DIRECTIONS OF FUTURE HOUSING DESIGN AND TECHNOLOGY

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Abstract: To look into the historical streams and the cases for future housing by analyzing the data, the meaning and significance of integrated technology is one of strategy for future housing, and new IT technology should be established correctly. In addition, adopting home automation as one of methods to organize technological devices and physical components efficiently shall need continuous research. An intelligence house shall be able to be structured by systematic methods of technology integration.

Key Word: Future housing, Home automation, Ubiquitous computing

1. Introduction
Known from the history of residential architecture is that the needs for a residential space have been gradually developed due to streams of an age, cultural influence and number of factors that inhabitants’ life style have been changed.

This study is intended to search for at which position and what sort of meaning housing design, one of possibilities to be substantially developed is located and represents in view of historical stream before our generation and to define the new technology of residence as a means to correspond to a new society through the fact that regarding a matter of whether to accept rapidly changing technological components in view of the architectural field, spatial construction methods of architecture have been restricted by the requirements of society in which construction has been organized, or overcome them with efforts.

Through basic theoretical research, it looked into the historical streams and the cases for future residence, by which analyzing the data, the meaning and significance of integrated automation, which is one of technologies for future residence, and new IT technologies are established correctly.

2. Concept for future housing
While a house is a type of building, residence contains place, living and habitation besides a building concept. Residential environment is formed by continuous exchanges with wide environments achieved by a man and residence and also accompanied by changeability. In the context, residence may be defined as a thing applied with concepts of living, residential mode and place compressively, and subsequently, future residence means 'the residential mode and living in the future.'

Classifying types of future residences published since the 19th century into 5 categories of concepts, it could be consisted of ‘efficient improvement of living environment(advent of fabrication and a house made of new materials, based on mass-supply and technological progress),’ ‘search for diversity of residential space(living in Mars, on the sea, underground and on a high-rise building),’ coexistence with the environment(ecological usage of the nature and energy sources, harmonization with the nature and pursuing pleasantness in residential life) and acceptance of various life styles(highly aged society, community consciousness, characteristic housing by inhabitant’ types and domestic introduction of IT).

3. Technology Integration with IT system

Home automation is essential component to realize an intelligent house to provide residents with various services by utilizing IT and telecommunication technology, and it functions to automate facilities and devices in a house with the state-of-the-art orientation. Home automation consists of fundamental software technology, application services and system. The fundamental software is expected to be modulated and a component as the real time IT technologies(multithreading supportable, real time scheduling and synchronized mechanism, telecommunication among processes/threads, interrupt delay time secured, efficient use of resources, fabrication module supportable, various hardware network supportable, wide-ranged user groups supportable and various services supportable) for domestic IT electronics while terminal technology for IT electronics(digital & Internet TV-related technologies, video phone-related technology, cell phone-related technology) would realize remote control by interlocking with Internet and make cyber communities active. Interface-related technologies(voice, touch, actual feeling/image-moving pictures) shall be commercialized in various forms of items utilizing biometrics and items of controlling hardware such as ubiquitous computing and etc.
Ubiquitous computing has its goal to enhance computer use by making numerous small tiny computers available throughout the physical environment, but making them effectively invisible to the user. Ubiquitous computing provides integrated information display into the everyday physical world. It considers the nuances of the real world to be wonderful, and aims to augment them. Unlike PDA's, Ubiquitous computing envisions a world of fully connected devices, with cheap wireless networks everywhere; also it postulates that users not need to carry anything with you, since information be accessible everywhere. Unlike the intimate agent computer that responds to one's voice, ubiquitous computing is a personal friend and assistant, and it works computing by envisions computation primarily in the background where it may not even be noticed. Whereas the intimate computer does your bidding, the ubiquitous computer leaves you feeling as though you did it yourself.

Application services and ubiquitous system consisting of an intelligent house shall be components depending on inhabitants' demands or the level of realization, providing interaction as they are organized in a complete system and facilitating the integration

**4. Conclusion**

A method to accept various behaviors to be presented in the future may not be attained by several technological approaches but the proposals for the solution should be an essential condition to be assumed for the realization of future residence. In the meantime, adopting a new technology increases the necessity of constructing an appropriate space to be maximally utilized by new technologies as well as to supplement the existing residential space. Supposing that an architectural space is organized with physical components in a space in the past, it shall be changed to components to contain technological devices that the physical components maximize the use of a limited space. In addition, adopting smart automation as one of methods to organize technological devices and physical components efficiently shall need continuous research. An intelligence house shall be able to be structured by systematic methods further study.

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