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# How Tall Buildings Meet the Ground is as Important as How They Meet the Sky

## 高层建筑亲近地面与触及天际同样重要



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James Goettsch is the president of Goettsch Partners as well as the firm's design director. He brings more than 40 years of experience and is a Fellow of the American Institute of Architects. Select projects include the 33-story original building and 24-story "vertical completion" at 300 East Randolph in Chicago, also known as the Blue Cross Blue Shield of Illinois Headquarters; the five-building, 300,000-square-meter Sowwah Square office complex in Abu Dhabi; the 53-story 111 South Wacker building in Chicago, the first-ever project certified LEED-CS Gold; and the China Diamond Exchange Center in Shanghai.

詹姆斯·盖驰先生为美国GP建筑设计有限公司的总裁，以及公司的设计总监。他有着超过40年的设计经验，是美国建筑师协会全权资深会员。精选的项目包括位于芝加哥的33层东伦道夫大道300号项目，以及在此基础上增建24层的“垂直加建项目”，此项目又称蓝十字蓝盾伊利诺州总部；位于阿布扎比的五栋单体、总面积为30万平方米的沙瓦哈广场综合商务办公楼项目；位于芝加哥的53层南威克路111号项目，为有史以来第一个被认证为LEED-CS金级的绿色建筑；以及位于上海的中国钻石交易中心。

### Abstract

Today, urbanism is synonymous with tall buildings, and because of their symbolic nature a great deal of attention is given to how these buildings meet the sky. However, if you are concerned about the urban habitat, you have to be equally concerned about whether or not buildings provide a positive experience at the ground level. By focusing attention on the design and technical advances related to the ground level of tall buildings, we can broaden the discussion of how these buildings relate to our cities and evolve over time. Requirements for security, accessibility and visibility/transparency must always be satisfied; however, providing amenities and meaningful public spaces will enhance the urban environment.

**Keywords: Lobbies, Plazas, Transparency, Openness, Security**

### 摘要

当今，都市化与高层建筑同义，并因其象征性，大多数人所关注的是这些建筑如何与天际相接。然而，若对都市环境有所关注，也就不能忽略建筑在地面层能否提供的切身体验。通过将注意力集中于高层建筑地面层的设计以及相关先进技术的应用，我们可以扩展讨论这些建筑物是如何融入我们的城市中，并如何随着时间逐步演变。安全性、可达性和可见性以及透明度的要求必须从一而终地得到满足。同时，提供配套服务设施和有意义的公共空间可提升都市环境品质。在美国、中东和亚洲的精选项目来提供处理这些问题的范例。

**关键词：大堂、广场、通透感、开敞感、安全性**

### Sense Of Arrival

Today urbanism is synonymous with tall buildings. Because of their symbolic nature, a great deal of attention is given to their defining characteristic: how they meet the sky—a characteristic that is best appreciated from a distance. Regardless of a building's height, however, if one is concerned about the urban habitat, equal attention should be given to their experience at the street level, where the individual and building meet, either as a pedestrian passing by or, more importantly, as an occupant entering the building. For a tenant, in particular, the quality of a building begins with a "sense of arrival." Four projects designed by Goettsch Partners (GP) will be considered—all Class A office buildings that are efficient, flexible, and fully loaded with technology and amenities; however, the focus will be on site design, the ground-floor public spaces, and the resulting "sense of arrival."

In architecture, it is clear that the perception of quality is not fixed; tastes change with time. During the real estate boom that ended in the early 1990s, when Postmodernism was fashionable, buildings were often caricatures of earlier classically inspired buildings. Postmodern high-rises were usually very solid,

### 归属感

当今，高层建筑象征了都市化，因其具有象征性，人们更多关注起主要特性：它们如何融碰天际—一个从远处方可得到最佳领会的特性。然而无论建筑的高度如何，若有人关注都市居住环境，其在街道层面所提供的体验应受同等的关注，因为这是每个人和建筑物相交的地方，无论是一个路过的行人，或更重要的，作为用户进入此建筑物。尤其对于租户，建筑的品质源自于“归属感”。四个由美国GP建筑设计有限公司设计的项目会在本文中提及，并被视为高效、灵活、高科技化和设施完善的甲级商务办公楼；然而，此文的重点将是对场地的设计，首层公共空间和由此而生的“归属感”。

