

Failure 100: Mont Blan Tunnel Fire 1999.3.24

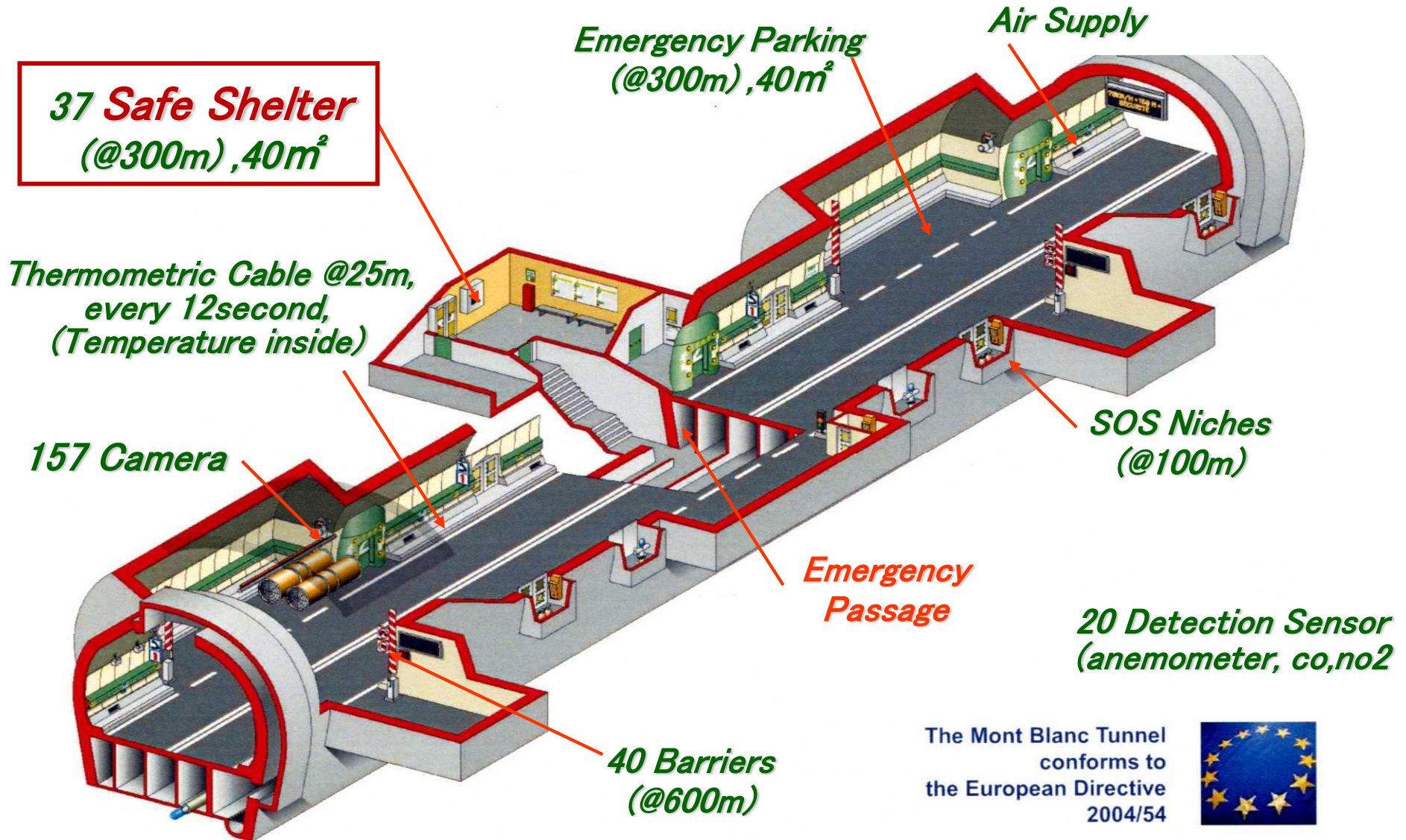
- **Fire** and **explosion** in a food truck fuel leak
(Wheat flour/12t, Margarin/8t) ⇒ Burnig
- Immediately after entering the tunnel,
although smoke is detected.....
- Fire spread to 30 cars, **40 deaths**
- The fire brigade arrives three days after the fire.

Cause

1. Initial extinguishment by driver is not successful,
Explosion occurred
2. The smoke was detected, but the tunnel was not blocked.
3. French side is the maximum exhaust, and the
Italian side is in the maximum Air supply mode
4. The inside of the tunnel reached about **1,000 degrees**.



