

THE BAUHAUS EARTH RESEARCH WORKSHOP



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Our Research Workshop is a laboratory for exploration, demonstration, and learning. Almost every project at Bauhaus Earth connects to it: we test materials, prototype building systems, build exhibition pieces, and share knowledge in hands-on learning formats.

The Research Workshop is embedded in an international network of fabrication labs, academic institutions, and practitioners working toward a regenerative built environment. Together, we create scalable solutions to reduce the environmental impact of con-

Bauhaus Earth Research Workshop at Atelier Gardens Berlin
© Experimental Fellowship at Bauhaus Earth, Photo: Raquel Gómez Delgado, 2025





↑ ↓ *Earth, Lightly*, Project by Experimental Fellows Maria Lisogorskaya and Kaye Song/Assemble
© Experimental Fellowship with Bauhaus Earth, Photo: Raquel Gómez Delgado, 2025



Located close to Bauhaus Earth's Berlin office at Atelier Gardens Campus, the Research Workshops is fully equipped for woodworking, processing raw earth and bio-fibers, and reusing building elements.

Our workshop team consists of doctoral researchers and trained craftspeople. We explore building materials, and produce prototypes up to the scale of demonstration buildings. Through this combination of scientific research, hands-on experimentation, and showcasing, our workshop has significantly advanced the development and certification of regional regenerative materials.

Our Research Workshop also hosts the *Experimental Fellowship with Bauhaus Earth*, that promotes practice-based experimental and research-oriented projects for sustainable architecture since 2022.

