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# The Haikou Tower - Signifier and Signified

## 海口塔—象征物与象征义



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Martin Henn studied architecture at the University of Stuttgart and at ETH Zurich, where he graduated in 2006 with a Masters Degree. In 2008, he received a Masters of Advanced Architectural Design at Columbia University in New York. Before HENN, he worked at Zaha Hadid Architects in London and Asymptote Architecture in New York. Today, Martin Henn is partner and head of design at HENN, an international architectural practice with more than 65 years of expertise in the design and realization of buildings and masterplans. He is in charge of all High-rise Projects and the Asian market.

Martin Henn曾于斯图加特大学和苏黎世联邦理工学院学习建筑专业，2006年获得硕士学位。2008年，他获得了纽约哥伦比亚大学的高级建筑设计硕士学位。在加入海茵之前，他曾在伦敦的扎哈-哈迪德建筑事务所（Zaha Hadid Architects）和纽约的Asymptote Architecture公司工作过。Martin Henn自2008年起进入拥有65年历史的海茵建筑师事务所工作，至今一直担任柏林、慕尼黑和北京设计工作室的设计总监。他于2012年成为合伙人，负责高层建筑项目及亚洲市场。

### Abstract | 摘要

*When designing the "Haikou Towers," our aim was to go beyond an architecture of mere function or form, but to construct an architecture of meaning. We tried to integrate all defining parameters of the design (context, program, structure, circulation) in a way that they would be mutually dependent and concurrently provide a sense of meaning. Projects often happen at such great speed and scale that we are confronted with a green field condition. In China, entire CBDs often mark the starting point of new urban developments. The challenge here is to bridge the gap between rich ancient, local cultures and the new, contemporary identities of the place and their people. In our eyes architecture is a vehicle to create identity. We are convinced that architecture should take on a political, social and cultural responsibility. Form should hereby be a strategy against the uniform. It should represent place rather than object.*

**Keywords: Buddhism, Chinese Culture, Identity, Non/Context, Performance, and Place-making**

在设计海口塔建筑群时，我们的目标是超越仅限于形式的设计，创造有涵义的建筑。我们尝试使设计中的所有元素（环境，功能，结构，交通...）相互依存，不可分离。在中国项目进展的速度和规模是惊人的，我们常常面对一种非境/原野。一个CBD的开发，往往意味着一个新城市阶段的成长。挑战在于桥接丰富的历史，当地的文化，新的当地的当代的身份认同。在我们看来，建筑设计是创造身份的工具，我们相信建筑设计应该迎接政治的，社会的和文化的责任。由此设计应该反对普罗，应该更尊重场所，而不是其本身。

**关键词：佛教、中国文化、同一性、无/语境、性能、场所营造**

When designing supertall buildings architects have to find answers to a number of challenging questions: How can the building be most efficient and intelligent in regards to functional, structural, environmental and economic requirements? How can a supertall building relate to its context? How can it integrate into the urban fabric, its social and cultural context? And, when building in developing places we are often confronted with another set of questions: What if there is no urban context to relate to? How can our buildings create a sense of place and meaning?

As humans, we are driven by a desire to construct meaning. Distinctively, we make meaning through the creation and interpretation of signs. Signs take the form of words, images, sounds, flavors, acts or objects, but such things have no intrinsic meaning and only become signs when we invest them with meaning. "Nothing is a sign unless it is interpreted as a sign", as C.S. Peirce put it in his semiotic theory. According to Ferdinand de Saussure a sign is composed of a "signifier" - the form of the sign, and the "signified" - the concept it represents, its meaning. Translated into architecture, a building becomes

在设计超高层建筑时，建筑师们应该要为以下问题找出答案：超高层建筑和它的环境有什么关系？它应该如何融入城市肌理，融入它的社会和文化脉络？但在海口塔建筑群这个案例中，我们面对的问题是：如果城市肌理实在无法借鉴，建筑如何创造新的场所和意义？

