Acknowledgments

ORGANIZATION AND FUNDING: GEER/EERI/ATC

The 2014 reconnaissance mission to Cephalonia, Greece was organized and supported financially by the Geotechnical Extreme Event Reconnaissance (GEER) Association, the Earthquake Engineering Research Institute (EERI), and the Applied Technology Council (ATC). The background and resources for each organization are acknowledged below.

The work of the GEER Association, in general, is based upon work supported in part by the National Science Foundation through the Geotechnical Engineering Program under Grant No. CMMI-0825734. The GEER Association is made possible by the vision and support of the NSF Geotechnical Engineering Program Directors: Dr. Richard Fragaszy and the late Dr. Cliff Astill. GEER members also donate their time, talent, and resources to collect time-sensitive field observations of the effects of extreme events.

The Earthquake Engineering Research Institute (EERI) is a nonprofit corporation whose objective is to reduce earthquake risk by advancing the science and practice of earthquake engineering, by improving understanding of impact of earthquakes on the physical, social, economic, political, and cultural environment, and by advocating measures for reducing the harmful effects of earthquakes. The reconnaissance mission was funded by EERI's Learning from Earthquakes (LFE) Program, which has been funded in large part by the NSF. LFE sends out multi-disciplinary teams of engineers, earth and social scientists into the field to investigate and to learn from the damaging effects of earthquakes.

The Applied Technology Council (ATC) is a nonprofit corporation with mission to develop state-of-the-art, user-friendly engineering resources and applications for use in mitigating the effects of natural and other hazards on the built environment. ATC also identifies and encourages needed research, and develops consensus opinions on structural engineering issues in a non-proprietary format, thereby fulfilling a unique role in funded information transfer. ATC funded this reconnaissance mission as a case of potential importance to the structural engineering design practice.

Any opinions, findings, and conclusions or recommendations expressed herein are the authors' and do not necessarily reflect the views of the above organizations, associations or companies that supported this mission.

EXTERNAL REVIEWERS

The technical information was significant in volume and potential impact in the earthquake engineering community. The editors asked for support of external expert reviewers to provide their feedback in the most technically important sections of the report. At the time of completion of Version 1, parts of the external review process is in progress that will be completed in the next version. The input of our external reviewers, experts in their field that bring additional value to our report is gratefully acknowledged. They are listed below in alphabetical order with the sections they have been reviewing:

Adda Athanasopoulos-Zekkos, Assistant Professor, Civil & Environmental Engineering, University of Michigan, Ann Arbor, USA (Section 8.2)

George Bouckovalas, Professor, School of Civil Engineering, Department of Geotechnical Engineering, National Technical University of Athens, Greece (Sections 8.2, 8.4)

Michael Constantinou, Professor, Department of Civil, Structural, and Environmental Engineering, University at Buffalo, and Deputy Director of Structural Engineering and Earthquake Simulation Laboratory (SEESL), USA (Chapter 11)

Youssef Hashash, Professor & John Burkitt Webb Endowed Faculty Scholar, Dept. of Civil & Environmental Engineering, University of Illinois at Urbana-Champaign, USA (Section 8.1, Section 10.1)

Nicos Makris, Professor, Department of Civil Engineering, Department of Structures, University of Patras, Greece (Chapter 9)

Cheryl J. Moss, Senior Geologist, Mueser Rutledge Consulting Engineers, New York, NY USA (Chapter 6)

Thomas D. O'Rourke, Thomas R. Briggs Professorship in Engineering, Department of Civil and Environmental Engineering, Cornell University, Ithaca, NY, USA (Chapter 10)

Philip J. Richter, Principal, Mosaic Architectural Solutions, Orange County, CA, and past President of the Applied Technology Council (ATC), USA (Chapter 11)

Constadino (Gus) Sirakis, Executive Director of Technical Affairs, New York City Department of Buildings, New York, NY, USA (Chapter 11)

Chris Sklavounakis, Associate Vice President, HDR, New York, USA (Sections 8.5, 10.2)

Christos Vrettos, Professor and Director of Soil Mechanics & Foundation Engineering, Technical University of Kaiserslautern, Germany (Chapter 7, Sections 8.3, 8.6, 8.7)

Andrew Whittaker, Professor and Chair, Department of Civil, Structural, and Environmental Engineering, and Director of Multidisciplinary Center for Earthquake Engineering Research (MCEER), University of Buffalo, USA (Chapter 11)

Aspasia Zerva, Professor, Civil, Architectural, and Environmental Engineering, Drexel University, USA (Chapter 7, Sections 8.1, 8.5).

