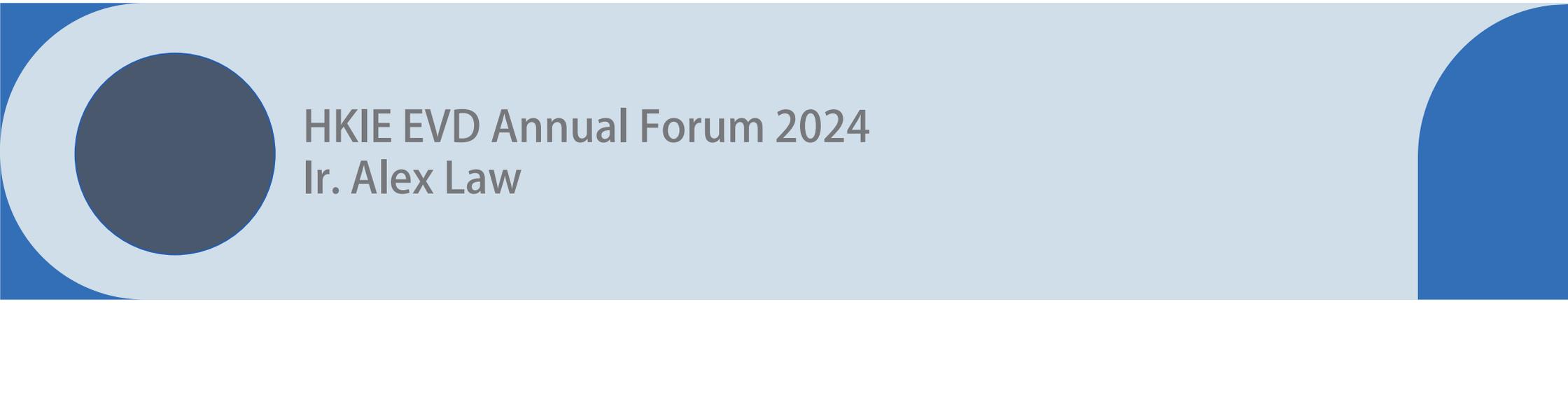


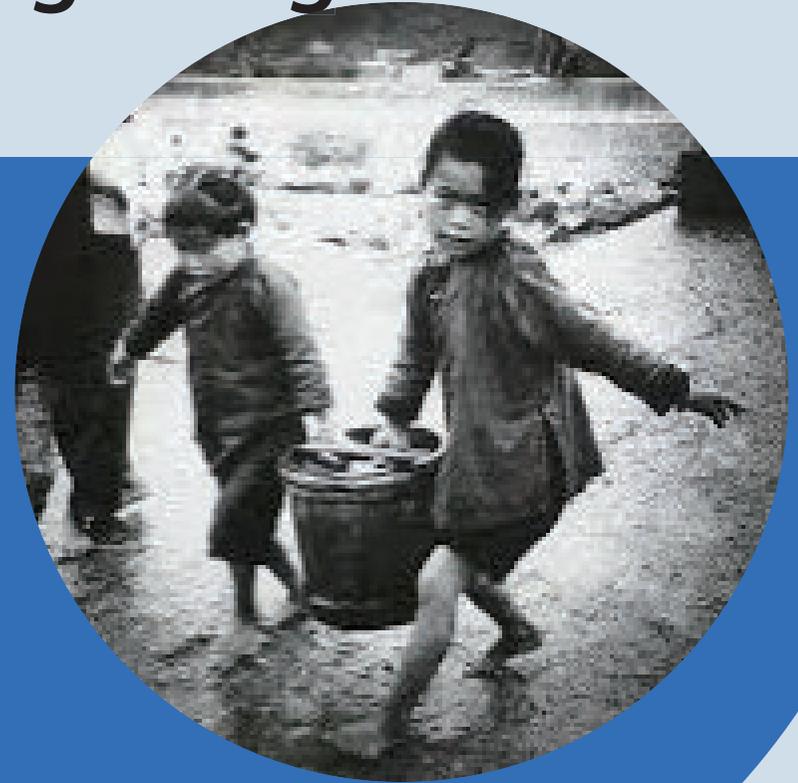


# New Source of Drinking Water for Hong Kong — Tseung Kwan O Desalination Plant



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%

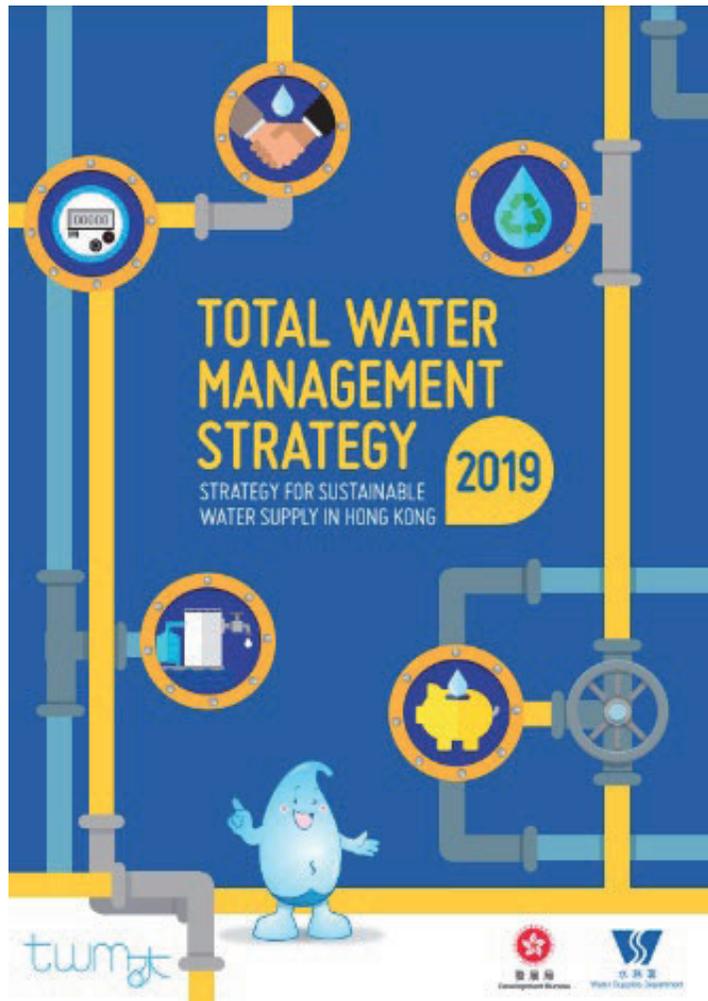


# Total Water Management



Shing Mun Reservoir





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

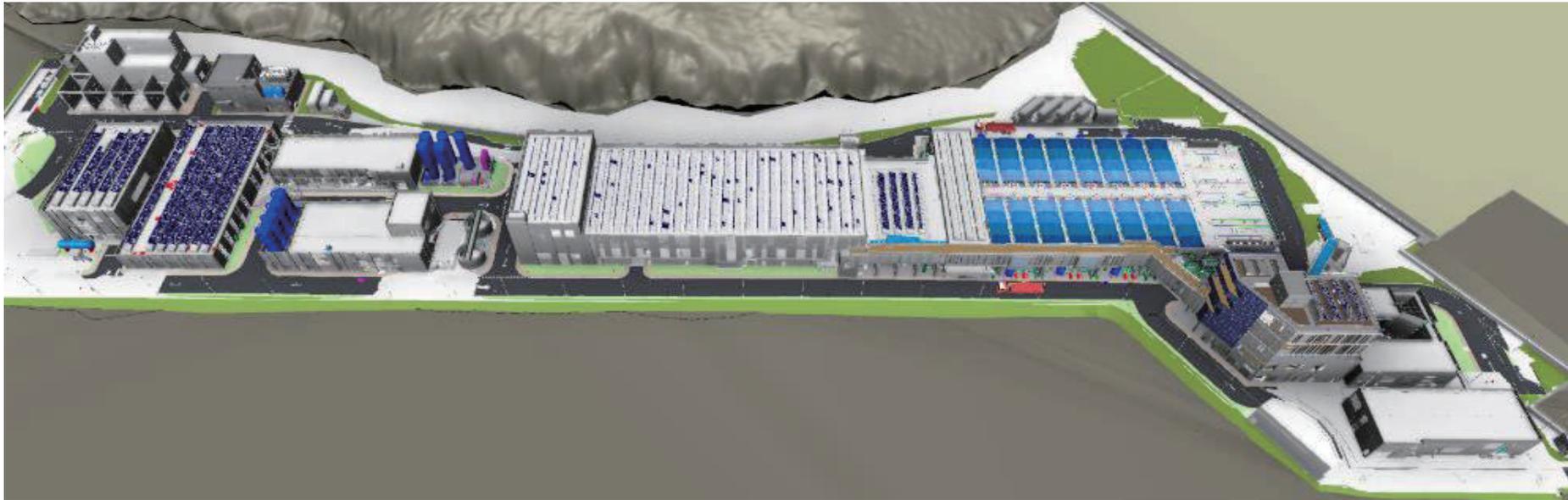
# Build resilience in fresh water supply

## 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



Newsletter

**CONTENT**

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

**Director of Water Supplies Mr. Tony YAU Kwok-ting's Visit**

**cycle - Used Red-pocket & Clothes**

# Governance



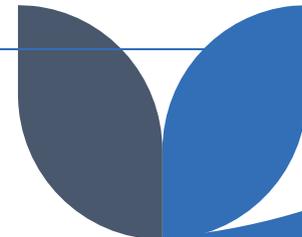
**Champion Group Meeting**

# Awards

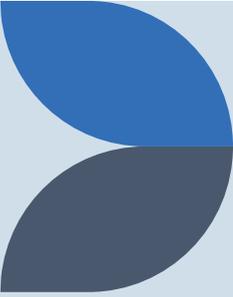
Organization	Award
CIWEM HK 2023 Innovation Awards 	First Runner Up 
Construction Industry Council Sustainable Construction Award 2023 	Gold Award in Project Owner (Public Sector) 
Institution of Civil Engineers Edmund Hambly Medal 2023 	Highly Recommended 
Hong Kong Award for Environmental Excellence 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
<p>Construction Safety Campaign The 22nd Construction Safety Award</p>	<p>Best Presentation Award — Best Safety Culture Activity Team by Occupational Safety &amp; Health Council</p>
<p>BEAM Plus New Buildings V1.2 by The Hong Kong Green Building Council</p>	<p>Provisional Platinum rating</p>
<p>Hong Kong Green Organization (HKGOC)</p>	<p>Excellent level on Energywi\$e Certificate</p>
<p>Hong Kong Green Organization (HKGOC)</p>	<p>Excellent level on Wastewi\$e Certificate</p>
<p>Occupational Safety &amp; Health Council</p>	<p>Joyful@Healthy Workplace Best Practices Award</p>



# Sustainable DfMA (for RO Racks)





**Thank you**



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