

# Designing “Female Prospect” into Public Space for Taipei City

Yi-Tsu Peng<sup>1</sup>, Yu-Di Huang<sup>1</sup>, Jun-Liang Chen<sup>1</sup>, and Chuck Chen<sup>2</sup>

<sup>1</sup>Graduate School of Creative Industry Design, National Taiwan University of Arts, Taiwan  
{yitsupeng, freeimage5361}@gmail.com, artistted@hotmail.com

<sup>2</sup>C.Y. LEE & Partners Architects, Taiwan  
chuck@mail.cylee.com

**Abstract.** With the global trend and the active participation and promotion by organizations and individuals from all fields who care about female issues, there has been a considerable degree of progress on substantive issues concerning female and public space in Taiwan over the recent 20 years. This is a gradual and interlocking process, especially in our capital of Taipei. In this dissertation the process of this evolvement will be clearly stated by the timeline-based recording approach. Comparisons will be made with respect to the modification of national policy in response to relevant social issues and events, and the specific presentation of its implementation in today’s public space with future prospects.

**Keywords:** male, Public Space, Public Space Design, Universal Design.

## 1 Introduction

The use of public space is an important part of people’s daily lives, and the urban public space is also an important field for activities promoting social connotations [1]. The consideration of public space from a female perspective has been the subject of global concern in the recent half century. Feminist geographer Linda McDowell (1999/2006) once indicated that the importance of public space is that it is the most significant part of the composition of ‘public’ diversity. Therefore, the goal for policy makers and urban planners is definitely to make the public space equally friendly and accessible for the public with various demands. Foreign feminist law scholars have also shown various cases of law amendments due to recognition of female roles under constant social development [2]. Based on such belief, this study was involved in the field of female and space ever since the middle of 1990s not long after the initial awareness of female roles in Taiwan, and research papers were composed with respect to the female’s demand for community parks in public space. Since then there have been a lot of concern and responses from all fields in Taiwan with respect to female subjects. Therefore, in this study the timeline-based review and examination with respect to the subject of female and space will be carried out. With Taipei as the research object, subjects and actions of females in public space and the subsequent

feedback and results will be reviewed and summarized in order to understand the improvement of female's demand for public space over these 20 years. In addition, the new demand subjects resulted from the progress of time will also be observed in order to collate the direction of subsequent effort in the future.

The subject of this research is to investigate public space in Taipei from a female perspective. The public space is defined as a public area open to general public. It is a social space that is generally open and accessible to people [3]. The public space includes outside spaces such as roads, squares, parks, beaches, etc., and/or government buildings which include indoors spaces such as libraries and transfer stations. Females in this study will include the 18-year-old (or older) adult female defined by the Constitution of ROC, and the growing young ladies in high schools or elementary schools with physical and psychological state of femininity.

The content of research in this dissertation is about the summarization of archives and data of public space subjects from female perspective recorded in timeline format. The author hopes to systematically summarize all efforts and results of local people dedicated to the cross-era subject of female use of public space in the recent 20 years from relevant literatures and records. In addition, the demands of female users for public space will be summarized from literatures, and comparison will be made to the improvement results at current stage. Field observations will be carried out with respect to the females' behaviors of using the public space in Taipei City nowadays in order to understand the improvement of overall environment in response to females' demands. Meanwhile, investigations of emerging subjects from all aspects resulted from the use of public space due to time evolution will be further emphasized.

## 2 Deductive Process of Female's Expectation on Public Space

The subject of female and public space in Taiwan first drew attention back in the early 90s, and since then it has gone through decades of growth and evolution. Thanks to the efforts and dedications of predecessors for all these years, today we get to enjoy a public environment which is comfortable for females. First of all, it was the founding of Awakening Foundation as shown in Figure 1.

In 1982, a group of female friends caring about gender equality founded the "Awakening Magazine" in order to achieve the ideals of awakening female self-consciousness, fighting for female rights, and promoting gender equality. In 1987, funds were raised to found the "Awakening Foundation" for the purposes of further development of social resources and unification of female power. Awakening Foundation is a organization advocating various reforms based on gender equality, which has contributed to the passing of numerous bills [4]. This can be regarded as the beginning of focus on women related subjects in Taiwan. Based on timeline recording approach, it describe all subjects, evolution, and development related to female and public space in Taiwan as shown in Table 1.



