



# NEC<sup>®</sup> Users' Group Annual Seminar 2014

*Dynamic Infrastructure  
and project delivery*

28 APRIL | LONDON

# NEC in Hong Kong



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**Deputy Director of Drainage Services  
Drainage Services Department**

**The Government of the Hong Kong Special Administrative Region**

**28 April 2014**

# Agenda



- 
- A high-speed train, likely a Shinkansen, is shown in motion on a track, with a green tint overlaying the image.
- Use of NEC in Hong Kong
  - Opportunities and Challenges
  - NEC Adaptation in Hong Kong

# Background



## Procurement of Projects in Hong Kong Government

### Stores and Procurement Regulations

- Works Contracts
  - Central Tender Board
  - General Conditions of Contract (GCC) (1999)
- Consultancy Agreements
  - Engineering & Associated Consultants Selection Board
  - General Conditions of Employment of Engineering and Associated Consultants (GCE) (1997)

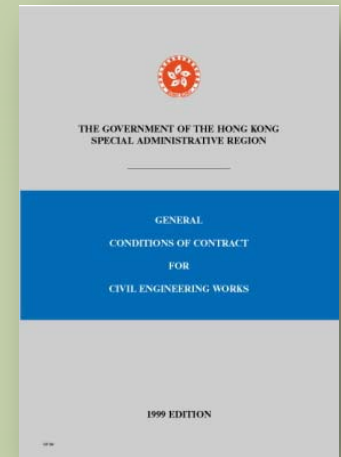
# Background



## General Conditions of Contract (GCC)

- A family for various types of works contract
- Based on ICE Conditions of Contract

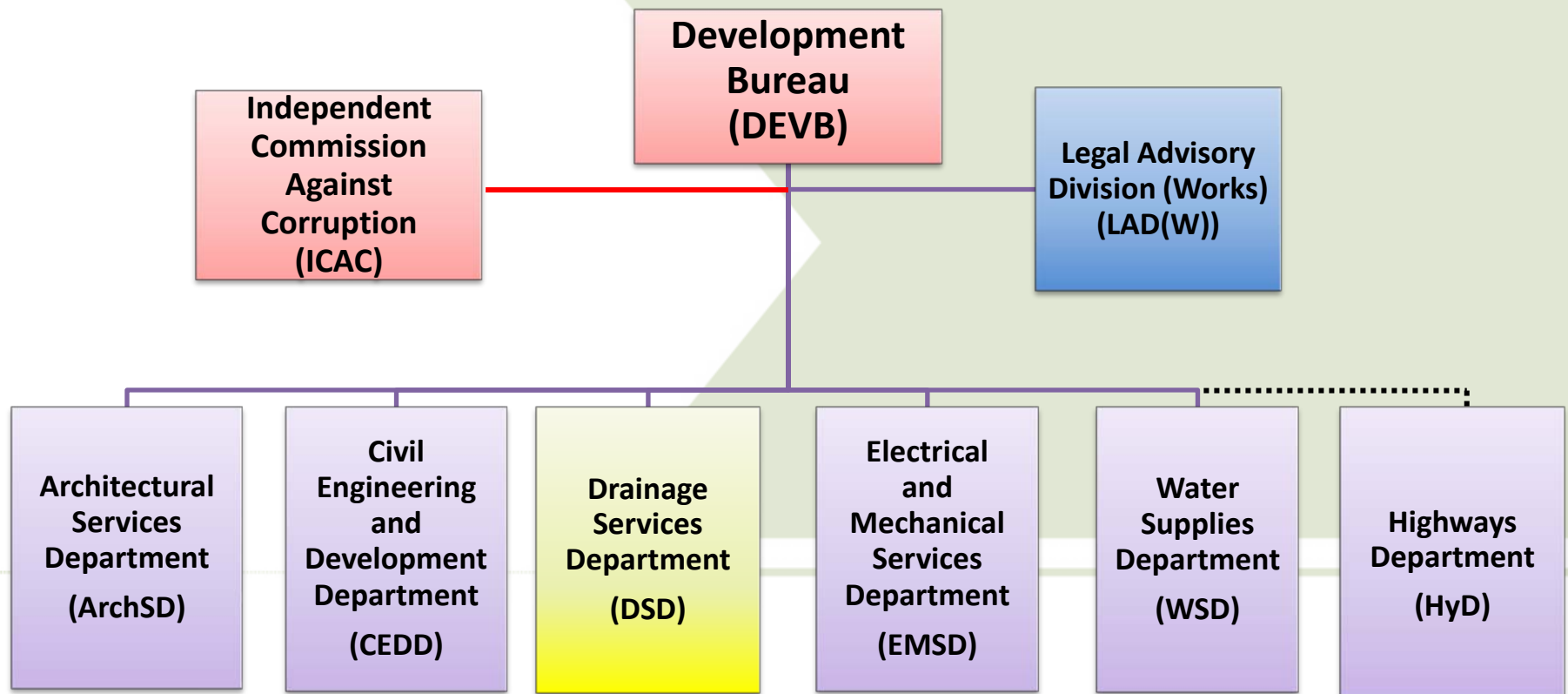
## General Conditions of Employment of Engineering and Associated Consultants (GCE)



