

Y. NAKANO LAB.

Safer Buildings against Earthquakes and Tsunamis



Department of Fundamental Engineering

Earthquake Engineering & Structural Dynamics

Department of Architecture, Graduate School of Engineering

<http://sismo.iis.u-tokyo.ac.jp/index-e.html>

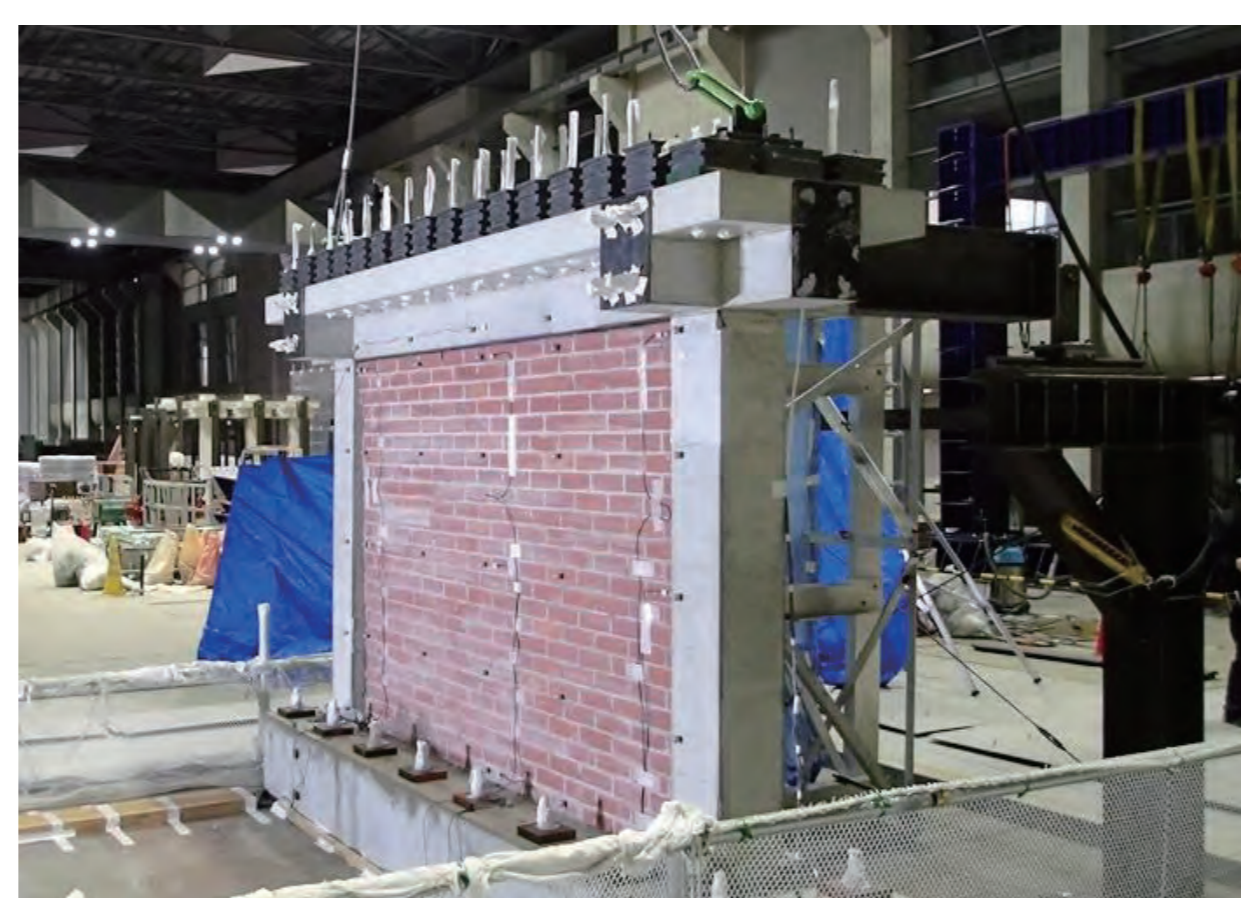
Performance Evaluation of Building Structures against Earthquakes and Tsunamis

