13/WSD/17

Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

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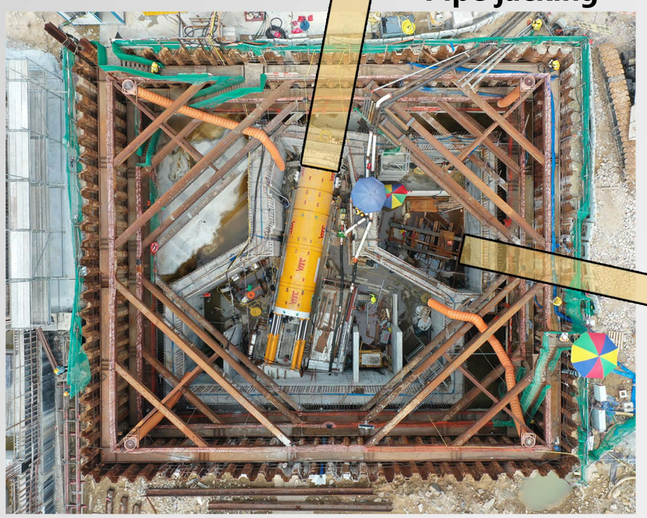
CONTENT

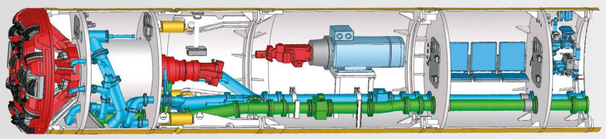
LAUNCHING OF TUNNEL BORING MACHINE FOR INTAKE & OUTFALL PIPES

Intake Tunnel
330m Long
DN2500
Pipe jacking

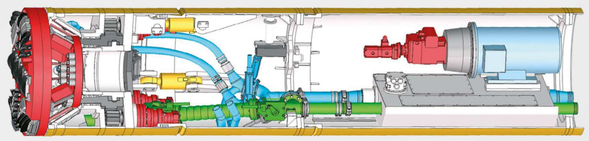


Outfall Tunnel
270m Long
DN1650
Pipe jacking

Combined Intake & Outfall Shaft



Intake TBM: 源源



Outfall TBM: 淼淼

Reference: https://www.herrenknecht.com/de/produkte/productdetail/avn-maschine/

We have just achieved another Milestone!

Our intake and outfall tunnel boring machines (TBM) have been launched in end of September 2021! Starting from now, the intake and outfall tunnels are working simultaneously to strive for early commissioning of TKODP.

Trenchless method – Micro-tunneling was selected to reduce potential impacts of the marine dredging works on water quality, marine ecology and fisheries of our sea.

In addition to basic equipment in the TBMs for day-to-day excavation, such as cutter head, main drive, steering cylinder, slurry lines, grout lines and laser target, our TBMs have the following features to work under the submarine ground condition of the project.

1) Air lock (Man lock) to allow hyperbaric intervention for TBM cutterhead maintenance.
2) Sub-sea recovery module to allow TBM retrieval in wet shaft to minimize the construction cost of the shaft.

Our team will face the challenges to excavate in mixed ground condition and replacement of disc-cutters for TBM under compressed air with 2.8 bar but we are prepared for it. To avoid ground instability, slurry TBMs are adopted for our tunnel construction as slurry is a good supporting fluid for mixed ground condition. To ensure safety, in particular when working under hyperbaric environment, we have established a detailed and rigorous working procedure for hyperbaric intervention. Prior to and after the hyperbaric intervention, all Compressed Air Workers (CAWs) will be subjected to health check by Appointed Medical Practitioner (AMP). During hyperbaric intervention, designated Manlock Attendant would maintain close contact with the CAWs and monitor the air quality inside the hyperbaric environment. Our team has also worked closely with relevant Authorities, including the Labour Department and the Fire Services Department, to formulate safe working procedures for working under compressed air. This includes a commitment to establish FSD's Emergency Pressurized Team (EPT) and such has been ready since July 2021.

