



渠務署

Drainage Services Department



Collaborative Value-engineering Management

in

Happy Valley Underground Stormwater Storage Scheme



LUK Wai-hung
Drainage Services Department

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 - **Team Building**
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Project Background

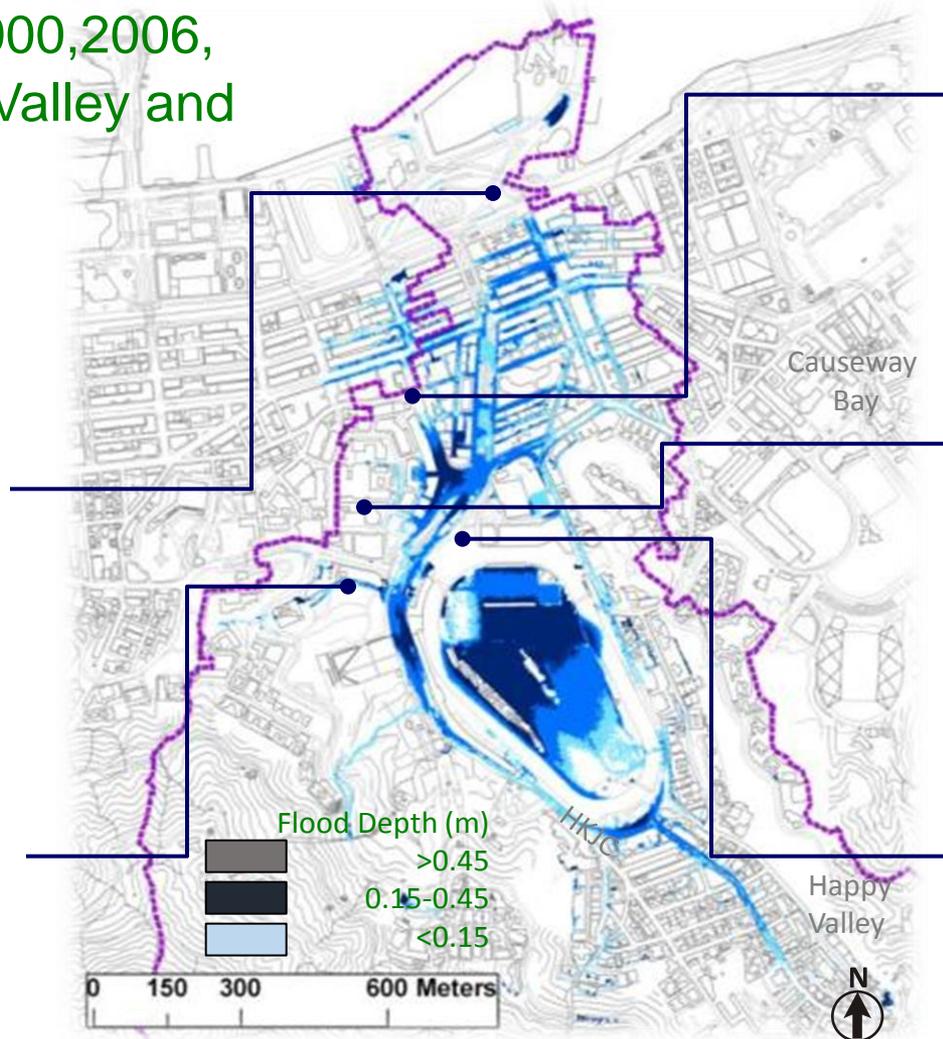
THE PROBLEM - FLOODING

Over 26 ha of land was **flooded** in 2000, 2006, 2008 in Happy Valley and Causeway Bay