人类自存在便一直拥有创造意义的精神渴求。在不同的情况下我们通过创造象征物或者解读象征物来建议各种意义。象征于我们，广泛存在于语言、图像、声音、味道、行为或物体中，但这些客观事物本身不拥有特殊的涵义，而仅在我们愿意赋予涵义时才成为某种象征物。C.S.皮尔斯在他的符号学理论中认为：“除非被认作是象征，没有事物生来是象征。” Ferdinand de Saussure也认为，一个象征由“象征物”，即具有涵义的事物形式，和“象征义”，即该事物所代表的精神涵义共同组成。在建筑学语境里，一栋建筑能够同时尊重象征的两面暨形式和意义时，它就拥有了自我独特的辨识度。

在设计海口塔建筑群时，我们的目标是超越仅限于形式的设计，创造有涵义的建筑。我们尝试使设计中的所有元素（环境，功能，结构，交通...）相互依存，不可分离。最终产生的城市和建筑设计既在



Figure 1. "Shanghai 46" (Source: HGEsch)  
图1. "上海46" (来源: HGEsch)

differentiable when it respects both aspects of the sign: form and meaning.

When designing the "Haikou Towers", our aim was to go beyond an architecture of mere function or form, but to construct an architecture of meaning. We tried to integrate all defining parameters of the design (context, program, structure, circulation...) in a way that they would be mutually dependent and concurrently provide a sense of meaning. The result is a masterplan and a tower design that is both "global" and "local" in its form and symbolism but also site-specific in its reaction to the local climate and context.

### Architecture for the Non-Lieux

When Marc Augé's Book "Non-Places: an Anthropology of Super-modernity" first came out in English in 1995 it was the result of Augé's travels: The concept of the non-place refers to spaces one encounters when travelling such as airports, bus terminals and hotels, which one only remembers in generic terms. Augé's aim was to theorize globalization as it is lived in properly global terms. Mono-functional places like shopping malls, highways or other Non-Lieux lack history, relation, identity and communication, they can "feel lonely and self-similar." Edward Relph had already researched "place and placelessness" (1976) when he stated, that "they not only look alike but feel alike and offer the same bland possibilities for experience." While places are static, the non-place is dynamic and ephemeral. The giant new megacity that the Pearl River Delta is becoming is full of such "Non-Lieux."

The breakneck speed of urbanization and urban growth has had a severe impact on the identity of place, rendering the cities unrecognizable from their appearance just a generation ago. Politically, socially and economically China currently is subject to a "clash of ideas" that may well soon result in a new hybrid synthesis and an exciting contemporary culture. The "new urban substance" of tall buildings in China and elsewhere can lead to a loss of heritage and re-do identity.

### Chinese Megacities - In search of a contemporary culture

Booming Chinese cities like the ones in the Delta are cities, which have made their artificiality their identity. The country's first special economic zone – the brainchild of the late Chinese President Deng Xiaoping – was established in 1980 and helped to promote the development of industrialization, urbanization and modernization. In merely 35 years, Shenzhen grew from a tiny border town into today's metropolis with more than 10 million inhabitants.

Rem Koolhaas had drawn attention to these puzzling phenomena with his contribution at the documenta art show in Kassel in 1997 called "The Speed of Shenzhen". The autistic giant buildings of Shenzhen, standing rather lonely on their sites, just do not find together to form a city (Figure 1). Koolhaas' text Portrait of a Potemkin Metropolis... or 30 Years of Tabula Rasa became the prologue to the

广义和本土的形式和象征主义上取得了成果，又在具体的与场地气候配合上获得成功。

### 非境下的建筑

1995年Marc Auges的著作《非境：超现代人类学》英文版首次面世，这本书是他多年游历的结果：非境这个概念指的是现代人在旅行中所体验的空间，例如机场、汽车站、酒店，它们给人留下的只有一种共通的特性印象。Auges的目的，是想通过寻找恰当的物质条件论据，来建立定义全球化的理论。单一功能的空间，例如购物中心、高速公路等缺乏历史、关系、身份和沟通，成为一种缺失文脉和环境的“非境”，拥有更多的“孤独感和自我熟悉”。Edward Relph在1976年已经研究过“场所与非场所”，当时他写道，“它们不仅看起来相似，感觉也相似，提供的也是同一种体验的可能性”。对于人类记忆的意义，场所是静态和持久的，非场所则是非持久的如朝露般瞬息的。中国珠三角区域的巨大城市架构空间中，即充满了这种“非境”。