With all the efforts and preparation the team has made, we look forward to reporting interesting events during the excavation and the breakthroughs in the next newsletter.

CONSTRUCTION SAFETY WEEK 10TH ANNIVERSARY

SAFETY X SMART SITE

Construction Safety Week (CSW) has been jointly organized by the Development Bureau and the CIC in Hong Kong since 2012. Under the main theme "Safety x Smart Site" this year, a series of events have been held including the CSW Conference, site visit and presentation ceremony of the 27th Considerate Contractors Site Award Scheme (CCSAS).

Ms. Mabel LAM, CE of WSD, gave a speech in the kick-off ceremony on 2 August 2021 to present how the smart and innovative technologies have been implemented in TKODP to enhance site safety, with a view to achieving the goal of "zero accidents". Our site is also delighted to be selected as one of the demonstration sites for sharing good site safety practice. Visitors from various government departments, consultants and contractors visited the project site on 4 August 2021.

We will try our best for the continuous enhancement of innovation and technology applications in TKODP to maintain zero accident.

Bird Eye View of TKO Desalination Plant Site

Sharing of Smart Site in Conduction Safety

Ms. Mabel LAM

Chief Engineer, CM Division, WSD

27TH CONSIDERATE CONTRACTORS SITE AWARD

It is an honor for the whole project team to receive Merit Awards in both **Considerate Contractors Site Award (CCSA)** and the **Outstanding Environmental Management and Performance Award (OEMPA) for the 27th CCSAS**.

We would also like to send our warmest congratulations to Mr. YANG Man-kwong, Mr. LEE Chi-wah and Mr. FONG Yau-man, Deman who have been awarded as the Model Worker, Model Frontline Supervisor and Model Frontline Supervisor respectively in the same event.

YANG Man-kwong

LEE Chi-wah

FONG Yau-man

Considerate Contractors Site Award

Outstanding Environmental Management & Performance Award

Considerate Contractors Site Award Scheme

BEST WORKS SITE AWARD 2021

CHAMPION

Kudos to the TKODP team!

We are the Champion of the Best Works Site Competition (Consultant-Managed Contracts) organized under WSD Staff Motivation Scheme, in a very keen competition this year. On 23 July 2021, 30-minute presentation under the theme of "Our Passion Our Site", followed by a site walk, was given to the Selection Panel as led by CE/C, demonstrating our good site practices in aspects including site safety, improving WSD image, site records, site tidiness, workmanship, progress, staff-coordination and etc.

We would like thank every one of you for your valuable contributions made to the project.

A safety manager who hopes to become a safety master, trying to find unsafe behaviours on the site and improve them. The information brought out is precautions for metal scaffolding and heavy machinery work.

A new recruit on the construction site who lacks a correct understanding of site risks, and then follows the story of the safety officer for all-round training. The information brought out by this film is that safety training for site personnel should be emphasized.

CONSTRUCTION INDUSTRY SAFETY SHORT FILM COMPETITION

MERIT AWARD

Construction Industry Safety Short Film Competition is one of the major promotional activities of the Construction Industry Safety Promotional Campaign by the Labour Department. To raise the OSH awareness and foster a positive safety culture in the TKODP project, we have submitted two entries, namely 安全大師"智安全"升級之旅 and 海水化淡-安全王, under "Construction Site Groups", prepared by David Wong, Shirley Cheng, Wilson Qu, Zeon Chan, Wing Chan and Ng Ka Po.

We are happy to receive the merit award from the organizer. See the list of winners
https://www.labour.gov.hk/tc/news/pdf/CISPC_award_list_tc.pdf

Safety x Smart Site

KM Café X Site Visit

WSD PM Project

Occupational Safety and Health Council

Working Group Discussion with Bureau Department

VISITS TO OUR SITE

We feel blessed to have received a lot of guests to TKODP project site in this quarter. The site visits provided good opportunities to exchange ideas with other professional industry practitioners by conducting first-hand and in-depth sharing on the site practices and technologies currently being adopted in TKODP project.

