

Safety 2.0 ***– a Multi-pronged Strategy***

Construction Safety Week 2022 Conference
29 Aug 2022



Mr. FONG Hok Shing, Michael, JP
Director of Civil Engineering & Development



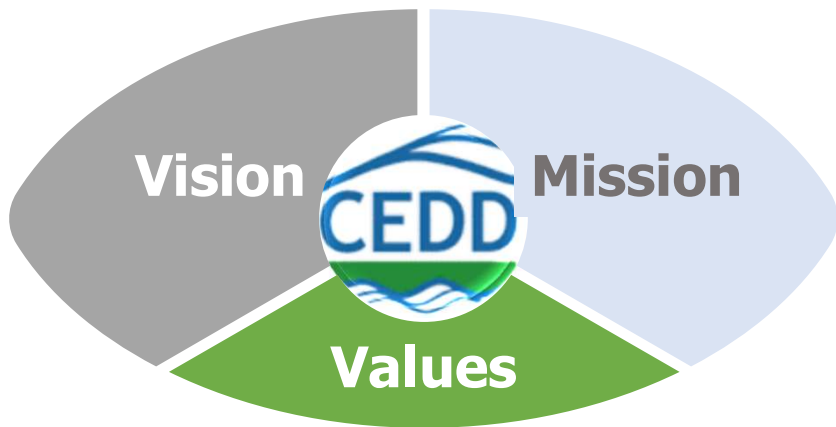
Construction Safety Week



CSW 2022

CSW2012

Our Commitment



Our Vision

- To be a leading organisation engineering the development of Hong Kong

Our Mission

- Striving for engineering excellence
- **Creating a safe, green and sustainable environment**
- Partnering with the community in infrastructure development
- Building a caring and motivating working environment for staff

Our Values

- Professionalism
- Customer Focus
- Teamwork

Towards Zero Accident

Zero“0”意外
ACCIDENT

地盤零意外 關懷建未來
Zero **A**ccident, we **B**uild, we **C**are

Professionalism

- Foster a Safety & Caring Culture
- Modern Construction Methods
- Innovative Technologies

Governance

Leadership

Teamwork

- we Build a Safety Community

Customer Focus

- we Care -
 - ✓ Public Safety
 - ✓ Site Personnel's Safety & welfare



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We Build a **Safety Community**

Internal



External



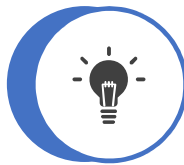
Site Safety Review Committee



Directorates' Safety Governance Workshops



Directorates' Visit & Cross Team Checking



Surprise Site Inspection



Communication Platforms with Partners

- Site Safety Forum
- Safety Stand-down Workshop
- CEDD Safety Innovation Seminar
- Thematic Safety Campaign
- CEDD Site Safety Channel Broadcast (monthly)



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Foster a Safety Culture – Safety Governance Workshops for Directorates

- A Perspective on Way Forward to Enhance Safety Culture in Major Infrastructure



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Foster a Safety Culture – Safety Stand-down Workshops

- Top Management of CEDD Consultants and Contractors
- Evaluate lessons learnt
- Share innovative approaches



Foster a Safety Culture – Thematic Safety Campaigns

■ Contractor

- Thematic Toolbox Talks to Workers
- Good Demonstration to Workers

■ RSS

- 2-hr Briefing to team members and project teams

■ CEDD

- Sample Lifting Permit
- Surprise Visit
- Cross-team Check



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Foster a Safety Culture – Caring Visits by Directorates

百萬獎金安全獎勵推廣計劃頒獎典禮
One-Million-Dollar Safety Award Promotion Scheme Award Ceremony
2022.07.06



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Foster a Safety Culture – Partnering Workshops



Foster a Safety Culture – Annual CEDD Site Safety Forum cum Construction Site Safety Award



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Foster a Safety Culture – CEDD Site Safety Broadcasting Channel

- Share construction safety matters to CEDD colleagues
- Guests from DEVB, CIC, OSHC, Labour Department, academia, consultants and contractors, etc.



