Y.NAKANO LAB.

[Safer Buildings against Earthquakes and Tsunamis]

Department of Fundamental Engineering

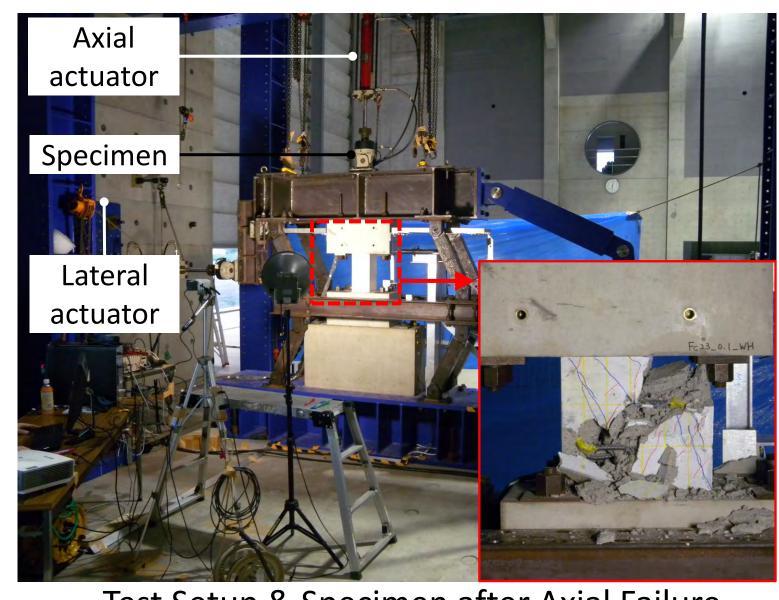
Earthquake Engineering & Structural Dynamics

Department of Architecture

http://sismo.iis.u-tokyo.ac.jp/

Seismic Performance Evaluation of Reinforced Concrete Building Structures

- MEMBERS: Evaluation of Residual Axial Capacity of Shear Damaged RC Columns
- SUB-ASSEMBLAGE: Out-of-plane Behavior Evaluation of Masonry Wall Infilled RC Frames
- OVERALL STRUCTURE: Response Evaluation Method of Buildings due to Waterborne Debris Impact Load
- INTERNATIONAL COOPERATION: Project for Technical Development to Upgrade Structural Integrity of Buildings in Densely Populated Urban Areas and its Strategic Implementation towards Resilient Cities



The proposed method have a high accuracy to estimate residual axial capacity

1.75

1.5

1.25

0.75

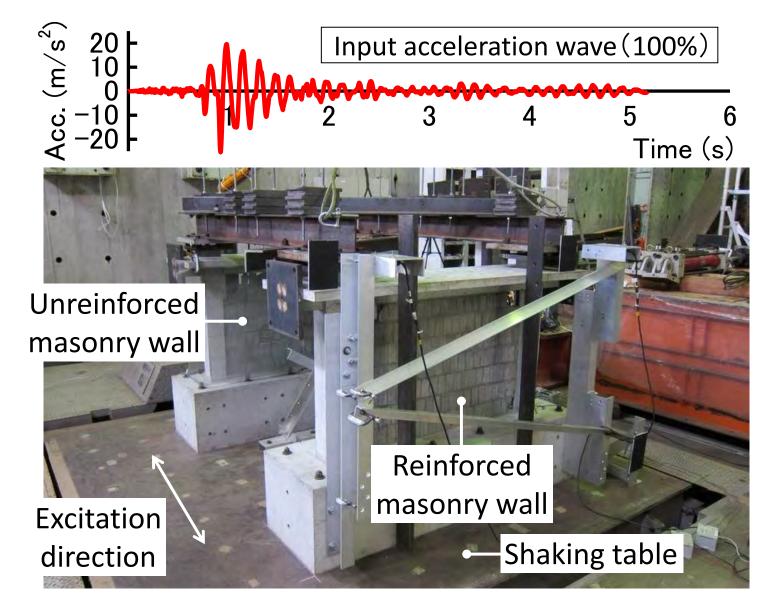
0.5

0.25

Fc10_0.2_WH Fc15_0.2_WH Fc10_0.1_WL Fc15_0.1_WL Fc25_0.1_WL

Specimen Name

Ratio of Evaluated-to-Measured Residual Axial Capacity



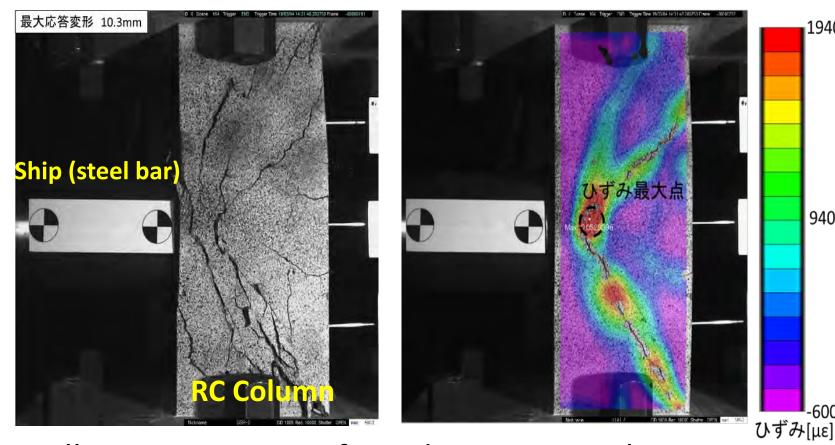
Test Setup & Input Acceleration Wave





Ship's drifting behavior at Hachinohe bay in 2011

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



Collision Test to Reinforced Concrete Column

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

<u>Japan</u>

- IIS, The Univ. of TokyoTohoku Univ.
- Osaka Univ. etc.

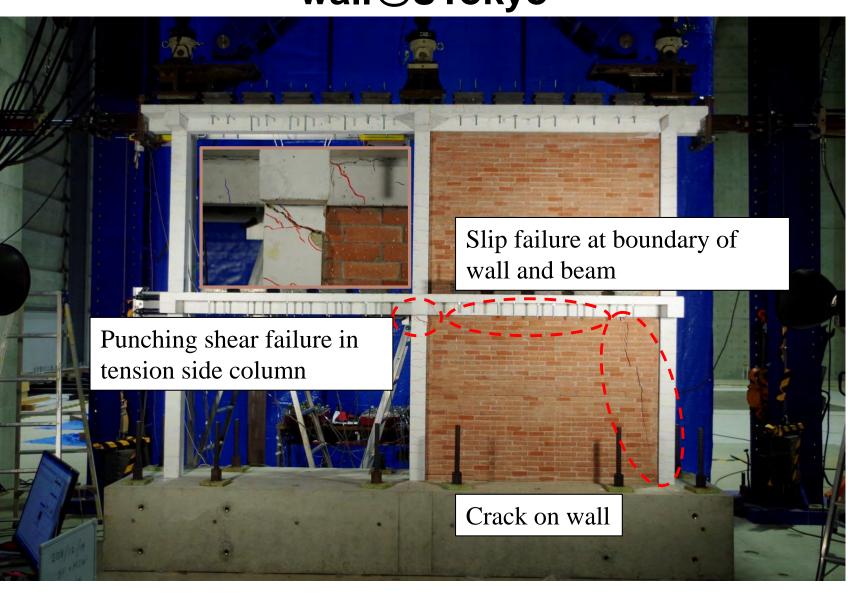
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Bangladeshi Representative

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

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

Testing on RC frame with masonry in fill wall@UTokyo



Testing on RC column@BUET



