

Postgraduate Degree | BASEhabitat

Master of Advanced Studies - Architecture

Summary activities 2020



Credits: BASEhabitat

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Master of Advanced Studies - Architecture
Summary activities 2020

Kunstuniversität Linz | University of Art and Design Linz
die architektur

PARTICIPANTS 2020

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Ujjwala Madikekansandra
Nivedita Mehrotra
Bárbara Miranda
Alexandre Nicolas
Tejaswini Krishna Padindala
Juan Romero
Jesús Sánchez Díaz-Hellin
Nathalie Wong
Vivian Velarde
Yaron Ginati
Wendy Mottard

This report is a summary of the activities that took place between February and November 2020. It includes the elaboration of the material provided by the guest professors and photos taken during the course.

The photos contained in this document are from BASEhabitat, except when something else is mentioned.

Report made by Marta Rota
February 2021

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1. Introduction week

5th – 7th February 2020

The Postgraduate Degree program started with the Introduction Week where the participants, through presentations and different activities, had the opportunity not only to get to know each other and the guest professors, but also to familiarize with the University of Art and Design in Linz. As a closing event, a guided tour to discover the city was organized.



Presentations



World Café: Challenges of sustainable architecture



Cooking challenge



World Café: Challenges of sustainable architecture



Game: Get to know each other



Guided tour through the city of Linz

2. Design and Theory in Linz

February - August 2020

The core part of the 'Design and Theory' term in Linz consisted of 3 blocks led and organised by the guest professors invited: Anna Heringer, Helena Sandman and Nina Pawlicki. Participants have benefited from the professor's knowledge, expertise and teaching method.

Every block started with an intensive week (impulse workshop) with the presence of the guest professor, followed by one or two meetings per week during the teaching month. In the meanwhile, the students were supported and guided by the assistant of the Postgraduate degree Marta Rota. The participants have worked independently in different projects in groups and individually.

The projects had a different focus in the field of sustainable architecture and with each guest professor, the students worked on a design implemented by theory and/or hands-on experience.

In addition to these three blocks, the students had some theoretical lectures about earth and fibres held by Dominique Gauzin-Müller, a module about fundraising from Lucía Perianes, lectures and consultations on specific topics from different experts (Bengin Dawod, George Foden, Christoph Lüthi) and two hands-on workshops on earth construction: one in Linz with the BASEhabitat construction manager Dominik Abbrederis, and one in Vorarlberg with Martin Rauch and his team.

The program was affected by the Covid-19 pandemic and from March to June the lectures took place online.



Clay Storming with Anna Heringer



Sustainable development in Tunis, Tunisia with Helena Sandman



Lectures with Dominique Gauzin-Müller



KitchenHub Linz with Nina Pawlicki

Credits: Jesús Sánchez Díaz-Hellin



BASEhabitat workshop with Dominik Abbrederis



Construction site in Altstaetten with Jan Glasmeier



Martin Rauch workshop

2.1 Anna Heringer

Teaching period: 10.02.2020 – 3.03.2020

Module title: Clay Storming

Anna Heringer has developed the method of Clay Storming together with Martin Rauch. During the intense week of workshop, students worked individually and in small teams to practice Anna's method of 3D sketching on clay models.

- After softening the clay by hand, the first exercise of the Clay Storming was to make a pot. The first time the eyes were kept open, the second time they were closed, while the last step was to combine both techniques. Looking at the pots that the students made, it was interesting to see the effect on the mind of closing the eyes while working. In this Clay Storming session, they had a chance to reflect on how we deal with our inner judge that wants to criticise us constantly and how to relearn to enjoy designing without that pressure of criticising, getting back into the feeling of joyful play and discovery.
- The second exercise was to think about your childhood's favourite space. Using simple tools to cut, shape and press the clay, the students created models that all the group could relate to. For example, a cave with a view, a place under the table with table clothes that protects from the eyes of others while we are able to hear everything, sitting in the crown of a tree where no one can see us but we have the full overview of what's going on, or a tent built with branches and textiles. No matter from which place the participants were coming from, it was fascinating to see how much they could relate to the feelings of the others: the spaces we like are not only entirely protected and introverted – they always have a window to connect us with the rest of the world. Everyone had a chance to reflect on our needs related to architecture especially during childhood, where the ego is not yet fully developed.

After making the models, the students had to destroy them. This is Shiva, the Indian god destroyer of worlds that also regenerates them. The Shiva exercise made us reflect on our reactions to let ideas go and how this can be a refreshing source for a new and better design. It is a training in trust that good ideas will come back.

- The third exercise was characterized by working on a model in a group. First, the group modelled the landscape, then a proper human scale was selected while discovering the right proportions and imagining the space. During the process of modelling the clay with hands, the members of the group switched position and worked on someone else's spot. This allowed for a change of perspective and, through a not verbal communication, a better understanding of other people's visions. This can be also used as a tool in a participatory process with the community. As it is written in the Laufen Manifesto, "*the process is just as important as the outcome*".
- After these exercises, the participants have developed their own project applying this method. They managed to find their own architectural language in a short time by letting their hands doing the communication guided by their intuition.



Overview of the Clay Storming process

Credits: Wendy Mottard

The aim of this teaching module was to improve the connection to our inner self especially in the process of design. Designing is a constant decision-making process and the best decisions are being taken with our gut feeling. Especially in complex contexts it is very helpful to have a good connection to our intuition.

Anna Heringer



Second exercise: design your childhood's favourite space



First exercise: make a pot



Design your childhood's favourite space



Shiva exercise



Third exercise: working in a group on the landscape



Details of the model





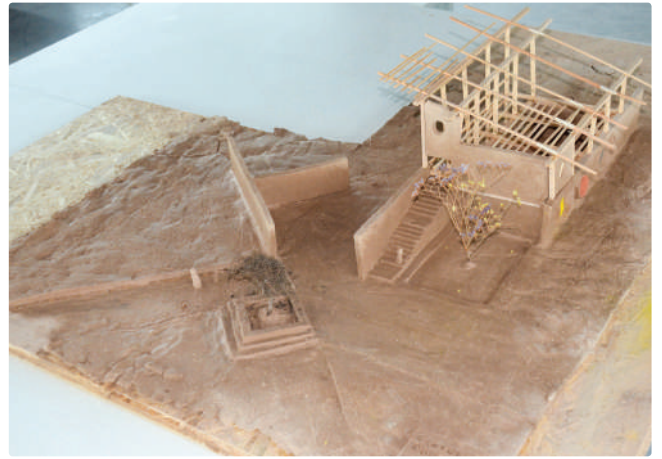
Participants' projects



'Inclusive Development Facility', a place for community empowerment through crafts (Nivedita Mehrotra, Jeyashri Chandrasekaran)



Centre for waste management (Bárbara Miranda, Jesús Sánchez, Nathalie Wong)