在建筑学上，显然对品质的观念没有固定的理解，口味随时间而改变。止于20世纪90年代初的房地产繁荣时代中，当后现代主义成为时尚，建筑往往笨拙地模仿受早期古典主义启示的建筑。后现代高层建筑通常是非常硬实的，花岗岩包裹的个体直接嵌入地块，并不考虑其周围环境。它们看似堡垒，内外空间分隔明确。后现代主义建筑试图重现过去传统的庄严感。这种建筑的视觉观感植根于历史，却很少接受当代生活方式。

十年后，随着科技网络的热潮，技术和通讯革命改变了我们对世界的看法。对过去

granite-clad objects that were inserted onto their sites without regard to context. They seemed to be fortresses with a very clear separation between exterior and interior spaces. Postmodern buildings tried to recapture a sense of grandeur from the past. The visual language of these buildings was rooted in history and did very little to embrace contemporary life.

Ten years later, following the dot-com boom, the revolution in technology and communications transformed our view of the world. The infatuation with the past was replaced by the wonder in what the future would bring. The tools of business and everyday life changed; technology was no longer a threat to our individuality, it liberated us and became rooted in our everyday lives. As technology became more user-friendly, it became easier to accept the design of objects that were very technical in appearance, whether they were cell phones, computers, TVs or buildings.

During this period, the word “transparency” was used frequently and in a positive way to describe full disclosure. Transparency provided a sense of security because it implied that one could see or be aware of what was going on. Transparency was embraced in business, in government and, eventually, in buildings.

Advancements in glass technology made it possible to use the material in ways that were previously inconceivable. The appeal of the new Apple stores is one of the best examples, featuring minimal glass enclosures, glass columns, glass beams, glass stairs, and even glass elevator shafts. In architecture, contemporary modernism is universally embraced by almost everyone and postmodern buildings are now clearly anachronistic—they seem almost like cartoons.

### UBS Tower Chicago, Illinois USA

Completed just over 10 years ago, One North Wacker, now known as UBS Tower, was designed during the period when tastes were changing. Granite building enclosures had lost their appeal, and stainless steel and metallic finishes became the norm. When One North Wacker was designed, its appearance on the skyline (see Figure 1) was thoroughly considered; however, the building's distinguishing feature is the way it meets the ground.

The barrier between interior and exterior disappears through the use of a highly transparent, cable-supported enclosure utilizing low-iron



Figure 1. UBS Tower Exterior. (Jon Miller © Hedrich Blessing Photographers)  
图1. 瑞士联合银行大厦外景 (版权所有Jon Miller ©Hedrich Blessing摄影)

的迷恋，被对未来的憧憬所代替。商业工具以及日常生活都已改变，科技已不再是对我们个性的威胁，反而它解放了我们，并成为我们日常生活不可缺少的一部分。随着科技变得更加方便易用，高科技的设计，不论是手机、电脑、电视机或建筑都被一般公众所接受。

在此期间，“透明度”一词已变得极为普遍，并以积极的方式来描述“泄露”。透明度提供了一种安全感，因为通过它，可感知或察觉正在发生的事情。透明度广泛用于商务及行政领域，最终，也在建筑中得以体现。

玻璃技术的进步使其成为可应用的物料方式是以前无法想象的。新的苹果店引人瞩目的外观是一个最好的例子，以简单的玻璃外墙、玻璃柱、玻璃梁、玻璃楼梯、甚至玻璃电梯井道为特色。在建筑学中，当代的现代主义普遍被每个人所接受，同时，后现代主义建筑显然是不合时宜的—它们看起来几乎像漫画一样。

### 瑞士联合银行大厦-北威克路1号 芝加哥，伊利诺伊州，美国

仅在10年前完成，现名为瑞士联合银行大厦的北威克路1号大厦是在风格转变期间所设计的项目。花岗岩建筑外墙已失去了吸引力，不锈钢和金属饰面成为泛泛标准。在设计北威克路1号时，外观设计充分考虑其天际轮廓线的表现（见图1），然而，这座建筑物的显著特点在于它与地面层相接的界面设计。

因采用超白玻璃带不反光涂层，高透明拉索支撑的玻璃外墙使室内与室外之间的屏障消失（见图2）。大堂成为街景的一部分，街景成为大堂的一部分。高品质材料不仅仅在内部装修上使用，同样也在外部使用。通过将吊顶高度增加至12.5米，无疑增加了大堂的内外通透感。

