Report on the work of the dissertation council

Dissertation Council at "KazNRTU named after K.I. Satbayev in specialties (direction of personnel training):" Architecture and construction "(in the context of educational programs: 8D07302-"Architecture and urban planning", "8D07303-" Construction and production of building materials and structures, "8D07305-" Construction and production building materials and structures "/8D07308- "Production of building materials, products and structures")

1. Data on the number of meetings held – 6 meetings.
2. Surnames, first name, patronymic (if any) of the members of the dissertation council who attended less than half of the meetings: none.
3. A list of doctoral students indicating the organization of their studies:

- B.A. Omarov - M. Auyezov South Kazakhstan University.
- Ibraimova I.B. - M.Auezov South Kazakhstan University.
- R.B. Kudabaev - M. Auyezov South Kazakhstan University.
- N.I. Berdi - KazNRTU named after K. I. Satbayev.
- Nietbai S.E. - KazNRTU named after K. I. Satbayev.
- Kozhakhmetov I.E - KazNRTU named after K. I. Satbayev.

1. Brief analysis of dissertations reviewed by the council during the reporting year

№	Name of doctoral student	Thesis	Code and name specialties	The year of completion of doctoral studies	Organization of studying
1	Omarov Berik Amankeldievich	Development of technology for the production of ceramic coatings based on South Kazakhstan clay rocks and study of physical and mechanical, operational properties	8D07308- "Production of building materials, products and structures"	01.09.2020-01.06.2023	M. Auyezov South Kazakhstan University
2	Ibraimova Ilzhan Bakhitzhankyzy	Study of volumetric and rapid destruction of trunk gas pipelines and development of methods for their prevention	8D07320 – "Construction"	01.09.2021-01.06.2024	M. Auyezov South Kazakhstan University
3	Kudabaev Ruslan Bakhtiyarovich	Heat storage material based on refined products for building envelopes	8D07305-" Construction and production building materials and structures "	01.09.2018-01.06.2021	M. Auyezov South Kazakhstan University

4	Berdikul Nazerke Imanilikyzy	Повышение эксплуатационных свойств мелкозернистого бетонов за счет использования эффективных химических добавок	8D07305-" Construction and production building materials and structures "	01.09.2021-01.06.2024	KazNRTU named after K. I. Satbayev
5	Nietbay Sayat Yerzhanuly	Обеспечение сейсмостойкости памятников архитектуры устройством систем геотехнической сейсмоизоляции	8D07303- "Construction and production of building materials and structures"	01.09.2021-01.06.2024	KazNRTU named after K. I. Satbayev
6	Kozhakhmetov I.E	Социально-экологические и архитектурно-градостроительные принципы развития общественных пространств в крупных городах Казахстан	8D07302- "Architecture and urban planning"	01.09.2020-01.06.2023	KazNRTU named after K. I. Satbayev

4.1. Analysis of the subject of the work Omarov B.A. is recommended for awarding the degree of Doctor of Philosophy (PhD) in the specialty "Development of production technology and study of physical and mechanical, operational properties of ceramic coatings based on clay rocks of Southern Kazakhstan," 8D07308- "Production of building materials, products and structures." One of the problems of modern materials science is the creation of an effective resource and energy-saving technology for the production of ceramic materials with the required properties. Over the past 50 years, the demand for high-temperature and chemically resistant materials with stable electrophysical and high thermal insulation properties has increased. In this regard, much attention is paid to clays as the foundations of silicon ceramics and composite materials.

Silica ceramics, mainly as functional ceramics, can be used in the form of bushings, plugs and linings in furnaces with a wide range of temperatures up to 700°C. Low thermal conductivity due to low porosity and low tightness of the surfaces during self-polishing, which allows them to be used as reflectors in heat transmitters.

