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"C.I.T.I.E.S." of the Future: Sinar Mas Center as Exemplar

未来"C.I.T.I.E.S.": 金光中心案例



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Abstract

In a rapidly transforming environment, vertical urbanism seems to be the direction most developed and developing nations are pursuing as a result of the demands of mass urbanization. The challenge of this paper is to move the dialogue about high-rises into a deeper conversation about livable cities, particularly in today's most rapidly transforming urban habitats. This paper describes the Sinar Mas Center mixed-use project in Shanghai and, introduces the concept of "C.I.T.I.E.S." (C = Center; I = Inhabitants; T = Technologies; I = Integration; E = Ecology; S = Sustainability) and relates the Sinar Mas Center project to the C.I.T.I.E.S. concept.

Keywords: C.I.T.I.E.S., Vertical Urbanism, Shanghai, New Bund, Sinar Mas, SOM

摘要

在快速变迁的环境中, 垂直城市主义似乎成为发达国家与发展中国家追逐的方向, 这是大规模城市化要求的结果。本文的挑战是将关于高层建筑的对话上升到更深的层次上, 特别是在当今城市人居环境快速变化情况下讨论宜居城市的议题。本文介绍了上海的金光外滩中心混合使用项目, 项目引入了"C.I.T.I.E.S."的概念 (C代表中心; I代表居民; T代表技术; I代表集成; E代表生态学; S代表可持续性) 并阐述金光外滩中心项目中C.I.T.I.E.S.概念的具体体现。

关键词: C.I.T.I.E.S.; 垂直城市主义; 上海; 新外滩; 金光集团; SOM公司

Introduction

Cities have developed vertically in order to remedy the lack of developable land and to meet the city's infrastructure requirements, particularly in the city center. This strategy solves multiple problems, but generates others, such as alienation from urban street life, energy consumption and congestion around vertical transportation.

The challenge addressed in this paper is to move the dialogue about high-rises into a deeper conversation about livable cities, particularly in today's most rapidly transforming urban habitats. This paper describes the Sinar Mas Center mixed-use project in Shanghai, introduces the concept of "C.I.T.I.E.S." (C = Center; I = Inhabitants; T = Technologies; I = Integration; E = Ecology; S = Sustainability) and relates the Sinar Mas Center project to the C.I.T.I.E.S. concept.

Sinar Mas Center

Sinar Mas Center (formerly known as White Magnolia Place) was developed by Shanghai Jingang North Bund Realty Co.

引言

城市由于用地缺乏而采取垂直发展模式, 并满足城市的基础设施的要求, 这种方式在城市中心尤为明显。这种垂直发展策略解决了一些问题, 但是同时产生了其他的问题, 如城市街道生活的疏离、能源消耗以及垂直交通堵塞。

本文的挑战是将高层建筑的对话上升到更深的层次上, 特别是在当今城市人居环境快速变化情况下讨论宜居城市的议题。本文介绍了上海的金光外滩混合使用项目, 项目引入了"C.I.T.I.E.S."的概念 (C代表中心; I代表居民; T代表技术; I代表综合; E代表生态学; S代表可持续性) 并阐述金光中心项目中C.I.T.I.E.S.概念的具体体现。

金光中心

金光中心 (原名白玉兰广场) 由金光纸业 (中国) 投资有限公司的子公司, 上海金港北外滩置业有限公司开发, 项目位于北外滩历史区的一块完整的场地上。这个大型混合功能的项目, 包括3层的商业零售裙房、2层的展厅、39层的W酒店、和66层的办公楼。设计方美国Skidmore Owings & Merrill (SOM) 建筑设计事务所, 采用了一个复杂且高度综合的建筑方式介入本项目,

Ltd., a subsidiary of Sinar Mas Paper (China) Investment Co. Ltd. It is on a full-block site located north of the historic Bund district. The large-scale, mixed-use project consists of a three-story tall retail base, 2-story pavilion, the 39-story W hotel, and a 66-story office building. The Skidmore Owings & Merrill (SOM) design solves the program with a complex, highly integrated architectural solution that respects this historic area of Shanghai while extending the public realm to provide a new destination and gateway to the city.