在设计建筑物周围的广场时，GP深化了一系列大规模圆形花岗岩座椅和丘状乔木花池。广场及花池实现了以下多个目标：

- 圆形座椅区成为受欢迎的聚会点（见图3）。
- 夏日里，花池不仅在水平面， 同时也在垂直面增加绿化。
- 整年中的花池如同摆设呈现出其别致的雕塑体态。
- 虽然不是最初的设计意图，花池却成为非常有效的安全屏障—因为在911事件之后，安全屏障成为许多高层建筑所



Figure 2. UBS Tower Lobby. (Jon Miller © Hedrich Blessing)  
图2. 瑞士联合银行大厦大堂 (版权所有Jon Miller ©Hedrich Blessing摄影)

glass with a non-reflective coating (see Figure 2). The lobby becomes a part of the streetscape, and the streetscape melds with the lobby. The same high-quality materials used on the interior are also on the exterior. The effect is enhanced by raising the ceiling height to 12.5 meters, which expands the visibility into and out of the lobby.

Working on the design of the plaza surrounding the building, a series of massive circular granite seating elements and mounded tree planters were developed. The plaza and planters accomplished multiple objectives:

- The circular benches become a popular seasonal meeting spot (see Figure 3).
- In the summer, the planters add greenery not only to the horizontal plane but also vertically.
- Year-round the planters, as an assembly, provide an intriguing sculptural element.
- Although not the original purpose, the planters serve as effective security barriers—a requirement for many tall buildings following the events of Sept. 11.

The transparency and sense of openness were a major part of One North Wacker's appeal, but the selection of high-quality materials, exceptional detailing, and unique lighting concepts were also an integral part of the composition. While Class A office tenants are primarily concerned with efficiency, economy, technology and amenities when selecting a new building, overall visual impact, the lobby quality, and plazas and public spaces can become a key part of their selection process.

Swiss financial services company UBS eventually signed on as the lead tenant for One North Wacker, and the developer, before completing construction, was able to sell the building for the highest per-square-foot price of any downtown Chicago office building since the late '80s.

### 111 South Wacker Chicago, Illinois USA

In the U.S., a developer must prelease 40–50% of a building in order to get financing. This process makes the competition for big tenants fierce. Following One North Wacker, the next big tenant looking for space in Chicago was professional services firm Deloitte, and they made it known that they were looking for a building similar to One North Wacker.

The John Buck Company, developer of One North Wacker, came to GP again, asking the firm to work on a site at 111 South Wacker Drive and hoping to secure Deloitte as the lead tenant. Whereas the site for One North Wacker was a very open, half-block parcel, with street frontage on three sides, the 111 site was a quarter block with adjacent buildings tight against the property line on two sides. To get the floor-plate size that Deloitte desired, the typical plan needed to cover almost the entire site. This configuration would have seriously restricted views on two elevations and offered very little opportunity for public open space at grade, making it difficult to replicate the attributes of One North Wacker.

Realizing the need to satisfy Deloitte's desire for an interesting as well as efficient building, the developer asked to raise the first office floor 12 levels above the street, thereby eliminating most of the lower floors that would have had restricted views and, instead, placing those floors on top of the building with dramatic skyline views.

The design team considered three different ways to elevate the



Figure 3. UBS Tower Planters and Seating. (Source: Goettsch Partners)  
图3. 瑞士联合银行大厦花池和座椅 (图片来源: GP)

必需具有的。

透明度和开放感为本项目的重要部分，但高品质材料的选择、杰出的细节和独特的照明概念也是不可分割的组成部分。当甲级写字楼租户选择一栋新建筑时，虽然效率、经济性、高科技性和建筑配套设施是重点考虑因素，但整体的视觉冲击、大堂品质及广场与公共空间也是他们抉择过程中的重要考虑因素。

瑞士联合银行最终成为北威克路1号大厦的主要租户。而本项目的开发商在建筑施工完成之前，以芝加哥市中心商业大楼自八十年代后最高的平方英尺单价售出了本建筑。

### 德勤总部大厦-南威克路111号 芝加哥，伊利诺州，美国

在美国，建筑开发商必须预先出租建筑中的40–50%的建筑面积才可得到银行贷款。这使为了得到大租户的竞争变得非常激烈。在瑞士联合银行大厦之后，美国德勤公司成为下一个在芝加哥寻找办公空间的大租户，并且表达了他们要寻找一个与瑞士联合银行大厦相似的办公楼意愿。

