



„ Rules concerned registration of the spatial objects in Poland in the context of 3D cadaster’s requirements”

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Polish cadaster – registered objects

In Poland cadastral system is 2D based system. System is using 2D parcels in order to register rights to the land and another objects.

According to the cadastral law in polish cadastral system there are registered 3 types of cadastral objects:

- land parcels,
- buildings,
- premises/apartments.

A land parcel in the cadastre - extension of rights to a land parcel / limitations

„A land parcel is a continuous area of land, located within the boundaries of one cadastral block, uniform with respect to legal issues and delineated from the environment by means of its boundaries”.

(§ 9. 1-2. Cadastral Law)

„Within the borders determined by social and economic destination of lands, the property covers the space over and under the surface. That regulation does not violate regulations concerning rights to waters”

(Act of April 23, 1964, The Civil Code, Art. 143)

A land parcel in the cadastre - extension of rights to a land parcel / limitations

In general, the property ranges to such altitude and to such depth, which are required for the standard utilisation of the given real estate.

„Waters of a territorial sea, sea inland waters including sea inland waters of the Gdańsk Bay, inland flowing surface waters and underground waters are the property of the State Treasury. A Water Permit is not required for development of water installations used for intake of underground waters for the needs of standard utilisation of water from water intakes located up to the depth of 30 m.”

(Article 10 and 124 of the Act of July 18, 2001 The Water Law)

Result => only waters in wells and stagnant waters may become a private property.

A land parcel in the cadastre - extension of rights to a land parcel / limitations

„Deposits of minerals, which are not parts of a land real estate, are the property of the State Treasury. Within the borders specified by legal acts, the State Treasury may, with the exclusion of other persons, use the deposits of minerals and use the rights to them by establishing mining exploitation of those deposits”.

(Art.7 of the Act of February 4, 1994 The Geological and Mining law)

A land parcel in the cadastre - extension of rights to a land parcel / limitations

„The local physical management plan should include resolutions concerning parameters and factors concerning characteristics of built-up areas and land management, which should, in particular, define the lines of buildings area, size of built-up areas with respect to sizes of land parcels, including participation of biologically active areas, sizes and heights or designed buildings and roof geometry”

(Act of March 27, 2003 on physical planning and management & Decree of the Minister of Infrastructure of August 26, 2003 on the required scope of the local plan of physical management)

A building in the cadastre – problems

„The outline of a building is an outline, which is determined by orthogonal projection of outer planes of outer walls of the ground floor of the building, on the horizontal plane; in the case of building located on pillars, orthogonal projection of the floor supported by those pillars”

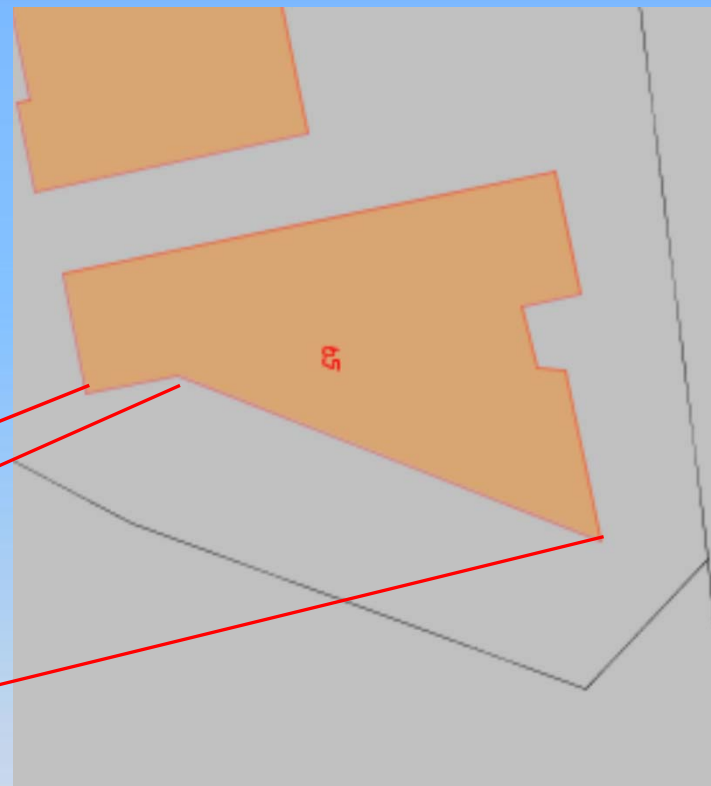
(Cadastral Law)

„A building is generally plotted in accordance to its ground floor, but when over-ground floors exceed the ground floor more than 2.0 mm at the map scale, they are plotted using an appropriate symbol.

Supporting pillars of over-ground parts are the elements of the ground floor and they should be plotted according to their shapes, if their size exceeds 1.0 x 1.0 mm at the map scale. In other cases a symbol of a supporting pillar should be used”.

