A Study of Development and Evaluation of Nightscape in Shanghai

Xu Zhou*, Takayuki Ikeda2 and Hiroko Ono3

1 Doctoral Candidate, Faculty of Engineering, University of the Ryukyus, Japan
2 Professor, Faculty of Engineering, University of the Ryukyus, Japan
3 Assistant, Faculty of Engineering, University of the Ryukyus, Japan

Abstract
Considering the current worldwide attention placed on the research of characteristic landscapes, the nightscape of a city has become an extensively studied field. The author examines Shanghai, the first city in China to engage in the construction of nightscape. In this paper, the conditions in Shanghai to construct nightscapes and the scale of Shanghai's nightscape are summarized. The features of four representative nightscapes in Shanghai, namely the Pedestrian Street of Nanjing Rd., the Bund, the Oriental Pearl Tower, and the People's Square, are analyzed in detail from the aspect of regional spatial characters, composition elements, and evaluations of impressions. The research shows that the element of space has been taken into consideration in Shanghai's construction of its nightscapes, but it reveals that further measures should be taken to ensure the features of the nightscapes in harmony with the character of the city. Finally, the author proposes that more attention be paid to the culture and traditional customs of a city in constructing its nightscape. How to synchronize the city's culture with the construction of the landscape and establish a reasonable plan is worth discussing in the future.

Keywords: nightscape; Shanghai; space features; space composition; space evaluation; SD method

1. Introduction
1.1 Backgrounds and Purpose
Today, it is fashionable to construct nightscapes that have a great charm, as it invigorates the inhabitants and forms a powerfully modern atmosphere. Since 1990, such constructions have progressed markedly in China and significant results have been attained in recent years, an achievement which is fairly rare in the world. At the same time, important problems worthy of more attention have emerged, for instance, blind imitation, greedy pursuit of quantity, and installation of the brightest and most fantastic illuminations have led to similar nightscapes all over China. Therefore, to construct a unique nightscape for a city, more attention should be paid to in-city sight research.

Studies of the nightscape began in the early 1990s, when most researchers concentrated primarily on illumination, which mainly deals with the function of illumination, the effect on the civil environment during sustainable city development, the classification of illumination, and the problems of planning the city's nightscape. At the same time, studies in Japan focused on the structure of the nightscape and testified to the relationship between psychological and physical aspects of the street space at night, with an eye toward variety, and the diversification between the impression and physical character. Thus far, the studies of the diversification between daytime and nighttime landscapes, physical and psychological conditions, as well as illumination, involve more than just the construction of a nightscape with unique regional features, of which there is also a relative lack.

Therefore, in order to develop a method of constructing a civil nightscape with uniquely regional features, Shanghai, the earliest city engaged in developing a nightscape in China, has been studied. In this paper, due to the status and results of the construction of a nightscape, several representative nightscape regions are selected to be investigated. The nightscapes are to be investigated from three aspects: regional space features, composition elements, and impression evaluation, and the result will be used to determine the regional space characteristics, construction methods, and their deficiencies. In this way, the practical construction status of a Chinese nightscape is to be identified, and the construction of a civil nightscape with uniquely regional features is proposed.

1.2 Study Methods
(1) Document investigation: collecting and processing the corresponding documents and regulations for the nightscape of Shanghai. (2) On-the-spot investigation: investigating and processing...
the materials after several representative regions of the nightscape of Shanghai are selected, combined with photos of these regions on the spot. (3) Our questionnaire is composed of three stages. The first identifies the citizen's standpoint on the development of the nightscape, as well as the influence on the city economy, environment, culture, and lives of its citizens. The second identifies the impression of the nightscape with the standard deviation method, while the third relates to the daytime landscape. (4) Analysis: through the investigation described, the primary features of the nightscape of Shanghai are summarized and deficiencies are analyzed (Tables 1. and 2.).