身为北威克路1号地产开发商约翰·巴克公司再一次委托GP与他们一起开发南威克路111号地块，希望以此得到德勤集团这个大租户。北威克路1号的地块非常开放、占地半个街区、有着三面临街的特点，而南威克路111号地块只占地四分之一街区，两侧各有建筑紧邻其地界线。为了得到德勤集团所需要的楼层面积，标准层几乎覆盖整个场地。但此形态将严重限制两个立面的视野，同时提供很少的公共露天空间在地面，这些实质的困难使它难以复制北威克路1号的特性。

考虑到需要满足德勤集团所愿望的一个富有魅力但同时有效率的建筑物，开发商要求GP将首层办公层设置在街道十二层以上，这样避免了低层大部分受限制的视野，反而，在塔楼顶部安置这些楼层却可以使租户观赏到壮观的天际线景色。

设计小组考虑了三个不同方式来抬高建筑物，其后决定使用一个简单的基座方式（见图4）：一个允许可重用本地块之前建筑留下的桩基和地基墙的方案。原有桩基与新桩基通过5米厚的混凝土基层相互结合来支撑本建筑物的核心筒。

随着设计的演变，设计小组探讨大堂的最佳设计方案及如何充分利用非常高的公共广场空间。在芝加哥有着很多的公共艺术品与主要建筑相结合的例子，因此小组决定在建筑底部设置大型艺术品。开发商主办了公共艺术品的投标，邀请三位国际知名艺术家提交了方案，最后由Olafur Eliasson的作品赢得此竞赛。

项目顺利地进行着，随着项目规模的增大，客户在造价和预租方面的信心亦有所增长。但在这时911事件改变所有的一切。许多人都在疑问高层建筑是否已成为过去了。

building and settled on the use of a simple pedestal (see Figure 4)—a concept that allowed for the reuse of existing caissons and foundation walls from a previous building on the site. The existing caissons were united with new caissons by a five-meter concrete mat that supported the core of the building.

As the design evolved, the team looked for a way to resolve the lobby and take advantage of the very high public plaza. With Chicago offering many examples of public art associated with major buildings, the decision was made to include a major art installation at the building's base. The developer sponsored a competition and paid three world-class artists to develop proposals, with the work of Olafur Eliasson ultimately selected.

The project was going smoothly, and the size of the project increased as the client became more confident in both the costs and the opportunity for pre-lease commitments. Then, the events of Sept. 11 changed everything. Many people questioned whether high-rise buildings were a thing of the past.

Uncertain of the unique design proposed, Deloitte still wanted to proceed with a new building but asked that the design be revised. Emotions won out over reason during that period, and there was no opportunity to explain that the original design was likely more secure at its base than the design that later replaced it.

At first, it was difficult to think of a redesign because all of the site characteristics that influenced the initial concept remained in place. However after some time, the design evolved, keeping the first office floor 12 stories above the street but filling the area underneath the office levels with eight floors of car parking and a four-story lobby. Initially, the drive ramp to the parking levels seemed to be an obstacle, but in time, it developed to form a signature design feature for the building. The resulting circular ramp then became the generator for the architectural details, paving pattern and lighting design (see Figure 5).

In order to maximize the building's sense of openness at grade, the 45 floors of the tower perimeter columns were transferred above the



Figure 4. Early pedestal design scheme for 111 South Wacker. (Source: Goettsch Partners)

图4. 南威克路111号早期基座设计方案(图片来源:GP)

由于对项目独特的设计变得不确定，德勤集团依然想要进展新建筑，但要求修改设计。在当时们的情感战胜了理智，这使得设计小组没有机会解释原设计的底部比后来所替换的设计可能更具有安全性。

首先，重新设计的想法是很困难的，因为影响原来方案的地块特点没有改变。然而，经过一段时间后，随着设计的发展，首层办公层保持在离街道十二层以上位置，在办公层下方设八层停车场，大堂为四层高空间。起初，上至停车层的机动车坡道似乎是一个障碍，但及后，它发展成为建筑的设计特征，此旋转而上的坡道结果成为建筑细节、铺地图案以及灯光设计的始源（见图5）。

