

2024



FH Salzburg



UNIVERSITAT
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GREEN LITTLE CIRCLE

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OBI

Lehner
♥ 100% WOOL



**TINYHOUSE
BAUSÄTZE**

JOYS ABRUCH

ORGANOD
NATURAL SURFACES

KB
KARL BRATZKE

BUNTE

SIMONSWERK

AL-KO
QUALITY FOR LIFE

ZRKULAR
THE FUTURE IS CIRCULAR

Raüert
Reisemobile

JamesHardie

Concular

K. H. SUHR HOLZBAU
Zimmerei · Trockenbau · Tischlerei

KIRCHNER
Stahlbau GmbH

WÜRTH

bzn BAUZENTRUM
Oldenburg

bauteilbörse bremen

SIEVEKE

Zimmerei von Seggern
MEISTERBETRIEB

**Weltholz
Sortimente**

werkzeugkiste
Vermietung von Maschinen und Geräten

HEDEMANN
BAUBESCHLÄGE · BAUELEMENTE · WERKZEUGE

01 WHAT IS THE GREEN LITTLE CIRCLE?



- Mobile
- Learning Space /Hub /Class
- Wood Construction
- Made from Reused Materials
- Based on the principles of the Circular Economy

Green Little Circle is a project focused on creating and building a mobile learning hub on wheels. The construction design and solutions are based on the principles of **Circular Economy**. Trying to integrate recycled/reused material and by ensuring that all materials (new or old) can be dismantled again. Green Little Circle is mobile space that is meant to show how Circular Economy **can be integrated in architecture** and building industry.



Green Little Circle:

2023 Winter semester

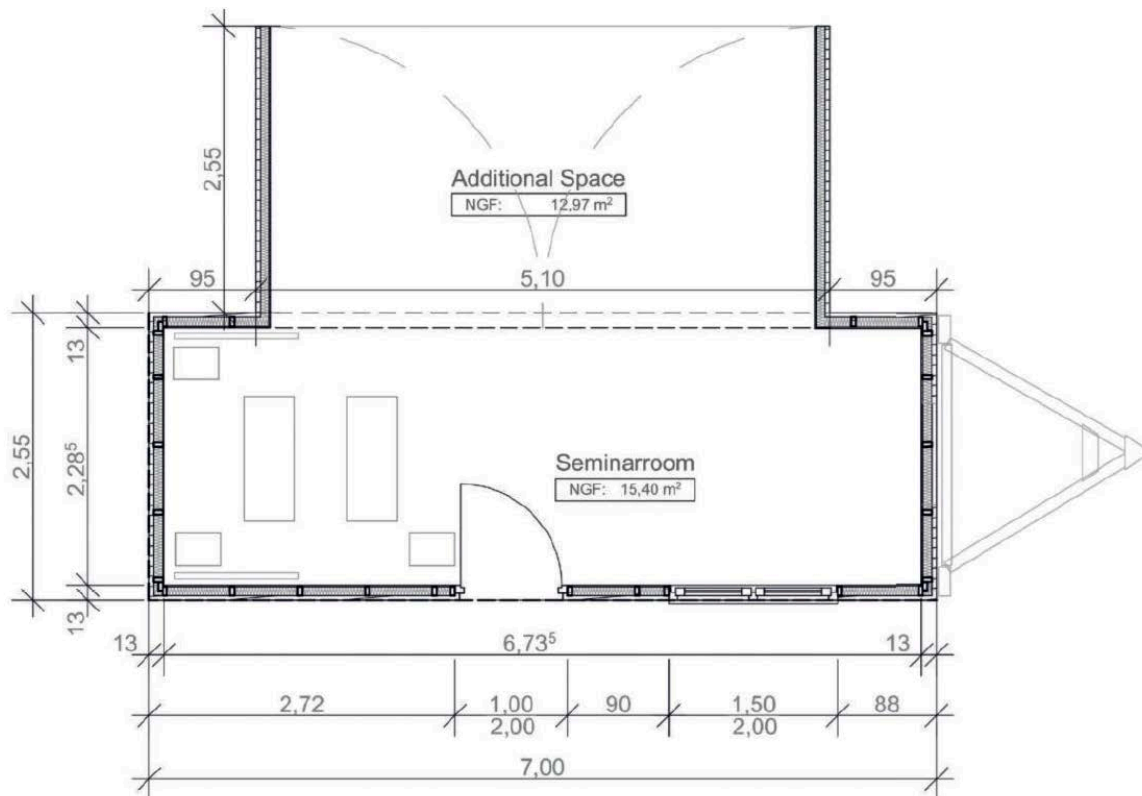
Development design and
preparing materials

2024 Summer semester

Workshop

Construction work in
Oldenburg

Students from **Salzburg**
University of Applied Science
and **Jade** University of Applied
Science worked together on
creating the **design**, finding
sponsors and materials needed.
The Design **plan** were ready and
presented in January 2024 at
Jade University.