Adoption of Modern Construction Method



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A Subway across Prince Edward Road East

- Kai Tak Development - Infrastructure at Former North Apron Area
- 140m pedestrian subway
- 11 - 13m below ground
- Existing Underground Utilities





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Kwun Tong Bypass, Prince Edward Road East

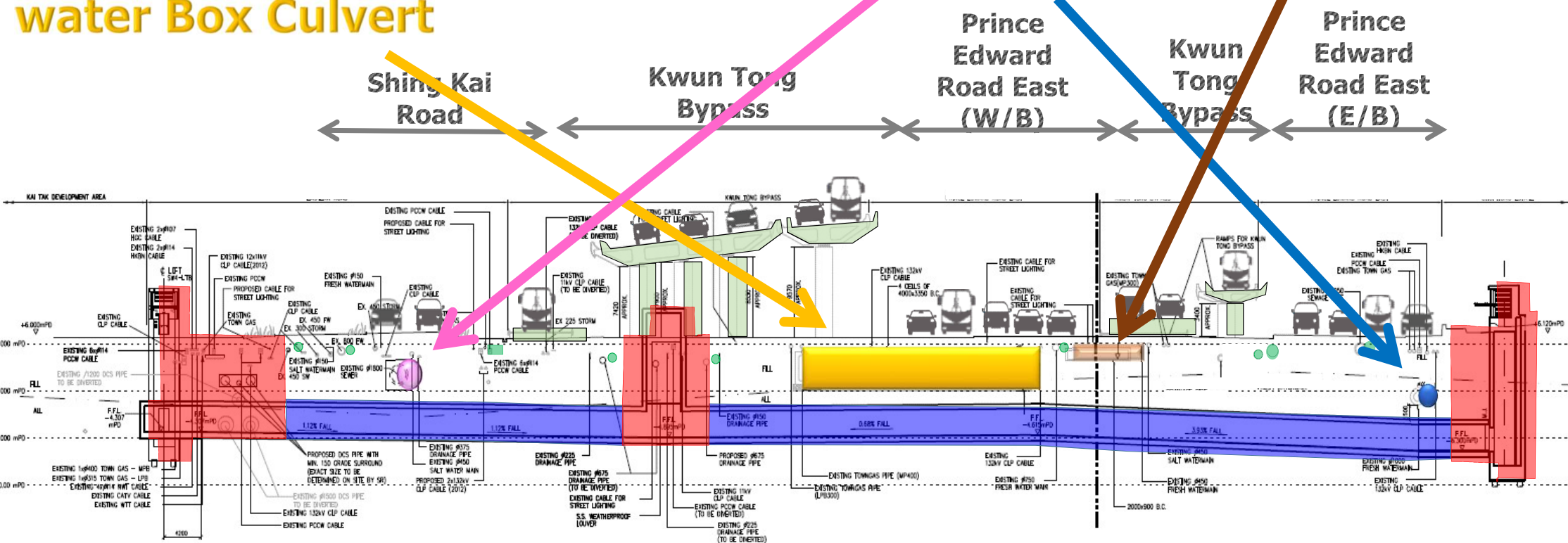
4-Cell Storm water Box Culvert

1800mm
Gravity Sewer

DN 1000
Water Main

Sewer Box culvert

Fresh
Other
utilities

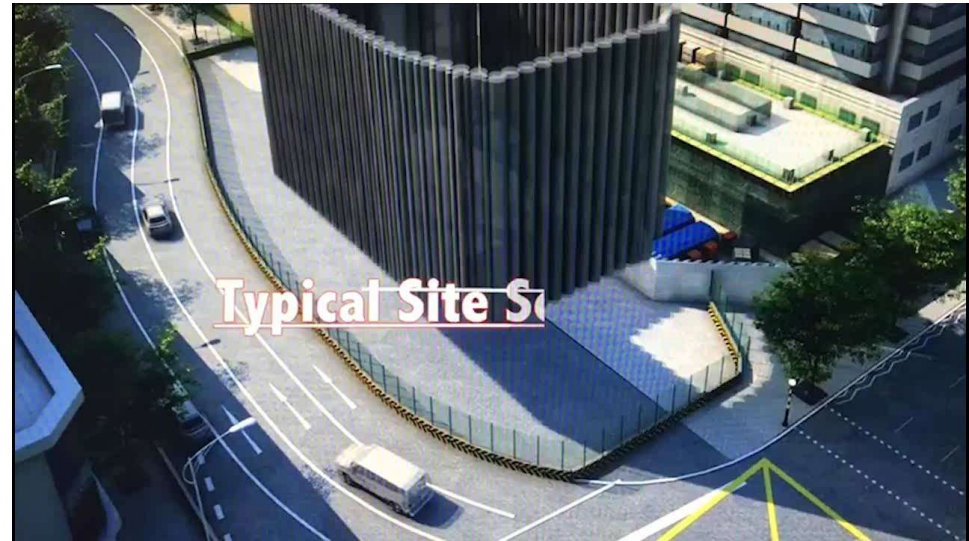


Traditional Construction Method

- Man-entry mechanical dug tunneling
- Cast-in-situ
- Labour intensive
- Conflicts between workers and mobile plants
- Hazards of water seepage, poisonous gases from sewerage leaking, collapse of temporary structures, etc.

Modern Construction Method – Rectangular Tunnel Boring Method (RTBM)

- New design: 92 Precast Segments
- Earth pressure balanced type RTBM
- Approximate rate of production: 1.5m/day (one segment each day)
- Safer working environment



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Modern Construction Method – Robotics



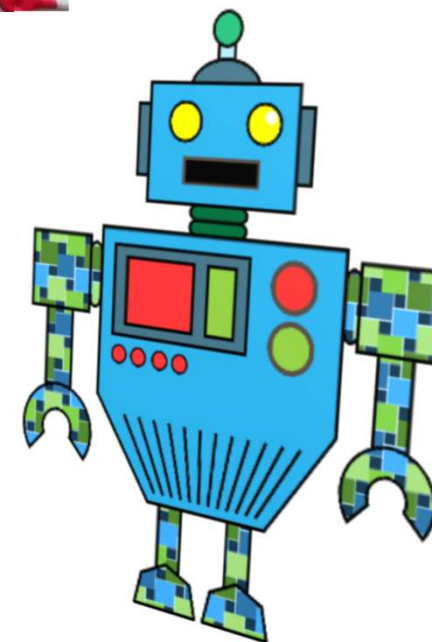
**Robotic Welding in
ELS works**
[NL/2020/03]



**Remote Demolition
Plant**
[SD/2021/02]



Underwater Drone
[SD/2021/02]



Encouraging Adoption of Innovative Technologies

❑ CEDD Innovation Awards since 2015



❑ CEDD Innovation Forum on Site Safety 2019



❑ Business Matching Event 2021



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Adopting Innovative Technologies to Manage Construction Sites

*Fill Banks and
Sorting Facilities*



*Tung Chung East
Reclamation*



*Kwu Tung North and
Fanling North New
Development Area*



Tung Chung East Reclamation – Constraints and Challenges

- Airport height restrictions
- TM-CLK Link Southern Connection
- Wide extent of work fronts
- Numerous barges & plants
- Over 800 nos. workers



