



Austrian Presidency
of the EU Strategy
for the Danube Region

IMPACT STORY

**The BOKU University River Lab:
a brand new and unique
research facility for river
systems**

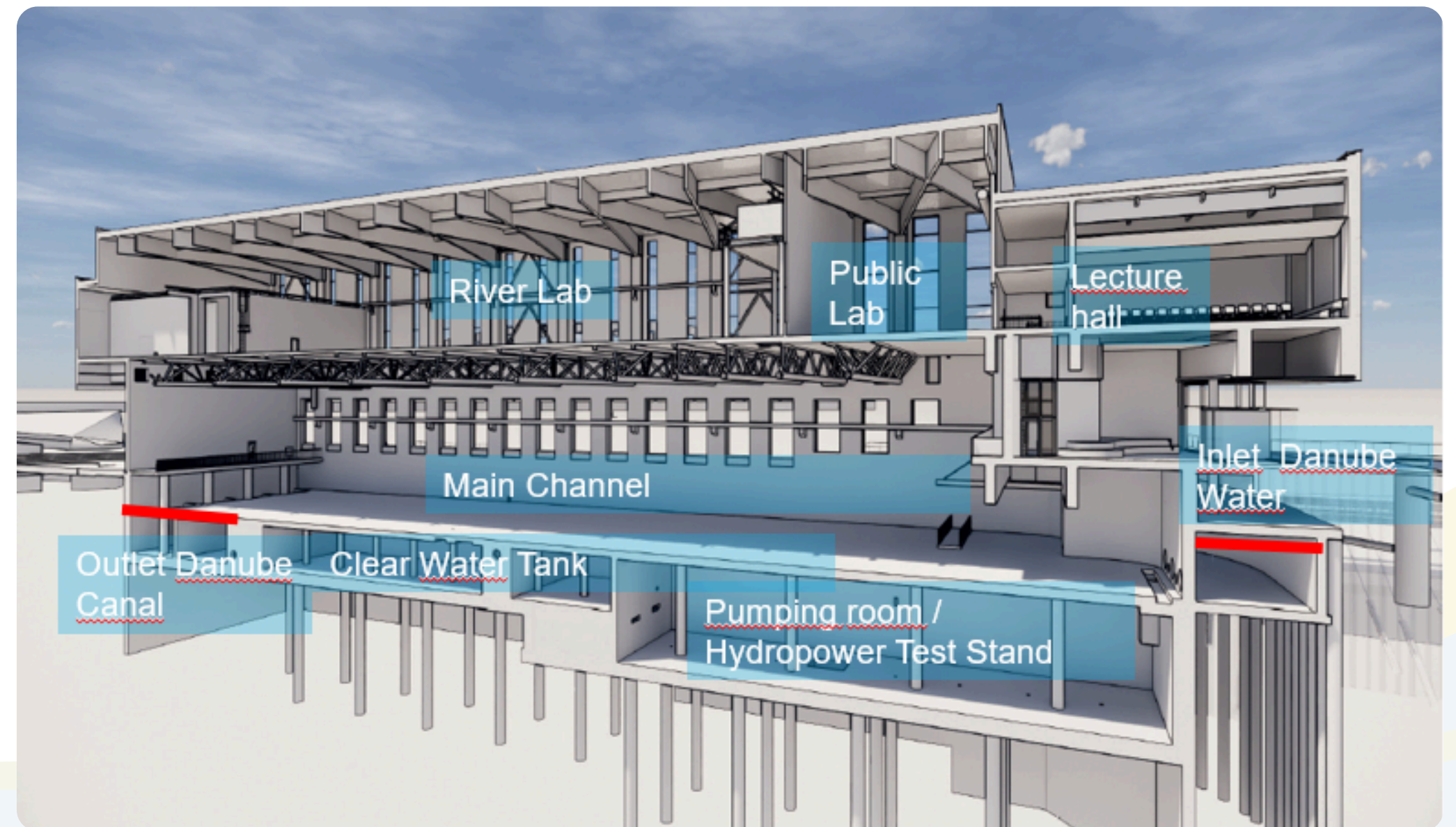


BOKU River Lab | BOKU/Gruber

BACKGROUND

On 12th June 2023, the new River Lab with its 90-meter-long and up to 25-meter-wide river channel opened ceremoniously. This facility enables **fundamental and applied research that is unique worldwide**. It took 14 long and exciting years, and overcoming various obstacles from the very first idea until the building was finished. The construction time alone took three years.

In this one-of-a-kind hydraulic laboratory, an impressive amount of up to **10,000 l/s can flow** through the main river channel. The water level difference of three meters between the Danube and the Danube Canal allows the water to flow through the laboratory without pumps and thus without external energy. This feature makes the River Lab a **globally unique research facility** with unrivalled experimental conditions.¹



BOKU River Lab Structure

ABOUT

The new BOKU River Lab enables experiments at a scale of up to 1:1, using a free-flowing discharge of up to 10 m³/s. Together with model tests on a smaller scale with clear water cycles, this results in a model family of scales that allows **in depth insights into processes** as well as their mathematical description.