# Background



## Works Departments in Hong Kong



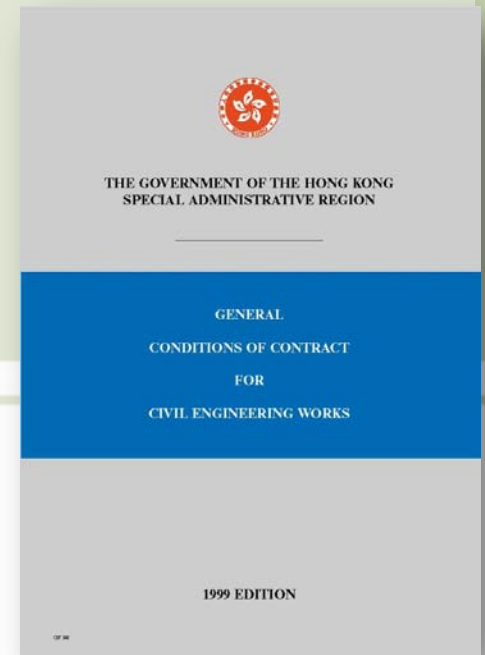
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# Background



- General Conditions of Contract (GCC)
  - Higher risks allocated to Contractor
  - Higher chance of dispute
  - Adversarial





# Background



- *Construction Industry Review Committee (CIRC) Report – January 2001*

## **“Construct for Excellence”**

- Partnering
- Integrate partnering to contractual relationship
- Alternative payment methods  
e.g. target cost, pain-gain share





# Background



## ■ *From 2001*

- Non-contractual partnering
- But under adversarial contract form

## ■ *In 2006, Hong Kong Government Decided to Take One Step Further*

- Adopt NEC3 – contractual partnering
- DSD – 1st works department for pilot trial on NEC ECC



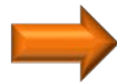
# 1st NEC Contract in DSD and in Hong Kong Government



## Planning of 1<sup>st</sup> NEC Contract in DSD



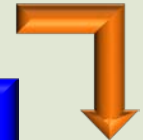
Engage NEC Advisor  
(Oct 2006)



Steering Committee (2007)



NEC Working Group  
(2007)



Seek Advice on  
legal and  
administrative  
measures  
(2007-2009)



Seek Advice on  
anti-corruption  
from ICAC  
(2007-2009)



香港建造商會  
Hong Kong Construction Association

Consult Hong Kong  
Construction  
Association, Organize  
NEC Workshops and  
Dummy Tender Exercise  
(2009)