城市化的疯狂速度，城市的迅速扩张，对场所的身份造成了严重的威胁，把许多城市在短短一代人的时间里变得面目模糊。目前的中国，政治上、社会上、经济上，都是各种理念碰撞的试验场，也许很快就会产生一种新的混杂的模式和令人激动的当代文化。高层建筑作为中国的“城市新元素”，也许会带来文化遗产丢失和认知身份改变的危机。

### 中国的巨型城市—寻找当代文化

迅速成长的中国城市，例如珠三角的许多地方，已经把人造变成了自己的身份。1997年库哈斯在卡塞尔文献展上用他题为“深圳速度”的展览指出了这个现象。当时在深圳矗立的巨大的现代建筑们，大多孤单地站在自己的场地上，相互之间却没有形成足够的引力（图1）。库哈斯后来在《新加坡歌谣》一书的序言中借用了当时的文字：“波将金式的都会...30年一片空白”，这本书所研究的就是一种白手起家，过于单纯、规整、简化的城市创造。库哈斯说，“这种波将金式的城市，将永远停留在波将金式城市的阶段。它的城市肌理永远在不断更新，永远都会看上去是刚刚建成不久的样子。”他还认为，“如此一来即便是刚刚建设的新城也拥有了历史，就是它的人造特性并不是无感的，而成为了一种风格，普罗风格。”在中国，“普罗式的城市并不是设计出来的，而是自然发生的”，库哈斯认为，“因为过去的历史存留太少，难以继承，普罗则是我们当下的文化所在。”

Singapore Songlines (Quodlibet, 2010) that researched the built-from-scratch, tabula rasa approach and the pristine, orderly, regulated and decongested cities they create. According to Koolhaas, "such Potemkin Metropolis is doomed to remain a Potemkin metropolis. It will always be in a state of constant urban renewal and will thus always look as if it has been erected in recent time," he writes. Koolhaas suggests that even a newly minted city has a history and that its artificiality is not sterile – it is in fact a style – the generic. In China "The Generic City is not planned, it just happens," says Koolhaas, because "the past is too small to inhabit and the generic city is the culture of our time."

It may be true that the immediate past of China is too small to inhabit. There is a certain lack of a distinct contemporary culture and identity, but the roots to its rich ancient culture are all the deeper. The Chinese culture is one of the world's oldest cultures. It traces back thousands of years. Many teachings and ideals from the past (Buddhism, Confucianism, Taoism) are still alive in people's minds and souls.

These traditions find their references in architecture and urbanism. Dieter Hassenpflug showed in his book, China's Urban Code, how traditional Chinese cities still follow ancient principles of centrality, symmetry and clear orientation. According to Hassenpflug, the basic structure of Chinese cities is formed by the dualism of open and closed spaces, the preference for private over public spaces, as well as the self-evident practice to see and design residential neighborhoods as nucleated settlements.

What we see today is a search for a contemporary Chinese culture combining both ancient and contemporary cultural patterns relating to a coherent collective sub-consciousness. The parts and pieces do not yet fit together seamlessly to form a new collective identity that opens a window for architects and urban planners to play an active role in this process.

As architects, we first have to listen, learn and understand the complexity of the interwoven patchwork of ideals and ideas. On this premise we can propose buildings and masterplans that may help crafting a contemporary Chinese culture.

Projects often happen at such great speed and scale that we are confronted with a green field. In China entire CBDs often mark the starting point of new urban developments. The challenge is to bridge the gap between

rich ancient, local cultures and the new, contemporary identities of the place and their people.

