

# 建造業安全周2022 Construction Safety Week **SAFETY 2.0**

## Safety • VCommit

Improving Construction Safety by Safety Culture  
Advanced Construction and Innovative Technology

**Ir Tommy LEUNG**  
Executive Director – Third Runway  
Airport Authority Hong Kong



*Have a tour to VCommit.*

3RS  
PROJECT

VCOMMIT  
SAFETY  
CULTURE

ADVANCED  
CONSTRUCTION  
TECHNOLOGY

SAFETY  
INNOVATIVE  
TECHNOLOGY

OUR  
PROSPECT



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Development Bureau



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INDUSTRY COUNCIL  
建造業議會



# 3RS PROJECT



## 3RS Three-runway System



3



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# 3RS PROJECT



## 3RS Three-runway System







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# VCommit Safety Culture





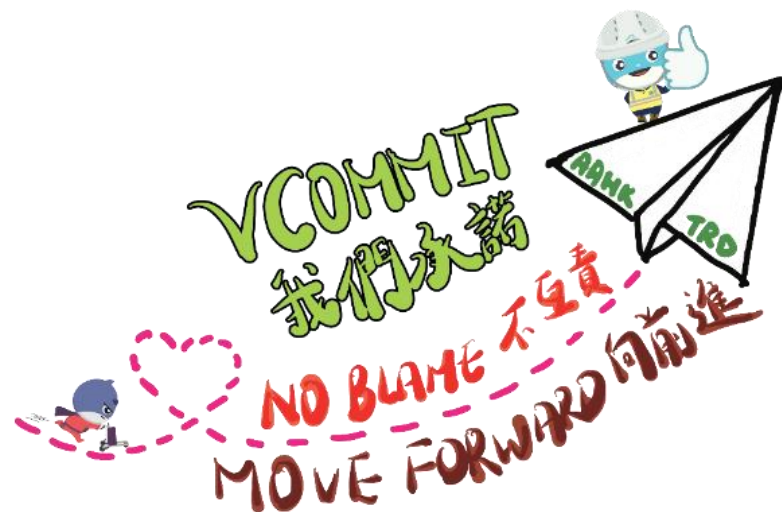
# VCommit Safety Culture



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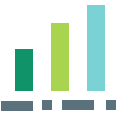


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同航  
Same Boat Same Goal





# No Blame Move Forward



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1. Align Common Objective
2. No Penalty, No Complaint
3. Continuous & Measurable Improvement

## A. Accident / Incident Management Review

## B. Safety Sharing Workshop

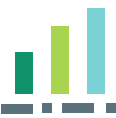
- Underground Utilities
- Temporary Works
- Electricity Safe System of Works

## C. Stand Down / Mini-stand Down

## D. VCommit Safety Alert







# Same Boat Same Goal



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1. Mutual Trust and Honest System
2. Safety Force Group (SFG) - to solve critical tasks
3. Safety ITP - make safety as engineering check point
4. VCommit Independent Safety Assessment (VISA) - Safety Assurance
  - focus assessment and linked with Incentive Payment
5. Quarterly Safety Promotion - promotion schemes subsidized by TRD
6. V.Share Safety Cluster (VSSC) - online cloud safety sharing platform



同航  
Same Boat Same Goal



TRD created an Online Cloud sharing platform

Objective:

- Virtual centralized safety cluster
- Stimulate of information collaboration
- Synergize between safety stakeholders
- Continual safety standards enhancement







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# Advanced Construction Technology



Deep Cement Mixing





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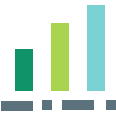


# Advanced Construction Technology



Deep Cement Mixing





## Deep Cement Mixing (Project 3206)

Formation of 650 hectares of reclaimed land using Deep Cement Mixing (DCM) technique. DCM is to mix cement slurry with the marine deposit mechanically to form cement mixing columns and stabilise the seabed.



