RINNO

Architecture, Engineering and Construction Software – Market Briefing

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Introduction

The Architecture, Engineering, and Construction (AEC) sector is increasingly shaped by digitalisation, with software platforms playing a central role in improving efficiency, collaboration, and compliance across the project lifecycle. These solutions enable architects, engineers, and contractors to plan, design, deliver, and manage built assets with greater accuracy and integration, while supporting the industry's transition toward sustainability and data-driven decision-making. As the sector continues to evolve under regulatory, technological, and market pressures, AEC software has emerged as a critical enabler of competitiveness and long-term growth.

This briefing outlines the current state and outlook of the AEC software market. It examines the policy and innovation drivers shaping new growth frontiers, presents global market forecasts and investment trends, and highlights key challenges that may restrain adoption. The report also reviews major industry trends such as cloud deployment, mobile-first tools, and the integration of advanced technologies into Business Information Modelling (BIM) workflows. Finally, it analyses the construction and design software segment in greater depth, assessing regional performance and the expanding role of BIM as a catalyst for market expansion.

AEC Software Sector

The Architecture, Engineering, and Construction (AEC) software sector comprises of digital platforms, tools and interoperable data environments, including Building Information Modelling (BIM) systems, project-management platforms, digital twins and common data environments (CDE), that support lifecycle information exchange for built assets from conception through design, construction and operation. In other words, applications that help professionals such as architects, engineers, and construction managers to plan, design, build, and manage buildings and infrastructure projects from start to finish.

Growth frontiers in the AEC Software Sector

Numerous government policies including EU Climate targets under the Climate Law,[1] the recast Energy Performance of Buildings Directive (2024),[2] the EU Green Deal (2019),[3] etc create major opportunities for AEC software products, especially those offering:

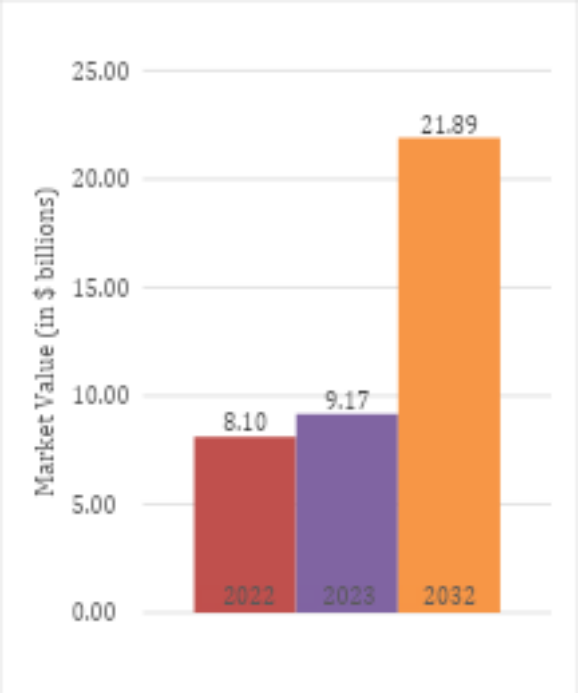
- BIM-based planning tools for MEPS compliance, renovation passports, and digital twin modelling.
- AI-driven diagnostic and simulation platforms to assess retrofit impact and prioritise interventions.

[1] European Commission, 2023a. Commission welcomes adoption of two final pillars of its 'Fit for 55' legislative package, putting EU on track to exceed 2030 targets. Press release IP_23_4754, 9 October 2023. Brussels: European Commission.
[2] European Union, 2024. Directive (EU) 2024/1275 of the European Parliament and of the Council of 24 April 2024 on empowering consumers for the green transition through better protection against unfair practices and better information. Official Journal of the European Union, L , 29.4.2024, p. 1–16.
[3] European Commission, 2019. The European Green Deal (COM(2019) 640 final). European Commission.

- LCA and embodied carbon modelling tools that comply with European Standard of EN 15978
- Interoperable digital logbooks and EPC management solutions.
- Prefabrication and logistics coordination systems.
- Participatory design and social impact tracking tools, supporting tenant engagement and co-creation.

The global AEC market is expected to have significant growth due to increasing demand for efficient and collaborative software solutions in the industry. The market, which was valued at $9.17 billion in 2023, is projected to grow at a Compound Annual Growth Rate (CAGR) of 9.7% and reach the valuation of $21.89 billion by 2032.[4]

Figure 1 AEC Market Over The Years (Custom Market Insights, 2024)[4]



[4] Custom Market Insights, 2024. Global Architecture, Engineering, and Construction (AEC) Software Market 2024–2033.

