singapore and Hong Kong.

**Why are we building a submarine cable system across Victoria Harbour?**



## Hong Kong Network

Superloop's network design is:

- Local loops (campus networks) interconnected.
- Primary campus networks (Tsuen Wan, Chai Wan and the TKO Industrial Estate and key business district of Hong Kong).
- The design criteria for Superloop's network is low latency, diverse, and fully redundant paths.

*During Superloop's network design, a critical network diversity limitations at the TKO Industrial Estate were identified.*



## TKO Industrial Estate

Strategically important telecommunications and media hub for Hong Kong and purpose-designed landing point for international telecommunications cables.

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## Chai Wan

Sino Favour Centre is occupied by HKCOLO Data Centre and is a Meet Me Room for many local and international carriers.

Mega-i is one of the largest Tier 3+ Internet Service Center buildings in the world, the International Telecom Gateway of Hong Kong, and one of the first Carrier Hotels in Hong Kong.



## TKO Express Benefits

The TKO Express Cable is **the only diverse path** between the key data centres in TKO Industrial Estate and Hong Kong Island.

TKO Express significantly **increases network security and resilience** by providing a high information carrying capacity cable system using an alternative path at another geographic location.



# TKO EXPRESS



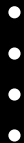
## Approach to the Project

## TKO Express - Approach to the Project

- **Started** looking at a diverse path between key data centres in TKO Industrial Estate and Hong Kong Island in **2014**.
- Design and Permitting Process for the selected sites started mid 2014.
- The project was planned, designed and built **fully in house** - Superloop had staff with these skills which helped produce a cost effective and optimum design that achieved our full requirements.
- **Specialists brought in at key points** of the project to provide advice during the planning and design and construction (eg. contract support, cable procurement, environmental support, landscape support, etc.)
- **Early engagement with Contractors** (Including Hong Kong Marine) during the Planning and Design Stage created the best design possible for a challenging area and provided a strong partnership that took us through the successful construction of the TKO Express Cable System.

