

FUTURE-PROOF YOUR CONSTRUCTION BUSINESS

How an **integrated and scalable platform** helps construction enterprises **adapt to changes** amidst an uncertain world to **secure a sustainable future.**





Building a sustainable future for the construction business and the world.

The impact of COVID-19 is likely to last and remote collaboration has become the norm. In addition to this, the AEC industry is under pressure to improve sustainability as the largest contributor (38%)⁽¹⁾ of global CO₂ emissions. What strategies should construction enterprises employ to withstand these challenges, survive, and thrive in an uncertain world? This white paper intends to explore how an integrated and scalable software platform can help construction businesses to implement digital transformation successfully to build long-term success and to contribute to a carbon net zero future.

(1), Global Alliance for Buildings and Construction, UN Environment Programme, "2020 Global Status Report for Buildings and Construction", <https://www.worldgbc.org>

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CHAPTER 01

Change is Constant in An Uncertain World

As a highly fragmented and complex industry, construction faces numerous challenges including stagnant productivity, low profit margins, unstable supply chains, intricate requirements from customized projects and more. As the COVID-19 pandemic hit the world stage in early 2020, it caused a ripple of devastating effects across the globe both socially and economically. Along with increasing concern for climate change and sustainability issues, the construction industry is now facing a more challenging and uncertain business environment than ever.

The impact of COVID is likely to continue.

In Q2 2021, a majority of (72%) of contractors ⁽¹⁾ still reported project delays due to the pandemic. Despite the overall situation improving, most Engineering and Construction (E&C) companies continue to face the challenges of stringent timelines, sustained costs, and margin pressures. As remote working becomes more common, higher standards are expected when it comes to **digital collaboration**, **data accessibility** and the **standardization of workflows**.



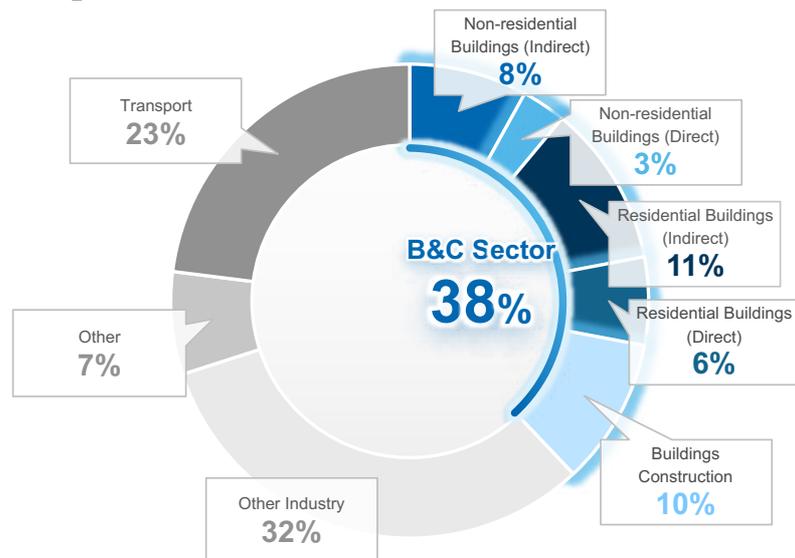
(1), U.S. Chamber of Commerce, "Q2 2021 Commercial Construction Index", <https://www.uschamber.com/report/us-chamber-of-commerce-commercial-construction-index-q2-2021>

Climate change is pressing the industry to act.

Sustainability is an area of increasing concern across the globe, and the construction industry has a significant opportunity (and responsibility) to reduce carbon emissions and contribute to a more sustainable future. In the process of business development, construction companies are likely to invest more to comply with more stringent environmental regulation.

In 2019, CO₂ emissions increased to its highest level for Building & Construction (B&C) Sector, representing **38%** of global energy-related CO₂ emissions (13.6 GtCO₂).