- MEMBERS: Response Evaluation Method of Buildings due to Waterborne Debris Impact Load
- SUB-ASSEMBLAGE: Out-of-Plane Shaking Table Test of Masonry Wall Infilled RC Frames
- OVERALL STRUCTURE: Vibration Characteristics of a Building before and after Seismic Retrofit
- INTERNATIONAL COOPERATION: Project for Technical Development to Upgrade Structural Integrity of Buildings in Densely Populated Urban Areas and its Strategic Implementation towards Resilient Cities

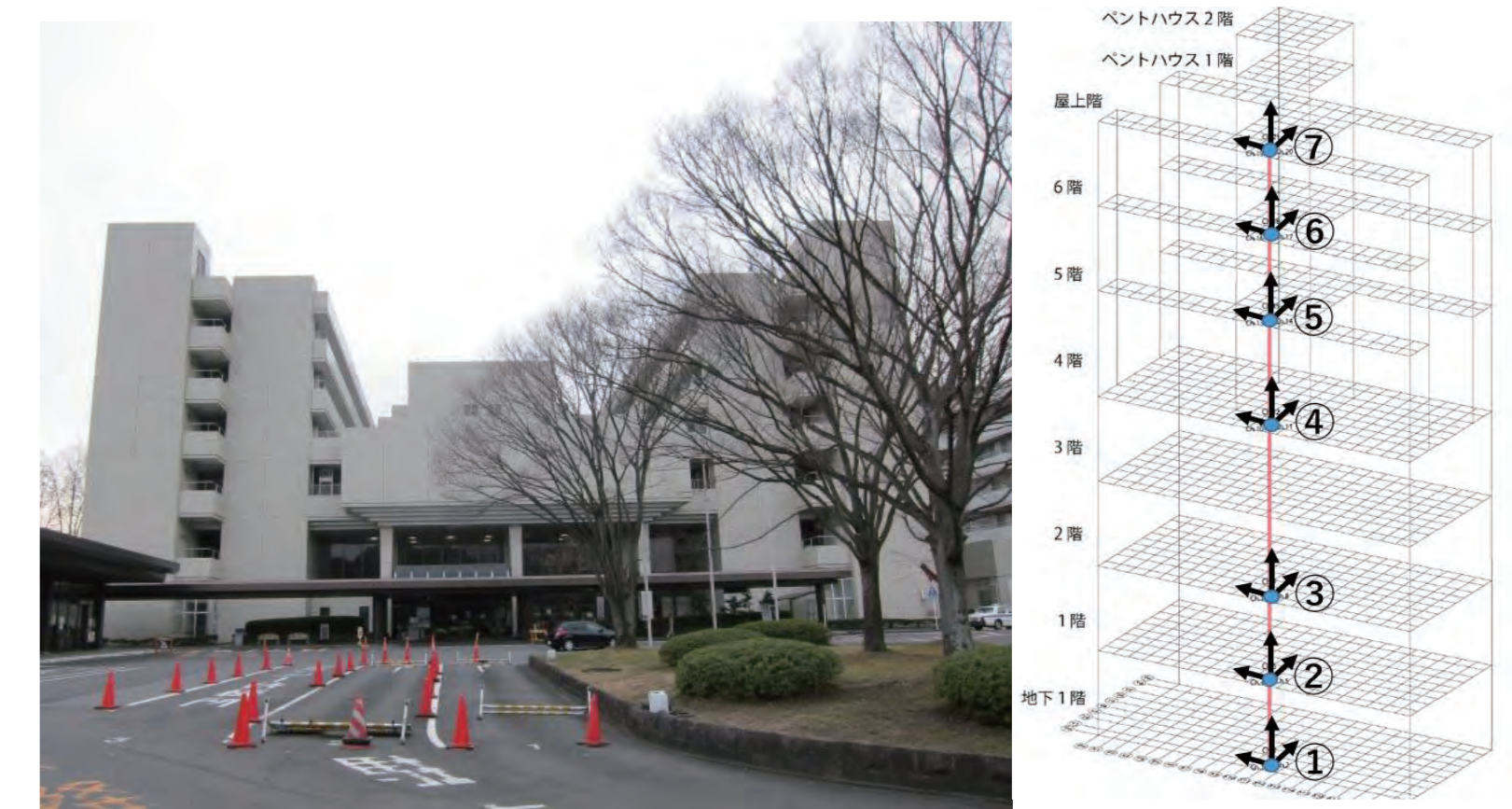


Ship's drifting behavior at Hachinohe bay in 2011

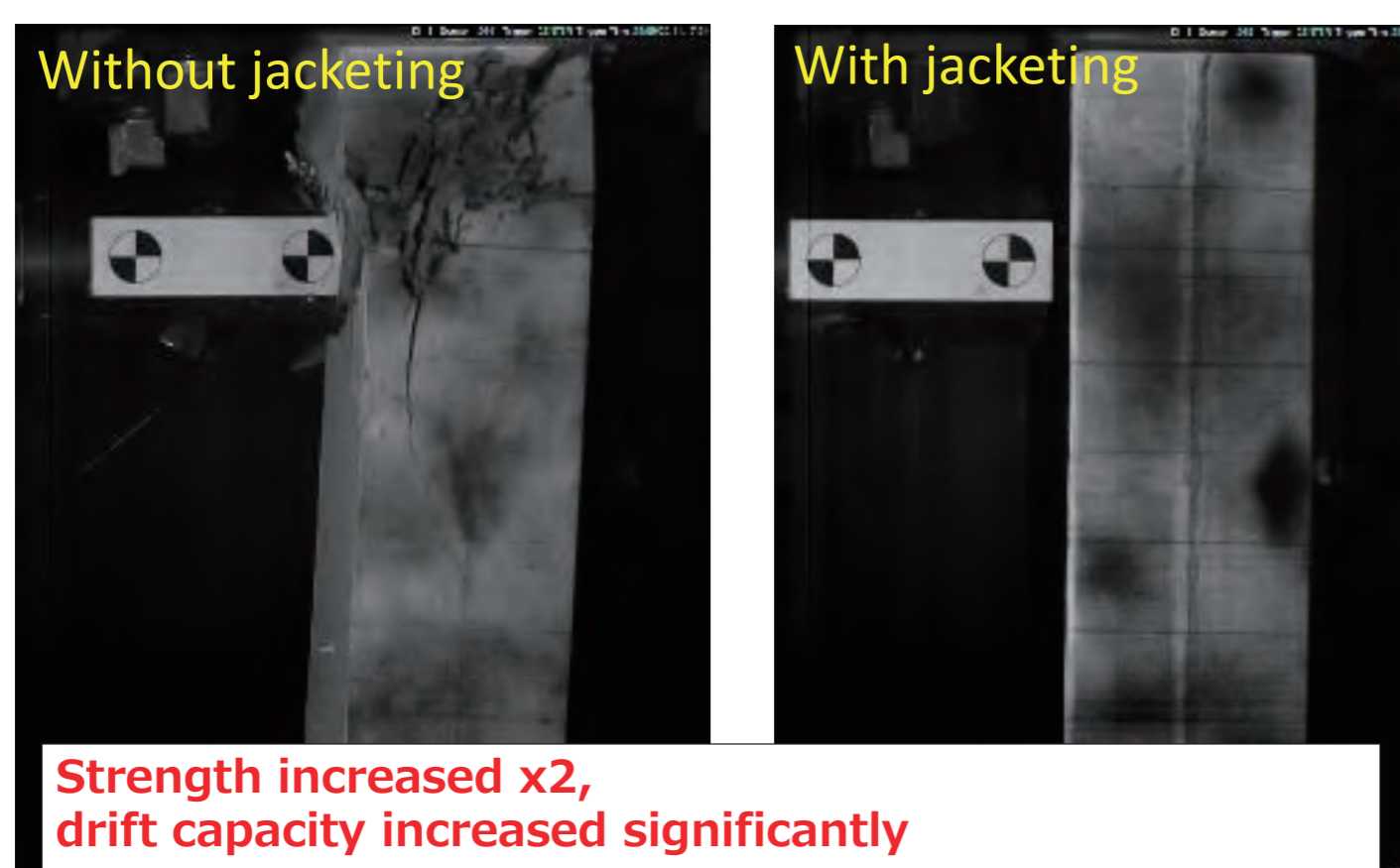
Drifting ships may cause severe damage of reinforced concrete buildings due to their collision



