Humanistic Design of Soft Space in Commercial Building

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Abstract

As an urban space that closely linked with human life, Soft space in commercial building enables the urban living scene to become more vivid, more passionate and creative. Through elaboration of the concept of soft space, this thesis discusses the form, character and function of the soft space in commercial building and is devoted to the humanized design of the space in which more care is put to create a human, comfortable, and pragmatic soft space in commercial building.

Keywords: Commercial Building, Soft Space, Humanistic Design

In the times featured by rapid rhythm, isolated space brings various mental and physical pressure to human and the urban life becomes monotonous and boring. As the attitude of slowing down the pace of life slipping into people's mind, people crave a kind of relaxing, emotional, and inclusive space. In light of this, I try to explore a kind of space----soft space, which is multi-functioned and human oriented and could resolve the problem that people build enclosure wall to protect themselves while longing for returning to nature[1]. The influence that commerce gives to modern urban life has far more exceeded its material sense. Commercial space has become places where urban behavior is displayed. In the interior and exterior space of commercial buildings, people could carry out gatherings, social intercourse, performances and leisure activities, etc. As one of the most public urban behavior, commercial actions make commercial buildings the outstanding carriers for researching the urban soft space.

1. Introduction to Soft Space

Lao Zi (philosopher in the Spring and Autumn Period, founder of Taoism) once said that the softest in the world conquers the hardest in the world. Popularly speaking, conquering the unyielding with the yielding, that is, to control the hardest thing with the softest one in the world; the softest thing in the world is water, however, water can conquer the hardness with its softness and can outwear the stones. The "softness" referred by Lao Zi can also be understood as a state of adaptive existence.

1.1. Concept of soft space

A "soft border" is a incomplete public and incomplete private transition region; "soft space" is the transitional area from private to public, usually as a connection function[2]; It is an organic whole, making full use of scientific method to contain and transfer interactive structures of different functions in various form according to time, place, circulation and gathering of people as well as needs of functional service, which helps satisfy people's needs to the utmost and enables them to be secure, relaxed and ease in their life and in the aspect of psychology.
1.2 Property analysis of soft space.

Table 1. Contrastive analysis

<table>
<thead>
<tr>
<th>Soft</th>
<th>Hard</th>
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<tr>
<td><strong>Ductility</strong> — with forces acting, it will change its form but not break down / soft and sturdy</td>
<td><strong>Do or speak fast and straightforward / easy to be broken down</strong> — be fragile and easily fragmented</td>
</tr>
<tr>
<td><strong>Affinitive</strong> — be attracted without notice / be approachable</td>
<td><strong>Stilted</strong> / be distanced from — estrangement</td>
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<tr>
<td><strong>Vague</strong> — mixed; confused/ not clear</td>
<td><strong>Clear/ distance/limit</strong> — clearly</td>
</tr>
<tr>
<td><strong>Freedom</strong> — act by their wills/ uninhibited</td>
<td><strong>Control</strong>: control it to restrain random action or — restrain not to exceed the border / uneasiness</td>
</tr>
<tr>
<td><strong>Gentleness</strong> — relaxed / not strict; not rude</td>
<td><strong>Vulgar and frantic</strong>: not gentle and not subtle — cruel</td>
</tr>
<tr>
<td><strong>Blending</strong> — incorporated into one; co-exist/ sustainable</td>
<td><strong>Separation</strong>: isolation / out of touch — separation</td>
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Source: concluded by the author

2. Form of soft space in commercial building

The soft space in commercial buildings create a perfect connection between architectural entities and urban space, which generally includes entrances of commercial buildings, interfaces of commercial buildings and their surroundings, as well as the space within the control of buildings. It is characterized by its openness and publicity. The static 2.1 represents the form of soft space of commercial building. The existence of static soft space weakens the boundary line of the internal and the external. Featured in openness and invisibility, it is a semi-public and semi-private space, and on the other hand, it also results in the approaching actions among people and social centripetal function psychologically, and enables the natural happening of people's interaction. It mainly represents in the following forms: building entrance, open courtyard, basement-on-stilts, colonnade area, square and streets (Figure 1), etc.

Figure 1. Diagram of building entrance, open courtyard, colonnade area, basement-on-stilts, sunken square

Source: Drawn by the author

2.2. Dynamic representing form of soft space of commercial building.

2.2.1. Transformation principle: To realize the transformation of its form, the basic factor to rely on is the displayable louvered panels. Such louvered panel can apply a variety of combination modes, such as linking by mechanical rod to form a panel, matching of multiple panels, namely forming an
interactive system of spatial transformation (Figure 2)[3]. It can be flexibly changed with the mechanical rod to suit to different needs. For instance, when all the louvers are closed, it will show up an information screen; in case of emergent evacuation, it can transform into stairs for emergency escape; while some small environment demands a mass of public resting facilities, it can change into a resting platform for the public; partial space can be set into openable ceiling at the top, thus you can open the louver in a sunny day for ventilation, sunshine or moonlight.