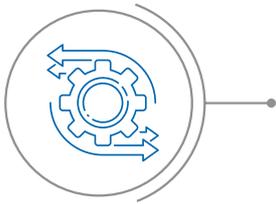
CO₂ Emissions



CHAPTER 02

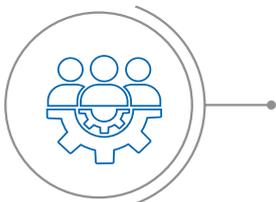
The Challenge for Long-term Digital Success in Changing Organizations

More and more construction companies are adopting digital transformation to survive and thrive in a world of uncertainty. However, digital transformation is not a sprint, but a marathon. On the path to long-term digital success, challenges will present themselves from all quarters. What digital strategies should construction enterprises put in place to mitigate these pitfalls and set themselves on the right course?



Organization & Process Changes

As your business transforms to align with an evolving industry, your organizational structures and workflows may become more complex. It is essential that these workflows can be monitored and adjusted as required, to support your pursuit of higher performance.



Business Changes

The business environment is changing fast, so is your business development. To respond rapidly and flexibly to market demand, your business models or business scope should evolve as well, e.g., adding new business divisions such as prefabrication.



Compliant to New Requirements

It is increasingly understood that a shift towards a low-carbon future is crucial. Construction companies are facing an increasing need to be compliant with more stringent project owner requirements, government regulations and carbon emission standards.

The frustrating results of digital transformation

63%

of companies use construction management software for less than 2 years.

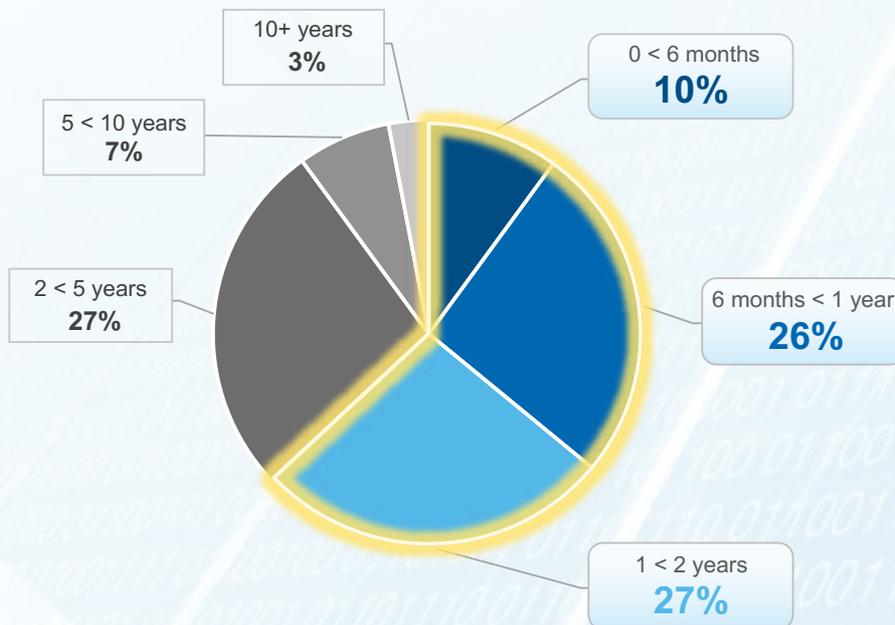
> 30%

of companies spent 4 to 6 weeks evaluating and purchasing new tools.

69%

of companies spent about 3 months implementing the new tool at their organization.

How long have you been using your construction management software?



Capterra, "Construction Management Software User Research Report", <https://www.capterra.com/construction-management-software/user-research>



03

CHAPTER

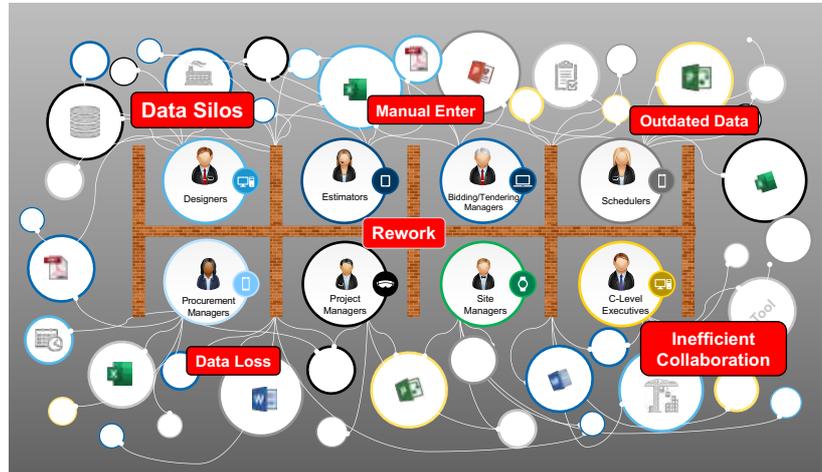
Point Solutions vs Integrated Platform: What Promises a Successful Future