In one of the site visit, we successfully "unlocked" a project achievement of accommodating 50 guests for a single visit! We will organize more site visits to share the work underway on this construction project.

23 July 2021	WSD Best Work Site Competition
4 August 2021	Safety x Smart Site in CSW
20 August 2021	Construction Safety Award by OSHC
2 September 2021	Sharing of DWSS Implementation with Bureau
3 September 2021	WSD Project Management Team Visit
10 September 2021	WSD - KM Café X Site Visit
29 September 2021	HKIE MMNC - Webinar

Marine Works Presentation

VR Training Centre

KM Café X Site Visit

COMING 3-MONTH CHALLENGES

Topping out of Reverse Osmosis Building and ActiDAFF Building

Completion of Pipe Jacking for intake and outfall pipes

Underdrain installation at ActiDAFF Building

Approval of DG store submissions by FSD

Delivery of RO Racks to the site

MIC SITE OFFICE SOLAR PV PANEL

To promote sustainability and the development of renewable energy (RE), the Hong Kong SAR Government has taken forward a number of large-scale Government RE facilities. TKODP is one of them! Solar photovoltaic (PV) panels will be installed on the rooftops of the permanent buildings of the TKODP that can be utilized for the PV system during operational phase. To get full benefits from it, we have advanced the PV panels installation on the rooftop of MiC site office to power up our site!

What are the major hardware components of a solar PV system?

Solar PV panels and inverter are the two major components of a solar PV system. In general, there are three major types of commonly available solar cells in the market which are monocrystalline cells, polycrystalline cells and thin film cells. We adopt monocrystalline cells, which have the best energy conversion efficiency amongst these three types of solar cells. Inverter is another key component of a solar PV system. It converts the output of solar PV panel from direct current to alternating current. The isolation transformer installed inside or outside the inverter also helps ensure the safe operation of the system.

AVERAGE ELECTRICITY GENERATED SINCE COMMENCEMENT

372 kWh/ day

ESTIMATED ANNUAL REDUCTION IN CARBON EMISSIONS

31655 kg CO_2e

SITE OFFICE USE

30%-60%

SHARING IS LEARNING

In response to the "Construction 2.0" policy promoted by the Development Bureau, various new initiatives have been adopted or being explored for implementation in Contract No. 13/WSD/17 "Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant" (this Contract). Among other things, off-site construction using Design for Manufacture and Assembly (DfMA) have also been included with a view to uplifting productivity and performance in safety, quality and sustainability for the works in this Contract.

We would like to discuss with you in the next "**Sharing is Learning**" session about our DfMA Implementation (Series 7), which will be presented by WSD Engineer – **Mr. LAI Hon Lam, Jack**. Stay tuned.

Previous Sharing in Q3:

Series 5

Smart Site For Safety - A Safer Way to Build
Mr. David Wong
Binnies SRE (General/ Measurement)

Series 6

Marine Works for TKODP
Mr. Raymond Ho
Binnies RE (Marine)

CIC TABLE TENNIS COMPETITION
1ST RUNNER UP – ALEX CHAN

"I feel a lot of pride to represent Binnies and TKODP team to participate in the Construction Industry Table Tennis Competition 2021 as organized by Construction Industry Sports & Volunteering Programme. The game was fun and I enjoyed it very much. Definitely joining next year!"

Alex Chan
Binnies, SOE

SMART SAFETY DEVICES
360° MOVING PLANT PROXIMITY ALERT SYSTEM

Since October 2020, 3 nos. of 360° moving plant proximity alert system have been installed at 3 nos. of excavator respectively. The monitoring system consists of high definition wide-angle cameras installed at four sides of the moving plant. Through the viewing monitor installed in the control cabinet, the operator can observe real-time conditions around the plant and make sure there are no obstructing objects (fixtures/people) while manoeuvring the plant and thus reduce the risk of striking surrounding objects. Meanwhile, audio alarms will also be triggered to draw the operator's attention in order to stop any further movement.

WATCH the Introduction Video

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https://www.tkodesal.hk/