

# Comparative Study on Korean and Japanese Traditional Furniture Design

Based on the residential behavior related to floor sitting

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**Abstract:** Furniture reflects the character of interior space and is the cultural symbol that represents the character of age and area. Furniture itself doesn't show the life style and behavior pattern directly, but it has inherent feature of culture. If these features aren't considered in the design process, the product cannot satisfy users. Hence, not only physical elements(form, color, material and structure) but immaterial elements(value, custom, life style and view of arts) should be considered in design process. It can produce result that fits to every cultural pattern and situation. And it can lead to create user-centered design that is the competitive power of furniture.

European furniture designers borrow heavily from traditional Asian style and culture. This trend is accelerating in the new millennium. The fusion of Asian philosophy with the "rationalist" design approach of the west is a fertile arena for original design. But very often, those "Asian" styles incorporated into western furniture are not culturally specific and very often, this "assimilation" ignores the broader and deeper origins of a particular style. This is why there is a pressing need for comparative and culturally oriented design studies. We need to better explore and differentiate various Asian design approaches and better understand the cultural/lifestyle precepts from which they arose.

The object and scope of this study is Korean and Japanese furniture that have common feature of sitting life style. The study plans to search the differences of floor structure, *ondol* and *tatami*, and background of its own life style. Also this study analyzes the differences between Korean and Japanese furniture layout, structure and function in house interior through the differences of life styles. This study expects the data, analysis of traditional furniture related to user behavior of floor between Korea and Japan, can be used practically in furniture design of present house.

*Key words: traditional, furniture, Korea, Japan*

## 1. Introduction

### 1.1. Purpose of Study

Furniture is not only cultural symbol that expresses peculiar character of an area and age but also an intermediate that forms special properties of the space and reflects distinctive quality of the interior of a room. Therefore there is immanent cultural character of regional society with furniture. Furniture that is made without considering special quality during design process would cause failure because user's request is not met.

Physical elements such as type, color of the material and structure and non-physical features such as value, formative senses, custom and life style effect mutually. It is necessary to analyze relations of elements for deep

understanding about regional daily life culture. Also, obtained data, which contains characteristics of traditional furniture related to using forms, is expected to be applied for furniture design in modern residing space.

## 1.2. Scope and Method of Study

The object and scope of this study is centered on the analysis between Korean *yang-ban* houses of Yi-Dynasty and *shoinzukuri* style from *Muromachi* era to *Edo* era in Japan, which have similarities in time and affected modern residing styles very much. The reason why we limited to comparison between Korea and Japan except China is that I thought I could analyze the characteristics and differences more deeply by comparing with similar floor-sitting culture of two cultures, although China belongs to Asia, it has chair-sitting culture.

**Table1. Chronological Table for Comparison**

	1300	1400	1500	1600	1700	1800	1900	
Korea	Koryo	Yi-Dynasty(1392~1910)					Korean Empire	
Japan	Nanbokuchou	Muromachi (1392~1573)	Momoyama (1573~1600)	Edo(1600~1868)			Meiji	

The contents of this study is figuring out characteristics of Korea and Japanese residing space having similarities in floor-sitting life culture and analyzing lifestyles in residing space. We searched differences of layout, structure and usability of furniture in residing space. This comparative analysis helps to grasp molding characteristics of furniture affected by life culture, we believe.

## 2. Characteristics of residing space

The form of daily life has not been changed naturally in Korea and Japan. The chair-sitting was employed anciently, to the middle ages it was changed into the floor-sitting, and to the modern time these two styles are used simultaneously. As seen in the Europe and China it's common that floor-sitting is developed in to chair-sitting. But in the two countries the chair-sitting was not firmly settled and replaced by the floor-sitting latter, which is rare characteristic in residing culture and affected furniture culture.

### 2.1. Characteristics of Korean traditional residing space

The general traditional residential form of Korea is the fault wooden furniture structure using the natural materials. Therefore, the furniture was progressed based on the house structure. *Maru* which is made with planks and *ondol* which pastes the paper lacquered with bean oil on the surface are representative form of the room floor. The Korean paper was pasted on the wall, ceiling, door and window and the ceiling of *maru* was exposed by rafter and white plaster painted between the rafter.

