



## IN MEMORIAM:

**Prof. Dr. Davorin Kovačić, grad. civ. eng.**  
(Mar. 29<sup>th</sup>, 1945 – Feb. 17<sup>th</sup>, 2019)

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### Commemoration



Our distinguished professor, Davorin Kovačić, passed away on February 17<sup>th</sup>, 2019. He was a member of the Faculty of Mining, Geology and Petroleum Engineering from 1991 to 1996, and he participated in scientific and professional work with numerous colleagues at the Faculty of Mining,

Geology and Petroleum Engineering in the fields of geotechnical engineering and environmental geotechnics.

Professor Davorin Kovačić was born in Zagreb on March 29<sup>th</sup>, 1945, where he finished elementary school and grammar school. He enrolled in the Faculty of Civil Engineering, at the University of Zagreb in 1964, graduated in 1969, and was awarded the title of a graduate engineer in civil engineering. He obtained his Master's degree in 1976 with the theme "The analysis of an excavation process using finite elements and critical state model" at The College, Swansea University, Wales, UK. He received his doctorate in 1989 at the Faculty of Civil Engineering, University of Zagreb with the topic "Numeričko rješavanje dvodimenzionalne konsolidacije tla" ("Numerical analyses of two-dimensional soil consolidation") and gained the academic title of Doctor of Technical Sciences, in the field of civil engineering.

In 1970, he was employed at the Department for Concrete Structures of the Faculty of Civil Engineering of the University of Zagreb as an expert associate. As early as 1972, he moved to the company Geotehnika - Institut Geoexpert, Zagreb as an associate designer. From 1974 to 1975, he resided in the United Kingdom as a postgraduate student at The College, Swansea University, Wales. After that, he returned to the Institut Geoexpert, first as a designer and later as a group manager. After gaining the academic degree of Doctor of Technical Sciences, from 1989 to 1991 he became the manager of the Department for Research and Development of Geotehnika, Zagreb. In that period, he had already started his academic career. From 1983 to 1990, he was a guest lecturer for the subject of Foundations at the Faculty of Civil Engineering, University of Mostar. In 1991, he was employed at the Faculty of Mining, Geology and Petroleum Engineering, University of Zagreb, first as an assistant professor, and later as an associate professor of

technical sciences, in the field of civil engineering, branch of geotechnics. He was the lecturer for the subjects: Soil mechanics and foundation engineering, Geotechnical structures, Numerical methods in soil and rock mechanics and Geotechnical Principles of Landfills. He also taught the course Application of numerical methods in geotechnics in the postgraduate study of Faculty of Mining, Geology and Petroleum Engineering. After that, he returned to the economic sector where he was the general manager of the company BBR Conex, d.d., Zagreb from 1996 to 2003. In 2003, he continued his university career at the Geotechnical Faculty in Varaždin, University of Zagreb, first as an associate professor, and then as a full professor from 2009 onward. At the Geotechnical Faculty, he held the following courses: Introduction to Geotechnics, Soil Mechanics, Earth Dams, Introduction to Geoengineering and Waste Management. During that period, he also acted as the Vice Dean of education at the Geotechnical Faculty in Varaždin for two terms, from the academic year of 2006/2007 to the academic year of 2009/2010. There, he was the leader of a task force for the new Bologna study program of Geoengineering. With his great involvement in the Council of technical studies of the University of Zagreb, he initiated a proposal for amendments to the policies in scientific and artistic studies, fields and branches, which ultimately resulted in the introduction of Environmental Engineering as a new branch in the field of Interdisciplinary technical sciences. He retired from the Geotechnical Faculty on September 30<sup>th</sup>, 2010. He remained active, and was engaged in the company Geoekspert d.o.o. in Zagreb from 2010 almost until the day he passed away. In addition, it should be noted that during his academic career, in the academic year of 2004/2005 to the academic year of 2008/2009, he was the course director for the courses of Landfills at the University Interdisciplinary Postgraduate Study of Eco-engineering, as well as an active participant in the negotiations for the founding of a joint doctoral study Geoengineering and Water Management, which was later implemented by universities in Zagreb, Graz, Maribor and Budapest. He was also a mentor to numerous students in the preparation of their final and graduate theses, one candidate for her master's degree, two doctoral theses and several works were awarded with the Rector's Award.

Scientific research by Professor Kovačić began during his studies in the UK in the field of numerical modelling in geotechnics, which continued throughout his career. Later, his interest was focused on another new area, applying geotechnics in the protection of the environment. In this area, he certainly represents one of the founders of the develop-

ment of this subdiscipline in Croatia. He published about fifty scientific and professional papers. In 1996, he was co-author of a chapter published in the Construction Yearbook titled "Geotehnologija pri odlaganju komunalnog otpada" ("Geotechnology in Municipal Waste Disposal").

