Matterport Capture Services

SCANNING BEST PRACTICES – STANDARD

Mission Statement

Following this Scanning Best Practices guide isn't just a recommendation – it's the foundation for producing reliable, scalable, and high-quality 3D Digital Twins.

Consistent Quality & Predictability

- Produces high-quality, accurate, and navigable 3D tours every time
- Ensures predictable results across different space types, technicians, and environments
- Reduces rework, reshoots, and post-production fixes

Better Customer Experience

- Delivers consistent 3D tours across regions
- Creates a smooth and reliable end-to-end experience
- Builds confidence that Capture Services will meet expectations

Supports Customer Business Goals

- Enables customers to use 3D tours effectively across their various workflows and use cases
- Ensures assets are compatible with downstream tools and teams

Efficiency & Risk Reduction

- Streamlines the capture process for the technician – less guess work
- Prevents costly errors caused by inconsistent styles
- Reduces the risk of incomplete or unusable data

Standard vs. Custom Job Requirements

All jobs should follow the guidelines outlined in this **Scanning Best Practices** guide, unless otherwise specified in the Additional Details of the Job Request.

Any non-standard requirements will be listed in the Job Request and mentioned in both Confirmation and Reminder emails.

Re-review all job details on-site to ensure compliance.

OVERVIEW

The purpose of this **Scanning Best Practices** guide is to walk you through the following topics:

- Lesson 1: Job Requirements
- Lesson 2: Basic Scanning Rules
  - Doors & Doorways
  - Stairs and Multiple Floors
  - Mirrors, Windows, and Trim
  - Scanning for Photography
- Lesson 3: Exterior Capture
- Lesson 4: Misalignments & Seamless Navigation
- Lesson 5: Completing the Job

Lesson 1

JOB REQUIREMENTS

This lesson emphasizes reviewing project requirements, client requests, and capture instructions to ensure compliance and avoid the need for reshoots.

Job Requirements

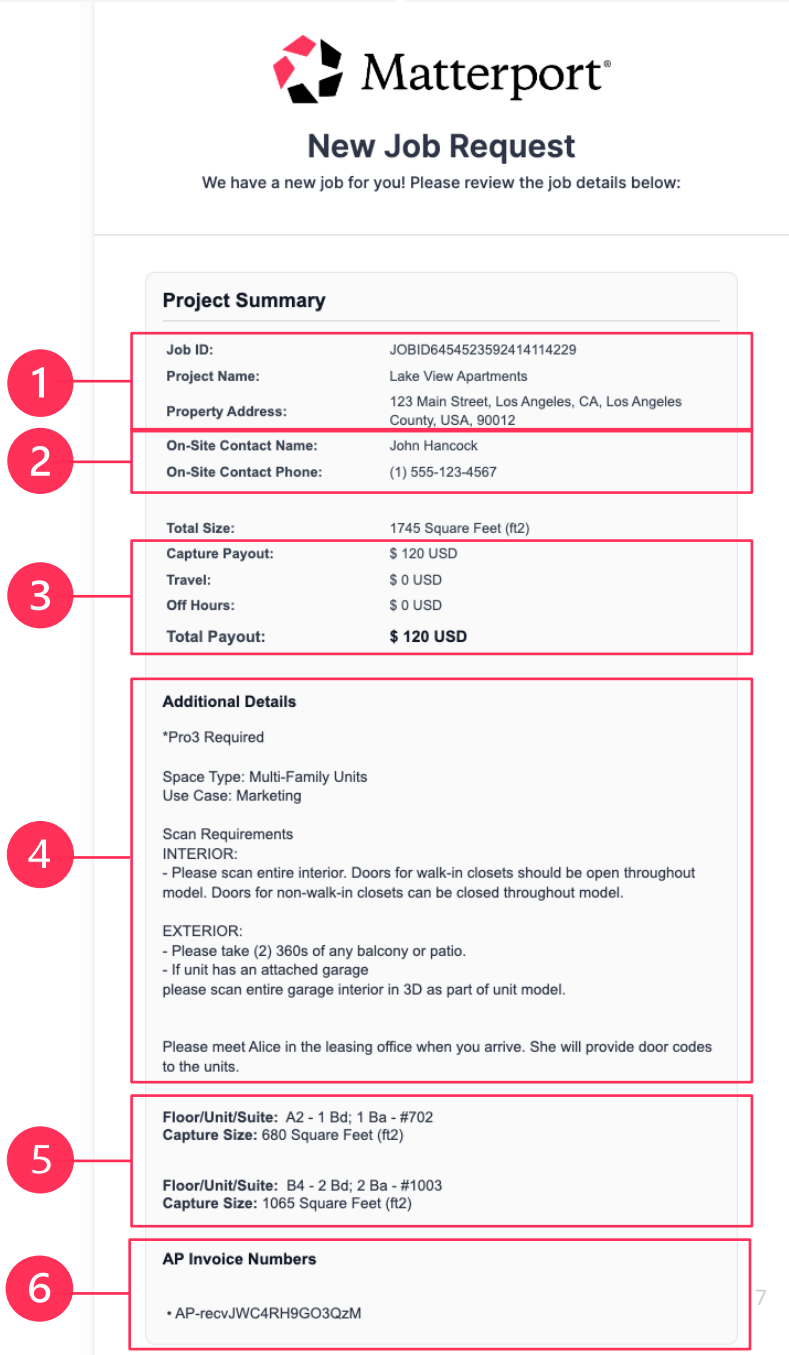
Use the Scanning Best Practices as your baseline, unless otherwise stated in the Additional Details in the Job Request.