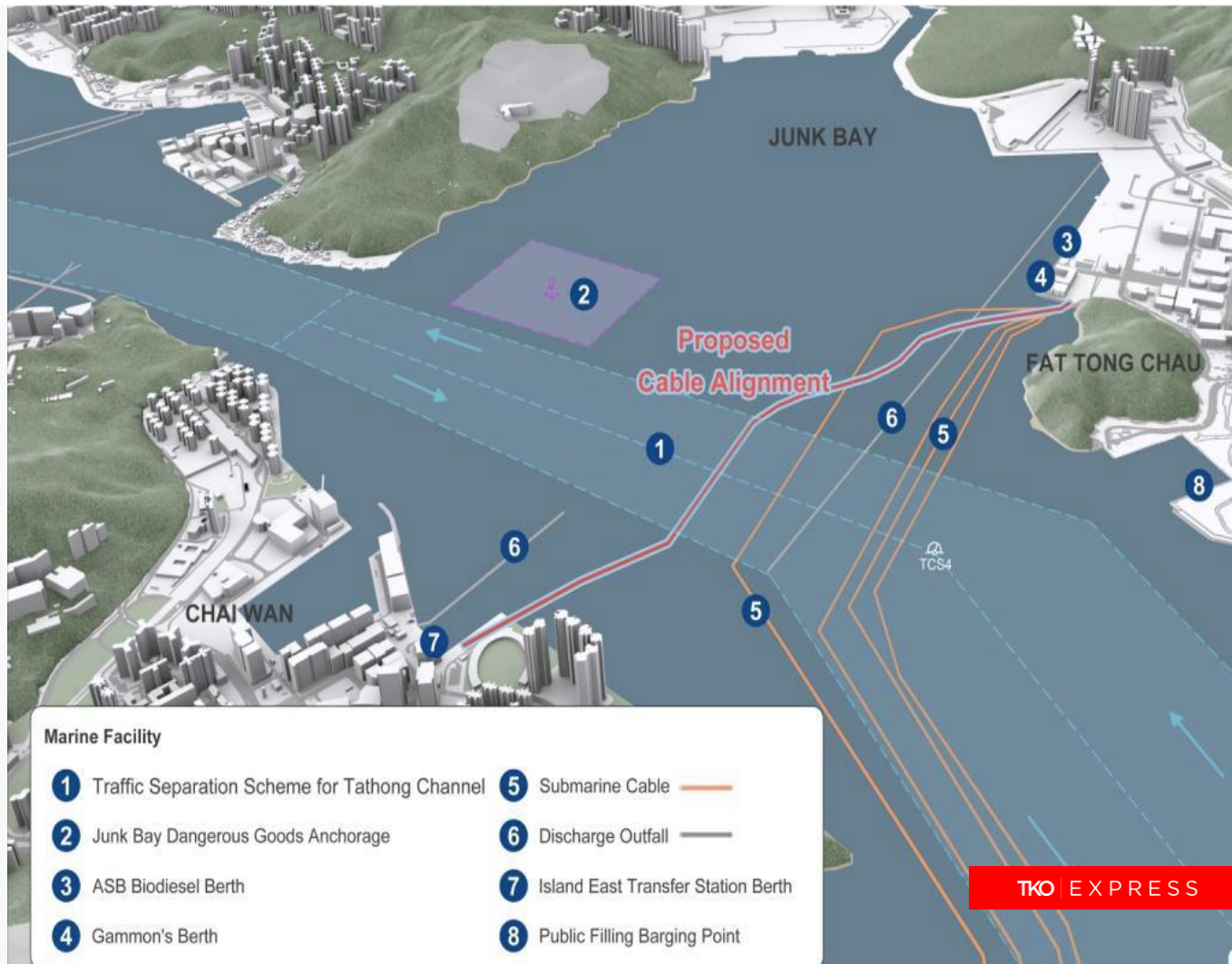


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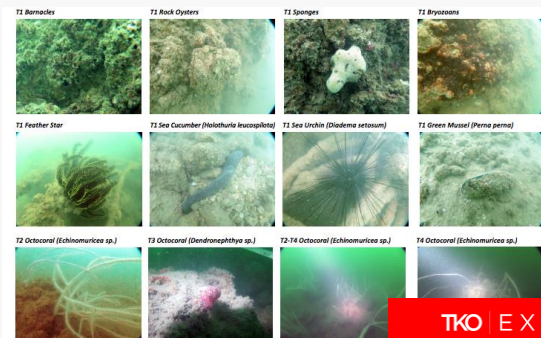
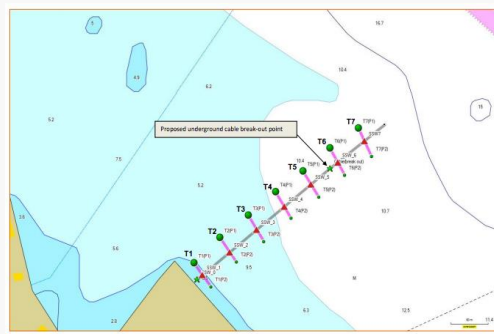
