

ORIGINAL ARTICLE

Principles of defining and recording data on structures permanently attached to buildings and their influence on coherence of cadastral data on buildings in Poland

Anna Przewięźlikowska^{1*}

¹Department of Integrated Geodesy and Cartography, Faculty of Mining Surveying and Environmental Engineering, AGH University of Science and Technology, 30 Mickiewicza Av., 30-059 Krakow, Poland

*przewie@agh.edu.pl

Abstract

The provisions of the geodetic law contain the term “Structures permanently attached to buildings”. These are elements that make up a set of attributes of buildings. At present, attributes of buildings are very complex, giving rise to discussion in the surveying environment. Many of them are impossible to be unambiguously and immediately defined by the surveyor. The surveyor is obliged to identify structures permanently attached to buildings, to define them, and to enter these structures with all their attributes into appropriate databases.

This research paper presents the analysis consisting of certain aspects related to an attempt to define these attributes and to determine the principles of assigning their definitions to construction realities. For this purpose, the legal regulations and case-law concerning the studied attributes were referred to. Then, symbolic representation for the presented structures was analysed, as regards its use on geodetic maps. An important element influencing the introduced changes was identified, which is a sign of the times, i.e. digitization of the geodetic and cartographic documentation database. Finally, the Author proposed what changes should be made with respect to the amount of the information collected on structures permanently attached to buildings, as well as to the methods of their presentation on maps.

Key words: building attributes, structures permanently attached to buildings, symbols on base map

1 Introduction

The provisions of the geodetic law contain the term “Structures permanently attached to buildings”. These are elements that make up a set of attributes of buildings. At present, attributes of buildings are very complex, giving rise to discussion in the surveying environment. Many of them are impossible to be unambiguously and immediately defined by the surveyor. The surveyor is obliged to identify structures permanently attached to buildings, to define them, and to enter these structures with all their attributes into appropriate databases (Buśko, 2016; Mika, 2016).

2 Legal regulations on principles of recording structures permanently attached to buildings

The concept of structures permanently attached to buildings has been in use since 2013. Appendix 1, Chapter 2, of the Regulation of the Minister of Administration and Digitization of 12 February 2013 on the geodetic database of the utility network documentation database, database of topographic objects and the base map (Regulation, 2013b) mentions the “Catalogue of objects constituting the contents of the base map”. The catalogue specifies that items 40–43 and 45–50 are “a type of a

– punktów 40–43, 45–48, 50 atrybut pozyskany z klasy EGB_OZB: geometria, rodzaj obiektu trwale związanego z budynkiem,

Figure 1. Fragment from Catalogue of objects constituting the contents of the base map

Table 1. Fragment from List of objects constituting the contents of the base map. Database used to capture the object – EGIB (database of the register of land and buildings)

No.	Object
40	terrace
41	veranda, porch
42	vestibule
43	stairs
44	overhang
45	support of a structure permanently attached to a building
46	ramp
47	entrance to the underground level
48	access ramp for the disabled
49	passage through a building
50	other structures permanently attached to buildings

structure permanently attached to a building”. The entry from the Appendix is illustrated in Figure 1. Then, Appendix 5, Chapter 6, on “Editing of the cartographic contents of the base map” names the structures which are the contents of the base map, together with identifying the database which is the source of capturing information about individual structures. For structures permanently attached to buildings, it is the database of the register of land and buildings. According to the Catalogue items, they are listed in the table containing the “List of objects constituting the contents of the base map” under numbers 40–43 and 45–50 (Tab. 1).

It is difficult to understand the logic behind listing such an order of elements in the table where the item 44 (overhang), which belongs to a different group of objects (a block of a building) and the item 49 (passage through a building), are located between objects which all belong to one group.

Pursuant to the above regulation of 12 February 2013 on GESUT (surveying records of the network of public utilities), BDOT (database of topographic objects) and MZ (the base map) (Regulation, 2013b), in the amendment to the regulation of 29 November 2013 on the register of land and buildings (Regulation, 2013a), §63a provides for structures permanently attached to buildings. However, §63a refers only to a possibility of entering structures permanently attached to buildings, and not to their obligatory record. Such an approach of the legislator results in voluntary entering or non-entering of the elements that significantly influence a representation of a building on the map being fully acceptable. It is hard to visualise an image of a building on the map without, for example, stairs, or a terrace, or an access ramp for the disabled, which constitute important information about a given building. This optionality probably results from the previous regulations in the form of technical guidelines, where these elements belonged to the group of optional information. However, the fact that they are permanently attached to buildings means that they are in fact always presented together with a building. Therefore, it is important to properly enter information about buildings into relevant documents which present data changes in the register of land and buildings (Buško and Przewiężlikowska, 2016).

