



PROFESSOR JAN KMITA (1922-2015) **– ENGINEER AND HUMANIST**

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Professor Jan Kmita was born on 18 February 1922 in Bobrowiec in the Rawa Mazowiecka District, into a peasant family. In his home village he finished primary school and from 1935 he attended the B. Prus State Junior and Senior Secondary School in Skierniewice, where in 1939 he was awarded the Certificate of Junior Secondary Education and in 1945 the Certificate of Senior Secondary Education in Humanities. During World War II, for nine months, he was sent to Pionki and Wolanów near Radom to do forced labour. He took part in the resistance movement as a soldier of the Home Army, and in clandestine teaching. He began his studies in the 1945/46 academic year at the Łódź University Faculty of Law, and then continued them at Wrocław University of Technology, from which in 1950 he obtained an MSc Engineering degree from the Faculty of Civil Engineering. After graduation he worked in design offices, where besides carrying out design projects he would organize group training for his co-workers, and science & technology conferences. His activity in this period resulted in the design of many civil engineering structures, including the bridge over the Kłodzko Neisse river in Kłodzko (1958) and the Peace Bridge in the centre of Wrocław (1959) – one the first bridges built of prestressed concrete in Poland. He undertook research and teaching in 1955 as assistant lecturer at the Bridge Building Department of Wrocław University of Technology, obtaining in his scientific career in turn: the position of lecturer (1958), the degree of Doctor of Technical Sciences (1960), the Habilitated Doctor degree

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at Warsaw University of Technology (1962), the title of Associate Professor (1969) and the title of Full Professor (1977). At his home University he held various posts: deputy dean for teaching in the years 1963-64, deputy dean for science in the years 1966-68 and dean of the Faculty of Civil Engineering in the years 1968-71.



Fig. 1. Professor Jan Kmita in the 1980^s

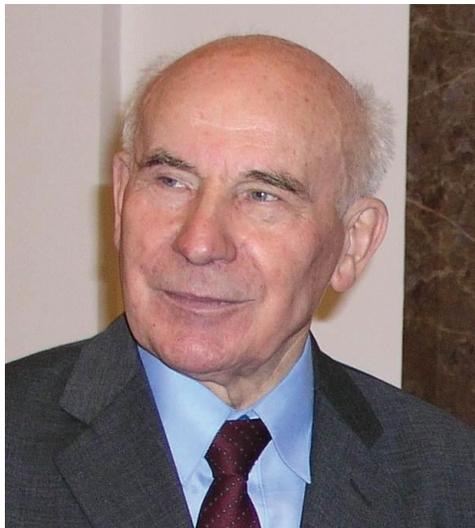


Fig. 2. Professor Jan Kmita (1922-2015)

For ten years (1971-1981) he was director of the Institute of Civil Engineering. From 1984 to 1990 he held the honourable post of Rector of Wrocław University of Technology and in the years 1989-90 he was chairman of the Autonomous Conference of the Rectors of Higher Technical Schools in Poland. Simultaneously, for 28 years (1964-1992), professor Jan Kmita was head of the Bridges Unit at the Civil Engineering Faculty of Wrocław University of Technology.



Fig. 3. The 85th anniversary of the Professor's birth (2007) – Cardinal Henryk Gulbinowicz presents the Professor with the Wrocław Archdiocese Millennium Ring

Professor Jan Kmita was an indisputable authority in the field of bridge engineering in Poland. His scientific works focus on: the theory and technology of prestressed concrete structures, including techniques of prestressing bridge spans with cables made of grouped ropes, stress states in cable anchorages, the theory and experimental studies of the friction of cables in tendon ducts, the model statics of diagonal plates, the distribution of load in multi-girder spans and the methodology of the rational shaping of the main girders in road and railway bridges. Among the Professor's scientific achievements there are also works devoted to the shaping and evaluation of the static strength behaviour of precast girders in the elastic and nonelastic ranges and to the rheology of such girders. Also important are the results of his research in the field of structural mechanics, relating to the rational selection of theoretical models for bridge structures with fatigue strength taken into account.

Owing to his 12 years long work in contractor and design firms Professor Jan Kmita's research is closely bound with engineering practice. Crowning his hitherto research he took up problems relating to the maintenance and upgrading of bridge infrastructure, the appraisal of the condition of bridges and the expert system aided management of bridge infrastructure. He is the co-author of the SMOK Railway Bridges Management System developed in the Bridges Unit and implemented in the whole country for the needs of the Polish Railway Lines.