The most significant characteristic of the Sung Confucianism social ethic of the Yi Dynasty is the arrangement plan and space composition of the residence which divide a site into distinctive places for man and woman life independently. For instance *anchae* and *sarangchae* are individual spaces for women and men respectively and devide their movement space. This was made to organize the space into two limit zones which makes people stand alone according to the social class and even there were divided places inside the household based on the court rank order.

### 2.2. Characteristics of Japanese traditional residing space

*Shoinzukuri* appeared in 17century was composed of the reception of guest space, the family life space and the

servant life space. The most big feature of *shoinzukuri* is that a building was divided into many houses and a house was divided into many rooms by *mazikiri*(partition). The *shoji* (paper sliding door) used whenever needed was fixed gradually and the shelf was also fixed in the building. *Chodai*(bed) and chairs also became not necessary by using *tatami* (Japanese floor mat). It excepted *dokonoma* decorated with flowers and pictures and it did not decorate entirely. *Dokonoma*, *chigaidana* composed with shelves which have different height of an each floor, and *tsukeshoin* offering a space of reading are three traditional elements remaining current Japanese interior design.

**Table2. Characteristics of Korean and Japanese traditional residing space**

	Korean Traditional House	Japanese Traditional House
Connection between house indoor and outdoor space	<ul style="list-style-type: none"> <li>•Most wall frames of each <i>chae</i>(a building of a group of connected buildings) consisted of a lifting <i>changho</i> which can be opened upward and bound up</li> <li>•Intermediate space like <i>twoitmaru</i>, <i>daechung</i> which divide and connect between indoor and outdoor of main spaces</li> </ul>	<ul style="list-style-type: none"> <li>•Space between house and indoor and outdoor house is mostly consisted of sliding door</li> <li>•Possible to open doors and interact with nature actively</li> <li>•A veranda surrounding the building connects indoor with outdoor</li> </ul>
Connection among interior spaces	<ul style="list-style-type: none"> <li>•Lattice door between <i>daechung</i> and a room and a sliding door between rooms play roles like walls</li> <li>•Combining and differentiating rooms according to if opening and shutting are possible</li> </ul>	<ul style="list-style-type: none"> <li>•Walls are consisted of a sliding door so very changeable</li> </ul>
Distinction of spaces	<ul style="list-style-type: none"> <li>•Distinguish life space of men(<i>sarangchae</i>) and women(<i>anchae</i>) under the influence of Sung Confucianism</li> </ul>	<ul style="list-style-type: none"> <li>•Divide spaces into guest reception, family life, servants life</li> </ul>
Handling method of walls, floors and ceilings	<ul style="list-style-type: none"> <li>•Finishing with papers for interior ceiling and walls, <i>changhoji</i> for inside <i>changho</i>, laminated papers lacquered with been oil for floor</li> <li>•The ceiling of <i>daechung</i> is consisted of ceiling whose structure is exposed, <i>changho</i> for almost all of walls, <i>maru</i> for floor</li> </ul>	<ul style="list-style-type: none"> <li>•Devison of spaces according to <i>mazikiri</i></li> <li>•Floor is <i>tatami</i></li> <li>•Don't decorate at all except <i>tokonoma</i></li> </ul>

