



PROJECT SUMMARY

Organization

United Utilities

Solution

Water and Wastewater

Location

United Kingdom

Project Objectives:

- Institute an enterprise-wide engineering documentation management system with an intuitive, map-based interface that will be used by United Utilities and its contractors
- Meet the CDM (construction, design and management) requirements of the UK's utilities regulator OFWAT
- Save money by always being able to access accurate, current 'as-built' data

Products Used

ProjectWise® Geospatial Management

FAST FACTS

- United Utilities is a FTSE 100 company with revenues in excess of £2 billion
- ProjectWise Geospatial Management is now used by both United Utilities and its contractors to provide enterprise access to all engineering documentation potentially saving millions of pounds over the next five-year Asset Management Plan (AMP)
- United Utilities now has secure, fast access to accurate engineering documentation
- The map-based interface and spatial indexing of documents and objects allows for easy retrieval of any type of project or asset information
- ProjectWise Geospatial Management will save United Utilities millions of pounds over the next several years

United Utilities Improves Project Control, Increases Efficiency and Cuts Costs Using Projectwise Geospatial Management

A HIGHLY REGULATED INDUSTRY NEEDS TO FIND EVERY EFFICIENCY IT CAN

The water industry in England and Wales is arguably amongst the most highly regulated of all industries. Every five years, OFWAT, the Office of Water Regulation, sets absolute limits on the prices the water companies can charge their customers. In the forthcoming Price Review, PR09, OFWAT will set price limits for customers' bills for each year between 2010 and 2015. After very heavy capital investment to meet EU legislation and quality standards, United Utilities AMP5 – the multi-billion pound five-year Asset Management Plan that depends on the outcome of the PR09 for funding – will now focus on the maintenance, upgrade and replacement of aging assets.

EFFICIENT AND COST-EFFECTIVE PARTNERSHIPS

United Utilities is the UK's largest listed water company and owns, operates and maintains utility assets, including water, wastewater, electricity and gas. United Utilities is a FTSE 100 company with a turnover of £2 billion and is the UK's market leader in utility outsourcing. Since the company was formed in 1995 from the privatisation of North West Water and Norweb, it has been evolving the way it works with contractors and partners in delivering successive AMPs more efficiently and cost-effectively. John Nickson, Project Engineering Manager at United Utilities Engineering says, "For AMP2, Bechtel were responsible as Programme Managers to United Utilities for delivering projects until 1999. In 2000, MWH became the Programme Manager with responsibility for the delivery of AMP3 providing the whole resource for the provision of drawings." Over this period, finding detailed information about projects was not easy, largely because there was a huge archive of physical

and electronic data that Bechtel handed back to United Utilities in 1999/2000. All the historical drawings are in storage, but the different formats make identification and retrieval of the required drawings a time consuming task. Increasingly, this data archive is becoming more redundant as AMP3 and AMP4 projects supersede the archive data. However, United Utilities Engineering is now Programme Managing the current AMP4 itself, with MWH as a partner providing engineering services.

The utilities industry in general has struggled with design data and information management on infrastructure projects for a long time. The existence of multiple uncontrolled copies of construction documentation is commonplace, with access to the right designs and associated information at the right time often fraught with difficulty. Poor drawing management constantly results in re-work and duplication, which in turn puts pressures on budgets and project timeframes. It also leads to the quality of design information being compromised, and therefore it is difficult or impossible to re-use design and construction data. Good engineering documentation management within an integrated project team can overcome many of these problems and enable efficient collaboration across a capital programme involving both the owner-operator and sub-contractors.

OFWAT EXPECTATIONS

There is an expectation from OFWAT that all water companies efficiently manage their asset data, including as-constructed drawings for projects. As John points out, "We need to be responsible for our own existing data and the integration of new data as projects are completed." Citing an example, he says, "We need ready access to the as-constructed detail so that in the event of there being future work, then from a Construction, Design and Management regulations (CDM)



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viewpoint, United Utilities can meet their obligations as Client and will be able to hand over accurate and up-to-date information about that asset to designers. This has a value for future work and for legal reasons too.”



UNITED UTILITIES CHOOSES PROJECTWISE GEOSPATIAL MANAGEMENT FOR ENTERPRISE ACCESS TO ENGINEERING DOCUMENTATION THROUGH A MAP-BASED INTERFACE

AMP4 Engineering Services Partner, MWH, used ProjectWise® for engineering drawing management and team collaboration. However, this was based on a previous version that had been extensively customised to meet United Utilities’ specific requirements, some of which were changing. Some 18 months ago, United Utilities and its AMP4 Alliance Partners, instituted a project to implement a future-proof solution that met United Utilities’ needs exactly, a solution that would be owned and managed by United Utilities.

The company selected and implemented ProjectWise Geospatial Management, a spatially enabled version of ProjectWise that allows users to access information in enterprise databases, legacy and departmental systems, and project-based data stored in virtually any format through a spatial interface. John again, “We currently have 50 user licences in total, 25 for CAD users and 25 for others in the business that need to access drawings. We expect usage of the system to increase rapidly once we move into AMP5 and extend it to include alliance partners.”

