



DESIGN OF A RESORT AND MULTI-STORY HOUSES (RECREATION ZONE) IN SALINATOUS SOIL AREAS.

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Annotation: this article deals with the design of a resort or multi-story houses (recreation zone) in saline soil areas. The automation of their cost calculation is covered.

Designing a recreation area (recreation zone) on saline soils is a rather complicated, but possible option if well planned. Below are the pros and cons of building a recreation area in such an area. In areas where saline soils are widespread, the roadbed should be provided taking into account the degree of salinity. Slightly and moderately saline soils can be used as a basis for calculations when leveling. Highly saline soils are allowed to be used as a material in areas of category 1 relief according to humidity conditions, including the installation of a working layer, with the mandatory application of measures aimed at protecting the working layer from increased salinity. The use of excessively saline soils should be justified by special calculations with the necessary measures to neutralize their negative properties. The roadbed in wet salt marsh areas should be constructed in accordance with the requirements for embankments on weak foundations:

- during construction, lateral compaction of weak soil under the embankment should be excluded;
- the intensive part of the foundation should be carried out before the device covers (an exception is allowed when using prefabricated covers in two-stage construction);
- elastic vibrations of embankments on a peat base during movement of vehicles should not exceed the permissible values for a given type of road surface.

I. Positive aspects:

1. Possibility of tourism development - Areas with saline soils usually have a poorly studied, unique landscape. This can be attractive for ecotourism or health tourism.
2. Use of vacant land - It becomes possible to effectively use lands unsuitable for agriculture.
3. Creating a healing environment - Some salty areas can be rich in natural minerals and mud (for example, salt lakes), which is beneficial for health resorts.
4. Job creation - The project will create new jobs for the local population.

II. Disadvantages.

1. Environmental and technical challenges - Saline soils are not conducive to plant growth. Drainage systems, artificial greenery, and land improvement work are required.
2. Construction problems - Saline soils are often waterlogged, which creates problems for the construction of foundations and infrastructure (e.g., risk of subsidence, erosion).

3. Water supply problems - Fresh water sources may be lacking in such areas. This creates difficulties for swimming pools, maintaining greenery, and other services that are important for a resort.

4. High costs - Soil reclamation, creating green zones, and special architectural solutions significantly increase the total cost of the project.

If you wish, you can also develop a simple project concept for a resort in saline land (with drawings, zoning, recommended styles). What type of resort is planned is important.

If you want to build a multi-storey building in saline land, first of all, you need to take into account several important aspects. Let's consider the following main stages.

Geological survey - Since saline land is usually saline, the density, moisture and stability of the soil should be checked. This is important, because in saline soil the foundation can sink or corrode.

Foundation selection - In saline lands, strong, deep foundations are usually chosen (for example, pile-drilled or foundation foundations installed on the subsoil). Special additives are added to the concrete mix, corrosion-resistant reinforcement is used.

Waterproofing - Special waterproofing materials are used to protect against the effects of water and salt (bituminous layers, membranes, etc.).

Architectural and structural design – The seismic stability of the project, resistance to wind and other natural influences are taken into account.

Permits and expertise – All permits from the State Construction Supervision and other agencies must be obtained.

Land reclamation of saline lands (if necessary) – drainage system, desalting of the land or its replacement.

What area are we talking about? Requirements and technical solutions vary depending on the area.

A program for calculating the cost of transshipment (i.e. compaction) of saline lands can be written in the C++ programming language. Below is an example of a simplified program. The program calculates based on the following data:

```
Land area (m2)
Depth of compaction (m)
Cost of compaction per m3 (sum)
#include <iostream>
using namespace std;
int main() {
    double maydon, chuqurlik, narxBirM3;
    cout << "Shor yerning tranbovkasi uchun ma'lumotlarni kiriting:\n";
    cout << "Yer maydoni (m2): ";
    cin >> maydon;
    cout << "Zichlashtirish chuqurligi (m): ";
    cin >> chuqurlik;

    cout << "1 m3 uchun zichlashtirish narxi (so'm): ";
    cin >> narxBirM3;
    double hajm = maydon * chuqurlik; // umumiy hajm m3 da
```

```
double umumiyHarajat = hajm * narxBirM3;  
cout << "\nUmumiy tranbovka hajmi: " << hajm << " m3\n";  
cout << "Umumiy harajat: " << umumiyHarajat << " so'm\n";  
return 0;  
}
```

Using this program, you can easily find the total cost based on land area, depth, and compaction cost.

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