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Beyond a Pretty Scan: Collaborate & Document with Matterport

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Learning Objectives

- 1. Understand the short & long-term value of digital twins within architecture, engineering, and construction.
- 2. Learn how digital twins interface with your tech stack and get fundamental knowledge on how they are created and used to transform your industry.
- 3. Improve collaboration, site surveys, progress reports, and documentation by leveraging digital twins at every stage of your project.
- 4. Recognize opportunities accelerate the adoption of digital twins for all stakeholders

Description

Beyond simply digitizing buildings, Matterport's digital twins are visually immersive, interactive 3D scans that connect teammates and stakeholders between offices and job sites directly to the computer in front of you. In this class, we'll discuss how teams utilize Matterport solutions to jumpstart and streamline workflows starting from concept design, throughout construction, all the way to handover, warranty, and beyond. We'll demonstrate the depth of Matterport's documentation and collaboration tools as well as showcase our direct to Revit Scan-to BIM process! Take this opportunity to get an understanding of Matterport's offerings and integrations with Autodesk. Visit us at matterport.com to learn more.

Speaker(s)

Stephanie Lin is the Sr. Director, Head of Business Strategy at Matterport (RA AIA LEED AP).



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Digital Twins for AEC

We will first explore some solutions and industry trends before we dive deeper into how and why digital twins are ideal for helping you achieve your business goals across all your projects and company initiatives.

Matterport Digital Twins

So what exactly is a Matterport digital twin?

It's a visually immersive, interactive & 3D model of the buildings & spaces where they do business.

Beyond the initial 3d replica that is created, a Matterport digital twin is also a full platform that helps you capture, edit, document, manage, collaborate, and share your project needs and assets with stakeholders.

Reasons for Digital Twin Adoption

According to a recent report by Forrester - 55% of software decision makers within companies are adopting digital twin technologies ...but why?

Extent to which organizations agree that the below are the key drivers of their digital twin investments:



Digital twins are a small but rapidly growing category. Another recent survey showed that companies that use digital twins have found them to significantly

- Help drive more sales
- Save time via operational and communication efficiencies
- And ultimately save money and work more sustainably

In summary, digital twin help drive top-line growth, bottom line savings, and carrying weight towards environmental initiatives.



Matterport Digital Twin Use Cases

Promotion of spaces and environments has long been a core use case for Matterport digital twins. But when talking about AEC, the need for promotion of the space is probably less critical while other priorities take precedent. A Digital Twin has a number of valuable use cases which can impact the productivity of the whole design team across the entire project.

For the Design stage of the project, Matterport can be used to effectively capture and communicate the existing site conditions and jumpstart those laborious modelling tasks.

For the Construction Phase, the Matterport Digital Twin provides an experience which promotes sustainability, allowing teams to effectively quality check and verify trade works, eliminate rework and reduce the number of site visits.

Operationally, these digital twins are often used as a high quality visual layer for facilities management, ensuring maintenance and critical site documentation are at hand and accessible at the right time.

Capturing a Matterport Digital Twin

A construction project involves a wide variety of tasks, all which have very different requirements and deliverables. Placing emphasis on understanding the task in hand, the requirements of that task and choosing the right tool for that job can greatly help speed up getting a digital twin while simultaneously reducing that earlier - 95% of data captured goes unused statistic.

A laborer could have completed some basic installation of electrical work on site. They need their works checked, approved and signed off. The ability to utilise a mobile device with a motorized mount gives them the opportunity to digital twin their works for documentation and issue to the site manager for sign off.

Tasks which require greater resolution and precision can be plugged and played to meet the desired requirements. Infrared red cameras like Matterport's Pro2 camera is perfect for most applications, giving 4k quality imagery in a rapid 18 seconds. Delivering the full digital twin experience has never been easier.

For spaces that might be hard to physically reach with a camera...for instance utility poles and communication towers, drone capture technology may also be leveraged.

And finally, for highest precision needs, LiDAR cameras can help one capture immense level of detail at maximum distances....albeit typically one needs to trade that level of accuracy with speed and expensive costs. In this category, the recent introduction of the Pro3 LiDAR camera has also significantly helped improve speed of capture as well.

Collaboration Features and Integrations

One of the most powerful things about a digital twin is that just ONE digital twin can be exported into multiple file formats. This saves our clients significant time & money with architects, contractors and designers.



