

# Building Land Register – an Important Step towards Effective Space Management

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## 1 ABSTRACT

Space is a limited natural resource that is subject to many pressures, such as the expansion of building land to agricultural land, whereas building land within settlements often remains vacant and unused. The reasons for this are the many constraints to the development of these areas, such as inadequate plots and ownership structures, inadequate communal infrastructure, or the dilapidation of this infrastructure, which needs to be renovated (MES PILOT, 2022).

Currently, there is no adequate register of building land and its properties in Slovenia, which would provide insights into the current state of the land and provide a basis for the implementation of land policy instruments. As a result, spatial planning is not in line with the principles of sustainability as defined in the Slovenian spatial planning legislation; that is, the treatment of space as a limited good that requires comprehensive treatment, coordination, and management of its social, environmental, and economic aspects (Spatial Planning Act - ZUreP-3). The lack of data is reflected in the reckless direction of settlement and placement of investments, without taking into account the possible activation of empty building land, possibility of revitalisation of brownfields, and without foreseeing possible negative impact on the living and natural environment.

In response to the described problem of urban management in the country, the idea of creating a systematically regulated spatial data record, called The Building Land Register, was developed. The Building Land Register contains data on the existing state of built-up land and vacant building land. Based on the properties of the land, it will be possible to determine the presence of degradation of the built-up land; therefore it will be possible to identify areas where, by activating the already occupied space, its functionality would be restored. According to their characteristics, vacant building land is classified into land development phases, which define the possibility of actual land construction. Spatial planning Act (ZUreP-3) defines five categories of land development phases: 1 – unbuildable land, 2 – spatially disordered land, 3 – building land without urban infrastructure provided, 4 – unorganized buildable land and 5 – buildable land. In order to classify land into these five categories, it is necessary to know the current state of communal infrastructure, planned spatial development, and limitations in space (ZUreP-3, explanation to Article 142.)

Establishing Building Land Register is the first step in effective urban management at all levels (local, regional, and national). To achieve this goal, collaboration of all levels of urban management is necessary, in addition to providing high-quality data about the building land.

This article states the reasons for the establishment of the Building Land Register, the importance of data in the management processes of space, the content of the Building Land Register and the method of its establishment provided for in the Slovenian spatial legislation.

Keywords: development phases of vacant building land, actual use of built-up land, building land register, land policy, urban management

## 2 CIRCUMSTANCES AND REASONS FOR IDEA OF BUILDING LAND REGISTER

All users of the space usually ask themselves similar questions. What does it offer us, where can we build, what can we build, and what are the costs of planned investments? Where should the development of settlements and activities be directed? Spatial planners and investors want to establish a safe and stable environment for work and living. To achieve this, a targeted development of activities is necessary, which requires knowledge of the situation in the area. Sustainable spatial management needs to be based on legally backed data that enable different stakeholders to make decisions that facilitate the focused, harmonized, and rational use of space. Credible data play an important role in spatial and urban policy planning, implementation of land policies, and real estate valuation.

Spatial planning is the responsibility of municipalities in Slovenia. Municipalities are autonomous administrative territorial systems that operate relatively independently of the state. Self-governing local communities are independent in decision-making and implementation within their original powers, and must act in accordance with law (Tasks of municipalities, 2023). The main tasks of municipalities in space

management are spatial planning, planning communal infrastructure, determining the actual use of land, managing land in the public interest, and implementing land policy measures. On the other hand, the state determines the goals of spatial development; determines the starting points, rules, and guidelines; and implements spatial measures and land policy tasks at the state level (Spatial planning act – ZureP-3). At the same time, by performing tasks related to the operation of the spatial information system and monitoring the state of spatial development, tries to follow the trends of the digitalization of space and related data.

For municipalities and the state to carry out their tasks in a high-quality way and manage land efficiently, it is necessary to understand the situation in the area. Information is needed on the fund of already used building land on the one hand and the fund of vacant building land on the other hand. It is necessary to know the properties of building land and the necessary inputs for the development of these lands to achieve their suitability for planning purposes.

