

Development of Desk for Public Reading in Library

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ABSTRACT

Through this study, I developed a new-styled desk for public reading in library in consideration of the characteristics of the company “KIFURS Co., Ltd.” established and branded by a part of the members of the association ‘Gyeonggi-Incheon Furniture Industry Cooperative’, in the background of growing library-furniture market situation according to the government policy and the related participations of competitive companies. The differentially designed product was herein presented by introducing the function of office furniture and related material, by giving the existing product some improvements on the basis of the domestic and international data searching.

The characteristic of the developed product is that the basic structure of the desk for public reading is easy to assemble & disassemble and also variable to be extended & modified. This basic structure is available to be mass production and to be pricewise through using aluminum. Furthermore it can be used as other library-furniture and office furniture, too. Also the luxury image was pursued by modern shape and different material, unlike the existing library-furniture.

Key words: Library-furniture, desk for public reading in library.

INTRODUCTION

Purpose of Study

Library-furniture that had been classified as a specific field was mostly customized in the past, but it has been standardized by the participation of the midsize office furniture manufacturer in the market. In design and material aspects new products having functions of office furniture have been presented in the market, which is however limited to several large enterprises and therefore the customer cannot have a wide variety of choices. The reason for this is that the library-furniture market was a small scale until 1990s due to dominant government procurement market and non-branded products made by private manufacturers, and it did not interest the manufacturer accordingly and

the related study & research were insignificant. From the year 2003, however, when the government project to remodel university libraries and the construction of most advanced library by several universities increased, the market has entered in a quick growth phase. According to the industry, the expected public libraries to be established by 2009 are more than 100 and the accumulated budget for that is approx. KRW 300,000,000,000 (USD 235,000,000). Like this the

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library-furniture market will be prosperous for a while thanks to ‘school library promotion project’ by government, and hereupon the participation in the markets of office furniture manufacturer with large enterprises is being active.

Therefore this study intends to develop a new-designed functional ‘library-furniture’ among educational furniture having big growth potential by laying emphasis on desk for public reading, on the basis of the characteristics and productive capacity of KIFURS Co., Ltd., in order to make office furniture more competitive in the market that is one of main business sectors of KIFURS Co., Ltd. that established and branded by 99 members of ‘Gyeonggi-Incheon Furniture Industry Cooperative’ 2006 as a sales plan how to deal with government policy ‘free competition’.

Scope and Method of Study

This study made a research into diverse domestic and foreign examples by help of internet and technical book, in order to offer a deep understanding regarding desk for public reading among library-furniture. Hereupon the characteristic and improvement points were analyzed and design concept for it was created. Then design process as like idea sketch, drawing and rendering etc. followed and finally a prototype was made. Product was developed on the basis of current status of KIFURS Co., Ltd. and the related design and manufacture process were here considered accordingly.

CURRENT STATUS AND ANALYSIS OF DESK FOR PUBLIC READING IN DOMESTIC AND FOREIGN CASES






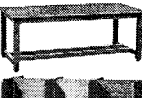

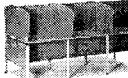
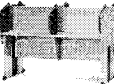




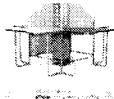







Object of study is desk for public reading among library-furniture and domestic as well as foreign examples were researched. In detail it was classified according to purpose, and its material, characteristic and country etc. were informed. All collected data were analyzed and through this analyzing problematic points were showed, and the direction of design development were created.

Current Status and Analysis of Domestic Desk for Public Reading in Library

As the under mentioned Table 1 shows, desks in domestic case are roughly classified in large enterprise product and non-branded product manufactured by small & medium enterprise. The leaders nowadays in the library-furniture market are the large enterprises, as already mentioned, that are rapidly reacting the government policy and combining functions of office furniture with high-grade material. On the contrary the products made by small and medium sized enterprises are still heavy due to using thick and crude material and have only simply function.

