

Solar Building Skins

太陽屋皮層與材料之空間演繹

- 一、試從你所熟悉的建築表面材料中選擇 3~5 種，描述其物理性能(如比重、熱、電、音、光之性質)、化學性能、機械性質(如強度、韌性、延展性、硬度等)及相關特質(25 分)。
- 二、分別說明你對於以下關於建築皮層與太陽能運用相關議題的認識(25 分)

- **Multifunctional Building Skins**

- Intelligent and Adaptive Building Skins
- Evolving Photovoltaic and Solar Thermal Technologies
- Enhanced Daylighting

- **Performance Criteria for Building Envelopes**

- Performance Metrics
- Life Cycle Costs of Multifunctional Elements

- **Holistic Concepts of Plus Energy Buildings**

- Market Strategies for Plus Energy
- Solar Retrofitting

- 三、底下有一段節錄文章，介紹 TREEPODS 此一綠色設計之原理，請針對『舊建築拉皮』，參考此一概念設計一新的太陽屋建築皮層。

1. 設定一舊有建築物狀況(基地環境、建築物本身...等)，並以簡圖及文字輔助說明(15 分)。

2. 以圖說分別表達改造後之設計(平面、立面、剖面、透視等)及其回應綠色設計的相關性(35 分)。

TREEPODS: Carbon-Scrubbing Artificial Trees for Boston City Streets

by Lori Zimmer, 02/15/11

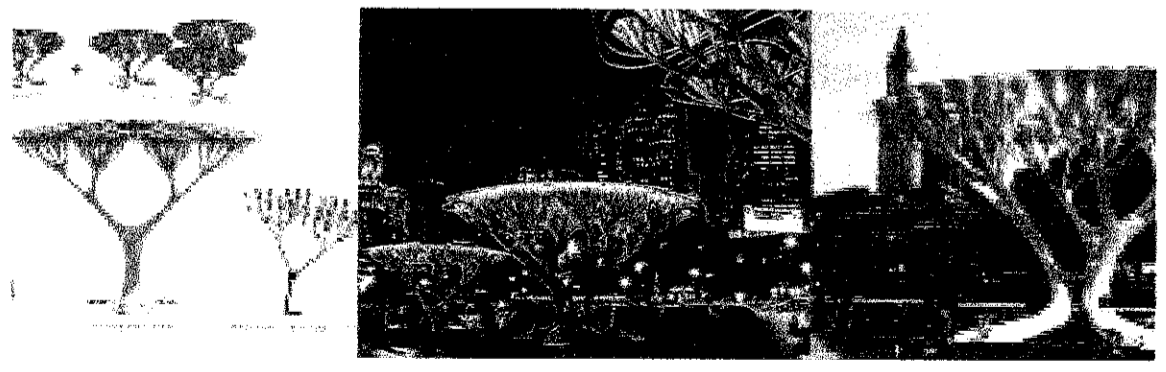
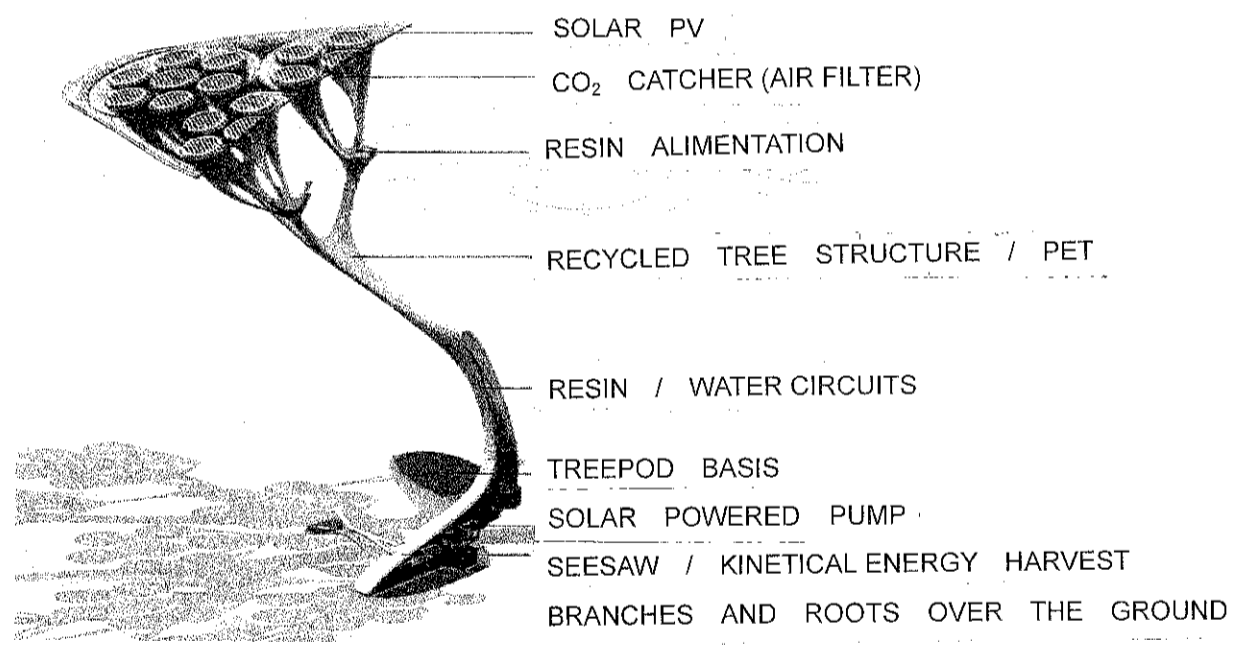
The TREEPOD systems are capable of removing carbon dioxide from the air and releasing oxygen using a carbon dioxide removal process called "humidity swing." In addition to their air-cleansing abilities, TREEPODS will also include solar energy panels and will harvest kinetic energy through an interactive seesaw that visitors can play with at the TREEPOD's base. As passersby play on the seesaws they power displays that explain the TREEPODS' de-carbonization process. Both the solar panels and the kinetic energy station will power the air filtration process, as well as interior lights.

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The TREEPODS themselves will be made entirely of recycled/recyclable plastic from drink bottles. Based not only on trees, but on the human lung, the design of the "branches" will feature multiple contact points that serve as tiny CO2 filters. The proposed design, giant white and translucent canopies of trees, can be installed among existing trees or on their own. Interestingly, the TREEPODS have been compared to "urban furniture": sleek yet functional design pieces that would fit into any urban environment. At night, the TREEPODS light up in an array of eye-catching colors.

"Trees" will function not just as examples of gorgeous urban design and sources of sustainable energy, but also as meeting places, allowing citizens to have an air purifying tree to sit under with friends and enjoy the day.



資料來源 TREEPODS: Carbon-Scrubbing Artificial Trees for Boston City Streets Treepods - Inhabitat - Green Design Will Save the World