Proposition of Residential Spaces for Single Woman, Considering Sensitivity and Safeness

Yoonhee LEE* Minyoung LEE**

* Trend Research Team, Design Center, LG Hausys, 643-22, Shinsa-dong, Gangnam-gu, Seoul, 135-896, Korea, yunii@lgchem.com
** Dept. of Furniture Design, Graduate School of Design, Kookmin University, 861-1, Chongnung-dong, Songbuk-gu, Seoul, 136-702, Korea, minyoungleee81@gmail.com

Abstract: As women's social appearance and professionalism speed up, there is increasing demand of independent residential space for women's lifestyle. However, unlike social demand like this, there has not been enough development in design that suits women's lifestyle. In this dissertation, the researcher analyses the type of current residence for singles, finds their problems, and proposes designs with safeness and sensitivity for women considered.

In active network society, every residence turns from a mere residential space into information oriented residence thanks to development in internet and information mobile communication. Residential space, where both residence and working are possible, has become the most important place for human beings because it is where people spend most of the time. In the situations where home becomes center of life, sensitivity and safeness play important roles in residential space design for women.

The method of research is gathering examples in Korea and Japan, analyzing them, and proving the difference in the aspect of oriental culture. Then from the aspect of both culture and social issue by re-proving them the factors of social issues showed in residential space design. Consumer group proposes residence design for future single women by anticipating types of thinking through patterns of actions based on statistical factors which enable anticipating future. Designing residence is inclusive action of design which show the connection between human and culture. It has importance that the various patterns of actions in space should be considered beyond just using one products. It proves the reason of design development and propose appropriate design by proving expansion of women's social hemisphere based on statistical data, and finding and coping with designing factors in the aspect of culture. It will give the base which helps understanding of the issue in the modern society and change of residence culture. Understanding mind of consumers will be helpful for setting directions for general fields of designing.

Key words: Residential Spaces for Woman, Design for Safeness, Design for Sensitivity, Meditation Interview, Psychological Design Method.
1. Introduction

1.1 Research Background and Objective
As a word nowadays identifying the family characteristic of this society, “single” has its meaning expanded to define various social groups such as “gold miss,” which represents an exuberant single woman, single mother and unmarried elder. The number of single women has been increasing mainly due to the change of perspective on women and women’s increasing participation in social activities and professional fields which are caused by the expanding opportunity of education for women. Institutional and political improvements for women have been realized as the social status of women elevated and the number of female professionals increased. However, feminine perspective and experience have not been implemented on traffic system, culture, housing and many other fields. City-dwelling women still sense discomfort and insecurity from their routine life. In addition, the frequency of crime committed, especially sexual crimes against women, has been rising (National Statistical Office. (2007) Female Statistics Annual Report), augmenting the need for women’s safety.

Therefore, this research proposes a dwelling satisfying feminine sensibility and socially needed security as a solution for the aforementioned problem. The isolation and insecurity that women feel will be resolved by constructing a foundation for female-friendly residential environment.

1.2 Research Scope and Method
This studying, with a doubt on whether the current dwelling for the rising social class called “single women” meets their lifestyle and needs, conceptualizes a dwelling relevant for the changed social structure and women’s sensibility with psychological methods.

First, the cause of creation and aspects of dwellings for single women in Korea and Japan will be acknowledged from statistical data as to learn the relevant socio-cultural and technological backgrounds.

Second, the consumer needs will be identified through meditation, which is a psychological approach based on single women’s sensibility. Consequent analysis will discover common consumer needs, and then essentials for single women’s dwelling will be extrapolated.

Third, the design concept keywords and spatial characteristics will be provided based on the consumers’ changed perspectives and the result of User Observation.

Finally, how the single women’s dwelling meeting the safety and sensual aspects affects society and what essentials it requires will be explained, and the guide for future development will be proposed.

2. The Change in Singles’ Dwellings in Korea and Japan

2.1 Socio-cultural Background
Both the demand and supply for dwellings for singles in Korea (See Figure1) and Japan are rising because more and more people are wishing to stay in their private space in order to isolate themselves from complex and competitive outer world: this socio-cultural change was caused by the advent of information age. Furthermore, current economic recession helped causing this phenomenon as people cut expenses for outdoor entertainment such as travelling and watching movie at theaters. Young people migrating to urban area to seek jobs and further education are another cause. Reflecting this phenomenon, more words are made to mean singles’ dwellings: “hobby room,” “cocooning house,” “capsule house” (Sang Won Lee. (2005) A Study on the Feature of Dwelling
Space to Ubiquitous Environment) are commonly used in Korea and Japan. The phenomenon is also changing the industries for life supplies including space-saving furniture, such as sofa-bed and small appliances.