Today we had our presentation at the BIM days in Oldenburg 🎉

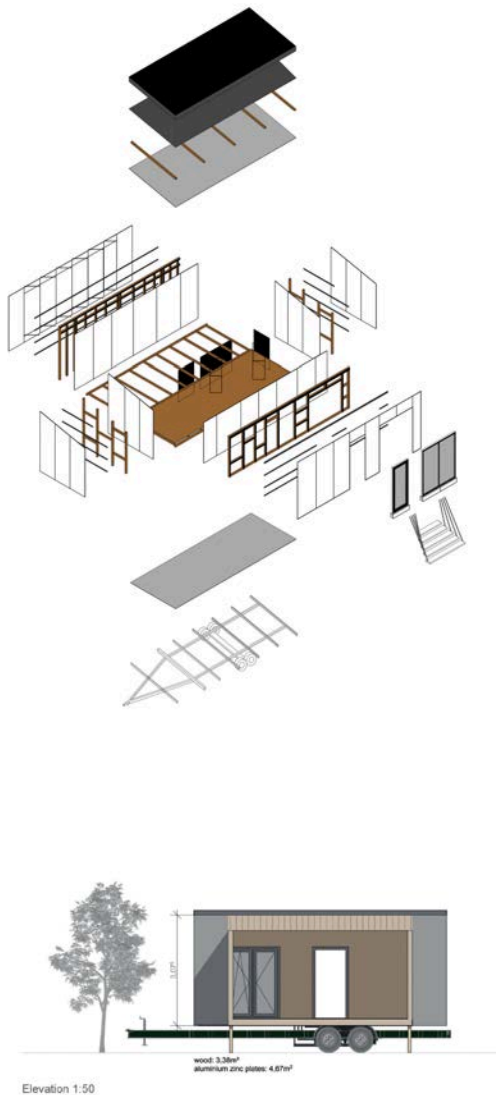
Now we are done with the theoretical work and looking forward to build up the tiny house in Oldenburg in may. The students from Salzburg will also come and join us to build it up 🤝🔨

We will take you along on the following journey. ATDE 🌿
Stay tuned!

#tinyhouse #sustainability #sustainable #ecofriendly #wood
#green #circular #economy



The basic **idea** was to create a compact mobile space for flexible exhibition purposes which is build on a trailer. The entire project was to be based on **cradle to cradle principles**. Large window openings are attached to the long outer side to generate light inside. In order to be able to enlarge the small area of approx. 15 square meters, if necessary, the building opens out to the rear through a **large opening**. In addition, a **pull-out floor** is added. This, together with the fold-out walls of the opening, creates a further room. It increases the exhibition space by **13 square meters** and offers almost twice as much space than the original room. This means we can keep to the small dimensions of the trailer and still have a large space.