But the widespread use of silica ceramics is hampered by its low strength. Therefore, it is necessary to optimize the composition of ceramic masses and the processes of their heat treatment by preparing new technologies and, first of all, using natural cheap and affordable raw materials. It is known that ceramic building materials are characterized by a number of technical properties, such as durability, chemical and fire resistance, strength, environmental and fire safety. In this regard, light and mobile composites based on ceramic matrix can be considered as a promising material that can improve important indicators of thermal physics, strength and others. To meet the growing

needs of the construction industry, there is an urgent need to form a scientific and technological basis aimed at increasing the production of building materials from the existing list, as well as developing promising technologies for obtaining materials that meet advanced requirements in terms of heat insulation indicators, the most affordable at cost. The rapid development of civil and industrial construction in Kazakhstan makes it necessary to increase the production of effective building materials and products, including ceramic linings. Currently, there is a shortage of high-quality clay raw materials in the production of ceramic building materials. Due to the limited reserves of high-quality clay in almost all regions of Kazakhstan, Loess-like clays with high physical and mechanical properties and a high content of unnecessary impurities are used for their production. The firing of ceramic products depends on the mineralogical composition of clay rocks, the degree of susceptibility to drying, the dimensions of linear and volumetric shrinkage of samples and the methods of firing, and the firing modes used. Due to the instability of the chemical composition of clays, even at high firing temperatures when firing the product (T=1000...10500c) the processes of mineral and structure formation are not complete. As a result, fuel and energy resources are inefficiently spent, and in order to cover these costs, enterprises are forced to raise prices for low-quality finished products. There is a need to find other, more effective ways to solve this urgent problem, that is, to find new sources of raw materials that contribute to the formation of an internal, unified structure of ceramic products and solutions that allow increasing the interaction activity between the components of the mixture when the firing temperature decreases. Therefore, the current problem is the selection of the optimal composition of ceramic compasses based on clay raw materials and production waste in the southern regions of Kazakhstan, the study of the laws of the influence of various additives on the firing temperature of ceramic products and the development of production technology.

The relationship of the topic of the dissertation with the directions of science development, which were formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs. The topic of the thesis corresponds to the scientific direction "rational use of natural resources, including materials, geology, processing, new materials and technologies, safe products and structures". Dissertation work-optimization of the composition of raw materials compasses necessary for the production of ceramic linings by vibration-pressing method based on South Kazakhstan clay rocks and production waste and selection of effective firing modes. There is a need to find other, more effective ways to solve this urgent problem, that is, to find new sources of raw materials that contribute to the formation of an internal, unified structure of ceramic products and solutions that allow increasing the interaction activity between the components of the mixture when the firing temperature decreases. Therefore, the current problem is the selection of the optimal composition of ceramic compasses based on clay raw materials and production waste in the southern regions of Kazakhstan, the study of the laws of the influence of various additives on the firing temperature of ceramic products and the development of production technology.

Analysis of the level of implementation of the results of the dissertation in practical activities. On the materials of the work, 8 papers were published, including 3 articles in scientific journals included in the list of publications recommended by the committee for quality assurance in education and science of the Ministry of Education and science of the Republic of Kazakhstan, 2 articles in peer-reviewed foreign scientific journals included in the Scopus database, 3 articles in the materials of international conferences.

The results of the dissertation research were put into production on the basis of the brick factory "BOKEI". The physical and mechanical characteristics of ceramic linings obtained by the method of vibration pressing fully meet the requirements of regulatory documents. The economic effect of introducing the results of the study into production is 175,535,605 thousand tenge.

4.2 Analysis of the work of ibraimova U. B."Research of large-scale rapid destruction of main gas pipelines and development of methods for its Prevention", recommended for the degree of Doctor of Philosophy (PhD) in the specialty 8D07320 – construction. Today, gas, like oil, is the

main source of energy for many consumers around the world. In recent decades, natural gas in the energy balance of the world economy

