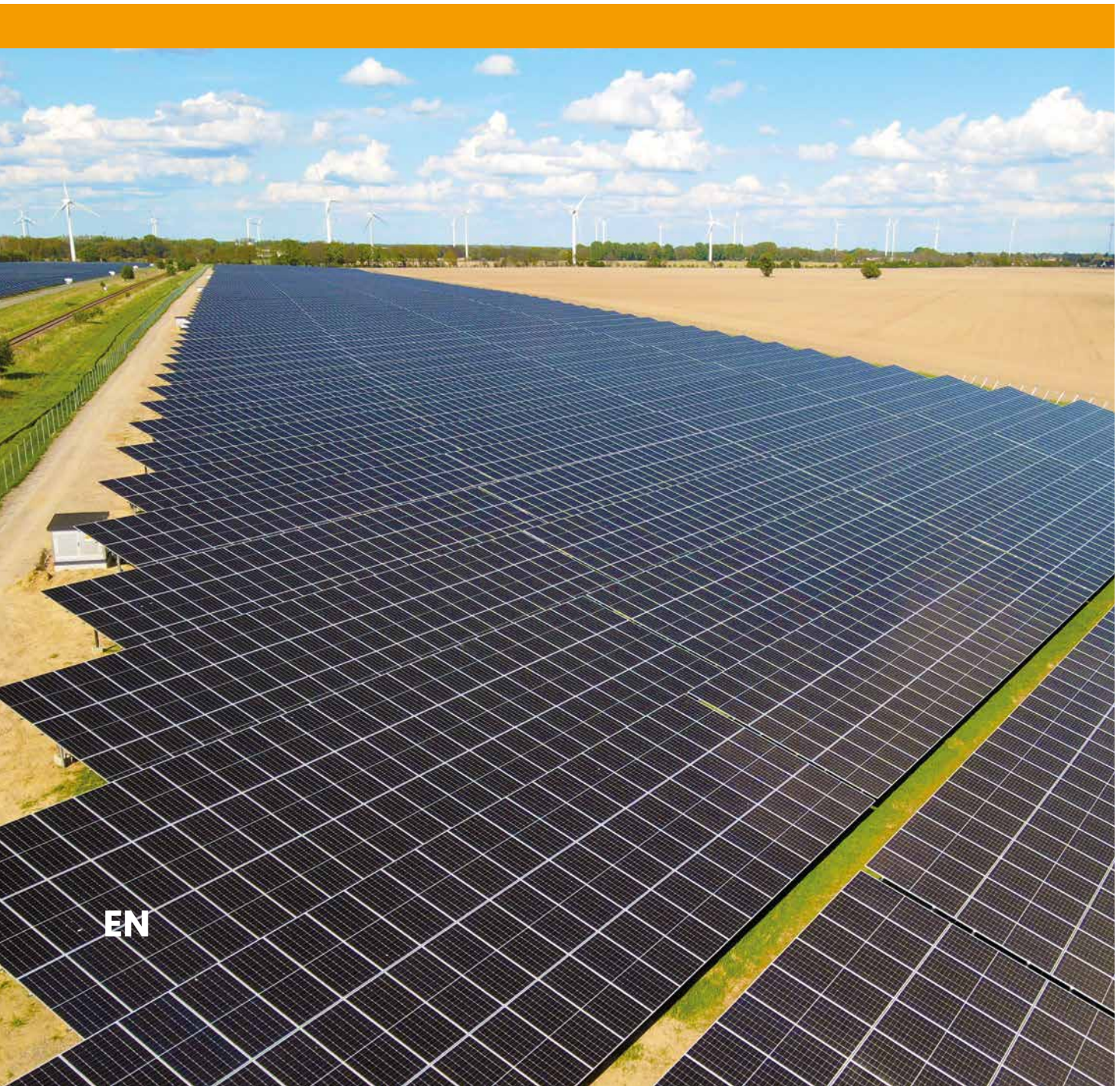


System solutions for photovoltaic applications



Gebhardt Energy



Gebhardt Group

Energy

The Energy business unit of the Gebhardt Group stands for pioneering, well-thought-out solutions in photovoltaic technology. We offer **a broad portfolio of products and services**, specifically designed to maximise the efficiency of PV installations while simplifying the installation process.