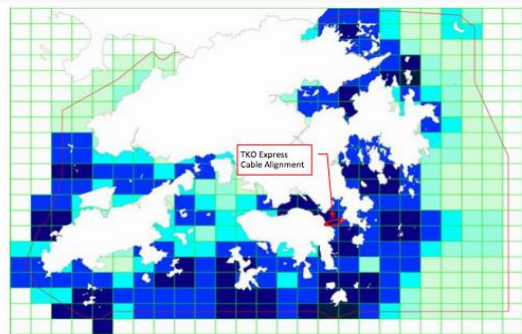
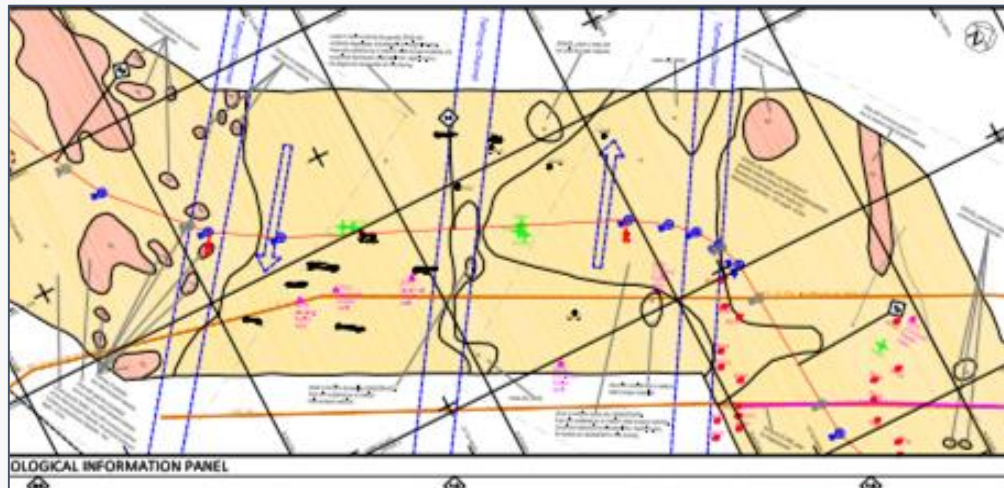
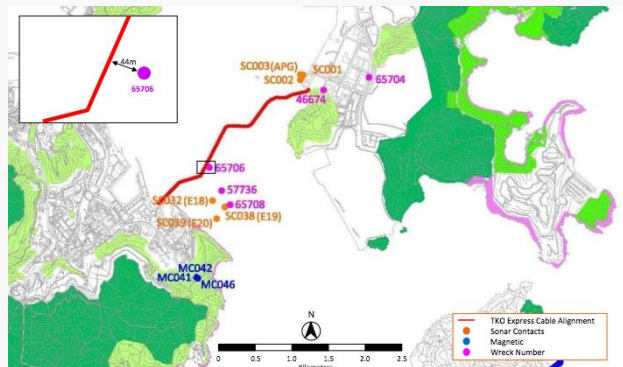
# 「Planning & Permitting」

