

THE ROLE OF BIM IN PREFAB AND PRECAST

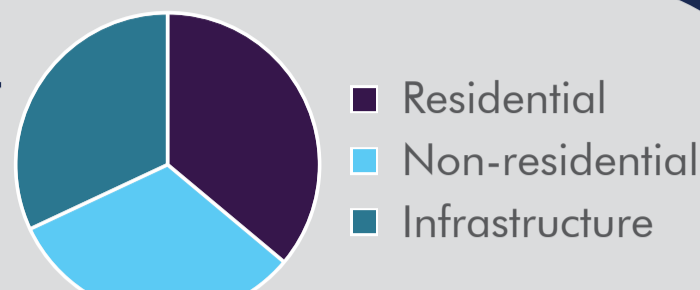
Boost operations and construction safety, reduce onsite installation schedules and material waste with BIM-reinforced Prefab and Precast.

Global precast concrete market size in 2020

\$ 92.14 billion



GLOBAL PRECAST MARKET BY END-USE, 2020



Source: www.grandviewresearch.com

CHALLENGES IN MANUFACTURING PREFAB AND PRECAST

Creating prefab and precast parts and pieces that may not fit on site. **Traditional 2D CAD processes for fabrication and installation are not accurate.**

Lower project efficiency and greater onsite risks. **Absence of digitization or automation for complex fabrication and installation.**

Tedious, time-consuming and inaccurate fabrication and installation lead to rework. **Lack of coordination, collaboration, and clash-detection within multiple trades.**

Escalated project costs due to material waste during fabrication and installation. **Lack of proper planning of site activity and material stock.**

Inability to meet project schedules and manage construction efficiently. **Absence of coordination leads to unplanned issues and site challenges.**

HOW BIM ENRICHES PRECAST AND PREFAB MANUFACTURING AND INSTALLATION

Coordinated 3D BIM models ensure accurate shop drawings and mould drawings.

Result Enhanced fabrication of precast elements
Better construction quality

3D precast and prefab models simplify complex fabrication and onsite erection.

Result Higher project efficiency
Lower onsite rework and construction risks

Identification and resolution of interdisciplinary clashes in the preconstruction stage.

Result Quick and efficient shift into production processes
Simplifies construction and reduces rework

Real-time data in 3D BIM models drive visualization for onsite precast assembly.

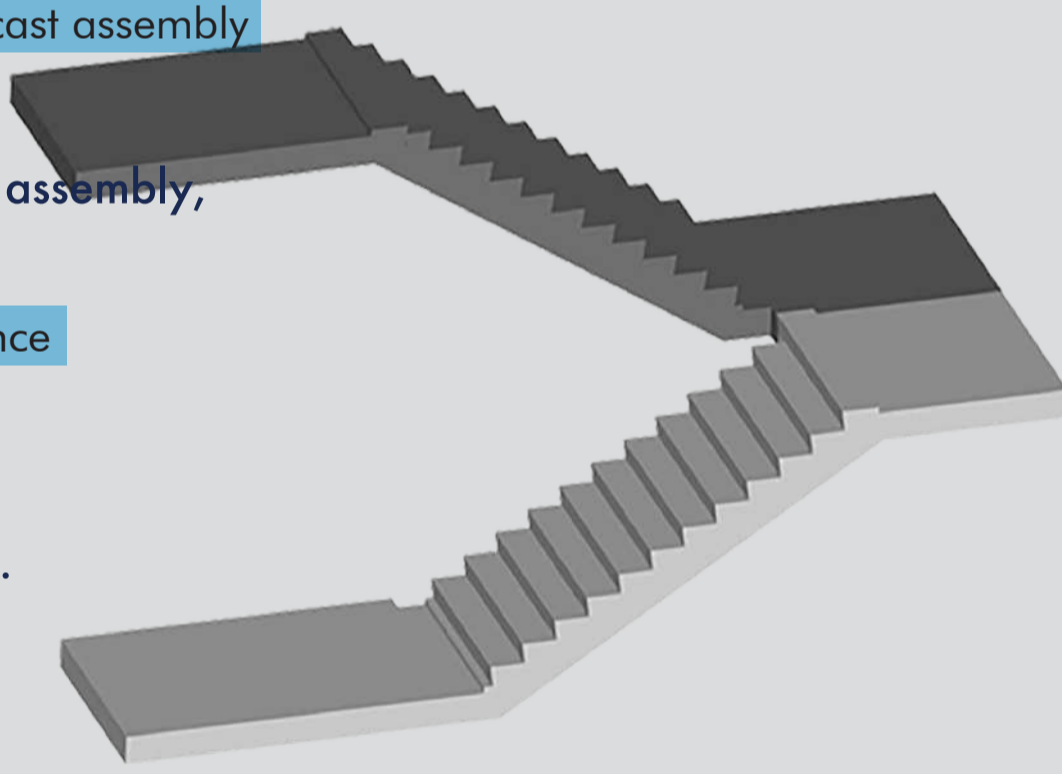
Result Lower project costs through accurate precast assembly
Higher cost performance and ROI