**Fig. 1.** Founding of the Awakening Foundation

**Table 1.** The main issues of female and public space

The main issues of female and public space	
1987	• “Awakening Foundation” is established.
1993	• “Women Association on Community Development in Taipei” is established and abbreviated as WACD.
1994	• “Fembooks publishing house & bookstore” is established.
1995	• The United Nations forth world woman conference is hold. • “Gender workshop“ is established by Taipei government. • “Center for the study of sexualities“ is established by National Chiao Tung University.
1996	• The ”Occupying the men’s room” event. • The ”Refuse to pay the money for using the ladies’ room” event. • Construction and Planning Agency Ministry of The Interior is modified the ”Architectural Technological Rule architectural facility chapter” to adjust the male and female public toilet proportion.
1998	• The Public Space and Women’s Safety conference is hold.
1999	• Taipei Rapid Transit Corporation (Taipei Metro) is setting the women’s waiting area during the night. • “Taipei Women’s Center“ is established.
2001	• Taipei Metro is setting “The counter-pinhole photographs surreptitiously” in the ladies’ room and the nursing room.
2002	• “Taipei Women’s Policy White Paper”.
2003	• Two professors of Taiwan represented: Women’s safety is beginning from the space design.
2009	• Taipei City Council passes the rule of “Taipei Public Space Nursing Self-regulations”. • No Gender Restroom event is occurred in sever campuses of Taipei.
2010	• Taiwan Railways Administration is setting the women’s waiting area during the night in all stations. • “The proportion of the male and female public toilet can’t be lower than 1:3” in the Building Ordinance is finished the Third Reading procedure in the Legislative Yuan of Republic of China.
2011	• “Gender Friendly Restroom”.
2012	• Taipei Metro is setting The Four Relieve Measures.
2013	• Taipei Metro’s innovational service for the disadvantaged customers is getting the recognition of the global public translate field.

### 3 Designing “Female Prospect” into Public Space

#### 3.1 The Demand of Public Space

From the aforementioned timeline-based statement and the summarized results of events related to subjects of female and public space developed in Taiwan over the recent 20 years, different dimensions of female’s demand for public space can be generalized. Foreign scholars have investigated people’s demands for public space and divided them into several categories such as safety, attractive appearance, psychological comfort, symbolic ownership, activity base situational establishment, and usage policy [5]. The author has also summarized females’ demands for public space into several categories (such as safety, spatiality, basic facility, beauty and atmosphere, and a sense of belonging) in previous publications for further research, and specific research results have been obtained [6]. Therefore, in this dissertation we will also start from these key points of design to observe public space today from a female perspective and to carry out in-depth field investigation.

#### 3.2 Universal Design

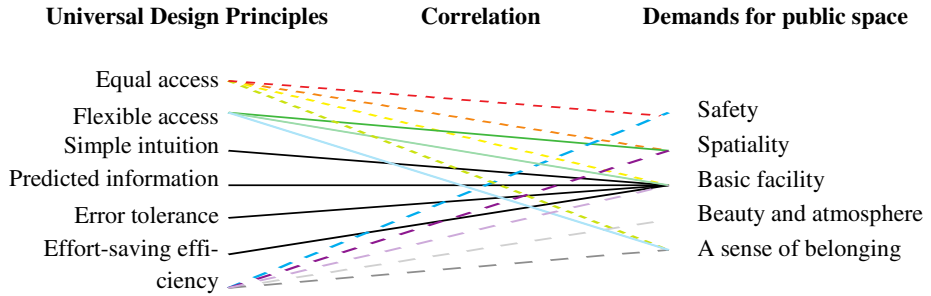
Universal Design was first proposed by American architect Michael Bednar. It was not until 1989 did American designer Ronald L. Mace begin to use the term “Universal Design” frequently, which basically means products, environments, and communications that can be used by everyone [7]. At the Center for Universal Design (CUD) at North Carolina State University, a group of architects, product designers, engineers, and environmental design researchers established seven principles of UD to provide guidance in the design of products and environments [8]. See Table 2.

