COAST 2 COAST

WHITEPAPER

WHEN MATTERPORT IS NOT THE RIGHT TOOL

A FIELD TECHNOLOGY DECISION GUIDE FOR ACCURATE AS-BUILT DATA

EXECUTIVE SUMMARY

In the race to digitize buildings faster and cheaper, tools like Matterport have become widely adopted—especially for visualization and small-scale documentation. However, based on extensive field testing and client outcomes, these tools are frequently misapplied to projects where accuracy, scalability, and data ownership are critical.

This paper outlines where Matterport performs well—and where it introduces measurable risk.

THE COAST 2 COAST PERSPECTIVE

We serve as our clients' **as-built field-technology partner**, not just a data collector. That distinction matters.

We deploy multiple capture technologies and select the right tool for each condition—not the most convenient one. Our approach is rooted in:

- Accuracy requirements
- Building complexity
- Downstream use (design, fabrication, coordination)
- Data ownership expectations

WHERE MATTERPORT WORKS

Matterport is effective in:

- Small retail environments
- Residential real estate visualization
- Marketing-driven walkthroughs
- Low-risk conceptual planning
- The problems begin when it is used outside these conditions.

WHERE MATTERPORT BREAKS DOWN

Some scenarios to avoid:

- Large commercial facilities
- Complex renovations
- Critical spaces like Airports and Hospitals
- Any project requiring accuracy

LIMITATIONS MOST TEAMS DISCOVER TOO LATE

1. ALGORITHMIC DEFICIENCY IN COMPLEX ENVIRONMENTS

Matterport's AI-based depth estimates introduce risk in large or repetitive environments.

Matterport's stitching workflow relies on depth-based alignment and AI-assisted processing through Cortex, which Matterport says aligns scans, removes artifacts, and merges geometry with imagery. Matterport's own training material warns that repetitive environments can cause misalignment because each scan looks too similar to the previous one, especially in empty warehouses, long hallways, and other low-feature spaces.

COMMON FAILURE POINTS:

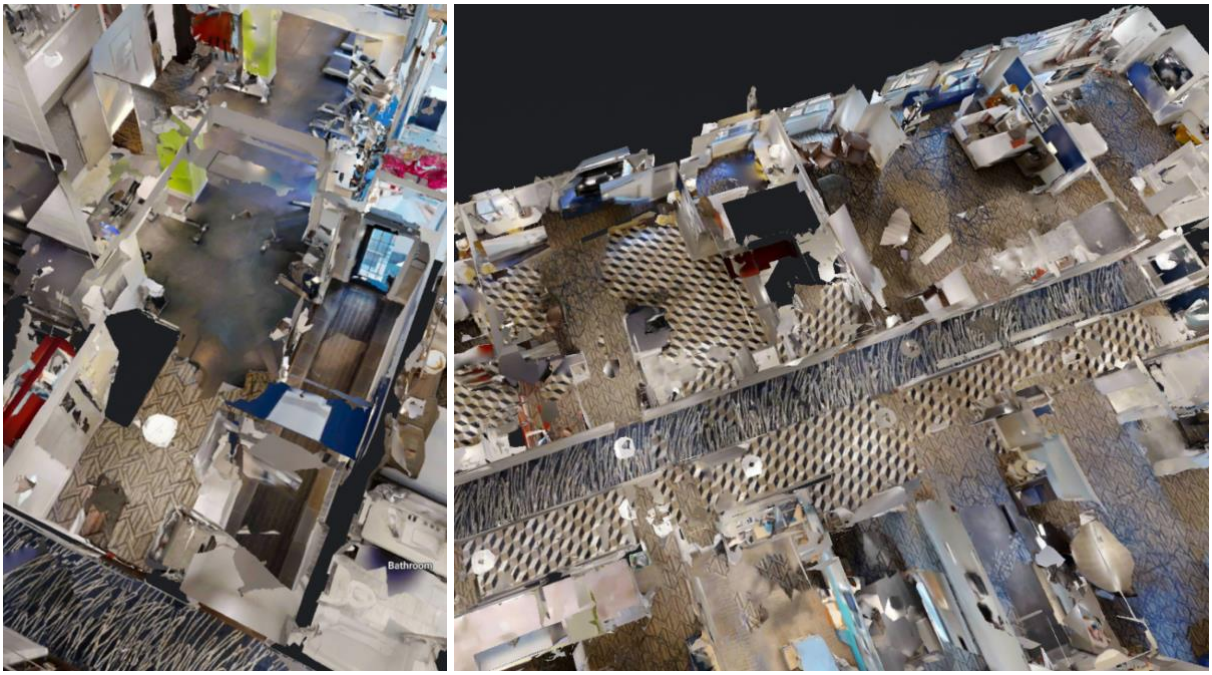
- Repetitive features cause tracking confusion (e.g., hotel corridors, parking garages)
- Floors can merge in multi-level captures
- Long corridors experience geometric elongation
- Vertical misalignment occurs at elevation changes
- Reflective surfaces (glass, water) produce misaligned geometry
- Cannot capture details above-ceiling because of low light conditions
- Large, empty interiors are difficult because the app has too little unique geometry to anchor scan placement.

