DESIGNING FOR ORIENTAL ENVIRONMENTALLY FRIENDLY CITIES

SELECTED TYPICAL CASES FROM URBAN DESIGN PRACTICES IN CHINA SINCE 1980S

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Figure 1: Bird View of Niushou Hill Tourist Service Center Design Project, Nanjing. Photo credit: Xu Haohao

URBAN DESIGN DEVELOPMENT IN CHINA SINCE 1980S

Urban design is rooted deeply in the long and broad history of Chinese civilization. Geomantic omen, arts and culture, poetry and literature; the wisdom of creating human settlement environments on the earth totem has long been blended into city building activities by Chinese ancestors. Today, in the scenes from those famous ancient Chinese paintings, such as *Dwelling in the Fuchun Mountains* by Huang Gongwang and *Along the River during the Qingming Festival* by Zhang Zeduan, we still can have a glimpse of life-scene scrolls blooming harmonious dialogues between mountains, waters and human settlements. These paintings illustrate the ancient oriental idea that "man is an integral part of nature". Beijing, Nanjing, Xi'an and other national historic and cultural cities have all embodied this Chinese traditional ideology and philosophy of urban design. Although this idea is shared by other ancient capital cities, the methods of building these cities vary to reflect their diversity rooted in regional culture and differentiate their collective aesthetic cognition. For example, Beijing and Xi'an were built to follow ritual urban design principles where the imperial palaces were located in the centers of the cities, while Nanjing was built with a more organic and flexible form in response to the special natural environment.

Generally speaking, modern urban design originated in the United States, but studies have also established China's own theoretical and methodological framework (Wu, 1999; Qi, 1997; Wang, 1991 & 1999; Lu, 2005). The discipline of urban design in China originated in the 1980s and was further developed in the 1990s. Meanwhile urban design practices have rapidly developed with three new development trends: 1) increased emphasis on low-carbon society and sustainable development; 2) the improvement of design methods thanks to digital technology advancement; and 3) the influence of changing ideological trends from contemporary arts.

The contemporary rise of urban design started in the western countries. However, with the dynamic process of urbanization on a global

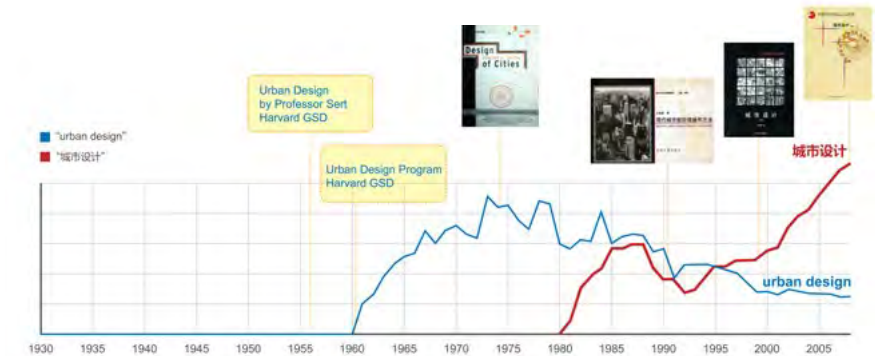

Figure 2: Key Words Search Results of "城市设计" ("Urban Design" in Chinese) and "Urban Design" in Google Book Database (Up till 2008)

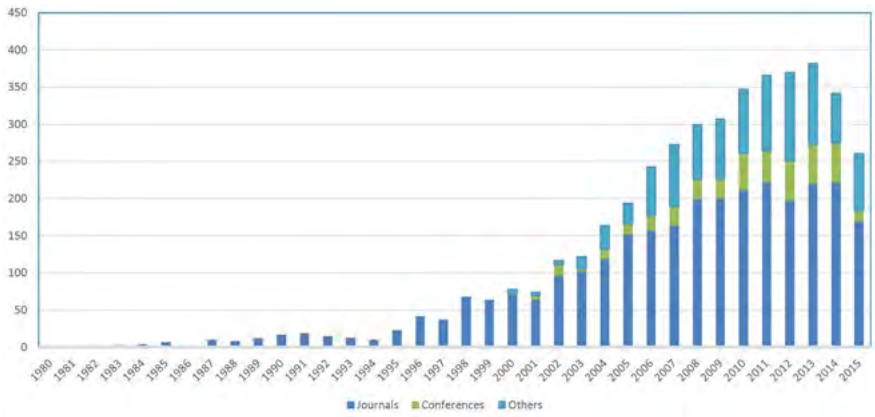

Figure 3: CNKI Literature Index by the Key Word "Urban Design" in Chinese

context, urban design has gradually become the new hot point and an opportunity especially for China. The vitality and popularity of urban design in China, in spite of its late arrival, could be distinctly seen in Figure 2 and Figure 3. Reflecting a phase-difference, there is a gap in the development of urban design practices in China and the West, where changing characteristics and trends are clearly shown in the chart. In the mid-1990s, urban design in China was characterized by "vast acreage and large quantities". During this period, a large number of projects had the potential to be implemented and a part of conceptual urban design projects proposed realistic requirement to be quickly implemented simultaneously.

More recently, European and American countries have entered a stable phase of urbanization in recent decades. Consequently, few new large-scale projects have been implemented in the West. Correspondingly, most urban renovation projects were industrial transformation (eg. Gantry Park in New York City) or urban regeneration (eg. Big Dig in Boston). These projects were usually small in scale and located in a quite completed urban structure. Therefore, the urban design schemes mainly focused on the physical environment with particular concerns on scale and form that are related to people's activities and visual perception. In comparison, less attention was paid to study urban form at the macro level. Many architects were involved in these projects with the aim of stimulating local vitality. For instance, Rem Koolhaas completed the development plan for the Zollverein XII Colliery on the outskirts of Essen in Germany, and his urban design scheme for reconstruction of the central area of Almere, Netherlands was partly implemented as a catalyst to activate the old area. Norman Foster won the bid with his urban design proposals for urban renovation of Duisburg Inner Harbor. Jean Nouvel was involved in the regeneration of the Winterthur Industrial Zone next to Zurich, Switzerland.

