

# Asia Ascending

Age of the Sustainable Skyscraper City

## 崛起中的亚洲

可持续性摩天大楼城市的时代

### Post-Congress Report

会后报告



**CTBUH 2012**

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### Cover Images | 封面图片

For more information on the "80 Asian Icons" found on the cover of this book, please see pages 14-15. The background text on the cover contains all continental Asian cities with an urban area population of three million or more, as well as other key Asian skyscraper cities.

了解更多关于本书封面“80座亚洲地标性建筑”的信息, 请查看第14-15页。封面上的背景文字涵盖了所有拥有300万以上城市人口的亚洲城市, 以及亚洲其他重要的拥有摩天大楼的城市。

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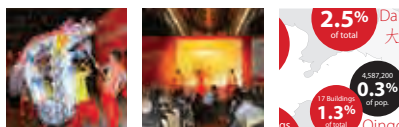


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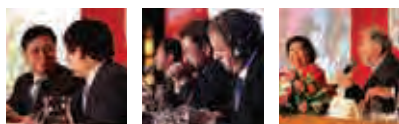
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# Congress Overview

## 大会概览

Report by (撰稿人): Antony Wood, CTBUH Executive Director / IIT Associate Professor (CTBUH执行总监 / IIT副教授)

The Shanghai World Congress – the ninth such gathering in the 44-year history of the Council on Tall Buildings and Urban Habitat – was a huge success. Eight hundred and seventy-seven delegates representing 430 organizations from 43 countries around the world gathered at the seminal Jin Mao Tower to engage with 114 presentations over three days, on the overall congress theme of *Asia Ascending: Age of the Sustainable Skyscraper City*.

In addition to the presentations and panel discussions, the Congress also included:

- A major exhibition
- Three prestigious social-networking events
- Eight technical workshops the day before the Congress
- Two poster exhibits (including that of an international student competition, which ran to a climax with five student groups competing for the top prizes during the Congress)
- The launch of two new technical guides
- Nine technical tours of tall buildings in Shanghai complete or under construction
- Four post-Congress regional tours of other cities around China

In short, the whole event was both action-packed and breathtaking.

The choice of China, and Shanghai in particular, for the 9th World Congress was clear. It seems indisputable that the 21st Century will be the age of the Asian Skyscraper. Already, the past two decades have witnessed a major shift in tall buildings from west to east. Many of the major advances in the tall typology are now taking place in Asia, often through a collaboration of Eastern and Western expertise. With global urbanization approaching 200,000 people every day, the need for a new or extended city of a million inhabitants *every week* is driving massive growth in hundreds of Asian cities simultaneously – from Mecca to Manila, Istanbul to Incheon, Karachi to Kunming.

At the same time, there is still intense global debate on whether the extrapolation of our cities vertically offers the best chance to combat global climate change, or whether a more sustainable pattern of life can be better achieved through other means. Tall buildings are not the only solution for achieving increased urban density, and the higher embodied energy of constructing and existing at greater heights may offset gains in land and infrastructure efficiency. The impact on inhabitants of future vertical cities must also be better understood. In all cities, infrastructure, long-term planning, and integrated thinking are essential. The major issues are no longer focused on just individual buildings, but how these buildings fit into the larger urban whole.

上海全球大会——世界高层都市建筑学会44年的历史上第九次举办这样的集会——获得了巨大成功。来自全球43个国家并代表430个组织的877位代表齐聚开创性的金茂大厦，在三天的时间里参与了114场讲座。整个大会的主题为“崛起中的亚洲：可持续性摩天大楼城市的时代”。

除了讲座与小组讨论外，大会还组织了：

- 大型展览
- 三场盛大的社交活动
- 大会前一天举办的八场技术研讨会
- 两场海报展览（其中包括国际学生竞赛展，五组学生在大会期间竞争最高的奖项将这一竞赛推向高潮）
- 两本新的技术指南发布
- 九组对上海已建成和正在施工中的高层建筑的技术参观
- 四组会后在中国其他城市的观光活动

