



Project Summary

Organization:

DAVID Holding Company for Sofia Municipality

Solution:

Municipal Operations

Location:

Sofia, Bulgaria

Project Objective:

- Better educate decision makers about the street lighting infrastructure within Sofia through the assessment of its physical condition, determining requisite repairs.
- Decrease public fund spending for street lighting maintenance, reduce repair time, improve infrastructure, and provide better customer service to residents through streamlined management.

Products used:

OpenUtilities

Fast Facts

- Sofia Municipality retained DAVID Holding to implement a GIS that mapped out the region's street lighting infrastructure so that they can assess its condition and pinpoint needed upgrades.
- A customized GIS of the lighting was created with OpenUtilities to manage the associated data.

ROI

- Field data processing and database population time was reduced because of the software's many supported data formats for data import.
- OpenUtilities' pre-configured electric data model was used as the basis for the customized street lighting data model, which cut deployment costs and design time.
- The application's capabilities cut data creation and modification time and decreased data entry mistakes.

Capital of Bulgaria Optimizes Street Lighting Infrastructure with OpenUtilities

Utilities GIS Lowered Operational Expenditures and Improved Customer Service

Light Infrastructure Management Needs Upgrade

Sofia Municipality, a large province in Bulgaria, is divided into 24 districts and comprises 38 settlements. The administrative center is Sofia, the capital city of the Eastern European country. Infrastructure needs are provided for the 1.3 million people who live within the metropolitan region, the majority of whom reside in the city, by the Transport Infrastructure Department. This department, a structural unit of Sofia Municipality, oversees construction, repairs, and maintenance of roadways, infrastructure facilities, and street lighting within the metropolis. The Transport Infrastructure Department also organizes and manages traffic and safety in Sofia Municipality.

A comprehensive inventory of available public lighting facilities for the Transport Infrastructure Department was necessary after an analysis of current street lighting information proved it to be incomplete and insufficient. So, Sofia Municipality retained DAVID Holding Company, an information technology (IT) company that provides enterprise and government organizations with software solutions, to develop, effectuate, and maintain software to oversee and organize the infrastructure.

Mapping and Managing Infrastructure Data

Sofia Municipality needed a comprehensive inventory to help the Transport Infrastructure Department better manage the region's street lighting infrastructure by informing the department when improvements and upgrades to the utilities are needed. The inventory focused on the quantity of street lighting and the current condition of the infrastructure. The government also sought to reduce spending public funds on maintenance, improve infrastructure overall, and lessen the duration of repairs with the detailed asset management system.

To satisfy the main objective of the project, the company required standard applications, commercial products, and software tools; an open architecture design that allowed for future extension and development; secure data creation, modification, and management; and uniform workflows within a standardized environment. DAVID Holding accomplished



DAVID Holding used OpenUtilities Designer to map out and manage the street lighting infrastructure in Sofia, Bulgaria.

these requirements by using Bentley's utilities geographic information system (GIS), OpenUtilities. The software was used to manage the street lighting infrastructure and collected condition data.

The GIS allows users to assess the public lighting facilities' current physical standing and need for repairs, as well as provides information on what technical capabilities are available for analyzing restoration needs. Given this information, municipality experts are able to prioritize areas where old street lights need to be replaced or where new lights need to be erected. Sofia Municipality is replacing antiquated street lighting with modern LED street lights to reduce the infrastructure's overall environmental impact.

Customizing the GIS Solution

Bentley applications provided the proper environment for DAVID Holding to develop the necessary product customizations to facilitate the right solution and meet the municipality's specific requirements. This customization was developed with .NET and VBA APIs, provided with OpenUtilities.

The project team used OpenUtilities' pre-configured electric data model as the foundation for the customized street lighting data model, which lowered deployment costs and allowed DAVID Holding to meet the project deadline by cutting a significant amount of design time. The solution enabled the user to decrease field data processing and the time required for database population because of the application's multitude

"Bentley OpenUtilities gave us the freedom to define a complex data model that best fits our needs.

Moreover, OpenUtilities technology enables every participant in the management of the infrastructure to use a single source of information, which significantly improves our work."

— Petya Todorova,
Senior Expert,
DAVID Holding

of supported data formats for data import. Using OpenUtilities also reduced mistakes in data entry and significantly reduced data creation and modification time because of the application's ability to support complex topology between the objects.

Additionally, once field data processing was published in a spatial database and the information system was operable, information exchange between stakeholders regarding the street lighting infrastructure was done within the GIS, streamlining the communication process.



Having a centralized location of data through Bentley software eliminated duplicate information, and engineers are now able to verify their information against the data documented in the platform.

Enhanced Infrastructure Benefits the Populace and Municipal Operations

Conducting the street lighting infrastructure inventory using a GIS enables the Transport Infrastructure Department to make better-informed decisions about improvements and street lighting management. OpenUtilities Map and OpenUtilities Designer supplied precise data regarding the status of the street lighting infrastructure within Sofia Municipality. The municipality used this data to enhance customer service, planning, engineering, operations, and infrastructure maintenance. The tailored GIS also lowered operational expenditures and improved budget planning for the municipality. Upgrading the street lighting where needed, making requisite repairs swiftly, and lowering environmental impact will serve to benefit the residents of Sofia Municipality.

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Contact Bentley
1-800-BENTLEY (1-800-236-8539)
Outside the US +1 610-458-5000

Global Office Listings
www.bentley.com/contact