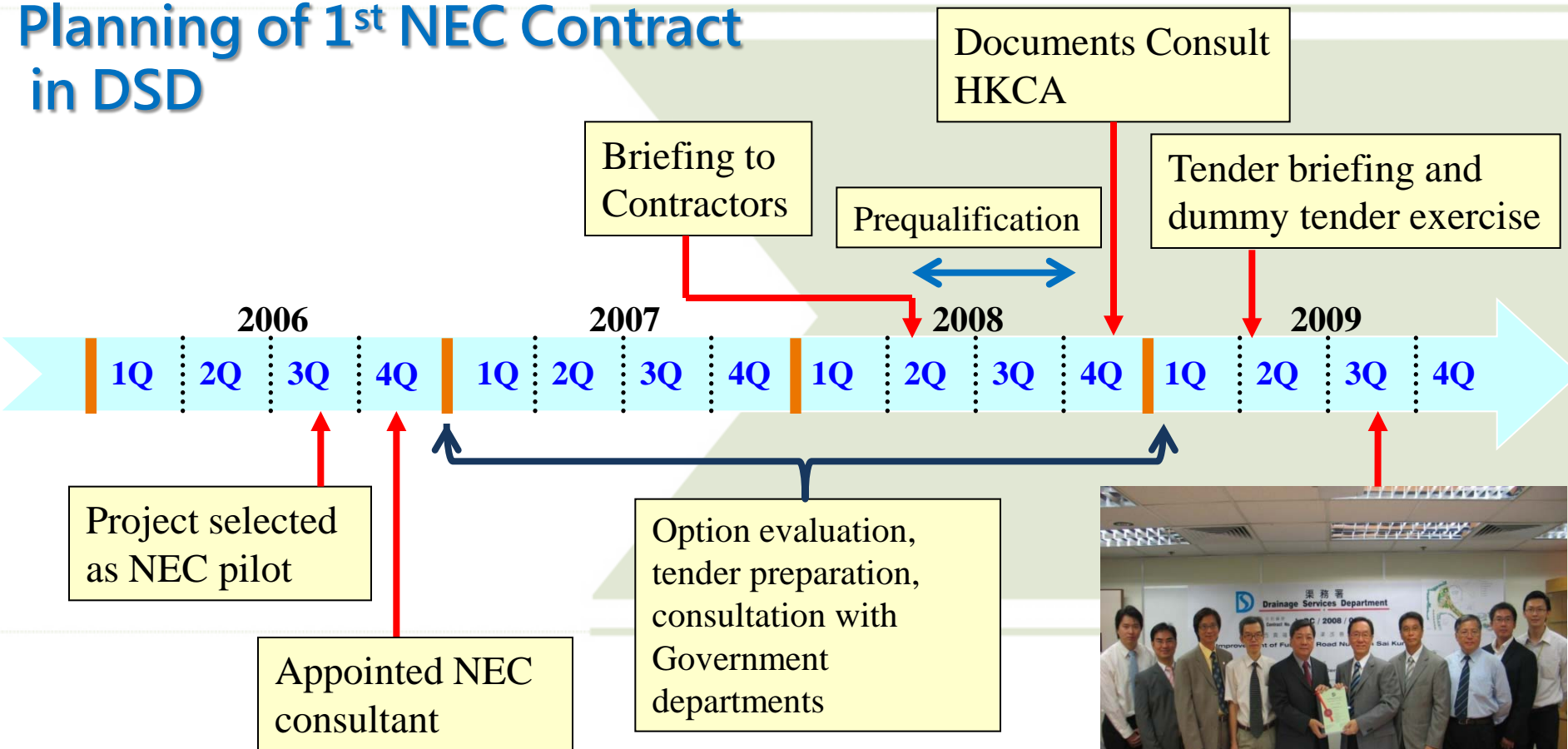


Work Contract Signing  
(Aug 2009)

# 1st NEC Contract in DSD and in Hong Kong Government



## Planning of 1<sup>st</sup> NEC Contract in DSD



# 1st NEC Contract in DSD and in Hong Kong Government



- ***Improvement of Fuk Man Road Nullah in Sai Kung***
  - Decking 180m long 12m wide open nullah, road and landscaping works



Success in: Early completion by 6 months  
Gain share of ~ 5%  
Working relationship  
Public Image



# 1st NEC Contract in DSD and in Hong Kong Government



## Feedback from Public

- “DSD, Contractor and Consultant have put great effort in **enhancing communication** with local stakeholders and presenting progress of works to District Council members. ‘**More communication, fewer problems**’ - I do appreciate this new thinking approach”

Ng Sze-fuk, SBS, JP

Chairman

Sai Kung District Council



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# NEC Contracts in Hong Kong