**Table 2.** Principles and design reference criteria of Universal Design

<b>Universal Design</b>	
Principle	Design reference criteria
Equitable Use	<ul style="list-style-type: none"> <li>● Provide all users with same or equivalent methods</li> <li>● Avoid user discrimination</li> <li>● Provide all users with same privacy or safety measures</li> </ul>
Flexibility Use	<ul style="list-style-type: none"> <li>● Provide options for application methods</li> <li>● Adjustability in coordination with user’s pace</li> </ul>
Simple and Intuitive Use	<ul style="list-style-type: none"> <li>● Eliminate unnecessary complexity</li> <li>● In compliance with user’s expectation and intuition</li> </ul>
Perceptible Information	<ul style="list-style-type: none"> <li>● Enhance the legibility of important information</li> <li>● Provide sensory disabled with diversified equipment operating techniques</li> </ul>
Tolerance for Error	<ul style="list-style-type: none"> <li>● Arrange the sequence of devices in order to reduce the danger or error, and provide warnings and safety protective devices</li> </ul>
Low Physical Effort	<ul style="list-style-type: none"> <li>● Allow user to maintain natural pose</li> <li>● Use reasonable operating force</li> <li>● Reduce repeated actions</li> </ul>
Size and Space for Approach & use	<ul style="list-style-type: none"> <li>● Sufficient and appropriate spaces and devices with easy access</li> <li>● Provide a clear line of sight for important device</li> </ul>

### 3.3 The Correlation between the Concept of Universal Design and Female Demand for Public Space

The correlations of environmental application of Universal Design concepts, especially for the demands for public space, can be summarized as shown below:



The color lines represent the parts closely related to female’s use of public space, which are:

- - - Safety at night      - - Equality of respect      — Activity participation      - - Interconnected space facilities
- - - Public space allocation      — Friendly space      - - Avoid dangerous space      - - Healthy, clean, and natural
- - - Female facility      — Flexible facilities      - - Special space requirements      - - Space dependence

As for the examination of aforementioned universal design principles corresponding to the females’ demand for public space, further case study will be carried out in the following Chapter 4.

## 4 Case Study

The case study of public space in Taipei City is as shown below. As indicated by relevant literatures, the scope of public space can be divided into several categories including outside public space (such as public parks, mountain forests, and beaches), indoor public space (such as airports, train stations, subway stations), and road system (such as sidewalks, bicycle paths, and road dividers). The most representative among them will be selected as the objects for observation and analysis. The current status of females’ use of public space in Taipei City will be explained by actual examples from the perspective of overall design.

In addition, from the perspective of user demands for public space, in this study we will start from several major categories including safety, spatiality, basic facility, beauty and atmosphere, and a sense of belonging in order to observe public space from a female perspective and to carry out in-depth field investigation. Various types of public spaces in Taipei City have been selected for case analysis.

#### 4.1 Outside Public Space — Take Daan Forest Park as an Example

Also known as “The lung of Taipei”, Daan Forest Park is located in the centry area of Taipei City with Jianguo South Road on the east side, Xinshen South Road on the west side, Heping East Road on the south side, and Xinyi Road on the north side. With a total area of 25.9293 hectares, it is one of the famous unban parks in Taiwan.

##### 1. Safety

- The peripheral of the park is based on penetrating fence or no-fence design allowing safer activities for female and disadvantaged groups and a more comfortable and spacious overall atmosphere.
- Night lighting in the park has been emphasized by widespread light sources in order to avoid blind spots. Therefore, there are a lot of female users in the park participating in activities or accompanying children during night time while feeling safe about doing so.



##### 2. Spatiality

- There is a huge hinterland in Daan Forest Park, which can be divided into various regions by the trails corresponding to various types of activities, yet there is no physical partition among them. The advantage of this design is to allow people with different demands to participate in activities in their respective areas while being able to visually take care of each other. This is a thoughtful design for women who usually play the role of caregivers.

##### 3. Basic facility

- There are a total of six public restrooms located in different activity areas. This provides great convenience to females, especially those who assume the role of caregivers for children, elderly or disabled.
- Basic suppliers have been provided in these public restrooms in the park in order to improve the overall quality and enhance the comfort level of female users.



##### 4. Beauty and atmosphere

- The park is segmented from the roads by trees. Formosan sweet gums were planted in the center of sidewalk in order to block out the noise and pollution of the external roads.
- People standing on the bandstand on top of the slope will have a clear view of all landscapes in the park. This outdoor space based on the integration of natural greenness and cultural lives are often used for all kinds of music events and arts performances thus adding to the cultural atmosphere of this



park. Sitting on the lawn, listening to the music concert, and enjoying the relaxing and pleasant time - this is female users’ favorite atmosphere.

