



# CONSTRUCTION SIMPLIFIED:

Turning stunning designs  
into better builds





## HOW SKETCHUP UNITES DESIGN AND CONSTRUCTION TO TURN VISION INTO REALITY

Design and construction professionals shape the world we live in. Between a bold idea and a finished structure lies the challenge of turning creativity into reality—on time, within budget, and without compromising quality.

This eBook explores how design and build teams can simplify complexity by connecting their data, models, and workflows in SketchUp. Learn how integrated collaboration helps reduce rework, improve coordination, and strengthen client confidence from concept through completion.

# Turn project data into progress

## UNITE 3D MODELS, 2D DRAWINGS, AND SITE INFORMATION TO KEEP EVERY DECISION ALIGNED

The design of any constructible project entails countless moving pieces and lots of data—models, drawings, markups, schedules, site data, environmental surveys, budgets, and more. Each piece tells part of the story. But when those pieces aren't integrated, workflows break, and project pain ensues.

AEC leaders see that data disconnect every day. Someone's updating an architecture model while the cost estimate lives in a separate spreadsheet. A new site scan arrives late, and integrating it creates rework for the design team. GCs don't have timely access to designs to support construction planning, making it harder to create constructable site models, sequence work, and plan site logistics.



The information exists—it's just too scattered to be useful. Successful delivery of complex projects on tight timelines hinges on workflow efficiency. So when workflows break, whether in design, planning, or on-site, there are material reputational and financial risks for design and build firms.

SketchUp helps protect users' brands and margins by unlocking the integration of diverse data and file types so project teams can focus on quality of delivery—not wrangling files.

## IMPACT IN ACTION:

# STaND Design revitalizes a historic mill

Mumbai-based studio STaND Design used SketchUp's 3D modeling, visualization, and AR capabilities to transform a century-old fabric mill into a contemporary cacao processing and visitor center.

By combining detailed site surveys, photogrammetry, and immersive visualization in SketchUp, they preserved the building's heritage while modernizing it for a new purpose.

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SketchUp played a pivotal role in the design and planning of the Subko Cacao Mill. Its versatile capabilities and user-friendly interface significantly expedited the entire design process.

Siddhant Tikkoo | Principal Architect



## DISCONNECTED PROJECT DATA CREATES PROJECT RISKS.

SketchUp helps AEC design and build teams manage that risk for on-time delivery by turning data complexity into easy-to-use insights. Firms that unify their design and construction data with SketchUp report measurable gains—about five percent less rework, higher-quality designs, and better documentation for more accurate logistics planning.



### How we do it:

- **Unified data:** SketchUp supports open formats like IFC, Revit, DWG, and point clouds, letting design and construction teams coordinate seamlessly across platforms, regardless of what other tools they use.
- **Better collaboration:** Every model, markup, and version stays organized and accessible anywhere with Trimble Connect. In-app commenting, real-time viewing, and private sharing enable focused, contextualized collaboration.
- **Contextual design:** Site data from point clouds ground design and construction planning in real-world conditions, enabling better project planning and estimating for seamless execution from studio to site.

Bring Revit models, IFCs, point clouds, GIS files, 2D drawings, and even job-site sketches together with SketchUp. A single, intuitive environment connects design coordination with construction planning and management to help teams move smoothly from early design through on-site execution without losing context or data.

When connected data eliminates bottlenecks, teams gain the clarity to focus on what matters most—turning vision into buildable reality.

## IMPACT IN ACTION:

# PSW cuts design time by 93%

Design-build firm PSW cut average project design time from five hours to twenty minutes (a 93 percent savings) by bringing point-cloud data directly into SketchUp.

SketchUp also improved accuracy. 3D scans and point-cloud data in 3D space replaced manual tape measurements and triangulation, which created significant labor savings.

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Using Scan Essentials gives us the accuracy we need. A few inches off is a problem in our world.