**ZHEC - CCCC - CDC JV**  
香港振華 · 中國交建 · 中交疏浚 聯營



### *Safety Benefits*

- More mechanical, Less labour
- Shorten Construction Period
- Factory-like Working Environment
- Enhance housekeeping and logistic
- Reduces risk of lifting operation
- Reduces risk of fall from height
- Less Environmental Pollution





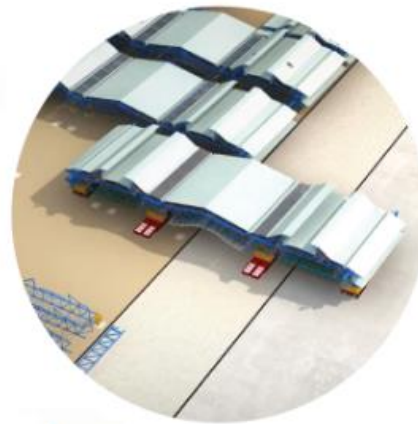
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# Advanced Construction Technology



Steel Structure Module





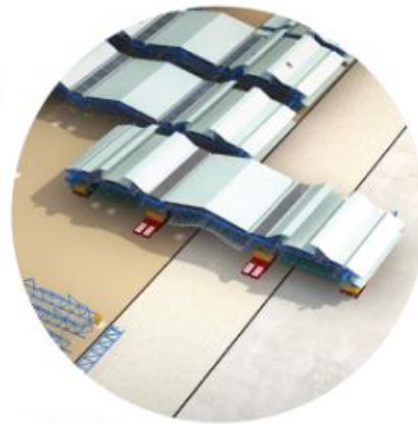
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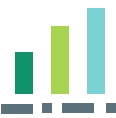


# Advanced Construction Technology



Steel Structure Module





## Steel Structure Module (Project 3408)

Design and construction of the Third Runway Concourse (T2C). Adopting substantial amount of MiC, DfMA, BIM, MiMEP and modular construction technology for the T2C roof.

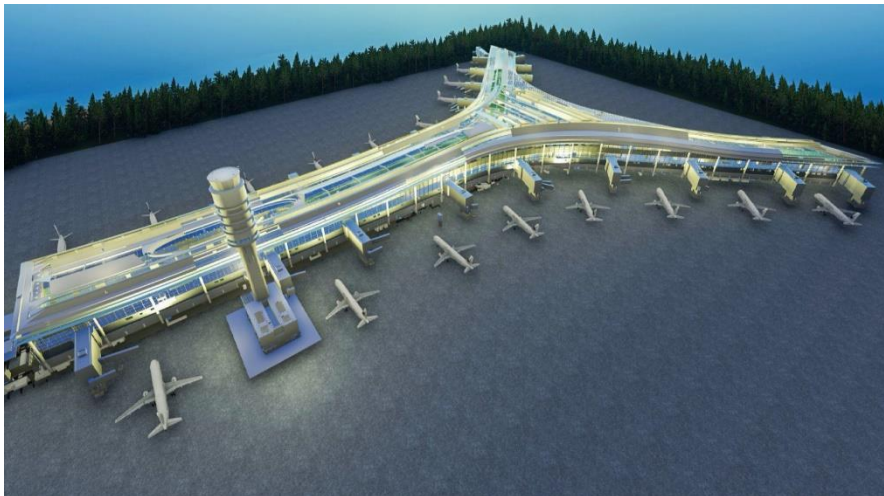


北京城建-其士建築聯營 BUCG-CCCL JV



### Safety Benefits

- Off-site fabrication (Better safety and quality)
- Less labour on site
- Shorten Construction Period
- Reduce Construction waste
- Enhance housekeeping and logistic
- Reduces risk of fall from height







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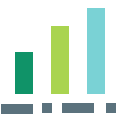