The socio-economic status of women and the number of single women are rising, showing that the meaning of family changed from secluded personal group to social unit having public functionality. According to Korean statistics (See Figure3), the economic participation of unmarried women (52.5%) was higher than the married women’s (49.5%), and the unmarrieds participated in economic activities more as they received higher education while the marrieds participated less in the same condition. This showed marital condition was deeply related to female economic activities. Women’s active social participation became a major cause for changing the social function of housing and a clear countermeasure for its spatial problems (Kyung Hee Lee. (2002) Research on the Perception and Habit of Apartment Residents on Kitchen) Single women’s residence and such social change demanded specific private space.
2.2 Changes by Technology

As a single ’s residence was a comfortable niche in the late 90’s, it now included the concept of freedom and liberalism. Activeness and entertainment were added to what once stood for passiveness and an escape from the world. This could be realized by technologies like digital and IT innovations, which transformed a single’s dwelling a place to not only a comfortable niche but also a place to dissolve the feeling of social isolation and discomfort.

Sensing, miniaturization, artificial intelligence, networking and virtual reality are the technologies which are able to create user experience and value, and home automation and ubiquitous environment are implemented on singles’ dwellings. The users of digital home service, free from the time and spatial limitations, could obtain needed information and service anytime and anywhere, and from this service they satisfied individual demands and even accentuated their personalities (Byung Hye Lee.(2005) The Effect that Individual Perspectives Influenced on the Consumer Habit of Information Media and Service). Thus, applying the technologies which combine digital and network technologies provides the security of physically living in a confined space while continuously communicating with the outside, which is essential for a single woman’s living space.

Cases of technological applications on singles’ residents that greatly enhanced the consumers’ life are security and disaster prevention system using Home Automation (HA), indoor environment controller and health assistance system. These technologies transcend time and spatial limitations to effectively manage all stages of the value chain to secure the user’s life through remote accessing and monitoring. Networking will ease customizing by enabling convenient and immediate information exchange and communication between suppliers.

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1 http://www.nttdocomo.co.jp
2 Remote medical examination video: During an automobile trip, an emergency in which a horse’s leg breaks happens. The car stops automatically. Remote medical examination is conducted using 3D hologram interfaced mobile medical device and a pair of medical gloves that synchronize with the device via Bluetooth or wireless LAN and allow tactile senses to be felt in augmented reality. Then, this information is shared in time with a hospital via wireless network. Therefore, a computer contacts a hospital and makes necessary procedures in case of emergency.
customers and between a supplier and a customer (Jun Il Cho. (2009) Global Business News (Ivytimes), LG Economics Research). Minituarization can be applied to single women’s dwellings in various ways because it solves the inconvenience of storing many domestic goods in a confined space by converging multiple functions into one compact furniture or item and expands the living space.

3. User Observation: Meditation Interview

3.1 Method for Meditation Interview

This research executed a customer interview known as “meditation interview” as a psychological method to identify the needs of women, who are sensitive to emotional and psychological changes. Meditation is a term encompassing the oriental spiritual training to focus mind on one subject (Ki Young Um. (2007) A Study on The Effect of Meditation through Tai-Chi Training). The core of meditation is Rajneesh, which means the inner awareness of consciousness.

The goal of meditation is eradicating the root of fear on pain, anger, stress, anxiety, worry, loneliness and death that people encounter in their life (Yeon Hee Kim. (2004) The Effect of Comprehensive Art Therapy Including Meditation on the Self Esteem of Ordinary People). Also, the brain activities connected to focusing, spatial ability and deliberation are known to enhance during meditation (Ki Young Um. (2007) A Study on The Effect of Meditation through Tai-Chi Training). Thus, the study implemented “meditation interview” as a psychological method to discover the fundamental problems of the users and formulate their cure, and set the following hypotheses:

- single women demand a spatial style tailored to their emotion to enjoy free single lives;
- single women enjoy hobbies, sleep and cook in their houses but confront spatial limitations; and
- single women have safety issues on their current residents.