In other side desks for public reading are itemized for general book room for public reading, for study hall (partition type) and for retrieving information according to their purpose. The products made by small & medium enterprise are mostly the partition type, but that is almost same to the open type desk placed in general library with exception of the partition added, and those can be used also for study hall. On the contrary the large enterprise’s product has functions of extension & modification, not only a basic function, and shows more modern and refined design thanks to the use of different materials. The reason why the large enterprise’s products are more competitive despite of the higher price compared with small & medium enterprises is that the products made by small & medium companies are mostly imitations of large enterprise’s goods or international brands due to lack of design development, and they can not be expected to be qualified goods therefore. So, the development of product being equal with the large enterprise’s products and foreign brands and being at the same time pricewise is necessary for customer to be able to have a wide variety of choices and to make diverse market situations.

Table 1. Desk for public reading in domestic case

	Product	Characteristic	Product	Characteristic.	Product	Characteristic
L I B R A R Y		-Open type (6 Pers.) -PB, ABS -Fursys		-Open type (6 Pers.) -PC available -PB, Metal -Fursys		-Open type (4 Pers.) -PC available -PB, ABS -Livart
		-Open type (6 Pers.) -Veneer, Metal -Top Class		-Slope type (6 Pers.) -PB -SM Furniture		-Open type (6 Pers.) -Lauan -Elite
S T U D Y		-Partition type (6 Pers.) -PB, ABS -Fursys		-Partition type (6 Pers.) -PB, Metal -Fursys		-Partition type (6 pers.) -PB. ABS -Livart
		-Partition type -Modifiable -PB, Glass Metal -Borneo		-Partition type (6 Pers.) -Separable -Veneer -Dana		-Partition type (6 Pers.) -PB -SM Furniture
I N F O R M A T I O N R E T R I E V A L		-Both sides (2 Pers.) -PB, Glass, Metal -Livart		-Round type (4 Pers.) -PB, Glass, Metal -Coas Well		-1 person -PB, PVC sheet -Coas Well
		-Screen (4 Pers.) -Modifiable -PB, Glass, Metal -Borneo		-Partition (6 Pers.) -Connecting available -PB. Metal -Fursys		-Round type (6 Pers.) -Lauan -φ1240x1200 (mm) -Elite Furniture
		-Round type -(6 Pers.) -PB. Glass, Metal -Fursys		-Cross type (4 Pers.) -PB, Metal -Fursys		-Round type (4 pers.) -PB, Metal -Dong Sung

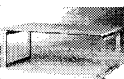

















Current Status and Analysis of Foreign Desk for Public Reading in Library

Also the desks for public reading in library in foreign cases were classified according to their purposes, and they were roughly divided into the thick & crude type made by wood as usual and the type with office furniture function. The examples showed variable extensions and modifications in

office furniture function compared with those of domestic examples are dominant, and furthermore the products considering the convenience of user e.g. lighting and PC facility were presented. They showed also more modern in terms of color and finishing compared with domestic goods. Material has relatively little difference to domestic products, but the harmony when it was matched with the finished good shows designable refinement and luxury more.

The research & development in educational furniture being a step ahead than Korea presents divers products of library-furniture and the customer can have a wide variety of choices, and this means a constant growth potential. At this point it is great significance to invest more research & development in furniture design in order to be competitive compared with foreign products and to achieve a high quality and design.

Table 2. Desk for public reading in foreign case

	Product	Characteristic	Product	Characteristic	Product	Characteristic
L I B R A R Y		-Open type (6 Pers.) -PB, Metal -Japan		-Open type -Module linking -Veneer, Metal -Sweden		-Open type (6 Pers.) -PB.Laminate -USA
		-Screen type (6 Pers.) -PB, Glass, Metal -Japan		-Screen type (screen separable) -PB. Glass -Japan		-Screen equipped with lighting -PB, Glass -Japan
S T U D Y H A L L		-Covering type (4Pers.) -Extensible for more persons -Sweden		-Covering type. -Extensible -PB, Metal -Japan		-Covering -Extensible -PB, Glass -Japan
		-Covering type (4pers.) -Modifiable -PB, Glass -Metal -Japan		-Covering type (4pers.) -Modifiable -PB, Glass. -Metal -Japan		-Covering type (1pers.) -PB. fabric, -Metal -USA
B R O W S E R D E S K		-Both sides (4 Pers.) -Wood -Germany		-Round type (4 Pers.) -PB, Metal -Sweden		-Screen type -Lighting -PB, Glass -Japan
		-Round type (4 Pers.) -Lighting -PB, Glass, Metal -Japan		-Screen type (separable) -PB, Glass, -Metal -Japan		-Round type (4 pers.) -PB, Metal -USA

