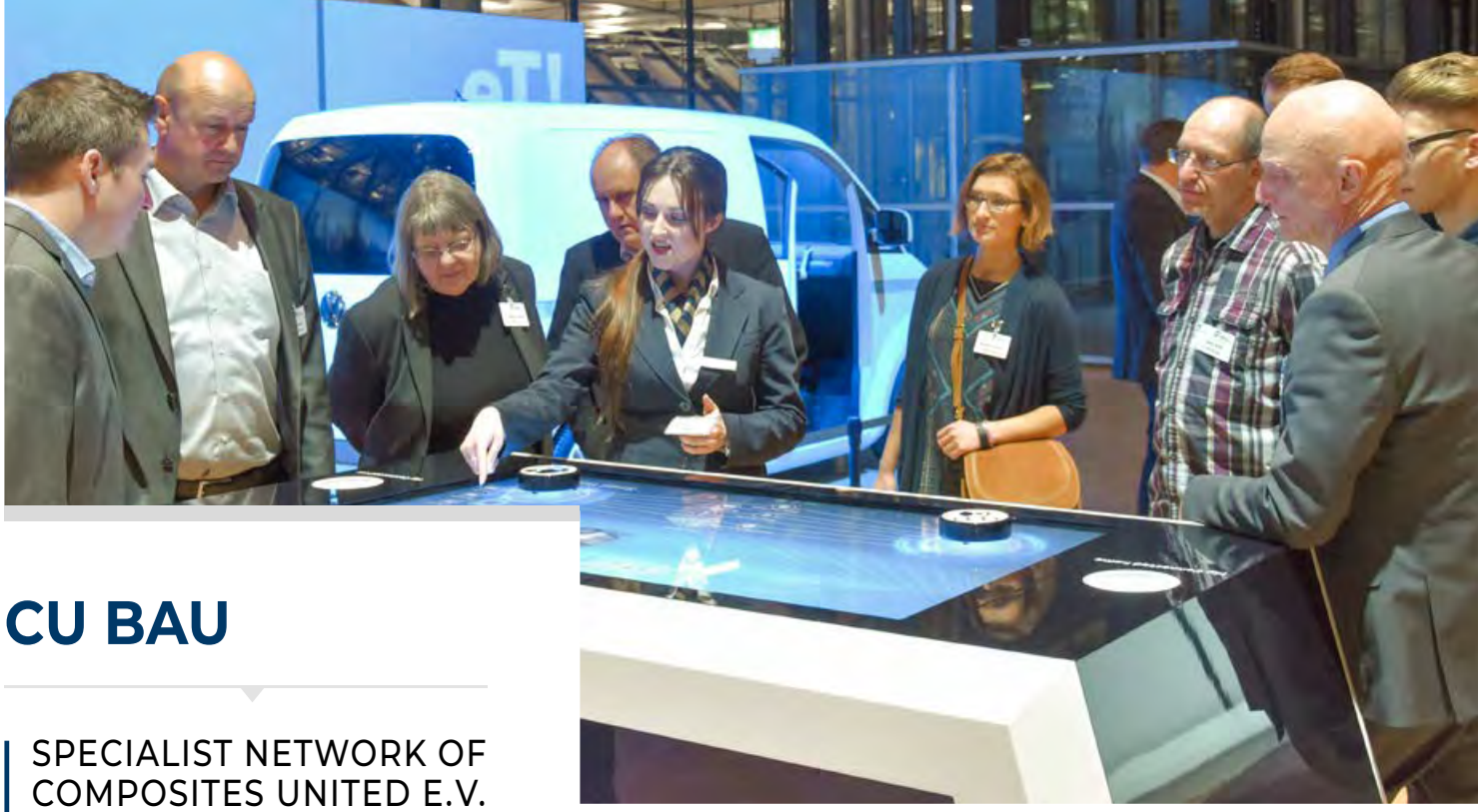
CU BAU

COMPOSITES UNITED | BAU

The international network for lightweight design with fiber composites in the construction sector



CU BAU

SPECIALIST NETWORK OF COMPOSITES UNITED E.V.

