



## Study on Product Design and Space Environment

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### Abstract

The function of the product design is prominent in the modern society day by day, and lead the change of people space environment. Considering from the space angle that the product design can provide a theories basis for its depth, we can also see the restriction of product design in the meantime, because the product guided space variety, so the space environment has influence it in turn, namely space restriction or influence product design. In the design process, both product and space must carry on unceasingly dialogue, then will has the good product connotation and can undergo the test in the intense competition of the market environment, and can the better satisfied person's need.

**Keywords:** Product design, Space environment

In the product design, we want to satisfy the function and the form at the same time, which depend on the designer “art intuition force” and the acquaintance to the technology to a great extent. However, as early as in the last century 70's, some outstanding designer have brought forward a few question to the tradition design idea, they thought that the combination form and function rigidly in the process of design would restrict our inspiration on the contrary. Many times, when emphasize excessively on the product function or energy to be concentrated on the new form, we will always do much detour. Many personages have agreed with to this viewpoint, a few senior personages have mentioned directly the close relationship between product design and the space environment.

Above all, as some kind of shape entity product design object, inevitably occupies the certain space. But, in actual product design, we ought to consider that part nihility space built by product. There are such few words in “Lao Zi”: “we show appreciation being that we use clay regiment to become a household utensil, bringing the household utensil function's into play really is really not that clay entity, but is that part nihility space built by this entity; We use wall to build the able building, but bringing the building function's into play really is not that the wall is such entity, but be that part nihility space built by this entity”. The truth is very simple, the entity is the embodiment thing, but truly displays the function is the abstract space. Does not have the embodiment the entity also not to matter the abstract space, however the significance of the entity existence also lay in which constructed the nihility space. It will provide one new kind angle for our design original intention and design procedures when we put this mode of thinking into product design, it is necessary to discuss emphatically and to apply in the design process.

Saying from the philosophy significance, at the same time, these two kinds of space-product entity occupies and it constructs the nihility one are mutual contradict and unifies, existence depending on each other, is that the actual situation and nihility are mutual promotion. Briefly, the relation of the product and the space is the one of content and form, if the form is content's representation, it must be getting in touch with content intensely, if you want to be allotted out it from content, that means that have wiped out content; Conversely also the same. (“Pin up Linsiji study of thesis”, new literature and art press printing in 1958) The beautiful content and form, are also interdependent and restrict each other, there is no absolute boundary between content and form. Under the certain condition, as some one kind of beautiful content forms, it can become the content of another kind of beautiful form. Product sculpt is the product manifestation, at the same time it also is the spatial environment content which locates. In dialectical relations between the content and the form, the content is in the status of decision; Product decide on form, but the form is not negative and passive factor, it has significantly activity on the content; and proposed the new request to the product design in turn, by this to design the product adapt to the spatial environment demand.

The content of product is the part of the space, then product design also have it's own venation and way. Product design is different with the pure art, because it has both the practical value and individual emotion color and experiences by oneself. It is also different with natural thing, the first is man-made, the second is function, in short, it built a conveniently and more enjoyable life space. Because of this, the product and person's life space has a very complicated relation. The concentrated manifestation is product design lead a different content space, in this kind of different spatial environment, there could be different life style, different cultural inheritance and different spatial complex. Space will become uncertain if no product, the product define space if you say architecture partition the space, in other words, the product give space the concrete character and function.

### 1. Function of the product and space

We can say that the emergence of the function of space follow the product which has some certain function. There are many examples in our daily lives, office is office because there are many kinds of equipment which we need in work, a hospital is different from others because there is a series medical equipment in it. We can associate a building with a kindergarten because there are many toys and many full spice products; a space is precisely defined as kitchen because we equipped with the stove, the microwave oven, the refrigerator, drains oil and smoke machine, kitchenware and so on. We defined a piece of ground as a sport stage when we placed some exercise instrument. Therefore, generally speaking, the product can express the spatial function at the most, in other words, the spatial readability may directly relate the function of the product which lies in it. So when design product, we must take the conception of space into account, since the product is not only used by people, but is laid in specifically space for use.

The products' reasonable design can express the beauty space. The scale to measure designing function is to release the human's manual labor and realize the spirited freedom. The design is not only the change for materialized form, but also the mental creation. So the Products' function beauty mainly manifests the favorable environment for our life. For example, the television design needs to satisfy multi-function of seeing and hearing effect, and beauty, simultaneously, we needs to consider from the use space, this kind of shape, color, and technology content television would be laid aside, is the family living room, KTV, the electrification classroom or other spaces. The television lies in a space as the seeing and hearing equipment, in the ordinary circumstances, this space has made a definition, this is a space which has seeing and hearing equipment, the people once enter into such space, can understand naturally the function of the space, can do what, should do what, then how to use this product. At the same time, Whether its form harmonize with the environment; whether the color and other product are harmony; Whether the style harmony and so on, all of this need to be considered by the consumer when they purchase it, this question is the design needs to solve, too. But, in the final analysis, all beautiful form must add to its function, taking this as basic when design, the product should be created for the suitable survival, the fine environment for the humanity, thus fully unfolds the function and use.