Current Status of KIFURS

KIFURS is a corporate body established and branded by 99 members of Gyeonggi-Incheon Furniture Industry Cooperative 2006 in terms of joint investment. In furniture industry filed private contacts between Furniture Industry Cooperative and Public Procurement Service were tolerated to delivery goods to government up to 2006, but from 2007 on since the 'free competition system' has been introduced, the system as cooperative association could not make contracts with main government agency and/or Public Procurement Service any more and therefore the members could not catch any chances to delivery goods to government and to confirm the market. So, the cooperative made a decision to establish a corporate body in way of joint investment as coexistence. This could work for the small and medium companies of which product line is not so various and brand value is also poor in comparison with large enterprises as a solution to overcome such disadvantages by making one representative brand, and this furthermore can help them to obtain sales network more convenient, and also to make the production cost down thanks to joint purchasing of raw material and moreover to be able to improve the quality of their products through developing new technology & the related new products by managing joint research & development or laboratory etc.

Thus research & development for new products matching with the specialized purpose is necessary and urgent for KIFURS Co., Ltd. to advance its brand value and competitive power. In consideration of such backgrounds this study intends to develop a desk for public reading in library, which can be a representative product of KIFURS Co., Ltd. of which main production lies in office furniture.

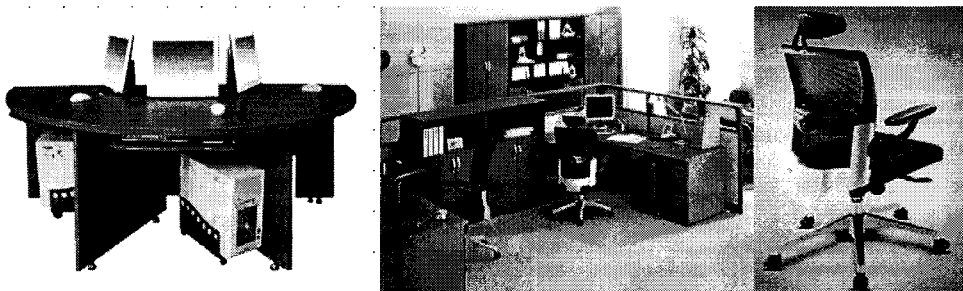


Fig.1. Product of KIFURS.

DEVELOPMENT OF DESIGN

Design Concept Creation

The most desks for public reading being currently used in public institutions and school libraries in Korea are crude and rough because they were made from timber and also in terms of function they are so simple. But as the a.m. table showed the tendency of combination between library furniture and office furniture in a view of function and material is coming also in Korea. Hereupon this study should concentrate on presenting a new-concept design considering these environments, and at designing the following points were dealt with importantly.

- 1) The differentially-designed desk for public reading equipped with new function and material breaking from the existing equal designs is pursued, in order to correspond with the customer's needs being updated according to the changes of education cultural environment.

- 2) Maximization of function should be done by making one basic structure variable to be extended and transformed, so that basic construction of desk for public reading can be modifiable accordingly. This modifiable desk is available to be used as other library furniture, not only desk for public reading, e.g. stack and book-truck etc. and furthermore also applicable to office furniture, too.
- 3) Efficiency of production should be improved. A desk for public reading is relatively easily designed like that basic assembly structure, front partition and side partition are made from chipboard. Assembly structure should be designed for mass production so that lead time and cost can be reduced.
- 4) The aesthetic point of view should be stressed by designing harmonically with different materials and colors, and with this the modernized design is pursued.
- 5) System of assemble & disassemble should be improved to achieve a convenient mobility and high space-efficiency.

