Application of information technology in the eco-design

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Abstract: Modern integration of various areas of knowledge serves as a basis for the development of new strategies of eco-design. Information technologies occupy the leading positions in this process and are used in all stages of project activities.

Key words: eco-design; the analysis; the forecast; 3D model of human body.

Introduction

At present, environmental consciousness will lead to the causal treatment of environmental problems and ecology of human, which will in turn reform industrial activities and lifestyles through more sustainable approaches in design. Design of clothes focuses on the following issues: development study to integrate environmental options consistently using simulation models; assessment of environmental options considering of national culture conditions in information technology (IT) society. It is also necessary to consider unique culture of individual countries, especially concerning their ideas of interrelation of a human body with the views on the environment and nature [1]. The positive impact of IT diffusion is a reduction in resource and energy consumption through "dematerialization" and development of visual design.Efficiency improvement means avoiding the waste of resources and energy which are thrown into system operations, by achieving closer communication between components of the system, such as human body and eco-design of clothes. These ideas were then brainstormed in order to construct a vision of a future-desired IT in eco-design, which represents the relationship between human society and technology.

The research objectives are: ordering and processing of information and analytical data eco-design of suit.
The tasks are: database creation eco-design of suit; ordering and association of data; the interface interaction with the user; search and data processing organization.

IT are used for the solution of the following problems of design: identification and analysis of requirements of society; generation of ideas of ecological design; organizations of information communications in design system.

It is possible to distinguish four distinct phases of IT development in design: premechanical (3000 BC – 1450 AD), mechanical (1450–1840), electromechanical (1840–1940) and electronic which began in about 1940. There are large economic incentives to merge results of experience of the ecological design which has been saved up by mankind, with computer technologies, using the incorporated system of submission of information. IT is used as the universal tool for representation of the integrated data on topographical human anatomy, constructive and decorative decisions of clothes and the databases including images of a traditional and modern suit. The solution of tasks eco-design covers a wide range from information systems/technology before development of computer systems and to programming. Digital IT represent technology of general purpose which promotes transformation of processes eco-design, giving them to modern, and more developed form. IT is applied in the course of through design of a suit to visualization of operations of functional and esthetic zoning of a suit directly on the design drawing taking into account anthropomorphous features on 3D the image of a body of the person.
Expansion of interdisciplinary area of research of objects eco-design occurs to attraction of the theory of counts partially because of requirement of formalization of reference points. In computer science, graphs are used to represent networks of communication, data organization, computational devices,

the flow of computation, etc. A similar approach can be taken to problems in anthropology, biology, computer chip design, eco-design and many other fields. The theory of counts is useful in efforts on preservation of topography of a body of the person in suit structure where the top can represent the vital physiological areas, and edges represent movement between areas. A graph structure can be extended by assigning a weight to each edge of the graph. A vast number of graph measures exist, and the production of useful ones for various domains remains an active area of research [2]. Results of use of a method of counts can measure efficiency of projects eco-design a suit.

It is necessary to create the corresponding values and measurements. These measurements correspond to requirements of development of professional education and ecological consciousness, and also existence of the corresponding scientific and technical base for industrial introduction of projects. The direction of eco-design can be realized by means of IT in the conditions of integration of achievements of medicine and design. IT projects need to be properly monitored and implemented, as the system's design and user interface should be suitable to the target users. IT projects need to be properly monitored and implemented, as the system's design and user interface should be suitable to the target users of designers of clothes.

One of examples of an ecological approach is «The second skin» - clothes in which humidity of a material are regulated automatically depending on body temperature, environment and sweat. Environment in the living body is kept comfortable. What-ever the situation one suit can be adapted year-round.

However, there are indications that industry lacks information and competence in eco-design, and therefore it was necessary to identify the demand and the needs for eco-design in the clothes. The database on functional esthetically zoning of a traditional suit is organized in a digital form that allows to simulate the corresponding aspects of reality. Entity-relationship model is an abstract conceptual data used in software engineering to represent structured data (Fig. 1). Data is stored in tables and the relationships among the data are also stored in tables. The data can be accessed or reassembled in many different ways without having to change the table forms.

Conclusion

Innovative IT unites achievements around the world to discuss and use the best methods of eco-design. IT offer alternate solutions for providing access for collaborative practices of eco-design to optimize costs and effectively use resources. The maximum use of methods of eco-design on the basis of use of IT creates a wide range of support of ecology of the person means of a suit, promotes studying of this problem by more convenient way.

References:

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