## Site Selection & Route Planning



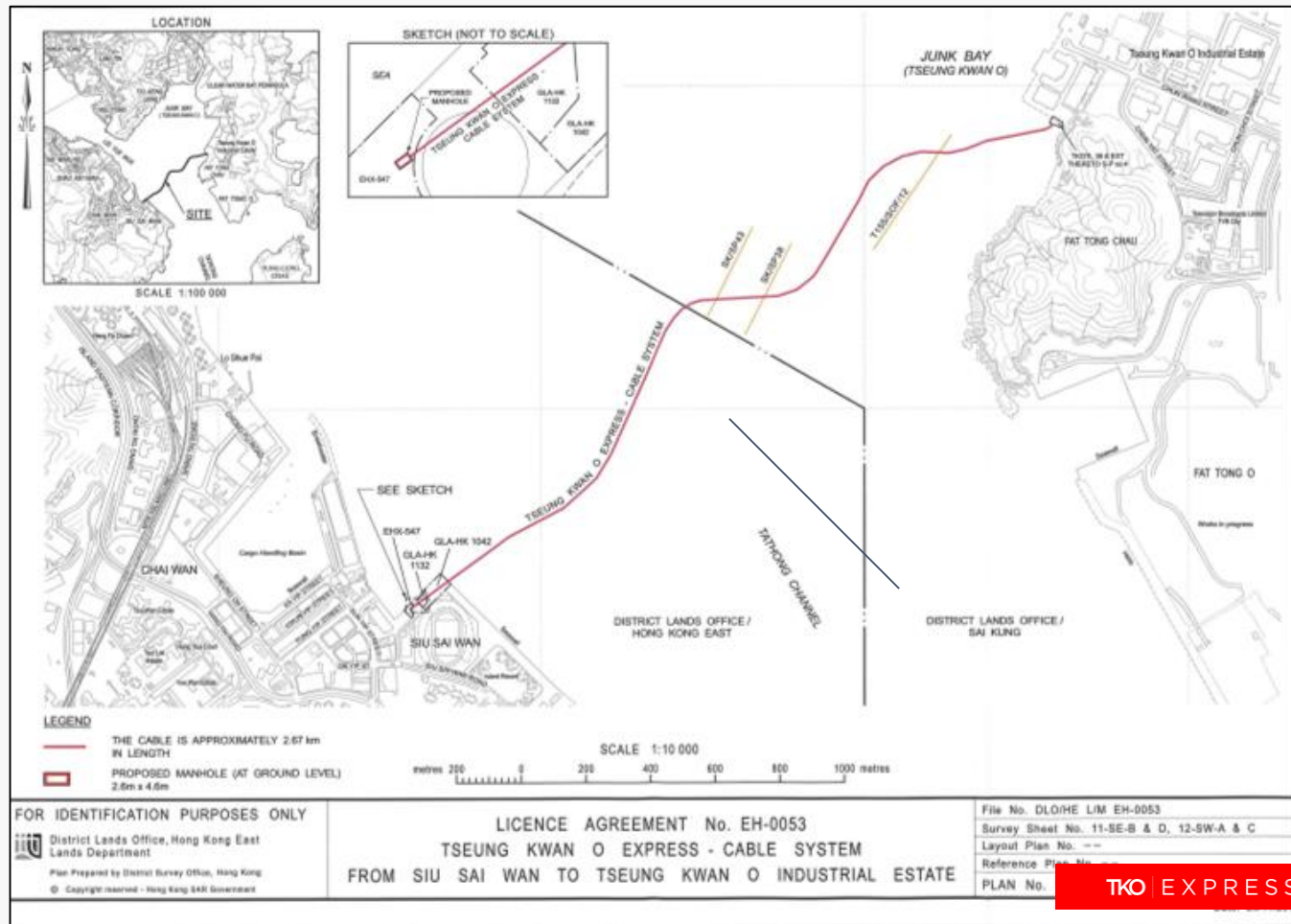
# Surveys / Investigations

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# Final Route





# Permits / Approvals / Agreements



古物古蹟辦事處  
Antiquities and  
Monuments Office



渠務處



土木工程拓展署  
Civil Engineering and  
Development Department



康樂及文化事務署  
Leisure and Cultural  
Services Department



China  
unicom 中国联通



Sai Kung  
District Council



Eastern  
District Council



中国移动  
China Mobile



環境保護署

Environmental Protection Department



Transform. Transcend.



