

Competition for the Conception of a Permanent and Interactive Exhibition within the Public Lab of the BOKU River Lab

Helmut Habersack, Allison O'Reilly

Content

Table of Figures.....	3
1. General Provisions	4
1.1 Tendering Procedure	4
1.2 Call for participation.....	4
1.3 Intellectual Property Rights.....	4
1.4 Contact Person.....	4
2. Organisation of the competition.....	5
2.1 Possible Candidates	5
2.2 Competition Documents.....	5
2.3 Selection Criteria.....	5
2.4 Budget and work contract	5
2.5 Jury.....	5
2.6 Timeline.....	5
3. About the BOKU River Lab	6
3.1 BOKU River Lab	6
3.2 Localization	6
4. The Public Lab	8
4.1 Vision and Mission of the Public Lab	8
4.2 Public Lab Prototype	9
5. Task Definitions.....	10
5.1 Tasks.....	10
5.2 Public Lab - Room concept.....	10
5.3 Public Lab - Exhibition concept	10
5.4 Topics of the exhibition.....	11
5.5 Requirements of the Concept.....	12



6.	Audience	12
6.1	Target Audience	12
6.2	Visiting Time.....	12
7.	Description of the available space	13
7.1	Public Lab location	13
7.2	The multifunctional Public Lab area	13
7.3	Catering Area	13
7.4	Entrance Area.....	13
8.	Photos and Maps of the Public Lab and the Catering Area	14
9.	Appendix	19



Table of Figures

Figure 1: BOKU River Lab	6
Figure 2: Fish Pass	7
Figure 3: View from Danube Canal	8
Figure 4: Map of the River Lab and the surrounding area	8
Figure 5: Photos of Stream Table.....	9
Figure 6: Photos of Stream Table.....	10
Figure 7: Lecture Hall	11
Figure 8 Photo of the wardrobe on the ground floor	13
Figure 9: Photo of the BOKU Public Lab with the big windows facing the Danube Canal. The exhibition should find space here.....	14
Figure 10: Public Lab	15
Figure 11: Public Lab	15
Figure 12: Public Lab facing east. Visitors enter the exhibition through the glass door on the left, or from the catering area (opening in the centre).....	16
Figure 13: Catering Area	16
Figure 14: Catering Area with space for a waiting and welcome area. Huge panorama windows overlooking the Danube.	17
Figure 15: View from the Catering Area towards the Danube	17
Figure 16: Plan of the Public Lab with emergency pathways marked	18



1. General Provisions

1.1 Tendering Procedure

We are seeking a concept for a permanent and interactive exhibition in the Public Lab of the BOKU River Lab (Institute of Hydraulic Engineering and River Research, Am Brigittenauer Sporn 3, 1200 Vienna).

This call will be issued and a date set for an initial presentation. Interested parties can contact us until 28 June 2024 via email (allison.oreilly@boku.ac.at) and apply for a spot to present their initial idea and budget. Please mention the names of all involved parties as well as a link to your website with credentials and reference to previous experience.

The at least three best applicants will be invited to an initial presentation. Participants in the competition will present a short draft of their ideas (max 30 minutes) as well as their budget to the Jury, followed by a 30-minute discussion. This presentation will be on 12 July 2024.

The winner will be asked to formulate a concept until November 2024.

1.2 Call for participation

This competition will be published in May 2024. The deadline to participate is 28 June 2024. The document will be published on the website of the BOKU IWA and on the DANUBE4all website. Additionally, experts in the area will be contacted with the information and asked to participate.

1.3 Intellectual Property Rights

Upon payment the BOKU reserves exclusive rights to use the results. BOKU reserves the right to further develop or change results.

1.4 Contact Person

Questions can be sent via email to Allison O'Reilly until 21 June 2024 and will be answered by 26 June 2024.

Allison O'Reilly | Allison.oreilly@boku.ac.at
Am Brigittenauer Sporn 3, 1200 Wien
+43 (1) 47654-81919

Note: All titles are working titles.