Vocational school in India (Tejaswini Krishna Padindala)



School in Colombia (Wendy Mottard, Juan Romero, Alex Nicolas)



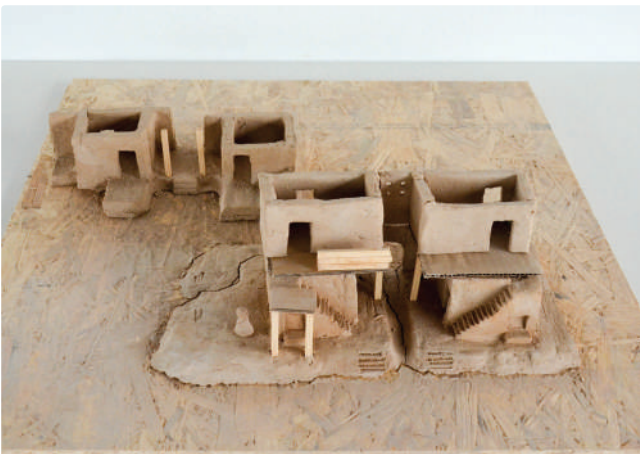
Healing centre in Peru (Vivian Velarde)



Pavilion in Zurich (Yaron Ginati)



Pavilion in Zurich (Adrian Baumberger)



Social housing in India (Ujjwala Madikekandra)



Upliftment centre in North-east India (Madhura Jamsandekar)

Credits for models photos: Wendy Mottard



The group with Anna Heringer

2.2 Helena Sandman

Teaching period: 23.03.2020 – 5.05.2020

Module title: Sustainable urban development in Tunis, Tunisia

Being part of an international group preparing a proposal for sustainable development for the Sebkha Séjoumi area in Tunis, Helena Sandman saw this as an opportunity for the students to get involved in a real-life project that could potentially lead to further collaboration with the municipality in Tunis.

The field of focus for this module was holistic sustainable and resilient urban development. Due to the Covid-19 pandemic, all the lectures had to be arranged online and it was challenging for everyone to adapt to this way of teaching.

The teaching month started with theory where the students were divided into four groups reading different literature broadly related to the design task: urban planning in developing countries, resilience, architecture for peace, and sustainability measurement tools. This was followed by the task of writing an academic essay on a freely chosen topic related to sustainability. Additionally, they were provided an extensive amount of material to familiarize themselves with the context and as sources for local knowledge they collaborated with three Tunisian students (Amin Mnasri, Iheb El Hasni and Oumayma) from the National School of Architecture and Urbanism in Tunis.

The site studied was the Sebkha Séjoumi area (salt plane lake) in Tunis, Tunisia. The salt plane, an ecological Ramsar site, is in danger of pollution and destruction due to the growth of informal settlements with an uncontrolled speed. Additionally, the area is flood prone. The aim of the project was to create a pleasant, modern and sustainable neighbourhood around Sebkhat Séjoumi from household scale to city scale.

The urban landscape we live in affect how we interact with other citizens. Architects have a key role in developing these landscapes, and thus affect our co-existence, the architecture can either bring people together or create gaps. We, as architects need to create space that can accommodate divergence and promote peace.

Helena Sandman



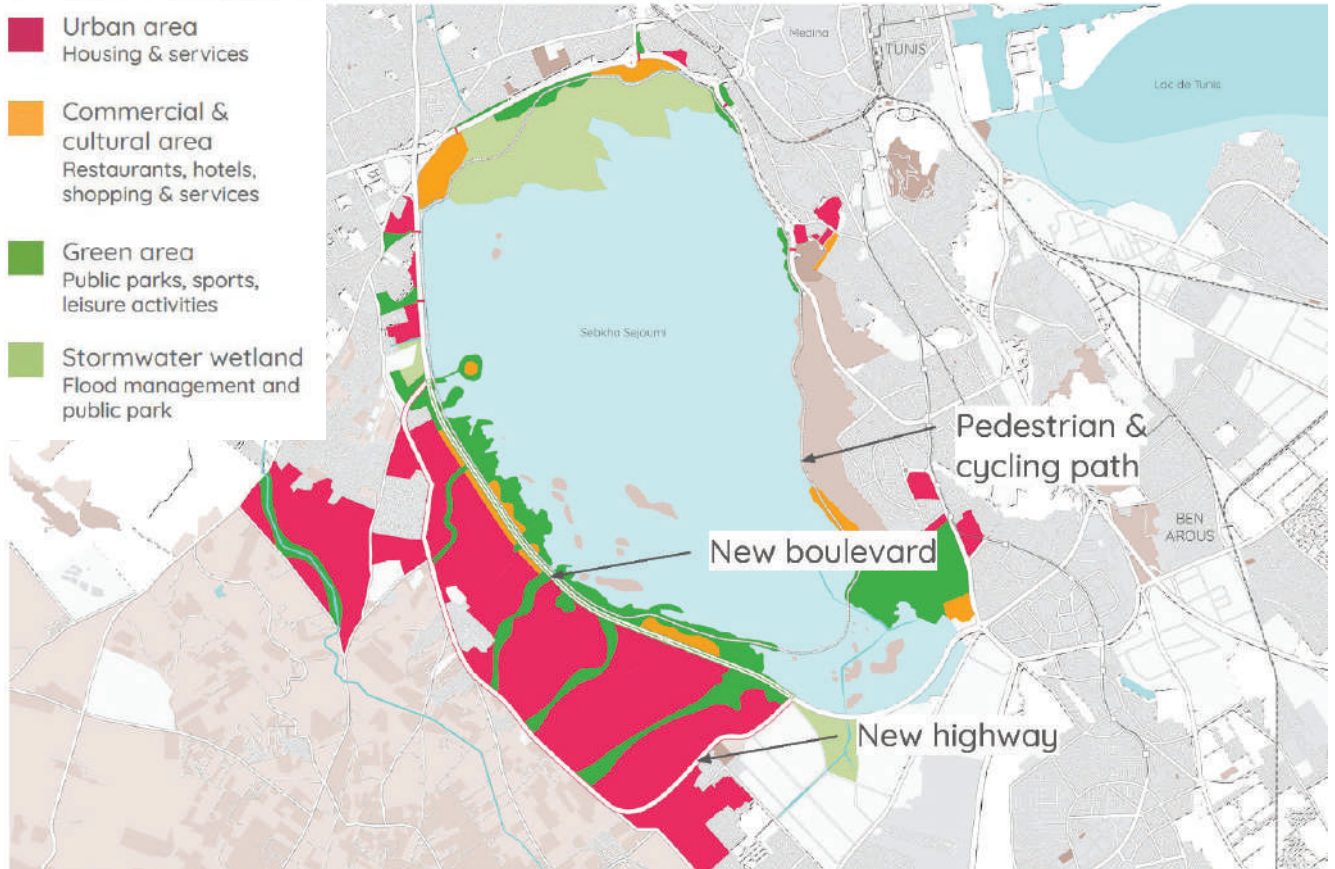
View of the Sebkhath Séjoui area

Credits: Helena Sandman

Looking at the redevelopment approach that considers holistic sustainability, finding the balance between the ecological, social, and economic aspects, the students had the possibility to choose in which scale and what focus they wanted to work on. The field of interest guided the creation of teams and the following projects were developed:

