A boost for quantum research: donation for a new physics building



Pius Baschera, Chair of the Board of ETH Foundation, donor Martin Haefner, ETH alumnus and Honorary Councillor, and Joël Mesot, President of ETH (ltr)

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ETH Zurich intends to further expand its leading position in quantum research, and so it is planning a highly specialised physics laboratory building on the Hönggerberg campus. A generous donation from ETH alumnus and ETH Honorary Councillor Martin Haefner is now the key step to taking the project further.

In recent years, quantum research has developed at breakneck speed. Scientists believe that quantum phenomena in the fields of computing, sensor technology and cryptography will soon facilitate novel technological applications. However, research in this field relies on highly complex infrastructure, because it takes extremely elaborate experiments to detect these fragile effects at the atomic level.

It is essential for such experiments to be performed in an environment that keeps interference to an absolute minimum. That is why ETH Zurich is planning to erect a research facility designed to be ideal for this purpose. “The

planned building will allow us to push research to the limits of what is technically possible," explains Gianni Blatter, Professor of Theoretical Physics and the driving force behind the project.

Enhancing Switzerland as a research location

Martin Haefner, ETH alumnus and Honorary Councillor of ETH Zurich, is now taking the project that decisive step further by donating 40 million Swiss francs to the ETH Foundation. "I would like my donation to strengthen not only ETH Zurich, but the whole of Switzerland as a centre for research," explains the owner and Executive Chairman of the Board of Directors of Swiss automotive group AMAG, continuing: "This project is important for pioneering quantum research, and it will also deliver new findings in basic research."

ETH President Joël Mesot is very pleased with the generous gesture: "Thanks to this donation, we will be able to add a research facility to the Hönggerberg campus that is unparalleled in terms of the quality of its infrastructure and will enable ETH Zurich to further expand its leading position in quantum technologies."

Underground centrepiece

Designed by Ilg Santer Architects, the new HPQ building appears calm and orderly from the outside. Above the two-storey entrance floor, which is open to the public, four floors provide office and laboratory space for 18 professorships with a total of almost 500 staff. But the new building's centrepiece is underground: three high-tech research platforms will sit deep in the earth below. This is where researchers will produce new materials and electronic-optical components, conduct sophisticated laser experiments and investigate how to manipulate specific atoms and ions as quantum objects.

By virtue of its design, the new building will minimise interference from external vibrations or electromagnetic waves. It will also meet the highest standards of temperature stability and cooling capacity. This places exacting demands on the construction. "This building will be home to innovative experiments – and it will be innovative in its own right, too," Blatter notes. This is particularly true for the new CLNE platform, located in the very depths of the building, where it will be possible to conduct particularly sensitive, highly isolated experiments. These test facilities rest on massive concrete platforms to prevent any passing trolley buses or lorries from disturbing their sensitive measurements.

Ready in eight years

However, researchers will have to wait a while before they can use the new infrastructure, as the project is currently awaiting approval. If everything goes according to plan, construction can begin in 2022 and the building will be ready in 2028.

learn more about the HPQ building

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About Martin Haefner

Martin Haefner (born 1954) studied mathematics at ETH Zurich. After teaching that subject at secondary schools in Baden and Lucern (Alpenquai), Switzerland, he became Executive Chairman of the Board of Directors of Swiss automotive group AMAG in 2006. Today Haefner is the sole owner of AMAG, and a committed philanthropist. He was also one of the very first donors to ETH Foundation. He is married and lives in Horw, canton of Lucerne.

https://ethz-foundation.ch/en/spotlight/news_2020_hpq/

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