为了使建筑在地面层具有最大化的开敞，四十五层塔楼四边的柱子全部被转至大堂每一侧的两个跨距25米的大柱子上。建筑核心筒使用白色大理石包覆，在地面层有着主导地位的形式，在这点上它的效果类似原来的基座设计。大堂的外墙为单向垂直拉索支撑玻璃墙，同样利用超白带不反光涂层的玻璃。大理石和花岗岩的选择，不锈钢和金属色铝材的使用，玻璃墙配件以及照明顺利配合互补达到整体设计概念。如北威克路1号一样，建筑内部和



Figure 5. Street view of 111 South Wacker Base. (James Steinkamp © Steinkamp Photography)

图5. 南威克路111号底部街景(版权所有James Steinkamp-Steinkamp摄影)

lobby into two large columns spanning 25 meters on each side of the building. The building core, clad in white marble, remained as the dominant form at the street level, and the effect was, in some ways, similar to the original pedestal design. The lobby was enclosed with a one-way, vertical cable-supported glass wall, also utilizing low-iron glass with a non-reflective coating. The selection of the marble and granite, the use of stainless steel and metallic aluminum, the fittings of the glass wall, and the lighting all worked well and were



Figure 6. Aerial view of 111 South Wacker Base. (© David B. Seide: Defined Space, Chicago)

图6. 南威克路111号底部处鸟瞰图(版权所有David B. Seide: 定义空间, 芝加哥)

complementary to the overall design concept. As with One North Wacker, the distinction between inside and outside is blurred, with the radiating lobby floor pattern extending through the glass and out into the public way (see Figure 6). Although the floors above the street level cover almost the entire site, the feeling at grade is remarkably open.

As a real estate venture, 111 South Wacker was a complete success. Sold shortly after it opened, the building set yet another per-square-foot pricing record for a downtown office building.

### 155 North Wacker Chicago, Illinois USA

Based on the success of the previous two Wacker Drive projects, The John Buck Company asked GP to work with them on a third building, also along Wacker. The market had adjusted to the post 9/11 world, and with the disappointment of not being able to carry out the previous core-supported building, the client encouraged the design team to be creative, as they once again began their search for lead tenants that could make the financing and construction possible.

The project started off well. Based on knowledge gained during the original design of 111 South Wacker, the initial concept for 155 North Wacker utilized a core-supported structure, with partial floors at the lower levels that rotated around the core. This design generated a spacious and intriguing streetscape, along with complementary ground-floor public spaces (see Figure 7).

With the building design taking place during a period of rapidly increasing construction costs and a somewhat declining real estate market, the initial concept faced challenges. In order to make the project viable, the design team had to reconsider the concept under the existing financial conditions and eventually redesign the building. Ultimately, the redesign was able to maintain the gesture of the large, open public space with a three-story outdoor arcade running along the south side of the core and providing an enhanced experience for passersby as well as building tenants (see Figure 8).

The building's two main entries are set within three-story, minimally designed glass walls on the east and west sides of the core. The design



Figure 7. Rendering of early design scheme for 155 North Wacker. (Source: Goettsch Partners)

图7-北威克路155号早期设计方案渲染图(图片来源:GP)

外部之间区分被模糊,大堂放射式铺地图案通过玻璃扩展到室外公共通道处(见图6),尽管在街道上方的楼层几乎覆盖整个地块,但首层给人的感觉是极度开敞。

作为一个地产开发项目,在其投入使用之后不久,其平方尺价格打破了市中心商业大楼的纪录售出,南威克路111号取得了圆满成功。

### 北威克路155号 芝加哥,伊利诺州,美国

在前两个威克路项目成功的基础上,约翰·巴克公司委托GP为其设计在威克路上的第三栋建筑。而此时市场已从911事件调整过来,尽管大家对未能实现早先以核心筒为支撑的建筑物而有所失落,但开发商鼓励设计小组们勇于创新,并再次开始寻找合适的主要租户,以使贷款和施工可以展开。

项目有一个良好的开端。总结之前南威克路111号的设计经验,以核心筒为支撑结构为北威克路155号项目的初步设计概念,其中部分底部楼层围绕核心筒旋转。此设计创造出宽敞及有魅力的街景,同时形成相辅相成的首层公共空间(见图7)。

建筑设计始于建筑造价的急升期和在房地产市场下跌的环境下,原设计概念受到了质疑。为了使项目可行,设计小组不得不根据当时的经济状况重新考虑设计概念,最后,更新的设计保留了在核心筒南侧的三层楼高的、大型、开敞的室外通廊,为路人以及大厦租户提供更佳的经验(见图8)。



