CAD/BIM Software
Industry Analysis Report

Content

1. Industry Background

1.1 The Role of CAD/BIM Software in China

The Computer-Aided Design (CAD) and Building Information Modeling (BIM) software industry is a fundamental part of China's **architecture, engineering, and construction (AEC) sector**. These software solutions are widely used in **design, planning, cost estimation, and construction management**. As China continues to experience rapid urbanization and infrastructure expansion, CAD/BIM software has become essential for improving efficiency, reducing costs, and enhancing the accuracy of construction projects.

China's CAD/BIM industry also extends beyond construction. It is **widely applied in manufacturing, industrial design, and infrastructure planning**, making it an important sector supporting **technological innovation and industrial modernization**.

1.2 The Shift from Foreign to Domestic Software Providers

Historically, the Chinese CAD/BIM software market was **dominated by international providers**, including Autodesk (AutoCAD, Revit), Dassault Systèmes (SolidWorks, CATIA), and Bentley Systems. However, with the Chinese government's push for domestic technology independence, local firms such as **Glodon, ZWSOFT, YJK, and Pinming** have emerged as competitive players. These companies focus on **developing proprietary software solutions that cater to China's specific industry needs**, reducing reliance on foreign suppliers.

Government policies have played a key role in this transition by **offering financial subsidies, research incentives, and regulatory support** for domestic software development. This has accelerated the adoption of locally developed CAD/BIM solutions, particularly in state-backed infrastructure and public projects.

1.3 Integration with National Development Plans

The development and application of CAD/BIM software align with China's broader economic and industrial strategies, such as:

- **Smart City Initiatives:** BIM software is increasingly used in urban planning, public transportation, and municipal projects to optimize design and construction.

- **Infrastructure Digitalization:** Major projects such as high-speed railways, highways, bridges, and airports require sophisticated BIM technology to improve efficiency and safety.
- **Industrial Upgrading:** In manufacturing, 3D CAD software is crucial for product design, simulation, and automation, supporting China's "Made in China 2025" strategy.

These factors contribute to the growing demand for advanced CAD/BIM solutions in both the public and private sectors.

2. Market Analysis

2.1 Market Overview

The **Architecture, Engineering, and Construction (AEC)** industry, **primarily composed of CAD and BIM solutions**, has been experiencing steady growth, driven by urbanization, industrialization, and technological advancements. According to Zion Market Research, in **2022**, the market was valued at approximately **$8.9 billion**, with estimates projecting it to grow to **$16.5 billion by 2030**, expanding at a **CAGR** of around **10.2% (2023-2030)**. Other forecasts suggest a market size of **$12.47 billion by 2027** and **$20.65 billion by 2032**, with a **CAGR** accelerating from **8.0%** (2022-2027) to **10.6%** (2027-2032).

This growth underscores the industry's increasing adoption of **advanced digital tools, automation, and data-driven solutions** to enhance efficiency and innovation in construction and infrastructure development.

Source: Zion Market Research

2.2 Market Segmentation by Product

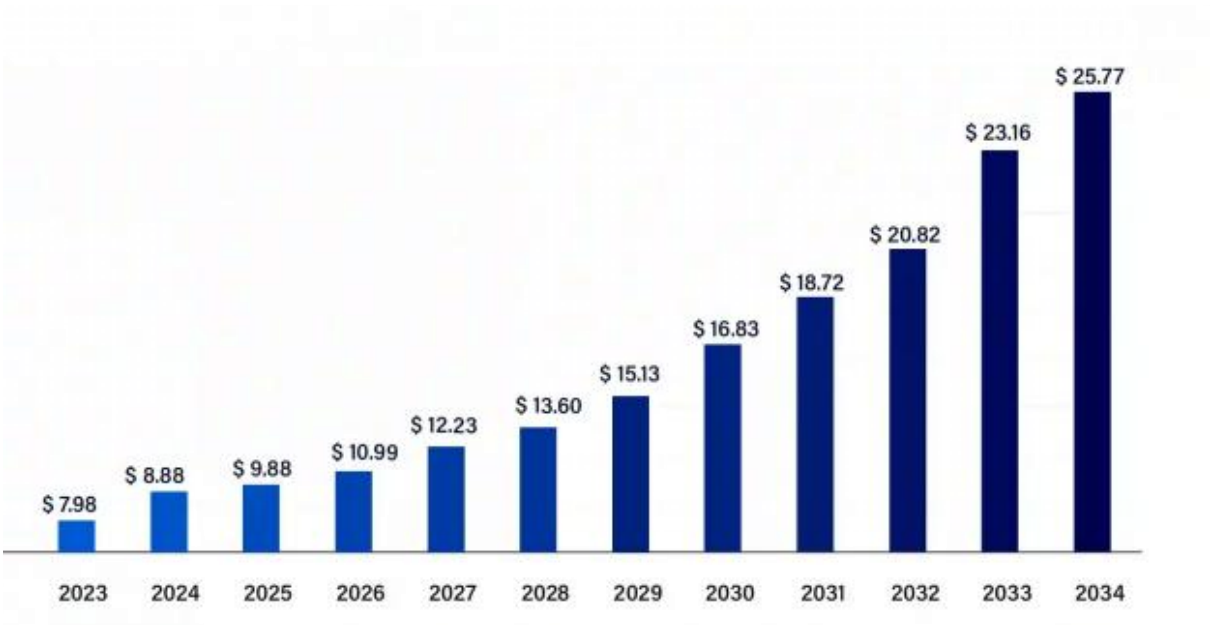
The **software segment** accounted for the highest share of the AEC Market, accounting for **78%** or **$7.07 billion** of the total in **2023**, owing to the increasing adoption of software solutions such as **building information modeling (BIM)** and **computer-aided design (CAD)** in the AEC industry. The software segment is expected to maintain its dominance throughout the forecast period.

