



Dr Wolfram Schmidt, RILEM member since 2008, is the first author of the recently published paper "Innovation potentials for construction materials with specific focus on the challenges in Africa", Wolfram Schmidt, Mike Otieno, Kolawole Adisa Olonade, Nonkululeko W. Radebe, Henri van Damme, Patience Tunji-Olayeni, Said Kenai, Angela Tetteh Tawiah, Kuukuwa Manful, Akeem Akinwale, Rose N. Mbugua, Andreas Rogge, RILEM Technical Letters (2020) 5: 63-74. Dr Schmidt is also the RILEM regional Convener for Sub-Saharan Africa and a member of the RILEM Bureau. This interview took place online on 12 October 2020.



RILEM Implementation Manager (hereafter RIM): Dear Wolfram, thank you for your availability to chat with me today and congratulations for the publication of your contribution to RTL. Could you tell us more about this paper?

Wolfram: This is indeed a very unique paper, to be honest, because normally if you author a paper and if you are first author you do 90% while the other authors send only a few comments and maybe one of them comes up with a deeper review or significant new text passages. At least, this is what I mostly experience. Here, literally every author contributed with own content...and, hence, for me it was hell.

RIM: Hell?!?!

Wolfram: Well, heaven and hell at the same time. Heaven because it was amazing to see the verve and to receive such a lot of super interesting thoughts and, yes, hell to arrange all the content in a pertinent order and to synchronise the various editorial styles! Because Alexandra (editor's note: Bertron, Editor-in-Chief of RTL) invited me to write a paper of max. 6-8 pages.

RIM: ...and it ended up being a 12-page long paper!

Wolfram: Exactly! And that was what gave me such a headache, as Alexandra told me I could stretch to 8 pages and I tried to stay within this limit, but my first draft was already close to the final length of 8 pages. Then I circulated it to everyone, and each co-author sent back really tangible and highly relevant content so that I had to add this to the paper. It was getting longer and longer. And, as I said, it is absolutely not normal that in a paper with 14 authors, each author contributes significantly. Not to mention that I had to manage some contradictions, as some people would have preferred to concentrate on one aspect, others on other aspects... this caused some real headaches to me. But certainly, all in a positive sense. It is good to have this diversity, and friction is good in science.

RIM: Are the authors all RILEM members?

Wolfram: Hmm... let me count... not all of them. 8 out of 14 are RILEM members, and some of them will soon become new members. The new structure for the [membership fees for young members](#) will hopefully help us to get more impact from African experts in RILEM.

RIM: The others are part of your African network?

Wolfram: There is one African project partner, and the rest are people that I met over the years and I identified they have something valuable to say. Because here the idea was definitively to have a technical paper that goes beyond the normal framework, which also considers the social and



economic aspects linked to materials and core RILEM topics. I think in the context of Africa this has an even higher relevance than in other parts in the world.

RIM: Are you satisfied with the outcome?

Wolfram: I am, I am!

Certainly it is only a small part of the full story, but... well Alexandra asked me to write a paper about research needs within the African region, so the last figure at the end of the paper represents what I have always had in mind, that is a flowchart of research topics that hopefully will stimulate other researchers to jump in. The aim of this paper was not really to showcase

one researcher's activities rather than another one's, but to inspire and trigger new research activities. It is really hard because we wanted to focus on Africa, and many of the topics in the flowchart are also relevant in other parts of the world. For instance, research on "cementitious binders" is relevant in Africa but also in Europe, so trying to find a way that makes this specific for Africa was really, really difficult. When topics were put less in the focus of this paper, it does not mean that they are not relevant in Africa but probably not explicitly important in Africa. What is important to consider is, that due to the limited resources available for research in Africa, African researcher have a higher responsibility to do research that positively contributes to socio-economic and environmental aspects locally and globally.

RIM: You mentioned that the full story is not there. Would you like to share here some other parts of the full story?

Wolfram: Basically, the idea of this paper came in Nanjing (editor's note: at the 73rd RILEM Annual Week, Nanjing, China). I assume the discussion with Alexandra started somewhere at the bar or during a coffee break, I do not recall... (comment from RIM: I have proofs that it started at the bar!!!!) and it was clear from the beginning that these regional papers could be a good idea.