Urbanism

The complex is bounded by four streets: East Changzhi Road on the north, Lushun Road on the west, Xinjian Road on the east, and East Daming Road on the south. Multiple entrances to the 422,791-square-meter complex weave Sinar Mas Center's mixed uses into the fabric of the city (Center, Integration).

The office tower is located at the center of the block, rotated 45 degrees from the street grid to direct views up and down the Huangpu River. The W Hotel is on the northwest corner of the site and is designed as a semicircular form that offers every guest room a view of the Pudong skylines across the river. A Pavilion is located along East Changzhi Road, between the hotel and office towers. It provides a smaller, iconic marker for the neighborhood and can be used for a variety of flexible programs, both public and private.

Program

The large-scale mixed-use program of Sinar Mas Center is carefully organized as a single, fully integrated complex that fills its urban block, but its architectural articulation provides unique identities for each of its programmatic parts.

There are four sub-grade levels that encompass the entire site, including two levels of parking beneath two levels of below-ground retail. The podium comprises three floors of above grade structure that ties together the larger project elements while creating a series of landscaped plazas that engage the surrounding district and welcome guests, workers and visitors to the various portions of the complex (Integration). The retail complex forms a loop that encircles the central office tower.

Dedicated drop off zones allow for dispersed access to the site's amenities in an organized manner. The drop off along the north side is specifically for retail. The western drop off serves the portion of the podium that predominantly accommodates hotel functions serving the W's guests—lobby, ballrooms, fitness center and pool, among other amenities that include retail shared with the larger shopping complex (Inhabitants).

The south entrance to the complex faces the riverside park and cruise ship terminal. It provides both pedestrian and automotive access to the office tower and retail center. The ground level interactions enhance access to the site from the park across the street (Ecology).

Form

At 320 meters, Sinar Mas Center's tallest building—its office tower—is considerably shorter than many of its neighbors across the river. But its dynamic shape gives it a strong presence in the North Bund District. The building principally square in plan, but its exterior shape is notable for its curving forms. The corners are relatively constant in radius from base to crown, but the curvature of the sides varies significantly as the tower rises. At the base, each of the four sides is very slightly concave—offering a welcoming shape to the pedestrian who encounters the tower from either the exterior plaza or from within the shopping mall. The concavity increases in intensity at the upper levels, developing a more sculptural form on Shanghai's skyline.

尊重了上海的历史建筑风貌区，同时通过为城市提供一个新的目的地和门户区域而拓展了城市公共领域

都市主义

这个城市综合体处在由四条街道划定的范围内：北临长治东路，西靠旅顺路，东与新建路相邻，大名东路紧接南侧。金光中心采用混合功能模式，项目总建筑面积422,791m²，同时有多个出入口，并与周边城市融合。(Center中心, Integration综合)

办公楼位于街区的中心，与道路网格成45度夹角，从而获得直接观赏黄浦江的景观视角。W酒店位于基地的西北角，采用半圆形的形式设计使酒店中每一个房间的客人都有一个隔江相望浦东摩天高楼的景观视角。展馆位于长治东路沿线，在酒店和办公楼之间。它为附近的区域提供了一个小型标志性建筑，并可灵活地用于展览各种公共和私人的文化艺术中心。

项目

金光中心大型混合功能项目是一个缜密组织并充分整合的城市综合体，填满了其所在的城市街区。同时，清晰的建筑形式展示了项目不同组成部分独特的特征。

场地中共有四层地下空间，包括两层地下停车场和两层地下商业零售空间。三层地上的裙房结构将项目元素联系在一起，从而创造了一系列的大型平台，以水景绿化广场，吸引周边街区的人来到此处，并成为迎接来到此城市综合体(Integration综合)的多元化来宾、白领人员和访客的场所。商业综合体组成了围绕中央办公楼的圆环。

专用的落客区使分散在场地内的出入口形成有序的组织。北面落客区是为零售功能而设置。平台西面落客区主要为W酒店的客人服务——提供大厅、舞厅、健身中心、游泳池和其他设施，如零售、大型共享购物中心 (Inhabitants居住者)。