Main Renovation after the accident



Evacuation facilities and equipment

1. Construction of **Refuge Shelters** (@ 300m)
2. Video communication of the control center with the evacuees is possible
3. Construction of a rescue tunnel?



Video Phone

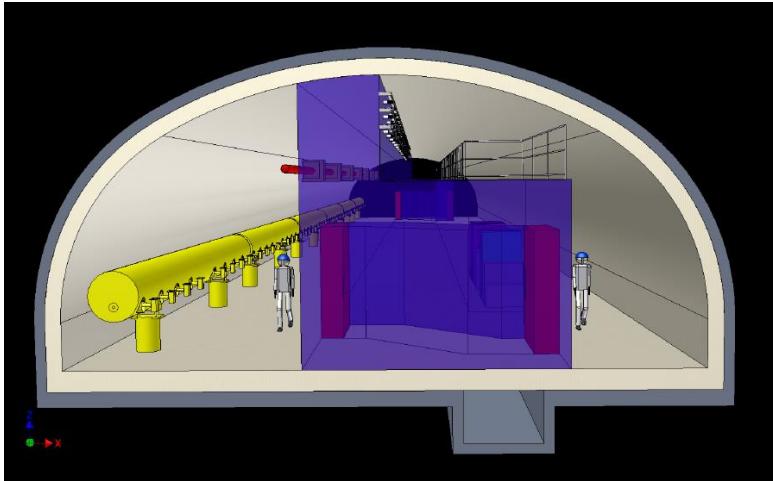


Refuge Shelters

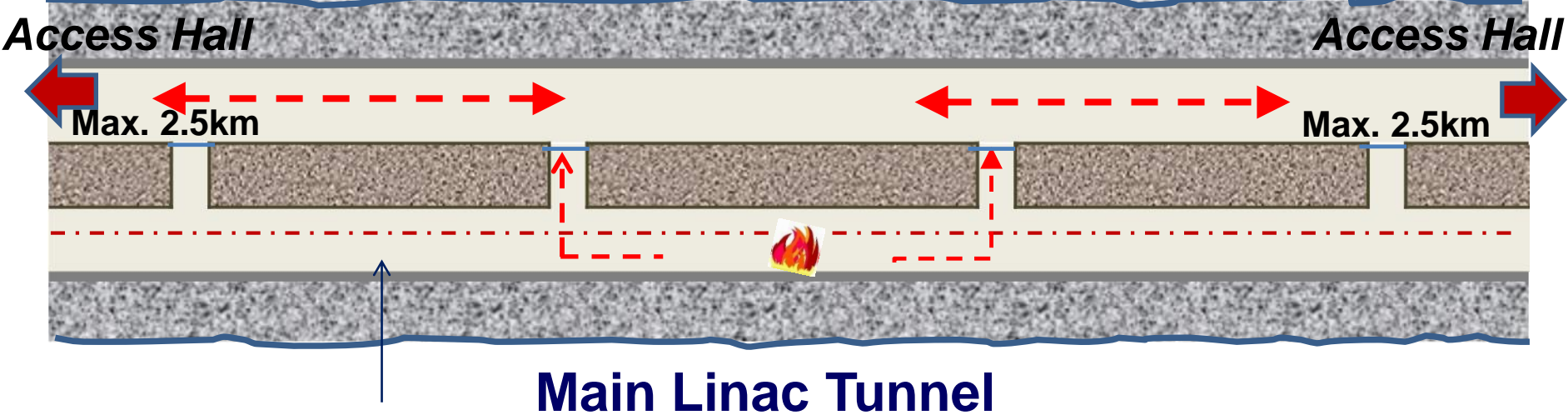
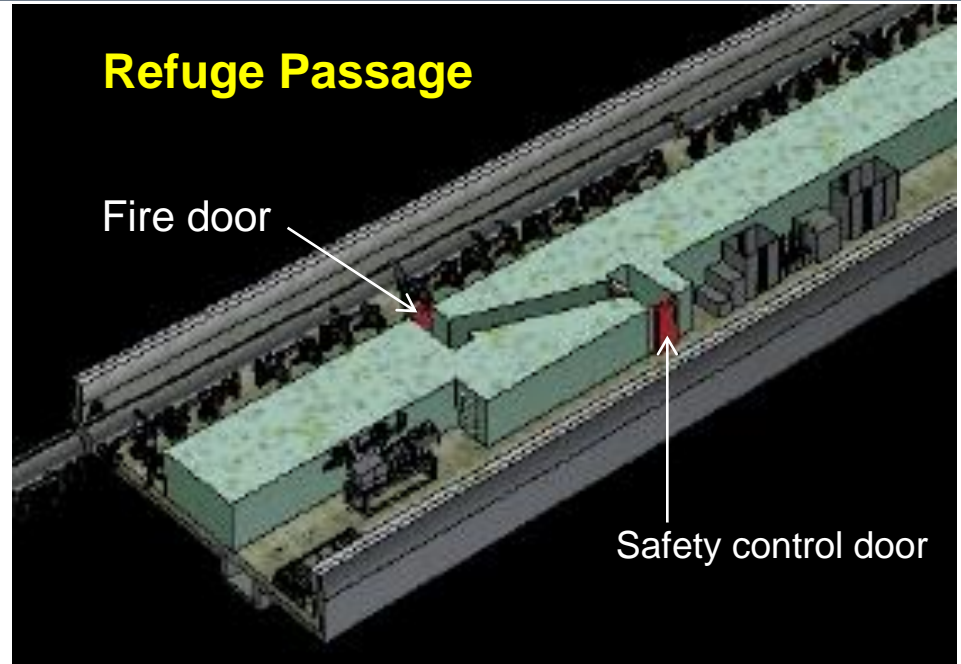


