The American Journal of Engineering and Technology
(ISSN – 2689-0984)
Published: December 22, 2021 | **Pages:** 20-25
Doi: https://doi.org/10.37547/tajet/Volume03Issue12-04

IMPACT FACTOR
2021: 5. 705
OCLC - 1121105677

Journal Website: https://theamericanjournals.com/index.php/tajet

Engineering Training Of Territories In Planning And Reconstruction Of Large Cities

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ABSTRACT

The issues of application of several methods of vertical planning in solving problems related to land works arising in the process of reconstruction and reconstruction of cities are presented.

KEYWORDS

Natural Disasters, Man-Made Accidents, Relief, Vertical Plan, Project, Horizontals, Atmospheric Precipitation, Normative Slope.

INTRODUCTION

A number of Central Asian countries and the territory of the Republic of Uzbekistan are prone to natural disasters (earthquakes, landslides, floods, strong winds, etc.), man-made accidents and ecological imbalances.

As a result of the above cases, the following damage is observed in the regions:

- Unusability of land and networks of urban and rural population used for existing economic purposes;
- Degradation and erosion of historical sites of high material and spiritual significance;
- Accumulation of atmospheric precipitation on existing streets and roads in the regions;

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- Filling of basements of existing residential houses, public buildings, buildings of service enterprises and institutions with rainwater;
- Landslides on the slopes of street and road lifts and carvings;
- Damage such as violation of sanitary and hygienic conditions in the areas.

One of the important issues of urban planning is the protection of existing material resources and nature in the regions from natural disasters, man-made accidents and ecological imbalances and the effects of damage, rescue and urgent rehabilitation in the affected areas.

Only as a result of an in-depth analysis of natural disasters, industrial accidents and environmental situations that characterize the region of Uzbekistan in the solution of damage problems in the regions (study the causes, strength, scope, impact on people, the environment) convenient measures are prescribed so that the scale of both material and moral losses in any emergency can be reduced to such an extent.

It is recommended to use several methods of vertical planning when adjusting the relief of the areas, ie bringing them to the normative slope.

The 3 main methods of vertical planning that are recommended are as follows:

- Longitudinal and transverse profiles (red profile) method of vertical planning;
- Method of project horizons (red horizons) of vertical planning;
- Grapho-analytical method of vertical planning.

The method of longitudinal and transverse profiles (red profile)-is divided into nets, passing straight lines in different directions from the characteristic places of the projected relief. Separate shear-profiles are constructed for each straight line in the grid. The greater the number of profiles, the more accurate information about the location is collected. The scales of the space and profile are selected depending on the purpose for which the ground level is used. The side of the squares is taken as 20-40 or 50 m for small areas and 100-120 m for large areas. When working on a vertical plan of a city or district area, the profile is drawn along the axes of the street. Building a street profile is considered a special case of this method. In this case, the main axis of the road and separate transverse profiles are built for each picket (a certain interval).

The horizontal method of the project - this method is useful in the design of micro-district areas, green areas and roads. The convenience of this method is that it is possible to mark the relief mark formed by the project or red horizontal lines.

Grapho-analytical method - allows you to plan the amount of initial work in the implementation of projects. This method adds good precision to a Vertical Plan project, especially when it comes to Vertical Planning of Streets and a Specific Area and Quarters, whether they are on a flat surface or in a complex location. In this method, clear marks are placed everywhere, i.e., the natural mark of the relief (black mark) and the project mark (red mark).

One of the main measures of engineering training is the implementation of landscaping, vertical planning of ravines, which is closely

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related to engineering landscaping. Engineering training plays an important role in improving the sanitary and hygienic conditions of the city. It will clear swamps, improve the irrigation system and water basins. Engineering measures allow for efficient and rational use of urban terrain. In this case, inconvenient and unsuitable areas in the territory of residential areas are partially or completely eliminated. Efficient use of urban space ensures a compact location of the city, which allows to reduce the length of streets and public transport, which in turn provides great economic benefits in urban life activities.

Engineering measures will be carried out prior to the commencement of construction, taking into account the compliance of the structures, architecture and master plan ideas used to maintain the environment. Landscaping is carried out on the basis of vertical planning, the use of retaining walls, stairs, ramps and other elements of engineering landscaping in the formation of various slopes. Engineering preparatory work is carried out as follows:

a) Excavation, plowing and hydromechanization, shoveling, filling of pits and ditches, leveling of hills;
b) The use of open or closed (hidden) sewage systems;
c) organization of irrigation systems;
d) The use of a drainage system that lowers the groundwater table;
e) Construction of structures that ensure the immutability of the terrain and use it for other purposes (retaining walls, dams, etc.);
f) Strengthening of various natural and artificial slopes.

Based on this information, we will study 3 types of environmental emergencies:

1. Conditions associated with changes in the state of land (soil, subsoil): catastrophic landslides - landslides, landslides as a result of mining and other human activities;

Contamination with toxicants from soil and land industry, presence of heavy metals, petroleum products, as well as pesticides and other toxic chemicals used in agricultural production in concentrations that pose a threat to human health.

2. Circumstances associated with changes in the composition and properties of the atmosphere (air): Extremely high pollution of the atmosphere with the following ingredients:
   - Sulfur oxide, nitrogen oxide, carbon monoxide, dioxide, dry matter, dust and other anthropogenic harmful substances in concentrations that pose a threat to human health.
   - Formation of large-scale acidic zones and large amounts of acid waste:
   - High levels of radiation:
3. Situations associated with changes in the state of the hydrosphere: Industrial and agricultural runoff from surface and groundwater:

Extremely high levels of pollution of petroleum products with wastes and other harmful substances containing heavy metals, various toxic chemicals that have caused or may cause poisoning;

An increase in the amount of groundwater that may or may not have caused the collapse of buildings, utilities, and housing;

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Acute shortage of drinking water due to pollution of water sources and water intakes with harmful substances.

At present, the United Nations - in addition to the description of emergencies in the UN:

a) Emergencies of a socio-political nature

b) Military-type emergencies can be included.

According to the decision of the Cabinet of Ministers of the Republic of Uzbekistan, the following types of emergency situations have been approved in our region:

1. Earthquakes, landslides.
2. Floods, floods, etc ;
3. Chemical - accidents at hazardous facilities (release of acute toxic substances);
4. Accidents and catastrophes at explosive and flammable facilities;
5. Accidents and accidents on railway and other means of transport;
6. Accidents at radioactive sources.

Using the proposed vertical planning methods, it is possible to perform the following main tasks in the reconstruction of cities, land reclamation and engineering preparatory work:

- Organization of open discharge of snow and rainwater or ensuring its inflow into the underground pipeline;
- Providing irrigation of trees and lawns;
- Provision of transverse and longitudinal slopes, ensuring comfortable and safe movement of vehicles and pedestrians;
- Modification and adjustment of the relief in accordance with the requirements of housing construction (leveling the ground);
- Laying of underground pipes and equipment, creation of the corresponding natural slope;
- Optimal in planning and construction of urban infrastructure
- A special solution - to preserve the landscape in such a way as to reveal the beautiful architectural views of buildings and structures.

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