

Dialog from

Float Glass Industries:
Well-planned technical
innovations creates state-of-the-
art integrated manufacturing

Albat + Wirsam



Dear Colleague,

Float Glass Industries Ltd. (FGI) continues to be one of the leaders in technological advancement within UK's float glass marketplace. Taking the lead again with their newest investments a year ago, they have completed the re-organisation and control of their operations with fully-integrated, state-of-the-art machinery and software. This, boiling down to a complete up-date of their entire machinery and order processing set-up, has achieved a high degree of automation and control which, FGI is happy to note, is already paying-back on their substantial investment. Beginning at order entry, they have merged inventory and purchasing flow with a superb concept for order management, production and tracking, making it now possible to control and direct their quality and productivity at any stage of the production process with the touch of a button.

ALBAT+WIRSAM, working hand-in-hand with FGI since 1994, have been a good partner in this most recent effort, allowing a myriad of machinery and technology innovations to now "talk to each other" all along the line. In sophisticated configuration linking an impressive variety of manufacturers and suppliers, A+W have brought a most striking convoy of "bedfellows" together: Bavelloni, Bystronic, Folrrell, Hegla, Laserjet, Lisec and Tamglass, to name the most prominent.

How have we succeeded in performing such a mighty coup in such short time? David Offland, JMD at FGI, sums it up with his favourite word, "Holistic. In less than 14 months," he continues, "we have succeeded through outstanding team work and exemplary know-how – realising for us the latest barcoding technology, tracking and machine integration software for the Remaster and all the processing steps, right up to IG and despatch."

What has just taken place at FGI shows the sign of the times at Glaston Corporation, Albat+Wirsam's new home as of July, 2007. Since the merger, we have taken a leading role in co-ordinating Glaston's OSP (One-Stop-Partner) projects around the world. At Glasstec in Duesseldorf next month, we invite you to experience yourself, in our Virtual Factory, what intelligent, dedicated synergy can do to promote technology... and the successful future of your own operation!

Yours sincerely,

Matthias Bialkowski

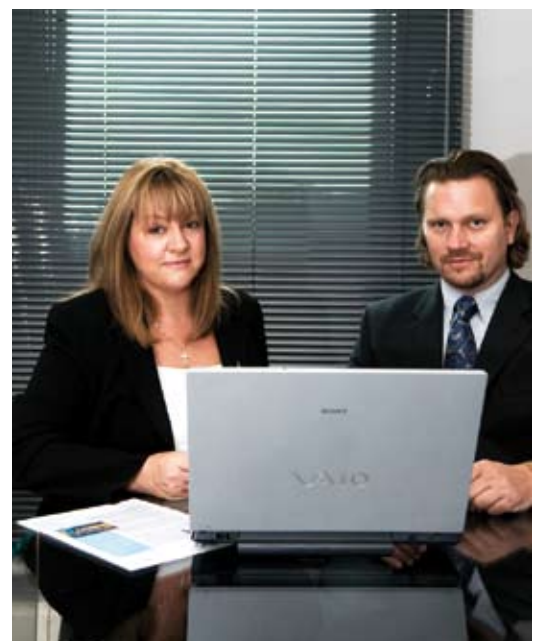
glasstec

Visit ALBAT+WIRSAM at the
Glaston Booth
Hall 16 Stand C57/C73

glaston
seeing it through



Float Glass Industries Ltd: well-planned technical innovation
creates state-of-the-art, integrated manufacturing



Now in the 4th generation of this family-owned business,
cousins Dawn Offland & David Offland, JMD's of FGI, have
instigated the momentum for the firm's boost into networked
high technology

Well-planned Technical Innovation Creates State-of-the-Art, Integrated Manufacturing at Float Glass Industries

With their recent extensive boost in technical innovation, FGI have secured their continuing tradition as one of UK's largest independent glass-processing companies. Impressively expanding their product spectrum at the same time, this highly-capable, full-assortment glass supplier is now even better service-orientated. First-class customer service, excellent delivery capability, top quality across the board and a competitive best-price policy... these are the assets of note for this family-owned and run company now in the 4th generation.

Efficiency through networked information

A decisive part in this development has been played by ALBAT+WIRSAM, the software partner which has advised and guided FGI for over 10 years, not just as promoter of innovation, but as integrator – bringing together state-of-the-art technology from the best glass processing machinery manufacturers in the world. The result is, as FGI proves, more than the sum of its parts: in their modern production halls, machinery from Tamglass, Bavelloni, Hegla, Bystronic, Forel and Lisec operate in perfect harmony, united by a common data strand. A sheet of glass, cut on one of the high-speed Bystronic or Hegla cutting lines, “knows” if it’s to be further processed on the ultra-modern Bystronic TPS IG line, polished at the Bavelloni CNC processing centre, or coated at the brand new Giardina opaque painter.

