



## Climate and Ski

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There are additions to the idea of the Tower of Babel. The idea for the tower was developed to create a giant sealed tank with a lot of debris and ski slopes for skiing. In essence, it turned out to develop garbage collection into large heaps. Simply pressing and stacking layers of existing landfills gives a maximum layer height of 70 meters. The new method will create mountains up to a kilometer or more. Even if the base is a radius of 2 - 3 kilometers. Of course, calculations and experiment are needed.



**Figure 1**

In figure 1 shows a micro-model of such a snow tower. It remains only to present it in natural size, if the base diameter and height are 1 kilometer or so. And the width of the spiral and the height of the spiral wall must be determined depending on the fluidity of the debris. With increasing pressure from above, it is possible to increase the force vector to the sides - on the walls. The strength of the fence also depends on this.

Vertical fencing is performed by a geomembrane of the following type: [https://yandex.kz/images/search?text=геомембрана%20что%20это%20такое%20и%20как%20используется&stypе=image&lr=162&source=wiz&p=14&pos=424&rpt=simage&img\\_url=https%3A%2F%2Fst31.stpulsцен.ru%2Fimages%2Fproduct%2F309%2F087%2F743\\_big.jpeg](https://yandex.kz/images/search?text=геомембрана%20что%20это%20такое%20и%20как%20используется&stypе=image&lr=162&source=wiz&p=14&pos=424&rpt=simage&img_url=https%3A%2F%2Fst31.stpulsцен.ru%2Fimages%2Fproduct%2F309%2F087%2F743_big.jpeg).



**Figure 2**

Figure 2 shows the wall material of the spiral tower. Options for using a concrete wall or cable-stayed structures can be considered. Or metal supports.

The real idea came from the analysis of the problems of urban waste disposal. The developed countries were able to organize the separate collection and use of different types of waste and incineration. Other countries are trying to follow the same path, but not all succeed.

To implement such methods, large investments are required in the creation and equipment of sorting and processing enterprises. It is a parasitic industry that distracts and overloads many labor, material and financial resources. And the restructuring of the consciousness of all citizens of these countries does not come immediately. Every city dweller is obliged to strictly sort his garbage into glass, plastic, paper, food waste. And pay fines for non-performance. Therefore, garbage will not be sorted soon in such countries and it still goes to the growing landfills, destroying the organic matter of new territories and contaminating the atmosphere and soil with gases and liquid chemicals - affecting the climate.

Garbage, completely sealed, becomes a new, as it were, living subject in nature. It has its own systems similar to life support systems, which have much in common with a living organism, in which some processes are constantly going on. The many different chemical elements of the debris at different combinations, pressures and temperatures, obviously, create many biological and chemical reactions. At the exit, we see and feel odors, emissions of gases, liquids, heat, leading to spontaneous combustion. All these results harm the environment and the very source of waste - humans.

Is it possible to take all these processes under control, use output substances and exclude the impact on nature?

Maybe the entire volume of garbage should be sealed in a single container, from which fermentation products come out - gases, liquids, heat, and they are all captured, processed and used. The very process of this fermentation is put under control and management of the supply of metered portions of air, water, to study and supply some reagents and receive useful substances. Now the heat of decay and methane are clearly visible from them, which can be captured and used. It turns out that one of the processes - rotting or composting - turns into a valid technological process from which

you can benefit. A closer study, perhaps, will provide other opportunities for obtaining useful and necessary products.

It is known from the information: [https://online.zakon.kz/Document/?doc\\_id=30108537#pos=16;-55](https://online.zakon.kz/Document/?doc_id=30108537#pos=16;-55) it was found that the water is "contaminated" with lead, mercury, sulfates exceed the norm by 15 times, ammonia by 10 times! In the wells drilled two and a half kilometers from the landfill, an excess of manganese was found three times, zinc - 2.4 times, nickel - 14 times, arsenic - almost 9 times, and copper - 67 times!

It turns out that the landfill can be used as a mine with many necessary substances.

This requires sufficient isolation of the collected debris. The shown "tower of Babel" is such a vessel. What remains is the creation of systems of pipes, drainage, ventilation, pipes with sensors of measurement, control and management systems.

Structurally, the alignment of pipes with wall supports can give a significant effect of creating the strength of the overall structure.

It is assumed that as rotting or composting, the amount of waste should decrease. To preserve the existing infrastructure and the process of obtaining heat and chemical elements, supplement with new garbage or soil. For this, it will be necessary to monitor and control the density of materials and pressure. It will be possible to supplement through the sealed hatches prepared during construction. All these waters, gas pipes and pipes with cables are installed with a dual purpose. If the debris slip resistance is not sufficient. They can be supports for geomembranes. Air supply and gas removal systems, water pipes, pipes are designed in such a way that they evenly penetrate the entire volume of debris in order to ensure a normal decomposition process. It may be more rational to lay on the terrace, also in a spiral under the coating layer.

All processes must be under constant control, studied, improved, identified and allocated, and other elements of sealing, capacity enhancement and release of the desired products.

It is interesting to create housing within this entire array. In essence, the building industry has been producing and building houses for thousands of years from materials that need to be compact. The need is caused by the desire to locate many apartments in a small area. The disadvantage of this construction is the conduction

of heat and noise through walls and ceilings. When placing premises inside the garbage, the thickness of the walls is not limited, you can do several meters. The need for heating disappears and the tightness of the walls excludes the ingress of gases into the apartments.

If the idea is realized, then all that remains is the separation of waste batteries and oils from the garbage. Each family can separate all such harmful substances and send the rest to the trash without suffering from sorting.

The city authorities will have no problems with creating a sector that nobody needs, purchasing expensive equipment, separate accumulation, processing, and marketing. Just leave these processes to specialized businesses that can take over the collection, sorting and delivery of all garbage to the tower.

The big problem is to clean up all areas of cities from the many existing landfills.

There is a unique opportunity to completely assemble all landfills and fresh waste in a single structure. Use rotting as a useful generator of heat, and a variety of chemical elements, eliminate environmental pollution and create unique opportunities for the emergence of a new terrain - create ski slopes in winter, new areas for growing any crops, green areas in summer and free significant areas from landfills to restore natural fields, meadows, forests. On the top of an artificial mountain, you can arrange viewing platforms, recreation areas, museums.

In Irkutsk, <https://www.irk.ru/news/articles/20160718/museum/>, a museum of rubbish is arranged, figure 3. You can also do this here. On the slope and inside in a specially prepared room.

Along the slopes, you can arrange ski slopes with lifts.

The resulting effect should be a real reduction in the anthropogenic impact on the climate.

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Figure 3