

Team Extension for Sustainability

# PRESS KIT

March 2021

**X4S**  
EXTENSION FOR  
SUSTAINABILITY

 solar  
deca**thlon**  
europe **21**  
WUPPERTAL GERMANY ...goes urban!

# THE PROJECT

Since fall 2019, Team X4S - Extension for Sustainability of Biberach University of Applied Sciences, is participating in the international competition Solar Decathlon Europe 21. The final of the competition will take place in Wuppertal in June 2022.

To create more living space within the city without sealing more land, we are extending the existing building of Café Ada in Wuppertal by adding four additional floors. We will then construct one representative residential unit of our design for the final of the competition.

The project's innovations are aimed at drastically reducing carbon dioxide emissions from buildings in urban neighborhoods while maintaining or improving the socio-cultural environment.

For the extension of Café Ada, our sustainability concept is based on sufficiency, efficiency, consistency and resilience. These ideas are pursued in three sub-areas: Architecture, Energy and Construction.



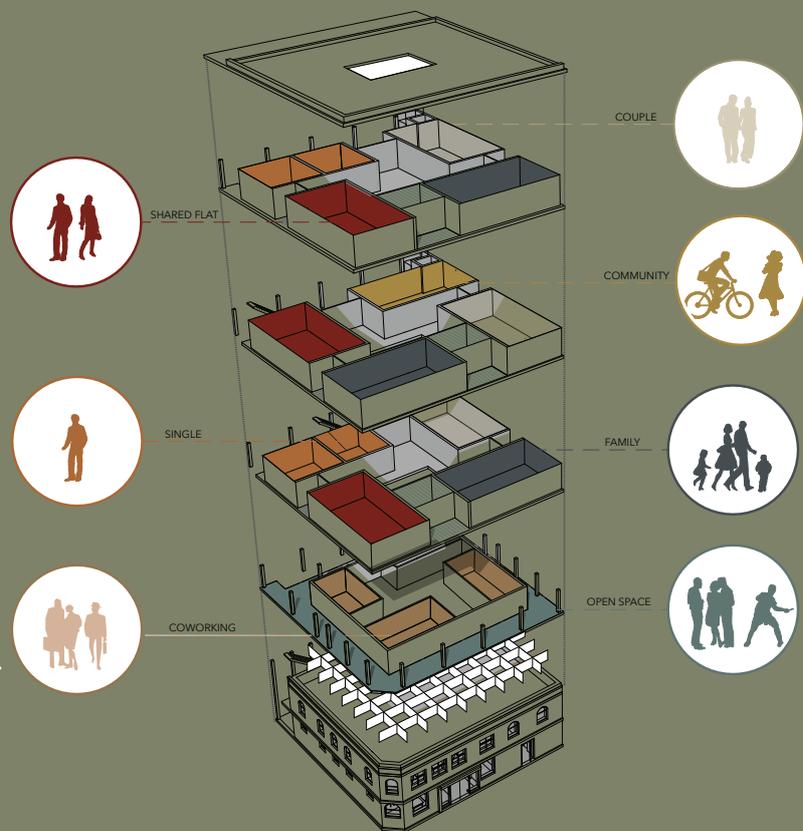
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We are using the existing building structure to meet the growing need for living space without sealing additional areas.

# THE OBJECTIVES

Our aim as a team is to create a solution for climate change in the urban context. This solution excels in terms of sufficiency, efficiency, consistency and resilience. We have to rethink our view on cities and to change the built environment in order to achieve greater sustainability and address social and economic demands at the same time. This is where the extension of cafe Ada acts an example for a transferable approach.

Densification solves urban issues like excessive land use, increased traffic due to spread-out cities or social isolation. The design focuses on residents who are interested in social participation. With small but expandable floor plans, the building provides living space for the growing demand for one or two-person households as well as for small families. We reduce the floor area per person and maximize common areas for flexible use.



We create flexible floor plans, providing living space for the growing demand for households of different sizes.

# THE OBJECTIVES

Cost-effective and fast to build constructions can be achieved by solid timber elements. A great share of prefabrication, minimal loads and separable components are advantages of this construction. Also, solid timber constructions enable high fire protection that we need for multi-storey extensions.

The engineering and construction concept is aligned along the following principles: Reducing heat losses by a highly insulated building envelope which is opti-

mized for solar passive gains. Next, active use of solar energy on façade and roof to produce heat and electricity. Also, a grid friendly operation is enabled by storage systems in combination with an intelligent management system.