Fig. 4. Professor Jan Kmita with the team
of the Wrocław University of Technology Bridges Unit (2010)

In the years 1992-1996 he took active part in supervising the construction of then the largest prestressed concrete bridge in Poland, across the Vistula in Toruń, carrying the A-1 motorway. He also took part in investigations and load tests of many bridges, including the Toll Bridge in Szczecin, the bridge across the Vistula in Wyszogród, the Piast Dynasty Bridge in Opole, the Holy Cross Bridge in Warsaw and tens of bridge structures over the A-4 motorway.

The research resulted in three books: “*Concrete Bridges – Part I. Foundations of Dimensioning*”, “*Concrete Bridges – Part II. Foundations of Shaping*”, published in 1984 and the co-authored book “*Computer Aided Design of Bridges*” published in 1989.

Up to this day the books are a source of important information for Polish bridge designers. The results of Professor Jan Kmita's research are contained not only in the books, but also in over 120 publications and in nearly 200 reports and expert opinions. The research also resulted in six patents, including two personal ones.



Fig. 5. Professor Jan Kmita against the background of the Peace Bridge in Wrocław, which he designed (2011)

Professor Jan Kmita taught, educated and tutored many generations of bridge engineers. He attached great importance to the scholarly development of the university staff – he was the supervisor of 11 doctoral theses, four of his pupils obtained the Habilitated Doctor degree and three were awarded the title of Professor of Technical Sciences. One of the main legacies left us by the Professor seems to be the Wrocław Bridge School – a group of his pupils and co-workers endeavouring to continue the activities initiated by him. The whole Polish bridge engineering industry and numerous academic centres draw on the Professor's educational, scholarly and engineering legacy. Naturally, Wrocław University of Technology, including the Faculty of Civil Engineering, the Bridges Unit and since 2015 the Department of Bridges and Railways have been, and continue to be, the greatest beneficiaries.

Also the whole Polish scientific and engineering community has gained much from the Professor's following activities:

- the organization of scientific “Schools for Young Personnel” in the years 1971-1980 – the seminars contributed to the development of the personnel of the Civil Engineering Faculty of Wrocław University of Technology and other universities;
- the organization of the periodic international scientific conference Safety of Bridge Structures in the years 1975, 1982 and 1987 – in those times it was a unique forum for specialist contacts with abroad;
- the participation in the preparation and publication of science & technology books in the “Communication Engineering” series published by Transport and Communication Publishers in the 1980s, constituting a compendium of current knowledge in those times;
- the participation in the creation of the Open Museum of Technology in Wrocław and the chairing of its Foundation Board in the years 1994-1998;
- chairing the Committee for the Building of the Lwów Eaglets Monument in Wrocław and getting the monument built in 1991;
- founding the journal Archives of Civil and Mechanical Engineering published by the Faculty of Civil Engineering and the Mechanical Engineering Faculty of Wrocław University of Technology;
- the preparation and publishing of the monumental work “Wrocław Academic Community. Creators and their pupils 1945-2005”.

The confirmation of Prof. Jan Kmita's authority was his long membership of many scientific committees and institutions connected with science, including: the Civil Engineering Committee of the Polish Academy of Sciences, the Commission for Building and Mechanical Engineering at the Wrocław Branch of the Polish Academy of Sciences, the Wrocław Learned Society, the National Awards Committee, the Central Commission for Academic Titles and Degrees, and many boards of scientific institutions. Professor Jan Kmita was also an active member of many science & Technology organizations and associations: the Polish Association of Civil Engineers & Technicians, the Polish Association of Transport Engineers & Technicians, the Polish Association of Theoretical and Applied Mechanics and the Polish Society of Bridge Engineers. An expression of the high regard for the Professor's achievements are the honorary doctorate degrees awarded to him by: Poznań University of Technology (1993), Cracow University of Technology (2000), his home Wrocław University of Technology (2000) and the Pontifical Faculty of Theology in Wrocław (2002).

Professor Jan Kmita was also honoured with, inter alia, the Commander's Cross of the Order of Polonia Restituta, the Commission of National Education Medal, the Professor Stefan Kaufman Medal, the Polish Society of Bridge Engineers Medal for outstanding achievements in bridge engineering, and Honorary Membership of PATE&T and of PSBE.



Fig. 6. Professor Jan Kmita gives a speech during the celebration of the 90th anniversary of his birth (2012)

Professor Jan Kmita was a man with great character qualities – great passion and diligence, high organizational skills and kindness and genuine friendliness to others, owing to which he not only won true recognition of the scientific and engineering community, but also genuine affection and friendship of all who worked with him. Professor Jan Kmita passed away on 10 December 2015. He will always be remembered by his pupils and co-workers and the results of his work form a solid foundation for the further development of Wrocław University of Technology and the community of bridge engineers.

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