

GEOINFORMATION TECHNOLOGIES FOR THE DESIGN AND OPERATION OF UTILITY NETWORKS

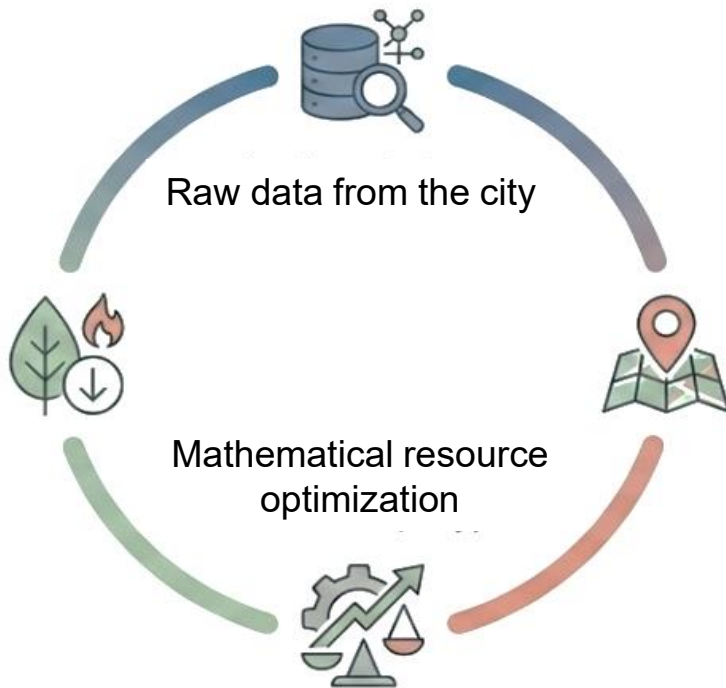


CREATING SMART THERMAL GRIDS



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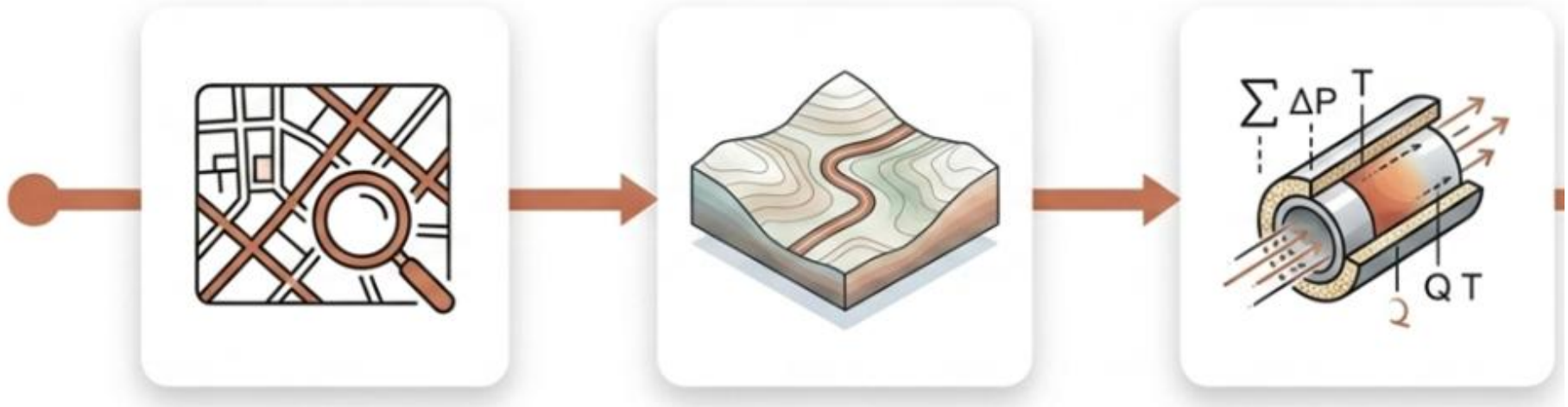
Lower costs and
eco-friendly heat



