

Video number 10: Other Technologies

Let's begin with magnetic levitation.

Magnetic levitation is not a new concept; it is already in use. This technique utilizes a magnetic field to defy gravitational force, allowing objects to remain without physical contact with the surface. The primary advantage of this method is the absence of friction, and theoretically, there are no limits to achieving high speed using magnetic levitation.

As we learned in the previous video, the Deep Underground concept proposes a system of shafts large enough to accommodate an average elevator, bringing people to the tunnel's level. However, traditional elevators, moved by ropes in a vertical shaft, somewhat limit usability.

More recently introduced magnetic levitation technology has allowed elevators to discard cables, opening up a host of possibilities. Firstly, independently driven elevator cabins can move in any direction, even diagonally. Secondly, without cables in the way, elevators can be stacked on top of each other or side by side.

Finally, a number of such elevators would be ideal for transportation through our system of shafts and tunnels, accommodating more than just a small group of people. The picture illustrates a directional elevator for 20 people, allowing traffic through a 6.5 m wide in one direction and 4.2 m wide in the other oval shaft and a 3.4 m wide and 3.2 m high tunnel.

These underground structures, consistent with the Deep Underground concept, are still relatively small, presenting an opportunity to establish fast public transport.

We must address the issue of excavated material, a topic covered in one of the upcoming videos. For now, let's mention that we count on 3D printing, a perfect technology to pair with the Deep Underground concept.

It is well known that favorable conditions, such as ideal temperature, light, and humidity, can significantly boost plant growth. Some sources claim that in a controlled environment where heat, humidity, water, and light can be regulated, food production can be multiplied by a factor of five or more, using modern techniques like indoor farming.

As we've seen, energy and heat can be provided using geothermal energy. Water is also available underground, so the construction of significant underground structures following the Deep Underground concept can open possibilities for constructing large underground farms, safe from weather storms and potentially immune to insect influence.

For those living underground, the quality of life depends on one essential factor that cannot be easily ensured: daylight. Remaining underground for extended periods

under artificial light may significantly damage settlers' health. Fortunately, there is a technique that can bring daylight deep underground. Daylight can be transferred via cables from a surface daylight collector to underground daylight transmitters. While this is an expensive solution with technical limitations, it ensures at least some daylight for anyone underground.

In this video, we mentioned geothermal power plants as an existing technology that aligns well with the Deep Underground concept. Additionally, we introduced magnetic levitation, directional elevators, 3D printing, indoor farming, and light transfer as supplementary technologies that essentially make the Deep Underground concept work.

It's time to say a word or two about money and how much underground construction, built according to the Deep Underground concept, could cost. The next video will discuss that.