By combining extensive expertise with seamlessly integrated technologies, we **reduce project complexity**. Our highly adaptable fastening, mounting and profile systems can be tailored precisely to your project requirements. The result: less planning effort, greater flexibility in design and systems that perform reliably, even when faced with bespoke demands.

With a wide range of **standardised and custom-made products**, we ensure fast, efficient installation – dependable, durable and easy to assemble. This saves valuable time on site and helps to avoid costly rework.

Whether open land, agricultural areas, parking areas or facades – we deliver what your project needs.

One group, one goal.
Your project success.

Efficiency in ... Less complexity. More **efficiency**.



Efficiency in System

- ▶ Intelligent systems: High adaptability for open spaces, agricultural areas or façades
- ▶ Durable materials: With corrosion protection for extreme conditions
- ▶ Modular design: Few components and maximum system logic



Efficiency in Engineering

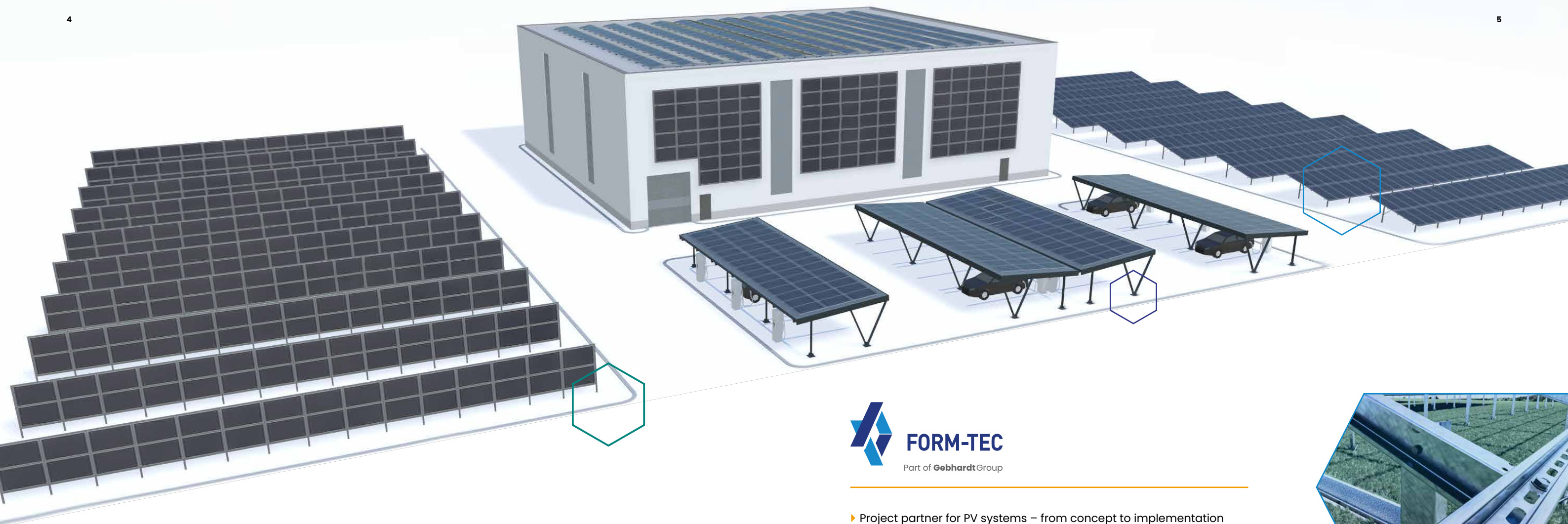
- ▶ Holistic planning: Structural calculations, design plans and technical details
- ▶ Fast results: Efficient software use and minimised system interface complexity
- ▶ Experience and expertise: In-depth understanding of regulatory requirements



Efficiency in Installation

- ▶ Tool-free installation: Fast processes without special tools on site
- ▶ Intuitive application: Components snap into place and sources of error are minimised
- ▶ Efficient processes: Up to 20 % time savings thanks to clearly structured installation processes





Our brands

Strong solutions are created where expertise works together. Each brand within Gebhardt Energy contributes its specific strengths – from design and planning through to production.

