SATREPS Project for Evaluation & Mitigation of Seismic Risk for Composite Masonry Buildings in Bhutan

ROAD MAP

2017
- Start of the Project
- New seismometer installed at over 4,000 m
- Queen Mother graced the Salang Tendrel ceremony

2018
- The 1st technical paper published
- The 2nd technical paper published
- Home Minister observed full scale static test
- Shaking table in operation

2019
- Drone first flight and active faulting survey
- Held a scientific seminar in Thimphu

Plan

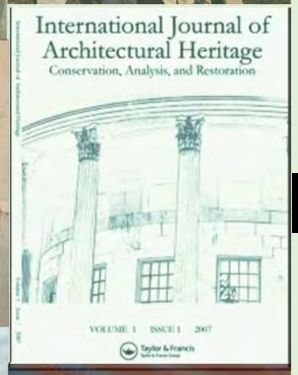
2020
- Install seismic intensity meters in gewogs
- Start using visual manuals for training programs
- Make seismic guideline, training on it
- Risk assessment in pilot sites

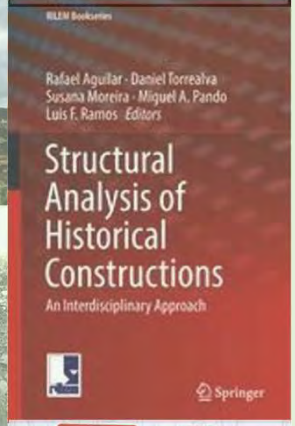
2021
- Building standard proposal
- Hazard map

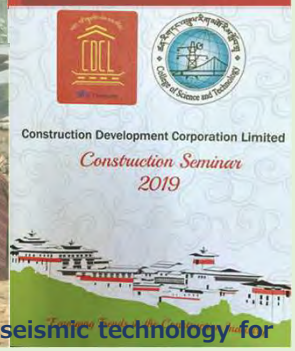
2022
- End of the Project, shall achieve project purpose for developing Bhutanese agencies' capacity

2023 | 2027

By 2027, shall achieve the overall goal to disseminate seismic technology for disaster mitigation of the composite masonry buildings across the country.



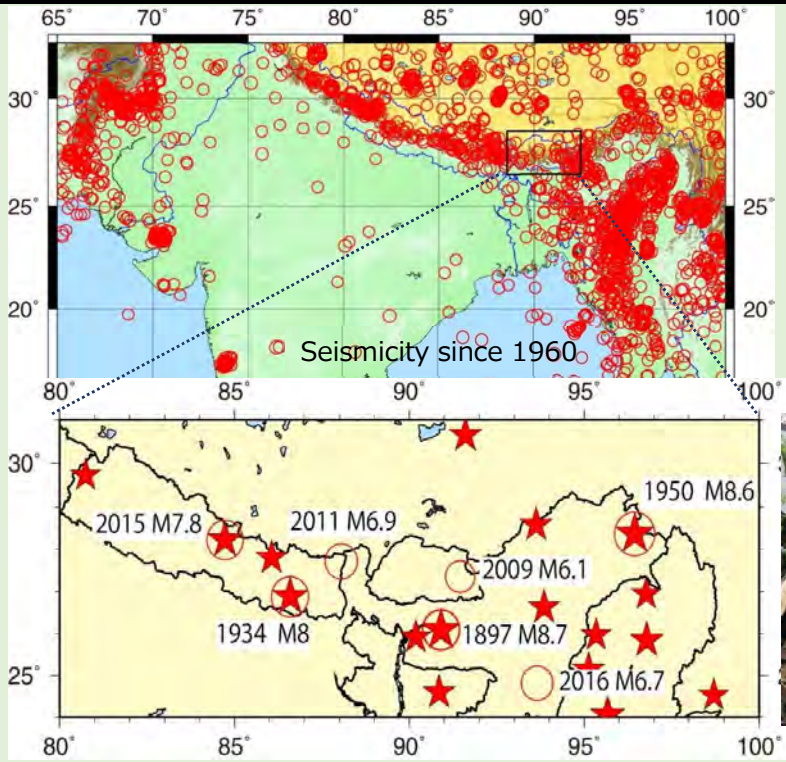




BACKGROUND

It is said 66 % of Bhutanese households live in traditional houses in rural area. Large earthquakes hit rural area in 2009 and 2011, which destroyed traditional houses. It is a critical task for the Royal Government of Bhutan (RGoB) to guide people to improve the seismic resilience of traditional houses. To this end, in collaboration with the Government of Japan, the SATREPS Project has been developing building seismic resilience technology and monitoring earthquakes.

THREATS OF EARTHQUAKE



★Earthquake more than M7 since end 19th century
○Earthquake damage to Bhutan

SUSTAINABLE DEVELOPMENT GOALS

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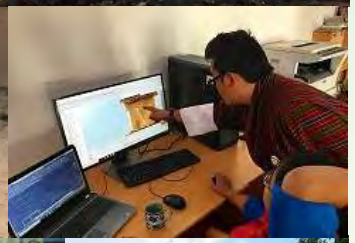
Watch Earthquake to Understand it

Output 1
To evaluate seismic risks of composite masonry buildings

Seismic Intensity

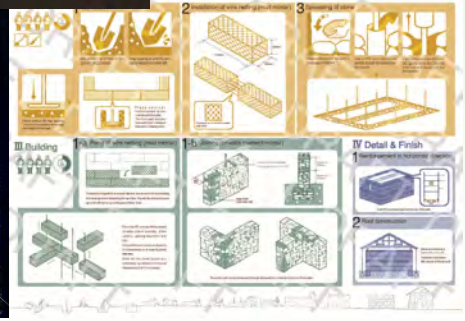
Make it Strong

Output 2
To develop seismic technology for constructing & strengthening composite masonry buildings



Let People Know it

Output 3
To enhance the dissemination mechanism for the seismic technology



Implemented by

Bhutan: Department of Disaster Management, Department of Culture, Department of Geology and Mines, Department of Engineering Services

Japan: Nagoya City University, National Research Institute for Earth Science and Disaster Resilience, Kyoto University, Tohoku University, Kagawa University, Nihon University, Hiroshima University, Building Research Institute

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