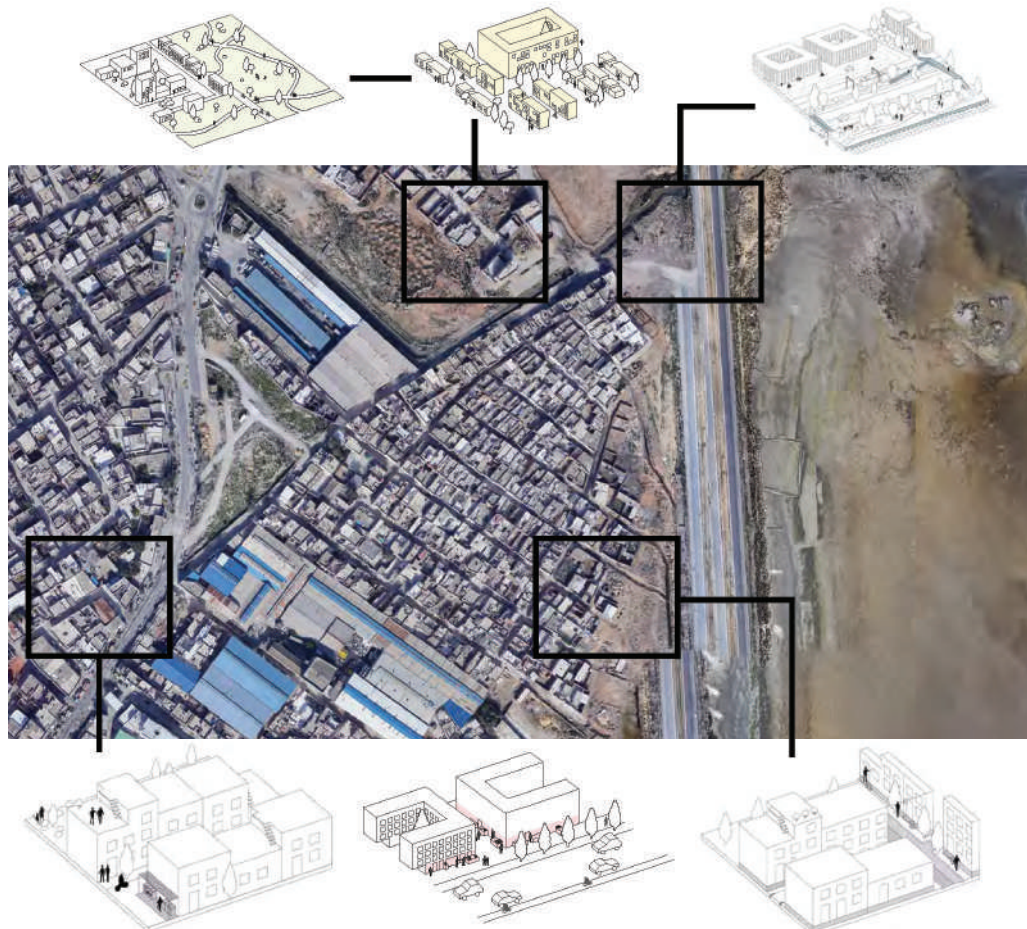
- **Urban planning for a new mixed-income housing area by the salt plane lake**
Jesús Sánchez Díaz-Hellin, Nathalie Wong, Bárbara Miranda focused on the study of three new neighbourhoods and developed a toolbox with possible interventions.
- **Urban planning of public space and green recreational areas surrounding the salt plane with a focus on flood resilience**
The aim of the project was to reconnect people with nature and protect biodiversity around the area. Vivian Velarde, Wendy Mottard, Yaron Ginati designed a belt around the Ramsar to raise awareness and to restore the relationship between environment and people.
- **Flood-resilient affordable housing and rainwater harvesting**
Together Nivedita Mehrotra, Jeyashri Chandrasekaran, Tejaswini Krishna Padindala, Madhura Jamsandekar, Ujjwala Madikekansandra studied a dwelling cluster with three different typologies which are related to culture and climate. The design includes strategies related to flood prevention, prevailing wind, sun path and rainwater collection.

As part of this module, the students had a chance to use QSAND to assess the sustainability aspects of the redevelopment project of the area. BRE Trust provided support to the students through training materials and an introductory presentation. As external reviewers for mid- and final reviews Bengin Dawod, urban planner specialized in planning for peace, and Christoph Lüthi, engineer and specialist in flooding and water solutions, were invited.



Land-use plan provided by Helena Sandman

Credits: Sebkh Sejourmi Development Project



Urban planning for a new mixed-income housing area by the salt lake

Credits: Bárbara Miranda, Jesús Sánchez Díaz-Hellin, Nathalie Wong



Existing housing condition

Credits: Helena Sandman



Flood-resilient affordable housing

Credits: Nivedita Mehrotra, Jeyashri Chandrasekaran, Tejaswini Krishna Padindala, Madhura Jamsandekar, Ujjwala Madikekansandra



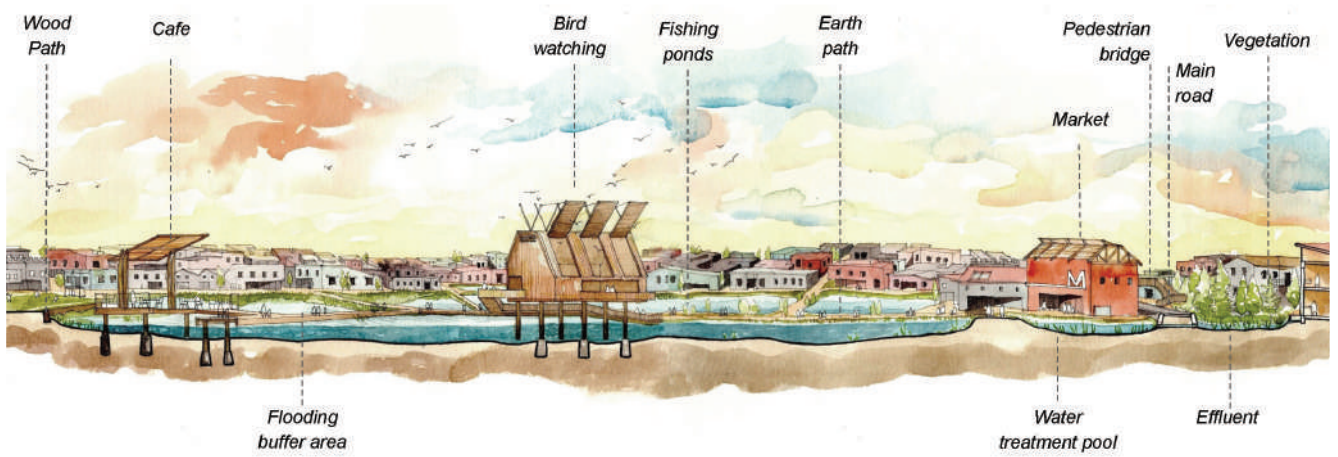
QSAND Guidelines

Credits: Nivedita Mehrotra, Jeyashri Chandrasekaran, Tejaswini Krishna Padindala, Madhura Jamsandekar, Ujjwala Madikekansandra