§63a (Regulation, 2013a) In addition to the outline of a building and its blocks, the cadastral database may contain building structures permanently attached to buildings, including: terrace, veranda, vestibule, stairs, support, ramp, entrance to the under-

enumeration
EGB_TypesOfStructuresPermanentlyAccordingToBuildings
terrace = 1
veranda, porch = 2
vestibule = 3
stairs = 4
support = 5
ramp = 6
entrance to the underground level = 7
access ramp for the disabled = 8
other = 9

Figure 2. Types of structures permanently attached to buildings, according to UML diagram

ground level, access ramp for the disabled.

It should be noted that §63a does not mention a porch, which is contained in the regulation on the base map. However, it is listed in the regulation on the register of land and buildings in the UML Application Diagram in Diagram: DanePrzedmiotoweSlovniki. It can be assumed that the veranda and porch can be treated interchangeably, as indicated in the diagram (Fig. 2).

The porch is listed as separate from the veranda also in §2.1.9 Regulation (2013a) as an element which is not considered to be a chamber.

§2.1.9 Regulation (2013a) Regardless of the size or method of lighting, the following are not considered to be chambers: entrance halls, halls, bathrooms, toilets, pantries, verandas, porches, or storage spaces

The above amendments in the regulations have influenced the inclusion of all structures attached to buildings (including a porch) in the List of objects constituting the contents of the base map (Appendix 5) of the Regulation of the Minister of Administration and Digitization of 2 November 2015 on the database of topographic objects and the base map (Regulation, 2015) (Tab. 2).

3 Definitions of structures permanently attached to buildings

It is therefore worth analysing whether there are legal definitions for the structures discussed. The case is important mainly because the surveyor is obliged to unambiguously represent structures on the map and describe them in the Building Record Data Sheet. These objects constitute a set of attributes of buildings, which is currently extremely complex (Buško, 2017).

The existing definitions of structures permanently attached to buildings are based on available dictionaries. These include: Polish Language Dictionary (2017), Szolginia (1975), Szolginia (1992).

However, these dictionaries are not the legal interpretation. Moreover, they are not unambiguous, which is revealed during actual construction proceedings. The definitions of the structures have been collected, analysed and included in the publication (Benduch et al., 2017c). A fragment of this analysis is presented in Table 3.

Numerous court judgements are proofs of problems with defining some structures permanently attached to buildings. Unambiguous definitions of the terrace, veranda, porch and vestibule seem to be the most troublesome. The porch was added to the definition of the veranda as a synonymous structure, as suggested by the previously presented legal regulations. While analysing court judgements in which structures permanently attached to buildings play a significant role, it is evident that there is a problem of no clear definition of these objects. Examples of such judgements include:

Table 2. Structures attached to buildings in the Regulation (2015). Source database: EGİB database of the register of land and buildings

No.	Name of database object	Geometry of object in database	Cartographic code	Geometry of cartographic sign	Cartographic sign on base map
32		area	EGBT07		terrace
33		area	EGBG08	area	veranda/porch
34		area	EGBW09	area	vestibule
35	structure	area	EGBS10	area	stairs
36	attached to a	point	EGBP12_01	point	support attached to a building
37	building	area	EGBP12_02	area	support attached to a building
38		area	EGBR13	area	ramp attached to a building
39		area	EGBW14	area	entrance to the underground level
40		area	EGBP15	area	access ramp for the disabled

Table 3. Definitions of selected structures permanently attached to buildings (Source: Benduch et al. (2017c))

Structure	Lexical definition	Remark
Terrace	A flat, roofless part of a building located on the ground floor, first floor or roof, designed mainly for outdoor recreation.	The basic factor determining the qualification of a given structure as a terrace is no roof over it. A terrace can be located on the ground or at the level of a floor or landing, supported on pillars. The cadastre will not show terraces located on the roofs of buildings.
Veranda Porch	Extension covered with a roof which is located at the entrance to a building, adjacent to its outer wall, with partially open or glazed walls, mainly serving as a relaxation area.	It is important to correctly distinguish between a veranda and a terrace. Considering the fact that a terrace can not be roofed, it should not be difficult in practice. A veranda in the cadastre is identified with a porch. It is sometimes confused with a vestibule.
Vestibule	A small, enclosed room, located at the entrance to a building or flat, used to stop the flow of cold air from outside.	A vestibule is a walled, enclosed space, located at the entrance to a building. It usually has a window. It is generally made of the same material as the building.

