



An overview of the 3rd RILEM Spring Convention and Conference (2020RSCC)

Guimaraes, Portugal, 10-14 March 2020

The third edition of the RILEM Spring Convention and Conference (RSCC2020) was caught right in the middle of the hurricane caused by the COVID-19 outbreak. During the previous couple of weeks, the attitude was essentially characterized by the cautious follow-up of all international developments, together with the establishment of precautionary measures, but still in a context of full freedom of action and zero cases in Portugal. Over the course of one week, a strong change on the general attitude by European authorities took place, characterized also by the prescription of preventive confinement to all citizens and the closing of the borders.

On Monday 9th March there were already about 100 participants involved in different activities in Guimaraes, including two TC Meetings, one FIB Committee meeting and one SARCOS PhD and ECI associated event. Tuesday 10th, the second and very important day for the activities by RILEM (including TAC, DAC, DEV, EAC and two other TCs), started with the effects of the initial measures by the Portuguese authorities towards the full lock-down, with the closing of the University of Minho. Eventually the entire country was under full lock-down at the onset of the following week. The same measures were being implemented in most of the European countries.

Despite the adversities, which led to the cancellation of some delegates and the closure of all public venues, participants kept an extremely positive spirit and RSCC2020 made it! In a very short time, the RSCC2020 organisers turned the event into an online conference, allowing delegates to present in remote mode from all corners around the world... and it was a great success! But let's start from the beginning.

The RSCC2020 was scheduled to open at 9 AM on Tuesday 10th March at the Guimaraes Campus of the University of Minho, Portugal. As mentioned before, on Monday 10th March, more than 100 participants had showed up in person at the registration desk of the event therefore cancelling was not an option when on the early morning of Tuesday, at around 8.30 AM, the Rector of the University of Minho, following the local Government restrictions emanated on that same morning, decided to close the campus. The Vila Flor Cultural Centre, the venue of the conference on Wed 11th, Thursday 12th and Friday 13th, had to follow the same restrictions, which were extended to all public facilities.

All these restrictions were caused by a resilient virus that was challenging the human society and causing troubles and sorrow for the first time, with unpredictable consequences and impacts.

But resilient was also the spirit of the RSCC2020 organisers that showed an impressive capacity to promptly recover from a difficult situation. Everyone was committed to push the young series of "RILEM Spring Convention" forward in its inception, although acknowledging that this third edition would be strongly marked by the unusual context and environment.



Virtual conference mode! Courtesy of 2020RSCC

The great majority of the RSCC2020 events took place in remote mode, organised literally on the spot, with not much time available, thanks to the non-stop activity of the event organisers and technicians and their knowledge of the appropriate technology. For the first (and probably not last) time, a RILEM event was streamed live including all its sessions and connecting speakers and delegates in remote mode from all over the world.

The conference rooms were almost empty locations. For safety reasons, delegates already accommodated in Guimaraes were asked to try the remote tools made available to follow the event and interact with the presenters, while enjoying the good weather, in open air, of the UNESCO World Heritage city of Guimaraes. Speakers were asked to attend their session in person to present their work. The speakers that were not in Guimaraes connected to give their presentations remotely. A few delegates were scattered in the conference room at a safe distance between each other. They asked questions to the speakers. Also remotely connected participants were given the opportunity to ask questions using the user-friendly and networking technologies.



Prof Eduardo Pereira, one of the conference organisers, dealing with technologies. Courtesy of 2020RSCC



One of the iconic buildings of the campus of the University of Minho, Guimaraes, Portugal, venue of the 2020RSCC. Courtesy of 2020RSCC



The same procedure was implemented for all RILEM Standing Committee meetings, i.e. EAC, DAC, TAC, DEV and Bureau, that met on Tuesday 10th and Wednesday 11th March. Some of the RILEM officers were in Guimaraes and others joined remotely. The following RILEM Technical Committees managed to have their meetings at the RSCC2020 as scheduled, with some TC members physically in Guimaraes and others joining remotely:

- ❖ 281-CCC, *Carbonation of concrete with supplementary cementitious materials*
- ❖ 275-HDB, *Hygrothermal behaviour and Durability of Bio-aggregate based building materials*
- ❖ MPA, *Mechanical properties of alkali-activated concrete*
- ❖ CCH, *Stress Corrosion Cracking and Hydrogen Embrittlement of Concrete-Reinforcing Steels*
- ❖ 270-CIM, *Benchmarking Chloride Ingress Models on Real-life Case Studies: Theory and Practice*
- ❖ CCS, *Early age and long-term crack width analysis in RC Structures.*

The RILEM Standing and Technical Committee meetings used a commercial remote-meetings platform which proved effective. All RILEM TCs above mentioned have now access to a license with this software and they can continue to use this license for the upcoming meetings, free of charge. The RILEM secretariat is giving the same opportunity to all RILEM Technical Committees and their members by purchasing more licenses.