Despite vast improvements in frontline technology and practices, the productivity of the construction industry remains fairly stagnant. We have adopted various tools and software applications, but fundamentally, no real impact on the productivity index has been made. A majority of companies still operate in a highly fragmented way by adopting different systems simultaneously for different jobs, but will this disconnected technical landscape secure long-term success?

Point Solutions Are Leading Nowhere.

Fragmented Teams, Siloed Data, Stagnated Efficiency, Lack of Scalability

The fragmented nature of construction encourages companies to adopt fragmented point solutions. Different systems specializing in different jobs and usually not integrated with one another, are being used simultaneously across the organization’s project management and workspace, causing data to be dispersed from multiple sources. These systems are good at dividing the work up into chunks but less effective in making sure everyone’s work fits together. As a result, data is held in separate system silos by different teams, and so time is wasted transferring this data between the different systems. This lack of digitalization hinders not just the collaborative effort of teams and key functions, but also slows the operation, and this, in turn, has become one of the root reasons for stagnant productivity in our industry.



Hidden Costs of Point Solutions

Point solutions demand lower upfront costs and as the business grows and projects are scaled up, more point solutions will be needed to meet demands. For instance, a company might only need an estimation tool in the first year, but as the business grows, more tools are demanded, such as scheduling tools, bidding management software, procurement management tools, and quality and safety software, etc. Subsequently, as more point solutions are added to the company’s technical landscape, more investment is required.



The Advantage of An Integrated Platform



Connectivity to Support Remote Working

An integrated solution should connect all stakeholders in one place: the BIM modeling team, quantity takeoff and estimation and the procurement team, to name a few, are all connected on one cloud platform for truly end-to-end digital integration. One team's data can be referenced by other teams, enhancing collaboration across the project regardless of location.



Standardize Processes That Adapt to Changes

An integrated platform covers the entire lifecycle of building projects, from planning, construction, to operation and maintenance. With an integrated platform at the helm, it is much easier to standardize workflows and adapt to changes as multiple modules interact and share data, ensuring all relevant parties are kept informed throughout relevant stages of the workflow.



Consolidated Data to Support Real-Time Accessibility, Analysis, Decision-Making, and Risk Mitigation

For many companies in the construction industry, project data is scattered and unstructured. An integrated platform provides a common data environment across every stage of the construction process. This allows teams to access and share the latest project data in real-time, mitigating risks, preventing safety issues, and maximizing the potential for productivity.



Scalability to Support Future Development of AI, IoT, Carbon-Tracking, and Integrations with Other Software

As a business grows in size and complexity, a scalable platform allows ease of integration with third-party tools or future technologies such as AI, IoT, and Carbon Tracking, making it effortless to extend platform capabilities. The platform constantly evolves to accommodate the growing needs of an enterprise, securing long-term success.

