

ARTICLE

Introduction to The Use of Environmental Protection Concepts in Interior Design

Yongxia Cao^{1,2} Nadia Binti Mohd Nasir¹*

¹ City University Malaysia, Malaysia

² Baotou Light Industry Vocational And Technical College, China

ABSTRACT

With the high consumption mode of industrial civilisation spreading all over the world since the middle of the 20th century, the pollution caused by industrial production has been not only related to environmental pollution, but also to the health of human beings themselves, affecting the conditions of survival of human beings and restricting the production and development of society. The global environment and resources are facing a severe test. As a result, the idea of environmental protection has been put forward. The concept of environmental protection has developed rapidly, from the initial single emphasis on reducing pollution, to the current reduction of energy consumption and resource conservation, this overall environmental protection concept is also applied in interior design, including the choice of materials, cleaning and maintenance, the use of energy saving. As long as it is matched properly, it can not only reduce the cost and achieve aesthetics, but also achieve the purpose of energy saving and environmental protection.

Keywords: interior design; environmental protection concept; use

1. Introduction

Before the highly industrialised Europe and America conquered the world, the concept of 'environmental protection' was almost never mentioned. Europe and the United States of America,

high energy consumption, bringing large-scale exploitation and consumption of resources, to the exploitation of resources and trafficking in resources as the mainstay of production and life model has become an example of civilisation development model, the developing countries are also to Europe

*CORRESPONDING AUTHOR:

Yongxia Cao; Email: Caoyongxia2022@gmail.com

ARTICLE INFO

Received: 10 December 2024 | Accepted: 26 December 2024 | Published Online: 30 December 2024

DOI: <http://doi.org/10.26549/jsbe.v7i4.22154>

CITATION

C, Y.X., 2024. Introduction to The Use of Environmental Protection Concepts in Interior Design. *Journal of Sustainable Business and Economics*. 7(4): 33–38. DOI: <http://doi.org/10.26549/jsbe.v7i4.22154>

COPYRIGHT

Copyright © 2024 by the author(s). Published by Bilingual Publishing Group. This is an open access article under the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License (<https://creativecommons.org/licenses/by-nc/4.0/>).

and the United States of America life closer. It was only after the environment for human survival had become unusually severe and produced unusually serious consequences that environmental protection was taken seriously and advocated.

2. The concept of holistic environmental protection

2.1 Background of the emergence of environmental protection

Prior to the high degree of industrialisation, the world was still very rich in resources, and industrial raw materials such as minerals and timber had not yet been over-exploited; people's living standards were relatively low, and many regions were still developing slowly in a low-energy-consuming social pattern.

Against the backdrop of the world's widespread adoption of energy-intensive production modes, the entire earth's atmosphere has been damaged, the intensity of ultraviolet rays has been significantly increased, and the highly intensive emission of greenhouse gases has also led to a devastating disruption of the weak balance between negative oxygen ions and carbon dioxide in the atmosphere, and the phenomenon of excessively high temperatures has begun to appear on a global scale, accelerating the process of desertification in many regions. The ecological balance of nature has been disrupted, and the widespread melting of icebergs at the North and South Poles has caused the global sea level to rise, with many cities living by the sea facing the possibility of being completely submerged. The environment for human existence has become exceptionally severe, and after people realised the seriousness of the problem, environmental protection was naturally put on the agenda.

2.2 Evolution of the concept of environmental protection

The concept of environmental protection was initially mentioned only in industrial production. For

example, coal power plants, cement plants, chemical plants and paper mills. These enterprises, which cause very serious air and environmental pollution, have acquired relevant equipment to reduce emissions after the introduction of environmental protection standards.

Later, environmental protection penetrated into urban planning. That is, the more polluting factories were laid out in advance to minimise their impact on the lives of residents. The requirements were significantly higher and required the co-operation of a large number of departments. Nowadays, environmental protection is also reflected in interior design. However, it should be noted that a city or a country, without the first two environmental requirements to meet the standards of protection, alone in the interior design of environmental protection, it is difficult to play a certain role. Only the first two requirements are up to standard, the residents of the pursuit of personal living space environmental protection is meaningful.

