

**Skyrise Greenery Awards 2012  
Awards Presentation Ceremony cum Seminar**

# **Give Roof a Change – Green Facelift of Sha Tin Sewage Treatment Works**

**讓屋頂煥然一新 – 沙田污水處理廠的綠化改造**



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**8 May 2012**

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# Background

- Commissioned in **1982**
- Occupying **28 hectares** of land
- Located at mouth of **Shing Mun River Channel**
- Surrounded by many **high-rise residential buildings** at Ma On Shan and Kau To Shan
- **Prominent structure** within the district



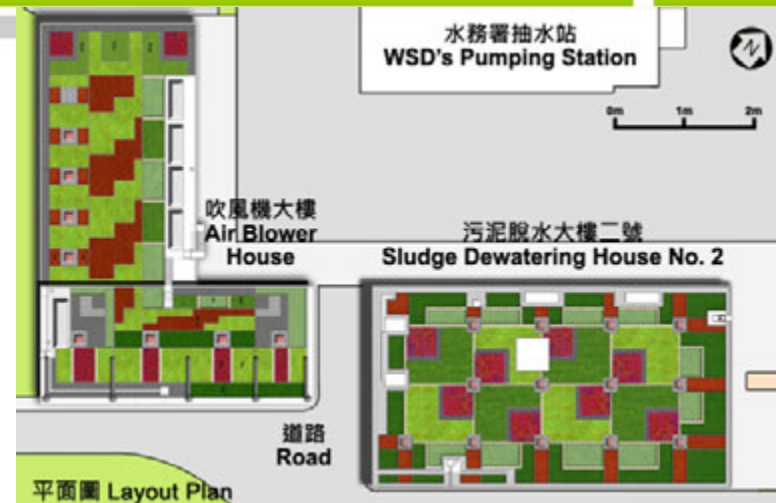
# Design Objectives

- Large-scale **landscape beautification works** commenced in Nov 2008
- **Retrofitting green roof** is one of tactics to increase greenery space
- **Four buildings** next to Tate's Cairn Highway and **visually sensitive** to nearby residents are installed with green roofs
- Increase **greenery space** and enhance **city environment**



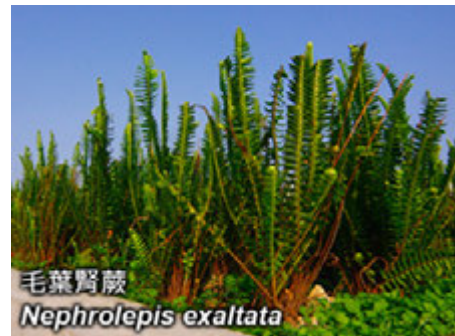
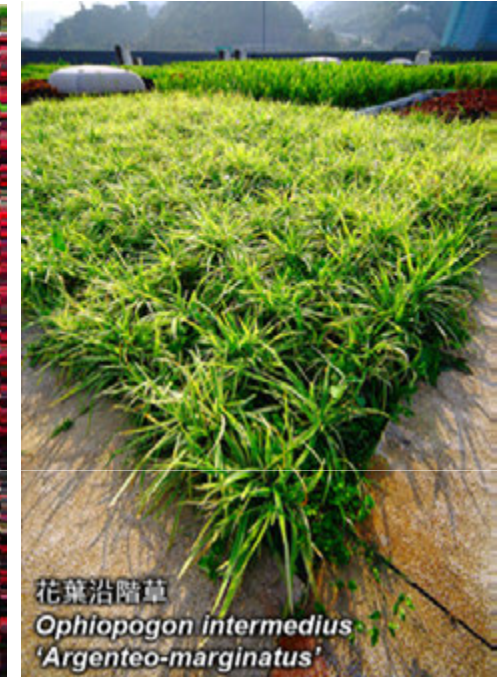
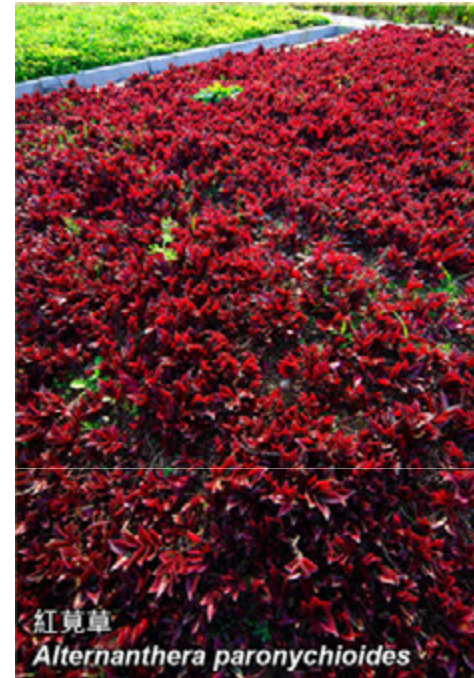
# Design Concept