2. Organisation of the competition

2.1 Possible Candidates

Interested parties with proven experience in exhibition design can take part in the competition. Ideal candidates will have experience in project management for the set-up and realisation of such an exhibition. We only accept applications from sole proprietors and firms.

2.2 Competition Documents

All accompanying documents are attached to the call. Applicants are given the possibility to visit the location and ask questions on 17 June 2024. 30-minute slots will be given upon request. Please contact us at least a week in advance to request a slot. No expenses of applicants will be covered for this.

2.3 Selection Criteria

The winner of the competition is selected based on the following criteria:

1. Originality of the Idea
2. Exhibit Design and Atmosphere
3. Hands-On Activities
4. Usability
5. Consideration of the special requirements of the target audiences
6. Consideration of the changing space requirement
7. Costs of Implementation
8. Technical Feasibility
9. Sustainability
10. Willingness to collaborate with the customer

2.4 Budget and work contract

The winner is commissioned to develop a detailed exhibition concept. Maximum sum offered as work contract: 10.000€ (ten thousand Euros) (all taxes already included).

Note: The exhibition will not be built all at once but rather in stages, depending on available funding at the time. The concept should account for a staged approach with each stage being functional and able to be used while funding and development of the next stage takes place.

2.5 Jury

Will be composed of members from IWA and an external consultant.

2.6 Timeline

- Visit Slots: 17 June 2024, morning
- Deadline for questions: 22 June
- Application deadline: 28 June
- Presentations: 12 July
- Decision by the BOKU Team: End of July
- Work on concept: November 2024
- Presentation of final results: End of November 2024



3. About the BOKU River Lab

3.1 BOKU River Lab

The BOKU River Lab is a unique hydraulic laboratory, in which water can flow at a rate of up to 10,000 l/s through a 90 meter long and up to 25-meter-wide river channel. A water level difference of three meters between the Danube River and the Danube Canal allows the water to flow through the laboratory without pumps and thus without the need of external energy. This feature makes the River Lab a worldwide outstanding research facility.

True-to-scale models are possible and thus promote knowledge about the use and protection of rivers. Teaching and research take place on a total area of 12,300 m² in different zones: a lecture hall and seminar room for around 200 students, two large laboratory areas (Main Channel and River Lab) with 3,500 m², a Public Lab with 400 m², special laboratories as well as office workplaces for 100 people on three floors.

3.2 Localization

The BOKU River Lab sits on an island in between the Danube River and the Danube canal. It is situated between two sluices connecting the river with the canal. Next to the building is a fish ladder which can be seen from the main entrance. The building itself is a worldwide unique laboratory which can already be visited by interested members of the public.



Figure 1: BOKU River Lab



Funded by
the European Union





Figure 2: Fish Pass



**Funded by
the European Union**





Figure 3: View from Danube Canal

The BOKU River Lab has outdoor space that could be used in future, but at the moment is not part of the competition and planned exhibition.