500t crane barge



500t crawler crane



Trailers



45t dumpers



Pelican barges



Land-based DCM rigs



Rollers



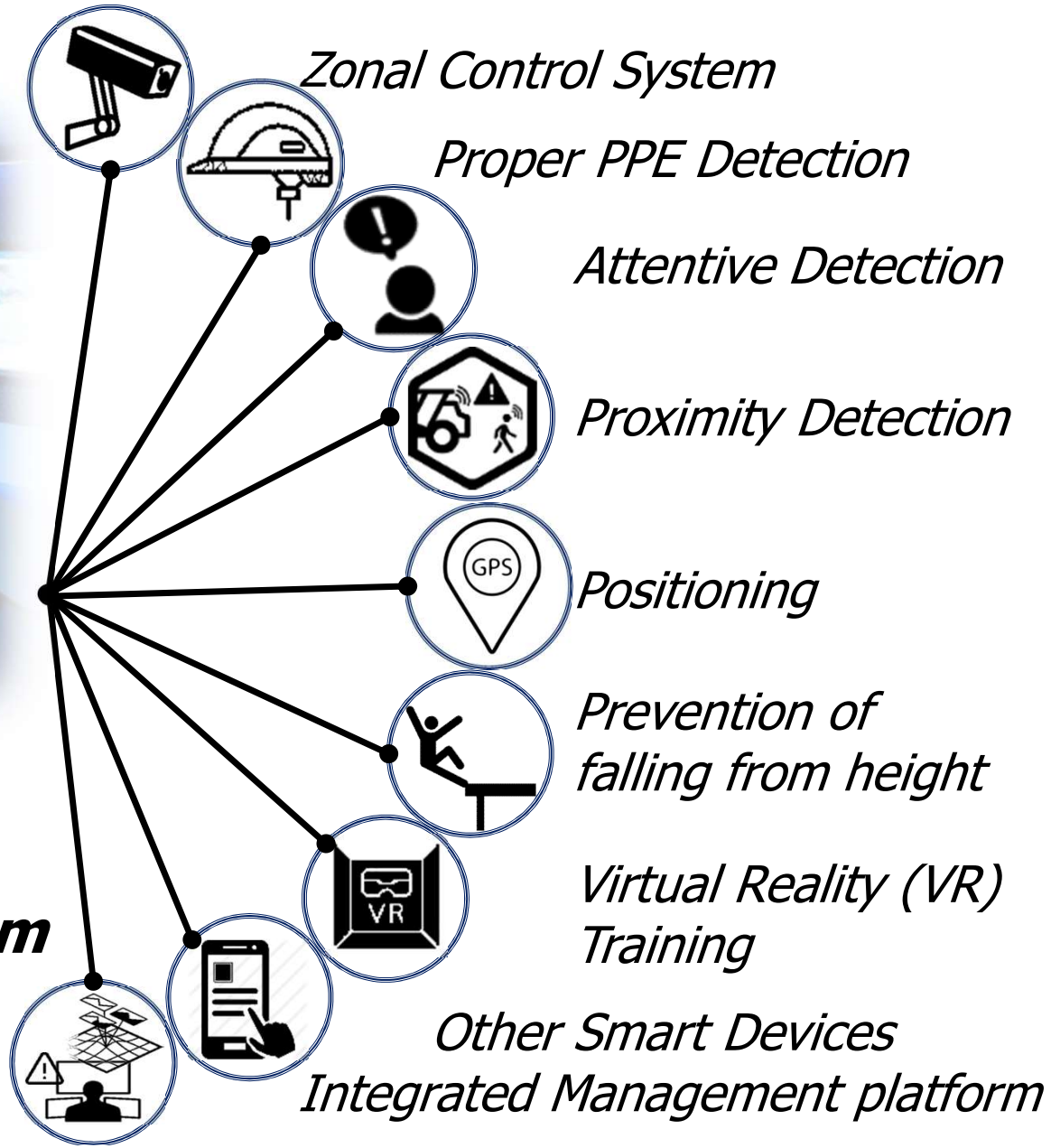
Long broom excavators



Dozers



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Integrated Management Platform



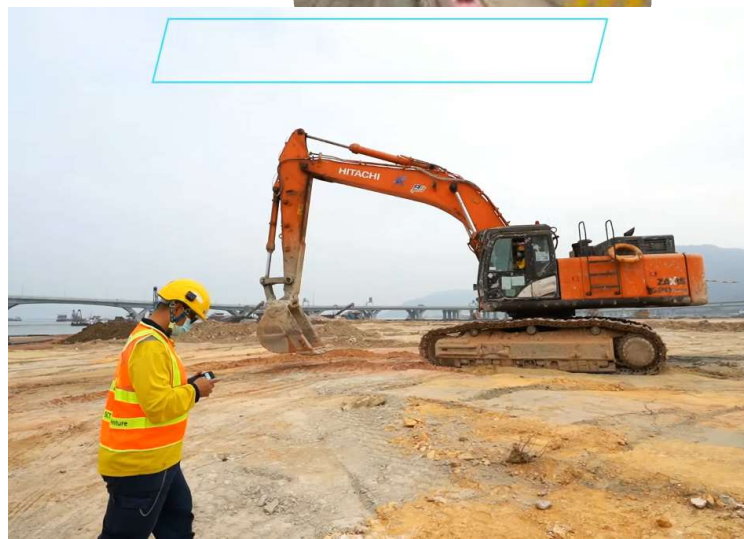
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AI Devices - Restricted Area