Market Challenges

Despite strong growth trends, the AEC software market faces key restraints that hinder adoption. These are1:

- Interoperability Challenges: Lack of seamless integration between different AEC software tools limits collaboration and smooth data exchange.
- Learning Curve: Steep learning requirements slow adoption as professionals resist or struggle with advanced tools.
- Dynamic Project Requirements: Constantly evolving project needs make it difficult for software solutions to remain flexible and fully efficient.
- Market Saturation: High competition in the AEC software space creates barriers for new entrants and makes differentiation harder.

Market Trends

Trend	Description
Cloud-based platforms dominate new deployments	Cloud solutions accounted for nearly 57% of the market in 2022 and are growing at a CAGR of 10.5%. They offer scalability, real-time access, and improved collaboration.
Mobile-first applications accelerate productivity	Mobile-enabled tools enhance on-site task management, issue tracking, and access to project data, supporting agile and responsive field operations.
Advanced technologies integrated into BIM	Artificial intelligence, generative design, and digital twins are being embedded into BIM workflows to improve simulation, coordination, and performance analytics.
Sustainability and compliance drive adoption	Green building regulations and energy efficiency targets are pushing broader uptake of lifecycle modelling and compliance solutions within BIM tools.
Government mandates and open standards	Public initiatives across global regions are promoting open BIM, digital building logbooks, and standardised data exchange to improve transparency and reduce fragmentation.

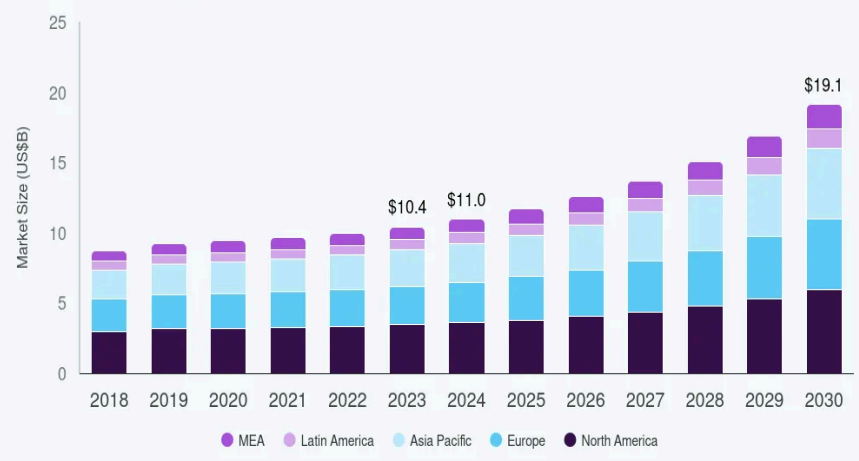
Construction and Design Software Segment

A pivotal part of the AEC software sector is the construction and design software segment. It includes a wide range of digital tools such as Computer-Aided Design (CAD), Computer-Aided Manufacturing (CAM), Product Lifecycle Management (PLM), and Building Information Modelling (BIM). These platforms support the design, planning, scheduling, and lifecycle management of buildings and infrastructure.

This construction and design software market is growing quicker than expected, global market estimates in 2024 range between US$10.2 billion and US$10.96 billion, with CAGR forecasts between 9% and 10.5% through 2034. North America leads the global construction and design software market, accounting for approximately 32% to 42% of global revenue, driven by robust infrastructure investment, and the widespread early adoption of digital construction technologies. Europe contributes around 27% of global revenue, with high adoption rates in Germany, France, and the United Kingdom, supported by a strong engineering and manufacturing base and reinforced by regulations promoting sustainable construction and digital compliance frameworks.[5]

Figure 2 Construction and Software Market by Region (Grand View Research, 2024)[5]

[5] Grand View Research, 2024. Construction design software market size, share & trends analysis report by deployment (on-premise, cloud), by application, by end- use, by region, and segment forecasts, 2024 – 2030.