3.2 Procedure for Meditation Interview

It is the utmost importance that the proper condition is provided for meditators to meditate comfortably (Ki Young Um. (2007) A Study on The Effect of Meditation through Tai-Chi Training). When conducting the meditation interview, the interviewee has to have his or her interview in a comfortable room. Proper environment must be provided for the meditation interview.

Light, humidity, color, aroma, tactile sensation and background music are the environmental aspects affecting meditation. Most importantly, the interviewee should feel comfortable and relax when setting the environmental aspects. Therefore in this experiment, the interviews were done in the interviewees’ residents, where they can express their emotional more accurately, and placid music was used to assist the process. The interviewees were 20 Korean capital-area residences consisted of 8 single women in their 20s, 6 single women in their 30s and 6 single women in their 40s: most were students and businesspeople. All of them were demanded to take the interview very casually, and to take 5 minute meditation prior to the interview. The interview took from 20 to 30 minutes. The questionnaire was consisted of total 20 questions referred from a Japanese single women’s magazine ‘Enjoying Living Single(Wives and Life, Co., Japan, April, 2009)’ with added contents necessary for certifying the hypotheses.

3 Meditation Interview: This research is one way of psychological interview bringing exact mental state and idea of interviewer being questioned and define ‘meditation’ as a tool used in the interview.
3.3 Results of the Meditation Interview

Based on the interview survey on the 20-member focus group, items answered more than 5 times (25%) were selected and those answered less than 10% were omitted. The result was organized below.

3.3.1 Reality of Single Lives

The overall single lives of the interviewees showed free but desolate and lonely aspects of their lives. They spent 10 hours average in their dwellings, and enjoy media such as TV and movies. Common worry and necessity of single lives was economic ability.

<table>
<thead>
<tr>
<th>Question</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is like to live alone?</td>
<td>free(35%)/desolate (30%)/free but Lonely (25%)</td>
</tr>
<tr>
<td>2. What is the joy of single life?</td>
<td>freedom (55%)/privacy (30%)</td>
</tr>
<tr>
<td>3. What is the worry of single life?</td>
<td>chores (30%)/economic responsibility (25%)/security (25%)</td>
</tr>
<tr>
<td>4. How long is your single life?</td>
<td>7<del>10 years (35%)/4</del>5years (30%)</td>
</tr>
<tr>
<td>5. How many hours in average do you spend in your house?</td>
<td>8<del>10 hours (35%)/10</del>13 hours (25%)</td>
</tr>
<tr>
<td>6. What do you do for pastime in your house?</td>
<td>watch TV and movies (45%)/sleep (25%)</td>
</tr>
<tr>
<td>7. What is most essential for living alone?</td>
<td>economic ability (35%)/interior (25%)/security (25%)</td>
</tr>
<tr>
<td>8. Are you satisfied with your single life? If so, why?</td>
<td>satisfaction (60%)/freedom (45%)</td>
</tr>
</tbody>
</table>

8 questions total

3.3.2 Reality of Single Lives

The questions below were asked to obtain the information on single women’s current living space. Generally they lived in 33m² to 40m² spaces, and they complained most about the lack of storage space and bad compartmentalization. Privacy problem upon the visitation of guest was another interior issue. Most satisfied aspects of the niche were sleeping quarter (including the bed itself), and desk and sofa were deemed as unnecessary furniture.

<table>
<thead>
<tr>
<th>Question</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How big is your dwelling?</td>
<td>33 m² (30 %)/39.6 m² (25 %)/25 m² (25 %)</td>
</tr>
<tr>
<td>2. What problem do you have with your dwelling?</td>
<td>lack of storage space (45%)/bad compartmentalization (35%)</td>
</tr>
<tr>
<td>3. What is the interior issue?</td>
<td>lack of storage space (50%)/disclosure of privacy upon the visitation of guests (25%)</td>
</tr>
<tr>
<td>4. Which aspect is most satisfying in your dwelling?</td>
<td>bed (Sleeping quarter) (30%)/bathroom (25%)/veranda (25%)</td>
</tr>
</tbody>
</table>
5. What are the most and least necessary furniture?

<table>
<thead>
<tr>
<th>Question</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>most: bed (30%) /storage furniture(30%) / desk (25%)</td>
<td>least: sofa (35%) /dressing table(25%)/ desk (25%)</td>
</tr>
</tbody>
</table>

3.3.3 Security of the Space

They generally felt insecure with their living quarters because of the lack of maintenance office, security camera and electric door lock, and the psychological stress of being alone. To promote safety, contact network, beeper, security system were chosen as ways to communicate with the outside, and maintenance office and locking devices were chosen as the internal systems.