The Additional Details section in the Job Request, Confirmation email, and Reminder email lists any job-specific scanning requirements based on the customer's needs. If these instructions conflict with the Scanning Best Practices, always follow the Additional Details.

- Ensure you review the specific and sometimes unique job requirements before accepting the work
- Be sure to share the job requirements with the technician performing the work on-site
- Attachments related to the job requirements will be shared in the Confirmation email (e.g. Letter of Authorization)

Job Request: What it includes

1. **Property Details:** This includes the business or property name, and property address.
2. **On-site Contact Info:** The name and phone number of the point-of-contact you will be meeting or can contact if you have any issues.
3. **Compensation:** The payout for this job will be reflected here, including any travel fees.
4. **Additional Details:** May include standard or project-specific instructions such as unique features to capture, special requirements, exterior needs, or access information. Everything listed must be included for the project to be considered complete. If no specific requirements are provided, follow the Scanning Best Practices guide.
5. **Shot List:** Shows the spaces that need to be captured. Each "Floor/Unit/Suite" section represents one 3D model. Multiple sections mean multiple models. If several spaces appear on the same line (e.g., *Floor/Unit/Suite: Lobby, Lounge, Fitness Center*), capture them as one continuous tour.
6. **AP Invoice Number:** You can use this number to track the payout in Tipalti.



Matterport

New Job Request

We have a new job for you! Please review the job details below:

Project Summary

Job ID:	JOBID6454523592414114229
Project Name:	Lake View Apartments
Property Address:	123 Main Street, Los Angeles, CA, Los Angeles County, USA, 90012
On-Site Contact Name:	John Hancock
On-Site Contact Phone:	(1) 555-123-4567
Total Size:	1745 Square Feet (ft2)
Capture Payout:	$ 120 USD
Travel:	$ 0 USD
Off Hours:	$ 0 USD
Total Payout:	**$ 120 USD**

Additional Details

*Pro3 Required

Space Type: Multi-Family Units
Use Case: Marketing

Scan Requirements
INTERIOR:
- Please scan entire interior. Doors for walk-in closets should be open throughout model. Doors for non-walk-in closets can be closed throughout model.

EXTERIOR:
- Please take (2) 360s of any balcony or patio.
- If unit has an attached garage
please scan entire garage interior in 3D as part of unit model.

Please meet Alice in the leasing office when you arrive. She will provide door codes to the units.