the role and importance is constantly increasing, which is due to its high efficiency as an energy resource and raw material for industry, as well as high efficiency in comparison with oil and coal, environmental friendliness. From 1980 to 2020, the growth rate of natural gas consumption was equal to 168%, while the growth rate of oil consumption in the same period was equal to 44%, and coal-102%. This means that gas consumption is increasing by an average of 7% per year. To date, proven reserves of natural gas in the World amount to 138 trillion.M3 is equal to. Of these, in terms of proven reserves of natural gas, the Republic of Kazakhstan ranks 14th with 2.7 trillion M3. In this regard, it is obvious that intensive construction of the main steel gas pipelines, as well as reconstruction, will continue, and great attention will be paid to maintaining them in operational and technically serviceable condition. For this purpose, significant funds will be allocated to restore the carrying capacity of main steel gas pipelines in operation. Because the construction and operation of main steel gas pipelines is associated with large material costs, fire and explosion risks, environmental pollution risks, and threats to people's lives, they belong to particularly responsible structures. The design and construction of such structures should be based on strict scientifically based rules and technically possible, fundamentally new constructive developments, as well as optimal and cost-effective constructive solutions. The importance of the state is influenced by the fact that more than 70% of existing gas pipelines in Kazakhstan are in a dilapidated state. In this regard, the study of volumetric-rapid destruction and their the development of preventive approaches on main gas pipelines is relevant and timely.

The relationship of the topic of the dissertation with the directions of science development, which were formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs. The dissertation work was carried out on the topic AP19680589 "development of scientific foundations of resistance to sudden destruction of main gas pipelines", funded by The Science Committee of the Ministry of Science and higher education of the Republic of Kazakhstan in accordance with grant financing of scientific and (or) scientific and technical projects for 2023-2025. The justification for the study of the work was the need to develop methods for preventing landslide destruction on main steel gas pipelines, taking into account the conditions of use, as well as the need to develop appropriate design and calculation methodologies. The study of the stress-deformed state, the nature of the distribution of the destruction light of traditional and pre – stressed pipelines, the features of the influence of the design parameters of the pre-stressed winding on the volumetric – fast destruction process, as well as the influence of temperature on the volumetric-fast destruction process of main gas pipelines was carried out using the ANSYS software complex based on the method of the latter elements. The correctness of the results of experimental research was ensured by the use of modern tested research methods using modern instruments and equipment. Modeling of geometric dimensions of main gas pipelines is carried out based on the criteria of mechanical similarity between the model and the real pipeline, based on the analysis of dimensions.

Analysis of the level of implementation of the results of the dissertation in practical activities. The main results of the dissertation work are presented in 4 scientific articles, two of which are indexed in the Scopus database with a percentile index of at least 71 and in the Web of Science database with a Q-1 Index, one article in an international peer-reviewed journal and one article in an international journal with a Q-2 Index. In addition, one utility model patent was obtained at the National Institute of intellectual property of the Republic of Kazakhstan.Ұлттық зияткерлік меншік институтында пайдалы модельге бір патент алынды.

4.3. Analysis of the topic of Kudabaev R.B.'s work "Thermal accumulative material based on oil refining products for enclosing structures of buildings", presented at the meeting of the doctor of Philosophy (PhD) on educational program 8D07305 - " construction and production of construction materials and structures

The construction of energy-efficient, efficient civil houses and the design of new types of their active use of energy are directly related to the methods, design solutions for the design of external fences and thermal energy accumulations. The development of this modern scientific direction in the construction industry has led to the development of the construction materials industry with high thermal efficiency, heat accumulator in the production of building materials.

The areas of application of thermal accumulative materials in construction and their types are quite numerous today. In this regard, there is a need to develop new effective heat-accumulating materials adapted to the operational conditions of buildings and to study their thermophysical properties, as well as to strengthen the research and use of multicomponent heat-accumulating materials with high heat-accumulating indicators.