总之，整个活动内容丰富且激动人心。

选择中国，特别是选择上海这座城市作为第9届全球大会的举办地的原因很明确。21世纪将成为亚洲摩天大楼的时代，这似乎已成为不争的事实。我们已经目睹了过去二十年中高层建筑发展重心经历了由西方到东方的巨大转移。目前高层建筑的许多重大进展都发生在亚洲，且往往是通过东西方的专业合作完成。伴随着全球城市化以每天20万人的增长速度，为每周新增的一百万居民建造新城或扩张旧城的需求推动了亚洲数百座城市的大规模增长——从麦加到马尼拉，从伊斯坦布尔到仁川，从卡拉奇到昆明，无一例外。





VIPs at the opening ceremony (left to right); Qing Wei Kong, Chairman, Shanghai Tower; Timothy Johnson, CTBUH Chairman/NBBJ; Shen Jun, Vice Mayor, Shanghai; Antony Wood, Executive Director, CTBUH; Guo Qiang Li, Professor, Tongji University  
 参加开幕式的VIP嘉宾（从左向右）：上海中心大厦董事长孔庆伟、CTBUH主席/NBBJ设计合伙人 Timothy Johnson、上海市副市长沈骏、CTBUH执行总监 Antony Wood、同济大学教授李国强

The CTBUH thus brought its 9th World Congress to the dynamic skyscraper city of Shanghai to examine these poignant issues. Is the skyscraper a sustainable building type? Can tall buildings truly reduce and harvest enough energy to become carbon-neutral? What is the full impact of developing skyward on the city and the lives of its inhabitants? And what support mechanisms and urban infrastructure are required for such growth?

The three days of the Congress convened the world's leading tall building owners, developers, contractors, architects, engineers, planners, policy-makers, and others, to ultimately answer the question: Does the vertical city offer the best chance for human survival in our rapidly-populating, urbanizing, consuming, and resource-dwindling world?

Here is a small taste of the vast variety of topics, events and discussions that dominated the Congress.

A traditional drum performance and a dancing dragon set the stage for the opening session of the Congress, which became a

与此同时，一个激烈的全球性辩论一直存在：我们是否可以推断垂直城市是对抗全球气候变化的最佳方式，或者是否可以通过其他方法达到一种更加可持续的生活模式？高层建筑不是解决城市人口密度持续增长的唯一途径，而且高度越高建筑本身产生的以及施工消耗的自含能量会更大，这也许会抵消掉土地和基础设施的使用效率。我们必须更深入地了解其对未来生活在垂直城市的居民所产生的影响。在所有城市和基础设施中，长远的规划和全方位的考量是必不可少的。现在主要的问题已不再是关注建筑本身，而是这些建筑如何适应更大尺度的整个城市。

因此，CTBUH在上海这座充满活力的城市举办第9届世界大会是要探讨这些深刻的问题：摩天大楼是可持续的建筑类型吗？高层建筑是否真正降低能耗并产生足够的能源从而实现碳中和？如此增长需要怎样的运营机制和城市基础设施？

为期三天的大会集结了全球领先的高层建筑业主、开发商、承建商、建筑师、工程师、规划师、决策者等来最终解答这一问题：在我们现在人口急速增长、城市化进程加速、高消耗以及资源逐渐匮乏的世界，垂直城市是否能为人类的生存提供最佳解决方案？

本文对大会众多的议题、活动以及重要的讨论作了简述。

传统的击鼓与舞龙表演为大会开幕式拉开了序幕，此次大会集中探讨了高层建筑领域中的文化、技术和最新的发展。大会前一天晚上在上海环球金融中心第93层举办了盛大的VIP招待酒会，那里是世界上最高的私人会场。参加开幕典礼的特别嘉宾有上海市副市长沈骏和上海中心大厦董事长孔庆伟。沈副市长意味深长地阐述了在中国快速城市化进程中土地资源是有限的，因此需要更大的城市密度。孔董事长向观众介绍了具有开创性的上海中心大厦的扭转形态和空中公共花园，这些花园届时将会设置在整个建筑632米高度的近三分之二的位 置，恰好在会场之外。