Lap Tak Lane



Wong Nai Chung Rd



Percival Street



Queen's Road East



Happy Valley Recreation Ground and Race Course

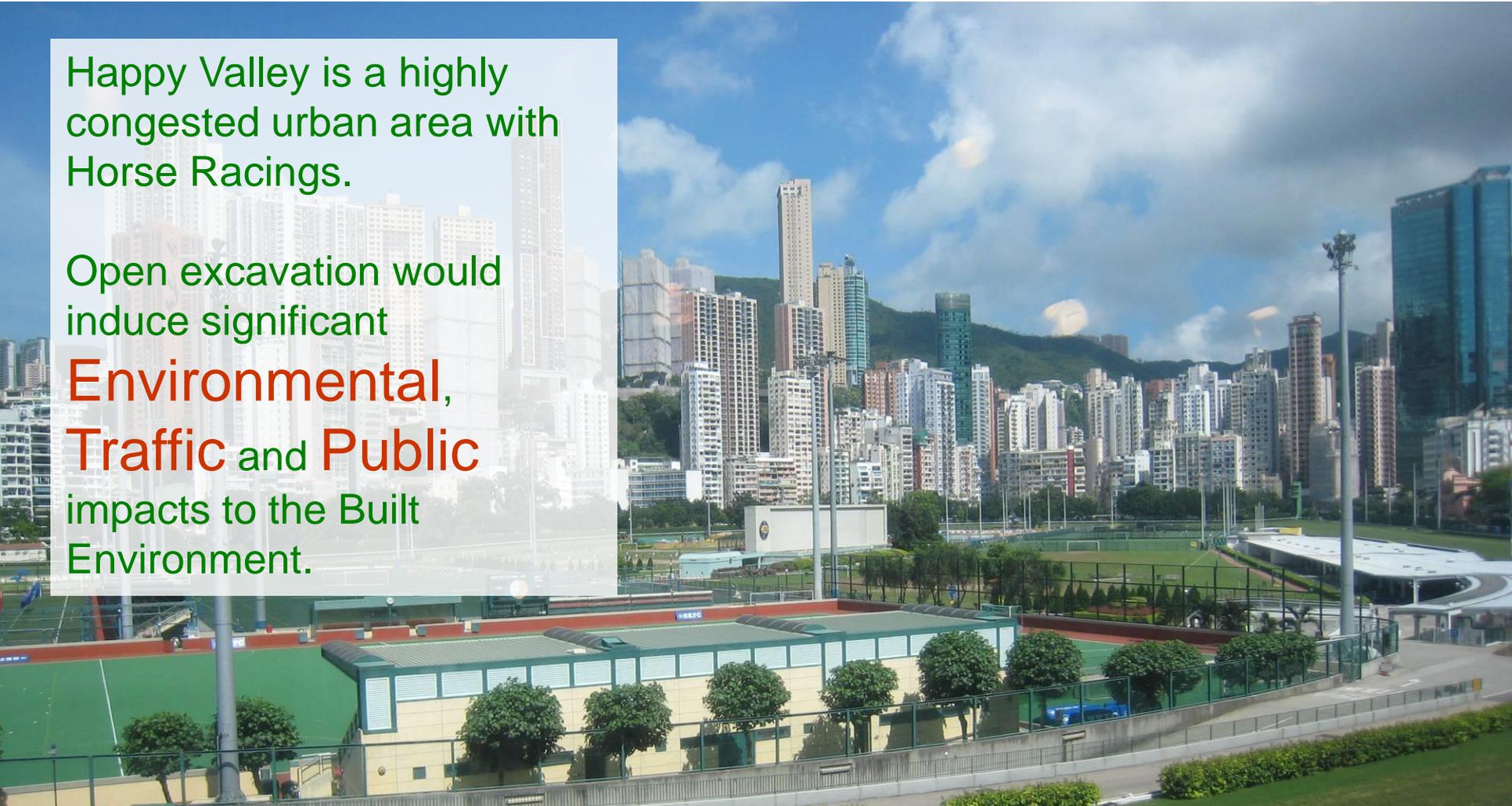


THE CONCERN

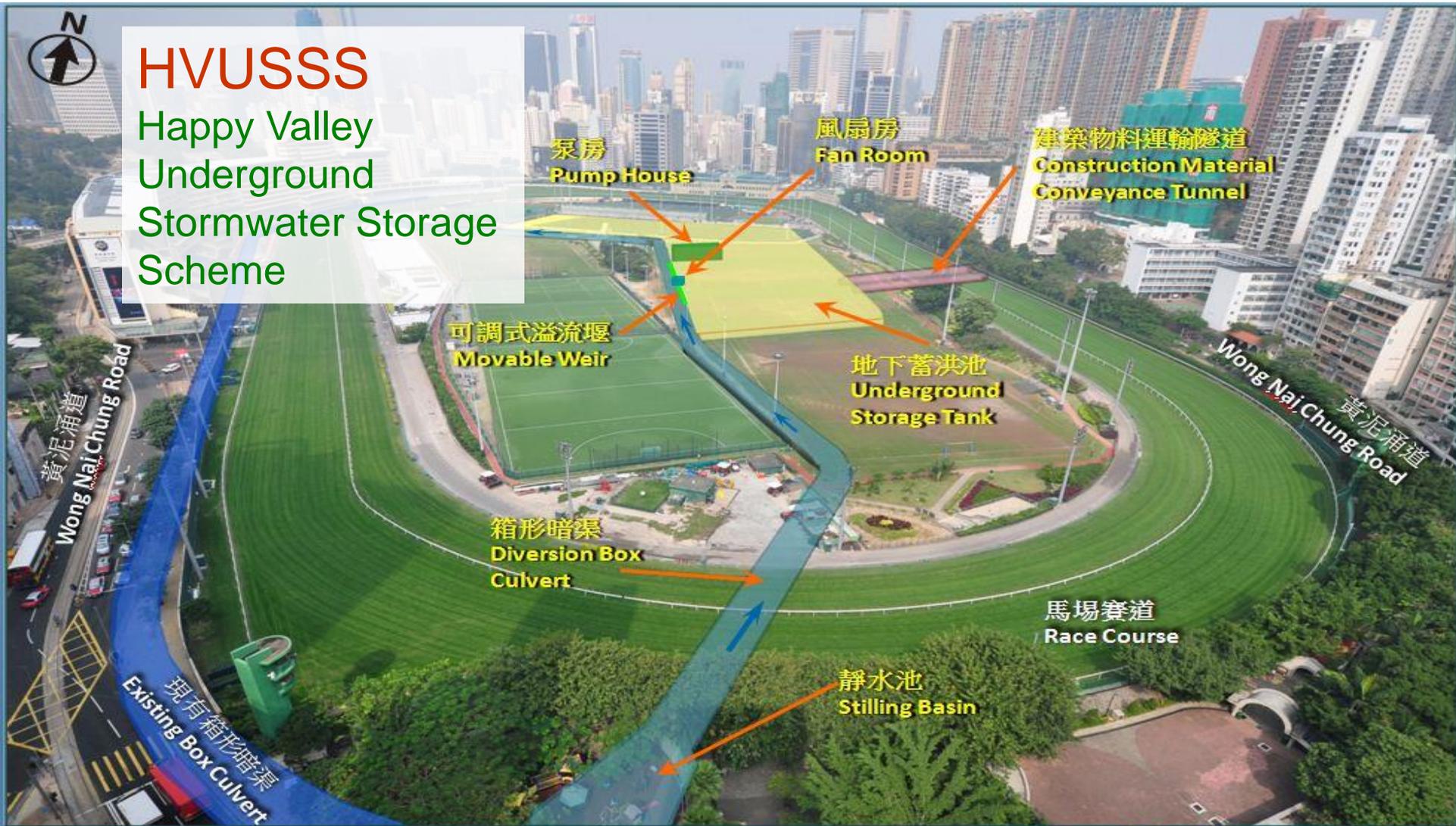
Happy Valley is a highly congested urban area with Horse Racings.

Open excavation would induce significant

Environmental,
Traffic and **Public**
impacts to the Built
Environment.



THE PROJECT- HVUSSS



THE CONTRACT



Contract No.	DC/2012/03
Contract Name	Happy Valley Underground Stormwater Storage Scheme
Employer	Drainage Services Department
PM/Supervisor	Chief Engineer/DPD, DSD
Scope of Works	Construction of storage tank, box culvert, pump house
Original Target Cost	HK\$ 678M
Duration	Sep 2012 – April 2018 (64 months)
NEC3 Option	Option C – Target contract with activity schedule
Contractor	Chun Wo Construction & Engineering Co. Ltd.
QS Consultant	Mott MacDonald Hong Kong Limited
NEC Advisor	Arcadis / JCP

NEC3 Cl. 10.1:

