Fluid Facts Only EFI

Engineered Fluid, Inc.

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DESIGN - BUILD as Another EFI Option

When factory-built pumping and pressure control equipment is a significant portion of project scope, DESIGN-BUILD contracting is an important option. Engineers, Owners and Developers have gained a high degree of confidence in the specialized engineering, design and fabrication skills of EFI. With that confidence, EFI has been asked to participate on the Project Team on a broad range of DESIGN-BUILD projects. The attained outcome of these projects has been better project control, decreased time to completion, higher quality and a reduction in total project cost.

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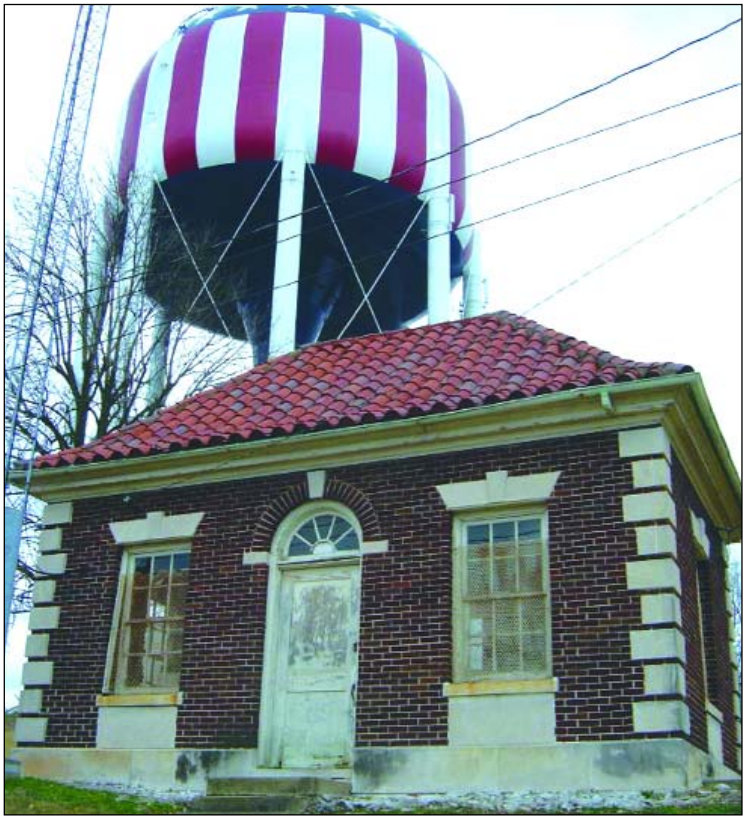
Bowling Green Kentucky Municipal Utilities, BGMU, in 2005, solicited proposals for the replacement of their old Red, White & Blue Booster Pumping Station.

With the involvement of EFI and their representative, Delaney & Associates, BGMU saw wisdom in approaching the project as a Design-Build collaboration. The new booster pumping station was to be the major portion of the project. BGMU sent out solicitations stipulating the station manufacturer as the Project Lead holding ultimate and single source responsibility for the overall project performance.

An important aspect of the Design-Build decision was the station mechanical and electrical design was to be a cooperative effort between BGMU Engineering personnel and their EFI counterparts. The outcome was a cost efficient design conforming to a tight budget. EFI selected quality components and sub-systems capable of being delivered to EFI quickly to meet a short delivery and installation schedule. Site design peripheral to the station was handled by BGMU.

The Owner's responsibility was to set the performance standard; EFI's responsibility was to meet that standard – a simple path to success.

Brett Jones, Project Engineer, Bowling Green Municipal Utilities



One aspect of the new station design was to meet the same architectural theme as the existing, 90 year old booster station and do so cost-effectively. The old station was a Registered Landmark and it sat on a Civil War battlefield.

In this picture the EFI hired foundation contractor is seen forming up the simple station foundation. Disturbance of the site had to be minimal.

In this picture the slab-on-grade foundation is being poured. EFI provided the foundation design based on BGMU provided soil condition data.

This picture shows the EFI provided crane contractor off-loading the station from the EFI delivery truck using EFI provided rigging and slings.

The Essence of Design-Build…

Our Industry tends to view Design-Build as a new wave of contracting but nothing is farther from reality.

Design-Build is the means by which the public works and municipal projects were undertaken going back to medieval times. The great gothic cathedrals and the magnificent public buildings of Europe in effect were design-build projects. Not until the turn of the 20th century did American contracting change to the now prevalent method of Design, Bid and Build.

What is Design-Build?

In essence Design-Build is a "Teamed" approach to construction. The Owner develops a clearly written document of specified outcome – cost and performance. Then the Owner selects a project team made up of design engineers, contractors, managers and major equipment/system suppliers. The Team, in active cooperation, defines how to meet the Owners required outcome and at what cost. The Team moves the project to completion. The Owner judges if the intended outcome has been met.

What are the advantages to Design-Build?

The active cooperation aspect breaks down the enmity and conflicts that can occur at the interfaces caused by the bid process.

The formation of the teams reduces overall project time as the process is no longer a serial activity; now major activities can occur concurrently. Costs are more controllable because optimum constructability is factored in from the beginning of the design stage. Risk is spread in a more equitable fashion.

More and more state governing and funding agencies for municipal water and wastewater are turning to the advantages of Design-Build and allowing this approach to project development.

This picture shows the EFI station set in place but without the roof trusses and the exterior masonry. The truss sill boards were placed at the Factory so as to be properly anchored into the roof joist system.

This picture shows one corner of the underside of the aluminum, standing seam metal roof, eve caps and the soffit work. The roof trusses and sheathing and the cover materials were provided and installed by a local roofing contractor as a sub-contractor to EFI.

This picture shows the internal mechanical and plumbing system for the two (2) – 125 horsepower, end suction centrifugal pumps with piping, valves and support structure. The building built by EFI supports a 2000 pound capacity bridge crane for use in safely servicing pumps and valves as is required.

Here is the EFI station completed with roof and masonry and with the same character as the old station and on time and on budget.