

СЕКЦІЯ «БУДІВНИЦТВО ТА ЦИВІЛЬНА ІНЖЕНЕРІЯ»

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GERMAN EXPERIENCE IN INTEGRATING BIM TECHNOLOGY INTO THE CONSTRUCTION INDUSTRY

Germany began implementing BIM in 2015 through the Federal Ministry of Transport and Digital Infrastructure (BMVI), developing a phased plan. This plan included three stages: the preparatory phase (2015–2017), the extended pilot phase (2017–2020), and implementation starting in 2020. Since January 2021, BIM has been mandatory for public infrastructure contracts, and by the end of 2022, it became required for building construction.

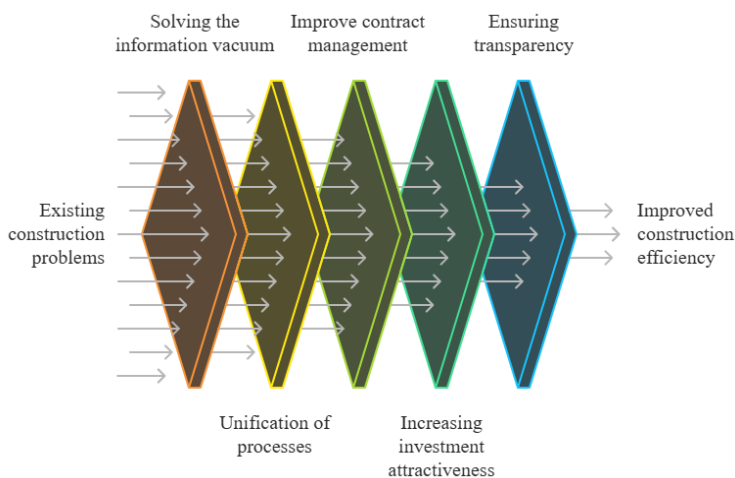


Figure 1 – The concept of BIM implementation based on German experience

As of 2025, BIM is mandatory for projects exceeding certain thresholds: infrastructure projects from €25 million and building projects from €10 million. BIM Deutschland launched its second phase after August 2023, focusing on support, digital twins, and adaptation for various stakeholders. However, challenges remain: a shortage of experts, software compatibility issues, and resistance to change within the industry [1].

The BIM Deutschland initiative, launched in 2019 jointly by the Federal Ministry of Transport and Digital Infrastructure (BMDV) and the Federal Ministry

of Housing, Urban Development and Building (BMWSB), entered its second phase after August 2023. As reported in the article [2] press release BIM Deutschland started in Phase 2, this phase focuses on:

- Revising and expanding informational resources about the BIM methodology.
- Creating tailored content for engineers, architects, planners;
- Planning specialized informational offerings for federal states and municipalities.
- Promoting digital twins for buildings and infrastructure;
- Conducting social media activities and dialogue events for experts.
- BIM brings significant advantages, as highlighted in the article [3]:
- 38% of engineering companies reported increased efficiency in construction work, 30% noted improved preparation, and 23% saw optimized calculations. Additionally, 22% of construction companies reported cost reductions.
- BIM consolidates all information into a single digital twin, providing access to all project participants, which saves time and reduces errors.
- BIM supports climate goals by enabling the assessment of environmental impact, CO2 footprint, and recyclability at early stages, reducing resource use.

The German experience in integrating BIM demonstrates a systematic approach, starting from pilot projects to mandatory implementation for public contracts. As of 2025, progress is significant, but challenges such as a shortage of experts and compatibility issues require further efforts. BIM Deutschland and government support, particularly through digital twins and tailored resources, position Germany as a leader in the digitization of the construction industry, offering a model for other countries.

The future will likely involve broader adoption of BIM in the private sector and further standardization.

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