As already mentioned, there is no adequate register of building land and its properties in Slovenia, which would provide insights into the current state of the land and provide a basis for the implementation of land policy instruments. As a result, spatial planning is not in line with the principles of sustainability as defined in the Slovenian spatial planning legislation; that is, the treatment of space as a limited good that requires comprehensive treatment, coordination, and management of its social, environmental, and economic aspects (Spatial Planning Act - ZUreP-3). The lack of data reflects on poor spatial planning, the reckless direction of settlement and placement of investments, without taking into account the possible activation of empty building land, possibility of rehabilitating brownfields, and without foreseeing possible negative impacts on the living and natural environment.

## 2.1 From idea to implementation

In response to the described problem of urban management in the country, the idea of creating a systematically regulated spatial data record, called The Building land Register, was developed. The first step from idea to implementation began at the national level, within the framework of the eProstor project program, under the common slogan "one space for all". The project was led by Surveying and Mapping Authority of the Republic of Slovenia and Spatial Planning, Construction and Housing Directorate under the Ministry of Natural Resources and Spatial Planning in the years of 2016 to 2022. The basic purpose was to increase transparency and efficiency in spatial planning, construction, and real estate management for local and state governments. At the same time, the goal was to make it easier for individuals, engineers, designers, and domestic and foreign investors to edit real estate documents and to have better and more transparent access to standardized spatial data collections. With this aim, the activities were carried out to cut red tape and allow paperless e-commerce in public sector, private sector, and public administration resulting in easily accessible official data on real estate and space (One space for all. Brochure, 2019). Under the Spatial Planning Act, Slovenia introduced the establishment of a digital environment in the fields of spatial planning, building construction, and real estate registration into its legal system. This regulates the operation of the spatial information system, within which, among other things, data on the Building land Register is managed. The Building Land Register is intended to serve as a multi-purpose database containing data on built-up land and vacant building land and providing information on development stages and other features of building plots. The records of building land retain data regarding: land area, land characteristics, connection with real estate and other information required for record-keeping (Building land register, Spatial information system, 2023).

Reliable data on built-up land is a prerequisite for the determination of vacant building land. As part of the project of mass capture of inhabited land, a record of the actual use of inhabited land was established in which data on the types of more detailed actual use of inhabited land were kept. Data on the actual use of built-up land were entered into the land cadastre of real estate and are publicly available (Records of the actual use of inhabited land. Spatial information system. 2023).

Spatial data on the actual use of built-up land had been captured for all municipalities in Slovenia, which was the first step toward creating a building land register made by the government. The second is to identify vacant building land and its characteristics. This is the part that is supposed to be taken by municipalities until the end of the year 2026. Since it is a completely new field of work, a methodology was created for the purpose of implementation to support municipalities in their work. The document describes in detail the key steps in the process of establishing an Building land Register, and it was created based on a pilot

implementation of the establishment of an Building land Register in which the municipality of Kranj actively participated. The task was carried out by the Geodetic Institute of Slovenia as part of the large-scale Pilot MOP project, which was led by the Ministry of Natural Resources and Space. The main purpose of the Pilot MOP was to establish the conditions for the successful implementation of many innovations introduced by the current spatial and construction legislation in the field of spatial and real estate management and to establish better cooperation between the state and local communities as carriers of spatial planning (MES PILOT, 2022).



Fig. 1: Records of the actual use of inhabited land (Insights into the building land records, 2023).

### 3 DATA CONTAINED IN BUILDING LAND REGISTER

As mentioned before, the Building land Register contains data on built-up land (Chapter 3.1) and vacant building land (Chapter 3.2). It provides information on the development stages and other features of building plots (Figure 2).

#### 3.1 Built-up land

Built-up land consists of land of public road and railway infrastructure, inhabited land and construction plots.

For existing buildings, built-up land was determined using mass capture of data. Built-up land includes the area that a facility uses for its operation in nature. Built-up land is determined on the basis of data on the actual state of nature with man made and natural boundaries, the condition of registered real estate and its ownership and the intended use of space in accordance with the provisions of spatial planning acts. For each piece of land, its actual use was also determined (Methodology for mass capture of inhabited land, 2019). The types of more detailed actual land use are taken from the Decree on Actual Land Use (Official Gazette of the Republic of Slovenia, nos. 43/18 and 35/19) and is kept in the land cadastre. Figure 3 shows an example of determining the area of inhabited land for residential and agricultural buildings.



Fig. 2: Data contained in Building land Register (Image material of the project MES PILOT 2022).



Fig. 3: Example of determining the area of inhabited land (Image material of the project MES PILOT 2022).