### Table 1. Questionnaire

| Item                                      | First (Space Evaluation) | Second (Nighttime) | Third (Daytime) |
|-------------------------------------------|--------------------------|--------------------|-----------------|
| Title                                      | Citizens' Opinions       | Space Evaluation   |                 |
| Period                                    | 10th-14th Jun. 2004      | 70th-15th Dec. 2004| 10th-18th Nov. 2004 |
| Sample space                              | 83 students, 35 citizens | 50 students        | 100 students, 50 citizens |
| Place                                      | Tongji University and streets of Shanghai | Tongji University | University of Finance and Economics |
| Collection                                | 118 Votes                | 50 Votes            | 104 Votes       |
| Content                                   | Questionnaire investigation including 18 questions from the following 4 aspects: economy, environment, local culture, and lives of its citizens. | 20 bipolar adjectives | 19 bipolar adjectives |
| Appointment                               | (Section 3.4)            | (Section 4.3)       | (Section 4.4)   |

### Table 2. Study Methods

| Aims                                     | Study Methods | Results |
|------------------------------------------|---------------|---------|
| Development of Nightscape of Shanghai   | References 1)–3) | Section 3.1–3.3 |
| Citizens' Opinion on Development of Nightscape | Questionnaire for First Stage | Section 3.4 |
| Screening of Representative Nightscapes and Daytime Landscapes | Questionnaire for Second and Third Stages | Section 4.3 |

### Table 3. Process of Development of Nightscape in Shanghai

| Stage                                      | Description                                                                 |
|--------------------------------------------|-----------------------------------------------------------------------------|
| Beginning Stage (1989–1992)                | the Bund; neon-lighted street of Nanjing Rd.                                 |
| Development Stage (1993–1996)              | Completing the downtown Small Ring of the sight lighting project, which is about 40km long, including Xujiahui, Hengshan Rd., Huaihai Rd., Sichuan Rd. and Shanghai Railway Station. |
| Generally Expanding Stage (1997–2001)     | Highlighted by establishment of the Big Ring of the sight lighting work, which is approximately more than 80km in length, covering 11 districts, including New Pudong District. |

### Table 4. Composition of Nightscape of Shanghai

| Styles                                      | Representative District |
|---------------------------------------------|-------------------------|
| Neoteric architecture nightscape featured in European style | the Bund |
| Nightscapes of modern buildings             | the Oriental Pearl Tower |
| Nightscapes characteristic from classical Chinese architectures | Yuyuan |
| Nightscapes of shopping windows and tunnels | Huaihai Rd |
| Artistic square stage nightscape            | the district of Xujiahui |
| Open space nightscape                      | People's Square          |
| Neon-lighted commercial street              | Nanjing Rd.              |
| Nightscapes of line-featured architectures  | Nanpu Bridge,Yangpu Bridge and overhead roads |

2. Object of Investigation

Shanghai is used as the object of investigation because it is the first city to engage in constructing a nightscape. Located on the east coast of China, at the mouth of the Yangtze River on the East Sea, Shanghai has been an international metropolis in the Far East since the 1900s, and it is one of four municipalities directly under the jurisdiction of China's central government, a vital international window, and the implemental center for the Chinese Open and Reform policy. The speedy construction and unique development process of the city are comparatively refined. In the world, as its unique city development deeply influences its culture, Shanghai projects a unique Ocean Style Culture.

Furthermore, after 20 years of development, a large-scale city nightscape has emerged.

3. General Description

3.1 Development Process

The year of 1988 witnessed the first step in the construction of the nightscape of Shanghai. Four points were included in the criteria for selecting of the nightscape objects: (1) major planned business blocks; (2) major planned regions and their landmark buildings; (3) downtown squares and green lands; (4) window units planned in station, airport and harbor buildings.

In the history of construction on a large scale, approximately three main stages are recognized that emerged from 1988 to 2001.

Beginning Stage (1989–1992): This period, featured constructing the floodlights for the "Multinational Architectures Exposition" of the Bund as well as the neon-lighted street of Nanjing Rd.

Development Stage (1993–1996): One of the characteristic of the downtown Small Ring was the sight lighting project, which is about 40km long, including Xujiahui, Hengshan Rd., Huaihai Rd., Sichuan Rd. and Shanghai Railway Station.

Generally Expanding Stage (1997–2001): Characterized by the establishment of the Big Ring of the sight lighting work, which is more than 80km in length, and covering "Architectures Exposition" of the Bund as well as the neon-lighted street of Nanjing Rd. eleven districts, including New Pudong District. At the same time, three symbolic theme sight lighting projects, which are the Shining Pujiang River, the
Starlight Glittering and the Window Image projects, were accomplished (Table 3).

After the development of the three stages, eight types of landscape groups with different styles and personalities came into being (Table 4).