2.2.1 Building Information Modeling (BIM)

Building Information Modeling (BIM) is a sophisticated 3D modeling software designed to help architecture, engineering, and construction (AEC) professionals gain deeper insights into project planning, execution, and management.

The **Building Information Modeling (BIM) software market** is forecasted to expand from **$8.88 billion in 2024** to **$15.13 billion by 2029**, reflecting **a CAGR of 13.1%** during this period. The growing adoption of BIM software is fueled by several factors, including rising sustainability concerns, increased construction activity, supportive government regulations, and a demand for enhanced collaboration. Additionally, opportunities in emerging markets, technological advancements, and improved facility management solutions are expected to further drive market growth and accelerate BIM adoption.

Building Information Modeling Market Size 2023 to 2034 (USD Billion)



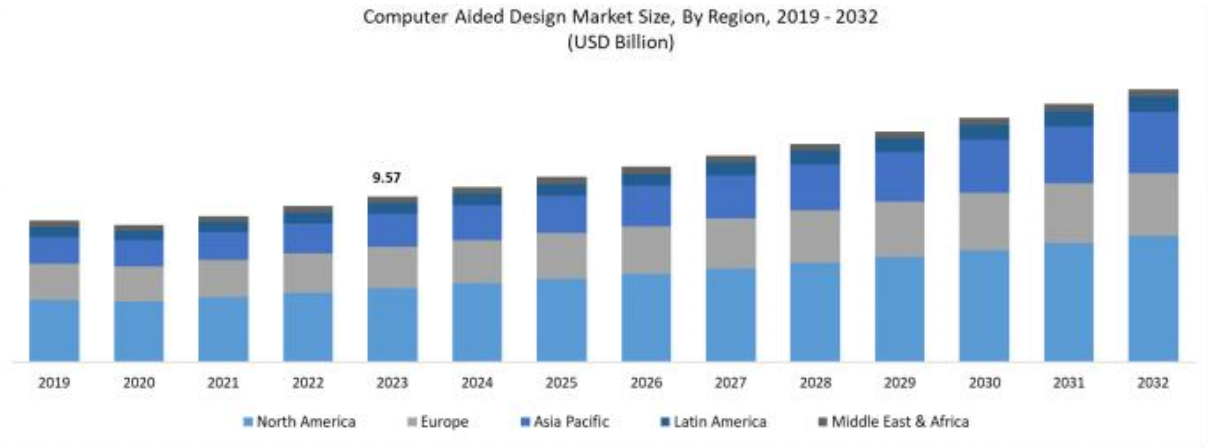
Source: precedenceresearch.com

2.2.2 Computer-Aided Design (CAD)

CAD software enables users to create, modify, analyze, and optimize designs across various industries, providing a digital environment for designing structures, mechanical components, electrical circuits, and more. It is widely utilized in engineering, architecture, product design, and manufacturing, allowing professionals to develop precise 2D and 3D models.

The global **Computer-Aided Design (CAD) software market** was valued at **$9.57 billion in 2023** and is projected to grow from **$10.11 billion in 2024** to **$15.77 billion by 2032**, with **a CAGR of 5.7%** during the forecast period.

The CAD software market is experiencing significant growth, driven by technological advancements that have led to more powerful and feature-rich solutions. Additionally, increasing adoption across industries, the demand for faster design processes, digitalization, and a stronger focus on product innovation are key factors contributing to market expansion.



Source: Polaris Market Research Analysis

2.3 Market Segmentation by Geography

North America contributes the largest share to the global AEC Software Market, accounting for **42.7% of the total in 2022**. This is driven by **advanced technology adoption, strong regulations, and a developed construction sector**. The region leads in **BIM** adoption, as key players like Autodesk and Trimble drive innovation in cloud collaboration, AI, and digital twin technology. The **demand for smart cities and sustainable construction** boosts AEC software use, while **high labor costs** push firms toward AI-driven automation and prefabrication. **Strong investment and**

digital transformation keep North America at the forefront of global AEC software advancements, with an estimated **annual growth rate of 8.0%**.

