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BUILDING INFORMATION MODELLING AND COPYRIGHT

Building Information Modeling (BIM) translated directly into Polish means modeling information about a building. BIM is used in the planning, design, management and implementation of construction, and – ultimately – in building management. In addition, BIM allows simultaneous cooperation of many people on one project. However, the question arises whether models created using this technology are protected by law. One of the most important issues related to BIM, and particularly models created using this technology, is the protection of copyright, which is why these issues are discussed in more detail in this article.

Keywords: real estate, BIM, proptech, copyrights, work

1. Introduction

In the construction sector, many investments end up failing to meet deadlines or exceed the costs included in the cost estimate. One of the problems is the incorrect organization of the construction investment process. The current approach brings the possibility of failure caused by the cooperation of independent design and implementation units. As shown by the CMAA Owners Survey 2005, CMAA Industry Report 2007, approx. 30% of the investments carried out were subject to the risk of exceeding the schedules or cost estimates. The research also shows that an estimated 1/3 of materials ordered for construction purposes was wasted, and 10% of the total investment costs included errors in orders. To avoid incurring the above-mentioned costs, the stages of construction project implementation should be connected. Such an integration of the design stage with the implementation stage is called the Integrated Project Delivery (IPD)[2]. Globally, among others in the United States, the IPD contracting model is used, based on the contract signed by several entities (in addition to the investor and the contractor also by the designer, architect and key subcontractors). In Poland, such contracts do not yet exist.

[1] Afiliacja…
[2] M. Drzazga, *BIM – zapis informacji o przedsięwzięciu budowlanym (projektowanie 5D)*, "Przegląd Budowlany" 9/2016, p. 33.

Moreover, it is worth noting that Polish construction sector is flooded with paper documentation. Verification of the project in terms of compliance with applicable regulations or technical and economic assumptions turns out to be tedious work and the cause of conflict between the investor and the architect, as well as between the constructor and the contractor. The optimization of the entire construction process as well as the integration of all its participants can be ensured thanks to digital technology – Building Information Modeling (BIM)[3].

Many people think that BIM is a development of CAD (Computer Aided Design, also Computer Aided Drafting) methods. The importance of BIM, however, goes far beyond the very process of project development. While the goal of CAD was to improve the preparation of documentation, the goal of BIM is to computerize the process of the implementation of investment[4]. The term "BIM" was popularised in 2002 by construction analyst Jerry Laiserin, who used it to describe virtual design and building management in all its life cycles. Some say BIM is about the design software. Others claim that this is a virtual model of the building. For some, it is a process or an organised database dedicated to the building. BIM can also be called a digital description of physical and functional properties of buildings, serving as a source of knowledge and data about the object. BIM information is the basis for data exchange between the participants of the investment process and facilitate the cooperation of the teams implementing the undertaking[5]. Finally, BIM can also be a database about a building that is developed throughout its entire life cycle. Created for this purpose and updated as-built model, it can be used as a database informing about a given object, to help e.g. in planning maintenance or renovation works or in the current analysis of the condition of the building[6]. Therefore, understanding of the "BIM" term is not uniform. Without contradicting the multifaceted nature of BIM, it should be emphasized that this technology has changed, among others, the way of creating construction documentation.

In the United States, all public investments at the design and implementation stage must now be handled with BIM, in the UK it is used more and more often. Unfortunately, in Poland, BIM is not yet widely used. Therefore, the term "BIM" has not been defined in any of the acts of in Polish law. However, it should be noted that in accordance with art. 10e of the Public Procurement Law, in the case of works contracts or tenders, the contracting

[3] *Optymalizacja procesu projektowania budynku – technologia BIM*, https://swiat-aluminium.pl/aktualnosci/architektura/438-optymalizacja-procesu-projektowania-budynku-%E2%80%93-technologia-bim.html, 12.08.2015 r. (accessed on 7.05.2019).
[4] W. Szymanik, *Ci, którzy pierwsi wdrożą BIM, wygrają*, www.inzynierbudownictwa.pl/technika, materialy_i_technologie,artykul,ci_ktorzy_pierwsi_wdroza_bim_wygraja,10566, 2.01.2018 r. (accessed on 29.04.2019).
[5] *Dictionary of terms related to BIM*, http://bim4u.eu/slownik (accessed on 10.04.2019).
[6] E. Wiktorowska, *Art. 10(e)*, *Prawo zamówień publicznych. Komentarz aktualizowany. system informacji prawnej LEX*, 2019.

authority may require the use of electronic data modeling tools for construction data or similar[7] and BIM actually is such a tool[8]. The Polish legislator allows the use of BIM tools in public procurement, but in none of the legal acts determines how the resulting models could be protected. Undoubtedly, one of the most important issues that should be analysed is the protection of copyrights of models created by BIM. It is worth considering whether models created using this technology are covered by copyright.