Floor/Unit/Suite: A2 - 1 Bd; 1 Ba - #702
Capture Size: 680 Square Feet (ft2)

Floor/Unit/Suite: B4 - 2 Bd; 2 Ba - #1003
Capture Size: 1065 Square Feet (ft2)

AP Invoice Numbers

• AP-recvJWC4RH9GO3QzM

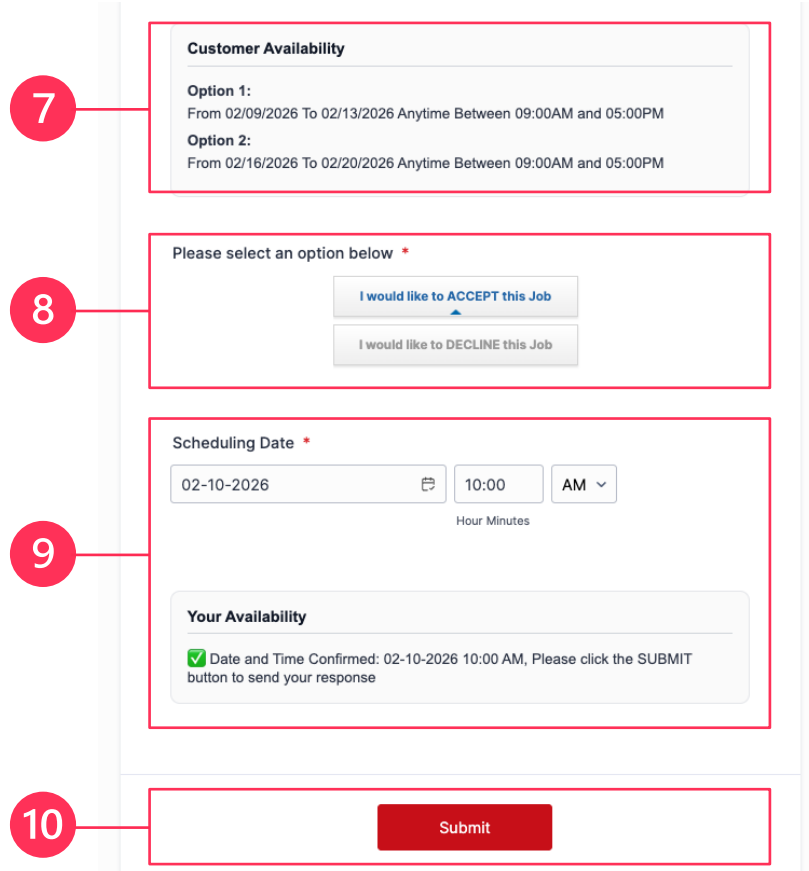
Job Request: What it includes

7 **Customer Availability:** This will show the date ranges and time ranges that the customer would like to get this job done.

8 **Accept or Decline:** If you would like to accept the job, please click “I would like to ACCEPT this job”.

9 **Scheduling Date:** Enter the date and time that works best for you from within the customer’s available range (see bullet 7). If you select a date or time that is outside the customer’s availability, you will see an error message.

10 **Submit:** To officially confirm the appointment, click the submit button. You will only be able to click submit if you have completed the previous steps.



Lesson 2

BASIC SCANNING RULES

This lesson covers optimal camera height, recommended scan distances, and best practices for scan locations to ensure accurate and uniform 3D models.

Camera Height

Standard Height for Interior Capture:

The camera lens should be at **4 feet 6 inches** (1.4 meters) from the ground to the center lens.

If the Job Request indicates “Photography Services”, please review camera height requirements **here**.