Building plot represents the land utilized by regular use of the building. By the new legislation it is obligatory to identify the building plot for new buildings, which is usually recorded as a single land parcel with arranged plot boundaries. By recording it in the Building land Register, the building plot represents an instrument for maintaining data on built-up land. By accurately recording real rights and restrictions on the plot, the building plot represents an instrument of spatial planning that connects real estate evidence with other spatial data (Spatial planning act – ZureP-3).

In addition, in the future, data will be kept for areas of built-up land on the possible devaluation of the space. Like many other countries around the world, Slovenia faces brownfields. Brownfields are degraded areas that have lower value due to inappropriate use or lack of settlements and can have a negative impact on the environment, society, economy or the visual image of the space. The areas are built and often equipped with communal infrastructure, but do not fully fulfill their original function (Methodology of derelict areas. MES PILOT, 2022). The basis for the determination of devalued areas as part of the Building land Register is the data of derelict land, which were obtained in the framework of the target research project entitled Comprehensive methodology for the inventory and analysis of abandoned land, the implementation of a pilot inventory and the establishment of an up-to-date register (Lampič et al., 2017). To direct the development of these areas, it is necessary to determine their quantity and characteristics. By recording in the systematically regulated spatial data record Building land Register, the possibility of activating the brownfield becomes more perspective.



Fig. 4: Example of Brownfield - An area that is built but does not fulfill its original function (Author: Barbara Lampič).

### 3.2 Vacant building land

Slovenian spatial legislation defines vacant building land as a plot or several plots or their parts, which are intended for the construction of buildings by the Municipal Spatial Implementation Act and are not built-up land. Spatial planning Act (ZUreP-3) defines five categories of land development phases: 1 – unbuildable land, 2 – spatially disordered land, 3 – building land without urban infrastructure provided, 4 – unorganized buildable land and 5 – buildable land. In order to classify land into these five categories, it is necessary to know the current state of communal infrastructure, planned spatial development, and limitations in space (ZUreP-3, explanation to Article 142.)



Fig. 5: An example of vacant building land, which is classified into one of five categories of land development phases, depending on the current state of communal infrastructure, the planned spatial development and the limitations in the space (Image material of the project MES PILOT 2022 and Insights into the building land records, 2023).

It should be noted that the level of the development phase does not determine whether construction is permissible or not, but rather, based on the collected data on the space, an assessment is given of the stage of

development the land is in, according to its construction purpose. The fact that a piece of land is classified as building land does not mean that it can be built on; many other parameters affect the buildability of the land, in particular, the provision of communal infrastructure, compliance with the regulations of the spatial act, and the possible existence of space restrictions, which are thus determined for the purpose of preserving nature, protecting cultural heritage, protecting the environment, protecting agricultural land, protecting forests, water management, protecting human health, defending the country, protecting against natural and other disasters, and protecting economic and public infrastructure.

The important information provided by the Building land Register is not only the development levels determined for individual plots of land. An essential contribution of the record is all data on the condition of the space, collected accurately per plot. Such a detailed identification of the condition of the land provides a basis for decision-making in all spatial planning processes, from planning, equipping, building, and using the public space to the maintenance and renovation of its components at all levels of operation – local, regional, and national.

Qualitative and legally valid data will be the basis for the valuation of building land. Through the process of development, undeveloped building land gains in value. First, appropriate spatial acts are prepared for them, which define the possibility of construction. Subsequently, subdivision procedures are carried out, and if necessary, consolidation procedures are carried out to create a structure of building land that enables the spatial arrangements foreseen by the spatial act. In each step, certain resources are invested in the land, which increases its value. For land to be suitable for construction, it is necessary to provide it with communal infrastructure, which is the highest investment in land in the process of its development to the level of buildable land. This also increased the value of the land to the greatest extent. However, buyers and sellers currently do not have detailed, publicly available information, as Building land register will provide. This situation is reflected in the sale prices of real estate, as the data show that the price of building land does not follow the actual value of the land or does not increase in the same proportion as the value of land. It is assumed that high-quality and legally formally supported data provided by the Building land Register will be the basis for the regulation of current prices in the real estate market, which will be a reflection of the actual value of land and at the same time, a measure for the valuation of land and duties related to it, which, taking into account quality data, will be allocated more fairly.