To make sustainability affordable, we make use of existing efficient technologies integrated in a highly efficient and resilient system design. Then, the components of the system are used multifunctional wherever possible.



The wooden building will sustain itself by reducing the energy demand and resource consumption and by generating solar energy on roof and facade.

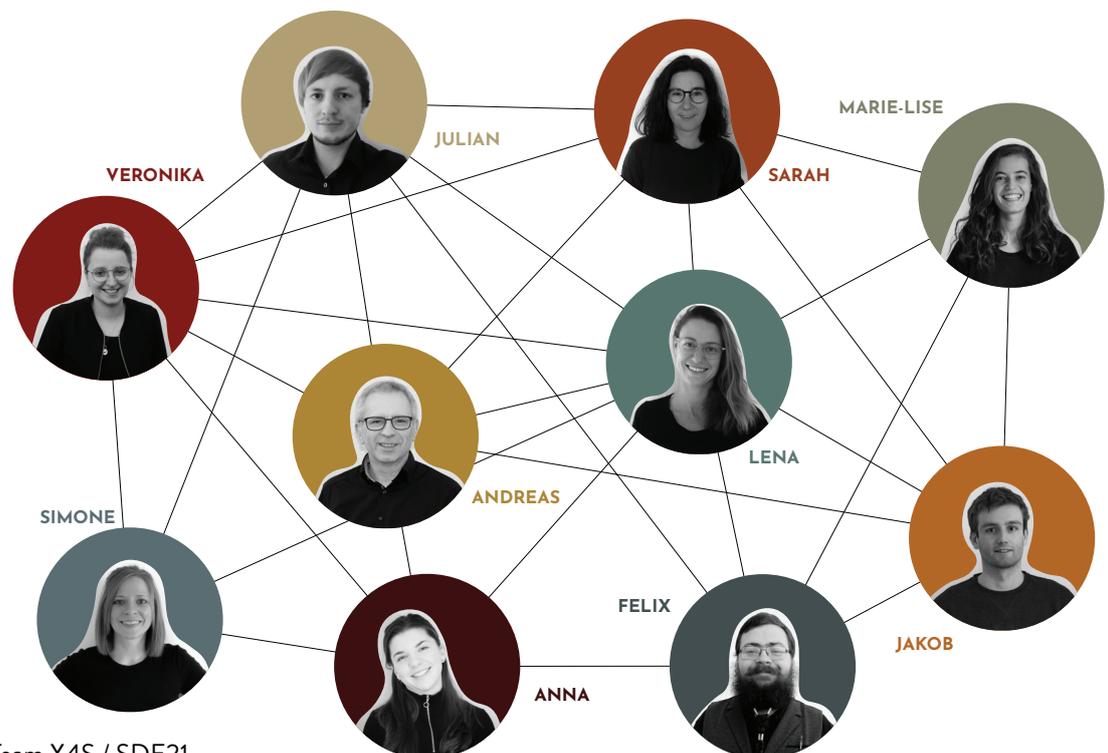


# THE TEAM

Our interdisciplinary project team consists of energy and civil engineers, project managers and architects. Students work on the project with the support of professors. Different institutes of the Biberach University contribute to the progress of the project with profound expertise, innovative approaches and practical experience. These include the Institute for Timber Construction, the Institute for Applied Research, the Institute for Education and Transfer as well as the University PR and Marketing Team. The SDE21 project permeates the entire university and combines subject-specific competencies to create innovative solutions.

With growing tasks and increasing workload, our core team has also grown. With the team, which now consists of ten members, we are able to work continuously and purposefully on the competition entry throughout the year.

Due to the different specializations and practical experiences of the individual team members, we can rely on professional competence in areas such as public relations, project management or visualizations.



