Increase local prospects of innovative approaches to improving energy efficiency of buildings

Navro'zbek Ergashevich Rahmonov
rahmonov.navruzbek@list.ru
Jizzakh Polytechnic Institute

Abstract: The article provides information on the effectiveness of work on improving the energy efficiency of buildings, which today are considered relevant issues, and the work carried out on improving the work in this regard in local conditions, as well as the desire for work in this regard.

Keywords: decay, atmosphere, acid, ecological, energy efficient, aerated concrete blocks, statistical analytical calculations, energy consumption

It is known that the growth of the population on Earth and economic development are leading to an increase in the consumption of energy resources, an increase in demand for them and price. At the same time, such a situation is caused by the absorption of the Earth's general ozone layer, pollution of the atmosphere from acidic residues, the emergence of toxic substances as a result of the occurrence of secondary chemical reactions in all layers of the biosphere, pollution of oceans, land-based water bodies surfaces and groundwater, violation of global and territorial environmental balance and. Therefore, the importance of energy conservation and efficiency will continue to increase. Work on this is being carried out in each country with an approach. A similar situation once happened with energy-saving window profiles, which are now widely used in construction. Sometimes they are still installed on the panels in the factory, which excludes incorrect installation and, as a result, heat loss.

Interestingly, in recent years, a proposal has been considered to take into account environmental indicators in the process of assessing the energy efficiency of the building. For example, many companies are replacing lead stabilizers on the window profile with safer materials. An important role in improving energy efficiency is played by the materials provided for the construction of the building. For example, modern aerated concrete blocks allow you to connect them with the most delicate seam. This reduces the risk of heat loss through the joint solution.In addition, a special glue has recently been presented, the use of which reduces any heat loss to a minimum. In most cases, they are reduced to zero.Often innovative changes also affect the engineering systems of the building. This applies primarily to ventilation and heating systems. However, in recent years, elevators have also been evaluating energy efficiency, as energy loss has been proven to reach fifteen percent in some cases when using these devices. Experts advise to evaluate the elevators not in production, but after installation on the construction shaft.

In this case, the data will be as close to reality as possible. I would also like to note that energy efficiency ideas are very popular. If we talk about the residential sector, then apartments built on the basis of modern technologies are in great demand from buyers. In this regard, there is hope that integrated technologies aimed at improving energy efficiency will be used everywhere and become one of the priorities. public policy is in construction.

An energy-saving House is a building that combines very low energy consumption with a comfortable microclimate. Energy savings in such houses are up to 90%. The annual heating requirement of an energy-efficient house can be less than 15 kW per square meter.

For example, in the most common design of a private house today (reinforced concrete foundation, a "warm floor" system without insulation, 1.5 brick walls with cement plaster, ordinary metal-plastic windows, roof insulation 150 mm and no supply) and exhaust ventilation with heat release) the energy consumption for heating is 110-130 kW per 1 m^2 per year.

A building built on the basis of modern energy efficiency standards can save 40-70% of utility bills. Large amounts of energy and resources are saved. At the same time, the general indicators of temperature, favorable microclimate, air humidity are in a larger order than the generally accepted ones, and are regulated by the owner of the room.

Today, there are four of the most popular ways to check the energy efficiency of buildings, consisting of those below:

1. Short-term measurement method. This style consists of a one-time measurement of the reading of one or two modernized engineering equipment in a building. In this case, the readings of other systems are analyzed based on General Statistics. As a result, the readings of new and old models are compared, the difference is taken into account and the energy efficiency class of the building is established.

2. Continuous sequential measurement method. In this case, the auditor measures the performance of modernized engineering equipment with a certain regularity for a certain period of time. The readings of old equipment, as in the first method, are measured by statistical analytical calculations. The final indicators will help to identify shortcomings in engineering equipment and update the system as efficiently as possible.

3. Analysis of the reading of equipment inside the building. As a rule, this is a long-lasting process that involves constantly recording the readings of all equipment

in the building, on the basis of which an analytical conclusion is drawn and a certificate of energy efficiency of the building is issued.