Haikou's new CBD will help transform the site from a non-context into a destination. The "generic city" here is not merely extended, but given a distinctive mark – the new CBD will be to Haikou what the Peak is to Hong Kong or Pudong's skyline is for Shanghai.

## Hainan and the Pearl River Delta

While physically, culturally, and economically the metropolises of the Pearl River Delta are merging into one super-connected urban whole, Hainan is not part of this new con-urbanization, but is part of the greater development in Southern China.

It is around 470 km west of the Delta, but in its function as China's premier holiday destination and home of China's most rapidly growing airline conglomerate, it is affected by the new density, vertical growth and emerging urban infrastructure of Guangdong Province and beyond. The economic focus began to shift from production to tourism, leisure and service industries. As the capital and most populous city of Hainan, Haikou with its over two million inhabitants is a port city as its name "Sea port" suggests. The terrain is flat and only a few meters above sea level. The city is known for its great air quality, which will make it even more desirable as a travel destination in the future. While Sanya in the South has grown into an international tourism destination, Haikou is the business and cultural center of Hainan.

## Hainan Airlines - Chinese Culture

Hainan Airlines (HNA) has its headquarters in a Buddha-shaped building on the city's main east-west axis of Haikou, in the center of the CBD. The company started as an airline to and from "China's Hawaii." HNA was a joint venture between the government funding and private investors led by Chen Feng, a devout Buddhist and representative of the Chinese cultural elite. Today, a charity is holding the largest shares of the company. It is committed to create a sustainable business model based on traditional Chinese values, integrating the company's interests with those of society at large.

Hainan Airlines is China's fourth-largest publicly listed airline. The company has

一方面中国过去的历史存留太少难以继承，当代文化和身份认同的缺失也是不争的事实。但中国文化的根太深。作为存续数千年的古老文化，思想（佛教、儒教、道教）仍然在人们的心中根深蒂固。

这些思想存续在建筑设计和城市规划中仍然有迹可循。Dieter Hassenpflug在他《中国的城市密码》一书中写道，中国城市的基本结构，是由开放和闭合空间的二元对立决定的，以及私密和公共空间的关系，最明显的证例就是城市居住社区的集中式分布。

今天我们能够观察到在集体的文化潜意识下，中国对当代文化的追寻结合了古代和现代的模式，相互彼此之间却不能无缝连接。而这些彼此之间的空隙则恰恰是建筑师和规划师能够发挥积极作用的地方。

作为建筑师，我们首先得倾听、学习和了解这些相互交织的理念的复杂性。在理解的基础之上，我们才能够提出一个能够对塑造当代中国文化有所贡献的建筑和规划方案。

在中国项目进展的速度和规模是惊人的，我们常常面对一种非境/原野。一个CBD的开发，往往意味着一个新城市阶段的成长，挑战在于桥接丰富的历史、当地的文化、新的当地的当代的身份认同。

## 海南和珠三角

珠三角区域正日益从物理上、文化上、经济上融合成为一个内部紧密联系的大城市集群，与此同时相隔不远的海南虽然并不是这个巨大城市化进程的一部分，但在南中国更为深远的发展计划中，也起着重要的作用。

海南岛位于珠三角以西约470公里处，是中国国内假日旅行的第一目的地，也是中国最快成长的航空公司的大本营。它不可避免的受着广东地区经济飞速发展和基础设施建设的影响，但它的发展重心更多的是从生产转向旅游、休闲和服务业。海口是海南岛的首付，人口约200万，是海南岛的第一大城市和第一大港。海口市区的地形非常平坦，仅仅高出海平面数米。岛上南端的三亚近年来成长为国际旅游的热点，海口也成为了海南岛的商业和文化中心。

## 海南航空-中国文化

海南航空的总部位于一栋颇有佛像意味的建筑内，位初海口中央CBD的东西轴线上。海航航空公司由经营航线起步，是





**Figure 2. Haikou Tower along Eastern Guo Xing Road, the heart of the Haikou Masterplan (Source: HENN)**  
图2：海口塔沿着国兴东路，海口总体规划的核心（来源：海茵）

expanded into logistics, hotels, retail, real estate, infrastructure and travel, its business is around the globe. HNA is the mainspring behind the island's development.

