Disaster Resilient Architecture Case Study: Tohoku University's Aobayama Campus in Japan

Disaster Resilient Architecture Case Study: Tohoku University's Aobayama Campus in Japan

1. Introduction

- **Aobayama Campus:** a major campus of Tohoku University in Sendai, Japan, a region highly exposed to earthquakes.
- It illustrates how research institutions integrate disaster-resilient design in a seismic zone.

2. Context

- Japan lies on active tectonic plate boundaries with frequent earthquakes and tsunamis.
- The 2011 Great East Japan Earthquake severely affected the Tohoku region.
- This drives advanced engineering for seismic safety and rapid recovery.

3. Resilient Design Strategies

- **Seismic isolation:** base isolators decouple buildings from ground motion.
- **Damping systems:** devices absorb and dissipate earthquake energy.
- Reinforced structural frames and redundancy limit collapse risk.

4. Research and Function

- The campus hosts disaster science and earthquake engineering research.
- Facilities are designed to remain operational as recovery and study centres.
- Lessons from real events feed back into improved building standards.

5. Significance

- Demonstrates integration of resilience into institutional architecture.
- Shows how design protects life and ensures continuity after disasters.
- Highlights the link between research, policy and resilient construction.