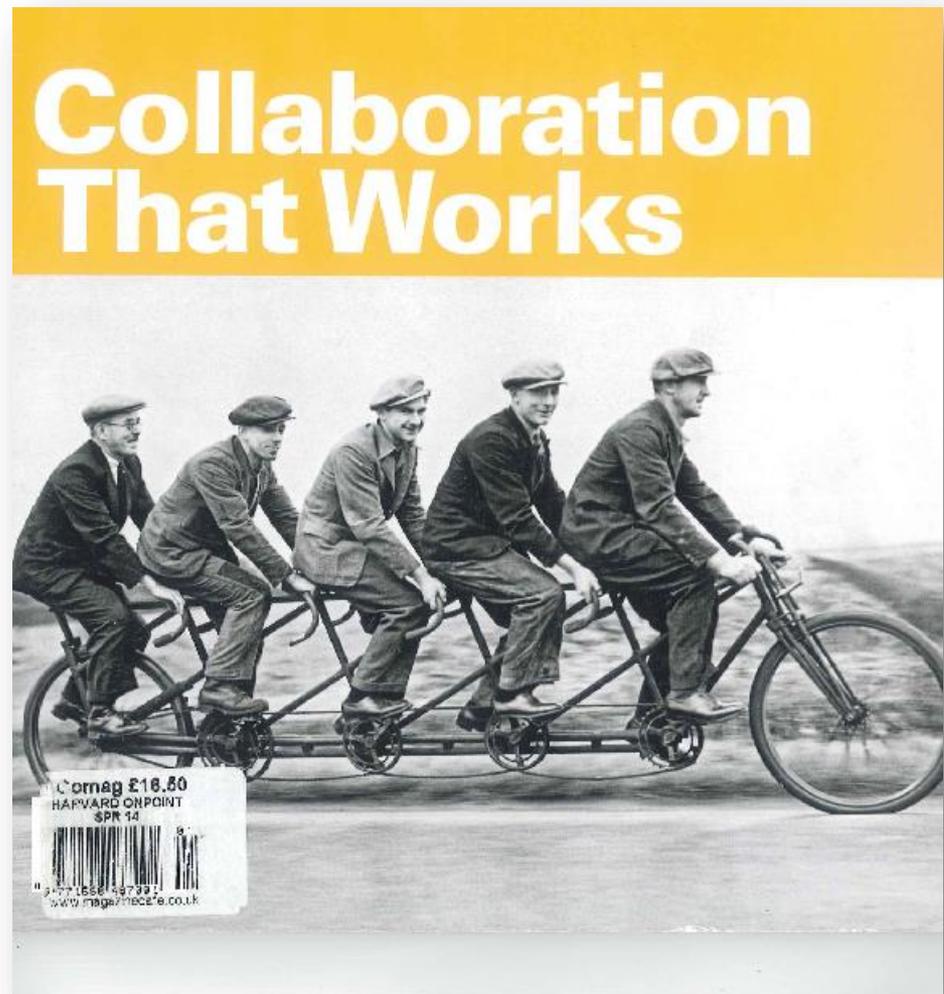
Mutual Trust and Cooperation

among
Employer,
Project Manager,
Supervisor, Contractor,.....



Employer
Project Manager
Supervisor
Contractor
Sub-contractor
Stakeholders
Consultants

.....



Collaboration



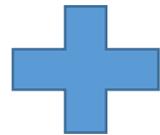
NEC3 :

Risk Management

Programme Management

Compensation Events

Open Book Account



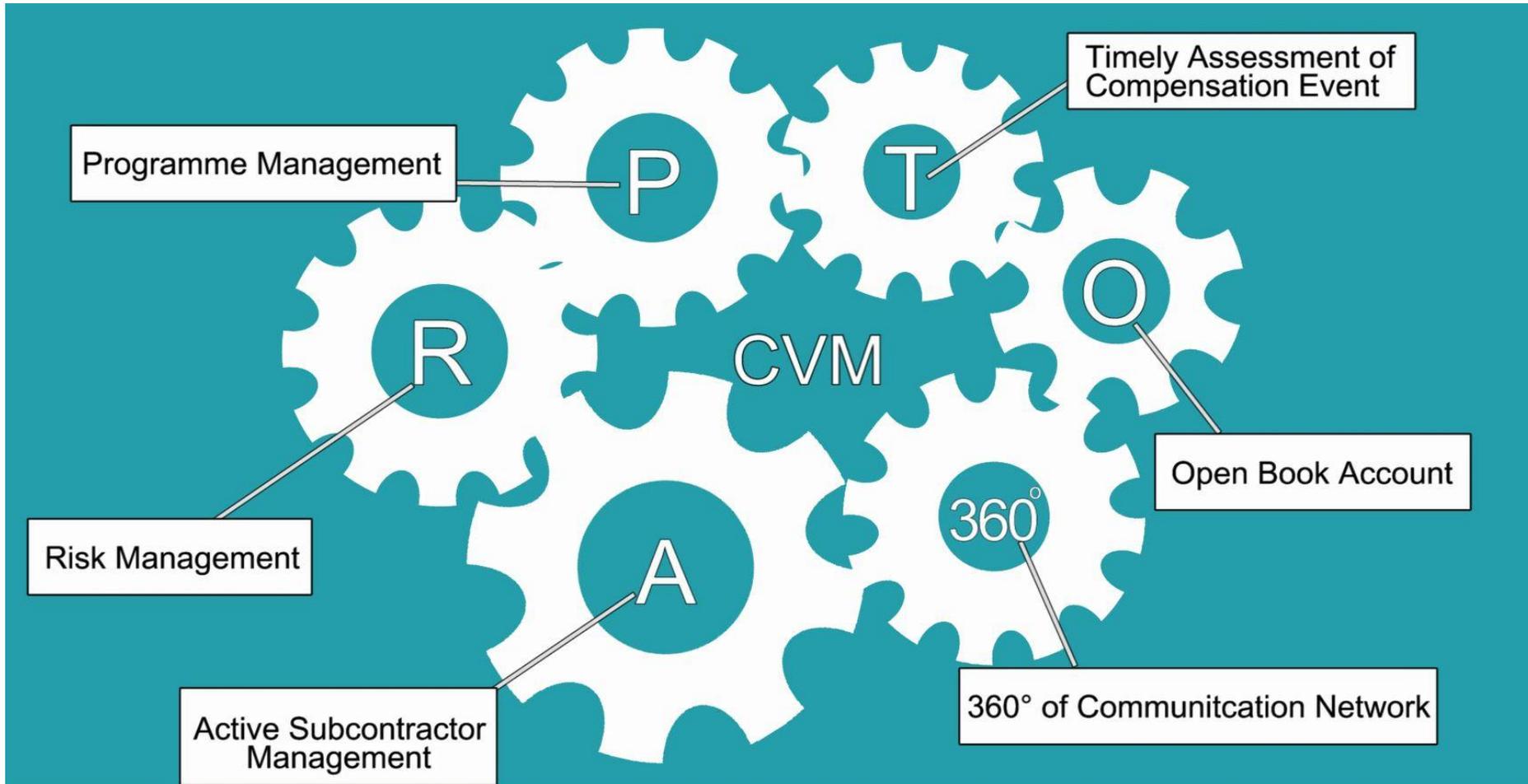
360° Communication

Active Subcontractor Management



***Collaborative Value-engineering
Management***

Collaborative Value-engineering Management (CVM) in HVUSSS



Click to show Video...



In CVM,
we develop mutual trust and cooperation
by 360° communication network

Team Building



360° Communication Network

36
WhatsApp
Groups
in different
categories



Stakeholders Workshop

District Council members,
HKJC, LCSD, Contractor,
Subcontractors...