**Table3. Life Patterns of Korean Traditional Space & Japanese Traditional Space Space**

Korean Traditional Space		Japanese Traditional Space	
Space	Living Activities and Use of Furniture	Space	Living Activities and Use of Furniture
Srangbang	<ul style="list-style-type: none"> <li>•Dining : Use and removal of unfixed furniture / Furniture for floor-sitting (personal <i>soban</i>)</li> <li>•Sleeping : Functional division in day·nighttime through the use and removal of furniture</li> <li>•Guest Reception : Layout according to hierarchy / Separate <i>seoan</i> and <i>soban</i> for guests</li> <li>•Recreation : Use of <i>seoan</i>, <i>jwatak</i> and <i>sabangtakja</i> for storage / Furniture to contain stationery</li> <li>•Working at Home</li> </ul>	South (space of 'hare')	<ul style="list-style-type: none"> <li>•Guest Reception : the raised portion of a floor, where master(host) or the highest person sits and sees subordinates</li> <li>•Floor sitting for the occasions like events, feasts, formal ceremonies</li> <li>•<i>Tokonoma</i> and <i>chigaidana</i> established in front, <i>tsukeshoin</i> established</li> </ul>
			<ul style="list-style-type: none"> <li>•Formal Guest Reception : a room for a dinner party, tea room</li> <li>•Decorated with candlesticks, incense burners, vases in front, placed chairs on both sides and a table with incense burners in the middle of it</li> </ul>
Anbang	<ul style="list-style-type: none"> <li>•Dining : Use and removal of unfixed furniture / Furniture for floor-sitting (personal <i>soban</i>)</li> <li>•Sleeping : Functional division in day·nighttime through the use and removal of furniture</li> <li>•Housework : Center space for women and housework / Furniture laid out within reach from a sitting position</li> </ul>	Nisinanama	<ul style="list-style-type: none"> <li>•Usual Guest Reception : set chairs in north and <i>tsukeshoin</i>, <i>tana</i> in south</li> </ul>
			<ul style="list-style-type: none"> <li>•Relax : living room for a general, decorated with <i>ika</i></li> <li>•set washing stuffs in <i>ochima</i>(a little lower place of north)</li> </ul>
Daechung	<ul style="list-style-type: none"> <li>•Family Gatherings : Beneath the ceiling of <i>an-daechung</i> is the storage for guest-serving <i>soban</i> and ritual items / Non-purpose, multi-functional space</li> <li>•Housework : Furniture enables modification on spatial function</li> <li>•Recreation : Musical instruments fit for floor-sitting</li> </ul>	North (space of 'ke')	<ul style="list-style-type: none"> <li>•Drinking Tea : set <i>chatana</i>, <i>chigaidana</i>, <i>toko</i></li> </ul>
			<ul style="list-style-type: none"> <li>•Study : set <i>tsukeshoin</i>, <i>hondana</i>, chair</li> </ul>
			<ul style="list-style-type: none"> <li>•Sleeping</li> </ul>

<Yangban house>

<Shouguntei>

### 3. Furniture arrangement of dwelling space and molding characteristics of furniture

#### 3.1. Furniture arrangement and characteristics of Korea

Korean furniture based on unique dwelling and life environment established characteristic tradition according to the times while passing through long history. Especially construction structure of *hanok*(Korean-style house) which uses the fault woodwork, *ondol* which is a unique heating type, and the lifestyle sitting on the floor have formed a distinctive and unique furniture form.

Enjoying the seasonal warm and chill by installing the *ondol* instead of the bed, creating the low proportion which is comfortable to see a view in the sitting position, development of a narrow storage space, and distinctive classification of the furniture of man and woman are representative examples. However almost no relics remain because main material of was wood.<sup>1</sup>

Yi-Dynasty residential inside spaces are categorized into *anchae* and *sarangchae*. There was an attic door in the warmer part of *ondol*, *byoungpung*(folding screen) was wrapped front of the door, *ansoek* was placed in the back, *jangchim* was on the left, *sabangchim*(elbow rest) was located on the right. *Seoan* played critical role in the *sarangbang* furniture and informed the location of the host position besides its original function where books are placed and read. *Sabang*-table is the most representative *sarangbang* furniture among these all since which was simply composed with only board and four pillars.

*Jang* and *nong* which are representative traditional furniture of putting things in, mirror stand, comb box and workbox show the quality of *anbang* furniture which is women space.<sup>2</sup> These furnitures were arranged so that stream of eyes can move in order of size from the small to the large naturally. When sitting on the bottom, *boryo*(mattress) was laid down on the warmer part of *ondol* in order to alleviate hot or cold feel and put *sabangchim*(elbow rest) on there. *Byoungpung* was placed at back side of *boryo* to stop draft of warmer part of *ondol* mainly in the winter and wrapped to make mild and brilliant atmosphere. *Mungap*(stationery chest) and storage box were arranged long under the windows along wall. The narrow long rectangular *mungap* was placed under the window, lower than *changho*(window frame) in order not to obstruct looking out on a yard. This has relation with sitting posture, an angle of eyes when sitting down, and the structure of *anbang*. The wall of *mungap* side has a blank so that the subject seemed to be cool or decorated by *gobi*.

The characteristics of furniture arrangement of Korean traditional houses can be summarized as below.

First, furniture is designed considering sitting-floor life and based on human factors engineering.

