

Video No. 2: Basic Postulates of the Deep Underground Concept

These photos show two road tunnels, which are common underground objects. There is not much difference between these two pictures, but if you look closer, you'll see that the tunnel in the left photo is slightly bigger than the one in the right photo.

The most significant difference is the price, with the tunnel on the left costing more than 100,000 euros per meter and the one on the right coming in at around 15,000 euros per meter. Why was there that much of a difference in cost? Well, the right tunnel was constructed in hard rock. Meanwhile, the left tunnel is bigger and was constructed in soft rock. The financial impact is staggering: the left tunnel is almost seven times more expensive than the right one!

This simple comparison leads us to the first two basic postulates of the Deep Underground concept:

- 1. Construct underground structures in good geological conditions only.**
- 2. Construct underground structures that are small in size.**

If you are driving through a modern road tunnel, you will see concrete boundaries only. Concrete is a primary support element in modern tunnel construction, but it is necessary only if you construct in bad geological conditions and are excavating large underground structures. In other words, you are not considering the first two postulates. If you have followed the first two, the next basic postulate is appropriate:

- 3. Avoid using concrete and other support elements.**

We can actually find very large natural structures without any support, like the cave in this picture.

A cave such as this one can be stable for millions of years without any support because of the so-called self-support capacity of the rock surrounding the cave, which is a property of high-quality rock.

There are also artificial objects of a similar size, such as the salt mine in the picture. You won't find any trace of concrete in there.

The final postulate pertains to mechanization and workers. Underground construction today is extremely costly, requiring heavy and expensive machinery, many site workers, strong backup teams, and exceptional organization. The final basic postulate should be then:

- 4. Avoid using heavy machinery and a large workforce.**

That's it. The four basic postulates of the Deep Underground concept are:

- 1. Construct underground structures in good geological conditions only.**
- 2. Construct underground structures that are small in size.**
- 3. Avoid using concrete and other support elements.**
- 4. Avoid using heavy machinery and a large workforce.**

Underground structures would be less expensive and more environmentally friendly when constructed in alignment with these four postulates. However, they can only be built in certain locations and according to specific design plans. The question is: Who would need such underground structures? We will find out in the following video.