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IN KRAKOW

Geomatics, Landmanagement and Landscape

GLL *Geomatics,
Landmanagement
and Landscape*

A stylized graphic of a key, positioned horizontally below the 'GLL' text. The key has a circular head with a cross-like shape and a long, thin shaft.

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Geomatics, Landmanagement and Landscape

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Landmanagement
and Landscape*



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Foreword

Dear Readers, I have the pleasure of presenting issue 4/2025 of the scientific journal *Geomatics, Landmanagement and Landscape*, which current thematic focus can be divided into three areas:

1. Modern geodetic techniques in the field of monitoring and inventorying buildings and infrastructure

Recently, there has been a remarkable development in measurement technologies used in engineering surveying. Laser scanning (TLS, MLS, ALS) and systems integrating multiple observation techniques play a particularly important role in this field. This is exemplified by a method developed for measuring the deformation of buildings affected by mining activity, which combines traditional facade surveying with high-precision measurements of control points embedded in the structure's thermal insulation.

Other studies presented in this issue show that continuous and precise monitoring is crucial in the case of slender structures such as towers, chimneys and masts. A case of continuous 24-hour measurement of the Iglica tower in Wrocław clearly confirms the importance of environmental factors – especially thermal effects – on structural deflections.

In turn, the development of mobile techniques (MLS) creates new opportunities for fast documentation of architectural objects and infrastructure. Meanwhile, analysis of the quality of point clouds obtained with handheld scanners proves that, with the right registration strategy, it is possible to acquire data with accuracy sufficient for documentation purposes, despite local deviations resulting from difficult registration conditions.

2. Geoinformation, national security and spatial management

The development of information society has a direct impact on the rising role of geodata, which has become crucial in managing state resources, spatial planning, infrastructure protection, and scientific research. The widespread availability of spatial data – as a result of the INSPIRE Directive and national regulations – brings significant benefits to public administration, businesses and citizens. At the same time, it poses serious threats related to the exposure of detailed information about critical infrastructure, such as energy, gas, water and telecommunications networks. Publishing this data in geoportals could increase the risk of cyberattacks and sabotage, which calls

for a review of the rules for sharing information and strengthening physical and ICT security measures.

Another key area of research is the protection of water resources and the assessment of health risks related to groundwater quality. This is covered by an analysis of hazards in the Lukunga watershed in the Congolese capital of Kinshasa, where a shortage of elements essential for health (Ca and Mg) and high susceptibility of water to pollution create real threats to residents. The combination of hydrogeological vulnerability assessment methods and health risk analyses provides an effective tool to support water resource management.

In the context of cartographic archives, there is also a growing need for precise spatial indexing methods. Standardisation of the system for reading Warsaw map sheets (25/75 layout) enables their integration with modern reference databases and use in GIS or AI/ML systems. This facilitates the efficient processing of large geographic data sets.

3. Sustainable development, spatial planning and property management

Landscape and public space management are particularly relevant in the field of sustainable development. Bibliometric analyses reveal an upsurge in the number of publications devoted to this issue, especially since the adoption of Agenda 2030. Research indicates the dominant thematic areas – environmental, landscape and spatial, and human activity – as well as countries leading in this field, including China, the United States and the United Kingdom.

Practical projects conducted in cooperation between universities and local authorities also play a significant role. The example of public space development projects in Cellettes (France) demonstrates that the diversity of student designs enriches local decision-making processes and provides valuable proposals in the areas of landscape architecture, greenery, communication and space functionality.

In the field of property management, analyses concerning the impact of the form of ownership of residential premises on their market value are important. The results of research conducted on the example of large-panel construction in Krakow indicate that the differences between separate ownership rights and cooperative ownership rights to premises are not a factor that has a significant impact on transaction prices.

Sustainable spatial management also covers issues related to the use of agricultural land and the preparation of land for investment.

Please allow me to wholeheartedly recommend this issue for its diverse, up-to-date and valuable collection of papers.

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