大会其他亮点还有开幕式集体大会（详见第20页），会上上海中心大厦总经理顾建平和Adrian Smith + Gordon Gill建筑事务所的创始人Adrian Smith作了发言，其中Adrian Smith详细介绍了其在像金茂大厦这样标志性的项目中探索亚洲超高层建筑本土性的过程。

绿地集团技术总监贾朝晖在第二天集体大会（详见第24页）上对观众讲到，新一代高层建筑给中国的开发商带来了新的问题。贾朝晖先生的发言为后面几个探索中



Drummers and a dancing dragon sets the stage for the opening of the CTBUH 9th World Congress, a convergence of culture, technology, and the latest advances in tall building development  
 传统的击鼓与舞龙表演为CTBUH第九届世界大会开幕式拉开了序幕，大会集中探讨了高层建筑领域中的文化、技术和最新的发展

# Asia Comes of Age

## 亚洲时代到来

Report by (撰稿人): Kevin Brass, Public Affairs Manager (公共事务主管), CTBUH

"Land resources are not renewable," said Shanghai Vice Mayor Shen Jun in his opening remarks to the day one plenary. "We have no choice but to build high-rises to save land efficiently." However, to succeed, tall buildings must provide solutions to China's long-standing urban problem of pollution and over-crowding, he emphasized. "It is an urgent and critical task to meet these challenges."

The themes laid out in the opening session would run through almost every discussion of the Congress in the next three days. Speaker after speaker underscored the need to develop realistic and achievable models for sustainability, as well as the need to integrate tall buildings into the urban fabric.

Data released by the CTBUH before the start of the Congress (see pages 7 and 13) revealed that Asia is now leading the world in tall building development. According to data compiled from the CTBUH's Skyscraper Center, by January 2013, more than 380 buildings over 150 meters had topped out or were under construction in China alone, more than any other country.

"It is just the right time to hold the event in China," said CTBUH China Country Representative and Tongji University Professor Guo Qiang Li. Throughout the discussions, there was an eagerness to share knowledge, a spirit of collaboration and a sense of commonly held interests.

"We hope that by sharing our experience and insight into our building systems we would make a contribution to sustainable supertall buildings in the world," said Qing Wei Kong, Chairman of Shanghai Tower, which will be the tallest building in China when it is completed in 2014.

"土地是不可再生资源", 上海副市长沈骏以这句话作为他的开场白。"为节约土地, 除了建造高层建筑之外我们别无选择"。但同时他也强调, 成功的高层建筑必须为中国长期的污染和过度拥挤等城市问题提供解决之道。他谈道: "应对这些挑战迫在眉睫。"

开幕式上提出的主题将会在未来三天的每场会议中贯穿始终。演讲者将会依次发言, 强调发展切实可行的可持续发展模式, 以及将高层建筑融入城市肌理的必要性。

根据CTBUH在会前发布的数据显示(详见第7页和第13页), 亚洲正在引领世界高层建筑的发展。同时, CTBUH摩天大楼中心的统计数据表明(更新至2013年1月), 仅在中国就有超过380座150米以上的高层建筑正在施工中, 这一数字为世界之最。

CTBUH中国代表、同济大学教授李国强告诉观众: "在中国举办此次盛会的时机很好。" 整个讨论下来, 与会者表现出想要一起分享信息、合作精神与共同兴趣的强烈愿望。



Shen Jun, Vice Mayor of Shanghai, welcomes the delegates to Shanghai and urges them to create sustainable tall buildings that meet China's urban population demands