Second, the center of a room is empty to be utilized as various use. Same room can be used as bedroom, meeting room, dining room and so on and furniture has strong mobility which was suitable to cope with these demands.

Third, the center of the room is main space and furniture was built on all sides, and asymmetric proportion is harmonized naturally.

Fourth, height to be suitable for sitting-floor life and proportion of plane division are beautiful. It is harmonious and nice standard in area of comparatively the low ceiling and narrow indoor. Continuous rectangle and square type show most beautiful balance, that is scientific and golden sectional.

Fifth, unique heating technology was developed because there are distinctive four seasons in Korea. *Ondol* divided an indoor space into the warmer and the upper(colder) part and made senior and younger person sit

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1 Korean nation culture dictionary, [www.koreandb.net/Kodia](http://www.koreandb.net/Kodia)

2 Korean nation culture dictionary, [www.koreandb.net/Kodia](http://www.koreandb.net/Kodia)

looking at each other. Furniture is arranged against the wall to avoid the heat of *ondol* can reach, and arrangement method of this interior can be found in current living rooms.

### 3.2. Furniture arrangement and characteristics of Japan

Because Japanese had life not using furniture historically, they had almost no interests with furniture. Living is possible even without furniture in the traditional Japanese residence. To the room with *tatami* floor (especially guest room) rather it is well evaluated it did easily does not have the furniture. Because wall or door was unsuitable for an inside in case of Japanese *sindenzukuri*, divided a space into *shoji* (sliding door), *sudare* (shade), *katabira* (emblem), *byobu* (folding screen), *tsutate* (partition) etc. and laid *tatami* and was called *sitsurai*. Room of *sindenzukuri* residing style there were fairly many furniture because made life space using necessary furniture according to case, and floor-sitting and chair-sitting were used jointly with chairs to have entered from China. Like this, *sindenzukuri* house compounds and installs furniture, and the house completed. So building and furniture were close inseparable relation and furniture is easy union, assembly, and there was important element of interior design that do room so that look beautiful. These times were the times when furniture culture developed from history of Japanese residence most, and the majority of Japanese furniture was formed this times.

However, the furniture became into a building while it was grown up *shoinzukuri* which house structure that building and furniture are unified, and is composed. *Sindenzukuri* remains by tradition of Japanese house which have characteristic that conversion is free. For example, such as using space extensively having removed sliding door when guest visited much, or habit that unfold *zen* (table) when is meal, show other characteristic fundamentally with 1 room 1 function residing of West Europe style. Organic space composition of Japanese traditional house space forms the most important special quality of one of Japanese tradition furniture. Interior plane flexibility was used in furniture built in as necessary, and it had been put soon up, and repetition of the circulation system how another furniture was arranged at was requested. It shows difference with the western furniture which function and situation are fixed in the single place where use is certain. As for the characteristic on this indoor space operation, put things in function became the background where it was especially grown up in Japanese traditional furniture.<sup>3</sup>

In the Japanese house, all the proportion to have been unified is composed by several basic modules (900×1800mm). *Tatami*, *shoji*, and *husuma* are the most basic modules of interior elements and the size of these elements is same and each room's size is decided by these union method. In this way, furniture was progressed with standard frame from indoor that is having standard model, and depending on this indoor lifestyle furniture move, or assemble, or is modified, or developed so that may be apt to fold and receive. *Tansu* can be carried easily because it is composed with two or three pieces of stacks and its handles are designed to be joint placed indoors. *Chabudai* (table) is designed to be able to fold legs and dishes can be piled up to be stored. As a result, characteristics of Japanese furniture such as variability of arrangement, compact structure and modularization can be said that is formed by standardization and unified proportion of Japanese interior composition elements.

Japan has formed important characteristics of Japanese traditional furniture keeping a characteristic of floor-sitting lifestyle.