## DSD's current NEC Contracts

Contract / Agreement No.	Contract / Agreement Title	Contract Sum	Nature	Start / Completion	NEC Contract
DC/2008/02 <i>Consultant</i>	Improvement of Fuk Man Road Nullah in Sai Kung	\$76M	Nullah Decking	Aug 2009 / May 2012 (C)	<b>ECC Option C</b>
DC/2012/09 <i>Consultant</i>	Pak Hok Lam trunk sewer and Sha Tau Kok village sewerage	\$203M	Village sewerage	June 2012 / Aug 2016	Framework + ECC Option B
DC/2012/03 <i>In-house</i>	Happy Valley underground stormwater storage scheme	\$678M	Flood prevention	Sept 2012 / Apr 2018	<b>ECC Option C</b>
DC/2012/05 <i>Consultant</i>	Yuen Long and Kam Tin Sewerage	\$160M	Village sewerage	Sept 2012 / Sept 2016	<b>ECC Option D</b>
DC/2012/07 <i>Consultant</i>	Lam Tsuen village sewerage	\$173M	Village sewerage	Oct 2012 / Jan 2016	<b>ECC Option B</b>
DC/2012/01 <i>In-house</i>	Building and Civil Maintenance to DSD plant and facilities	\$160M	Maintenance	Dec 2012 / Nov 2016	<b>TSC Option A</b>
DE/2013/05 <i>In-house</i>	E&M Facilities for Sewage Pumping Stations	\$18.5M	E&M	Mar 2014 / Sep 2015	<b>ECC Option C</b>
CE 63/2013 <i>Consultant</i>	Drainage Improvement Works in Happy Valley	\$8.9M	IDC Consultancy	Apr 2014 / mid 2019	<b>PSC Option G</b>

# DSD R&D Forum 2013 – NEC

(28-11-2013)





# NEC Contracts in Hong Kong



## Overall

- 17 ECC contracts by end 2013
- DEVB's policy:
  - Extend pilot on NEC form in 2015 and 2016

## *In the Pipeline*

	ECC – Construction Contracts			PSC - Consultancy		
	2014	2015	2016	2014	2015	2016
DSD	7	27	13	1	2	4
All works departments in Hong Kong	13	48	43	5	4	6



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# Opportunities



## ■ *Risk Management*

- Risk register
- Early warning notice
- Risk reduction meetings



Extract from LegCo  
Development Panel  
Information Paper  
CB(1)925/13-14(03)  
dated 25.2.2014  
- Challenges in Delivery  
of the Capital Works  
Programme

### *Risk Management by Contractual Partnering: NEC*

30. For better risk management, Government has been using the New Engineering Contract (NEC) form, which emphasizes mutual trust and co-operation between the contracting parties, in some pilot public works contracts. The NEC form allocates contractual risk to the party best able to manage it. Moreover, it provides a collaborative risk management mechanism to reduce the chance of risk occurrence as well as mitigating the consequence when the risk is materialized. The sharing and management of risk in the NEC form could help reduce the cost to the project due to materialization of the risks.



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# Opportunities



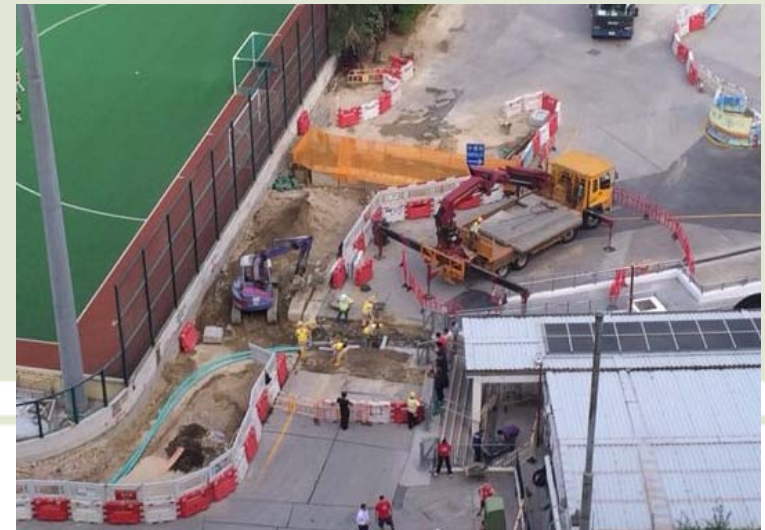
## ■ *Early Risk Identification & Timely Joint Problem Solving*

### Risk

- Conflict with HEC cables
- Progress hampered
- Impact on horse racing

### Joint Problem Solving

- Joint advance planning
- Secured HKJC's agreement on TTA
- DSD's/HKJC's/HEC's contractors collaborated in cable diversion