Top Vendors in the Construction and Design Software

Company	Core Product Focus	Deployment Model	Key Strengths	Differentiation
Autodesk	CAD, BIM, PLM (e.g. Revit, AutoCAD, Fusion)	Cloud and On-premise	Strong brand in design and modelling, BIM leadership	Broad industry reach (AEC, MFG, M&E), AI integration, cloud transition (Autodesk Docs)
Trimble	BIM, project controls, scanning, field tools	Cloud and hybrid	Integrated hardware-softw are (e.g. GNSS, robotic stations)	Field-first strategy, strength in infrastructure and construction automation
Bentley Systems	BIM, infrastructure digital twins (e.g. iTwin)	Primarily on-premise, evolving cloud	Civil engineering, infrastructure, rail, water, energy	Digital twin focus, deep vertical specialisation in large-scale infrastructure
Dassault Systèmes	3DEXPERIENCE Platform (PLM, BIM, MFG)	Cloud (3DEXPERIENCE)	Advanced modelling, generative design, systems engineering	Enterprise-grade PLM + BIM integration, strength in simulation and manufacturing
Procore Technologies	Project management,	Native Cloud (SaaS)	Construction execution, strong UI/UX	Role-based segmentation (Owner, GC, SC),

	financials, collaboration			mobile-first, rapid ARR growth
Nemetschek Group	BIM, design, cost estimating, visualisation	On-premise and hybrid	Modular European portfolio (e.g. Allplan, Bluebeam)	OpenBIM leadership, acquired specialist brands for niche capabilities
Oracle Aconex	Common data environment, construction delivery	Cloud (Oracle Cloud Infra)	Large project delivery, compliance, global deployments	Focus on CDE and governance, used in infrastructure and PPP projects

BIM Software

At the core of AEC software market lies BIM software. BIM is a model-based process for designing and prototyping infrastructure for architects, engineers, and contractors and consists of the creation of a 3D model of a construction project. This enables a cohesive means of managing and coordinating projects and containing geometry and storing data to ensure a consistent and coordinated model throughout. This technology helps respective job segments to improve their efficiency, reducing the cost and time while creating better designs and constructions. Simultaneously, BIM requires a combination of people, technology, and processes in order to create value, improve productivity and reduce waste in relation to the designing and creation of building and infrastructure design.

According to market forecasts, the global BIM software market is expected to grow from approximately US$4.7 billion in 2024 to over US$19 billion by 2030 . Rise in urbanisation and infrastructure development globally, growing adoption of digital twin technology to enhance lifecycle management, growing emphasis on sustainability and green building certifications, and the need for real-time collaboration, improved efficiency, and project visualization across stakeholders are some of the major drivers impacting market growth during the forecast period.

Figure 3 BIM Market (Mordor Intelligence, 2024)[6]

[6] Mordor Intelligence, 2024. Building Information Modelling Market Size & Share Analysis – Growth Trends & Forecasts (2025–2030).


Market Size in USD Billion
CAGR 13.90%
USD 19.04 B
USD 9.93 B
2025
2030

Conclusion

The AEC software market is positioned for significant growth as digitalisation rapidly transforms the sector's workflows and capabilities. With increasing regulatory pressures such as the EU Climate Law and the Revised Energy Performance of Buildings Directive, the demand for efficient, collaborative, and compliance-focused software solutions is intensifying. These policy drivers create strong market opportunities particularly for Building Information Modelling (BIM)-based tools, AI-driven simulation platforms, lifecycle assessment applications, and interoperable digital logbooks, which together support sustainable construction practices and lifecycle management. As the industry pushes to meet ambitious climate and energy targets, software that enhances project integration, accelerates decision-making, and optimizes energy performance is becoming indispensable.

The market outlook is positive, with valuations expected to more than double by 2032, fuelled by the rise of cloud-based platforms, mobile-first tools, and the embedding of advanced technologies such as digital twins and generative design into BIM workflows. These innovations are not only improving productivity and collaboration but also facilitating stakeholder engagement and social sustainability through participatory design features. The construction and design software segment, encompassing CAD, CAM, PLM, and BIM, is growing even faster, led by strong adoption in regions like North America and Europe, which benefit from supportive infrastructure investment and regulatory frameworks promoting digital compliance and sustainability.

Despite this robust expansion, challenges such as interoperability issues, steep learning curves, and market saturation remain. However, ongoing advances in open standards, government mandates, and user-centric developments are helping to mitigate these barriers. In summary, the AEC software sector is evolving into a critical enabler of smarter, greener, and more integrated construction practices, driving industry competitiveness and advancing the transition toward sustainable, data-driven built environments across the globe.

ABOUT RINNO

RINNO is a four-year EU-funded research project that aspires to deliver greener, bio-based, less energy- intensive from a life cycle perspective and easily applicable building renovation elements and energy systems that will reduce the time and cost required for deep energy renovation, while improving the building energy performance. Its ultimate goal is to develop, validate and demonstrate an operational interface with augmented intelligence and an occupant-centered approach that will streamline and facilitate the whole lifecycle of building renovation.

For more information, please visit https://rinno-h2020.eu/

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