Judgement of the Provincial Administrative Court in Poznań of 13 September 2017, Ref. No. IV SA/Po 326/17

Despite the lack of a legal definition of the term “veranda”, it shall be understood as the additional usable space located on the ground floor of a building, usually at its front side, with a roof, frequently enclosed with glass or wooden partitions – walls or openwork screens. A veranda is often located at the entrance to the building and, just like a terrace or a balcony, has a relaxation function.

Judgement of the Supreme Administrative Court in Warsaw of 27 January 2017, Ref. No. II OSK 1220/15

For clarification, it should be noted that a terrace specified in §2 clause 9 of the plan as appurtenant land development (next to the objects of landscape architecture) does not have a legal definition.

The publication “Principles of measuring usable floor space of premises” (Gaca, 2016) raises numerous doubts in defining the aforementioned terms. It turns out that it is important to determine whether it is a veranda because: “It may be controversial from the point of view of the described principles to include verandas or loggias into the surface areas of premises where the previously open spaces have been permanently enclosed by various types of building partitions”. Moving on to components of premises, the author of the publication writes: “As it results from the statutory definition referred to above, which defines components of premises, this definition does not include either verandas or loggias. Furthermore, according to the encyclopedic data, the veranda is an extension, usually a wooden or a brick room, open or glazed, covered with a roof, placed in front of the entrance to the building or by any other elevation”. It is clear that the author refers to the encyclopaedic data that is to help him define the veranda. Then, continuing the issue of whether to include the veranda into the surface area of the premises or not, the author refers to the Act of 21 June 2001 on the protection of tenants’ rights, municipal housing stock and amending the Civil Code (Act, 2001): “Due to the fact that the veranda or the closed loggia has the function of a “room” and, as follows from the definition set forth in Article 2.1.7 of the Act (Act, 2001), the usable floor space should be understood as “the area of all rooms

in premises, (...) regardless of their intended purpose and method of use”. In this context, the surface areas of verandas or closed loggias should be considered as the usable floor space of premises”.

At this point, an important question arises: Is it important where is and what is: Terrace, Veranda, Porch? This is the subject of another court judgement:

Judgement of the Provincial Administrative Court in Szczecin of 28 June 2017, Ref. No. I SA/Sz 307/17

In this respective case, a summer shed was subjected to taxation, and the first disputable issue was whether it was exempt from taxation subject to its development area, or not.

For this judgement, the provisions of the Act of 20 March 2015 amending the act – Construction Law and some other acts (Act, 2015) are significant. Namely, in Article 2 of the Act of 13 December 2013 (Act, 2013) on family-owned allotment gardens, clause 9a was added with the following wording: “summer shed - shall be understood as a detached recreational and leisure building or other building structure that has such a function, located on a plot of land in a family-owned allotment garden, with the development area not exceeding 35 m² and with a maximum of 5 m in height if with a steep roof, or up to 4 m if with a flat roof, where its development area does not include a terrace, veranda or porch, unless their total area exceeds 12 m²”. It is, therefore, extremely important which structures permanently attached to buildings will be included in the register and how they will be interpreted by the surveyor. This applies to summer sheds, but it is equally important for all buildings entered into the register of land and buildings. Therefore, when trying to look closer at the provided examples of various buildings, in numerous cases, the recipients will have doubts related to identifying elements attached to the building. Let us try to determine what structures are attached to the building in Figure 3 – a terrace or a veranda? So how should the surveyor name and then represent individual objects on the map? According to the Author of this research paper, these elements should be interpreted as described in the Figure 3.