IMPACT:

Distorted geometry that looks visually acceptable—but fails in design workflows.

TEST CASE: HOW REPETITION IN HOTEL CORRIDORS CONFUSES ALGORITHM

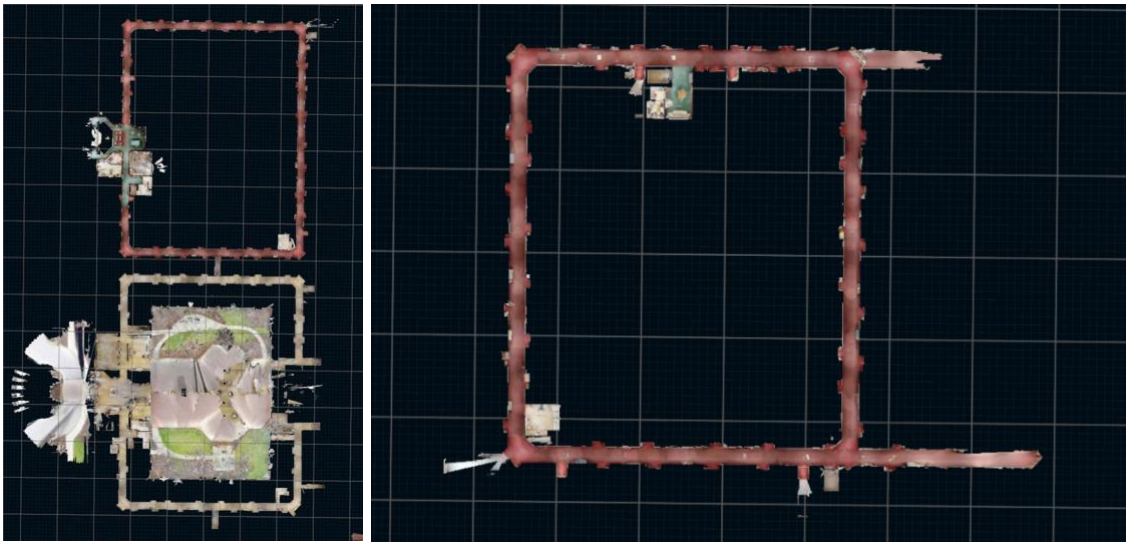
In capital projects, the frequent repetition of elements in guestrooms and guestroom corridors can “confuse” the scanner. The capture technician must be very diligent about where the Matterport app places the scans – in X, Y, and Z. Multi-floor capture required careful floor separation in the app, with the final floor structure still dependent on Cortex processing in this test. Without intervention, the AI merged multiple floors together, resulting in an unusable tour. The 2nd and 3rd floors fused into one.



Left: Level 2 fitness center fused with level 3 guestroom. Right: Multiple guestroom corridors, merged.

TEST CASE: AI MAKES MISTAKES - SHIFTS & ELONGATION IN CAPITAL PROJECT

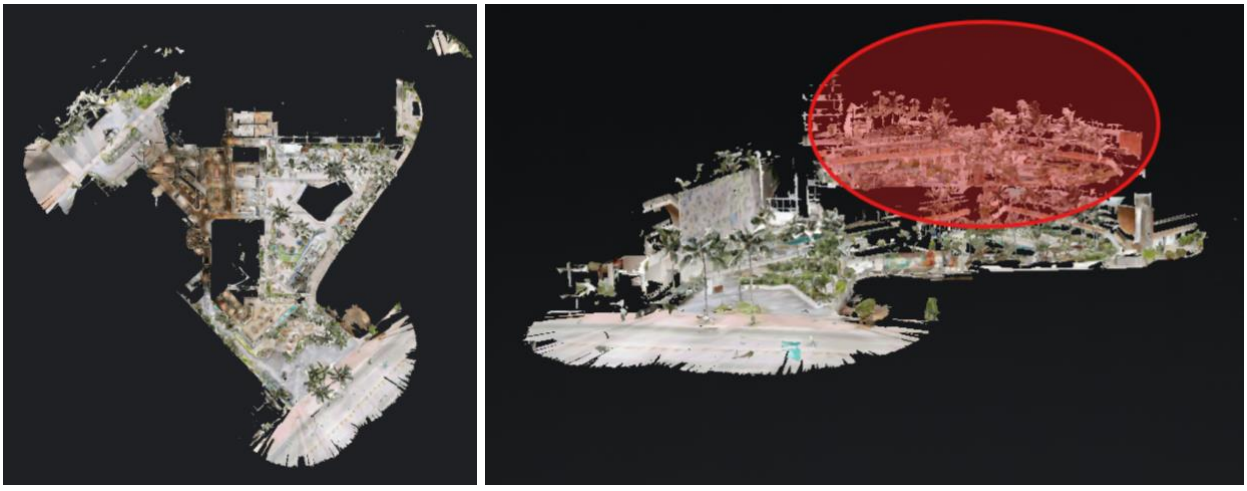
Processing errors caused data to shift on the 3rd and 10th floors, extending the corridors beyond the exterior wall. Matterport's stitching workflow relies on depth-based alignment and AI-assisted processing. Where distances span large areas, small local errors compound across the model. Matterport's published materials also acknowledge that a different tool should be used where higher precision is required.



