

16.08.20 - 21.08.20

**NIM**

**NECKAR**  
**NOW** summer  
school

**EXPERIENCE**

TRANSFORMATIVE APPROACHES  
FOR A SUSTAINABLE FUTURE

# IMPRINT

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## **BELÉN ZEVALLOS**

Belen Zevallos is a Peruvian-Portuguese architect and urban researcher based in Germany. Her interest in participative architecture and temporary occupation as a form of urban development has led her to conduct research work culminating in a book entitled “Köpi wasteland: The transformation of a noWhere into a nowHere” (Berlin, 2013). Her interest in landscape and its definitions, meanings and representations, as well as its treatment in education, has led her to create Space Transcribers, an international platform and an interdisciplinary network of architects, urbanists and artists, that questions the contemporary built environment in terms of its representation and collective imaginary. Currently she is working as a Research Associate and Teaching Assistant at the School of Engineering and Architecture of the SRH University Heidelberg.

## **PROF. DR. ULRIKE GAYH**

Ulrike Gayh is Professor for environmental and process engineering and is the dean of the Master’s Program Water Technology (M.Eng.) at the School of Engineering and Architecture of the SRH University Heidelberg. She conducts international research activities in the field of water technology solutions for the prevention and reduction of local and regional water conflicts. Together with the SRH’s Serbian partner university, the University of Novi Sad, she established the Democratia-Aqua-Technica initiative, which deals with the question of concepts of innovative technical solutions for sustainable water resource management. Her further research interests are in the fields of biogas, wastewater management and water protection, whereby the focus is mainly on alternative sanitation systems and the removal of micropollutants by alternative adsorbents.



# **FOREWORD & ACKNOWLEDGEMENTS**

The School of Engineering and Architecture of the SRH University Heidelberg organized the first interdisciplinary Summer School “Neckar Now: Transformative approaches for a sustainable future”, that took place from 16th until 21st of August 2020 in Heidelberg, Germany.

The Neckar Now Summer School addressed the potential and challenges of a city along the river from an engineering and architectural perspective. Heidelberg provided the perfect setting to learn about current trends and methods of sustainable innovation and design.

Due to the Covid-19 Pandemic, the Neckar Now Summer School was carried out as a hybrid model, allowing participants to join the program online in addition to the in-situ participants in Heidelberg.

With participants from all over the world (over 14 nationalities), the summer school provided a safe space for exchange, diversity and finding common ground. At the same time, the interdisciplinary Summer School gave international students and young scientists an insight into life, teaching and studying in Germany. The exciting one-week program, including field trips, input sessions and expert feedback rounds, gave the participants the ability to develop different approaches to local problems, as well as to create their own projects in an immersive experience.

The Summer School Neckar Now was funded by the DAAD from funds of the Federal Foreign Office.

This E-book provides an overview of our one-week program, by presenting the main idea, as well as the context and the projects developed.

The challenges that our cities will face owing to climate change will have to be targeted with a holistic approach; our students need to learn how to work in an always changing environment, in interdisciplinary teams as well as in an international context, to achieve that. We believe the Summer School Neckar Now is a good step in that direction.

Thanks go to all participants and partners who made the Summer School Neckar Now possible and exciting. This goes especially to the students that trusted us in this journey and made us proud with their performance and the projects developed during that week.

We are looking forward to carrying out Neckar Now II “Transformative approaches to a sustainable future – towards resilient cities” in August 2021.

**PROF. DR. ULRIKE GAYH  
& BELÉN ZEVALLOS**



## THE SUMMER SCHOOL PURSUED FOUR MAIN OBJECTIVES:

- 1** To gather a group of international students and discuss the tendencies and possibilities of different countries, sectors and social actors regarding public spaces, architecture and water technology. This gave the participants the opportunity to reflect on their intercultural similarities and differences.
- 2** To provide a common interdisciplinary scientific basis to all participants. During the Summer School, the participants learned different methods of innovation management and can apply them in the field of water technology and architecture.
- 3** Through research and analysis of best practice examples and through field trips, the participants collected a portfolio of different approaches based on the interaction between architecture and water technology, applying some of them to their own projects.
- 4** Last but not least, at the end of the Summer School the participants were informed about the opportunities and requirements for further studies and academic qualification paths in Germany.

For more information visit our official website!



# APPROACH

“Mapping is a fantastic cultural project, creating and building the world as much as measuring and describing it.”

*James Corner*

The Neckar Now Summer School sought to develop a theoretical-practical methodology to provide in-situ work for the period of one week.

In addition, a gamification approach was used to combine modern digital elements into a complete concept within an Explorer App for Heidelberg.

The participants were part of a Neckar Now Mapping of Heidelberg workshop, obtaining an overview of the city and its link to architecture and water technology. The Explorer App was used directly in Heidelberg, but also as a purely digital exploration of the city of Heidelberg. This gamification strategy consisted of digital elements such as an Escape Room, GPS-Geo-caching and Augmented Reality.

The in-situ work was structured according to two main approaches.

## **Practical Sessions:**

The participants worked in international interdisciplinary groups, including at least one virtual group member via Zoom.

The groups were supervised by international and interdisciplinary mentors, experts on the

field (in research and practice). Every group developed a project that, at the end of the week, was presented in an interactive poster session during the “Final Rally” as well as in the “Market of Ideas”.

The participants were able to experiment with a methodology that involved:

- **Observation** in-situ in order to analyze opportunities and constraints present in the built space of the city;
- **Understanding** the relation between the Neckar, the morphology of the city and the challenges water technology and architecture face into developing public spaces;
- **Dialogue** with the community in order to understand and to record the built space, considering a variety of actors (from a cultural, age, and gender diversity perspective);
- And **sustainable**, integrating innovative scenarios that **engage** the imagination and will help develop a future strategy for the Neckar riverbanks.

Besides the work in the groups, field trips to several places in Heidelberg, such as the “NeckarOrte” – a local initiative

that addresses the Neckar river front as a potential for the city–gave students the chance to gain practical insights and and experience a direct dialogue with experts.

## **Theoretical Sessions:**

Several complementary input sessions took place during the week in the SRH University Heidelberg, such as lectures by invited researchers and partners from practice related to the themes of the summer school.

## **Final Presentations:**

During the final rallye, the students presented their projects in-situ. Besides that, an outdoor poster session along the Neckar was planned to end the summer school. Here the students had the opportunity of presenting their projects to the citizens of Heidelberg and receiving direct feedback from them.

The summer school was followed by a team of digital experts creating an audiovisual documentation of the process; this will be published in the web portals (our Website, Instagram and Youtube).

# THE TASK

**“Architecture is a great adventure into the unknown; it is a speculation about the future of our built environment.”**  
*Jürgen Mayer H.*

Nothing manifests our future more than our built environment. With this perspective, we took a look at the future and re-thinking our current public spaces.

HOW will neighborhoods and living models, architecture and public space, infrastructure and supply chains function, WHAT will change and WHY? What conclusions and strategies can be developed from future scenarios addressing our current challenges?



## PROCEDURE

- 1** Read the Reader and absorb all the information you can about Heidelberg and the Neckar River.
- 2** During our rallye and your stay in Heidelberg, map and be curious and an active participant.
- 3** Select a specific place where you and your group would like to develop a project, analyze its location challenges and potentials.
- 4** Create a scenario for this place. Take into account a possible driver of change: ecological developments, housing needs, housing typologies, population development (migration effects), climate change, future needs - technological, social, economic developments.
- 5** Stay active during the input and feedback sessions.
- 6** Develop your project and create a prototype, model, visualization, collage, drawing of your idea.
- 7** Prepare the presentation poster with your group and present your project.



# THE PROGRAM

## DAY 1

### 16.08.20 "Arrival & Ice-Breaker"

**18 - 22:00** Meet & Greet, short city tour of Heidelberg City architecture and floods in a historical perspective (Prof. Bartels, B. Zevallos)

Dinner together with participants and lecturers from the School of Engineering and Architecture. Introduction and getting to know each other.

