

ゆらぎや振動のない研究施設(1) Fluctuation Free Facility (1)

FFF (Fluctuation Free Facility)

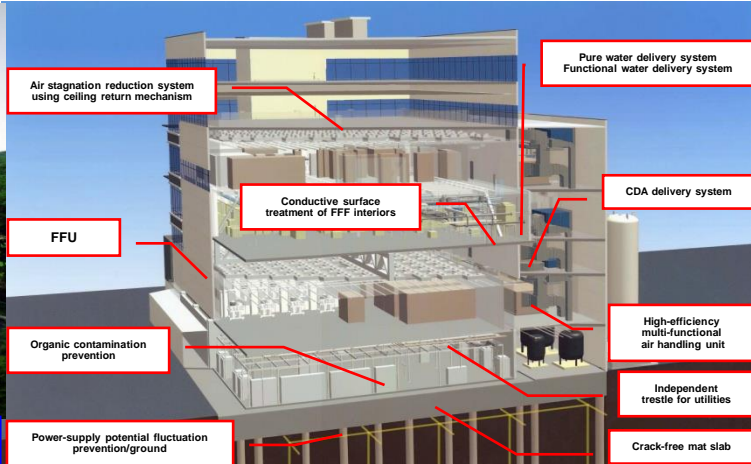
Facility without any drift, fluctuation or variation

Ambience in which remaining factors for fluctuation in clean room are controlled more effectively.

The institution which concentrated the innovative infrastructure utility technology of doing synthetic research of a design, a device process, equipment, material, and measurement technology.

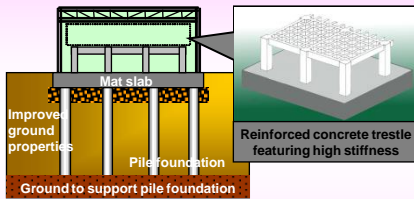


Tohoku University New Industry Creation Hatchery Center



微振動対策 Micro-vibration Control

• A two-meter-thick concrete mat slab of 3700 ton in weight
⇒ Transfer of external vibration **0.15 μ m or less (2Hz or more)**

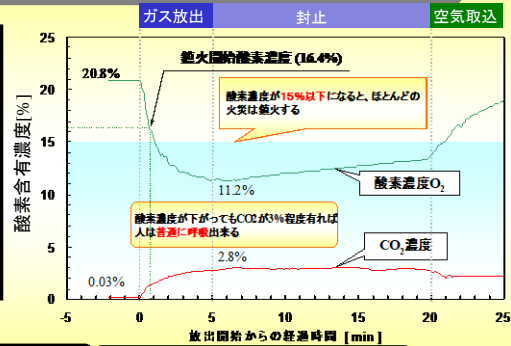


• Control of the dissolved oxygen gases in pure water by membrane deaerator
⇒ **1Gal or less (0.1~400Hz Horizontal)**

イナージェンガス消火設備 Counter Measure Fire

Concept

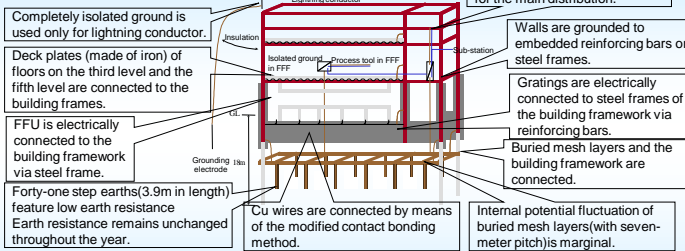
- ★ Defend human life from fire
⇒ Provide **Safety Fire Fighting System for human**
- ★ Protect fortune; production machine; from fire
⇒ Provide **Fire Fighting Material which is able to keep the function of machine after discharge.**



Inergen Gas™ System (N₂:52%, Ar:40%, CO₂:8%)

Argon-Carbon Dioxide Gas System (Ar:80%, CO₂:20%)

Ground to Reduce Fluctuation of Power Supply Potential



• Grounding (step earths + mesh ground)
⇒ grounding resistance; **0.08 Ω or less**

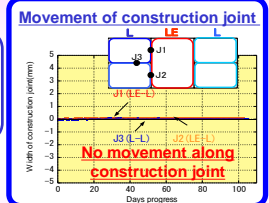
• Grounds to all building composition components
⇒ surface specific resistance; **10⁶~10⁹ Ω**

Crack Prevention for Mat Slab Concrete

Application of Expansive Concrete

Combination of low-heat Portland cement and high-grade expansion admixture reduces shrinkage by effective expansion at early stage of concrete hardening.

Casting mat slab with shrinkage-type concrete and expansion-type concrete alternatively enlarges effective surface area at construction joints.
Realizes Mat Slab Concrete without Crack



Statistical evaluation of cracking by actual measurement

Future risk of cracking is within allowable range.