Diversion of HEC's Cable  
by Joint Efforts

# Opportunities



## ■ *Early Warnings and Risk Reduction*

Contract No.	No of Early Warning Notice Issued	No of Risk Reduction Meeting Held	No of Early Warning Notice Resolved
DC/2012/09	23	9	8
DC/2012/03	28	18	22
DC/2012/05	41	49	36
DC/2012/07	15	11	11
DC/2012/01	10	3	10

# Opportunities



## ■ *Cost Control*

- Prospective compensation events
- Less dispute
- Early finalisation

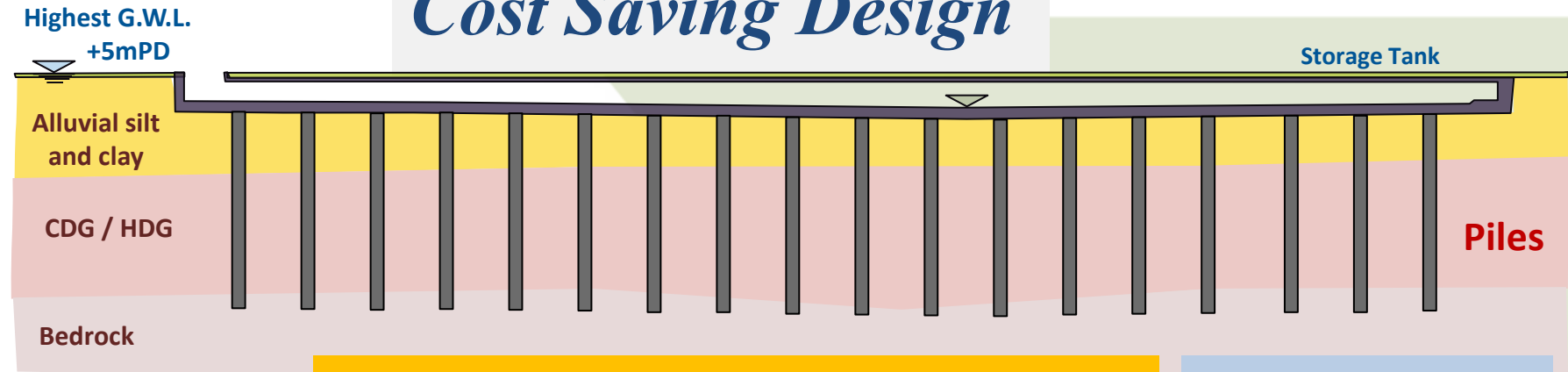
Contract No.	No of CE notified	No of CE agreed
DC/2012/09	24	19
DC/2012/03	78	33
DC/2012/05	31	28
DC/2012/07	30	29
DC/2012/01	5	5