Accurate scheduling and sequencing improves assembly, logistics, and installation.

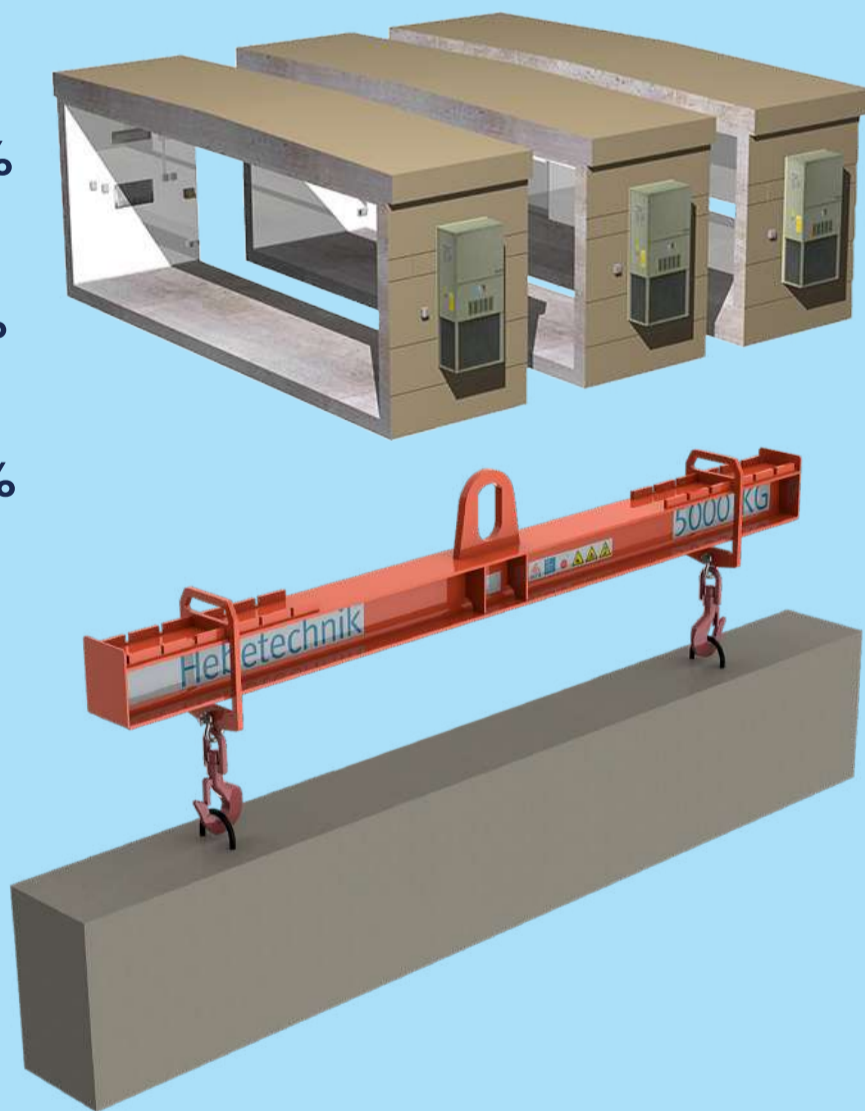
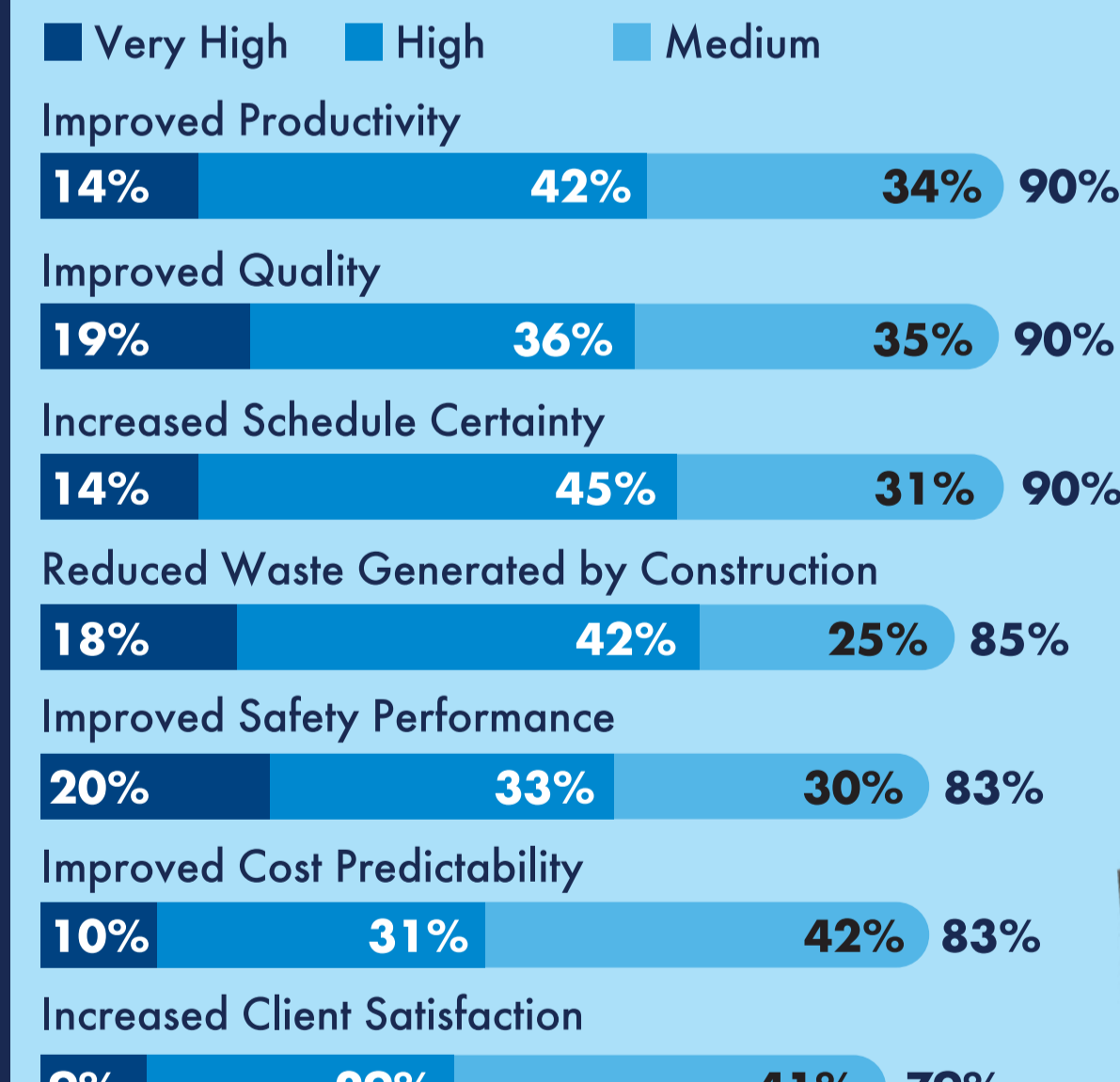
Result Planned construction and erection sequence
Fewer project delays

Accurate BOQ's for prefab and precast components like walls, beams, bars etc.