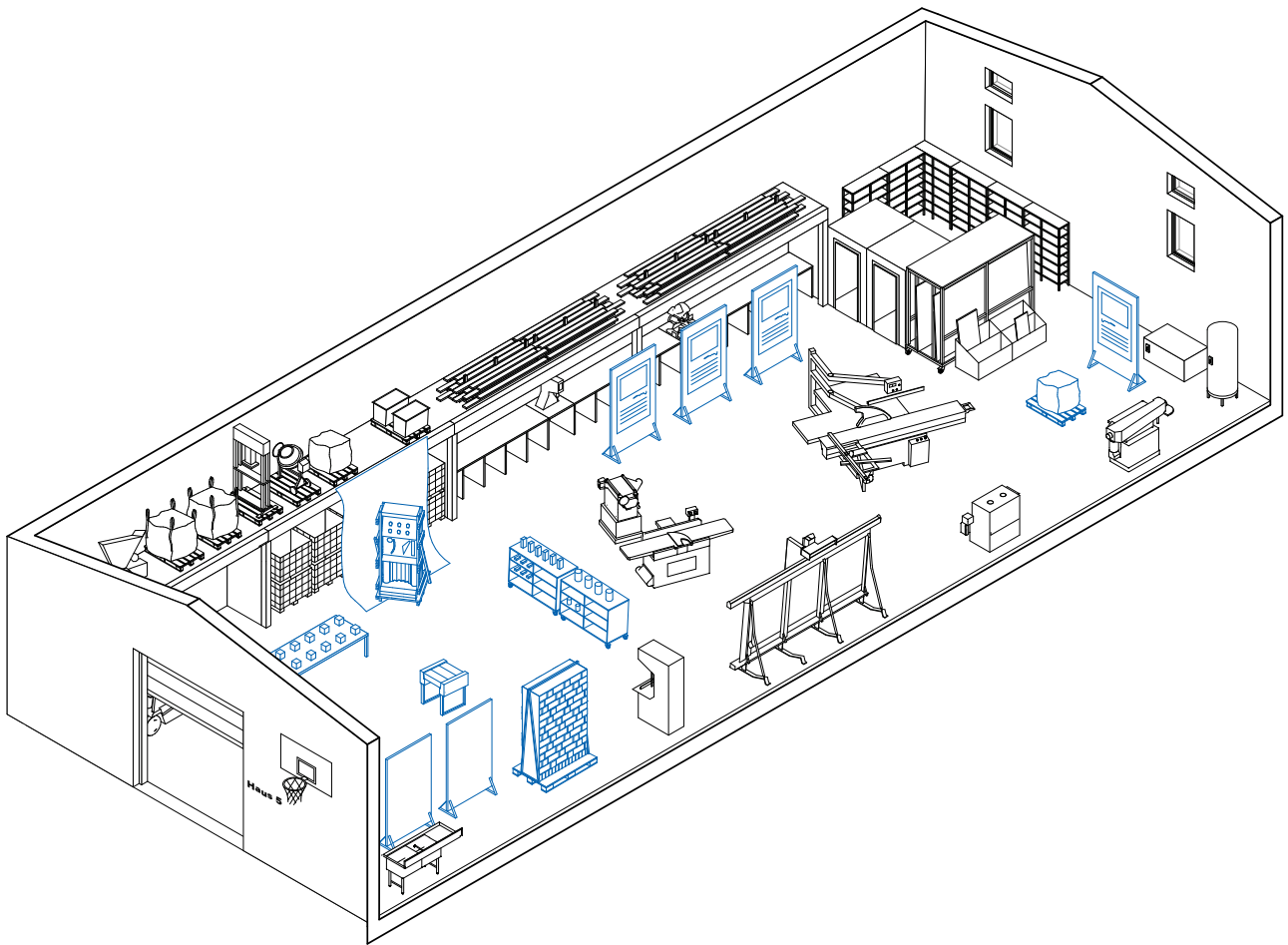
RESEARCH WORKSHOP

A MULTIFUNCTIONAL SPACE

What makes our Research Workshop unique is the scale at which we can operate. We are neither a conventional research laboratory limited to the molecular or material scale, nor a traditional carpentry dedicated to only building. Instead, we work in the space between — bridging foundational research and practical construction.

We turn research findings into scalable building products. We move beyond theory by developing full-scale prototypes, testing assemblies under real conditions. This step is crucial: it shows architects, developers, and policymakers that innovative, sustainable solutions are viable and ready for adoption.





Research Workshop Infrastructure

The 325 m² space provides the infrastructure for experimenting, prototyping and small-scale production. We combine different low-carbon materials in building components that meet the complex prerequisites of durable construction.

By pioneering new forms of construction, we tackle design and technical challenges early on and resolve details before they become costly or complex issues on the construction site. In doing so, our workshop accelerates the transition from research to practice, helping innovative ideas break out of the lab and into the built environment and industry.

The space also hosts events, talks, and exhibitions, bringing in cutting-edge research and innovation from around the world.

↑ Isometric of the Research Workshop interior with areas for production, exhibition, research and archiving
© Bauhaus Earth

← Exterior view of Research Workshop at Atelier Gardens Campus, Berlin
© Florian Jannowitz, 2025