## DAY 2

### 17.08.20 "Welcome & Innovations Workshop"

**9 - 9:30** Registration

**9:30 - 10:30** Opening Ceremony of the summer school by the rector of the University (Prof. Dr. Diener) and the dean of the School of Engineering and Architecture (Prof. Dr. Gerber); **online live and recorded**

**10:30 - 11:15** Workshop: Introduction of the topic, (Prof. Dr. Gayh, B. Zevallos); **online live and recorded**

**11:15 - 12:00** Gamification Strategy (O. Schlenker) Briefing of the Neckar Now Mapping; **digital version available**

**12 - 14:00** Lunch and guided tour of the SRH campus; **digital version available**

**14 - 19:00** "Neckar Now Mapping" Presentation of best practice projects at the interface between water technology and architecture in Heidelberg, as well as some of the planning and landscape planning projects of the NeckarOrte Initiative; **digital version available**

**19 - 22:30** "Tour and Beer Tasting" Heidelberg Kulturbrauerei

## DAY 3

### 18.08.20 "Innovations Workshop & Best Practice"

**9 - 10:00** Introduction to the methods of sustainable innovation management (Prof. Dr. Gerber); **digital version available**

**10 - 13:00** Innovation workshop for the development of sustainable project ideas for the Neckar (Prof. Dr. Gerber, Prof. Dr. Gayh, B. Zevallos); **online live participation**

**13 - 14:00** Lunch at the SRH campus

**14 - 15:00** Best practice examples (Prof. Dr. Gayh, B. Zevallos, et al.); **digital version available**

**15 - 18:00** "Project work I" Application of skills learned to develop an implementation strategy for the project (Prof. Dr. Gayh / Prof. Dr. Edinger / B. Zevallos); **online live participation**

**18 - 19:00** Neckarorte Expert input session; **digital version available**

**19 - 22:30** "Viewing the city from another perspective" Boat trip through the Neckar.

## DAY 4

### 19.08.20 "Milestone: Practical project development"

**9 - 11:00** Methodological workshop for visualization and application to the project (Prof. Dr. Edinger / B. Zevallos); **digital version available**

**11 - 13:00** Milestone: Presentation of the implementation strategy for the projects and feedback from the group (Prof. Dr. Gayh / Prof. Dr. Kirschbaum / B. Zevallos) content update for the rallye (O. Schlenker); **online live and recorded**

**13 - 14:00** Lunch at the SRH campus

**14 - 17:00** Project work II: Practical project implementation (Prof. Dr. Gayh); **online live participation**

**17 - 19:00** "Infrastructure as an attractive public place" Excursion to a local project; **digital version available**

## DAY 5

### 20.08.20 "Flashback / Flashforward"

**9 - 10:00** Presentation of project status (Prof. Dr. Gayh / B. Zevallos); **online live participation**

**10 - 12:30** Project work III: Implementation and visualization of the results (Prof. Dr. Gayh / B. Zevallos); **online live participation**

**12:30 - 13:00** Content update for the rallye (O. Schlenker); **online live participation**

**13 - 14:00** Lunch at the SRH campus

**14 - 17:00** Project work IV: Visualization of the results (Prof. Dr. Kirschbaum / B. Zevallos); **online live participation**

**14 - 17:00** Studying at the HSHD: Introduction and overview of the master's courses and studying in Germany (all lecturers); **digital version available**

## DAY 6

### 21.08.20 "Market of Ideas at the Neckar"

**9 - 10:00** Making of the Outdoor Poster Session "Market of Ideas" (Prof. Dr. Gayh / Prof. Dr. Kirschbaum / B. Zevallos); **online live and recorded**

**10 - 12:00** Project work V: Finalization of the presentation of results and pilot presentation with students at the SRH Heidelberg University (Prof. Dr. Gayh / Prof. Dr. Kirschbaum / B. Zevallos); **online live participation**

**12:00 - 16:30** Opening of the Neckar Now Rallye

**16:30 - 18:00** Outdoor Poster Session "Market of Ideas" for the general public (moderation by SRH Hochschule Heidelberg, Neckarorte e.V.); **online live and recorded + digital versions of the posters**

**18 - 22:00** Final Ceremony + Barbecue at the Neckarorte; **online live and recorded**

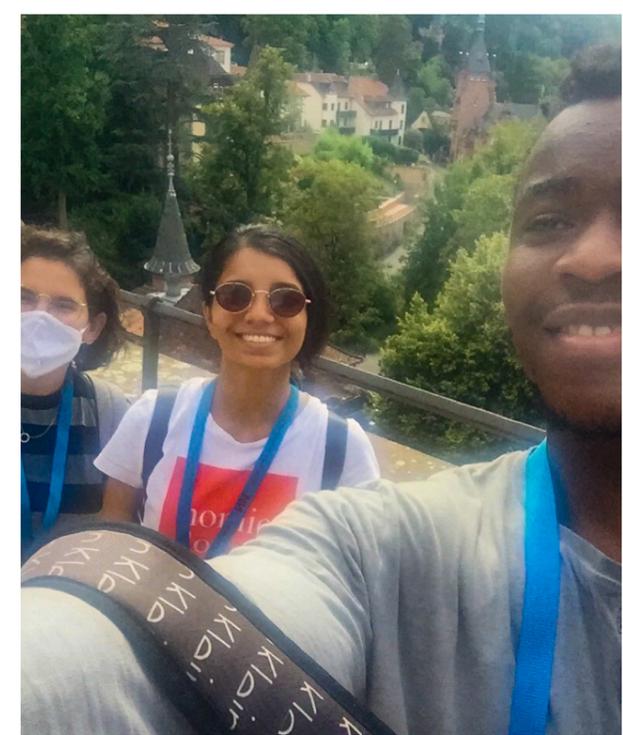


# THE RALLYE



In total, there were two rallyes planned for the Summer School. Both of the rallyes were carried out with an ExplorerApp. This App combined elements from other games such as: Escape Room, City Rallye, GPS-Geocaching and the most modern technology, Augmented Reality. Besides that, there were tricky puzzles, as well as funny pictures and video challenges.

The first rallye served as an introduction to the city and the mapping tool for the participants of the Summer School. The participants were equipped with an iPad and set off on an exciting adventure through Heidelberg, getting to know the city and its challenges, as well as historical facts. The second rallye was developed for the public. After registering on our website, they joined an updated version of the first rallye, where they discovered highlights of the city and visited the projects developed during the Summer School.