Figure 3. Terrace or Veranda? (Source: photograph of a building from the training materials of the Society of Polish Geodetic Surveyors)

Another example which questions the proper interpretation of structures is illustrated in Figure 4. It is uncertain whether these objects in the photographs are: Canopy over Terrace, Veranda or covered Terrace? The problem is particularly important for land surveyors, because canopies, with the exception of bus shelters, are not represented on the maps in the current legal regulations. And yet, in the construction industry, such structures occur quite frequently, and it is sometimes difficult to replace them with a different term if they clearly serve as a shelter, for example, as a carport or a woodshed, and are attached to a building. There is also a respective court judgement on the subject: “A terrace roofed with steel canopy as a building structure”:

Judgement of the Provincial Administrative Court in Białystok of 6 September 2007, Ref. No. II SA/Bk 430/07. According to the authority, both the canopy and the terrace should be treated as a single building structure, despite the fact that they were constructed in various stages. The court in its judgement pointed out that the canopy was the roofing of the terrace and of the camping trailer standing next to it. At the same time, the pillars of the canopy were permanently attached to the terrace. The authority also indicated that the legal status of both the terrace and the canopy was identical. Hence, it was reasonable to settle the matter with one decision, as for a building structure being one whole.

As a result, another description of “the canopy” appears which can be interpreted differently by land surveyors. Before the amendment of the regulations in 2015, it was represented on the maps. Thus, according to the Author, the examples of roofing over the developed paved area illustrated in Figure 4, where the surveyor may have some doubts in interpretation, would be best described as a roofed terrace, regardless of the function they perform. Such a definition would not cause inconsistencies in the specification of the attributes, as it would not raise any doubts in interpretation.

The examples illustrated in subsequent photos in Figure 5 may pose a big interpretation problem in distinguishing between the veranda and terrace. According to the Author, Figure 5 demonstrates examples of structures attached to buildings which can be classified as “verandas” in the verbal description of the attribute due to permanent glazed walls together with a permanent roof. Another solution could be to include them into the outline of the building as a single whole.



Figure 4. Canopy over Terrace, Veranda or covered Terrace? (Source: photographs from the Internet)

When the walls of the terrace attached to a building are partially open or covered in a loose manner, and the structure is clearly intended to be a relaxation area, it is a different case. Then, it should be classified as a covered terrace, not as a veranda. This is the way they are interpreted by architects and builders. The substrate of such a terrace should be of particular importance for illustrating on the map. If it is permanently affixed to land, then it should be marked with a continuous line on the map, as it is an important element for the development of the area around the building. Such examples are illustrated in Figure 6.

Figure 7 presents a residential building where, in the descriptive part of the construction design, there is a “porch with a vestibule function”. From the surveying point of view, this is a very dubious object to represent on the map as a separate structure. A vestibule is a place that is important due to its function inside the building. It is unreasonable to wonder whether it might be a porch. Such considerations are completely unnecessary and too detailed. Therefore, looking at the external image of the building, each of its elements, especially the vestibule which is made of the same material as the rest of the building, should be included in the building’s outline, such as the other walls of the building, without delving into its internal character. Such a record was already included in the Technical Guideline K-1 of 1979, where §90 sets out: *Permanent extensions are marked with the same symbols as buildings.* No one then delved into what was inside that extension.

4 Symbolic representations of structures permanently attached to buildings

In the context of correct definition of the type of a structure permanently attached to a building, the variability of these struc-



Figure 5. Veranda (Source: photographs from the Internet)

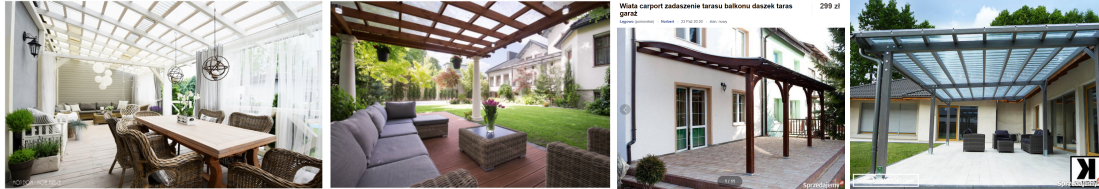


Figure 6. Covered terrace (Source: photographs from the Internet)



Figure 7. Porch with function of vestibule (Source: photographs from the Internet)

tures over the years is extremely important, due to frequent legal changes affecting their types and symbolization used on geodetic maps. This variability consists in: changing the types of structures, changing their names, and changing the geometry of these structures. Such variability is also responsible for the prolonged time of information flow between the systems because the cadastral data is not updated in an automated manner (Przewięźlikowska and Buško, 2014). The Prussian materials that are still used for the modernization of the register of land and buildings (Przewięźlikowska, 2015) are a good example of documents that are still easily interpretable today.