In the development of energy-efficient and high-energy storage building materials, the development of heat-accumulative materials with hidden heat storage capacity is becoming more effective. Among such materials, a special place is occupied by Phase-variable heat-accumulative materials. In Phase-variable heat-accumulating materials, the accumulation or distribution of heat energy in the environment occurs during the phase transition, that is, when the material changes from one state to another. During the transition from a solid to a liquid state, these materials increase in temperature as they absorb heat into themselves, like ordinary building materials. In Phase-variable thermal accumulating materials, heat accumulation is achieved by the destruction of the crystal structure of the material, and the transfer of heat to the environment is achieved by the re-formation of crystals, which is the main feature of Phase-variable materials from traditional thermal accumulating materials.

Therefore, it is an important goal to obtain various thermal accumulative materials from production waste, which have high thermal capacity, properties with high stability during use, are efficient from the economic pedestal, have high energy efficiency, and their effective use in construction requires comprehensive research.

In accordance with the above, the development and study of heat-accumulative materials based on commercial paraffins from oil and oil waste, as well as their use in the enclosing structures of civil houses, is an urgent problem today.

The basis for the development of the topic was the need to increase the heat-insulating properties of building enclosing structures and obtain energy-saving heat-insulating material that allows you to obtain energy-active enclosing structures and develop suitable methods for their production.

To develop the topic, the thermal technical and operational properties of commercial paraffins, existing methods for studying their composition and main properties, climatic characteristics of the construction area, experience in the design and operation of heat-efficient enclosing structures, as well as the main regulatory and technical documents on the construction and operation of external enclosing structures were used as the initial data.

The modern regulatory framework and building codes and regulations set specific tasks for designers and builders to increase the category of buildings in terms of energy efficiency, the efficient and rational use of energy resources. Housing construction in Kazakhstan is developing rapidly, and in accordance with this, the requirements that determine the quality of housing that are suitable for living at any time of the year include: heat, coolness, dryness, silence. At the same time, one of the main characteristics of modern housing is the search for ways to reduce energy consumption, aimed at reducing the cost of heating houses, in particular, the construction of heating systems called "passive houses" or energy-efficient houses. Currently, searches in this direction are underway in many countries, including those with favorable climatic conditions. In our country, on the basis of the law of the Republic of Kazakhstan dated January 13, 2012 No. 541-IV "on energy saving and increasing energy efficiency", the state policy of energy saving has been formed. In

accordance with it, new concepts were introduced: energy-saving materials (materials that allow increasing the efficiency of using energy reserves), thermal modernization (measures to improve the thermal characteristics of houses, which lead to a decrease in heat energy consumption), energy efficiency category of houses (energy efficiency level by energy consumption, which characterizes the energy efficiency of houses at the stage of operation) and others. Tightening the norms on thermal protection and bringing them in line with the norms adopted in other countries shows that in practice it is.

The relationship of the topic of the dissertation with the directions of science development, which were formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs. The development of the topic was based on the need to obtain energy-saving heat-accumulating materials and develop suitable methods for their production, which would allow increasing the heat-accumulating properties of building enclosing structures and obtaining energy-efficient enclosing structures.

To develop the topic, the thermal and operational properties of commercial paraffins, existing methods for studying their composition and basic properties, climatic characteristics of the construction area, experience in designing and operating heat-efficient enclosing structures, as well as basic regulatory and technical documents on the construction and operation of external enclosing structures were used as primary data.

The work was carried out in accordance with the state budget topic GB NIR-21-02-06 "Increasing the operational efficiency of building materials, products and structures based on raw materials of the Turkestan region", included in the thematic plan of scientific research work of the M. Auezov Higher Educational Institution.

