

VIDEO NUMBER 20: RULES AND LIMITATIONS — TECHNOLOGY-BASED DESIGN

We are looking for a technology-driven design that fits the Deep Underground concept. There are some simple rules that should be followed.

Within those rules, the applicants are free to choose the theme and form of the art in which their ideas would be expressed.

General rules:

- Strictly consider the four basic postulates of the Deep Underground concept.
- Respect the rules of the size of underground basic elements and the rules for constructing curved basic elements.

The basic elements of the Deep Underground concept form a tunnel or shaft that is 3 meters in diameter and up to 100 meters long. All underground structures must be constructed from those basic elements. Tunnels can be curved, but the curvature shouldn't be applied over a borehole length. Two allowed strategies for creating curved tunnels or shafts are presented in this picture. Elliptic basic elements are allowed in the case of transport design or when creating big caverns. The final inner profile of a tunnel or shaft doesn't need to be entirely circular, but sharp edges are not allowed.

- Respect the rules for the construction of large underground structures and underground structures with pillars.

Large underground structures should be circular or elliptic in shape, not more than 200 meters wide, and the height shouldn't exceed half of the object's width. Large structures shouldn't be too close to each other, as shown in the picture. Remains of the excavation in the form of big pieces of rock should be used within the structure.

Large underground structures with pillars shouldn't be too close to each other, as illustrated in the picture. The pillars' length and length of excavation between pillars are related and shouldn't exceed values in this picture.

- No use of construction materials for underground construction.

The use of construction materials in underground structures, like concrete, steel ribs, wire mesh, and anchors is forbidden.

Interior design should try to hide the fact that there is an underground facility in question. For facilities like factories, shopping centres, offices, halls, stations, and farms, artificial lightning should be provided, with possible access to a place where natural light is available. Surface or subsurface facilities should be designed as an extension of underground facilities.

For surface and subsurface construction, we are looking for large structures constructed from materials like clay, light clay, straw, straw bales, and a local type of wood. Concrete is forbidden. The use of steel or wood for support beams is allowed. If possible, provide a 3D printing for those structures.

Big surface and subsurface structures from straw bales, prefabricated straw bales, can be used as ideas for the renovation of cities in Ukraine, for example. Such ideas would be highly welcomed.

That's about it. We are hoping for a lot of good proposals, and we hope that you will enjoy designing extraordinary structures.