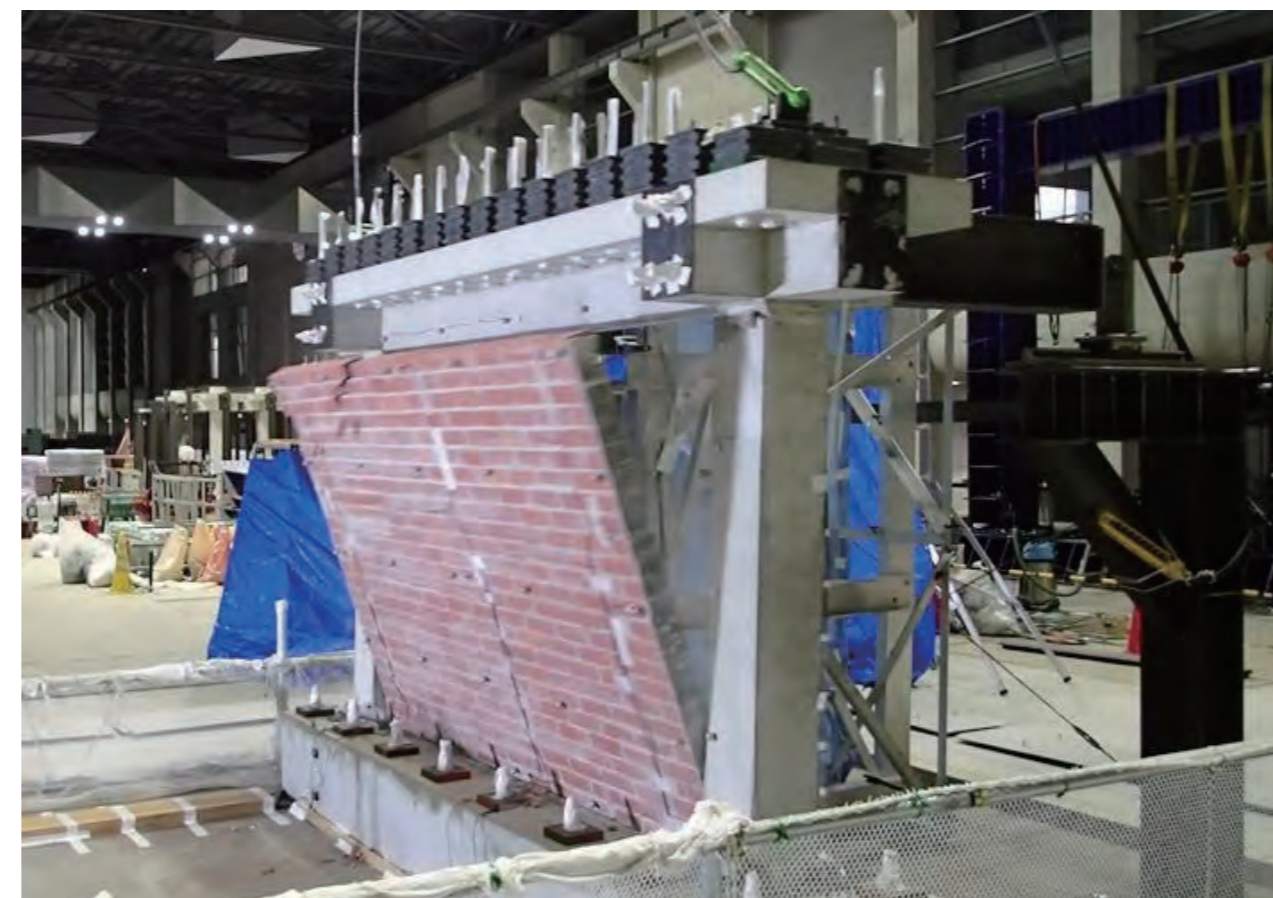
Out-of-plane shaking table test using motion capture measurement system was performed. The RC frame's behavior significantly influenced out-of-plane capacity of the wall.