# Opportunities



## Cost Saving Design



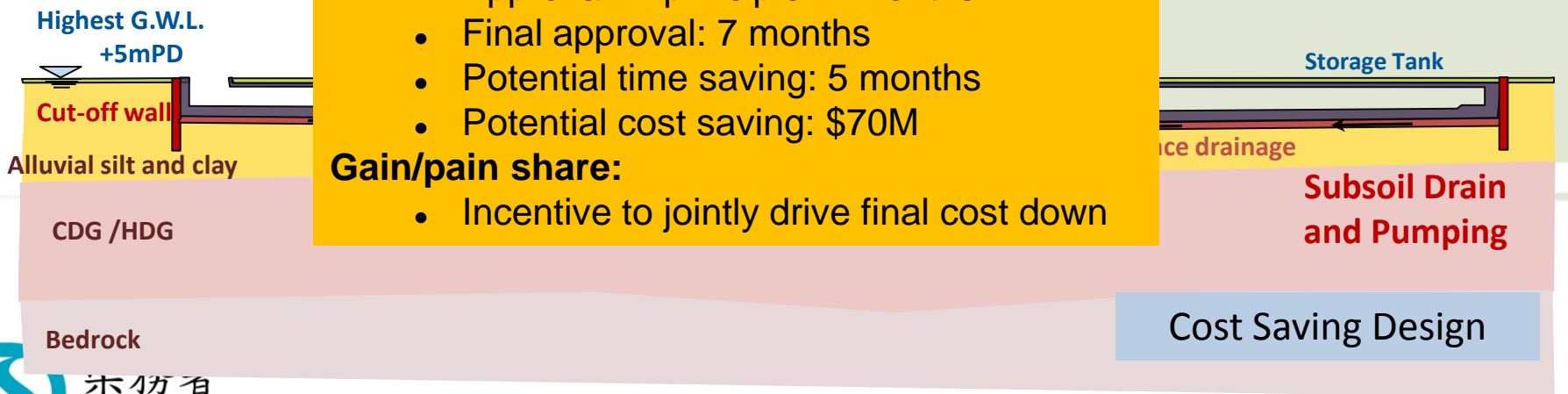
### Early Approval

- Approval-in-principle: 2 months
- Final approval: 7 months
- Potential time saving: 5 months
- Potential cost saving: \$70M

### Gain/pain share:

- Incentive to jointly drive final cost down

### Original Design



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# Opportunities

## ■ *Staff Morale*

- Team spirit / harmony
- Stakeholders' satisfaction
- Achievement

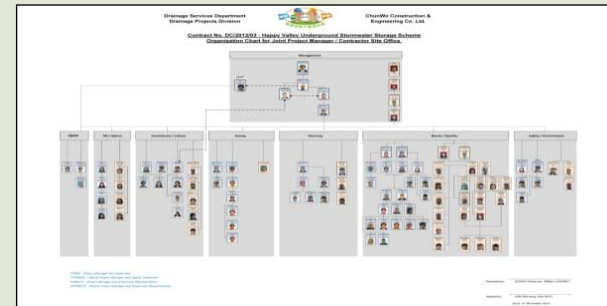


DSD / Contractor

Site Housekeeping Award 2013



Mobile Messenger Device



Joint Organization Chart



Stakeholders Workshop:  
District Council members, HKJC, LCSD,  
Contractor, Subcontractors