Analysis of the level of implementation of dissertation results in practical activities The practical significance of the results obtained is confirmed by 3 patents for utility models (08.06.2018 No. 3951 "Multi-layer heat-efficient enclosure structure"; 02.07.2019 No. 4426 "Enclosure structure with energy-active panels"; 17.08.2021 No. 6631 "Installation for heat treatment of concrete and reinforced concrete products using solar energy") and an innovation patent (10.12.2019 No. 34970 "Heat-accumulating material"), as well as the author's certificate "Methodology for determining the thermal efficiency of energy-active enclosure structures and assessing the heat-accumulating properties" issued by the Institute of Intellectual Property of the Republic of Kazakhstan, as well as the patent for heat-accumulating material based on commercial paraffins of the ZHAM-25 brand ST 2425-1958-01-GP-007-2023 based on the organization's standards and acts of introduction of the results of the dissertation work into production. 18 scientific works were published on the main results of the dissertation work. Of these, 3 articles were published in foreign journals included in the Scopus and Web of Science databases, 4 articles were published in scientific publications recommended by the Committee for Quality Assurance in Science and Higher Education of the Ministry of Education and Science of the Republic of Kazakhstan and in the materials of international conferences.

4.4. Analysis of the topic of the work of Berdykul N.I. "Improving the performance properties of fine-grained concrete through the use of effective chemical additives", submitted for the degree of Doctor of Philosophy (PhD) under the educational program 8D07305- "Construction and production of building materials and structures"

In the Republic of Kazakhstan, the problem of developing urban transport infrastructure is currently important. In this regard, highways are being built, metro lines and urban railways are being laid, and channels for engineering systems are being laid, including tunnels and other underground facilities that require the use of fine-grained concrete mixtures. However, the high rate of industrial development requires a large amount of electricity, which leads to the formation of a

large amount of fuel ash and slag waste, including fuel, which negatively affect the ecological situation in the country and require disposal.

For the rational utilization of ZU, it is possible to use them in the composition of mineral binders, as well as as finely dispersed active mineral additives in concrete and construction mortars. This will allow to replace expensive imported micro-silica and highly active meta kaolin and bind free calcium hydroxide (CH) to less soluble and reactive low-basic calcium hydrosilicate (CSH).

Thus, the use of local ZU to obtain effective fine-grained concrete (MZB) is a promising solution to the problem. Local zeolite can be used as a mineral additive to the concrete mix, as well as low-calcium fuel ZU, which is part of the binder, to obtain high-strength and corrosion-resistant MZB. At the same time, a chemical additive based on polycarboxylate ethers will allow to create a compacted and strengthened structure of cement stone.

Fine-grained concrete is an important direction in the development of modern building materials. Recently, many studies have been conducted aimed at improving the properties of fine-grained concrete by adding various impurities and additives.

One of the most interesting areas of research is microstructure optimization of fine-grained concrete. A study was conducted to optimize the microstructure and properties of fine-grained concrete using the addition of fine-dispersed silica powder and plasticizers. It was found that such additives significantly increase the strength and resistance of concrete to destruction. In addition, in this work, it is proved that the use of air-entraining and complex chemical additives does not increase the air-entraining capacity, but transforms the air phase into a system of smaller ordered pores, which leads to. It was found that such additives can significantly increase the strength and resistance of concrete to destruction. Additionally, in the same work it was proven that the use of air-entraining and complex chemical additives does not increase the air-entraining capacity, but transforms the air phase into a system of smaller ordered pores, which leads to an increase in the strength of the material and its durability. The organization of the air phase in the form of a system of fine air pores allows increasing the strength of the material and improving its other properties: frost resistance, water resistance, and others.

Multicomponent fine-grained concretes, which were not widely used in the past due to their properties and structure, are increasingly used to create structures in various areas of construction.

The use of concrete structure modifiers has significantly improved its performance characteristics, which became possible due to the transition to multicomponent concretes with additives such as superplasticizers and mineral additives of various types.

A multicomponent structure has a number of advantages, including effective control of structure formation and the ability to obtain materials with specified properties. Fine-grained concrete structure provides improved strength, durability, performance and resistance to aggressive environments, and also improves the aesthetic properties of structures.

Works devoted to the study of the properties of fine-grained concrete and their application in various construction industries. In particular, studies were conducted on the properties of fine-grained concrete using various fillers, such as ash, slag, expanded clay, glass and other materials.

One of the main advantages of fine-grained concrete is its increased strength and resistance to destruction. This is due to the fact that the use of small aggregates allows to reduce the distance between the cement particles, which leads to an increase in the contact surface between the particles and, consequently, to more efficient use of the binder [8].

