



INTEGRATION WITH NATURE DESIGN IN GREENING URBAN ROADS

Eshquvatov Ulug‘bek Abdulla og‘li

Teacher at Termez State University of Engineering and Agrotechnology

Abstract:

This article discusses the main means of greening cities and residential areas, the creation of green spaces of significant ecological importance, the ability of trees and shrubs to provide optimal microclimate conditions, regulate the gas composition of the air, protect residential areas from urban noise, and new and advanced methods of using natural resources to purify urban air, as well as methods of obtaining energy using highways.

Keywords: City roads, greening, nature conservation, design, integration, highways, solar energy, green areas.

Introduction

The United Nations 2018 report predicts that by 2050, a large part of the world's population, 68 percent, will live in cities. These figures are especially true for developing countries, and in most countries, more than 50 percent of the population will live in cities. When we think about livable cities, we focus primarily on key criteria such as optimizing buildings for energy efficiency, improving public transport, and providing pedestrian-friendly sidewalks.

The prospect of urbanization on the scale predicted by the UN means that these advances must be linked to a more fundamental recalibration of how we think about the relationship between the built environment and the natural environment. From biodiversity loss to the spread of pandemics, our mistaken belief that humans are somehow above and separate from the natural world is already having an impact. To ensure that an urbanized future is livable, we must start designing places that coexist with nature as their core feature, rather than trying to dominate and separate ourselves from it.[1]

But the importance of nature for the cities of the future goes beyond its functional benefits. The fundamental need to connect with the natural world is something we are hardwired into as humans, and a growing body of science is showing that experiencing nature benefits our health and well-being in many ways. Time spent in natural environments is known to enhance our mental and physical health ; improve cognitive function , attention, memory, and creativity ; reduce depression



; improve sleep; reduce stress , and improve our overall happiness and well-being . There is even evidence that living close to green spaces can help us live longer . In other words, if we are deprived of nature, our health will suffer. Therefore, as we move towards a future of concrete and asphalt, the task of establishing the right relationship between nature and cities is crucial to ensuring the well-being of the inhabitants of these cities.

Main article

Cities around the world have done this in a variety of ways, from connected networks of parks and urban green spaces to green roofs, green walls, and roadside gardens. The growing movement of architects and designers in the emerging field of biophilic urban design has shown what our cities could look like if we embraced it on a global scale .

The development of sustainable technologies is the need of the hour today. With the rapid depletion of natural resources, the threat to survival has become clear. Scientists and designers are constantly searching for designs that will solve the survival needs of tomorrow. It is true that the increasing number of highways should be blamed for polluting the environment. However, many modern industrial designers guarantee that this transportation line will become a center for green energy production for the future. Highways stretched over vast areas have the potential to develop many sustainable energy generation tools. Electric cars, electric turbines, solar and wind energy lighting, and solar-powered air purifiers are just a few of the futuristic designs to limit pollution levels and build a self-sufficient system through highways.

It won't be long before these green innovations turn our highways into power generation hubs. They could soon be powering our residential and industrial centers. Not only is this a cheaper option, it will also save us from our non-renewable energy sources like coal, nuclear, and petroleum.

1. Solar-powered city air purifier





Air pollution has taken a toll on our health as well as the ecosystem. The increasing number of vehicles on our streets and highways needs to be checked. This is possible with a solution presented by industrial designer Ken Jansinski. Jansinski's solar-powered air purifier can be mounted on existing streetlight poles. It uses a solar panel to generate energy to power an ultraviolet air purification system. The system captures carbon dioxide from the surrounding air and releases oxygen into the atmosphere. It is designed to work even on cloudy days.[2]

2. E turbine



While we know cars tend to consume the energy they produce, a new concept has been developed that could generate renewable energy from the movement of cars on highways. Industrial designer Pedro Gomes uses electronic turbine technology, which converts the air movement caused by fast-moving cars into renewable

energy. This energy can be used to power street and road lighting, information panels and emergency telephones. The system, which is placed between two rows of cars, generates energy from the movement of the air, which is then transferred to the main battery.[3]

3. The concept of road ribs for generating energy from traffic



Electric power generating road ribs are a design that allows for the generation of renewable energy by driving on highways. These road ribs are here to convert the fuel energy used by vehicles into useful energy. It is more like making the best of waste. This saved energy can be used to light highways or charge electric vehicles. This technology is based on the concept that any moving vehicle should also move the ribs, which in turn generates energy, and this energy can be stored in batteries placed along the road. These ribs are able to withstand the weight of heavy vehicles without showing signs of wear and tear.

4. Trunk lighting concept - Night Owl



Industrial designer Eden Kurzweils recently prepared for an era when electricity would be unavailable. He sees solar power as the only source of energy that has the potential to meet future needs.[4] This LED lighting system is powered by solar energy. It illuminates cities and roads through clusters of LEDs that rely on batteries charged by large flexible polymer solar panels mounted on top of the lights. It requires little maintenance.

5. Wind and sun energy working release for green roads project



Innovators, Gene Fein and ED Merritt car of the roads potential from growth again renewable energy working releasing to places use the idea think They found . Highways are ideal for hosting these green generators, wind turbines, and solar panels. This advanced road project uses solar panels, wind turbines, and geothermal devices to convert natural resources like sunlight and wind into electricity. The idea was to electrify our cities with green energy while also turning highways into charging stations for electric vehicles.

References:

1. AKQayimov. Greening of residential areas. - T .: "Science and Technology", 2012, 204 pages.
2. Dosakhmetov AO Greening of residential areas. Text of lectures. Tashkent, Tashkent State University of Applied Sciences, 2001.
3. RMBakhramov. Texas Journal of Agriculture and Biological Sciences ISSN NO: 2771- 8840 <https://zienjournals.com> Date of Publication: 28-04-2023. 1-6 p.m.
4. RMBakhramov. 1st International Conference on Energetics, Civil and Agricultural Engineering 2020 which will take place in Tashkent/Uzbekistan on October 14-16, 2020.