Going back to the context of China, the Central Urban Work Conference was held in Beijing on December 20th and 21st, 2015. It was only the second time that Chinese leaders had held such a conference in 37 years (Xinhuanet, 2015). Several key points were highlighted in this conference and as a result the national importance of urban design entered a new era:

- It insisted on intensive development to establish the concepts of "smart growth" and "compact city", and delimited the development boundaries of cities scientifically in order to drive urban development from "denotation expansion" to "connotation promotion", namely the "new normal".
- It enhanced urban design, advocated city repair, and enhanced publicity and mandatory regulatory detailed planning.
- It enhanced planning and management on spatial stereoscopic, planar compatibility, feature integrity and cultural continuity so as to retain the specific "genes" of regional environment, cultural characteristics, architectural styles etc.
- It promoted efforts to build city spirit by preserving the historical context and cultural heritage, combing it with the historic inheritance, regional cultural and era requirements.
- Finally, it promoted planning levels while affirming the scientificity and authority of urban planning to accelerate "unity of diversified planning", as well as comprehensively carrying out urban design and improving architectural policies in the new period to scientifically draw schemes of "growth coordinates" for the cities.

Above all, since the middle of the 20th century, the international development of urban design peaked between the 1970s until the 1980s, then the attention on it gradually declined. Comparatively, development of urban design in China emerged a small climax in 1985; later after some fluctuations, the attention on it kept rising until December 2015, when "enhancing urban design" was proposed in the Central Urban Work Conference. So far most urban design projects in China were orchestrated and implemented based on various levels in the nation's specific statutory urban planning hierarchy. However, in the last thirty years of its evolution, while absorbing traditional characteristics and the successful experiences internationally, urban design in China also incorporated Chinese urban design characteristics and Chinese ways of social practice. That is to say, it has developed its own framework of urban design in terms of

both theory and practice, which is multilayered, multi-dimensional, and multi-model that integrates urban design with statutory urban planning (Wang, 2013), ranging from overall urban design to district urban design and plot urban design, along with ranging from preposition to the same time and postposition.

TYPES OF URBAN DESIGN IN CHINA WITHIN ITS OWN FRAMEWORK

After more than sixty years of development, urban planning in China has formed a comprehensive framework of laws and regulations, management system, and technical methods which created work contents at several levels including overall urban planning, district urban planning and regulatory detailed planning. Nevertheless, there still exists some problems that urban design is absence, it is unique worldwide and has achieved great success depending on particular development opportunities. In brief, besides its controlling and guiding roles, with close connections and interfaces to statutory planning in urban management, Chinese urban design practices, since 1980s and especially since the new millennium, could be roughly categorized to the following types:

Conceptual urban design which is a visionary design for future cities based on independent assessments. It is most frequently used in urban area that do not have explicit possibilities and it usually takes the form of a competition whose focus might be ecology, locality and etc. The possibilities of these cities are then discovered by evaluating all of the proposals at different levels. A good example of a conceptual urban design is the *Planning and Design Proposal for World EXPO 2010, Shanghai.*

Thematic urban design which is more flexible with distinct referring, mostly focuses on one or two aspects of a systematic issue. There are mainly two types; one *gives priority to ecological concerns*, and the other *aims at heritage preservation*. A good example of the thematic urban design giving priority to ecological concerns is *Planning and Design Project for the Philanthropy Park in Sun Yat-sen's Mausoleum, Nanjing.* Another good example of the thematic urban design aiming at heritage preservation is the *Urban Landscape Design Project for the East Bank of the West Lake, Hangzhou.*

Practical urban design focuses on spatial construction, restructuring and optimization, including the development of a unifying design for a group of buildings. The *Niushou Hill Tourist Service Center Design Project* in Nanjing is an example.

Moreover, several universal propositions are presented in urban design in China. Our cities are experiencing the new historical period characterized by a shift "from denotation to connotation, from quantity to quality, and from increment to stock". It is a period when urban development is more likely to be driven by innovation, therefore the role of urban design or architectural design in this environment is to create high quality human settlement environments with urban attributes. "Catalyst" projects and pilot projects are set in cities to stimulate citizens' imagination for the sake of generating urban vitality. Green urban design based on the idea of "ecological priority" is comprehensively carried forward. Creativity of urban design plays an increasingly important role in historic heritage preservation and regeneration to retain collective memories of "urban nostalgia" and "rural nostalgia". Innovative practices of large-scale urban design on the general level blossom into new hot points, and there is more and more emphasis on urban growth and the guidance of citizens' social needs as opposed to a design emphasis focused on squares, wide roads or street spaces.

SELECTED TYPICAL CASES FROM URBAN DESIGN PRACTICES

PLANNING AND DESIGN PROPOSAL FOR WORLD EXPO 2010, SHANGHAI

The Planning and Design Proposal for World EXPO 2010 in Shanghai is a representative case of conceptual urban design. It is a "catalyst" project which aims to stimulate citizens' imaginations and to enhance the city's vitality. Spanning both riversides of the Huangpu River and located at its bends between the Lupu Bridge

Figure 4: Bird View of Planning and Design Proposal for World EXPO 2010, Shanghai

and the Nanpu Bridge, the Planning and Design Proposal for World EXPO 2010 in Shanghai covers a total area of 6.68km^2 with an enclosed zone of 3km^2 in planning. Four exhibition areas were planned on the cross structure formed by the Huangpu River as the horizontal axis and a central EXPO axis rectangular to it, which were to be constructed between the Pudong and the Puxi EXPO parks. In Pudong, the International Exhibition Area and a separate Exhibition Island of China were to be built, the major functions of which were exhibitions, communication and mega-events. In Puxi, the Exhibition Area of Corporate Pavilions and the Urban Practice Area were to be set up to highlight China's industrial development in modern times and to unfold the culture and life of the port city. The site's transportation network was planned and designed with full consideration of traffic characteristics and intensity during the period of EXPO, as well as demands from post-EXPO development. The transportation system was multi-modal, including subways, light rails, buses, vaporettos (water taxis), bicycles and walking.