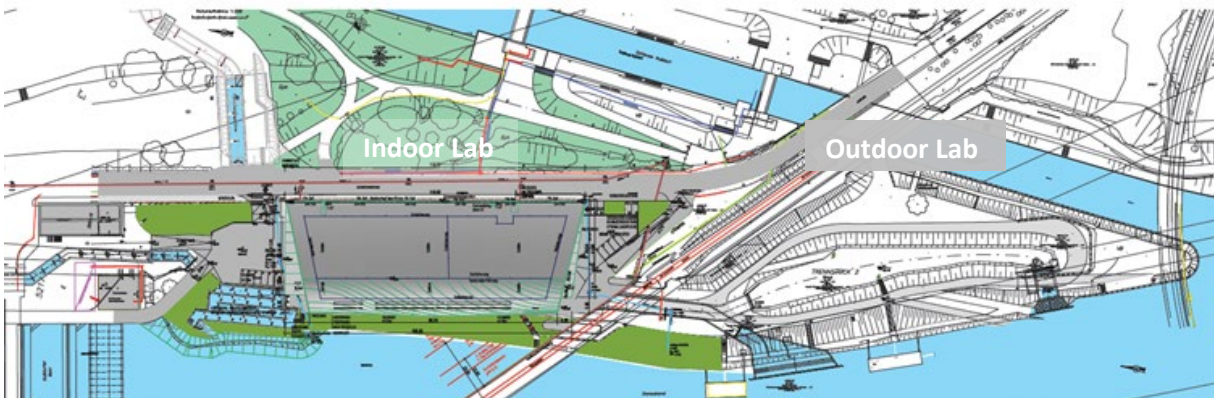


Figure 4: Map of the River Lab and the surrounding area

4. The Public Lab

4.1 Vision and Mission of the Public Lab

Our vision is to have a standing exhibition within the BOKU River Lab that is open to all kinds of audiences, but especially school children and adolescents.

From the beginning on it was clear to us, that we want to share our knowledge with the public in an adequate way. Our work has for years been very public, with topics such as floods and droughts being issues of high relevance. We want to meet this interest by giving the public the possibility to learn more about water management, hydrology and our rivers.



Funded by
the European Union



To get a quick overview on topics often communicated by us to the public, you can watch this ORF clip from minute 37:45 on. Here you can find information about some of our core topics. <https://bokubox.boku.ac.at/#928a2c1b09e175ccbfb4e87c051e7acf> (internal use only).

4.2 Public Lab Prototype

The BOKU IWA has long been working on strengthening public acceptance and interest in rivers with the specific aim to advance the knowledge of river systems towards enhanced environmental integrity. The BOKU IWA aims to go beyond the usual engagement of people by using co-creation workshops and mobilization campaigns, including citizen science, linking ecosystem restoration to recreational activities, water sports and culture. The end goal of this engagement is to empower citizen stewardship and action. Many of the activities are already in progress within running projects. The Public Lab will bring together these aims and activities into one space, offering the public the possibility to learn about rivers, ecosystems, threats and possibilities, providing them opportunities to become active in working towards healthier rivers. Visitors should leave the Public Lab with enhanced knowledge on rivers and the vital role they play in our everyday life. At the same time, they should be equipped with ideas and solutions to become active citizens interested in conserving and restoring our rivers.

First setups have already been tested with school children. The BOKU Riverlab was allowed to use Stream Tables from Emriver (<https://emriver.com>), a system that is “perfect for demonstrating river science and conservation principles to audiences of all ages and educational backgrounds.” (<https://emriver.com/models/em2/>).



Figure 5: Photos of Stream Table



Figure 6: Photos of Stream Table

Leading questions here were: How does the river form its bed, which width does a river require, how is it depending on sediment supplies, do plants make a difference, how much sediment is transported in a specific time. Further leading questions all revolved around the “needs” of a river and how much space is necessary for the river to form its path.

5. Task Definitions

5.1 Tasks

- Creation of a room concept for the Public Lab, including first drafts of the room layout and the exhibition.
- Development of an exhibit design with methods and implementation of the exhibition (analogue and digital exhibition objects and their interaction).
- A cost estimate for detailed planning and implementation as well as a rough schedule for implementation.

5.2 Public Lab - Room concept

We are looking for an innovative concept that compels the audience to marvel as soon as they enter the room and allows them to be immersed in a “water and river world”. Students and visitors should be provided the opportunity to use all their senses to explore the incredible diversity of water and rivers, how they are used, what dangers they are currently facing, including climate change and how everyone can help to protect this system. The concept needs to impress in an aesthetic way while giving the audience the feeling of entering a “river world”.

Ideally the views of the room and the high ceiling would not completely be obstructed.

5.3 Public Lab - Exhibition concept

The exhibition should, if possible, contain a broad mix of methods, from artistic implementation to some very technical solutions (“push of a button”) as well as a mix of analogue and digital approaches.

After visiting the exhibition, visitors should see rivers with new eyes and become aware of the importance they have for our living space while still providing basic core teaching concepts, such as geology, tectonics, and hydrology. Climate change, land use changes and their impact on the water cycle and rivers, as well as possible future dangers, should also be explained in an understandable manner. Finally, the concept should also provide information regarding possible solutions and how everyone could contribute.

