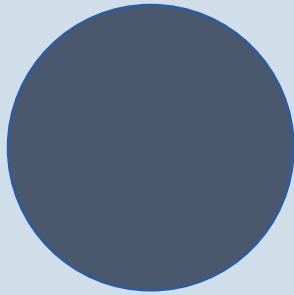
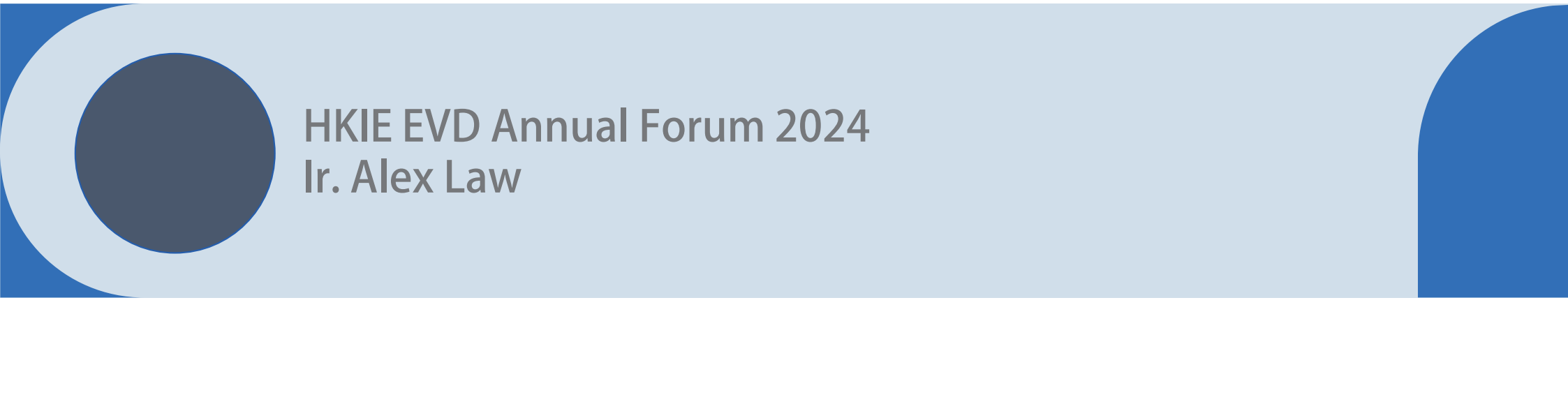