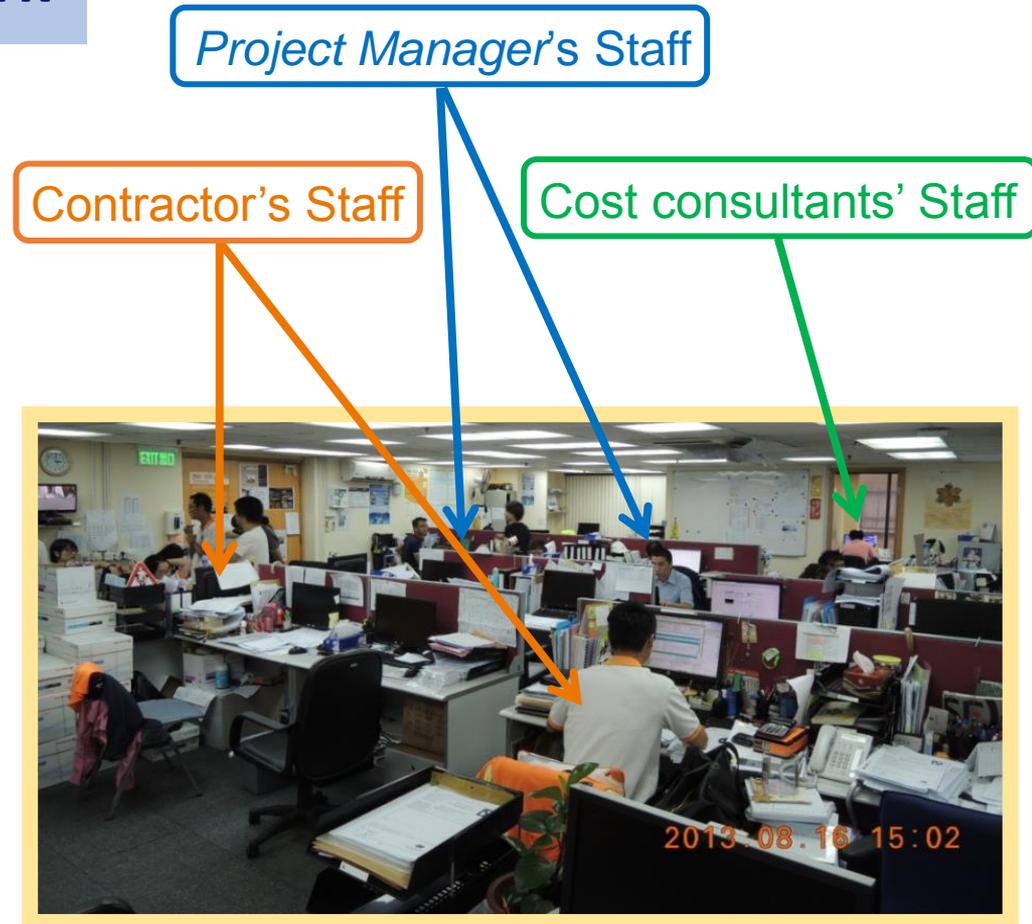
Team Building



360° Communication Network



Morning Briefing



Joint Office



Team Building



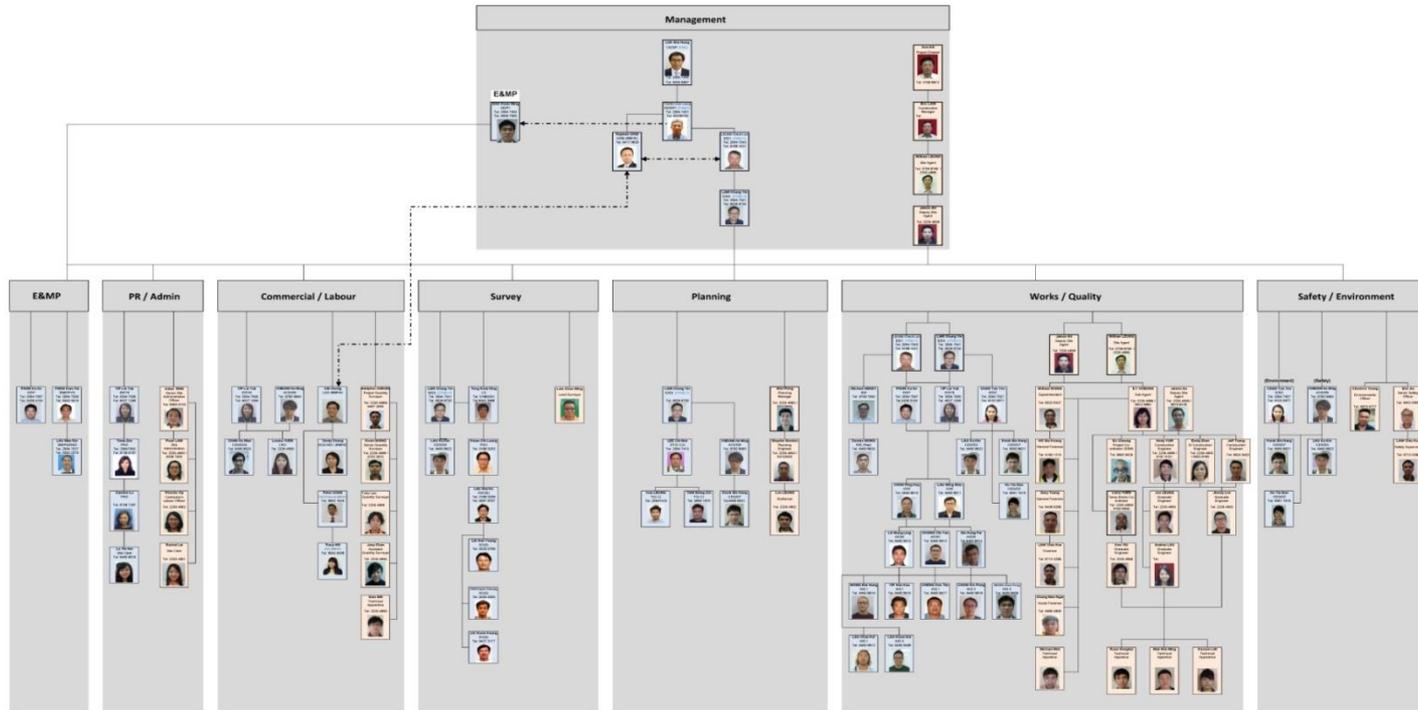
360° Communication Network

Drainage Services Department
Drainage Projects Division



ChunWo Construction &
Engineering Co. Ltd.

Contract No. DC/2012/03 - Happy Valley Underground Stormwater Storage Scheme
Organisation Chart for Joint Project Manager / Contractor Site Office



