

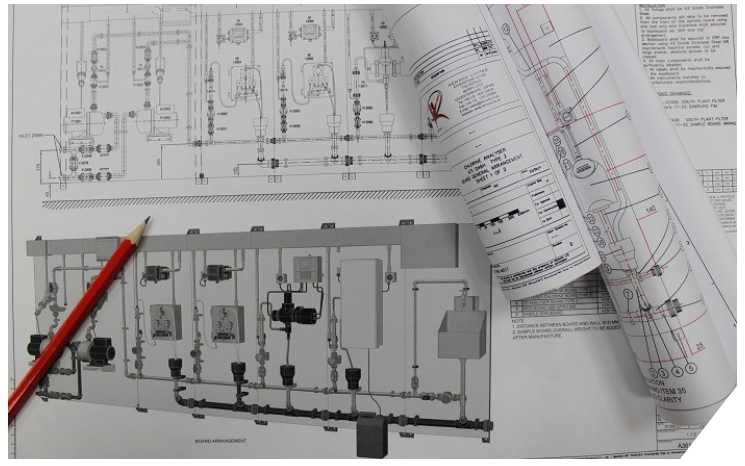


SEVERN
TRENT

BAMFORD WTW WATER QUALITY MONITORING

CLIENT: SEVERN TRENT WATER
PROJECT VALUE: £700,000
LOCATION: BAMFORD, DERBYSHIRE
PROJECT TYPE: WATER & UTILITIES
DURATION: 12 MONTHS

LOCATED IN THE PEAK DISTRICT, BAMFORD WATER TREATMENT WORKS (WTW) IS ONE OF SEVERN TRENT WATER'S LARGEST TREATMENT WORKS, SUPPLYING DRINKING WATER TO THE NEARBY CITIES OF NOTTINGHAM, DERBY, LEICESTER AND SURROUNDING AREAS. TAKING ITS SUPPLY FROM LADYBOWER, HOWDEN AND DERWENT RESERVOIRS, THE INCOMING WATER IS BLENDED AND TREATED AT THE WORKS BEFORE FEEDING INTO DERWENT VALLEY AQUEDUCTS.



THERE HAS BEEN A WATER TREATMENT PLANT AT BAMFORD SINCE THE EARLY 1900's. WATER QUALITY STANDARDS HAVE IMPROVED OVER THE YEARS AND THE DEMANDS HAS SIGNIFICANTLY INCREASED, RESULTING IN THE PLANT BEING UPGRADED ACCORDINGLY. FOLLOWING CONSTRUCTION OF LADYBOWER RESERVOIR IN 1945, THE ORIGINAL SLOW SAND FILTERS WERE CONVERTED TO CLARIFIERS AND RAPID GRAVITY FILTERS. THESE ARE MORE EFFICIENT IN REMOVING THE IMPURITIES CONTAINED WITHIN AN UPLAND WATER SUPPLY. BAMFORD WTW SUPPLIES THE LOWEST COST WATER IN THE REGION AS IT BENEFITS FROM GRAVITY FLOWS IN AND OUT OF THE WORKS.

THE ISSUE

Increasing raw water colour from the reservoir catchments, associated with higher intensity rainfall events, believed to be linked to global warming, put the existing clarification processes under increasing challenge. In order to future proof the works against this issue, a substantial project to upgrade and enhance the works was carried out over a 3 year period. Designed to meet the challenge of climate change, the plant needed to ensure water quality for the future, with a potential maximum output of 202 MI/day.

A major part of the upgrade works was to provide new water quality monitoring systems throughout the process of the works for both monitoring and control purposes to ensure high demands could be achieved. The water quality monitoring systems needed to be of modular design to ensure easy 'plug and play' upgrades if required by the end user, with each system having a vast range of analytical instruments to continuously measure the water quality with the highest of accuracy. All instruments had to be selected from the end users preferred supply chain.

THE SOLUTION

Having previously supplied water quality monitoring systems at Bamford WTW for the disinfection stage contact tank, Kemada were asked to supply various Water Quality Monitoring assemblies and sample pump boards, covering the following applications; pH (ORP), temperature, turbidity, chlorine, dissolved organics, iron & manganese.

Our scope included the full 3D mechanical and electrical design of all assemblies manufactured to Kemada's unique modular range. Our assemblies were supplied, installed, tested and commissioned using direct employed personnel with onsite works including the supply and installation of all PVC-U pipework and support systems for both water sample lines and sample waste drainage.

During the onsite construction works additional pumping systems had to be employed to ensure sufficient flows to our assemblies to guarantee reliability. Our standard sample pump boards c/w control panels were a perfect solution and could be either directly coupled to the water quality assembly or mounted remotely. Kemada became a 'one-stop-shop' to our customer.

THE OUTCOME

Due to time constraints and flexibility our modular systems were the perfect solution as they eradicate the need for re-design work and significantly reduce the design, procurement and manufacturing process whilst also providing many other key benefits to the end user including the reduction of costs.

Kevin Gibbons, Director of Kemada said, "It has been a pleasure to work on such a prestigious project and increase our portfolio. Working closely with Severn Trent Water's operations team and our supply chain has assisted us greatly to further develop our customers. The modular systems have once again proved their place in the market. The flexibility of the 'plug and play' arrangement paid dividend throughout the project."



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