

Safety measures (e.g. methane gas) during the Expo period

- In the Green World construction area (landfill site with general waste and sludge from water and sewage, etc.), methane gas was detected only in the underground pits of the east and west buildings for restroom. In the east restroom, concentrations above the standard (*1) were measured.
- In the Pavilion World construction area (landfill site with dredged soil-sand, construction generated soil, etc.), methane gas was detected at only five spots.
- In response to the results of measurement, the following safety measures will be implemented during the Expo period against the generation of methane gas and other gases. (※2)
 - ※1 Standard concentrations for evacuation of mine workers and suspension of fire use, etc. under the Ordinance on Industrial Safety and Health (1.5vol% (30%LEL))
 - ※2 Methane gas, carbon monoxide, hydrogen sulfide, carbon dioxide, ammonia

1. New structural measures in the Green World construction area

- ① In the east and west restrooms, the following measures will be implemented
 - Use sealants or other materials around toilet bowls and pipework to fill gaps and prevent gas ingress from underground pits.
 - Install Mechanical ventilation systems to ventilate forcibly gases entering underground pits and ceilings.
 - Install gas detectors to measure gas retention in underground pits, rooms and ceilings.
 - ※ On the basis of the above, depending on the results of future concentration measurements, other buildings will also be subject to measures such as ventilation capacity, location and quantity of detectors, etc.
- ② Measures to be taken in outdoor underground structures.
 - Use perforated manholes and other lids for rainwater drainage, electrical installations, etc., to facilitate the venting of stagnant gases.
 - ※ The Pavilion World construction area is close to the Green World construction area, the upper underground construction area where low concentrations of gas have been detected. Therefore, this area will be intensively measured for gas concentrations and similar measures will be implemented according to the results.

2. Non-structural measures in the Green World/the Pavilion World construction area

- The Organiser of the World Expo 2025 will continuously measure gas concentrations in this area, so that any spots where gas is detected will be ventilated immediately.
- Reporting of measurement results daily on the Exposition Association website is under consideration. The content of the public announcement is also under consideration to ensure that it is easy for visitors and others to understand.
(Measurement results are reported regularly during the construction period.)

Methane gas measurement results

Green World construction area (landfilled with general waste, water and sewage sludge, etc.)

Methane gas was detected in the underground pit,
only in the East/West restrooms. The East restroom measured a concentration above the standard value (*).

*Standard concentration for evacuating underground workers and suspending the use of fire under the Ordinance on Industrial Safety and Health

**West
restrooms**

**East
restrooms**

**Methane gas detected
at 5 locations**

会場配置計画
(2023年11月30日時点)



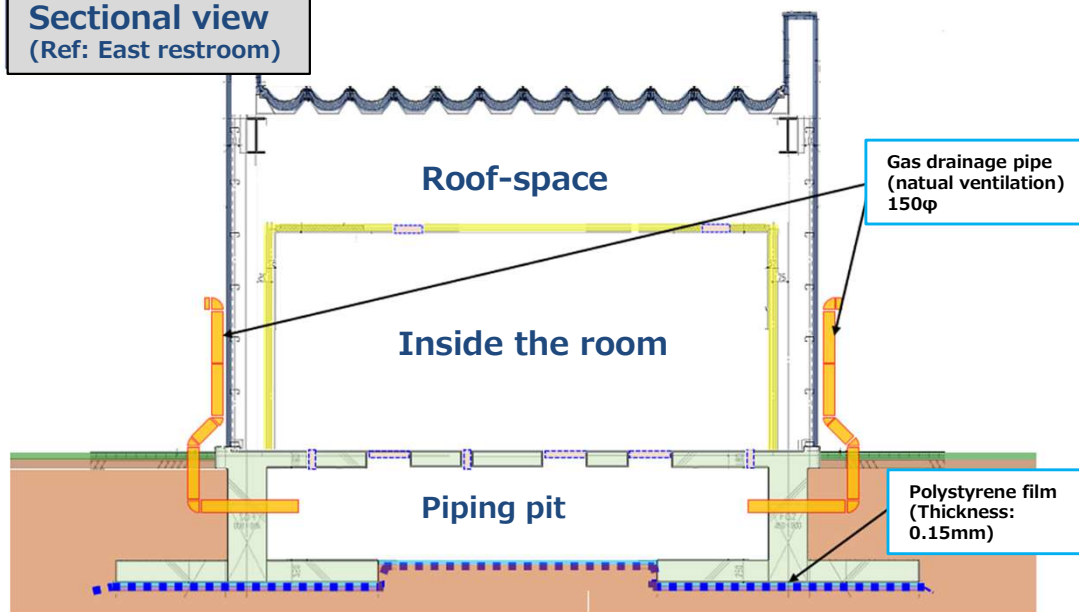
Pavilion World construction area (filled with dredged soil, construction waste, etc.)

Measurements conducted for 10 consecutive business days at locations where methane gas has been detected, and
no further methane gas detected.

Gas countermeasures for the Green World construction area (East and West restrooms) during the Expo period

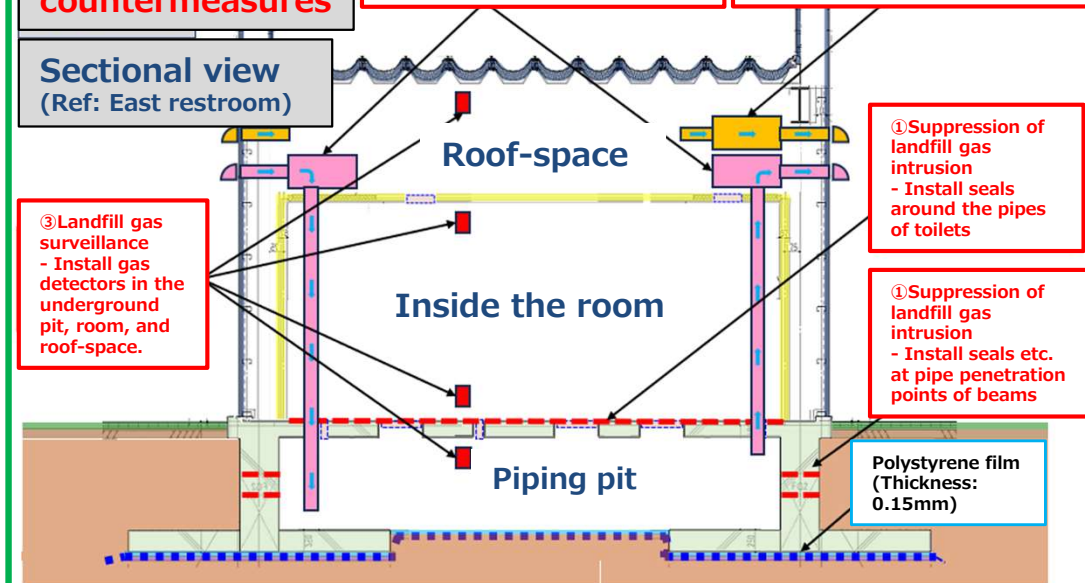
Initial landfill gas countermeasures

Sectional view (Ref: East restroom)



Additional landfill gas countermeasures

Sectional view (Ref: East restroom)



*For other buildings, measures such as ventilation equipment capacity and the installation locations and quantities of detectors will be taken into consideration based on the above and in accordance with future concentration measurement results.