CU Bau is an internationally active network of industry and research, manufacturers and users who cover all forms and areas of application of fiber-reinforced lightweight design.

Our mission is to establish fiber-reinforced lightweight design throughout the construction industry.

We support designers, architects and construction managers as well as licensing bodies and construction companies in discovering and exploiting the enormous application potential of building products with fiber-reinforced concrete and polymer matrices.

Five working groups are active in CU Bau whose expertise our members can draw on:

- Fiber composites for new construction and renovation
- Processes, methods and digitalisation
- Draft, planning, dimensioning and design
- Sustainability, health and the circular economy
- Education, public relations and cooperation with authorities

As a international specialist network of Composites United e.V., CU Bau promotes the acceptance and broad use of fiber-reinforced materials in the construction industry for its members from industry and science.

We are THE innovation driver for resource-saving and sustainable construction.

Recycling lightweight granulate
© IAB Weimar gGmbH

CHALLENGES IN THE CONSTRUCTION INDUSTRY

The construction industry is facing a wide range of challenges: the current geopolitical world situation, inflation, rising energy and raw material prices, disruption to supply chains and climate change are also affecting construction companies. In particular, the issues of sustainable construction are becoming increasingly important.

ENERGY AND RESOURCE CONSUMPTION

Construction consumes large amounts of natural resources such as wood, concrete, steel and energy. The production of building materials alone contributes to significant energy consumption and greenhouse gas emissions.

CO_2 EMISSION

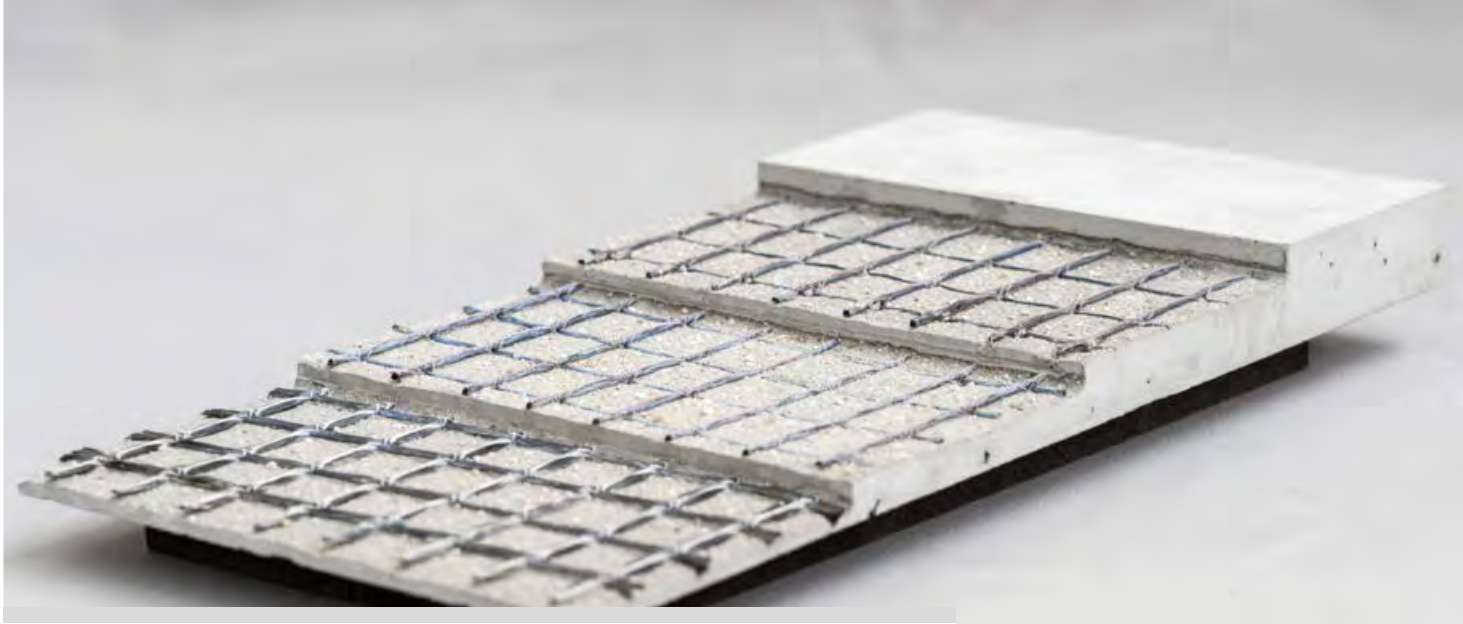
The production of cement for concrete alone accounts for around 8% of global CO_2 emissions.