2.3 The emergence of new environmental protection concepts

The new environmental protection concept does not only impose exact limits on environmental pollution, but also strongly emphasises the reduction of energy consumption, that is, energy conservation. The old environmental protection concept of reducing emissions and pollution only provides a pavement for energy conservation. The ultimate goal of environmental protection is to prolong mankind's consumption of the earth's limited resources, to save more resources for future generations, and to have a better living environment for mankind. In other words, energy conservation is a must and the only means to achieve the goal quickly. With such a large population base in China, if the vast majority of residents can implement new environmental protection concepts, reduce energy consumption and environmental pollution, the total amount of resources saved will also be very considerable. Therefore, it is crucial to realise new environmental concepts in interior design.

2.4 New environmental concepts related to interior design - holistic environmental concepts

The holistic environmental concept is based on a whole chain of environmental concepts.

Firstly, the environment in which the structure or building is situated must meet certain standards; secondly, the structure must have a comprehensive waste disposal and recycling system, wastewater must be properly treated, and the water system must be in a virtuous cycle; and thirdly, the structure must have been constructed taking into account the geographic location of the building. For example, the effect of the sun and monsoon on the building, as well as temperature variations are important considerations.

and monsoon winds on the building, as well as temperature variations, are all important considerations. A good structure makes good use of light, not only to avoid high indoor temperatures caused by light, but also to make the interior very well lit, with minimal use of lighting fixtures. In interior design, pay attention to the impact of small environment to people. Therefore, designers should pay attention to the design of the small indoor environment. In the specific design process, the designer not only needs to consider the spatial factors of the environment, but also to fully consider the flexibility of the space, so that people can have a good experience. At the same time, the designer should also be the use of materials for full consideration, in the choice of materials, to the natural elements and its full integration, which not only can promote the application of environmental protection concept in interior design, but also can effectively reduce the waste of resources. In the use of resources, the relevant designers should also follow certain environmental protection concepts, to save energy, to renewable resources instead of non-renewable resources. In addition, in the specific design process, should also pay attention to the treatment of solid waste, reduce the pollution generated by solid waste.

Many luxury villas are designed with large

floor-to-ceiling windows because the use of floor-to-ceiling windows can achieve the purpose of good lighting, ventilation and a wide field of vision, which is very much in line with the needs of modern people's lives, but only a few areas and lots are suitable for large floor-to-ceiling windows. Although the large floor-to-ceiling windows can provide more adequate light, but to waste energy unnecessarily heating and cooling (because the thermal conductivity of the glass is very strong, so that the temperature difference between indoor and outdoor can not be pulled apart). If you do interior design for such a house, it is extremely difficult to be environmentally friendly.

Environmental protection can not only start from saving energy, but also through the development of new energy sources to achieve the purpose of resource utilisation and environmental protection. For example, make full use of renewable resources. Renewable resources include: wind energy, solar energy, natural gas and so on. These resources are renewable, clean and non-polluting. When designing the exterior of the building and the ventilation system, the relevant staff can design the interior based on the consideration of wind energy, so that the interior can be better ventilated.

Finally, a building's exterior and interior decorative materials can also try to avoid wasting energy. Nowadays, many clients are able to accept the original colours of the materials. In such a case, the judicious use of a mix of natural materials can serve to beautify the building, reduce the waste of resources, and make the maintenance of the building provide convenience.

It must be emphasised that needless embellishment of light fittings not only wastes a lot of electricity, but also hinders the maintenance of the building. Therefore, the use of decorative materials that require electricity should be reduced as much as possible; in some public buildings, such as railway stations, airports and other places, although they also use a large number of lamps and lanterns, but if they can be designed to make rational use of the lamps and lanterns, maximise the lighting and decorative

effect of the lamps and lanterns, and to be able to turn off some of the lamps and lanterns at certain specific times of the day, but also be able to

If we can make rational use of the function of the lighting to maximise the lighting and decorative effects, and can turn off some of the lighting at certain times while still maintaining the basic illumination, we will be able to maximise energy savings.