Sebkha Séjourni salt plane lake

Credits: Helena Sandman



Urban planning of public space and green recreational areas surrounding the salt plane

Credits: Vivian Velarde, Wendy Mottard, Yaron Ginati



Earthen paths

Credits: Vivian Velarde, Wendy Mottard, Yaron Ginati



Final presentation

2.3 Nina Pawlicki

Teaching period: 27.07.2020 – 21.08.2020

Module title: Collective Design – design for change.
The kitchen Hub Linz

Since 2015 Nina Pawlicki is collaborating with the NGO *Über den Tellerrand* - which can loosely be translated as ‘cooking outside the box’. In their own word this explained what they are doing: “*cooking and bringing together people from all over the world, overcoming barriers and helping strangers to become friends*”. In 2015 Nina Pawlicki and a team of students designed and build the first KitchenHub in Berlin, that has become a very popular and unique place for mutual exchange on an eye level ever since.

The module ‘*Collective Design – design for change*’ was organized as a close collaboration with the local satellite of the NGO *Über den Tellerrand* in Linz.

The module focused on the development of a skillset for organizing inter- and transdisciplinary groups in design processes that aim to trigger change. It was subdivided into a theoretical and a more practice-oriented part.

The theoretical part included lectures on methods and tools for agile organization formats, DesignBuild and circular construction principles. It was accompanied by various short tasks that aimed to implement and test the newly gained knowledge.

The practical part consisted in designing and building of a new home for the NGO *Über den Tellerrand*. Within a short time frame the team of students completely transformed a former sports club into a welcoming, multifunctional space – the KitchenHub Linz.

In collaboration with:



Cooking and bringing together people from all over the world,
overcoming barriers and helping strangers to become friends.
Über den Tellerrand



KitchenHub Linz as a place for mutual exchange: Cook, eat, meet

The course consisted of four assignments:

- 1_collaboration

The students gained knowledge about decision making processes for larger, transdisciplinary groups via theoretical input and application tasks.

- 2_ideation

The students dealt with the question on how to set up an ideation process with the NGO to start a collaboration with the aim of developing the design and implementation of the KitchenHub Linz further. This included the gathering of information reflecting on parameters such as place, program, people and the observation of the existing NGO structure and place.

- 3_design

The team developed a masterplan for the former sports club in Linz Frankenviertel, that the NGO is renting from the city. The space itself has been in use and operating as the NGOs headquarter for the last two years. The design task mainly consisted in a transformation and modification of the exiting place, because atmospheric and usage-oriented qualities were lacking.

- 4_build

Key elements of the masterplan were realized by the students themselves. Therefore, the group split into three teams. Besides the design tasks the students were also taking over main project management tasks during the project. In just four weeks they went through all stages of a building project.



Meeting with the NGO Über den Tellerrand in Berlin



Realization of the elements on site



Realization of the elements at the Workshop in the university



Masterplan

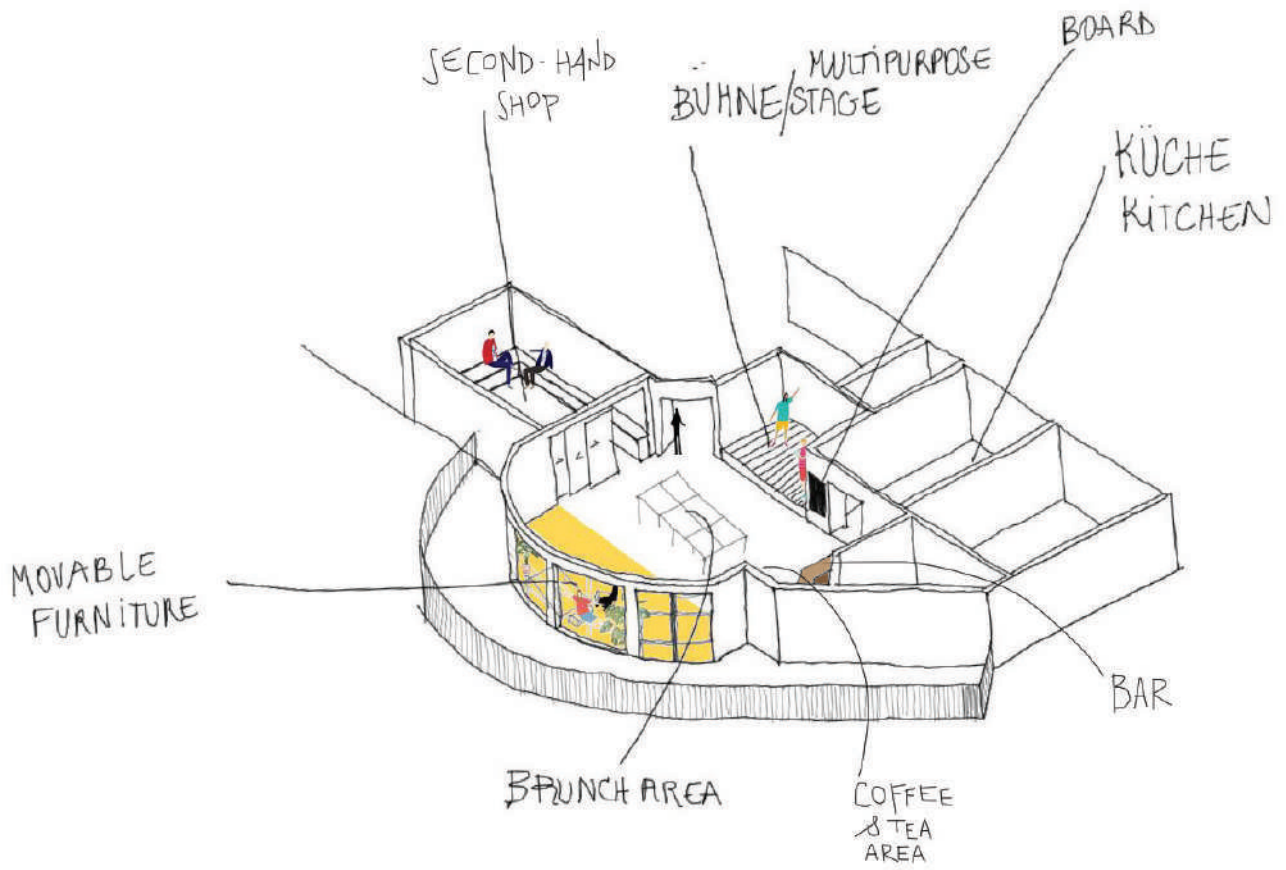
The main focus of the masterplan for the modification of the KitchenHub is the creation of a multifunctional and welcoming space. Therefore, the existing usage flows regarding the operation of the place were analysed and adapted in the new design. The reuse of the existing furniture as a material source applying circular construction principles developed as a main principle for the three groups connecting their elements.