Rescue tunnel

ML Tunnel



Refuge Passage



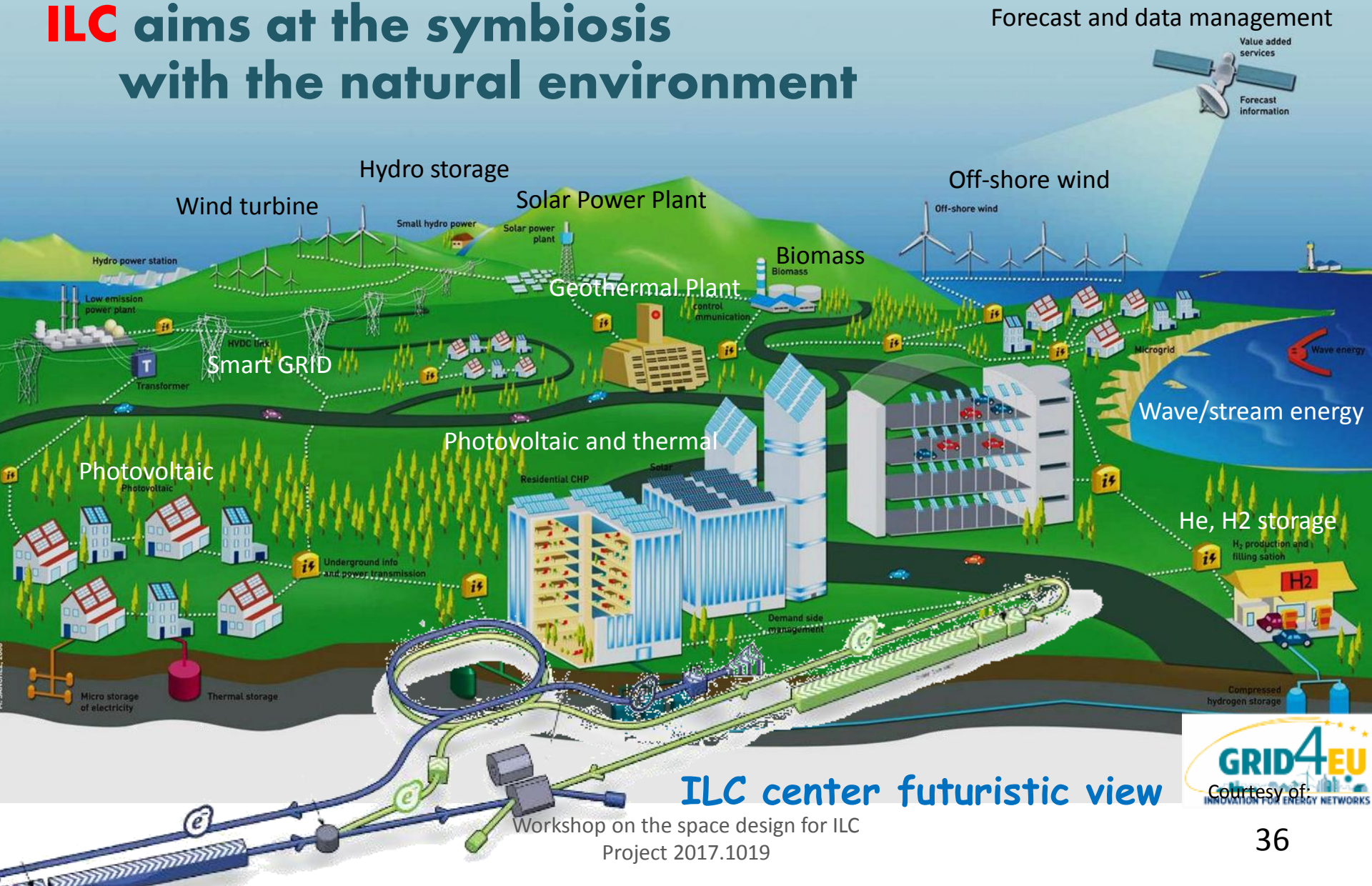
Main Linac Tunnel

Summary

- Consideration of the negative factors specific to the underground space
 - The ILC must be constructed in the underground space to satisfy the experimental functions.
 - Nevertheless, it is required to prepare a more comfortable research environment for the working in the underground.
- Disaster Prevention Issues
 - Optimization of Access Control System
 - Communication system with precise refuge information
 - Consideration of Life Safety under the special condition

Environmental Considerations

ILC aims at the symbiosis with the natural environment



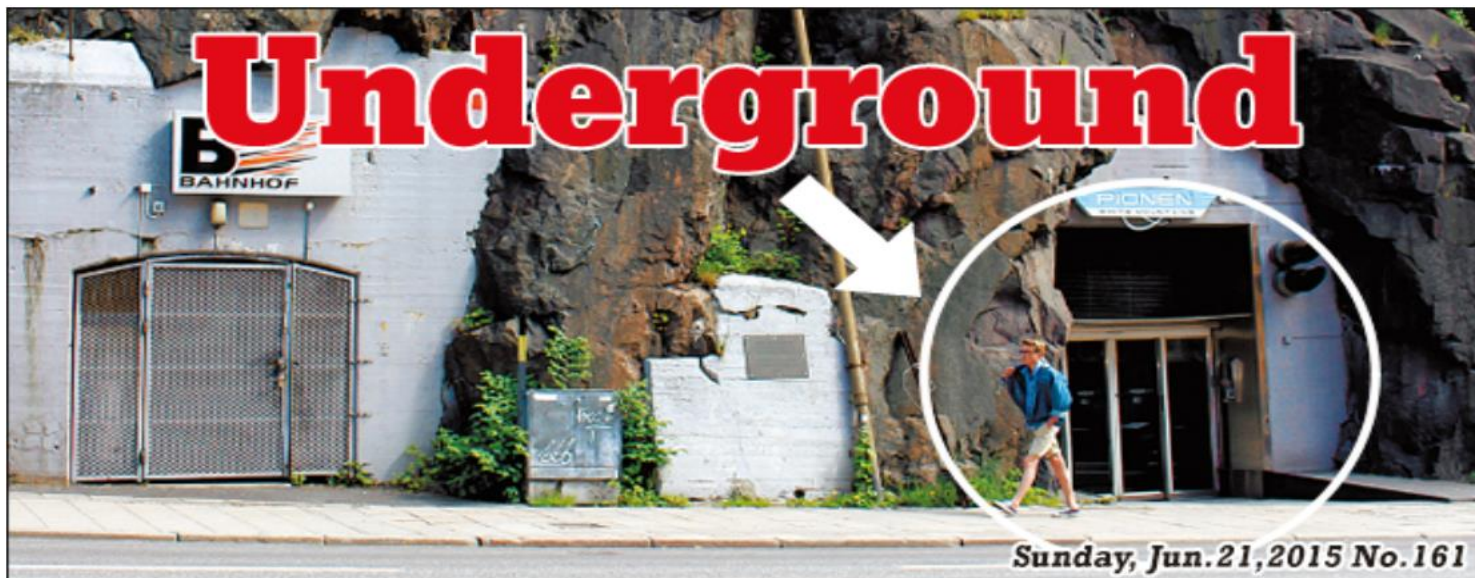
ILC center futuristic view

Workshop on the space design for ILC
Project 2017.1019

End

Appendix

From the Topics of Asahi GLOBES



Why do people head to underground?

- As urbanization progresses, the freely usable underground space is getting limited.
- Now we are looking for ways to make the underground more efficiently and comfortably.



本編 01 Underground storage



本編 02 Review underground



本編 03 Familiar underground

➔ Part-① World's first “underground park” /New York

Novel and spectacle plan!

- Proposal by architect James Ramsey (37). (former employee of the NASA)
- An underground space of about 4,000 square meters, the vehicle base of the streetcar in manhattan, New York.
- The solar light collected by the parabolic device installed on the ground, and spread it by reflection on the ceiling.
- Grass and trees will also be planted in the underground space.

➤ Is this realized in near future?