3..The overall environmental protection concept in the interior design of the specific performance of the overall environmental protection concept requires a global perspective on the relationship between design and environmental protection. Aesthetics is bound to consume a certain amount of resources, and will inevitably be out of the scope of practicality; and environmental protection requires the ability to maximise the effectiveness of materials and save resources. This seems to be contradictory, but ultimately to achieve harmony through design is to find a balance.

3.1 Aesthetics in the big picture

Aesthetics is a subjective sensibility that changes with the times and technology, and it is more important to consider the matching of different materials in the design. Different performance and characteristics of the material, with each other, complement each other's strengths and weaknesses. Mixed materials are the star of the materials used in the current decoration, and also the future development trend.

When carrying out interior design, designers usually use wood panels to carry out the design, in the division of the material, it can be classified into two categories, one is solid wood panels, one is man-made panels. But at this stage of the specific design process, designers usually use to artificial board, because to fully consider the environmental factors. If the board is classified according to the moulding, then it can usually be divided into solid board, plywood, fibreboard, decorative panels, fire prevention boards, density boards, etc., of which the most commonly used is density board. Alternatively,

density board can be divided in detail. If it is divided by density, then it can be classified as high density board, medium density board, low density board. Each of these three categories has its own characteristics.

Mixed materials not only offer more functionality, but also a greater variety of colours and styles. Colour is the first thing that must be considered and it creates different sensations to people. The choice of colour of materials is very important in modern architecture and it is an important element in the composition of the man-made environment.

Since the middle of the 19th century, psychologists began to focus on the effects of colour psychology verified by experiments. Psychologists have found that different colours produce different psychological changes in people. Red causes people to become exuberant and excited, while blue causes people to become quiet. They also found that colours also have an effect on people's brain waves, for example, red gives people a sense of warning, while blue is relatively more relaxed.

Faced with this phenomenon, designers can also use colours in interior design, where designers most commonly use cool and warm colours. In the study of warm colours, it can be found that red, yellow, etc. will make people feel warm, so it is called warm colours. Purple, blue and green colours make people feel cold and are therefore known as cool colours. In daily life, the indoor use is usually incandescent lamps, if they are switched on, then people will not have a warm feeling, more so in winter. If some warm colours are added to the interior, then this feeling will be relieved relatively. In general, if the interior space is narrower and you want the interior space to be visually enlarged, then you need to use cool colours to adjust the visual effect, because warm colours have a sense of forward movement. Therefore, if you use warm colours for decoration you may make the space appear visually smaller. Darker tones and larger patterns are desirable for spacious interiors, and small rooms should consciously use a sense of colour distance to expand the space.

The purity and brightness of colours can also have a big visual effect. In general, dark colours will give people a heavy feeling, bright colours will make people feel relaxed. Therefore, when designing, the brightness and purity of colours should be used wisely.

3.2 Environmental protection in the whole picture

The rational use of decorative materials is the first condition for interior decoration to meet the requirements of environmental protection.

With the development of decorative materials technology, the wide application of wallpaper replaces the previous difficult to change the style of interior decoration and decoration of the problem. Wallpaper replacement relative to change the colour of wall paint to be easier, and less air pollution. Currently there are ordinary wallpaper, plastic wallpaper, paper-based fabric wallpaper and many other types of wallpaper.

For example, the choice of flooring materials, according to the size of foot traffic to choose different materials. Larger foot traffic in the living room and walkway, try to use tiles and other more resistant materials, although the aesthetics is relatively low, but also difficult to replace, but the cost is lower, more stable. Bathrooms and kitchens use a lot of water, so also use tile as a decorative material. Bedroom and study of these relatively small flow of people, more use of wood flooring and other endurance is relatively low, but more beautiful materials. Wooden flooring is a lightweight, resilient, low thermal conductivity, simple construction material, and easy to construct.