香港  
國際機場  
HONG KONG  
INTERNATIONAL  
AIRPORT

# *Innovative Safety Technology*

## VCommit Incentive Scheme





# Innovative Safety Technology



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## VCommit Incentive Scheme

- Explore local and international innovative safety technology
- Direct connection with suppliers
- Provide platform for pilot scheme in 3RS project
- Act as supporting organization of suppliers when applying CITF pre-approved products
- Top-up subsidizing contractors and subcontractors to cost free
- Review performance of the innovative device and feedback to the suppliers



**鷹網智能監測系統資助計劃**  
360 DEGREE CAMERA INCENTIVE SCHEME

Save them from fatal zone  
消除致命地帶的危言

**費用全免**  
100% FREE

**主要功能**  
MAJOR FUNCTION

- 獨特的人體偵測技術  
Unique AI human-detection technology
- 利用毫米波雷達偵測外物  
Glebae detection by Radar technology
- 提供360度組合用高電機視圖  
Provide a 360 degree combined CCTV view
- 感測移動物體以偵測內部的移動物體  
Recognize moving object with alert alarm
- 偵測到之物的距離及所有角度  
All Angle Distance Chedling from 1m to 2m
- 拍攝低光條件：0.3 Lux  
Capture low light condition at 0.3 Lux

資助條件...  
AS LONG AS...  
• 安裝系統後於三個月內使用最少六個月  
Minimum 6-month usage in TRD after installation

由以下機構資助：  
SUBSIDIZED BY:

**80% CITF**  
**20% TRD**

均可申請 FOR BOTH CONTRACTORS AND SUBCONTRACTORS

掃描二維碼了解詳情  
SCAN QR CODE FOR MORE

**車輛駕駛員監察系統**  
DRIVER MONITORING SYSTEM  
INCENTIVE SCHEME

**費用全免**  
100% FREE

**主要功能**  
MAJOR FUNCTION

- 打哈欠警告 Yawn Warning
- 路旁警告 Warning Forward
- 碰撞警告 Collision Warning
- 車道偏離警告 Lane Departure Warning
- 環視警告 Looking Around Warning
- 注意力不集中警告 Inattention Warning
- 打緊電話警告 Calling On Phone Warning
- 車道偏離警告 Lane Departure Warning
- 即時雲端監控平台 Real Time Cloud-Monitoring Platform

資助條件...  
AS LONG AS...  
• 安裝系統後於三個月內使用最少六個月  
Minimum 6-month usage in TRD after installation

由以下機構資助：  
SUBSIDIZED BY:

**70% CITF**  
**30% TRD**

承建商及分包商均可申請  
FOR BOTH CONTRACTORS AND SUBCONTRACTORS

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SCAN QR CODE FOR MORE

**高強度纖維吊索**  
High Performance Synthetic Slings

**快速檢查系統**  
Fast check system

- 外層光線檢查  
Optical Fiber Check
- 外層纖維檢查提示  
External Fiber Check Indicator
- 外層纖維檢查提示  
External Fiber Check Indicator
- 內層纖維檢查提示  
Inner cover shows red for damage warning
- 收縮式纖維吊索  
Contracted ID mark

**費用全免**  
100% Free

承建商及分包商均可申請  
FOR CONTRACTORS AND SUBCONTRACTORS

掃描二維碼了解詳情  
Scan QR code for more



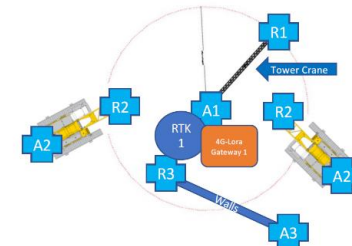
High  
Performance  
Slings



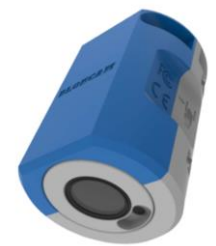
AI 360 Degree  
Camera



Driving Status  
Monitoring

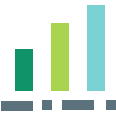


Crane Anti-Collision  
Alarm



BlokCam





# High Performance Slings



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## Safety Benefits

- Fast check system
  - ✓ External Warning Indicator (EWI)
  - ✓ Optical Fiber Check
- Inner cover shows red for damage warning
- Strong covers for superior abrasion resistance
- Less than 1% elongation when during lifting
- Durable and traceable identification tag