DSECO - Drainage Services and Construction



Joint Organization Chart

In CVM,
we promote value-engineering by
utilizing tools in NEC Contract

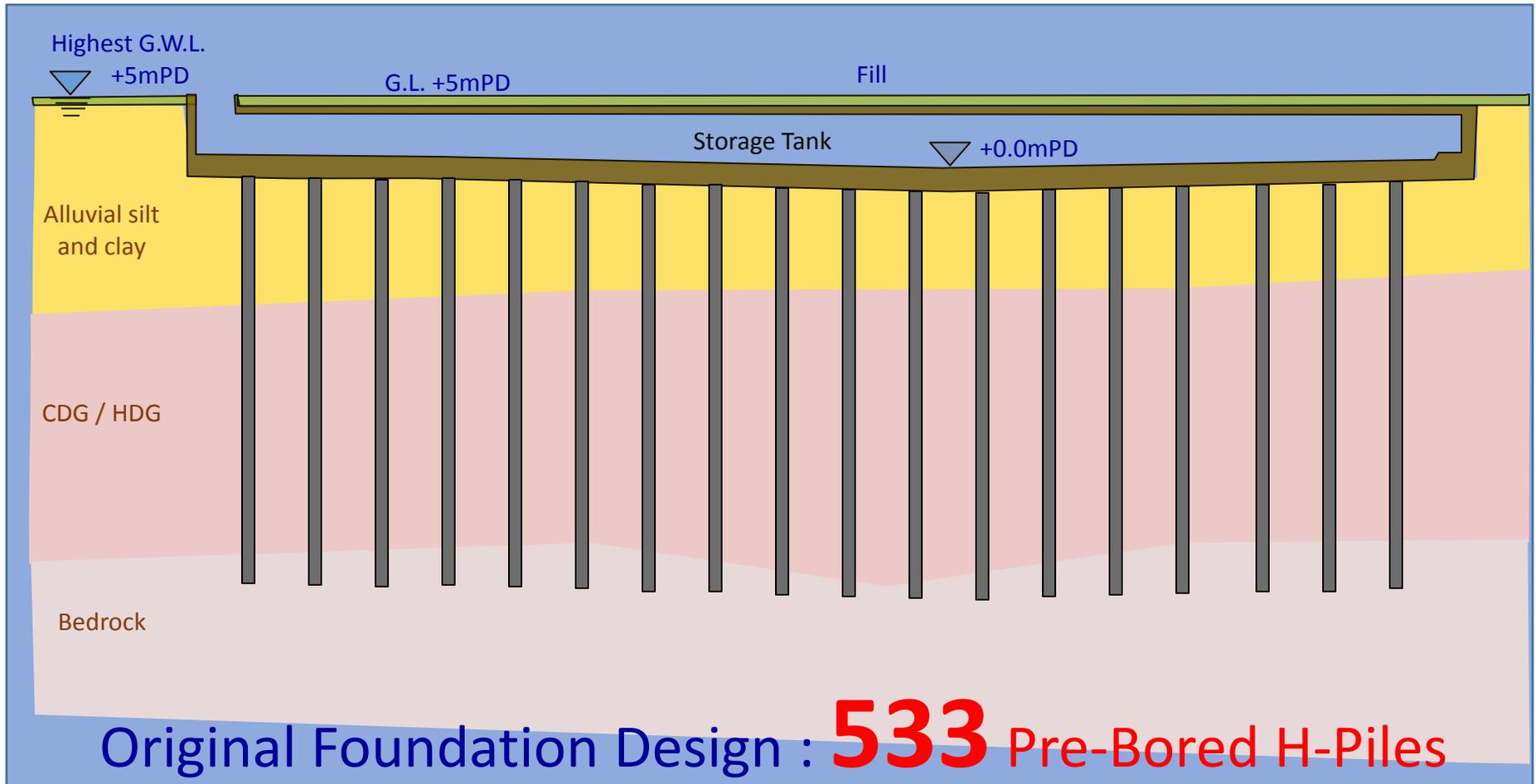


Value-engineering



Pain/ Gain Share by Open Book Account

Initiative for Contractor to propose Cost-saving Design

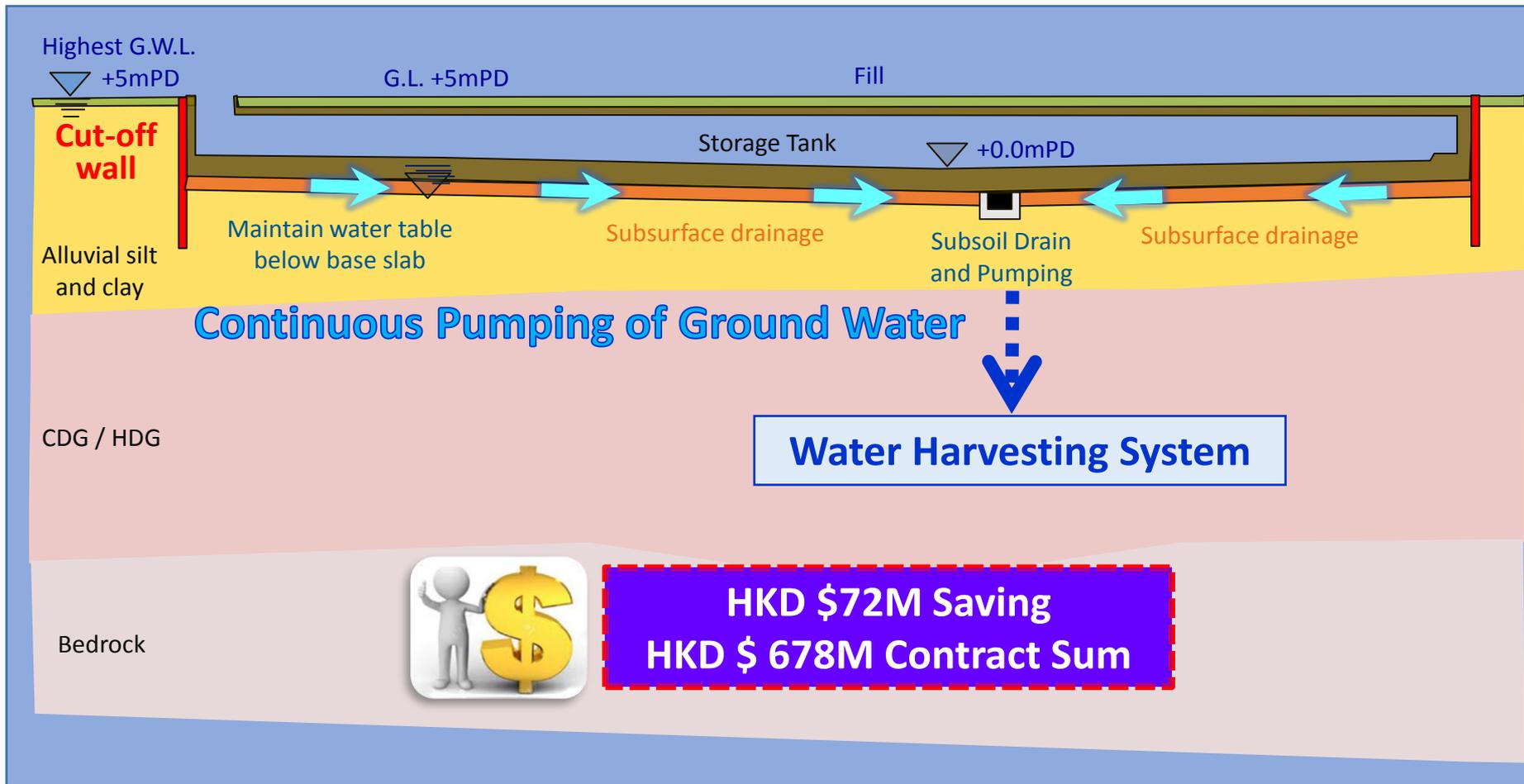




Value-engineering



Pain/ Gain Share by Open Book Account



Cost Saving Design: **Cut-off Wall / Sub-surface Drainage System**



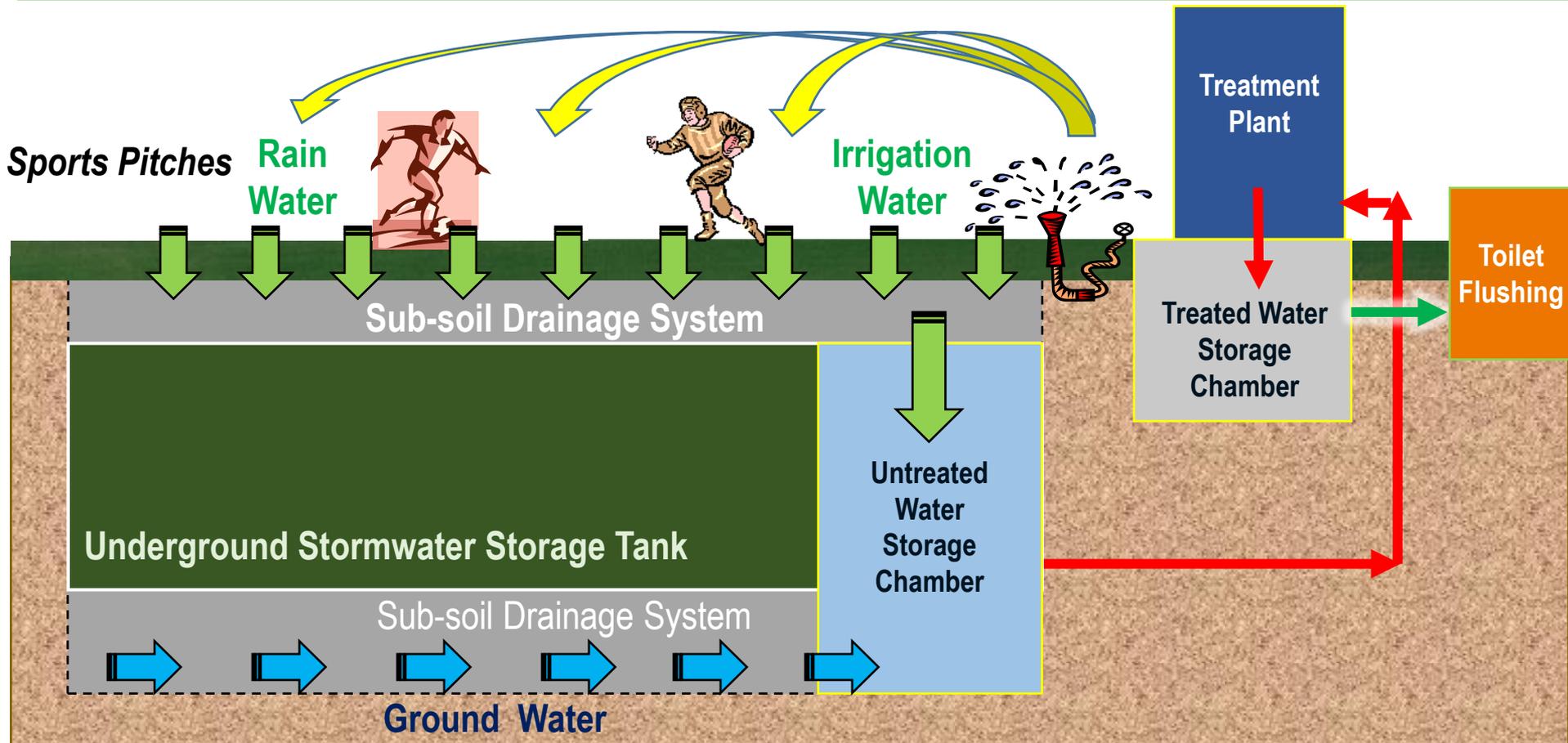
Value-engineering



Timely Assessment of Compensation Event

CE about Water Harvesting System

was issued within **one month** with **no abortive works**



Active Subcontractor Management

Concerns on Target Contract:

- ? *Cost of work by subcontractor is reimbursable*
- ? *Contractor may have no incentive to selective most competitive offer*

Control Measures on

