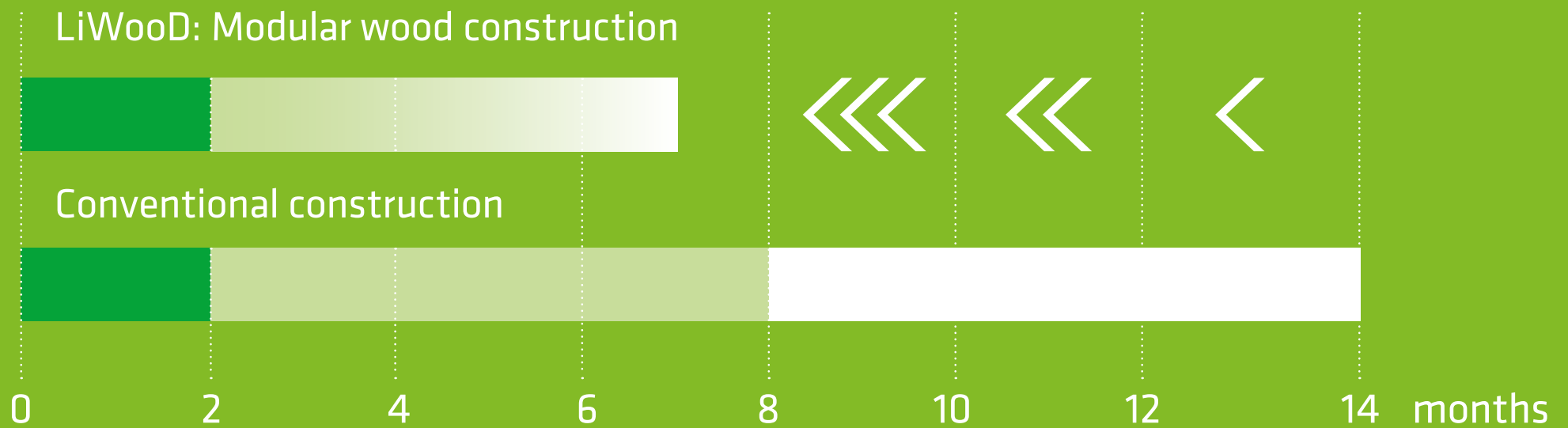


STUDENT
LIVING
TRIER

LiWood
LIVING IN WOOD



Significant time-savings with LiWooD



■ Site installation/foundation ■ Shell ■ Completion



“enercase: living, lecturing, laughing!”

This instructive headline was chosen by our client, the Trier Student Union, who needed on the University campus, a student residence that could accommodate 84 students. It was to guide the project implementation in terms of architecture, design and operational requirements. “Ecological, sustainable, energy-efficient and a maximum level of comfort” were the targets. The sustainable design of the building was considered part of the Student Union’s mission which made it one of the decisive and critical criteria in the tender.

Within barely 4.5 months almost 1,680 square metres of living space were built from the foundation slab upwards. The Trier project was achieved using LiWood’s modular wood construction technique, and the use of resource-saving materials, maintenance surfaces and easy-to-access installations.