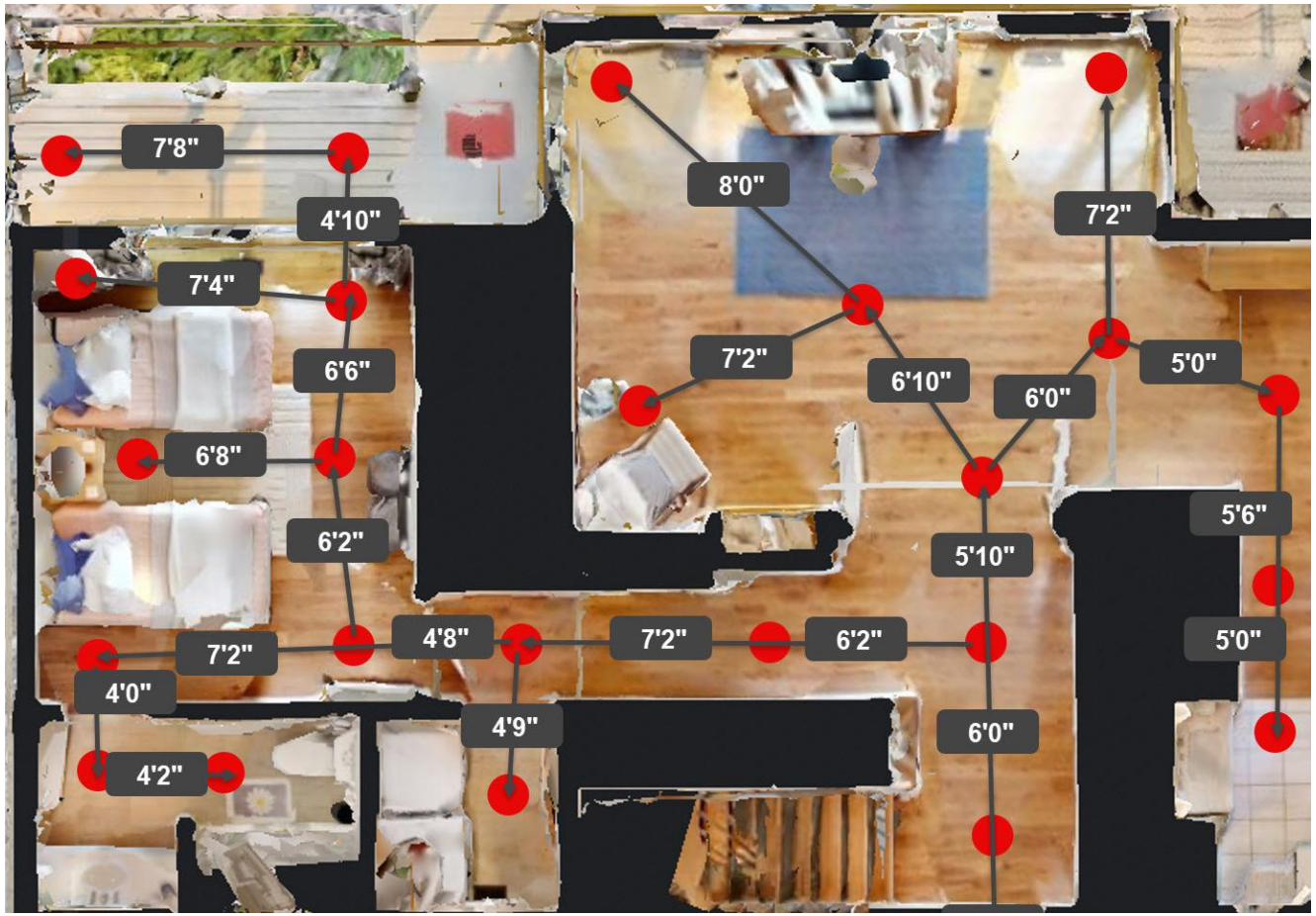
Scan Distance & Camera Placement

Scan Spacing

- **3–8 feet apart**; can be shorter distance depending on layout
- Aim for even spacing between scan points, whenever possible