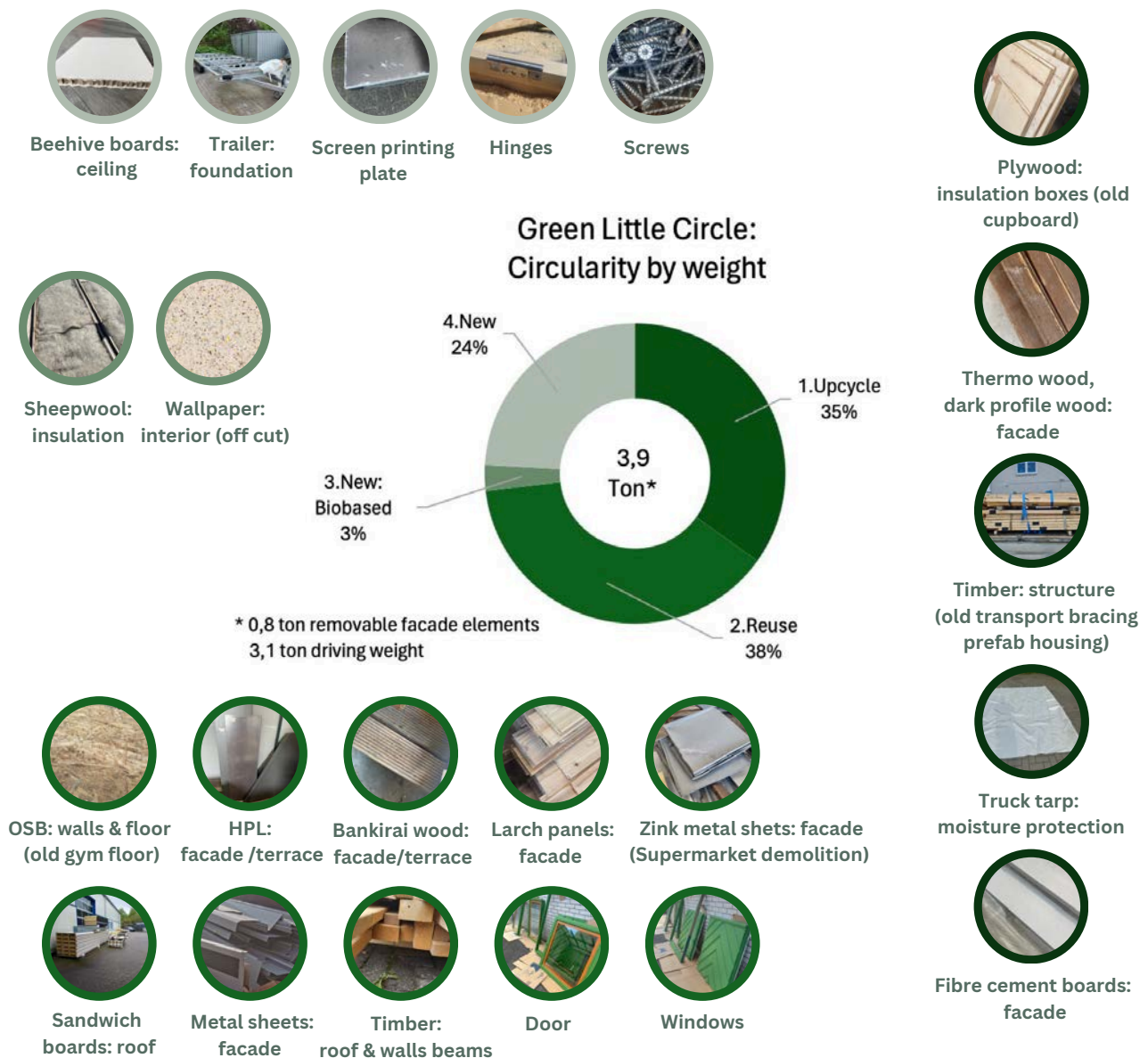
The outer **facade** is also intended to serve as an information point to show both the construction and various materials. The **openings** are provided with the same material at the top and bottom of the openings to stretch the view of the small building. Facade parts made of semi-transparent material are intended to allow the substructure to be seen and understood. Wooden slats as a **recycled material** stretch the building and make it appear larger. The individual facade elements are designed as hanging elements of the same size so that they can also be flexibly exchanged on the facade. The facade elements on the large wall opening can be used as flooring of the extendable floor.

The project Green Little Circle originated from **the BIP Workshop 2023 in Joensuu [Finland]**. There, students from Jade University of Applied Sciences, Karelia University of Applied Sciences, and Salzburg University of Applied Sciences participated in a competition where they developed ideas for a tiny house that used Circular Economy principles. The winning idea was **'The Sailing Classroom.'**



02 CIRCULAR ECONOMY

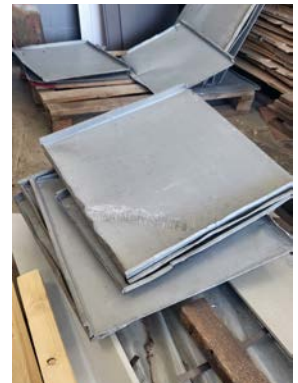
This project meets **Circular Economy** standards as almost everything should be able to be recycled. A Circular Economy building differs from a new building in its design sequence. It is impossible to predict all the materials that will be available, reusable materials must first be found and then incorporated into the building design. Planning a building for a Circular Economy involves changing the traditional design process, which is one of the main challenges that usually needs to be addressed.



Materials that are recycled need to be **checked** for their **quality**, so that the building will last as long as a new building.

03 MATERIALS USED

Material control in circular economy project needs to be a lot stricter than in regular new building, because materials are usually second hand, so some materials can be damaged. Structurally recycled materials should last as long as new materials, if they are taken good care of.