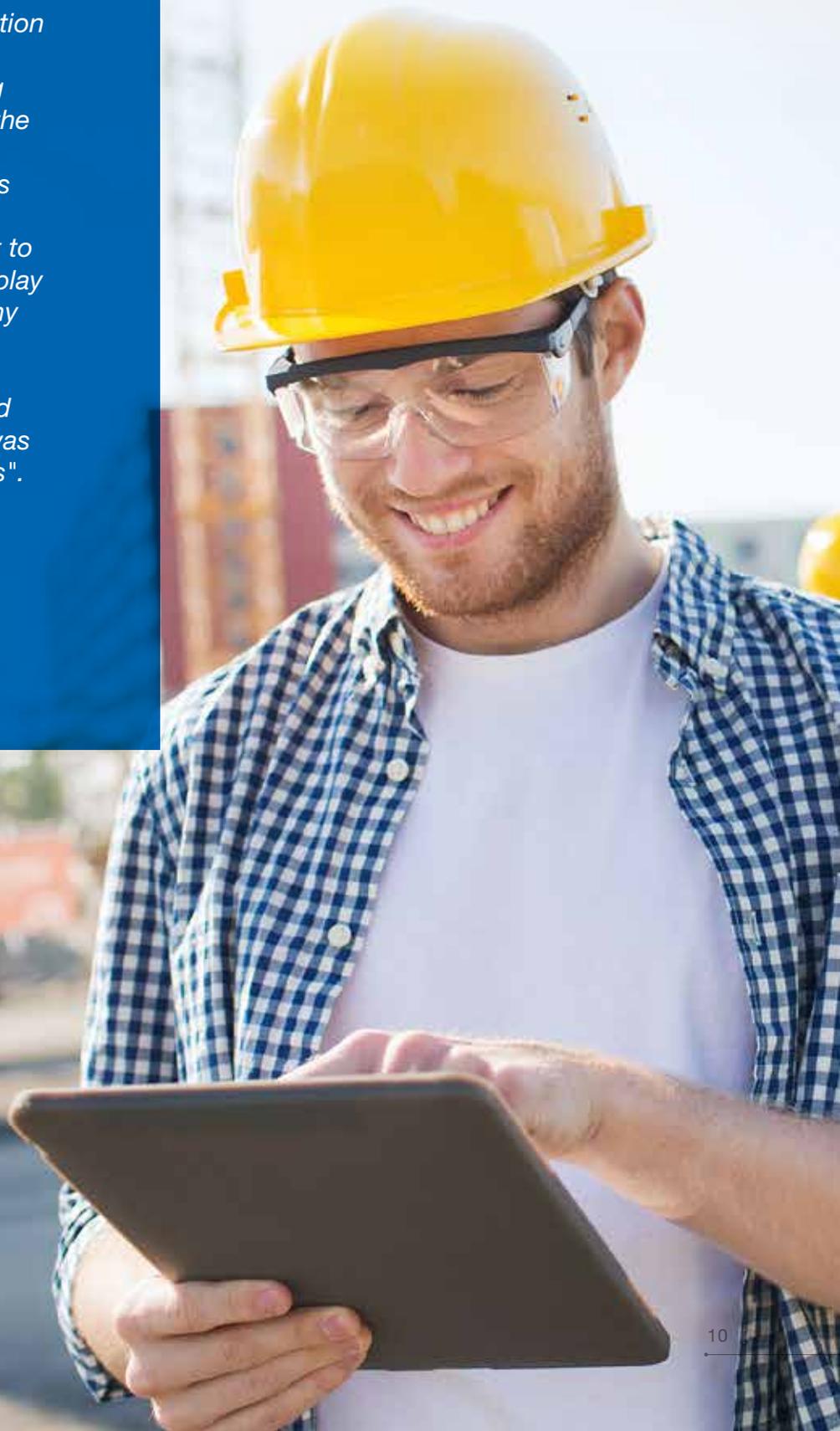
Point Solution vs Integrated Platform

Point Solutions	Integrated Platform
Disconnected data	Connected inter- and intra-company data ✓
Siloed teams	Connected teams for efficient collaboration ✓
Un-scalable or limited scalability	Ease of scalability & integration ✓
Disconnected or no workflows	Connected and automated workflows ✓
Hidden costs	Visible cost ✓
Pose barriers to Business Intelligence possibilities	Easy to develop BI dashboards ✓
Pose barriers to AI	Easy to develop analytics & insights ✓
Scattered knowledge	Enterprise knowledge base to speed up future projects ✓
Short-term ROI	Long-term growth ✓

"In order to improve our entire core process, we decided to use a fully integrated construction industry solution. In addition to the seamless, digital coverage of our planning and execution process, the digital collaboration with our suppliers using Swiss and German norms and standards was important to us. The possibility to display all locations and company divisions in one system and thus combining the construction industry and business management was what finally convinced us".