<1%



GO

EWI IS VISIBLE

NO-GO

EWI IS MISSING



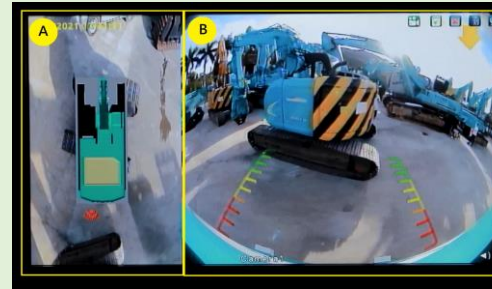


## Safety Benefits

- Superimpose 4 Wide-Angle 720p CCTVs into a 360 aerial view
- Detect object close to plant and alert operator
- Work with 0.3 lux and Self-Adjust under strong sunlight
- Digital Video Recording (4 Camera)
- Do not require “Smart Helmet” for the alert
- AI Human Detection

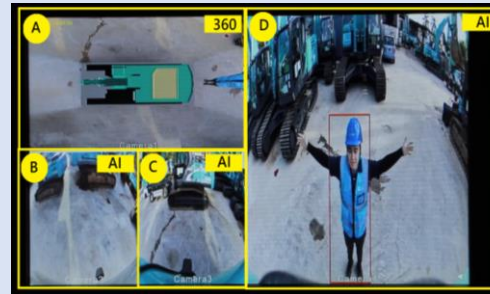
## \*Applied to Excavator and Mobile Crane\*

