

## Frankley Water Treatment Works Upgrade



### Introduction

Frankley WTW is one of a number of Water Treatment Works operated by Severn Trent Water, where this works supports the water supply infrastructure in the West Midlands.

### Solution

This was a high profile programme of works as it played a major part in Severn Trent meeting DWI targets. CEMA were commissioned to deliver MCCs and Control Panels, Systems Integration, Electrical Installation, and Communications Infrastructure for the following main projects:

- ◆ Frankley WTW GAC Project
- ◆ Frankley WTW MWCS Project
- ◆ Frankley WTW Hypochlorite

The STW capital expenditure is circa £39 million and Cema Ltd. was awarded £5.4 million in total for works allocated within these three main projects.

### Conclusion

Cema Ltd. delivered the projects at Frankley WTW within restricted time-scales, co-ordinating resources between several complex parallel capital projects and responding to programme acceleration requirements to ensure Client external dates are achieved, and security of supply was maintained.

Cema Ltd. are capable of delivering a main contractor and Principle Contractor role providing a Client with a single EICA contractor with an ability to simultaneously deliver multiple and individual projects

### Project Scope of Work

All projects were delivered simultaneously during an 18 month period. Cema Ltd. was appointed to provide the following Electrical and ICA services:

- ◆ **Frankley WTW MWCS Project – Value £3.4 million**
  - Provision of new site-wide, resilient optical fibre network
  - Supply of new SCADA system to replace existing but obsolete DCS system
  - Replacement of 80 process plc's and associated control panels whilst maintaining 24x7 process operation
  - Principle Contractor (CDM) role and site H&S management
  - Project management role as main contractor and sub-contractor management
- ◆ **Frankley WTW GAC Project – Value £1.5 million**
  - Design and installation of HV ring main extension
  - Design, supply and installation of process MCC's and LV electrical system
  - Project Management including third party management
- ◆ **Frankley WTW Hypochlorite Project - £0.5 million**
  - Removal of redundant chlorine plant
  - Design, supply and installation of process MCC's and LV electrical system

### Cema Ltd. Project Delivery Strategy

For the MWCS project, as the project scope was entirely Electrical and ICA work, Cema Ltd were asked by Severn Trent to take on the role of Main and Principal Contractor. This allowed simplification of supply chain in that CEMA procured third party services on behalf of Severn Trent, and delivered an immediate cost saving through elimination of a 'traditional' main contractor's management fee.

Other benefits delivered by Cema Ltd through innovative working practices are:

| CEMA LTD. WORKING PRACTICES  | DELIVERED BENEFITS  |
|--|---|
| Utilising a common project team with a constant on-site presence                         | <ul style="list-style-type: none"> <li>▪ Process impact visibility and management across all projects to ensure security of water supply</li> <li>▪ Improved resource management (waste elimination)</li> <li>▪ Improved cross project communication</li> <li>▪ Shared site working practices</li> </ul>  |
| Collaborative working with Consultants and other Contractors across multiple projects    | <ul style="list-style-type: none"> <li>▪ Shared infrastructure across multiple projects providing a direct Client cost benefit</li> <li>▪ Elimination of "traditional" main contractor providing a direct Client cost benefit by elimination of management fee</li> <li>▪ Improvement on design development/approval and reduction in rework</li> </ul> |
| Improving Client Health & Safety through design  | <ul style="list-style-type: none"> <li>▪ Reducing Operational risks by elimination of HV area access requirements</li> </ul>  |
| Improving SCADA and process functionality in-line with Client standards                  | <ul style="list-style-type: none"> <li>▪ Process functionality improvements at "zero cost"</li> <li>▪ New object creation improving SCADA remote functionality and eliminating manual valve operations (H&amp;S benefit to Operator)</li> </ul>   |
| Vesting equipment  | <ul style="list-style-type: none"> <li>▪ Securing of installation equipment to maintain programme and achieve Client external target date</li> </ul>  |
| Provision of a bespoke test facility at Cema Ltd. Wrexham and use of on-site sample work | <ul style="list-style-type: none"> <li>▪ Reduction in design approval periods and Client confidence in build and solution delivery</li> </ul>   |



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