

## The Public Facility Design Guideline of Mueang Chon Buri District, Chon Buri: Comparative Study on Urban Design of Incheon Metropolitan City, Republic of Korea

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### Abstract

The capital city of Chon Buri province, Mueang Chon Buri district has been quantitatively expanding by increasing residential area during the urbanization. This environment change has been rapidly made, allowing citizens and visitors not to recognize the city identity. This seems to be the result from the lack of recognition on urban design and from the absence of integrated public design policy.

This research is to create the definition of the identity of Mueang Chon Buri and to propose the vision and strategy. It is to remind the necessity of unified and aesthetic public street facility design by checking the status of public street facilities. This research have been investigated by three sectors. Firstly, exploration on the public design through theoretical approach and case studies are conducted being compared with successful public design projects in the four cities of overseas. Secondly, configuration and application are made based on the public design policy of Incheon Metropolitan City, Republic of Korea. Finally, evaluation on current public facility status, local image and city identity is made through the survey.

This research will discuss about the urban image of Mueang Chon Buri as a marine, tourist and industrial city. Also, the necessity for a systematic and inclusive public design based on an integrated urban design plan will be mentioned

**Keywords:** Public Facility Design, Mueang Chon Buri, Urban Design, Incheon Metropolitan City

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## 1. Introduction

### 1.1 Background

Chon Buri province, located at the east side of Thailand and adjacent to Bangkok, is the center of national marine and land transport infrastructure within Thailand. Nowadays manufacturing and tourism business have been heavily invested. As the second important economic position next to Bangkok, Chon Buri province has well-developed manufacturing and tourism businesses under heavy support from Thailand government.

The capital city of Chon Buri province, Mueang Chon Buri district has been quantitatively expanding by increasing residential area due to overpopulation and by enlarging urban infrastructure during the urbanization. The public facility of the city was installed in accordance with the development of the city, but the public space is now narrow and the urban environment is much damaged. With the visual inconvenient problem due to the overflow of urban street facility and outdoor signboards and the sanitary problem due to lack of water supply and drainage facility, the city images are injured making citizens and visitors difficult to catch the city identity. This seems to be the result from the lack of recognition on urban public design and from the absence of public design policy.

Today, for Chon Buri province, the issue is how to consider the local image and identity and how to improve the urban environment while recovering the publicness. To solve this problem, it is necessary to establish a planned and integrated public design policy across the whole city then to improve the city in accordance with local characteristics and sustainable urban environment.

### 1.2 The Objectives of Research

The objective of this research were as follows,

1.2.1 It is to identify the definition of the identity of Mueang Chon Buri district, Chon Buri province.

1.2.2 It is to propose the vision and strategy of the Public Design of Mueang ChonBuri district.

1.2.3 It is to suggest the public design direction for public facilities improvements of Mueang Chon Buri through identification and analysis of the current situation of public facilities at Mueang Chon Buri district.

1.2.4 It is to classify the specified target of Mueang Chon Buri's design manual in detail.

### **1.3 The Scopes of Research**

The scope of this research divides largely into spatial scope and textual scope. The spatial scope restricts to two cities, Incheon as a preceding case and Mueang Chon Buri district as a target city an urban public design guideline will be proposed. The spatial scope this research would propose and apply the urban public design guideline is limited to Mueang Chon Buri district of Chon Buri province only. The reasons why this researcher chooses Mueang Chon Buri is that this city is located on a national road between Bangkok, Thailand's capital and Pattaya, self-governing municipal area, and also this city is the central place of urban infrastructure of whole range of Chon Buri province as well as a hub of local industries. In the textual scope, the urban public design guideline contains a broaden meaning and the urban public facility design belongs to a small and detail scope.

### **1.4 The Methods of Research**

The methods of this research consist of literature search, case study and field survey. Literature search is used to review conceptual definition and theory between city and public design. Case study is used to evaluate classification system of public design and classification standard of each structural factors. Finally, field survey is used to analyze the searched contents then to apply them to public design guideline.

### **1.5 The Benefits of Research**

The following is expected through this research:

1.2.1 It is derived the definition of the identity of Mueang Chon Buri and proposed the vision and strategy of the Public Design of Mueang ChonBuri district.

