

HEALTHY SLEEPING AND REST POSSIBLE MODIFICATIONS INTERIOR MICROCLIMATE

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Abstract: This paper is concentrated on finding of the impact of ions in dwelling environment. It has been tested the influence of ions on amounts of VOCs (Volatile organic compounds).

This thesis studies canopy bed and quality of inner environment. Main aim of this thesis is attempt to design bed (known as canopy bed), at which - by usage of technique, technology as well as design - it would be possible to create canopy, which would allow modification of microclimate in area between bed and canopy. Modification of internal microclimate would be provided by filtrating air in this area.

Keywords: canopy bed, microclimate, air filtration.

Introduction

The question of healthy sleep and housing is very often recently discussed the problem. It's given the state of our environment. This has been generally in the area improves, but still used on a larger scale a series of new materials and technologies, which despite all the efforts are not exactly known their effects on human life. Toxic gas components are entering the interior of the outdoor environment, arising from inside the buildings due to the construction materials and the influence of human activities. In measuring the impurities in the air in the interior, it was found that in interior air is more polluted than the exterior. Cleanliness airs only affect the natural gas components, but in the dust, aerosols and various micro-organisms, whose source is, inter alia, the materials contained in the interior. And here spend one-third of life sleeping and at least one third of the second free stay. We know, because this represents the largest part of our lives!

Purpose of work

The concept of this task can be attributed to the application of historically well-known and psychologically oriented adjustments beds using canopy (heaven), so that a relatively closed area (defined heavens and the beds), in which it would be possible to clean the air in accor-

dance with the desired parameters such as the type and dependence allergies. This will also be in this area created the necessary microclimate for healthy sleep and rest. At the same time, this clean air was accompanied by negative ions, which are so necessary for human life. In the interior are still negative ions due to deteriorating environment in very small indeed, almost minor quantities. The use of this equipment can be seen not only for healthy sleep and relaxation, but also as for the prevention for healthy people living in a polluted environment.

Social - the historical position of beds

Beds were from ancient times among the most important furniture objects. It presentational piece of furniture not only the premises feudal dominion, but also houses wealthy burghers. Beds were covered canopy and curtains of rare substances. Form kind of massive element, dominant volume of the entire area of his bedroom. For living then such intimate area provide more warmth and protection against insects. Beds have often built in the area of the raised podium, which was even more highlighted their dignity. Canopy was often part of the architecture in the room and was suspended under the ceiling above the bed, using the columns. 20 sleeper furniture century is characterised by effort to achieve optimal composition sleeping area, which would meet the requirements of modern knowledge of the physiology of sleep. At present, there are beds to the heavens only very rarely.



Figure 1: Bed with a canopy - Late Renaissance



Figure 2: Spanish Baroque bed

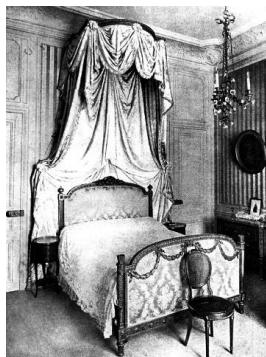


Figure 3: Bed from the time of Louis XIV



Figure 4: Bed with a canopy -Empire Style

Ionic environment and air ionized incidence on man

Ions have important place in environment. Positive ions are attracted to Earth surface. Negative ions are repulsion towards ionosphere. Negative ions (N_2^+ and O_2^-) rising outdoor and in rooms in considerable quantity, but their concentration is quickly declined by polluting materials. Air contains always more impurities. These impurities joint to negative ions in consequence of electric changer distinctness. Ions decrease often brings health difficulties which are caused developed by lack of negative ions.

Influence of toxic materials on man

The activity of toxic materials on man can lead to development of different illness. Short term illness make neuralgic pains and low mental and physical efficiency and total tiredness. Long term lack of ions can lead to lasting neuroses and respiratory trouble. Main ions trap are smoke, smog, dust, aerosol and various micro-organisms.

Oxygen anions are considerably highly effect on our health and psyche and immune system.

Anions are exploited to cure different health disorders, especially for air ways, but even burn injuries and nervous disorders.

Philosophy proposal

This modern concept of the heavens beds can be seen as a memory of history, but in a new concept canopy and use of new advanced air-conditioning and ionization technology. Use “canopy” create an entirely specific conditions (microclimate) for healthy sleep and rest. The necessary quality is achieved by using micro-special cleaning, air-conditioning equipment and ionisation. All of these technologies are set into one device and incorporated into the structure of heaven.

Tested operating on a very pleasant man and his intimate mini induce space, which may have an impact on his psychological well-being. If we look back to the past, so we find that the beds were very popular heavens and tested before many hundred years ago. It is true that the beds were constructed as chest bedroom in the rooms where their massive canopy should feature more heat, protection against insects and decorative. Therefore, I think that is not nothing special but the thing that tested and proved in the previous years. It is, however, the method, which must transform and integrate into our modern time.