Development of Design

The point of design lies in modifiable basic structure of desk for public reading, unlike the existing form. Fig. 1 is showing diverse ideas to design such concepts. First of all, one basic structure is differently modified as framework supporting table. This basic structure is relatively easy to assemble and disassemble, and is designed in different aspects, so that it can be produced on a large scale. From one basic structure like this, desk for public reading can be diversely modifiable from open type, partition type to for one person and for 6 persons. Also side panel and front panel are available to be made in different materials and colors, and Fig. 2 is showing examples for this.

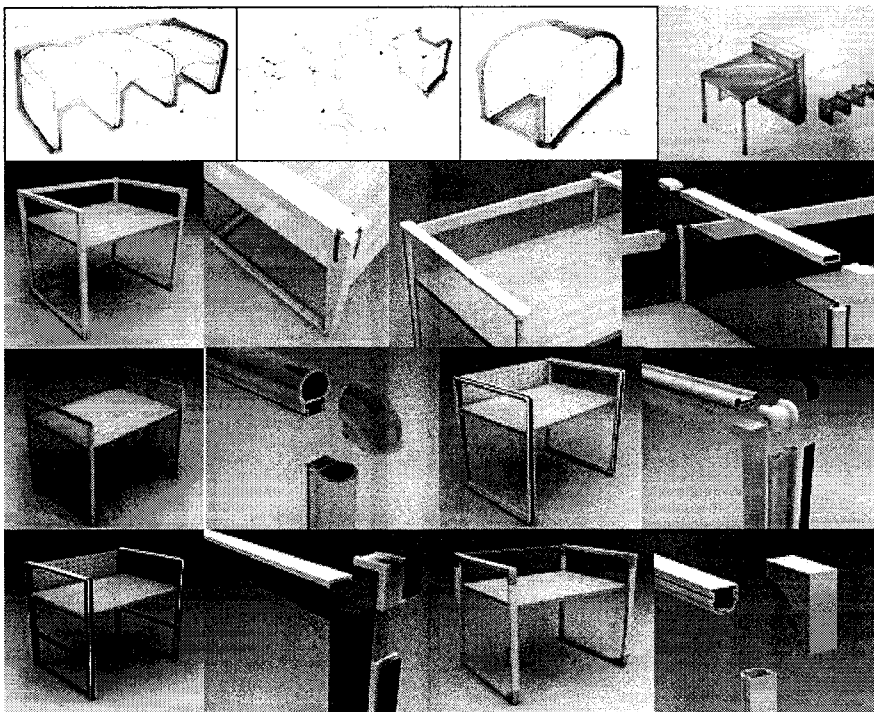


Fig.2. Ides sketch and development to design basic structure.

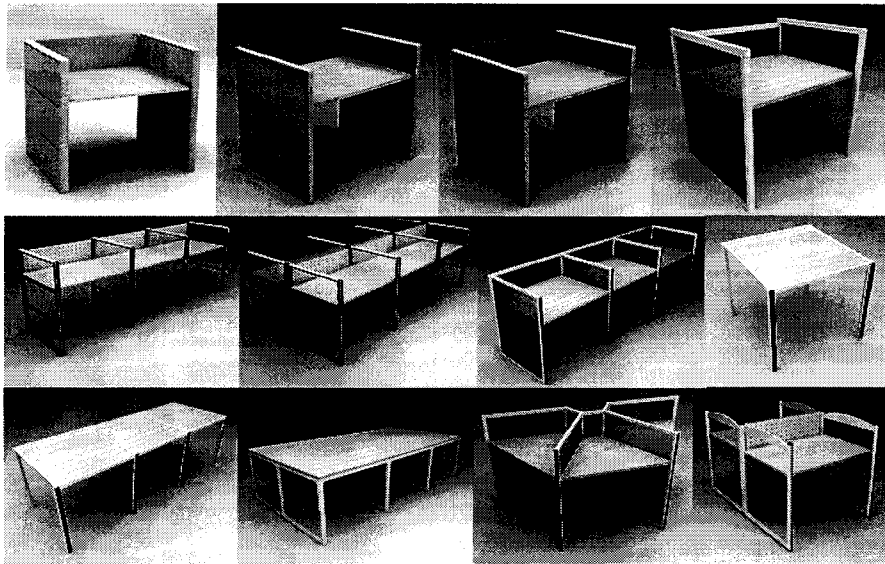


Fig.3. Extension and modification of basic structure.