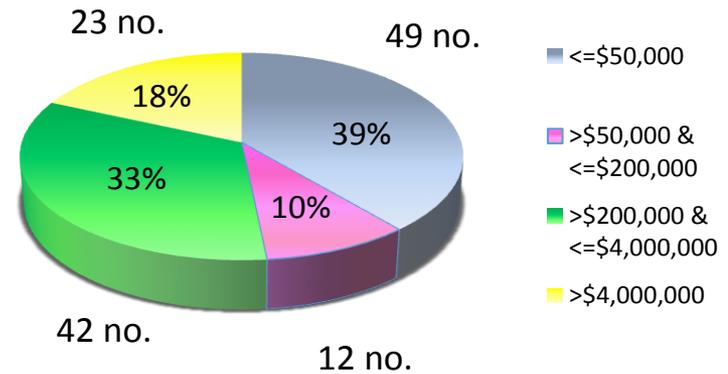
- Subcontract Package
- Selection
- Payment
- Finalisation



Active Subcontractor Management



Sum of awarded subcontracts



No. of finalized Subcontracts = 28 out of 126



Tender Briefing



Tender Interview

Active Subcontractor Management



Alternative Turf Proposal

Save **\$3M**
out of \$16M



Advance Progress by
1 month

Capture Innovative Proposal by Subcontractor

**In CVM,
we manage risk and programme by
utilizing tools in NEC Contract**



Early Warning and Risk Register

Pre contract : 9

- Ground Condition
- Excessive Settlement
- Congested Working Environment
- Flood Risk

Construction : 44

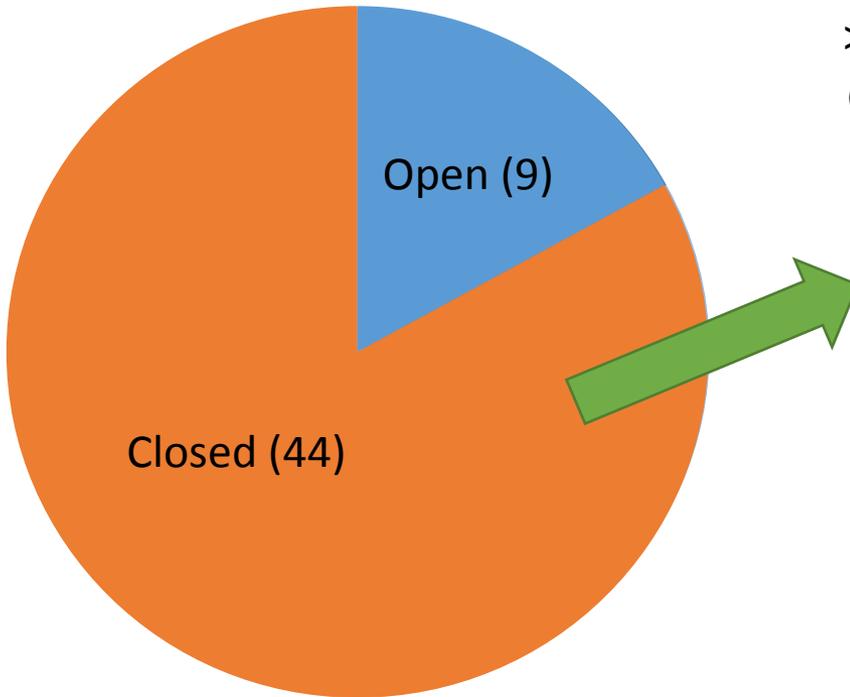
- Interfacing works with HKJC
- Delay in Access Date of Pitch No. 4
- Lack of engineering and site resources
- Slow progress of different work fronts
- Missing details
- Defects