The architectural design embodied the idea that "harmony is most precious", which is the traditional Chinese idea of landscape philosophy. It adopted the design strategies of "urban topography" and "architectural topography" which would suffice to form earth landscape. It also comprehensively took into account the issues such as how to plan the pos-EXPO utilization of the venue, how to handle the relationship between the retained structures and the removed structures, how to organize the comprehensive transportation system, and how to achieve an anti-terrorism design. Green technologies which include passive insolation and ventilation were to be incorporated within the architectural design of the China Pavilion. The China Pavilion and some of the rental pavilions would adopt the giant steel reticulated shell structure to simulate shapes of mountains, forming spacious exhibition spaces inside. The crust of the mountain-shape structure had characteristics from ecological technologies with multifunc-

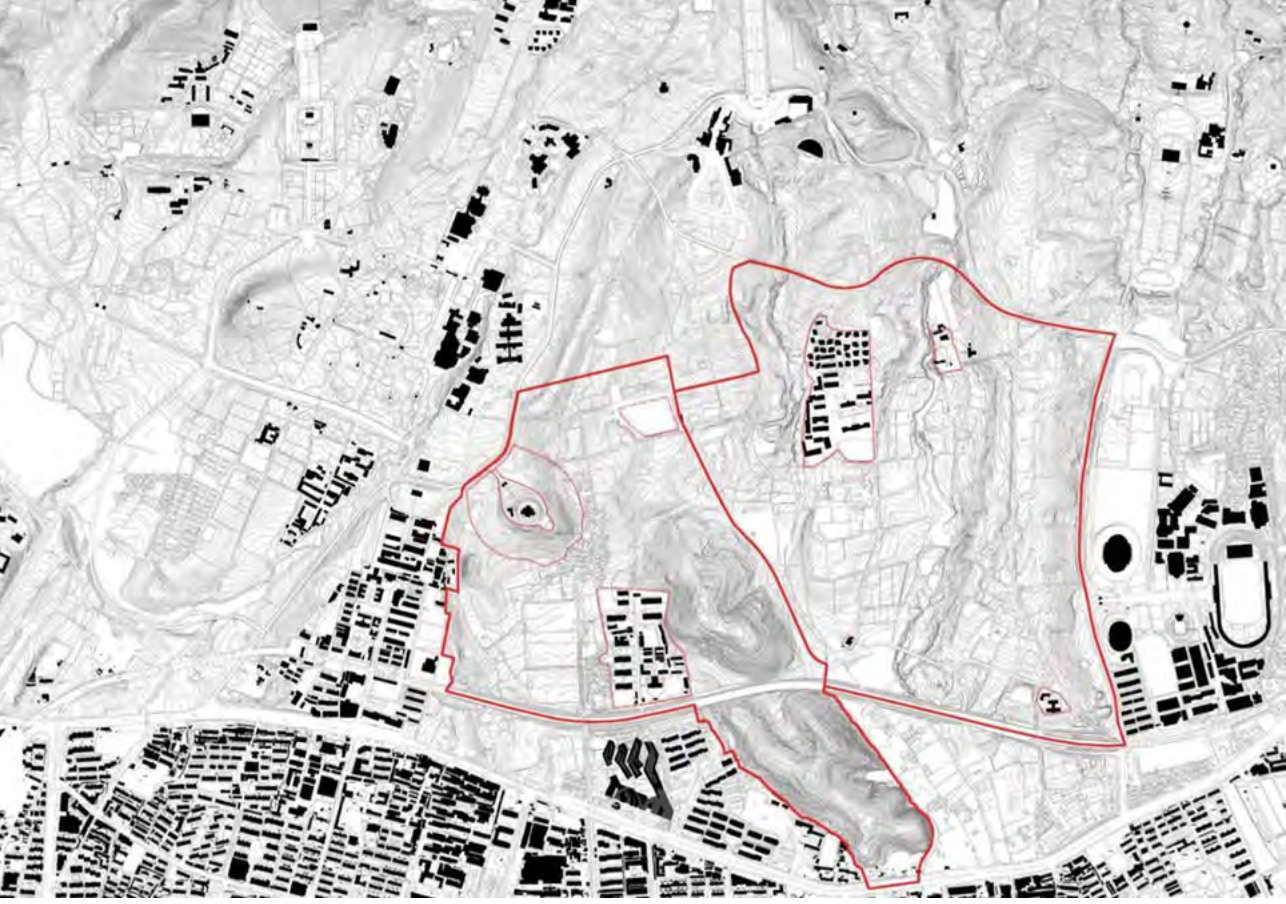

Figure 5: Figure-Ground Relation Pattern in Planning and Design Project for the Philanthropy Park in Sun Yat-sen's Mausoleum, Nanjing

tional and sustainable utilization values, giving a nice interpretation to the design idea of "scenic cities" with duality from both sides of form and technology. The planning and design was aimed at setting up a philosophy of ecological human settlements in accordance with the idea of sustainable development and an urban paradigm of a new Shanghai, expressing the principles of peace, progress, equity and efficiency.

PLANNING AND DESIGN PROJECT FOR THE PHILANTHROPY PARK IN SUN YAT-SEN'S MAUSOLEUM, NANJING

Under the common sense of sustainable development, there are some major concerns for contemporary urban design, for example, bioclimatic condition and natural situation. By creating a pleasant environment and giving reasonable utilization of natural resources, urban design could effectively facilitate sustainable urban development (Wang, 2013). Nowadays, influential factors on sustainable urban development related to urban design include environmental protection, energy utilization, etc. The Planning and Design Project for the Philanthropy Park in Sun Yat-sen's Mausoleum in Nanjing is a typical case belonging to thematic urban design which gives priority to ecological concerns. It is an example of the ecological practice in green urban design based on "ecology priority" principles.

