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ECONOMIC JUSTIFICATION OF RENOVATING AND IMPROVING ARCHITECTURE AND CONSTRUCTION ACCORDING TO EUROPEAN STANDARDS

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ЕКОНОМІЧНЕ ОБГРУНТУВАННЯ ОНОВЛЕННЯ І ВДОСКОНАЛЕННЯ В СФЕРІ АРХІТЕКТУРИ ТА БУДІВНИЦТВА ВІДПОВІДНО ДО ЄВРОПЕЙСЬКИХ СТАНДАРТІВ

The article formulates theoretical and methodological principles of economic justification of the expediency of renewing and improving architecture and construction according to European standards. There is evidence that investment, especially foreign investment, is not only an instrument of development, but also a method of regulation of the economy by means of capital transfers. The peculiarities of the assessment of the effectiveness of investment projects in the field of architecture and construction are under consideration. The relevance and practical significance of the closed-loop economy are demonstrated. The implementation of energy saving technologies in the EU countries, which have been successfully applied in the energy markets of Ukraine, is the subject of analysis. It proves that besides energy efficiency it is important to implement the concept of "smart city". Certain areas of the study show that the updating and improvement of building codes and

architectural practices is an important component of the economic development of Ukraine. The introduction of modern technologies and standards in construction can have a positive impact on the competitiveness of Ukrainian companies. It can help create new jobs and increase construction activity. The development of the construction industry will also contribute to the implementation of infrastructure and housing projects, which will have a positive impact on regional development and the quality of life of the population. It should be noted that the harmonisation of the Ukrainian legislation with the European standards will facilitate the easy integration of the country into the European and global economic space. In particular, by reducing technical barriers and creating synergies between standards, it facilitates trade in Ukrainian products and services. However, since harmonisation requires legislative changes, adaptation to new standards and training of specialists, it is a complex and time-consuming process. The conclusions state that in adopting European standards in construction and architecture, Ukraine is not only adapting to the modern requirements of the time, but is also taking a strategic step that will open wide opportunities for the country in the international arena, bringing economic benefits and improving the quality of life of its citizens. Implementing these changes will require the combined efforts of government, business and civil society, but the results will provide a solid foundation for the country's sustainable development and European integration.

Сформульовано теоретичні та методичні засади економічного обгрунтування доцільності оновлення та вдосконалення в галузі архітектури та будівництва відповідно до європейських стандартів. Доведено, що інвестиції, зокрема з-за кордону, є не лише інструментом розвитку, але й методом регулювання економіки за допомогою переливання капіталу. Розглянуто особливості оцінювання ефективності інвестиційних проектів у сфері архітектури та будівництва. Обгрунтовано актуальність та прикладне значення циркулярної економіки замкненого циклу. Було проаналізовано впровадження енергозберігаючих технологій в країнах ЄС, які успішно використовуються на енергетичних ринках України. Доведено, що, крім енергоефективності, важливо впроваджувати концепцію "розумного міста". Окремі напрямки дослідження переконують, що оновлення та вдосконалення будівельних норм і архітектурних практик є важливою складовою розвитку економіки України. Запровадження сучасних технологій та стандартів у будівництві може позитивно позначитися на конкурентоспроможності українських підприємств, сприяти створенню нових робочих місць та збільшенню обсягів будівельної діяльності. Розвиток будівельної галузі сприятиме також реалізації інфраструктурних та житлових проектів, що підсилить розвиток регіонів та сприятиме покращенню якості життя населення. Наголошено, що гармонізація українського законодавства з європейськими стандартами сприяє легкій інтеграції країни в європейський і світовий економічний простір. Зокрема, це спрощує торгівлю українською продукцією та послугами, оскільки зменшуються технічні бар'єри та виникає синергія стандартів. Однак гармонізація є складним та тривалим процесом, оскільки вимагає внесення змін в законодавство, адаптації до нових стандартів та навчання фахівців. У висновках зазначено, що примикаючи до європейських стандартів у будівництві та архітектурі, Україна здійснює не лише адаптацію до сучасних вимог часу, а й здійснює стратегічний крок, який відкриває країні широкі можливості на міжнародній арені, приносячи економічну вигоду та підвищуючи якість життя громадян. Спільні зусилля уряду, бізнесу та громадянського суспільства є важливими для впровадження цих змін, але отримані результати стануть міцною основою для сталого розвитку країни та її інтеграції в європейське співтовариство.

Key words: economy, architecture, construction, investment project, energy efficiency, smart city concept, standards, competitiveness.

Ключові слова: економіка, архітектура, будівництво, інвестиційний проект, енергоефективність, концепція "розумне місто", стандарти, конкурентоспроможність.

PROBLEM STATEMENT

On its way into the European community, Ukraine is faced with the need to modernise and improve many sectors of its economy. Construction and architecture are among the leading sectors. High requirements for quality, safety, energy efficiency and environmental friendliness are imposed by European standards in these sectors. Adaptation to these standards is important not only for the improvement of the living conditions of the population, but also for the economic development of the country. In particular, there can be several positive economic effects for a country as a result of upgrading and improving the

construction industry. First, it can contribute to the development of the construction sector by increasing the volume of construction products and services. This stimulates economic growth and job creation. Secondly, it can provide more comfortable and safer conditions for the use of buildings by improving their quality and safety. Energy efficiency is an important aspect of European standards. With many buildings and structures in need of energy efficiency upgrading, Ukraine has great potential in the field of energy efficient construction. The result will be a reduction in energy costs, an improvement in comfort and a reduction in the negative impact on the environment. Furthermore, the introduction of new technologies and innovations in the construction sector can be stimulated by the implementation of European standards. This can contribute to the development of the domestic production and technology base and the development of new products and solutions on the basis of current trends. However, both the government and the entrepreneurs and professionals in the architecture and construction industry will need to make considerable efforts to implement European standards. Reforms are needed to improve the legal and regulatory framework, enhance professional development, stimulate investment and increase government support for the development of energy efficient construction and architecture. Overall, bringing the construction and architectural sectors up to European standards is a challenging task. However, it can be an important step towards improving living conditions, stimulating economic development and increasing Ukraine's global competitiveness.

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

Various aspects of this problem have been studied and presented in the works of Ukrainian scientists, such as I. O. Moshlyak [1]; A. S. Bilyk [2]; Y. B. Kolupaev, S. S. Zalyubovska, I. O. Melnychuk [3]; L. M. Cherenko, S. V. Polyakova, V. S. Shyshkin, A. G. Reut, O. I. Krykun, Y. L. Kogatko, V. S. Zayats, Y.A. Klymenko [4]; K.V. Pavlov, O.M. Pavlova [5]; R.V. Fedorovich [6]; V.T. Vecherov, R.A. Aliev, A.O. Iskanderov [7]; L.G. Kvasniy, L.O. Malik, O.Y. Shcherban, O.Y. Soltysik [8]; Z. V. Yurynets [9]; T. G. Rovenchak, V. V. Malyarchuk [10]; S. O. Smirnov, S. Y. Kasyan, L. V. Nakashidze, T. V. Guilhorme [11]; T. Pisarenko, T. Kvasha, O. Paladchenko [12]; D. Oliynyk [13]; I. Samoilenko [14]; V. Chimshir [15]; O. Zakharova, D. Kozyrev [16]; V. Voronkova, N. Metelenko [17]; A. Pin [18]; M. Gorshkov, O. Lozovsky [19]; V. Bondarenko, F. Vashchuk [20].

FORMULATION OF THE OBJECTIVES OF THE ARTICLE

The purpose of the study is to determine the theoretical and methodological foundations of the economic justification of the feasibility of renovating and improving architecture and construction according to European standards.

PRESENTATION OF THE MAIN RESEARCH MATERIAL

A significant positive impact on the Ukrainian economy can be achieved by updating and improving building regulations and architectural practices in line with European standards.

According to I.O. Moshliak, investment, especially foreign investment, is not only a tool of development. It is also a method of regulating the economy through capital transfers. Foreign investment is the main source of the latest competitive technologies at the current stage of market development. Foreign investors consider the acquisition of Ukrainian companies or their shares, i.e. mergers and acquisitions, as an attractive form of investment. This reduces the risk of inefficient management. In addition, there are more and more opportunities for the use of best practices in the acquisition of new technologies and cost optimisation during a prolonged crisis [1, p. 67].