LiWood – Living in Wood

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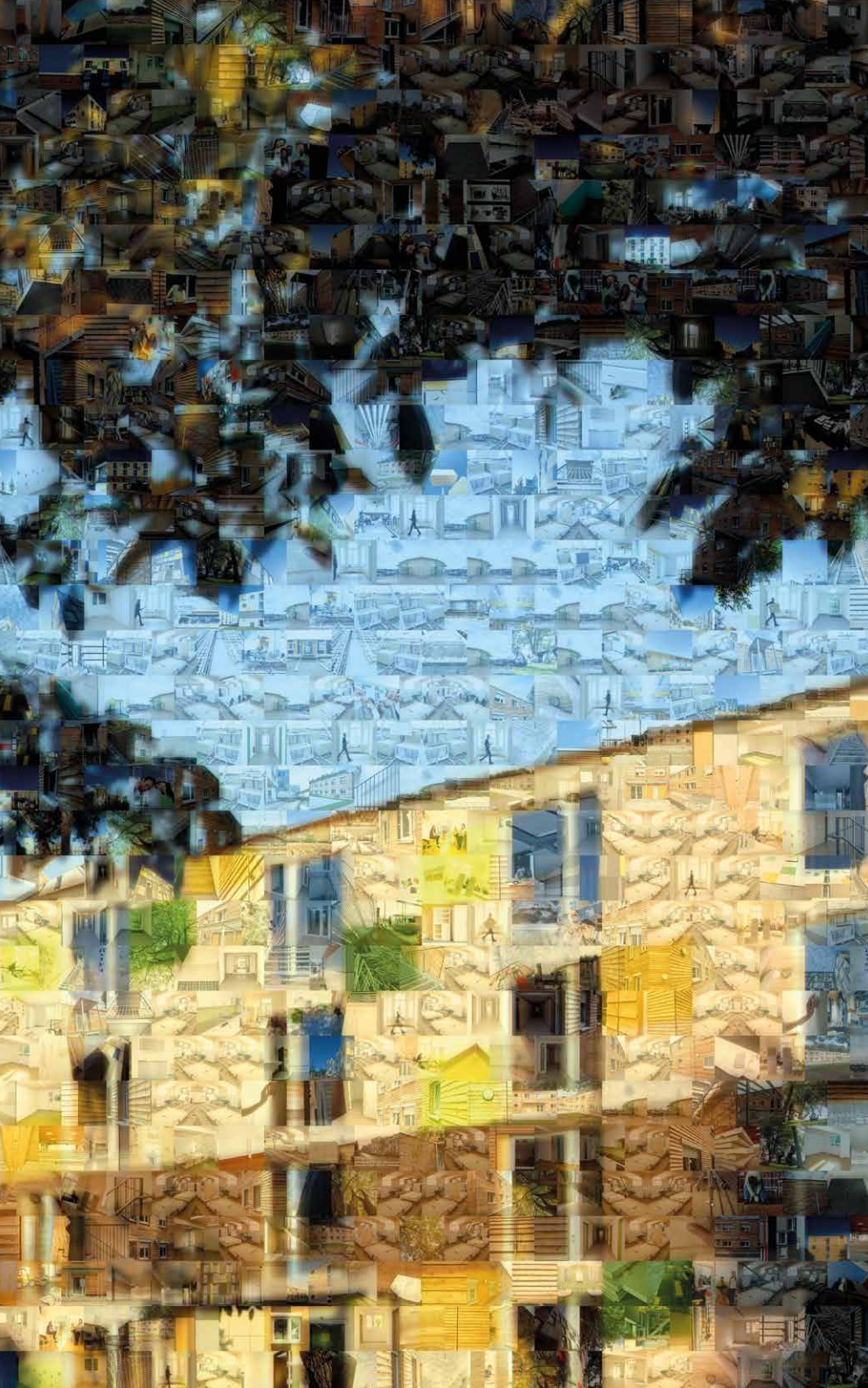
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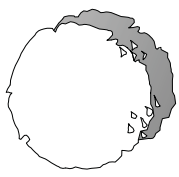


LiWood - Living in Wood - As simple as it is ingenious

We think modular for buildings

Since 2006 we have been planning and developing modular multi-storey buildings as diverse as student apartments, retirement homes, apartment hotels and social housing schemes. Increasingly private and public clients are demanding solutions which consistently put the principles of sustainability into practice. We have specifically set out to create sustainable building projects with the highest quality standards at an affordable price.

Our modules are assembled on site in a field-factory specially developed for this purpose. Supported on rails in the field-factory, the individual components, i.e. cross laminated timber boards, which have been carefully selected according to our exacting sustainable criteria, are transferred to the processing point for assembly. After assembly, the completed modules are taken to the site and put in place. The modules will already have been fitted with the necessary conduits and utility pipework during assembly in the field-factory. Our process allows for the production of up to ten modules a day. Our field factory production is not weather dependent and its use reduces site contamination and keeps environmental pollution to a minimum.