4. Computational and experimental. A modern way to determine the energy efficiency of buildings and structures, it is based on computer calculations and modeling the energy curve model of the building. This type of analytical work, as a rule, is carried out throughout the building.

Work on this in our country is also being carried out in a high way for example more than three years have passed since the Paris agreement on climate change was signed. The date of signing this international document almost coincided with the approval by the Government of Uzbekistan of a joint project with our GEJ and the Ministry of construction of Uzbekistan to promote and build energy-efficient and low-carbon country houses and rural settlements.

Work in this direction has been successfully carried out from 2017 to the present day, and the first high-quality results have determined a positive direction for the entire project.In accordance with the Presidential Decree No. 5577 of November 14, 2018 "on additional measures to improve state regulation in the field of construction", according to the state program "affordable housing of rural residents", all housing construction should be energy-efficient on new model projects developed with Project Support. In 2019, their number exceeded 12,000 units, the main feature of such structures is the use of additional thermal insulation made of mineral wool (Basalt Fiber), which retains heat in winter and cool in summer, reducing energy consumption by about 30 percent.In addition, within the framework of our project, a green mortgage scheme was tested in order to attract personal investments in construction in five regions of our country (Samarkand, Surkhandarya, Fergana, Khorezm and Bukhara). It is noteworthy that 800 one-story three-room houses were built not only with the insulation of the outer wall, but also with photovoltaic devices with a power of 300 Watts, as well as water heaters with a volume of 200 liters, which are powered by sunlight.

References

1. Алиев, М. Р. (2020). Экспериментальное определение динамических характеристик кирпичных школьных зданий. Academy, (11 (62)), 66-70.

2. Rakhmonkulovich, A. M., & Abdumalikovich, A. S. (2019). Increase seismic resistance of individual houses with the use of reeds. Modern Scientific Challenges And Trends, 189.

3. Юсупов, У. Т., Алиев, М. Р., & Рузматов, И. И. (2021). Энергоэффективность новых жилых домов. Science and Education, 2(5), 131-143.

4. Юсупов, У. Т., Алиев, М. Р., & Илҳомов, Р. (2021). Архитектурное решение энергоэффективных многоэтажных жилых домов. Science and Education, 2(5), 276-287.

5. Алиев, М. Р. (2022). Характерные повреждения индивидуальных домов со стенами из сырцового кирпича. Eurasian Journal of Academic Research, 2(3), 264-268.

6. Aliyev, M. R. (2022). Bino va inshootlarning konstruksiyalarini tekshirishning asosiy bosqichlari. Science and Education, 3(2), 98-102.

7. Asatov, N., Tillayev, M., & Raxmonov, N. (2019). Parameters of heat treatment increased concrete strength at its watertightness. In E3S Web of Conferences (Vol. 97, p. 02021). EDP Sciences.

8. Рахмонов, Н. Э. (2020). Проблемы разработки отечественного синтетического пенообразователя. Academy, (11 (62)), 93-95.

9. Rahmonov, N. E. (2022). Energiya samarador uylar qurilishini qishloq sharoitida ommalashtirish istiqbollari. Science and Education, 3(2), 169-174.

10. Асатов, Н. А., & Рахмонов, Н. Э. (2022). Пути уменьшения краевого эффекта при расчете конического купола с учетом влияния преднапряженного опорного контура. Eurasian Journal of Academic Research, 2(3), 260-263.

11. Ablayeva, U., & Normatova, N. (2019). Energy saving issues in the design of modern social buildings. Problems of Architecture and Construction, 2(1), 59-62.

12. Норматова, Н. А. (2020). Проектирование энергосберегающих зданий в условиях узбекистана. Academy, (11 (62)), 89-92.

13. Аблаева, Ў. Ш., & Норматова, Н. А. (2021). Тошкент: лойиҳалашнинг анъанавийликдан хозирги кунигача. Science and Education, 2(5), 206-216.