Camera Placement

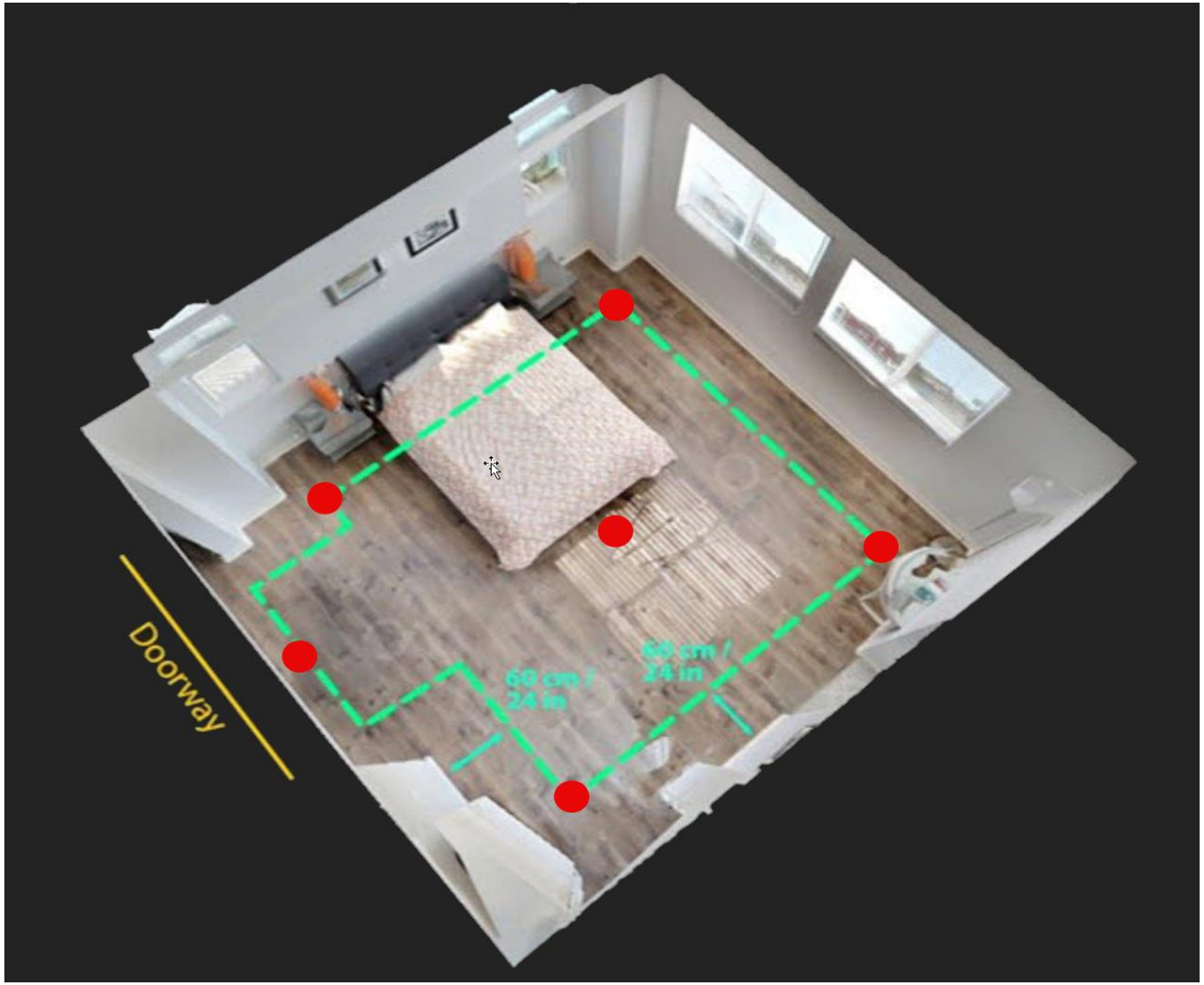
- Create a visual grid for ideal scan placement
- Each scan point should be within line of sight to the previous scan point
- Capture a scan point in every corner of every room
- Scan points in hallways should be straight down the center
- It is usually best to follow the natural path of travel



Distance from walls

- Place the camera a **minimum of 24 inches (60 cm) from any wall** when scanning the room perimeter, when possible