# CURRENT STATE

## TEAM-WORK

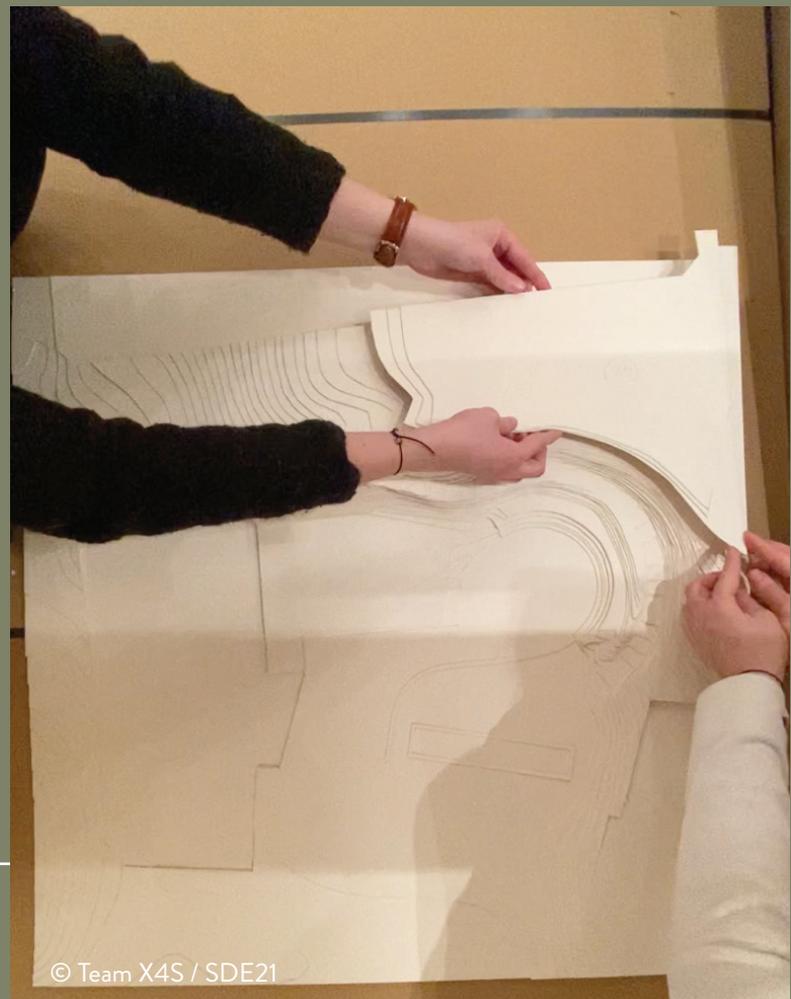
Due to the Corona pandemic, communication within the X4S team has been almost exclusively digital. The core team of Biberach University of Applied Sciences meets once a week to discuss the current status and project progress. Since some of the members now live almost 600 kilometers from Biberach, digital communication certainly has its advantages.

## VISIT OF THE PROJECT SITE

To have a better impression of the site and to create content for a video about our project and further imagery for our social media, we spent one entire day in the Mirke district in Wuppertal, where our project is located. By visiting Café Ada, the design plans and ideas were given a more concrete form.

## MODEL BUILDING

The model represents our building design in an urban context. It shows a section of the property with the topography of the immediate surroundings as well as the handling of the existing building of the Café Ada. The choice of material and the level of detail highlight the existing building and the design for the extension.



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Process of the model construction representing the topography of the immediate surroundings and the building design.

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# CURRENT STATE

## EDUCATION

Both in project planning and in the courses, which are tailored to the competition, building aspects become more practical. For example, students will consider integral building design and further develop the areas of ventilation, direct current and automation. Architecture course participants are already thinking about sustainable furniture. Students develop models for tables, chairs, shelves, etc. that are easy to assemble, comfortable to use and fully recyclable.

## MULTIPLE USE

To save resources, we develop components that can be used several ways. One example is the solid wood wall. It is the connecting element of statics, electrical engineering, building physics and interior design. An integrated rail system enables the individual living areas to be supplied with electricity, illuminated and furnished. Furthermore, static elements are used for line routing, the floor structure combines the function of thermal storage, sound insulation and the option of separability.



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In the architectural course “art and design”, Julia Blatz and Felix Pompe designed a lamp using self-made mycelium material.