This Africa-focused paper was considered to be the start of a series of regional focus papers. For example, Karen Scrivener organises the next regional paper focusing on Europe, which is planned as the next paper in the series around March 2021. My first idea was to put myself out of the story and just to connect people, but certainly it is

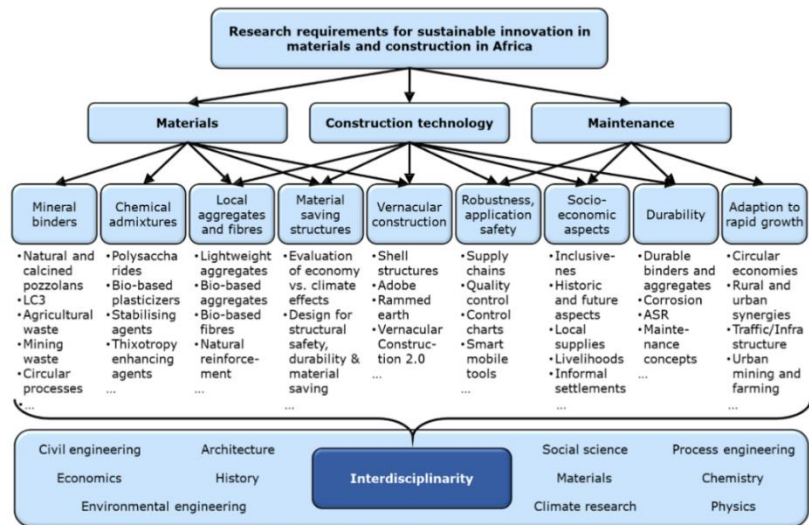


Figure 4. Summary of climate and society relevant trans-disciplinary research focal areas related to challenges and potentials in construction in Africa.



RILEM delegates of the 73rd RILEM Annual week gathering at the bar of the conference venue. From the left: Dr. Alexandra Bertron (RTL Editor In Chief), Farai Ada Shaba, Dr. John Kolawole (RILEM young member), Prof. Sofiane Amziane (RILEM senior member) and Dr. Wolfram Schmidt (RILEM senior member). The gentleman standing behind the couch in white shirt is Prof Folker Wittmann (RILEM Senior member). Picture courtesy of Daniela Ciancio.



not easy to convince someone to take over the job coordinating the content and editing of the paper. I also have to admit that due to an overflowing pool of already existing ideas, after a while I fell in love with the idea of this paper. I know that it might sound selfish but I really thought I could be the best person to do this. I started a draft thinking that someone else could take over, but after a while the draft had converted into a real paper manuscript and it was hard to step back. Telling a story was not really the problem, because Africa has so many stories to tell. There is so much content! It could not be reduced!

RIM: Where do you see Africa is going? Towards the right direction? It can be tricky when you have too much freedom and some guidance is needed. Are African people receiving this guidance? To not make the same mistakes that other “older” countries did...

Wolfram: I am absolutely convinced that the right people and the right spirit are there. Certainly, it is also a question of politics. What I can see is that Europeans are trying more and more to establish their framework onto Africa.

RIM: ... and is this good?

Wolfram: Some European approaches can have positive impacts but unfortunately we are used to think that more regulations, standards and rules always bring improvements. I do not think this is always good. I believe in good conduct, and a good codex can be much better than tight rules, which only provoke that the rules are exactly fulfilled, but nothing better. African researchers and Africans in general have a spirit to make the best out of what is available instead of following rules blindfold. You know... I am German and in Germany everything is regulated, and sometimes people have stopped to even think about the reason or history of the rules they apply. They often confuse human made rules with natural laws, and in the context of a dramatically increasing demand for more sustainable use of resources in construction, we cannot afford to limit innovative thoughts by dogmatic belief in written down principles. Not in the whole wide world, but particularly not in Africa. Certainly, standards are important with regard to safety and application robustness, but they should also know their limits. For instance, it makes a lot of sense to standardise plug sockets, but we do not have to standardise the colour or the shape of the frame! In construction regulations, I have the feeling, we have reached a threshold, where overregulation might become obstacle for sustainable construction and innovation. This is where institutions like RILEM also do have a responsibility to become advocate for good practice (editor’s note: RILEM supports [GLOBE](#), Global Consensus on Sustainability in the Built Environment). African researchers and regulative bodies should definitively avoid this to happen. I met so many people all over the continent, particularly young and inspiring personalities, super motivated, so eager to learn and to give back what they have learnt. And what is so inspiring is that although they operated in an international environment, they all carried, how to say, an African spirit and mindset! This is very interesting, because Africa has such a huge diversity in cultures, but this energy seems to be common all over the continent. I am very confident, these are the right people to build Africa and to teach us in the rest of the world, where I believe, we all need “more Africa”. But at the same time, I am concerned about policies and the old established networks that keep up the existing top-down structures. There are too few bottom-up initiatives, unfortunately. This is a pity! I think RILEM can strengthen African researchers