(Technical Instruction K-1, The Base Map)

Overground storeys – missed registration in the cadastre



Source: map – The Office of Geodesy and Cadastre for the City of Warsaw, photograph – author

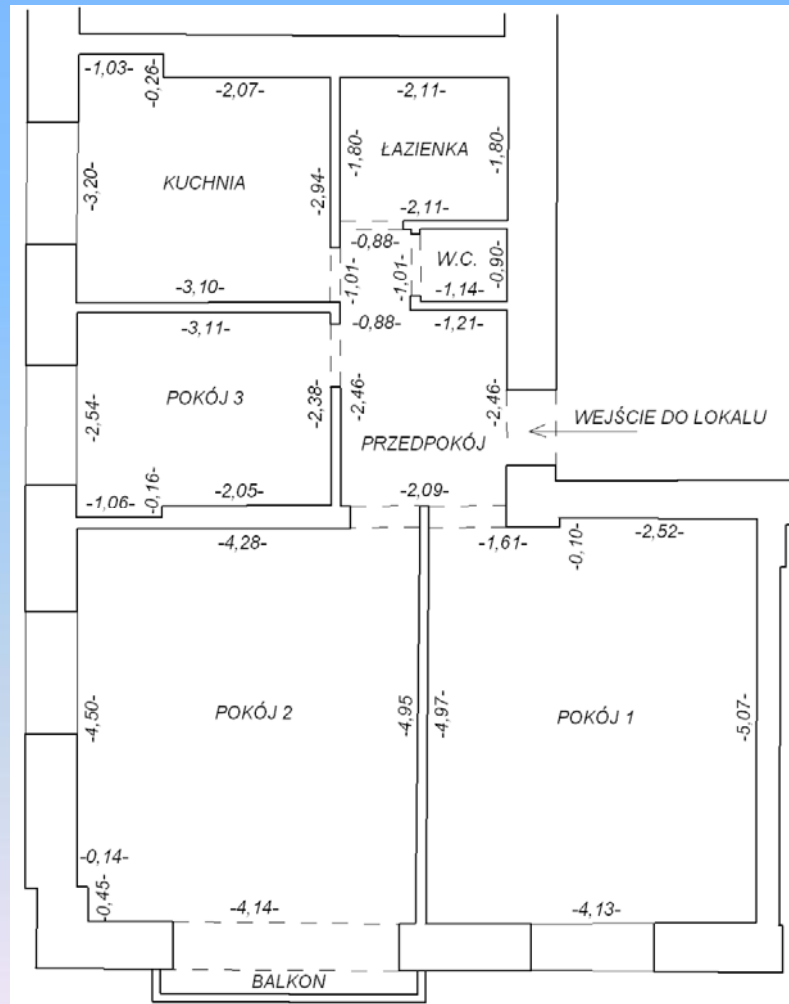
Overground storeys – missed registration in the cadastre?



Source: author

Premises/apartments in the cadastre – problems

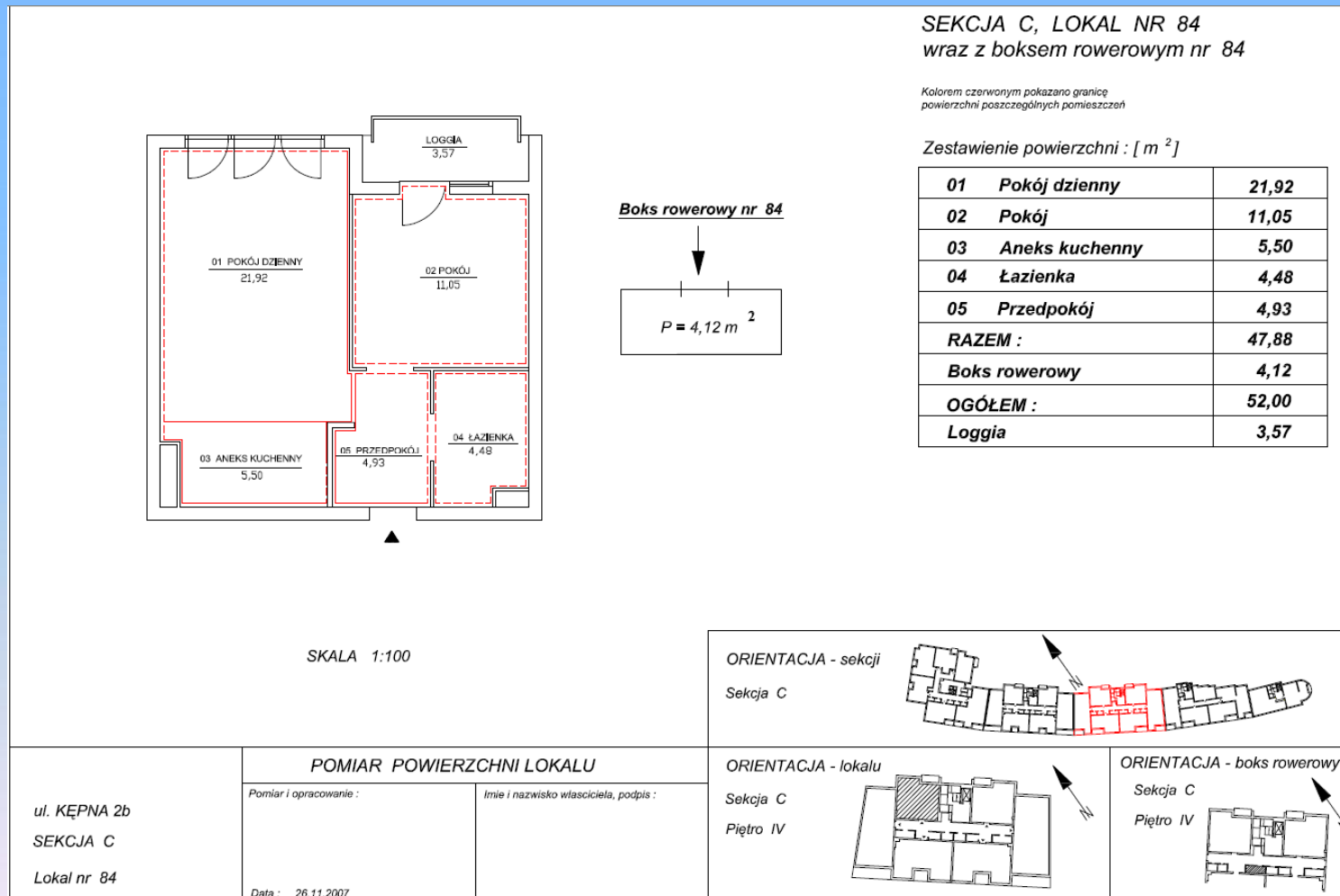
Discussed by the author in the paper: *„Registration of the Premises in 2D Cadastral System in Poland”, FIG Working Week 2011, Marrakech, Morocco – paper no.4818*