A new flexible stage element is directed to the main central seating area of the place. The bar area got modified to open up more to the space and create a more functional operation flow. The relocation of the tea and coffee serving table allowed to connect it directly with a new multi-use library furniture system. Storage and wardrobe got defined precisely allowing a more structured usage and opening up the two entrances to the balcony area overlooking the sports ground and Linz mountainous hinterlands in the background.

GROUP 1 - Shiva

Students: Adrian Baumberger, Jeyashri Chandrasekaran, Alexandre Nicolas, Juan Romero

The group focused on the transformation of the niche between entrance and functional kitchen into a functional wardrobe area, bookshelf and platform. Therefore, they mainly made use of the existing wood benches and furniture and used it as a material source. By turning the separation wall of 90 degrees, they created a new spatial division which provides space for hanging jackets and storing bags. On the other side, the platform surrounded by benches can easily be transformed from a stage, to a cosy, Arabic-style sitting area and to a boardgame table constellation. It is easily accessible via 3 steps and can be used for performances, concerts, reading groups, tea ceremonies, boardgame sessions or similar activities. Underneath the platform shelves were installed in order to create further storage space.



Credits: Nathalie Wong



Multi-use shelf and box system

Credits: Wendy Mottard

GROUP 2 - Bar

Students: Madhura Jamsandekar, Ujjwala Madikekansandra, Bárbara Miranda, Vivian Velarde, Yaron Ginati

The group focused on the transformation of the bar and tea&coffee. The upper part of the bar got taken down in order to connect the bar with the main area. A big wooden countertop got installed and it can be used for buffets or cooking events. The massive shelves on the backwalls were replaced by much lighter boards that can display special pieces of the collection of international dishes and kitchen utensils. Underneath the countertop a restructuring of the existing furniture allowed to create storage for the equipment the NGO is using for their events. The outer shell of the bar counter got covered with a selection of slats made from the original materials that were found in the place and not used anymore in the new design. By relocating the tea&coffee serving area from its' original location close to the kitchen entrance towards the semi round area the design aims to trigger a more structured usage flow in the place.

GROUP 3 - Inclusion

Students: Nivedita Mehrotra, Tejaswini Krishna Padindala, Jesús Sánchez Diaz-Hellin, Nathalie Wong, Wendy Mottard

The group focused on a design for the semi-circular shaped area of the KitchenHub, that had been difficult to use in a functional way before the intervention due to the windows with a direct connection to the terrace. The group designed a multi-use shelf and box system with the dimensions adapted to the measurements of these openings. The elements were designed in a way so that the windows opening to the terrace could still be used and would allow for enough light to still enter the space. The shelves can now be used to display the impressive collection of cookbooks from different cultures, as well as copies of the two different cookbooks by *Über den Tellerrand*. The lower parts of the shelves provide storage for a set of polygon-shaped boxes, that can get arranged in different constellations to communicate and play! In order to make the boxes more comfortable to be used as a stool felt cushions in orange and purple - the colours of the NGO – were handmade. Smaller shelves for plants or books adapted to the width of the columns between the windows and made from salvaged materials complete the design.



Bar before



Bar after



Platform and wardrobe area before

Credits: Jeyashri Chandrasekaran



Platform as a boardgame table constellation



Platform as a cosy, Arabic-style sitting area



Platform as a stage



Table, shelves and storage space

Credits: Jeyashri Chandrasekaran



Coffee and tea area



View of the wardrobe area, bookshelf and platform

Credits: Jeyashri Chandrasekaran



Members of the NGO at the inauguration day



Inauguration



Panorama of the KitchenHub Linz



2.4 Dominique Gauzin-Müller

Teaching period: 9.03.2020 – 13.03.2020

Module title: Sustainable Architecture in earth and biobased materials

Sustainable architecture is the result of an integrated planning, which combines ecologic, economic, cultural and social issues. In order to explore this meaning in depth, the module was structured around 4 questions.

- Why should we build sustainable? Why is it so essential to act now?

The issues around the global concept of sustainability and especially the sustainable architecture were collectively discussed.

- What can we learn from vernacular architecture to develop a creative sufficiency?

„More with less” is one of the key words representing low-tech architecture. In order to find the right arguments to convince clients, craftsmen, firms and users, the participants looked at different manifestos (examples: Laurie Baker principles, Laufen Manifesto, Manifesto for happy and creative sufficiency).

- How to build with earth, wood and other biobased materials?

Sustainable architecture has to fulfil its functions and satisfy its users. It should require little energy and be adapted to its natural, social and cultural environment. The specificities of local, renewable materials (earth, stone, wood, bamboo, straw, reed...) and their use were studied in detail. Finalists of the TERRA Award or the FIBRA Award were analysed in order to understand the process which brings to a more sustainable world. These International buildings demonstrate how it is possible to achieve beauty and to create specific identities with little means.

- How is it possible to achieve the ecological/social transition at the scale of a region?

The analysis of what happened in Vorarlberg (Austria) in the past 40 years showed how a region can achieve an energy autonomy and, more globally, an ecological transition and which are the involved stakeholders.