The Philanthropy Park is located in the southern part of the core scenic area in the Scenic and Historic Area of Zhongshan (also known as the Purple Mountain) in Nanjing, near to the south of Sun Yat-sen's Mausoleum. The park is an integral part of the scenic area and is also the important node for the east portal of the main city. There are abundant natural resources in the 231.78hm^2 large scenic area which also has profound historical and cultural accumulation.

Prior to the park's development, the site contained a mix of land uses, with several villages and a driving school built on rented farmland. Such a kind of situation did not match the national scenic area as they create problems in

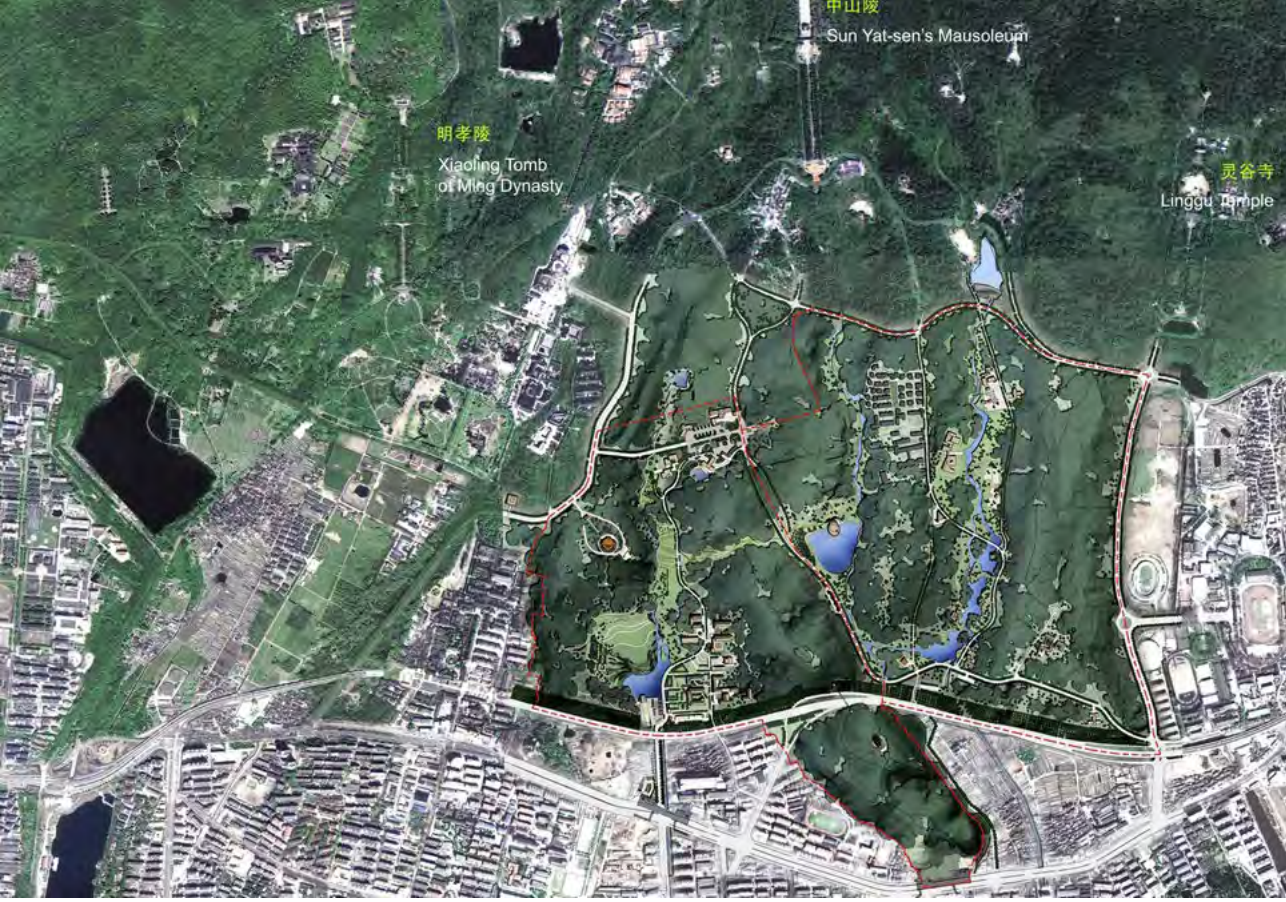

Figure 6 (top):Master Plan of Planning and Design Project for the Philanthropy Park in Sun Yat-sen's Mausoleum, Nanjing

Figure 7 (bottom): On-site Photo of the Philanthropy Park in Sun Yat-sen's Mausoleum, Nanjing

Figure 8: Comprehensive Analysis of Vegetation Map (From Left to Right: Analysis of Tree Species in Vegetation, Analysis of Tree Ages in Vegetation, Analysis of Canopy Density in Vegetation)