Kłoka Łukasz, 2011: „Issues of premises as an objects in cadastre”. Master Thesis, Warsaw University of Technology, Department of Cadastre and Land Management., supervisor of thesis: Marcin Karabin,

Premises/apartments in the cadastre – problems

An Example of Architectural and Building Inventory of Premises and Accessory Rooms (Section C of building 2b, premises No. 84 and a bicycle shed No. 84 belonging to the premises)



Kłoka Łukasz, 2011: „Issues of premises as an objects in cadastre”. Master Thesis, Warsaw University of Technology, Department of Cadastre and Land Management., supervisor of thesis: Marcin Karabin,

Premises/apartments in the cadastre – problems

- unclear legal regulations concerning the rules of surveys of rooms in premises, and surveys of entire premises, and calculation of the size of the living space of rooms and premises (there is no specification of obligatory standards and inaccurate specification of the accuracy of calculation of areas,

Premises/apartments in the cadastre – problems

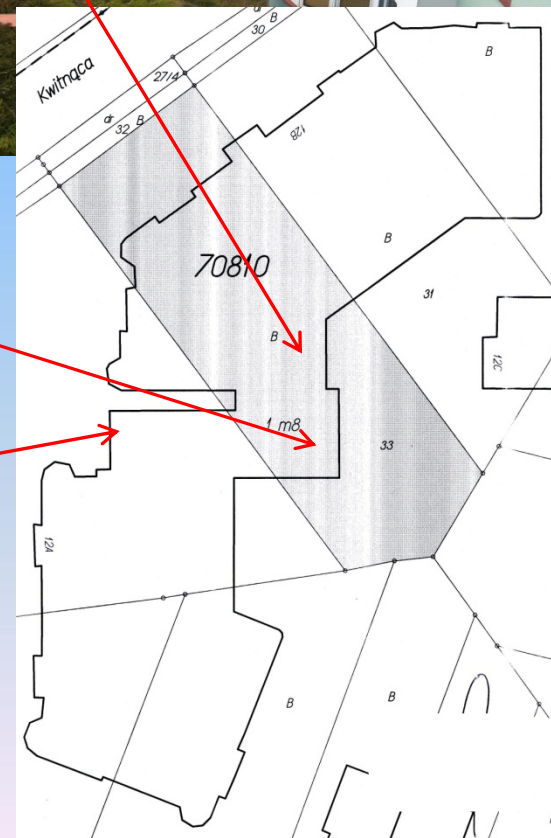
- the standards PN-70/B-02365 and PN-ISO 9836:1997 present various rules concerning the surveys and calculation of sizes of living space of rooms and entire premises, high differences occur, which do not allow for exchangeable application of both standards and therefore, it is not possible to specify a universal (possible for application for each premises) coefficient, to be used for automatic re-calculation of the living space of premises, following one of those standards to the value obtained basing on the other standard,

Premises/apartments in the cadastre – problems

- the way of calculation of the owner's share of separated premises in the common property, which relates it with the size of living space of all premises, separated within a given building, what – following provisions of Art. 3 of the Act on Ownership of Premises may cause many difficulties, since modification of that share is not possible if an agreement between the owners of premises, in the form of a notarial deed is not concluded,
- registration of shares of owners of separated premises in the common property in land register, both in the land register of the common property and in land register of particular premises; this is disadvantageous from the point of view of introducing changes.

Untypical 3D objects

Test object No.1 – cadastral map



Source: map – The Office of Geodesy and Cadastre for the City of Warsaw, photographs – author