The Exhibition should contain elements with flowing water. Herein smaller guided experiments could be conducted. We have tested this in a small scale in the western area of the Public Lab, with small laboratory flumes, see 6.1. Additionally, we are seeking for a kind of river model, in which river morphology in dependence of discharge sediment delivery can be simulated. This model could also be used to show consequences of floods.

Experts will be present during a visit and will explain important aspects of the exhibition. This should be considered in the planning of the interactive elements.

Visits could include an introductory lecture of 30 minutes which will be conducted in our large lecture theatre right next to the public lab.



Figure 7: Lecture Hall

5.4 Topics of the exhibition

The exhibition should contain approx. nine interactive learning topics. All elements should have a clear reference to rivers (the Danube amongst others) and their catchments and surroundings including their floodplains. Thereby, the formation and development of rivers, the water cycle, climate change, usage and protection of rivers, ecology and the interaction with humans should be focused upon.

The current plan includes the following topics:

- Geology, tectonics (forming of continents, mountains and rivers etc.)

- Climate change, water, glaciers (changes in the water cycle and glaciers)
- Floods & droughts (natural processes and anthropogenic influences, improvement possibilities)
- Sediment balance, river morphology (changes, too much or too little sediment, morphological consequences, improvement possibilities), river restoration (spatial needs, river continuity, river corridors)
- Hydropower (importance, consequences, optimization to reach more sustainability)
- Navigation (importance, consequences, optimization to reach more sustainability)
- Ecology, biodiversity (changes regarding the points above, effect on fishes, benthic organisms, vegetation etc., possibilities of improvement with help of restoration measures).
- Water usage, drinking water, irrigation, groundwater, fishery (importance of rivers, consequences of usage, possibilities of improvement).
- Recreation function, ecosystem services, Citizen Science, co-creation, co-design (meaning of rivers/water for humans, possibility of interaction, etc.)

5.5 Requirements of the Concept

We would envision the exhibits to be built in a way, that they will withstand heavy use. Our aim is a hands-on exhibition. Objects should be planned in a way that they do not break easily. All safety standards and EU and Ö-norms have to be considered. Used materials should be environmentally friendly and pose zero health hazards to visitors.

6. Audience

6.1 Target Audience

The exhibition will need to cater for all age groups from school children to senior citizens, whereby we imagine frequent visitors to be school groups (11–18-year-olds), visiting scientists and the general public. We envisage the Public Lab to be frequently used for field trips by schools. Most schools would likely visit in the morning/midday. Therefore, in the afternoons, the exhibition could be open to the wider public at fixed times. The exhibition will need to contain information targeting absolute novices through to experts. Therefore, the content needs to be mindful of this wide range of knowledge. For example, simple conceptual background information for school children but supplemented by QR codes leading to detailed technical information or posters or even scientific papers.

It is important that the exhibition concept utilises a wide range of methods and embraces the various different learning styles required by diverse school groups e.g. hands on experimentation and play through to written and visual content. There also need to be, areas for short breaks, seating possibilities, places to leave (school)bags etc. More on this can be found below, under the point “Catering Area”.

6.2 Visiting Time

We aim for a stay at the River Lab of around one to three hours, with a maximum of 30 people at a time and up to 50 people for special events.



7. Description of the available space

7.1 Public Lab location

The Public Lab area lies between the research hall, the lecture theatre and the catering area. It is located on the second floor of the BOKU River Lab and can be accessed without barriers. This 400 m² room is overlooking the Danube Canal on one side and facing towards the Danube on the other side.

The following plan shows approximately where fixed structures could be built (marked orange). Orange striped areas are places where mobile exhibition elements could be set up and moved, if the space is needed for an event. A concept could include adding a second floor or a vertical extension into the existing room.

7.2 The multifunctional Public Lab area

The Public Lab area also has to serve as event location and space where students and visitors wait until they can enter the lecture theatre. Therefore, the space needs to be flexible and either mobile or built in a way that events with up to 200 people would still be possible. Smart solutions for the multi-use of the room are appreciated.