† In September 2020, the RILEM General Council approved the RILEM Youth Council (RYC) project that is currently under development. The RYC aims, amongst other goals, to prepare young members for leadership positions, to encourage the participation in TAC and EAC activities of young RILEM members, to create networks between emerging researchers. The RYC structure consists of PhD students from all RILEM regions, including [Sub-Saharan Africa](#).



and I am sure with the new RILEM Youth Council[†] a structure has been installed, that helps young African talents to be heard.

RIM: You mentioned the “Africa spirit”. What is that?

Wolfram: There are two things here. I can see that all the students, young doctors and researchers do have the capacity to lead proactively. They see that things are happening too slowly in Africa, for instance, in terms of more sustainable construction technology. What has been established is lagging far behind what could be possible. By leapfrogging existing but not future-oriented technologies these gaps can be closed by these young people. But at the same time, what makes Africa so special is its tradition and history, its interhuman relation, which I believe helped Africa sustain all the foreign imposed hardships of the past centuries and today. It is difficult to express in words. People in Africa accommodate both, innovation drive and preservation of traditions. This important balance is very unique to Africa and this is what I feel, the researchers really want to incorporate into their work. I see that a new generation of researchers is coming up, with a different mindset that can really make a change in the world if we give space.

RIM: Sure, this seems to be crucial!

Wolfram: Yes, to give them space and listen without bias. It cannot be doubted that particularly from Europe but also from North America and East Asia, there is always this often unconscious but unfortunately always existing habit to feel “superior” or “more developed”, just based on the economic power and large-scale available technology. We must not forget where this comes from historically, and typically we ignore all the positive changes. In the rest of the world we should preach less and learn more from Africa.

RIM: Which are the potentials in Africa? What is “key” in the future development of Africa?

Wolfram: What is happening in Africa is happening everywhere, but today more rapidly. The population is growing dramatically. The population density is not very high compared to Europe or Asia, but people are moving more and more to cities. I was told that in the next decades Africa will need the equivalent of 130 “Berlins” to provide habitat for the future urban population. This has to be built right from the scratch. And, it will happen, no matter how much we discuss about climate change and resource saving. It is impossible to avoid this, as people are in need of decent housing, and it would also not be fair to even claim to avoid this. Since this is inevitable, we should make sure that mistakes from the past are not repeated. Here, the African sense of tradition, history, ancestors, and solidarity can become its strength. Although we talk about materials, the social implications need to be considered too. Social life is different to other places and unique to Africa and this should also be considered in the way urban structures are built and materials are consumed. People should also not seek too much for role models outside the continent but rather develop unique African and regional urbanization concepts.



RIM: How is your new project going? (editor's note: Falconess - Female Academic Leadership Network for Conscious Engineering and Science towards Sustainable Urbanisation)

Wolfram: Falconess was a matter of heart, because whenever I came back from any African country, I had the feeling that somehow the girls appeared smarter than the boys. I didn't want to believe it, but it seems on average this is true!



RIM: 🙌

Wolfram: I met very amazing and brilliant male and female researchers in equal numbers, yet my feeling was always that the general impression of the female researchers was better than that of the male counterparts. I tried to understand this issue and looked at it from a statistics point of view. In Africa, most professional networks are male dominated. This also applies for academia. If you are "only" a normally skilled female researcher, you are most likely excluded from certain positions, which, however, can be accessed by average or below average male persons. In return, while a whole spectrum of male qualification levels, from highly skilled to less talented, can get a chance to fill certain positions just because the persons are male, the same positions can only be accessed by the most outstanding female researchers. This makes the difference, and it is getting clear, why on average female researchers always outperform their male counterparts. By the way, this is not gender specific, as the same applies for every group that is excluded from participation. However, with an increasing demand on novel and sustainable solutions for challenges that regard the entire global population, we cannot afford wasting the urgently needed talents by excluding them based on gender, religion, sexuality, age, or colour of skin. This is, why I hope the "Falconesses" can make a change that is overdue. One of them, by the way, is Nonkululeko Radebe, the sub-Saharan representative for the RILEM Youth Council.