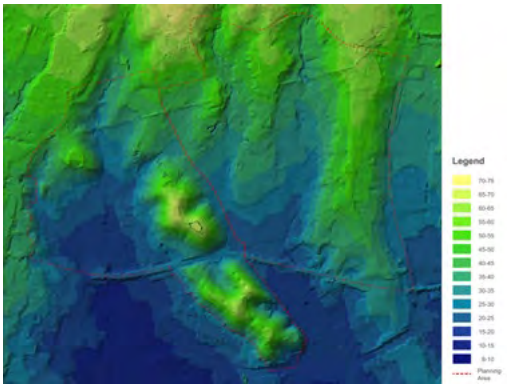

Figure 9: Terrain Elevation Analysis

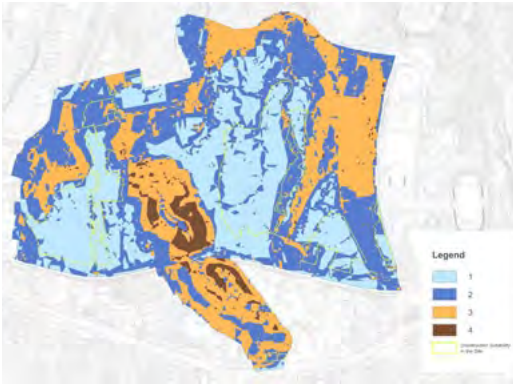

Figure 10: Comprehensive Analysis of Construction Suitability in the Site

functional organization as well as planning problems related to planning administration on land uses. Besides, the site consisted an extraordinarily complicated natural environment consisting of conditions covering terrain and topography of the site, vegetation and forest form, geological and hydrogeological conditions, and catchment areas. As a result, the project adopted the working method to integrate urban planning, architecture, history, ecological landscape, transportation, tourism planning and computer technology using multidisciplinary collaboration. The technology of GIS was comprehensively applied as the analytical approach to conduct terrain elevation analysis and slope analysis, and to map attributes of the site, such as the distribution of tree species, tree ages and canopy density in vegetation. Superimposition analysis through the "multi-layer cake" way aggregating all comprehensive analysis came to the conclusion of construction suitability on the basis of natural and environmental sensitivity in the site. Using this analysis, project planning and design was accomplished with a moderate environmental impact.

The planning and design efforts resulted in the careful locations of new buildings in the sensitive natural environment. Historic architecture design methods were analyzed and applied to influence the design of new buildings, learning from traditional and classical architectural works that have harmonious relationship with mountains and waters in the surrounding areas. The project has established an information inquiry and management database to be used in planning and design together with management of the scenic area. Doing this effectively guarantees that the achievement of the project would be foresighted, scientific and feasible, providing the necessary technical support for future renovation and well-organized construction of the environment in the scenic area.

URBAN LANDSCAPE DESIGN PROJECT FOR THE EAST BANK OF THE WEST LAKE, HANGZHOU

West Lake is an exceptional example of traditional Chinese landscape gardens combining with a long history and great cultural connotations. The Urban Landscape Design Project for

Figure 11: Bird View of Urban Landscape Design Project for the East Bank of the West Lake, Hangzhou

the East Bank of the West Lake in Hangzhou is another typical thematic urban design but this one focuses on heritage preservation. It is an innovative large-scale overall urban design as well as an urban landscape promotion project intended to have West Lake designated as a World Cultural Heritage Site by UNESCO. The project won the first prize in an international design competition and has been adopted to deepen and carried out. The scope of the project includes research about the 168km^2 large main city of Hangzhou, and the focused renovation area which is the 45km^2 large area on the east bank of the West Lake.

The planning and design began with the study of maps showing the formative evolution of the West Lake and the study of historic maps which document the evolution of the banks of the lake with both its natural history and cultural history. These studies were undertaken to clearly understand and document its scenic values and the reasons why it has wide-ranging influences both domestically and internationally. The research was driven by the core values judgment of the West Lake landscape system which are: 1) natural paragon of oriental mountains and waters; 2) humanistic paragon of building activities for thousands of years; 3) aesthetic paragon of delicate beauty and grace; and 4.) place paragon of public activities. The relationship between "city, lake and people" and the 5.9km2 large open water surface which is the "dynamic random sightseeing face" to enjoy the urban landscape were the key entry points of the project.

Discussing about the "dynamic random sightseeing face" as the key entry point, the new method of urban landscape design based on dynamic random viewpoints supported by GPS and GIS techniques in this project is going to be elaborated. The classical method of urban landscape design is more about the analysis of the relationship between architecture and horizons, while urban landscape is mainly realized through visual medium (more than 60%). Some examples are the classical analysis of square sizes following the perspective of classical aesthetics by Rob Krier, and the