Figure 8. 155 North Wacker Exterior. (© Tom Rossiter Photography)

图8. 北威克路155号外景(版权所有Tom Rossiter摄影)

建筑物的两个入口分别设于核心筒东西两侧三层高、简洁设计的玻璃墙中。通廊的吊顶,铺地图案以及材料的选择均自然地融入大堂空间内,再一次使在首层建筑内外之间的屏障最小化(见图9)。人们从大堂进入电梯大厅,并可直接望向公共通廊。

通廊处,所设计的街道小品和花池用以调和优化空间。作为通廊的延伸,本项目还包括了一个公共小公园,成为本项目的一部分来完成(见图10)。公园特色有着非常成熟的树木、定制的花岗岩长椅与格状草地供来访者在午餐时间使用。



Figure 9. 155 North Wacker Base. (© Tom Rossiter Photography)  
图9. 北威克路155号底部 (版权所有Tom Rossiter摄影)

of the ceiling, floor pattern and materials of the arcade flow seamlessly into the lobby, again in an effort to minimize the barrier between interior and exterior space at the ground level (see Figure 9). The elevator vestibules are entered from the lobby and look directly onto the public arcade.

The street furniture and plantings in the arcade are designed to complement and enhance the space. A public pocket park, completed as part of the project, serves as an extension of the arcade (see Figure 10). The park features very mature trees, custom granite benches, and patches of grass for seasonal lunchtime visitors.

### Sowwah Square Abu Dhabi, United Arab Emirates

Shortly after completing the three Wacker Drive buildings, GP was approached by Mubadala Development Company, a wholly owned investment vehicle of the government of Abu Dhabi, to participate in a design competition for an “iconic, world-class mixed-use waterfront development.” The development was to be the future international business and financial center of Abu Dhabi and would include four office towers totaling 180,000 square meters, a stand-alone stock exchange building, substantial retail, and parking for 8,000 cars. Two five-star hotels were to be added to the project at a later date.

This competition coincided with the time period when questions were being raised about the excessive exuberance of many buildings in Dubai. Mubadala wanted iconic, world-class office buildings, but they also wanted them to be rectilinear, buildable and efficient. Based on the Dubai model, these objectives seemed to be at odds. Two of the buildings were to be 20 stories, and the other two were to be 26 stories. The stock exchange building would be three stories and total 20,000 square meters. The complex, overall, was to be built on an island which, up until 2006, was nothing more than a patch of sand with no buildings and no existing infrastructure or context of any kind.

A comprehensive master plan had been developed for what was then known as Sowwah Island. The plan called for the island to be almost doubled in area through land reclamation from the tidal basin, and the master plan divided the island into six separate districts that included residential, medical, hospitality, retail and commercial uses. The island's infrastructure was being planned and construction began during the process of the design competition. A new podium level was also being created, to rise 14.5 meters above the original level of the island. The area below the podium was to be utilized for building services, through-traffic and parking.

The word “iconic” had become commonly used when discussing aspirations for projects in the Middle East. Buildings like the Burj



Figure 10. 155 North Wacker Arcade and Park. (© Tom Rossiter Photography)  
图10. 北威克路155号通廊和公园 (版权所有Tom Rossiter摄影)

### 沙瓦哈广场 阿布扎比, 阿拉伯联合酋长国

完成三个威克路上的工程后不久, 穆巴达拉开发公司, 一家由阿布扎比政府全资拥有的投资公司邀请我们参与一个“标志性、世界级的临海建筑群综合开发”的设计比赛, 这将会是阿布扎比未来的国际商业与金融中心, 它总计18万平方米的建筑面积包括四栋办公楼、一栋独立的证券交易所、大型零售商场和8000个车位的停车库, 两家五星级酒店将在稍后时期添加到项目中。

此设计竞赛恰好处于社会质疑迪拜是否盲目兴建了过多豪华高层建筑舆论期。穆巴达拉开发公司希望此建筑群成为标志性、世界级的办公楼, 但他們也希望本项目为直线型, 拥有可建性和有效率的特点。根据迪拜的模式, 这一目标看似奇怪。建筑群中的两栋建筑为20层, 另外两栋为26层。证券交易所为3层, 共计2万平方米。整个综合体要建在一个在2006年前除了沙丘外没有任何建筑物和任何城市基础设施的岛上。