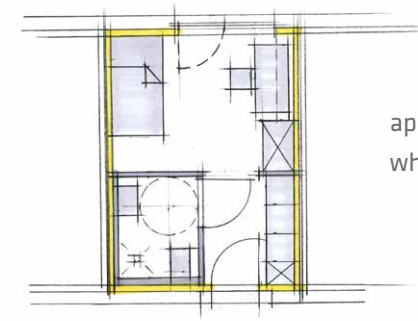
Ebene 1



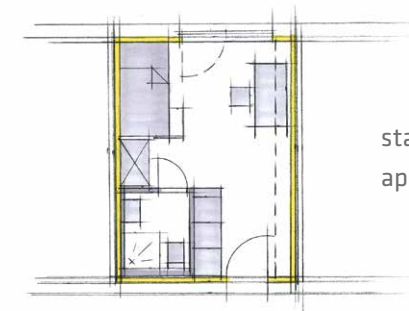
Student living

The two buildings were designed with a view to use space efficiently with minimal traffic areas and harmonious integration of the buildings into the sloping surrounding terrain. Another key aspect of the design was the inclusion and implementation of elements of the Trier Student Union's corporate design. This is reflected in the colours chosen for the interior and exterior design as well as in the energy efficiency of the buildings and their surfaces. The communal areas inside and outside the buildings promote harmonious interaction amongst the students. An iconic red British Telephone box serves as a Book Exchange Centre and stairs with seating steps and spacious open areas create a welcoming, friendly a relaxing environment.

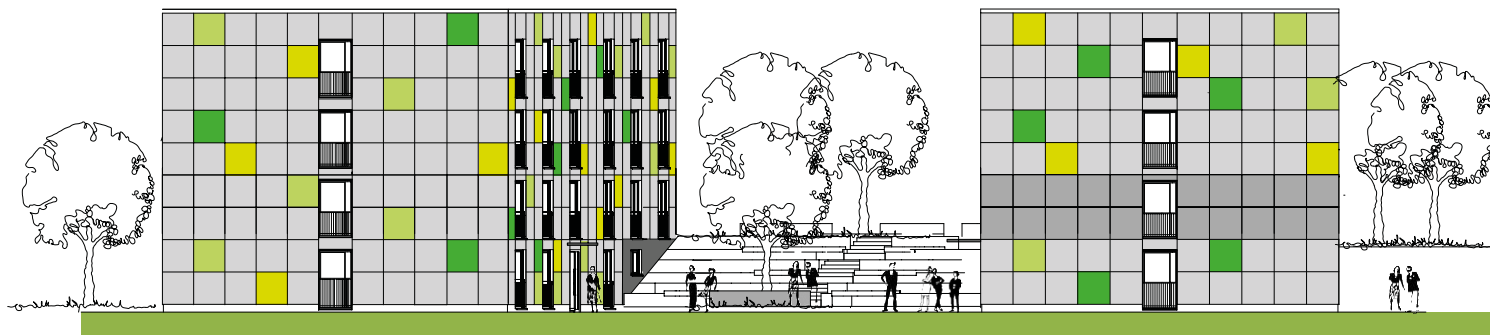
The requirement to have excellent energy efficiency and a long technical service life are met by the excellent access for service to all technical facilities. This is true of the facilities corridor in the basement of each building as well as for the utility shaft in each room.



apartment layout,
wheelchair-accessible



standard
apartment layout



Designed by Grassinger Emrich Architekten, Munich (Germany)

Apartments

enercase consists of 84 fully furnished residential units, 9 of which are wheelchair-accessible. Each apartment has 20 square metres of floor space. It consists of study and sleeping areas as well as a kitchenette and a bathroom with a shower. The furniture was built by the “Caritas-Werkstätten” in Trier, a workshop for disabled people which was involved in the project. In general we have kept apartments simple and modern to give students room for their own ideas without restricting them with a predefined furnishing concept.



Energy column

Can be installed at any location in the apartment and connects to empty conduits which extend in the floor slab. As a result, this supply unit provides easy access for service inspections and/or retrofitting. Sockets and media connections can be installed at the required height.

Utility wall

The utility wall is a combination of useful and pleasant features. It is a metal wall which conceals the buildings vertical utility shaft and allows easy access, when required, by service engineers.