Europe's AEC Software Market is expanding due to **strict environmental regulations, government-led digitalization, and sustainability goals**. The EU mandates **BIM** for public projects, accelerating adoption in Germany, the UK, and France. **Green building practices** integrate energy modeling, carbon footprint analysis, and lifecycle assessment into AEC software. Rising demand for **cloud-based project management and digital twins** is fueling growth, despite challenges in interoperability and data privacy. Given these factors, Europe remains a key driver of sustainable and digital construction, with an estimated **CAGR of 7.4%**.

Asia Pacific is the **fastest-growing** AEC software market, fueled by **urbanization, infrastructure projects, and digital construction technologies**. Countries like China, India, and Japan are investing in smart cities, high-speed rail, and commercial developments, driving demand for BIM, AI-powered design tools, and cloud collaboration. The **real estate boom and prefabrication trends** further accelerate adoption. It is estimated that the growth will be at a **CAGR of 9.5%** in this region, followed by **a CAGR of 8.6% in South America**.

3. Key Players and Competitive Landscape

3.1 Major Industry Participants

The **China CAD/BIM software market** is primarily led by **Glodon, ZWSOFT, YJK**, each specializing in different aspects of the industry. These companies are focusing on **core product enhancements, AI integration, and cost optimization** to navigate a challenging environment with weaker IT spending and slower software adoption rates.

- **Glodon** is the industry leader in **construction cost management and digital building solutions**. The company has launched **AceGPT,** an in-house AI model with 32 billion parameters, to improve efficiency in **cost estimation, design, and project management**. Despite Q4 2024 revenue growing **+3% YoY**, its net income (NI) fell to **Rmb 259 million**, **down 24%** due to higher operational costs. The firm is prioritizing Key Account (KA) clients in core regions while enhancing its cost management platform and construction management software.
- **ZWSOFT** focuses on **3D CAD software development**, targeting large industrial clients such as Lenovo, ZTE, Xiaomi, and Huawei. However, its Q4 2024 revenue growth of **+3% YoY** was **15%** lower than expected, mainly due to **weak education-sector demand and project delays**. The company's Q4

net income declined **13% YoY to Rmb 50 million**, reflecting one-time costs from headcount reduction and goodwill impairment. To maintain competitiveness, ZWSOFT is investing in **3D CAD kernel upgrades** and slowing down headcount expansion in 2025 to improve profitability.

- **YJK** specializes in **structural design software** but has struggled with a **10% YoY revenue** decline in Q4 2024 due to weak IT spending by design firms. The company reported a net loss of **Rmb 7 million** for the quarter and is attempting to offset commercial sector weakness by expanding into public infrastructure projects. YJK has also introduced AI-driven design tools like **YJK GAMA**, which is being offered via subscription and licensing models.

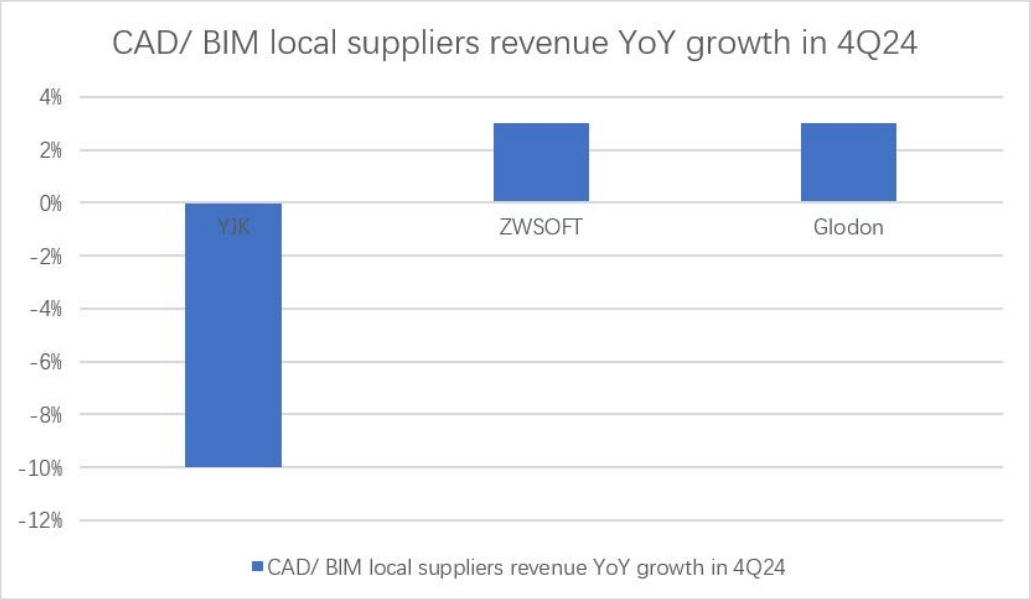
With Glodon and ZWSOFT sustaining revenue growth and YJK experiencing financial pressure, the market is increasingly favoring companies with strong AI-driven innovation, cost management strategies, and large enterprise client bases.