# DISSEMINATION

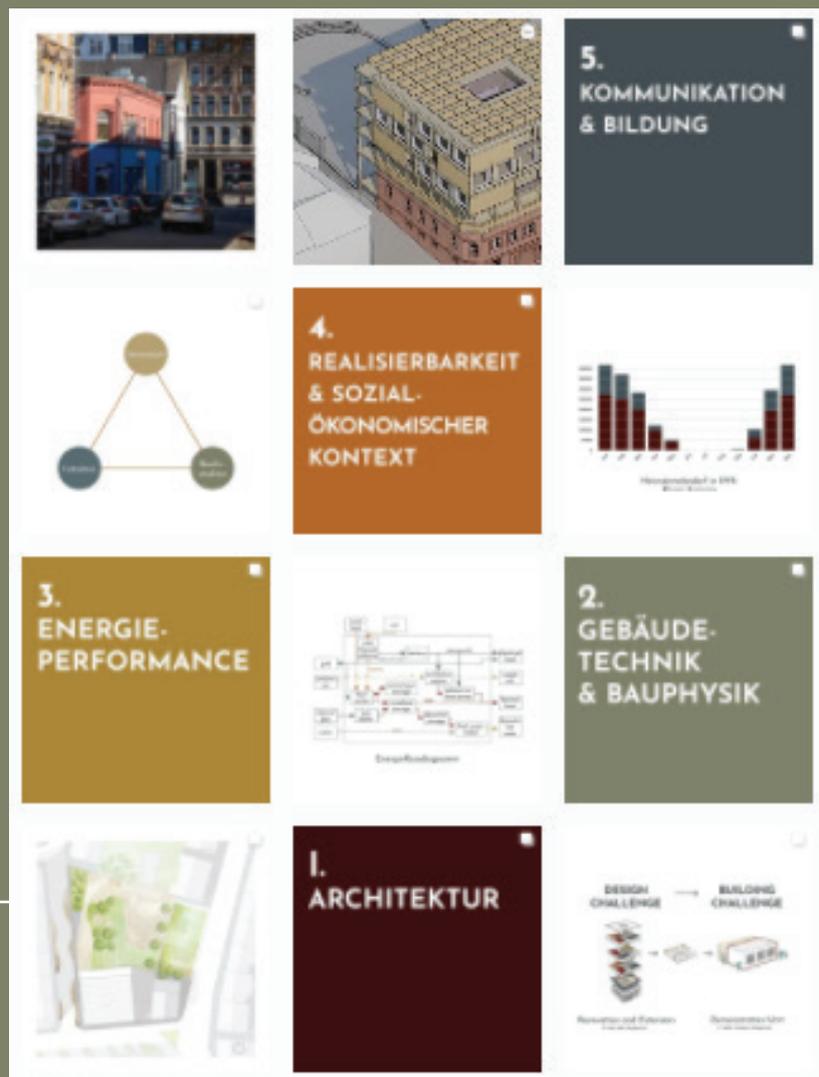
## PRESS

Continuous reporting on the progress of the project as well as press relations are an important part of Team X4S' work. The goal is to address different target and age groups - the general public as well as experts or potential sponsors. We want to offer as much scientific information as possible, packaged in multimedia formats to best reach the general public.

## SOCIAL MEDIA

On Social Media, we are sharing our project objectives, information on sustainable building strategies and current tasks we are working on. Therefore, we create different series like the presentation of the ten contests that we are sharing over a span of several weeks.

Sharing information about the ten SDE21 contests on our Instagram Account @team\_x4s



# DISSEMINATION

## PERSONAL COLLABORATION

We also work together with local personalities who support our participation through their public appearance. These include Biberach Mayor Norbert Zeidler. In a video message, Zeidler has expressed his wishes for our success and perseverance for the upcoming tasks. He emphasized the importance of participation, also for the city of Biberach.

We received further encouragement from the neighboring city of Ravensburg in a video contribution of Ravensburg Mayor Dirk Bastin.

In order to reach the younger target group, Mathias Brugger, German decathlete and student of civil engineering at HBC, supports us in external communication. Due to his sporting career, he is very familiar with the successful mastering of ten disciplines and has already promoted our participation in SDE21 on posters and in video contributions.

## INSTITUTIONAL COLLABORATION

Our cooperation with the **carpentry training center** and the **Karl-Arnold-Schule** currently consists of exchanging know-how and developing sustainable construction techniques as well as preparing and planning the joint execution phase.

## PARTNER

By the distribution of our competition entry, our name recognition and also the interest of regional or thematically-related companies and organizations increases. Thus, the team of Biberach University of Applied Sciences already receives support in the area of software. We are also in contact with companies and organizations in the field of timber construction and wood-based materials. We receive further support from named companies in the energy and technical sector.

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A message from Biberach Mayor Norbert Zeidler on the YouTube Channel of Biberach University of Applied Sciences.



# CONTACT

## PRESS CONTACT

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## WEBSITE

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## INSTAGRAM

[www.instagram.com/team\\_x4s](http://www.instagram.com/team_x4s)



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