For example,

- Once you have a digital twin of your property...
- You can export it into many different file formats to accelerate your design projects including point clouds and 3D object files
- One of our most popular is **BIM file + Revit Plug-in for direct access** which can be leveraged by design, construction and facilities teams
- Matterport can create a BIM model of the entire property – including mechanical, electrical, plumbing (**MEP**) and furniture components – in just a few days.
- This keeps architects focused on the design process – instead of spending thousands of dollars and weeks on the upfront documentation required to start the project.
- [Matterport Autodesk Construction Cloud Integration](#)

Additionally, a digital twin's usefulness doesn't have to end once you export out the files that you need. It can also be used a powerfully clear and easy to understand backdrop for online and real-time collaboration.

Specific Features

 Photos - Convert your 3D space into 2k or 4k photography	 Notes - Collaborate on Matterport digital twins in real time
 Measurements - Take accurate measurements of anything featured in a digital twin	 Tags - Embed pop-up notes, links, videos, and links to warranty information and maintenance manuals.
 Export to Floor Plans - Quickly generate and download floor plans	 Space search - Locate an element in a model with a keyword search
 TruePlan - Generate SKX files in floor plan and 3D views to use in Xactimate	 MatterPak - Download, edit, and import high-resolution digital assets from Matterport Cloud.
 E57 - Easily import an accurate high density point cloud into any design software	
 BIM File - Transform your space into a 3D Autodesk Revit model and 2D CAD files	
 Autodesk Revit Plug-in - Import Matterport point cloud files and Scan-to-BIM assets to use within Revit	
 Autodesk Construction Cloud - integration coming soon!	

Using Matterport Digital Twins Throughout Your Projects

During the Design Phase of projects, architects, engineers, and contractors alike can leverage digital twin platforms to expedite building surveys and assessing site conditions. During the last two years of COVID, multiple firms across the world have relied on digital twin technology to replace traditional site visits and have found that the immersive experience ..aka that ability to be able to walk through a space digitally, incredibly powerful.

Similarly, contractors have been leveraging matterport digital twin platform to boost their weekly or biweekly site reports and even streamline client meetings.

The digital twin platform collaboration tools such as Tags and Notes are heavily leveraged to enable real-time collaboration and RFI coordination. Views have also been leveraged to be able

to direct pertinent information to each individual stakeholder without overwhelming them with information meant for other trades.

Sharing site conditions with Architects for milestone documentation and drawing set updates are significantly simplified by using the exportable drawing assets straight from the digital twin.

And ultimately, the Matterport digital twin platform helps the handover process where typically teams need to spend a significant amount of time gathering all the project documentation and ensuring not only the transfer of documents to your end-clients, but also ensuring that the end-client understand the information being shared.

Teams have again leveraged the Matterport digital platform collaboration tools such as Tags to be able to upload entire spec binders and associate each warranty and maintenance manual with the exact individual piece of equipment that was installed on site. This not only saves on all the paper that is traditionally used to print out spec binders, but also ensure the information is easily accessible and searchable from any device at any time.

Additional Available Capabilities

Customer such as Kraus Anderson have also been amplifying the possibilities of their 3D spaces by leveraging Matterport development tools, like our Showcase SDK and APIs. The Matterport 3D SDK is a Javascript library designed to help you create value-added use-cases based on the fastest growing source of 3D spatial data with a library of over 2 million spaces. Matterport's Application Programming Interfaces (APIs) automate data flows by creating tighter integration between your systems and Matterport.

Oauth: An Application Layer security protocol to publish and interact with protected data. Enables apps to obtain secure and limited access to a user's data.

Dynamic Tags: Create, edit, delete, or move mattertags via the SDK

Insert 3D objects into your spaces.

Build interaction capabilities with content or controls on the page. Ex: for interactive training on facilities or equipment

Insights: Gain insights from your spatial data. For example, you could track user or camera location to see what they spend time looking at.

Matterport solution for AEC

Key takeaways

Streamline documentation, 3D scans as-builts, and collaborate with all your teams - from design to handover

Execute design and BIM modeling processes easier with digital twin cloud data of site conditions

Matterport digital twin platform integrates seamlessly with your existing software

Manage an entire project portfolio remotely, from anywhere