Form-Tec supports projects right from the start: with well thought-out planning, structural calculations and coordinated services. **Gebhardt-Stahl** supplies the right profile – precise, durable and also for special requirements. **Van Zelst** contributes decades of experience in forming technology – for components that fit exactly.

The result: holistic solutions for photovoltaic projects – from small systems to megawatt installations.



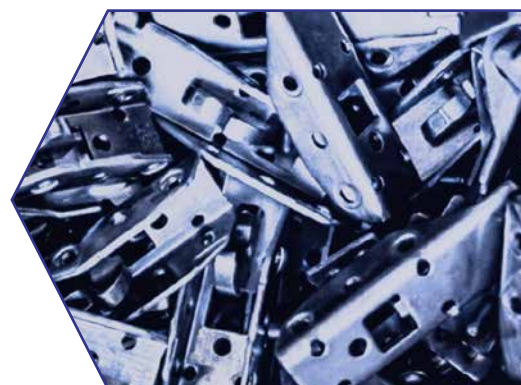
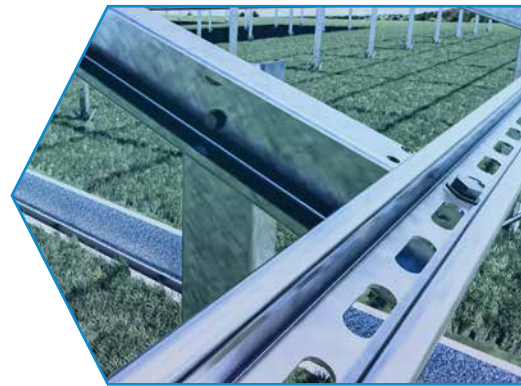
- ▶ Project partner for PV systems – from concept to implementation
- ▶ Project planning including structural analysis, occupancy and pile driving plans, as well as on-site services
- ▶ Member of the German Solar Industry Association (BSW) and the State Association for Renewable Energies (LEE NRW)



- ▶ Development and manufacture of roll-formed steel profiles for efficient, stable and easy-to-install PV substructures
- ▶ Wide range of standard profiles and customised special solutions
- ▶ In-house construction department as an integral part of system design



- ▶ Development and manufacture of stamped and bent parts for PV systems
- ▶ Wide range of forming technologies – punching, bending, laser cutting
- ▶ Flexible production for system-integrated series and special parts