1.2.2 It is possible to help local government to study on this subject and to reflect the result on the future urban development plan.

1.2.3 The prototype design guideline can be applied to other districts of Thailand.

## **2. City and Public Design**

### **2.1 Literature Review on City and Publicness of City**

In the development process of human race, a city is a certain place that individuals experience social activity, keep their life and live as society members, being balanced among the regulations and common ideas for the community. In a city, the natural environment is transformed into artificial environment by the need of human life. The city is a large special field containing several systems. During urbanization process, the competition among cities has

been gradually intensified and the citizens' requirements for the city have been diversified. The demand for quality of life and the intensification of city competition has result in changing and renovating the city, and starting to build the foundation for city development through private and public joint cooperation. Local community and government improve the city environment, adopt and apply city development related policies. The city has changed and evolved internally and externally, finally it obtains the value as a city itself. At the same time, the city design has become the key solution to determine the city environment and image. Hildebrand Frey (1940- ), a city planner, has studied the physical changes that a city needs to increase the intimacy of citizens and to reduce the harmfulness. He explains the relationship between desire of human being and good city can be classified by six stages, adding a stage of 'A chance to be creative and an aesthetically pleasing environment' to the five stages that are defined in 'Hierarchy of Human Needs' by Abraham Harold Maslow (1908-1970). Based on his research, it is easy to understand that human beings feel deep aesthetical satisfaction and stability in the self-realization aspect when the basic desire for urban environment is satisfied. (Frey, H., 1999)

The word of 'the public' means 'people' and implies 'joining or sharing'. The concept of 'publicness' can be generally defined as 'a nature that affects numbers of people'. Publicness should be defined as a nature but can be defined only if something affects multiple people. When publicness is dichotomously categorized between public and private matters, 'public' means a nation and 'private' means an individual. (Choi, T.Y., 2008) Place marketing, one of concepts that apply the publicness to local space, had appeared while developing urban areas in western countries from 1970s. The purpose of place marketing can be divided into economic, social and cultural points. (Kim, K.H., 2010) Place marketing is born by the government as a part of political social purposes to aim at social integration or economic activation by fulfilling cultural desire of citizens or by improving local image, or for local merchants to create economic opportunity while activating commercial power. At the same time, the importance of public design was recognized. The public design for aesthetic urban landscape is a consequential process to enhance quality of life of local people and to establish local identity.

## 2.2 The Image of City and Public Design

Public design suggests a detailed plan to make up an entire city image. As the main player of the actions/works to generate communication and value and to harmonize the

publicness with the design, general citizens not by certain individuals should be the center to generate the key components of public design including the types, colors, images, signs and symbols. Accordingly, public design for community needs to reflect public creativity of citizens and to consider variety and plurality of local people. (Refer to Fig. 1)

Different from commerciality and productivity of existing industrial design, public design affects quality of life of citizens directly. Public design of a city is planned based on the integration. Design policy is determined and implemented to enhance quality of life of the public. After public design is introduced, the image of the changed city should be able to represent the pleasantness and local identity of the city.

### 2.3 Territory and Classification of Public Design

Public design means a design that all of social members share, focused on publicness and sustainability.

First, the territory of public design can be categorized into 'property', 'space' and 'image' by a visibility of public artificiality. (The Public Design Forum, 2008) Second, the target of public design is divided into total 5 fields including four design fields (Refer to Table. 1) and plus a policy field; public space design, public facility design, public information & sign design, public supplies design, and public design policy field. Third, public design is divided into state-leading, expert-leading, private-leading and government-private cooperative leading type, depending on who leads. (Kim, M.S., 2011)

**Table 1** Classification by targets of public design by Korean Society of Public Design, 2007.

Design	Public Space	Public Facility	Public Information & Sign Design	Public Supplies
Division	Landscape Public building Park, green space Colors, illumination Road	Street facility Traffic facility Rest facility Sanitary facility Shopping facility	Administration media Advertising media Media like money, passport, car number plate Visual media for city Outdoor advertising materials	Unified items by national organizations Supplies of public organizations Public publications Administration forms Landscape