<table>
<thead>
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<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you believe your current dwelling with safe from intrusion? Why do you believe so?</td>
<td>insecure (35%) : lack of security camera and electric door lock (25%) / being alone (25%)</td>
</tr>
<tr>
<td>2. What devices and equipments are needed for security?</td>
<td>contact list (45%) /locking device (35%) /maintenance office (25%) /beeper (25%)</td>
</tr>
</tbody>
</table>

3.3.4 Desired Space Style

Modern style, followed by vintage style, was the housing style most wanted by the interviewees. Neatness and white were preferred as overall concept and color. Storage space was most desired to be changed. The ideal housing size averaged 49.5 m². Most essential quarter for single life was bathroom.

<table>
<thead>
<tr>
<th>Question</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What style do you prefer?</td>
<td>modern (55%)/vintage (25%)</td>
</tr>
<tr>
<td>2. What concept do you prefer?</td>
<td>neatness (45%)/comfort (25%)/warmth (25%)</td>
</tr>
<tr>
<td>3. What color do you prefer?</td>
<td>white (45%)/ivory (35%)/beige (25%)</td>
</tr>
<tr>
<td>3. Which quarter do you wish to change the most?</td>
<td>storage space(40%)/compartmentalization (30%)/entrance (25%)</td>
</tr>
<tr>
<td>4. What is the ideal size of space for living alone?</td>
<td>49.5 m² ( 35%)/39.6 m² ( 25%)/33 m² (25%)</td>
</tr>
<tr>
<td>5. What quarter is most needed for living alone?</td>
<td>bathroom (35%)/veranda (25%)</td>
</tr>
</tbody>
</table>

5 questions total
4. Proposal of Design Concept

4.1 Discovery of Common User Needs

4.1.1 Discovery of Korean User Needs

Quantitative analysis was implemented on Korean single women’s comments on their living space obtained from meditation interview. Followings were the materials—the single life, spatial style for the emotional and security satisfactions of the focus group—needed for proving the hypotheses expressed in their proportions:

![Figure.6, 7: Essentials for Emotional Satisfaction (left), Interior Ambience Preferred for Emotional Satisfaction (right)>

![Figure.8: Essentials for Security Satisfaction>](image)

Interior ambience took the most proportion as the essential for emotional satisfaction, and storage and compartmentalization had similar importance. The preferred interior concept was modern simple. Beeper and locking devices were the essentials for security satisfaction.

4.1.2 Discovery of Japanese User Needs

The Japanese single women’s magazine ‘Enjoying Living Single(Wives and Life, Co., Japan, April, 2009)’ was referred in this studying to facilitate the understanding of Japanese single women’s lives and dwellings. From the survey on 1000 single women, followings were chosen as data needed to prove the hypotheses.
1. What are you dissatisfied with your room? small>lack of storage space>unit - bathroom

2. What is your interior issue? lack of uniformity>lack of security>bad landscape

3. What interior style do you desire? natural>asian>fashion&accessory shop style

4. What is your issue with single life? feeling sick when alone>crime or arson>loneliness

The data only had the ranking and lacked specific data. Based on the available data, smallness and lack of storage space were the major issues. Lack of uniformity and security were interior related issues, and natural was the most desired interior style. The issues with single life was feeling sick when alone, followed by crime or arson and loneliness.

4.1.3 Discovery of Common User Needs between Korea and Japan
Security issues were the most important aspect in single life deemed by both Korean and Japanese single women. Regarding to interior issues, ambiance related answers were common. Modern style was preferred most in Korea while natural style was most preferred in Japan.

4.2 Proposal for the Essentials for Single Women’s Residential Space
Based on the context, single women enjoy free life and participate media activity during their pastime. Though free, they feel alone and have fear on security. Beeper, locking devices and maintenance system are necessary elements to overcome such fear. Spatial need for the expansion of storage space and improvement to the proper style are the emotional elements needed for enjoying single life.

The spatial style concepts shown on the interview are proposed to satisfy such spatial demands shown above, and digital and IT technologies should be implemented on pastime activities such as media participation to coincide with the single women’s sensibility and security.