The Haikou Towers are projected to become the heart of the new Central Business District which was envisioned from a blank slate (Figure 2). The CBD itself is located in Dayingshan district, the site of former Haikou airport, which makes its owner, HNA, the main driving private force behind this CBD development.

The masterplan comprises an ensemble of 10 towers ranging from 150 to 450 meters in height with an overall building area of 1.5 million square meters. The urban masterplan was inspired by a stylized image of two "Buddha Hands" – a specification given by the client during the competition. The two series of towers culminate in two highpoints, creating a unique skyline (Figure 3). At ground level the towers are framing a big, central plaza, outlined by an undulating podium with commercial facilities. The public realm between podium and boulevard expands with lush green spaces and water basins (Figures 4 and 5). All buildings will be connected both above as well as below ground.

### Haikou Tower - Form and Meaning

When designing the tower, we were always torn between the extreme functional requirements of a supertall building and



**Figure 3. Haikou Masterplan. Future CBD of Haikou, China (Source: HENN)**  
图3：海口总平面图。中国海口未来CBD（来源：海茵）



**Figure 4. Masterplan, CBD (Source: HENN)**  
图4：海口总平面图。中国海口未来CBD（来源：海茵）



**Figure 5. Haikou Tower, Hainan, China (Source: HENN)**  
图5：海口塔，海南，中国（来源：海茵）

一家由政府 and 私人共同参股的巨无霸，它的领导陈峰，则是出名虔诚的中国文化信徒。今天，这家公司最大的股东是少为人知的慈航基金，它建立了一种以中国文化为基础的企业经营理念，最大程度的将公司利益与社会回报相结合。

海南航空目前是中国第四大航空公司。这家公司已经拓展到物流、酒店、零售、地产、基础设施和旅游，在全球开展业务，是海南岛发展的最大经济引擎之一。

海口群塔从一片空白上崛起，将成为海口新CBD的核心（图2）。海口CBD位于大英山地区，其场地本身是原来海口老美兰机场，这也使得海航作为原机场的运营者成为现在CBD的核心驱动力。

海口塔及周边建筑群的整体规划包含十座从150米到450米高度不等的塔楼，建筑面积超过150万平方米。概念规划的形象主题为“佛手”，一个由甲方指定，意在为海南人民祈福的命题作文。分列南北的两排塔楼以南北两座400米超高层为核心，形成了独特的天际线（图3）。在地面上，建筑群略微围合，形成了一个巨大的中央广场，四周是连续起伏的商业裙楼。裙楼和大道之间的公共区域布置了大量的绿植和水景（图4、5）。所有的建筑在地上和地下都相互连接。



the semantic aspirations of the client. The understanding of the cultural and social context of the place was key. We felt that the Buddhist faith was an important influencing factor. While avoiding any direct iconography, we did reflect upon principles such as harmony, balance, flow and continuity. But these are architecturally abstracted and find their references in the geometric language and the spatial articulation of the building.

Haikou lies in the typhoon belt, and therefore experiences extremely high wind loading. The form of the building and facade has been designed to spread the wind vortex-shedding over a broad range of frequencies. The corners of the building are rounded and the overall shape is constantly changing up the height of the structure. The detailing of the facade provides further interruptions to the wind. At the same time, Haikou is located in one of the most seismic regions of China.

Furthermore, the form and structure of the tower have been directly informed by the program requirements of the building and the drive for an efficient structural scheme. The occupant needs for an office space and hotel room are distinctly different and have led to a shift in structural system at the boundary between the two functions. The shift in systems occurs at the hotel and is a key feature of the overall design.

