

CTBUH "In Detail" Series
CTBUH "深入解读"系列

Suzhou Zhongnan Center: In Detail

苏州中南中心: 深入解读

Editors (编者): Antony Wood, Jinshi Chen (陈锦石) & Daniel Safarik





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封面: 苏州中南中心, 中国苏州 © Gensler

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Introduction

概述

Suzhou Zhongnan Center 苏州中南中心

Suzhou, China 中国苏州

A confluence of factors makes Suzhou an ideal location for a megatall building. Though it is only 30 minutes from Shanghai by train, Suzhou is an independent city with an identity all its own. Its population is more than 10 million (yes, 10 million!), and its canals and gardens make it a top tourism destination. Further, its industrial parks and new technology districts are transforming Suzhou into a world-class city.

The Suzhou Zhongnan Center will be a 729-meter tall building, containing 375,000 square meters of gross floor area across 137 floors. The project site is located just west of the Jinji Lake central business district, on 16,573 square meters of land adjacent to Century Plaza and The Suzhou Center. It is a building of virtually unprecedented scale and scope, even within China. Its extreme height, difficult soil conditions, and widely varied program required an advanced level of thinking beyond typical tall-building planning, design and construction.

The design of the tower is intended to reinforce local Jiangnan culture, referencing its pagodas and local springs, with the remainder of its geometry defined by its diversified program functions. Across nine zones, the tower contains retail, restaurants, entertainment functions, offices, luxury apartments, a seven-star hotel and an observatory.

The most notable design feature of the tower is its tapering form and needle-like apex, with a consistent look broken only by the louver systems at mechanical floors. The podium attaches to the tower via a translucent façade, lit by fritted glass to the outside. It lifts up its canopy in a welcoming “flying lantern” gesture, creating a public plaza at ground level.

As with all of the megatall buildings currently under design or construction in China – still a very small “club” – existing code provides very little basis for the structural design of a building of Zhongnan Center’s height or complexity. Due to the rapid increase of wind loads and responses with the building height, wind loading becomes a dominant governing factor for many aspects of the structural design for tall buildings, but for those in high seismic zones, such as Zhongnan Center, both conditions must be accommodated. Thus, the team undertook performance-based design to enhance and tailor the special design elements to match stakeholder objectives and ensure safe, economical construction, while addressing issues such as seismic waves, wind-induced serviceability design, life-cycle cost, material weight, and story

诸多因素使得苏州成为了建造巨型高层建筑的理想之地。虽然乘坐高铁到达上海仅需三十分钟，但苏州是一个独立的城市，拥有其独特的城市文化。苏州的人口超过一千万，勾连的运河和秀美的园林让它成为最著名的旅游胜地。此外，苏州工业园区和高科技产业开发区正在将苏州带入世界级都市的行列。

苏州中南中心高729米，137层，总建筑面积375,000平方米。该项目地块占地16,573平方米，位于金鸡湖CBD西侧，紧邻世纪广场和中润苏州中心。即使在中国这个高层建筑最大的市场，该项目也是一座真正在体量和规模上史无前例的高层建筑。超高的高度、复杂的土壤条件和多样的功能设置都要求设计者在规划、设计和施工上经过超出一般高层建筑的深思熟虑。

该项目的设计意图在于加强江南文化，引入了佛塔和泉水的元素，几何形式由多种功能定义——九个分区中包含了零售、餐饮和娱乐功能、办公空间、豪华公寓、七星级酒店和观景平台。

塔楼设计显著的特征在于其由底部向上逐渐收缩的形式和针状的尖端，外观(除位于机械层的散热系统)保持高度的一致

Right: Rendering of the Suzhou Zhongnan Center located just west of Jinji Lake (Source: Gensler)
右: 坐落在金鸡湖西岸的苏州中南中心 (来源: Gensler)



Design for Vertical Habitation

垂直人居环境设计

Jun Xia (夏军), Elizabeth Michalska, Wendy Wong (黄玮儿) & Raymon Chen (陈黎明), Gensler

This chapter describes the main principles behind the architectural design of the building. Its architectural expression and functional organization achieve not only iconic landmark status, but also fulfill its owner's investing strategies by creating a modern business model in which performance-based measurements can be closely monitored. The ultimate objective of the design is to create livable spaces for daily life, work and play. The tower is on track to become the tallest building in China upon completion in 2020.