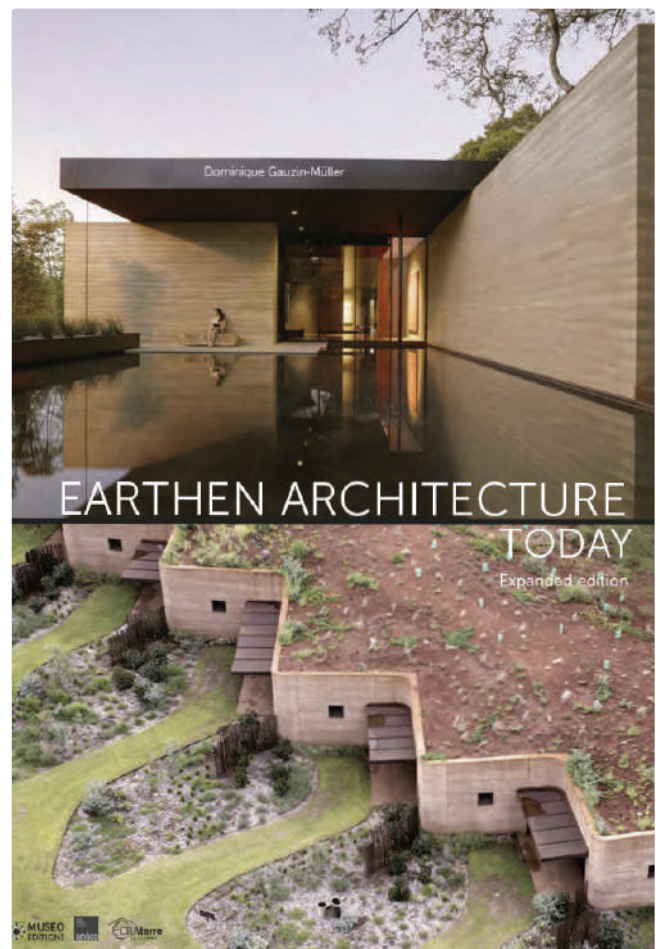
In the 20th century, we discovered that we have to “think global and act local”, we should now act local for a global change.

In this module the participants reflect about the many subjects related to sustainable architecture and developed their knowledge and therefore their self-confidence on those topics. The aim is to build in the group a “creative empathy” that they can use in their professional life.

Dominique Gauzin-Müller



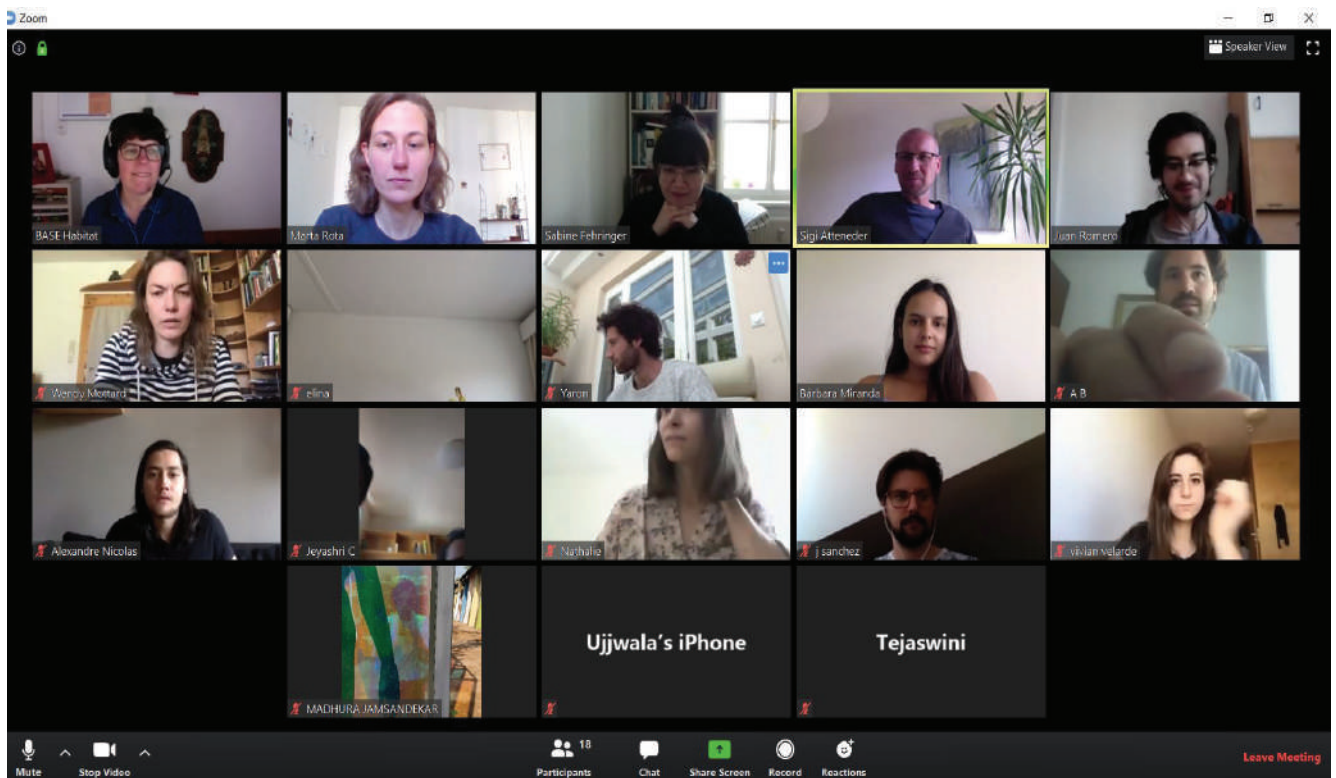
Publications TERRA and FRIBRA Award



Credits: TERRAFIBRA award



Distant learning



2.5 Lucía Perianes

Teaching period: 2.06.2020 – 02.07.2020

Module title: Fundraising

The aim of this module was to acquire the tools and know-how needed to create and manage a crowdfunding campaign. Within this framework, the participants learned how to build a real campaign to collect funds for a social project. As part of the topic, they got acquainted with basic terminology and concepts in fundraising and project promotion.

The first session was about theory behind fundraising. Together with Lucía, the students looked at the different possibilities and discussed the different options within the crowdfunding online platforms. Looking at some examples of successful crowdfunding campaigns, they chose the best option and defined the goal for the campaign.

In the second session, they created a campaign on the platform *wemakeit.com* entitled Feed the hunger #COVID-India. Information and images were prepared, and the campaign was launched.

The campaign did not reach enough donors because it was not well promoted.

Link of the campaign: <https://wemakeit.com/projects/feed-the-hunger-covid-india>

we make it

Log In



Feed the Hunger #COVID-INDIA

The COVID-19 lockdown has gravely impacted the lives and livelihoods of daily wage workers in India. Help us raise funds to supply basic food items to such families and prevent imminent starvation.

A crowdfunding project by Students of BASEhabitat PostGraduate Degree, food, community, and kids / youth, Mumbai and Linz.