Another advantage of fine-grained concrete is its increased deformation resistance. The use of small aggregates allows to create a denser concrete structure, which increases its resistance to deformation.

Also, fine-grained concrete is easier to process, which facilitates its use in various construction projects. They also have a higher resistance to wear, making them an ideal choice for projects that require high wear resistance, such as road surfaces or concrete floors. In addition, it is possible to improve the properties of fine-grained concrete by adding various additives. This allows you to create even stronger and more resistant to destruction materials.

The relationship of the topic of the dissertation with the directions of science development, which were formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs.

The research is based on theoretical and empirical methods based on generalization, comparison, experiment, methods of a systematic approach, mathematical modeling, planning and processing of experimental results. The work was performed using the system-structural approach of building materials science, which allows taking into account the relationship between the composition, structure and properties of the material, which in turn ensures the optimization of its production and operation processes. Experimental studies on laboratory samples using modern analysis methods such as electron microscopy, X-ray, photocolorimetric, laser granulometry and chemical analysis will allow to obtain more accurate and reliable results and evaluate the quality and properties of the obtained material. This approach ensures high reliability and accuracy of the data obtained, which is an important condition for the development of new building materials and optimization of their properties.

Analysis of the level of implementation of the results of the dissertation in practical activities. 8 scientific papers have been published on the topic of the dissertation in peer–reviewed scientific journals and publications designated by COXON of the Ministry of Internal Affairs of the Republic of Kazakhstan, including: in the WoS database – 2 articles, in the Scopus database – 2 articles, in journals recommended by COXON of the Ministry of Education and Science of the Republic of Kazakhstan - 3 articles; in other scientific journals and publications – 1 article. List of published works. The results of the work have been tested at 2 international scientific and practical conferences.

There is a patent for invention 2.

4.5. Analysis of the topic of the work of S.E. Nietbai "Ensuring the seismic resistance of architectural monuments by the device of geotechnical seismic insulation systems", submitted for the degree of Doctor of Philosophy (PhD) in the specialty 8D07303- Construction and production of building materials and structures.

Cultural and natural heritage is an invaluable and irreplaceable asset not only of every nation in the world, but also of all mankind as a whole. The concept of cultural policy of the Republic of Kazakhstan, aimed at ensuring the sustainable development of society based on the formation of creative value orientations, identified key problems and outlined models of cultural policy, where one of the priorities is the protection of existing cultural values.

A significant part of the oldest architectural monuments of Kazakhstan and Central Asia, which are the heritage of world culture, are located in earthquake-prone areas with varying intensity of impacts and patterns of propagation of seismic waves in difficult engineering and geological conditions. Among them, the architectural and cultural heritage of the 14th century, the Mausoleum of Khoja Ahmed Yasawi, is located in an area with a seismicity of 7 points, with difficult soil and hydrological conditions. To solve the problem of ensuring the earthquake resistance of architectural monuments, alternative methods and means of seismic protection and seismic insulation have been developed in our country and abroad, reducing the intensity of seismic loads. Research on international policy in the field of cultural monuments protection and the experience of various countries shows common approaches in preserving the cultural heritage of history. At the same time, British experts are of the opinion that the preservation of architectural monuments should be

ensured with minimal interference in its structure. Therefore, the problem of ensuring earthquake resistance and protection of historical structures, their preservation and transmission from generation to generation in their original historical appearance, is an increasingly relevant topic today.

Research on international policy in the field of cultural monuments protection and the experience of various countries shows common approaches in preserving the cultural heritage of history. At the same time, British experts are of the opinion that the longest possible life of the monument should be ensured with minimal interference in its structure, because with the "double process of destruction and restoration, the exterior appearance of the building necessarily deteriorates.

The preservation of architectural monuments and their durability depends on many factors affecting the destruction of the supporting structure and appearance. Both natural and man-made interference by humanity increases the risk of their premature destruction.