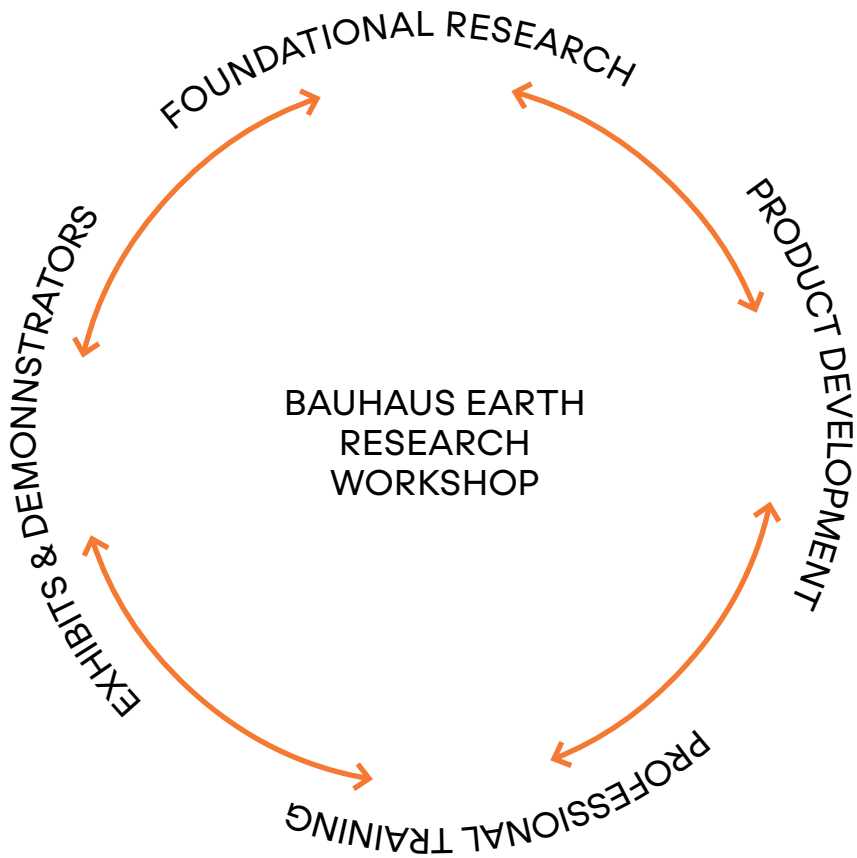
RESEARCH WORKSHOP SKILL SET

At the core of our approach lies the holistic development of building materials and components starting from foundational research and concluding with the integration of our innovations into industry, demonstration buildings and training programs for craftspeople and planners. We aim to develop solutions that are environmentally viable and affordable when produced at scale.





↑ Earth Block Masonry, Prototype © Bauhaus Earth, 2024
← Production of Compressed Earth Blocks © Florian Janowitz, 2025

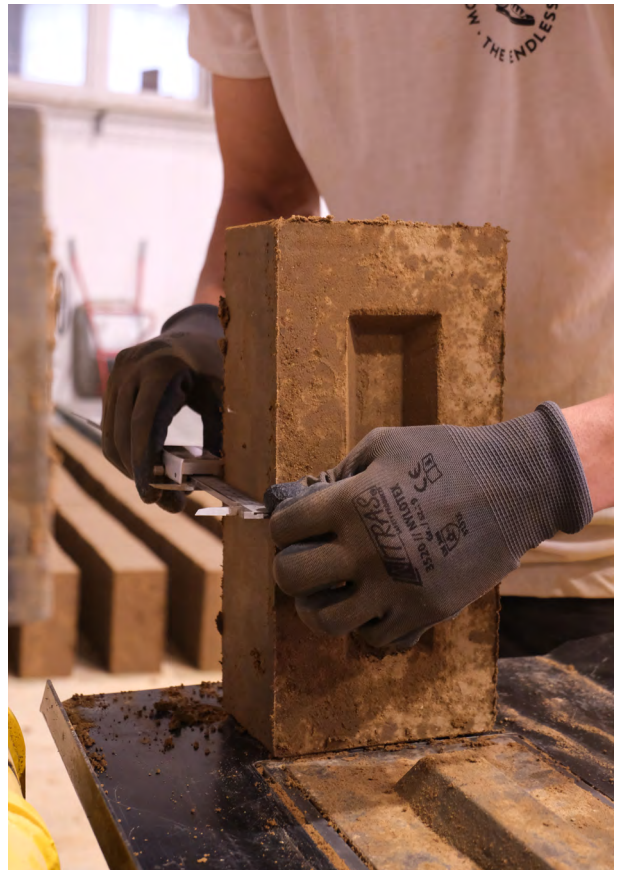


Foundational Research

Material and technical innovation sit at the core of our work. In research projects, we test materials to establish a scientific basis for different use cases and identify gaps in regenerative building practice. Whole-Life-Cycle Assessments (LCAs) help us track environmental impacts. We work with labs, testing agencies, and standardisation bodies to investigate bio-based, geo-based, and re-use materials.

Product Development

Our Research Workshop is equipped to produce and test regenerative building products in small series. Building on research insights, we make full-scale prototypes to examine material performance, construction details, and processes, aiming at industrial integration. We partner with manufacturers, architects, engineers, and developers to bring ideas from the drawing board to certified products for regular use in the construction sector.