### Radar Obstacle Detection

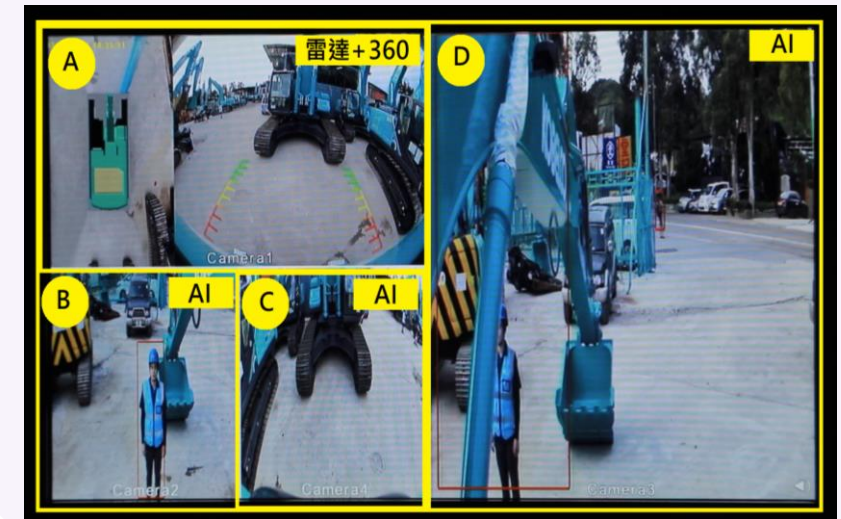


### AI Human

#### Human Detection



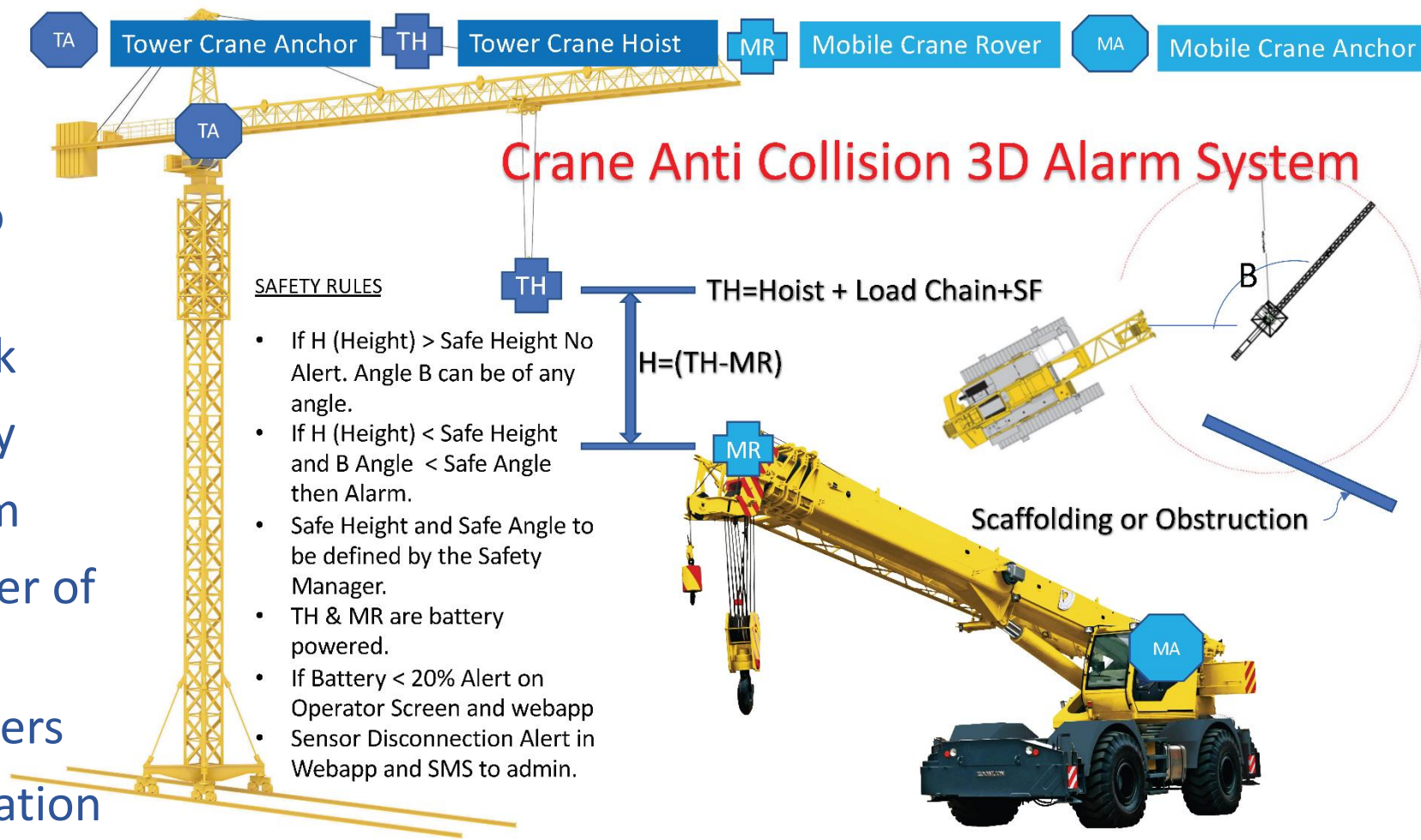
## Superimpose Imaging Technology (4 cameras into 1 image)





## Safety Benefits

- Proactive anti-collision alert to crane operators
- Do not require mobile network
- Use wireless 4G LORA Gateway
- 3D Coordinate Accuracy ~20cm
- Connected to unlimited number of cranes
- SMS alert to designated numbers
- IP67 Rating for outdoor application