Furthermore, it doubles as a useful magnet board for messages, postcards and souvenirs as well as any study related material which students need to have on display.



Bath

Following the agreed requirements stipulated by the client we installed light-weight prefabricated bathrooms. These are especially durable and easy to maintain and clean. Their all-white interior makes them both modern and timeless.

Outdoor area and Book Exchange

Here we have created an area that is central to both buildings. It has stairs that lead from the inner courtyard up to a 22 space car park which is on a higher level than the buildings. To the left and right of the stairs we have provided seating steps where students can gather to study, socialise and relax. This is where we have also placed the red British Telephone box for discussing and exchanging books.





Bats welcome!

This initiative by the German environmental organisation “Naturschutzverband NABU Rheinland-Pfalz” was launched in 2010. Its aim is to create a space where bats, that are so valuable for our ecosystem, can sleep and raise their offspring. For this purpose, special boxes were mounted on the facades of the new student residence and labelled with the “Bats welcome!” quality seal.

Energy-efficient and sustainable

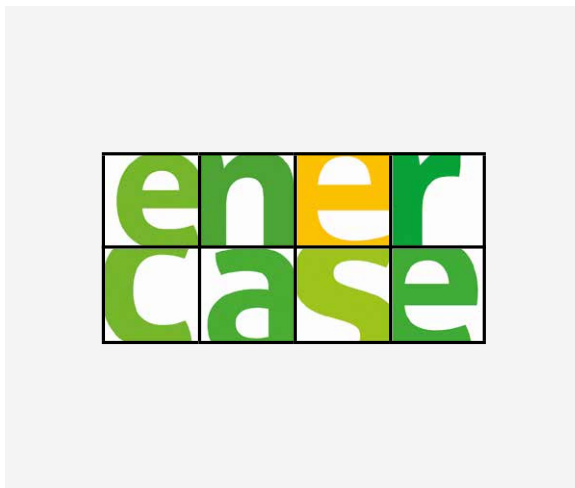
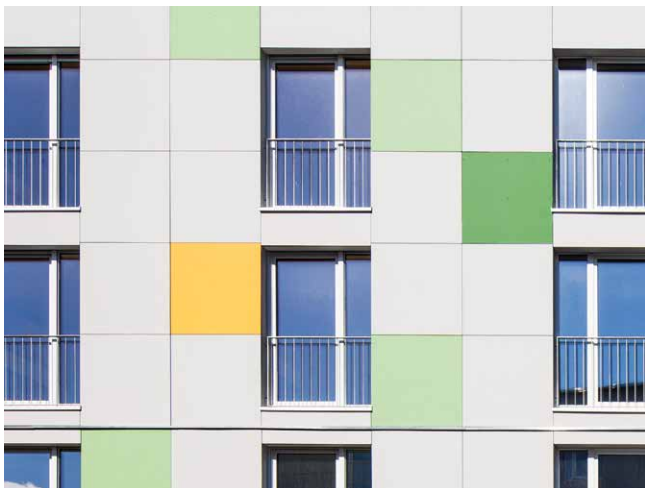


Owing to its good insulation characteristics, wood is the prerequisite for achieving excellent energy-efficiency standards, including the energy efficient house 40+ standard. **enercase** generates energy for heating and hot water on the rooftops of its two buildings, using air-water heat pumps. The decision to mount them on the roof was not based exclusively on design and space saving reasons but because we find it useful to draw heat from the ambient air at the exact spot where a building gives off heat. Air water pumps do not generate any CO₂ emissions, they are environmentally friendly and can be operated at low cost. As much as 75% of the energy actually required can therefore be generated from ambient air – an invaluable contribution to reducing global warming. To provide the energy needed for the heating, we have combined the air-water heat pumps with an additional photovoltaic system on the roof, allowing

the building to produce the electricity for operating the heat pumps (on an annual basis).