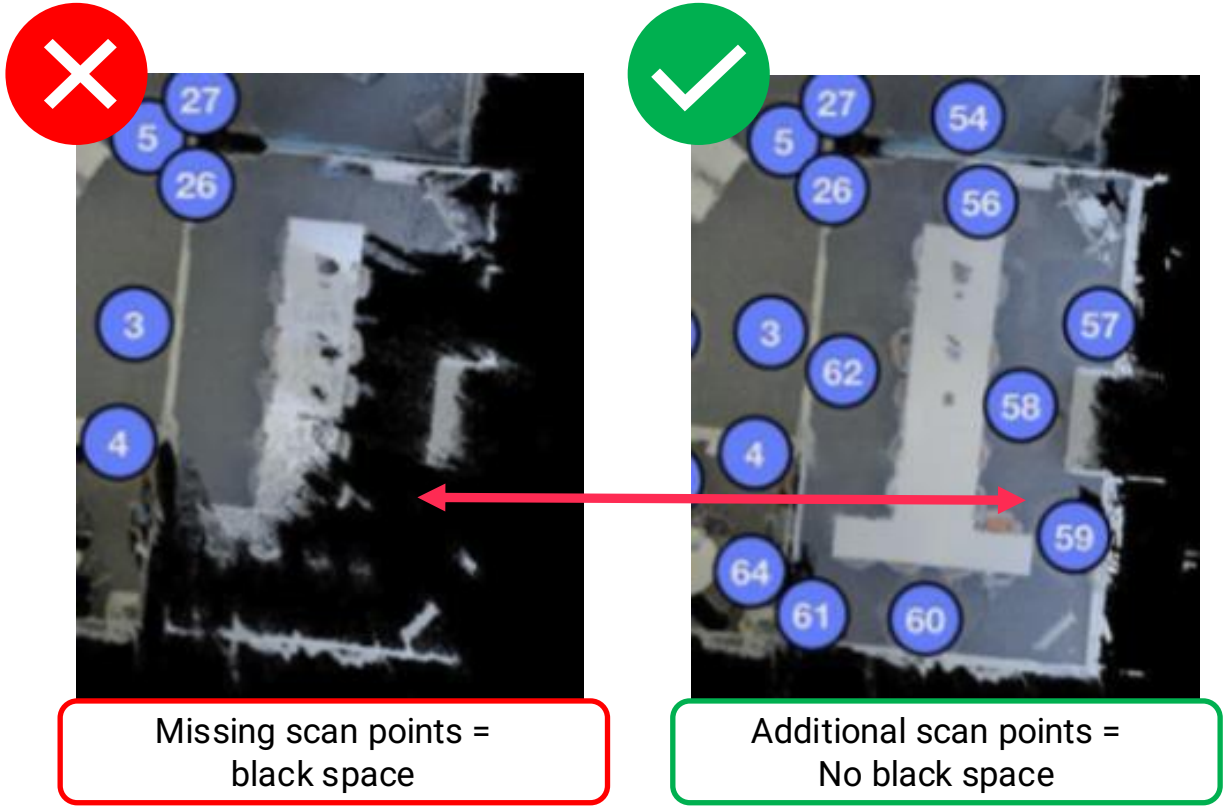
  - If the camera is too close to the wall, the scan may miss important details and reduce the quality of both the 3D and 2D outputs



Eliminating "Black Space"

A black space is missing data from a scan and should be filled in:

- Capture the entirety of each room and around furnishings
- Tight spaces may require dense capture to fill in
- Position scans closer to black areas
- Adjust tripod height if needed to see areas that cannot be reached
- Review floor plan view to ensure there are no black spaces before completing work