上海市副市长沈骏欢迎代表来到上海, 并鼓励建造可持续的高层建筑来满足中国城市人口的需求



Jian Ping Gu, President, Shanghai Tower Construction & Development Co., discusses Shanghai Tower

上海中心大厦建设发展有限公司总裁顾建平讨论了上海中心项目



Adrian Smith, Founding Partner, Adrian Smith + Gordon Gill Architecture, analyzes some of his many tall building projects, including The Jin Mao Tower

Adrian Smith + Gordon Gill建筑事务所创始人 Adrian Smith分析了他所做的包括金茂大厦在内的很多高层项目

Like many modern projects, Shanghai Tower's aspirations go far beyond its height. The developers want to make it the "most sustainable building in the world," with green areas and a design that makes it a comfortable and efficient part of Shanghai's changing landscape.

"Priority was given to humanity," said Jian Ping Gu, President of Shanghai Tower, during his keynote address. "We want to have better functionality, to have a more harmonious and sustainable growth model."

But those goals are not unique to Shanghai Tower or Asia. The opening session brought home the universality of the challenges faced by Asia as it grows taller and designs new cities. "Let's find new ways to make buildings more sustainable," CTBUH Chairman and NBBJ design partner Timothy Johnson told the audience. "Let's be innovative. Let's find ways to change the way we think of tall buildings."

Mr. Johnson brought a personal perspective to the opening session. One of his first connections with the CTBUH was in 1990, he recalled, when his architecture career was just starting out and he received his first Asian assignment. In his research, he came across a copy of the proceedings from the CTBUH 4th World Congress in Hong Kong.

"I poured through it for hours, looking for ideas and background," Mr. Johnson told the audience. "Let's not underestimate the value of this event."

To close the opening session, CTBUH Executive Director Antony Wood introduced the architect who has "probably designed more supertall buildings than any architect in the world," Adrian Smith, the co-founder of Adrian Smith + Gordon Gill Architecture. In addition to designing the

**"Land resources are not renewable. We have no choice but to build high-rises to save land efficiently."**

**"土地是不可再生资源。为提高土地利用效率，除了建造超高层之外我们别无选择。"**

Shen Jun, Shanghai Vice Mayor / 上海副市长沈骏



Rendering of the Shanghai Tower, subject of JianPing Gu's keynote presentation, with the neighboring Jin Mao and Shanghai World Financial Center © Gensler

顾建平的主题演讲对象——上海中心大厦的效果图：上海中心与金茂大厦和上海环球金融中心相邻

上海中心董事长孔庆伟说道：“我们希望能够通过分享我们在建筑系统中的经验和认识，为全球发展可持续的超高层建筑贡献力量”。上海中心在2014年建成时将会成为中国第一高楼。

像很多现代建筑项目一样，上海中心的抱负远比它的高度更加宏伟。开发商们希望通过加入绿色空间将其打造成为“世界上最可持续的建筑”，并在上海不断变化的城市景观中成为舒适并高效的一部分。

上海中心总裁顾建平在主题演讲中说到：“人性关怀是我们首要考虑的因素。我们追求更好的功能性，以及更和谐、更可持续的增长模式。”

然而，那些目标并非是上海中心或者亚洲所特有的。大会开幕式清晰地阐述了亚洲在建造高层建筑和发展新城过程中所面临的共同挑战。CTBUH主席兼NBBJ设计合伙人Timothy Johnson告诉观众：“让我们找到新的方法让建筑变得更加可持续，让我们具有创新性，让我们找到方法来改变我们固有思维中的高层建筑”

Johnson先生在开幕式上表达了他的个人观点。他回忆说，他最早接触CTBUH的时候是在1990年，那时候他的建筑职业生涯刚刚起步，并且接到了他在亚洲的第一个项目。他在研究中偶然接触到了在香港举办的CTBUH第4届世界大会的会议论文集。

Johnson先生对观众谈到：“为了寻找创意和背景资料，我花了几个小时的时间仔细



## How High Can We Go, and Why Should We? 大会聚焦：我们能建多高？为什么要建那么高？

In the panel discussion “How High Can We Go, and Why Should We?,” four experts from different disciplines – structural engineering, architecture, MEP engineering, and letting/cost consultancy – gathered to discuss one of the industry’s most essential questions: “How high can we go, and why should we?”