Restricted area



Site traffic

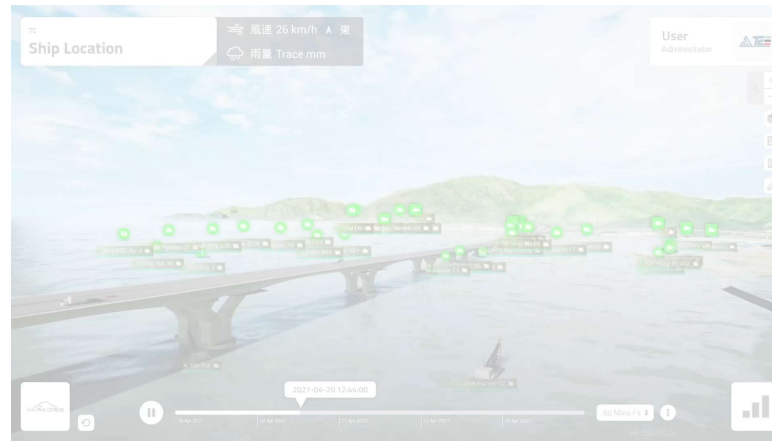


- Dynamic identification
- Prevent **unauthorised** entry
- Proximity detection
- Review AI data for site management



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AI Devices – Vessel Management System



GPS & HAMU system

- BIM based
- Warn site staff for **unauthorised** vessels
- Distance between vessels and bridge



