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Press Message

Pilz creating basis for further growth with new production sites – exemplary manufacturing in the model state

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In building the new Peter Pilz Production and Logistics Centre, Pilz is not only expanding its production area at its headquarters in Ostfildern: flexible, production-centred hall design, energy efficiency, integrative design of processes and working environment as well as a clear Industrie 4.0 focus are establishing the basis for the further growth of the company.

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The new Peter Pilz Production and Logistics Centre forms part of what is now a worldwide network of Pilz manufacturing locations. Alongside its headquarters, Pilz has production operations in Betschdorf, France, and since summer 2015 also in Jintan, China. The same production standards and processes and the same machinery are used at all manufacturing locations. That assures the consistently high quality of the products and smooths the way for international cooperation both with customers and internally.

The new Production and Logistics Centre in Ostfildern is earmarked for making especially new and more complex products, including PLC control systems for the Industrie 4.0-standard PSS 4000 automation system, sensors such as the safe 3D camera system SafetyEYE and also equipment for the Pilz Motion Control safe drive technology. To create both short lines of communication and spatial proximity on and away from the production line and speed up the production process, that is where production operations including Goods Inward and Dispatch as well as all production-related departments such as Production Technology, Information Technology, Quality Management and Purchasing are located. The new building also houses the training workshop and the Works Council.

Integrated, energy-efficient and production-centred

Following ground-breaking on April 28, 2014 it took 16 months to complete the Production and Logistics Centre. The project cost some EUR 20 million. With 6,900 m2 of production area and around 4,000 m2 of office space, the building provides ample space for 390 staff. Every day, on average around 2,200 relays, control systems, sensors and drive technology products are manufactured here.
The new centre was built with an eye to Pilz's plans for growth and to the latest standards of energy efficiency, logistics procedures and noise protection. It strikes a balance between energy efficiency, manufacturing processes based on lean principles and workplace ergonomics.

The family business deliberately chose to expand the Ostfildern location, both to maintain proximity to the other departments within the company and to remain a reliable partner for the region. The planning process involved close consultation and an in-depth

exchange of information with the Ostfildern municipal authorities as well as with residents and other businesses in the “Schwarze Breite” industry park. To minimise noise emissions for local residents, the facility was located as far away from the residential area as possible. The access roads for delivery vehicles were consequently placed behind the building.

Right from the start of the planning process, staff were also involved in the design of the production hall and offices. The working environment in the production area was optimised in interdisciplinary workshops for the Production Technology department and the production workers, in order to establish efficient, ergonomic production processes. In the offices, too, air-conditioned rooms, an ingenious acoustic concept with sound absorbers as well as transparent room dividers and underfloor heating create a pleasant working atmosphere.

Energy efficiency is at the heart of the new building: the new energy concept was devised on the basis of the most rigorous ecological standards. In the new Peter Pilz Production and Logistics Centre, near-surface geothermal energy – in other words the heat of the earth – is used to heat the building. Compared to a conventional gas-fired heating system, that saves at least 150 tonnes of CO2 per year. The use of geothermal energy and highly effective building insulation keep energy consumption low; an ingenious heat recovery system reduces it further.

Over and above meeting ecological standards, the family business also pursues ambitious goals when it comes to production technology: by siting the entire production operations on a single level, the flow of goods is optimised.
By working through several planning versions, a hall with almost no

supports was achieved. The structural engineering challenges included developing concrete beams with a span of more than 30 metres for the roof structure. This solution made it possible to reduce the number of supports in the production hall from 48 to 8, providing maximum flexibility for the space. The resulting “adaptable factory” can be modified swiftly to reflect changing requirements. A gallery running around the west and south sides affords all visitors a good view of the entire production area and means disruptions to production operations are avoided.

The close proximity of Production Technology to the production area and the shared use of space and infrastructure by Goods Inward and Outward also optimise cooperation between the production units.

Focus on the needs of staff and customers

Developed from the outset in workshops involving staff and outside specialists, the production layout follows lean principles and reflects rising market requirements. Arranging the individual production units in a horseshoe pattern not only speeds up the flow of goods and information; it also shortens processing times and therefore the entire delivery chain up to the customer. Spatial separation of the production area into “fast sellers” and “exotic products” speeds up the production process further.

