Paradigm Academic Press
Art and Society
ISSN 2709-9830
AUG. 2024 VOL.3, NO.4

Development and Prospects of Fourth-Generation Houses in China

Xinyi Li[1]

[1] North China University of Technology, Beijing, China

Correspondence: Xinyi Li, North China University of Technology, Beijing, China.

doi:10.56397/AS.2024.08.12

Abstract

Accompanied by the accelerated urbanisation process in China, residents' demands for the quality of the living environment have gradually increased. However, although the traditional housing model has met the needs of modern people to a certain extent, it has also led to some problems. Against this background, the fourth-generation houses, are gradually attracting the attention of society. Fourth-generation houses not only focus on the functionality and comfort of the building itself, but also places more emphasis on ecological protection, resource conservation and community building (Zhou Hao, Yu Juan, Lin Borong, et al., 2020). The purpose of this paper is to discuss the current development status and future prospects of fourth-generation houses in China. And to analyse the case of Chengdu Qiyi Urban Forest Garden project as an in-depth analysis.

Keywords: fourth-generation houses, Chengdu Qiyi Urban Forest Garden, ecological protection, resource conservation, community integration

1. Background and Current Situation of Fourth-Generation Houses in China

1.1 Urbanisation and Ecological Needs

In recent years, the pace of urbanisation in China has been accelerating, with urban spatial resources gradually becoming strained and environmental problems becoming increasingly prominent. The traditional housing model has often neglected to protect the ecological environment during the rapid construction process, leading to the intensification of the urban heat island effect, the shortage of water resources and the decline of air quality. These challenges have led to a rethinking of urban housing design concepts, which has led to the emergence of the fourth-generation houses.

1.2 Policy Impetus and Market Demand

Since recent years, the Chinese government has introduced a number of policies to promote the development of green buildings. The "Green Building Evaluation Standards" released in 2019 has laid the policy foundation for the development of fourth-generation houses. With the continuous improvement of the living standard of the residents the demand for green and ecological housing is also growing, providing a strong market demand to support the development of the fourth-generation houses.

2. Main Features of Fourth-Generation Houses

2.1 Eco-Friendly Design

The fourth-generation residential design concept that emphasises eco-friendliness is based on the design concept of organically. It combines the built and natural environments. Passive energy-saving design is usually applied in the design process, using natural light, natural ventilation, roof greening, rainwater collection system and other methods. Such a design reduces energy consumption and obviously improves the living environment of residents.

2.2 Intelligent Management

An important feature of the fourth generation of homes is intelligent management. By using Internet of Things (IoT) technology. Fourth-generation homes can manage indoor air quality, temperature and humidity, as well as energy use.

2.3 Community Interaction and Sharing

Fourth-generation houses focus more on the concept of community interaction and sharing than the traditional housing model. It usually has abundant public spaces such as community gardens, gyms, children's activity areas, and so on. In order to promote exchanges and co-operation among residents.

3. Architectural Demonstration Project of Chengdu Qiyi Urban Forest Garden: A Practical Example of Fourth-Generation Houses

3.1 Case Background

Located in the centre of Chengdu, the Chengdu Qiyi Urban Forest Garden project is an exemplary practical example of fourth-generation houses. Through an innovative approach to community interaction, the project not only combines green building design concepts, but also successfully creates a harmonious and ecological community environment.

3.2 Implementation of Eco-Friendly Design

The Qiyi Urban Forest Garden is designed with full consideration for the protection of the ecological environment and the recycling of resources. Vertical greening technology is widely used in the project on the facades of the buildings, reducing the urban heat island effect through extensive plant coverage. And it achieves integration between architecture and nature. The community is also equipped with a rainwater collection system to irrigate the green spaces and gardens, to reducing the community's water consumption.

3.3 Applications of Intelligent Management

Qiyi Urban Forest Garden has widely used an intelligent building management system, which allows residents to monitor indoor temperature, humidity, air quality and other parameters in real time through the intelligent platform (DAI Xinpeng, 2005). It has also upgraded community security, allowing residents to remotely view the community's surveillance and control the access control system.

4. Future Possibilities for Fourth-Generation Houses

4.1 Possibility of Further Policy Increases

As the Chinese government continues to place greater emphasis on sustainable development, more policies to support the development of fourth-generation houses may be introduced. For example, the government may further encourage developers and residents to choose fourth-generation houses through tax incentives, green loans and other ways.

4.2 Development Driven by Technological Innovation

The degree of intelligence in fourth-generation homes will be further increased with the continuous advancement of technology. In the future, fourth-generation homes may adopt a large number of technologies such as artificial intelligence, 5G networks and big data analysis to provide a more personalised living experience for residents (LI Haixia, 2021).

4.3 Pathway from Pilot to Universalisation

At present, fourth-generation houses are mostly concentrated in demonstration projects in some cities. However, with the increase in market demand and the promotion of policies, this housing model is expected to gradually spread to more cities and become the new standard for residential development. In the future, fourth-generation houses may gradually replace the traditional housing model and become the mainstream direction of China's housing development.

5. Conclusion

As a new housing model that responds to the challenges of ecological protection and resource conservation in the process of urbanisation, fourth-generation houses have a promising future in China. Taking the Chengdu Qiyi Urban Forest Garden Architecture Demonstration Project as an example, we can see the significant advantages of fourth-generation houses in terms of eco-friendly design, intelligent management and community interaction and sharing. In the future, under the combined effect of policy promotion, technological advancement and market demand, fourth-generation houses are expected to become the mainstream direction of urban housing development in China. However, how to balance cost and economy, and how to enhance public awareness and acceptance will be the main challenges to be overcome in the promotion of this model.

References

DAI Xinpeng, (2005). Research on Intelligent House Security Alarm System. China Agricultural University [2024-08-23]. DOI:10.7666/d.y774451.

LI Haixia, (2021). Research on the fourth Generation Housing Design in China. Southwest University of Science and Technology.

Zhou Hao, Yu Juan, Lin Borong, et al., (2020). Discussion on the design trend and visualization technology of architectural function and space? *Building Energy Efficiency*, (2), 9. DOI: CNKI: SUN: FCYY. 0.2020-02-008.