Katharina Lehmann

Owner and CEO
Lehmann Group



CHAPTER 04

How to Set a Digital Foundation for the Next 20 Years



Digital transformation is not a single leap but a long-term journey. During this endeavour, companies will inevitably be presented with changes, additional demands, and other requirements. For instance, external forces such as climate change will place new requirements on the carbon emission benchmarks of AEC companies. At present, many companies will combine disconnected point solutions across their projects, creating data silos that lead to lower management efficiency. This tactic is contrary to the integrated nature of true digital transformation and may cause new digital endeavours to fail.

Connectivity and scalability are the key to a long-term digital strategy.

As with all business decisions and investments, there are 2 common strategies regarding digital transformation: the traditional strategy of department or project-level application acquisition and the enterprise-level type investment. Companies without a clear digital transformation goal are likely to adopt the project-level strategy while organizations with a clear goal and defined roadmap are more likely to adopt the enterprise-level strategy.

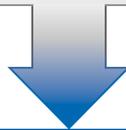
63% of companies use construction management software for less than two years, either because the software features were not aligned with business needs, or because they could not support the company’s growth ambitions. This misalignment between technology and company demand usually emanates from the department level strategy of tool and application implementation. The key to long-term digital transformation success, however, is to adopt an enterprise-level platform as the digital foundation that retains an open API for the wider supply chain to adapt to future changes. This way, as the organization evolves, additional solutions can be integrated and interconnected onto this platform, while costly stop-gap measures that only help in the short-term can be phased out.

	Traditional digital strategy	New digital strategy
What	Department / Project-level	Enterprise-level ✓
Focus	Stop-gap measure	Connectivity & scalability ✓
How	Each department purchases point solutions for themselves	Purchase platform with core functions suit for an enterprise with scalability ✓
Result	<ul style="list-style-type: none"> • Pay more on additional software to meet new demands. • Create too many silos, blocking efficiency. • Digital journey is disrupted, reset and redone. 	Has one digital foundation ready that can accommodate enterprise growth ✓
Advantage	Short-term ROI	Connected data and teams, long-term growth ✓

Traditional Digital Strategy

Project / Department Level

Systems silo,
Unstructured data, Inconsistent workflow, Short term



New Digital Strategy

Enterprise Level

Structured data,
Customized workflow, Open API,
Long-term



Adding sustainability to the digital agenda.

In 2019, the building and construction industry was responsible for 38% of global energy related CO₂ emissions. As an industry that employs 7% ⁽¹⁾ of the world’s working age population and as 68% ⁽²⁾ of the world’s population will live in urban areas by 2050, stakeholders in this industry must take responsibility to reduce emissions for a sustainable future. All organizations will come under increased regulatory pressure to be compliant with government regulations restricting carbon emissions.

Therefore, **sustainability metrics will become a key consideration when offering and winning bids, adding further pressure for companies to ramp up their digital transformation.** Furthermore, not only is sustainability to be measured by project emission metrics, but also by measuring the actual social value for communities, of which end-user residential emissions also become a factor in the sustainability measurement of projects.

The writing on the wall is clear: companies will require an enterprise-wide digital platform that includes emissions and sustainability measurement tools. An obvious solution is 6D BIM, which enables 6D simulations of design options, with the 3D design model integrated with the schedule (4D), cost (5D), and the carbon factor (6D). Third-party carbon databases can be connected with this platform to reduce embodied carbon or carbon created in the process. A winner on all fronts, 6D BIM not only increases company efficiency and productivity, but also ensures your organization navigates sustainability and emission compliancy, hassle-free.



(1), McKinsey & Company, “Reinventing Construction: A Route To Higher Productivity”, <https://www.mckinsey.com/business-functions/operations/our-insights/reinventing-construction-through-a-productivity-revolution>

(2), United Nations Department of Economic and Social Affairs, “68% of the World’s Population Projected to Live in Urban Areas by 2050”, <https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html>

"One of our highest principles is to minimize negative environmental influences through best technologies and equipment. The topic of sustainability therefore also played a major role in the choice of a suitable software. With iTWO, we have chosen a future-proof innovative solution that will digitize our planning and execution processes and make them more effective. It was also important to us to improve digital cooperation - internally as well as with our partners - according to Austrian norms and standards. iTWO offers us the possibility to display all company divisions and locations in one system. This is what finally convinced us".

