# AUTODESK Construction Cloud | MULTIGREEN

# MultiGreen's Data-Driven Approach to Solving the Housing Crisis with Autodesk Construction Cloud

Demand for housing has been higher than ever, and if the industry fails to meet that demand, the country will face a severe shortage.

One firm striving to address this issue is MultiGreen Properties (MultiGreen), a real estate development and operating company that focuses on creating attainable, sustainable, and tech-enabled homes. Last year, the company announced a bold and ambitious goal: to build 40,000 multifamily homes by 2030 with its Workforce Plus™ initiative.

It's a massive objective, and one of the steps that MultiGreen is taking to accomplish it is by standardizing data capture on a unified platform. Doing so will enable the firm to drive better decision-making and create repeatable processes to shorten the design cycle and bring buildings to market faster.

MultiGreen has chosen Autodesk Construction Cloud™ as its key technology solution to handle its projects and connect data from design to operations, unlocking efficiencies and increasing collaboration to achieve its goal.

## Customer Snapshot

| | |
|---|---|
| FIRM SIZE: | <500 |
| FIRM TYPE: | OWNER |
| REVENUE: | $5.2 MILLION |
| FOCUS AREA: | COMMERCIAL |
| HQ: | HENDERSON, NV, US |

**PHASE:**

DESIGN — **PLAN** — **BUILD** — OPERATE
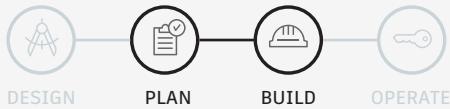
**CAPABILITIES:**

- Coordination
- Project Management
- Cost Management

**OUTCOME:**

Cost     Quality

## The Need for Attainable and Sustainable Housing

Housing demand in the United States won't be slowing down anytime soon. The National Apartment Association (NAA) and National Multifamily Housing Council (NMHC) are forecasting that the US needs at least 4.6 million apartment homes by 2030.

There's also the issue of sustainability. Climate change, environment-centric legislation, and client expectations continue to drive sustainability expectations in construction, and companies that meet those needs are in a better position to thrive.

These issues make MultiGreen's Workforce Plus initiative all the more important. Workforce Plus is the company's plan to deliver build-to-rent units in high-demand, low-supply markets for a target audience of essential workers, such as firefighters, nurses, teachers, and police officers.

"The Workforce Plus initiative provides attainable, sustainable, and tech-enabled homes to essential workers in our community. Workforce Plus homes are constructed with materials that will provide digital amenities and a living standard that is possible today and future-proofed for tomorrow," says Randy Norton, Chairman of the Board at MultiGreen.

Beyond building sustainable housing, MultiGreen wants the Workforce Plus initiative to serve as a

blueprint for other developers to bring attainable housing to the market.

According to Norton, "One of the main reasons why we're sharing this knowledge is we're hoping that other developers and home builders will collaborate and participate in this cause. The supply of housing is going to deteriorate. So while we're building 40,000 units, we need at least ninety-nine more MultiGreen type companies to address the housing crisis."

## Defining the MultiGreen Way: Establishing Standard Operating Procedures

In the construction industry, how you build something is just as important as what you build. Having solid, standardized processes enables teams to implement projects quickly and cost-effectively.

After dealing with the inefficiencies of inconsistent practices and systems, the company decided to implement what it calls the "MultiGreen Way" to standardize how everyone works. The first phase was standardizing its procedures and requirements on a unified platform to capture consistent data to optimize the design and development of repeatable assets.

"There's a challenge of getting general contractors and subcontractors all on the same platform. Everybody still wants to use their system," explains Norton. "And really, that was the basis for standardizing

on Autodesk Construction Cloud. By using BIM Collaborate and Build to provide a common data environment, MultiGreen can have ownership of our data to optimize our processes and make better and more informed decisions on our projects."

## Taking a Data-Driven Approach to Building Repeatable, and Scalable Residential Units

According to Norton, MultiGreen aspires to win at data and analytics.