Left: Floors 1 and 2, showing identical footprints. Right: Elongation on floor 3 caused by a processing error.

TEST CASE: HOW REFLECTIVE SURFACES CAUSE MISALIGNMENT

Reflective or transparent materials, such as glass, glossy panels, mirrors, or water, distort or break the point cloud reconstruction. In this case, the reflections in the pool and windows caused alignment issues and distorted spatial interpretation. Upon initial viewing in the top-down “floor plan” view, the data appears to be correct. However, the alignment issues come to light when the project is viewed in the “dollhouse” view. The porte-cochere, main lobby, and certain pool are positioned significantly higher in the “z-plane” compared to the plane of the restaurant and pool area.



Left: Floor Plan view looks aligned. Right: Doll house view with z-plane misalignment (area in red significantly higher)

2. HARD SIZE CONSTRAINTS

Matterport tours are limited to **2,000 scan points per model**.

Matterport workflows are often described as practical for single properties but more complex and costly at scale, especially for multi-floor or very large commercial spaces. A recurring operational limitation in third-party guidance is that large spaces often require multiple stitched tours, which increases the coordination burden and can create fragmented deliverables.

IMPLICATIONS:

- Large buildings require multiple stitched tours
- Hosting costs increase exponentially
- Data fragmentation creates coordination gaps
- Limited LiDAR range reduces capture fidelity in large volumes

IMPACT:

What starts as “cost-effective” becomes operationally expensive and technically limiting.

Evidence from Matterport’s own and partner guidance suggests these issues matter most in large venues, hotels, convention centers, warehouses, and other high-volume environments. In practice, the capture process becomes less about a single seamless model and more about managing overlap, route planning, and post-capture organization across multiple sessions.

3. MEASUREMENT RELIABILITY ISSUES

Matterport is not a measurement-first platform.

Matterport itself positions the platform as a visualization system and not a survey-grade measurement engine.

Independent academic comparison work found Matterport point clouds to be somewhat lower in quality and accuracy than terrestrial laser scanning, while still acceptable for lower-tolerance geometry.

KEY LIMITATIONS:

- Measurements are taken from mesh/visual layers—not true point cloud data (E57/XYZ)
- Errors compound across large distances.
- Small objects are highly error-prone. Small objects need exact representation, because mesh-based reconstructions are less reliable than direct survey workflows.
- Reflective or transparent materials, such as glass, glossy panels, mirrors, or water, distort or break reconstruction.

IMPACT:

- Small jobs hide errors
- Large jobs amplify error

Matterport's published materials also acknowledge that model fidelity depends on the use case and capture conditions, and that higher-precision expectations should be tempered accordingly. Accuracy results vary by hardware and use case, and forum discussions note that Matterport does not claim results equal to a survey performed with commercial-grade equipment.

4. DATA OWNERSHIP AND RISK EXPOSURE

Matterport operates on a SaaS-controlled data model. Once a space is uploaded and processed on their platform, you do not have full control to selectively remove sensitive information from the underlying dataset.

This is not just a UI limitation—it's tied to how the platform is designed.

Matterport's legal terms state that access can end when the subscription or agreement ends, and that the platform can deactivate services and limit export access based on the account's state. Their subscription agreement also states that, upon termination or expiry, customers may lose the ability to export previously purchased digital assets from the platform account in available file formats.

From Their Terms:

- Users do not own the processed data
- Access can be suspended at any time
- Data must be destroyed upon termination

No Access to Raw Editable Data:

- The original spatial data remains intact in the system
- You are not editing the raw dataset (like an E57 point cloud)
- You're applying a visual layer—not altering source geometry
- No control to remove sensitive information from the underlying dataset.