Test object No.1

Cadastral map

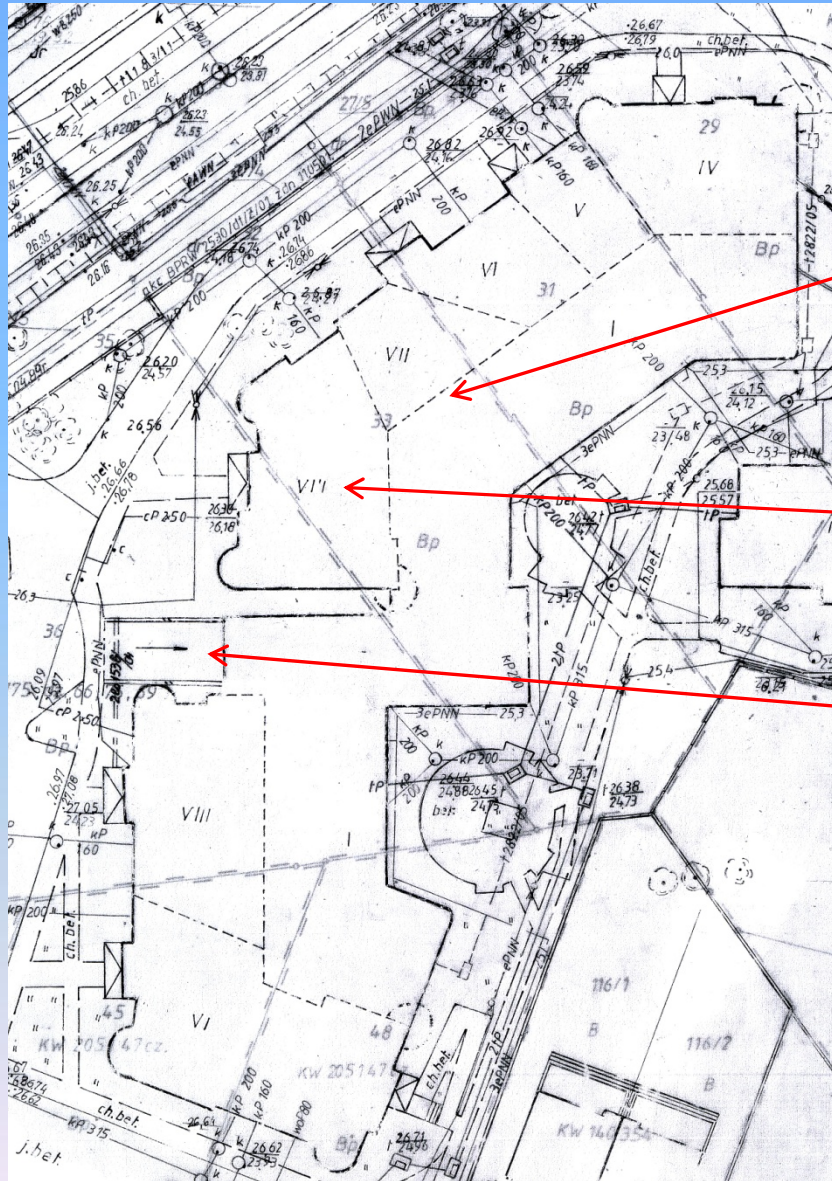
Only a part of the building outline is the presentation of walls of the residential floor; the rest of it presents the underground parking area, which is higher than the surface of the surrounding parcel.

The image of this building on the cadastral map is somehow false, since it does not present the image of reality in a correct way.

Descriptive part of cadastre

Only the information has been introduced that the building has one underground floor and that the maximum number of floors equals to eight within the building.

Test object No.1 – base map



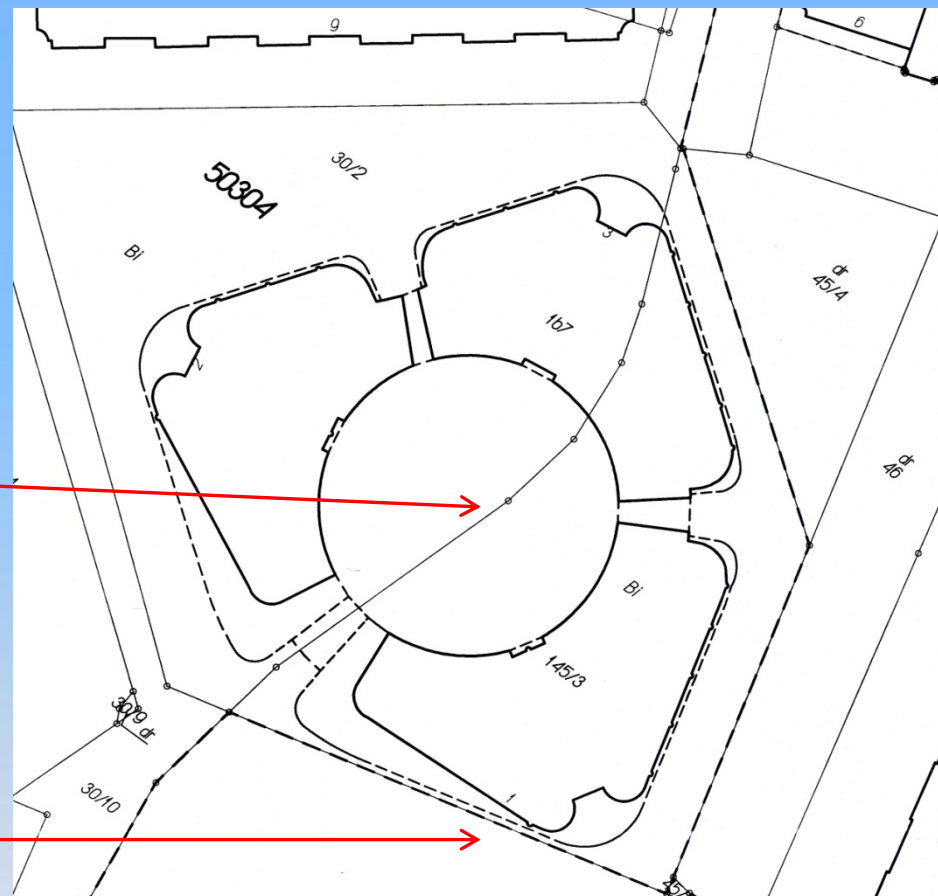
Line of outer walls of the residential floor – separating particular parts of the building of various numbers of floors and from the parking area, standing above the terrain surface