#### **4 BUILDING LAND REGISTER ESTABLISHMENT PROCESS**

Establishing a building-land register involves several phases (Chapter 3.2). Currently, the first phase has been completed, wherein a proposal for inhabited land and its actual use have been prepared as part of the mass capture of inhabited land. As previously mentioned, the proposal for inhabited land was prepared by the Ministry of Natural Resources and Spatial Planning. Municipalities are taking over data management now. They have to determine the amended proposal for inhabited land and the proposal for vacant building land. To determine the amended proposal for inhabited land, the municipality will use data from the proposal for inhabited land, which is the result of mass data collection, data on building plots, data on associated land of public roads and public railway infrastructure, and other data on built-up land. Data on degraded areas will be also considered when determining the final proposal for the extent and characteristics of build-up land. After this activity, they will identify vacant building lands and their characteristics. It is an extensive and complex process in which it will be necessary to use a multitude of datasets to determine the properties of individual lands. In their work, municipalities will use at least data on real estate cadastre parcels, economic public infrastructure, spatial acts, spatial restrictions, and many others. These data will be collected for each vacant building land and these plots will be classified into one of the development levels based on the collected characteristics (Methodology for mass capture of inhabited land, 2019 The register of building land. Spatial information system, 2023).

The preparation of the first proposal for built-up land and vacant building land will be followed by informing property owners. Based on the comments of the owners and views of the municipality, a final proposal for the data will be prepared. The municipality will then submit data on inhabited land, associated land of public roads and public railway infrastructure, and vacant building land with development levels to the register of building land at the state level.

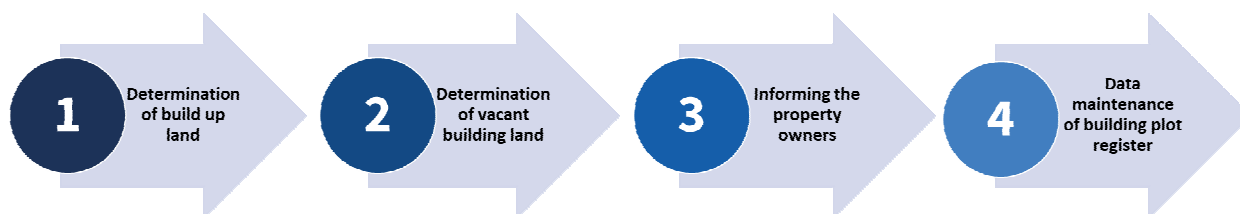


Fig. 6: The process of setting the Building land Register.

This is the moment when the real-life building land register will be started. Data from the building land register will be maintained based on changes resulting from the adoption of individual or general legal acts in the field of spatial planning, construction, or public finance (Spatial Planning Act, ZureP-3).

## 5 CONCLUSION

Sustainable management and land use (space) are priorities for sustainable development. Land, especially agricultural and forest land, is recognized as a non-renewable natural resource, which, when lost, is very difficult (and expensive) to replace. Many strategic documents and policies at different levels address the necessity of changes in approaches to the location of activities and the management of space and, at the same time, point to the critical consequences of the development of the last decades. The report on the environment (2015) of the European Environment Agency points out two things in this connection: a) the extremely rapid loss of (mostly agricultural) land due to construction and b) the great threat to soils and related ecosystem services due to soil "sealing," erosion and pollution (Methodology of derelict areas. MES PILOT, 2022).

The development of system-driven evidence, such as Building land Register, is a long-term and extremely complex process that involves various actors and a multitude of data sources. The implementation began with mass collection in 2017, and the Building land Register is currently in a phase where it is waiting for the municipalities to take it over in their administration and upgrade the data with properties about vacant building land.

With a detailed identification of land properties, the Building land register will provide a basis for decision an policy making in all spatial planning processes, from planning, construction, and use of space to maintenance and renovation of its components and at all levels of operation—local, regional, and national. Building land Register will offer greater transparency over the situation in the area and answer questions about where I can build, under what conditions, and whether the land on which we can build is equipped with the necessary infrastructure.

The article draws knowledge and information from the projects of mass capture of inhabited land, eProstor, and Pilot MOP, in which the Geodetic Institute of Slovenia participated as a contractor. We believe that with our work, we have taken important steps towards effective, balanced and sustainable management of space with improved quality of life for all.

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