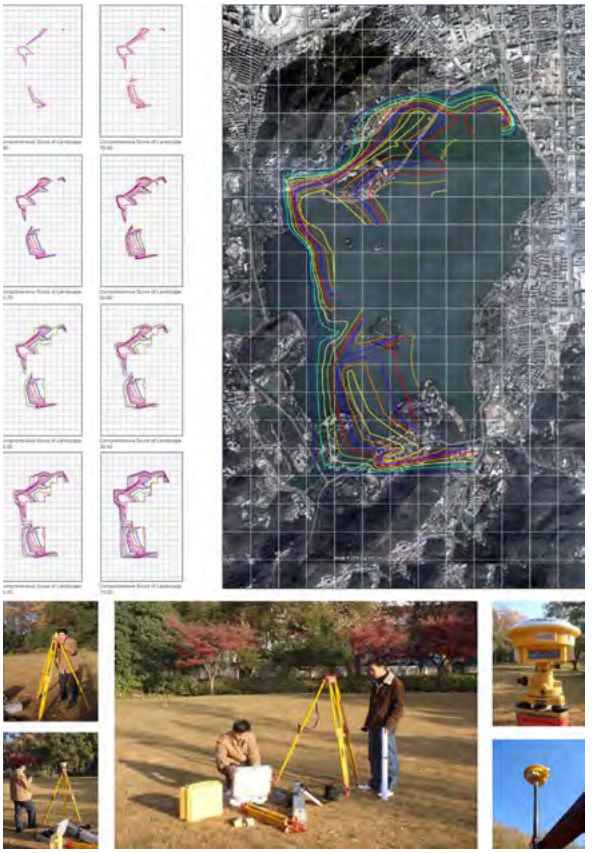

Figure 12: Selection of the Viewpoints and Determination of the Visual Isopter

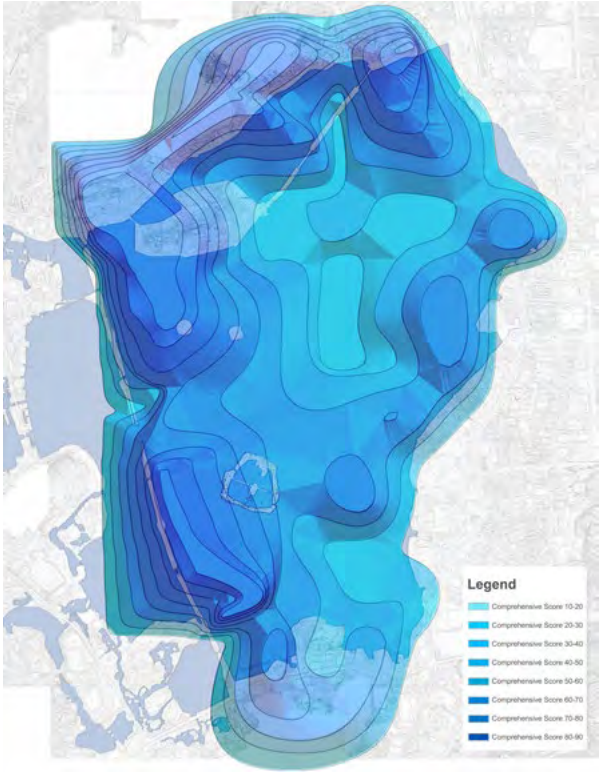

Figure 13: Visual Isopter Generation in Computer

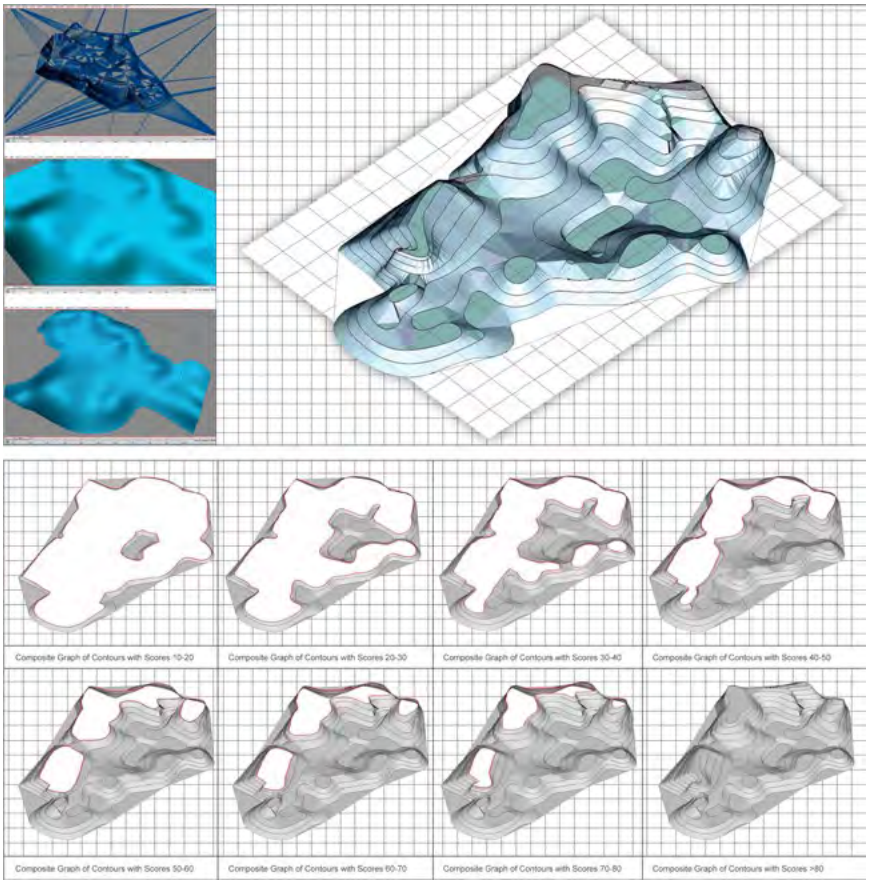

Figure 14: Contour Generation in Computer

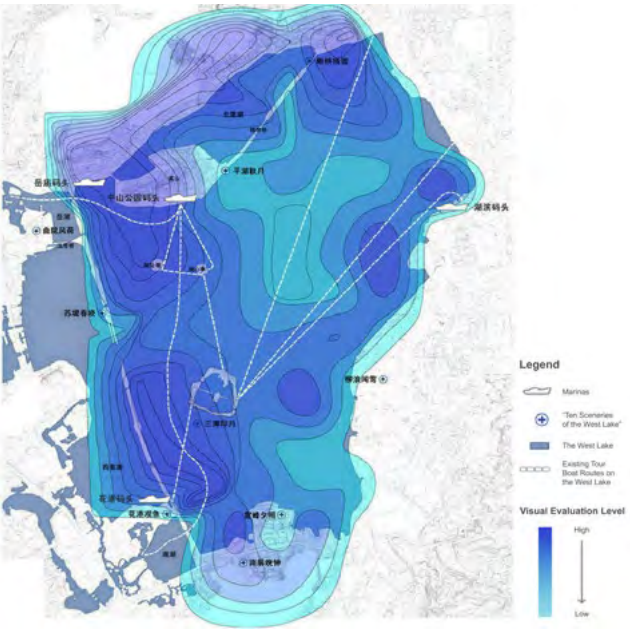

Figure 15: Superimposition of the Existing Tour Boat Routes on the West Lake and the Landscape Visual Isopter

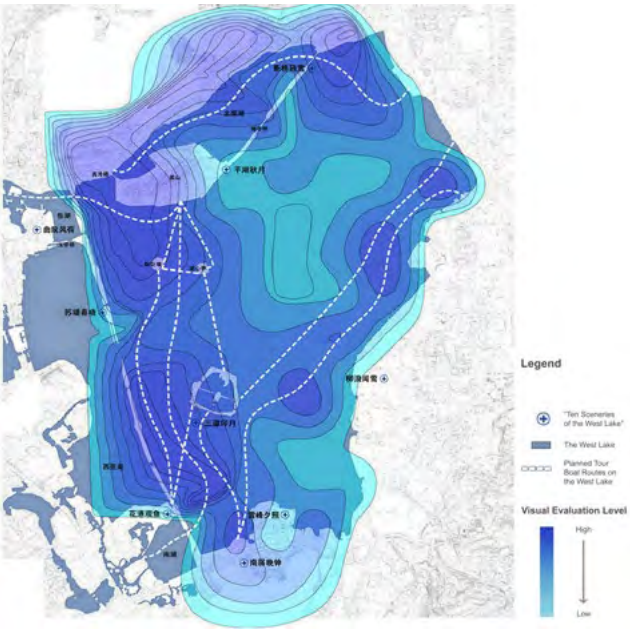

Figure 16: Superimposition of the Planned Tour Boat Routes on the West Lake and the Landscape Visual Isopter