HKSTP Technologies



Friends of  
the Earth



漁農自然護理署  
Agriculture, Fisheries and  
Conservation Department



海事處  
Marine Department



運輸署

Transport Department



規劃署

Planning Department



通訊事務管理局辦公室  
OFFICE OF THE  
COMMUNICATIONS AUTHORITY

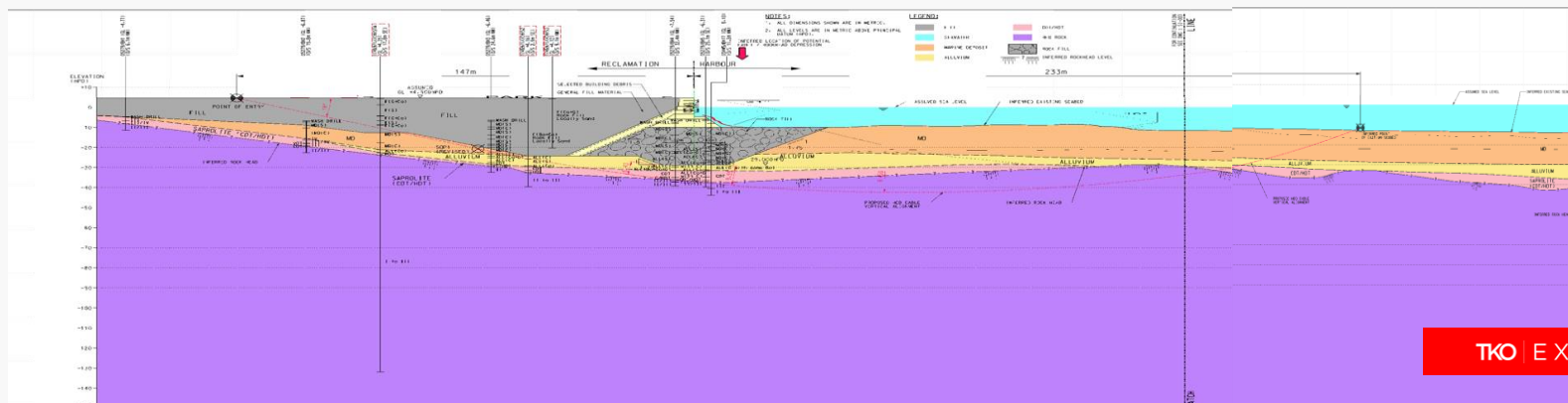
# TKO EXPRESS



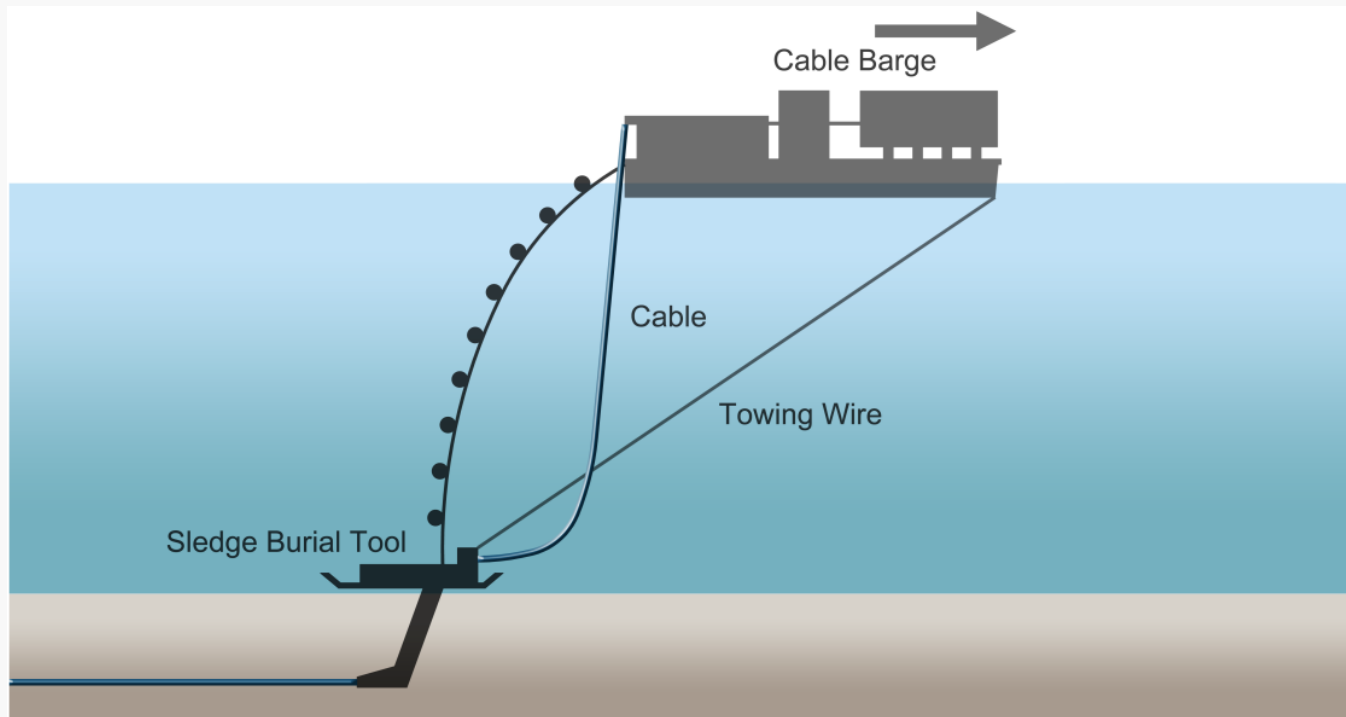
## Design Stage

# Beach Manhole Construction - Horizontal Directional Drilling

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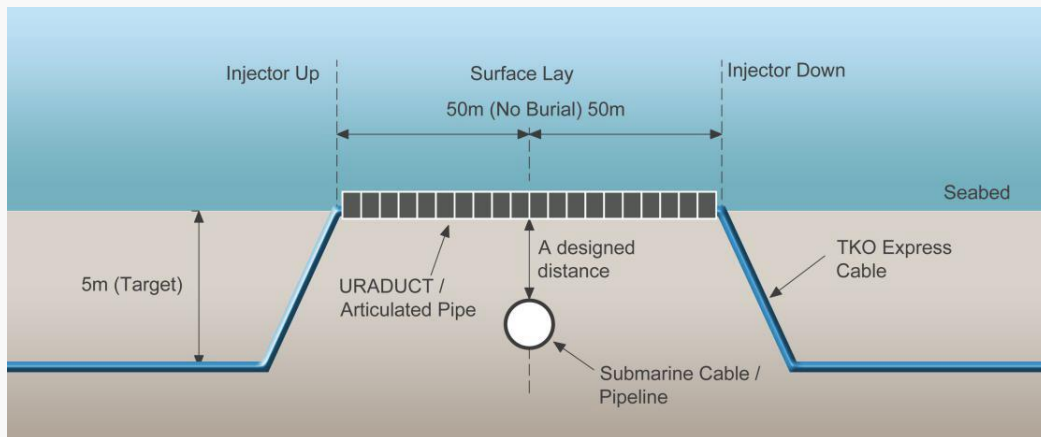
## Marine Installation