There are five basic principles for assessing the effectiveness of investment projects in world practice: 1. Principle of comparing the project's useful results expressed in terms of income, profit, with other alternative investments. 2. Principle of modelling product, resource and cash flows. All flows should be linked to particular timescales. 3. Principle of making results comparable through the discounting of future cash inflows from different time periods. The application of this principle results in the comparability of income and expenses between different time periods. Specific alternatives for the investment of capital are used to select the discount rate. 4. Principle of determining integrated results and costs involves considering all possible consequences of the project, including the total costs and benefits to all parties involved. 5. Principle of considering possible risks and determining their impact on the investment project choice [14], These principles allow for an objective assessment of the effectiveness of investment projects and the making of informed choices with regard to capital investment.

In terms of application, there are a number of methods for evaluating project effectiveness, such as: absolute project effectiveness, replacement cost effectiveness, comparative project effectiveness and incremental cost effectiveness. Project evaluation can be carried out on the basis of a comparison of the cost of capital with the expected rate of return, or on the basis of a comparison of the cost of the project with the cost of a benchmark.

Absolute effectiveness reflects the results of the project without replacing similar equipment, or in the case of the inappropriateness of continuing to use the replacement equipment. The old equipment continues to be used regardless of whether or not the project gets implemented. The substitution effect of similar equipment shows the results of the project in the case where the substituted equipment is competitive.

If the substituted equipment is competitive with the baseline for its intended purpose, the substitution effect reflects the results of the project. The evaluation of the project is in its pure form. The comparative effect makes it possible to identify the best option among projects with a similar purpose. Projects are in comparison with each other in their pure form. The effect of additional costs shows whether it is possible to increase the costs in order to achieve a more significant result. The assessment of future costs and results in the determination of the

investment project's effectiveness is carried out within the calculation period, the duration of which is measured in terms of the number of years, taking into account: the duration of creation, operation and (if necessary) liquidation of the object [15, p. 64].

Various indicators are compared using a special method called discounting to assess the effectiveness of a project. A pure appraisal is the analysis of a project as a source of income within the framework of an equity financing scheme. This ensures uniformity in the evaluation and comparison of projects. It also eliminates the influence of the financing scheme, possible tax benefits and other specifics of project implementation in a particular company.

One of the most important benefits of improved standards and practices in the construction sector is that they provide a transparent and understandable set of rules for investors. For foreign companies seeking markets where they can operate under predictable conditions, this is important. Transparency and confidence that building regulations are in line with international standards and requirements is ensured by the introduction of European standards.

For example, while it is still possible to call the planet home, the transition to a green economy is not just a political whim, but an urgent necessity. The circular economy is a model of economic development based on the renewal and rational use of resources, which is an alternative to the traditional linear economy. It aims to minimise the negative impact of human activity on the environment by creating new alternative economic approaches. Studies have shown that in order to avoid catastrophic climate change, the global economy will have to shift to a circular model by at least 17 % by the year 2030 [2, p. 11], This will be achieved by introducing innovative technologies and approaches that enable business models to minimise or eliminate waste. The main idea of the circular economy is that all resources are used in a closed cycle. They are constantly renewed and reused without loss of quality. Special attention is paid to the development of technologies that save resources and do not produce waste. Ukraine must adopt that European strategy.

Ukraine's investment attractiveness could also be enhanced by updating construction standards and architectural practices. Foreign investors will be more interested in considering investment projects in a country where construction is in line with international standards and where the reliability and safety of their investments are a guarantee. At the moment, there is a need for legislative guarantees on the part of foreign investors for investment in our economy. State guarantees and benefits are also demanded by many large companies and investment companies. However, the mechanism for the implementation of legal guarantees has not yet been properly developed. In addition, there are no adequate legal means for the enforcement of investors' rights and the settlement of disputes [3, p. 28], This is a situation which is in need of improvement.