3.2 Layout of the Nightscape

The Huangpu River separates Shanghai into eastern and western parts. Nightscapes such as Commercial Street of Nanjing Rd., the Bund, People's Square, Yuyuan Garden and Shanghai Railway Station in Puxi region are located in the old quarters; while across the river in the newly developed Pudong region stand Oriental Pearl Tower and Pudong International Airport. Generally speaking, the nightscape of Shanghai is centered in the downtown areas, except for Pudong International Airport, which is situated in the suburbs (Fig.1).

3.3 Position of the Nightscape in City Planning of Shanghai

The city planning of Shanghai is composed of three parts: comprehensive planning, detailed planning, and district planning. Currently, the nightscape planning of Shanghai, which is not independent from the city planning or planning proposals, is based on detailed planning. Furthermore, nightscapes that have already been constructed are subjected to district planning, not independent planning.

3.4. Citizens' Opinions on Developing of Nightscape

In order to have a perfect landscape, many cities are engaged in zealously developing their nightscape, which is mainly conducted by local governments and other entities. Many people and investments contribute to achieving improvements. What attitudes do the citizens regarding development of the nightscape? In order to gather the citizens' opinions, a survey was conducted from Jun. 10 to 14, 2004, using a questionnaire with 18 questions about effects the constructions have had on the city's nightscape, including the city's economy, environment, culture, and the lives of its citizens.

The final investigation results indicate that most people consider that it is necessary to develop nightscapes that can promote the local tourism industry, spread local culture, beautify the environment, and...
complete public facilities. At the same time, some criticisms exist about increasing rubbish, rising land value, and decreasing public security. Generally speaking, however, the citizens are positive to developing the nightscape on a large scale and anticipate further improvement in the city environment (Fig.2.).

4. Summary of Investigation about the Representative Nightscapes

4.1 Means of Choosing Representative Nightscapes

This paper is based on the features of the Shanghai nightscape. However, if all the nightscapes of Shanghai were to be investigated, the workload would be enormous. Therefore, four representative types from eight typical nightscapes mentioned above were selected for investigation (Table 5.).

In order to choose regions reasonably, oral surveys with questionnaires were conducted among 50 students of Shanghai Tongji University. In this way, Nanjing Rd, the Bund, the Oriental Pearl Tower and the People's Square were chosen (Fig.3.).

4.2 Spatial Organization of Chosen Regions

4.2.1 Contents of Investigation

To determine the features of the nightscapes of Shanghai and its regional characteristics, detailed investigations were conducted on the conditions of the landscape space, architectural styles and essential space factors, which include layouts of luminaries, lighting methods, lighting colors and their illumination.

4.2.2 Steps of Investigation

On-the-spot investigation: all regions were traversed before places were selected to observe the panorama. Photographs of the night and daytime landscapes of four regions were taken as references to the spatial composition elements. Processing the spatial elements: the spatial elements can be divided into two parts, a compositional part and a characteristic part. The two parts can be further divided into eleven detailed sections, from which elements to represent the regional features or characteristics are to be chosen (Tables 6. and 7.).

4.2.3 Results of Investigation

(1) Nanjing Rd.: As the development of Shanghai progressed in the 1990s, a commercial walking street 25m wide and 1500m long in Nanjing Rd., which represents the nightscape of a commercial neon-lighted street, was rebuilt successfully. The street is composed of commercial buildings, alleys, billboards, street furniture, traffic signs, street statues, and pedestrian walks. The colorful neon lights, which play an important role in the nightscape of Nanjing Rd., are most attractive to visitors.

(2) The Bund: The nightscape in the Bund area has a strong European architectural style from times of foreign concession. It focuses on displaying the buildings by using mostly warm and white colors with partially interspersed low-power illumination. The project of reforming the Bund, illuminating the roads in the Bund, the Outer Baidu Bridge, Huangpu Park, the Monument, the greenbelt, the fountain, the Statue of Mr. Chenyi and the affiliated furniture, is brought into effect. This way, the integrated and harmonious nightscape of the Bund, characterized by emphasizing the buildings’ illumination with proper attention to other parts, has come into being.

(3) The Oriental Pearl Tower: One of the landmark buildings in Shanghai is distinguished for its uniquely graceful figure and superior architectural style, which was established along with the construction of the Lujiangui Economic Development Zone. It is a relatively modern building, composed of three slender cylinders, three erect cylinders, and eleven spheres of different diameters. In order to emphasize its own unique architecture, active and peaceful illumination was implemented. The bodies of the building are at the center, white light runs through the upper, middle and bottom, and light is cast from inside and outside simultaneously.