In the period from 1996 to 1998, he was the principal investigator of an international project entitled "Applicability of materials from flysch coastal regions of Croatia for the construction of impervious barriers in sanitary landfills" within the U.S. - Croatian Science and Technology Program and in cooperation with the University of Colorado Boulder. He was also the principal investigator of two scientific projects funded by MZOS: "Geotehnologija za odlagališta otpada" ("Geotechnology for Landfills") and "Karakterizacija krutog komunalnog otpada" ("Characterization of Solid Municipal Waste"). He participated in seven other domestic and international scientific projects. He was actively involved in the organization of the first symposium on waste management in Croatia in the early 1990s. This conference has been continuously organized in Zagreb to this day under the name Međunarodni simpozij gospodarenja otpadom (the International Waste Management Symposium).

He was the principal investigator of the first TEMPUS and CEEPUS projects at Faculty of Mining, Geology and Petroleum Engineering, through which an intensive international exchange of teachers and students was realized. The TEMPUS project called "Advanced Computational Engineering Mechanics" took place during the war-torn years from 1991 to 1994, so the establishment of international co-operation at that time was more difficult and all the more significant for every participant since the exchange was conducted with universities from the UK, the Netherlands, Germany and other Western European countries. The CEEPUS project "Geotechnology of Environmental Protection" was a project established in the academic year of 1996/1997 between the University of Zagreb and Gdansk University of Technology, Poland. Through these projects, Professor Kovačić was a guest lecturer twice at the University of Colorado Boulder, Department of Civil, Environmental and Architectural Engineering in the United States and at the University of Technology in Gdansk, Faculty of Civil and Environmental Engineering in Poland.

Dr. Sc. Davorin Kovačić was very active in the geotechnical profession. He created several software packages at the very beginning of his career. He participated in a number of significant projects, as a designer or design reviewer. Here are just a few of them: HE Obrovac, HE Rama, projects of deep foundations in Baghdad and Moscow, protection of construction pits in Leningrad and Zagreb, a water supply project in Sudan, the Ploče harbour, the Mirna viaduct, Krčki most (Krk Bridge), Dubrovački most (Dubrovnik Bridge), Centar za zbrinjavanje otpada Marišćina (Center for waste management Marišćina), the Zalužje - Varaždin landslide, protection of the Urinj River - Rijeka, and Arena centar - Zagreb. He also published his professional experiences in works and handbooks, of which we single out the handbook entitled "Mlazno injektiranje – prikaz tehnologije i primjene mlaznog injektiranja" ("Jet Grouting – technology and practical applications"), published in 1997.

He was a member of several Technical Committees in the State Bureau of Standards and Metrology. He was also active in the Croatian Chamber of Civil Engineers. Several

times at the Days of Chartered Engineers, he was the head of the section. He also received an award for the meritorious members of the Society of Civil Engineers and Technicians of Croatia.

He held numerous invited lectures and was a member of professional associations in which he held important functions. From 1983 to 1986, he was secretary of the Društvo za mehaniku tla i temeljenje Hrvatske (Society of Soil Mechanics and Foundations of Croatia), and from 1986 to 1990 he was its president. Today's Croatian Geotechnical Society has emerged from that society, in which Professor Kovačić again made a significant contribution as a member of the board of directors, and he participated in the organization of numerous domestic and international symposia in an organizational or scientific board. In more recent years, Professor Kovačić was a member of Editorial Board of the Glasnik Hrvatskog geotehničkog društva (Newsletter of the Croatian Geotechnical Society). In that period, Glasnik acquired a new attractive look and richer content, and Professor Kovačić was very active and encouraging in the creation of articles for each publication. In 2018, he was appointed as a meritorious member of the Croatian Geotechnical Society for his outstanding contribution.

In 2005, Professor Kovačić was accepted as an associate member of the Croatian Academy of Engineering, in the Department of Civil Engineering and Geodesy. Professor Kovačić left a significant mark there as well. From 2013 to 2017, he was Secretary of the Department of Civil Engineering and Geodesy, and as of a few years ago, he was named Emeritus of the Academy. He was one of the initiators of a series of scientific and professional conferences on the topic of Waste Management and Environmental Protection Technology, the first of which was held in Varaždin in 2006 and the last in Zadar in 2009.

He was a member of international associations: ISSMGE - International Society for Soil Mechanics and Geotechnical Engineering and ISRM - International Society for Rock Mechanics.

Many of his collaborators in any of the numerous institutions where he worked or with whom he collaborated could certainly say a lot about Professor Kovačić's substantial career, his style and work habits. Professor Kovačić was a thorough, disciplined, accurate, excellent lecturer and pedagogue, an inspirational mentor, theorist and practitioner, always ready for challenges, and the initiator of numerous activities. Although Professor Kovačić worked at the Faculty of Mining, Geology and Petroleum Engineering for only five years, he continued to cooperate with all his close associates throughout the years that followed. This was a very productive and intensive period of scientific-educational work in our geotechnical group, but so much more than that. It was not difficult to achieve good results in the stimulating and comfortable atmosphere created by Professor Kovačić. It is hard to believe that Professor Kovačić has left us, and we are aware of the great loss for all those involved, including the employees of the Faculty of Mining, Geology and Petroleum Engineering. His contribution to the Faculty of Mining, Geology and Petroleum Engineering and all the other institutions where he worked was exceptional and for this, we are extremely grateful to him.