Because Pilz attaches great importance to developing and making its products in-house, logically enough it tests prototypes in situ. It has a “factory within a factory”, known as the PT plant, for conducting several tests up to production readiness. It replicates all machinery and processes on a small scale, thus avoiding interruptions to the volume production process. New production processes for all production sites are tested there, and existing ones

are optimised.

In order to respond flexibly to individual customer requirements, additional space has been set aside in the building for system assembly. There, complete systems such as the PSS 4000 are not just assembled but also programmed and can be handed over to the customer ready to use. This underscores Pilz's ambition to be a full-service provider for automation. The demands on the staff are consequently also changing and being upgraded. In future, as well as assembly their tasks will include finishing and programming the complete systems.

Industrie 4.0 in production

With the growing integration of machinery and infrastructure through the use of IT in production, Pilz is also highlighting its profile as technology leader in its own production operations. To accelerate Industry 4.0, the necessary infrastructure for intelligent production has been created and elements of Industry 4.0 have been swiftly implemented. An intelligent workpiece conveyor developed in-house is already in use. It speeds up and simplifies the process of populating the circuit boards and the soldering process. The workpiece carriers find their way from the solder wave to the assembly unit automatically thanks to a built-in RFID chip.

Production at Pilz is integrated with the upstream and downstream processes and procedures. Orders from the web shop on the Pilz website, for example, are registered directly and automatically in SAP and from there transmitted directly to Production Planning. Delays or errors due to changes of media or interface problems are thus excluded.

Over the next few months Pilz will successively roll out intelligent

production: machine data will be deliberately gathered and processed for production control. Evaluating this data will yield important information about changes in the condition of machinery and levels of wear. Maintenance can then be carried out preventively. Predictive maintenance avoids malfunctions and downtimes. Saving of the latest versions of work documents in a Pilz cloud will also be realised in 2016. All data and documents will then be available in real time, always in the latest form, and can be accessed on mobile devices in production shops anywhere.

Pilz is aware of the challenges to IT security of a fully integrated production setup. That is why Pilz is investing in a comprehensive security infrastructure to monitor all data traffic. The measures include a separate computer centre reflecting the latest standards. By permanently analysing protocols and all other data, anomalies can be picked up early on. In addition, different firewall systems have been installed for individual production areas so that the necessary security level can be determined individually by zone. Stoppages and safety risks are avoided, and know-how is protected.

“Pilz Think Tank 4.0”

Cooperation between specifically the Information Technology and Production Technology departments, which is so pivotal to Industry 4.0, is another top priority of Pilz. The specially created “Pilz Think Tank 4.0” brings together members of Production and IT and equips them with the necessary resources to plan and carry out joint projects for Industrie 4.0. Over and above its involvement in the Research Alliance and the SmartFactory KL research platform, Pilz is therefore emphasising its role in Industrie 4.0 with the new Production and Logistics Centre: Industry 4.0 is not merely a project for the future at Pilz, it is already a reality in the production process.

Facts and figures about the new building

Name: Peter Pilz Production and Logistics Centre
Location: Ostfildern
Size: 13,500 m2 (6,900 m2 production area, 4,000 m2 office space, 2,600 m2 ancillary and extension area)
Construction period: 16 months
Construction costs: EUR 20 million
Departments housed: Production, Production Technology, Information Technology, Quality Management, Purchasing and training workshop as well as Works Council
Employees: 390 (when fully fitted out)

Points of interest about the building:
- Environmentally friendly energy concept with geothermal energy, high-efficiency building insulation and ingenious heat recovery system,
- Flexible production layout thanks to open-plan, almost support-free hall design
- Ergonomic working environment in production hall and offices
- Arrangement of the individual production units in horseshoe pattern speeds up flow of goods and information
- Optimised for Industrie 4.0: intelligent workpiece carriers, integrated with upstream and downstream processes, Pilz Think Tank 4.0
“Factory within a factory” (PT plant) for testing new production processes and optimising existing ones

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