(4) The People's Square: This is the in-town area of Shanghai, which is made up of the Municipal Photograph 1: Nanjing Rd.

Photograph 2: the Bund

Photograph 3: the Oriental Pearl Tower

Photograph 4: the People's Square
Table 5. Method of Choosing Districts

| Range | 8 representative night landscape districts of Shanghai |
|-------|------------------------------------------------------|
| Data Gathering and Criteria Selection | 1. Districts visited by author; 2. Records came into being, arranged from left to right, divided among a) favorite nightscape, b) representative nightscape for Shanghai; c) relatively better building styles, lighting and atmosphere. |
| Survey Sample Space | 50 students of the architecture department of Tongji University, of whom 30 are boys and 20 are girls. |
| Date | 10th -14th. Jun. 2004 |

Table 6. Characteristics and Components of Chosen Districts

| Place                  | Nanjing Rd.                                                                 | the Bund                                                                 | the People's Square                                                                  | the Oriental Pearl Tower |             |
|------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------|------------|
| Location and adjacent architecture | Long and narrow space formed by historical buildings and new buildings | A riverside financial street with strong European architectural style from foreign concession times | Multifunctional open space, surrounded by modern buildings | Unique figure located at the trigonal zone near the Huangpu River |          |
| Component of nightscape | light from buildings; neon lights; billboards, etc… | light from buildings; streetlights; light from cars, etc… | square illumination; building illumination; streetlights, etc… | building illumination; greenbelt illumination; streetlights. etc… |          |

Table 7. Space Elements

| Element                          | Place                  | Nanjing Rd. | the Bund | the Oriental Pearl Tower | the People's Square |
|----------------------------------|------------------------|-------------|----------|--------------------------|--------------------|
| **Space composition**            |                        |             |          |                          |                    |
| Form and combination of buildings | property              | public      |          |                          |                    |
|                                  |                        | private     |          |                          |                    |
|                                  |                        | multiple    |          |                          |                    |
|                                  |                        | characteristic |      |                          |                    |
|                                  |                        | historical  |          |                          |                    |
|                                  |                        | newly built |          |                          |                    |
| Open space                       |                        |             |          |                          |                    |
| Pedestrian precinct              |                        |             |          |                          |                    |
| Traffic and parking              |                        |             |          |                          |                    |
| Supporting activities            |                        |             |          |                          |                    |
| People                           |                        |             |          |                          |                    |
| Vehicle                          |                        |             |          |                          |                    |
| Others                           |                        |             |          |                          |                    |
| Signboard                        |                        |             |          |                          |                    |
| Billboard                        |                        |             |          |                          |                    |
| Street furniture                 |                        |             |          |                          |                    |
| Traffic sign                     |                        |             |          |                          |                    |
| Telegraph pole                   |                        |             |          |                          |                    |
| Greenbelt                        |                        |             |          |                          |                    |
| **Lighting composition**         |                        |             |          |                          |                    |
| Signboard and billboard          |                        |             |          |                          |                    |
| Streetlight                      |                        |             |          |                          |                    |
| Dynamism                         |                        |             |          |                          |                    |
| **Unique factors in nightscape (illumination)** | |          |          |                          |                    |
| Architectural appearance lighting|                        |             |          |                          |                    |
| Neon                             |                        |             |          |                          |                    |
| Projector                        |                        |             |          |                          |                    |
| Light fiber                      |                        |             |          |                          |                    |
| Sodium lamp                      |                        |             |          |                          |                    |
| Gradening lamp                   |                        |             |          |                          |                    |
| Obstruction light                |                        |             |          |                          |                    |
| Low-pressure discharge           |                        |             |          |                          |                    |
| Floodlight                       |                        |             |          |                          |                    |
| Lighting from building           |                        |             |          |                          |                    |
| Unmoveable illumination          |                        |             |          |                          |                    |
| Moveable illumination            |                        |             |          |                          |                    |
| Signboard                        |                        |             |          |                          |                    |
| Apparent color                   |                        |             |          |                          |                    |
| Polychrome                       |                        |             |          |                          |                    |
| White and orange light           |                        |             |          |                          |                    |
| Polychrome                       |                        |             |          |                          |                    |
| Fountain-polychrome               |                        |             |          |                          |                    |
| Street light and Gradening lamp |                        |             |          |                          |                    |
| -White                           |                        |             |          |                          |                    |
| Others                           |                        |             |          |                          |                    |
| Musical                          |                        |             |          |                          |                    |
| With music                       |                        |             |          |                          |                    |