One of the most popular sessions of this Congress, the panel consisted of Richard Tomasetti, founding partner of engineering giant Thornton Tomasetti and 2012 CTBUH Lifetime Achievement Award winner; Rafeal Viñoly, founder of international design firm Rafael Viñoly Architects; Vincent Tse, managing director of Parsons Brinckerhoff; and President of Global Asset Development for CBRE, Tony Long.

Here are some of the most significant statements from this fascinating panel.

**R. Tomasetti:** When you ask the space administration in the USA, “how high we can go?” they think in terms of a space elevator, which is basically a satellite in orbit with a skyhook, balanced by a counterweight. They have designs that go from 4,000 kilometers up to 100,000 kilometers. Then they come down to Earth a little bit, and they talk about the limits of carbon-epoxy composite in a tapered column. For that tower to hold up its own weight, with no floors or bracing, you can get up to 114 kilometers.

But we have to come down to Earth. If we look at the materials we mostly use, such as steel and concrete, the same column compared to the epoxy column for steel and concrete would get us to [13,500 meters and 7,800 meters, respectively]. But **if we decide to make it a building and put a typical amount of floors in there, we’re going to be at heights somewhere between 3,200 meters and 1,100 meters. Just the tapered column itself. But that’s not very high.** These are approximations, depending on the strength of the materials. Once you start putting lateral loads in, especially wind, these numbers get reduced by 30 to 50 percent. That doesn’t seem too high – we already have buildings going up that are 1,000 meters with lateral loads.

**V. Tse:** The limiting factors right now are elevator speed and comfort, air conditioning, and power and data... We talk of green buildings, but the thing is, when you look at the whole lifecycle of a tall building, tall buildings are not typically demolished... **That means a tall building’s life cycle can be 100 years. But of course, MEP systems cannot last that long...** We have professionals

在“我们能建多高以及为什么要建那么高？”的座谈小组讨论中，分别来自结构工程、建筑设计、MEP工程以及预算造价咨询的四位专家齐聚一堂，探讨了建筑行业其中的一个最重要的问题：“我们能建多高以及为什么要建那么高？”

作为大会最受欢迎的分会讨论之一，此座谈小组由工程业宋腾添玛沙帝公司的创始人Richard Tomasetti先生、2012年CTBUH终身成就奖获得者、国际建筑事务所Raphael Viñoly的创始人Raphael Viñoly先生、柏诚集团常务董事Vincent Tse先生、以及世邦魏理仕的全球资产管理服务总裁Tony Long先生。

以下是这个精彩的小组讨论中的一些重要观点。

**R. Tomasetti:** 如果你问美国航天局：“我们能到达多高？”他们可能会想到太空升降舱所能到达的高度。其工作原理是在轨道上放置一个带有天钩的卫星，并由配重来取得平衡。这个装置可以到达4000千米到10万千米。装置回到地面上，专业人员探讨在锥形柱中碳-环氧复合材料的限制性。而作为结构的塔在没有任何楼板和支臂的情况下可以维持自身的重量，并达到114千米。

但是我们必须得回到现实中来。如果审视我们常用的材料，例如钢材和混凝土。与航空上所采用的环氧树脂材料柱子所能到





that redesign buildings, but old buildings must be continually retrofitted. They are continually changing. In other words, if your MEP is going to change, your building is no longer sustainable.

