One-team approach to safe, efficient construction

Early in 2012, AkzoNobel received planning permission for the construction of a £100 million facility at Ashington on a 1,000,000 sq metre site. The facility will be one of the world’s most advanced sustainable manufacturing plants utilising the most sophisticated technology, it will manage highly complex filling requirements at exceptional speeds.

AzkoNobel is the largest global paints and coatings company and a major producer of speciality chemicals. They manufacture iconic brands including Dulux, Polycell and Cuprinol. The new facility, planned to commence operations in late 2014, will halve AkzoNobel’s environmental impact in the North East, reducing energy consumption per litre of paint produced by 60%.

ABB were initially approached by AkzoNobel to review the present construction management organisation. Following a well-received review, ABB were appointed as the principal contractor to undertake the construction management of the process and manufacturing plant. AkzoNobel required a company with a strong safety focus and a proven track record for planning and co-ordination, contractor management and delivery to time and cost.

ABB’s ‘one-team approach’ and safety expertise results in an efficient construction project for AkzoNobel.

The project was a challenging one, some of the key issues being:

- Working to a tight programme
- A large number of contractor companies working on-site (over 30) leading to multiple interfaces
- A large number of people on-site - up to 300
- A number of foreign companies on-site - not familiar with UK site / safety culture

Specific challenges for safe working:

- Congested work areas
- Limited headroom
- Multiple height working
- Significant number of confined space entries

Solution

The approach taken by ABB to managing this complex project had a number of different facets:

Safety and quality management

- Work areas were segregated:
  - Eliminate risk to unrelated workers
  - Keep pedestrians away from plant and site vehicles
  - Carefully planned and fully resourced confined space entries
- Using ABB’s HAZCON (Hazards in Construction) process to identify the construction hazards, the results were used to set out the successful approach to managing site safety
- ABB safety training for foreign workforce prior to site arrival assured UK standards of health and safety were maintained on site
- Quality control - ABB managed all equipment delivery inspections; with any defects identified prior to installation, avoiding installation and commissioning issues

Planning and co-ordination
- One-team approach - ABB construction manager was fully integrated into the overall project senior management team, with the site construction team under ABB’s control, the team consisted of team members from the client, designers and ABB. The one team approach facilitated, good team work, communication and efficiency
- Overall integrated construction plan, from design through to construction, was generated and maintained:
  - Helped focus resources in the right area at the right time, providing more opportunity to identify areas where flexibility may be required
  - Plan ensured effective co-ordination between contractors; minimising delays and disruptions
  - Plan was flexible to deal with project changes

Contract management
ABB advised the client on contract strategy and contract plans and played a significant role in the assessment of contractor competency and selection. ABB managed the safe installation of:
- 16,500 individual registered plant items
- 29,000 meters of pipework
- 135 skids
- 15,000 CE loops
- 5,000 valves
- 500 pumps
- 300 tanks and silos
- 5,000 instruments

Benefits
- Assuring measured high levels of site safety
- An efficient and highly flexible construction management team
- Alignment of all construction contractors to AzkoNobel project objectives through a one-team approach
- Quality assurance through efficient equipment inspection controls