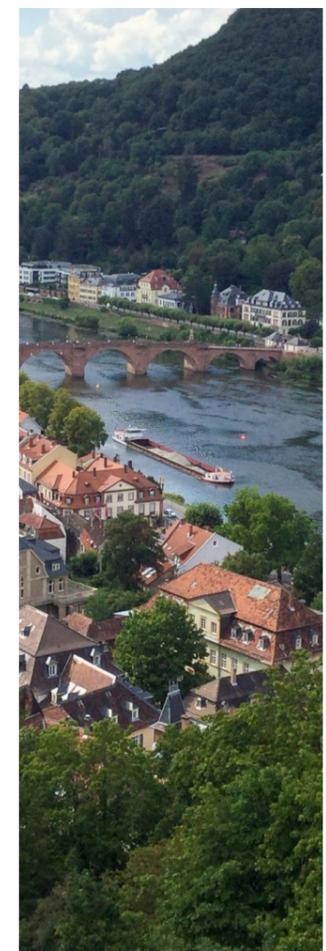
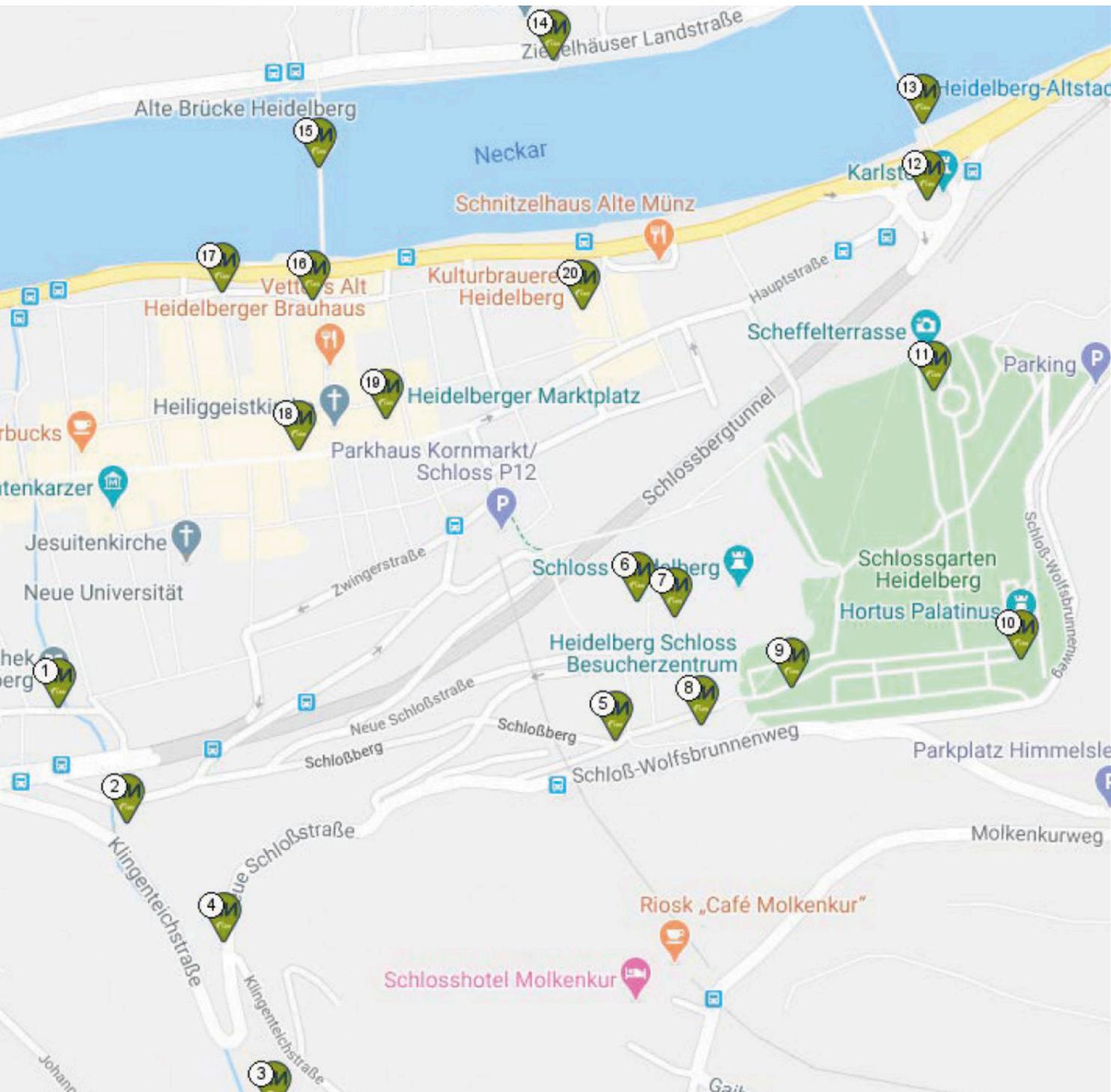


Here the students presented their own projects at different locations and the citizens of Heidelberg had the opportunity to ask questions and give feedback.

In addition, it was also possible to join a digital version of the rallye from everywhere in the world. For this, we shot videos in 4K quality to capture the surroundings and highlights of the city, allowing an immersive experience in Heidelberg for any participant around the world.

After the final rallye, a public outdoor poster session was organized, "Market of Ideas". Here, all the posters were presented by the groups; this was followed by the final ceremony.

# THE STATIONS





## BACKGROUND & CONTEXT

Water is an essential resource for the daily life; from since the establishment of old settlements society has been struggling with hydrology systems. However, since the industrial revolution, urban development and today's sustainability goals have presented new challenges to be confronted.

Adaptation and mitigation are the main short-term factors for climate resiliency. Floods are the most common catastrophic events affecting cities. We must redesign cities and the public spaces to be able to be resilient, seeing floods as an opportunity rather than a threat. To this end, it is important to understand water dynamics as a means of establishing a relationship with water. How can dikes, walls and permeable soils be redefined?

Heidelberg, as a city along the Neckar River, provides the perfect setting for international students and students of Water Technology and Architecture to get to know the meth-

ods of sustainable innovation management and to develop their own projects.

### ABOUT HEIDELBERG:

Heidelberg is home to around 160,000 people. The locals appreciate its world-renowned beauty and idyllic setting on the river Neckar at the heart of the "Rhine-Neckar Triangle", but what they value most is the quality of life that the city offers. This cosmopolitan, friendly, people-oriented and vibrant University City is made up of 15 distinct neighbourhoods and is particularly attractive to families, students, those in the creative industries, businesspeople, and academics and researchers.

People genuinely feel at home here: in recent surveys, no fewer than 98 percent of all Heidelbergers said they loved living in the city.

# HISTORY

Heidelberg has always been characterized as the “City on the Neckar”, owing to its location on the river. The area where the Neckar flows out of the Odenwald into the Rhine plain has a long history of settlement due to its location.

The Roman bridge was replaced in late antiquity or the early Middle Ages by a Neckar ford. *See Figure 1.*

A ferry was operated from the beginning of the 13th century, belonging to the monastery of Schönau from 1217, which played an important role in the settlement process of the city and its planning.

The current Old Bridge, finished in 1788, had eight forerunners on this site, that were all destroyed by flood, ice or fire, because they were made mostly of wood.

Before its channel was modified at the beginning of the 20th century, the Neckar frequently had low water and could be crossed by means of numerous small islands. It presented itself as an untouched river landscape with different amounts of water depending on the season.

The use of the Neckar as a waterway with barges and wooden rafts with firewood and

timber from the Black Forest is documented from 1100.

The Lauerplatz, which was located at the bridge in front of the city wall, was used as a loading and unloading area as well as a wood market.

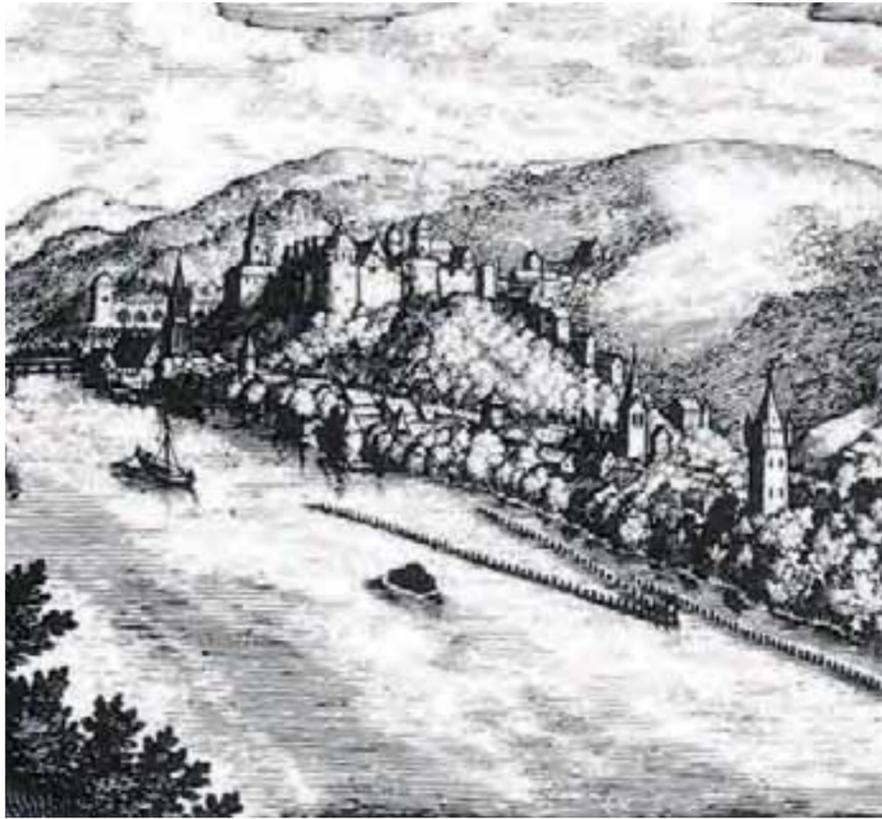
At the western tower of the Marstall building a crane of the customs office (mentioned in 1586) was located, and next to it the salt house. The shore between the city wall and the Neckar was thus mainly used as an economic zone.