**R. Viñoly:** Whatever was not possible once is possible today... Technology will continue to evolve. That is for certain and more than just a possibility... The question is really, "Why are you guys collectively trying to go higher?"... Essentially what we have historically is the proof that **the best buildings, at least in my book, both aesthetically and functionally, are buildings that are not buildings**, but are structures, such as telecommunication towers, that represent a need for iconicity and a symbolic function, which I think is completely legitimate and totally present today.

**T. Long:** There's more increase in the markets that have supertall buildings than there are in markets that do not... the data points form a nice, upward slope that shows that there is a correlation to higher rents and the tallness of the building. But it also shows that there is a point when a building loses some of that appeal to the market. **So, there is an upward limit, from a market standpoint, as to how tall a building can go.** ■

达的13500米相比，钢材和混凝土制成的柱子可以让我们到达7800米。如果我们将这两种类型的柱子变成建筑，并在其中放置一定数量的楼板，那么建筑的高度会在3200米和1100米之间。仅有锥形柱而已。但是那不是很高的。这些也只根据材料的强度而得到的近似值。一旦水平负荷出现，尤其是风力，高度就会下降30-50%。这样看来似乎并不高。但是我们已经有了1000米的大厦对应着风力拔地而起了。

**V. Tse:** 目前的限制因素是电梯的速度与舒适度、空调系统、电力与数据等。我们谈论绿色建筑，但是你审视高层建筑整个生命周期时，（并且高层建筑一般来讲不会被拆毁）事实上的一座高层建筑的生命周期可以为100年。当然，MEP系统不可能持续那么久。虽然我们有了可以对原有建筑进行再设计的专家，但是旧建筑也需要被不断地翻新。它们一直以来都在变化。换句话说，如果一座建筑中的MEP需要改变，那么这座建筑也不再是可持续性的了。

**R. Viñoly:** 原来不可能的事情在如今都变成现实了。技术也会一直发展下去，这是一定的。但是问题在于，“大家为什么都要建到更高？”从本质上讲，历史上那些最好的建筑，至少在我的印象中，是那些兼具美学意义和功能意义的建筑。那些不是建筑的构筑物，例如电视塔，其体现了标志性和象征性功能的需求。我认为这是完全合情合理的，并在今天的建筑市场中也得到了体现。

**T. Long:** 拥有超高层的市场比那些没有高层建筑的市场增长更快。数据中那条向上延伸的斜率显示着租金与建筑高度成正比的关系。但是它也显示了，在某点上建筑会对市场失去吸引力。所以从市场角度出发来讲，建筑能造多高是有上限的。■

Above: Panel Discussion (left to right); Richard Tomasetti (Session Chair), Founding Principal, Thornton Tomasetti; Vincent Tse, Managing Director, Parsons Brinckerhoff; Rafael Viñoly, Principal, Rafael Viñoly Architecture; Tony Long, President, Global Asset Development, CBRE

上图：讨论嘉宾（由左向右）：宋腾添玛沙帝创始人Richard Tomasetti（主持人）、柏诚集团常务董事Vincent Tse、Rafael Viñoly建筑设计事务所主管Rafael Viñoly以及世邦魏理仕总裁Tony Long

# Technical Building Tours

## 技术参观



Delegates take in Shanghai from the Riviera TwinStar Square project  
代表们站在浦江双辉大厦上欣赏上海

As part of the CTBUH Technical Tour program, attendees of the World Congress were presented with an inside look at nine iconic tall buildings across Shanghai, led by those responsible for the design, construction, or management of the buildings.

Located in the heart of Pudong's Lujiazui financial district, the two towers of the **Shanghai International Financial Center** are not even among the top ten tallest in Shanghai – but the three-year-old complex is nevertheless a centerpiece of Pudong.

"I enjoyed seeing the core and elevating configurations for the towers and the resultant lobby and entrance arrangements," said one of the participants, Benjamin Johnson of Adrian Smith + Gordon Gill Architecture. "The sky lounge was also an obvious highlight."