## **2.4 Public Design Policies of Overseas**

### **2.4.1 Harmony between tradition and history: 'Street for All' of London, England**

The 'Street for all' guideline was published to review public design by United Kingdom the Heritage Foundation in 2000. 'Street for all' includes the general policy for London streets and suggests a guideline with detailed study cases and examples about the locations, sizes, types, colors and installation methods on the following targets: Ground surface, street furniture, new equipment, traffic calming and management and environmental improvements. Since manufacturing industry had slumped, England has put top priority on value-added design as the key of national competitiveness. As a top priority industry together with finance, this design policy allows England to be called today as a 'design country' or 'creative country', to enable the jump in public design field. As result, it has been changing London as another new city to create new opportunity for success. The advanced public design allows English to enhance quality of life and to feel wealthy and comfortable happiness of life. The downtown of the city emphasizes the importance of public design while providing the people with rich and environment-friendly art.

### **2.4.2 City regeneration and local harmony: 'Minato Mirai 21' of Yokohama, Japan**

'Minato Mirai 21' is a standard success case today among downtown redevelopment projects that utilize waterside space. With the success of 'Minato Mirai 21', Yokohama has secured the status of No.2 city in Japan in every respect including population, economical power and living conditions. By continuing the 'Creative city project' driven by the city together with culture and art development, Yokohama has created more than 6 billions of Yen of added value in every year. It is the result of continuous efforts of citizens and related officials who have been connecting tradition and modernism properly while illuminating the city from the creative point of view. The administration attitude for the purpose of enhancing citizens' life and pleasant environment is the good example for city design among all the local governments. (Park C.S., and et al. 2007)

### **2.4.3 Safety Street and Pleasant City: 'Street Design Manual' of New York, USA**

The Street Design Manual is the New York City's comprehensive resource for street design guideline, policy and process. It integrates a broad range of resources including all the treatments that are allowed and encouraged on New York City streets. It supplements

rather than replaces existing engineering and environmental standards, requirements, or guidelines. The Street Design Manual is built based on current thinking about street design, materials, lighting and project implementation to promote a great public realm. It advocates high-quality, sustainable design and encourages greater mode choice. This manual has led to the streamlining of New York City Development of Transportation (DOT)'s internal design-review processes, allowing efficient execution of the project. The conditions given to New York City's public spaces put a significant impact on the city's environmental health as well as the quality of life for its residents. DOT's overall goals and principles are defined by 6 keywords; Safety, Balance, Access and Mobility, Context, Streets as Public Spaces, Sustainability and Cost-Effectiveness.

#### **2.4.4 Design creative city: 'Design Seoul Guideline' of Seoul, South Korea**

Seoul has generated and applied a design guideline to build a localized (Seoul-like) design by adopting the Design Seoul, to globalize the city brand in accordance with 'World Design Capital' designated by UNESCO in 2010. To sustain an integrated urban image of Seoul, public design guidelines have been reflected in related organizations and departments from the early stage of the public design plan. At the same time, Seoul Design Committee has been operating to improve the life quality of the people by reforming public design and urban environment. This design guideline is largely reflected in each section as the standard. In addition, the city has reviewed and applied related regulations to enforce the guidelines. For integrated and systematic improvement and management, the city landscape and public design policies are specified with details and protected by the related laws and regulations.

### **3. Public Design Comparison between Incheon and Chon Buri**

#### **3.1 Geographical Features and Urban Public Design Policies of Incheon**

##### **3.1.1 Geographical Features of Incheon Metropolitan City**

Incheon is one of 6 metropolitan cities in Korea, having 1,046.80km<sup>2</sup> (as of Jan. 2015) of width and 2.9 millions of population, and marks the third biggest city in the population. Incheon is placed geographically at the midpoint on the west coast of the Korean Peninsula and had been a key area for foreign trading thanks to its geological location, and opened first to Japan in 1883. Since then, the city has become a start point to income foreign cultures and has grown as one of core national logistics ports. This city has installed a railroad first in Korea, introduced the first western style public park and also maintained the first foreign concessions within Korea. Since Korean Civil War, export industrial complexes had been

built in this city by the government plan which is first set in 1965 as a part of economic drive during 1960s and 1970s, and concentrated investment and expansion had been made for these complexes and related industries. For 1980s, housing developments were actively made and residential areas had been expanded from old downtowns to surrounding areas and new downtowns. For 1990s, geographical significance of Incheon had become higher due to the opening of mainland China. Also, new trend of globalization and restoration of local autonomy which was broadened in 1991 in Korea has finally allowed new construction of Incheon International Airport and creation of Free Economy Zone (Tri-port) project. Manufacturing industry occupies big part of the city's economy, and marine transportation takes a key role as well. Today, Incheon is actively operating various internal city development projects including renovation of existing city contents and suburban area development. With a plan to activate the underdeveloped culture part, the city has been performing several cultural programs and endeavoring to construct spiritual and cultural infrastructure to establish the local identity.

