

# True Modular Building – Redefining the Future of Affordable, Sustainable Housing with Revolutionary Modular Innovations to Tackle Global Crises

**T**he way we build our homes is far more than a construction process—it's a reflection of how we live and how we envision the future. For too long, the construction industry has adhered to outdated practices that drain our resources and harm the environment. With rising demand for affordable housing and escalating environmental challenges, the need for change has never been more urgent. This is not just about erecting buildings; it's about creating sustainable spaces that empower communities, respect nature, and pave the way for a brighter future.

**True Modular Building (TMB)** is leading this transformation with a bold commitment to affordable, sustainable housing. Central to TMB's mission is the belief that innovation can redefine construction, enabling the creation of homes that are both cost-effective and environmentally responsible. With over 40 years of experience, TMB embraces a forward-thinking approach to modular construction. By drawing inspiration from global sustainability movements, visionary leaders, and cutting-edge technologies, the company has developed a model that prioritizes social impact and environmental stewardship.

TMB recognizes the interdependence of all life and the responsibility to treat Earth's resources with care. Every decision is driven by a vision

to create a world where housing meets the needs of all—regardless of socioeconomic status—while protecting the planet for future generations.

At CIO Bulletin, we had the distinct privilege of interviewing Carel van Duuren, CEO of True Modular Building, who shared valuable insights into how his company is committed to building a future where housing empowers communities and preserves the planet for generations to come.

## The Genesis of True Modular Building

The world faces multiple crises—housing, energy, climate, and high CO<sub>2</sub> emissions—each with varying perceptions based on different priorities. However, one fact is clear: real estate consumes 50% of global energy, emits 40% of CO<sub>2</sub>, and uses 40% of raw materials, making its environmental impact undeniable. As Carel van Duuren states, *"The CO<sub>2</sub> and waste from construction make it essential to rethink building methods with sustainable materials."* Change is urgently needed.

Carel is driven by finding solutions to these challenges. *"We cannot solve our problems with the same thinking we used when we created them,"* he reflects. For Carel, it's not about selling a product—he



*Carel van Duuren, CEO*

aims to share knowledge, choices, lessons, and opportunities in modular construction, believing the future of housing lies in this approach.

TMB, a construction technology company, emerged from Carel's work with Kessel Rental/NxtGen Smart Modular Building (KR/NGSMB), where he helped develop a kit-of-parts building system using transport containers. *"In 2017, I was asked if this could be used for residential buildings, and NxtGen Houses was born,"* Carel recalls. The experience led him to reverse-engineer affordable, sustainable housing solutions.

*"I once read, 'you don't find your passion, your passion finds you,' and that's what happened."* Seeing the high costs of materials and contractors, he created a simpler, plug-and-play system. In 2023, he rebranded it as True Modular Building (TMB). *"Construction is often overcomplicated, which slows the process and raises costs,"* Carel explains. TMB aims

to simplify construction, making housing more affordable, sustainable, and accessible.

## TMB's Modular Solution for a Sustainable Future

Affordable housing is a growing global challenge, yet traditional construction methods have been slow to adapt. Carel envisions modular construction as the solution.

*"We use proven, interchangeable modular components. These can be adjusted to fit local needs and building codes, offering a made-to-order solution."* This modular approach ensures easy customization without sacrificing efficiency.

The method's simplicity is its strength. *"Building blocks fit into standard frames, which connect to the superstructure. This plug-and-play process reduces construction time, waste, and costs, ensuring high-quality results,"* Carel describes. The modular process accelerates timelines and lowers environmental impact, which is crucial in today's industry.

TMB stands out for its ability to mass-produce components. *"Modularization allows co-makers to produce building parts at scale, keeping TMB housing affordable,"* Carel says. This scalability is key to making housing both affordable and accessible.

TMB's goal is clear: to revolutionize homebuilding by making it more affordable, adaptable, and sustainable.

## Innovating for Adaptable Imminent in Housing

For TMB and Carel, technological innovation is key to transforming the built environment. He believes, *"With innovation, improved materials, and hybrid engineering, we can provide safe, decent, and affordable housing globally."*

Carel emphasizes that building homes isn't complex—it requires flexibility and adaptability. *"We need a system that can handle changing circumstances."* Decarbonizing the built industry with sustainable methods is crucial to solving the housing crisis. He adds, *"The speed of communication and sharing innovations will drive changes in the built environment."* This mindset led to the creation of the NxtGen Industrial Building System and the Orange Kit, designed to evolve with the housing market.