For the office levels in the lower part of the tower, there is a desire for long span floors with column free interiors. This led to a mega column and mega brace solution in conjunction with a large central core. In order to maximize the flexibility of the internal spaces, mega columns are pushed to the eight exterior points of the building, inclining and rotating with the form (Figure 6). The mega columns are tied back into the core at each of the sky lobby levels through large steel truss outriggers. This shares the lateral load between the core and the mega column/mega brace system and provides a stiffer structure. In order to limit the floor spans to efficient dimensions, smaller intermediate columns are introduced in the facade between mega columns.

The eight mega columns describe the overall form of the tower. They are gently curved and make for an elated overall appearance of the tower (Figure 7). When seen from above, they are reminiscent of a Lotus Flower (Figure 8). The continuous lines culminate in the tower tip where they revert back on themselves. The silhouette of the tower can be traced with a continuous curved line. The large mega braces carry the horizontal loads due to extreme wind and earthquake loading. The braces are

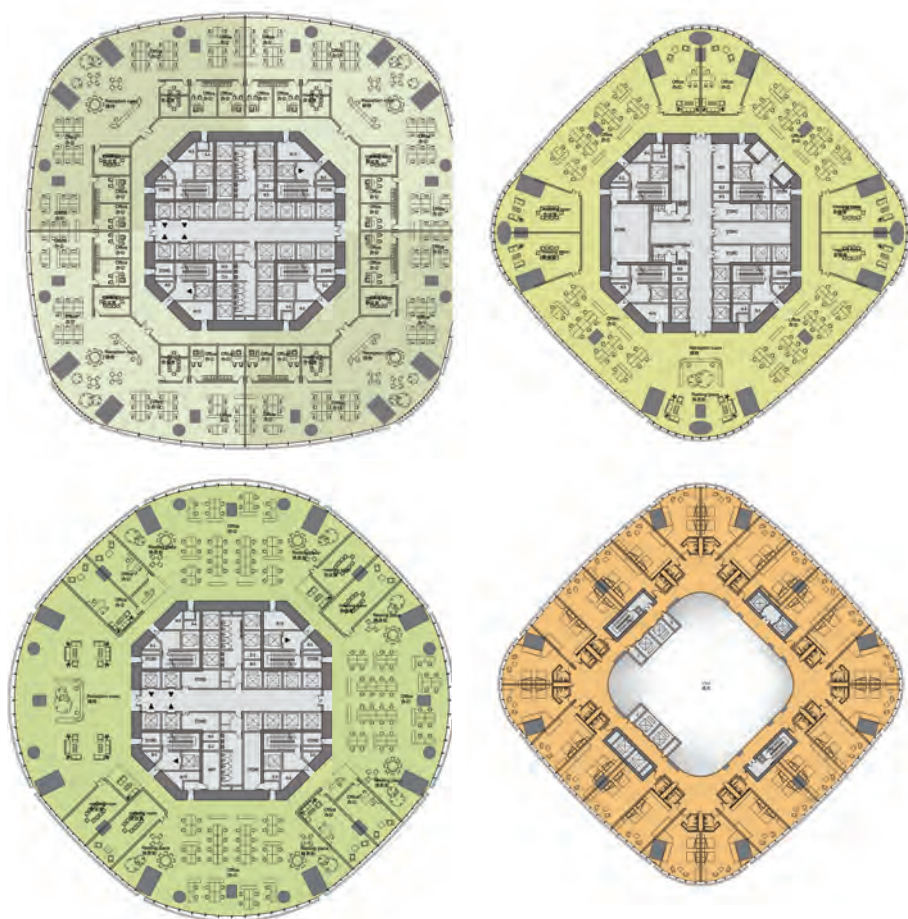


Figure 6. Floorplans (Source: HENN)  
图6. 平面图 (来源: 海茵)



Figure 7. Haikou Tower, Hainan, China (Source: HENN)  
图7. 海口塔, 海南, 中国 (来源: 海茵)

### 海口塔-形式与意义

在设计海口塔之初, 令我们最感困惑的就是功能上的极限要求和业主的感性诉求之间的矛盾。了解场地文化和社会语境是设计的很关键。我们感觉佛教信仰对这个项目的影 响不容忽视。在设计中我们避免了直接的符号主义, 尝试通过建筑的几何形态、空间组织去表现和谐、平衡、顺畅和持续的主题。



