

立法會房屋事務委員會

Legislative Council Panel on Housing

(I) 提高新公共租住屋邨綠化率 及
(II) 增加現有公共租住屋邨康樂設施的措施

- (I) Measures to Increase Greening Ratio of New public rental housing (PRH) Estates and
(II) Provision of Recreational Facilities in Existing Estates

24.05.2010

香港房屋委員會

Hong Kong Housing Authority

(I) 提高新公共租住屋邨綠化率 的措施

Measures to Increase Greening Ratio of New PRH Estates

目標：

- 提高所有新公共屋邨的綠化率至不少於20%
- 令居住環境更爲綠化和健康

Target:

- Increase the greening ratio of all new PRH estates to *at least 20%*
- Enhance *green* and *healthy* living environment

(1)新公共租住屋邨的綠化措施

Greening Measures in new PRH Estates

- (一) 盡量綠化地面及斜坡
- (二) 綠化天台或樓頂
- (三) 草磚鋪地
- (四) 實行垂直綠化

1. Provide planting at grade and slope areas as far as possible
2. Provide green roof or green decking
3. Install grass-paving system
4. Implement vertical greening



(一) 盡量綠化地面及斜坡

Provide planting at grade and slope areas as far as possible

地面種植 *Planting at Grade*

- 每 **15個單位** 種植至少 **一株樹木**
- 居民 **直接享受** 並 **觀賞** 綠化成果
- At least **one tree for every 15 flats** in PRH estates
- More **direct enjoyment & appreciation** of greening by residents



牛頭角上邨 *Upper Ngau Tau Kok Estate*



秀茂坪邨 *Sau Mau Ping Estate*

(一) 盡量綠化地面及斜坡

Provide planting at grade and slope areas as far as possible

斜坡種植 *Planting at Slope Areas*

- 會盡量在斜坡各位置**加強種植**
- 多種植**本地品種**植物，與自然環境融合
- *Maximise planting in slopes*
- *Use of **native species** in slope planting to reinstate the natural habitat & blend in with the surrounding natural environment*

秀茂坪南邨的人造斜坡
種植採用了22種本地品種樹木和
14種本地品種灌木

22 native tree species and
14 native shrub species
planted at the Sau Mau Ping South Estate
slope



(二) 天台綠化 *Roof greening*

- 在可行的情況下，於低層建築設置綠化天台
 - 利用不同品種的植物
 - 自2007年起，完成設置綠化天台約8 000平方米
-
- Provide green roofs in low-rise structures with extensive planting wherever feasible
 - Using different types of vegetation
 - 8 000m² green roof installed since 2007

(二)天台綠化 Roof greening

種植品種 Types of vegetation



草被
Grass

彩盈邨 Choi Ying Estate



景天屬植物
Sedum

清河邨 Ching Ho Estate



小灌木和地被植物
A combination of
shrubs & groundcovers

牛頭角上邨青年中心
Upper Ngau Tau Kok Estate –
youth centre

(二)天台綠化 Roof greening

- 景天屬植物

- 較耐旱品種包括**金葉佛金草**及**三七景天**

- **Sedum plants**

- Best drought tolerant sedum plants include ***Sedum mexicanum*** (Mexican stonecrop), ***Sedum kamtschaticum*** (orange stonecrop)



金葉佛甲草 *Sedum mexicanum*



三七景天 *Sedum kamtschaticum*

(三) 草磚鋪地 *Grass-paving system*

- 在露天停車場、上落客貨處、緊急車輛通道和其他*交通流量較低*的地方，以草磚鋪地代替硬地
- 需要*充足陽光*
- An alternative to hard paving surfaces for open carpark, loading & unloading bays, emergency vehicular access & *areas with less traffic*
- Require *sufficient sunlight* for grass growth

(三) 草磚鋪地 *Grass-paving system*

天晴邨 (2009)

- 效果較佳
- 進出通道汽車流量少

Tin Ching Estate (2009)