2. Sources of law

Considerations about the copyright should start with identifying the sources of law. Copyright law has been regulated at the international, European and national level.

At the international level, one must consider the regulations contained in the Berne Convention for the Protection of Literary and Artistic Works[9]. This is one of the first agreements on respecting copyright. Initially, in 1886, 10 European countries signed the convention in order to unify certain rules on copyright. Poland acceded to the Berne Convention on January 28, 1920. The Convention is based on two basic principles: the principle of minimum protection (signatories must ensure in national domestic law such copyright protection as provided for in the Convention) and assimilation principle (the creator from another country must be treated equally with citizens of a given member state). According to the Berne Convention, in principle, the minimum duration of protection covers the life of the author and 50 years after his / her death. Another important act at the international level is the universal TRIPS copyright convention[10], which was developed by UNESCO. Like the Berne Convention, it contains the principle of mutual respect of rights and prohibits any discrimination against foreign authors. You also need to consider the copyright laws included in the World Intellectual Property Organization Copyright Treaty[11]. It refers to the protection of digital content, databases and computer programs.

At the European level, on the other hand, the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society should be highlighted. The aims of the directive were to harmonize copyright protection in the European Union and to adapt the level of protection to the

[7] Journal of Laws of 2018, item 1986 as amended.
[8] E. Wiktorowska, *Art. 10(e)*, *op. cit.*
[9] Journal of Laws of 1935, No. 84 item 515.
[10] Agreement on Trade-Related Aspects of Intellectual Property Rights, www.wto.org/english/ /docs_e/legal_e/27-trips.pdf (accessed on 15.03.2019).
[11] Journal of Laws of 2005, No. 3, item 12.

realities of using digital works[12]. The Directive on Copyright in the Digital Single Market, formally the Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC is a European Union (EU) directive came into force on June 6, 2019[13]. It aims to modify the copyright law in the European Union so that it meets the requirements of the digital age. These changes are made as part of the European Commission's project. The goals include creating a single market in the European Union and enabling more effective competition with entities from other regions, e.g. the USA. The effects will probably be visible after a few years of their application in practice.

In Poland, works and objects covered by related rights are protected primarily by the provisions of the Act on Copyright and Related Rights[14]. This act will be the subject of further considerations regarding the possibility of ensuring copyright protection of the models created by BIM.

3. The term "work" according to the Act on Copyright and Related Rights

The subject matter of the copyright is the work. The work is a basic, fundamental institution of copyright, as well as the reason and justification for the creation and separation of this area of private law[15]. It is an intangible legal good, which should be distinguished from the material object (material medium, also referred to as *corpus mechanicum*), on which it is usually fixed[16]. The article 1, para. 1 of the Act on Copyright and Related Rights defines what the work is. Work is every manifestation of creative activity of an individual character, established in any form, regardless of the value, purpose and manner of expression. The work is subject to copyright from the moment it is determined, even if it has an unfinished form. The subject scope of copyright protection set out in the aforementioned definition is described in art. 1 para. 2 of the Act on Copyright and Related Rights by listing basic categories of works. The listing is exemplary and not exhaustive, which means that other characters of the song may also appear on the market, as long as they meet the

[12] L 130/92, https://eur-lex.europa.eu/legal-content/PL/TXT/PDF/?uri=CELEX:32019L0790&from=ET (accessd on 27.11.2019).
[13] *Conclusion. Directive of the European Parliament and Council on copyright in the Digital Single Market*, https://eur-lex.europa.eu/legal-content/PL/TXT/PDF/?uri=CELEX:52016PC0593&from=EN (accessed on 15.03.2019).
[14] Journal of Laws of 2018, item 1191 as amended.
[15] M. R. Sarbiński, *Art. 1*, *Prawo autorskie. Komentarz do wybranych przepisów*, Wydawnictwo Prawnicze LexisNexis, 2014.
[16] J. Barta, R. Markiewicz, *Art. 1*, *Ustawa o prawie autorskim i prawach pokrewnych. Komentarz*, ed. 5, LEX, 2011.

conditions set out in the definition of the work. The basic categories of works include architectural, architectural-urban and urban works.