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# *Our Prospect*







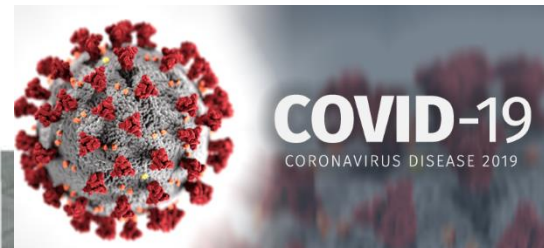
# Hong Kong Airport During COVID-19



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DURING COVID-19





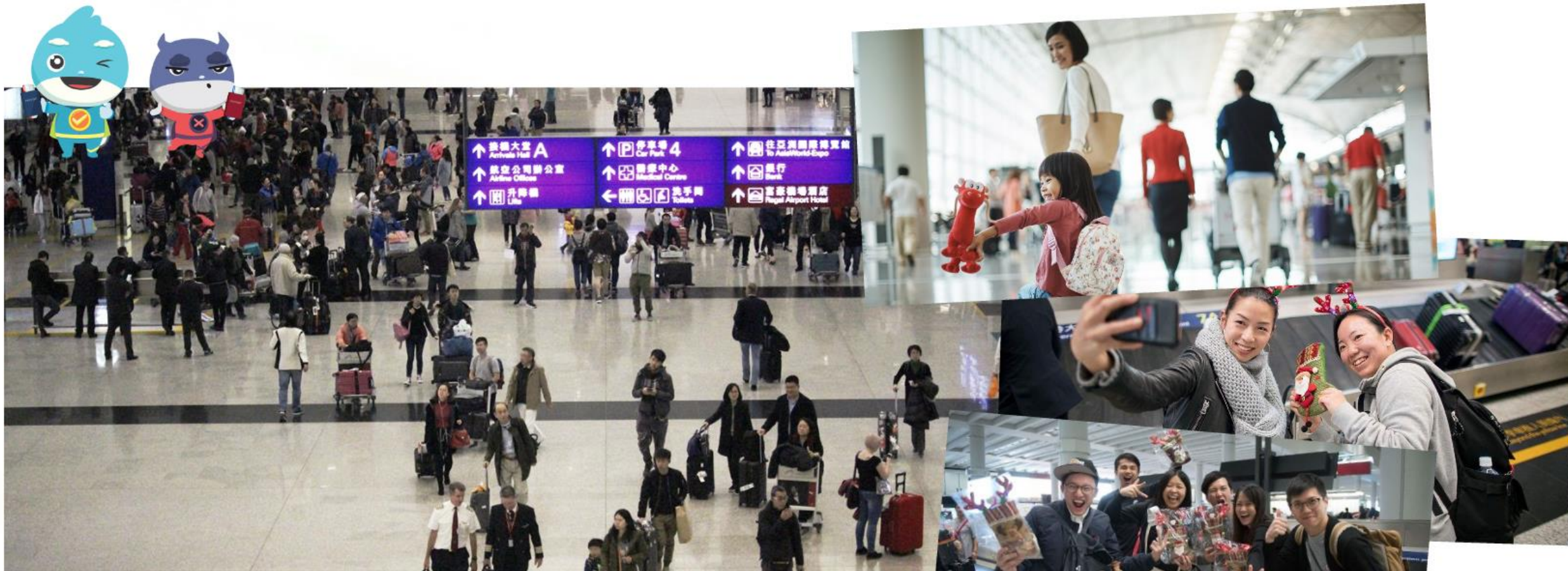
# 2024 Three-Runway System Completion



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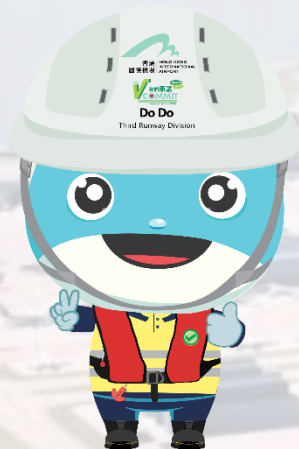
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POST COVID-19 AND  
3RS COMPLETION IN 2024







# Forge Legacy of VCommit Spirits into Hong Kong Construction Industry