About Backers 28 Comments 4



Project Status

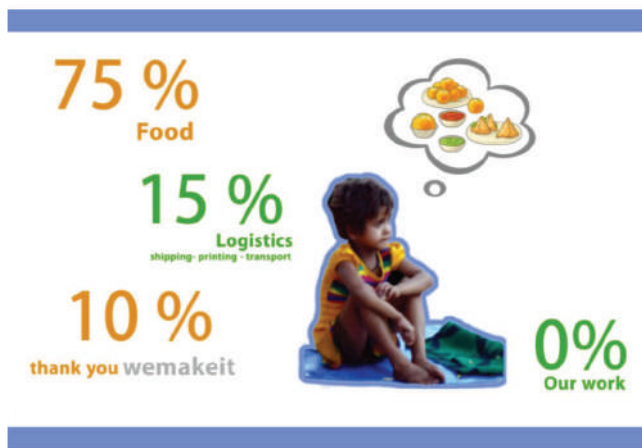
1'214
of EUR 5'000 pledged

26
backers

24 %
percent reached

Unfortunately, this project ended unsuccessfully on 17/7/2020 17:00.

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Crowdfunding campaign

Credits: Participants Postgraduate Degree

3 WORKSHOPS

3.1 BASEhabitat hands-on workshop

Date: 13.07.2020 – 17.07.2020

Module title: Earth construction

Location: University of Art and Design Linz

Tutors: Dominik Abbrederis and Marta Rota

During the week-long workshop, the participants learned about earth as a construction material discovering different types of mix.

Touching and experiencing the material, they learned how to make field tests (biscuit test, cigar test, sedimentation test) and to understand which earth composition is good for each technique.

The workshop focused on two techniques: rammed earth and adobe.

During the adobe workshop, the participants made adobe blocks experiencing traditional technique and they built a 1:1 mock-up of a wall.

In the rammed earth workshop, they built a formwork and made their own dumper to compact the material.

The participants realized a 1:1 furniture in rammed earth.

The practical sessions were enriched with theoretical information. The students started to familiarize with the material in anticipation of the work on the construction site.



Workshop setting at Kunstuniversität Linz



Feeling the material and its composition



Carazas test





Rammed earth workshop at Kunstuniversität Linz



Adobe workshop at Kunstuniversität Linz

3.2 Martin Rauch

Date: 24.08.2020 – 28.08.2020

Module title: Rammed earth workshop

Location: Lehn Ton Erde, Schlins, Austria

The workshop week was a dense introduction to the world of Vorarlberg's building culture. The participants got to know Martin Rauch's environment and they had an insight into the company Lehm Ton Erde, working with different applications of earth techniques.

With Martin Rauch's team, they made rammed earth walls for a bench for the workers, placed in the basement of the Werkhalle in Schlins. They also had the opportunity to visit House Rauch that was completed in 2008.

Two evenings were spent together cooking and discussing the future of earthen building, reflecting on sustainability and social responsibility as an architect, planner and designer.

This workshop was engaging and the students had a great time participating.



Werkhalle in Schlins



Preparation of the base of the bench



Construction of a rammed earth wall



Construction of the formwork



Rammed earth base



Placement of the prefabricated walls in the basement



Construction process of the walls



Visit of Martin Rauch house



Discussion with Martin Rauch and Anna Heringer at Martin's house

4. Construction site in Altstätten, Switzerland

September - November 2020

Under the guidance of the guest professor Jan Glasmeier and the BASEhabitat construction manager Dominik Abbrederis with the support of the assistant Marta Rota, the participants designed and built a multi-purpose pavilion in Altstätten, Switzerland.

The pavilion is located inside a nature garden, where a variety of different type of vegetables are grown on an area of around one hectare. The pavilion is designed to provide shelter from sun and protection from wind and rain. The area under the roof is spacious enough to not only host workshops and other activities related to gardening work but also to provide resting space for employees of the local company. A freestanding adobe wall on an elevated open terrace overlooking the nature garden is the main feature of the pavilion. The adobe wall is build using soil excavated from the garden. It is defined by niches and shelves, which can be either used as display or storage, a foldable table as well as an integrated seating opportunity.

The main challenge of the project was the use of locally available building materials and the reuse of recycled materials from the client's company and the surrounding area.

During the different stages of construction, students learned how to build with clay, straw and wood on a real construction site. Studying and discussing architectural solutions and developing details on site was part of the process. The practical work was supplemented by critical reflection.

During the Nina's month, the students wrote their Manifesto for the construction site:

Our main goal is to explore the potentials and the limits of materials, connections and details while supporting a process to create a functional and meaningful project.

Therefore, we want to work with low-tech building principles, be guided in the construction process, learn different building techniques (traditional ones among them) and learn about the impact of our materials/construction techniques choices. And of course, we want everyone to stay safe, healthy, happy and respectful with each other!



View of the niches, shelves, folding table and bench



View of the back facade with recycled clay pipes used as decorative elements



View of front facade of the pavilion looking towards the nature garden

4.1 Jan Glasmeier

Teaching period: 31.08.2020 – 9.10.2020

+ 9.11.2020 – 25.11.2020

Module title: DesignBuild

Due to international travel restrictions due to the Covid-19 pandemic, BASEhabitat and Karl Zünd foundation agreed to collaborate on a multi-purpose pavilion design and build project in Altstätten, Switzerland.

The goal was, that during the different stages of construction, students would be exposed to learn different construction techniques, use of relevant tools related to the work with clay, straw and wood and experimenting with a variety of other locally available construction material.

During the first month on site in Switzerland, students had not only to design the pavilion, but also to work parallel on different tasks on the construction site.

During the process we went through the following steps:

1. Adobe production

After finalizing the location of the pavilion, we started to produce adobe bricks by using soil excavated from a natural pond in the garden. We produced around 1.750 adobe bricks, while continuously working on the final design of the pavilion. The dimension of each brick was 32 x 15 x 8 cm.

For the formworks we recycled wood from few broken pallets that we found inside a container for waste material. In total we fabricated three formworks which resulted in a maximum production of 250 bricks per day. The drying process took around 10 days. The bricks were protected by a roof and we turned them various times to ensure they were sufficiently dried. Once completely dried, we stored all bricks on pallets in an adjacent warehouse and we moved them later to the construction site.



Adobe production process



Making the mix



Formwork made with recycled wood



Drying process

2. Excavation and foundation

The construction pit was excavated to a level of -1.00 meter to make sure that the base of the foundation would reach the frost-free zone. To prepare a strong base for the adobe wall, we filled and compacted the construction pit with loose gravel before preparing a bespoke formwork for the wall foundation. The reinforced concrete foundation has a width and height of approximately 50 cm.

For the foundation of the timber roof construction, we utilized concrete pipes with a diameter of 40 cm. Those concrete pipes were placed inside the construction pit and we filled them with concrete after placing the timber frames of the roof. After placing the formwork, the foundations were poured using ready-mix concrete.