- Successful establishment of grass-paved route with limited vehicular use



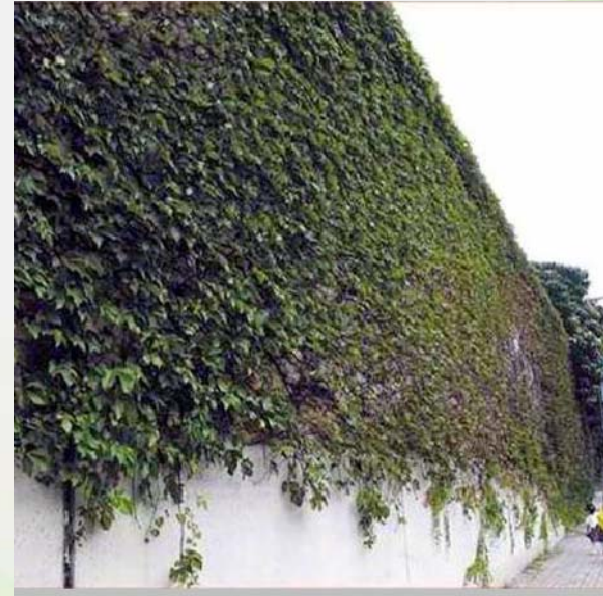
(四) 垂直綠化 Vertical Greening

(I) 傳統的攀緣植物垂直綠化方法

- a) 以攀緣植物垂直綠化
- b) 以固定於攀架的匍匐植物垂直綠化

(I) Traditional Climber Planting Methods

- a) Vertical Greening by Climbers
- b) Vertical Greening by Creepers on Climbing frame



葵涌邨第一期
隔音屏障以攀緣植
物進行綠化

**A noise barrier wall
at Kwai Chung
Estate Phase 1**



彩盈邨
以固定於攀架
的匍匐植物垂
直綠化

**Vertical Greening
by Creepers
on Climbing
frame
Choi Ying Estate**

(四) 垂直綠化 **Vertical Greening**

(II) 非傳統的垂直種植層上綠化 ...

a) 噴播垂直綠化

(II) *Non-conventional Planting on Vertically Placed Growing Substrate.*

a) Proprietary mulching method



油麗邨一期的人造斜坡試用綠化噴播方法
Mulching Method at Yau Lai Estate Phase 1

(四) 垂直綠化 *Vertical Greening*

(II) 非傳統的垂直種植層上綠化

(b) 垂直綠化板

- (i) 大面積固定綠化板
- (ii) 組件式綠化板

(II) *Non-conventional Planting on Vertically Placed Growing Substrate*

(b) *Vertical Green Panel*

- (i) Large size fixed type panel
- (ii) Modular type panel



(四) 垂直綠化 Vertical Greening

(i) 大面積固定綠化板 Large Size Fixed Type Panel



內栽種面

Interior planting face



外栽種面

Exterior planting face

秀明道公園
大面積固定綠化板作視覺屏障
Sau Ming Road Park
Vertical Green Panels as **Visual Barrier**

(四) 垂直綠化 Vertical Greening

(i) 大面積固定綠化板 Large Size Fixed Type Panel



秀茂坪南邨
大面積固定綠化板作**隔音屏障**
Sau Mau Ping South Estate
Vertical Green Panels as **Noise Barrier**

(四) 垂直綠化 Vertical Greening

(ii) 組件式綠化板 Modular Type Green Panel



油麗邨四期

- 組件式綠化板

Yau Lai Estate Phase 4

- Modular Type Vertical Green Panels



葵涌邨

Kwai Chung Estate

研究新的綠化技術

Research into New Greening Technologies

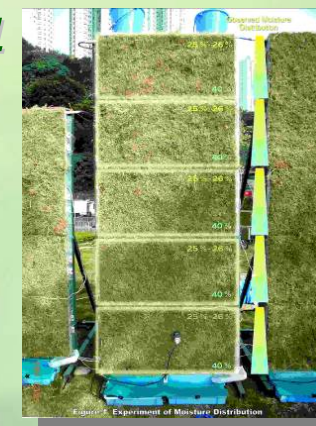
油麗邨垂直綠化組件的實驗及研究

- 研究:
 - (一) - 最適當的灑水量
 - (二) - 養料持續性和流失情況
 - (三) - 組件組合的用水效率
 - (四) - 品種篩選
 - (五) - 隔熱功能
- 於2007年8月至2009年1月，聯同香港中文大學生物系共同研究