First, it is rare that storage furniture has legs whose function or form are emphasized. Occasionally structural legs of furniture are observed because Japanese furniture was affected by Chinese and Korean culture. However those legs are usually designed for decorative purpose not for practical purpose like China or Korean frame. The

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<sup>3</sup> Lee Jin-Min, Furniture of Eastern-Korea and Japan to the center, monthly Interior Design, Korea, pp114-127, 1999.8

middle age *tatami* which is supplied with the basic bottom material of interior the straw or the rush was salty and with the all pebble bottom of our country and the floor bottom of the wood product with the hard bottom material there was an elasticity together differently with the fact that it made, it was a comparison stable material in change of temperature or humidity, from the criticism left life space the furnitures of most to be low it was under arranging from inside the height scope where the user sits on the bottom, for the stable arrangement of the furniture or utility or to the furniture of Japan it means the high leg will be unnecessary from the side. *Tatami* which is supplied with the basic bottom material of interior since middle ages is woven straw or rush, and is the material which is elasticity and comparatively stable in temperature or a change of humidity unlike hard floor materials such as wooden floor of Korean. Also, point that Japanese furniture superimpose according to necessity and use was the reason, too.

Second, another characteristic of Japanese furniture due to floor-sitting life is that the decoration of front side is emphasized. The front side of furniture enters mainly in a visual field because movements of people were somewhat fixed in the floor-sitting life. Especially these characteristic of Japanese furniture appear more notably in furniture that put things in doing a form of a simple box style.

Third, the design feature of Japanese furniture is that rectilinear composition is mainly used. In this way it can be said that the reason is because straight line is convenient to mix system furniture, and it was pursued being straightforward simplicity sensuously. Simplicity is due to being straight line form, but means that structure oneself of furniture became simple. However, asymmetric configuration and a technique of finishing were used so that these plane board-oriented simple structure of Japanese furniture let boredom to decrease dissolve. Especially, delicate balance was used and which can give refined tension and activity. These asymmetric sense is not only furniture but characteristic that appear commonly in Japanese formation.

**Table4. Characteristics of Korean and Japanese traditional furniture**

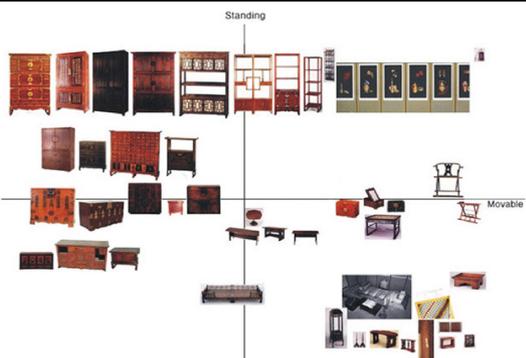
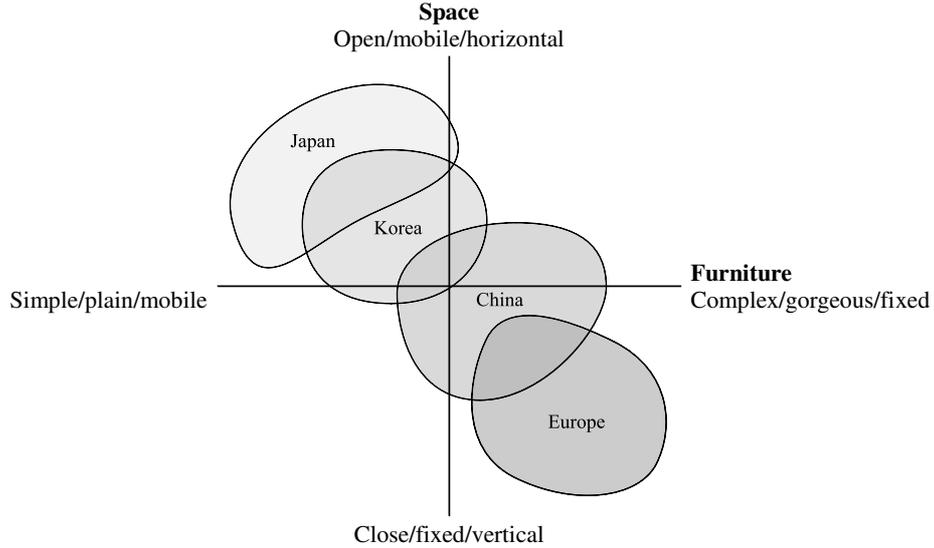
	Korea	Japan
Characteristics of residing space and furniture arrangement	<ul style="list-style-type: none"> <li>• Developed as the concept of Furnishing rather than furniture that connects people and furniture because of a building constructed by being floated and <i>maru</i> of summer, <i>ondol</i> of winter</li> <li>• Set furniture such as <i>jang</i> and <i>nong, kwe</i> appropriate to floor-sitting life</li> <li>• Empty the center and arrange furniture to walls</li> <li>• Arranged so that stream of eyes can move in order of size from the small to the large naturally</li> <li>• The narrow long rectangular <i>mungap</i> was placed under the window, in order not to obstruct looking out on a yard</li> <li>• Handling <i>daechung</i> as an empty space</li> </ul>  	<ul style="list-style-type: none"> <li>• Houses constructed in wooden style, raising the surface of floor and the indoor floor is made of soft <i>tatami</i>, so less furniture than Korea</li> <li>• Living is possible even without furniture in the traditional Japanese residence</li> <li>• Furniture became built-in and modularized while it was grown up <i>shoinzukuri</i></li> </ul>  

