

## PhD SYMPOSIUM IN CIVIL ENGINEERING, 5-7 SEPTEMBER 2022 - Università di Roma "Tor Vergata"

### THE CONFERENCE PROCEEDINGS

The 14<sup>th</sup> *fib* PhD Symposium in Civil Engineering has been held for the first time in Italy, at the University of Rome *Tor Vergata*.

The previous editions were organized in Budapest (1996, 1998), Vienna (2000), Munich (2002), Delft (2004), Zurich (2006), Stuttgart (2008), Lingby (2010), Karlsruhe (2012), Quebec City (2014), Tokyo (2016), Prague (2018), Paris (2020/21).

The selection of the venue has been decided by a quite large group of colleagues who have participated, as members of the Scientific Committee, to promote *fib* in the Scientific Community and to animate it by means of their scientific activity. Rome, *the Eternal City*, represents the past, the present and the future of concrete from an architectural point of view, and very few towns can compete with it in this special representativeness.

The event is a look at the future of the scientific community that must face the *challenge of sustainable building*: it collects around 120 PhD theses on the main research topics of concrete structures, carried out by the people who will take up the baton to make complex choices on the built environment to guarantee the progress of technical and social activities without sacrificing the future of subsequent generations.

The researchers come from all over the world. We received more than 151 papers from 72 research Institutes and Universities: as expected, Italy has the largest representativeness with 49 papers, Germany the second one with 31 papers and the third position is from Hungary and Switzerland, both with 8 papers. Twenty-nine countries have candidates. The selection was quite hard, and we arrived to admit only 115 papers.

The four main topics involved in the theses are: *Structural Analysis and Design* (27%), *Innovation in Concrete Technology* (18%), *Durability and Materials* (17%) and *Retrofitting and Assessment of Existing Structures* (14%). For the first time we have also theses on *History of Concrete Structures and Assessment of Heritage Buildings*.

The high scientific level of the Symposium also attracted the interest of large companies operating at international level. Companies like *MAPEI*, *Bekaert*, specialized companies like *ASDEA Software*, *Červenka Consulting (ATENA)* and the National Federation of Concrete Companies *FEDERBETON*, that represents the whole industrial chain of concrete firms in Italy, have decided to give away significant prizes to promote the technological culture of concrete and the commitment of the young participants.

The Symposium has been used also by REcube, an Erasmus Plus Project financed by European Community aimed at the transmission and the dissemination of a new sustainable approach to the conservation and reuse of modern reinforced concrete architecture at European and international level, as multiplier event. It collects 10 Research Institutes, 5 Associated Partners (*fib* included) and promotes the enhancement of the significant European heritage: the REcube action is oriented to prepare master's degree students of engineering and architecture by courses organized by university partners to foster the development of a new mentality in the field of modern heritage regeneration.

The main contribution to the communication with the candidates, the distribution of the reviews and the patient daily control of the progress in the selection of papers has been followed by the Italian *fib* Young Members Group and, in particular, by Isabella Giorgia Colombo, Marta Del Zoppo, Diego Gino,

Simone Spagnuolo, Diego Alejandro Talledo: our thanks go to them for the time dedicated to this precious activity.

*Marco di Prisco, Alberto Meda and Gyorgy Balazs*

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