↑ → Earth Block testing © Tillmann Gebauer, 2025



Final Colloquium of *Earth, Lightly*, © Experimental Fellowship with Bauhaus Earth;
Photo: Raquel Gómez Delgado, 2025

Exhibits & Demonstrators

We produce building materials and integrate them into building assemblies for demonstration at different scales. We support builders, curators and artists with the planning, production, and construction of exhibition pieces and demonstration buildings that showcase regenerative materials and circular construction techniques. Our work spans from product-scale objects to multi-storey buildings, offering 1:1 experiences that build trust and foster replication and adaptation. Beyond physical demonstration, our work is published in peer-review journals, architectural magazines and books.

Professional Training

The Research Workshop hosts trainings and seminars on regenerative construction for planners, craftspeople, policymakers, and students. We also collaborate with universities, trade schools, and institutions, and other external experts. Training sometimes extends directly to construction sites. Bauhaus Earth is an educational partner of the New European Bauhaus Academy (NEBA).

SELECTED PROJECTS

HOLZ-LEHM-HYBRID

The Holz-Lehm-Hybrid (Timber-Earth-Hybrid) project investigates novel nature-based building components and techniques in the context of a demonstration building project in Berlin.

The project is a collaboration of Bauhaus Earth (research lead), B&O Bau und Gebäudetechnik (client and contractor), Sauerbruch Hutton (architects), the Industrieverband Lehmbaumstoffe e.V., and the Landesbeirat Holz Berlin-Brandenburg. It is funded by the Deutsche Bundesstiftung Umwelt.



↑ Prototype of Earth Block Masonry for the HLH-Building
→ Development of a Timber-Earth Floor Plate (patent pending)
© Bauhaus Earth, 2024f



Re-use of the concrete foundation: aerial view of the B&O Bau construction site in Berlin-Weissensee, © B&O Bau; Photo: Jan Bitter, 2024

In recent years, efforts to transform the building sector toward regenerative practices have begun to take shape in real-world projects. Timber construction has emerged as a central pillar: forestry and wood industries are moving toward sustainable, regional processing, while planners are gaining the skills to apply timber at scales from pilot projects to high-rise buildings.

The HLH project builds on this momentum by combining timber and earth into hybrid assemblies. It explores simplified construction methods, reduced use of energy and materials, and improved options for dismantling and reuse. Designed as a living lab, the project prototypes and monitors regenerative components at building scale, including recycled concrete slab foundations, timber floor slabs, timber fire walls, load-bearing earth block masonry, and timber–earth hybrid ceilings. All elements share common goals: maximising regional resources, minimising primary energy and material input, and enabling dismantling and reuse.

The Bauhaus Earth Research Workshop developed materials, component prototypes, as well as a monitoring system to evaluate performance over time.

SELECTED PROJECTS

EXPERIMENTAL FELLOWSHIP

In the Experimental Fellowship with Bauhaus Earth, the inaugural fellows Material Cultures extended the methodology of their ongoing research on sustainable forestry and regenerative land management in the UK.

Their project *Constructive Land Berlin/Brandenburg* explored the potential of rewetting peatlands to produce regional bio-based building materials in Brandenburg and to apply them in building components.



↑ → Material Cultures: Paludiculture Fragments for *The Great Repair*, Exhibition at Akademie der Künste Berlin, 2023; Experimental Fellowship with Bauhaus Earth; Photo © Johanna Wilk



Constructive Land Berlin/Brandenburg, Fellowship Project by Material Cultures;
© Experimental Fellowship with Bauhaus Earth; Photo: Zara Pfeifer, 2024

The project represents the experimental transfer of the previously developed methods to a new political, climatic, and cultural context: from the UK to Berlin/Brandenburg. This transfer reveals universal and specific properties of the methodology and tests its suitability for use in different contexts.

The first phase of the fellowship resulted in the report “*Wetlands and Construction: An Opportunity for Berlin-Brandenburg*”, examining drained peatlands and the potential of rewetting them. The report found that well-planned peatland restoration can not only mitigate current CO₂ emissions, but can also produce a variety of building materials from perennial biomass, including reeds, sedges, reed canary grass, willow, and alder wood.

