

Division of Geosciences and Civil Engineering	Research field	Earthquake Engineering in Urban City	Lab. ID GC05
Laboratory web site			
Research subjects			
1. Seismic Behavior, Performance Evaluation, and Design of Geotechnical Structures We study the seismic behavior of bridge foundations, culverts, and other geotechnical structures through model tests, numerical analyses, and field investigations. Our goal is to develop practical methods for evaluating, designing, maintaining, and retrofitting these structures while considering deterioration and variability in ground and material properties. 2. Road Planning Considering Structural Seismic Performance Roads consist of bridges, embankments, culverts, slopes, tunnels, and other structures. We develop methods for selecting suitable structural types based on ground conditions and evaluate how damage to individual structures affects the entire road network. The results support structural selection, retrofit prioritization, and alternative-route planning. 3. Seismic Damage Estimation for Structures We improve seismic damage estimation for timber houses and other structures by combining ground-motion prediction, microtremor observations, ground information, and three-dimensional structural simulations. 4. Seismic Performance of Stone and Masonry Structures We investigate earthquake damage to brick masonry, castle stone walls, and masonry retaining walls through shaking-table tests and numerical simulations, and develop measures to improve their seismic performance.			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
Our research covers disaster prevention, earthquake engineering, geotechnical engineering, structural mechanics, and construction management. Research topics are determined through discussions with supervisors. Students receive regular research guidance and are encouraged to present their work at conferences and submit papers to peer-reviewed journals.			
Daily life in the laboratory, etc.			
Students learn from discussions across different research fields and develop a broad engineering perspective. Joint seminars with other universities and laboratory social events also provide opportunities for collaboration and communication.			
Message or comments by the laboratory faculty staffs			
Research addresses questions without ready-made answers. We value careful observation, curiosity, evidence-based thinking, and independent action. Unexpected results can also lead to important discoveries. We welcome students who wish to contribute to a safer society through research.			
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