"Our long-term strategy is to compete on analytics. And to do that, we need great data," he says.

Norton says that to be competitive, you need to be "making the very best decisions with the very best information that you have – and your information is only as good as your data."

Many of the construction industry's largest inefficiencies come from the poor handling of data. "That's why there are so many variances with cost, delivery, and scheduling," he explains.

MultiGreen is addressing this through standardization. According to Levi Naas, Director of Development at MultiGreen, they're using the data they collect to build a catalog of standard unit types. That way, they always have a clear idea of the required assets, equipment, and costs for each item in the catalog.

"We're using Target Value Design to produce scenarios



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>
> **-Randy Norton**
> Chairman of the Board,
> MultiGreen

and models, which we can share with our architects, general contractors, and subcontractors to provide a clearer picture from the start of what we're trying to accomplish for each of these sites," says Naas.

Norton likens it to a fast-food menu with a set catalog of products. "We have three products. One is our mid to high rise type one construction, the second is our podium style, which is type four construction, and then you have our garden-style campus communities, which is type five construction."

This approach gives MultiGreen many options, particularly as the company navigates today's supply chain issues.

"Whether we want to use stick build, or steel and Styrofoam core as our envelope, or if we want to go into any precast or prefab environment, by controlling this design catalog, we know exactly what our optionality is and construction delivery methodology."

MultiGreen also intends to use standardized data to evaluate and optimize assets – such as materials, suppliers, and contractors – to drive better decision-making for future projects and update their catalog with information.

"We're making a multimillion-dollar investment from the design and AEC environment, and that investment is piggybacking on the R&D that Autodesk has already proven and figured out over its lifetime. Our body of knowledge is going to expand only in one industry, and that is multifamily housing. As we specialize in this multifamily subset, we're going to share this knowledge with the world. Hopefully, others can follow suit, and we can all cut out a lot of these inefficiencies and waste and make the world a better place," says Norton.

## Streamlining the Coordination Process with Autodesk BIM Collaborate

With Autodesk BIM Collaborate, MultiGreen can aggregate all project information across stakeholders on a single solution to streamline the design collaboration and coordination process. Aligning multidisciplinary teams for coordination during preconstruction reduces the risk of schedule setbacks and cost overruns downstream. And with information centralized in one location, teams can easily track changes in the design that can impact the project's overall scope. Cloud-based coordination also helps MultiGreen eliminate data silos and be more collaborative.