The feedback from speakers and participants was very positive:

Dr. Mija Hubler, 2020 Colonnetti medallist, keynote speaker: *It was interesting and new, I would say. It was a strange presentation as I could not see the audience all the time. The only thing that would have been nice is to meet people there in person, because I was really excited to see the community people that had already travelled there. It would have been nice to go for dinner with them. Everybody appreciates social events at conferences so that is the only sad part.*

Dr. Branko Šavija, 2020 Colonnetti medallist, keynote speaker: *I was very pleasantly surprised that the organisers managed to organise everything so functionally in such a short notice. I think this shows us possibilities for the future. Without any doubt, it is better after your talk to discuss in person your research with the other conference delegates, but the RSCC2020 organisers did a very good job. I am not disappointed! We should all applaud them for what they did in such a short notice.*

Dr. Guang Ye, Chair of TC MPA: *The kick-off meeting on 11 March attracted 25 TC members in the Zoom meeting. It is about 50% of total number of the TC. In overall, the quality of the connection was good. The meeting was interrupted only once. We sent a new invitation and continued the meeting within 3 minutes. The discussion between TC members was also very active. We would like to thank to the RILEM secretariat and conference organization for the kind support, to make our TC meeting possible in this special circumstance.*

The streaming on YouTube of all sessions was accessed by thousands of participants. The organisers confirmed that the average number of people simultaneously watching the streaming sessions was 400 for the Auditorium room and 100 for the thematic session rooms. None of the 10 keynote presentations was cancelled, 4 delivered in person from Guimaraes and 6 in remote mode:

Plenary session on Wed 11 March

1. *Testing techniques and numerical models for understanding and development of cementitious materials*, Branko Šavija, 2020 Colonnetti medallist **(in remote)**
2. *Modeling long term deformations of concrete: creep, shrinkage and cracking*, Mija Hubler, 2020 Colonnetti medallist **(in remote)**



3. *Rediscovering earth as a building material: old and new construction*, Paulo Lourenco (in remote)
4. *Environmental assessment: from incremental to radical decision making*, Arpad Horvath (in person)
5. *Practical solutions for CO2 reduction from cement and ongoing research needs*, Karen Scrivener (in person)

Plenary session on Thursday 12 March

6. *Ultra High Durability Concrete: upgrading the concept and durability-based design of reinforced concrete structures exposed to extremely aggressive environments*, Liberato Ferrara (in remote)
7. *Greening the grey: recent advances on sustainable cementitious composites*, Enzo Martinelli (in remote)
8. *Self-healing concrete research in the European projects, SARCOS and SMARTINCS*, Nele de Belie (in person)
9. *Rheology and processing of cement-based materials*, Nicolas Roussel (in remote)
10. *Challenges, opportunities and potential solution strategies for environmentally and socially responsible urban development of megacities in Africa*, Wolfram Schmidt (in person)

Despite the struggles to make all happen, as well as some understandable concerns about the decision to maintain the original schedule, the main message from this event goes beyond the technical topics discussed during the conference, i.e. “Ambitioning a sustainable future for built environment: comprehensive strategies for unprecedented challenges”. The lesson to take home is about the capacity to adapting to reality instead of fighting against it, and that our great power is to stay together, have hope and will. However this was a minor test, compared to what is yet to come...



*Prof Joaquin Barros (on the left) asking a question to Dr Mija Hubler, 2020 Colonnetti Medallist, presenting in remote from Boulder, CO, USA. This key-note session on **Wednesday morning** was chaired by Prof. Nele De Belie (on the right). Screen shot of conference streaming on YouTube*



*RILEM President, Prof. Ravindra Gettu, opening the keynote session on **Thursday morning** and introducing the presentation (in remote mode) of Prof Liberato Ferrara, Polytechnic of Milan, Italy. Screen shot of conference streaming on YouTube*