FUNDING RESOURCES FOR GREEK TEAM MEMBERS

Funding for Greek members of our team has been provided by the following resources, whose support is gratefully acknowledged.

The European Union (European Social Fund, ESF) and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) - Research Funding Program Thales: Investing in knowledge society through the European Social Fund has supported the participation of Professors Achilleas Papadimitriou and Panos Tsopelas of the UTH, University of Thessaly (MIS 375618), and the participation of Professor Nikos Klimis and Mr. Manos Psaroudakis of DUTH, Democritus University of Thrace (ESF Project 85330). The DUTH members were also supported by the Geotechnical Division of their Civil Engineering Department.

The research project "FORENSEIS" (Investigating Seismic Case Histories and Failures of Geotechnical Systems), implemented under the "ARISTEIA" Action of the "Operational Programme Education and Lifelong Learning" and co-funded by the European Social Fund (ESF) and national resources, supported financially the participation of Professor George Gazetas and his team from the National Technical University of Athens (NTUA).

The European Research Project "Strategies and tools for Real Time Earthquake Risk Reduction (REAKT)," supported the participation of team member Dr. Dimitri Pitilakis and his team from the Laboratory of Soil Dynamics and Geotechnical Earthquake Engineering of the Aristotle University of Thessaloniki, under REAKT Grant No. 282862.

The Queens School of Engineering of the University of Bristol provided the travel funds to Professor George Mylonakis of the University of Patras.

The Technical Chamber of Greece (TEE) supported the reconnaissance visits by Professors George Bouckovalas and Ioannis Psycharis of NTUA.

COLLABORATING INSTITUTIONS, AUTHORITIES, INDIVIDUALS

Several organizations assisted this mission by being active participants or providing information and support to our team. Their help was invaluable in making information available rapidly and setting meetings with agency representatives. Their support is gratefully acknowledged and we hope that this collaboration is the beginning of a long relationship with our supporting GEER/EERI/ATC organizations. The Greek collaborating institutions are:

The Hellenic Society of Earthquake Engineering (ETAM, eltam.org) is highly acknowledged for their immense contribution to this reconnaissance study. ETAM participation included President Kyriazis Pitilakis, Vice President Elli Vintzilaiou, Secretary Anastasios Sextos, Board members George Gazetas and Ioannis Psycharis, and more than 20 members in the field reconnaissance and report preparation. ETAM was in constant contact with the GEER/EERI/ATC team and provided valuable support.

The local (Cephalonia-Ithaca) chapter of the Technical Chamber of Greece (tee.gr) supported our mission by providing technical information and facilitating communication with local authorities. The dialogue between practicing engineers and researchers on regional design and earthquake observations was very insightful.

The Cephalonia Police authority assisted in making the reconnaissance work safe and organized our access to areas closed to general public by providing special tags to our members.

The Port Authority was instrumental in getting us to the island upon arrival to Greece, by delaying the departure of the last ferry boat that would transfer USA team members R. Gilsanz and S. Nikolaou to Cephalonia. Coordinating with team members from Easy Facilities, the ferry captain Mr. Christos Moraitis was able to get appropriate permission from the National Port Authority to hold the ferry schedule back. We are grateful for this help.

The Technological Educational Institute (TEI) of Cephalonia graciously provided their facilities, including a large amphitheater that could host all our team for daily meetings at the end of each day, which was essential. Communication of team members with the Greek Society of Civil Engineers (ΣΠΜΕ, www.spme.gr) and the Greek section of the International Association for Bridge and Structural Engineering (IABSE, iabse.gr) is appreciated.

EYDAP (ΕΥΔΑΠ), the Water Supply and Sewerage Company personnel collaborated with our teams in the field and prepared a detailed report that is included in Chapter 10. EYDAP teams to Cephalonia were supervised by the General Manager of Networks, Mr. Stefanos Georgiadis, Deputy General Manager of Networks, Mr. Konstantinos Vougiouklakis, and CEO Mr. Antonis Vartholomaios. Mapping services were provided by Vassilis Sapoulidis and Angeliki Tzamakou with support by Gesfaira SA. This invaluable contribution was made possible by the coordination of Mr. George Sachinis of EYDAP, to whom we are grateful.

Dr. Vassilis Bardakis, Professional Structural Engineer, kindly provided information related to the “Mantzavinateio” Lixouri Hospital from his work on studying this structure.

The employees of the Cephalonia branches of Eurobank and National Bank of Greece are acknowledged for their productive cooperation under difficult conditions.