Fig. 3. Choice Means of Representative Night-landscape
Government Building, the Grand Theater, the Museum, Telecom Building, the Meilihua Plaza, and the Zhuangyuanlou Building. It is an integrated square used for functions such as ceremonies, tours, and recreation. Analyzed from the three main points (symbols, buildings, and public space) of the square, the buildings play a central role in the square as nightscape space; the fountain, ground, pavement, greenbelt, and bridge constitute the nightscape space of the People's Square. The designers used low-power illumination to emphasize a peaceful atmosphere over the Square.

By this investigation, according to the regional characteristic and building styles, different illumination methods and apparatuses are adopted for the four nightscapes, such as colorful neon light advertisements in commercial spaces, warm lights in traditional buildings, lights adopted to give prominence to symbolic buildings, and low illumination in leisure sections. All the means of illumination both indicate regional characteristics and fulfill a practical purpose at the same time.

4.3 Space Features of Representative Nightscape

4.3.1 Goal and Method of Experiment

It is important to select appropriate adjectives as the evaluation scale. Referring to investigations conducted previously, 20 bipolar adjectives for nightscapes and 19 for daytime landscapes were selected, which express emotionality and characteristics of space for the four regions.

4.3.2 Analysis of Investigation Results

(1) Nightscape

From the curve, a satisfying evaluation for all four regions was deduced by using the words bright, rambunctious, gorgeous, urban and open. Of course, differences exist among different regions. For example, high praise is accorded to the Bund by using particular, comfortable, friendly, and orderly, in contrast to words associated to the walking street of Nanjing Rd.: disorderly, cabined, depressive, and occlusive, which were often used due to the narrow space. The Oriental Pearl Tower is also praised highly by virtue of its unique structure located at the trigonal zone near the Huangpu River, with the words of modern and capacious. No special evaluation was accorded to the People's Square as a public space (Fig.4.).

(2) Daytime Landscape

The following is the result of evaluation of the curve. From the entire curve, four interweaving lines indicate many differences in the evaluation among the four regions. For instance, Nanjing Rd. is described by rambunctious, occlusive, and disorderly. The Bund is evaluated by glad, traditional, approachable, and timeworn. The People's Square was not especially esteemed with bright, capacious and diverting. Compared with the other three lines, the line for the Oriental Pearl Tower is relatively flat, and its evaluation is focused on gloomy, modern, urban and

The investigation was conducted with a five-point scale (1, 2, 3, 4 and 5).

Fig.4. Result of Comparison Concerning Average Score (Daytime vs Nighttime)
Table 8. Summary of Investigation for Four Regions

| Place                | Nanjing Rd. | the Bund | the People's Square | the Oriental Pearl Tower |
|----------------------|-------------|----------|---------------------|-------------------------|
| **Photo**            | ![Image](image1.png) | ![Image](image2.png) | ![Image](image3.png) | ![Image](image4.png) |
| **Target in master plan** | International commercial center | Riverside financial street with strong European architectural style dating back to foreign concession times | Rebuilding Object is a serious, cheerful, polite open space with some wooded area | Construct it into Largest Business Center in world |
| **Location and Adjacent Architecture** | Long and narrow space formed by historical buildings and new buildings | Rebuilding Object is serious, cheerful, polite open space with some wooded area | Unique figure located at the trigonal zone near the Huangpu River |
| **Illumination Composition** | light from buildings; neon lights; advertisement signboards, etc… | light from buildings; streetlights; light from cars, etc… | square illumination; building illumination; streetlights, etc… | building illumination; greenbelt illumination; streetlights, etc… |
| **Illumination Method** | The street is composed of commercial buildings, alleys, advertisement signboards, street furniture, traffic signs, street statues and passerby flows. The colorful neon lights play an important role in the nightscape of Nanjing Rd. | It focuses on the buildings by casting mostly warm and white color with symphonious blue and green light sprinkled on the main side, and illumination with low power interspersed in partial sides. | It constitutes the nightscape space of the People's Square. The designers used illumination with low power to indicate the peaceful atmosphere of the Square. | In order to emphasize its own unique construction, active and passive illumination methods are implemented, which involve the body of the building as the center, white light running through the upper, middle and bottom, and casting light from outside and emitting light from within. |
| **Evaluation** | rambunctious(4.1) urban(3.66) | traditional(2.20) simple(3.24) | comfortable(3.84) bright(3.88) | urban(3.86) gloomy(2.78) |
| **Daytime**         | favor(3.30) favor(3.96) | favor(3.60) favor(3.86) | favor(3.22) favor(3.92) | favor(3.24) favor(3.51) favor(3.72) |
| **Nighttime**       | gorgeous(3.74) bright(3.93) | gorgeous(4.05) bright(4.03) | rambunctious(4.00) modern(4.13) | gorgeous(4.00) modern(4.13) rambunctious(3.88) |
|                      | favor(3.49) favor(4.24) | favor(3.51) favor(3.97) | favor(3.32) favor(3.92) | favor(3.72) favor(3.92) favor(3.88) |