3D Rendering

3D rendering was tried from different angles prior to starting prototype. Fig. 4 is the rendering for the design-confirmed assembly structure and shows the basic mode, namely for 1 person, partition type and with & without side panel and front panel. Material and color are basically jade color, steel and glass.

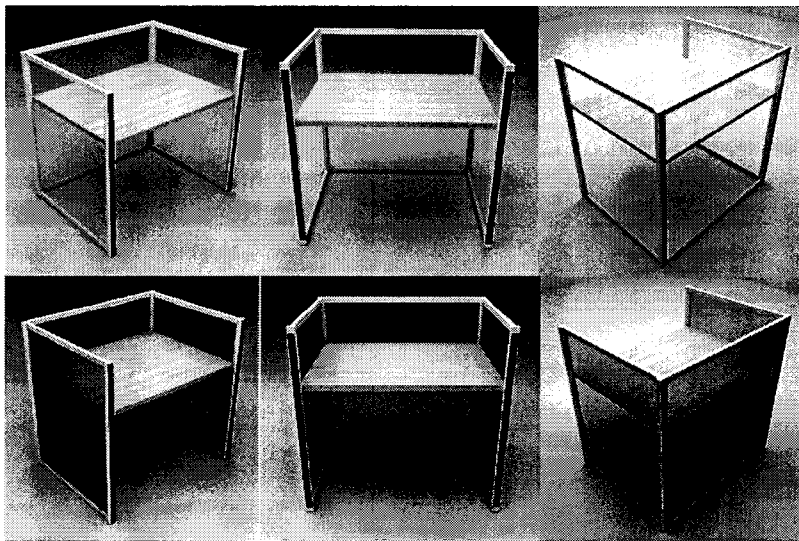


Fig.4. 3D Rendering.

Drawing

Drawing was classified into basic assembly structure (drawing I) and desk for public reading for 2 persons (drawing II).

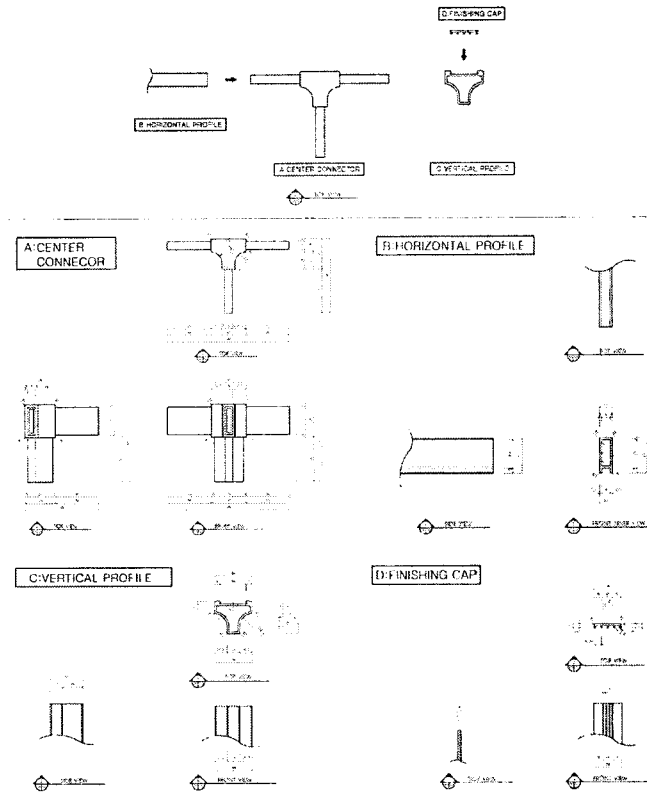


Fig. 5. Drawing I.

