EXCELLENCIA
INTERNATIONAL MULTI-DISCIPLINARY JOURNAL OF EDUCATION
Volume 02, Issue 05, 2024 ISSN (E): 2994-9521

Advancement Achieved by Implementing Environmentally Friendly Technology in Housing and Communal Services

Bobokulov Sanjar Bakhrankulovich

Associate professor of the Department of "Digital Economy" Samarkand Institute of Economics and service,

+998941891989, ferdu_www@mail.ru

Abstract

In light of the increasing focus on eco-friendly construction in Uzbekistan, there is now a pressing need to include green building technology (GBT) into construction methods to improve building efficiency. At the same time, there is an urgent requirement for government-backed affordable housing to address the housing difficulties experienced by a substantial segment of the population, such as low-income citizens and migrant workers. Affordable housing, distinguished by its economical building expenses, efficient layout, and rapid construction schedules, differs from traditional housing choices.

Keywords: Green buildings, urban construction, thermo-modernization, environmentally friendly technology

INTRODUCTION

The notion of green buildings has been developing for almost thirty years, starting with the introduction of the Building Research Establishment Environmental Assessment Method (BREEAM) in the United Kingdom in 1990. The answer was made following the demand for 'sustainable development' established by the International Union for Conservation of Nature in

1980. Several countries, including the United States, Japan, and Germany, have implemented their own green building standards, such as Leadership in Energy and Environmental Design (LEED), Comprehensive Assessment System for Built Environment Efficiency (CASBEE), and Deutsche Gesellschaft für Nachhaltiges Bauen (DGNB), following the example set by the UK.

The implementation of environmentally friendly construction methods in Uzbekistan gained momentum with the introduction of China's inaugural green building evaluation standard (GB50378-2006) in 2006. As of September 2016, a total of 520 million square meters of buildings in 336 cities across China had been granted green certification. Currently, the incorporation of Green Building Technologies (GBTs) to improve building efficiency is now a requirement imposed by the government for urban construction projects (National Development and Reform Commission of China and Ministry of Housing and Urban-Rural Development of China, 2012).

Low-cost housing, specifically tailored to accommodate the housing requirements of economically disadvantaged households, has attracted considerable global interest. Nations such as the United States, Germany, Singapore, and Japan have implemented comprehensive and accessible housing regulations. The sharp increase in real estate prices in China, namely in major cities such as Beijing, Shanghai, Shenzhen, and Hong Kong, has highlighted the need to tackle the problem of housing affordability. The Chinese government has implemented strong measures to encourage the creation of cheap homes in response. Between 2011 and 2015, Zhejiang province alone built up to one million units of affordable housing, amounting to a total area of approximately 55 million square meters.

To enhance the living conditions of individuals with low incomes and promote environmentally friendly construction methods, municipal authorities in more developed areas of China, such as Zhejiang and Jiangsu, have implemented a mandate that all new affordable housing initiatives must comply with the national green building standards. Nevertheless, the distinctive attributes of inexpensive housing, such as economical building expenses, efficient layouts, and expedited construction timelines, pose specific difficulties. It is imperative to promptly identify appropriate GBT systems for affordable housing in order to improve building performance without substantially raising expenses or complicating construction.

The endeavor to provide cost-effective environmentally-friendly housing is in line with worldwide initiatives to maximize ecological standards and architectural efficiency, ultimately improving the well-being of inhabitants. However, current research primarily concentrates on individual technologies or structures, without providing a thorough evaluation of the applicability of Green Building Technologies (GBT) for specific types of buildings. In addition, existing evaluation techniques frequently evaluate individual indicators and fail to consider the comprehensive performance of GBT systems.

To fill these deficiencies, our investigation centers on Zhejiang province, taking into account its consistent economic advancement and swift population increase. A comprehensive evaluation methodology is proposed to examine 37 commonly used GBTs based on 43 case studies. This model takes into account multiple objectives, including economy, environmental quality, load, and maturity. This study seeks to completely evaluate these technologies in order to offer precise guidelines for selecting the most suitable GBTs for affordable housing projects in Uzbekistan. The objective is to ensure enhanced building performance without imposing excessive economic or construction constraints.

Methodology. According to estimates from the European Commission, Uzbekistan has significant potential for energy savings in buildings, particularly for heating, hot water, air conditioning, and lighting. By 2010, it was projected that these savings could reach approximately 22% compared to consumption levels in 2001. However, in Uzbekistan, this potential is even greater.

Over 60% of residential buildings in Uzbekistan currently exhibit highly inadequate energy efficiency features, with more than 90% of the population residing in them. Despite this pressing need, the level of thermo-modernization in these buildings remains remarkably low, as indicated by energy audits and pilot projects.

By implementing pilot projects for thermo-modernization, Uzbekistan could achieve a significant reduction in heat consumption, potentially up to 50%. Additionally, focusing on "behavioral energy saving" could yield further savings of at least 10-20%. However, like in Ukraine, historical perceptions in Uzbekistan have led to the misconception that housing and communal resources are provided essentially for free. This results in insufficient tariffs that fail to reflect the true cost of these services.

Results and discussion. Tariffs for water and heat services in Uzbekistan are set at only 90 to 93% of the total cost, further complicated by low provision rates of sub-household metering and regulating devices. Despite efforts to introduce flexibility in consumption norms for housing and communal services, rationalization of expenses remains a challenge. For instance, water usage varies widely across regions, with an average of [insert Uzbekistan's average water usage per person per day] nationwide.