本文阐述了苏州中南中心采用的主要设计原则: 其建筑表达及功能组织不仅达到了城市地标的要求, 还通过成功的现代商业模式(在该模式下, 其基于性能的测量可密切监控)的营造满足了业主的投资战略预期。设计的终极目标在于营造出适宜日常生活、工作及休闲的宜居空间。该多样化的垂直社区有望于2020年建成时成为中国最高楼。

Site

The main entrance to the site is located at Suhui Road and Xingyang Street. The podium overhangs above the main entrance to the plaza and provides primary access to retail, the hotel ballroom and offices. The office drop-off is located along the south edge of the tower. The north entrance of the tower, across the street from Century Plaza, will provide access to the seven-star hotel. The apartment drop-off is situated along the west edge of the tower. Freight access is located at Xingzhou Street to the east (see Figure 2.1).

Concept and Tower Geometry

The vision is to transform the tower into Suzhou's most iconic destination, at the heart of the urban fabric. The intent of the design is to reinforce the Jiangnan culture, integrating it with the functional stacking of spaces in order to create a vertical public realm.

The tower's vertical geometry is set out by combining three delicate radial curvatures tangent to each other, giving shape for the sensuous tower form. The four corners of the tower are treated by two strips of metal cladding panels at the edge of each corner, giving definition to its geometric form. The geometry is defined and determined by the diversified program functions of the tower. The project will enhance the general image of the Suzhou CBD to become a major destination for both local and international visitors.

The form of the tower relates to the Jiangnan culture, inspired by the pagoda and the springs of water flowing down to Jinji Lake. This gives the Suzhou Tower a feminine, elegant and sensuous form. The concept also signifies the strength and cultural values of Zhongnan's brand identity.

Building Massing

The 137-level tower, being the dominant mass in the region, is juxtaposed with the eight-level podium attached to the south side of the tower. The podium is the modern interpretation of the "flying lantern" (see Figure 2.2), with a recessed mass linking the podium and the tower

基地

基地主入口位于苏惠路及星阳街上; 裙楼悬挑于通往广场的主入口上方, 主要提供与商业、酒店宴会厅及办公的出入口。办公下客区位于塔楼的南面。塔楼北侧入口与世纪广场南面的道路相毗邻, 为七星级酒店出入口。公寓下客区坐落于塔楼的西面。货运出入口位于东面的星洲街上(参见图2.1)。

设计概念及塔楼几何外形

设计旨在将苏州中南中心建成苏州中心位置最具标志性的目的地。我们的设计手法强化了江南文化, 与空间的垂直功能相整合, 营造出垂直的公共空间。

三个曲率半径相切, 构成了塔楼的垂直几何外形。塔楼四个角的各个边缘均采用两条金属外挂板处理, 定义了其几何体型。此外, 还利用不同的业态功能区别界定了该体型。该项目将改善苏州中央商务区的形象, 使其成为当地及国际访客的主要目的地。

塔楼的外形与江南文化相关联, 从佛塔及从天空顺流至金鸡湖的泉水获得灵感, 为苏州塔楼提供了具有女性气质、优雅且富于美感的外形。该概念还体现了中南品牌标识的实力及文化价值。



Figure 2.1. Site plan (Source: Gensler)
图2.1. 场地平面图 (来源: Gensler)

together. The podium canopy and tower core act as beacons of light, shining on the tower. The architectural vocabulary of the tower canopy serves as a circulation linkage between the tower and podium.

The approach of lifting the podium off the ground creates an open public plaza at ground level connected by escalator to Level 2 through an atrium space. The atrium space then spans four levels vertically, all connected by escalators. This sequence creates inviting and sculpted space for retail and entertainment.