Ground-mounted

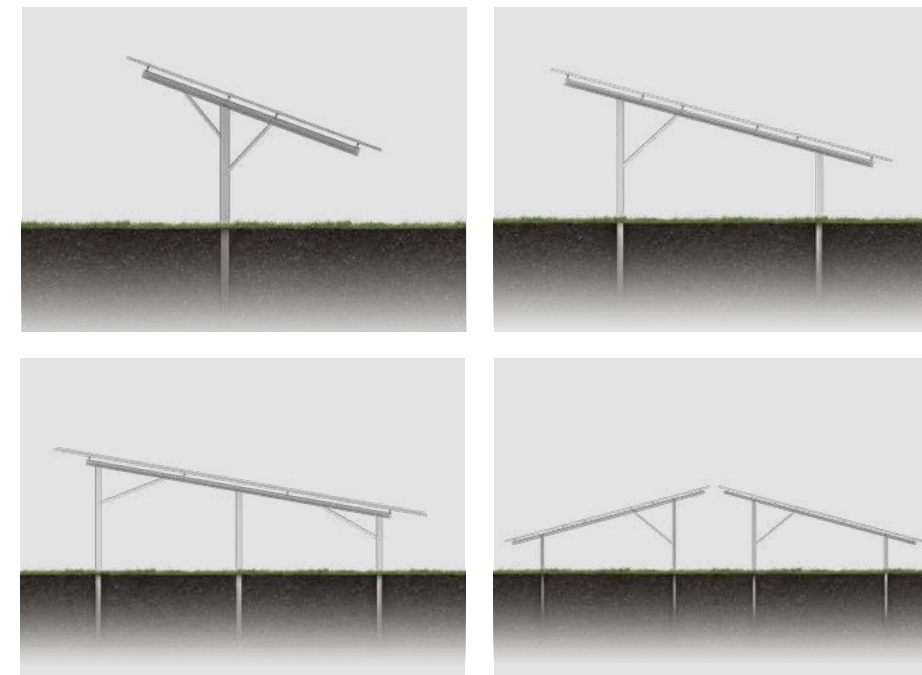


**Efficient
installation**
Up to 20%
time saving

Scalable ground-mounted PV systems for open fields of any size.

With our extensive portfolio of standardised and customised products, we provide you with the flexibility you need to execute every project to perfection. Our systems are durable, scalable in size, and ensure long-term efficiency in solar power generation – all at the highest level.

- ▶ Efficient installation through standardised and customised products
- ▶ Unique combination of steel profiles, connectors and anchoring solutions
- ▶ Easy assembly with just one screw type
- ▶ Project-specific production for fast delivery and reduced inventory
- ▶ Optimised material use for sustainably produced systems
- ▶ Support throughout the entire project – from initial planning to commissioning



**Systems with 1, 2,
or 3 posts.**
East-West or South
orientation.

Clean energy and **agriculture** efficiently combined.

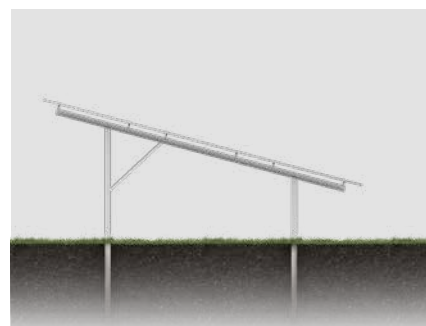
Photovoltaic systems for agricultural land combine the advantages of solar power generation with the agricultural use of land. Our customised systems make it possible to simultaneously produce clean energy and maintain agricultural use – for a sustainable and efficient use of resources.

- ▶ Mounting-optimised components for agricultural areas
- ▶ Adapted construction height for smooth passage of agricultural machinery
- ▶ Increased yield through shade effect and improved soil moisture
- ▶ Minimised planning and procurement costs thanks to full service and support
- ▶ Sustainable system architecture for CO₂ reduction and land efficiency
- ▶ Support with funding programmes and financing options

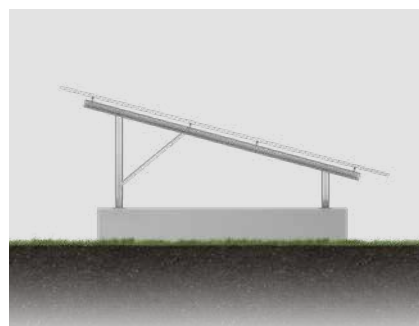


Agri-PV Vertical system

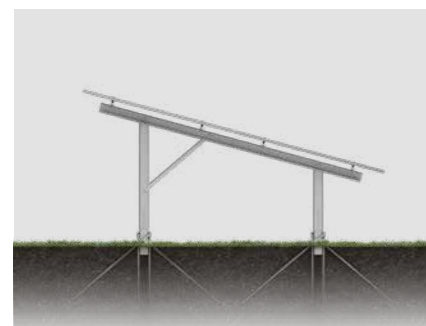
It's a question of the right soil connection.