- The ecological pond located in the northwest side of the park is based on natural scenery with diversified plants bred along the shore. The artificial island in the pond has become a favorite habitat for a variety of birds. Walking along the water shore and observing the natural ecology can be indeed a spiritual feast for sentimental women.
- There are double seats installed in all aforementioned areas. For female users who emphasize interpersonal emotional exchange, these are perfect areas for sharing each other’s lives.



#### 5. A sense of belonging

- Increasing number of activities (such as annual flower exhibition) introduced to the park will lead to enhanced sense of belonging of users - especially for female participants such as volunteering mothers.

### 4.2 Inside Public Space— Take Taipei Train Station and All MRT Stations in Taipei as the Example

Taipei Train Station was built in 1891, which was 122 years ago. After several restructurings, the current station building was inaugurated in 1989. The construction of Taipei MRT started from the “Taipei Metropolitan Mass Rapid Transit System Plan” in 1986. The first operational line, Wenshan Line (known as Mucha Line at that time) was open for traffic in March 1996. After years of construction, the entire system currently has become the transportation backbone of Taipei metropolitan area.

#### 1. Safety

- Women waiting area at night” on the platform has been set up in all Taiwan Railway Stations throughout Taiwan and all MRT stations in order to make female passengers feel safe while taking public transportation at night[9].
- The mechanism of "anti-pinhole camera" has been implemented in restrooms and breastfeeding rooms in Taipei MRT for enhancing the safety.
- Various measures such as “Safe Waiting at Night”, “Safe Restroom Access”, “Safe Ride”, “Safe Departure from Station” have been implemented in Taipei MRT in order to better protect the safety of women.

#### 2. Spatiality

- The breastfeeding rooms have been built to provide breastfeeding females with an interference-free environment for breastfeeding[10].
- With the enforcement of regulation on the ratio of men’s room and women’s room (which shall be at least 1:3) in public venues[11], females no longer have to wait in long lines for



using the restroom except some early stages (such as Tamsui Line) before the aforementioned regulation was promulgated. Competent authority should provide responsive measures to solve this issue, such as expanding the space of women's room or re-arrange the ratio of spaces of men's room and women's room.

### 3. Basic facility

- Women no longer have to pay for the access to public toilet in Taiwan Railway Station, and there are more women's rooms than before, indicating more emphasis on the respect for females.
- The establishment of "Gender-friendly restroom" with the facilities of safety handrails, safety backrest, children toilet, child safety seat etc. has provided great convenience to females with kids or elders.



### 4. Beauty and atmosphere

- As for the building of MRT station, the beauty and atmosphere have both been greatly improved, especially for the Xinyi Line which was just completed earlier this year, and the renovation of food court on the second floor of Taiwan Railway Station.

### 5. A sense of belonging

- With the installation of breastfeeding room, the increased number of women's rooms, and no more charge for women's room, women no longer feels like they are invisible secondary citizens. Instead, a sense of belonging has grown in their minds.

## 4.3 Public Road System — Take the Ring-Type Bicycle Path System in Taipei and U-Bike as the Example

After years of organization, the ring-shape bicycle path system in Taipei City has connected numerous sporadic recreational sites along the riverside greenbelt around the city and formed the recreational network of the outer ring of Taipei Metropolitan area, which starts from the Mucha Zoo in the downstream of Jingmei River in the south and then extended to the Tamsui MRT station in Tamsui River Basin in the north. This route along the river shore is mostly at a certain distance away from downtown, such that there is a huge hinterland and a lot of greenness along both sides of the path.



U-Bike is the most popular public program among Taipei citizens, which is set to be the alternative transportation means along urban transit system. It can also be regarded as an alternative shuttle bus.

During the interviews conducted by the author, these two facilities related to road public space are particularly welcome and recognized by female users, mainly due to



the dual significance in sports and in environmental protection/energy saving/carbon reduction.

### 1. Safety

As indicated by the experience of interviewees in using U-Bike, the quality control has been rather solid in terms of brake system, lighting, overall structure, and maintenance. The only things missing are the night time lighting and chain locking mechanism for the bike rental of this ring-type bicycle path system.

### 2. Spatiality

Both ring-type bicycle path system and U-Bike cover a rather broad range of paths. There are U-Bike rental stations near important MRT stations covering the entire downtown of Taipei, while the ring-type bicycle path system is based on the ring-type system planning along the peripheral of Taipei City.