There is also a significant economic impact of improving the quality of construction. Better quality construction helps to extend the life of buildings, reduce repair and maintenance costs, and contribute to providing comfortable and safe housing for the population. This could lead to an increase in the demand for real estate and provide a stimulus for the development of the construction sector. It is worth noting that opportunities for new perspectives are emerging in Ukraine as a result of the housing crisis caused by the military events. Specifically, the state has an opportunity to develop a new policy to ensure the constitutional right of everyone to housing as a basic need [4, p. 132].

An important component of Ukraine's economic development is the updating and improvement of building codes and architectural practices. The result will be the creation of a stable and competitive construction sector, which in turn will strengthen the country's economic potential. The functional type of competition in the market is the result of the understanding that each need of the housing market can be satisfied in different ways, according to the research of modern scientists such as K.V. Pavlov and O.M. Pavlova. For example, apartments in high-rise buildings, individual houses, and small sectional buildings intended for residential use are specific competitors in the residential property market. It is important to bear in mind that the parameters of the competitive environment in which the producers (builders, developers) operate are formed as a direct result of the market conditions. For example, in the case of construction of large housing facilities by several powerful developers, this may have an impact on the dynamics of the market [5, p. 112].

It should be noted that the competitiveness of Ukrainian companies at the international level is growing. This allows them to participate in a wider range of tenders and projects abroad, and also facilitates the creation of joint ventures with Western companies in Ukraine. A large number of Ukrainian companies are actively working to improve the quality of their goods and services by introducing modern technologies and managed quality systems in order to meet the requirements of international markets [6, p. 211], This is enabling them to take part in a wider range of tenders and projects in foreign countries. In various sectors, such as energy, transport, information technology and business services, Ukrainian companies are winning contracts for construction, infrastructure projects, and the supply of goods and services.

It is necessary to pay attention to the current trend that the development of the modern European construction services market is associated with the growth of information and technological support, which leads to the fact that the price of construction services is less and less related to the cost of materials. In the construction services market, logistics and engineering are becoming key methods of competition. The timely delivery of high quality materials and complete equipment is important in order to save costs in the construction industry [7, p. 125].

Energy efficiency of buildings is one of the key aspects of European standards. Energy consumption and heating and air-conditioning costs are reduced through the use of energy-efficient materials and technologies, such as well-insulated walls, energy-efficient windows and heating systems. This not only reduces the cost of running and maintaining buildings, but also helps to reduce the

environmental footprint of the construction sector. It also helps to ensure that global environmental goals, such as reducing greenhouse gas emissions, are met [8, p. 28].

Solar thermal heating systems are actively used in the developed world. Compared to the systems used in Ukraine, these alternative systems are considered more environmentally friendly and safer. A solar heating system is the use of solar collectors and equipment for the conversion of solar energy into heat. The sun is a unique source of energy. Not only is it an inexhaustible and free source of heat, but it is also the most environmentally friendly source of energy available to mankind. The facts show that every 8 minutes the sun provides as much energy as is used by the human race in an entire year. Solar energy is a promising solution for the future, as it can help reduce the negative impact on the environment. In the summer, solar collectors are able to meet the entire demand for hot water. In spring and autumn, up to 40% of the energy needed for heating and up to 60% of the energy needed for hot water can be provided by solar energy [11, p. 117].

Earth's energy can be an alternative source of heat instead of solar energy. Many people in our country are looking for new methods of heating and air conditioning that use heat resources economically, due to the limited and expensive supply of gas. Using heat from the ground and underground with a heat pump is one way to replace gas heating. Heat pumps are compact, economical, silent and environmentally friendly systems. They enable heat for hot water supply and heating of dwellings to be obtained from a low-potential heat source (groundwater and underground heat) by transferring it to a heat carrier with a higher temperature [10, p. 133].

When working out architectural and planning solutions for development, it is necessary to take into account the principles of environmentally friendly development of territories. These principles include the following basic provisions 1. Ensuring efficient use of natural resources, in particular, reducing energy and water consumption, rational use of soil and vegetation. 2. Preserving biodiversity and green areas, providing spaces for developing natural ecosystems and continuums. 3. Ensuring a healthy and safe environment for living, working and recreation. This includes reducing noise, air and water pollution and the impact on human health. 4. Sustainable building principles, including energy efficient technologies, renewable energy, using secondary materials and waste [22].