Steel post driving

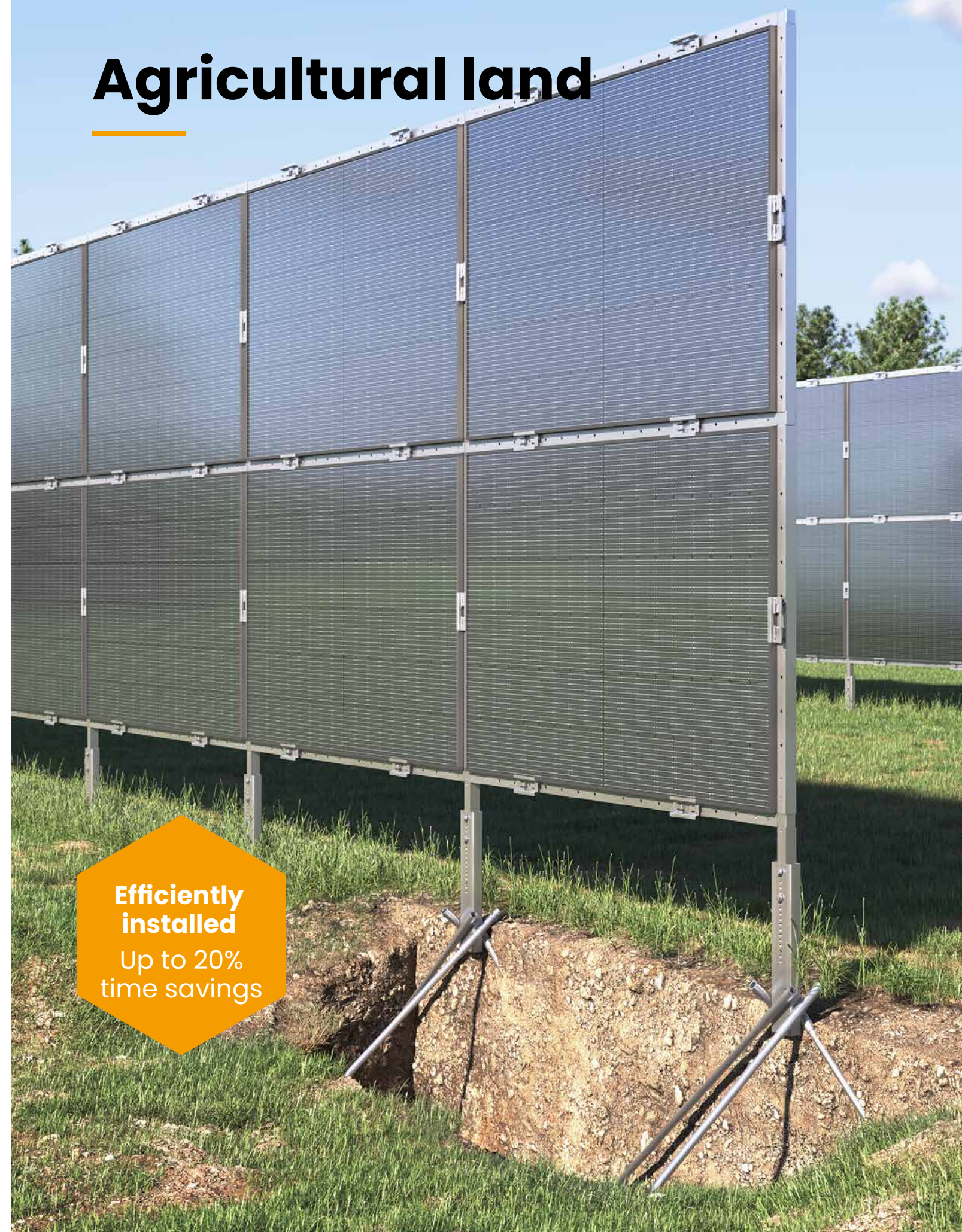


Concrete connection



Root system

Agricultural land



**Efficiently
installed**
Up to 20%
time savings

Parking areas



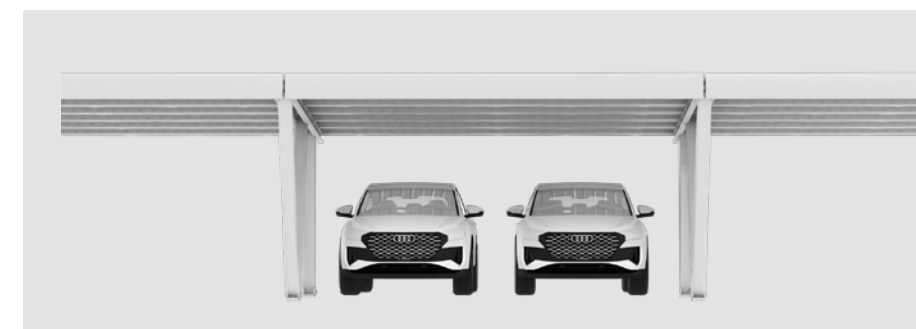
**Efficiently
installed**
Time savings
of up to 20%

Park safely and generate solar energy with intelligent carport systems.

Our PV carport systems offer more than just a parking space. They combine high quality and stability with modular flexibility to make the most of sealed surfaces for energy generation. The photovoltaic modules convert sunlight into clean energy, while your cars or commercial vehicles remain reliably protected from the elements. Integrated charging stations enable electric vehicles to be powered directly with self-generated solar energy – a sustainable solution for modern mobility.

- ▶ Dual use of space for parking and energy generation
- ▶ Convenient forward and reverse parking
- ▶ Complete system: steel substructure, connecting elements and anchoring
- ▶ Solar modules can be mounted vertically or horizontally
- ▶ Clearance heights: 2,100 mm or 2,900 mm
- ▶ Available versions: Single, Double or Add-On

Unlimited expandability thanks to flexible add-on components.



20% faster installation of solar modules on industrial facade surfaces.

With our innovative click-in system for mounting PV modules on façades, unused surfaces can be quickly utilised for solar energy generation. The frames are assembled without tools and can be installed directly on the façade in just a few simple steps. This straightforward solution enables more efficient installation – **up to 20% faster** compared to conventional system solutions.