In the context of considerations devoted to the definition of a work, the elements determining its existence are also important. The three following premises should be met jointly: there must be an element of creativity, individual character and it has to be fixed in any form.

According to the current synthetic definition, work is a manifestation of creative activity. Creative activity thus becomes the key to understanding the notion of "work". The use of the term "creativity", as is apparent from the wording of the provision, in its functional meaning may seem a bit misleading. After all it is not about the creation elements that would manifest themselves in the process of creating a work, but as a result of this activity[17]. Undoubtedly, to talk about creativity, there must be a creative element. In this case – what is important in the context of BIM – the effect resulting from routine and template activities will not meet these criteria. Polish courts have repeatedly expressed themselves on this issue. According to the case law, if the technical documentation is on the verge of copyright protection, it is in principle granted copyright protection[18]. In practice, proprietary protection will cover primarily untypical and innovative solutions – in the scope of both the construction itself (e.g. in the date of preparation of this article, a lot of space is devoted to an office building using wooden construction) and individual industries (especially when using building materials based on on so-called unit admission). On the other hand, it may be difficult in practice to capture the creative element in the situation of template solutions.

Another premise that regulates the definition of work is its individual character. In Polish jurisprudence and doctrine there is a lack of agreement on the understanding of the premise of individual character. Mostly it refers to the result of human activity, it is connected with the concept of originality, novelty or the mark of a personal creator[19]. The work should have a unique character.

The last premise is the possibility to determine the work in any form in such a way that third parties can be familiar with it, and therefore also in electronic form. At the same time, the so-called determination has to be distinguished from the fixing of the work. The determination consists in the fact that any recipient other than the artist himself / herself may get acquainted with the work. In turn, the fixation is based on the fact that the work is replaced by a form that allows any number of people to be familiar with it at any time. It is worth noting that it is enough for a work to have been determined to gain protection, but it is not necessary to be fixed.

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[17] M.R. Sarbiński, *Art. 1*, *op. cit.*
[18] VI ACa 1200/14, LEX nr 1936794.
[19] M.J. Stępień, *Indywidualny charakter utworu jako przesłanka ochrony prawnoautorskiej dzieła technicznego*, "Acta Iuris Stetinensis" 2(18)/2017, p. 341.

4. The creator and his / her personal and proprietary rights

The creator is the person who created the particular work. Creator status may be granted to natural persons due to the fact that they may undertake creative activities. Already from the statutory definition of the work, it appears that it is a manifestation of a personal act of creativity, and thus the creator cannot be replaced in this matter by another person. Creating a work is an event resulting with specific legal consequences. They can arise for the benefit of any natural person. According to art. 8 of the Civil Code, everyone has legal capacity (the ability to be a subject of rights and duties)[20]. Therefore, it is not required to achieve a certain age, creation awareness or the psychophysical state of the creator to be covered by copyright[21].

Undoubtedly, the creator of, for example, architectural and construction project will be an architect, and in the case of an industry project – a specific designer. Article 8 para. 1 of the Act on Copyright and Related Rights expresses the basic principle of copyright, according to which the original author is the subject of the right. This principle covers both proprietary personal rights and proprietary copyrights. Any exceptions to this rule may not result from the will of the parties, it can be established only by a legal provision. Personal rights are not defined in any legal act, although the catalog of personal rights is mentioned in art. 23 of the Civil Code. The Act on Copyright and Related Rights also regulates the issue of personal rights (art. 16). Personal goods should be understood as the bond of the creator and the work, but they are not transferable and are not subject to inheritance. The legislator lists as personal rights the right to authorship, the right to be named, etc. In turn, proprietary copyrights are regulated in art. 17 of the Act on Copyright and Related Rights. Unless the act provides otherwise, the author has the exclusive right to use the work and dispose of it in all fields of exploitation and to collect remuneration for using the work.