In order to analyse the variability of structures, six provisions concerning the symbolic representation on the base map regarding the discussed issue were compared, in the period from 1969 to the current 2018. The analysed guidelines and regulations include Guideline D-II (1969), Technical Guideline K-1 (1979), Technical Guideline K-1 (1995), Technical Guideline K-1 (1998), Regulation (2013b), Regulation (2015).

The analysis involved the division of structures permanently attached to buildings into three tables: 4, 5 and 6, where structures of similar character were grouped. Despite earlier analyses limited only to selected structures, this part of the research paper will discuss changes in all structures permanently attached to buildings, since the differences occur in many cases and at different levels of detail.

Table 4 demonstrates the symbolization of the structures which are the most controversial in their correct definition and classification to the appropriate type, namely: terrace, veranda, porch, vestibule. These structures are analysed as follows:

- Terrace – present in all legal regulations since 1969. It has open and covered versions, it used to be identified with a ramp, it can be identified with a veranda, it was identified with a canopy if constructed on supports and the canopy was under it. Currently, according to the proposed definition,

only roofless structures may be qualified as terraces.

- Veranda – present in all legal regulations since 1969. It was then identified with a covered terrace. Since 1995, the veranda has been equated with a terrace, without distinguishing whether it is an open or covered structure. A significant change introduced in 2013 is distinguishing between a terrace and veranda again, and adding the porch as synonymous to the veranda.
- Vestibule – it has been in the register of land and buildings as a building structure since 2013. In its symbolization, it is similar to a covered terrace from the earlier regulations.

A distinct change in the symbolization occurs in the legal regulations of 2013 and 2015.

Table 5 contains structures such as stairs and skylights. As for these objects, there were relatively few changes from the point of view of visual reception for the map user. It was decided to represent stairs more precisely, taking into account their real shape. Nowadays, the need to represent an exact course of the stairs, either round or multidirectional ones, which is insignificant for the map itself, poses a serious difficulty for the computer preparation.

Table 6 contains structures such as a ramp, entrance to the underground level and access ramp for the disabled. When analysing the symbols, it can be concluded that:

- Ramp – has one, relatively invariable and clear symbol that has remained the same for all these years.
- Entrance to the underground level – similar combinations in change of its symbolic representation occur, as is the case with terraces. It has both covered and open versions, as well as generalized ones. A distinct change occurred between 2013 and 2015.
- Access ramp for the disabled – appears as a structure in 2013, and in 2015 its symbol changes.

From the user's point of view, the change which is the most difficult to understand is an innovative change in symbols between 2013 and 2015 for: veranda, porch, vestibule, entrance to the underground level and access ramp for the disabled. It seems that the creators of the symbols have forgotten that not only surveyors are the map users, but also industry professionals and average citizens who are parties to a construction procedure. In the current legal situation, surveyors frequently have problems with the correct identification of structures in the field. This is due to excessive fragmentation in their nomenclature, which is really unnecessary from the point of view of the users of surveying data. This generates additional prob-

Table 4. Structures: Terrace, Veranda, Porch, Vestibule

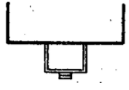

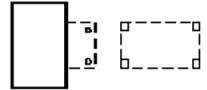

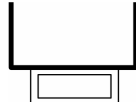
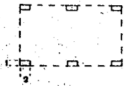
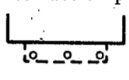
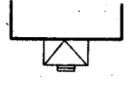

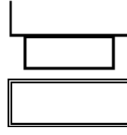
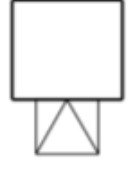
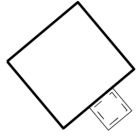

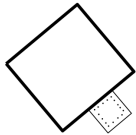

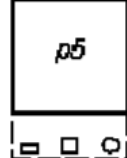
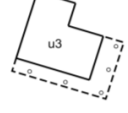

D-II 1969	K1 1979	K1 1995 K1 1998	Regulation of 2013	Regulation of 2015
<p>Open terrace (ramp)</p> 	<p>Open terrace</p> 	<p>Canopy, open terrace on supports</p> 	<p>Terrace</p> 	<p>Terrace</p> 
<p>Canopy, overhang, open field dryers</p> 				
<p>Upper terrace on pillars</p> 				
<p>Covered terrace, veranda</p> 	<p>Covered terrace (veranda)</p> 	<p>Terrace, veranda</p> 	<p>Veranda, porch</p> 	<p>Veranda, porch</p> 
		<p>No distinction between covered terraces (verandas) and open terraces</p>	<p>Vestibule</p> 	<p>Vestibule</p> 
	<p>Pillar</p> 	<p>Outline of a support (load-bearing pillar) of arcade, canopy, gallery, wires</p> 	<p>Support attached to a building</p> 	<p>Support attached to a building</p> 