Number of the highest floor

Symbol of entrance to the parking area

Source: map from The Office of Geodesy and Cadastre for the City of Warsaw, descriptions – author

Test object No.2 – cadastral map



Source: The Office of Geodesy and Cadastre for the City of Warsaw – map, photographs – author

Test object No.2

Cadastral map:

the building outline is presented on the cadastral map. Parts of the floors, which are located above the ground and supported by pillars, have been marked with dashed lines. In general, there is no information on the map, what is located in the circular part of the building and it is unclear, how many buildings are presented on the map.

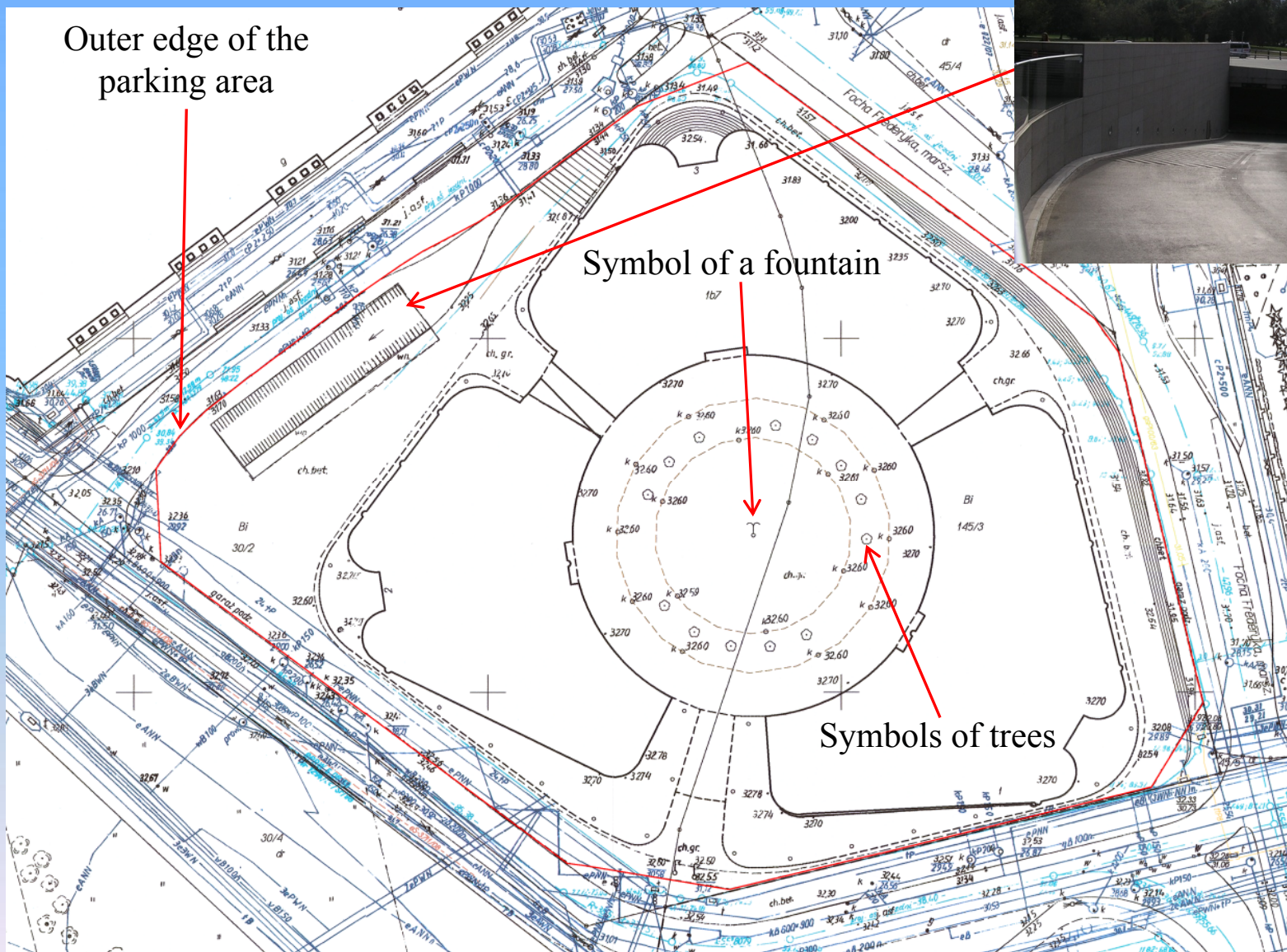
Descriptive part of cadastre:

Information that it is one object – the building of seven floors above the ground and two underground floors.

The expansion of the underground floor ?

Is it included in the building outline, presented on the map, or the underground part has different borders?