Figure 8. The tower's top was inspired by the shape of a lotus flower (Source: HENN)  
图8. 塔最大的灵感来源于一个莲花的形状 (来源: 海茵)

海口位于台风区, 要应对极高的风荷载。我们设计的建筑几何形态和幕墙形式能够帮助分散漩涡, 减少漩涡的集中。建筑的棱角均为圆滑倒角, 整个形体随着高度变化也不断变化。幕墙的细节也进一步阻挠风的连续性。海口所位于的地区也是中国地震烈度最大的地区, 按照8.5度设防。



Figure 9. Haikou Tower, Hainan, China (Source: HENN)  
图9. 海口塔, 海南, 中国 (来源: 海茵)



Figure 10. The shift in the structural system occurs at the boundary between the tower's two functions (Source: HENN)

图10: 结构体系的转变发生在这座塔的两个功能之间的边界 (来源: 海茵)

only required on four of the eight faces, which allows uninterrupted facades on the other four faces.

For the hotel levels, there is a greater requirement for unobstructed views (Figure 9). That is why at the top any cross bracing on the perimeter was avoided and is set back. At the hotel lobby level the central core splits into four separate cores (Figure 10) to make space for a grand central atrium. The full-height atrium has a light diagrid tube pattern inside which also resembles a lotus-like motif (Figure 11).

The tower has a height of 428 meters and amounts to a total area of 380,000 square meters. It offers spaces of working and living for more than 20,000 people every day.

The humid tropical island climate of

Hainan and the building's height called for an intelligent, performative envelope to react to differing sunlight conditions. The façade design will have the biggest impact on the building's energy consumption. A highly efficient shaded façade is proposed that is adapted to suit each orientation. The facade achieves this with a panel system divided into two parts – an upper opaque part that blocks sunlight and a lower transparent part (Figure 12). The opaque spandrel provides shading to reduce cooling loads while the glass facade in the lower part maximizes the use of daylight. The division in each facade unit folds in and out. The angles vary according to sun-shading requirements, from north to south and from bottom to top. The continuous differentiation of the facade blends with the large-scale structure of the tower.

建筑形式也受到建筑功能和结构效率的限制。建筑内办公和酒店的使用者对空间质量要求的不同带来了两种功能相对应的两种不同结构形式。结构的转换在酒店的空中大堂部分完成,同时也成为整个设计的主要特点。

建筑底部的办公部分要求尽可能大的无柱空间,所以大的核心筒会承担一部风荷载,外围的巨柱和桁架是主要的结构支撑体系。八根巨柱形成建筑平面的边界,保障内部空间的自由度(图6)。

这八根巨柱也决定了建筑的整体形体,它们稍呈曲线,定义了塔楼缓慢变化的流线型外观(图7)。如果从顶视图来看,这些巨柱的交织酷似一朵莲花(图8)。在塔尖,结构柱继续以装饰性的延伸回到中心点。另一方面,四个面上的巨型桁架是



Figure 11. Hotel lobby on the 72nd floor, the void tops the core below (Source: HENN)  
图11. 位于72层的酒店大堂 (来源: 海茵)