Spatial GIS Analytics



STAGES IN THE DEVELOPMENT OF A GIS FOR HEATING NETWORKS

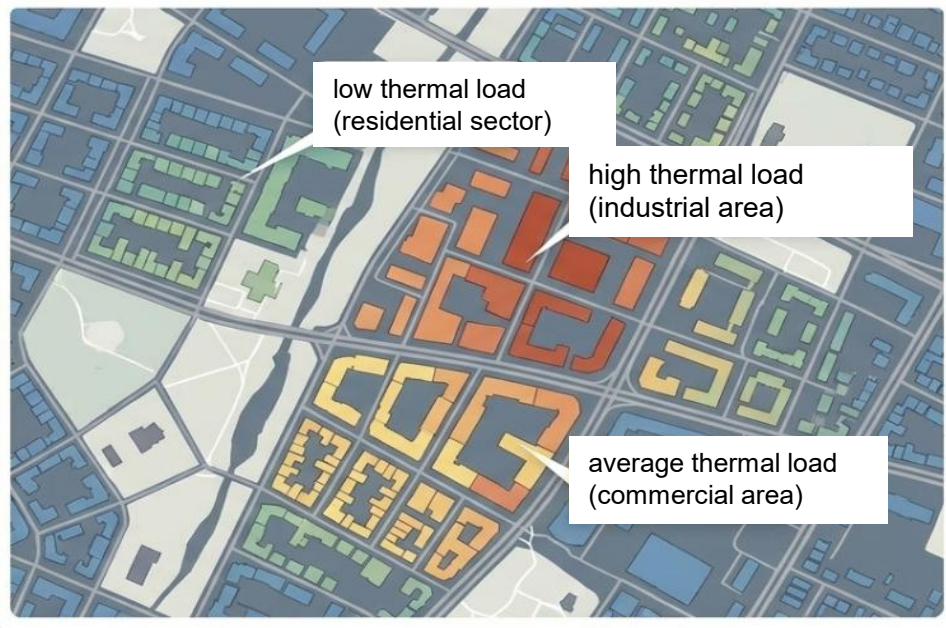


Understanding the
city's needs at the
macro level

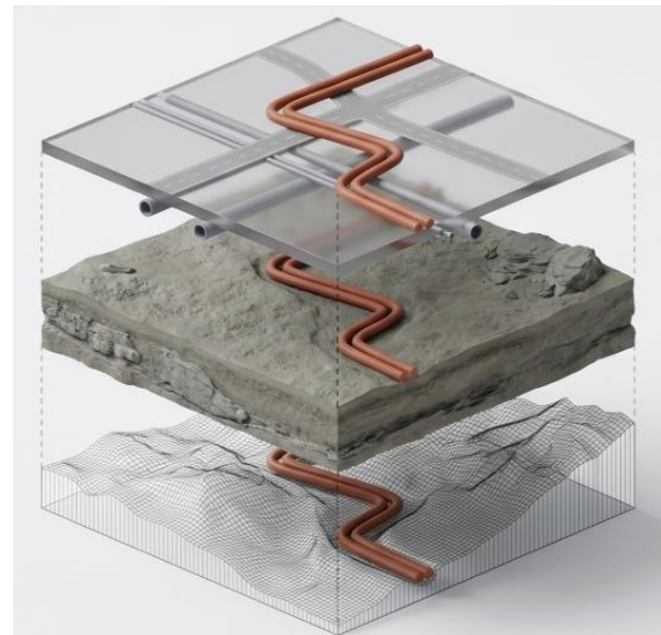
Cost-Distance Analysis

Calculation of heat loss

GIS APPLICATIONS FOR HEATING NETWORKS



Demand Analysis (Zoning)

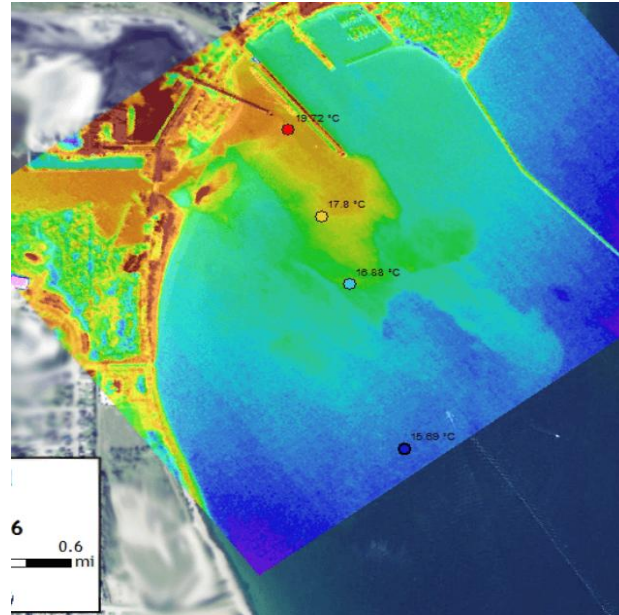


Cost-Distance Analysis

ASSESSMENT OF POLLUTION FROM ENERGY FACILITIES USING MATHEMATICAL MODELING AND SATELLITE MONITORING



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ASSESSMENT OF POLLUTION FROM ENERGY FACILITIES USING MATHEMATICAL MODELING AND SATELLITE MONITORING



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Preparation

Obtaining satellite images and data from ground measuring stations, normalizing measured data.



Modeling

Selection of the parameters of a mathematical model so that it corresponds as accurately as possible to a set of experimental or observed data.



Forecast

Generation of a pollution map for a specific area.



ASSESSMENT OF POLLUTION FROM ENERGY FACILITIES USING MATHEMATICAL MODELING AND SATELLITE MONITORING



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The satellite provides a "flare" of emissions, which is used to define the boundaries of data collection from ground stations and calibrate absolute values of pollutant concentrations in the surface layer.



GEO-INFORMATION TECHNOLOGIES AT THE DEPARTMENT OF SOFTWARE ENGINEERING IN THE ENERGY SECTOR



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The Department of Software Engineering trains high-level specialists in software engineering in the following areas: the development of cutting-edge control systems for complex technical and organizational systems, particularly in the energy sector; the development of new technologies for the design and implementation of intelligent systems; solving problems to improve the efficiency of any systems using artificial intelligence, machine learning, big data processing, Internet of Things technologies, edge and cloud analytics, and the development of web and mobile applications.



<https://ipze.kpi.ua/about/about1/>



GIS TEAM OF THE DEPARTMENT OF SOFTWARE ENGINEERING IN THE ENERGY SECTOR (SEES)



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