### **3.1.2 Urban Public Design Policies of Incheon**

Incheon is a transportation hub in the northeast Asia, having the biggest airport and the second largest seaport in Korea. This city is one of surrounding city around Seoul, the capital of Korea, and also has large scale of industrial facilities that allows containing many jobs and much population. Accordingly, the city needs continuous development and expansion. To improve the city environment, Incheon established '2025 Incheon City Master Plans' and 'Public Design Master Plans' in 2009, under the slogan of "Global Green City Incheon, Pleasant to Live". Based on these plans, '2025 Incheon Metropolitan City Landscape Guidelines' are made. Among Incheon's plans, the coexistence between old downtown and new downtown, the relationship improvement and tourism business activation to enhance city landscape are good examples for Chon Buri to benchmark Incheon to establish the city plan. Incheon has been updating public design guidelines from 2006; determined 'Incheon City Landscape Guideline 2008' from 2008; unveiled detailed guidelines for each landscape factors; 'Public Design Guideline 2009', 'Incheon City Entry/Exit Landscape Masterplan 2009', 'Incheon Metropolitan City Basic Landscape Plan 2025' and 'Color Design Basic Plan 2010'. 'Incheon Metropolitan City Basic Landscape Plan 2025' is made after modifying and complementing the previous guidelines established in 2008. It enacted the Incheon Landscape Ordinance to specify how to preserve, develop and foster the landscape resources in Incheon.





**Figure 1 (a)** Establishing process for public design guidelines in Incheon

The public design fields of Incheon include not only public space designs but a part of private space designs (like outdoor advertisements) as well. As for design targets, the current city design guideline that is modified and complemented based on the Urban Landscape Design Guideline 2008, consists of the following 4 fields: Buildings, Colors, Outdoor advertisement and street environmental design. Compared to the public design plan, this guideline is much detailed. Considering the function, characteristics, size and main installers, the public design plan classifies the targets into the following 5 types; Public facilities, Public visual media, public buildings, public spaces and outdoor advertisements.



**Figure 2 (a)** Target classifications of public design of Incheon by Public Design Master Plan. (2009); (b) Actual applications of Incheon public Design Plan (Public Facility division)

### 3.2 Social Geographical Features and Urban Public Design Policies of Chon Buri

#### 3.2.1 Social Geographical Features of Chon Buri Province

Chon Buri is a suburban province, about one and half hours of driving distance away from Bangkok, the capital of Thailand. Located at the Bay of Thailand, this province is facing to the sea. Chon Buri occupies the 50th widest of width among total 76 administrative districts and records the 10th highest population density in the country. This area has shown 4% of annual residential population increase since 2000 and has high rates of floating population. Recording the 3rd highest personal income within Thailand, Chon Buri has

maintained comparably high portion of fishing, manufacturing and tourism manpower. Especially, this area is one of the most favored weekend travelling destinations by domestic urban citizens and by the people of Northeastern and Northern provinces. Pattaya, located at the Bay of Thailand, is the most famous global tourist destination within Chon Buri province, and Sriracha is preferred by foreign residents because of Laemchabang (one of the largest trading seaports in Thailand) due to surrounding many foreign companies. (JOC, 2012) In 2011, it is recorded that Chon Buri province takes 6.28% of total Thailand tourism income and selected as ‘2011 TOP 10 Tourist Destinations of the Year’ by Tourism Authority of Thailand. (MOTS, 2012)