During the second phase, a prototype of 1:1 building fragments was built in our Research Workshop using various paludiculture-based materials. By demonstrating the use of materials cultivated on rewetted peatlands, the project aimed to promote peatland carbon capture and support a regional, bio-based building industry. The paludiculture “fragment” was displayed at international exhibitions such as *The Great Repair*, at Akademie der Künste, Berlin and at *Water Pressure – Designing for the Future* at MAK, Vienna.

SELECTED PROJECTS

SEDIMENTS

The Sediments Project explores the potential of mineral-based materials within regenerative building practices. Aligned with the principles of circularity, sufficiency, and regional adaptability, the project seeks to complement bio-based solutions.

The project centres on the development of unfired, earth-based materials that use clay as a natural and reversible binder, making them inherently circular.





↑ Production of Compressed Earth Blocks © Florian Janowitz, 2025
 ← Earth-Hemp-Blocks, Test Samples © Bauhaus Earth, 2024



Wall Fragment at *Treffpunkt Bauwende – Regeneratives Bauen*,
 Exhibition in collaboration with Bundesstiftung Bauakademie
 © Bauhaus Earth 2025

A main focus of the Sediments Project is the use of compressed earth blocks (CEBs) for load-bearing construction. Left unfired and unstabilised, these blocks are a sustainable alternative to conventional mineral materials such as fired bricks or concrete. With their high raw density, they complement light timber structures, adding mass that helps regulate acoustics, temperature, and humidity.

After developing, certifying, and applying CEBs made from Berlin excavation material, the project expanded to other regions, including Gerswalde (Brandenburg), Esbjerg (Denmark), and New Haven (USA).

Beyond CEBs, the Sediments Project explores other earth-based products such as hemp-earth composites, earth mortars, and timber-earth hybrid floor plates. Knowledge from this research is shared through books and online publications, and workshops at institutions including TU Berlin, TU Munich, and Yale University. Recently, the materials developed by this research line have been used in demonstration buildings.

SELECTED PROJECTS

PROTOPOTS DAM

Since 2023, one of our demonstration buildings for regenerative construction has stood in central Potsdam. A living lab, built with regional, reusable, and renewable materials that highlights resources and construction potentials of the Berlin-Brandenburg region.

ProtoPotsdam was created in collaboration with TU Berlin, HNE Eberswalde, and FH Potsdam. Since its opening, it has also become an active venue for workshops, screenings, panel discussions, and exhibitions for Potsdam and beyond.





↑ ProtoPotsdam Demonstration Pavillion © 414films, 2025

← Masonry workshop with Compressed Earth Blocks at the ProtoPotsdam living lab © 414films, 2023

ProtoPotsdam is both experiment and demonstration: It applies regenerative construction methods to reduce resource use, close material cycles, and test building techniques. Our workshop developed and built key components of the pavilion, which continue to be studied through long-term monitoring.

The plinth uses bricks recovered from a demolished farmhouse. They are laid in lime mortar to allow for future disassembly. The ground floor slab is made of compacted recycled concrete rubble without new cement. The central walls consist of compressed earth blocks produced from Berlin excavation soil. Developed in our Research Workshop, these low-emission blocks are certified for multi-storey construction, can be reused, and stabilise indoor climate – but require protection from rain during building and use.

A wide roof overhang protects the earth masonry. It is built from reused steel sheets combined with timber from Brandenburg forest conversion. Roundwood posts of robinia carry the roof. Robinia is durable and fast growing but not yet structurally certified. Its use here indicates a possible extension of available building materials in the region.