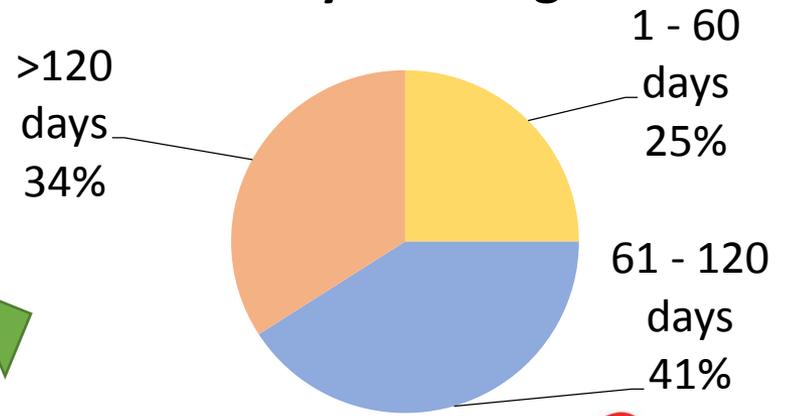


Early Warning and Risk Register

Number of Early Warnings



Time required for closing the Early Warnings





Risk and Programme Management



Collaboration in Risk and Programme Management

Interface construction works of HKJC and DSD during summer break of 2014



Tight Schedule, High Project Risk



Risk and Programme Management



Collaboration in Risk and Programme Management

27.05.2014




PARTNERING CHARTER
Happy Valley Underground Stormwater Storage Scheme



Hong Kong Jockey Club, Gammon, Chun Wo, Drainage Services Department

Mutual Objectives	Common Targets
Time	Completion of box culverts and related works for commencement of 2014-15 race season in Happy Valley by 19 October 2014 and operation of Stage 1 of the Scheme before 31 March 2015
Safety and Environmental	No reportable accident No offence
Quality	100% compliance in final tests
Public relations	Zero disruption to horse racing Zero complaints

VALUES & BEHAVIOURS

<p>Trust</p> <ul style="list-style-type: none"> - Commitment - Punctual/Quick response - Openness/Communication - Honour - Be considerate - Understanding and fair 	<p>Cooperation</p> <ul style="list-style-type: none"> - Good planning - Joint ownership/responsibility - Sharing of information - Caring for each other - Empathy - Passion
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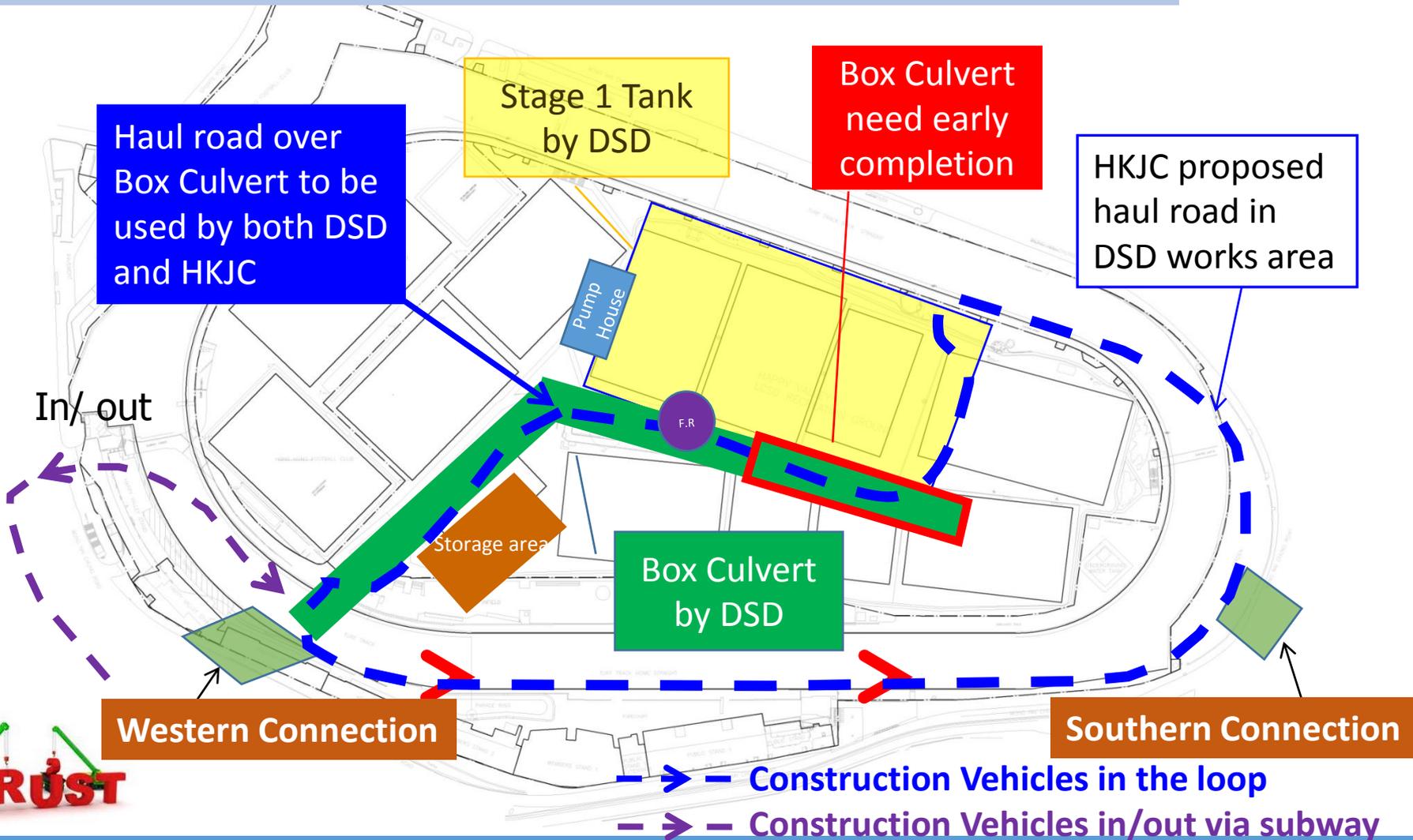
This Charter is a voluntary statement of general principles and objectives to guide the parties during the project. It is not binding and shall not be used to interpret contracts between the parties