The materials made available on or through the Service are protected by copyright and other intellectual property rights, including all images and Space information available for viewing in the Matterport Viewer.	Matterport may suspend or terminate your use of the Service at any time in our sole discretion. Upon any such termination, you must destroy any material obtained from the Service and all copies thereof.

Left and Right: Quotes from Matterport Website

IMPACT:

- No long-term control
- Validation weak point
- No integration flexibility
- Privacy compliance and legal risk

In a project setting, the risk is not only about geometry quality but also about continuity: if you need long-term archiving, independent validation, or vendor-neutral integration, source data must be captured outside the platform whenever possible. Independent validation is limited if you do not maintain your own raw-source archive outside the SaaS environment.

Most teams assume they can edit or remove anything later. With Matterport, that's not actually how the system works. While the platform offers tools to visually obscure elements (such as blurring), these are applied at the presentation layer rather than the source data itself. Because users do not have access to or control over the raw spatial data, they cannot selectively delete geometry, reprocess the model independently, or permanently redact specific areas. As a result, any sensitive information captured during scanning may remain embedded within the platform's ecosystem, raising concerns about data control, security, and long-term compliance.

THE HIDDEN RISK: FALSE CONFIDENCE

MATTERPORT'S BIGGEST RISK ISN'T OBVIOUS FAILURE— IT'S **PERCEIVED ACCURACY**.

The output:

- Looks complete
- Feels navigable
- Appears precise

But beneath the surface, it lacks the fidelity required for:

- MEP modeling
- Clash detection
- Fabrication
- Renovation design

THE BOTTOM LINE

If your use case is documentation, marketing, or remote walkthroughs, Matterport can be effective; if you need survey-grade geometry, long-term data independence, or robust performance in repetitive/reflective/very large spaces, the risk profile rises quickly. The safest framing is that Matterport is a convenience-first spatial platform with known limitations in algorithmic alignment, precision, and data control.

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THE COAST 2 COAST APPROACH

We solve this differently.

1. TOOL-AGNOSTIC DEPLOYMENT

We select from multiple technologies:

- Terrestrial laser scanning
- Mobile LiDAR
- Photogrammetry
- Hybrid capture strategies

FIELD CAPTURE TECHNOLOGY COMPARISON

Criteria	Matterport Tours	Terrestrial Laser Scanning (Leica/FARO)	Mobile SLAM Technology (NavVis)	Coast 2 Coast Hybrid Approach
Primary Use Case	Visualization	High-accuracy as-builts	Large-scale mapping	Fit-for-purpose solutions
Accuracy	Low–Moderate	High (±2–3 mm)	Moderate–High	Right tool per requirement
Measurement Reliability	Limited (mesh-based)	True point cloud (E57/XYZ)	Point cloud	Validated using multiple tools
Scalability	Limited (2,000 scans)	Unlimited	High	Unlimited / structured
Large Facilities	Poor	Excellent	Excellent	Optimized approach
Repetitive Spaces	Struggles	No issue	Minor drift possible	Mitigated with strategy
Reflective Surfaces	Problematic	Handles well	Moderate	Managed via tech mix
Data Ownership	Platform-controlled	Client-owned	Client-owned	Client-owned
Hosting Costs	$$$$ (Reoccurring SaaS Model)	$	$$	$
Speed	Fast to Moderate	Moderate	Fast	Balanced for outcome
Best For	Small retail, tours	Design, BIM, fabrication	Large Campuses	Everything (when scoped right)

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2. ACCURACY FIRST

We deliver **true point cloud data (E57, XYZ)**—not just visualization layers.

3. SCALABLE CAPTURE STRATEGY

No artificial scan limits. No fragmented datasets.

4. CLIENT-OWNED DATA

You own your data. Full stop.

5. CONSULTATIVE SCOPING

We don't just capture—we advise.

Our process includes:

- Pre-field strategy conversations
- Use-case alignment
- Risk identification
- Custom scope development

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CONCLUSION

Matterport is a powerful tool—when used appropriately.

But when misapplied, it introduces hidden risks that surface later as:

- Rework
- Budget overruns
- Schedule delays
- Loss of trust

The difference isn't the tool—it's the **decision-making behind the tool**.

That's where Coast 2 Coast delivers. We use a range of technologies and take the time upfront to understand how the data will actually be used—so we can match the right tool to the project and avoid those downstream issues entirely.

COMPANY PROFILE

Established:	2000
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About Coast 2 Coast:
With a reputation for delivering critical architectural documentation tailored to meet the needs of each architect, engineer, and property owner customer, we simplify commercial renovation and construction. Our CAD drawings, 3D models, and 360 ° photography solutions provide the tools needed to successfully manage design data and inherently complex projects. Whether it's an elaborate, single-location, multi-site project or part of a franchise effort, Coast 2 Coast discovers the true existing conditions so our customers can envision what their building could become.