### 2. The form of the product and space

Among the several main elements of the product, the form is the soul in product design, it decide the existent form of the product. Certainly, this kind of existent form has intent relation with space, its form decide or influence the spatial form. Generally speaking, the reality form can be divided into natural form and artificial form.

We live in the man-made world because of the rapid development of the industry, for example, we live in storied building made by armored concrete, work in the transparent glass building, and walk through the underground path. The chance that we contact nature is less and less. but our nature sentiment by born become more and more, not decrease, we long to approach natural, delighted taste organism's thing more intensely. Therefore, in the daily life, we can see many originally forms which are designed on the basis of natural form. The user can feel kindliness and nature from these products because of these nature forms. For instance, as the essential furniture in our actual life, the chair has emerged many kinds form following the machining technology improves. Many chairs' modeling design is also take the nature form as the primary form, through analyses structure and function principle, refines its representative characteristic, achieved excellent likeness but not in resembles simply, like swan chair, ant chair, egg chair and so on. People have the return natural feeling because of these extremely familiar elements.

Artificial configuration is that the man machining with purposeful by using natural or man-made matter by refining natural matter. Among the product form which the human made in early time, most of them get material from nature directly and by machining simply became special form, such as zax, stone hammer and so on. The human didn't satisfy this simply process that got directly. The variety, quality and paten of the product had taken place many change when the man mastered the technique like make pottery, refine bronze and so on. The man-made product became more and more beautiful because of the rapid development of technology. The space where these man-made products are giving off the flavor of simple and unsophisticated, kindliness and practicality. The integration of space and man-made product brought the rational and kindliness space.

### 3. The effect of material of product on space

Speaking commonly, the material of product divided into four kinds: metal material, project material, industrial pottery and porcelain and composite material. Certainly, different material has different characteristic. The metal has good polish on it's surface and the sense of rigidity and noblest, is processed easily. Project material has light mass, high intensity, good elasticity, gentle quality, and can give people a sense of affable and soft. Industrial pottery and porcelain is able to endure high temperature, don't transfigured easily, has little the chrematistic of transmit heat. It's a good material of insulated heat. Composite material is compound that mix different characteristic material, which is a useful material.

The quality and texture of product material affect on the pattern of space. What is called quality, on the one hand, is physical and chemic character of material, on the other hand, is feeling that the effect the material give people. For

example, steel is rigidity, plastic is lubricity, glasses is clear, bamboo is legerity. When these products are laid in a space, people can feel cool and steady of steel, smooth and bright of plastic, fine and clear of glass, rustic and gliding of bamboo. The texture is taste experience that the structure, the form, the vein of the material surface give people the feeling. The texture effect have mainly two kinds: one is experience effect that the scraggly of material surface can give people the feeling of granulation or flowing; the other is the texture and the density of color produce visual effect. Different product design use different material texture that can exhibit the pattern of space. Generally speaking, the pattern of space which is transferred by the texture effect of material have mainly several facets:

(1) The shape effect: use the means of repetition and the change of orientation and space distance, contrast and arrange, then by creating the solid and unilateralism space exhibit the shape effect.

(2) The effect of light in space: the material have brightness and irradiance character, this kind of brightness transfer the material have a clear and bright degree with give out light function, the person is in its space through the variety of position, these light feeling texture, deliver to the public reason clear quick, flowing freely, sport change of appreciate beauty effect, such as marble product, glass product, the product of metals material, the product of synthesize material.

(3) The visual effect of space: when contacting the material, people usually feel warm, painful, strain and vibration and acquire smooth, soft, clean, moist, clearness etc. of feeling, this is conditioned reflex that is produced when human get in touch with body material. But this kind of touch effect form common sense in vision, namely not get in touch with, just see or lay in this kind of style space will have these feelings.

Therefore, we can say, the material is the muscle of product, it influences the shape of product, in the meantime the shape decides spatial style and effect again.

Product design is constantly changing our living space, with an existence of space environment, so there will have a series of antinomy, these conflict will urge a new product of development, develop, create more in keeping with time of space, because time is in the transformation, the person is change, unique constant of be change.

The product design is outstanding in the function of the modern society day by day, if the theory of product and space have a conversation is fitting, the product design guided the variety of people's the space environment and also provide theories for the depth of the product design basis; In the meantime, we can also see the limits of product design, because the product guided the variety of space, the space environment by all means has recoil to it, namely space restriction or influence product design. Only this both must carry on continuous dialogue, there is a good product content, then can experience a test in the competition in the vigorous market environment, then can be better to satisfy the person's need.

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