## Cable Protection

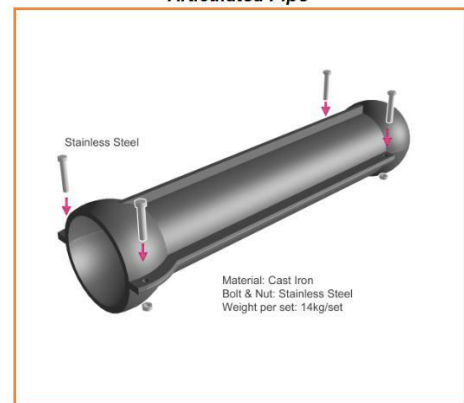
Due to the marine uses in the area a cable protection plan was developed to add additional protection to the cable system in addition to the double armour system built into the cable.



**Uraduct**



**Articulated Pipe**



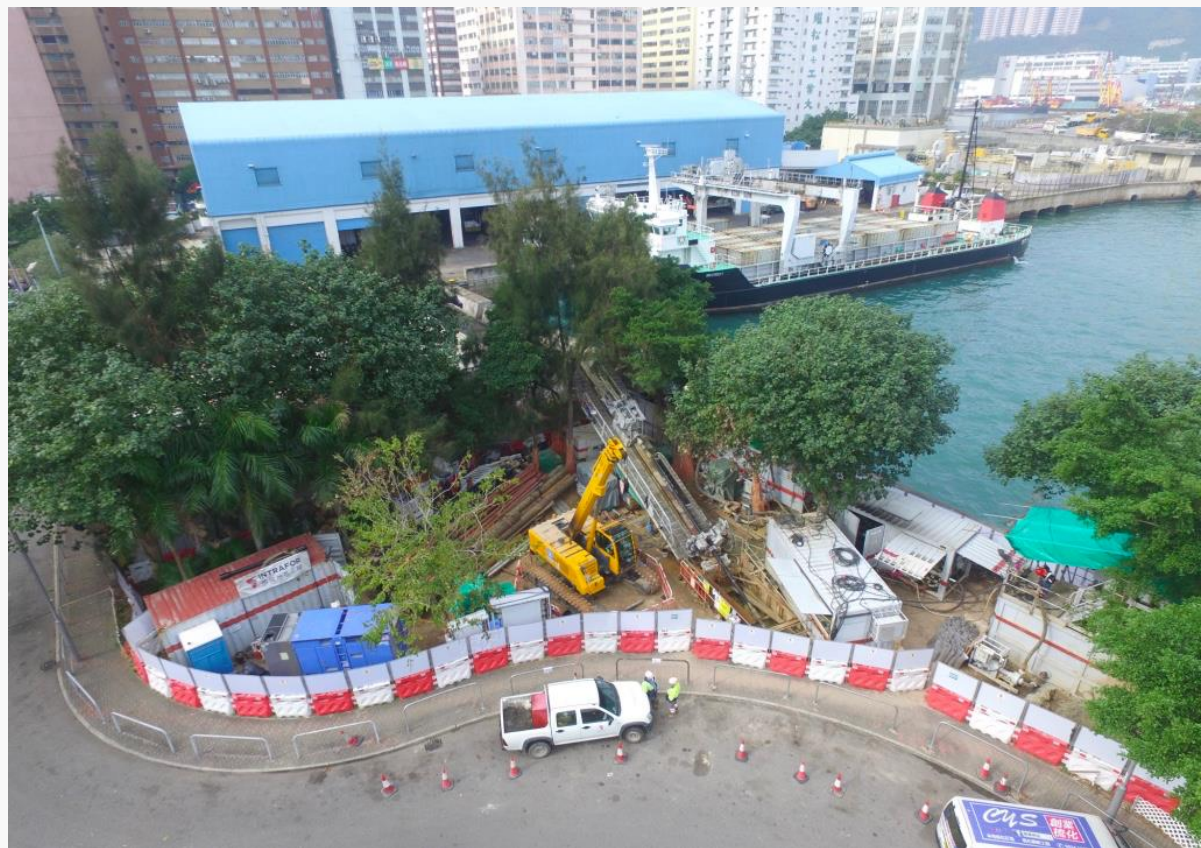
## Cable Selection



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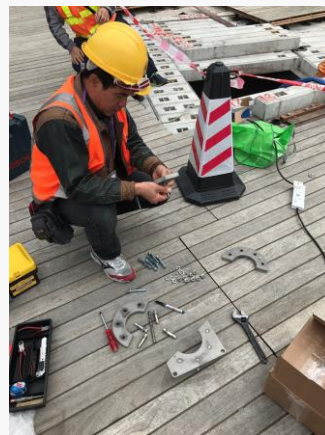
Construction