As Naas points out, "Within this environment, everybody can see if there's an issue. It's all about transparency and having everybody working together to create the necessary solution to keep the project on schedule."
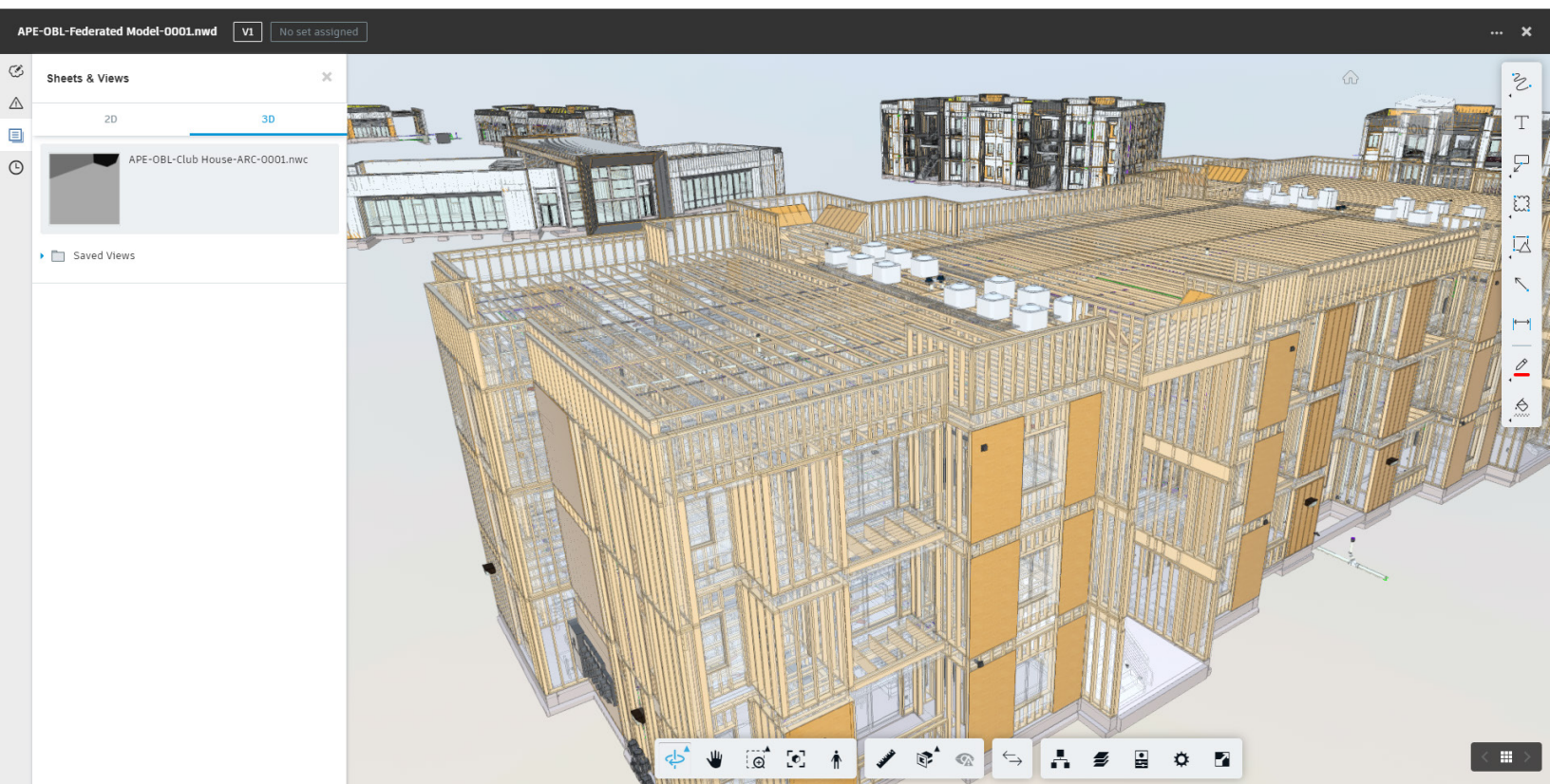
By coordinating in one environment, model conflicts are automatically detected, enabling faster decision-making and issue resolution to enhance project delivery. Naas shares an example of how the team resolved an issue between the architect and engineer whose designs were prioritized for the clubhouse in one of their multifamily buildings.

The architect went into the model to set up the windows and curtain panels, which impacted the height of the beams included by the structural engineer. This created conflict in the design and raised the question: does the roof need to be raised, which will ultimately increase cost, or do the windows need to come down slightly, which would sacrifice the view.

"Those conversations are more difficult to have when you're acting in silos. By having our team's co-author models, as an owner, we have more visibility into the process and can make more timely decisions about what needs to happen on the project. It eliminates redundancies and shortens up the cycle," explains Naas.

MultiGreen is changing the coordination process, moving from a specialized process with a specialized tool to one where every project stakeholder can access models and participate. With increased collaboration during the design and coordination process, teams can have more value-added conversations around clashes to resolve issues faster and avoid costly bottlenecks. This process allows them to expedite the design collaboration and coordination workflow for future builds and reduce RFIs during the planning, design, and preconstruction phases.

## Enhancing Construction Management Capabilities with Autodesk Build

Autodesk Build increases project visibility to better track, manage, and resolve issues on the jobsite. With the ability to coordinate logistics and track assets from a centralized location, MultiGreen can ensure that teams optimize project schedule and handover to deliver information on time and budget. This process improves productivity and increases collaboration across project teams, reducing unnecessary rework.