**Table 2** Geographical metaphor and cultural reproduction in Chon Buri province

Reproduction of Nationalism Period		Reproduction of Globalization Period (paradoxical)	
Weekend House, Seaport	International Industrial City, Eastern Seaboard Development Program (ESB)	The Next Phase of Growth for tourist attraction and the city	Entertainment venue
Beach Landscape: Wonnapa Beach, Bang Saen Beach, Pattaya Beach, Jomtiam Beach, Toey Ngam Beach			
Island Landscape: Koh Sri-Chang, Koh Lan, Koh Sak, Koh Loi, Koh Phai and another			
Mountainside Landscape: Khao Sam Muk, Khao Chee-chan, Khao Kheow			
Seaside Tourist Landscape: Pattaya Viewport, Laem Thaen, Khao Sam Muk Viewport, Ang Sila Fish Market, Sea Turtles Conservation Center Royal Thai Navy at Sattahip Naval Base			
Culture Landscape: Najaataichue Chinese Temple, The Goddess of Mercy (Quan Yin), Wat Yan Sana Sang Wara Ram, Vihranra Sien, and The Sanctuary of Truth Pattaya			
Opened-Early modern-Multi- culture city	Wanderer (Loss of home recognition)	Coexistence (Tolerance and combination)	Coexistence city Creative city
Modern construction Landscape: Commercial Building, Condominium, Hotel and Department Store.			
Industrial city	Grey city	Industry restructuring	Distribution to the

		Late industrial urbanization	World
Industrial complex landscape: Laem Chabang Industrial Estate, Amata City Industrial Estate			
Express highway Landscape: Motorway Bangkok-Chon Buri New Line Highway 7 Bangna-Trad, Tollway Buraphavithi			
Seaport of Eastern region	City near Bangkok	Place for union and reconciliation	A city of union and reconciliation
Port landscape: Laem Chabang Port			

ASEAN (Association of Southeast Asian Nations), started in 1967, is scheduled to join an integrated economy bloc named as AEC(ASEAN Economic Community), propelled from 2007 which states to open total 12 categories of service field among member countries, based on 5 big principles seeking for free movement for products, services, investments, capitals and high-quality human resources. With rich natural resources, man powers and infrastructures, plus good financial ability of Singapore, AEC expects great increase of overseas investment and trading in the Southeast Asia in the future. Among them, Thailand expects to consolidate the strong stance as the distinguished local brand among surrounding countries and Chon Buri province expects to play as the center of international industries. Involving Pattaya, a world famous tourist destination, and Laem Chabang, the No.1 seaport in Thailand, Chon Buri is well equipped with convenient traffic and life environment, and domestic and overseas trading related industrial facilities are heavily populated in this area due to aggressive support and development policies by local government.

### 3.3.2 Urban Public Design Policies of Chon Buri

From early in the history, Chon Buri had formed a city and currently is still being urbanized. However, the urbanization has been performed lack of aesthetics, leading the city to a poor space which seeks for dwelling only. Recently, the government has interested in city beautification and started improving the city environment. The local government published a fact sheet on Oct. 2010, announcing “Chon Buri, livable, leading economic partner.” (Chon Buri Provincial Administrative Organization, 2012)

### **3.3 Public Street Facility Design in Mueang Chon Buri District**

#### **3.3.1 Social Geographical Approach**

Mueang Chon Buri is located on a national road between Bangkok and Pattaya. This city has a wide range of urban infrastructure and plays as the hub in local industries. Recently, Mueang Chon Buri district has become an alternative for Bangkok, the capital of Thailand, because of political chaos and natural disasters there. Additionally, this city has good geographical location allowing easy access to Pattaya, the best tourist city in the country and also supporting good transportation to the Southeastern industrial complexes. Accordingly, much investment and expansion has been given to this area for local development and public infrastructure construction. City infrastructure are already prepared; commercial and residential facilities are newly developing; new consumption areas are being formed; public spaces and facilities around seaside tourist destinations are being renovated; landscape improvement projects for surrounding entertainment facilities are being processed at the same time.

Under the current environment of Mueang Chon Buri, it is requested to consider the suitability with the tropical oceanic climate environment for public street facilities; to check the absence of systematic traffic system and commercial use of pedestrian space; also, to find out properly and improve the status of street facility.