Gerald Gunsch

Project Manager

Fröschl AG & Co. KG

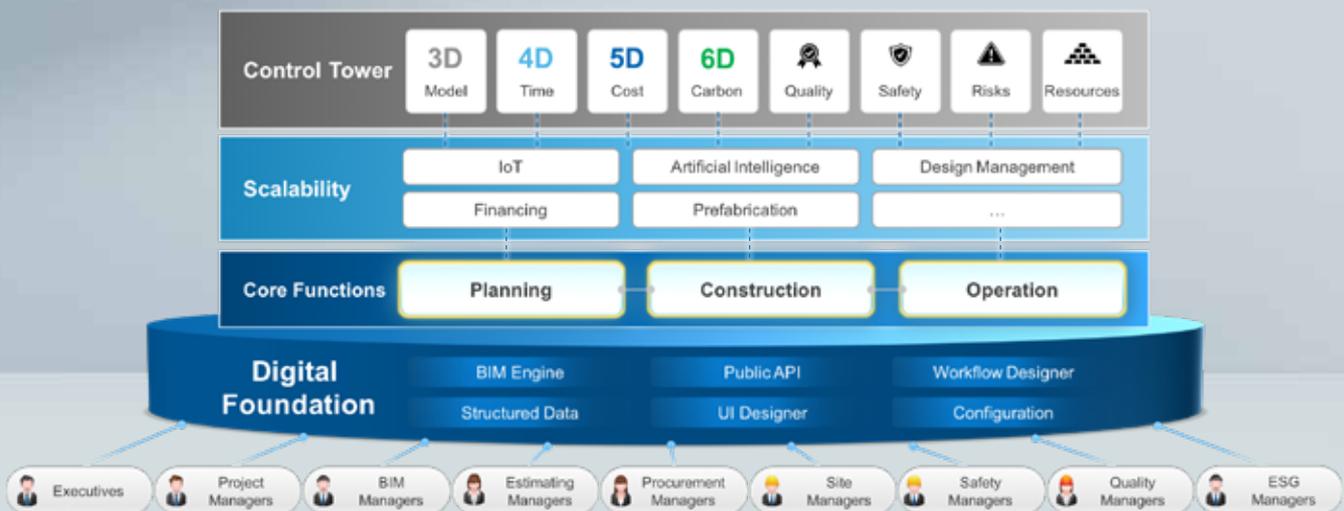
** iTWO is the core technology of
RIB Software's MTWO Construction Cloud*

CHAPTER 05

Future-Proof Your Construction Business with MTWO Construction Cloud

Connect all people, processes, and data with one integrated and scalable platform to increase efficiency, minimize risks, and secure your long-term business success.

- Time-Saving ✓
- Cost-Saving ✓
- Data-Driven Decision-Making ✓
- Risk Mitigation ✓
- Predictive ✓
- Carbon-Reduction ✓



MTWO is a future-proof construction enterprise cloud platform that helps to manage all projects from end to end with 6D BIM (3D design + 4D schedule + 5D cost + 6D carbon factor). MTWO connects all teams, anytime and anywhere through all devices, and provides real-time intelligent data for effective decision-making, helping project teams to build faster, smarter, and better, and enabling enterprises to be more efficient, sustainable, and successful.

"MTWO is the core of the entire system because through technology it allows removing the human error that exists in this type of project and to parameterize all construction processes. It minimizes the risks of the project, logically it allows us to grow and make industrialized construction a reality, offering a successful product."

Juan Jesús González

*General Director of Planning
and Organization*

Avintia Group

About RIB CCS

For four decades RIB CCS has been the preferred supplier of specialised software solutions to the engineering and construction industry, serving more than 1,800 Clients and 40,000 Users in over 80 countries.

Underpinned by more than 35 years of expertise, passion and innovation, RIB CCS offers software solutions that are intelligent by design, fit-for-purpose and aimed at enhancing productivity, transforming operating models and adding value to the businesses it serves.

RIB CCS is an RIB Software SE group company and a partner pioneer in the transformation and digitalization of the engineering and construction industry.



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