The insightful contribution in insurance-related matters of Mr. George Foufopoulos of National Insurance Company of Greece (Εθνική Ασφαλιστική) is grateful acknowledged.

Ms. Dionysia Poulaki-Katevati, author of the book *Cephalonia before the earthquake of 1953*, was a priceless resource of knowledge. She kindly provided information and material such as rare postcards and documents that gave a vivid picture of the architecture and infrastructure of the pre-1953 island. We are indebted to Ms. Poulaki-Katevaki, whose hard work, passion, and depth of knowledge for Cephalonia was inspiring.

DATA DISSEMINATION: STRONG GROUND MOTION, LIDAR, GEOSPATIAL

The following organizations that participated in the reconnaissance report provided recorded strong ground motion data from their stations for use by the earthquake engineering community. We are grateful for their contribution and sharing their data.

EPPO-ITSAK (Earthquake Planning and Protection Organization, oasp.gr - Institute of Engineering Seismology and Earthquake Engineering, itsak.gr) provided their recorded acceleration time histories, presented in Chapter 7. EPPO-ITSAK kindly acknowledges K. Konstantinidou, MSc-IT, and the staff of the Technical laboratory of ITSAK. Civil engineer S. Zacharopoulos and technicians A. Marinos and N. Adam contribute to the effective operation of the EPPO-ITSAK strong motion network and assure its data transfer to the central computer facilities in Thessaloniki.

NOA-IG (National Observatory of Athens, noa.gr – Institute of Geodynamics, gein.noa.gr) provided their recorded acceleration time histories, presented in Chapter 7. The NOA-IG team greatly appreciate the contribution of the NOA-IG's technicians to the operational reliability of the accelerographic network.

The Geography Department of HUA (Harokopion University of Athens, geo.hua.gr) provided the Remote Sensing Interferometry data prepared by team member Professor Isaak Parcharidis, who acknowledges DLR for TerraSAR-X data provision.

Geoengineer.org, the international information service for geotechnical engineers, committed IT resources (human and cyber-infrastructure) to facilitate the immediate data mining, indexing, mapping and dissemination through a “clearinghouse” via the portal

mygeoworld.info. Mr. Ilias Giannoutsos and Mr. Kostis Tsantilas of the IT division of the company were instrumental in this effort and are gratefully acknowledged.

GEER/EERI/ATC LEADERSHIP SUPPORT

The support and encouragement of the GEER/EERI/ATC leadership in our mission was essential. Jonathan Bray and David Frost, GEER's Steering Committee Chair and Member, respectively; EERI LFE Chair Ken Elwood, Executive Director Jay Berger and Special Projects Manager Marjorie Greene; and ATC Executive Director Chris Rojahn, all were available around the clock while in Greece and during report preparation. GEER recorder Christine Z. Beyzaei was instrumental in reviewing report material and posting information on the web. We are grateful for their attention that went beyond the funding support.

GILSANZ MURRAY STEFICEK

Special gratitude to the Partners of Gilsanz Murray Steficek (GMS) who have supported this effort by graciously providing engineering time, supporting staff and other resources, particularly for the work of Mr. Ramon Gilsanz, Mr. Eugene Kim, Mr. Alberto Guarise, Ms. Connie Yang and Mr. James Rosenmann.

MUESER RUTLEDGE CONSULTING ENGINEERS

The Partners of Mueser Rutledge Consulting Engineers (MRCE) have graciously supported this effort by providing engineering time and resources, and MRCE staff engineers volunteered time. This included the field and office work of Dr. Sissy Nikolaou and participation in editorial or authorship capacity of MRCE engineers Dr. Menzer Pehlivan, Mr. Dimitrios Iliadelis, Ms. Lysandra Lincoln, Mr. Jesse Richins, Ms. Nonika Antonaki, and Dr. Mojtaba Malek. Engineering support was provided by Mr. Kyriakos Barbagianis, Dr. Michael Law, Mr. Edward Phelps, and Mr. Allan Amador. Ms. Cheryl Moss reviewed Chapter 6 and Mr. Adam Dyer created sketches of Lixouri Port and Debosset geologic section in Chapter 8. The support of MRCE in this mission and report is gratefully acknowledged.

PEOPLE OF CEPHALONIA

Last but not least, we are most grateful for the kindness of the people of Cephalonia. Under difficult conditions, they opened their doors to us, shared their experiences, and provided us with information of drawings and engineering calculations for their houses. We have been touched and humbled by each and every one of them.