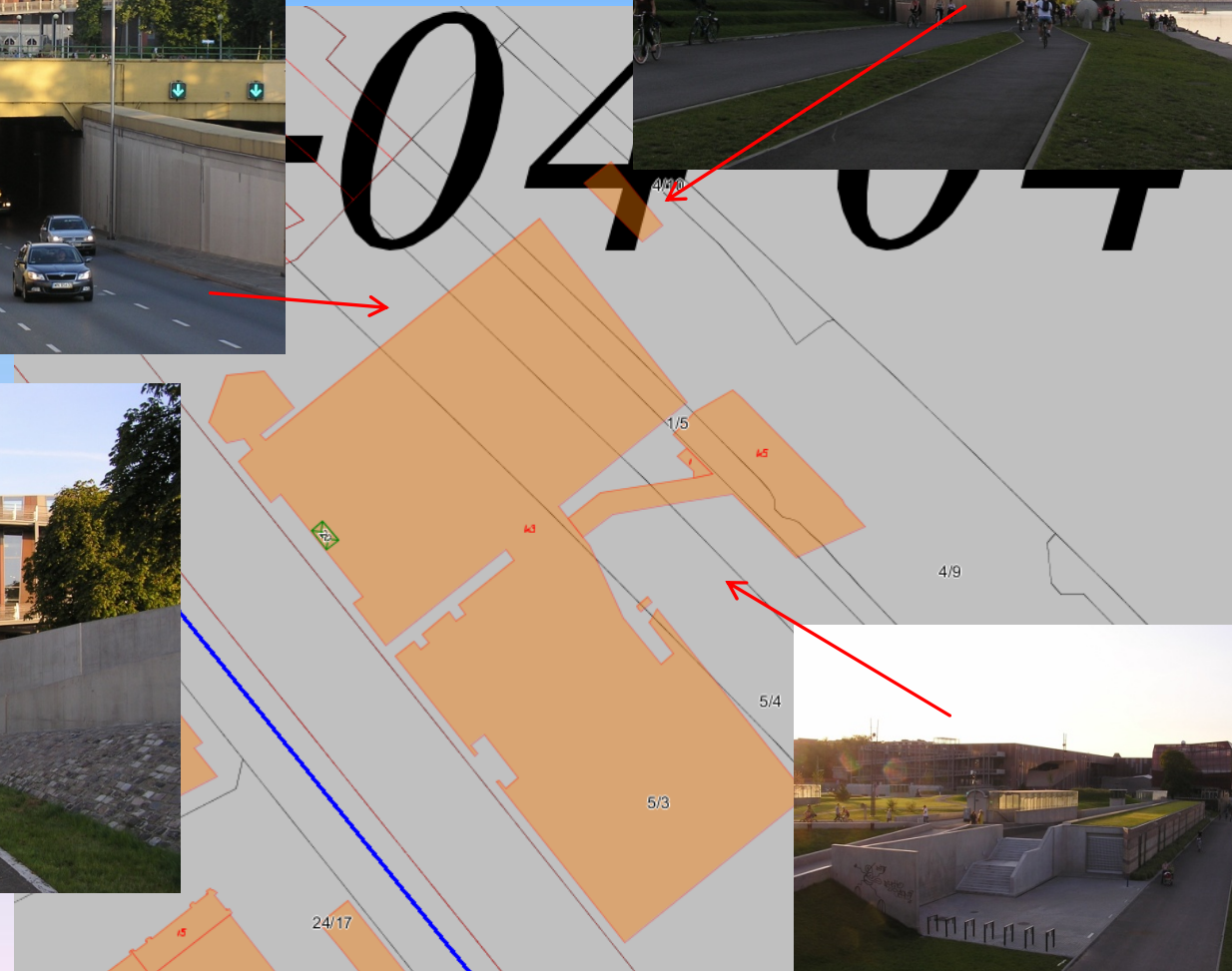
Test object No.2 – base map



Entrance
to the
parking
area

Source: map from The Office of Geodesy and Cadastre for the City of Warsaw, descriptions – author

Test object No.3 – cadastral map



Source: The Office of Geodesy and Cadastre for the City of Warsaw – maps, photographs – author

Test object No.3

Cadastral map:

The underground tunnel is missing as an element of that map.

In general, elements of the underground infrastructure are missing, including the entrance to the underground tunnel (the bus stop is located in that tunnel).

Descriptive part of cadastre:

Three separate buildings

Building 1 it has been specified that it has the underground floor, but this information does not concern a road tunnel, which is independent from the building, but the underground parking area; the entrance to that parking area is visible outside the building.

“other built-up” areas have been specified in the cadastre as the land use type for parcels no. 5/3, 5/4, 1/4, 1/5.

Test object No.3

Descriptive part of cadastre:

owners of particular parcels are: the Capital City of Warsaw (parcels 5/3 and 5/4), the State, in co-ownership with the Capital City of Warsaw (parcel 4/9) and the State (parcels 1/4 and 1/5), but the City Road Management Board is specified as the administering body. This may only suggest that we deal with a road object, since this is not precisely specified in the cadastre.