Alarm on barge

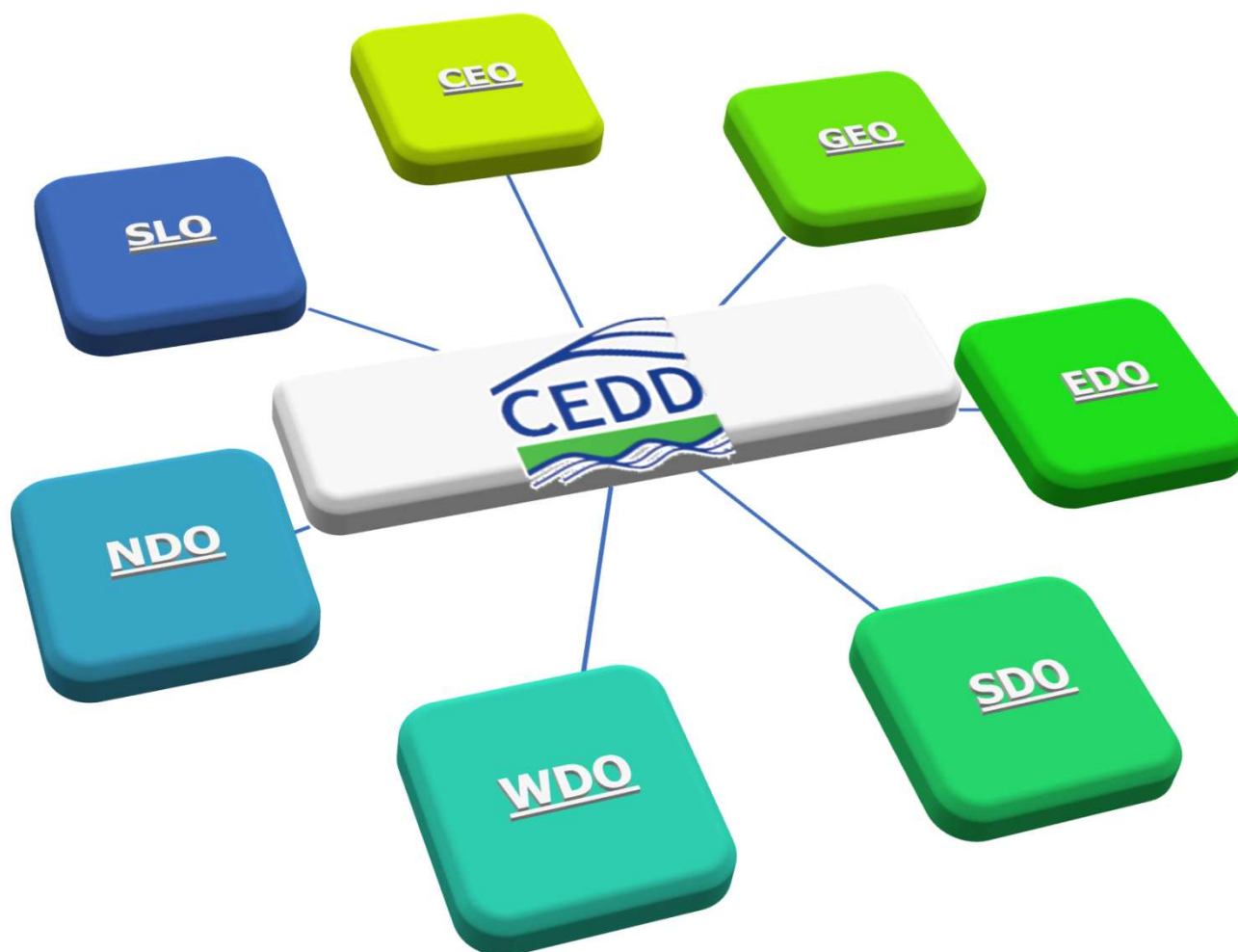


AI camera

Safety Rating



Smart Site for Safety



CEO

- CV/2015/07 - Handling of Surplus Public Fill (2016 - 2018) (Fill Banks)
- CV/2018/02 - Temporary Construction Waste Sorting Facilities (2019 - 2022)
- CV/2019/03 - Site Formation and Infrastructure Works at Pik Wan Road, Yau Tong
- CV/2017/07 - Site Formation and Infrastructure Works at Wang Chau, Yuen Long – Contract 1
- CV/2020/01 - Site Formation and Infrastructure Works for Public Housing Developments at Pok Fu Lam South
- CV/2021/07 - Site Formation and Infrastructure Works for Public Housing Developments at Pok Fu Lam South
- CV/2020/09 - Construction of Lei Yue Mun Public Landing Facility

EDO

- ED/2018/03 - Construction of Government Flying Service Kai Tak Division
- ED/2018/04 - Trunk Road T2 and Infrastructure Works for Development at the former South Airport
- NE/2017/07 - Cross Bay Link - Main Bridge and Ancillary Works
- SD/2019/03 - Wan Chai Development Phase II - West Landscaped Deck and other roadworks

WDO

- YL/2017/03 - Development of Lok Ma Chau Loop - Land Decontamination and Ancillary Engineering Works
- YL/2020/04 - Site Formation and Infrastructure Works for Public Housing Developments at Kam Tin South, Yuen Long - Phase 1

NDO

- Contracts in Kwu Tung North and Fanling North Development Area Projects
(including ND/2019/01, ND/2019/02, ND/2019/03, ND/2019/04, ND/2019/05, ND/2019/06, ND/2019/07...etc)

