

Everything turned totally upside down

A newly defined product range, completely different production sequences and a radically simplified organization. These are all part and parcel of the transformation process which has taken place for window manufacturer Beck Fensterbau since Junior Director Johannes Beck introduced the new processing centre.

Since the new processing centre made its grand entrance at Beck Fensterbau in May of 2009, nothing has been quite the same. “We have turned everything totally upside down: The design process, and consequently the product range, the production sequences and the work organization”, says master glazer and window builder Johannes Beck. Together with his father, Senior Director Heinrich Beck, he is in charge of the window producing firm with its staff of seven and an annual production output of around 500 windows. The family management team is completed in the admin department by Senior Director Doris Beck. Founded in 1918, this traditional firm is now running under its fourth generation of family management, with Johannes sharing the helm. Its particular strength lies in the field of historical monument and building conservation, which accounts for around 30 per cent of its sales. Its customers include predominantly private households, but also famous monumental buildings such as the baroque Palace of Ludwigsburg. Beck produces 1:1 copies of historic window designs which provide a sensible compromise between the demands of monument conservation and today’s comfort, thermal insulation and noise protection requirements. The decision to invest in the processing centre provided the impetus for the company to restructure its product offering. “We have created and defined eleven wood and wood-aluminium window systems for monument conservation, renovation and new builds. This has forced us to optimize our previous systems, iron out design weaknesses and adjust details to

the new production method. There is high demand for ten of these eleven models, while the composite window is lagging slightly behind at present.”

A whole host of objectives

Beck was hard put to specify a single main motivation for the investment decision. He actually had a whole host of different objectives in mind: To further extend the company’s particular strength, its flexibility, to improve precision and product quality, to make even the most complex window designs easy to master, to streamline production, simplify the process of work organization and reduce throughput times for each order. “We have actually achieved every one of these aims. For our production process, it now no longer matters whether a window is square, polygon-shaped, oval or round. The production time per order has been slashed by 20 per cent, as has throughput time through the workshop. Another major benefit is that we have gained more workshop space”, summarizes Beck.

Previously, the company produced its windows using a normal angular plant and then rebated around the sashes after gluing. The production staff had to insert hardware, perform trimming operations, fit glazing bars and so on using an army of individual machines. Using the window design software ProLogic, the production engineer used to generate bills of material for production. The production staff knew the geometric data for each standard component off by heart, and were required to set up the various machines. In order to minimize time spent setting up, they streamlined processes by collating the different production orders to form very large production batches. Introducing the processing centre has radically simplified all these processes.

No need for collation of orders

The processing centre now offers such a degree of flexibility that collating different orders no longer makes economic sense. The staff only ever has to deal with just one or a only a very small number of current orders. Beck had been concerned for a number of years with researching for this

investment project. Not only had he found out about what was on offer from the relevant manufacturers, he had also been gathering information in trade journals, making visits to colleagues and attending trade fairs. The decision to opt for HOMAG was made on the basis of his conviction that the product range, the quality and the cost-to-performance ratio ticked all the boxes. Another important concern was geographical proximity, with Homag just one good hour's drive away.

To thrash out the project engineering and precision planning process, Beck, machine manufacturer HOMAG, the window software provider ProLogic (www.prologic.eu) and tool manufacturer Zuani (www.zuani.de) all put their heads together. The decision was taken to opt for the processing centre Venture 12 with a 4 m long table, fitted with a clamping series of eight double clamps for window staves. Depending on the stave length, either two, four or six parts can be clamped for a single processing cycle. ProLogic took charge of creating the link between the design world and wood**WOP**. The HOMAG software "Fenalive" is used to collate table layout configurations.

Zuani's task was to address the subject of profile splitting, accommodating the profiles or profile segments of the entire window range with a total of 60 tools. The chain changer used in the Venture 12 is able to accommodate 30 tools. Manual tool change is not necessary within a window system. When changing between window systems, perhaps three or four tools will need exchanging – a process which takes no more than two minutes. The most laborious part of introducing the processing centre was depiction of the eleven window systems in the design software, with programming costs accounting for around 15 per cent of the overall investment. "My father and I attended a three-day training course at HOMAG in Schopfloch, after which we passed on what we had learned to our staff. The installation and running in process took three weeks, after which we were able to ramp up production to full output straight away. At present we do not utilize the machine's full capacity, and are pleased to accept CNC processing jobs for cabinet makers and joiners", says

Johannes Beck. GM

Fig. 1:

Nerve centre of the restructured production process at Beck Fensterbau: the Venture 12 from HOMAG

Fig. 2:

Copies of historic window designs: Windows used in the Market Place at Bietigheim made by Beck

Fig. 3:

This oval lattice window for the baroque Ludwigsburg Palace was made by Beck

Fig. 4:

Window with jamb and architrave for historic half-timbered buildings

Fig. 5:

Small V joint, not a weak spot: Beck Fensterbau sands the windows after gluing

Fig. 6:

Orderly and manageable: This degree of organization makes every tool change quick and efficient

Fig. 7:

When changing between window systems, three to four tools have to be exchanged

Fig. 8:

Reclamping the six staves following the first processing stage

Fig. 9:

Exceptionally short parts can be trimmed with the aid of a special clamp

Fig. 10:

Block shims in the glass rebates transmit the pressure of the clamping element

Fig. 11:

Although the clamps are automatically positioned, the laser still points towards the trimming areas

Fig. 12:

A typical table layout configuration when working with short window staves. After loading and program start, the machine operator has 20 minutes to perform other tasks close by.

Fig. 13:

“Now different orders are processed in succession, no matter how complex or simple”, says Johannes Beck

With the kind permission of Konradin Medien GmbH, 70771 Leinfelden - Echterdingen

For more information, contact

HOMAG Holzbearbeitungssysteme GmbH

Homagstraße 3-5
72296 SCHOPFLOCH
GERMANY
www.homag.com

Alexander Prokisch

Head of Communication
Tel. +49 7443 13-3122
Fax +49 7443 13-8-3122
alexander.prokisch@homag.de