Of course, the sheets of glass don’t “know” anything of themselves. The information is gathered in the A+W production database ALCIM, and transported from the individual

workstations to the processing machinery. Monitors, “talking” barcode labels and scanners have replaced the paperwork and long foot journeys across the shop floor. Streams of data travel at lightning speed between processing and control centres, giving FGI employees the information they need for their first-class work in real-time. ALBAT+WIRSAM Software has transformed the stand-alone high-tech machinery into integrated systems with continuously flowing information. The machines “talk” to each other – so that even multi-level production processes, FGI’s daily bread, run with fail-safe precision. In a thoroughly networked environment, all required information is available at the right time and the right place. Supplemental to barcoding, a simple but highly functional ID system has been achieved with colour-coded labels for the various work segments. A silver stripe means that the sheet goes to the IG line and up to 6 other colours denote that the sheet will go for painting, tempering, polishing, etc.

State-of-the-art machine technology

Innovation to the machinery set-up has followed multiple goals: the

extension of the product palette, improved quality and better, more reliable delivery. The new machinery at FGI has been laid out in intelligent configuration according to specific function and responsibility; i.e., the Tamglass tempering furnace has been designated almost exclusively for the Bystronic-Lenhardt IG line and the Giardina Paintline, which opaquely coats the spandrels in roller-coating technique.

In this way, FGI has reacted astutely to the steadily increasing demand for safety glass in the commercial area: IG units, constructed in ever-increasing variations of functional float glass, such as Low-E, solar and audio protection, and in combination with tempered and laminated safety glass, can now be delivered in ultimate variety.

Laminated safety glass: more output, better yield

FGI is known for their extensive variety of laminated safety glass. More than 10 varieties are on hand at any one time, from clear glass to sound and solar protective; right up to fireproof panes. The stock sheets are



More than 10 years partnership between FGI and A+W: FGI-Operations Director Mike Thompson (right), ALBAT+WIRSAM's Sales VP UK, Matthias Bialkowski (middle) and Simon Blount, Head of Systems.



HEGLA cutting table for both laminated and float glass, with the perfectly integrated HEGLA Remaster sub-plate storer. Storer and cutting line are controlled by ALBAT+WIRSAM's XOPT-ON software.

processed on a vertical Forel cutting table, automatically turning the sheets to the correct x/y/z cutting side. Since 2008, the Forel has reinforcements: a state-of-the-art, combination cutting table from Hegla manages both float and laminated safety glass to further boost delivery efficiency. The icing on the cake with this facility is the Hegla Remaster for laminated glass, which stores the pricey glass leftovers for recycling within the going run. How does that work?

After the breaking out of the last sub-plate, it is stored horizontally over the cutting table according to instructions fed from XOPT-ON. This means the leftover plates stay within the cutting area. Long transport and interim space requirements have completely fallen away. At the line position pre-calculated by A+W's control software, the residual plate is merged into the next optimization run for processing. These functions are time and run optimized to avoid unnecessary standstills at the break-out and cutting areas. The software guided recycling of these expensive leftovers saves real money.

The "White Giant": TPS IG in XXXL

In view of their well-developed production capacities for safety glass, FGI's decision to build their own IG facility was logical and timely. In their position as full-assortment glass supplier, they have established generous conditions for their continuing growth, while remaining flexible with regard to fluctuating conditions on the market. The decision to install a facility capable of producing IG units 5 metres



The brand new BYSTRONIC IG-Line, using LENHARDT's TPS warm-edge system, produces EVERSEAL™ insulating glass up to widths of 5 meters, especially for the commercial market. The giant line is controlled by ALBAT+WIRSAM ToolTV production management software.

wide is in line with commercial market and building trade trends.

EVERSEAL™ Warm Edge Insulating Glass manufactured at FGI is made on the largest TPS line in Great Britain, and its warm edge feature and production flexibility are attracting high interest from the UK commercial building sector.

The ALBAT+WIRSAM control stations along the IG line see to it that the operator receives the right information at the right time via monitor. The positioning of the sheets, coatings, reference edges – ALCIM "knows" all the details and relays them to the operator via the ToolTV-IN and ToolTV-Assembly monitors. A Viprotron scanner automatically inspects each sheet entering the line for damage or dirtiness.