Materials for this project are gathered from construction sites near Oldenburg. Timbers are left over materials of construction sites and have been checked to be in good shape, so they could be used in frame of the project. The windows and door are from old buildings and are checked to be in good shape so we can reuse them. All materials were gathered before Workshop so building could start right away.

04 WORKSHOP IN OLDENBURG



Green Little Circle was done in six separate group which consisted students from **Austria, Finland, Germany** and **Spain**. Groups were Woodwork, Window/door, Façade, Quality management, BIM/material passport and Marketing. Each group had their own tasks to do every day, and group leaders had meetings every day to discuss their problems and what they needed from other groups. Many groups had to do teamwork together because some work depended on other groups.

Woodwork workers were tasked to construct the structure of the mobile learning hub. They started by building the floor. They separated themselves into two groups, one was building the floor, and second one was making the wall elements.

Woodwork



Lamb wool used as insulation



Quality management was tasked to weight the materials, keeps the morning and evening briefings, communicate with other groups and try to resolve their problems.



Frame material



Window

Window/door workers were tasked to clean and repaint the old windows and doors, and then make the fold-out door that opens to the side of the trailer. They started by grinding the paint from windows and doors, and after that they painted them to make them look brand new. After that they made the doors of the larger opening, and in the end assembled them to the frame.

Façade workers were tasked to make the inner and outer façade. Because of tight schedule and weight restriction of the trailer, they had to make façade as removable elements, so when driving the trailer, the façade could be removed and stored inside of the van pulling the trailer.

Façade materials



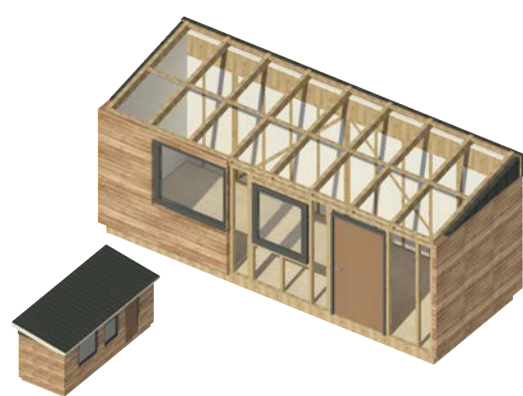
Façade panels



BIM/material passport were tasked to laserscan the trailer and create a digital twin of the mobile learning hub. So, all materials used in the mobile learning hub were documented including their weight. BIM-model was made with AutoCad Revit modelling software.



Instagram account



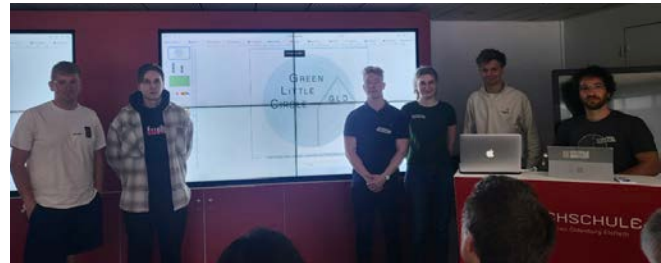
3D Model

Marketing group were tasked to post pictures and videos of whole building process to Instagram account @greenlittlecircle. Interviewing teachers and students about GLC lead them to create an amazing video. They also made this book and an article about Green Little Circle. On the last building day, Marketing group organized a "Richtfest" party for everyone interested and participating.

Day 1

Austrian, Finnish, and Spanish students arrived in Oldenburg the day before. The BIP workshop **started** at Jade University early in the morning on the first workday with a briefing. All the students were separated to different Groups that were woodwork, window/door, façade, Bim/material passport, Quality management and Marketing. Then after the briefing each group had made presentation on what they are going to do in this project. After that we went on the site and started the work.

Morning Briefing

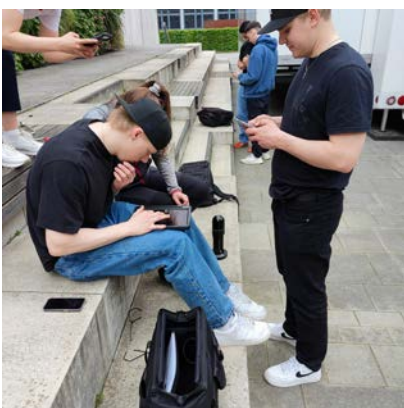
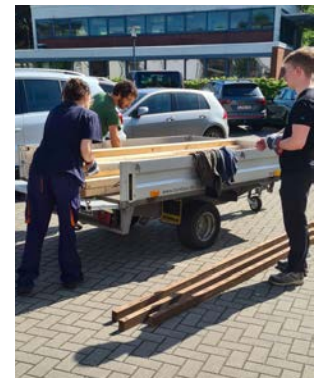