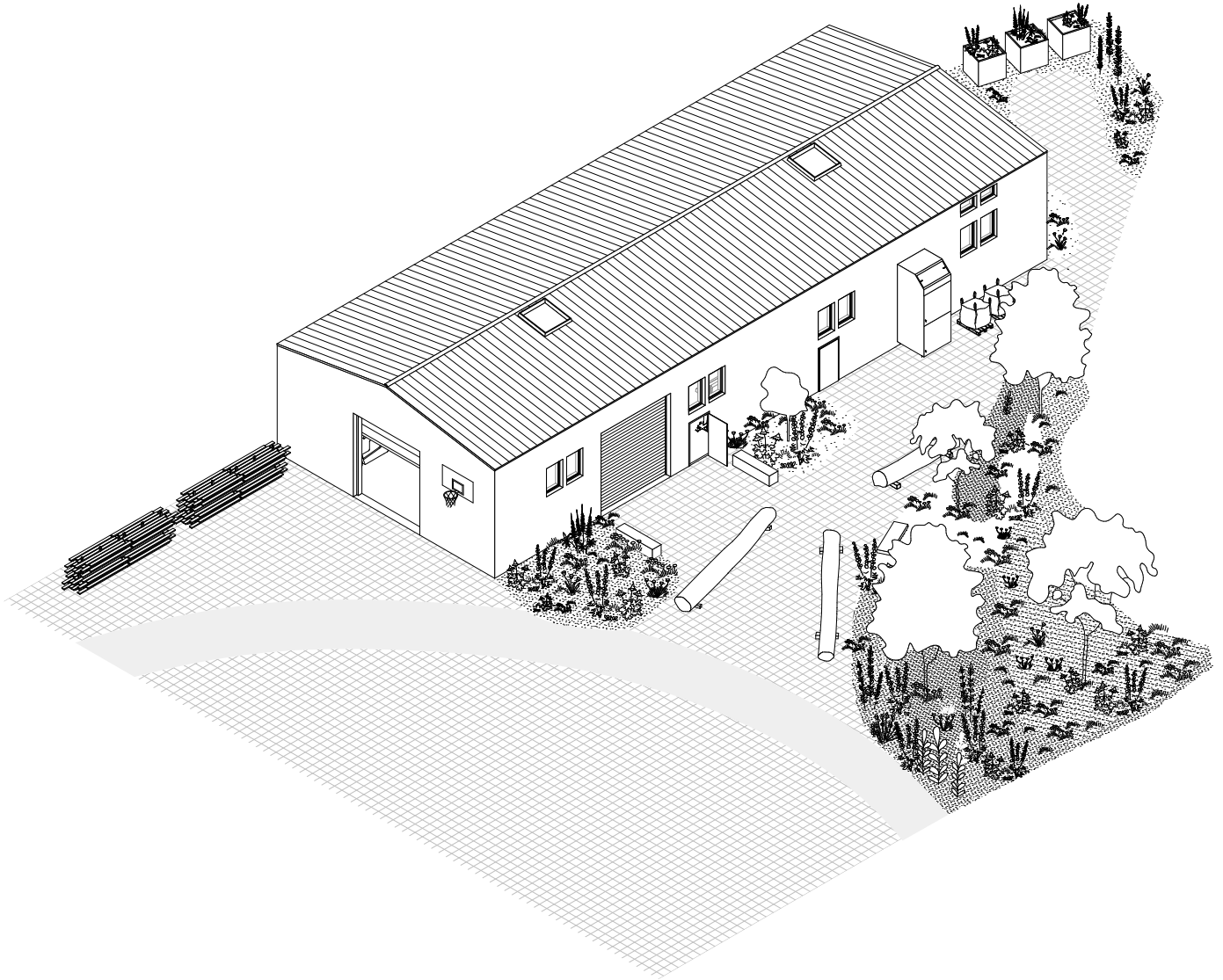
LETS MAKE!

We welcome new ideas, collaborations, and partnerships. Whether you are developing a product, planning an installation, or co-creating a design project, we invite you to explore how regenerative materials can bring your visions into practice.

By supporting our workshop, you are investing in the future of regenerative building systems — solutions that are practical, scalable, and tested at full scale to inspire architects, developers, and policymakers. Together, we can pioneer construction methods to shape a more sustainable built environment.



Research Workshop team meeting © Florian Janowitz, 2025



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