综合体的南侧入口面向滨江公园和游艇码头。提供到达办公楼和零售中心的步行和车行路径。地面层的联系增强了从街对面到场地的可达性 (Ecology生态)。

形式

金光中心的办公大楼高320米，是项目中最高的建筑。但是仍旧低于隔江相望的区域中许多摩天大楼。但建筑极具动感的形态使其在北外滩地区具有极强的存在感。平面上看建筑形态是方形的，建筑外形则是引人注目的曲线形式。建筑塔楼从上到下的半径是相对恒定的，但是建筑每一面的曲率随着建筑的高度上升而发生细微的变化。在底层高度，建筑的四个面都有轻微的凹陷，这种处理使建筑以包容的形态迎接从外部广场或购物中心进入塔楼的来宾。随着建筑高度的增加，建筑立面的凹陷程度也随之增加，因此建筑在城市天际线中形成了一种雕塑的形态。另外，整个塔楼也进行了收分处理，这是一种传统处理柱状几何体的策略，强调了建筑物的垂直形态。在较低的高度建筑每层的面积有细微的扩大，而在塔尖高度有微微减小。在塔的顶端，建筑的每个边都呈扇形，四角高高升起成为建筑立面中最高的部分。

而办公楼的建筑形式随着高度而改变，W酒店是一个简单的半圆形态。酒店的形式成为对办公大楼形式的补充，其南向立面在平面上看是一个标准的突出半圆，使每个客房都能获得良好的景观条件。北面凹陷的外观模式显示出建筑服务中心的位置。

从蜂巢形状的展厅可直接到达建筑酒店和零售区，并提供了沿综合体北侧独特的街道立面。(Integration综合)。

裙房的曲线提供了一个有机的外观，使建筑具有独特的形态。拱肩楼板以水平表达为主，与塔楼上光滑的玻璃材料对比，创建了一个相似但稍有不同外观。贯穿的曲线开口为地下公共区域提供自然采光，并形成了地下层与外部空间之间的视觉联系

The entire tower exhibits entasis—an ancient method of modulating columnar form so that it emphasizes vertical expression. The size of the floor plate subtly expands through its lower floors, before tapering towards its summit. At the crown, each of the four sides is dramatically scalloped and the four corners rise to the building's highest elevations.

While the office building's form morphs as it rises, the W Hotel is a simple semicircular extrusion. The hotel's shape complements the office tower's form, its southern façade a pure convex semi-circle in plan that facilitates views from every guest room. Its north façade is concave and primarily an expression of the building's service core.

The bee-hive-shaped pavilion provides a distinctive street presence along the north side of the complex with its interiors directly accessible from the hotel and retail areas (Integration).

The curves of the podium give it an organic appearance that reprises the signature form of the towers without duplicating it. Primarily horizontal in expression, its solid spandrel panels contrast with the glazed materials on the towers to create a similar, but subtly different look. Curved openings throughout provide natural day lighting to the public areas below grade and create visual connections between the lower levels and outside (Ecology). Voids within the retail spaces are important means of providing light to lower levels and visual connections between the five retail levels. Escalator circulation was important consideration to help tie together the multilevel experience for all users (Integration). Substantial portions of the podium structure have green roofs that provide environmental benefits and can promote special programmatic functions (Ecology).

Façades

Cold bent glass is used throughout the office tower—a high performance material application that creates Sinar Mas Center's strong expression with economical means. A limited amount of hot bent glass is employed at the more pronounced curvature that forms the crown. Meticulous architectural and engineering analysis was performed to create the tower's dramatic form with the most efficient use of these different techniques (Technologies, Sustainability).

Each of the three main structures—office tower, hotel and pavilion—are glazed and incorporate horizontal aluminum shading fins. These perforated aluminum sunshades reduce solar heat gain by day and reduce light pollution by night. The depth of shading devices varies according to exposure in order to decrease solar gain for interior environmental comfort and energy efficiency. The spandrel panels on both towers are acid-etched to provide a neutral, non-reflective surface that reinforces the predominant reading of each primary structure as a glass monolith. The office tower has two horizontal fins per level—one at the top and bottom of each spandrel panel. Additionally, vertical fins are employed when necessary to augment the effects of the horizontal elements (Technologies, Ecology).

The pavilion also has three-dimensional shading fins that undulate with the form of the structure. Their form emphasizes the entrance and become more translucent towards the top of the building. These environmentally responsible elements reinforce the organic qualities of the overall design, defining Sinar Mas Center as a complex whose boldly contemporary forms are in harmony with its natural and urban environment (Sustainability).

