Implementing the Beautification and Sustainable Designs for the Harbour Area Treatment Scheme (HATS) Stage 2A

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Agenda

• Project background
• Key challenges
• Visions for future sustainable designs
Project Background
Design Principles

Construction stage
- Sustainable materials
  - Minimize carbon footprint
  - Operation stage
    - Saving water and energy
      - Enhanced operation efficiency
      - Hospitable sustainable features
        - Raising public awareness
Proposed Works

• Beautification
  ➢ Featured Water Wall
  ➢ Designated Visitor Route
  ➢ Greening Enhancement
  ➢ Renewable Energy Devices (PV panel, hydro turbine)

• Sustainable Urban Drainage System (SUDS)
  ➢ Bioswale (site trial)
  ➢ Rain Garden (site trial)
  ➢ Permeable Pavement (by others)
Localisation of Sustainable Design

- Climate
- Vegetation
- Maintenance needs
- And many more!

Pilot test is required
Challenges
Overview of Stonecutters Island Sewage Treatment Works (SCISTW)
Need to Balance

Site Constraints

User Convenience

Sustainability

Accomplished Busy Compacted
Water Feature Wall
Water Feature Wall

**Purpose**
- Echo with the Client’s identity
- Grab visitors’ attention upon arrival

**Challenge**
- Unknown ground utilities

**Solution**
- Adaptation such as diverting surface runoff and roof drainage to an underground grey water storage tank for screening and disinfection
Visitor Route

Coach or Guest’s vehicle (Entry via Gate 1)

Coach or Guest’s vehicle (Leaving via Gate 1)

Vehicle waiting area

Drop-off & Pick up Point (underneath ODB)

Vehicle path (with Guests)

Vehicle path (dropped off)

Vehicle path (Leaving)
Visitor Route

**Purpose**
- Minimize the interference from visitors to operations
- Enhance learning experience for sustainability

**Challenge**
- Congested on-site traffic

**Solution**
- Coordination for thorough understanding of the operations
Sustainable Urban Drainage System

- Vegetated Bioswale
- Rain Garden
Sustainable Urban Drainage System

**Purpose**
Reduce surface runoff and lighten drainage system

**Challenge**
- Concurrent construction works
- New design implemented in Hong Kong

**Solution**
Site trials to collect useful data before full-scale implementation
Sustainable Urban Drainage System

Design Consideration

- Aesthetic value
- Ability to improve biodiversity
- Maintenance requirement
- Required footprint
- Installation cost
Sustainable Urban Drainage System

Site Trial Locations

Rain Garden
Bioswale
Sustainable Drainage - Key Considerations of Site Trials

1. Sample taking

Outflow samples taken at the end of horizontal flow (channel)

Inflow samples taking

Bioswale
Sustainable Drainage
- Key Considerations of Site Trials

1. Sample taking

Samples taken at the bottom of vertical flow (Pond)

Rain Garden

Inflow sample taking
Sustainable Drainage
- Key Considerations of Site Trials

2. Communication in implementation
Sustainable Drainage - Key Considerations of Site Trials

3. Observations / measurements to take

- Construction experience
- Maintenance experience
- Reduction in surface runoff
- Reduction in pollutant
Visions for Future
Visions for the Future

- Developer and Project Promoter can plan ahead to incorporate the sustainable design
- By adapting the sustainable design, the design life of the facilities can be lengthened
Thank you