TJ Varghese | Design Director



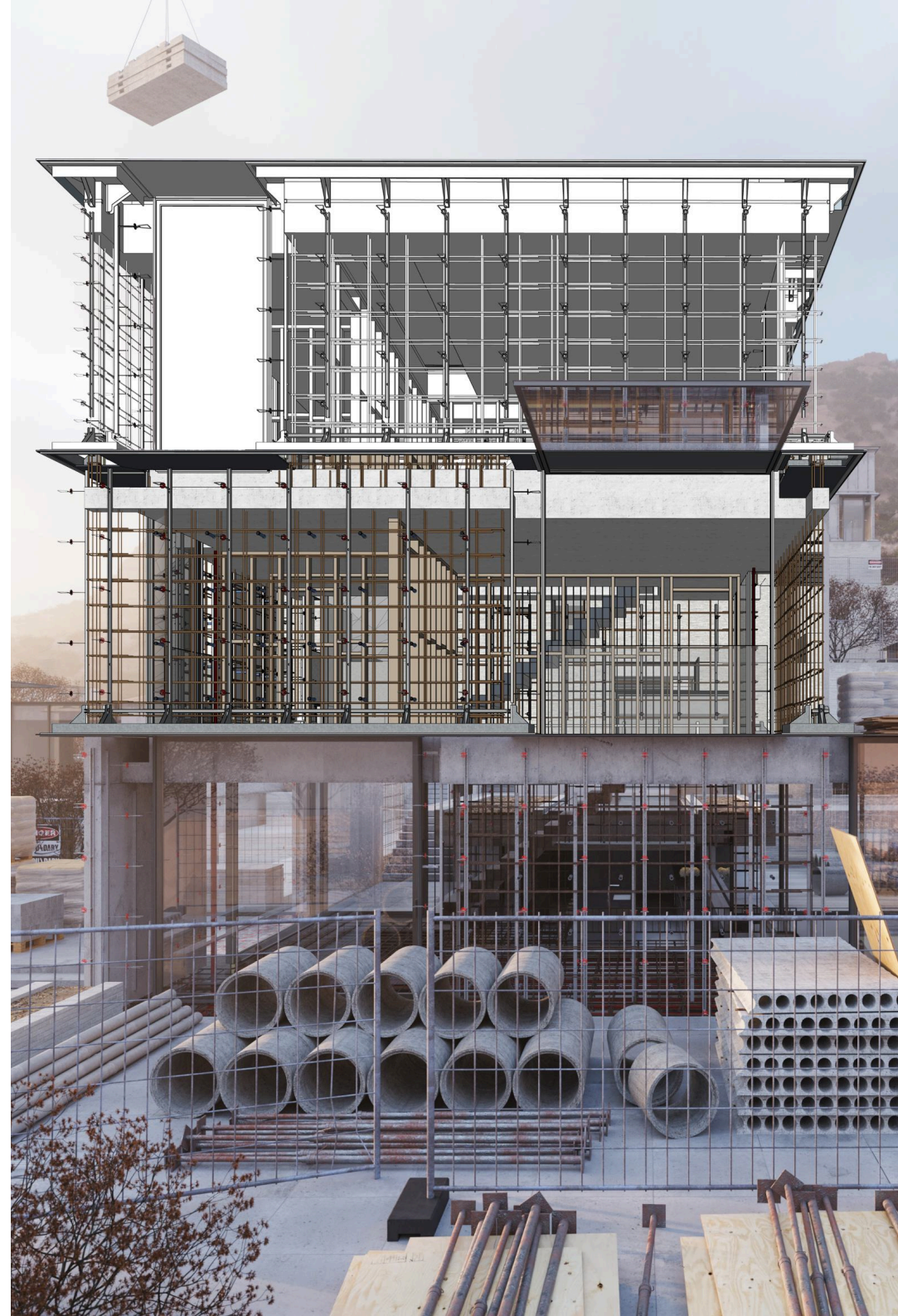
# Clarity that drives seamless execution

## REDUCE REWORK AND REINFORCE TRUST WITH INTEGRATED DESIGN AND BUILD WORKFLOWS

Rework doesn't just waste time; it erodes margin and trust. Many construction errors happen because of unclear expectations and lapses in coordination, not bad design. SketchUp helps design-build and construction management teams prevent rework by turning complex project information into clear, build-ready visuals.

Misalignment between designers, engineers, and builders adds friction at every stage: duplicate effort, stalled reviews, and delayed procurement. According to SmartPM, up to 98 percent of construction projects go over budget, with communication failures as a key driver.

When you choose a design and modeling tool, you're not buying pretty pictures. You're buying workflow insurance.



## IMPACT IN ACTION:

# Chengdu Hotel project accelerates delivery by 50%

On the Chengdu Hotel project in China, teams used SketchUp's lifecycle BIM workflows to plan site logistics, coordinate trades, and visualize build-out sequencing in one connected model.

