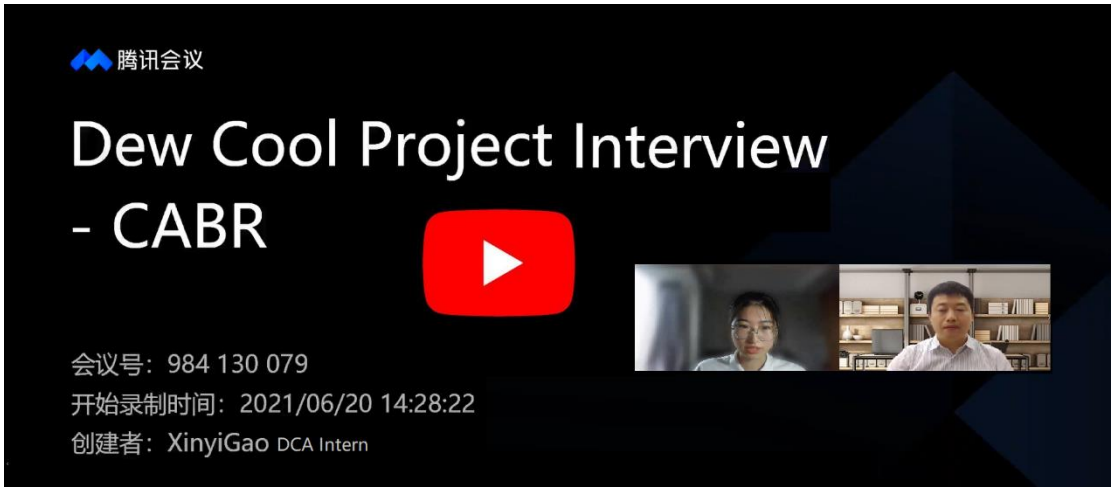

VIDEO TRANSLATION

DCA: Welcome to everyone tuning in - To assist in the transfer of knowledge we will conducting a series of video interviews with partners of the Marie Curie European Exchange Project No 734340 Dew-Cool-4-CDC. Today I am pleased to be joined by Dr Guozhu Li, Associate Professor, from China Academy of Building Research. Hello, Dr Li.

Dr Li: Hello.

DCA: To assist those watching could you please tell me a little bit about China Academy of Building Research and your daily own responsibilities within the organisation.

Dr Li: China Academy of Building Research was established in 1953, it's the largest comprehensive research and development organisation in Chinese construction industry. Its focus is doctorates and master's degrees in the construction industry. The organisation has built a post-doctoral research station in civil engineering, equipped with an outstandingly talented team including academicians, design masters, hundreds of well-known experts in various fields, and many both young and experienced scientific and technological specialists. CABR has always regarded serving public welfare and promoting industry technology progress as its own responsibility. The organisation is primarily focused on the Chinese construction industry, concentrating on construction engineering as the main research objective, but also looking into applied research and development research, and solving key technical problems in engineering construction. There are also responsibilities for compiling and managing major Chinese engineering construction technical standards and specifications, conducting research on common, basic, and public welfare technologies required by the industry, and undertaking

supervised inspection and test work of national construction projects, air-conditioning equipment, solar water heaters, elevators, chemical building materials, and building energy conservation. The scientific research and business work covers 70 research fields including building structure, foundation, engineering seismic resistance, built environment and energy saving, building software, building mechanization, building fire protection, construction technology, building materials, etc. In recent years, it has strengthened the green building package research and development of technology, new energy application technology, disaster prevention and mitigation technology, and intelligent integration technology.

DCA: Can you tell me about your involvement in this Marie Curie European Exchange Project?

Dr Li: I participate in MARIE Curie European Exchange Project in "Horizon 2020" Guide, the specific project is date centre dew-cool cooling technology.

DCA: What are the principal goals and objectives of this project from your perspective?

Dr Li: From the perspective of Marie Curie's exchange project, the purpose of this project is to improve cross-disciplinary and cross-industry opportunities for researchers, increase international communication experience, expand careers or skills, and promote knowledge sharing. From the perspective of project technology development, it is to collaborate through the studying in relevant institutions in China and the EU and to develop a set of data centre low-energy cooling systems and key technologies to reduce the cooling energy consumption of the data centre. This enables younger scientific and technological talents to be developed, this could be through secondment or joint research, this ensures that they can not only learn and master certain technical skills, but also improve their international communication skills.

DCA: Specifically what work packages and deliverables are you as an organisation responsible for?