(Ecology生态)。零售空间的空隙是为低层提供光并建立五层零售空间之间视觉联系的重要手段。自动扶梯的循环帮助使用者将多层空间体验联系在一起 (Integration综合)。裙房结构的很大一部分都有绿色屋顶，能提供环境效益并促进项目整体的功能 (Ecology生态)。

立面

整个办公塔楼都使用冷弯玻璃——这是一种高性能材料的应用，通过合理的经济手段使金光中心项目具有引人注目的外观。数量有限的热弯玻璃在曲率更大的塔冠部分应用。进行了细致的建筑和工程分析，以通过这些不同技术最有效的运用创造出塔的戏剧性的形式 (Technologies技术, Sustainability可持续性)。

项目的三个主要结构: 办公楼, 酒店和展馆都装有幕墙玻璃和水平铝制遮光片。这些多孔铝制遮光片在白天减少太阳辐射热量, 在夜间可使建筑免收光污染的影响, 遮阳装置的深度随照射光亮而调节以降低获得的太阳能辐射量以创造舒适的室内环境并节能。三个塔楼的拱肩楼板都经过了酸蚀刻处理, 提供无色的非反射表面, 加强了各主要结构作为玻璃体量的形式整体性。办公大楼每层侧面板的顶部和底部都有两个水平鳍。此外, 直鳍形条板的运用加强了水平元素的效果 (Technologies技术, Ecology生态学)。

展览厅还拥有随着结构形式而波动的立体阴影条形板。这些条形板对入口进行了强调, 并使建筑物顶部变得更加透明。这些对环境负责的元素加强了整体设计的有机品质, 使金光中心城为一个具有复杂而大胆的现代形态, 并与自然和城市环境和谐的城市综合体 (Sustainability可持续性)。

结构

金光中心的工程结构系统由一个高层办公塔楼、一个中等高度的酒店和一个连接裙楼商业和地下停车场的水平平台组成。

办公楼的结构体系具有高效性, 并且是一个强大的协调组合系统, 设计充分利用混凝土芯的重量效率、阻尼作用, 以及外部框架固有的稳定性和效率, 结构具有24个组合柱、两层悬臂梁以减少动态风荷载并有利于地震能量消散。

上海的处于中度的内陆/沿海风和地震活动区域 (地震烈度7度, 设计1组), 这将使建筑需要一个能够在地震情况下的吸收能量的柔性结构。

根据中国的规范, 侧风和地震荷载抵御系统设计成一个双系统, 具有一个内部的钢筋混凝土核心, 以抵抗大部分侧向荷载, 以及由深宽翼缘钢梁和复合柱组成的外部框架。混凝土芯的重量能锚固结构, 防止倾覆力的破坏, 并防止芯壁元件的张拉或隆起。钢框架通过立柱和横梁的弯曲抵抗横向荷载, 同时也在机械层面上由周边“带桁架”绑在一起, 建筑内分布的交叉互连悬臂梁桁架将加强钢框架组合柱的轴向刚度, 帮助抵抗横向荷载。在桁架对角线交叉的钢能提供多个负载路径的额外的优点: 如果任何单个周长柱被损坏, 地板可从带桁架挂起并重新分配荷载到相邻的柱子上。在地震情况下, 钢框架可适应较大的变形, 并将通过韧性耗散地震能量。虽然混凝土核心筒将抵抗大部份横向地震和风力, 钢框架按比例比例承受发生在任何地面或基底抗弯框架最大剪力较小的1.5倍荷载, 或者根据中国的规范承受总剪力的25%。

在金光中心的岩土工程条件中涉及淤泥层、砂、粘土和混合土。这些弱土壤类型需要深桩筏基础。塔的基础由1200毫米直径的现浇钢筋混凝土桩构成, 设计承载力12000 kN, 并带有3.5M厚的筏板基础。裙房的基础由750毫米直径的钢筋混凝土钻孔灌注桩构成, 设计承载力4250kN, 设计抗拔承载力1000kN, 配备1M厚筏板基础。

Structure

The structural system of the Sinar Mas Center project consists of one high-rise office tower, one mid-rise hotel tower, and a connecting podium building with commercial and underground parking levels.