That integrated approach shortened the construction cycle by nearly 50 percent and improved on-site efficiency at every phase.

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When we use point cloud scanning, the as-built dimensions are up to date in the 3D model to assure its accuracy throughout the project.

Liu Dejian | Deputy General Manager



## ENSURING STAKEHOLDER ALIGNMENT WITH SKETCHUP

If collaboration happens too late in the process, small gaps and errors can snowball. Stakeholder input drops after key decisions have been made, or field teams don't see design updates until plans are already in motion. The issue isn't effort—it's timing.

When feedback is captured inside the model and edits are shared in real time, construction teams can turn architect drawings into constructible models early, validate buildability, and coordinate site plans as they evolve.

This reduces on-site risk, eases personnel strain, and protects hard-earned reputations by enabling on-time delivery.

Move from confusion to coordination by turning project data into clear, actionable project plans.

Rework prevention starts long before construction begins. When models communicate intent—not just data—stakeholders stay aligned and decisions get easier. SketchUp provides design and build teams with the tools to identify issues early, develop constructible plans, manage site logistics, and keep projects moving, even when contingencies arise or circumstances change.

***Teams that design with clarity deliver with confidence.***



### Bring site conditions into the designs

With point-cloud data, existing terrain, structures, and utilities are modeled with precision to capture site-specific nuances. This real-world context keeps design intent grounded and guides smarter decisions about grading, access, logistics, and safety planning.



### Design for sustainability and constructibility, together

Environmental factors like orientation, shading, and material impact are easily visualized in the model, so teams can evaluate performance and practicality at the same time. Those insights build alignment between design vision and buildability, ensuring decisions made in the studio hold up on-site.



### Connected 2D, 3D, and collaboration workflows:

Keep 3D models and 2D documentation in sync with LayOut, while Trimble Connect ensures every version, markup, and update stays visible across disciplines. The result is a shared source of truth that unlocks the creation of beautiful designs that become constructible models.

# Win more work with stunning designs

## **COMBINE CREATIVITY, SPEED, AND RELIABILITY TO DELIVER RESULTS**

In a competitive market, design-build firms and general contractors win by combining speed, polish, and a record of on-time delivery. SketchUp strengthens that edge with tools that support across the project lifecycle—from design concepts to constructible modeling and site logistics planning. Leading firms rely on SketchUp to craft standout proposals and bring transformative designs to life on time and on budget.

In today's market, visuals alone don't win projects—proof does. Clients need to believe that beautiful designs will be constructible. For AEC firms, delivering that confidence means bridging creativity with real-world conditions.



SketchUp helps connect design vision to reality. From point clouds and terrain imports to photoreal materials and building performance analysis, teams can illustrate exactly how a structure will fit the site and interact with its environment. This clarity builds trust that the design is not just impressive on paper but practical and ready to deliver in the field.