![Figure 2. Diagram of the transformation of spatial forms](Source: drawn by the author)

2.2.2. Dynamic representing form: The dynamic forms of soft space of commercial building take on two modes, one is the private space transforms into open space (Figure 3), where the interactive system enables the transformation of opening, recreation and privacy by opening and closing the space, or that it can form an information screen to offer people with space of different usage at any time.

The other is square-street transformation mode (Figure 4), the square and the streets can transform into different states according to the traffic load in different time periods by combining people's living demand. In the peak hours, they can be divided into walkway and driveway to secure safe travelling. At the leisure time, Vehicles on the streets gradually become fewer, people go out and get together, chatting or playing chess and then the street mode will get changed and transform into a temporary square, the information screen can serve as the setting of a performance and can transform into stairs or chairs for resting as well.

![Figure 3. Transformation mode of open space/semi-open space/privacy space/information screen](Source: drawn by the author)

3. Main functions of soft space of commercial building

We can say that commercial building is the most attractive thing the city provides people with despite of living and work. Furthermore, the commercial building, which holds commercial actions, extends many public activity locations such as recreation, leisure, entertainment, information exchange, cultural transmission. The delicately designed soft space of commercial building usually becomes the best carrier of these public activities. Its existence largely improve people's life quality and satisfy varied needs, thus improving the communication and interaction among people and lift the sense of security physically and psychologically so that they will represent a safe, slow and vibrant state in their activities.

![Figure 4. Diagram of spatial form transformation](Source: drawn by the author)
3.1. Forming a sound publicity effect

The commercial soft space could bring the sense of multi-layer and gradual movement, break the limitation of the space and introduce the urban space to the architectural space. Let’s get back into the commercial building itself. Its exterior plays a role as the best channel for conveying the commercial information and two-way communication between merchants and consumers. In the outer space of the commercial buildings limited by the architectural interfaces, some visual measures such as showcase, display screen, fascia and temporary stage, all of which will stimulate consumption. (Figure 5).

![Figure 5. Colorful space and bustle commercial atmosphere](Source: drawn by the author)

3.2. Reversion and creation of communication space.

Commercial soft space can trigger “1+1≥3” effect (“1+1≥3” effect: when someone begins doing something, the others will show a clear participation tendency, by doing so, the entire activity will almost always be richer than the combination of earliest single activities), once people feel that some space is the safety section for psychological balance, it will form different locations for social networking, resting and communication organically, such space form will contribute to the transmission of commercial information and intrigue the consumers (Figure 6).

![Figure 6. Comparison of space with and without human interest](Source: Taken by the author)

3.3. Ease the traffic pressure

Mixture of pedestrians and vehicles will cause low running efficiency and hard management. Soft space of commercial building, as a part of urban environment, will shoulder part of urban activities and absorb part of people flow in order to ease urban traffic pressure and address people-vehicle splitting problems, thus securing a safe walking environment and creating high-efficient and smooth transportation conditions (Figure 7).

![Figure 7. Safety hazard results from people-vehicle conflict; colonnade space disperse people flow](Source: Internet)

3.4. Bearing urban security function.

It is necessary to implant disaster prevention function into soft space of commercial building for the sake of urban security; such function will also play a key role in reducing the losses caused by fires and earthquake. In the occurrence of disaster, soft space will form a series of shelters to efficiently guide people's sheltering action in order to maximize the security of their lives and properties (Figure 8).
4. Humanistic design of soft space of commercial building

Shopping behavior is the basic activity in people's daily life, and the soft spatial environment formed by commercial building and street is the first impression the consumers have for shopping areas, space with a sound environment will bring a pleasant mood to consumers, which will stimulate a positive buying mood, thus increasing economic benefit invisibly. However, due to planning, design and management problems, many commercial building and its surrounding space lack delicate environment and humanistic design, which mainly shows in the following aspects: traffic disturbance in the external space of building, coarse and dull landscape design that do not take people's considerations, also, it neglects free-barrier, free-danger and non-pollution humanistic design and some detailed scrutiny.

4.1. Research Methods of the Commercial Soft Space

4.1.1 Analysis and interpretation of documents: According to the research purpose of the thesis, I will explore various documents for acquirement of materials, getting a complete and correct information about the inside and outside space of the commercial buildings and forming a comparative impression of this kind of space, which is good for observation and visitation.

4.1.2. Observation method: Select proper commercial buildings and observe buildings directly through senses and auxiliary tools and then keep down the records, all of which will enlarge people’s perceptual knowledge, inspire thinking and acquire new findings. The method is purpose-oriented, well-organized, systematic and repetitive.

4.1.3. Establish the design model and principle: Modeling could make theory more clear and specific and direct the practice. This research is supposed to establish interactive model of the commercial soft space and optimize the design in combination of observation and modeling.

4.1.4. Method of modeling: According to the main features of the space, create a similar model. Through modeling, mimic the form of space transformation, which has become an effective and necessary way in the process of design.

4.2. Basis for soft space of commercial building.

Based on the following analysis, it will be able to make clear how the users occupy and use the space and what functions the space needs to accommodate, thus enabling the self-regulation of the interaction system of soft space and its adaptation to the user's demand.