SLO

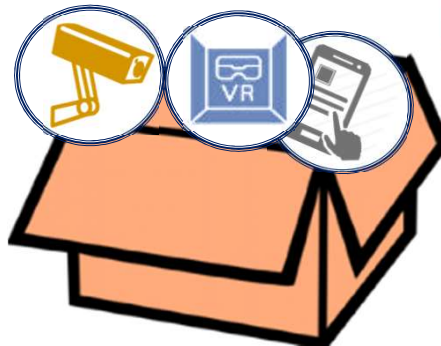
- Contracts in Tung Chung New Town Extension (including NL/2017/03, NL/2020/02, NL/2020/03...etc)

**MORE
TO
COME**



Never Rely on Blackbox

- **Use** but **NOT being used** by technologies
- Professional Judgement
- **Collaborative effort** of various roles
- Safety Management System



To Recap...

*We Engineer
Hong Kong's Development*

- we **Build** a **Safety Community** by:
 - Communicating with our Partners
 - Collaborating with Different Stakeholders
- we **Care** public and site personnel's safety by:
 - Fostering a safety culture
 - Adopting Modern Construction Methods & Innovative Technologies



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Zero“O”意外
A C C I D E N T

地盤零意外 關懷建未來
Zero Accident, we **Build**, we **Care**

A photograph of three people from behind, standing in a grassy field with trees in the background. The person on the left is wearing a white t-shirt and jeans. The person on the right is wearing a white t-shirt, dark overalls, and a straw hat. The person in the center is wearing a light-colored shirt and a straw hat. They are all holding hands and have their arms raised in a celebratory gesture.

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關懷

*Thanks for Safeguarding
our Working Pals!*



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我們矢志保障工地安全

*We are committed to
safeguarding the site safety as our first priority*