Table 5. Structures: Stairs, Skylights


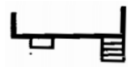
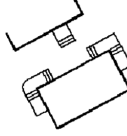
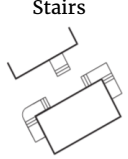
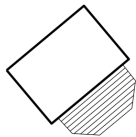

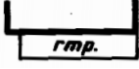

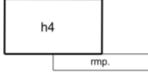

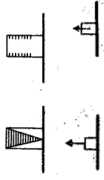
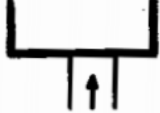
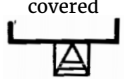
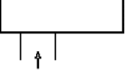
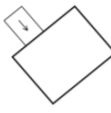
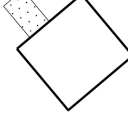
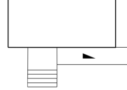
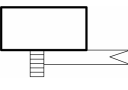
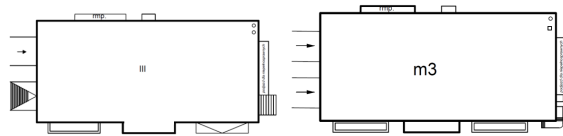
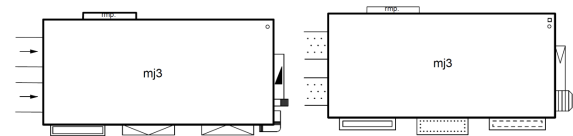
D-II 1969	K1 1979	K1 1995 K1 1998	Regulation of 2013	Regulation of 2015
<p>External stairs</p> 	<p>Stairs, skylights (cellar windows)</p> 	<p>External stairs</p> 	<p>Stairs</p> 	<p>Stairs</p> 
		<p>Skylights for the underground level</p> 		

Table 6. Structures: Ramp, Entrance to the underground level, Access for the disabled

D-II 1969	K1 1979	K1 1995 K1 1998	Regulation of 2013	Regulation of 2015
	Ramp 	Ramp 	Ramp 	Ramp attached to a building 
Stairs and driveways to the underground level: - open - covered 	Entrance to the underground level open  Entrance to the underground level covered 	Entrance to the underground level  No distinction between open entrance and covered entrance	Entrance to the underground level 	Entrance to the underground level 
			Access ramp for the disabled 	Access ramp for the disabled 

**Figure 8.** Buildings drawn under different legal regulations: [Technical Guideline K-1 \(1979\)](#), [Technical Guideline K-1 \(1998\)](#)**Figure 9.** Buildings drawn under different legal regulations: [Regulation \(2013b\)](#), [Regulation \(2015\)](#)

lems with their interpretation based on maps, because each surveyor will use the classification of the structure and the resulting symbol on the map totally arbitrarily.

It is hard to imagine that map users, such as industry professionals and citizens to whom these maps are dedicated, will be able to clearly state what object is drawn next to a building. It will be particularly difficult if the same structures are displayed on the map, but from different periods of time, which is reflected in their different symbolic representations. Such a situation will result in serious inconsistencies in the cadastral data on buildings that is collected in the register.

In order to illustrate the changes taking place between individual provisions better, Figures 8 and 9 illustrate a hypothetical building with all the structures permanently attached to this building, presented on the map according to different regulations. It is possible to notice quickly how the evolution in the representation of individual structures proceeded, and how the actual buildings differ from one another. This is of great importance for the performance of as-built surveys of buildings, as a result of which it is mapped ([Przewięźlikowska and Krzyżek, 2016](#); [Krzyżek and Przewięźlikowska, 2017a,b](#)).

It is difficult to accept such frequent changes of symbols on the map. The recent ones, completely different from the previous symbols, are explained by IT companies as being able to be properly defined on IT grounds. Even if it is so, computers are to serve geodesy, as it is in this case, and not vice versa. While

analysing various examples of computer software operating on the surveying market, it is frequently the case that not all of them keep up with the changes in symbols ([Mika et al., 2015](#)) and in the interoperability in cadastral data ([Mika, 2017](#)).