Simple decoration is a trend, the resources used in decoration and furniture will be more reasonable. Now there are many small houses decorated with luxury, in fact, this is a waste of resources. The pursuit of high-grade, the use of a large number of complex decoration materials, will make the space looks more crowded, the material residual toxic gases in a small space can not be quickly evaporated, may be hazardous to health. You can create a

comfortable and warm living environment through decoration and furniture placement.

4. New environmental protection concept of interior design decoration material selection

The overall environmental protection concept puts extra emphasis on saving energy, of course, in saving energy at the same time to reduce the cost, not just the pursuit of environmental protection and make the renovation of the cost is too much, which is contrary to the original intention of environmental protection, after all, saving money is also in saving resources.

Many customers are now keen on natural materials such as wood and stone. Timber and stone processing history is relatively long, the technology is also quite skilled, pollution is basically the lowest of all materials, is indeed a more ideal material. However, in today's more industrially developed world, natural materials are rather more expensive. Therefore, there is no need to use too much natural materials in most buildings. In addition to being expensive, natural materials are relatively difficult to recycle and dispose of.

Polymer materials are a more desirable choice for home decoration. Polycarbonate (hereinafter referred to as PC) is one of the best. PC material has excellent transparency and impact resistance, good mechanical strength, thermal performance and electrical resistance, small creep, product size stability, and can be alloyed with many kinds of polymer materials to make its performance more perfect. Good prospects and excellent performance, as well as low prices, all make PC materials become the first choice for future home decoration. Mass production of PC materials, in the cost than natural materials have an advantage, and can pull the related industrial development.

At present, the domestic building design has strengthened the importance of fire protection. If the home decoration still use too much wood, glass and other poor fire performance of the material, obviously does not meet the requirements of the combination of PC materials and fire-retardant

materials, can achieve a more ideal fire performance. Therefore, PC materials are often used in large public buildings.

5. Conclusion

At present, there are still a lot of wasted materials and wasted energy in interior design. To save energy, then in the specific process, the relevant staff need to do the following two aspects.

First, when designing, the concept of environmental protection should be integrated into it, so that the interior design can be more environmentally friendly. Secondly, when carrying out interior design, designers should also fully integrate the relevant elements of nature into the design, so that people can better get close to nature.

Therefore, in the specific design, designers should not only consider the practicality of the design, but also spend a lot of energy to study the cost-effectiveness of different materials. Protecting the environment and paying attention to ecology is the responsibility of every designer.

References

- [1] Eman Zhang. New wave of interior design innovation and design for the twenty-first century [M]. Shanghai: Shanghai People's Fine Arts Publishing House, 1999.
- [2] Guo Qian. Interior Decoration Materials and Construction [M]. Beijing: Water Resources and Hydropower Publishing House, 2006.
- [3] Wang Peng. Environmental art design [M]. Beijing: China Textile Publication, 1998.
- [4] Chang Huaisheng. Environmental Psychology and Interior Design [M]. Beijing: China Architecture Industry Press, 2000.
- [5] Li Dong, Shi Yongfu. Construction and Management of Interior Decoration [M]. Nanjing: Southeast University Press, 2000.
- [6] [English] Adrienne. Handbook of Colour and Material Matching for Interior Designers [M]. Shanghai: Shanghai People's Fine Arts Publishing House, 2008.
- [7] Pan Gohua. Interior furnishing art design [M]. Beijing: China Architecture Industry Press, 2000.
- [8] Li Qingshu. Fundamentals of Interior Design [M]. Beijing: Peking University Press, 2009.
- [9] Li Xiangyuan, Yang Wei Di, Tian Pei. Colour Analysis and Application in Interior Decoration [M]. Beijing: Water Resources and Hydropower Press, 2008.