While gas and electricity consumption is widespread and typically metered, optimizing heat and water use by end consumers could result in substantial savings for the state budget in Uzbekistan. The focus on energy-saving programs within the European Community primarily targets buildings, with transportation being the only other sector receiving significant attention. Looking ahead to 2050, the World Bank emphasizes the need for Uzbekistan to tap into its significant energy conservation potential. If the country were to match the energy intensity of, its energy usage could be reduced by approximately 33%. The industrial sector, with its reliance on outdated technologies, presents significant opportunities for improvement, alongside measures such as modernizing the gas transmission system and enhancing energy efficiency in buildings.

EU member states have been actively implementing energy efficiency policies for buildings since the 1970s. The International Energy Agency has determined that residential and commercial/public buildings are responsible for 35% of global final energy use. The energy-saving possibilities in buildings with the adoption of the Energy Efficiency in Buildings Directive. Within the Energy Efficiency in Buildings Directive, there is a potential for a 28% reduction in energy usage in buildings. If this potential is realized, it would lead to an 11% decrease in the overall energy consumption in the European Union.

Conclusion

The use of eco-friendly technologies in housing and common services signifies notable progress in tackling energy efficiency and sustainability issues. By implementing strategies like thermo-modernization and promoting behavioral energy saving, significant advancements can be achieved in decreasing energy consumption, maximizing resource usage, and mitigating environmental impact. Nevertheless, there are still obstacles to overcome in the form of insufficient tariffs and deep-rooted beliefs about free services. This emphasizes the importance of implementing comprehensive policies to encourage energy saving and guarantee the sustainable future of housing

and community services. Countries can accomplish substantial enhancements in both environmental sustainability and quality of life for their population by utilizing developments in green building methods and embracing new solutions.

References:

1. Boboqulov S. B. et al. O‘ZBEKISTONDA RAQAMLI IQTISODIYOTI SHAROITIDA ELEKTRON BIZNESNI RIVOJLANTIRISH YO‘LLARI //YASHIL IQTISODIYOT VA TARAQQIYOT. – 2023. – T. 1. – №. 10. – C. 524-529.
2. A.N. Nizamov, S.K. Yuldashev, A.X. Jumayev, Sh.S. Sharifov, S.B. Boboqulov. Salary in the system of material incentives for workers of construction //Journal of Advanced Research in Dynamical and Control Systems. – 2020. – T. 12. – №. 7. – P. 1925-1927.
3. Bobokulov S.B. Diversifying the service field under digitalization //American Journal of Interdisciplinary Research and Development. – 2022. – V. 11. – ISSN Online: 2771-8948. – P. 218-224.
4. Bobokulov S. B. et al. Methods of increasing efficiency of the public utilities //International Journal on Economics, Finance and Sustainable Development. – 2019. – V. 1. – №. 1. – P. 7-10.
5. Boboqulov S.B. KOMMUNAL XIZMAT KO‘RSATISHDA XARAJATLARNI OPTIMALLASHTIRISH //THE INNOVATION ECONOMY. – 2023. – T. 1. – №. 2. – P. 92-100.
6. Бобокулов С. Б. КОММУНАЛ ХИЗМАТ КЎРСАТИШ СОҲАСИНИНГ ХОРИЖ ТАЖРИБАСИ ВА МАМЛАКАТИМИЗДА УЛАРДАН ФОЙДАЛАНИШ ЙЎЛЛАРИ //Инновацион технологиялар. – 2022. – Т. 1. – №. 4 (48). – С. 116-120.
7. Бобокулов С. Б. Роль модернизации в повышении эффективности системы коммунальных услуг //Экономика и предпринимательство. – 2020. – №. 7. – С. 820-822.
8. Mirzaxodjayev A. B. Sharifov Sh //S., Boboqulov SB," MAKROIQTISODIYOT" o‘quv qo‘llanma. – 2021.
9. Boboqulov Sanjar Baxronkulovich, Qadamboyeva Dilso‘z Doniyor Qizi RAQAMLI IQTISODIYOTI SHAROITIDA INNOVATSION TEXNOLOGIYALAR ASOSIDA TADBIRKORLIK FAOLIYATINI RIVOJLANTIRISH ISTIQBOLLARI // JMBM. 2023. №7. URL: https://cyberleninka.ru/article/n/raqamli-iqtisodiyoti-sharoitida-innovatsion-texnologiyalar-asosida-tadbirkorlik-faoliyatini-rivojlantirish-istiqbollari (дата обращения: 10.01.2024).
10. BAXRONKULOVICH, BOBOQULOV SANJAR, ORTIQOV FARMONBOY RAXMON O‘G‘LI, and MEXRIDDINOV FAHRIDDIN ASQAR O‘G‘LI. "O’ZBEKISTONDA AXBOROT-TEXNOLOGIYALARINI RIVOJLANTIRISHNING IQTISODIY-HUQUQIY ASOSLARI." *Formation and Development of Pedagogical Creativity: International Scientific-Practical Conference (Belgium)*. Vol. 1. 2023.
11. Erkin, Shavkiev, and Bobokulov Sanjar Bakhronkulovich. "Some Issues Related To the Industrialization of the Economy of Uzbekistan." *EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY* 4.3 (2024): 187-194.
12. S.B.Boboqulov, Sh.B.Djurakulov. Elektron tijoratda “buy-side” hamda “sell-side” tizimlarining o‘rni va ahamiyati. Iqtisodiyot va ta'lim / 2024-yil 1-son. 2024-02-29. https://cedr.tsue.uz/index.php/journal/article/view/1442