Therefore, our research is related to studying the impact of seismic effects on architectural monuments and ensuring their stability and safety without interfering with the structures of the structure.

Ensuring seismic protection and seismic isolation of architectural monuments requires the use of various methods and technologies that take into account the unique features of each historical site.

An effective approach to earthquake protection is to strengthen the building structure. This approach aims to increase the strength and rigidity of the existing building structure to resist seismic impacts. The main method of strengthening the building structure is the reinforcement of walls and foundations. The method consists of installing steel or composite reinforcing elements inside existing walls or foundations to increase their strength. An example is self-compacting concrete reinforced with steel fiber, which is a relatively new composite material obtained by adding fiber to a brittle cementing matrix. Injection technologies are also widely used. Filling cracks and voids in stone or brick masonry with cement or polymer mortars to increase the integrity of the structure, such as a modified polymer mortar that can be used as a fluid mortar for semi-flexible mixtures. A grout combination consisting of ordinary Portland cement, acrylic emulsion, superplasticizer and water. Another method is the use of shell structures. Creation of additional shells around the building's load-bearing elements, such as columns and beams, to increase their resistance to seismic loads. An example is the modernization technique in which carbon fiber sheets were glued to a stone wall, and also attached to the surrounding concrete frame using specially designed carbon fiber anchors.

The use of modern monitoring and control technologies is also widely used, which makes it possible to identify and eliminate potential threats to historical buildings in a timely manner. The main monitoring and control methods include Seismic sensors. Installation of seismic sensors and accelerometers for continuous monitoring of seismic vibrations and the condition of the structure.

The relationship of the topic of the dissertation with the directions of science development, which were formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs. The development of new methods of seismic insulation, characterized by new principles of operation, the best modified properties to reduce inertial seismic loads on the structure, are very relevant. Analysis of the world experience in theoretical and experimental research, methods and means of seismic protection and seismic insulation for the development of methodology and scientific and technical justification of the effectiveness of their use in ensuring the earthquake resistance of architectural monuments. Creation of an information model and development of a methodology for assessing the earthquake resistance of architectural monuments. The development of the concept of geotechnical seismic insulation as a design alternative to the traditional seismic insulation system, characterized by reliability in ensuring the earthquake resistance of architectural monuments.

Analysis of the level of implementation of the results of the dissertation in practical activities. The main results of the dissertation are presented in 7 published papers of scientific value, including 2 publications in the journal of the Scopus database Q2, Q3, 2 in journals recommended by the KOKSNVO, 3 in journals recommended by the RSCI, 2 patents for the invention: "Screen for protecting buildings and structures from seismic shocks during earthquakes and effects of man-made sources of fluctuations".

4.6. Analysis of the topic of Kozhakhmetov's work "Socio-ecological and architectural-urban principles of the development of public spaces in large cities of Kazakhstan", submitted for the degree of Doctor of Philosophy (PhD) in the specialty 8D07302 – Architecture and urban planning

In the modern world, there is a significant increase in attention to the role and importance of public spaces in the urban environment. This trend is due to the increasing influence of cities on the social and economic life of both developed and developing countries. Kazakhstan is also notable in this context, but despite its significant territory and unique natural conditions, research on urban processes here has not yet become widespread, especially in terms of studying public spaces and their impact on urban development. The value of this work lies in the fact that, despite the significant development of the topic of public spaces in science, today's defense demonstrates the result of many years of efforts. The doctoral student's work began with a bachelor's degree, continued with a master's degree and during the following years of training. He has been improving and developing all this time.

One of the main advantages of a doctoral student is his ability to adapt, listen, draw conclusions and make necessary adjustments. This quality is reflected in the content of the work, which demonstrates a scrupulous attitude to the use of scientific works and the correct citation of previously published studies on the problems of the planning organization of public spaces.

I would also like to note the high level of graphic culture of the presented material. The illustrations in the dissertation are made clearly and make it possible to effectively demonstrate the main points of the work formulated in the text material.