The IFC tour broke into sub-groups to visit different areas of the building, including the technical facilities and machine rooms. Special attention was paid to the lobby and entry configurations, and the intricacies of connecting the different elements of the mixed-use facility.

The **Jin Mao Tower** tour began at the "Skywalk" public observatory on the 88th floor. Unlike observatories in more rectilinear buildings, this space is composed of angles and notches derived from the complex façade, and from steel support members for the crown of the building. A unique round viewing platform at the center of the floor gave visitors a look straight down into the Hyatt's atrium. The tour concluded with a visit to the 8th-floor offices of the building owner, the China Jin Mao Group.

The **Jing An Kerry Centre Tower Two** had required more than 10 years of planning and strategic purchasing, tour attendees learned. Joining the original Kerry Centre on the corner of the property, the project has been expanded to cover 350,000 square meters of retail, hotel, and office space. According to the developer, Kerry Properties, constructing the building between

作为CTBUH技术参观项目的一部分，参加全球大会的代表在会议期间有机会在项目（设计、施工或项目管理）负责人的带领下，深入参观上海的九座地标性高层建筑。

位于浦东陆家嘴商务区核心的**上海国际金融中心**尽管未跻身上海最高的十座建筑，但这一刚刚建成三年的综合体已经成为了浦东新的焦点之一。

本次活动的参与者之一来自Adrian Smith + Gordon Gill建筑师事务所的Benjamin Johnson说：“我欣赏大厦的核心筒设计和电梯配置以及由此得来的对大堂和入口的设计。空中酒廊显然也是一个亮点。”

此次参观被分成了不同小组来参观建筑中的不同区域，包括了技术设备和机房。其中大堂和入口的布置以及连接混合使用设施中各个不同元素的复杂性引起了代表们特别的关注。

对**金茂大厦**的参观是从88层的公共观景平台的“空中人行天桥”开始的。不同于更多方盒子建筑的观景平台，这一奇特的空间是因金茂大厦复杂外立面的角与槽以及建



Left to right: Shanghai World Financial Center, The Jin Mao Tower and Shanghai Tower © Gensler  
 从左向右：上海国际金融中心、金茂大厦和上海中心大厦



Tomorrow Square © John Portman & Associates  
 明天广场



Delegates take photographs from an observation deck at Tomorrow Square  
 代表们在明天广场的观景平台上拍照



The Shanghai Tower tour group gets an overview of the building structure and function  
 上海中心大厦的参观团听取了对其建筑结构和功能的大致介绍

The Council on Tall Buildings and Urban Habitat is the world's leading resource for professionals focused on the design, construction, and operation of tall buildings and future cities. A not-for-profit organization based at the Illinois Institute of Technology, Chicago, the group facilitates the exchange of the latest knowledge available on tall buildings around the world through events, publications, research, working groups, web resources, and its extensive network of international representatives. Its free database on tall buildings, The Skyscraper Center, is updated daily with detailed information, data, images, and news. The CTBUH also developed the international standards for measuring tall building height and is recognized as the arbiter for bestowing such designations as "The World's Tallest Building." This document is a review of the seminal ninth CTBUH World Congress, which took place in Shanghai over four days in September 2012.

世界高层都市建筑学会致力于为专业人士提供高层建筑和未来城市设计、建造和运营方面全球领先的资源。学会是总部位于芝加哥伊利诺伊理工大学的非盈利性组织，通过活动、出版、研究、工作组、网络资源以及其全球代表的广泛联络来促进世界高层建筑最新资讯的交流。学会拥有免费的高层建筑数据库——摩天大楼中心，对项目的详细信息、图片、数据及新闻进行每日实时更新。CTBUH还设立了测量高层建筑高度的国际标准，被公认为是授予“世界最高建筑”头衔的仲裁者。这份文件回顾了于2012年9月在上海召开的为期四天的开创性的CTBUH第9届全球大会。



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