Test object No.3

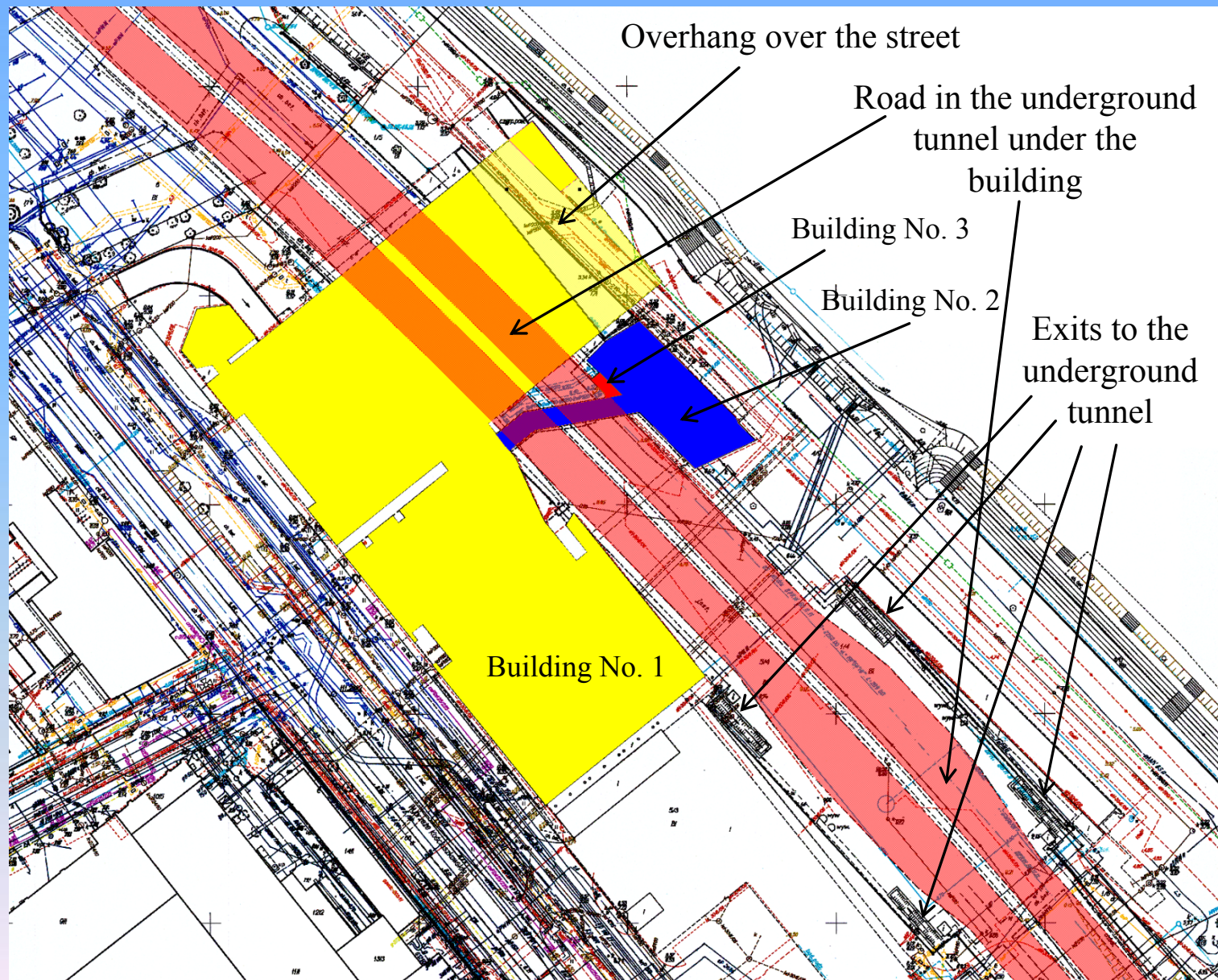
Land register:

1st LR for the parcels 5/3 and 5/4, 2nd LR for the parcels 1/4 and 1/5 and 3rd LR for the parcel 4/9

The entry concerning charges for the benefit of the power supply plant and related to the right to use, free of charge, and unlimited in time, selected underground lands located in Warszawa, Wybrzeże Kościuszkowskie Street, may be found; It concerns power supply installations located in the road tunnel.

Lack of information about the tunnel results from the fact that both, the road in the tunnel and the Copernicus Science Centre, are the property of public bodies – the State or the Capital City of Warszawa. This issue would be probably presented differently when the tunnel would be located under the privately owned lands.