## Sui Sai Wan Beach Manhole Construction





## TKO Beach Manhole Preparation



## Marine Installation



Challenger 8 Preparing to Install the TKO Express Cable



Dragon 55

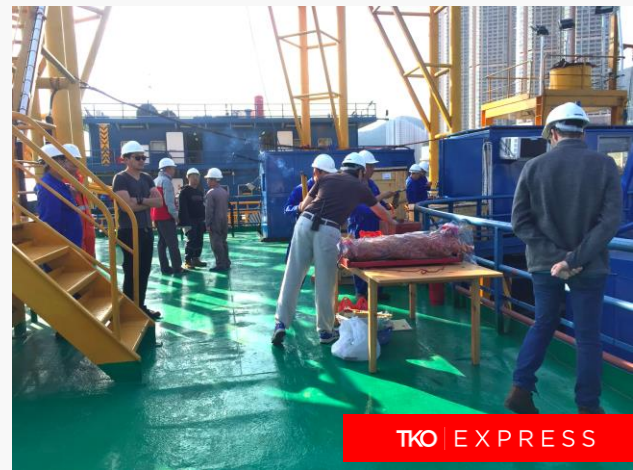
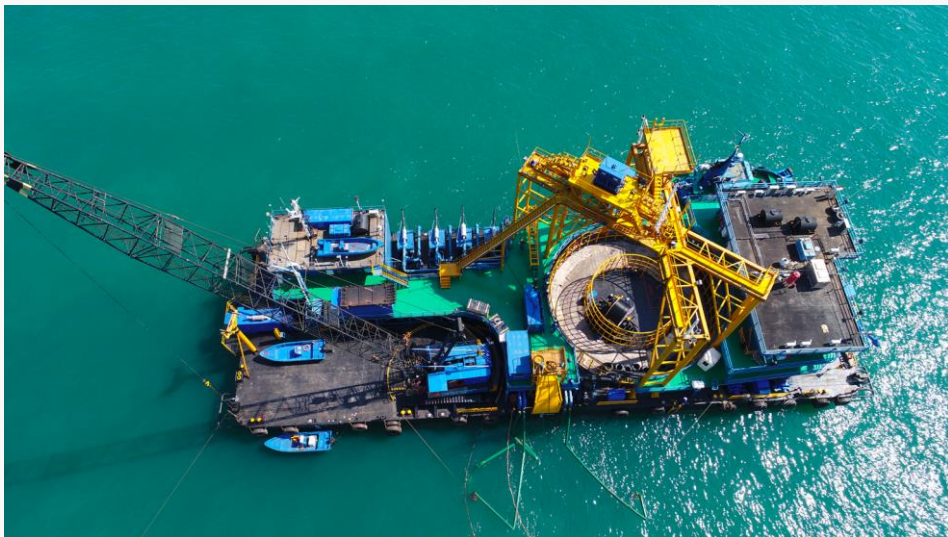
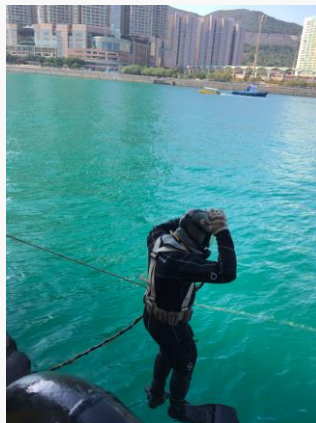


Yellow River



# TKOExpress Installation

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## TKO Express

- Successfully installed 19th Feb 2017
- Provides the only true geographical diversity for the TKO Industrial Estate - increasing security and reducing risk
- It's the shortest path linking the HK Stock Exchange with the Central Business District.
- 20km shorter than any other terrestrial path from Chai Wan to Tseung Kwan O





## TKO Industrial Estate Connection



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