

AT 建筑技艺

AT 观点
AT View

“上海之鱼”7座环湖景观桥
滨水公共空间
建筑师介入
全过程控制
7 "Fish of Shanghai"
landscape bridges
Waterfront public space
Architect intervention
Full process control

桥梁工程师眼中的桥梁美
力学逻辑
结构原则
The beauty of bridges
Mechanical logic
Structural principles

AT 作品
AT Work

日月桥和无限桥
空间异型桁架
结构选型
异形桥
Sun Moon Bridge and
Infinite Bridge
Special-shaped space truss
Structural type selection
Heteromorphic bridge

绸桥

空间营造
基础设施
日常性
Silk Bridge
Space construction
Infrastructure
Everydayness

百穗桥

建造
体验
Tassels Bridge
Construction
Perception

浒墅关步行双桥

游走路径
廊桥生活
行为活动
Xushuguan Double
Pedestrian Bridge
Wandering path
Life on lounge bridge
Activity

李巷村人行桥

乡土建造
现代技艺
Lixiang Village
Pedestrian Bridge
Rural construction
Modern craftsmanship

设计研究

Design Research

哥本哈根大学马士基大楼

幕墙 - 百叶结构
骨架式幕墙系统
建构文化
Curtain wall-louver structure
Stick curtain wall system
Tectonic culture

20世纪现代高层建筑复兴

法兹勒·汗
结构逻辑
结构美学
The renaissance of modern
high-rise building
Fazlur Rahman Khan
Structural logic
Structural aesthetics

住区智能生成方法

条件生成对抗网络
环境性能模拟
The intelligent residential
generation method
CGAN
Environmental performance
simulation

城事

Design for City & Life

溪村营造

因材适用
空间复合
Creation of Xicun area
Suitable use according to
the material
Spatial recombination

建筑师说技艺

Architects' Own Narrative

昆山西部医疗中心

本土营造
行为生活
Kunshan West Medical Center
Local construction
Behavior-life

大亚湾西区实验学校蓝岸分校

图像学
空间行为
参与度
体验
Daya Bay West District
Experimental School
Lan'an Branch
Iconology
Spatial behavior
Participation
Experience

简上体育综合体

剖面
图底
透明性
Jianshang Sports Complex
Section
Figure-ground
Transparency



Paper Mountain: China Xuan Paper Town | White Cast-In-Situ Concrete

China Xuan Paper Town, with a construction area of 10,695 square meters, is a charming little town located in Jing County, Xuancheng City, Anhui Province. Designed by China Academy of Art and constructed by Xuancheng Municipal Construction Group, the town is centered around the China Red Star Xuan Paper Plant, which is the heart of the town. What makes this town unique is that it serves many functions such as production, exhibition, sales, accommodation, research, tourism, and much more, all of which are centered around the Xuan paper culture. The town aims to become a significant hub for Chinese Xuan paper culture in the future.



A Journey Through the Seamless Integration of Architecture and Landscape

The architecture and landscape on the banks of the Wuxi River are seamlessly integrated in architecture design, with white concrete shaped as giant paper sheets serving as the primary element. This creates a picturesque "paper mountain" landscape that conveys the unique charm of Red Star Xuan Paper. Walking through the mountain feels like stepping into a painting.

The design elements include the architectural expression of Xuan paper texture, large areas of white space, minimal objects to control the picture, and the creation of a spatial artistic conception. The multiple paths and continuous slope design enhance the unique charm of the Paper Mountain journey, allowing visitors to enjoy a pure and spectacular touring experience as they navigate through the separation of white concrete sheets.

The construction is situated by the water and surrounded by mountains, it is enveloped in a mystical mist that adds to its ethereal feeling. The way in which it seamlessly blends into its natural surroundings is truly remarkable. The building's design incorporates elements of Chinese ink painting, creating an immersive experience for visitors. On a sunny day, the reflection of the building in the water is simply stunning. The architect's use of closely ordered sheet wall design, combined with the reflection of sunlight on the concrete surface, creates an ever-changing interplay of light and shadow that makes the building come alive.

The rustic concrete surface is utilized to express the unique texture of handmade Xuan paper, which is a testament to the skill and dedication of craftsmen. The concrete's beauty and durability are used to express the charm of Xuan paper, which is known for its ever-changing ink charm and a lifespan of a thousand years. The use of white concrete materials perfectly represents the white and non-fading features of Xuan paper.



Project Features

The project features a complex design with numerous changes in plan, elevation, and space to optimize land use while preserving the original topography. Three interconnected buildings make up almost 11,000 square meters of construction, primarily consisting of huge frames of thin shear walls and large-span thin concrete beams forming the roof all cast-in-situ. The project won the "Da Vinci" Gold Award at the Florence Art Biennale in Italy.

The roof structure has a maximum net span of 36m, exceeding normal design standards, and forms a continuous curved surface with no two identical concrete beams. The main structure is made of white fair-faced in-situ cast concrete, with approximately 70,000m² of exposed concrete surface, which requires strict material storage, production, and transportation standards. Concrete dimensions were required of high precision, with allowable tolerances of only 3mm for verticality, 2mm for flatness, and 2mm for formwork joints.

White cast-in-place concrete

This modern architecture employs cast-in-place concrete technology using white concrete based on Aalborg White cement - also known as decorative concrete.

This technology involves onsite pouring of freshly mixed concrete into formwork creating the final shape. The formwork is stripped after a few days and the concrete structure is essentially ready. Simple but complex. A one-time pouring and forming process, resulting in a smooth white decorative surface. The texture of the surface mimics the formwork surface with its joints and clamp holes, forming a surface that showcases the essential beauty of concrete. White fair-faced concrete is considered one of the most advanced and honest expressions of the concrete material, with a tactile appearance, providing a simple and natural sense of robustness and elegance that cannot be replicated by other modern building materials. The truthful surface of white fair-faced concrete discloses the nature of concrete with smooth areas of white shades, holding the characteristic marks from clamp-holes and joints from formwork.

The Spirit of Craftmanship

The construction of the "Paper Mountain" project was extremely challenging due to its intricate structure and numerous restrictions on scale, visual appearance, and style. This type of building has a rich heritage that creates tension in cultural time and space, which is not just different or metaphysical, but a naturally generated logic.

Therefore, the construction team did not overlook the building's natural essence during construction, nor did they intentionally pursue material application techniques. Instead, they persisted in adhering to the building itself. This persistence embodies a spirit of craftsmanship that is ingrained in their blood and bones, with an unwavering focus on quality and a heart of reverence.

After three years of meticulous work, the collaboration of designers, construction teams, owners, and material suppliers successfully achieved the design intent of "stacking rolls into mountains, hanging curtains like smoke, and a floating platform like water," resulting in a feasible, desirable, and picturesque white concrete "Paper Mountain."

Project credits:

Project Owner: China Xuan Paper Town Co., LTD

Contractor: Xuancheng Municipal Construction Group Co., LTD

Architecture Design: Landscape Architecture Design and Research Institute of China Academy of Art Co., LTD

White cement supplier: Aalborg Portland Anqing (Cementir Group) (www.aalborgwhite.com www.white-hub.com)