## IMPACT IN ACTION:

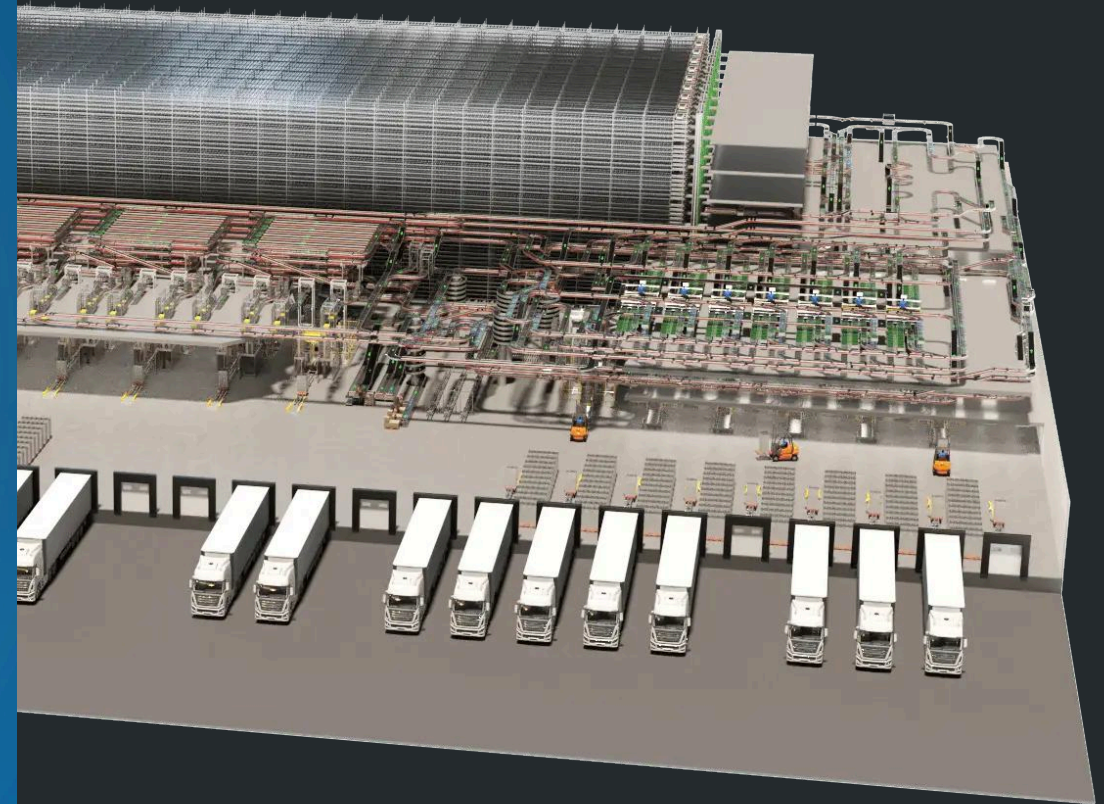
# TGW boosts design speed by 80%

International warehouse automation firm TGW replaced outsourced renderings with in-house SketchUp visuals, cutting time from idea to working layout by 80 percent. Faster iteration and richer visuals helped clients grasp complex systems instantly, speeding approvals and boosting project wins.

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SketchUp has completely revolutionized sharing our projects with customers.

William Arkle | Senior Applications Engineer





SketchUp gives AEC professionals the flexibility to move from concept to client-ready proposal in a single environment. Whether producing quick design iterations or detailed documentation, teams can balance speed and precision without switching tools.

A strong proposal is more than a presentation—it's the foundation for a successful build. By showing how projects fit their environments and how construction will unfold, teams reduce risk, eliminate rework, and protect profit margins. The firms that stand out aren't just fast; they're dependable. SketchUp helps AEC professionals turn design intent into actionable plans that establish mutual execution confidence from the first meeting through final delivery.



### **Create high-quality visuals**

With point-cloud data, existing terrain, structures, and utilities are modeled with precision to capture site-specific nuances. This real-world context keeps design intent grounded and guides smarter decisions about grading, access, logistics, and safety planning.



### **Move seamlessly from 3D to 2D**

Environmental factors like orientation, shading, and material impact are easily visualized in the model, so teams can evaluate performance and practicality at the same time. Those insights build alignment between design vision and buildability, ensuring decisions made in the studio hold up on-site.



### **Collaborate anywhere**

Keep 3D models and 2D documentation in sync with LayOut, while Trimble Connect ensures every version, markup, and update stays visible across disciplines. The result is a shared source of truth that unlocks the creation of beautiful designs that become constructible models.

## IMPACT IN ACTION:

# Zachary Engineering saves months with 3D workflows

Zachary Engineering's structural team cut drafting time by up to 40 percent using SketchUp and LayOut to produce complete plan sets and shop drawings before permitting, helping contractors save months and reduce costly delays.

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We're saving 20–40 percent drafting time compared to using an imported Revit or AutoCAD model.

Jesse Brown | Project Engineer





## From vision to reality

The best design-build firms know that success depends on more than creativity—it depends on connection. By unifying data, workflows, and communication, teams can minimize risk and maximize value at every stage of delivery.

This connected approach ensures that design excellence translates to construction excellence. It reduces rework, accelerates schedules, and builds client trust that lasts long after the project ends.

With SketchUp, architects, engineers, and builders can work as one team—combining design precision with constructable detail to bring every idea closer to reality.



## About Trimble

Trimble is an industrial technology company transforming the way the world works by delivering solutions that enable our customers to thrive. From purpose-built products to enterprise lifecycle solutions, Trimble construction technologies give users control of their operations with best-in-class solutions and a common data environment.

For more information about Trimble (NASDAQ: TRMB) visit [construction.trimble.com](https://www.construction.trimble.com).

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