The adoption of these practices not only benefits the environment but also presents a range of economic and social benefits, including reduced energy costs, improved indoor air quality, and enhanced occupant comfort and wellbeing. As a result, there is a growing interest among architects, engineers, and construction professionals in sustainable and eco-friendly construction practices, with many viewings them as a crucial component of a more sustainable future.

However, there are also challenges to the widespread adoption of these practices, including high initial costs, a lack of awareness and education, and resistance from traditional construction practices. Nevertheless, as the benefits of sustainable and eco-friendly construction practices become more widely recognized, it is likely that the trend towards these practices will continue to grow, paving the way for a more sustainable and eco-friendly construction industry in the future.

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REUSE OF MATERIALS IN CONSTRUCTION

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As global warming and reduction of carbon emissions themes are not losing their relevance professionals of all fields seek the ways to save energy and resources.

Reuse should be prioritized over recycling as it can reduce the whole industry's carbon emission. Reuse usually takes less energy and labor, compared to recycling. It reduces air, water and land pollution, limits the need for new natural resources, such as timber, oil, fibers and the others.

Reuse needs much fewer resources because the main idea of the method is to use the parts of the other buildings without changing their forms and nature. The materials can be refinished or resized, but should keep their original forms.

The building materials such as beams, bricks, glass can be reused again almost without any changes. And such building elements as doors and windows should be reused and not recycled as more energy could be saved. For example, the energy saving potentials of reuse and recycle a door is 50% versus 8%.

There are a few examples of the reusable/recyclable/biodegradable building materials architects can use in their projects to reduce pollution and energy use: wood (reusable/recyclable/biodegradable); steel, aluminum, iron, copper (reusable/recyclable), bricks (reusable/recyclable).

In 2016, Belgian studio Samyn and Partners completed the European Union's headquarters in Brussels which features a large glass atrium with a transparent facade on its new northeast corner constructed as a patchwork out of 3,750 recycled wooden window frames from renovation or demolition sites across Europe.

Architects who want to reuse the materials for their project can face many issues. The main problems are materials search and liability. Usually there is no information about quality and reliability of the materials.

The architects say that BIM models or 'resource passports' for all buildings in danger of being demolished must be created so the architects can understand which resources are available. With more information about the physical characteristics of materials and the possibility of reuse/recycling, the reuse of materials in construction will be easier and safer.

David Greenfield, managing director at the consultancy SOENECS (Social, Environmental & Economic Solutions) says, that the biggest barrier for the architects is the mindset of what circular economy and reusing are. Now the most developed countries in this area are Denmark, Belgium and the Netherlands.

A lot of construction wastes create many environment problems. The energy saving potential of reusing and recycling is very high compared to incineration and creating databases will help accelerate wide-ranging change. Ukraine has faced a lot of destruction because of the war and the reuse of building materials will help reduce environmental damage and material costs.

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PREDICTING TRAFFIC ACCIDENTS METHODS IN URBAN PLANNING

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The relevance of the research topic

Every year, road traffic accidents (RTAs) in urban lead to the death and injury of road users, as well as significant material losses not only to users but also to the road network. There are different reasons for this phenomenon, but one of the main factors is the insufficient consideration of the road's network formation attributes depending on urban planning conditions, which leads to poor perception of the "visibility triangle" by drivers and pedestrians.

This problem become increasingly relevant, therefore, identifying the causes of RTAs and addressing prevention issues are important scientific research topics.

Modern information technologies are the most important factor in the development of both the modern science and education system and means of ensuring safety of people. Using computer technologies creates fundamentally new opportunities not only in obtaining knowledge and skills to prevent RTAs, but also in their prediction.

Developing methods for predicting the number of RTAs will make it possible to reduce their number through advance forecasting, taking into account the framework of the road network. Using the models for predicting the number of RTAs will enable:

- the comparison of theoretically calculated forecasts and actual statistics
- tracking the number of RTAs
- analyzing the growth or decline rates of their numbers with respect to the factors affecting the outcome indicator (number of cars and the population of a particular city, region or country)

The goal of the research:

The goal of this research is to explore methods for reducing accidents in cities while considering their urban planning component. Accordingly, the following tasks will be performed in my work: