

Le opportunità offerte dalla Transizione Digitale nel Settore delle Costruzioni

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AutoCAD



6.74M

Total subscribers

\$1.2B

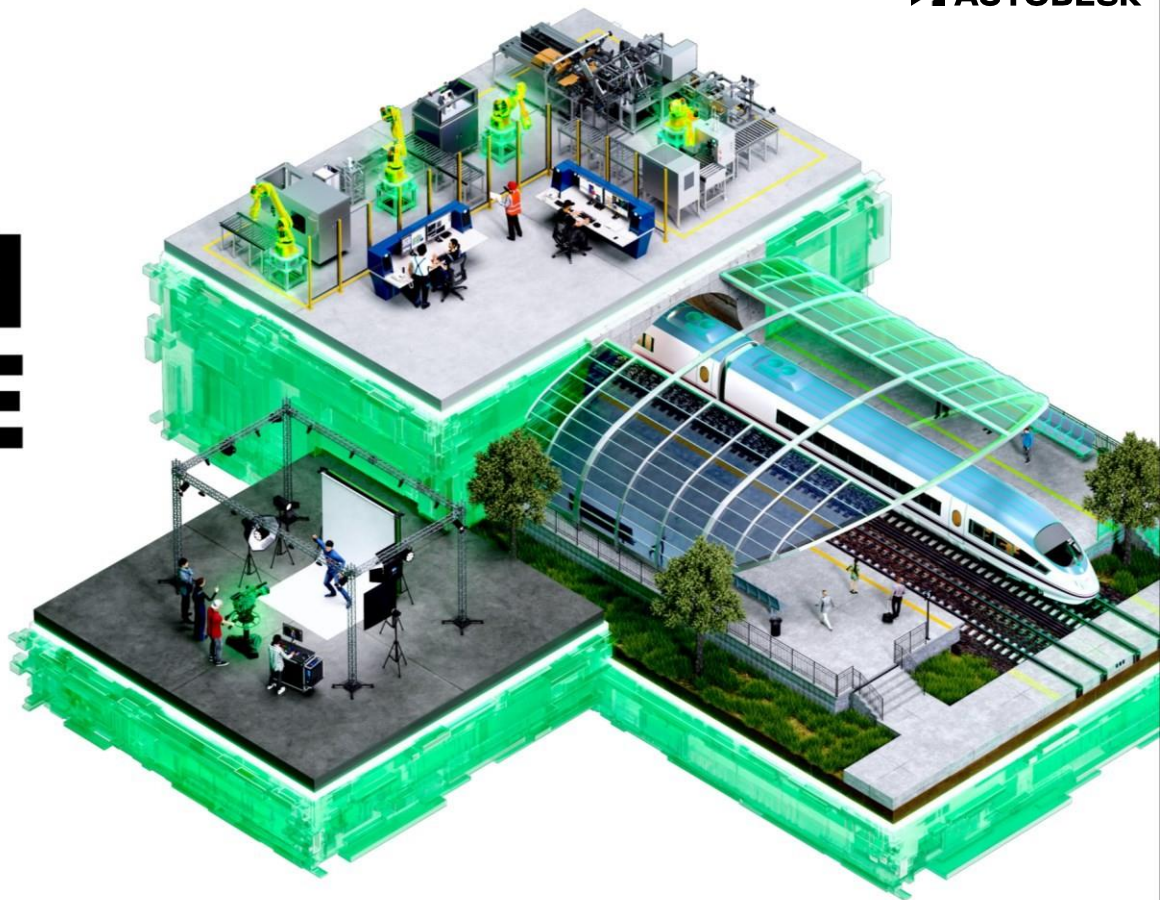
R&D investment



**Figures are from our fiscal year 2023, which began February 1, 2022 and ended January 31, 2023.*

2024 STATE OF DESIGN & MAKE

For this year's report, Autodesk surveyed and interviewed 5,399 industry leaders, futurists, and experts in the architecture, engineering, construction, and operations; design and manufacturing; and media and entertainment industries from countries around the globe. This report contains key findings from this research, including details at the sector and regional level.



Benefits to effective digital transformation

In this report, “digitally mature” companies are defined as those that are approaching the goal or have achieved the goal of their digital transformation journey.

Respondents from digitally mature companies are more likely than their peers to report that they...

+37%

...have experienced “above average” or “exceptional” **performance**

+38%

...have increased or “strongly increased” **investment** in the past 3 years

+18%

...have kept up “very well” with **change in the industry**

+23%

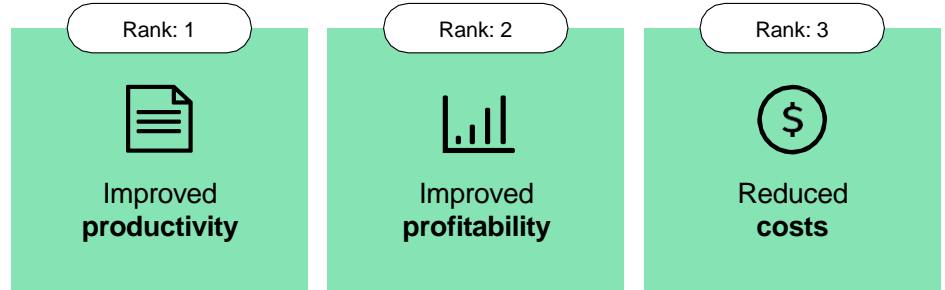
...“agree” they are **prepared** for the future

+20%

...are “very effective” at **leveraging data**

Top advantages to-and barriers of digital transformation in AECO

Advantages



Barriers



Top ranked response to survey question: Has your company or organization experienced any of the following benefits of digital transformation? Top ranked response to survey question: What are the barriers to digital transformation in your company or organization?

BIM



Stream Building Performance Data

Your digital twin will monitor your building in near real-time by streaming operational data from installed IoT sensors and BMS systems.

1. Your Existing/Historical Building

Many existing buildings do not have accurate or complete as-built documentation, but don't worry, there's a solution.



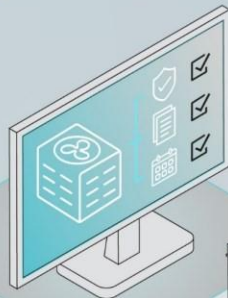
3. Data Alignment

Using Autodesk ReCap, the individual point cloud scans are properly aligned to generate as-built documentation.



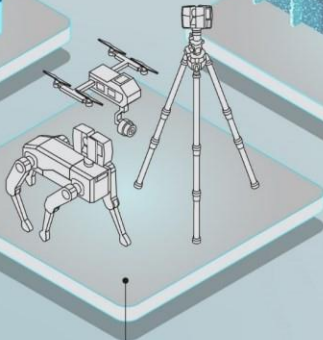
5. Twin Building

Once the BIM model is uploaded to Tandem, Twin Builders tag assets with their associated data, including serial and model numbers, manufacturer specs, O&M manuals, and other desired information.



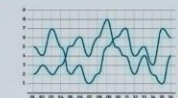
2. Reality Data Capture

By using Reality capture methods, you can quickly and accurately record the geometry of a building, all resulting with the output of a point cloud.



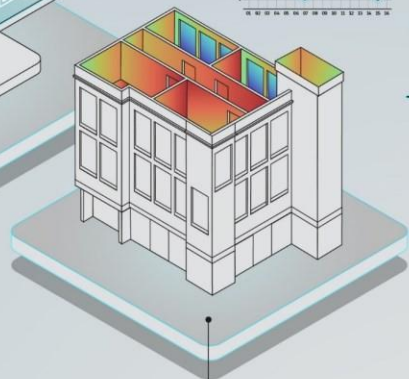
4. From Pointcloud to BIM

By using Revit, you can create a highly accurate modeled geometry of the as-built facility containing its architectural, structural, and MEP assets.



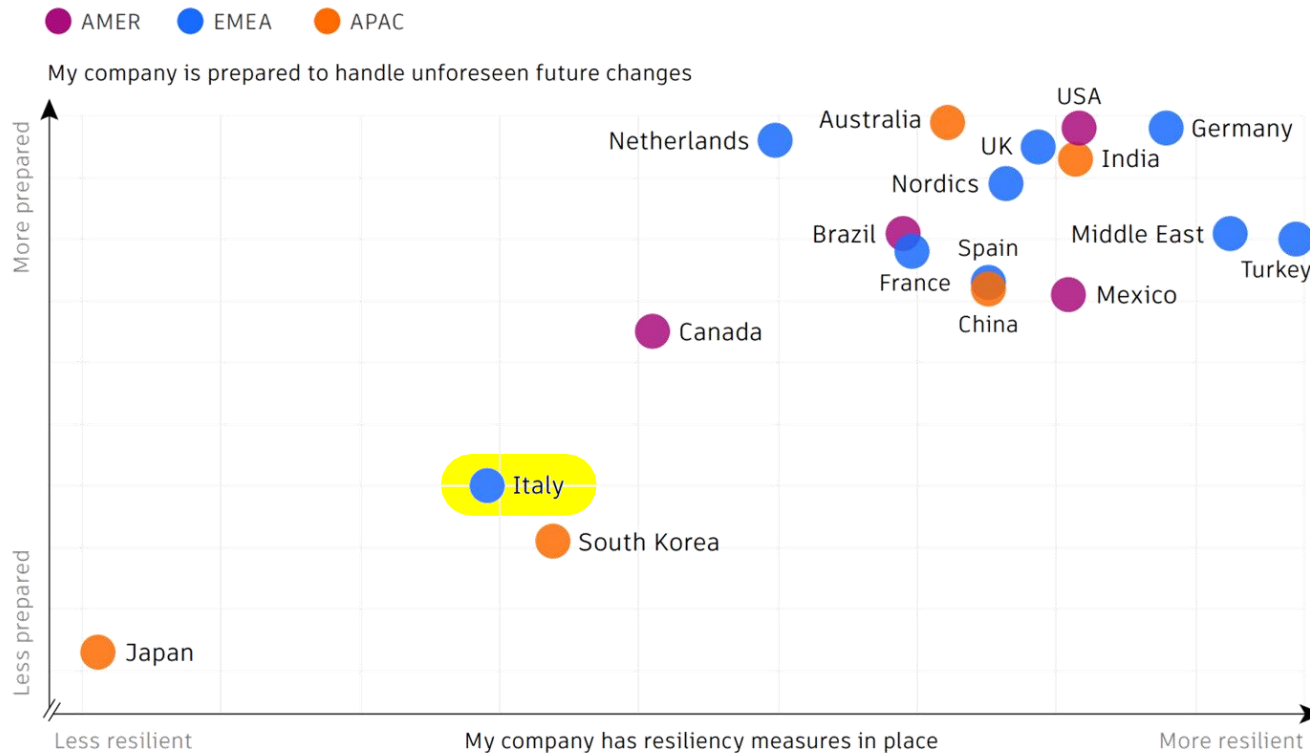
6. Insightful Operations

Leverage IT/OT data with powerful visualizations to analyze system performance in near real time and make data-driven informed business decisions.



The connection between preparedness and resilience

With plans in place, leaders are more confident about navigating change



Survey question: My company is well prepared to handle unforeseen future macroeconomic and geopolitical changes. x Resiliency is the average score of the survey question: To what extent do you agree or disagree that your company or organization is doing the following to be more resilient? Planning new offerings, entering new markets, increasing agility, and diversifying supply chain. 5-point scale.

Il Contesto Italiano

La progettazione delle opere pubbliche

Digs 36/2023 - Codice dei Contratti Pubblici

Il codice degli appalti prevede che la progettazione si articoli in due livelli:

- **Progetto di fattibilità tecnico-economica - PFTE** (art. 41, comma 6)



Metodi e strumenti di gestione informativa digitale delle costruzioni

ALLEGATO I.9 – Art. 1



La progettazione delle opere pubbliche

Digs 36/2023 - Articolo 43

Metodi e strumenti di gestione informativa digitale delle costruzioni.

1. A decorrere dal 1° gennaio 2025, le stazioni appaltanti e gli enti concedenti adottano metodi e strumenti di gestione informativa digitale delle costruzioni per la progettazione e la realizzazione di opere di nuova costruzione e per gli interventi su costruzioni esistenti per importo a base di gara superiore a 1 milione di euro. La disposizione di cui al primo periodo non si applica agli interventi di ordinaria e straordinaria manutenzione, a meno che essi non riguardino opere precedentemente eseguite con l'uso dei suddetti metodi e strumenti di gestione informativa digitale.

2. Anche al di fuori dei casi di cui al comma 1 e in conformità con i principi di cui all'articolo 19, le stazioni appaltanti e gli enti concedenti possono adottare metodi e strumenti di gestione informativa digitale delle costruzioni, eventualmente prevedendo nella documentazione di gara un punteggio premiale relativo alle modalità d'uso di tali metodi e strumenti. Tale facoltà è subordinata all'adozione delle misure stabilite nell'allegato I.9.

3. Gli strumenti indicati ai commi 1 e 2 utilizzano piattaforme interoperabili e mezzo di formati aperti non proprietari al fine di non limitare la concorrenza tra i fornitori di tecnologie e il coinvolgimento di specifiche progettualità tra i progettisti, nonché di consentire il trasferimento dei dati tra pubbliche amministrazioni e operatori economici partecipanti alla procedura aggiudicatari o incaricati dell'esecuzione del contratto.



Soglie per le opere di nuova costruzione, ed interventi su costruzioni esistenti, salvo eccezioni		
1 gennaio 2016	100 M€	DM 560/2017
1 gennaio 2020	50 M€	DM 560/2017
1 gennaio 2021	15 M€	DM 560/2017
1 gennaio 2022	15 M€	DM 312/2021
1 gennaio 2023	5,225 M€	DLGS 50/2016
1 gennaio 2025	1/2/4 M€	??????

BIM
Building Information Modeling

ISO 19650
UNI 11337

Policy paper

Government Construction Strategy

The Government Construction Strategy sets out a range of workstreams.

From: [Cabinet Office](#)
Published 31 May 2011

HM Government

Industrial strategy: government and industry in partnership



Building Information Modelling



[Link al documento](#)

The initial **estimated savings to UK construction and its clients is £2bn pa**⁴ through the widespread adoption of BIM and is therefore a significant tool for Government to reach its target **of 15-20% savings on the costs of capital projects by 2015**. An Investor's Report describing the business benefits to the market is available at:

<http://bimtaskgroup.org/wpcontent/uploads/2012/InvestorsReport-BIM.pdf>

The Government/Industry BIM programme commenced in July 2011 and is focused on the adoption of BIM technology by both public and private sector organisations involved in the procurement and delivery of buildings and infrastructure. The drivers for the adoption of BIM have been set out in the BIS BIM Strategy and the Government Construction Strategy and in overview these are the requirement to:

- **reduce our asset costs** and achieve greater operational efficiency,
- facilitate **greater efficiency** and effectiveness of construction supply chains
- assist in the creation of a forward-thinking sector on which we can base our growth ambitions.

"BIM will integrate the construction process and, therefore, the construction industry. But it will also have many additional benefits for the nation. It will enable **intelligent decisions** about construction methodology, **safer working arrangements**, greater energy efficiency leading to **carbon reductions** and a critical focus on the **whole life performance** of facilities (or assets). Of even greater importance are the benefits for the economy that will accrue from **better buildings and infrastructure delivered by the construction industry.**"

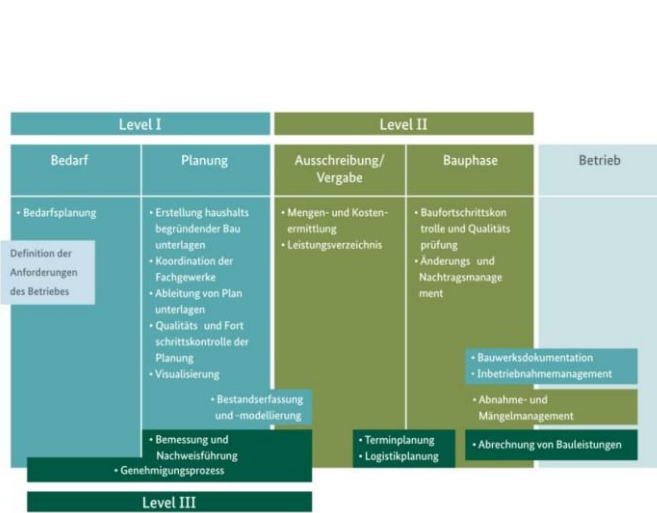
Graham Watts, OBE, Chief Executive Officer, Construction Industry Council