本项目所在的沙瓦哈岛有着非常全面的总体规划, 规划中沙瓦哈岛将通过填积潮汐盆地来增加接近一倍的面积, 然后划分出六个不同的区域, 包括住宅、医疗、酒店、零售以及商业。岛上的基础设施已被规划, 并在GP进行设计竞赛的同时开始兴建。本项目新增一层裙房, 较岛上原有水平高度抬高了14.5米。裙房之下区域作为建筑物服务设施、交通穿梭及停车场使用。

在中东地区讨论对项目的期待时, “标志性”这个词已被频繁提及。正如像哈利法塔和帆船酒店等建筑就成为了明显的标志性建筑典范。当设计小组专注于沙瓦哈广场项目竞赛过程, 如何将20至26层的建筑变成标志性画面已是一项挑战了, 更何况还有一个四层的证券交易所。

当时的挑战是如何使一个具有中等规模和高度的建筑群兼一个1.38万平方米的证券交易所具有使人印象深刻的建筑映像。以沙瓦哈岛的总体规划作为设计过程的出发点, 设计小组简单地将四栋写字楼和证券交易所设置在地块上, 发现其轮廓将覆盖地块总面积的34%, 而且还未包括大量的地面交通面积。简而言之, 开发一个具备“标志性”的综合体广场的面积所剩无几。因此, 设计团队开始将建筑物抬高地面进行设计研究, 这类似于之前的一些芝加哥项目。

为从平面提升四栋办公塔楼, 建筑立面上的边柱用以转换至中心结构核心筒。以这种方式在地面层的, 实体建筑体量中仅有电梯和楼梯以及核心筒结构。将办公楼抬高至裙房9层以上, 不仅使得场地环境变得非常通透开敞, 视觉上也得相连。核心筒一侧设置有带遮盖的室外入口, 而其另一侧安置了办公塔楼的室内大堂。核心筒对面的大堂外墙是由非常高的双向拉索幕墙所构成, 采用超白带不反光涂层的玻璃。这一细微化的表现营造出没

Khalifa and the Burj Al Arab became obvious examples of such iconic structures. As the design team contemplated the competition for Sowwah Square, it was a stretch to think that one could create an iconic image with 20- to 26-story buildings, not to mention a four-story stock exchange.

The challenge was how to make a dramatic architectural statement with buildings of a modest size and height, and with the financial center site area designated for 13,800 square meters. Using the master plan as a point of departure for the design process, the team looked at simply placing the four office buildings and stock exchange on the site and found that the footprint of the buildings would cover 34% of the area, before even accounting for significant vehicular circulation. In short, there would be very little site area left to develop a plaza worthy of an "iconic" complex. As a result, the design team started to investigate the idea of lifting the building masses above the ground plane, in a manner similar to what the firm had done in Chicago.

In raising the four office towers, the perimeter columns are designed to transfer into the center structural core. This approach made it possible to limit the solid building masses at grade to just the elevator and stair enclosures and the structural elements of the center core. With this design, the team found that the site became very open, spacious and visually connected if the typical office floors were raised nine floors above the podium ground plane. One side of the core became a covered exterior entry, and the other side of the core accommodated interior office lobbies. Defining the lobby enclosure opposite the core was a very high, two-way cable-supported net wall with low-iron, non-reflective glass. This minimal expression created a feeling in the lobbies as if they were not enclosed at all—almost behaving as exterior space. The amount of the site that was covered by solid masses is 6%, and the remainder of the site is visually very open. Both the open exterior entry and the glass-enclosed lobby are shaded by the office floors above. Raising the office floors above the ground plane and expressing the structural transfer of the perimeter columns into the center core with the building mass gave the buildings a simple elegance and recognizable form that would not have been achieved with a more conventional structural concept (see Figure 11).

The expression of the building core was also reinforced by the difference in the building enclosure (see Figure 12). The core element is enclosed with a double-glass wall utilizing return air to temper the space between the glass walls and reduce the overall heat gain. The remaining surfaces of the office floors are shaded with horizontal glass louvers that respond to the sun's rays by rotating and shading the direct light as the sun moves around the buildings. The interior office spaces further benefit from electronic daylight harvesting.