In general, the energy saving technologies in the EU countries that are being successfully implemented in the Ukrainian energy efficiency market are as follows LED lamps; solar panels; solar collectors for hot water and heating; heat pumps; new generation foam glass insulation; foam concrete houses; heat recovery; maximum use of solar heat and daylight; and thermally efficient double (triple) glazing.

In the future, for the integration of the Ukrainian energy market into the European space and the implementation of the concept of sustainable development and consumption, it will be important to optimise the energy infrastructure. Given the current global trends and the growing economic inequality, Ukraine should create and implement a public-private partnership model that will enable it to integrate organically into the new global economic order, based on the 5G PPP (5G Public-Private Partnership) infrastructure created by the EU Commission, industrial producers, telecommunications operators, service providers, enterprises and academics to make strategic decisions for the implementation of communications infrastructure [13, p. 42].

It is important to introduce smart technologies in addition to energy efficiency. Among the various modern urban concepts, sustainable development has the longest history and is the most widely recognised in the world. However, the concept of smart cities has recently become increasingly popular. Moreover, in a relatively short period of time, new versions of the concept have appeared.

In Smart Cities 1.0, technology providers were the initiators of the introduction of technology into cities that were not really ready for a proper understanding of the implications of technology solutions. In Smart Cities 2.0, the initiators are local governments. They are increasingly focusing on technological solutions to improve the quality of life. A new version, Smart Cities 3.0, has recently emerged. It focuses on the application of the co-creation model to guide the next generation of smart cities [16, p. 8], However, the complicated implementation of this version of the concept, involving conservative governance traditions and lacking transparency of authorities, complicates the process of engaging citizens. In spite of this, practice shows that not all cities move from one version of Smart Cities to the other, and that some cities remain with the original model. Nevertheless, the development of broadband digital infrastructure, wireless networks, e-gov and m-gov services and IoT sensor networks must be supported by city structures in today's environment.

The main characteristics of smart cities include an infrastructure network that provides reliable communications; a strategic vision that aims to increase the city's competitiveness through the use of new technologies and the involvement of different actors; and a sustainable and inclusive approach to urban development that emphasises social capital in shaping the urban environment [p. 417],

There are three main factors that enable smart cities to emerge: technology (hardware and software infrastructure), people (creativity, diversity and education) and institutions (governance and policy). At the same time, a "smart city" is characterised by the presence of smart people, a smart economy, a smart environment, a smart government, a smart life and a smart mobility [18, p. 116],

In addition, the development strategies of smart cities can be divided into two types, depending on the emphasis placed on infrastructure: cities with a 'hard' infrastructure and cities with a 'soft' infrastructure. Cities with a hard infrastructure priority are based on the development of tangible assets. These include transport systems, water supply, waste management and energy infrastructure. At the same time, soft infrastructure cities focus on intangible assets and people, such as social, cultural and human capital, well-being, education, politics, governance, community participation, innovation, business, inclusion and equity. We share the view of M. A. Gorshkov and O. M. Lozovskii that, in addition to resource savings, residents of smart cities will enjoy a clean environment, a developed economy and comfortable living conditions [19, p. 89], After all, combining systems and data with the

physical infrastructure and services of the city can reduce costs and increase the sustainability of the management system, improve energy use, optimise waste collection, reduce traffic congestion and even improve air quality. City residents can use smart city systems in different ways: smartphones or other mobile devices.

It is important to note that the European Commission defines the concept of "smart cities" as a holistic development strategy that uses not only digital technologies to increase productivity, improve living conditions, reduce costs, save resources, and at the same time increase citizen participation in governance processes [21], In order to achieve the key result of the management process — the creation and sustainable development of smart cities — it is important for the effective functioning of such an organisational and economic system to coordinate the activities of management units, which are regulated by clearly defined management principles that form a system of management methods and define key management tools.

This involves using smart technologies to manage buildings. These can be automated control systems for lighting, heating, cooling and ventilation. They provide maximum comfort for building users with minimum resource costs. Such systems can effectively manage and optimise energy processes in buildings by monitoring and analysing energy and water consumption and other indicators.