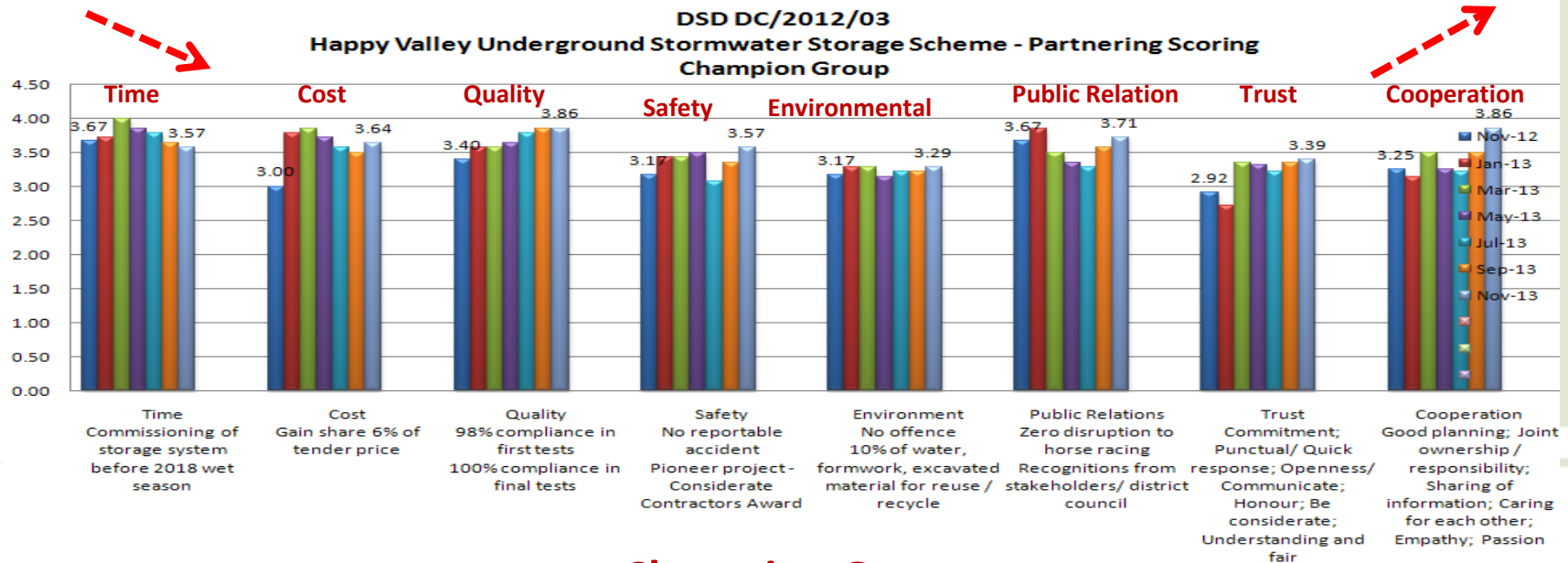
# Opportunities



## Partnering Scores

**Down Trend**  
(due to increased difficulties on site)

**Up Trend**  
(after some success cases)



**Champion Group**

# Challenges



## ■ *Lack of Knowledge / Experience*

- Form of contract
- Contractual terms
- Administrative procedure
- Programming
- Cost accounting



# Challenges



## ■ *Resource Demanding*

- NEC advisory and project management
- Programming and costing
- Early intensive resources



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# Challenges



## ■ *Inherent Culture in All Levels*

- Status quo
- Risk averse
- Personal conviction/belief
- Greed
- Bureaucracy



# Challenges



## ■ *Trade Practices*

- Preferred subcontractors
- Pre-bidding
- Open book accounting
- Tactical pricing
- Windfall profit



# Challenges



## ■ *Scepticism*

- Purpose
- Accountability
- Liability
- Integrity
- Sustained effort

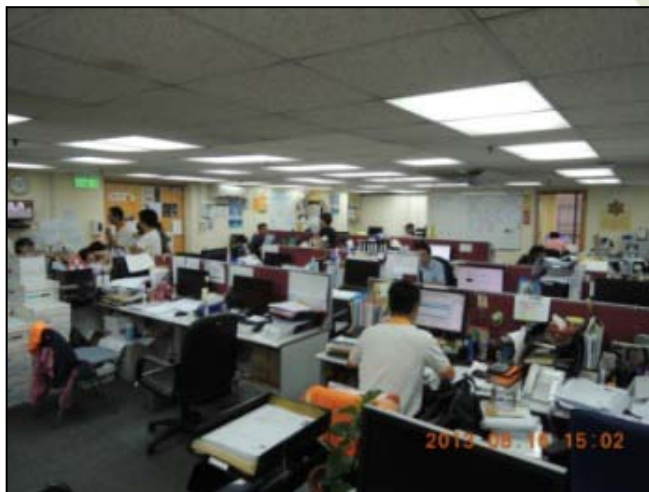




# NEC Adaptation in Hong Kong



## ■ *Promote Partnering*



Joint Site Office



Birthday Party



Dragon Boat Racing Team





# NEC Adaptation in Hong Kong



## ■ *Inclement Weather*

- Replace ECC Core Clause 60.1(13) by
  - (i) inclement weather and/or its consequences adversely affecting the progress of the *works*, or
  - (ii) the hoisting of tropical cyclone warning signal No. 8 or above, or
  - (iii) a Black Rainstorm Warning.

# NEC Adaptation in Hong Kong



## ■ *Hierarchy Clauses*

- For any ambiguity or inconsistency between any provision or document
- Adopted in PSC contracts
- Consider to be adopted in future ECC contracts