CONSTRUCTION AND DEMOLITION WASTE

Furthermore, the construction industry generates large amounts of waste, including dismantling waste. The avoidance of waste, recycling at the end of its useful life or proper disposal are a cost and environmental factor that should not be neglected.

VISION AND MISSION

Our goal is to provide sustainable and economical solutions for construction by using innovative materials and construction methods.



High-performance reinforcement structures with significant bond improvement (up to 500% higher bonding effect in concrete, compared to flat yarns)
© ITM TUD, photographer: Mirko Krziwon

LIGHTWEIGHT DESIGN AS A SOLUTION

Lightweight design is based on a simple principle: Products are made with less or lighter material – with improved or consistent functionality and performance. The aim is also to recycle products or individual materials in line with a circular economy. From the design and production to the use and recycling of products, materials and energy can be saved, thus reducing greenhouse gas emissions and costs across industries.

SUSTAINABILITY

Fiber composites are durable, recyclable and help improve energy efficiency in the construction of new buildings. They offer new renovation and repair options that allow a longer usage of existing buildings.

ECONOMY

The use of fiber composites leads to cost savings in the construction process. Due to their lightness, they enable shorter construction times, lower transport costs, reduced need for construction machinery and smaller foundations.

EFFICIENCY

With prefabricated elements and simpler assembly procedures, projects can be completed more quickly and with fewer people.

APPLICATION EXAMPLES

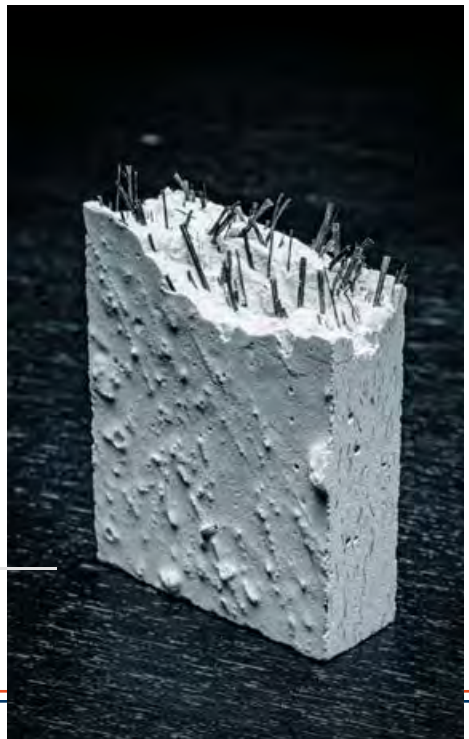
Expansion joint profile in carbon sandwich design for industrial buildings after completion
© FloorBridge International GmbH

Interactive GRP honeycomb bridge
© TU Chemnitz, Lightweight Construction

Carbon rebars
© CG TEC Carbon und Glasfasertechnik GmbH

Manufacture of a base plate
© ASGLAFORM composites GmbH

Production of a CFRP bridge module
© Baltico



Floor renovation
© Hitexbau

C-BAR short cut fiber precast concrete element
© Newcycle

Intricate bridge made of wood and carbon concrete
© solidian GmbH

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Large picture:
Combar® fiberglass bond reinforcement: Permanently high-strength and rust-proof, making it suitable for use in corrosion-prone concrete components
© Schöck Bauteile GmbH

Small picture:
An alternative to steel lattice girders are textile mesh girders made of carbon reinforcements
© Institute of Concrete Structures at TU Dresden, Photographer: Mirko Krziwon