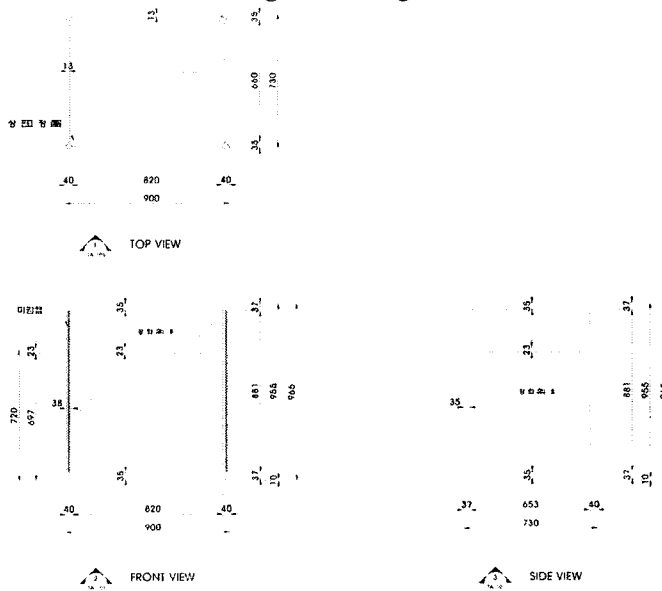


Fig. 6. Drawing II.

Basic Assembly Structure

The frame as basic construction of desk for public reading is a combination of basic assembly structures and it is composed roughly of 4 parts. The first is the center connector that has 3 facets connecting with horizontal profile and of which one facet connecting with vertical profile projects 50 mm. This projection part is filled for being fixed by screw in order that profiles from each side can be fixed to it. Also, it is able to make 'T' type connector after cutting one projection part and '□' type too, if needed. Second, it is a horizontal profile that connects horizontal space between center connectors. The projection part of center connector being empty is fixed into here by screw. Profile produced according to standardized length can be used after cutting as occasion demands. A third part is vertical profile and it connects vertical space also between center connectors. As like horizontal profile, it is empty too, and is screwed on the projection part of center connector. Also to put side and front panel into here, there is 8 mm groove inside of it. Profiles produced according to standardized length can be used after cutting as occasion demands, in this case, too. A fourth is the finishing cap and it is used in outer groove of vertical aluminum profile. This part play a role to hide screw that is projected at fixing vertical aluminum profile to center connector and look not so good due to its projected appearance, and it can be diversely changeable by help of different materials & colors. Assembly structure is produced by a mold and its basic material is aluminum, and this contributes to mass production and price down.