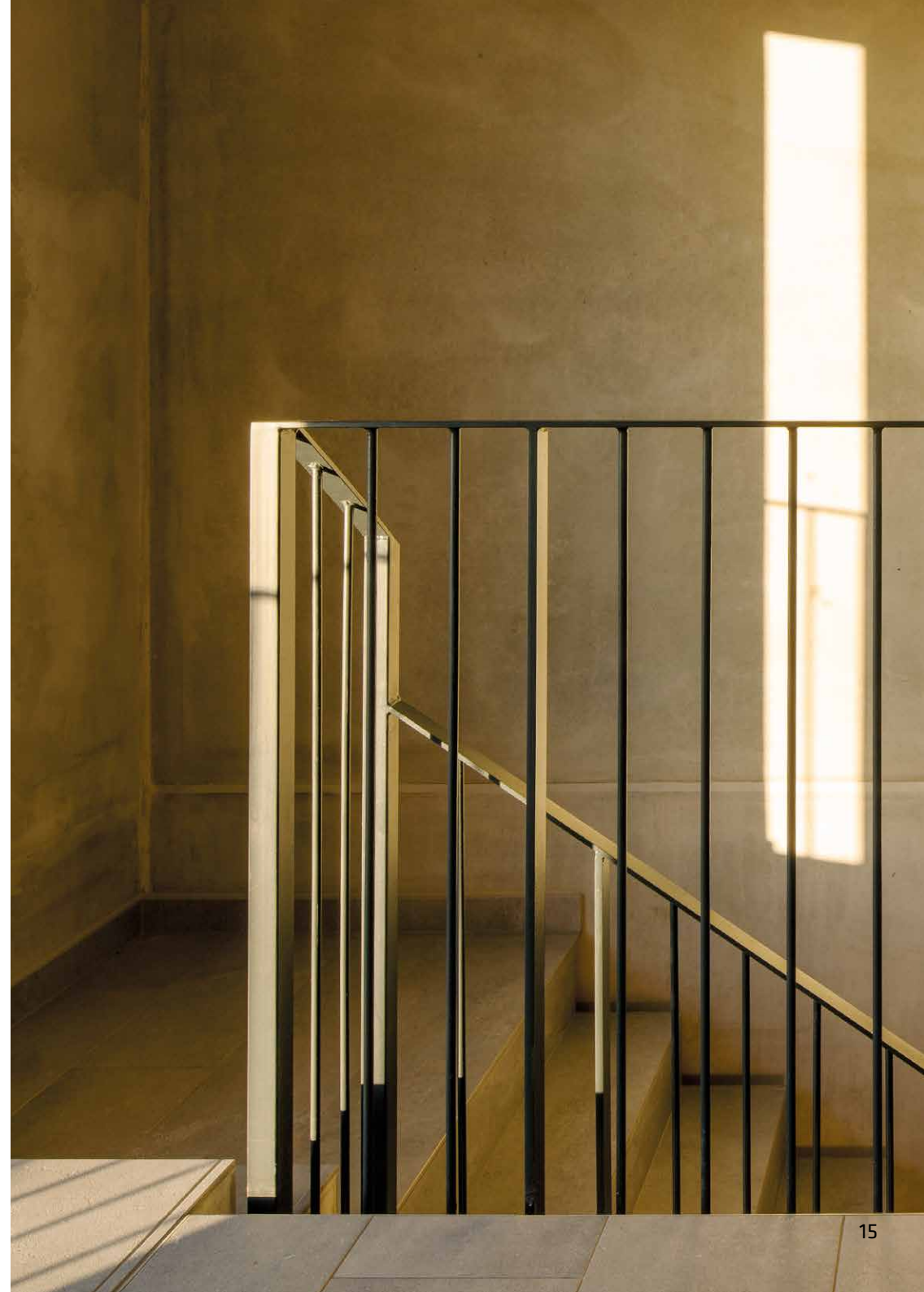
Any excess electricity not required for heat generation will be used exclusively for the building's own power supply needs. Additional benefits are its minimum maintenance, its long service life as well as the fact that it does not emit any CO₂. An accessible utility and installation corridor is provided under the building. From here, the building operator can perform inspections of installations extending from the installations room, through head ends of riser pipes and installation shafts generally accessible for service, on and up to resident's rooms. Besides facilitating repairs, this also makes it easy to replace components of the building services equipment.