The structural system for the office tower is a highly efficient and robust assemblage of distinct but attuned systems designed to take advantage of the efficiency, damping and mass properties of a concrete core and the inherent stability and efficiency of exterior moment frame, with 24 composite columns engaged by two levels of steel outrigger trusses to minimize dynamic wind forces and dissipate seismic energy.

Shanghai is located in a region of moderate inland/coastal winds and earthquake activity (seismic intensity degree 7, design group 1) that will require a ductile structure capable of absorbing energy during a seismic event.

The lateral wind and seismic load-resisting system is a dual system, as required by the Chinese code, comprised of an interior reinforced concrete core that resists the majority of lateral loads, and an exterior moment frame consisting of deep wide-flange steel beams and composite columns. The weight of the concrete core anchors the structure against overturning forces and prevents tension or uplift in core wall elements. The steel moment-frame resists lateral load through bending of the columns and beams but is also tied together at mechanical levels by cross-building outrigger trusses interconnected by perimeter "belt-trusses" that activate the moment frame composite columns' axial stiffness to help resist lateral loads. The steel diagonals in the belt trusses have the additional advantage of providing redundancy and multiple load paths: if any single perimeter column is damaged, floors can hang from the belt truss and redistribute load to the adjacent columns. In the event of an earthquake, the steel moment frame can accommodate large deformations and will dissipate seismic energy through ductile yielding. Though the concrete core will resist the majority of lateral seismic and wind forces, the steel moment frame will be proportioned to resist the lesser of 1.5 times the moment frame maximum shear occurring at any floor, or 25% of the total base shear, per Chinese code.

The geotechnical conditions at Sinar Mas Center consist of layers of silt, sand, clay and a mixture of soil. These weak soil types necessitated a deep-pile-supported mat foundation. The tower foundation consists of 1200-mm diameter cast-in-place reinforced concrete piles of 12,000kN design bearing capacity, with a 3.5-meter-thick mat foundation. The podium foundation consists of 750-mm diameter cast-in-place reinforced concrete piles of 4,250kN design bearing capacity and 1,000kN design uplift capacity, with a 1-meter-thick mat foundation.

The substructure is comprised of four basement levels. The superstructure is a reinforced concrete core system, which, along with concrete-encased steel composite columns at the primary tower grid lines, will extend through the basement. The foundation walls have a bentonite-panel waterproofing system. The substructure floor systems consist of reinforced concrete two-way flat slabs, with column drop panels at lower levels, and a reinforced concrete two-way slab with beams at ground level. In areas with no basement, the lowest level is a reinforced-concrete ground bearing slab with a vapor barrier and granular fill placed over compacted backfill. The lowest level of the basement and the utility tunnels utilize a topping slab with a drainage system (Technologies).

下部结构是有四层。上部结构为钢筋混凝土核心系统，其中，在主塔的网格线型钢混凝土组合柱延伸到地下室。墙有膨润土防水系统。结构楼板系统由地下层的钢筋混凝土双向板、柱降板，以及地面层的钢筋混凝土双向梁板组成。没有地下室区域，最底层由带有防潮层的钢筋混凝土地基承载板和颗粒填充压实回填层组成。地下室和公共设施的最底层具有顶板排水系统 (Technologies 技术)。

"C.I.T.I.E.S."的概念

城市基本上是由下面的元素组成，这些元素的内涵可以进行发展并作如下理解：

C- 代表中心

I- 代表居民

T- 代表技术

I- 代表综合

E- 代表生态性

S- 代表可持续性

城市中心通常是指一个以高层建筑为焦点区域。最重要的是，它是活动的中心，是社会和商业聚集、思想交流和交汇的场所。

为了满足城市中心发展的需要，高层建筑并不需要成为解决上述所有活动方案。城市中心应是一个真正的“场所”，迎合了社会交往的最关键的需求，在场所中进行业务所需的面对面集会。

一般而言，一个城市中心随着其所构成的活动的发展而发展。为了发展而制定的新城市规划聚集了大量的建筑，其中最重要的是，通过地标建筑来凸显城市中心。与之不同的是，未来的城市中心可能是一个公园、湖泊或传统历史中心，这些区域可提供“场所”的历史性、文化性和身份特征。

