



## Raw Ingredients Intake

### CHALLENGE

Burton's needed to upgrade its aging process control system for the Raw Ingredients Intake, with a streamlined, easy-to-use and scalable solution. DPS Group was tasked with migrating the legacy control solution over to a modern automation and SCADA system with no disruption to production.

### SOLUTION

- Siemens Simatic S7-1500
- Siemens S5-F7 Interface Adaptors
- Siemens Scalance Fibre Optic Network
- Profinet
- iFIX from GE Digital
- Historian from GE Digital

### RESULTS

- A control solution which meets the requirements of streamlining and ease of use
- Migration path with reuse of existing I/O Wiring, reducing plant downtime
- Faster and more robust plant network
- In-house and external remote access capabilities, ensuring a timely intervention from outside in the event of malfunction of installations operating 24/7
- Totally Integrated Automation (TIA)

### PROJECT AREAS



Project management



Automation solutions



Turnkey systems

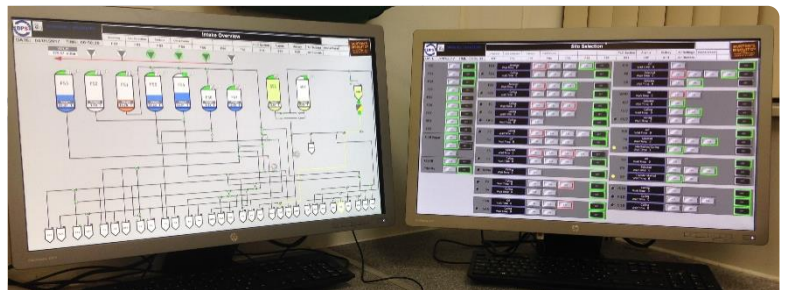


Electrical division

### PROJECT OVERVIEW

Our brief was to upgrade the Raw Ingredients Intake System, a mission critical, high availability process. Without it, the factory would not produce.

The Raw Ingredients Intake System was originally installed over 20 years ago, and whilst it has served the company well, it was deemed that due to its age the time was right to replace and upgrade the control system.



The system comprises nine silos, 30 day bins, 12 mixers and six blowers. Raw ingredients, including flour and sugar, are transferred from the silos to the day bins. They are then weighed into the mixers, using recipe and route control.

There are over 100 routes that the products can flow through. Complex routing and queuing systems ensure the factory's high demand for raw materials is met, 24 hours a day.

The fundamental challenge was keeping downtime to a minimum; the only window to undertake the work was within the short Christmas holiday period.



imagination at work

SIEMENS



# DPS Group - One Integrated Solution - Case Study

## OUR INTEGRATED SOLUTION

DPS Group set out to develop a system that would improve: operator experience, diagnostics, maintenance & system redundancy.

Working closely with the client, DPS Group developed and updated existing documentation including P&IDs, flow routes, and electrical schematics, which did not reflect the process operation. This was essential given there had been many years of modifications & additions.



To ensure project demands and critical timescales were met, DPS Group produced a full set of meticulous documentation including a Functional Design Specification (FDS), test & validation plans.

DPS Group designed and produced a system which enabled a high speed changeover of hardware, to minimise downtime, a key priority for the project.

A robust contingency plan to restore original conditions was also drawn up to ensure that the system could revert to its original configuration and ensure production could be re-established. This was not required, as the project proceeded as planned.

The complete system was developed at DPS Group's headquarters in Fife, where it was fully simulated and customer Factory Acceptance Test (FAT) was carried out.

All hardware was changed over in four hours and fully tested. The new system was ready for process commissioning within twelve hours of the plant shutting down and in full production within five working days.

Control Systems Engineer **Filip Kurek** explains that this was a project founded on a strong client relationship.

"The nature of the project meant that working close with the customer was critical," he explains

"Numerous upgrades since first installation of the system required us to work together to understand their systems.

"DPS Group ensured all user requirements were met, and also provided a fresh look at the controls and diagnostics available to further improve operators and maintenance functionality.

"Our designated team worked closely together to ensure all aspects of the project - planning, documentation, development, testing, installation and commissioning - were achieved

within tight timescales.

"Extensive in house testing allowed minimising commissioning time to allow quick changeover between old and new system.



"This ensured that the system was up and running within eight hours from shutdown, and full plant operation was possible just after the days of commissioning."

And by the project's conclusion, **George Wotherspoon** from Burton's was delighted with the work completed.

"At the Burton's Biscuits' Edinburgh site we finished the last production run of 2016 with a twenty year old high risk, obsolete intake control system and started 2017 with a new, low risk, modern control system," he says.

"I believe the key reason for the success of the changeover was down to a robust plan from DPS Group and the professionalism of their engineers to follow that plan to the letter.

"Thanks to the staff and engineers at DPS Group they're helping keep the "Wagon" wheels turning at Burton's Biscuits for hopefully the next 20 years." ■

## HIGHLIGHTS

- High Availability, Mission Critical System
- Minimal Downtime, 5 Workings allowed (during Christmas Shutdown)
- Over 100 Production Routes with critical queuing demands
- Over 900 I/O Points
- SIEMENS S5 / S7 Hardware Conversion
- 8 Siemens S7 racks
- PAC/SCADA Software re-write



## ABOUT DPS GROUP

DPS Group is trusted to provide a range of integrated solutions across eight core sectors, delivering the highest standards of safety, quality, environmental compliance, and customer service.

Our customers benefit from the collaboration between our:

- **Systems expertise:** design, engineering and project management
- **Customer services:** electrical, instrumentation and control construction
- **Product strength:** strong brand partnerships and quality product



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