The introduction of the latest technologies and materials into the construction sector not only improves the quality of life, but is also a driver for innovation in the industry. People become more interested in buying energy-efficient and modern buildings, which increases confidence and demand for such facilities. That's why the implementation of European standards contributes to the development of the construction industry. It attracts investments and creates new jobs.

Harmonisation of Ukrainian legislation with European standards facilitates the country's integration into the European and global economic space. In particular, it facilitates trade in Ukrainian products and services by reducing technical barriers and creating synergies between standards. However, harmonisation is a complex and time-consuming process, requiring legislative changes, adaptation to new standards and training of specialists. There are also significant challenges to Ukraine's successful harmonisation and integration into the European Economic Area, such as corruption, an inadequate business climate and infrastructure problems.

It is also worth noting that changes in governance and corporate management, as well as in standards of democracy and human rights, are also part of the process of integration into the European economic area. This requires considerable efforts to change cultural and institutional principles in order to comply with European values and norms [20, p. 5], Therefore, the implementation of European standards should be accompanied by reforms in the management and control system, including the fight against corruption and the creation of a transparent regulatory system. This requires the involvement of qualified specialists and the training of staff to work competently with the new standards. Such staffing changes will require a greater emphasis on the education and training of professionals, especially engineers and architects, and the promotion of continuous professional development.

A systematic approach and the joint work of government authorities, the business community and the public are required for the successful implementation of European standards in the management and control system. For the implementation of European standards, public authorities need to establish an appropriate legal framework and institutional mechanisms. This may involve enacting legislation, developing policies, setting up specialised bodies and improving monitoring and controlling mechanisms. Businesses should also play an active role. They should adapt their practices and processes to European standards. This can be through the implementation of new management systems, the acquisition of certification and the undertaking of compliance audits. Civil society, particularly in the areas of democracy, human rights and social standards, also has an important role to play in the implementation of European standards. Civil society organisations and activists can appeal to the authorities to demand compliance with European standards and monitor their implementation.

All in all, it is only through the joint efforts of the authorities, the business community and the public that it will be possible to successfully implement European standards in the management and control system. This will contribute to economic development and improve the quality of life of Ukrainian citizens. This is the only way in which Ukraine will be able to become a part of the European economic area and to attract more investment and technology.

CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH AND DEVELOPMENT

An important step in the development of the Ukrainian economy is the modernisation and improvement of the architecture and construction sector according to European standards.

This applies in particular to attracting investment. Investment is indeed an important tool for economic development and can also be a means of regulation of the economy through capital transfers. This is particularly important for the architecture and construction sector. Investment can support and enhance economic growth. It is a complex process that requires careful analysis and consideration of various factors to assess the effectiveness of investment projects in the architecture and construction sector. The main features of the assessment of the effectiveness of such projects are 1) financial analysis includes an assessment of the potential revenues and expenses of the project, as well as the calculation of profitability indicators, such as net current income, internal rate of return and payback period; 2) economic analysis includes an assessment of the overall socio-economic benefits that can be achieved as a result of the project, such as the creation of new jobs, infrastructure development, improved quality of life, etc.; 3) technical analysis includes an assessment of the technical feasibility and complexity of the project, as well as the identification of risks and possible ways to mitigate them; 4) social analysis — an assessment of the impact of the project on people,

including an analysis of employment, living standards, social infrastructure and other social aspects; 5) environmental analysis — an assessment of the impact of the project on the environment and natural resources, including an analysis of energy efficiency, environmental safety and sustainable development. This comprehensive analysis helps to make informed decisions about investment in architecture and construction projects, ensuring maximum efficiency and positive outcomes.