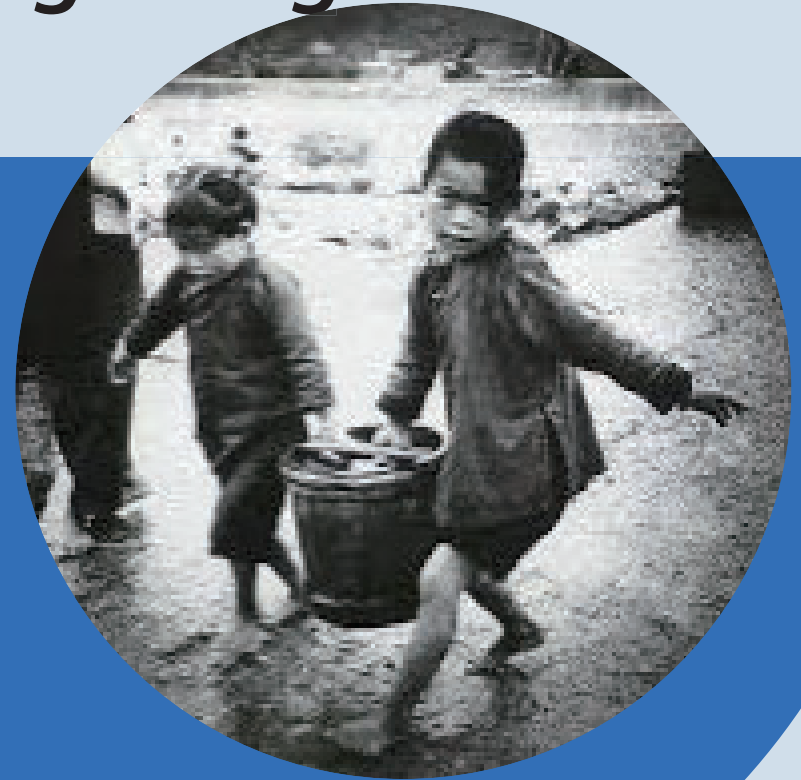


# New Source of Drinking Water for Hong Kong — Tseung Kwan O Desalination Plant



HKIE EVD Annual Forum 2024  
Ir. Alex Law

# Water Supply in 1960s Hong Kong



# Hong Kong Fresh Water Supply



Cities in Pearl River Delta with rapid growth, compete for limited resources



Local sources of Rainwater 20 to 30%

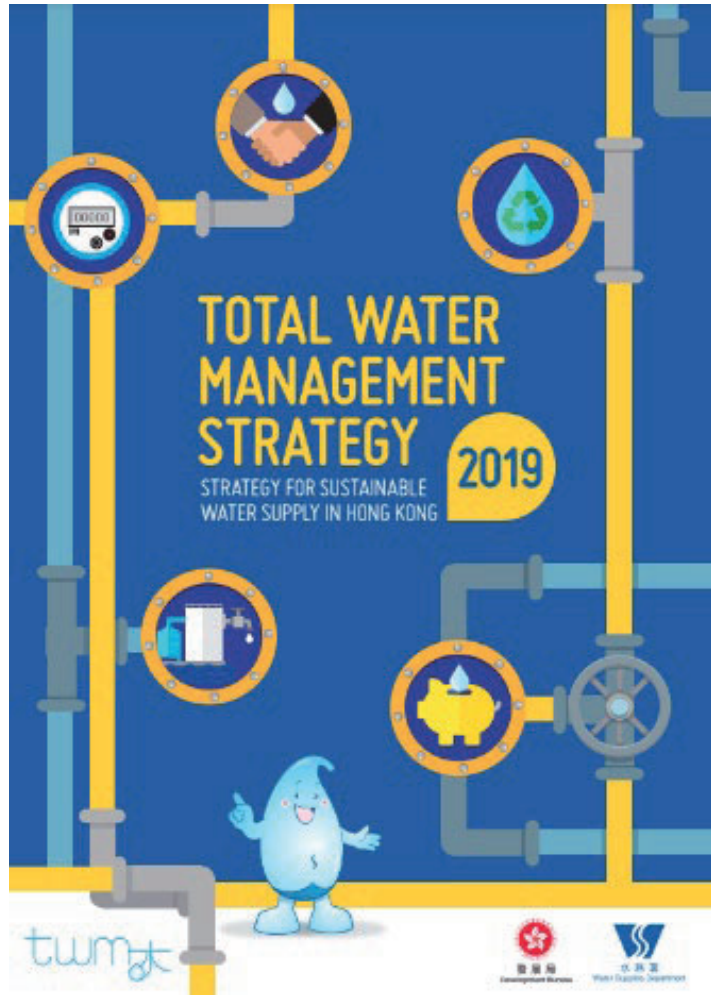
# Total Water Management



Shing Mun Reservoir







- Import from Mainland China
- Rainwater
- Desalination Plant
- Reclaimed Water

# Build resilience in fresh water supply

## First Stage of Tseung Kwan O Desalination Plant

- Output capacity 135 MLD
- Future extension to 270 MLD  
= 18 Litres /person /day
- Approx. 5% of Fresh water demand
- Not susceptible to climate change



# Design of Tseung Kwan O Desalination Plan







# ActiDAFF

- Combined filtration and flotation (DAFF) process.
- Flotation on top of filtration, at filtration velocity  $< 8$  m/h
- Optional flotation, optimize energy when not required.



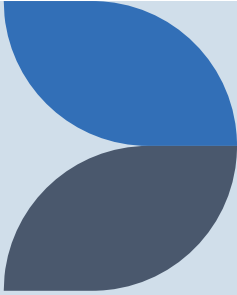




# RO Building

- A remarkable process of forcing water out from the salt water through a semi-permeable membrane.
- Designed in two floors, optimizes layout.
- Facilitates access and maintainability.

# Environmental, Social and Governance (ESG) Elements





# Environmental



Energy Recovery System



PV System





# Social

4D Cave



Smart Site for Safety

13/WSD/17 - Tseung Kwan O Desalination Plant



Smart Site Safety System(4S)



Share Area



**13/WSD/17**  
Design, Build and Operate First Stage of  
**Tseung Kwan O Desalination Plant**  
Newsletter | ISSUE 11 | Spring 2023  
View all issues  
QR code

**TKODP**  
CONSTRUCTION  
INNOVATION  
建造創新博覽會  
EXPO 2022

**CONTENT**

- D.2** Construction Innovation Expo 2022
- D.3** Director of Water Supplies  
Mr. Tony YAU Kwok-ting's Visit
- D.4** Safety Open Day for Workers  
Recycle - Safety Open Day for Workers
- D.5** Fundraising  
CIC Soccer
- D.6** Coming 3

**Director of Water Supplies  
Mr. Tony YAU Kwok-ting's Visit**  
Mr. Tony YAU Kwok-ting, Director of Water Supplies, visited the project site on 4 January 2023 to meet the project team and inspect the progress of the project.

**cycle - Used Red-pocket & Clothes**  
The project team has implemented a sustainable initiative of using used red-pockets and clothes in the site office.

**Newsletter**



# Governance



## Champion Group Meeting

# Awards

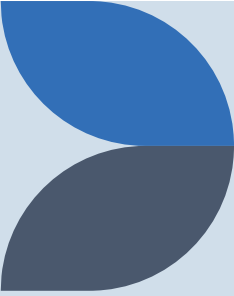
Organization	Award	
CIWEM HK 2023 Innovation Awards	First Runner Up	
Construction Industry Council Sustainable Construction Award 2023	Gold Award in Project Owner (Public Sector)	
Institution of Civil Engineers Edmund Hambly Medal 2023	Highly Recommended	
Hong Kong Award for Environmental Excellence 2021	Certificate of Merit	
Development Bureau and Construction Industry Council	27 <sup>th</sup> & 28 <sup>th</sup> Outstanding Environmental Management and Performance Awards (OEMPA)	
28 <sup>th</sup> Considerate Contractors Site Award	Innovation Award for Safety and Environmental Excellence — Gold Award	

# Awards

Organization Campaign	Award
Construction Safety Campaign The 22nd Construction Safety Award	Best Presentation Award — Best Safety Culture Activity Team by Occupational Safety & Health Council
BEAM Plus New Buildings V1.2 by The Hong Kong Green Building Council	Provisional Platinum rating
Hong Kong Green Organization (HKGOC)	Excellent level on Energywi\$e Certificate
Hong Kong Green Organization (HKGOC)	Excellent level on Wastewi\$e Certificate
Occupational Safety & Health Council	Joyful@Healthy Workplace Best Practices Award



# Sustainable DfMA (for RO Racks)







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