深蓝——建筑营造实验

Deep Blue - Experiment in Digital Design and Making

「深藍」是香港大學教授領銜的一個知識交 流實驗專案。它基於「數位化實踐」暑期工作坊 的教學成果,在數位化平臺下整合材料性能、設計 形態和加工方式的一次設計建造嘗試。這個足尺 度的構築物得到了香港和內地多家贊助公司及企 業的支援。

「深藍」的目的是通過把平淡無奇的回收材 料轉變為新穎愉悅的臨時棚亭, 提升公眾的環保 意識; 傳播設計和製造的數位化應用; 并提升香 港成為國際設計創意大都會之一。

「深藍」選取了回收的高密度藍色塑膠桶 它既是表面的圍合材料,塑造特有的質感和效果; 又是結構的連接支撐構件。 每一個桶都會根據和 它周邊連接桶的重疊面的尺寸,決定連接孔的位 置和數控切割「開花」的程度,使其從外面看仿 佛一朵朵的藍色玫瑰, 徹底改變人們對於原有桶 的形態認知,同時保留力學性能最關鍵的桶底。 整個設計明晰的過程,包括自動生成加工所需的 G-Code, 只有在數位化參數建模和程式設計運 算的平臺下才能得以實現。建造的過程也根據這 種材料的特點,結合臨時豎杆支撐和地面組裝、 整體旋轉對位的方式,完成主體結構拱的組裝建

「深藍」首先在香港大學的大學街展示一個 月,之後移送到香港荃灣的愉景新城商場,作為公眾 活動的藝術舞臺長時間使用。

主辦單位: 香港大學建築系 项目性质: 临时构筑物设计营造实验 展覽日期: 1st - 27th Feb 2013

地点: 香港大學大學街(黃克競樓北側廣場)

设计时间: 2012年8月-11月 材料: 130個回收塑膠桶 总用地面积: 49平米 总建筑投影面积: 40平米 总造价: 9.8万元人民币

项目设计师: 高岩, Olivier Ottevaere

设计团队:

香港大學: 蔡鴻奎, 梁博然

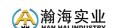
凱達: 梅钜川

奧雅納工程顧問: 趙恩望, 何彥邦 以及: 毛小輩, 關舜之, Tiffany Tivasuradej, Karen

Jie-rong Chen, Riyad Joucka

特别鸣谢:宋剛(華南理工大學)和毛小輩

支援贊助單位:







广州市万绿达集团有限公司











The Deep Blue is a Knowledge Exchange project based on the outcomes of the Digital Practice International Summer Program at Department of Architecture, The University of Hong Kong (HKU). Led by professors of HKU, this project integrated materialization with digital computation and fabrication. It attracted sponsors from local architectural and engineering companies, as well

http://fac.arch.hku.hk/summer/hk/dp

The main objectives are to raise envrionmental awareness by transforming mundane recycled materials into an inspiring structure, to explore digital design and making with ordinarory fabrication methods in PRD China, and to promote Hong Kong as one of the worldclass cities for design innovation.

The design team synthesized the visual effect of the recycled High Density Polythylene Drums (HDPE) with its structural and connecting capabilities. Each HDPE transforms radically into flower alike at the top without losing the structural integrity at the bottom through the variouse cuts according to the overlaped surface area connected to the adjacent barrels, which also determines the fixing point of the internal timber disks as the stiffeners. The fabrication process integrated parametric generation of the G-code for controling a 3 axises CNC machine. A strategic construction sequence had to be followed in order to minimize the accumulating deflection in the global scale.

This design-and-built project was first displayed in one of the most populated pathway in HKU, and then was reassembled in Discovery Park Shopping Centre as a permanent structure for various public events.

Organiser: Department of Architecture, HKU Project type: Pavilion experimentation Exhibition date: 1st - 27th Feb 2013 Location: The University Street, HKU Material: 130 recycled blue barrels Gross Land Area: 49m² Projection Area: 40m² Total cost: 98,000 CNY

Project architect: Yan Gao, Olivier Ottevaere Design team:

Cai Hongkui (HKU), Victor Leung, Paul Mui (Aedas), Anthony Chiu (Arup), Don Ho (Arup), and Shortpain Mao, Calvin Kwan, Tiffany Tivasuradej, Karen Jie-rong Chen, Riyad Joucka (HKU) Special acknowledgement: Gang Song (SCUT), Shortpain Mao

Sponsors:





THE UNIVERSITY OF HONG KONG 香港大学 **SH** faculty of architecture 建筑学院 Aug 2012 - Feb 2013