2015

Federal Ministry of Transport and Digital Infrastructure

Road Map for Digital Design and Construction

Introduction of modern, IT-based processes and technologies for the design, construction and operation of assets in the built environment



2021

Bundesministerium des Innern, für Bau und Heimat | Bundesministerium der Verteidigung

Masterplan BIM für Bundesbauten

Erläuterungsbericht



Figure 1: Schematic illustration of the Road Map (author's illustration)



Federal Construction Technical Information

Information and Knowledge Management in Federal Construction



Home > Topics > BIM for Federal Buildings

[https://www.fib-bund.de/Inhalt/Themen/BIM fuer Bundesbauten/](https://www.fib-bund.de/Inhalt/Themen/BIM_fuer_Bundesbauten/)



BIM Germany – the central contact point for everything related to BIM

Jointly operated by the Federal Ministry for Digital Affairs and Transport (BMDV), the Federal Ministry for Housing, Urban Development and Building (BMWSB) and the Federal Ministry of Defense (BMVg)

[read more](#)

<https://www.bimdeutschland.de/>



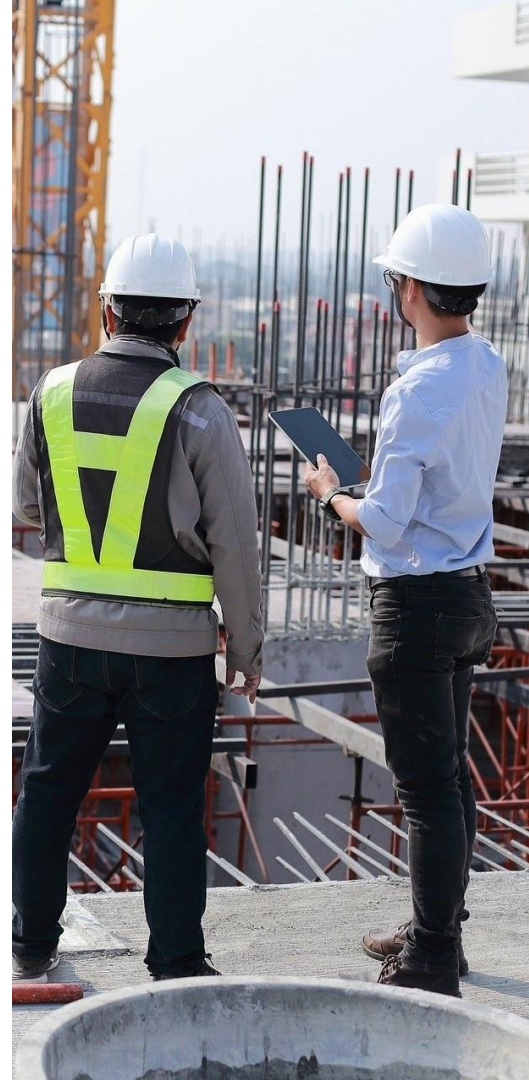
Benefici della trasformazione digitale

- **"Capture Reality"**: un progetto oggi include immagini aeree e scansioni laser dell'esistente, che catturano accuratamente la realtà e semplificano notevolmente la preparazione del progetto.
- **Nessuna duplicazione delle informazioni**: non c'è bisogno di rielaborare e duplicare i gli elaborati perché tutti lavorano a partire da un unico modello coordinato
- **Migliore collaborazione**: la condivisione e la collaborazione basata su modelli e attraverso un flusso di lavoro digitale è più semplice. Le fasi di revisione e "markup" assicurano che tutti siano allineati e quindi pronti quando si passa alla costruzione.



Benefici della trasformazione digitale

- **Simulazione e visualizzazione:** lavorare ai progetti per verificarne le prestazioni e la costruttibilità risolvendo i problemi prima di arrivare in cantiere e riducendo i costi
- **Programmazione delle attività:** ogni fase della costruzione è una sequenza coordinata di attività, materiali e personale che consente di avere un processo di costruzione più efficiente e prevedibile
- **Disponibilità delle informazioni:** il modello BIM consente di avere a disposizione tutte le informazioni relative al progetto in maniera strutturate. Avere queste informazioni del modello su cloud significa avere accesso ai dettagli del progetto da qualsiasi luogo e su qualsiasi dispositivo.







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