- **3,000m<sup>2</sup>** green roof planted with **120,000** groundcovers of **11** species
- **Different colours** of groundcovers **integrate** with existing roof layout
- Create a **colourful** pattern
- **Extend greening works** to Shing Mun River
- Reserve **maintenance access**



# Plant Selection

- Constraint: **120mm soil depth**
- Plant Selection Criteria
  - **Low maintenance**
  - **Shallow root system**
  - **Wind tolerant**
  - **Drought tolerant**
  - **Tolerant to direct sunlight**
  - **Pest resistant**



# Installation Process



1. Clean up rooftop surface



2. Install root barrier



3. Install drainage composite layer



4. Install water retention mat



5. Placing planting soil



6. Place plant materials

# Benefits of Green Roofs

***" 120,000 groundcovers in different colours increase the greening space by 3,000m<sup>2</sup> "***

- Enhance **aesthetic values** of surrounding environment
- Improve **air quality** and mitigate **heat island effect**
- Contribute in **energy saving**, indoor temperature reduced by **1.5 to 2.3°C**



# Benefits of Green Roofs

*“ Planting brings the roof to life ”*

- Enhance **ecological value**
- Strengthen **relations with the community**
- Promote **greening initiatives**
- Share **experience** with the industry
- Enhance the **image** of sewage treatment facilities





**End?**

**It's only a START!**



# Continual Improvement

- Completed **9,000m<sup>2</sup>** retrofit green roofs from 2007 to Apr 2012 in 10 facilities
- 4,200m<sup>2</sup>** in 7 facilities will be completed in 2012

## Batch 1 (May to Dec 2012)

1. Siu Hong SPS
2. Shek Wu Hui STW
3. Cheung Sha Wan SPS
4. Waterboat Dock SPS
5. To Kwa Wan Screening Plant
6. Shuen Wan PS
7. Sham Shui Po SPS No. 1 and 2

## Batch 2 (2013)

8. Ha Tsuen SPS
9. Anchor Street PS
10. Shui Wai Floodwater PS
11. Pak Shek Kok SPS No. 2
12. Pak Shek Kok SPS No. 3
13. Nam Sang Wai SPS
14. Kam Tin SPS
15. Sha Po SPS
16. Au Tau PS



Tseung Kwun O PTW



Kau Hui Pumping Station

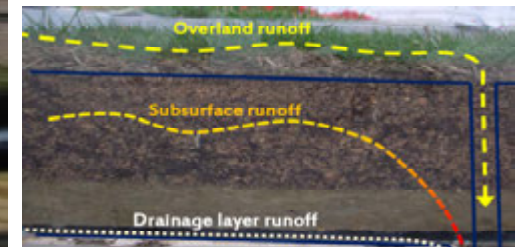


Peng Chau STW

# Continual Improvement

## Study of Green Roofs : Green Roof Guidelines, Water Quality and Peak Runoffs

Start	Completion	Objective
12/2010	6/2013	<ul style="list-style-type: none"> <li>• To conduct wind tunnel tests and develop wind suction numerical models for evaluating wind damage to green roof</li> <li>• To investigate the benefits of green roofs in runoff water quality improvement and peak runoff mitigation</li> <li>• To establish a guideline for planning requirements and design and maintenance criteria for green roof system</li> </ul>



# Thank You

