

## LANDSCAPE SOLUTIONS AROUND THE HIGHWAYS

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**Annotation:** This article demonstrates the turfs of landscape of highways. Moreover, this paper presents the results of scientific research on landscaping using local and acclimatized ornamental plants in the development of landscape solutions based on the climatic conditions of the regions.

**Keywords:** highway curbs, landscape solutions, plant composition, aesthetic and functional qualities, annual and perennial flowering plants, technological discoveries, outdoor environments, parks, parks, hilly areas, ecology, green architecture , ornamental trees and shrubs.

A large-scale work is being carried out in our country to create a complex of various industries that meet world standards. From the first years of independence, our country has paid special attention to access to world markets and the development of trade and economic relations with the outside world. In particular, the construction and reconstruction of transport facilities – highways, roads, bridges and tunnels, airports and airfields - is in full swing. The program covers the construction, renovation and maintenance of new highways.

Uzbekistan is a low-forested country, which is why greenery defines the landscape . In our country, large-scale landscaping of residential areas, roads, irrigation facilities, reservoirs is carried out. Hills and mountains reclamation forestry is of great importance because the role of forest in protecting water, air and soil is invaluable. In order to beautify and plant greenery around the roads and railways of international, state and regional significance in the country, to create roadside parks and wind protection facilities, the President of the Republic of Uzbekistan on September 11, in 2018-2020 adopted a “ Program of landscaping of roads, including public roads and streets”.

The main means of beautification of highways of international, state and regional significance, residential areas - cities, districts, villages and settlements in the country - are the landscaping of these areas. Landscaping of roads is mainly roadside embankments, which

prevent the road from collapsing, create a favorable climate and hygienic conditions that ensure traffic safety.

These plantations are planted in the plains of the relief, by row planting, the number of rows is determined by the width of the roadside. Multi-row plantations created on the border of agricultural crops simultaneously serve as hills that protect the field. In the hilly parts of the road, mainly trees and shrubs are placed. Rows of hills play a special role in the roads of the southern regions of Uzbekistan. However, a series of uniform crops will tire the driver of the vehicle. In order to ensure road safety, it is possible to establish a group of ornamental trees, a group of shrubs and their mixed crops among the row crops [1-3]. In the part of the road, row bushes, groups of shrubs, low trees, flowers are planted. Borders, green barriers or concrete walls will be built to limit it. Trees in the division part are planted on lawns (on the turf).

Row plantations at the back of bus stops; and on both sides of the station - separate or grouped crops of trees and shrubs are created. Where possible, rabatkas will be set up in front of the station. Where there is an open area, small trees of one or more species are planted [1]. These places are adapted for recreation. Railway greening: creation of multi-row forest plantations (to protect roads from sand and avalanches); landscaping of railway settlements, nearby reservoirs and lakes; landscaping of railways and railway stations. Green plantations reduce the accumulation of carbon dioxide on busy streets.

According to R.A.Babayans, 2-2.6 km away from the large chemical plant, aspen, birch, oak trees have dried up to 75-100%, and apple, willow, jasmine and poplar leaves have been damaged by 30-75%. [4-6]. Atmospheric air is also polluted by incomplete combustion of fuel - powdered hydrocarbon compounds. In the human respiratory tract, from 13 to 48% of the mixture is trapped in the air [5]. The rest of the toxins enter the human internal organs and cause poisoning. High air pollution is observed in residential areas of Uzbekistan in summer. This is due to the peculiar physical properties of yellow, sandy soils and the influence of garmsel winds blowing in the sands that cover the oases. Greenery improves air circulation and cleans the city streets.

As a result of complete landscaping, the air is almost completely cleaned of dust. In this way, phytoncides released from plants reduce harmful microbes in the air by 40-50%. Even in

winter, when trees do not have leaves, they are important for protection against dust. Along with other additional measures to ensure clean air, such as measures to prevent the spread of industrial waste, it is also vital to improve the streets. During the summer, the leaves of trees and shrubs need to be washed frequently, otherwise the plantations may die slowly.

A high degree of protection can be achieved by studying the dust protection properties of trees and shrubs of this or that species and selecting them correctly. Proper engineering and ecological design will ensure the efficiency of the sanitary function of green plantations. The direction of the wind, the type, height and composition of the emissions into the atmosphere, the chemical and physical properties must be taken into account when constructing green sanitary plants. The structure, width, height and composition of tree species depend on these indicators: large-branched, hairy, wrinkled, rough, uneven-leaved tree species (oak, elm, mulberry, black walnut, white poplar, maple, small-leaved oleaster, barberry, catalpa, soap tree, carcass and etc) catches dust in the air well. They also absorb toxic chemical compounds, especially carbon dioxide.

Conifers trap more dust than deciduous trees. In autumn, snowless winters and early spring, when there is a lot of dust in the settlements, the deciduous trees are very important, because at this time the deciduous trees do not have leaves. High-growing oak, sophora, ailant, elm, and ash trees have large leaf surfaces, so their green massifs provide good protection of the atmosphere from transport and industrial wastes and dust.

Dust accumulated on the surface of plant leaves contains particles of the following heavy metals and trace elements: lead, iron, titanium, copper, zinc, nickel, cobalt, manganese and others. Dusts scattered around large enterprises contain 37.9% iron, 15.3% aluminum, 2.7% copper, 0.9% titanium, 0.8% manganese and 0.2% lead. there is. As a result of damage to the atmosphere and soil by heavy metal residues, they accumulate in plants, as the leaves, stems and roots of plants accumulate these substances.

Plants, especially those that grow in sandy soils, absorb and store metal residues through their root systems. The amount of ash in the leaves of plants in such areas increases by one and a half to two times and is 13-17%. For this reason, it is advisable to build forest reserves around and near large industrial enterprises and highways.

Conifers are plants that absorb heavy metals and trace elements (spruce, pine, juniper, camel), which serve as indicators of air pollution, as they cause necrosis and shedding of needles in the air. indicates the presence of excessive toxic compounds.

For this reason, in the regions, protective trees are planted perpendicular to the wind, and in cities, wide green alleys serve as ventilation corridors.

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