analysis of sizes of renaissance plazas in the book Civil Art (Hegemann and Peets; 1922, 1988). Cullen (1961) mentioned "series visions analysis" as understanding space is not only at viewing, but also at passing it through movement. People can consciously use a group of moving viewpoints and some static viewpoints to choose suitable routes (usually the routes where people assembled) for doing observation of visual characteristics and properties of space, and for doing simultaneous real scene records in correspondence with the plans (Cullen, 1961). In reality, there are also many classical examples of series visions analysis; the design for the group of buildings in Acropolis of Athens follows the basic principles of static classical visual aesthetics, so does the Rome City Hall and the Capitol Square designed by Michelangelo. Urban design for the central area of Washington, D.C. was implemented through the method with a combination of landscape viewpoints and linear series visions from static classical aesthetics.

In a word, previous researches of Western landscape features mostly employ static viewpoints or linear series visions as the basis for designs. It is the dynamic sightseeing sequence that unfolds following a given route, driven by knowledge. However, in reality, people's ornamental activities have the essential characteristics of roaming. This is because roaming is a random and dynamic activity with "wandering", following one's inclinations and sense of discovery. It is the sightseeing activity that is easy to happen, pristine and decided by people's real-time characters. Essentially, random roaming is more important than static gaze, especially in an environment with planar viewpoints. Wandering routes were always set in traditional gardens, but most of them were preset in the design beforehand. Accordingly, landscape is formed with "scenery" and "sightseeing"; "scenery" is relatively static, while "sightseeing" is closely related to people's viewpoints, sight lines, sight places and activities. The relationship between static scenery and dynamic sightseeing has been an important unsolved question in academia for a long time.

The previous urban landscape design for the West Lake mainly depended on people's static landscape visual laws. In the new project, GPS and GIS techniques were applied to identify the coordinate positions of viewpoints in order to focus on solving scientific correlations between the random viewpoints of the West Lake landscape and the urban landscape. Generally, four steps were taken to establish the sightseeing relationship between the West Lake landscape and the tour route on the surface of the lake. Firstly, we identified sampling points on the surface (250m spacing grids), along the banks of the West Lake and at the commanding heights in surrounding areas. Secondly, we numbered the sampling points, then photographed the urban landscape of the east bank from each sampling point. We did sample evaluation for each one of them for the sake of measurement, rating and scoring based on landscape quality. Thirdly, we input data from all of the sampling points into computer to establish a digital model. The points with the same ratings and scores would generate "contours" in the computer to form a three-dimensional image which vividly reflected the ratings and scores which was then superimposition over the topography of the West Lake and surrounding areas. Fourth and last, we superimposed the splicing results with graphic expression to get the comprehensive evaluation charts which identify views from the lake surface towards the urban landscape on the east bank, namely the "visual isopter chart".

The next stage was to understand how tourist used the West Lake. The design team prepared a questionnaire and administered it to domestic and foreign tourists in order to gain various subjective information, such as tourists' usual sightseeing ways, sightseeing contents, staying time and sightseeing routes. From this information we did bayonet statistics on tourists visits to the West Lake including locational statistics on tourists' behavior. We then superimposed the "visual isopter chart" with the existing tour boat routes on the surface of the West Lake and considered the promotion effects of those routes for enjoying the "Ten Sceneries of the West Lake". Based on the preceding information, the optimal tour boat route was planned and designed, where it would pass the peak points on the visual isopter to the best of its ability. On the basis of optimizing the tour boat routes, the design proposed

Figure 17: Night Scene of Niushou Hill Tourist Service Center Design Project, Nanjing. Photo credit: Xu Haohao

the construction of “ecological floating islands” in the areas with the lowest landscape quality based on our comprehensive visual evaluation. This design idea followed the principle that “limit one's vision through a leaf to see the Mountain Tai”, keeping unfavorable landscape out while augmenting landscape layers and even adding new scenic spots.

Another important innovation in planning and design was the consideration of elevation in the park based on visual and air visibility analysis. The design divided the West Lake and the east bank area to four sightseeing distance levels[1]: less than 2 kilometers, 2 to 3.5 kilometers, 3.5 to 6 kilometers, and more than 6 kilometers. Using the Hangzhou meteorological data statistics as important references during the process, it did statistics on weather visibility conditions as a function of the year and the tourism golden months. Then the height guidance model was developed based on land attributes factors. Finally, air visibility isobars were superimposed on to the height guidance mode to determine the landscape security pattern used to control building heights in the visible range on the east bank of the West Lake. Finally, urban skylines were controlled on the basis of the skyline appearance distribution map, and the short distance, medium distance and long distance landscape distribution map.

The planning and design used scientific information such as GPS viewpoints positioning, landscape digital modeling, air visibility analysis techniques, and GIS height analysis scientifically, to reveal the relevance between "static scenery" and "dynamic sightseeing". Our approach overcame the deficiencies caused by designing through only a single viewpoint and a single sightseeing, which we discovered could not solve the scientific problems of dynamic random viewpoints and sightseeing roaming. The development of the composite sightseeing models contributed to the rational decision-making for successful urban design based on landscape features while acquiring the preliminary scientific "controllability”. Combining with other planning schemes, the outcomes have been implemented by Hangzhou Municipal Government, and had made a direct contribution to the West Lake's application as a UNESCO World Cultural Heritage Site.

NIUSHOU HILL TOURIST SERVICE CENTER DESIGN PROJECT, NANJING

The Niushou Hill Tourist Service Center Design Project in Nanjing is a good example of practical urban design. It is an example of architectural design with urban attributes, aiming to create a high quality human settlement environment through urban design. In China, there are mainly two legal approaches for implementing urban design; one is through the architectural design of building complexes for specific owners, the other is under the premise of urban planning implementation. This project is a building complex of a specific owner with site design based on urban design principles.