4.2.1. Analysis of people stream (Figure 9): The analysis of people stream will help understand the characteristic of this space and the behavior mode of the users. The user's behavior mode can be divided into two major groups—the static and the dynamic, namely sitting and walking, specifically, it can also subdivided into halting, waiting, strolling and running. It's investigated that a most-gathering place will attract more people, otherwise, a place where no people stop will gradually form a road.

4.2.2. Analysis of use strength (Figure 10): The use strength of a place can be determined by the quantity of users attracted in a certain period of time, a darker color shows the frequenter use of a place. Each space has its radial scope, when users pass by such area, they will be attracted. Space of larger use strength will require more service functions to satisfy the different using demand of users.
4.2.3. Analysis of function demand (Figure 11): Implanting of soft space function emphasizes the complementation of unusual functions, that is, implant temporary living, medical emergency, material reserve based on the usual function of commercial shopping, leisure and entertainment. This will satisfy people's daily commercial need, and will also form a sound emergency rescue system automatically in case of emergency, having the capacities of protection, self-rescuing, evacuation and isolation.

4.3. Detailed design of soft space of commercial building

4.3.1. Well-arrangement of the traffic space and well-distribution of the traffic flow: With the development of economy, for a commercial building, the complexity of traffic dispersion will largely increase [4]. Fast and easy traffic flow has become the key factor that may affect the economic benefit. Transforming the form of the soft space and lifting or lowering the space division on the ground could prevent vehicles from running in the space and the space would be for walking only, which will be convenient for shopping, strolling and resting and meanwhile the humanized shopping environment increase respect for consumers.

4.3.2. Abundance and colorfulness of the places for commercial and leisure activities: An easy and pleasant shopping environment should not only locate in the interior of a building, and the external spatial environment design of a building is also very important. Space with combination of open and semi-open style is the transition of urban space and the organic part of commercial building, providing customers with a resting, waiting and communication area. Soft space is the best place for the customers to experience the commercial atmosphere, which would be the stage for merchants to carry out publicity and promotion, and combining the commodity information on the screen. By utilizing the space, the merchants can express themselves to the customers to stimulate their interests [5]. According to the research results, the outer space of many commercial buildings lack necessary resting facilities and many leisure activities are standing-oriented whose degree of comfort has decreased people’s interests. Soft space will form open and semi-open space inside which will be convenient, interesting and comfortable for the users. (Figure 12)

4.3.3. Self-regulation of the interaction structural system, maximize its adaptation to the customer's demands: In commercial activities, accessible design for the old, the kids and the disables should not be neglected. The interaction structural system can self-regulate for the purpose of adapting to different situations and can response to the behavior mode of the user in order to timely realize the transformation of slop and stairs as well as the formation of chairs. It could not only meet the function needs of the consumers but also the mental needs, enabling them to enjoy a kind of life interest[6].

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**Figure 9.** Analysis of people stream  
**Figure 10.** Analysis of using strength  
**Figure 11.** Analysis of function implanting  
**Figure 12.** The interaction system of soft space forms space of different purpose

Source: drawn by the author
Soft space also needs to consider that big shopping malls have shuttle buses for customers, and when the waiting people increase in number at the bus station, the induction plate of the interaction structural system will be able to discover the change of situation and form much more seats, and when the users get on bus, the structural system will recover to the original state. Interactive system could also response to weather changes and make relevant adjustment according to the weather condition. In rainy days, it will be transformed into a waiting area to provide shelter against the rain, which is convenient for the customers to get on and get off.

4.3.4. Implant the function of disaster prevention and sheltering, response to the frequent occurrence of urban disasters: In case a disaster occurs, the commercial building will come out with a great number of refuge staff, they will show up multi-directional sheltering behaviors at the same time. Once people are affected by information blocking and panic, serious disorder will appear which may cause severe losses of personnel and property than disaster.

In the first time when a disaster occurs the disaster protection system installed to the commercial soft space will start, remarkable color will become the highlighted sheltering place with clear features and high identifiability and reachability, which will help to delivery sheltering guidance fast and safely, at the same time, the information center will control the display platform to deliver authentic public information efficiently, thus to conduct effective guidance and suitable psychological regulation to the public.

5. Summary

The value of soft space of commercial building should not simply be defined by its spatial form, what's more important is that soft space support the public activities including commercial behavior in what extent[7]. Soft space improves the external space that accommodates its original traffic function, Soft space will eliminate many defects such as huge dimension, loss of human kindness, spatial environment of same pattern, etc. In the designing process, the space will be optimized on the basis of the original basic functions according to people’s habits, physical structure, mental situation, and thinking mode, which will be more convenient and comfortable for people to live in. Soft space will respect and meet the mental, physical and spiritual needs and the humanistic care in the design shows respect for the human nature, but that it starts from people's behavioral psychology and aims to create a shopping environment and an ease, sentimental, casual and generous leisure space where people enjoy themselves with scientific techniques, and involve in the construction and development with an active and positive tendency[8]. Similar to other public space and semi-public space, soft space is eventually to provide a location more suitable for urban life. Only a harmonious urban life will accommodate its space and shine with constant charm.

6. Reference