#### **3.3.2 Fields and Classifications of Public Street Facility**

Currently, many new facilities are introduced and city infrastructure system changes. As result, this city is showing messed landscape while new facilities are mixed up with the existing one. In reviewing the status of public street facilities of Mueang Chon Buri district, public facilities are divided into the following 4 items: Convenience facilities, green facilities, transportation facilities and supplement facilities. Each item is divided into sub items except for green facilities. Convenience facilities are divided into rest, sanitary and other service facilities; transportation facilities into passage and protection facilities; supplement facilities into management facilities and other facilities. (Refer to Table 3) Each facility is classified in accordance with the above criteria and evaluated by items during on-site survey and fact-finding survey.

**Table 3** Status of public street facilities of Mueang Chon Buri district \*

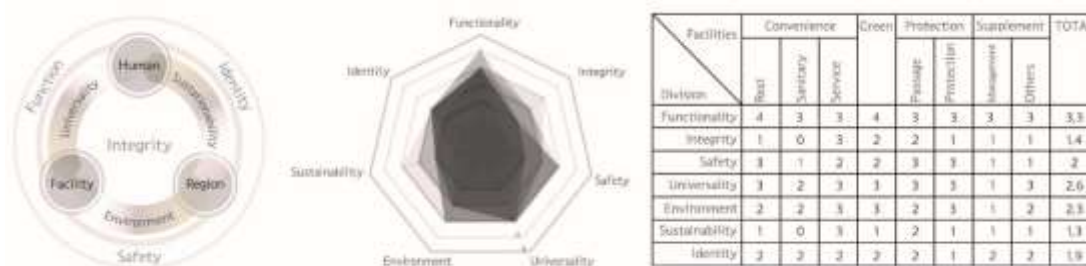
Items		Detailed items		
Convenience facilities	Rest facilities	Sanitary facilities		Other service facilities
	Benches	Wastebasket		Bike storages
	Pergolas	Public toilet		Tourist information canters
		Drinking fountains		Public telephone booths
				Post boxes
Green facilities	Street flowerpot stands, roadside tree protection covers, roadside tree support bars.			
Transportation facilities	Passage facilities			Protection facilities
	Bus stops	Border stones between		Bollards
	Shelters	walkway and roadway		Protection fences
	Pavement slabs	Overhead bridges		Jaywalking prevention facilities
	Raised blocks	Bridges		
Supplement facilities	Management facilities		Other facilities	
	Ground instruments	Manholes	Streetlight supports	Symbolic sculptures
	Trenches		Digital image media	Construction area temporary
	Traffic signal controllers		Clock towers	fences and screens
				Hydrants, etc.

\* Kim, S.H., Seo, M.Y. (2015). A Study on the Status of Street Facilities of Mueang Chon Buri district, Thailand; Based on Analyzed Case Study of Public Design in South Korea, Journal of the Korean Society of Design Culture(KSDC), Vol.21, No.1, p.84.

## 4. Evaluation and Analysis

### 4.1 Evaluation Indicators on public street facility status and analysis

Determining the evaluation items, the subjects are divided into 'human', 'facilities' and 'districts'. Safety, functionality and identity are main items to evaluate each subject and based on the relationship among subjects, universality, environment and sustainability are added. (Refer to Fig. 8) Finally, the integrity among public facilities is positioned in the center. The fact-finding survey on the status of street facilities of Mueang Chon Buri is made based on the total 4 categories including convenience facilities, green facilities, transportation facilities and supplement facilities. The survey was done from November, 2012 to January, 2015. As results, the high evaluation index (5) points out high satisfaction and the low index (0) means that related item needs to be improved.



**Figure 3** (Left) Configuration of evaluation items for the status of public facilities; (Right) Analysis result on the status of public street facilities of Mueang Chon Buri district<sup>†</sup>

The final results after analyzing the status of public street facilities of Mueang ChonBuri indicate that the functionality item shows the highest satisfaction (3.3) but sustainability (1.3) and integrity (1.4) are poorest. Identity item (1.9) is very weak as well. (Refer to Fig. 3). In case of functionality and universality, it is reviewed to satisfy the basic safety and functionality because installed facilities are mostly purchased or manufactured with the same existing products by each local authority (tambon). On the contrary, it shows low satisfaction in integrity and sustainability item. Since each local authority operates separate public design projects, connectivity between districts is broken or sometimes over-installation disturbs the aesthetics of a city.