3.2 Competitive Landscape

The revenue growth of China's CAD/BIM software companies in Q4 2024 varied significantly, reflecting differences in **market positioning, product demand, and enterprise spending**.

- **Glodon and ZWSOFT** both achieved **+3% YoY revenue growth**, outperforming expectations in a difficult **IT spending environment**.
- **YJK** faced **-10% YoY revenue drop**, largely due to **weaker project pipelines and lower client investments**.

The competitive landscape is **polarized**, with Glodon maintaining a leadership position through its strong AI-driven cost management solutions, while ZWSOFT is leveraging its 3D CAD capabilities to stay competitive. In contrast, YJK is under greater financial pressure, struggling to maintain client acquisition and revenue stability in a challenging market.



Source: Company data

4. Market Trends and Outlook

The AEC software industry is poised for **sustained growth**, driven by **urbanization, infrastructure investments, and government initiatives**. Emerging technologies, including **BIM, AI, VR, and digital twins**, are reshaping construction by enhancing productivity, cost efficiency, and sustainability. Additionally, trends like **modular construction, volumetric building techniques, and automation** are improving project speed and quality.

As digital transformation accelerates, the industry will continue evolving toward **integrated, data-driven, and highly automated construction processes**, solidifying AEC software's role as a cornerstone of modern infrastructure development.

4.1 Incorporation of AI

The growing use of **artificial intelligence (AI), blockchain technology, machine learning, and cloud computing** is enhancing efficiency, automation, and decision-making in construction projects.

AI is revolutionizing the AEC industry by enhancing design optimization, predictive analytics, and project management. Recent innovations include:

- **BST Global (2023)** – Launched AI-powered project intelligence tools to improve resource management and project forecasting.

- **TwinUp (2023**) – Introduced an AI-driven platform for architects, leveraging real-time data to enhance design and collaboration.

Moreover, **blockchain technology** is gaining traction in AEC software for enhanced security, transparency, and automation in project workflows. Key developments include:

- **Arcartera (2023)** – Developed a Blockchain-BIM solution that uses NFTs to create immutable records of building data, improving traceability and security.

4.2 Shift from CAD to BIM

For years, Computer-Aided Design (CAD) has been the standard for architects and engineers, providing 2D drafting and basic 3D modeling. However, **Building Information Modeling (BIM)** has emerged as a **transformative tool**, integrating 3D modeling with project data, material specifications, and performance analytics.

The adoption of BIM is rapidly increasing, with approximately **72%** of construction firms worldwide now using **BIM-based workflows**. The key benefits derived from this shift include enhanced collaboration, advanced visualization, increased efficiency, and lifecycle management and sustainability.

4.3 Growing Alongside Economy & Infrastructure Projects

The Architecture, Engineering, and Construction (AEC) industry is experiencing **significant growth**, driven by substantial investments in **urbanization and infrastructure** development by governments worldwide. These investments aim to modernize aging infrastructure and accommodate expanding populations, leading to an increased demand for digital construction solutions. Notably, **an estimated $3.7 trillion is needed annually through 2035** to meet global infrastructure demands, underscoring the scale of these initiatives.

Meanwhile, the surge in infrastructure projects is closely linked to **economic growth**, as increasing public and private investments in infrastructure fuel demand for advanced construction technologies and digital solutions. As economies expand, governments allocate more funds toward urbanization, smart cities, and large-scale infrastructure projects, leading to a heightened need for AEC software to enhance efficiency, reduce costs, and improve project management.

4.4 Market Outlook by Segment and Region

The AEC software market is poised for **significant expansion** across multiple segments, driven by increasing demand for smart construction practices, digital transformation, and sustainability initiatives. The **software solutions segment** is expected to contribute **$3 billion** in global annual sales by **2027**, while **pre-construction planning** is projected to generate **$1.78 billion** within the same period. Additionally, **building applications** are anticipated to reach **$1.92 billion** in sales, reflecting strong adoption across construction projects. The **AEC professionals segment** will account for **$2 billion** in market growth, emphasizing the increasing reliance on digital tools among industry experts. Regionally, **the United States** is forecasted to experience the largest market expansion, with an estimated increase of **$1.3 billion**, solidifying North America's position as a key driver of AEC software adoption. As the industry continues to evolve, these high-growth segments and regions will play a crucial role in shaping the future of digital construction and engineering solutions.

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