The Orange Kit was built for adaptability. *"The platform consists of stand-alone digital systems,"* says Carel. It uses components from the kit to design buildings. TMB's systems, like TMB cladding, walls, envelope, and foundations, integrate with third-party platforms for heating, electricity, and MEP systems to create a hybrid modular system. This ensures homes are customizable and future-proof.

Modularity, dry mounting, and reusability make TMB adaptable to homeowners' changing needs. *"TMB can adapt to evolving*



*requirements, making homes more sustainable and flexible."*

TMB buildings are practical by design. *"The foundation has vertical and lateral load-bearing capacity."* Metal components can be adjusted to change their capacity, ensuring buildings meet future demands.

Sustainability is also a focus for Carel. He highlights the importance of biobased insulation and materials, stating, *"They're essential for any building, not just nice to have."* With growing demand for affordable housing and labor shortages, TMB's easy, fast assembly systems help address these challenges while delivering sustainable homes.

## TMB's Approach to Meeting Changing Needs and Reducing Environmental Footprints

For TMB, understanding that *"people have different needs which change over time"* is key to their approach in building lasting homes. TMB's flexible designs and building components ensure homes can adapt as needs evolve. *"The diverse needs of customers/tenants are addressed using add-on and add-in components."*







These components seamlessly attach to the superstructure, allowing modifications in function and aesthetics.

Add-ons like cladding, balconies, rooftops, Sani pods, and kitchens allow for easy adjustments. *"Attaching add-on components enables cost-efficient, long-term changes."* This modular approach not only increases adaptability but also offers significant cost savings, as modifications can be made without major remodeling.

Carel's vision for TMB goes beyond meeting immediate needs; sustainability is central to the company's decisions. *"We minimize costs and use quasi-vertical integration to control the supply chain."* This ensures sustainability is embedded in design, materials, and construction. TMB also focuses on long-term value, aiming for co-ownership of buildings for at least 15 years instead of short-term profits through sales.

*"We use planet-friendly materials with longevity in mind,"* Carel says,

reinforcing TMB's commitment to reducing its environmental impact. Each building follows the TMB system, ensuring sustainability and durability. By making sustainable choices and offering adaptable components, TMB is not only meeting today's needs but also future-proofing homes for generations.

## The Road Ahead

TMB is advancing its innovative housing solutions with a focus on refining its third prototype (MVP) and getting its products to market. *"We're testing plug-and-play assumptions, assessing co-maker components, and improving assembly ease."* The team is also optimizing packaging and logistics to streamline the construction process for maximum efficiency.

Scaling is a top priority for TMB, and securing funding is key. *"As a self-funded company, we're exploring funding options to expand our reach."* The company is looking into NGO

status and creating a Global TMB Housing Fund to support affordable housing markets. *"We are open to suggestions and support in achieving our goal of providing global affordable housing,"* Carel adds, emphasizing TMB's commitment to collaboration and innovation.

TMB's mission goes beyond building homes; it's about creating a lasting legacy. *"We aim to make TMB a brand known for high-quality, affordable housing. We focus on design and selecting fundamental building parts that are easy to assemble."* This vision drives TMB's modular approach, which is applied to all projects. And it ensures minimal parts for faster assembly, even without specialized skills.

TMB's modularity is key to their success. *"We engineer sub-assemblies with minimal parts, planned in detail like pieces of a puzzle."* This agile, hybrid approach allows TMB to incorporate materials, add-ons, and add-ins that increase stability, load-bearing capacity, and reduce weight. *"TMB is a smart plug-and-play dynamic assembly system,"* Carel adds, highlighting their commitment to simplicity and efficiency.

*"All people have a right to quality, affordable housing,"* concludes Carel van Duuren. CB

## Quick Facts About the Company

**Company Name:** True Modular Building

**Founding Year:** 2020

**Website:** [www.truemodularbuilding.com](http://www.truemodularbuilding.com)

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**Founder/CEO:** Carel van Duuren

**Target Audiences:** BTR Communities

**Office Locations:** Gorinchem, The Netherlands

*"Everyone deserves quality, affordable housing. We aim to make TMB a brand recognized for providing high-quality, affordable homes, focusing on design and easy-to-assemble fundamental building parts."*