14. Аблаева, Ў. Ш., & Норматова, Н. А. (2021). Ўзбекистондаги мавжуд биноларнинг энергия тежамкор шамоллатиладиган тизимлари асосий системалари. Science and Education, 2(5), 193-205.

15. Норматова, Н. А. (2022). Саноат биноси ташқи деворининг иссиқлик самарадорлигини аниқлаш ва ечиш. Eurasian Journal of Academic Research, 2(3), 224-227.

16. Испандиярова, У. Э. К. (2020). Усиление мостовых железобетонных балок высокопрочными композиционными материалами. European science, (6 (55)), 63-67.

17. Асатов, Н. А., & Испандиярова, У. Э. К. (2021). Бетон с комплексной добавкой на основе суперпластификатора и кремнийорганического полимера. Academy, (5 (68)), 6-10.

18. Испандиярова, У. Э., & Исаев, Р. А. (2023). Рост промышленного и жилищного строительства в нашей республике, актуальные вопросы, стоящие перед строителями. Science and Education, 4(4), 413-420.

19. Карабеков, У. А., & Каримов, В. Ш. У. (2021). Использование ГИС-технологий в городах строителство. Science and Education, 2(5), 257-262.

20. Karabekov, U. A. (2022). Improve the use of gis in land management for agriculture and farmers. Eurasian Journal of Academic Research, 2(3), 256-259.

21. Karabekov, U. B. A. (2022). Qishloq xo‘jaligi va landshaft kartalarini yaratishda GAT dasturlarini qo‘llash texnologiyasini takomillashtirish. Science and Education, 3(2), 163-168.

22. Gayrat, S., Salimjon, M. K., & Dilshod, Z. (2022). The heat does not cover the roof of residential buildings increase protection. Galaxy International Interdisciplinary Research Journal, 10(2), 674-678.

23. Асатов, Н. А., & Саримсоков, С. Ш. (2022). Экспериментальные исследования динамических параметров висячих систем. Eurasian Journal of Academic Research, 2(3), 232-237.

24. Sarimsoqov, S. S. (2022). Armaturalangan ikki qiyali yog‘och to‘sinni loyihalash. Science and Education, 3(2), 175-183.

25. Sarimsoqov, S. (2019). The main characteristics of the situational method of teaching a foreign language. In science and practice: a new level of integration in the modern world (pp. 205-207).

26. Uktamovich, S. B., Yuldashevich, S. A., Rahmonqulovich, A. M., & Uralbayevich, D. U. (2016). Review of strengthening reinforced concrete beams using cfrp Laminate. European science review, (9-10), 213-215.

27. Asatov, N., Jurayev, U., & Sagatov, B. (2019). Strength of reinforced concrete beams hardenedwith high-strength polymers. Problems of Architecture and Construction, 2(2), 63-65.

28. Sagatov, B., & Rakhmanov, N. (2019). Strength of reinforced concrete elements strengthened with carbon fiber external reinforcement. Problems of Architecture and Construction, 2(1), 48-51.

29. Ашрабов, А. А., Сагатов, Б. У., & Алиев, М. Р. (2016). Усиление тканевыми полимерными композитами железобетонных балок с трещинами. Молодой ученый, (7-2), 37-41.

30. Sagatov, B. U. (2022). O’zbekistonda energiya tejamkor binolar qurilishining ahvoli. Science and Education, 3(1), 261-265.

31. Sagatov, B. U. (2022). Composite materials for reinforcing ferro-concrete elements. Eurasian Journal of Academic Research, 2(3), 281-285.

32. Abdurakhmanov, A. M. (2020). Ventilated hinged view and its properties. in синтез науки и образования в решении глобальных проблем современности (pp. 37-43).

33. Асатов, Н. А., & Абдурахмонов, А. М. (2023). Исследование энергоаудита жилого здания для устойчивого развития с использованием

возобновляемых источников энергии. актуальные проблемы научных исследований: теоретический, 16.