- ▶ Scalable modules for large-scale PV installations on façades
- ▶ Maximum yield in winter due to perpendicular solar radiation
- ▶ Optimal rear ventilation thanks to sufficient gaps between installed solar modules

Suitable for concrete, trapezoidal sheets, or sandwich panels.



Facade



**Efficient
installation**
Up to 20%
faster

Individual components for greater flexibility in system installation.

Every system consists of individual components, which are manufactured within the Gebhardt Group both as standard and made to order. For projects that have specific requirements for individual components, we also offer these – both as standard solutions and in customised designs. This means that our customers can obtain exactly the parts they need for their individual applications.



Roof hooks

- ▶ For roof installations
- ▶ Made of galvanised steel or zinc-magnesium
- ▶ Punched and assembled

Wind deflector

- ▶ For roof installations
- ▶ Made of galvanised steel



Ballast load

- ▶ For stabilising substructures
- ▶ Made of aluminium

Balast carrier

- ▶ For roof installations
- ▶ Made of galvanised steel



Mounting element

- ▶ For supports and brackets
- ▶ Made of galvanised steel

Z-profile

- ▶ Alternative to the module rail
- ▶ Made of galvanised steel



Just ROOT it.

Root system for reliable anchoring

Our Root system offers an innovative solution for anchoring PV systems in challenging terrain conditions where conventional piles reach their limits. It enables stable installation on steep slopes, soft soils, landfills or areas with ground monuments – and with minimum penetration depth.



