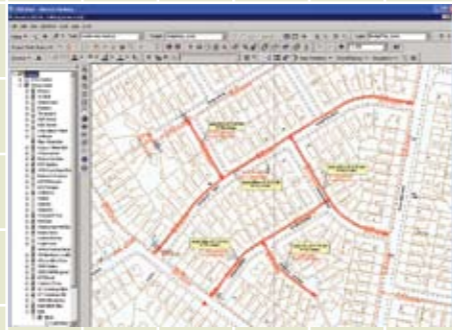


New designs create intelligence in a central database, which can be utilised as part of an integrated workflow.



Replacement planning is integrated with SAP to improve efficiency.

Pioneering a new approach to Design and Build Wales & West Utilities

As well as Wales & West Utilities itself, the company's customers also benefit from the new Design and Build process. Wales & West Utilities is now able to attach electronic copies of plans to the records in its customer relationship management (CRM) system. As a result, everyone in the business can easily see the planned new pipe route and respond promptly and knowledgeably to customer enquiries.

"Everyone has visibility of the design and this improves our ability to provide good customer service," says Hancock. "As soon as a project is approved, we can very quickly activate the job in the system and offer a customer appointment at an early date."

The future

Wales & West Utilities plans to continue to develop its successful Design and Build process by extending it to include engineers working in the field. At the moment, when engineers are laying and repairing pipes, they refer to maps on CDs.

ESRI (UK) offers utility companies the ability to equip their field workers with a mobile ArcGIS solution that runs on tablet PCs and handheld devices. This solution enables engineers to view the latest plans, 'red line' any changes and upload any new asset information directly back to the central GIS – all from the side of the road. West & West Utilities is exploring plans to implement this functionality, so that its Design and Build process can become truly end-to-end.

"If the intended route of a pipe has to be redirected around a tree, for example, engineers can mark the change on the plans on their tablet PC and immediately update our central records," explains Pike. "It will make the entire process even more tightly integrated."

ESRI (UK)

ESRI (UK) is part of the global ESRI network, with solutions in use by over 4600 Utilities worldwide. With the single, largest pool of GIS expertise in the UK, the company is the technical authority on GIS. ESRI (UK) provides solutions, technology and services including off the shelf applications built on the ArcGIS software suite and an extensive range of consulting and training services.


As the UK market leader for Utilities, ESRI(UK)'s customers include National Grid, Severn Trent Water, ScottishPower and Northern Gas Networks. Through a unique combination of world-class technology, domain expertise and implementation experience, it is able to deliver the deeper levels of network understanding demanded by the industry. This process of enhancing sustainable business growth by developing GIS solutions with the power to anticipate and meet industry specific requirements is known as **Visionary Thinking**.

Find out more at www.esriuk.com/utilities



Pioneering a new approach to Design and Build

As a new company, Wales & West Utilities had new ideas. Working with ESRI (UK), it pioneered an integrated approach to Design and Build and has achieved significant improvements in operational efficiency as a result.



“The new process is much closer to real time and cuts out months of delay.”

Phil Pike, Head of IT

“Everyone has visibility of the design and this improves our ability to provide good customer service.”

Nick Hancock, Senior Business Analyst

The client

Formerly part of National Grid, Wales & West Utilities is a regulated gas distribution business with around 34,000 km of gas distribution pipelines located in Wales and the South West of England. Covering a sixth of the UK, Wales & West Utilities serves an area with a population of 7.4 million.

The challenge

Every year, Wales & West Utilities undertakes to repair and replace over 400 kilometres of gas pipeline to ensure its safety and reliability. In addition, Wales & West Utilities actively competes with other infrastructure providers for new connection contracts. This is an important business area for the company, not just because of the revenues that it can gain from carrying out gas pipe installations, but also because of the increased income that it can earn from transporting gas over an extended network.

Both of these business areas – maintenance and new connections – rely on very similar processes for designing and building new pipelines. Wales & West Utilities wanted to improve its competitiveness and efficiency by streamlining its core Design and Build processes. The company, which had recently been acquired from National Grid

Transco by a consortium led by Macquarie Bank, was keen to build its business on a strong foundation of integrated systems.