Other users groups of the Neckar were fishermen, plied their trade alone or in company groups. Until the 1930s there were women who used to wash their clothes at the edge of the water.

At the end of the 17th century, the city and the castle were mostly destroyed; the town was rebuilt again in Baroque style. Around 1800, the scenic location on the Neckar, the castle ruins and the pleasant weather, along with its reputation as a university town, led Heidelberg to become a popular touristic destination and a university town.



City map of Heidelberg 1830  
Wysocki, J., (1981): Stadtplan von Heidelberg 1830. Heidelberg von Arbeit, Geld in 150jähriger Geschichte der Sparkasse, p. 4.



2) Heidelberg, engraving by M. Merian, around 1619  
 Budde, Kai; Gercke, ans (Herausgeber); Griesbach, Dieter; Krames Annette; Maisant, Mechtild; Seeliger-Zeiss, Anneliese; Wegner, Reinhard (1980). Beruf: Photograph in Heidelberg. Ernst Gottmann sen. & Jun. 1895-1955. Verlag Dieter Fricke, Frankfurt. S 6.



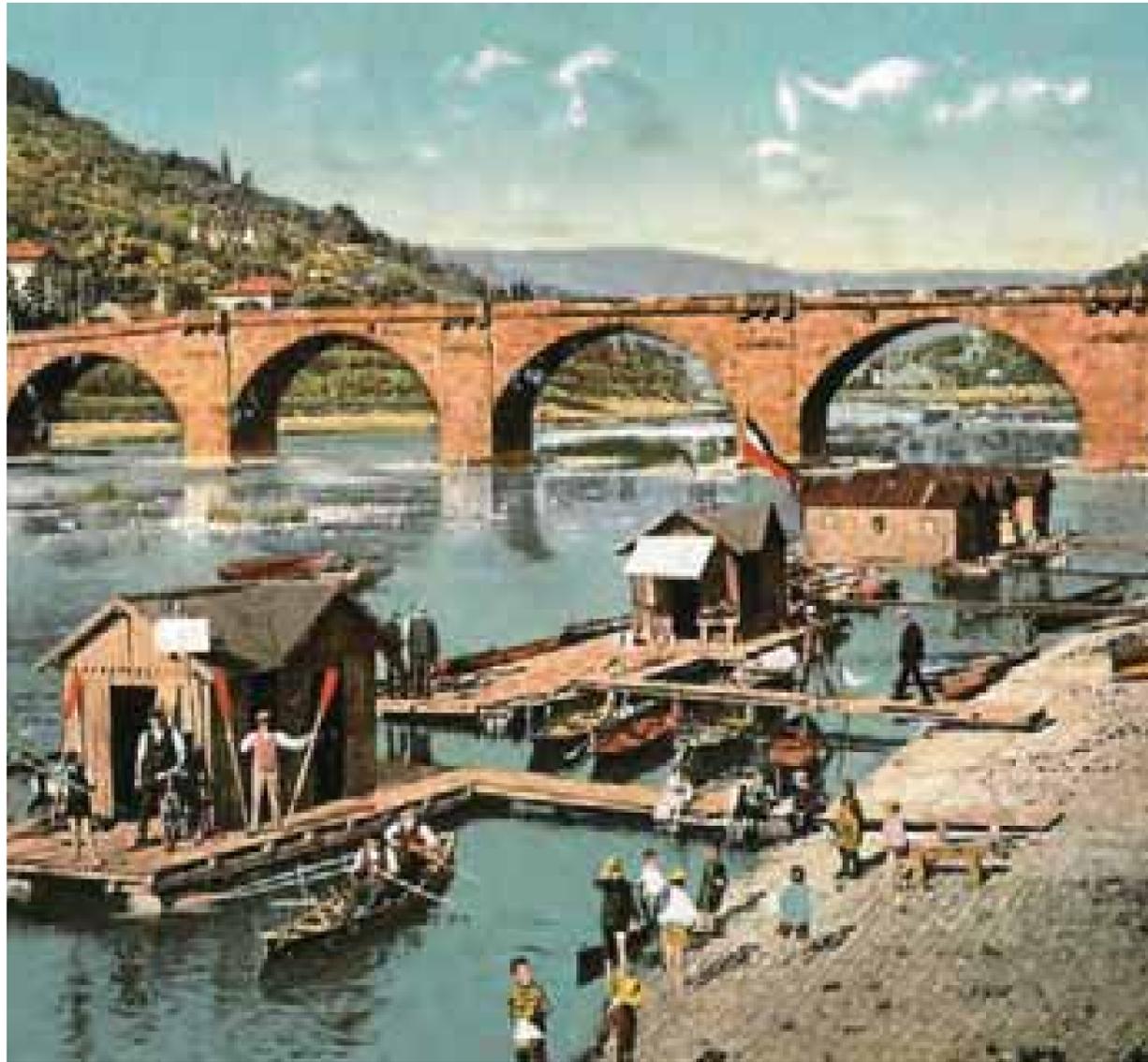
4) Heidelberg, view from the Philosophenweg  
 Pfaff, D. K., (1902): Heidelberg vom Philosophenweg aus gesehen, 1896. Heidelberg und Umgebung. J. Hörning, Universitäts-Buchdruckerei in Heidelberg, p. 100.



3) Heidelberg, Matthaeus Merian, 1620  
 Budde, Kai; Gercke, ans (Herausgeber); Griesbach, Dieter; Krames Annette; Maisant, Mechtild; Seeliger-Zeiss, Anneliese; Wegner, Reinhard (1980). Beruf: Photograph in Heidelberg. Ernst Gottmann sen. & Jun. 1895-1955. Verlag Dieter Fricke, Frankfurt. Abb. II (Anlage)



5) A school in Heidelberg, 1900  
 Pfaff, D. K., (1902): Das Gymnasium zu Heidelberg 1900. Heidelberg und Umgebung. J. Hörning Universitäts-Buchdruckerei in Heidelberg, p. 165.



6 Boat rental at the Old Bridge, around 1900  
Anon., n.d. Bootsverleih an der alten Brücke um 1900. [Art] (Sammlung Heinz Vogt).

The Neckarstaden between the Old Bridge and the Bienenstraße, which was built in 1896, by filling in the riverbank, served as flood protection and a transport link to the old town.