4 Interior of anbang, source : Park Young-Soon, The Story of Traditional Korean House, Yeolhwa-Dang, Korea, p146, 1998

5 Interior of daechung, source : Park Young-Soon, The Story of Traditional Korean House, Yeolhwa-Dang, Korea, p81, 1998

6 The Emperor's room of the Ogakumon-jo, source : Traditional culture preservation association, Kyoto Imperial Palace, Benrido, Japan, p30, 2002

7 Interior of shoinzukuri, source : Koizumi Kazuko, Encyclopedia of Japanese history-Furniture, Tokyodo publishing company, Japan, p16, 1995

<p>Characteristics of residing space and furniture molding</p>	<ul style="list-style-type: none"> <li>• Furniture produced low and simply on account of flat floor-sitting life</li> <li>• Furniture were arranged under the windows along wall in order not to obstruct looking out on a yard</li> </ul>   <ul style="list-style-type: none"> <li>• Developed furniture considering mobility defective to space application</li> </ul>   <ul style="list-style-type: none"> <li>• All furniture has each own short legs to prevent its metamorphosis from the heat of <i>ondol</i></li> </ul>   	<ul style="list-style-type: none"> <li>• There is not furniture almost and it's not fixed so it can be removed</li> <li>• Furniture that has storage structure (like drawers) developed because of mobility of interior space</li> </ul>    <ul style="list-style-type: none"> <li>• It is rare that storage furniture has legs which function or form are emphasized</li> </ul>   <ul style="list-style-type: none"> <li>• Decoration of front side is emphasized under the influence of flat floor-sitting style</li> </ul>    <ul style="list-style-type: none"> <li>• Technique of finishing were used</li> </ul> 
<p>Maps of furniture types<sup>9</sup></p>		
<p>Characteristics of space and furniture classified by nations</p>	<div style="text-align: center;"> <p><b>Space</b> Open/mobile/horizontal</p>  <p><b>Furniture</b> Complex/gorgeous/fixed</p> <p>Simple/plain/mobile</p> <p>Close/fixed/vertical</p> </div> <ul style="list-style-type: none"> <li>• openness of space : Japan &gt; Korea &gt; China &gt; Europe</li> <li>• mobility of furniture : Japan &gt; Korea &gt; China &gt; Europe</li> </ul>	

8 Interior of sarangbang, source : Park Young-Soon, The Story of Traditional Korean House, Yeolhwa-Dang, Korea, p152, 1998

9 Techno Design Research Center, Journal of Technology & Design, monthly Design Net, Korea, p85, p87, 2002

#### **4. Conclusion**

The characteristic of Korean and Japanese residence is that there is no furniture compared to the West and China. It can be assumed that the reason is because residential construction itself acts a role of big furniture. In the West and China, beds and chairs are necessary indoor furniture to sleep and sit, because they wear shoes indoors and do not sit down on the floor. Other furniture is also needed since beds and chairs are away from the floor. In Korea and Japan, indoor environment is not appropriate to develop furniture because residents can take off shoes indoors, sit on the floor, and sleep if bedclothes are spread out.

In the chair-sitting life most furniture is touched by the part body directly and interests for furniture is raised naturally, but in the floor-sitting life interests for furniture is low.

This traditional characteristic of furniture by sitting lifestyle remains contemporary residence of Korea and Japan. As extension of this research, characteristic of lifestyle in modern residence will be studied in the near future. Through the studies basis for furniture design can be established which based on the understanding of life culture.

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