



ERASMUS+ PROGRAMME  
2018-1-R001-KA203-049458  
INNOVATIVE EDUCATIONAL INTEGRATION OF URBAN  
PLANNINGS BASED ON BIM-GIS TECHNOLOGIES AND FOCUSED  
ON CIRCULAR ECONOMY CHALLENGES



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# MULTIPLIER EVENT in Poland by Civil Engineering Faculty Warsaw University of Technology

## POLISH REGULATIONS REGARDING BIM TECHNOLOGIES IN CONSTRUCTION SECTOR



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## Overall introduction

According to Autodesk, BIM (Building Information Modeling) is 'an intelligent 3D model-based process that gives architecture, engineering, and construction (AEC) professionals the insight and tools to more efficiently plan, design, construct, and manage buildings and infrastructure'.

It is some kind of technology which is used to generate and use data about the building.



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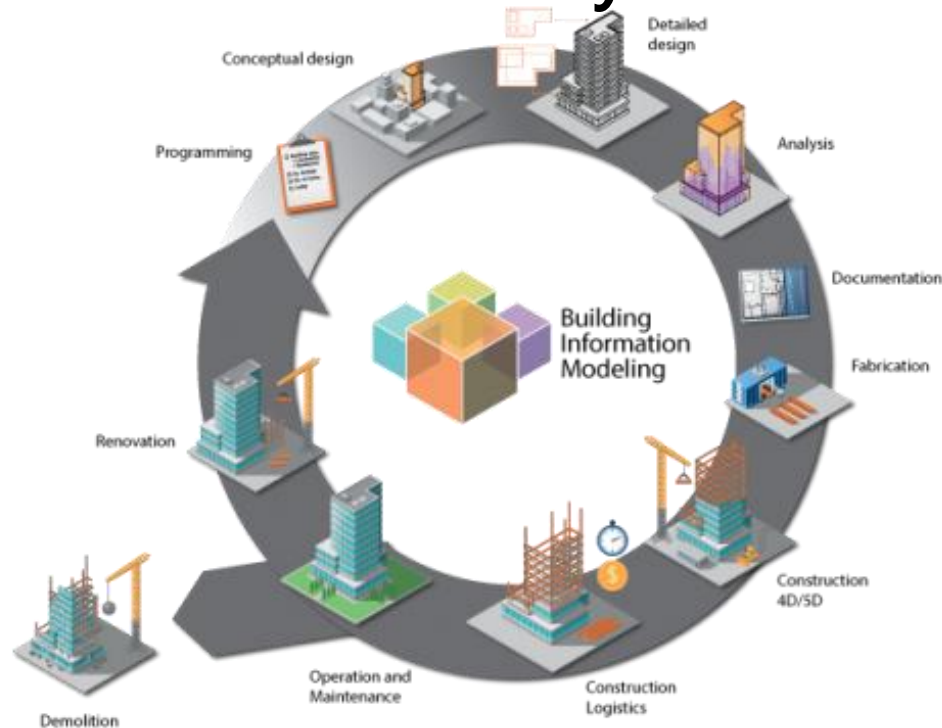


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# BIM life cycle



Source: <https://www.reuters.com/brandfeatures/venture-capital/article?id=34655>



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## BIM genesis

Designing structures for many years has undergone various improvements, primarily through the development of tools and software. This is due to the development of digitization and technology. Originally, the aim was to create drawings more quickly and to operate them more easily. Everything was heading towards a change involving the creation of virtual models in 3D. The transition from presenting the project in 2D to 3D is considered a breakthrough because it was the beginning of creating software that not only allows for more precise presentation of ideas but also is the basis for a better understanding of industries and all participants in the construction process.



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## BIM advantages

Generally, the core and main goal of BIM technology is the communication between the participants of the investment process and better understanding of the general design idea. The project at BIM introduces support in the form of various programs or reports facilitating and accelerating this interpretation as well as collecting and exchanging data by collaborating designers.

The greatest advantage of Building Information Modeling is the ease of making any changes. The virtual model in the computer is open to changes in various positions. It is easy to rotate the model, select any element and its correction, which is difficult in a traditional 2D model.



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## BIM related Polish standards

- PN-EN ISO 19650-1:2019-02 and PN-EN ISO 19650-2: 2019-01
- PN-ISO 12006-2: 2005 and PN-EN ISO 12006-3: 2016-12
- PN-EN ISO 16739: 2016-12
- PN-EN ISO 16757-1: 2019-07 and PN-EN ISO 16757-2: 2019-07
- PN-EN ISO 29481-1: 2017-11
- PN-EN ISO 29481-2: 2016-12
- PN-EN 15804 + A1: 2014-04
- PN-EN 15942: 2012
- PN-EN ISO 13567-1: 2017-11 and PN-EN ISO 13567-2: 2017-12



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## BIM in Poland

On 1 March 2018, the Polish Association of Construction Employers, together with the Polish Association of Construction Engineers and Technicians, took the initiative to implement the 'BIM Standard PL' project. Project initiators hope that this project, which is important for the construction sector, will gain broad support from the industry.

This is a big step to implement BIM technology in Poland. Initially, the implementation will take place in the largest construction companies, which is honestly expressed by the participants of the March meeting, but soon and the smaller ones will use BIM technology.



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## Conclusion

Statistics show that it is not obvious for everyone to use these techniques. There are many reasons why BIM is not used, especially for contractors. There will be a lot of entrepreneurs who do not want to use this technology, especially small companies, which are deterred by high costs of BIM implementation.



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## Obstacles in BIM implementing

1. Experience - BIM is usually considered a rather difficult process and requires gentleness in the bypass.
2. Reluctance to change - especially older engineers still not open enough for the changes we notice around them.
3. Information management problem - another challenge that companies have to face is the management and handling of information contained in models that are the essence of classifying the 3D development as BIM.



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## Obstacles in BIM implementing

4. Bigger costs - it can not be denied that the process includes significant expenses for software, training and time devoted to the implementation of technology.
5. Big companies lead the way - over three-quarters of small companies (employing ten or fewer employees) declare that BIM is unprofitable for them and therefore they do not apply it.



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