7.3 Catering Area

A small part of the catering area is planned to be the waiting and welcome room for the Public Lab visitors. It is “part” of the exhibition and should have the same design.

7.4 Entrance Area

The cloakroom and lockers for visitors are located at the entrance area and are not part of the competition.



Figure 8 Photo of the wardrobe on the ground floor

8. Photos and Maps of the Public Lab and the Catering Area



Figure 9: Photo of the BOKU Public Lab with the big windows facing the Danube Canal. The exhibition should find space here.

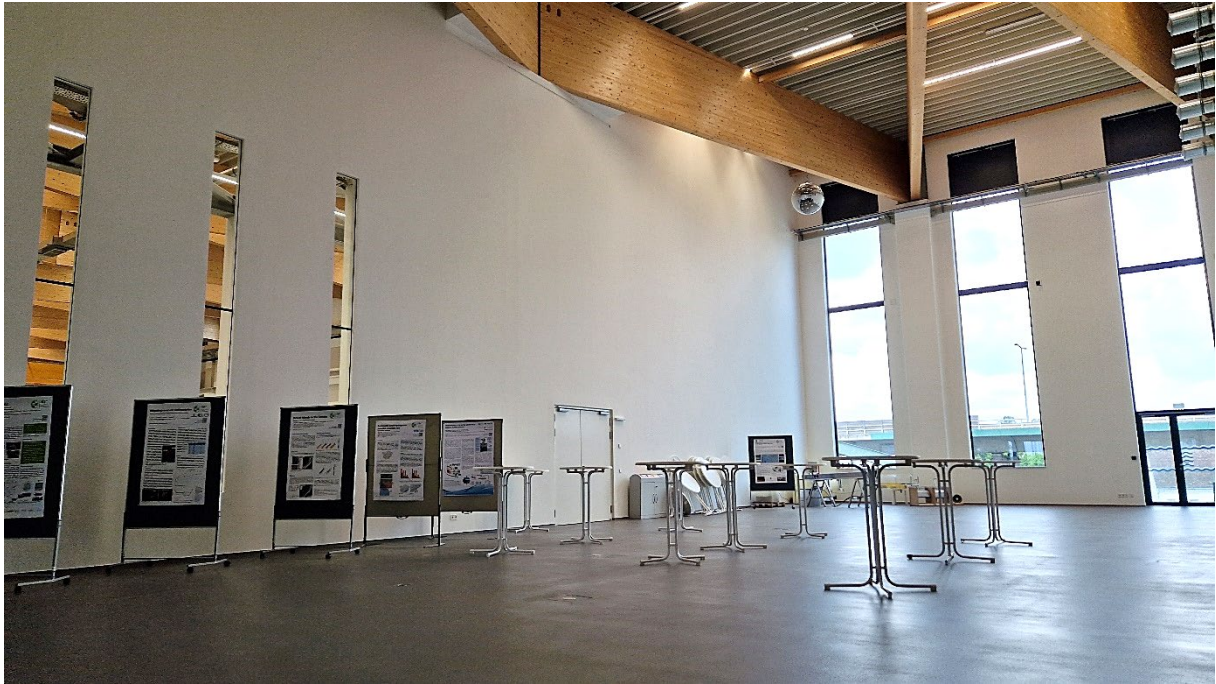


Figure 10: Public Lab



Figure 11: Public Lab



Figure 12: Public Lab facing east. Visitors enter the exhibition through the glass door on the left, or from the catering area (opening in the centre)



Figure 13: Catering Area



Figure 14: Catering Area with space for a waiting and welcome area. Huge panorama windows overlooking the Danube.



