



Daisuke KATO, Dr. Eng.

Professor

Program: Environmental Science and Technology

Area: Architecture and Civil Engineering

Undergraduate: Dept. of Architecture and Civil Engineering

Professional Expertise

My professional expertise is structural engineering on earthquake resistant design of reinforced concrete buildings. For this purpose I have studied on damage of buildings during major earthquakes (Photo 1) and examined on behaviors of structural elements composing reinforced concrete buildings such as columns or walls (Photo2).

Research Fields of Interest

- Investigation on buildings damaged during major earthquakes (Photo 1, Ref.[1]-[2])
- Retrofitting and strengthening methods for reinforced concrete buildings (Ref.[3]-[4])
- Earthquake resistant design for reinforced concrete structures (Photo 2, Ref.[5]-[6])
- Effects of confinement by hoop reinforcement on deformation capacities of reinforced concrete columns (Ref.[7]-[8])
- Axial load carrying capacity of reinforced concrete columns (Ref.[9]-[10])



Photo1: Shear failure of a column of 5-story reinforced concrete building in Tokamachi city damaged during the 2004 Mid Niigata Prefecture Earthquake [6]

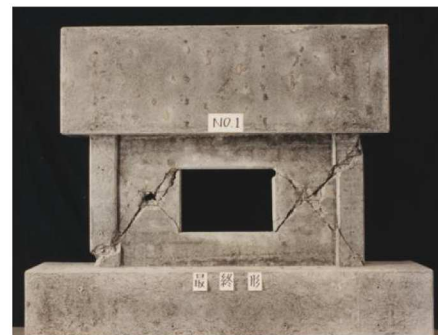


Photo 2: Test specimen of reinforced concrete wall with an opening failing in shear [11]

Education

1984: D. Eng., University of Tokyo

1981: M. Eng., University of Tokyo

1979: B. Eng., University of Tokyo

Major Publications

Damage Report on Earthquakes

- [1] Otani, S. and Kato, D., Lessons Learned from the 1992 Turkey Earthquake, Proceedings of the Ninth Japan Earthquake Engineering Symposium, 1994, Vol. 1, pp.79-84
- [2] Nakano, Y. and Kato, D., Seismic Capacity of Reinforced Concrete Apartment Buildings Damaged due to 1992 Erzincan Earthquake, Turkey, Proceedings of the Ninth Japan Earthquake Engineering Symposium, 1994, Vol. 3, pp.E163-E168
- [3] Damage Report on 1992 Erzincan Earthquake, Turkey, Joint Reconnaissance Team of architectural Institute of Japan, Japan Society of Civil Engineering, and Bogazici University, Istanbul, Turkey

[4] Yoshimasa Honda, Daisuke Kato and Yukiko Nakamura, Effect of Seismic Retrofitting on Reinforced Concrete Buildings Suffered During The 2004 Mid Niigata, Prefecture Earthquake, the 8th National Conference on Earthquake Engineering, 2006

Retrofitting and Strengthening

- [5] Kato, D., Katsumata, H. and Aoyama, H., Hosokawa, Y., STRENGTH AND BEHAVIOR OF POSTCAST SHEAR WALLS FOR STRENGTHENING OF EXISTING REINFORCED CONCRETE BUILDINGS, the 8-th World Conference on Earthquake Engineering, 1984, pp.243-250
- [6] Tetsuo Nagahashi, Daisuke Kato and Yoshimasa Honda, Effects of eccentricity on behavior of a damaged R/C building during 2004 Chuetsu Earthquake, the 14-th World Conference on Earthquake Engineering, 2004, CD-ROM

Earthquake Resistant Design

- [7] Kato, D., Otani, S., Katsumata, H. and Aoyama, H., EFFECT OF WALL BASE ROTATION BEHAVIOR OF REINFORCED CONCRETE FRAME-WALL BUILDINGS, the Third South Pacific Regional Conference on Earthquake Engineering, 1983, pp.171-190
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- [9] KATO, D., DEFORMATION CAPACITY OF REINFORCED CONCRETE BASE ROTATING SHEAR WALLS, Transactions of the Japan Concrete Institute, Vol. 7, 1985, pp. 567-574
- [10] Kato, D., Earthquake Response Analysis of reinforced Concrete Buildings with Base Rotating Shear Walls, the 9-th World Conference on Earthquake Engineering, 1988, pp.447-452
- [11] KATO, D., KABEYASAWA, T., OTANI, S. and AOYAMA, H., Earthquake-Resistant Design of Shearwalls with One Opening, ACI Structural Journal, Vol.92, No.4, July-August 1995, pp.495-500
- [12] Kabeyazawa, T., Kato, D., Nishiyama, M. and Niwa, J, A Framework of Concrete Model Code - Design, Proceedings of the Fifth East Asia-Pacific Conference on Structural Engineering and Construction, Volume 3, 1995, pp.2335-2340

Deformation Capacities

- [13] KATO, D., Ductility of Reinforced Concrete Columns with Various Reinforcing Arrangements, the 10-th World Conference on Earthquake Engineering, 1992, Vol.5, pp.3029-3034
- [14] Kikuchi, M. and Kato, D., Deformation Capacity of R/C Members with High Strength Concrete and Reinforcement, Transactions of the Japan Concrete Institute, Vol. 15, 1993, pp. 399-406
- [15] Kato, D., Kikuchi, M. and Honda, Y., Confinement of Concrete and Main Bars of R/C Members under Varying Axial Load, Transactions of the Japan Concrete Institute, Vol. 16, 1994, pp. 281-288
- [16] Kato, D., Kanaya, J. and Wakatsuki, K., Buckling Strains of Main Bars in Reinforced Concrete Members, Proceedings of the fifth East Asia-Pacific Conference on structural Engineering and Construction, Volume 1, 1995, pp.699-704
- [17] Kato, D., Kanaya, J., Wakatsuki, K. and Honda, Y., Design method to Prevent Buckling of Main Bars in RC Members, Pacific Conference on Earthquake Engineering, Volume 3, 1995, pp.117-126
- [18] KATO, D., HONDA, Y., SUZUKI, H. AND SHIBA, J., Confinement of Concrete of R/C Members under Varying Axial Load, the 11-th World Conference on Earthquake Engineering, 1996
- [19] D.Kato, F.Watanabe, M. Nishiyama and H. Sato, "Confined Concrete with High-strength Materials," High-Strength Concrete (HSC) in Seismic Regions, SP-176, America Concrete Institute, 1998, pp.85-104

Axial Load Capacities

- [20] Daisuke KATO and Yuji OTSUKA: Axial load carrying capacity of R/C columns with side walls, Proceedings of the fib 2003 Symposium, May 2003, CD-ROM
- [21] Daisuke KATO, LI Zhuzhen, Katsuhiro SUGA and Yukiko NAKAMURA, Effects of Reinforcing Details on Axial Load Capacity of R/C columns, the 13-th World Conference on Earthquake Engineering, 2004, CD-ROM
- [22] Daisuke KATO, LI Zhuzhen, Mareyasu Doi and Yukiko NAKAMURA, EXPERIMENTAL STUDY ON RESIDUAL AXIAL LOAD CAPACITY OF R/C COLUMNS FAILING IN SHEAR, the 14-th World Conference on Earthquake Engineering, 2004, CD-ROM
- [23] Daisuke Kato, Yudai Miyajima and Yukiko Nakamura: Evaluating Method of Deformation at Losing Point of Axial Load Carrying Capacity of RC Columns, Journal of Asian Architecture and Building Engineering/September 2009