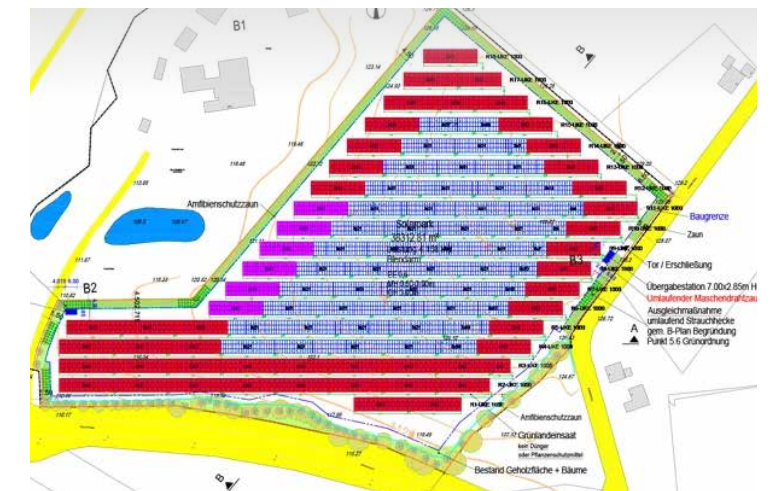


100% project success thanks to excellent service.

Our efficiency is demonstrated in the seamless collaboration between planning and personal on-site support – exactly where decisions have an impact. This includes taking the time on-site to thoroughly analyse challenges and work with you to develop robust solutions. Whether it's planning efficient cable trenches or securely fixing the DC cabling, we take care of the crucial details that will ensure your system remains reliable and high-performing in the long term.



- **Layout plans** define the arrangement and placement of solar modules on the available area.
- **Piling plans** indicate the position and depth of the pile foundations that support the solar modules.
- **Structural calculations** determine variable loads such as wind, snow, and earthquakes, as well as permanent loads from the weight of the modules and substructure.



- **Project support** and installation directly on-site
- **Training and workshops** support efficient installation



- **Extraction tests** are carried out using modern measurement equipment.
- **Soil analysis** is performed directly on-site.
- **The data** provides information on the load-bearing capacity and compaction of the soil.

Gebhardt Group

Efficiency in profiles



The **Gebhardt Group** is an internationally active corporate group with subsidiaries in Germany, the Netherlands, Poland and the United Kingdom. With decades of experience and a deep understanding of the diverse demands of various industries, we provide specialised and innovative solutions across four key business areas: Construction, Air Duct Solutions, Industry and Energy.

We are European specialists in steel – combining our expertise in a wide range of applications to create **efficient and modern profiles**.

Modern steel profiles are the foundation for sustainable constructions and fastenings. Whether durable reinforcement sections for modern windows and doors, weather-resistant fastening systems for energy and solar systems, special profiles, or stamped and bent parts in industrial environments or for use in air duct technology – with its solutions, the Gebhardt Group focuses on tailor-made efficiency – **Efficiency in profiles**.

GebhardtGroup

Efficiency in profiles



Part of GebhardtGroup



Part of GebhardtGroup



Part of GebhardtGroup



Part of GebhardtGroup



Part of GebhardtGroup

Business sectors

Construction

We provide customised profile solutions for the window and door industry to reinforce PVCu systems. This includes reinforcement profiles, door frame profiles, and thermally broken sections. Additionally, we support our customers by optimising their processes. As a reliable partner, we accompany them through all project phases and make their work easier.



Air Duct Solutions

We help HVAC experts tackle the increasing complexity of their projects. With modular, readily available systems, we respond flexibly to individual requirements and ensure a noticeable reduction in time and costs – through integrated solutions provided directly on-site and from a single source. Our products prove themselves daily in clean rooms, data centres, and the public building sector.

Industry

With our customised steel profiles and innovative solutions, we help our customers reduce internal efforts, unlock efficiency potentials, and achieve tangible cost savings. We develop and manufacture profiles, as well as stamping and bending parts, all the way to serial production, used in data centres, container construction, and the construction industry.



Energy

We lay the foundations for sustainable energy systems and support our customers as a reliable partner in the planning, construction, and implementation of photovoltaic projects. This enables projects to be completed more quickly and cost-effectively.

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GebhardtGroup

Efficiency in profiles

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