Young (Fig.4.).

(3) Comparison between Nighttime and Daytime

In general, bright, rambunctious, gorgeous and urban are used as the common comments. As for every region, according to the function and position, relative evaluations are different. For instance, Nanjing Rd., which is a commercial space, has as the spatial elements mainly advertising neon lights; rambunctious and prosperous are the impressions both in daytime and at night, while the People's Square, the urban leisure space, with low illumination on the greenery is evaluated most by comfortable, capacious, and reassuring. From the aspect of impression diversification, the Bund and the Oriental Pearl Tower among the four regions are very diverse. For the Bund, in particular, traditional and timeworn are used most to evaluate it in the daytime, while young, bright and modern with illumination are typical at night (Fig.4.)

By this investigation and analysis, it is noted that the daytime landscape is in harmony with the construction goals and the characteristics of every region. On the other hand, because has not a definite goal for the nightscape in each region, the nightscapes are featureless except the Walking Street of Nanjing Rd.

From the aspect of citizen's fondness, the evaluation of the nightscape is higher than that of the daytime landscape. Furthermore, the Bund is the favorite region among the four night landscapes.

By this investigation, in accordance with regional characteristics and building styles, different illumination methods and apparatuses are adopted in the four nightscapes, such as colorful neon light advertisement in commercial spaces, warm lights in traditional buildings, lights to give prominence to symbolic buildings, and low illumination in leisure sections. All the illumination methods are used to indicate regional characteristics and fulfill a practical purpose at the same time (Table 8.).

5. Conclusions

By this integrated investigation, conclusions can be drawn as follows:

(1) The nightscape planning for Shanghai has been carried out over 20 years. Eleven nightscapes have been established, covering the Puxing and Pudong area of about 120km². According to the questionnaire administered to the citizens, they hold positive attitudes toward the construction of nightscapes on a large scale, and anticipate further improvement in the city's environment.

(2) As the results of the investigation on the fourrepresentative nightscapes are analyzed, architecture as the principal part, and different illumination methods using different illuminating apparatuses and colors, are adopted consciously in the city's fundamental facilities to display different characters of a region.

(3) More attention should be paid to the position and features of the nightscape or cityscape.

As an international metropolis, which takes a leading role in constructing the city landscape, Shanghai must face the issue of how to identify the location of the city landscapes and how to highlight their local Ocean Style Culture. Every city has its own unique characteristics.
landscape, so it should have its unique city landscapes. How to grasp the city's characteristics lies in how to grasp the local culture. In the future, sustaining the city culture by constructing the landscape and establishing a suitable plan to develop a landscape for the city itself is worth discussing.