ELIMINATING THE NEED FOR AN EXPENSIVE HAND-OVER

According to John, “The benefits are enormous and there was a strong business case: it is good practice to manage the production drawings to eliminate errors and the risk of errors.”

He adds, “The ‘as-constructed’ drawing data in particular is fundamental asset data and having it created and maintained within a single United Utilities controlled system is just common sense, which furthermore eliminates the potential loss of data at the end of an AMP.”

PREPARATION OF A QUALITY SUBMISSION

To produce a high quality PR09 submission, United Utilities has produced over six hundred drawings. According to John, “Through using ProjectWise Geospatial Management, we know we have accessed the right data, visited sites, prepared site plans and shown exactly where new assets will go.” He adds, “ProjectWise is one of the very few engineering content management systems that can handle the peculiarities of different CAD systems (reference files, X refs and so on) and heterogeneous CAD file types like DGN and AutoCAD’s DWG with equal ease.”

HUNDREDS OF PROJECTS

For PR09, United Utilities currently has around 200 projects in ProjectWise. As AMP5 projects are commenced, they will develop more asset data within the ProjectWise environment. Importing AMP4 ProjectWise data will increase this asset coverage, and maintaining the use of ProjectWise will eventually touch on more or less all their sites. John again, “By the end of AMP6, we should have a substantial electronic warehouse covering the majority of United Utilities’ assets that OFWAT expects, and we will have done it through good practice on our part.”

He adds, “We will then be able to easily search on and retrieve asset information based upon varying criteria. These include: where the asset is located geographically, which contractor worked on that particular asset and when, what equipment was used in the design of that asset, what the age of the asset is and when components of that asset will next need servicing or upgrading.”

A ROBUST, RELIABLE AND AUDITABLE SYSTEM

The OFWAT Reporter has now witnessed United Utilities’ use of ProjectWise for drawing document control. They have shown the regulator the drawings and other documents and how ProjectWise removes potential duplication and errors, adding to OFWAT’s understanding that United Utilities is using a robust, reliable and auditable system.

In John’s view, “With ProjectWise, the regulator has no reason to doubt the quality and accuracy of the project scoping work carried out and we were able to score highly in the OFWAT scorecard in this respect. Any doubt in this area could seriously affect the outcome of PR09. Even half a percent of several billion pounds is a lot of money!”

"I estimate we could potentially save £60,000 on just one project by eliminating duplicated work."

ABOUT BENTLEY

Bentley Systems, Incorporated is the global leader dedicated to providing comprehensive software solutions for sustaining infrastructure. Architects, engineers, constructors, and owner-operators are indispensable in improving our world and our quality of life; the company's mission is to improve the performance of their projects and of the assets they design, build, and operate. Bentley sustains the infrastructure professions by helping to leverage information technology, learning, best practices, and global collaboration – and by promoting careers devoted to this crucial work.

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MAP-BASED FRONT END

United Utilities' major long-term ambition, and the main reason for choosing ProjectWise Geospatial Management, is to access data from a map-based interface, so that users can intuitively find drawings, soil information, topographical surveys, hydraulic models and so on.

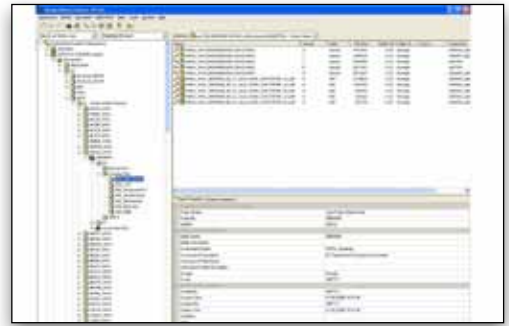
According to John, "I estimate we could potentially save £60,000 on just one project by eliminating duplicated work. It might be that we have not worked on a site for many years and we might have ended up paying for a topographical survey or an asset survey - pipework drawings etc. - that already existed, but couldn't be easily found. Over two or three AMPs, I'm sure the saving would be considerable, probably in the millions of pounds."



ProjectWise Geospatial Management uses a map-based interface to access engineering content.

MORE EFFICIENT BECAUSE OF PROJECTWISE GEOSPATIAL MANAGEMENT

Summing up, John says, "Our work for PR09 is now complete. The ability to hold and access drawings has been critical to getting this right. We haven't had any problems with incorrect or duplicate drawing numbers, and we've had no misunderstandings about correct drawing issues. The use of ProjectWise has removed potential confusion over project options. Our declared intention is that partners who want to do business with us will have to adopt the United Utilities implementation of ProjectWise. That way, they can be confident that they have the right data so that they can do the job right, first time, and to cost. The system works well and undoubtedly we are more efficient because of ProjectWise."



ProjectWise Geospatial Management – engineering documents organized by project.