Using a similar design approach to raising the towers, the entire stock exchange building was lifted five floors above the ground plane and supported on four massive structural columns, which contain the MEP risers, service elevators and exit stairs. To make the stock exchange building even more monumental, the horizontal surface of the podium under the exchange was lowered 14.5 meters to the natural grade, providing the exchange with the impression that the massive form was hovering eight floors in the air, supported only by four large piers.

The combined effect of elevating the office floors as well as the exchange is enhanced by the landscape design of Martha Schwartz. The design features varying three-dimensional landscaped forms that rise above the plaza and provide vertical and horizontal surfaces of green in a manner similar to the dome-shaped landscaped forms at One North Wacker.



Figure 11. Sowwah Square Tower Base. (© Michele Nastasi)  
图11. 沙瓦哈广场塔楼底部 (版权所有Michele Nastasi)

有封闭压抑的感觉——就像身处室外一样。实体建筑只覆盖了6%的场地，余下未被覆盖的场地视觉感觉极为开敞。开放的室外入口和以玻璃围合的大堂均被上方的办公楼层所遮盖。将办公层抬高地面，通过将边柱转换至核心筒的体量表达方式，使建筑外形简洁优雅和易于识别，这是用其它更传统的结构概念所不能达到的（见图11）。

建筑外墙处理手法的不同也巩固了核心筒的表现性（见图12）。核心元素以双层玻璃墙围合，并利用玻璃墙之间的空间作回风空间以恒定温度，来降低建筑整体的热增量。其余的办公楼层表面通过水平玻璃百叶来遮阳，这些百叶可感光并追踪日光角度自行转动调节。在提供遮阳的同时，使室内空间进一步受益于电动日光采集。

采用类似于将办公塔楼抬高地面的设计方法，整个证券交易所大楼提升至距地面五层以上，以四个根巨型结构柱子支撑，柱内含有机电管井、服务电梯和安全疏散楼梯。为使证券交易所大楼显得更加高大，交易所之下的裙房水平面下沉14.5米至自然地面，这使交易所仅由四根巨型柱子支撑，看似像一个巨型体积悬浮在八层高的半空中。

Martha Schwartz的景观设计加强了办公和交易所楼层被抬高地面的综合效果。设计特色是广场上的立体景观，并在垂直和水平表面上的加以绿化，类似于在北威克路1号中所设的圆顶绿化造型。

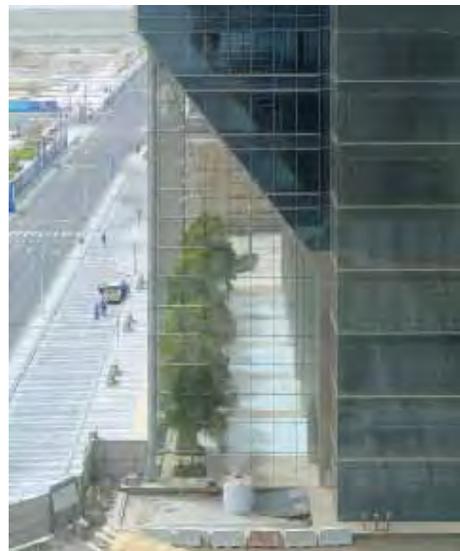


Figure 12. Sowwah Square Base and Enclosures. (© Michele Nastasi)  
图12. 沙瓦哈广场底部和外墙 (版权所有Michele Nastasi)

## Conclusion

The most unique aspect of these buildings is not their profiles in the skyline but rather their presence in the urban streetscape. Each building was conceived to merge interior and exterior at the base, providing a similar experience whether you are a pedestrian passing by or a tenant entering the building. By extending the same paving materials from the lobby to the street, using transparent enclosures so that the richness of the lobby materials become a part of the public realm, and using quality materials and detailing throughout the plaza areas, the value of the public realm is elevated to the same level as that of the building itself. The quality of a building begins with a sense of arrival.

## 结语

这些建筑最独特的方面不是它们的天际轮廓线，而是它们在都市街景中的存在。每栋建筑的构思都是意在建筑物底部的室内外空间结合在一起，为路人在室外路过建筑 and 用户从户外进入建筑时拥有相似的体验。相同的铺地材料由大堂延伸使用至室外街道，透明的外墙使丰富的大堂材料成为公共领域的一部分，优质的材料以及细致设计广泛使用在广场区域，这些公共空间的品质被提升到与建筑同等的水平。建筑的品质源自于归属感。