Technical Study for VGP in Yau Lai Estate Phase 4

- Studies:
 - 1 – Plant Performance vs Watering Regimes
 - 2 – Fertility Persistence & Nutrient Loss
 - 3 – Water Use Efficiency of Panel Clusters
 - 4 – Species Selection
 - 5 – Heat Reduction Capacity



- Conducted in collaboration with the Chinese University of Hong Kong from August 2007 to January 2009

研究新的綠化技術

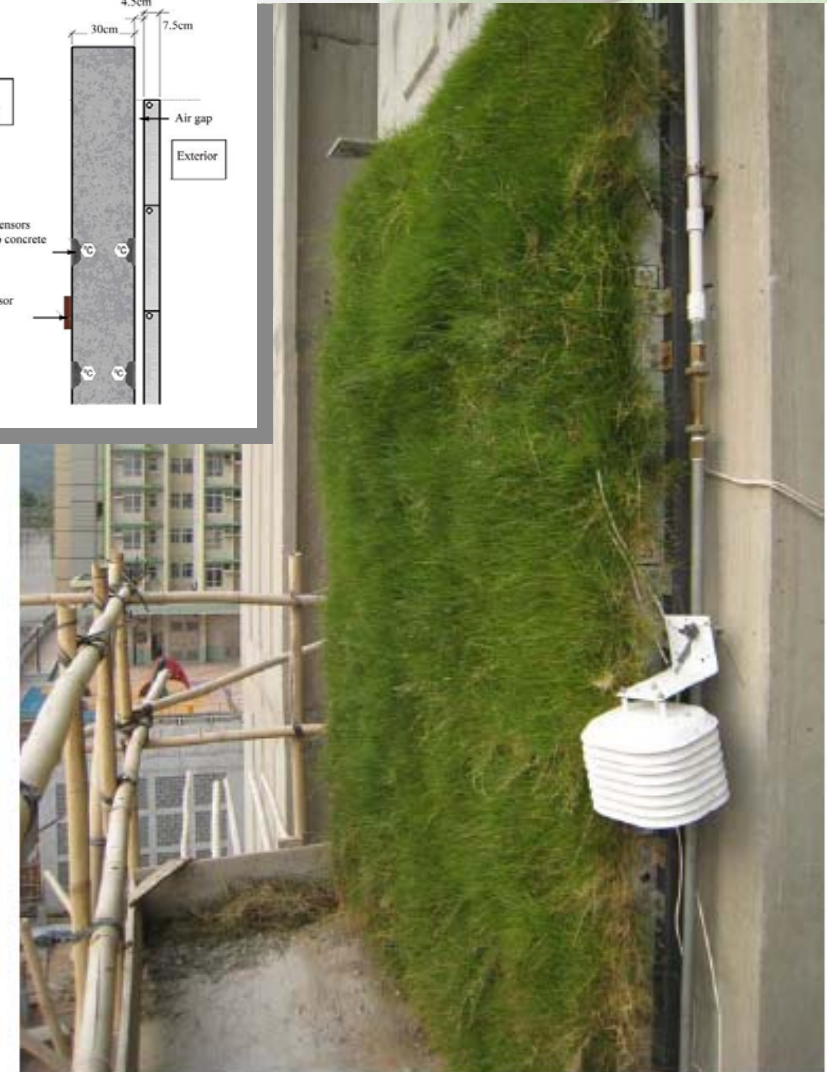
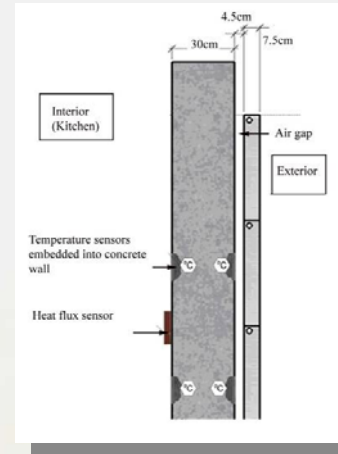
Research into New Greening Technologies