Phil Pike, Head of IT at Wales & West Utilities explains: “One of our main goals was to reengineer the business processes that we had inherited from National Grid and create more automated, end-to-end processes. We saw GIS as an important tool in helping us to achieve this goal.”

The Design and Build processes that had previously been used by National Grid were primarily paper based. Network designers would draw new pipe networks on paper and then send the paperwork out with the operational teams digging the holes. Any changes to the plan that became necessary – such as rerouting pipes around trees – would then be marked by hand on the paper records. Finally, the paper records would be sent back to head office to be digitised and loaded onto a GIS solution.

“This whole process used to take several months and typically created a six month time lag,” recalls Pike. “As a result, our asset information was always six months out of date. This was something that we were committed to changing.”

Cumbersome systems and processes also hindered service levels to time sensitive customers. An integrated approach, facilitated by GIS, had the potential to improve responsiveness, customer service and quote accuracy in an increasingly competitive market.

The solution and capability delivered

Wales & West Utilities had already selected ESRI (UK) as its corporate GIS partner and so started to work with ESRI (UK)’s industry specialists to create an integrated Design and Build solution. ESRI (UK) has a deep understanding of the gas industry and was able to meet the company’s precise requirements with a solution based on ESRI’s ArcGIS Server platform.

The Design and Build solution delivered by ESRI (UK) enables designers to produce their plans for new connections and pipe replacements directly in the company’s central GIS. Planned network extensions and changes are therefore immediately visible, giving all employees a clear, accurate and up-to-date view of the company’s current and future network.

“Using the ArcGIS design layer is like putting a piece of acetate over a hard copy map and marking the new pipe route on that,”

explains Nick Hancock, Senior Business Analyst, Wales & West Utilities. “The designs created in ArcGIS become the graphical representation of the work that we are going to undertake. When the repair work or new installation is completed, we simply select ‘adopt new’ in the system and the replacement designs become actual plans. All our central records are immediately updated.”

When Wales & West Utilities is preparing quotes for new connections, it can scan in the housing development drawings and geo-reference new properties within the ESRI software. Designers can easily identify the nearest mains and digitally design the new pipe infrastructure. Once an efficient design has been produced, it can be automatically exported into network sizing software to accurately define the dimensions and attributes of the new scheme. “Previously, most of this process would have been manual,” says Hancock.

In order to make the entire Design and Build process as streamlined as possible, ESRI (UK) integrated ArcGIS with the company’s SAP back office systems. As a result, when plans are approved, ArcGIS automatically triggers the creation of assets and work orders in SAP.

Wales & West Utilities wanted to make its new Design and Build process as easy as possible from the user perspective. It therefore worked with ESRI (UK) to create a range of time-saving and intuitive features, such as favourites lists with pre-set attributes for common tasks.

Benefits

The implementation of an integrated Design and Build system based on ArcGIS has led to a host of benefits for Wales & West Utilities. The greatest amongst these benefits is the undeniable improvement in operational efficiency.

“If Wales & West Utilities didn’t have this integrated GIS capability, much of our Design and Build process would be done manually on paper,” says Pike.

The integration with SAP has contributed significantly to the time savings that Wales & West Utilities has gained. “We used to have to go into the back office system to create each separate work order,” recalls Hancock. “The interfaces with SAP save an enormous amount of time and effort. As soon as we hit the ‘plan approved’ button, all the necessary work orders and central records required by our back office systems are automatically created in SAP.”

Because plans are entered directly into the central GIS system, there is no need for plans to be digitised after the work is carried out. Consequently, Wales & West Utilities benefits from more accurate and up-to-date central maps. “The new process is much closer to real time and cuts out months of delay,” says Pike.

He adds: “Previously, we faced the usual issues such as dual entry, mismatched data, poor data quality and time delays. The new integrated Design and Build system cuts out all of that. ArcGIS has enabled us to improve both the quality of our information and our operational efficiency.”

Use of the new Design and Build process has helped the company to improve its competitiveness in bids for new contracts. It has been able to ensure that all of its new connection quotes are delivered quickly in response to customer requests and presented consistently and professionally. “We can effectively provide standard quotes for non-standard installations,” says Hancock. “All our new connection proposals are completed and presented to the same high standard, regardless of which designer creates the plan.”