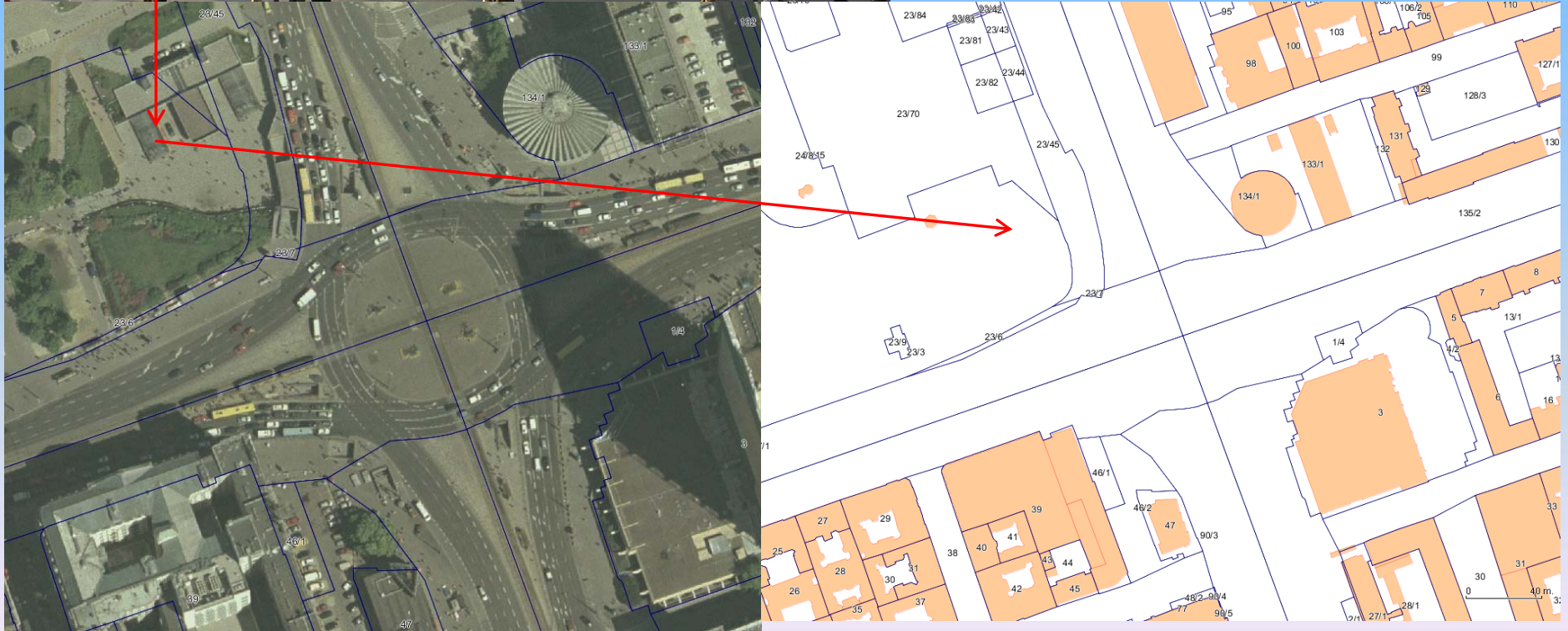
Test object No.3 – base map



Source: The Office of Geodesy and Cadastre for the City of Warsaw – maps, photographs – author

Test object No.4 cadastral map

Underground Railway Station



Source: The Office of Geodesy and Cadastre for the City of Warsaw – maps, photographs – author

Test object No.4

Cadastral map – no information

Descriptive part of cadastre (register of the buildings) – no information

Affected parcels – in cadastre classified as a road

Land books – not exists

The network of premises is hired by a company, which administers underground passages, rents particular shops, service facilities, advertising boards and takes care of the entire object. The company has signed multi-year contracts with tenants of particular premises.

Test object No.3 base map



Entrances to
underground
passages

Sewage collectors

Tunnels of the
underground
railway

Source: The Office of Geodesy and Cadastre for the City of Warsaw – maps, photographs – author

Test object No.4

Those objects have not been registered in the cadastre results from the fact that they are located under the lands being the property of public entities – the lands owned by the state. The railway tunnel and the railway itself, as well as the underground railway tunnel and the underground railway itself, are the property of the State or the city. Therefore there was not necessary to establish limited material rights. They are not the cadastral objects as well.

The entire route of the underground railway is traced under the lands being the property of the Capital city of Warsaw. That route is located under the main streets of the city and the tunnel route exceeds the streets in the case of big stations only; this may be observed at the analysed location.

Conclusions

- In Poland, such spatial objects as buildings and premises have been registered in the cadastre for many years. What refers to both categories of objects, their technical parameters are registered in the descriptive part of the cadastre and only in the case of a building its spatial data has its graphical presentation on the cadastral map (the building outline). With respect to premises, documentation concerning their spatial parameters, such as architectural projections of premises, is also collected, but it is stored in the form of analogue documents and not in the digital form.

Conclusions

- Although the Polish cadastre does not register: underground objects of the nature of buildings, underground tunnels and other devices of the underground infrastructure, information concerning those objects may be found in other official documents.

Finally, the data base of the Technical Infrastructure was to be established in Poland, which would contain spatial and property information concerning particular underground installations. Until this inventory is established, its role will be played by the base map, which covers the areas of the highest density of such objects, i.e. cities and urbanised areas.

Conclusions

- In the case of computerisation of those maps – they are integrated with the cadastre, since they contain parcel boundaries and building outlines and they are stored in one database. The content of the base map is sufficient to identify the spatial extension of those objects in the x,y plane, and, for the technical infrastructure installations in the vertical plane as well, since heights of particular elements of that infrastructure (conduits, manholes etc.) are also specified.

The body which maintains the base map (the same body maintains the cadastre) has the complete surveying documents concerning those objects in the archive.

Conclusions

- If Poland concerned introduction of the complete version of the so called true 3D cadastre, i.e. containing spatial data about objects, which are not the cadastral objects at present – the base map and its archive should become the basic source of information about extension of those objects.
- Introduction of the 3D cadastre in its simplified version, i.e. without introduction of 3D spatial parcels, is possible with relatively low financial inputs, comparing to those required for surveying the objects from the very beginning, since the base map and source documents contain sufficient information concerning locations of those objects and they should be utilised for that purposes.

**THANK
YOU
FOR
YOUR
ATTENTION**