5 Conclusions

To maintain the consistency of cadastral information on buildings in Poland, there are conclusions regarding the modification of the attributes of buildings with respect to structures attached to buildings. Their number and level of detail significantly affect the ability to survey buildings in a reliable manner ([Krzyżek and Przewięźlikowska, 2017a,b](#)). In particular the author proposes to introduce the following modifications:

- removal of the vestibule object,
- restoration of the canopy and an covered terrace objects,
- the objects veranda, porch, covered terrace and canopy should have one symbol, or if they are surrounded by permanent walls - they should be included in the outline of the building.

The types of some structures permanently attached to buildings must be verified, as well as their number and symbolic representations.

Table 7 presents these structures which are the most ambiguous to define, together with their proposed modification

or removal of symbols to be used on the map. At the same time it is advisable to restore the symbols which are intuitively understandable for the recipient, especially for the users other than surveyors. The symbols currently occurring in the regulations are not as intuitive to the recipient as they used to be. This especially applies to such objects as: entrance to the underground level, vestibule and veranda. The proposals result from the comparative analysis of regulations containing the catalogue of symbols of the basic map, included in the Tables 4, 5 and 6 in force in Poland since 1969.

Too detailed specification of cadastral data on buildings in Poland destabilizes its cohesion (Przewięźlikowska, 2017). This issue has already been discussed by Benduch et al. (2017a,b). It suggests a general conclusion regarding the simplification of symbolic representations and attributes of any structures presented on surveying maps, i.e.:

- permanent structures – continuous thick line (e.g. a building),
- structures not included in the outline, but permanent – continuous thin line (e.g. a terrace, plus a possible symbol of a roof),
- structures which are not permanent – dashed line.










Acknowledgements

This work was carried out within the statutory studies of the AGH University of Science and Technology, Faculty of Mining Surveying and Environmental Engineering, Department of Integrated Geodesy and Cartography No. 11.11.150.444

References

- Act (2001). The Act of 21 June 2001 on the Protection of Tenants' Rights, Municipal Housing Stock and Amendments to the Civil Code. Official Journal 2001, No. 71, item 733.
- Act (2013). Act of 13 December 2013 on family-owned allotment gardens. Official Journal 2014, item 40.
- Act (2015). Act of 20 March 2015 amending the act — Construction Law and some other acts. Official Journal 2015, item 528.
- Benduch, P., Hanus, P., and Pęska-Siwik, A. (2017a). Budynek na mapie ewidencyjnej, kontur budynku i bloki budynku. *Przegląd geodezyjny*, 7:15–20, doi:10.15199/50.2017.7.1.
- Benduch, P., Hanus, P., and Pęska-Siwik, A. (2017b). Pozyskiwanie i ujawnianie danych opisowych budynku w katastrze nieruchomości. *Przegląd geodezyjny*, 9:6–10, doi:10.15199/50.2017.9.2.
- Benduch, P., Hanus, P., and Pęska-Siwik, A. (2017c). Rejestracja obiektów budowlanych trwale związanych z budynkiem w katastrze nieruchomości. *Przegląd geodezyjny*, 8:12–15, doi:10.15199/50.2017.8.1.
- Buśko, M. (2017). Intended use of a building in terms of updating the cadastral database and harmonizing the data with other public records. *Reports on Geodesy and Geoinformatics*, 103:78–93, doi:10.1515/rgg-2017-0007.
- Buśko, M. and Przewięźlikowska, A. (2016). The problem of demonstrating cadastral changes in surveying documentation. In Bieda, A., Bydłosz, J., and Kowalczyk, A., editors, „GIS ODYSSEY 2016” *Geographic Information Systems Conference and Exhibition: 5–9 September 2016, Perugia, Italy*, pages 50–62. Zagreb: Croatian Information Technology Society — GIS Forum.
- Buśko, M. (2016). Bulding contour line in the database of the real estate cadastre in poland pursuant to applicable laws.

Table 7. Proposals of changes for symbols for selected structures attached to buildings

Structure	The most intuitive symbol	Pictured
Open terrace		
Covered terrace		
Veranda, porch		 Should be included into outline of a building, as there are many buildings with glazed walls today; possibly a symbol as for covered terrace.
Vestibule	No symbol	 Symbol unnecessary; vestibule should be included in the outline of a building
Entrance to the underground level		The symbol used since 1979 is the most understandable for the recipient. The change in 2015 introduced an incomprehensible symbol.
Access ramp for the disabled		The symbol from 2013 is understandable for the recipient. Unreasonable change of the symbol in 2015.