<sup>†</sup> Kim, S.H., Seo, M.Y. (2015). A Study on the Status of Street Facilities of Mueang Chon Buri district, Thailand; Based on Analyzed Case Study of Public Design in South Korea, Journal of the Korean Society of Design Culture(KSDC), Vol.21, No.1, pp.84-88

#### 4.2 Evaluation and analysis on local image and identity

The researcher has surveyed 436 people throughout the Mueang Chon buri's citizens. This questionnaire would be used as the basic information to understand the local image and identity of Mueang Chon Buri district and to generate the design for public street facility, prior to establishing the guidelines for public street facility design of the city. The survey was done from December 15, 2015 to February 20, 2016. Among the people questioned, 71 % of people consist of civil servants who work at 12 municipalities of Mueang ChonBuri district and the faculty of Burapa University. 97% of the people surveyed reside in this city and 56% of them have stayed in this area for more than 10 years.

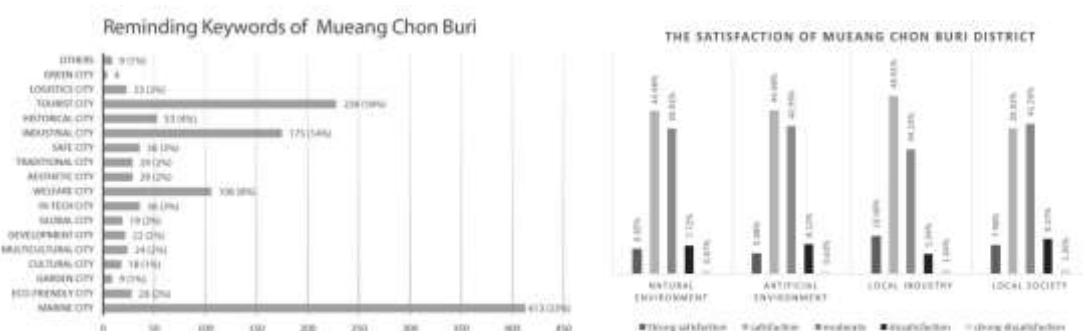


Figure 4 Reminding Keywords and the Satisfaction of Mueang Chon Buri district

Contents of the survey is first to check the existing city image of Mueang Chon Buri district based on associated words, then to investigate in detail by total 4 subcategories; natural environment, artificial environment, local industries and local society.

According to the survey that was made to check the city identity of Mueang Chon Buri district, most answers show high satisfaction with the current city environment. The most commonly mentioned city image of Mueang Chon Buri district is a marine, tourist or industrial city. 65% of people selected these words. Among them, answers on sanitation, safety, welfare and residential environment indicate comparably low satisfaction. Answers on urban environment, local industry and local society show more than 80% of satisfied.(Refer to Fig. 4)

#### 5. Conclusion

As I reviewed in this research, the public street facility of Mueang Chon Buri needs to consider the following design requirements to establish local identity:

First, the local identity of Mueang Chon buri has the image of a marine, tourist and industrial city, and on the other hand, showing dynamic and development-oriented tendency. The design for public street facility needs to actively reflect this fact.

Second, Mueang Chon Buri has been rapidly developing through continuous city development and its urban landscape is changing accordingly. At this point, Mueang Chon Buri needs to build an integrated, sustainable, nature friendly and streamlined public street facility design

Third, based on current status of public street facility of Mueang Chon Buri, it is needed to divide the existing street facility into 3 zones: residential zone, government office and tourism zone, and seaside and fishery zone. In addition, more detailed design guideline needs to be established and arranged for each street facility by types, materials, colors and installation methods.

## 6. Recommendation

To build a pleasant and high-quality life environment that this city is seeking for, first, it needs to make a unified and sustainable public design guideline based on the whole city plan. Second, to construct a harmonious and esthetic city image, after systematic analysis and research, a new city design strategy should be prepared and executed. Third, an institutional mechanism to establish and operate a suitable public design policy for Mueang Chon Buri district needs to be arranged. Establishing an integrated public street facility design guideline would contribute to enhancing the value of city brand of Mueang Chon Buri district.

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