The proprietary copyrights may be transferred or be contractually made available for use (licensed). The duration of copyright has been regulated in detail in art. 36, 37 and 39 of the Copyright and Related Rights Act[22]. The proprietary copyrights belonging originally to the creator (in most cases) expire after 70 years counted from his death, and in the case of co-authored works – from the death of the last co-creator who survived the others. It is different when the author hid under a pseudonym (actual, not artistic) or asked for anonymity when spreading the work (composition, words) – the 70 years counts then from the date of the first release of the work to the public. However, if at that time the author reveals his / her identity, this period counts from the

[20] Journal of Laws of 2018, item 1025 as amended.
[21] M. Wiśniewska, *Podmiot prawa autorskiego – twórca*, https://lexplay.pl/artykul/prawo_autorskie/ /Podmiot-prawa-autorskiego-tworca (accessed on 20.03.2019).
[22] Journal of Laws of 2018, item 1191 as amended.

creator's death. In the course of being an anonymous author or hiding under a pseudonym in the exercise of copyright law, he / she is replaced by the publisher, producer or competent organization of collective copyright management, e.g. in Poland the ZPAP (artists' rights) or SARP (architect's rights)[23].

5. Models created in BIM – how to protect them?

There is an ongoing discussion in the world about the need to protect as copyrighted works models made in multidimensional technologies. Currently, there are no regulations that would precisely address this issue. In my opinion, some kind of protection exists, but it should be noted that there is a lack of specific regulations relating to multidimensional projects.

In the understanding of copyright, work is a product of the human intellect (the creation of the creator). The forms generated by the forces of nature and animals are not protected. It is assumed that if the creation of a work includes using tools, machines or other technical means, the author is the one who determines their use and method of work[24]. From a legal point of view, CAD and BIM programs are tools that improve the design process of a building. The author will be the one who will determine the use of a given program. As E. Czernik emphasizes, structures designed using these programs do not differ from those that are created manually[25]. This sentence deserves approval, especially in the context of the analysis of the protection of projects created on the basis of BIM and the issue of copyright protection. Multidimensional models could therefore be subject to similar protection as hand-made models.

However, when creating projects in BIM, it is difficult to capture a creative element that comes from a specific person. In practice, it is extremely difficult. Determining who is the creator of a given element requires analysing specific factual circumstances. From the very beginning it is worth thinking about regulating all issues through the use of contract instruments. People who create a specific project in BIM should determine to whom the individual elements of this project belong. The right to decide on the form of the work belongs to the author. If the author decides to transfer his / her proprietary copyrights, he / she should remember to transfer (or not to transfer) derivative rights (the right to change, alterations). If the derivative rights are not transferred, the content of the work should not be changed after the transfer. The author should agree for each modification.

When concluding contracts in Poland, it is important to remember about the principle of freedom of contract. According to art. 353 as amended 1 of the Civil Code, contracting parties may establish a legal relationship at their own

[23] *Duration of copyright and related proprietary rights*, https://zaiks.org.pl/171,154,6_ czas_ _trwania_autorskich_i_pokrewnych_praw_majatkowych (accessed on 20.03.2019).
[24] A. Binder, F. Kosterhon, *Urheberrecht für Architekten und Ingenieure*, München 2003, s. 21.
[25] *Ibidem.*

discretion, as long as its content or purpose does not oppose the property (nature) of the relationship, the act or the rules of social coexistence. Interpretation of the nature of a legal relationship is a characteristic element of freedom of contract. As also unnamed contracts can have their nature. In such a case, it is difficult to talk about contradictions with the act, as there are no provisions regulating these contracts. The parties may establish a legal relationship at their own discretion. As a rule, this allows you to shape the content of contracts to any degree. Contracts between the contractor and the investor should regulate the transfer of proprietary copyrights or licensing. It is not possible to transfer personal rights (it is possible, however to oblige not to exercise copyrights). In addition to the transfer of proprietary rights, it is important to remember about the regulations on derivative rights, such as adaptation and modification.

Imprecise or nonexisting contract provision may result in copyright infringement. We face copyright infringement each time, when an unauthorized entity enters the copyright of the authorized person. Copyright infringement may occur directly or indirectly. A direct infringement is committed by the perpetrator himself / herself, by entering the scope of the monopoly of the rightholder. It takes the form of e.g. assigning oneself someone else's work in its original version (art. 115 para. 1 of the Act on Copyright and Related Rights) or the reproduction and dissemination of the work in the original version without the consent of the authorized person (art. 117 para. 1 of the Act on Copyright and Related Rights). It is also possible to conduct an indirect infringement of rights. For example, the civil liability for infringement of copyright, in addition to the perpetrator, is also borne by: a helper, instigator and a person who consciously benefited from the damage caused to the other (art. 422 of the Civil Code). In addition, according to the Civil Code, a third party may be liable if the perpetrator cannot be held guilty because of age (art. 426 of the Civil Code – minors up to 13 years old) or liability cannot be attributed to him / her due to being in a state that disables sanity (art. 425 of the Civil Code).