### 3. Basic facility

- There are facilities of tire inflation, drinking water dispenser, and restrooms in all rental stations along the ring-type bicycle path system.
- There are sufficient numbers of portable toilets installed in multiple spots along the ring-type bicycle path system providing great convenience to female users who have higher demands for restrooms.



### 4. Beauty and atmosphere

- The public spaces surrounding the bicycle ways have been healthier and cleaner, the atmosphere highly regarded by female users has been improved. Female interviewees feel rather pleasant by either wandering in the riverside ring-type bicycle path system or enjoying the urban exploration alone.
- The bicycle path system and U-Bike in Taipei have been highly praised by female interviewees because they have not only relieved the load of public transportation, but also reduced air pollution and enhanced the quality of life.



### 5. A sense of belonging

- As the kind of sport which is not too intense and capable of maintaining physical and mental health and fitness, bike riding has been well-received by females. A lot of women have found their confidence and the sense of belonging in this field.
- Overall, from the females’ perspectives of safety, spatiality, basic facility, beauty and atmosphere, and a sense of belonging, the public space in Taipei City has been greatly improved over the recent 20 years and become more and more in line with females’ demand.

## 5 Result and Discussion

As indicated by the results of aforementioned case analysis, after being examined by universal design principles in coordination with the demand for public space, multiple specific achievements have been shown by the public space in Taipei City based on females' expectations, which have been summarized in Table 3.

**Table 3.** Achievements of the “Female Prospect” into Public Space for Taipei City

		Space Demands	Achievements of the “Female Prospect” into Public Space for Taipei City
Universal Design Principle	Equitable Use	Safety	<ul style="list-style-type: none"> <li>• The park is based on penetrating fence or no-fence design allowing safer activities for female and disadvantaged groups.</li> <li>• “Women waiting area at night” on the platform has been set up in all Taiwan Railway Stations and MRT stations to make female feel safe while taking public transportation at night.</li> <li>• The mechanism of "anti-pinhole camera" has been implemented in restrooms and breastfeeding rooms in Taipei MRT for enhancing the safety.</li> <li>• Various measures such as “Safe Waiting at Night”, “Safe Restroom Access”, “Safe Ride”, and “Safe Departure from Station” have been implemented in Taipei MRT in order to better protect the safety of women.</li> </ul>
		Spatiality	<ul style="list-style-type: none"> <li>• With the enforcement of regulation on the ratio of men’s room and women’s room (which shall be at least 1:3) in public venues, females no longer have to wait in long lines for using the restroom.</li> </ul>
		Basic Facility	<ul style="list-style-type: none"> <li>• In recent years basic suppliers such as toilet paper have been provided in these public restrooms in the park in order to improve the overall quality and enhance the comfort level of female users.</li> </ul>
		A sense of belonging	<ul style="list-style-type: none"> <li>• You no longer have to pay for the access to public women’s room in Taiwan Railway Station, and there are more women’s rooms than before, indicating more emphasis on the respect for females.</li> <li>• The purpose of the campus uni-sex toilet movement in 2009 was to pursue gender equality and to provide a space dedicated for non-heterosexuals.</li> </ul>
	Flexibility Use	Spatiality	<ul style="list-style-type: none"> <li>• The establishment of “Gender-friendly restroom” with the facilities of safety handrails, safety backrest, children toilet, child safety seat, and baby diaper platform has provided great convenience to females with children or elders.</li> </ul>
		Basic Facility	<ul style="list-style-type: none"> <li>• There are sufficient numbers of portable toilets installed in multiple spots along the ring-type bicycle path system providing great convenience to female users who have higher demands for restrooms.</li> </ul>
		A sense of belonging	<ul style="list-style-type: none"> <li>• Increasing number of activities introduced to the park will lead to enhanced sense of belonging of users - especially for female participants such as volunteering mothers.</li> </ul>

**Table 3.** (continued)

Size and Space for Approach and Use	Safety	<ul style="list-style-type: none"> <li>• Night lighting in the park has been emphasized by widespread light sources in order to avoid blind spots.</li> </ul>
	Spatiality	<ul style="list-style-type: none"> <li>• The breastfeeding rooms have been built to provide breastfeeding females with an interference-free environment for breastfeeding.</li> </ul>
	Basic Facility	<ul style="list-style-type: none"> <li>• The bicycle path system and U-bike in Taipei City have connected the sporadic public spaces and formed a belt-like recreational network in order to relieve the load of public transportation and enhance the quality of life.</li> </ul>
	Beauty and Atmosphere	<ul style="list-style-type: none"> <li>• The public spaces surrounding the roads have been healthier and cleaner, and the beauty and atmosphere highly regarded by female users have been improved.</li> </ul>
	A sense of belonging	<ul style="list-style-type: none"> <li>• The breastfeeding rooms built in public venues in Taipei City have enhanced the sense of belonging among females.</li> </ul>