All students presented their group presentations

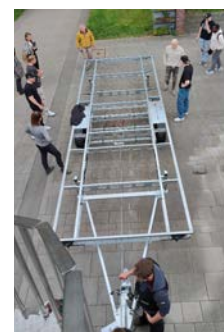
Preparing the reused materials, removing old nails and metal parts



Preparing GLT components



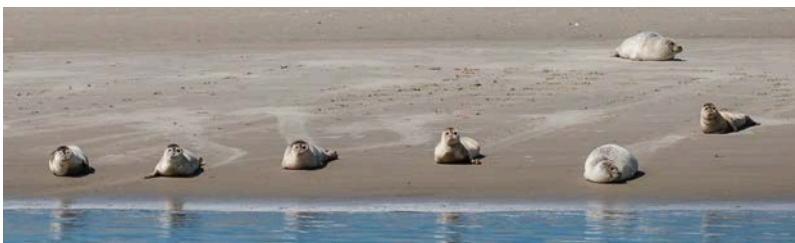
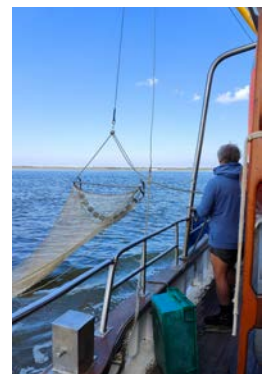
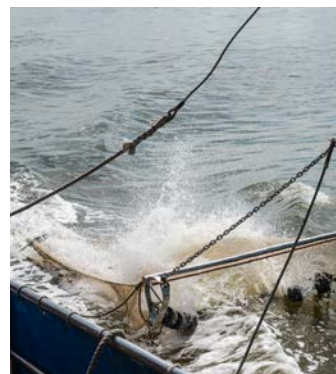
Laser scanning the trailer



Weekend

We had voluntary networking event at **North Sea**. We first visited the harbor of **Neuharlingersiel** and from there we visited the island of Spiekeroog by boat with show fishing and seal bank visit. On the island **Spiekeroog** we visited UNESCO World Heritage Wadden Sea mudflats and had an professional guide with us to tell about the site.

Visiting Neuharlingersiel harbor

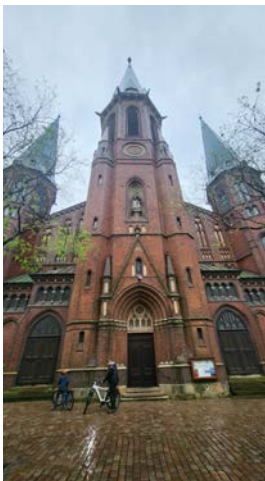


We had free time to explore city of **Oldenburg**. We also had voluntary networking event where we visited important locations of Oldenburg and the history of the city. We visited sites like Oldenburg **Castle**, Saint Lamberti **church** and other points of interest in Oldenburg.

Oldenburg Castle



Saint Lamberti church



Day 2

We started the day with morning briefing and every group worked on their tasks. Window/door group went to workshop to work on the beams of the trailer. Woodwork group worked on the floor and wall elements. Façade group started to make façade elements. BIM/material passport group worked on 3D-model of Mobile Learning Hub. Marketing worked on Instagram and took pictures and videos. Quality management group kept the morning and evening briefings, calculated, and weighted the materials of mobile learning hub, they also were solving problems of other groups. At the end of the day, we had barbeque at Jade University of Applied Sciences own "Kuhbar". We also celebrated our teacher tutor Sebastian Hollermanns birthday!



**Happy
birthday
dear teacher!**



Day 3

After our usual morning briefing... Woodwork group continued on making the floors structure and wall elements. Window/door group were at the workshop working on the frame of the fold-out door and the beam of the big opening, and at the end of the day they had finished the beam, they also grinded the old windows and doors so they could paint them. Façade group worked on façade elements and helped other groups if they needed help. Quality management continued on weighting the materials and documenting them and finding out their origin, they also were solving problems of other groups.. BIM/material passport group worked on making the 3D-model and started to calculate all the materials. Marketing group continued on taking pictures and videos and making the small book, they also did the "Richtkrone". At the end of the day we had the evening briefing.