In Polish civil law, two types of civil liability can be distinguished, namely tort liability and contractual liability (the division resulting from the source of liability). We can speak of tort liability when the damage caused to one entity by the other is an independent source of the obligatory relationship between them, regardless of whether the two entities previously had any legal relationship. In turn, contractual liability is presented in the Polish Civil Code (*ex contractu*) in art. 471. If the debtor, in spite of the existing legal relationship, does not fulfill his / her obligation, the creditor is entitled to a claim for damages that has resulted from the non-performance or improper performance of the obligation[26].

[26] J. Józefczyk, *Odpowiedzialność deliktowa a odpowiedzialność kontraktowa*, https://mojafirma.infor.pl/umowy-w-firmie/abc-umow/294929,Odpowiedzialnosc-deliktowa-a-odpowiedzialnosc-kontraktowa.html, 12.09.2014 r. (accesed on 10.04.2019).

This is the case, for example, of a situation where the author does not grant derivative rights to the contractor, but the contractor nevertheless modifies the work.

In some cases, apart from the civil liability, the copyright infringement is also punishable by criminal liability. The misappropriation or misleading about the authorship of all or part of someone else's work or artistic performance, is punishable with a fine, restriction of liberty or deprivation of liberty for up to three years. The same penalty is imposed on the one who disseminates the work in the original version or in the form of a compilation without publicly mentioning the name or pseudonym of the creator or is publicly distorting such a work. A fine, restriction of liberty or imprisonment is also imposed on a person who, without the right or against its conditions, disseminates someone's work in the original version or in the form of a study. It is therefore worth specifying the legal relations precisely at the very beginning of creating building models using the BIM tools. The absence in the contract of precise provisions regarding copyright issues may result in the use of the work in a manner that violates these rights.

6. Conclusions

The issue of copyright for works performed in BIM is undoubtedly problematic. Despite the existence of many regulations regarding copyright, there are currently no legal regulations in Poland that would directly define the protection of such works. It would be reasonable on the part of the legislator – *de lege ferenda* – to introduce specific solutions relating to the protection of multidimensional projects. It may be troublesome to combine different solutions in BIM as a result of the work of different people (although this may apply not only to the same architectural project, but also to the combination of various projects and industry solutions). Moreover, in practice the situation may be complicated by the difficulty in separating creative solutions from typical, commonly accepted solutions. Therefore, it should be assessed individually whether a given model can constitute a work within the meaning of the Act on Copyright and Related Rights. For models created using BIM, the challenge would be to capture the creative element.

For many years there have been discussions about the evaluation of which designer's work can constitute an architectural work and which not. This problem is even more visible in the case of projects created in BIM. Project members should clearly regulate at the very best beginning all the copyright issues in their respective contracts. Depending on the type of project (*build*, *design&build*) the contracts between the investor and the general contractor, as well as the contracts between the investor and the architect, should include provisions regarding copyright. The appropriate regulation in contracts regarding this issue should be each time considered. The market definitely makes much more use of

the possibilities that BIM offers from the technical side than of the legal possibilites. Currently in Poland, we are far from composing multilateral contracts with innovative clauses, like those created by the American Chamber of Architects[27]. The implementation of Integrated Project Delivery contracts could be on of possible solutions. The greatest strength of the IPD is the ability to compromise, work in accordance with clearly defined rules of the game and using the strengths of all players[28].

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[2] Binder, F. Kosterhon, *Urheberrecht für Architekten und Ingenieure*, München 2003.

[3] Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society.

[4] Directive of the European Parliament and Council on copyright in the Digital Single Market.

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[10] Berne Convention for the Protection of Literary and Artistic Works of September 9, 1886, reviewed in Berlin on November 13, 1908 and Rome on June 2, 1928 (ratified in accordance with the Law of 5 March 1934), Journal of Laws of 1935, No. 84 item 515.

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[17] *Dictionary of terms related to BIM*, http://bim4u.eu/slownik (accessed on 10.04.2019).

[18] Act of 23 April 1964 – Civil Code, Journal of Laws of 2018 item 1025 as amended.

[19] Act of 29 January 2004 – Public Procurement Law, Journal of Laws of 2018, item 1986 as amended.

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