隔熱功能

- 減低 牆身溫度波動
- 減低 太陽熱能傳導
- 減慢 牆身熱傳導
- 在炎熱的下午，有綠化板覆蓋的牆面溫度會比外露的石屎牆面降低約 **16°C**

Heat Reduction Capacity

- *Temperature fluctuation of facade wall is minimised*
- *Reduce solar heat transfer*
- *Delay heat transfer through facade wall*
- VGP covered wall about **16°C** cooler than bare concrete wall in a hot afternoon



展望未來 *Looking Forward*

- (一) 地面種植作為主要綠化策略
- (二) 採用更多耐旱和易於保養的植物來綠化天台
- (三) 如果長遠效果確實滿意，我們會更多採用非傳統的垂直綠化方法
- (四) 如環境許可，我們也會更多使用草磚鋪地

1. Apply planting at grade and slope as main greening strategy
2. Provide low maintenance plants for non-accessible green roof
3. Apply more non-conventional vertical greening if proven satisfactory
4. Install grass-paving system under suitable environmental conditions

展望未來 *Looking Forward*

- 提高新公共租住屋邨綠化率，在任何情況下也
不低於20%
- 若新公共租住屋邨地盆面積 *>2公頃*，綠化率將
增加至 *不低於30%*
- *繼續研發綠化專門技術*
- Increase the overall site green coverage of new
PRH estates to *at least 20%*
- Greening ratio to be increased to *30% for new
PRH estates > 2 ha*
- Continue to *research* on special greening
technology



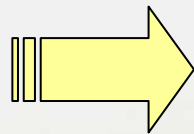
(II) 增加現有公共租住屋邨
康樂設施的措施

(II) Measures to Increase the Provision of
Recreational Facilities in
Existing PRH Estates

提升現有康樂設施

Enhance Existing Recreational Facilities

- 居民需求改變
- 人口老化
- Tenants' needs
- Aging population



(一) 更新康樂設施

(二) 提高長者健身器材比例

(1) Upgrade recreational facilities

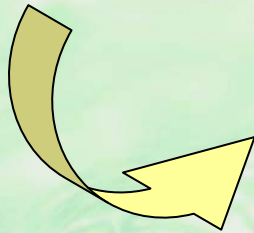
(2) Increase the proportion of elderly fitness equipment