- ECONTECHMOD: an international quarterly journal on economics of technology and modelling processes, 5(3):183–190.
- Gaca, R. (2016). Zasady pomiaru powierzchni użytkowej lokali. *Nieruchomości*, 10.
- Guideline D-II (1969). *Conventional signs and principles of describing engineering and economic maps. Second Edition.*
- Krzyżek, R. and Przewięźlikowska, A. (2017a). Accuracy assessment in determining the location of corners of building structures using a combination of various measurement methods. *Reports on Geodesy and Geoinformatics*, 104:48–56, doi:10.1515/rgg-2017-0014.
- Krzyżek, R. and Przewięźlikowska, A. (2017b). Ocena dokładności wyznaczenia położenia narożników budynków w trybie kompilacji różnych metod pomiarowych. In Balawejder, M., Matkowska, K., and Warchoł, A., editors, *Innovative technologies for surveying – using in various sectors of the economy: 7–9 June 2017, Kamionka, Poland*, pages 60–61. Wyższa Szkoła Inżynieryjno-Ekonomiczna w Rzeszowie.
- Mika, M. (2016). Proposals for changes in surveying–legal procedures for the needs of cadastre in Poland. *Reports on Geodesy and Geoinformatics*, 102:67–77, doi:10.1515/rgg-2016-0028.
- Mika, M. (2017). Interoperability cadastral data in the system approach. *Journal of Ecological Engineering*, 18(2):150–156, doi:10.12911/22998993/68303.
- Mika, M., Siejka, M., and Przewięźlikowska, A. (2015). Monitoring rynku programów geodezyjnych wykorzystywanych do opracowania mapy do celów projektowych na terenie powiatu krakowskiego. *Czasopismo Inżynierii Lądowej, Środowiska i Architektury*, 32(62):301–313, doi:10.7862/rb.2015.156.
- Polish Language Dictionary (2017). <http://sjp.pwn.pl/>. Accessed: 30.03.2017.
- Przewięźlikowska, A. (2015). Wykorzystanie źródłowej dokumentacji katastru pruskiego do modernizacji mapy ewidencyjnej. In *Innovative technologies for surveying – using in various sectors of the economy: 10–12 June 2015, Kamionka, Poland*.
- Regulation (2015). Regulation of the Minister of Administration and Digitalization of 2 November 2015 on topographic pages 141–143. Wyższa Szkoła Inżynieryjno-Ekonomiczna w Rzeszowie.
- Przewięźlikowska, A. (2017). Analysis of land markets intended for single-family housing for different suburban areas. In *the 10th International Conference Environmental Engineering: selected papers. Vilnius Gediminas Technical University, Lithuania, April 27–28, 2017*. doi:10.3846/enviro.2017.232.
- Przewięźlikowska, A. and Buśko, M. (2014). The analysis of the updating time of subject and object data due to the information flow between the systems of the real estate cadastre and the land and mortgage register. In *SGEM 2014: GeoConference on Informatics, geoinformatics and remote sensing: 14th International Multidisciplinary Scientific Geoconference: 17–26 June, 2014, Albena, Bulgaria, Vol. 3, Photogrammetry and remote sensing cartography and GIS*, pages 933–940. Sofia : STEF92 Technology Ltd. doi:10.5593/SGEM2014/B23/S11.118.
- Przewięźlikowska, A. and Krzyżek, R. (2016). Inwentaryzacja powykonawcza budynków w kontekście zgodności usytuowania z projektem zagospodarowania terenu. *Przeгляд Geodezyjny*, 88(8):11–15, doi:10.15199/50.2016.8.2.
- Regulation (2013a). Regulation of the Minister of Administration and Digitalization of 29 November 2013 amending the regulation on the register of land and buildings. Official Journal 2013, item 1551.
- Regulation (2013b). Regulation of the Minister of Administration and Digitization of 12 February 2013 on the geodetic database of the utility network documentation database, database of topographic objects and the base map. Official Journal 2013, item 383.
- objects database and basic map. Official Journal 2015, item 2028.
- Szolginia, W. (1975). *Architecture and construction*. Scientific and Technical Publishing, Warsaw.
- Szolginia, W. (1992). *Architecture*. Sigma NOT, Warsaw.
- Technical Guideline K-1 (1979). *The Base Map*.
- Technical Guideline K-1 (1995). *The Base Map of the country*.
- Technical Guideline K-1 (1998). *The Base Map*.