居民在全市范围内进行工作、生活和社交活动。没有居民城市则是一座死城。许多城市中心在非工作时间缺少人的活动，除了一些全天候的城市，如纽约，东京和伦敦。这些城市中心通过在工作时间之外的混合使用，如夜总会和餐馆而吸引人在此进行活动。同时也十分重要，许多最繁荣的城市有居民在城市中心居住。而许多其他的城市的住宅区都远离城市，因为那里的土地是可用的；居民的通勤时间长达1-2小时，这取决于交通方式的不同。这种职住分离导致人际关系的疏离，最终扼杀生命力和创新。规划中对中心城范围内住宅社区的整合是长期活力的关键所在。

技术是保持城市运行的关键原因，技术能提供舒适和安全，并维护通信。普遍承认的是，城市中通信所占技术的份额越来越大。通过技术减少通勤并提供舒适和便利的可能性具有一定的依据。虽然有许多日常活动可以一定程度上被技术所取代，但这会导致社会缺乏活力。例如，去商店提供了一个与他人交往以及与环境互动的机会。

综合性是使城市宜居和可管理、以及有效运转的不可或缺的元素。

生活、工作和活动的一体化应该成为城市规划中一个重要的考虑因素。居住空间应不仅包括住宅；我们还应该提供的公共空间、社会空间、休闲和体育活动设施以及绿化。同时应该考虑减少机动车辆，最大化主要行人通的可达性，并充分发挥通信的作用。自行车作为曾经中国城市生活的主角，如果基础设施进行了调整

The “C.I.T.I.E.S.” Concept

Cities are essentially made up of the following elements, or can be interpreted and developed into these elements:

C – Center

I – Inhabitants

T – Technologies

I – Integration

E – Ecology

S – Sustainability

The center of the city usually refers to a focal point dominated by high-rise buildings. Most importantly, it is the center for activities, social and business congregation; ideas exchange and form a marketplace for transactions.

To meet the needs for the center in the city, high-rises need not be the solution for gathering all the activities mentioned above. The center could truly be a “place” that caters to the most critical needs of social interaction, where face-to-face meeting is necessary to conduct business.

Traditionally, a city center grows along with the development of its constituent activities. New cities plan for such growth by having clusters of buildings, and most of all, by having landmarks to signify the city center. A future city center could be a park, a lake or the original historic center, which can offer history, culture and identity to the “Place.”

Inhabitants work, play, live and socialize in and within the city. A city without inhabitants is a dead city. Many city centers cease activity after office hours, except for “24/7” cities such as New York, Tokyo and London. These city centers avoid becoming depopulated because they support a mix of uses beyond office hours, such as nightclubs and restaurants. Importantly, many of the most thriving cities have residents in the central areas. Most residential areas are far away from city where land is available; residents travel one to two hours to reach their jobs, depending on the mode of transport. This dispersal leads to monocultures and isolate people from each other, which ultimately stifles vitality and innovation. Planning to integrate residential communities within the center city is vital to long-term livability.

Technologies are the key solutions for keeping the city in operation, providing comfort and security, and maintaining communications. It goes without saying that communications form an increasingly large share of the technology running through cities. The potential for technology to reduce commuting, provide comfort and convenience is well documented. But there are many routine activities that could be replaced by technology at some point, but to the disadvantage of social vitality. Going out to the store provides an opportunity to socialize with others and interact with one’s environment, for instance.

Integration is essential for all elements that make a city livable and manageable, as well as effectively functional.

The integration of living, work and play should be a key consideration in city planning. Living space should consist of more than residences; we need to provide communal spaces, social spaces, leisure and sport activities, amenities, and greenery. We should also consider minimizing the role of motor vehicles and maximizing primarily pedestrian access and communication. Once the staple of Chinese urban life, the bicycle could once again become a primary transportation means if the

and support its use, it may once again become a primary mode of transport. When we use cars, their impact on urban space should be minimized, for this, we proposed a mechanical parking solution, which will give more space for walking or commuting and provide a bridge for life, work and entertainment environments.

In today’s cities, ecological performance provides a harmonious built environment, this is also a goal that developers and urban planners have not yet achieved or chosen to ignore. All technologies should consider eco-friendly processes and production flows. Other factors, such as natural lighting and ventilation, and non-landfill disposal for waste, are also equally important.