(一) 增加康樂設施

Increase Recreational Facilities

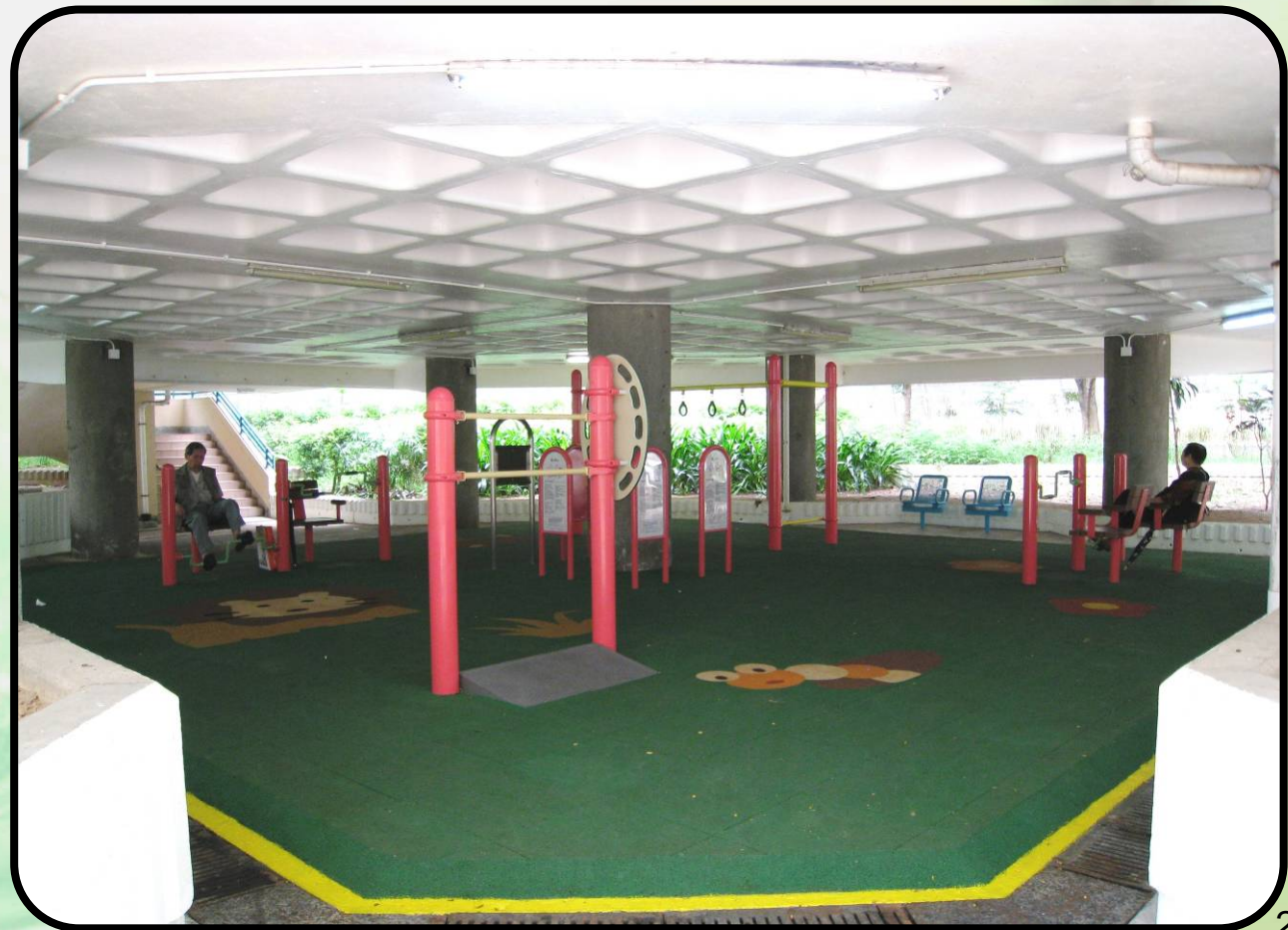
- 取締低用量設施
- Convert facilities of low usage



(一) 增加康樂設施

Increase Recreational Facilities

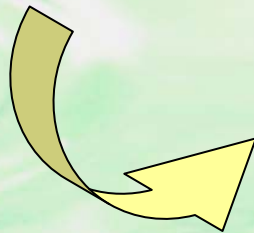
- 善用空間
- Utilise vacant space



(一) 增加康樂設施

Increase Recreational Facilities

- 善用空間
- Utilise vacant space



(二) 綜合社區休憩遊樂設施概念 Concept of Communal Play Areas

- 長幼共融、一同參與
- Participation of grand-parents, parents & children in the community



未來路向 *Way Forward*

- 為公屋租戶和社區提供 **更綠化、更健康及更舒適** 的居住環境
- Provide tenants and the community a ***greener, healthier and more comfortable living environment***



謝 謝

Thank You