Missing scan points = black space

Additional scan points = No black space

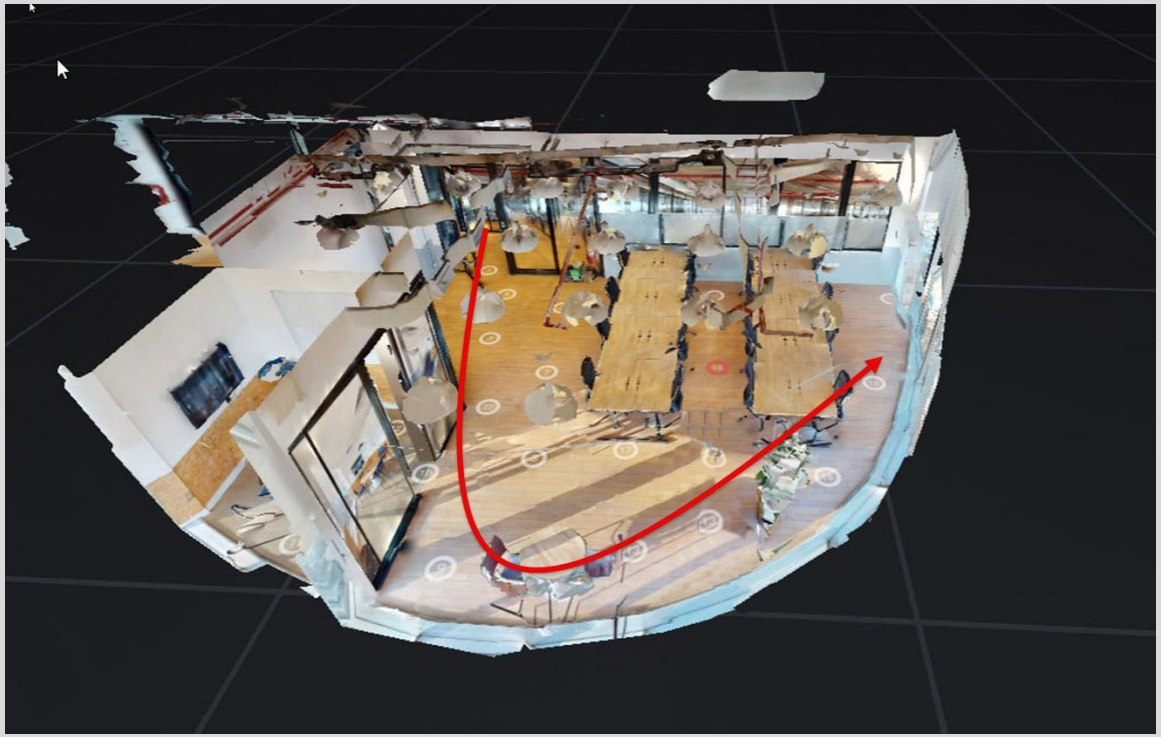
Large Rooms

General Layout

For both commercial and residential spaces, position the camera to follow the room's natural path, adding perimeter and supplemental scan points as needed to ensure complete coverage and eliminate black spaces.

Scan Distance

Maintain scan positions 3–8 feet apart to ensure sufficient overlap for accurate alignment and seamless navigation in the final 3D model.