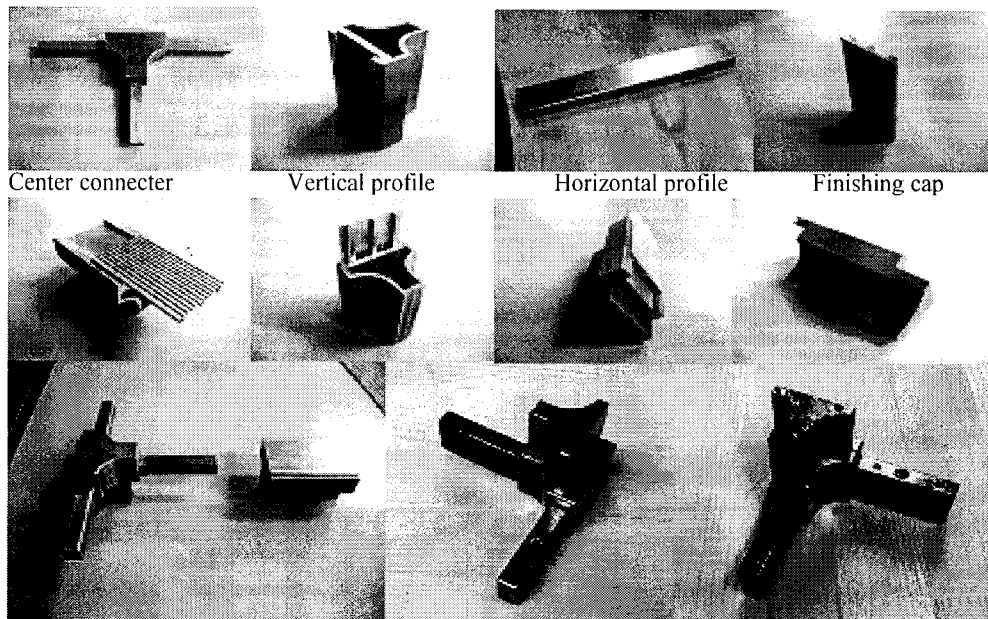


Fig.7. Construction and connection of basic assembly structure.

Prototype

A prototype of desk was manufactured as like basic mode with partition for 1 person. Dimension is 900 x 730 x 965 mm, and materials are steel structure, side & front panel made from glass, and table from plywood. Side panel was made from tempered glass in point of aesthetic view, but different materials e.g. wood, metal etc. are also available.

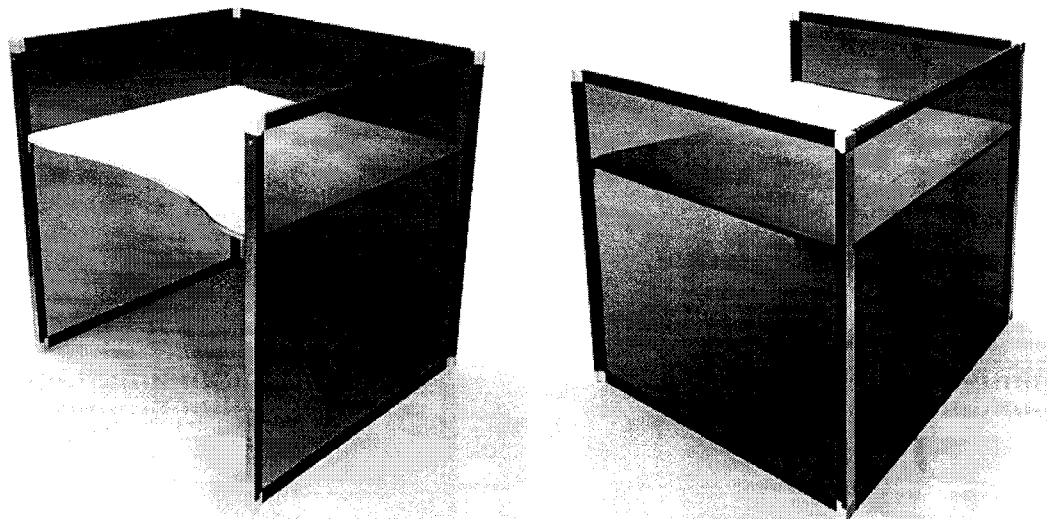


Fig.8. Final Prototype.

CONCLUSION

This study intended to present a differentially styled desk for public reading in library in consideration of characteristics of KIFURS Co, Ltd. established & branded by members of Gyeonggi-Incheon Furniture Industry Cooperative and the current status of the furniture market. The characteristics of the developed products are as follows: 1) in terms of functional aspect the desk was developed of which basic structure is easily to be manufactured and likely to be extensional and modifiable from open-, screen-, to partition type and from for 1 person to 6 persons. This resulted from a epoch-making improvement of the assemble & disassemble system and is simple to package and transport. 2) the aesthetic aspect of design unseen in the existing library, and the modern shape and luxury material were pursued. 3) in point of production one basic assembly structure is available to be used also as other library furniture not only as desk for public reading and furthermore it is extensively applicable to office furniture, and efficiency of production is available accordingly. Also, mass production thanks to a mold is possible and production cost can be down due to aluminum material.

The product developed by this way is underway for mass production thanks to a positive response as the differential attempt. Also in the future a lot of research and development will be expected in library furniture with this study as a starting point.

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