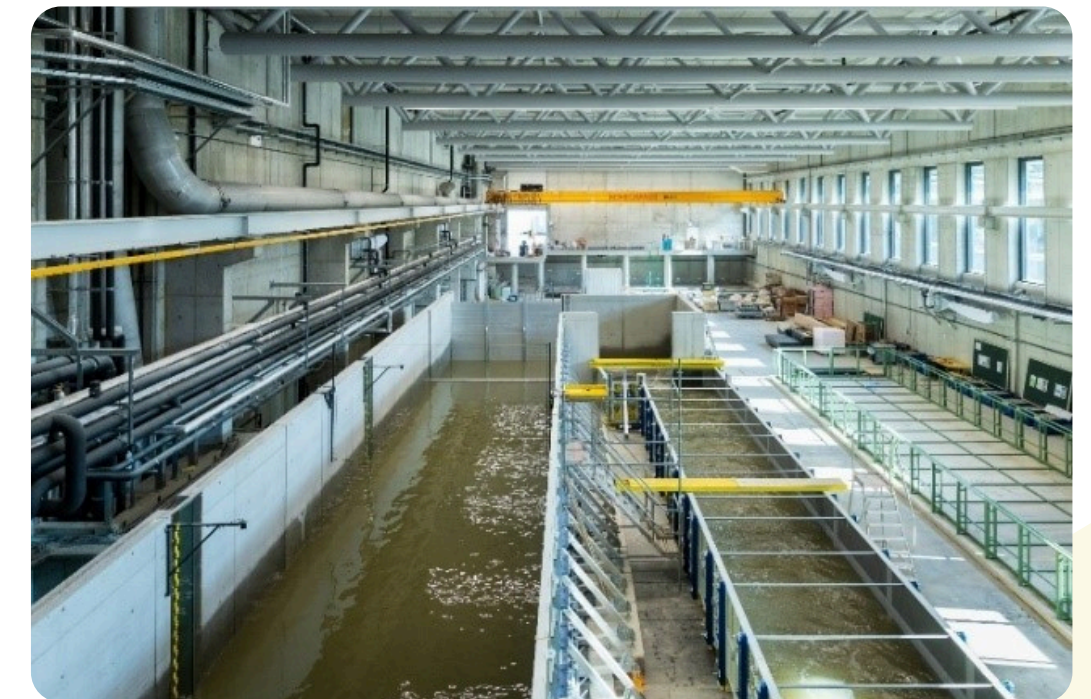
Teaching, research and method development take place in a total of 12,300 m²: a lecture hall and seminar room for around 200 students, 2 large laboratory areas (Main Channel and River Lab) with 3,500 m², a public lab with 400 m², an outdoor lab and special laboratories as well as meeting rooms, workspaces for 100 people in the office wing on three floors.

The **Federal Agency for Water Management**, Institute for Hydraulic Engineering and Hydrometry is homebased as well in the River Lab, working on the following tasks:

- Elaboration of design and implementation principles for measures of water protection, water management and flood protection
- Preparation of hydraulic engineering studies and expert reports
- Consulting for hydraulic engineering and river morphology problems
- Development of basics for the improvement of the quality of discharge measurements



River Lab



Main Channel



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ABOUT

Next to the possibility of multidisciplinary research, the **involvement of the public** and the young generation is particularly important. A concept for the Public Lab is currently being developed with the aim to build a permanent exhibition. The objective is to make complex topics around river research under climate change and land use understandable.

So far there have been over **150 guided tours with approx. 10 thousand participants**, including a great many schoolchildren and students aged 11 to 18, who are very interested in the topic of water and rivers in the light of climate and land use change. It is important that, in addition to the negative headlines about the earth's ecological development, solutions are conveyed and it is also shown that everyone can take part in improving it.

Prof. Helmut Habersack was elected as initiator and project leader of the BOKU River Lab as **Austrian of the year 2023** in the category **research**. In November 2024 the BOKU River Lab won the **PMA "Project Excellence" Award**. The PMA Awards recognise outstanding achievements in accordance with international project management standards.



Austrian of the Year 2023 | Roland Rudolph



PMA Award 2024 | Allison O'Reilly



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CONNECTION WITH THE DANUBE REGION

The Danube plays a vital role for the River Lab, the river even flows through the building providing the water for the **1:1 scale experiments**. A lot of the funding was provided by actors from the Danube Region initiated by the flagship project DREAM: The total costs of around 49 million Euros were covered by the **European Regional Development Fund** (through four EU projects with Hungary, Slovakia and the Czech Republic as well as through the “Investments in Growth and Employment Austria Program”), the City of Vienna and the State of Lower Austria as well as the Federal Ministries of Education, of Agriculture, for Climate Action, and supported by the Federal Ministry of Labour.

Several projects on the topic of the Danube are currently being managed at the River Lab, e.g. the **HE project DANUBE4all**, as well as the **Interreg Danube Region project DanubeSediment_Q2**.

The project DREAM (Danube River REsearch and Management) was the first flagship project of the EUSDR. The River Lab is one of the activities of DREAM. Support letters of the EUSDR helped to demonstrate the importance of the River Lab for the Danube River Basin. Furthermore, the River Lab has been considered as pilot measure for the EUSDR, which stimulated further support for the implementation by e.g. the European Commission.




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<https://boku.ac.at/wau/iwa>


<https://www.danube4allproject.eu/>

<https://interreg-danube.eu/projects/danubesediment-q2>



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