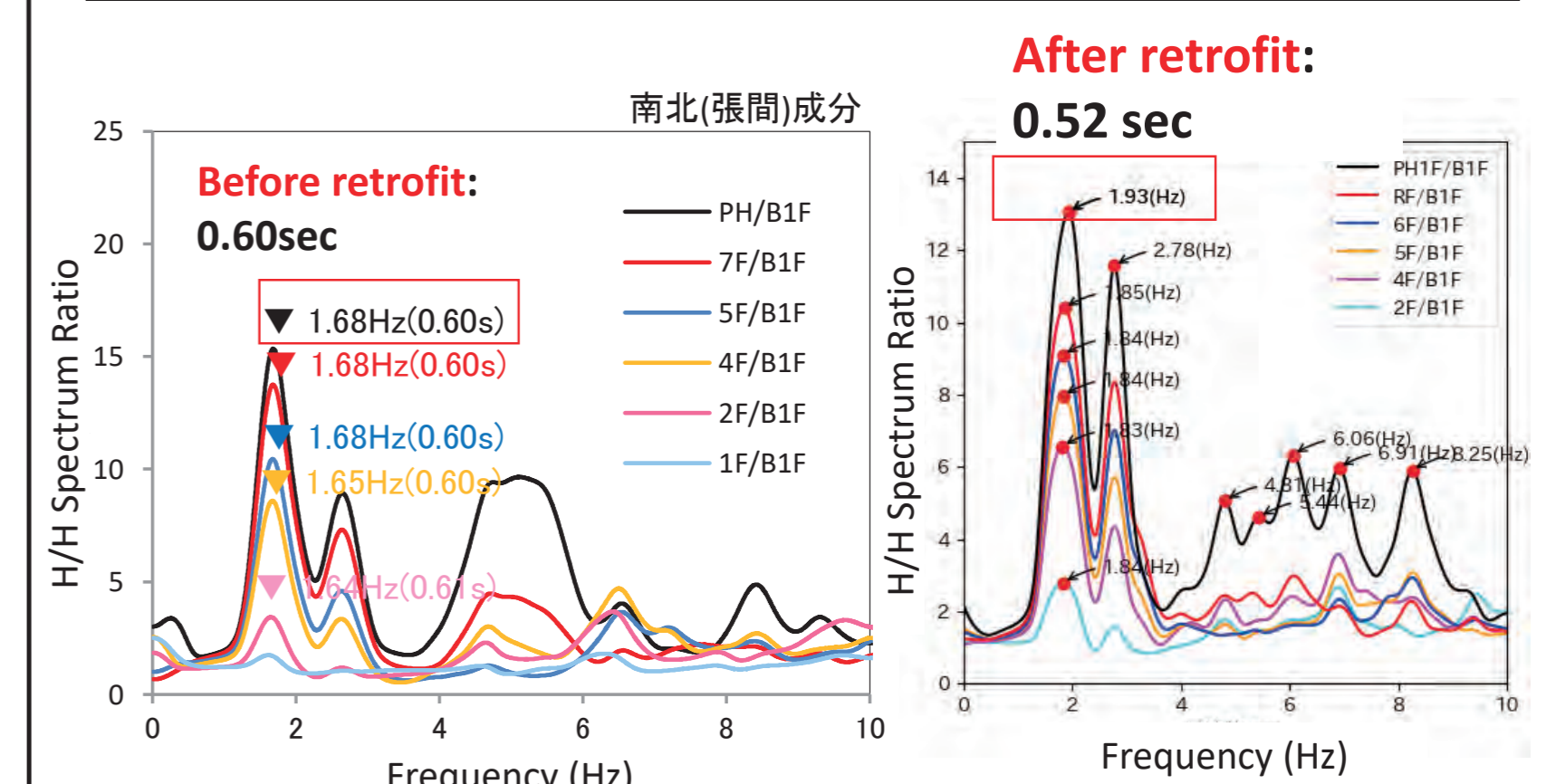
Using microtremor measurement, the natural period of the building structure before(2016) and after seismic retrofit was performed. The measured natural period after retrofit was successfully shortened by effective seismic retrofit scheme.



Tsunami Debris Impact Test of RC Column: Non-Jacketed vs Jacketed



Masonry wall collapse by shaking table test



H/H spectrum ratio of before and after retrofit

Science and Technology Research Partnership for Sustainable Development (SATREPS)

Project for Technical Development to Upgrade Structural Integrity of Buildings in Densely Populated Urban Areas and its Strategic Implementation towards Resilient Cities

Joint Research Group

Japan

- IIS, The Univ. of Tokyo
- Tohoku Univ.
- Osaka Univ. etc.