The building complex is located on the east side at the foot of the Scenic Area of Niushou Hill in Nanjing. Acting as the main entrance of the Scenic Area of Niushou Hill in the east, the Niushou Hill Tourist Service Center serves as the reception center for 50 to 60% of the total tourists to the Scenic Area, which means an average reception capacity of 10,000 visitors per day in normal peak days (weekends). The functions of the building complex include ticketing, exhibition, teahouses, sales, small-scale theatres and underground garages. The total area of the complex is around 95,000m^2.

The scenery of the Niushou Hill with rolling clouds and wreathing mists was one of the historic "Forty-eight Sceneries of Jinling (the ancient place name of Nanjing)", which described the natural scenery from hilly topography on the Niushou Hill. These views appeared indistinctly due to clouds and mists caused by the humid climate in Jiangnan (the region in south of the Yangtze River). During the conceptual design process, it was clearly recognized that what the building complex relied on were not some great mountains or precipitous cliffs, but the hilly natural base with its exquisite and graceful sceneries. Hence it was more important to have this conceptual expression reflected into the architectural subject values and to integrate the architecture into the environment. In fact, the building complex’s spatial design strategy had already highly respected the natural conditions of the Niushou Hill. It reasonably utilized the elevation difference in the site to shape the relationship between architecture and the hill while the archi-

tectural form is harmoniously blended in environment, to set the environment as the leading role while architecture is background for nature.

On the basis of reasonable utilization of the elevation difference in the site, the project tries to integrate Zen Buddhism's cultural elements and ideas as design elements into both public spaces and the tourists' routes for stepping into the Niushou Hill. Wind chimes ring on the tower, lotus flower patterns blossom on the ground of squares; all these Buddhist landscape design elements embody the sense of satisfaction. As a spatial guide, the design associates the tourists by means of vision stimulus, sense of hearing and psychological activities, with the Buddha Palace which is the main scenic spot on top of the hill. In this way, an identified building complex located at the east entrance accomplished form generation. The project has also made contribution to cultural context continuation. The whole building complex creates an atmosphere of religion and cultural tourism by incorporating the concise style of the Tang Dynasty, which was a glorious time and golden age for Buddhist cultural development in ancient China. With the folding dark grey titanium-zinc panel roofs and overhanging steel beams, the dialogue between tradition and modernity is interpreted. In the mood of the Tang Dynasty style, the graceful temperament that fits the locality is displayed.

By the way, in actual use the building has been a success. Given a reception task of around 5000 tourists on weekdays, around 10,000 tourists on weekends, and around 35,000 tourists on peak days, the project has shown effective pedestrian circulation and has a reasonable arrangement for the flow of traffic, which are the necessary supporting conditions for the operation of a tourist service center.

CONCLUDING REMARKS AND DISCUSSION

Sustainable development has already become a global consensus. Based on elaboration of urban design development in China since 1980s, China has established and developed its own theoretical and methodological framework of urban design, which has expressed itself with its typical types into urban design practices in the nation. It could be seen explicitly that there are some universal propositions and core values in Chinese urban design, which could be summarized as:

1) The cities in China are experiencing a new historical period of development "from denotation expansion to connotation promotion, from quantity to quality, and from increment to stock", and this has become the "new normal". The concepts of "compact city" and "smart growth" have been officially recognized which has resulted in delimiting the scientifically defined development boundaries of cities, as well as intensive development and efficient utilization of heritage.
2) There has been extensive attention on urban design from the national level to issues promoting local identities. At the same time, due attention in urban design has not only been given to the "grand urban narratives", but also to the "civilian narration".

3) Reasonable utilization of "catalyst" projects and pilot projects in urban design could help to stimulate citizens' imagination and generate urban vitality.

4) Urban design could be an important complement to the comprehensive framework of urban planning covering laws and regulations, management system, and technical methods to improve various levels of a city with specific themes. Especially, it could generate constructive guidelines for protection and recovery of large-scale urban spaces through the approaches such as green urban design based on "ecology priority" principles.

5) Urban design highlights the creation of human-oriented amiable spaces, focusing on the importance of historical and cultural connotations and urban collective memories.

6) Urban design, also includes architectural design with urban attributes, could be used to formulate creative schemes to improve the quality of the physical environment. For urban design projects at the micro-level, architects could have more advantages in spatial organization, form creation, aesthetic control and cultural manifestation.

All in all, urban design should develop on the basis of the national conditions, concerning total amount, capacity, stock, increment and quality. Concentrating the efforts from the government, the market and the citizens, urban design should more forward to build livable, vibrant and characterized modern cities. During such a process, the sustainable way of development should always be remembered. The Chinese ancestors never forgot to seek for telepathy and connections between cities and the natural environment during the process of creating cities. They observed those manners and orders from the laws from nature by designing a sense of breathing and relaxation in street spaces. The lessons created a human settlement environment on the earth totem.

Today, urban design practices rooting in China are becoming more and more mature from both of theory construction and technique methods, but they are still connected with their ancestry in the oriental scroll of natural mountains and waters. The ancestors in ancient China firstly got to know soil quality and water quality before building a city, and then to observe the night view of heaven and feng shui[2], showing great respect to nature. The urban designers in today's China are also exploring and making efforts on ways of design practices to insure oriental environmentally friendly cities. We sincerely hope all of the efforts could help to leave our descendants "with sights towards mountains and waters to remember rural nostalgia". ◆

ENDNOTES

1 According to accessibility and hierarchical laws of people's visual range.

2 "Feng shui" which literally translates as "wind-water", is a philosophical system in China since a long time ago, emphasizing harmonization between everyone and the surrounding environment. It is widely used to oriental buildings in an auspicious manner, always spiritually significant structures but also dwellings and other structures sometimes.

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Figure 18: Night Scene of Niushou Hill Tourist Service Center Design Project, Nanjing. Photo credit: Xu Haohao