As a scientific consultant, I can confirm that the doctoral student skillfully responded to comments, drew the necessary conclusions, and each time came closer to achieving his goals.

The value of a public space is shown when there is social activity in it. That is, by creating socially active spaces, the value of the territory is improved. If the space is used only once a year for major events and is idle at other times, then its value will be reduced. In this regard, we propose the activation of public space through the multifunctionality of buildings, landscaping and the creation of social infrastructure facilities that will work until late in the evening.

Social comfort: social comfort, first of all, lies in the safety of people. When people feel safe, they feel more comfortable. The next moment is when people are interested: when there are objects, functions, landscaping or small architectural forms that make it possible to use space. It also helps to create a comfortable environment.

The model in practice: We have applied these principles in a theoretical model, as well as used the results in real projects over the past four years. In particular, this concerns the RAP of the city of Almaty, where the principles were implemented in separate urban fragments. For example, the square in front of the Ascension Cathedral, the concept of developing public spaces in the area of apartment buildings located in the quarter of Rozybakiev, Zhandosov and Satpayev streets, as well as in other complexes, including multifunctional complexes and administrative districts.

Analysis of the work of official reviewers (with examples of the most low-quality reviews)

Ful	**name**	**student Reviewers**

1	of the doctoral	Full name of the reviewer1(position, academic degree, title, number of publications in the specialty for the last 5 years)	Full name of reviewer 2 (position, academic degree, title, number of publications in the specialty over the past 5 years)
1	Omarov Berik Amankeldievic h	Rakhimova Galiya Mukhamedievna-Candidate of Technical Sciences, Associate Professor, Head of the Department "Construction Materials and Technologies", Karaganda Technical University.	Zhuginisov Maratbek Turabayuly-Doctor of Technical Sciences, Professor Kazakh National Research Technical University named after K. I. Satpayev.
2	Ibraimova Ulzhan Bakhytzhankyzy	Polyakova Irina Markovna-Candidate of Technical Sciences, KAZGAS, Almaty. Қазақстан.	*Mirzayev Askar Akramovich*-Candidate of Technical Sciences, Associate Professor, "Tashkent University of Architecture and Civil Engineering", Tashkent, Uzbekistan.
3	Kudabaev Ruslan Bakhtiyarovich	Karshyga Galymzhan Orynbasaruly - Candidate of Technical Sciences, ass. professor Korkyt Ata Kyzylorda University, Kyzylorda, Kazakhstan	**Rakhimova** Galiya Mukhamedievna Rakhimova - t Candidate of Technical Sciences, ass. professor, Karaganda Technical University, Karakandy
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Suggestions for further improvement of the system of scientific personnel training: Increase the requirements for the work of scientific consultants (especially from Kazakhstan) of doctoral students in terms of the proposed topics of dissertation research and their guidance in the training of scientific personnel.

1. Data on reviewed dissertations for the degree of Doctor of Philosophy PhD, doctor by profile

Dissertation Council	Code and name of the specialty		
	8D07305 - " Construction and production of building materials and structures	8D07303- Construction and production of building materials and structures	8D07302- Architecture and urban
planning Theses accepted for defense	4	1	1
Including doctoral students from Other universities	2	1	-
Dissertations withdrawn from consideration	-	-	-
Including doctoral students from other universities	-	-	-
Dissertations that received negative Reviews from reviewers	-	-	-
Including doctoral students from other universities	-	-	-
Dissertations with a negative decision based on the results of the defense	--	-	-
Including doctoral students from other universities	-	-	-
Dissertations aimed at revision	-	-	-
Including postdoctoral students from other universities	-	-	-
Dissertations aimed at re-defense	-	-	-
Including doctoral students from other universities	-	-	-

Chairman
of the Dissertation Council on
Architecture and Construction **B. U. Kuspangaliev**

Scientific Secretary
of the Dissertation Council in the field
of Architecture and Construction **K. Akmalayuly**