"When our project teams are connected, everyone can perform their best work," says Naas. "With documents centralized in one location, project data is easily referenceable and allows teams to focus on higher-value areas of the project instead of searching for information. This also creates a deeper level of accountability and confidence that they are working off the latest model."

As an owner, MultiGreen is also excited about the cost management capabilities in Autodesk Build. With Autodesk Build, MultiGreen can improve cost control by centralizing all cost activities in the cloud. The unification of cost activities allows MultiGreen to manage the overall budget better and plan future projects more accurately based on historical project data.

"Since we've moved to Autodesk Build, the team is excited by the robustness of the cost management capabilities," says Naas. "The capabilities are better than most tools currently on the market, and provides more transparency, is easier to use, and eliminates silos allowing us to track how cost-related items are progressing in real-time."

In addition to enhancing cost management, MultiGreen is leveraging Autodesk Build to digitize and improve the commissioning process. Rather than manual checklists and clipboards, the project team uses Autodesk Build during the commissioning stage, making information more visible and accessible to the teams both on the field and in the office, streamlining the process.

Having this information documented in one place also benefits their facilities team by ensuring they're set up for success on day one. With the ability to track and manage project assets like equipment or system components, the facilities team can transfer that data to their own facilities management tools or use the PlanGrid Build mobile app to see the status of all assets. Additionally, they can see any related information to each asset like operation and maintenance manuals, issues, checklist items, or submittals tied to that asset as they are walking the jobsite. While this data helps improve operations, it also allows MultiGreen to better plan, design, build, and operate facilities in the future.

"While it's still early days for managing these buildings, by standardizing data capture, we can measure and make informed decisions that reduce the energy usage of these buildings and optimize how they perform over the next 30 years," says Naas.

Naas shares an example of how they're looking to use the data captured in Autodesk Build to drive efficiencies around assets, such as air handler units.

"If we go in and we start noticing that these units are requiring higher maintenance than expected, or if they're failing, we'll have to replace them more often," says Naas. "Data enables us to dive deeper into our

#2 - 334 Units
Apex Meadows
Las Vegas, NV

MULTIGREEN

670
of 40,000 Units by 2030

assets and assess if we need to switch suppliers on future projects. Having that transparency gives us the flexibility to be more impactful in our decision-making around which materials we use in our buildings."

"Autodesk Build is making the complex simple," says Norton. "It's intuitive, easy-to-use, and our project teams have been positive about making the switch to the new solution."

And while MultiGreen has standardized its processes, every project will apply lessons learned to optimize the use of Autodesk Build to drive better outcomes. It's about continuous improvement and technology adoption across a unified platform to collect data that informs better decision-making.

## What's In Store for The Future of Multifamily Housing

As of today, MultiGreen has constructed 1,106 of the 40,000 units. Applying a data-driven approach with connected workflows across the project lifecycle in Autodesk Construction Cloud, the company can optimize how they design, plan, build, and operate future multifamily buildings, accelerating time-to-market.

A part of MultiGreen's strategy is to create a developer portal where their program requirements, design guidelines, product catalogs, and closing checklists

are accessible to other companies looking to build developments to offset the housing crisis.

"We want to be the Marriott or Extra Space Storage of the multifamily residential market. When there are groups that want a specific multifamily type of brand on their property, we want them to call us for our design, our amenities, and our property management," says Norton.

Beyond that, they want other players in the industry to get involved and provide solutions to the country's housing needs.

"I like to use the term a call to arms," says Naas. "We need everybody getting involved in providing solutions to bring attainable housing to the market that also meets the lifestyle requirements that we're experiencing today."

As for Autodesk's role, MultiGreen is excited for the continued improvement and integration of tools across the Autodesk Construction Cloud platform.

"MultiGreen is making a huge bet on Autodesk because we know that its products will deliver a comprehensive platform that acts as a single pane of glass for any stakeholder — whether it's the owner, construction lender, developer, general contractor, employee, or any subcontractor — we want to operate in and control our own digital environment," says Norton.