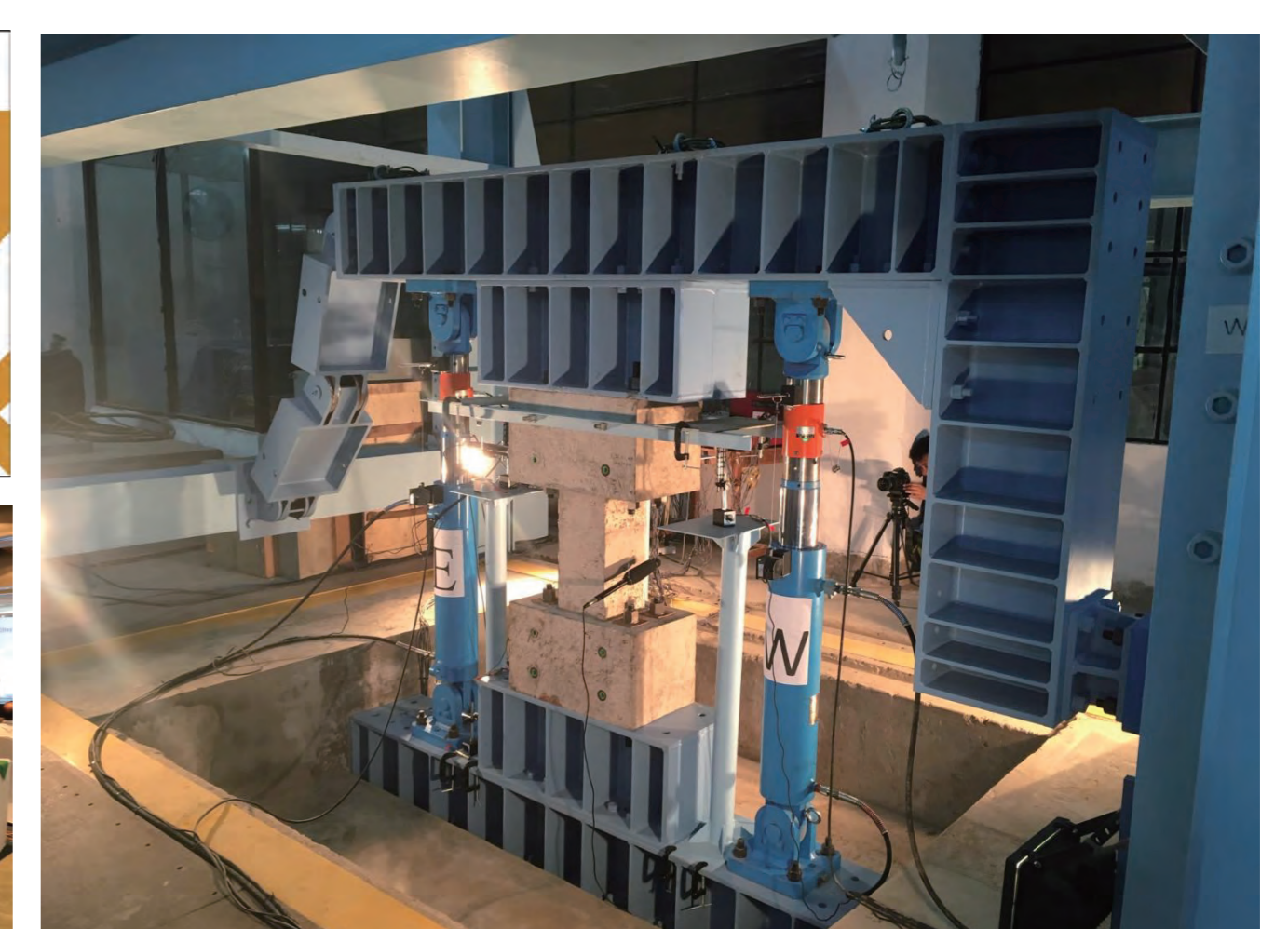
Bangladeshi Representative

- Housing and Building Research Institute
- Public Works Depart.
- Univ. of Asia Pacific etc.

Publication of guidelines and dissemination seminars



Testing on RC column@BUET



Technologies for enhancing structural resilience of buildings in Dhaka and their effective implementation schemes are proposed.