By comparing Table 3 above with the overall public space design in Taipei City today, it appears that significant progress has been made in all aspects (safety, spatiality, basic facility, beauty and atmosphere, and a sense of belonging) after active efforts devoted by people from all fields and years of gradually accumulated growth. Among all demands for public space, safety is the one most emphasized by females, whose active pursuit has led to the achievement in this aspect today. Therefore, in terms of including females’ expectation into the design of public space in Taipei City, in addition to the design itself, the most important thing is the change of laws and regulations and people’s view on women’s rights and interests in order to accomplish the mission of making public space to better meet the requirements of female users.

It has also been found during field observation and interviews that there is insufficient number of women’s rooms in some old public facilities (such as MRT Lines built in earlier stages) which is not in compliance with the principle of proportionality; the platform of opinion box is too high for most female users; and the indicative systems for general public (such as the motion line system and indicating signs in the underground level of Taipei Main Station) are too complicated. These are all areas which can be further improved in the future.

## 6 Conclusion

With women’s organizations and people from all fields caring about women’s subjects paying significant attentions from various aspects to the role of public space user played by female in Taiwan over recent 20 years, the entire society and government policy have been urged to face the issue of substantive gender equality, and to convert the passive attitude into active attitude in order to implement such concept to the use of various public spaces and facility improvement. The best example is the first Municipality, Taipei City, which is currently equipped with comfortable public spaces for female users. However, this is the result of 20 years of hard work. As for the Xinyi

Line of Taipei MRT which was just opened for traffic this November (2013), we carried out onsite investigation on the overall planning of the largest public space in Taipei City – Daan Forest Park Station, which can represent the latest results of public space project constructed by our government. In this MRT station we can find not only the high-quality overall design from all aspects (visual, auditory, and all other senses) based on integration of inner and outer park environments, but also complete services meeting the qualitative and quantitative demands of female users with respect to public space. For example, there are 10 fully-equipped spacious and bright women's rooms with breastfeeding rooms nearby. There are dedicated intercoms installed outside the door for users to notify the station personnel in order to remotely open the locked door. In addition to the complete and safe equipment, there is also security mechanism as the secondary protection such that there should be no worries for breastfeeding women. The author also noticed that there is a large-area "friendly space" created between men's room and women's room equipped with adult toilet (including safety armrest and backrest) for the disabled, children toilet, and baby seat on the inside, and baby diaper platform and hand washing/drying station on the outside. This is a comfortable and spacious space dedicated for people on wheelchairs, parents and kids, elderly, and disabled. We believe that, in addition to the continuous focus on extended female subjects and the improvement on public space environment and equipment, the attention to the right to life of disadvantaged groups in public space will become the next public space subject to be actively emphasized by the general public and our government. We have already started working on this social responsibility and mission.

## References

1. Grundström, K.: Gender and use of public space, Housing Development and Management–HDM. Lund University (2005)
2. Pruit, L.R.: Gender, Geography. Berkeley Journal of Gender, Law & Justice 23(2) (2013)
3. Wikipedia: Public Space (2011), [http://en.wikipedia.org/wiki/Public\\_space](http://en.wikipedia.org/wiki/Public_space)
4. Awakening Foundation: About Awakening (2009), <http://www.awakening.org.tw/chhtml/>
5. Hester, R.T.: Planning Neighborhood Space with People, pp. 57–75. Van Nostrand Reinhold, New York (1984)
6. Peng, Y.T.: The demand of neighborhood park for women in Taichung city. Tunghai University (1995)
7. College of Design: The Center for Universal Design, North Caloraindo University (2008)
8. Burgstahler, S.: Universal Design: Process, Principles, and Applications, University of Washington (2012)
9. Reporter: Taiwan Railways is promoted the, Waiting Zone for Female Passengers at Night, TVBS News (2009)
10. Taipei news: Nursing in public space, The Liberty Times (2009)
11. Building Law of Republic of China: chapter 97 revision (2010)