Between 1870 and 1900, the walkway was built on, with representative residential build-

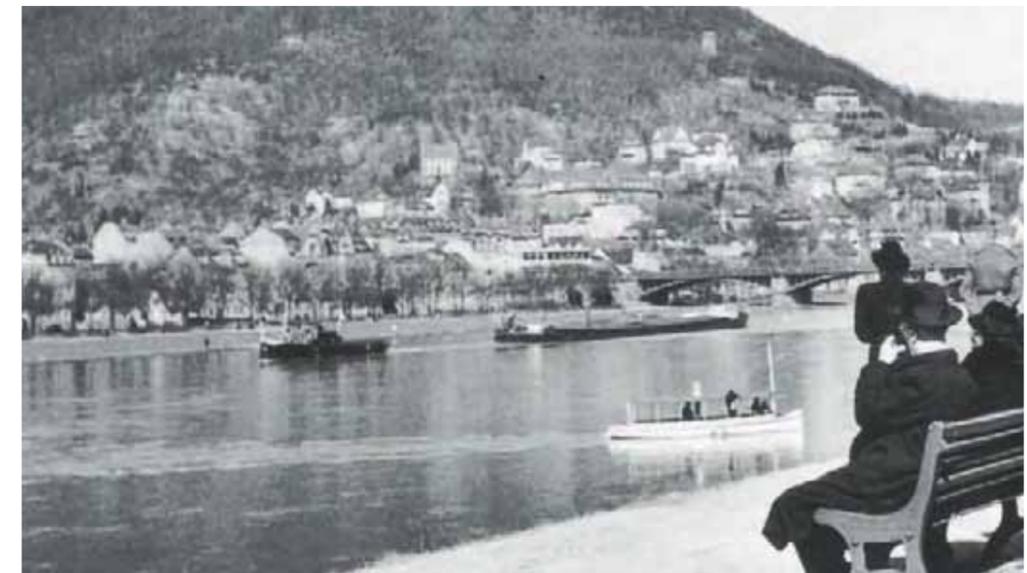
ings and a school, and in 1901-03 the town hall was added. The eastern side of the riverbank at the southern end of the Old Bridge remained in its original state until the mill canals were destroyed by the Neckar canalization.

The Wiebling riverbank was built during the first phase of the Neckar canalization in 1925.

In the course of the damming, water sports became popular, and the rowing sport, established since the end of the 19th century, was joined by paddling with kayaking, canoeing and sailing.

During the reconstruction of the Ernst-Walz-Bridge, care

was taken that the underpass of the B37, built in 1951, which allows an undisturbed passage to through traffic on both axes. The last two changes to the structure of the Old Bridge took place in the 20th century. After two central arches of the bridge were destroyed at the end of the Second World War, the rebuilt bridge was inaugurated in 1947 with the help of donations from the population.



7 View of the Heiligenberg and the Theodor-Heuss Bridge from the walkway path along the Schurmannstrasse, approx. 1930  
D., (2000): Blick auf Heiligenberg und Theodor-Heuss-Brücke vom Promenadenweg längs der Schurmannstrasse, ca. 1930. Heidelberg Gestern und heute Eine Gegenüberstellung, p. 51.

# CURRENT DEVELOPMENTS

Under the general term “City by the river”, the city of Heidelberg is pursuing an overall urban strategy of improving the link between city and river. The Neckar possesses, in this context, a central meaning for the development of public spaces, as well as for the creation of an independent profile of from the city of Heidelberg.

The city, together with several members of civil society, such as the NeckarOrte initiative and development projects such as the IBA Heidelberg, have been working on the issues for the several past years.

The first ideas for the city by the river existed from 1987. At that time, it was instructed a feasibility research into the feasibility of building an underground tunnel between the Anniversary Square and the Karlstor was carried out. In 2005, the administration received the order to develop the concept of “City on the river”.

In 2008, the municipal council approved a resolution on the concept “City on the River”, which was followed in the same year by the “City on the River” competition and the development of a financing plan. The results of the competition were approved by a majority in 2009, an event day called “City on the River” was held on the Neckar, and an application was made for the inclusion of the project in the state’s funding program.

As a result, a main project was developed. This consists in a continuous walkway along a main cycle route to bring the city to the river. The new, continuous path should significantly increase the accessibility to and experience of the Neckar within the city. There is also the possibility that, with the new riverside road, the existing footpath and cycle path running parallel to the road can be reorganized.



Neckar beach with beach bar, 2019  
Stadt Heidelberg (2019): Stadt an den Fluss, [online] [https://ww1.heidelberg.de/buergerinfo/vo0050.asp?\\_kvonr=26359&voselect=5901](https://ww1.heidelberg.de/buergerinfo/vo0050.asp?_kvonr=26359&voselect=5901), [25.06.2020].



97 New bike and pedestrian bridge for the Neckar, 2020

According to the city's development plan, the model of the "city on the river" must be given priority in urban development measures and changes in the core city. It is in this context that the Neckar Now Summer School is embedded.



107 New bike and pedestrian bridge for the Neckar, 2020



117 New bike and pedestrian bridge for the Neckar, 2020

ABB. 9-117 SETEC TPI, Explorations Architecture, Baron, Mart &, metrisarchitekten + stadtplaner (2020): IBA online-ausstellung: Rad- und Fußwegbrücke über den Neckar, [online] <https://iba.heidelberg.de/en/projects/neckar-cycle-and-foot-bridge>, [25.07.2020].



## ENVIRONMENTAL ASPECTS

There are a lot of global challenges with regard to water. The United Nations (UN) have defined access to drinking water as a human right, but billions suffer a shortage. Half of the world's population faces the risk of water shortage and the global water demand is projected to increase by 55% by 2050. The amount of clean drinking water in many regions is decreasing because of pollution and climate changes (e.g. flooding, aridity); this will intensify the challenges of water supply. Furthermore, the energy production requires water and clean water, in turn, requires energy.

Due to environmental pollution, climate change, and our increasing world population, challenges in water-related areas such as water supply are increasing. The importance of water as an essential resource and industrial raw material, as well as of the treatment of wastewater, is increasing steadily. Climate change mitigation to combat problems such as flooding, but of course also other aspects of sustainability, water re-use and sustainable energy are topics in the city of Heidelberg.

The Neckar Now projects should apply science and engineering principles to minimize the adverse effects of human activity on the environment, they should protect and utilize natural resources and control environmental pollution.

Screening in the form of an environmental impact assessment should be carried out. This entails the systematic collection and analysis of information about the environmental effects of a project in order to enable the competent authority to decide if and how the project should be carried out. The deviation from the baseline situation that is caused by the activity of the project should be analyzed. The baseline situation is the existing environmental situation or condition in the absence of the activity. Thus, it is important to note that projects have also to deal with life above and below the waterline (i.e. for amphibians, fishes, insects and birds).

The experts recommend avoiding large scale interventions in wooded areas and adapting the planning to the spatial situation.

In general, the following topics should be analyzed during the environmental impact assessment:

- Public health: addresses the quality of life, improvement in community health, and potential risks associated directly or indirectly with the project
- Abiotic factors include the characteristic landscape and natural scenery, as well as soils and sediments, air and water quality.
- Socio-economic and cultural considerations include the project's effects on the day-to-day lives of the individuals and the community, the project's impact on the management of natural resources and the project's impact on local and regional development. Gender-specific effects and variations among the potentially affected population or community, such as those influenced by social or ethnic affiliations, must be taken into consideration.

The biotic environment encompasses the terrestrial and marine biological resources, including flora, fauna and sensitive species that inhabit the area impacted by the proposed project.





# BEST PRACTICE EXAMPLES

To celebrate the diversity of our group and share the knowledge that they brought from home, we planned a “Best practice examples” session on day 3 (see the program).

The participants prepared a short presentation of a public space in their country (or elsewhere they have been) that is next to a river, water front or a place that establishes a relation to a water site (it can be a visual relation).