Excavation



Placement of concrete pipes as foundation for the timber roof construction



Building the formwork for the foundation wall



View of the formwork and concrete pipes



Pouring cement





Detail of the formwork



Detail of the foundation



Dismantling of the formwork of the foundation wall

3. Adobe wall construction

For the 50 cm thick adobe wall, we decided to use a combination of a Dutch bond with an English bond, alternating runners and headers. We estimated a total of twenty-two rows of bricks to reach a wall of 2.20 meters high. For the mortar in between each row and brick we prepared a mix of finely sieved soil with sand and straw. Due to the lack of adobe bricks to reach that height, for the final three rows at the top of the wall we used locally fired bricks. Producing more adobe bricks during rainy and cold autumn days, it would have resulted in delaying the construction process.

After completing the wall construction, we applied two layers of clay plaster on the inside wall using a mix of finely sieved slag, fine sand and fine cut straw. The first layer was rougher than the second one, which was the finishing layer. To emphasise the visibility of the aggregates inside the clay plaster, we applied different brushing techniques.

For the final layer on the outside wall on the exposed northern side of the pavilion, we invited Christian Giongo, a local lime plaster specialist, to guide us through the various steps of applying lime plaster to the adobe wall. The process was characterized by applying two layers of lime plaster to the wall adding in the last one coloured pigment.



Laying adobe bricks



Preparation of the earth mortar



Laying adobe bricks under the supervision of Jan Glasmeier



Adobe wall construction under the supervision of Dominik Abbrederis



Placing recycled clay pipes on the back of the wall



Placing the table frame inside the adobe wall



Fixing the table frame





Applying lime plaster on the outside wall



Lime plaster workshop with Christian Giongo



Lime plaster workshop



Clay plaster workshop with Dominik Abbrederis



Corner detail



Clay plaster on the inside wall

4. Green roof construction

The roof structure including columns, beams, joints and roofing, has been designed with the support of Norbert Ammann, a local carpenter from Oberriet. His insides and experience helped us to decide which wood dimensions to choose, which connection details and joints are appropriate for this type of construction.

For the preparation and cutting process of all structural parts we had the opportunity to work inside a wood workshop where we were able to use professional cutting and drilling tools. The working space had been offered by Manser, a local woodworking company. Within a week we managed to cut and assemble all the structural elements of the pavilion roof. During the following weeks we moved all the preassembled structural parts to the construction site and with the help of a small crane, the roof structure was placed into the point foundations.

For the filling of the extensive green roof, we collected and reused substrate, moss and plants from a nearby factory building owned by Karl Zünd.

5. Wooden Floor Installation

For the pavilion terrace we had an initial plan to use only natural stones collected from the nearby area and arrange them in a bed of sand to provide a solid floor base to the pavilion. Unfortunately, we realised that the number of stones was insufficient, and that cement would be needed to stick them together.

In the end we decided to have an elevated wooden floor. Norbert Ammann, the local carpenter, supported us by tailoring all necessary wooden pieces and joints at the wooden workshop.

Afterward we were able to seamlessly install the wooden floor and skirting detail on site.



Credits: Jesús Sánchez Díaz-Hellin



Timber roof construction under the supervision of Norbert Ammann



Preparation of the elements



Cutting

Credits: Marta Rota



Measuring



Preassembly and transport of the elements to the construction site



Preparation and assembly of the columns and beams



Wooden frame of the roof

Credits: Jesús Sánchez Díaz-Hellin



Assembly of the structural parts on the construction site with the help of a small crane



Assembly of columns and beams on the construction site



Assembly of the frame on the construction site





Green roof

Credits: Jesús Sánchez Díaz-Hellín

6. Additional works

Besides working on the pavilion construction, the students got involved in several other smaller projects at the “Naturgarten”.

The group learned to build a natural stone wall using sandstone by Werner Strub.

The following weeks, some students continuously worked on a small natural stone wall, which could be used as a seating bench around a fire space.

Eveline Dudda, the person in charge of the vegetable garden, requested a cleaning area, where freshly harvested vegetables could be weighed, washed and prepared, before using them at the company’s kitchen. We supported the project by excavating foundations, erecting metal frames, placing wooden floorboards and attaching translucent polycarbonate roof sheets.

On the rear side of the “Naturgarten” two shipping containers have been used to store gardening tools and a variety of construction material for the pavilion project. By using leftover pieces of the pavilion wooden floor and polycarbonate sheets, we managed to build a small pergola roof that protect the space between the two containers. The rear side of the containers, which opens towards a pedestrian walkway, has been closed off using left over floorboards as wall elements. This will be used as an information and announcement board for general event happening inside the garden.

For updated information about the garden:

<https://nanugarten.ch/>



Construction of the working area

Credits: Jesús Sánchez Díaz-Hellín



Working on the natural stone wall



Small pergola roof

5. Experts, sponsors and partners

Teaching period in Linz

Bengin Dawod

Bengin Dawod is an architect and urban designer, born in 1982 and currently practicing in the architectural bureau 'Common Affairs'. He advises the city of Amsterdam on the strategy development of the refugee camp in Jordan, and is a co-founder of Ondertussen. He initiated the Soul of the City project which is focused on the reconstruction of post conflict cities. Which asks beyond current practices and involves a wider set of disciplines than professionally trained architects and urban planners.

website: <http://livingaleppo.com/>

George Foden

BRE Trust (Building Research Establishment)

Expert of QSAND (Quantifying Sustainability in the Aftermath of Natural Disasters) a self-assessment tool to promote sustainable approaches to relief, recovery and reconstruction after a natural disaster.

website: <https://www.qsand.org/>

Christoph Lüthi

Head of the Department Sanitation, Water and Solid Waste for Development' (Sandec).

Eawag is the Swiss Federal Institute of Aquatic Science and Technology and is concerned with concepts and technologies for dealing sustainably with water bodies and with water as a resource.

website: <https://www.eawag.ch/>

On the construction site in Altstaetten

Werner Strub

Blacksmith

Norbert Ammann

Timberman

Christian Giongo

Lime plaster specialist

Eveline Dudda

Vegetable gardening specialist

SPONSOR AND PARTNER

- **Karl Zünd Stiftung**
Industriestrasse 8, CH-9450 Altstätten, Switzerland
www.karlzundstiftung.ch

Board members

Karl Zünd

Karl is Chairman of the Foundation board. Founder of the Zünd group (www.zund.com), chairman of the board of directors of Zünd Holding AG and Zünd Systemtechnik AG.

Monika Wohler

Monika Wohler is Vice-Chair of the foundation board. Former deputy Rector of the St. Gallen University of Applied Science, head of the Social Work Department.

Jennifer Jensen-Zünd

Jennifer is member of the Foundation board. Member of the Board of Zünd Holding AG. Expert in traditional Chinese medicine, acupuncture and nature healing.

Dora Züger

Dora is responsible for the administration of the Foundation.

- **Verein Naturgarten Eisch**
website: <https://nanugarten.ch/>



Credits: Erwin Wagenhofer

BASEhabitat

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Head of BASEhabitat

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Studio Management

Ulrike Schwanter

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