Result Lower material waste
Accurate concrete pour cycles



THE POSITIVE IMPACT OF BIM-BASED PREFABRICATED CONSTRUCTION



Dodge Data & Analytics, 2020

SUCCESS STORY: BIM REINFORCED PRECAST AND PREFAB

Rebar and bar bending schedules save costs for an Asian office building project.

Business Need

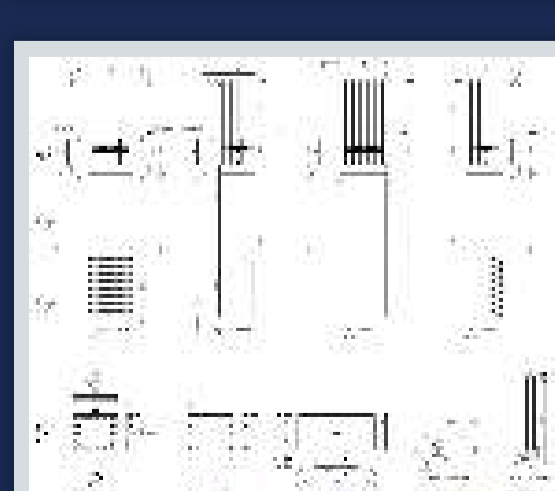
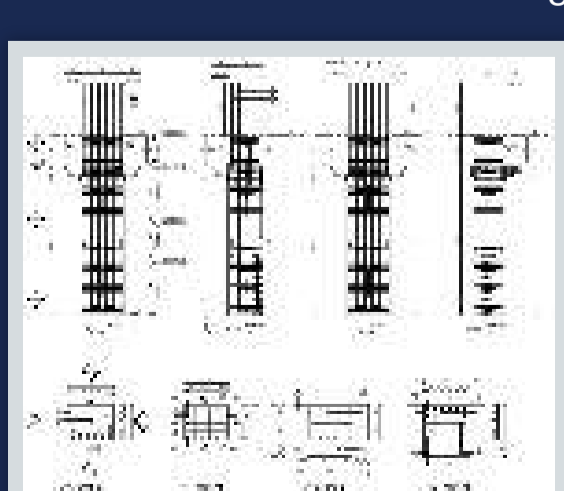
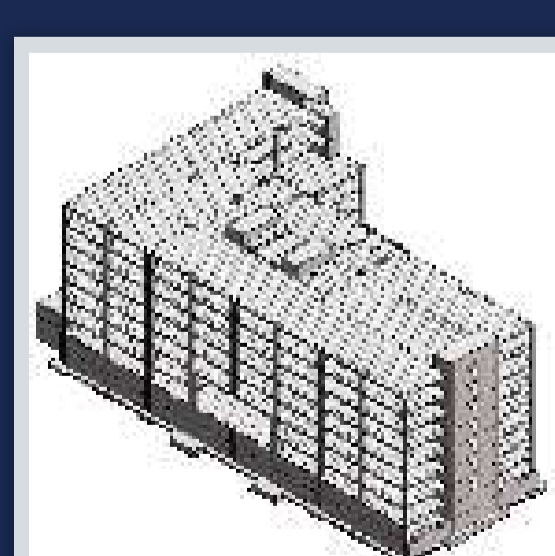
» Build a Revit structure model with LOD 450 and rebar modeling

Approach

- » Structural coordination and extraction of technical information from input CAD files
- » Coordination of 3D structural model with architecture and MEP trades to identify and resolve clashes
- » Accurate and comprehensive documentation creation with bar bending schedules and connection details

Outcome

» Coordinated Revit structure model, precise documentation, and detailed sheet-setup delivers cost-effective results



Hitech CADD Services offers bespoke BIM-based pre-cast/pre-fabrication as well as modular formwork modeling solutions for your concrete construction projects. We have successfully delivered over a hundred projects globally, with a certified team of 50+ Revit experts. Our customized solutions integrated with the latest BIM technology help you build sustainable buildings while saving costs and time.

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