**Use this QR code to visit the interactive map!**



- Río Santiago, Atlas, Guadalajara, Jalisco, Mexico
- Grand Canal, China
- Yalu River Broken Bridge, Zhenxing District, Dandong, Liaoning, China
- Dujiangyan, Chengdu, Sichuan, China
- Ponte de Lima, Portugal
- Ponte Romana, Rua Caneiro, Chaves, Portugal
- Rua de Couros, Guimaraes, Portugal
- Museu de Arte Contemporânea Nadir Afonso, Avenida 5 de Outubro, Chaves, Portugal
- Côa Valley Archaeological Park, R. do Museu, Vila Nova Foz Côa, Portugal
- NeckarOrte, Heidelberg, Germany
- Pogradec, Albania
- Grand Park of Tirana, Rruga Herman Gmeiner, Tirana, Albania
- Avenida Costanera, Asunción, Paraguay
- Malecón 2000, Malecón Simón Bolívar, Guayaquil, Ecuador
- Tomebamba River, Cuenca, Ecuador
- Spielplatz Menden (Knochen Brecher), Menden, Germany
- Asomdwe Park, Accra, Ghana
- Lake Bosomtwe, Ghana
- Ashaiman Dam, Ghana
- Cape Coast Castle, Victoria Road, Cape Coast, Ghana
- Mwanza, Tanzania
- Thane, Maharashtra, India
- Sabarmati Riverfront, Old City, Lal Darwaja, Ahmedabad, Gujarat, India
- Taj Mahal, Dharmapuri, Forest Colony, Tajganj, Agra, Uttar Pradesh, India
- Lake Palace, Lake Palace Road, Old City, Brahmipuri, Udaipur, Rajasthan, India
- Recife, State of Pernambuco, Brazil
- Athirappilly Water Falls, Pariyaram, Kerala
- Alemdar, Basilica Cistern, Yerebatan Caddesi, Fatih/İstanbul, Turkey
- Lady Bird Lake, Austin, TX, USA
- Cali River, Valle del Cauca, Colombia



Grönland

Island

Finnland

Schweden

Norwegen

Russland

Kanada

Vereinigtes  
Königreich

Polen

Deutschland

Ukraine

2

Frankreich

Italien

Spanien

Türkei

Kasachstan

Mongolei

Nördlicher  
Atlantischer Ozean

Nord  
Atlantischer  
Ozean

Nördlicher  
Stiller Ozean

USA

Mexiko

Algerien

Libyen

Ägypten

Saudi-Arabien

Irak

Iran

Afghanistan

Pakistan

Indien

Thailand

Südkorea

Japan

2

Niger

Tschad

Sudan

Ethiopien

Nigeria

Demokratische  
Republik Kongo

Tansania

Angola

Namibia

Botsuana

Madagaskar

Indischer  
Ozean

Indonesien

Papua-Neuguinea



Südpazifik

Südatlantik

Venezuela

Argentinien

Peru

Brasilien

Bolivi

Chile

Argentinien

Südlicher  
Ozean

Australien

Neuseeland

Südlicher  
Ozean

Südlicher  
Ozean

# FINAL POSTERS & PRESENTATION



The participants presented their projects in-situ within the second rallye.

Final Presentation at the "Market of ideas".



# NECKAR PERLE

INÉS PEREIRA, GIL MARTINS, THOMAS ROTH  
 NIKITESH SOMNATHE, ZHYU YAN,  
 KENNEDY GERALDO, SINDI SHEHI, MEGI BUFI,  
 JAMIMA ZITA APPIAH, YIMENG TANG



In the center of the Neckar river is located an island with its rich fauna and flora. Pearl of the Neckar is a project that celebrates the beauty and preservation of its ecology.

It consists of building a floatable pathway around it creating an immersive experience with your senses and surroundings like you've never experienced before since this structure will follow the river natural waves as if you were walking on top of it.

This pathway creates a connection between the land, river, and island giving this area a whole new meaning and space.

The floatable pathway won't destroy any land and will keep the beaver's habitat. It will raise awareness of the animals that are living in this area which may have an impact on people's behavior.

It creates an opportunity to observe the behavior of the animals.



Because of its shape and materials it naturally fits into its environment.

It shows people a new spot of Heidelberg besides the main attractions.

People can stay at a silent spot apart from the noisy roads.

FIND OUT MORE



# MOVE & MÜLL

JOHN IWUEKE, SHRADDHA PAWAR, JULIANA MORAIS, CORRINA SOMERHOLTER,  
 MARVIN LOTSCH, DANIELA CHIQUITO, DILAY GÜLERYÜZ, JEMIMA ZITA, JOHN LUGONGO,  
 OMKAR KIRAN WADIKAR, YINLIN ZHOU.

## LET'S PLAY MOVE & MÜLL

Games are becoming one of the most interesting ways of promoting environmental awareness. Our first game is called Move & Müll and it is a waste separation game which uses intrinsic motivation to encourage environmental literacy.

Move & Müll aims to change the future of gaming with a fun and exploratory mobile game that teaches people ecological sustainability. It offers the smartphone generation the opportunity to make conscious decisions about the environment and therefore to play this role in the real world.



SCAN QR CODE

SPHERIEARTH



# DYNAMIC FLOOD CATCHER

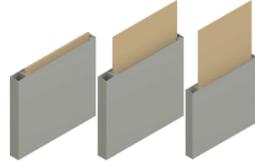
MOHAMED ALMETWALLY, ADITI DAS,  
 HELENA FIGUEIREDO, KWAKU KARIKARI,  
 JOHN LUGONGO, SUPRIYA MOHAIKAR,  
 LUCÍA MORALES, AJEESH NELLIKUNNEL JOS,  
 YOGESH KUMAR



Heidelberg is one of the most historical student cities in Europe, therefore looking for a solution to the flooding problem that takes place mostly in the Spring season must be a priority to all Heidelbergers.

Here we come up with a solution that is dynamic in nature, addressing this challenge in a not-invasive way for the traditional old town and the Heidelberg's beautiful historical landscape.

The idea is to implement a structure at the riverbank that contains movable panels. As a result, this temporary panels avoid the water coming towards the city, and consequently, protecting it from floods.



The hydraulic mechanism lift up the barriers (panels) by using the water pressure created when the river increases its flowrate.

Some things that need to be considered in the future are: improvements in the engineering design, efficient selection of sustainable and resistant materials and identification of potential areas for implementation of other dynamic flood catchers.



The panels act as a multifunctional structure for the city. Besides of its protection purpose, its surfaces can be used for advertisements, tourist information or even for gardening projects.

SCAN ME!



# DRAFT MEET(IN)G THE RIVER

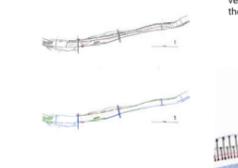
JOÃO BANDEIRA, LUCAS CERQUEIRA,  
 SAMIKSHA KOTTEWAR, AHMED ABDELRAHMAN, (ONLINE) VEDANT RAJPUT.

## BIGGEST PUBLIC SPACE IN HEIDELBERG

The river Neckar now no longer divides the city into two parts but with Drafts we unite the people by morphing it into a meeting point.

Draft is a modular system that can be used for various purposes and is adaptable to the different schedules and daily routines of the citizens as well as foreigners. These floating structures which can also be anchored at different points in the river we connect both the sides of river. Our project aims to provide a new urban structure supporting the existing one in education, culture and leisure spaces alongside the Neckar.

Analyses of the riverbank and mobility



Diagrams of the modular system

In order to achieve this Drafts have to face some issues like the ship traffic on the river which makes of one of the city's main sources of income as well as the fragile eco-systems (fauna and flora) living in the river that can be harmed by the increased flux of people which may cause pollution or disruption in the natural balance generated there. To combat this type of challenges Draft is equipped with a system of solar generated power which fuels the floating structures and a cleaning and filtering system incorporated in the platforms that help reducing residual waste just by moving. This floating device has also the capability of retract whenever ships approaches to make easier their passage.

FIND OUT MORE



# DEVELOPED PROJECTS

▷ BIGGEST PUBLIC SPACE  
IN HEIDELBERG



# DRAFT MEET(ING) THE RIVER

The river Neckar now no longer divides the city into two parts, but with DRafts we unite the people by morphing it into a meeting point.

