



## ECOLOGICAL FRIENDLINESS IN THE PRODUCTION OF CONSTRUCTION MATERIALS AS THE MAIN DIRECTION OF URBAN DEVELOPMENT

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<https://doi.org/10.5281/zenodo.19333664>

### ARTICLE INFO

Qabul qilindi: 21-mart 2026 yil  
Ma'qullandi: 25-mart 2026 yil  
Nashr qilindi: 30-mart 2026 yil

### KEYWORDS

*urban development, ecology ,  
building materials.*

### ABSTRACT

*This article examines the main trends in building projects using environmentally friendly construction materials. It describes some of the environmentally friendly materials currently used worldwide and provides examples of green building construction..*

Construction is a branch of material production aimed at producing building materials, constructing buildings and structures, and reconstructing and demolishing them. The construction process includes all survey, design, organizational, and construction and installation work. The results of construction are completed buildings with interior finishes, a functioning technological system, and the relevant documentation.

Urban planning is the planning and development of cities; a field of construction and architecture that comprehensively addresses aesthetic and construction-technical issues.

The purpose of urban development is to construct residential space for comfortable living of the population.

Construction impacts the environment. Under buildings, the soil, topography, groundwater, moisture evaporation, vegetation density, and much more change. All these criteria must be observed during planning and construction to maintain the balance between people and nature. It is also important to use environmentally friendly materials in construction.

In Russia in the 1960s, sanitary control for synthetic building materials was created and approved: "List of polymeric materials and structures permitted for use in construction by the Ministry of Health."

Even as the chemical industry accelerates its production of cheaper but more hazardous products, new, more environmentally friendly building materials are being developed every year. This is essential for maintaining human health, as more and more people suffer from various diseases every day. But we can reduce this number by using environmentally friendly building materials.

Eco-friendly materials are those whose production does not harm the environment or other objects. There are two types of building materials:

- 1) Absolutely environmentally friendly (stone, wood, rubber, bamboo, straw, cotton);
- 2) Conditionally environmentally friendly (brick, foam concrete blocks, tiles, materials made of silicon and aluminum).

Currently, conditionally environmentally friendly materials are used to a greater extent; they are as safe as absolutely environmentally friendly ones, but have the highest technical indicators [1, pp. 35–37].

New environmentally friendly materials are no less popular. For example, the following can be used for wall construction:

Geocar is a noise-absorbing and heat-insulating block made from peat with added wood chips. It has bactericidal properties and kills harmful microorganisms. It can be used in buildings up to three stories high.

Ceramic foam (kerpen) is a highly porous building material composed of low-melting clays, basalts, and perlites. It is significantly lighter than brick, yet significantly stronger.

– Reeds, straw blocks – lightweight blocks made from reeds and straw, in which clay is used as a binding element. They are used as insulation in the construction of capital buildings [2].

The most environmentally friendly roofing materials include: ceramic tiles and sheet copper.

As insulation you can use: mineral wool, wood boards and ecowool (made from cellulose).

"Green buildings," which have a minimal environmental impact, have recently gained popularity in urban development and are now being built around the world. An example of such a structure is a building completed in 2009 in Copenhagen. Its primary energy sources are the sun and ground heat. Its cylindrical shape reduces heat loss from the façade while more efficiently harnessing sunlight during the day. During hot weather, roof windows provide ventilation, and thermoactive concrete floors provide cooling.

Eco-friendly building materials typically vary in price. They are generally more expensive, leading to higher project costs, and sometimes even cheaper. The choice is up to the construction company: save on material costs and pollute the environment, or build environmentally friendly structures.

Thus, modern urban development, which ensures the aesthetic appearance of cities and environmental safety, while using environmentally friendly building materials, is a relevant direction for the development of the construction industry.

#### References:

1. Peredelsky, L. V. Construction ecology: textbook / L. V. Peredelsky, O. E. Prikhodchenko. - Rostov n / D: Phoenix, 2003. - 320 p.
2. Builder's Handbook // 19.01.2015 [Electronic resource]. URL