The design challenge of resolving these two extremely contrasting masses requires articulation by breaking up the podium massing and expressing the podium lantern separately.

Diversified Vertical Community – Program Functions

The vertical functional stacking of the mixed-used development connects public spaces such as retail, entertainment and hotel ballrooms at the podium to the tower base by traversing skywards into more private spaces. The latter consists of apartments

建筑体量

主结构为137层高的塔楼，与8层高的裙楼（与塔楼南侧相连）比肩齐飞。裙楼是孔明灯的现代诠释（参见图2.2），凹槽将裙楼与塔楼连接起来。夜晚裙楼雨篷及塔楼如灯塔般闪闪发光。塔楼雨篷的建筑设计语言使塔楼和裙楼连接在一起。

裙楼的架高设计在地面层营造出开敞公共广场，通过自动扶梯通往二楼，而中庭空间通过内部的自动扶梯将四个楼层垂直连接，为商业和娱乐功能营造出引人入胜的室内空间。

对于这两个反差极大的体量，其设计挑战在于需打破与裙楼体量的衔接，单独体现裙楼灯笼外型，而无需与塔楼相呼应。

多样化的垂直社区—功能规划

多功能项目的垂直功能叠加从裙楼和塔楼底层的商业、娱乐和酒店宴会厅等公共空间一直向上延伸到更加私密的空间，包括沿塔楼至楼顶竖向叠加的公寓和酒店功能。塔楼一共分为9个区（参见图2.3），裙楼和塔楼1区包括位于2层和3层的商业空间，4层和5层的餐厅，6层的KTV娱乐和温泉水疗设施，以及7层的主次宴会厅。国际甲级办公布置在2区，公寓式办公布置在3区，豪华公寓布置在4到7区，7星级酒店布置在顶部的8区和9区。各区由避难和设备层分隔。本项目的酒店将成为世界上最高的酒店。

通往酒店上部观光层的体验旅程始于2层，将成为塔楼顶部游客的亮点，可观赏到风景如画的金鸡湖景色。

地下室共5层。B1层布置商业和餐饮功能；包括卸货和装货区的交通运输中心位于B2层，而B3，B4和B5层的功能设置为停车场和位于西北角的人防。主要的设备机房位于B5和B2。

作为商业总体开发策略，地下商业空间的北部和东南部通过地铁通道与相邻的商场连接，打造了跨越两个基地的商业环路。商业人流可通过基地北侧的下沉式广场竖向流通，并可通过南侧的下沉广场到达1层广场，形成通往地下商业的主入口节点。1层广场打造了同地下及地上商业空间相连的商业联系，吸引人流，同时营造了场所感（参见图2.4,图2.5）。裙楼的商业空间通过连廊与相邻的商场相连，是商业总体开发策略的一部分。

The Suzhou Zhongnan Center will be a 729-meter-tall building, containing 375,000 square meters of gross floor area across 137 floors, containing retail, restaurants, entertainment functions, offices, luxury apartments, a seven-star hotel, and an observatory. Its extreme height, difficult soil conditions, and widely varied program make it a building of virtually unprecedented scale and scope, even within China. This requires an advanced level of thinking beyond typical tall building planning, design and construction.

The CTBUH "In Detail" series provides an in-depth, full-color exploration of some of the most important tall buildings in the world, drawing from the multi-disciplinary expertise of the practitioners directly involved in bringing these buildings to life.

苏州中南中心高729米，137层，总建筑面积375,000平方米，包含了零售、餐饮和娱乐功能、办公空间、豪华公寓、七星级酒店和观景平台。即使在中国该项目也是一座真正在体量和规模上史无前例的高层建筑。超高的度、复杂的土壤条件和多样的功能设置都要求设计者在规划、设计和施工上比一般高层建筑有更多更深的思考。

CTBUH“深入解读”系列是以全彩页的出版形式对全球一些最重要的高层建筑进行深入剖析。其中，直接参与项目的不同领域的专家会参与此系列出版物的撰文与编辑，力求将项目全方位的信息生动呈现给读者。

