

Gijón (Spain), March/2022

## **PHB Weserhütte begins the installation of the industrial automation system of Santiago Bernabéu Stadium's pitch**



**The innovative system, unique in the world, will free up the surface of the playing field for any other type of activity, preserving and maintaining the grass in perfect condition inside a large underground greenhouse built below the stadium.**

PHB Weserhütte, a subsidiary of the Asturian group TSK, has been awarded the contract for the industrial pitch automation system as part of the remodeling of the Santiago Bernabéu stadium.

The description of this unique system in the world, consists basically in dividing the playing field into six longitudinal trays of approximately 107x12 meters, which include the entire playing field with all its auxiliary systems of irrigation, heating, drainage and other components, with each tray weighing 1,500 tons. The 6 trays are moved to the large

greenhouse below ground level by means of 12 automatic trolleys, and a hydraulic lifting system positions them at different heights up to a maximum depth of 24 meters, maintaining a free distance of 2.20 meters between each, which allows for perfect maintenance and conservation of the turf. This large below-ground greenhouse is equipped with ventilation and air conditioning systems, lighting, fertigation and drainage, as well as CO2 injection systems, and all the necessary machinery for its care and conservation to keep it in optimal conditions.

The installation has been designed with maximum reliability in mind, with redundant systems for the movement of the trays, as well as for the electrical power and control systems, and in general for all critical auxiliary subsystems. The extraction or introduction maneuver of the entire playing field will be completed in a maximum of 10 hours.

All processes are carried out automatically with monitoring and control systems, which are remotely supervised by the operators through closed-circuit television cameras integrated into a state-of-the-art building management system.

The work to be performed by PHB Weserhütte will include shop engineering, supply, assembly and commissioning of the trays, horizontal trolleys, lifting and storage equipment, and all services required for the maintenance of the turf in the large underground greenhouse, all of which is installed in a complex, digitized and fully automated system.

As differentiating factors of the company, the proven experience of PHB in the design of mechanical and hydraulic equipment with the highest degree of automation, and in particular, the efficiency demonstrated after numerous works in programmed shutdowns without interruption of production carried out for different industrial plants; at the same time, as part of TSK, it has the experience of the group, with recognized design and joint work capacity of all its divisions for the realization of installations in deadlines with very critical conditions and at the highest level of demand.

For 60 years, PHB Weserhütte has been developing material handling projects for industry in general, with highly complex mechanical equipment and control systems, experience that will be essential for the unique and innovative installation to be carried out on the Santiago Bernabeu Stadium. The Asturian company has gone from making a large part of the existing mining installations in Spain, to being able to offer its clients in 35 countries on 4 continents high capacity equipment with its own technology at the highest level, which adapts to the specific requirements of each one.