5. Design Proposal
The styles respectively preferred by Korean and Japanese single women, modern simple and natural styles, are conceptualized into Modern Chic and Natural Vintage. Home network concept is configured to manage various entertainments, health care, education and security in one system via home server; this concept is implemented on the spatial style.
5.1 Modern Chic with Home Network System

This restraints decoration to form simple space in modern style with chic urban sense suitable to socially active single women. White and beige are the base color, pointed with dark brown, wine and black. Unadorned but luxurious furniture and bedding fabrics are used. The contrasting effect between lustrous and dim materials and geometrically patterned graphic can be expressed. Organic building material, wallpaper and flooring consist the living quarter to protect women’s sensitive skin and health. The furniture has emphasized horizontal and vertical lines, can be folded or raised to maximize space utilization. Space utilization is further maximized by compartmentalizing the quarter with the combination of metal and wood and high-strength assembly panels. Highly functional storage system can induce compartmentalization and change of ambience.

Built-in compact appliances and household tools that are inconspicuous when not used contribute to the neatness of space. Diversity of glass improves the neatness and openness. Color and intensity adjustable lighting rejuvenates energy and can be customized to fit customers’ innumerable tastes.

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4 The IEEE 1394 interface is a serial bus interface standard for high-speed communications and isochronous real-time data transfer, frequently used by personal computers, as well as in digital audio, video, automotive, and aeronautics applications. (http://www.wikipedia.org)

5 Ethernet is a family of frame-based computer networking technologies for local area networks (LANs). The name comes from the physical concept of the ether. It defines a number of wiring and signaling standards for the Physical Layer of the OSI networking model, through means of network access at the Media Access Control (MAC)/Data Link Layer, and a common addressing format. (http://www.wikipedia.org)

6, 7, 8, 9 source of case images: LG Hausys, Ltd., Design Center, Korea
Comfortable, relaxing and economic life can be achieved by one home server that manages a home network system controlling AV network, home office, internet shopping, other data network, and a control network dealing robot vacuum cleaner and indoor environment control system.

5.2 Natural Vintage with Home Network System

Housing with nature’s feeling is depicted to let single women feel comfortable in their niche. The color and varnish that depict a ged environment are coordinated with various wooden materials and feminine colors. Nature’s rough materials and cultural images blend in, and ethnic patterns and embroideries and vintage items are introduced. Tapestry, exotic pattern, tile and handicrafts harmonize in the space. Terrace is prepared for pastime like small-scale gardening. Patterned partitions separate kitchen and bedroom to provide exotic nuance to the overall environment.

<Figure.13(left), 14(right): Ideal Design 1,2 for Natural Vintage with Home Network System>

<Figure.15: Ideal Design 3 for Natural Vintage with Home Network System>
In addition, Safety is secured via home network system connected to neighbors, local police station and hospitals all of which make possible to cope with emergency. For better future, the dwellers can check their health and contact hospitals via self diagnosis kit built into bathroom. When unable to return to home even at late night, the residents light the house remotely by controlling an electricity controller linked to their cellphones; when they return home very late, the lighted house is more inviting and give them the sense of security.

6. Conclusions
This research hypothesized from the customers’ perspective change, the observation of social happenings and statistics that sensibility and security are essential for single women’s living quarter, and certified the hypotheses by conducting meditation interview on selected customers and analyzing relevant Japanese data. The design concepts of Modern Chic and Natural Vintage with applied technologies were proposed as spatial designs which satisfied what sense and safety issue that single women are desiring and worrying about.

The group of single women is expanding as social structure and valuation are changing. Single women put importance on spatial ambience as to enjoy life in their living quarter, and they want to be free from the fear of insecurity. Modern technologies such as various media, security and home network system made it possible to mediate single women’s oneliness and anxiety, and even entertainment to expand their happiness in single women’s life.

Meditation interview can be interpreted as a customer survey method of which interviewees excite spatial recognition ability and deliberation in comfortable psychological state to draw more accurate state of mind and demand. This method realized psychological approach to design problem solving cases and shall be implemented to various design fields.

The residential space design which considers sensibility and security resolves the discomfort and worry that the single women feel in daily life, and provides female friendly residential environment, which gives the single women the opportunity to have a happy and comfortable life as urban dwellers. Single women’s sensibility and needs will influence the development of multifunctional and space-saving furniture and appliances, making the aforementioned spatial design a trend.

Along with stylish approach, eco-friendly and universal approach, which combines the elements of environment, nature and humanity, on the spatial design that satisfies single women’s sensibility and security should be attempted in further researches.

7. References and Citations