Japan is at the forefront of seismic technology. Still, the damage from recent earthquakes calls for viable measures for ensuring safety in damaged buildings and cities, going beyond the traditional assumption of the perfect avoidance of seismic damage. The development of an intelligent house in this research applies the concept of IoT so that buildings can sense and report any pain or discomfort.

Purpose of Research

We propose a new IoT-based building system that detects, analyzes, diagnoses and notifies human activities and damage from earthquakes. Such an intelligent house features: 1) energy harvesting to supply power to sensor and radio devices, 2) power-saving radio communication network and 3) AI analysis and diagnosis system in order to effectively prevent disaster (seismic design of building), facilitate evacuation (quake diagnosis, life protection, and relief) and mitigate disaster (resilience to ensure rescue and quick recovery of the building).