Risk and Programme Management



Collaboration in Risk and Programme Management





Risk and Programme Management



Collaboration in Risk and Programme Management

Construction of Pipe Pile Wall at Crescent Garden

Shared Access

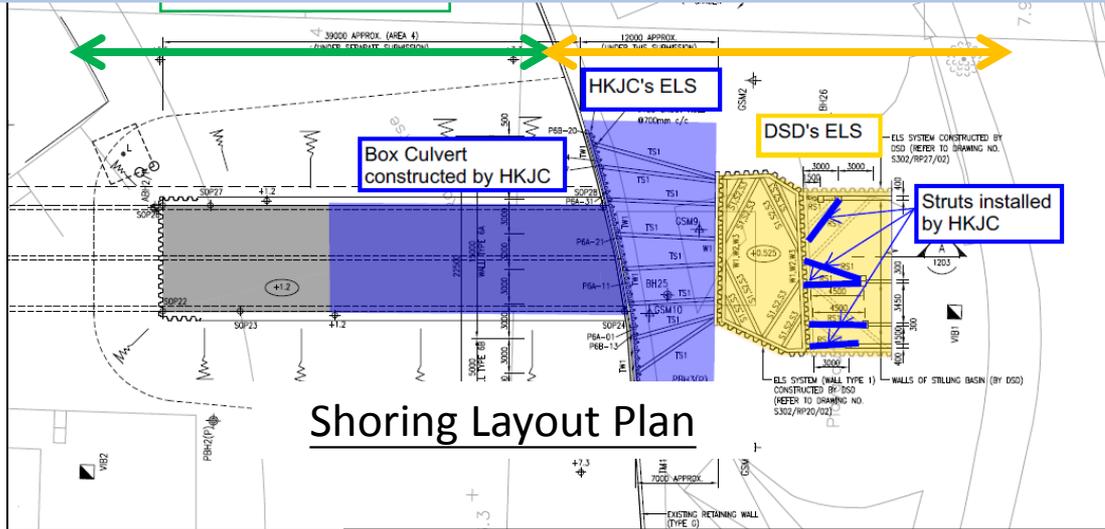




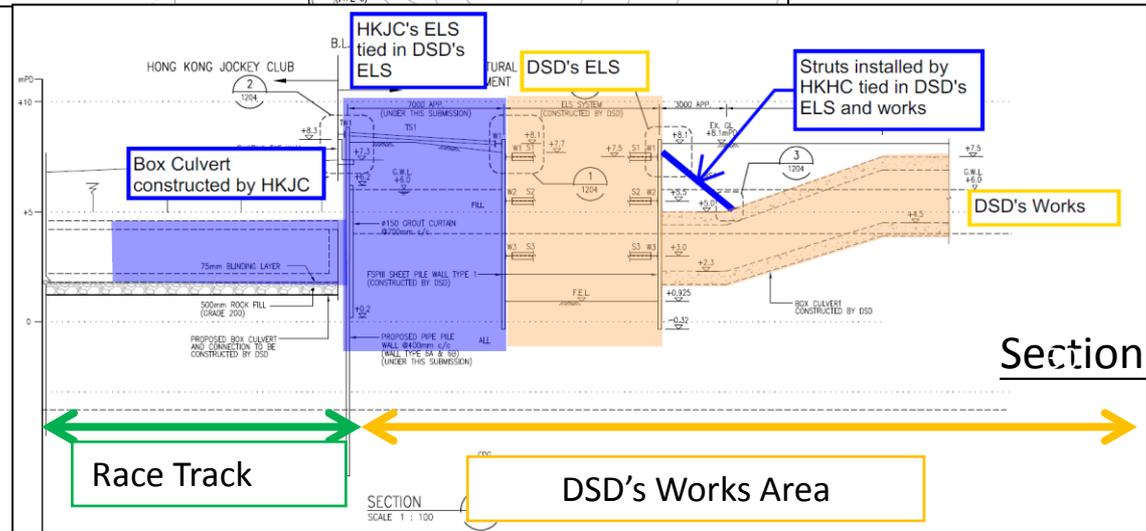
Risk and Programme Management



Collaboration in Risk and Programme Management



Shared ELS system





Risk and Programme Management



Collaboration in Risk and Programme Management

Shared Access



Shared ELS System





Risk and Programme Management



Collaboration in Risk and Programme Management



Management Involvement from both sides

Trust and Morale – Ups and Downs

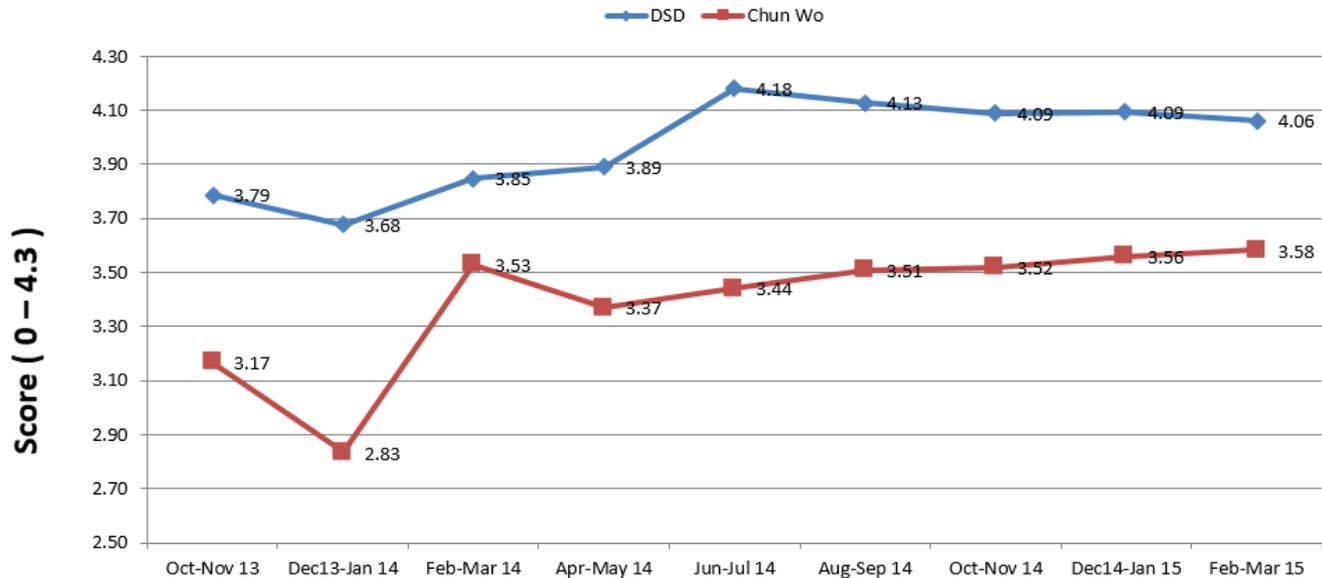




Trust: Ups and Down



Contract DC/2012/03
Happy Valley Underground Stormwater Storage Scheme
Partnering Evaluation Scoring for Targets in Progress, Safety, Communication and Cooperation
Frontline Staff



Frontline Staff	Oct-Nov 13	Dec13-Jan 14	Feb-Mar 14	Apr-May 14	Jun-Jul 14	Aug-Sep 14	Oct-Nov 14	Dec14-Jan 15	Feb-Mar 15
DSD	3.79	3.68	3.85	3.89	4.18	4.13	4.09	4.09	4.06
Chun Wo	3.17	2.83	3.53	3.37	3.44	3.51	3.52	3.56	3.58



One Team One Goal





Achievement



Highly Commended New Engineering Contract (NEC) Large Project of the Year 2015 Award by NEC Users' Group in UK



(photo taken at the prize presentation ceremony held in London, UK, April 2015)



Conclusion



ACHIEVEMENTS in progress, cost, quality and safety
CERTAINTY of risks about time and cost for all parties
TRUST has to be earned
EFFORT has to be paid for the achievements





Thank You