Pushing a button, the operator signals the sheet on its way to line's end; ToolTV-OUT graphically indicates the correct storage location, rack number and rack change. Because networked production is no one-way street. ToolTV-OUT also relays the "IG completed" data back to the FGI's central ALCIM database, automatically



A+W control station XTV: This visualizing tool shows the employee at the breakout table breakout pattern and rack location, thus ensuring that glass is available at the tempering furnaces and the IG-line in the correct sequence.



up-dating the sheet's status in the ALFAK order processing system. In future, order processing clerks at FGI can give detailed information like, "IG unit completed; not yet loaded for transport," – a further step ahead in customer service, made possible through barcode technology and an excellently organised database.

The tempering process is also supported by the ALCIM control stations. The furnace manager scans the bar-coded label of the current sheet for completeness of processing. This gives him a true-to-scale technical drawing on the ToolTV TG-IN monitor, allowing him to control the parameters and previously completed work. With the release of the sheet to the furnace, he automatically registers it with ToolTV TG-OUT, which then – automatically – releases the print of new labels right at the exit and assigns a new storage location. The toughened sheet is then reported complete or broken, and is automatically allocated to a rack.

This data, too, automatically becomes available in the ALCIM production database and to ALFAK data processing. The whereabouts



State-of-the-art and pretty fast: The high-performance TAMGLASS tempering furnace. The tempering process is supported by ALBAT+WIRSAM ToolTV-TG control stations - every sheet to be tempered is registered via barcoding and correctly forwarded to the next processing machine.

and processing status of any sheet are available at all times as well as the next processing step. Lost sheets or wrong or missing processing steps are practically unknown at FGI.

In addition, ALBAT+WIRSAM is now piloting first elements for furnace optimisation in conjunction with their Glaston co-partner, Tamglass. Now in its earliest stage, this software product, when fully developed, will support the tempering process with energy savings and optimised put-through capacity.

From Shaping & Nesting to CNC processing

Alongside right-angle polishing lines and manual CNC drills, Float Glass Industries operates a Bavelloni-Alpa CNC processing centre for shapes and free-form shapes, specialising in glass doors, sectional walls, furniture and table glass as well as structural glazing elements.

The technical Order Capture (TOE) for the high-tech processing machinery is state-of-the-art and supported by the ALBAT+WIRSAM CAD programme Shaping & Nesting. Where "standard" shapes have lost their attractiveness and free form shapes are more in demand than ever, Virtual Digitising has taken over the geometry. The dimensions are photographed directly from templates with a calibrated camera marking the necessary reference points. The Shaping & Nesting data created provides the basis for the display at the ToolTV workstations and the on-line control of the processing machines.

Programming a processing centre and determining the tools and grip positions, etc., is a time-consuming process. With their brand-new, jointly-developed CAD release format, Glaston

partners ALBAT+WIRSAM and Bavelloni have enormously simplified operation of the ALPA machine. The high-tech specialists have implemented the new CAM-DXF format containing both shape geometry and machine configuration data - "understood" by processing machines without excessive programming. All the tool, set-up, geometry, grip positioning, etc. information is already included.

In practise, this means that an employee can set up the CAM-DXF file from his PC, with all the commands necessary for machinery on the shop floor - eliminating traditional at-the-machine programming completely. This greatly reduces turnaround time and chances for error, a real day-to-day business plus!

Comprehensive process optimisation

FGI's management team is young, and its employees conscientious, self-sufficient and motivated. Since their giant jump forward began two years ago, FGI has well-integrated this mass of new technology into their daily business, and the refining and optimisation phase has begun. Having taken the time and effort to well-plan for their future in Britain's (now green-thinking) stands them in good stead. The machinery and software operate synergistically, "in sync" - an entire, fascinating process which JMD David Offland happily describes in one word: "Holistic!"



The new Giardina Paintline, which opaquely coats the spandrels in roller-coating technique.



The BAVELLONI CNC processing centre for shapes and free-form shapes is fed online with processing data in new CAM-DXF format.

Float Glass Industries Limited
 Float Glass House
 Floats Road, Roundthorn
 Manchester, M23 9QA
 United Kingdom
 Tel: +44 161 946 8000
 Fax: +44 161 946 8092
 salesorders@floatglass.co.uk
 www.floatglass.co.uk

ALBAT+WIRSAM Software (UK) LTD.
 2 Viewpoint Office Village, Babbage
 Road
 Stevenage, Hertfordshire, SG1 2EQ
 United Kingdom
 Tel. +44 1438 761-400
 Fax +44 1438 761-420
 admin.uk@glaston.net
 www.a-w.de