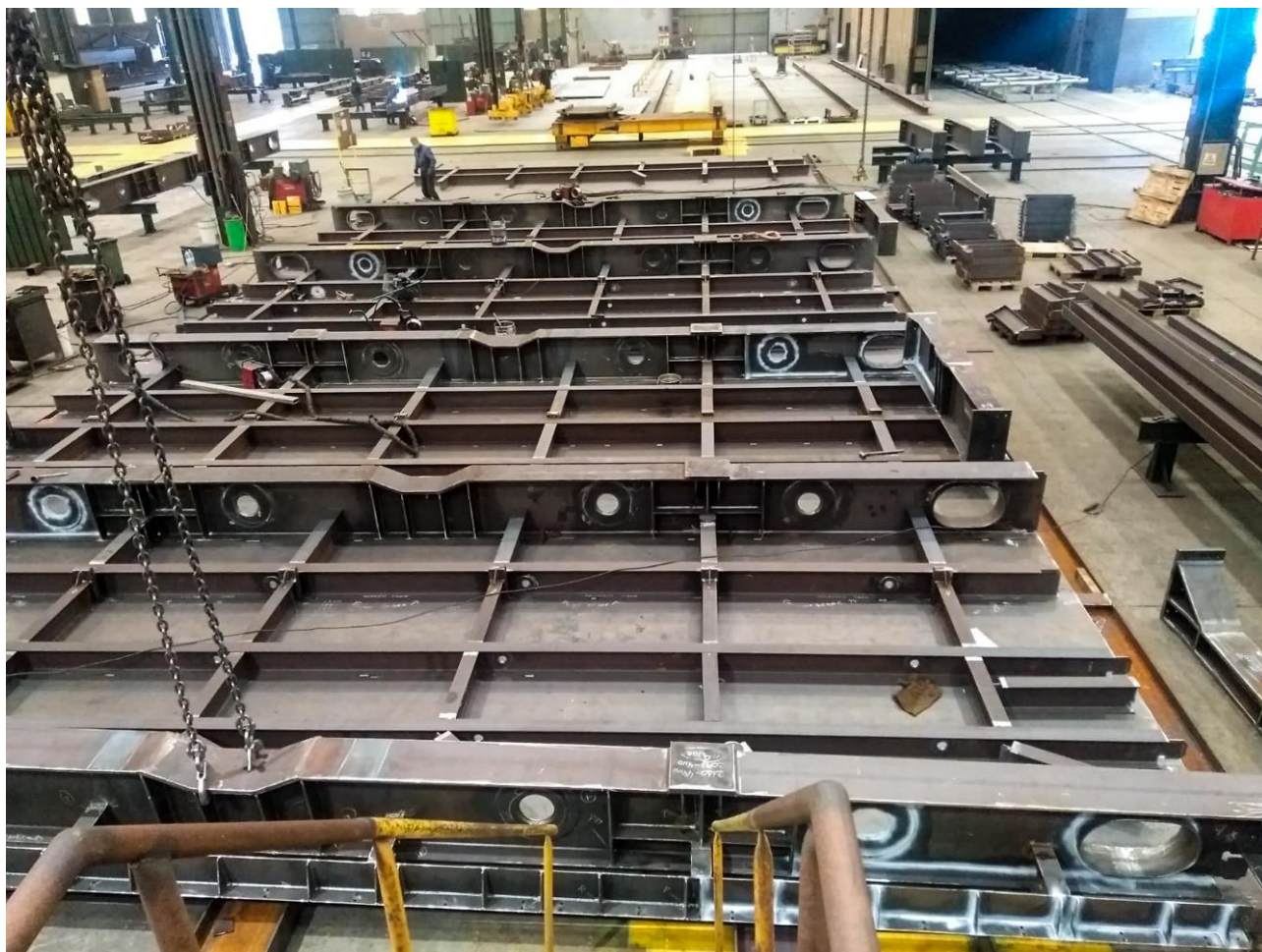
TSK will develop the electrical and control systems of the facility, including the management systems of the new installation, which will be integrated with those of the rest of the Stadium, as well as the technological systems of access control, video surveillance, communications and data networks, and all this through the supervision and remote control of all the systems, with a high level of data processing, high level of cybersecurity, automation and digitization.

The experience and knowledge accumulated for more than 35 years in the main technical disciplines, together with the digitalization of installations, has allowed TSK to develop innovative solutions for different sectors of the industry, such as electrical infrastructures, industrial plants, power generation plants (conventional or renewable), Gas to Power, water treatment plants or storage and handling facilities for raw materials. TSK's accumulated sales for 2021-2023 exceed 3 billion euros, with more than 1,000 professionals and projects executed in more than 50 countries.

The Santiago Bernabeu Stadium pitch automation project is an important milestone for PHB Weserhütte. Due to the complexity, weight and dimensions of the equipment to be handled, the combination and synchronization of the translation and elevation movements, the execution time of the maneuvers, the digitalization and the need to carry out the installation work in a very tight schedule, without interfering with the normal development of Real Madrid's sports calendar or with the rest of the ongoing remodeling works is a challenge in itself.

PHB Weserhütte, after completing the workshop engineering tasks and contracting the equipment to various specialized workshops and manufacturers, all of them Spanish (Asturias, Madrid, Galicia, Basque Country and Catalonia), is implementing the personnel and materials at the Santiago Bernabéu stadium, and designing the Logistics Plan that will require the transport of more than 500 trucks with large and heavy materials, in order to start the installation of the trusses of the west side next April 2022 and the pitch trays once the matches of the current season are over.





*In the following link, you will find the images in printer quality.*

[LINK](#)

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