DRaft is a modular system that can be used for various purposes and is adaptable to the different schedules and daily routines of citizens and non-citizens alike. These floating structures, which can also be anchored at different points in the river, we connect both the sides of the river.

Our project aims to provide a new urban structure, supporting the existing one in education, culture and leisure spaces alongside the Neckar.

Analyses of the riverbank and mobility in order to achieve these drafts have had to face some issues, such

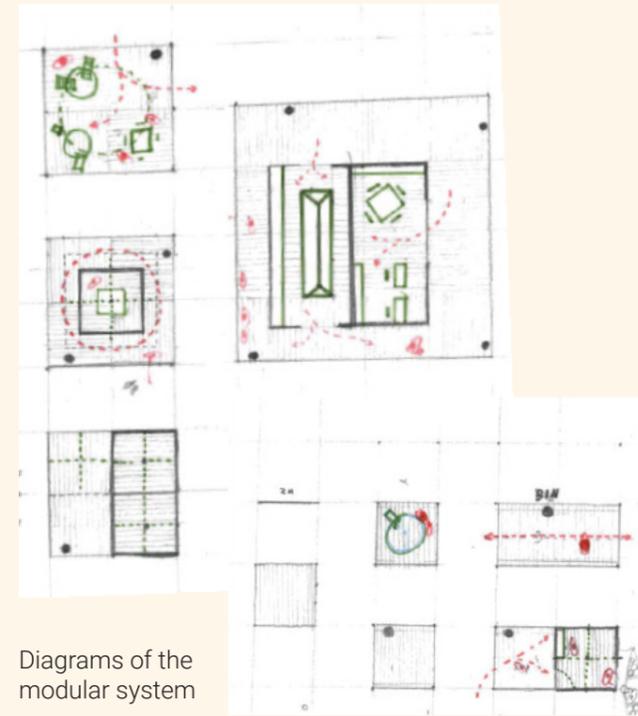
as the ship traffic on the river, which is of one of the city's main sources of income; the fragile eco-systems (fauna and flora) living in and on the river that can be harmed by the increased flux of people also had to be considered, disruption of the population of such species in the natural balance generated there might be caused.

To combat this type of challenge, Draft is equipped with solargenerated power which fuels the floating structures and a cleaning and filtering system incorporated into the platforms that helps to reduce residual waste just by moving.

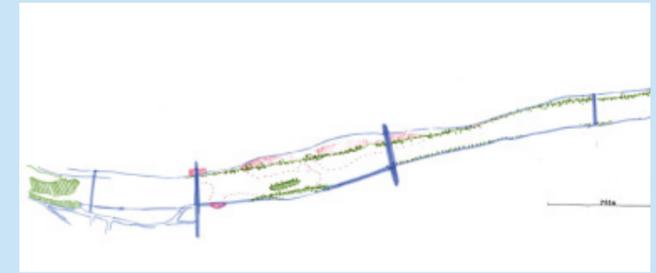
This floating device can also retract whenever ships approach to make their passage easier.

## PARTICIPANTS:

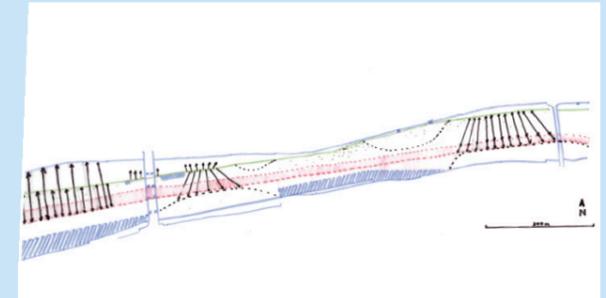
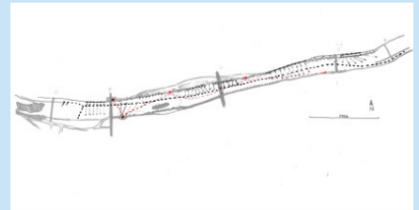
JOÃO BANDEIRA, LUCAS CERQUEIRA, SAMIKSHA KOTTEWAR, AHMED ABDELRAHMAN, VEDANT RAJPUT



Diagrams of the modular system



To make our Drafts more sustainable, we can power these rafts by installing solar panels on them



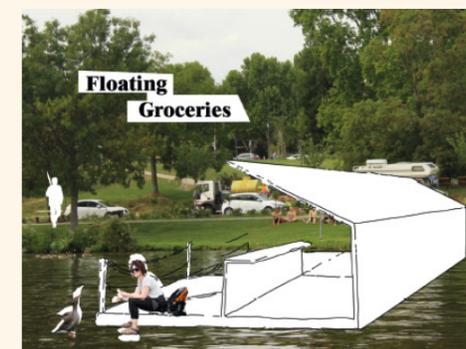
## "ON THE ROOF OF STRUCTURE"



<https://www.boatsogo.com/>



- Flexible solar panels, 3 x 68 watts
- 2 marine deep-cycle batteries
- 1 solar charge controller





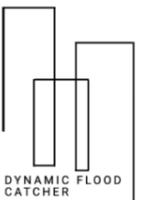
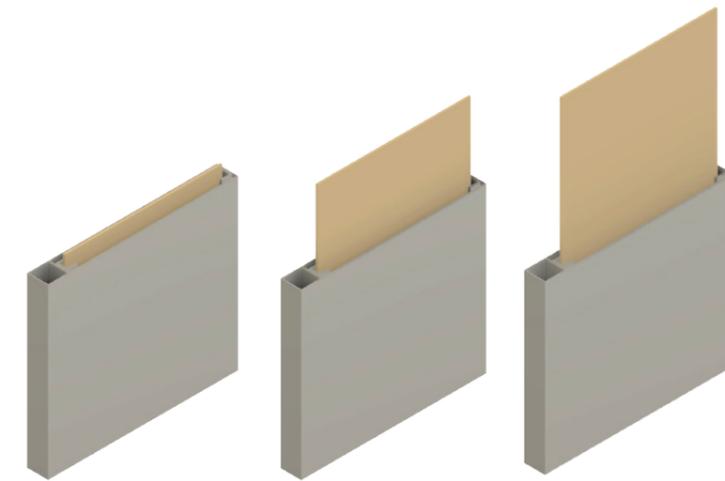
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Heidelberg is one of the most historical student cities in Europe. Solving the flooding problem that occurs mostly in the spring season must be a priority to all citizens of Heidelberg.

Here, we have come up with a solution that is dynamic in nature, addressing this challenge in a non-invasive way to preserve the traditional old town and the Heidelberg's beautiful historical landscape.

The idea is to implement a structure at the riverbank that contains moveable panels. As a result, these temporary panels deflect the water coming towards the city, and consequently, protect it from floods. The hydraulic mechanism lifts up the barriers (panels) by using the water pressure created when the river increases its rate of flow.

Some things that need to be considered in the future include improvements in the engineering design, the efficient selection of sustainable and resistant materials, and the identification of potential areas for implementation of other dynamic flood catchers.



The panels act as a multifunctional structure for the city. Apart from their protective purpose, their surfaces can be used for advertisements, tourist information or even for gardening projects.

The positive impact of this project in Heidelberg will be vast when addressed. What needs to be carefully addressed is the en-

gineering design so this cannot create damage to the environment surrounding the area.

Therefore, the project needs thorough research into the river behaviour in spring in order to analyse the water pressure and the worst-case scenario, so as to design these temporary barriers in a way suitable to each location which prone to flooding.



**Keine Sandsäcke mehr an der Alten Brücke, besser ein Zusammenspiel aus Strukturen.**

No more sandbags at the Old Bridge, better a symphony of barriers

#### PARTICIPANTS:

MOHAMED ALMETWALLY, ADITI DAS, HELENA FIGUEIREDO, KWAKU KARIKARI, JOHN LUGONGO, SUPRIYA MOHALKAR, LUCÍA MORALES, AJEESH NELLIKUNNEL JOSE, YOGESH KUMAR



# MOVE & MÜLL

## GAMIFICATION FOR THE ENVIRONMENT

Games are becoming one of the most interesting ways of promoting environmental awareness. Our first game is called **Move & Müll**; and it is a waste separation game which uses intrinsic motivation to encourage environmental literacy.