The proposal bed with a canopy – design

The proposals presented must be understood from the dual perspective. And this from the perspective of design-psychology and health concerns, which are not in this work in the first place. All proposals foresee beds suitable air-conditioning equipment technology. This technology can be effective in different ways according to specific user needs. In the interest of broad applicability beds - the city, countryside, young, old, etc. are handled in the spirit of classical shapes to the concept, to some extent, futuristic, but

in any case would be very carefully assessed the viability of their design. The idea of presenting the various proposals design beds, where the heavens internal micro-beds separated from the surrounding environment in the interior. The proof of this claim may be one of the proposals, which was conducted and presented in the context of international trade fair housing Mobitex 2008, where the “bed with the heavens” won the Grand Prix prize for progressive technology and materials.



Figure 5: The prototype bed with the heavens issued by the International Fair Housing Mobitex 2008

Bed with the heavens in living space

In this variant form a canopy free-floating element in the area, which is structurally related to the bed. This occurs to us very air and open space. Restraint is done to the ceiling plate and either hanging consoles, or using a reduced ceiling - the ceiling. The heavens are formed compared to the past and severe canopy, but are replaced by clear and textiles, which may be suspended to heaven in different ways. Easy to attach textile hinge ensures its easy cleaning and laundry. According to the interior in which a bed and used according to the wishes of individual users, the system may be equipped with air cleaners in addition to a ionizer well as a number of electronic accessories - special lighting, acoustic speakers, etc. Design beds designed in a modern style, material veneer Makassar wood high polish in combination with high white lustre.



Figure 6: Design bed with canopy in living space



Figure 7: Design bed with canopy in living space

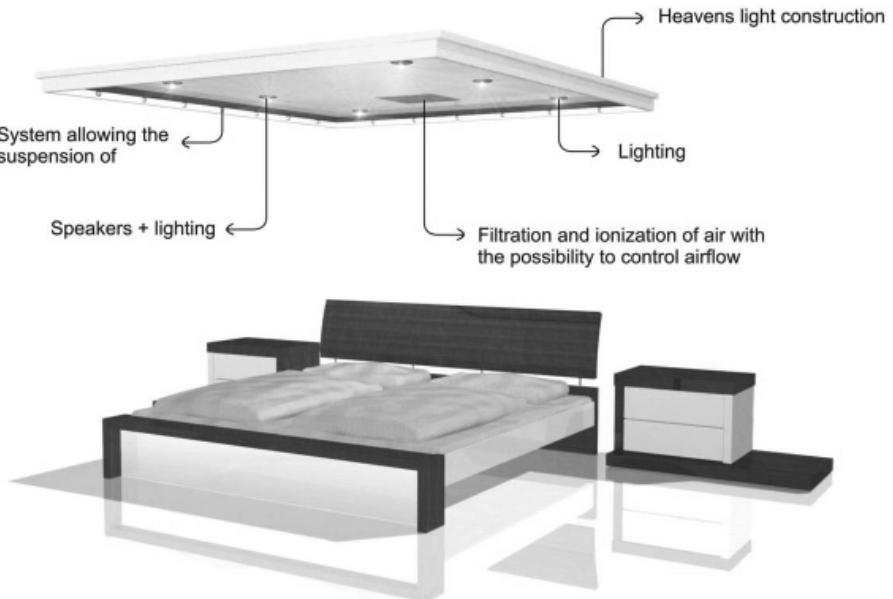


Figure 8: Design bed with canopy in living space - description main parts

Conclusion

The intention of this work was to highlight the proposal of a special bed with the heavens, which would allow adjustment of microclimate for healthy sleep. During this work, I took the view that it alone with a bed heavens may induce a very intimate and psychological environment, and the use of air conditioning and lighting are all points more leverage. This very intimate environment may create a fabric canopy, which will not only isolated from the surrounding insects, but will also have a very interesting psychological function. Furthermore, if the heavens will be supplemented by air-conditioning and negative ion generator, so we created the necessary microclimate for healthy sleep and rest. This possibility will appreciate how allergy and sick, as well as full health people who would welcome appropriate regulation of air quality.

Resume

The objective of this thesis was to design special canopy bed, which would allow modification of microclimate for healthy sleep, while meeting base requirements and with taking account of ergonomic and construction. Design and construction of bed are consistent with requirements for modern bed. Design of bed, by its shape and material composition influences furniture culture and psychological factors of human. Construction then serves for base factor affecting safety feeling for sleep and rest.

The advantage of canopy is that it is not linked together with bed, but is detached and can be sold separately. Design of canopy bed is conceived as modular system with possibility of exchange and complementation of selected parts.

Credits

Credits include the Internal Grant Agency IGA MUAF in Brno, which provided funding enabled to deal with the research.

ZDRAVÝ SPÁNEK A ODPOČINEK; MOŽNÉ ÚPRAVY INTERIÉROVÉHO MIKROKLIMA

Abstrakt: Tento příspěvek se zabývá otázkou zdravého spaní ve znečištěném prostředí a prostředím, které je chudé na záporné ionty, což může vést k různým zdravotním poruchám a onemocněním.

Těžištěm této práce je návrh postele (lidově: postel s nebesy), u které by bylo možné díky použití techniky, technologie a samozřejmě i designu (z důvodu vlivu na psychologii) vytvořit „nebesa“, která by umožňovala v různé míře ovlivnit mikroklima prostoru vymezeném nebesy a posteli. Změna interního mikroklimatu je řešena pomocí filtrace a ionizace vzduchu v daném prostoru mezi nebesy a postelí.

Klíčová slova: postel s nebesy, mikroklima, filtrace vzduchu