The District Cooling System in Hong Kong

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Climate Change



Climate Change





APEC



World Economic Forum



Economy Profiles

Hong Kong SAR

The Global Competitiveness Index 2017-2018 edition

Key indicators, 2016				
Population millions				7.4
GDP US\$ billions				320.7
Performance overview				
Index Component	Rank/137	Score (1-7)	Trend	Distance from bes
Global Competitiveness Index	6	5.5	_	
Global Competitiveness index				

Old Kai Tak Airport



Landing aircraft to old Kai Tak Airport

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CATHA

PACHE

'Hong Kong turn'

World's 10 most difficult airports for pilots

Old Kai Tak Airport



New Kai Tak Development

• Overall greening ratio of 30%

2nd Central Business District of Hong Kong

 Large scale of old district redevelopment from 1998

DCS in New Kai Tak Development

Complex re-development Multi building types Recreation areas

- 320 hectare
- 1.73 million m² air conditioning area
- Cooling capacity : 284 MW
- Pipes length: ~40km
- Project sum: HK\$4945 million (~JPY 68680 million / ~USD 634 million)

Significant annual saving:

- Electrical Saving ~85 million kWh
- CO₂ emission reduction 59,500 tonnes



Principle of DCS







Benefit of DCS







Energy saving

- Load Diversity
- Economies of scale

Increase reliability

Mitigate heat island effect and eliminate the noise and vibration

Benefit of DCS



Utilize low development potential land to build the plant room





Save spaces for more flexible building design

Achieve the overall greening ratio of 30% in KTD

Government roles



Promoter

Design – Build - Operate



Implementation of DCS

Standard & Guidelines





- Summarize the experiences
- Provide standard and guidelines
- Facilitate the implementation in New Development Area (NDA)

Kai Tak Development



Connecting DCS as one of Land Sale Conditions



The District Cooling Ordinance (Cap. 624)



District Cooling Services Tariff

Regulator

IIC Approach for Applying DCS

Innovative



Collaborative

10











Water Leakage Detection Cable







Approach Channel improvement

Approach Channel sea water for cooling



Enhancing water circulation at Kai Tak Approach Channel







TBM in Jacking Pit at 25m depth below ground level



Subsea Tunnel (350m) at Kai Tak Approach Channel



• Consider to adopt of Common Utility Enclosure (CUE) in critical locations such as local roads and major junctions with heavy traffic volume.

THE REPORT OF A LOSS OF

• Well coordination with other Utilities to avoid re-excavation of road for pipe laying works.

Feedback



DCS Energy

TOP ENTRY PANEL 1	PANEL 2	PANEL 3	PANEL 4	FANEL 5	PANEL 6	PANEL 7	PANEL 8			
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DCS Energy









DCS Energy

Total Plant Electricity Consumption (kWeh)



Total Cooling Consumption (kWrh)



Potential New Development Areas



Better Use of Resources





Lets Take off for our sustainable future Welcome your ideas and eager to collaborate with you Thank you





https://www.youtube.com/watch?v=_evMIhtohKg Search "District Cooling System at Kai Tak Development"