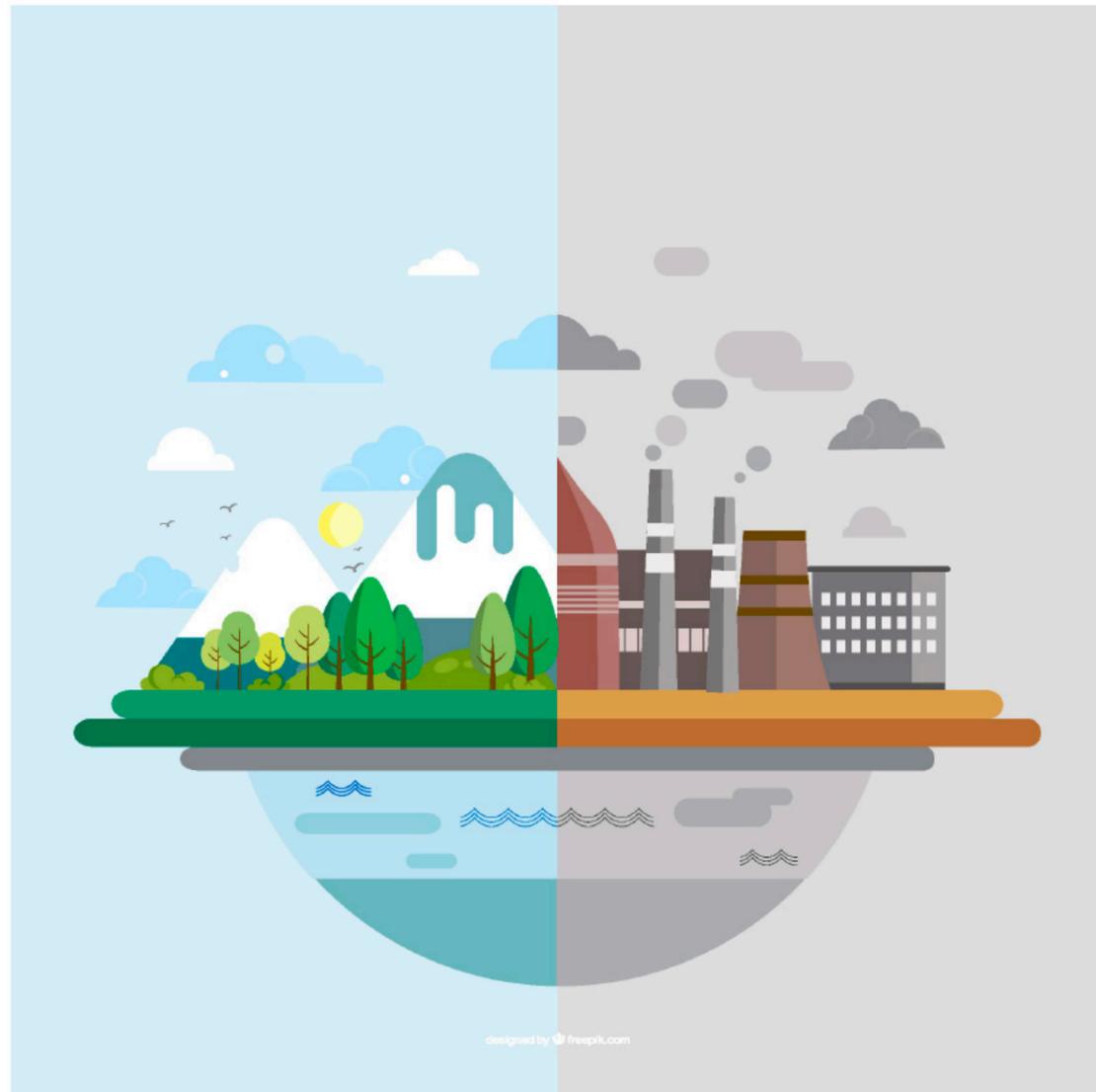
It generates the opportunity to make conscious decisions about the environment and therefore to play this role in the real world.

**Move & Müll** aims to change the future of gaming with a fun and exploratory mobile game that teaches people ecological sus-



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PROTECTED HABITAT FOR  
BEAVERS



# NECKARPERLE

## LEVITATING PATHWAY IN HEIDELBERG

In the center of the Neckar river there is an island with rich fauna and flora. Pearl of the Neckar is a project that celebrates the beauty and preservation of its ecology.

It consists of building a floatable pathway around the island creating an immersive experience for your senses and surroundings like you've never experienced before, since this structure will follow the river's natural waves as if you were walking on

top of the water. This pathway creates a connection between the land, river, and island, giving this area a whole new meaning and space. The levitating pathway won't destroy any land and will keep the beaver habitat intact. It will raise awareness of the animals that are living in this area which will hopefully have a positive impact on people's behavior.

It creates an opportunity to observe the behavior of the animals.



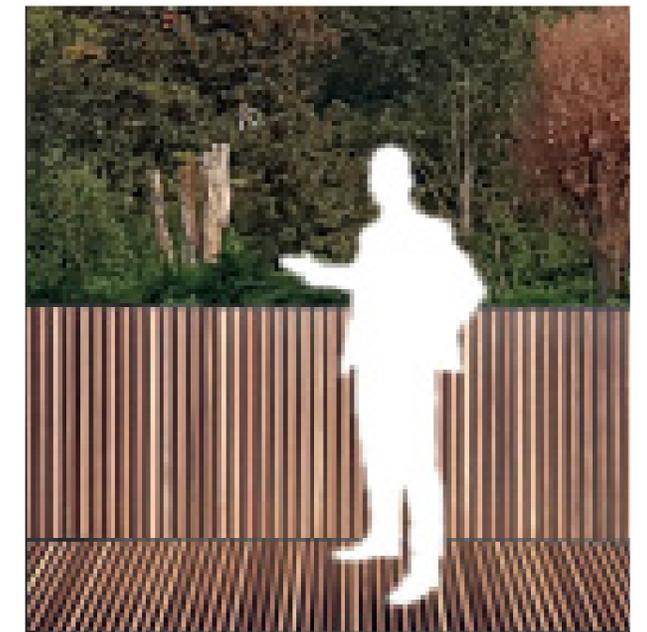
### PARTICIPANTS:

INÉS PEREIRA, GIL MARTINS, THOMAS ROTH NIKITESH SOMNATHE, ZHYU YAN, KENNEDY GERALDO, SINDI SHEHI, MEGI BUFI, JAMIMA ZITA APPIAH, YIMENG TANG



Because of its shape and materials, it naturally fits into its environment.

It shows people a new side of Heidelberg, apart from the main attractions. People can stay at a silent spot away from the noisy roads.



### QUICK FACTS ABOUT THE BEAVERS:

01. Species: North American beaver and European beaver
02. Habitat: Freshwater ponds, lakes, rivers and streams near woodland areas
03. Length: 100 - 170 cm
04. Weight: 11 - 30 kg
05. Colour: Dark brown fur
06. Speed: Beavers can swim at speeds of up to 8 km/h
07. Behaviour: Nocturnal
08. Collective Noun: Colony
09. Offspring: Young beavers are called kits
10. Lifespan: 16 to 24 years in the wild



Find more: <https://facts.net/nature/animals/beaver-facts>



Organized and carried out by  
Prof. Dr. Ulrike Gayh & Belen Zevallos,  
School of Engineering and  
Architecture



Funded by the DAAD from funds of the Federal Foreign Office:

**DAAD** Deutscher Akademischer Austauschdienst  
German Academic Exchange Service



With the support and collaboration of:





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16.08.20 - 21.08.20

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