Figure 15: View from the Catering Area towards the Danube

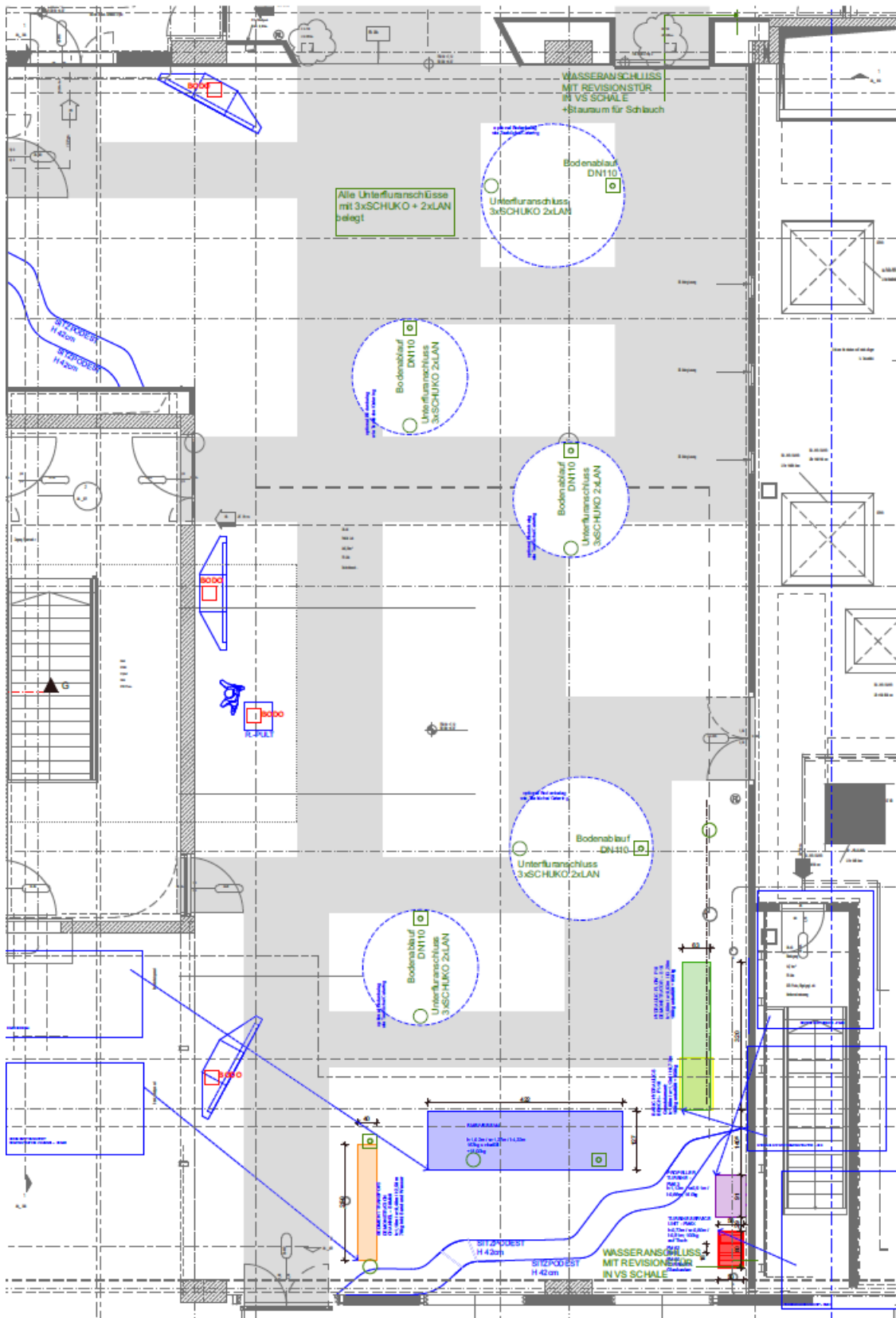


Figure 16: Plan of the Public Lab with emergency pathways marked



Funded by
the European Union



The last figure includes first ideas of the architect of how to set up stations. These do not have to be taken into account.

Note: Further information, technical plans and constructional conditions can be found at the end of this document. The maximum load the floor can withstand is 7,5 kN/m².

The exhibition would be open during the week. BOKU University is committed to sustainability. The exhibition should incorporate this mindset in all areas.

9. Appendix



Wasserbaulabor_EI
ektroinstallation-OC



Querschnitt
WBL.pdf



Plan 2OG.pdf



Funded by
the European Union