34. Асатов, Н. А., & Абдурахмонов, А. М. (2023). Исследование меры энергоэффективности и экономического анализа изоляционных материалов в строительном секторе. глобализация науки: история, современное состояние, 19.

35. Асатов, Н. А. (2023). Анализ иследования ультранизкого энергопотребления зданий из передовых материалов и необходимые условия для них. central asian journal of arts and design, 79-83.

36. Abdurakhmanov, A. M., & Pak, D. A. (2021). Analysis of a research of a technique of construction of reinforcing frameworks. Сборник статей подготовлен на основе докладов Международной научно-практической, 3.

37. Пармонов, Н. Н., & Абдурахманов, А. М. (2021). Новая энергоэффективная технология, применяемая в производственных процессах. In Технические и технологические основы инновационного развития (pp. 30-32).

38. Pak, D. A. (2021). TECHNIQUE INCREASE IN FIRE RESISTANCE METAL DESIGNS. In ИНТЕГРАЦИЯ НАУКИ, ОБЩЕСТВА, ПРОИЗВОДСТВА И ПРОМЫШЛЕННОСТИ: ПРОБЛЕМЫ И ПЕРСПЕКТИВЫ (pp. 9-10).

39. Пармонов, Н. Н., & Абдурахманов, А. М. (2021). ИССЛЕДОВАНИЕ СПОСОБОВ РАСЧЕТА СТАТИЧНО НЕОПРЕДЕЛИМЫХ СИСТЕМ. In ФУНДАМЕНТАЛЬНЫЕ И ПРИКЛАДНЫЕ НАУЧНЫЕ ИССЛЕДОВАНИЯ: АКТУАЛЬНЫЕ ВОПРОСЫ, ДОСТИЖЕНИЯ И ИННОВАЦИИ (pp. 48-50).

40. Kobilov, B. U., & Abdurakhmanov, A. M. (2021). theoretical justification of criteria of capacity of Knots and components of the equipment. In концепции, теория и методика фундаментальных и Прикладных научных исследований (pp. 136-137).

41. Inomovich, A. N. (2021). Principles of Reconstruction and Formation of Residential Buildings Typical of Historical City Centers. European journal of innovation in nonformal education, 1(2), 29-40.

42. Inomovich, A. N. (2021). CHARACTERISTICS OF HISTORICAL SAMARKAND CITY CENTERS. International Journal of Discoveries and Innovations in Applied Sciences, 1(5), 155-158.

43. Inomovich, A. N. (2022). Cement Hardening and its Kinetic Features. European Journal of Life Safety and Stability (2660-9630), 13, 54-57.

44. Асатов, Н. А., Сагатов, Б. У., & Нишонова, Д. И. (2023). Проектирование солнцезащитного устройства в условиях сухого жаркого климата. Science and Education, 4(4), 460-468.

45. Асатов, Н. А., Сагатов, Б. У., & Джавлонова, Ш. Г. К. (2023). Перспективы реконструкции производственных зданий. Science and Education, 4(4), 445-451.

46. Asatov, N. A., Sagatov, B. U., & Egamberdiyev, T. T. O. G. L. (2023). O'zbekiston Respublikasida 1970-2020 yillarda qurilgan turar-joy binolari. Science and Education, 4(4), 452-459.

47. Джураев, У. У. (2021). Влияние минеральных добавок в агрессивной среде на прочность керамзитобетона. Science and Education, 2(5), 144-154.

48. Dzhuraev, U. U. (2020). Improving the technical condition of buildings and structures on the basis of verification calculation.

49. Djurayev, U., & Mingyasharova, A. (2019). Determination of the technical condition of buildings and structures on the basis of verification calculations. Problems of Architecture and Construction, 1(4), 37-39.

50. Джураев, У. У. (2020). Повышение технического состояния зданий и сооружений на основе поверочного расчета. Academy, (11 (62)), 70-74.