Sustainable development is the key to the city’s continued survival and growth, and many aspects are also the most popular topics for city developers. Purchasing local products and materials, increasing the use of recycled and renewable materials, and waste minimization strategies will all help improve the city’s environment.

挑战

Sustainable development is the key to the city’s continued survival and growth, and in many aspects is the most popular topic for city developers. Local products and materials procurement, increasing the use of recycled and renewable materials, and waste minimization strategies will all help improve the city’s environment.

A city with all “C.I.T.I.E.S.” attributes should be like this:

- 城市中心的规模应具有可管理性，最远点之间的交通时间应在30到45分钟之内。
- 住宅和公共设施应融入城市，以确保一个宜居社区并支持工作环境
- 绿色空间应当贯穿整个城市，并促进社会的交往活动。这也将改善空气质量，而空气质量是当今城市一个全球性的问题。
- 基础设施，如轻轨应当主要位于地下或者设计成分级互通形式。
- 应用可回收的材料和循环系统。
- 技术支持工作、生活方式和环境之间的连接和沟通。
- “对人的考虑”是决断时的首要因素。城市为人而服务的。

结论

The Jin Guang Center project adopted a mixed-use environment approach, becoming a new urban gateway for North Siping Road. Through the cruise ship pier, it welcomes many city visitors to Shanghai. Its unique structure and form reflect a bold aesthetic trend, from the surrounding urban肌理出发融入以低层尺度为主的外滩环境。两幢塔楼具有巨大具有动感的建筑形式，具有极突出的形象特征，在上海快速变化的天际线中塑造了一个鲜明形象。公共开放的外部 and 内部空间通过一个完全集成的设计，综合了高层建筑与城市人居环境结合的愿景，这是第二十一世纪的解决方案，体现了其业主“C.I.T.I.E.S.”的概念，并创造了一个新的城市目的地，同时为全球城市的可持续发展提供多样化经验。

infrastructure were adjusted to support it. When we do use autos, their impact on urban space should be minimized - to this end, we would propose a mechanical parking solution, which would give back space, allowing more pedestrian or interaction spaces to bridge between within the living, working and playing environments.

Ecology takes account of the natural world to provide a balanced built environment in today's cities, and it is something developers and city planners consistently fail to realize or choose to ignore. All implementations of technology should take into consideration, eco-friendly processes as well as the production. Other factors, like natural lighting and ventilation, and non-landfill garbage disposal, are all equally important to incorporate into the making of the city.

Sustainability is critical for cities to continue to thrive and evolve, and is in many ways the hottest subject among city-development professionals today. Local sourcing of products and materials, increasing use of recyclable and recycled materials, and waste minimization strategies will all contribute to improving the urban realm.

The Challenge

The challenge today is to fulfill the "C.I.T.I.E.S." conditions/expectations before more cities are conceptualized, planned and built.

A city has all the properties of "C.I.T.I.E.S." when:

- The city center is a manageable size, with maximum travel times of 30 to 45 minutes from end to end.
- Residential units and public amenities integrated into the city, ensuring a livable community and supporting the work environment
- Green spaces are located throughout the city, facilitating social interaction. This will also improve the air quality – currently a global issue
- Infrastructure, such as light rail is largely underground or otherwise grade-separated.
- Recyclable materials and systems are implemented.
- Technologies form a supportive connection between work, lifestyle and environment.
- The "human factor" is elevated above all else when decisions are being made. Cities are for people.

Conclusion

Sinar Mas Center provides a blended mixed-use environment and forms a new gateway for Shanghai's North Bund District. It will welcome many visitors to the city who arrive through the passenger cruise ship terminal. The distinctive forms of its podium structure are a bold aesthetic departure from the surrounding urban fabric—while fitting into the predominantly low-rise scale of the Bund itself. The two towers provide an iconic presence whose dramatically fluid forms give the complex a distinctive presence on Shanghai's rapidly evolving skyline. Publicly accessible exterior and interior spaces create a new destination within the city through a completely integrated design that brings together the shared aspirations of tall buildings and the urban habitat—a 21st century solution that exemplifies its owners' concept of "C.I.T.I.E.S.," providing multiple lessons for enduring development of our increasingly global cities.