Dr Li: This project is divided into 10 work packages in total. We participated in the development of the work package 1: data centre dew point cooling system design framework and information database and submitted the results of the basic survey of the data centre. We also participated in the development of work package 7: data centre cooling system design theory and calculation tools, this was mainly responsible for the development of the calculation theory and calculation tools, and the submitted results are the calculation theory model of the cooling system and the calculation tool software. We also participated in the Toolkit 8: data centre case study. We are responsible for calculating and analysing a case in

China and submitting a case study report. We also contributed to work package 9 and work package 10. These two work packages are mainly for achievement sharing, project management and personnel secondment.

DCA: Next we'll ask some technical questions. Can you introduce our audience to the Data centre DPC cooling design method and computer tool that developed or used in this project?

Dr Li: This work type of work is mainly handled by us. The data centre low-energy dew point cooling system jointly developed by China and Europe is internationally advanced. This system integrates dew point evaporative cooling technology, dehumidification and regeneration technology, solar energy utilisation technology, data centre waste heat utilisation technology, phase change energy storage technology, microchannel circulating heat pipe technology, intelligent control technology, etc., the system breaks through the limitations of the application of simplex evaporative cooling technology, meanwhile makes full use of the waste heat resources and solar energy resources of the data centre, which contributes to the energy saving and carbon dioxide reduction of the data centre cooling system significantly. As I said, the whole system is highly innovative, and the system itself is very complex. If you want to organically integrate various technologies and apply them to the data centre, you need to carry out an integral design, so our design theory of this system is conducted in-depth research and developed into computer computing tool software.

DCA: Can you tell us more about CABR`s work in the development of this technology and why does this technology important to the whole system?

Dr Li: Our core work is to carry out an integrated design for this system, study design theories and methods, and form a calculation tool. This work is very important for this system, which means that it determines whether this system can be truly applied and promoted. There are many technologies used in the system, and the equipment involved in various technologies is diverse, but there is no existing experience or information that can be referred to. Therefore, the key to the successful application of this system is to integrate the performance of multiple equipment in a system design method combining various technical characteristics. Theoretical calculations are always very complicated. For engineers, what they need is not a complicated theoretical formula, but a simple and effective calculation method. This is also the key to the widespread promotion of the system after the system is developed. Therefore, we have formed computer software from complex theoretical calculations. The key information of the system design can be obtained by inputting simple design parameters, this allows the basic

design of the system to be completed. It is very easy for engineers to learn. Therefore, the integrated design theory of the system and the development of calculation tools are very important to the whole system.

DCA: Can you introduce to our audience to the Case study work that has been carried out in this project?

Dr Li: This system was applied in a data centre in China to conduct a case study and compared with a conventional cooling system. It found that the obvious energy saving of the system. The power utilisation efficiency PUE is an index to evaluate the energy efficiency of the data centre, which is the ratio of total energy consumed by the data centre to the energy consumed by the IT equipment. PUE is close to 1 approximately, which means that the energy consumption of the data centre is lower. On the contrary, the larger the PUE is, the greater the energy consumption. Taking Guangzhou, China as an example, in the case study, PUE of the conventional data centre in Guangzhou region is 1.40. While using this system increases the applicable time of dew point evaporative cooling technology by 40%, and its annual calculation PUE can be reduced to 1.21, saving 50% of power. The above-mentioned data is based on some conditional assumptions and theoretical calculations, not actual operating data, so the above-mentioned data does not represent the actual operation results of the system, but it does not affect the large energy-saving potential of the system.

DCA: Can you tell us more about why case study work is important to this project?

Dr Li: There is no precedent for this system, so our project has taken the important first step. It is a good start, and the advance of the system has been theoretically proved through case studies, so the case study work is very important to this project. Due to limited time and research tasks, we were not able to apply the system to actual data centres for testing in this project, but the next work of both China and EU will consider evaluating the actual engineering effect of the system as a new cooperation directive. I hope to get the support from EU again.

DCA: Finally, can I ask you to summarise why it was so important for China Academy of Building Research to participate in this project and highlight the value of what it has and or will deliver?

Dr Li: Chinese Academy of Building Research pays great attention to international exchanges and cooperation, especially cooperation in scientific and technological innovation. Through this project, both China and the EU can play their respective parts to complete a scientific and technological innovation project, which can also cultivate young talents. This project

strengthens the exchange of ideas from the younger generation with concepts shared between China and the EU through mutual visits, and expands the international vision of young talents, which is of great significance to both China and EU.

DCA: That's great Dr Li, that just about leaves me enough time to thank Dr Li, from China Academy of Building Research for taking the time today to explain a little more about the Marie Curie European Exchange Project and the valuable contribution it has made to the research and development of the Dew Point Cooler technology. This interview will be available to view on the project website shortly, where you will also find interviews with all the partners involved in this project. Thank you.