# NEC Adaptation in Hong Kong



- ***Independent Administration and Cost Audit***

- Audit NEC practices
- Cost audit

- ***Financial Control and Auditing***

- Two-tier Payment Auditing Mechanism

# NEC Adaptation in Hong Kong



## ■ *Dispute Resolution*

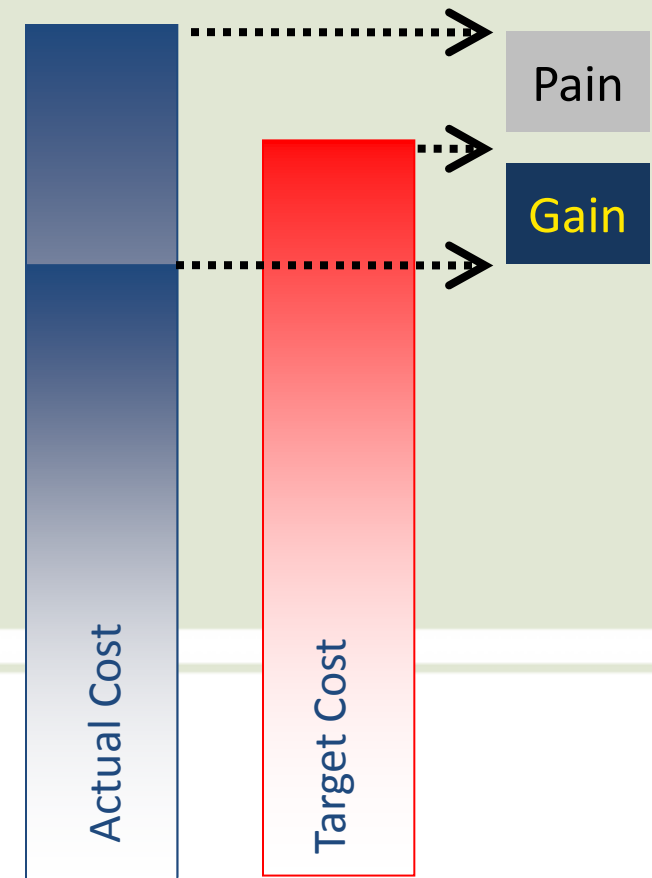
- NEC standard Dispute Resolution Options W1 and W2 not adopted in Hong Kong
- Hong Kong government's dispute resolution provisions added as Z-clauses
  - Mediation
  - Adjudication
  - Arbitration

# NEC Adaptation in Hong Kong



## ■ *Pain-gain Share Mechanism*

- Pain – cap at 110% for Employer
- Gain – no cap



# NEC Adaptation in Hong Kong



## ■ *Cash Positive to Cash Negative*

### ■ ECC Core Clause 11.2 (29)

“The Price for Work Done to Date is the total Defined Cost which the *Project Manager* ~~forecasts will have been paid by the Contractor before the next assessment date~~ plus the Fee.”

← assesses the *Contractor* has paid at each

### ■ Pay when paid



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# NEC Adaptation in Hong Kong



## ■ *Subcontracting*

- ACC Cl. C10 - Tender requirements for subcontracting
  - Different levels of procurement authority
  - More Project Manager's involvement
  - List of approved contractors / suppliers for sub-contracts >HK\$4.0M

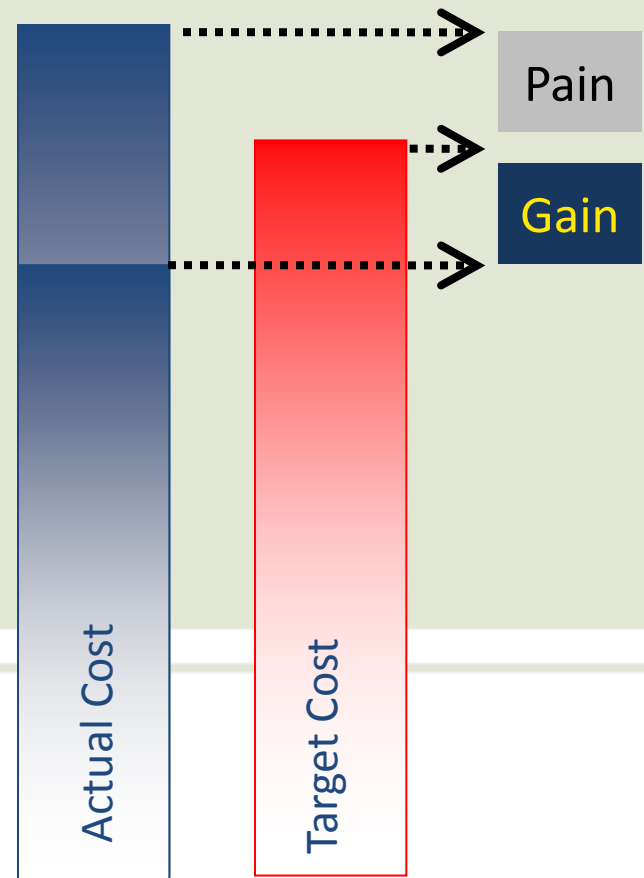


# NEC Adaptation in Hong Kong



## ■ *Further Pursuit for Full Benefit*

- Options E & F
- Incentive
- Cash positive payment
- Pain/gain share methodology
- Sub-contracting



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# Thank You