

# The Design and Management of Sustainable District Energy Networks With Bentley® sisNET

Today's environmentally conscious society is constantly searching for more sustainable solutions for the provision of heating and cooling services. District heating and district cooling technologies are more energy efficient and contribute to a more sustainable future than other technologies. They are widely available in some countries, and are set to become more widespread as pressure mounts for energy utilities to deploy more efficient heating and cooling services. Bentley is one of the few software vendors with products specifically designed for managing the lifecycle of district energy network infrastructure.

## District Energy and Multi-Utility GIS for Operations Decision Support

The Bentley sisNET product suite comprises a full range of GIS products that help engineers and GIS professionals in utilities design, document, and manage district heating and district cooling networks more efficiently. Bentley sisNET supplies effective decision support for operations and maintenance workflows, thus reducing operational costs and using valuable resources more efficiently. Based on a fully configurable geospatial data model, Bentley sisNET offers the ability to faithfully model network assets regardless of layout (e.g. two-pipe or three-pipe networks) or type. A multi-user configuration ensures that multiple editing processes can take place concurrently and that each modification of the network is archived.

A range of dedicated placement and modification commands allows the editor to work with complex, multi-pipe features as single objects. In addition to network editing, Bentley sisNET makes available a full range of in-depth analysis, reporting, and plotting tools, as well as an interoperability framework to integrate with CRM and ERP systems such as SAP.

Because the Bentley sisNET suite integrates with Bentley's industry-leading Bentley® sisHYD analytical modeling and network design software, users of the Bentley sisNET product suite can share network connectivity, maintenance records, and operational data to run hydraulic and thermal calculations for their district energy systems.

## Web Publishing

Bentley's solution for district energy extends to publishing spatial data via an intranet or Internet connection to user communities that do not require full editing privileges with Bentley® sisIMS. As a result, spatial data can easily be presented to groups such as customer service representatives, senior management, and sales and marketing, both in dedicated web sites and company portals. Using web technology to grant review access to network assets enables the wider use of critical asset information within utilities.

## Supporting the Field Work Force

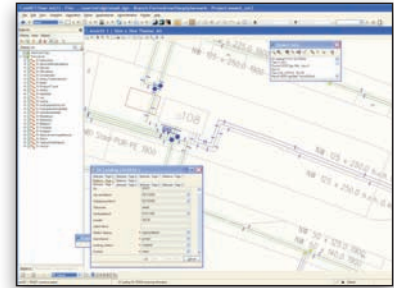
Data created and maintained using the desktop GIS environment can be taken into the field with Bentley® sisVIEW for as-built validation, construction, and redlining activities. Bentley sisVIEW provides full access to all the network's assets, and the network documentation can be edited regardless of whether it is graphical or alphanumeric data. By offering data access in the field, Bentley sisVIEW helps to optimize fully digital utility workflows.

## Thermal-Hydraulic Modeling and Analysis

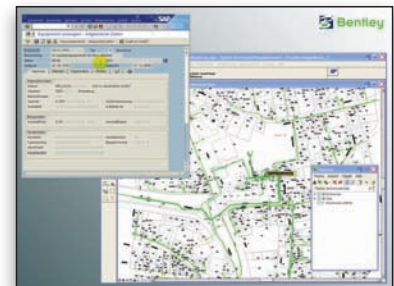
Bentley sisHYD is a comprehensive analytical modeling and network design solution for the hydraulic and thermal calculations necessary in district energy networks. These calculations are used for static and semi-dynamic analysis of media flow, pressure, temperature, and heat loss in a given network. Analytical results can be presented in a variety of maps, graphs, and reports.

## With Bentley sisHYD utilities can:

- Optimize the balance between electric and heat generation depending on actual and predicted loads,
- Identify areas of the network where service will likely be deficient or nonexistent,
- Design new infrastructure more intelligently or model operational conditions more efficiently.



Advanced network analysis in Bentley sisNET.



Bentley sisNET integrated with SAP.



Bentley sisIMS serves infrastructure data to utility portals.

## About Bentley

Bentley is the global leader dedicated to providing architects, engineers, geospatial professionals, constructors, and owner-operators with comprehensive software solutions for sustaining infrastructure. Bentley's mission is to empower its users to leverage *information modeling* through *integrated projects* for high-performing *intelligent infrastructure*. Its solutions encompass the MicroStation platform for infrastructure design and modeling, the ProjectWise platform for infrastructure project team collaboration and work sharing, and the AssetWise platform for infrastructure asset operations – all supporting a broad portfolio of interoperable applications and complemented by worldwide professional services. Founded in 1984, Bentley has grown to nearly 3,000 colleagues in more than 45 countries and \$500 million in annual revenues. Since 2001, the company has invested more than \$1 billion in research, development, and acquisitions.

For more information, visit: [www.bentley.com/utilities](http://www.bentley.com/utilities)

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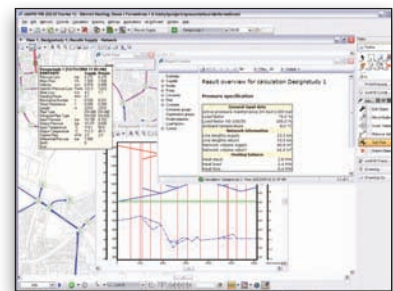
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## Global Office Listings

[www.bentley.com/contact](http://www.bentley.com/contact)



Reviewing network assets in the field with Bentley sisVIEW.



Customizing the display of analytical results in Bentley sisHYD.