Frame for the big opening



Façade panels



Wall frame



Attaching the floor to the trailer



Day 4

After our usual morning briefing... Woodwork group worked on the floor and finished it in the end of the day, they also erected the wall elements. Window/door group worked on the frame of the fold-out door and they painted the old windows and doors to their new color. Façade group continued working on façade elements so they would be ready when the walls were ready. BIM/material passport group worked on 3D-model and they finished it at the end of the day, they also counted the weight of the materials and worked on material list. Quality management weighted the materials and started to document the materials and they leaded the morning and evening briefing, they also were solving problems of other groups. Marketing group continued to take pictures and videos and writing the small book and posting the videos and pictures on Instagram, they also started to work on the poster for Mobile Learning Hub. At the end of the day we had the evening briefing.



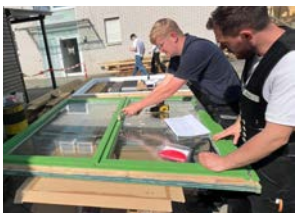
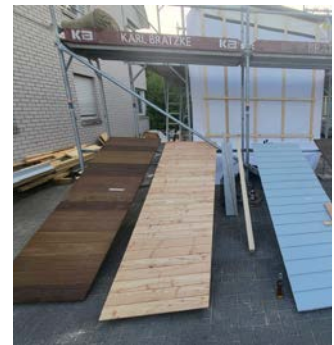
Day 5

This day started with the morning briefing and after that every one started to work on their tasks. Woodwork group started to work on the roof. Window/door group started to install windows, and continued on making the fold-out door. Façade group continued work on the façade panels. BIM/material passport group continued on making the material list for the 3D-model. Quality management continued on weighting the materials, making the material list, and doing the briefings. Marketing group continued working on the article about Mobile Learning Hub, small book, taking pictures and videos and editing them, and posting on Instagram. For lunch we had barbeque, because of a german bank holiday the university cafeteria was closed.

Making the fold-out door



Façade panels



Install windows



Install roof



Day 6

It is our last day working together on building the Mobile Learning Hub. We installed the door and the fold-out doors, finished the roof details, assembled a moisture protection layer in the walls, and glued wallpaper inside. We worked hard throughout the week, and by the end, it looked quite ready. Our workshop concluded with the traditional '**Richtfest**' speech and a closing party. We were honored to have visitors such as the president of Jade University and some sponsors who came to celebrate our achievements. At the end, we watched the final video prepared by the Marketing team. The Green Little Circle is an example of circular economy construction, demonstrating that it is possible.

We can say: "Now we know more; we did it together. We are building sustainably for today and tomorrow. The Mobile Learning Hub will serve as a 'sailing classroom' for cooperation, learning, and working with each other. Let's shape the future together!"



05 FOR THE END

We wanted to share some reflections and insights of the participating students. Their experiences bring out the highs and lows, the challenges they faced, and the moments of growth and learning.

Best Moments

"I mean, the fact that we're actually **building** something, you know? Actually doing something with the material we're getting and not just kind of planning it and not executing it. And the idea, I think, is the best thing that we are kind of showing that you can use circulated material. We're going to work with material passport now. We're going to start with that. So I think that's quite exciting right now."

"Best thing? When I was actually **working** and like the moments before I hit my hand with hammer."

"The Best thing? That I **can name** my professor by his first name now, haha."

"Maybe meeting new people, and now it is good weather, it has been fun."

"Best thing about the workshop is all the people working **together** from all the different countries and they are trying to work in different teams and being together and create something **new**, and yeah, be friendly to each other and **help** each other where it's needed."

Challenges and Learning Experiences

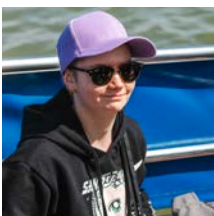
"Worst thing. Well, I guess our project **coordination** and **communication**, that was probably the most challenging, I would say. But there is nothing, you know. It's all **learning experience**, I would say."

"Haha, hitting my hand with the hammer."

"At first it was confusing, who was doing what and like who **managed** this whole project."

The Worst? That I have to work for **whole day**, and that I can't study to my exam, that I have next week, but that's okay.

"The worst thing is possibly if it is not going to be finished, but the **learning effect** is still there, so it's not really the negative thing about there."



BUILDING SUSTAINABLE FOR TODAY AND TOMORROW- SHAPING THE FUTURE TOGETHER.



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Green Little Circle 2024
Oldenburg, Germany