Notes
1. Since the 1990s, the study and construction concerning the city views with their own character have emerged in China, within which many are about the nightscape and a few researchers have criticized that the current nightscapes lack planning and features, for instance, The Planning and Design on the Nightscape by Xiaoyan Wang, Constructing Featured City Nightscape of its Own by Qianhui Xiao, the Actuality and Prospect of the Nightscape by Luyu Yang, and Consideration in the Development of the City Nightscapes in China.
2. In the paper Constructing Featured City Nightscape of its Own by Qianhui Xiao, he presented a scheme for constructing a featured city's own nightscape.
3. Reference 16
4. Reference 14
5. Reference 15
6. Reference 16
7. Reference 17
8. Reference 4)
9. Ocean Style Culture: since Shanghai was exploited in ancient times, merging with the Wu and Yue Culture, it has formed a unique Shanghai Culture. Especially after the Opium War in 1840, with collision and merging between colorful western cultures and Chinese traditional culture, Ocean Style Culture reached its peak in the 1920s~1930s. Ocean Style Culture is a unique type of culture with powerful absorbability, independent of regulations, active creativity, and strong influence.
10. Reference 17
11. The 18 questions are as follows: (1) Is it necessary in the city construction? (2) Can it attract visitors and promote the development of local tourism industry? (3) Can it improve the local standard of living? (4) Can it cause the land value of the neighborhood to increase? (5) Can it improve and promote the city's image? (6) Can it make the local culture and city history known widely? (7) Can it influence locally unique traditional culture? (8) Can it change the manner of relaxation and willingness of residents to relax? (9) Can it cause the deterioration of local social security? (10) Can it promote the local culture to spread and absorb foreign culture? (11) Can it beautify the city environment? (12) Can it complete the local public facilities, such as street lamps, rest chairs, and other items? (13) Can it destroy the local natural environment? (14) Can it cause loud noise and light pollution? (15) Can it make the region crowded on holidays? (16) Can it cause garbage to increase and sanitation conditions to worsen? (17) Can it cause taxes of residents to increase? (18) Can it increase cost and promote wasting of money?
12. From the total of 200 pictures, of which 140 were taken on-site at various regions and 60 were selected from guidebooks or the Internet, how were candidate regions selected? That is: 1) Panoramic places where full pictures can be taken in large; 2) Place should be representative of the regional spaces; from relatively similar views from the 200 pictures, 2 pictures of each region are chosen. Using eight pictures from all the regions as reference, investigation criteria for the factors of regional composition are obtained.
13. Methods of landscape evaluation: 1) Frequency of use of the investigated regions; 2) Visitors who have been to the regions as testers revive the nightscape style and atmosphere in their memory, and finally find appropriate words from the questionnaires. The evaluation can be done using the recorded answers.
14. Reference 3) ~5)
15. 20 adjective pairs for the nightscape and 19 for the daytime. Because the glaring lamplight phenomenon of the daytime landscape does not exist, the adjective pair (glaring vs. not glaring) is omitted.

References
1) The Comprehensive Plan of Shanghai Metro-Region (1999~2020)
2) Deputy Director of Shanghai City Appearance and Environmental Sanitation Administration Bureau, Shanghai City's Construction of Night Lighting, 2004.
3) Deputy Director of Shanghai City Appearance and Environmental Sanitation Administration Bureau, Construction Control of Night Landscape in Shanghai, 2004.
4) Hirai, T. and Nagata, T., A Study on Nocturnal Atmosphere of Streets Equipped with Streetlights, 2000, 9, pp.425~426, AJ.
5) Hiroe, S. and Hiroshi, D. A Study on the Change of Townscape between Daytime and Nighttime in Commercial District, 1992, pp.781~786.
6) Katsuya, U. and Katsue, K., A Study on the Night Streetscape of Commercial District in Tokyo, 1991, 26, pp.445~450.
7) Ziwei, L., Shanghai City's Construction of Night Lighting, Shanghai City Appearance and Environmental Sanitation Administration Bureau, 2004.
8) Xiaoyan, W., The Planning and Design on the Night Landscape, Southeast University Press, 2000.
9) Qianhui, X., Constructing Featured City Night Landscape of its Own, China Light and Lighting, 2001, 11, pp.20~21.
10) Luyu, Y., The Actuality and Prospect of the Night Landscape, Construction of Urban, 2001, pp.12~14.
11) Luoxi, H., Consideration in the Development of the City Night Landscape in China, 2002, 7, pp.39~41.
12) Cheng, Q., The Cultural Expression and the Lighting Plan on Urban Night Scenery, Urban plan, 2003, 18, pp.73~74.
13) Ming, W., Development of the Night Landscape of Urban, Planners, 2002, 11, pp.48~52.
14) Shengjun, D., The Classification of Illumination, Light and Lighting, 2001, p.4.
15) Liang, X., Consideration in the Illumination of Urban Shanghai Architecture, 2001, 7, pp.156~157.
16) Tadahiro, H. and Hidenori, T., A Comparative Study on the Identifiableness of Cityscape between Daytime and Nighttime, 1988, 6, pp.79~85, AJ.
17) Watari, U., A Study on Constructional Diversification between the Impression and Physical Character of Night Landscape in City, 1990.
18) Quanhua, J., The Function of the Night Landscape Illuminating and the Effect on the Civil Environment during the Sustainable City Development, Tongji University, 2001.