

FAIRPORT ENGINEERING'S LATEST GYPSUM PROJECTS

FAIRPORT ENGINEERING UNDERTAKES NEW MATERIALS HANDLING PROJECTS FOR BPB GROUP COMPANIES IN THE UK AND SPAIN

GG The UK's Fairport Engineering is well-known for its process engineering and materials handling capabilities. The company has now undertaken significant projects for BPB Group companies (now Saint Gobain), in the field of gypsum handling, processing and storage.

A recent run of contract awards has been the result of Fairport's increasing involvement with BPB group companies, over the last three years. Fairport is to undertake some £7.0m of specialist materials processing and handling assignments for BPB spread across three projects in the UK and Spain.

In 2002 Fairport undertook for British Gypsum the mechanical and electrical works for the design and installation of a fourth kettle into the existing systems at Barrow on Soar, together with the installation of other ancillaries such as the milling and dust extraction systems. Having successfully commissioned the new kettle and milling systems and thus increased the production of stucco (calcined plaster) it was then necessary to increase the downstream screening capacity. Consequently, in 2004, Fairport designed and installed the fourth screen and ancillaries – storage silo, discharger, screens and filter systems.

East Leake project

It is believed that the experience gained on these projects has contributed to British Gypsum awarding a similar, but larger project, to Fairport as part of a UK£50m (US\$87m/Euro72m) investment to establish its third UK plaster manufacturing plant at East Leake.

The project is essentially to establish additional stucco production capacity in a new mill. Equally, in

order to provide operational flexibility the project also includes work in the old mill to allow milled material from here to be processed in the new mill.

The new mill will receive raw material and grind this in a heated cage mill prior to classification in a cyclone and associated dust filter before



Above: the new hot pit at Barrow-on-Soar, under construction by Fairport.

being stored in silos, which will also be capable of receiving raw material from the existing milling plant. This material will then be pneumatically conveyed to weigh silos prior to blending and then passing to a twin line kettle and hot pit configuration to convert it to stucco. A twin line tube milling, mixing and screening system will process the stucco into its finished state.

San Martin de la Vega

As well as seeking to increase its plaster manufacturing capacity, BPB is also intent on expanding its plasterboard production activities. To this end BPB Engineering invited Fairport to assist it, in early 2004, with a design study focussing on the materials

processing and handling requirements of a new board plant then being planned for Iberplaco in Spain. Fairport is now working with BPB Engineering, Iberplaco and other partners, finalising the detailed design for the actual build of the rock-handling project. Fairport's specialist expertise in minerals processing has been combined with BPB's operational knowledge from over 60 plants worldwide to create the state of the art raw materials system to be constructed at San Martin de la Vega, south of Madrid. The new facility is to process some 600t/h of rock gypsum and produce a homogenised

–50mm product, which will be suitable for calcining and subsequent use in the board production plant.

The new rock processing plant will consist of a scalping grizzly ahead of a primary jaw crusher arranged such that the grizzly undersize can either by-pass the crusher and join its product or be diverted to a separate scalplings stockpile if its quality is in doubt. A secondary roll crusher, in closed circuit with a selector screen,



Left: An aerial view of San Martin de la Vega's gypsum quarry.

to produce the -50mm product desired, and will then process the primary crushed material. Both primary and secondary crushing facilities will be equipped with dust extraction and maintenance facilities.

The crushed gypsum will be homogenised using a windrow stacker reclaimer system of some 10,000t capacity before being conveyed at 200t/h to the rock storage bin ahead of the calcining facility and board line.

A state of the art distributed PLC-based control system will be used for the rock handling plant. This will allow remote control of the facility via connection to the main plant SCADA and control system.

Runcorn project

Apart from plaster and plaster board production British Gypsum, in joint venture with Isover Saint-Gobain, also manufactures Isowool a thermal and acoustic mineral wool in Runcorn, Cheshire. Fairport installed, in 2000, a new glass cullet intake handling plant, which has allowed British Gypsum Isover to markedly improve the economics of its operations. In mid-2005 Fairport was tasked with providing additional cullet in-feed and blending systems at the plant.



San Martin de la Vega's existing rock handling plant

The additional intake facility will allow tankers to pneumatically discharge road transported cullet into two new 150t silos before being metered into the production process by a combination of vibro and weigh belt feeders. Equally a separate hopper, feeder and bucket elevator system will also be provided to allow cullet to be fed into the system by mobile plant from other storage areas.

The Isowool production process also relies on chemical additives being batched into the production process and Fairport is also to install an ingredient additive system to receive FIBCs and batch these materials before being conveyed by a vacuum transfer system to the production facility.

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Below: San Martin de la Vega's existing plaster works.