As far as the circular economy is concerned, the trend is relevant and of great practical importance in the modern world. It is based on the principle of a closed cycle in which resources are used efficiently, waste is reduced to a minimum and materials and products are re-used or recycled. Reducing negative environmental impacts is one of the main benefits of the circular economy. Resources and waste can be reused or recycled, reducing consumption of natural resources and emissions to air, water and soil, rather than constantly extracted and disposed of. There are also economic benefits to the circular economy. Instead of using resources once and making new products, it promotes new business models. These include repair, reuse, recycling and upcycling. This can help create new jobs, stimulate innovation and increase resource efficiency. In turn, this can make an economy more competitive. Examples of the circular economy include: the use of recycled materials in production, such as the use of waste from one industry as a raw material for another; the reuse or recycling of waste, such as the recycling of plastic bottles into new plastic products; and the repair and refurbishment of goods, extending their life and delaying their disposal to landfill. These are all examples of how the circular economy can contribute to sustainable development, resource conservation and the reduction of negative environmental impacts. Adopting a circular economy model is essential for balanced economic development, given the natural state of our planet and the problems of pollution.

On some aspects of updating and improving construction codes and practice. The development of the Ukrainian economy and the creation of a stable and competitive construction sector can be significantly influenced by the proper updating and improvement of construction codes and architectural practices. Here are some of the reasons and important aspects discussed in the context of updating construction codes and architectural practices: 1. Energy efficiency: Optimising construction processes and introducing new energy saving standards can significantly reduce the costs of heating, cooling and lighting buildings. Companies and communities can thus increase energy efficiency and reduce costs. 2. Innovation and new technologies: scientific research and the use of new technologies are often used to update standards and practices. This is a factor in the attraction of investment and the acceleration of innovation in the construction sector. Product quality can be improved and the construction sector made more competitive through the introduction of modern construction methods, new materials and technologies. 3. Safety and sustainability: updating construction codes aims to ensure that buildings are built to last. This is important for the protection of investments and the life safety of citizens. Improved practices will take into account the risks associated with construction and contribute to the creation of high quality, reliable and sustainable buildings. 4. High quality standards: the updating of construction codes and architectural practices will lead to improvements in the quality of building materials, structures and processes. This can have a positive impact on the durability of buildings, reducing maintenance costs and emissions. It can also improve the quality of life for building users and occupants. 5. Tourism and investment development: more tourists and investors can be attracted to Ukraine by high standards of architecture and construction. The country's tourist attractiveness and foreign investment can be enhanced by respecting the historical heritage, preserving and reconstructing historical buildings and creating new architectural masterpieces. Thus, an important component of Ukraine's economic development can be the updating and improvement of construction codes and architectural practices. They will help to create a stable and competitive construction sector, to attract investment, to save energy, to improve the safety and quality of buildings, and to stimulate tourism and investment.

With regard to the introduction of energy efficiency technologies. Energy-saving technologies have a long history of successful implementation in the European Union (EU). They are one of the most important tools for reducing energy consumption and greenhouse gas emissions. They also improve energy efficiency and reduce dependence on energy imports. Ukraine is also implementing energy-saving technologies. However, it is doing so with due regard to its specific characteristics and shortcomings in the energy sector. For example, Ukraine is actively developing and implementing energy-efficient building and rebuilding programmes, promoting the use of renewable energy and encouraging industry to upgrade to energy-efficient equipment. However, progress in implementing energy-saving technologies in Ukraine has been insignificant and slow. High levels of corruption, lack of awareness and insufficient government support remain obstacles to their effective implementation. Additional measures such as raising public awareness, improving legislation, accelerating technological development and providing financial support are needed to develop energy efficiency in Ukraine.

Implementing the "smart city" concept, which involves not only energy efficiency but also using information technology to improve various aspects of urban life. For example, reducing traffic congestion and improving the quality of transport for residents can be achieved through smart traffic management systems. "Water consumption can be optimised and wastage avoided through smart water management systems. Smart lighting, smart security, smart healthcare and more can also be included in smart solutions. Improving the quality of life for residents, conserving resources and reducing the negative impact on the environment can be achieved by implementing the smart city concept. Such cities are already being successfully implemented in various countries around the world. They are becoming an example for other cities that want to increase their energy efficiency and make life more comfortable for their residents.

As far as the problem in general is concerned. Adaptation to European standards in construction and architecture is not just a requirement of the time; it is a

strategic step that opens up greater opportunities for Ukraine in the international arena, brings economic benefits and improves the quality of life for its citizens. The implementation of these changes will require the joint efforts of the government, the business community and civil society, but the results achieved will provide a solid foundation for the sustainable development of the country and its integration into the European community.

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