Design concept

The colour scheme of the corridors is based on the colours of the Trier Student Union logo. Its various greens and its yellow were the basis for the colouring of the walls of the corridors and the rear ventilated exterior facade. Slender banisters were installed to accentuate the interiors. The materials used are durable, low-maintenance and therefore sustainable. The coloured fibre cement boards in the corridors and the exterior facade are not only easy to clean but also feature a graffiti-resistant coating; the flights of stairs were made from steel-reinforced concrete and are therefore as robust and durable as the linoleum flooring. This reduces subsequent treatment and maintenance works such as sanding and painting to a minimum.



Construction diary

JANUARY TECHNICAL CONCEPT AND DEVELOPMENT

The design and development of the building in cooperation with our architects, specialist planners and the building owner began in January.



MARCH FIELD FACTORY

As early as in March, our field factory which produces the modules was put in place on the campus of the Trier Student Union, and the construction site with the site office was set up.



APRIL BUILDING THE FIRST MODULE

This is how the first module was erected on the construction site in April.



MAY TOPPING-OUT CEREMONY

To celebrate the first “stacked” row of modules, a topping-out ceremony was held in May, with burgers and Bavarian beer.



Construction diary

JUNE FACADE/CLADDING

In June, things were already in place. All the modules had by then been installed and also the facade elements had already been mounted.



JULY INTERIOR WORKS

Interior construction was in full progress in July.



OCTOBER MOVING IN

And so students were able to move into their new residence, ready to begin the winter semester in October, after barely seven months of construction.



enercase - the film

TV report about the topping-out ceremony on 8th May 2015. Interviews

- Lothar Grassinger (Architect)
- Christian Czerny (CEO LiWood Management AG)
- Andreas Wagner (Managing Director Student Union)



Scan QR code or click on the link below:
www.liwood.com/enercase

Technical Data

Client	Studentenwerk Trier AÖR
Architect	Grassinger Emrich Architekten GmbH
Scope of project	turnkey building incl. planning
Building class	4
Construction time	6 months after completion of foundation slab
Completion	mid-September 2015
Gross floor area	2,751 m ²
Net usable area	1,814 m ²
Number of storeys	4
Total number of modules	96
Number of individual apartments	84 (of which 9 are wheelchair accessible)
Technical and service rooms	4
Energy supply	air-water heat pumps, photovoltaic systems
Energy standard	KfW 40 (German energy standard)
Primary energy demand	38.4 kWh/m ² /a
Final energy demand	14.8 kWh/m ² /a
Final energy demand whole building	ca. 36,926 kWh/a
Annual yield from PV system	ca. 46,000 kWh







*Wohl bleibt mir am Ende zum guten Schluss
ein dankender und gratulierender Gruß,
dass viele Bewohner von hier nun zu Fuß
am Stau vorbei und ohne Verdruß
denn da ist hier oben ja nichts mehr im Fluß
doch enercase hält hier alles im Schuß.*

*Auf daß dieses Haus gute Geister beflügelt
studierwillig alle hier sitzen im Stühle
und stets sich versichern: ich denke ich grüble
ich werd auf dem Weg zum Erfolg niemals müde
all meine Gedanken sind helle - nicht trübe*

Wir danken dem Studiwerk für immer es blühe“

Untranslatable rap as written and performed
at the occasion of the topping-out ceremony by:
Prof. Dr. Michael Jäckel
Chancellor of Trier University

We are your partners

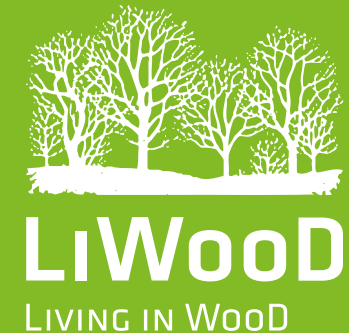
Describe your building project, and we will show you how it can be implemented in an ecological, economical and elegant manner. Benefit from our experience to find the best way of implementing your project, no matter whether on your premises or at our Munich offices.

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We are grateful to our partners for their project in particular the Student Union Trier and the architects Grassinger Emrich. Photographer Sacha Kletzsch was been very helpful in taking pictures of our work.



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