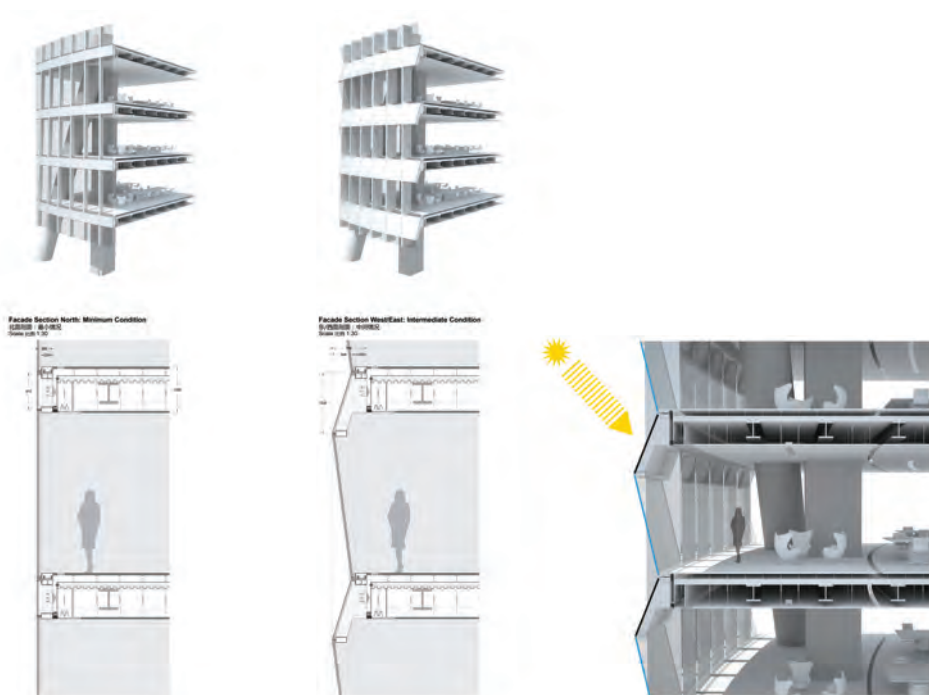


Figure 12. The facade reacts to differing sunlight conditions depending on orientation (Source: HENN)  
图12: 表面对不同光照条件下的反应取决于方向 (来源: 海茵)



## Conclusion

Coming back to the initial question about the meaning of architecture, we are postulating the idea of a more dialectical approach. By that we mean the reciprocal dialogue between intrinsic and extrinsic logics as the defining parameters for architectural design. Besides economic, functional and technical requirements there is a social and cultural dimension. Usually this is not as easily quantifiable and is more abstract, but it's an important element for the sustainable development of our future cities.

By appealing to the generic, architecture would be subordinated solely to the dictates of the commercial, it would be liable to be co-opted and blended into the indifferent equivalence of everything with everything else, for an audience that has no concern for that difference and no discernment of quality.

In our eyes architecture is a vehicle to create difference. We are convinced that architecture should take on a political, social and cultural responsibility. Form should hereby be a strategy against the uniform (generic). It should represent place rather than object.

承载风压的主要结构元素，也是地震中结构稳定性的主要保障。

酒店则更需要无遮挡的开阔视野（图9）。所以海口塔顶部的三分之一结构不考虑任何桁架或大的斜撑。在酒店大堂层，大核心筒被分成四个单独的小核心筒，为中心的中庭腾出了空间（图10）。通高的中庭直达顶部，内部的对角线形式结构构件也是一朵倒覆的莲花（图11）。

海岛气候潮湿闷热，海口塔除了应付热带气候，还要应对这一纬度上超高层建筑面对的强烈阳光直射。建筑的立面在这一目标下发展成为一个折板系统，上半部不透明，遮挡阳光，下半部透明，提供视线和日照。上下部分根据每一个幕墙单元的点位不同折合角度不同，整体变化分布和对塔身的日照分析对应（图12）。幕墙因此也大同小不同，处处微变，与结构体系不谋而合。

## 结语

回到最初关于建筑的意义的问题，我们希望用设计一座超高层建筑的表现为例来回答。在经济、功能的、技术的要求之外，还有社会的和文化的要求。这些要求从来没有一定之规和计算标准，但对于未来城市的可持续发展更为重要。

从普罗精神来讲，建筑设计完全服务于商业目的，是可以无差别被融入任何事物的工具之一。对于观者来说，这并不意味着质量的差别和下降

但我们主张辩证主义。建筑设计对象内部的逻辑和外部的逻辑应该经常性的对话，建筑设计应该承担政治的、社会的和文化的责任。由此设计永远应该反对普罗，更应该尊重场所，而不是其本身。

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