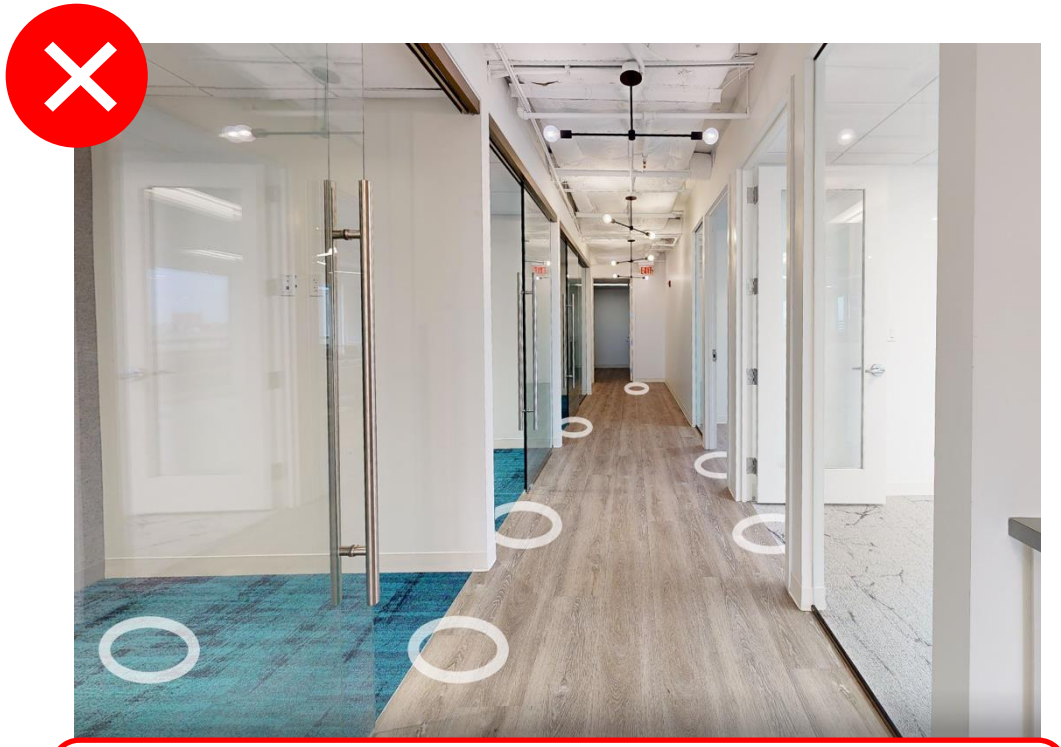
Large Rooms

Uniform Grid

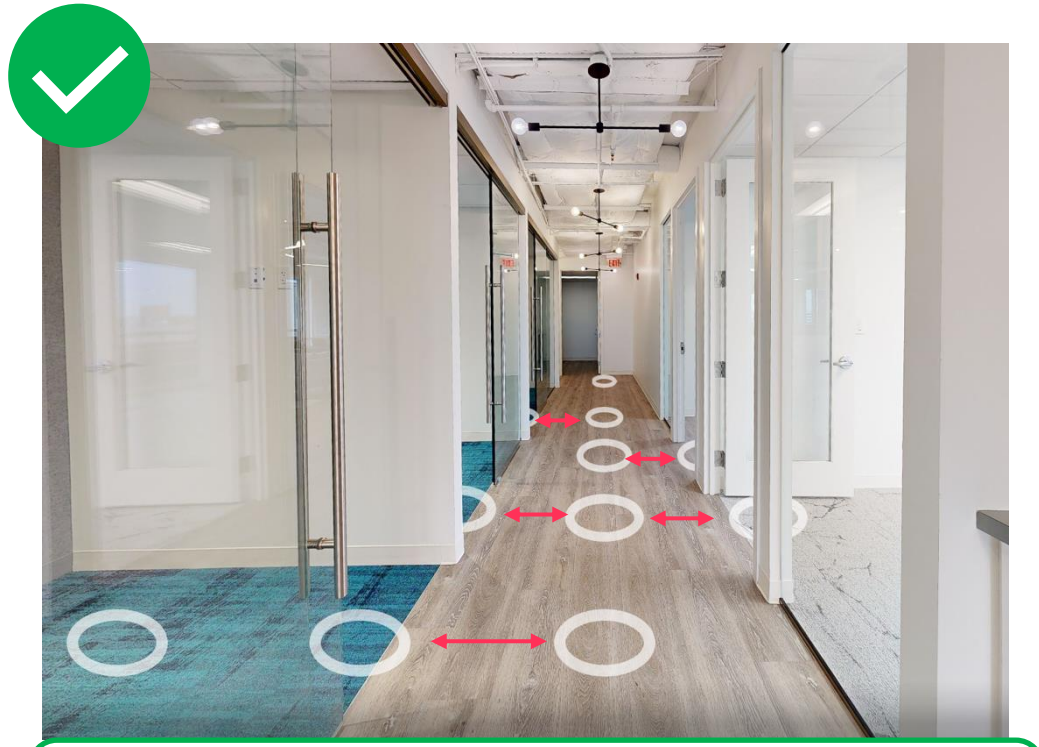
In large, open spaces, create an **imaginary grid** and place the camera at grid intersections, maintaining the recommended distance **(3–8 feet) between scan points**

Hallways

Scan points in hallways and walkways should be centered and in a straight line. If there are doors off of the hallway, try to arrange the centered hallway scans adjacent to the doors so access into the room is easy. See our **Doorways & Thresholds: Off of Hallways** section for more information on how to scan hallways and the rooms attached to hallways.



Scan points in doorways only and missing scans down the center of the hallway
= awkward navigation



Scans down center of the hallway adjacent to doorways (when possible), then scans just inside rooms
= clean, seamless navigation

Closets

Closets can be tricky, so here is our standard for how to scan closets:

Walk-In Closets & all Laundry Closets

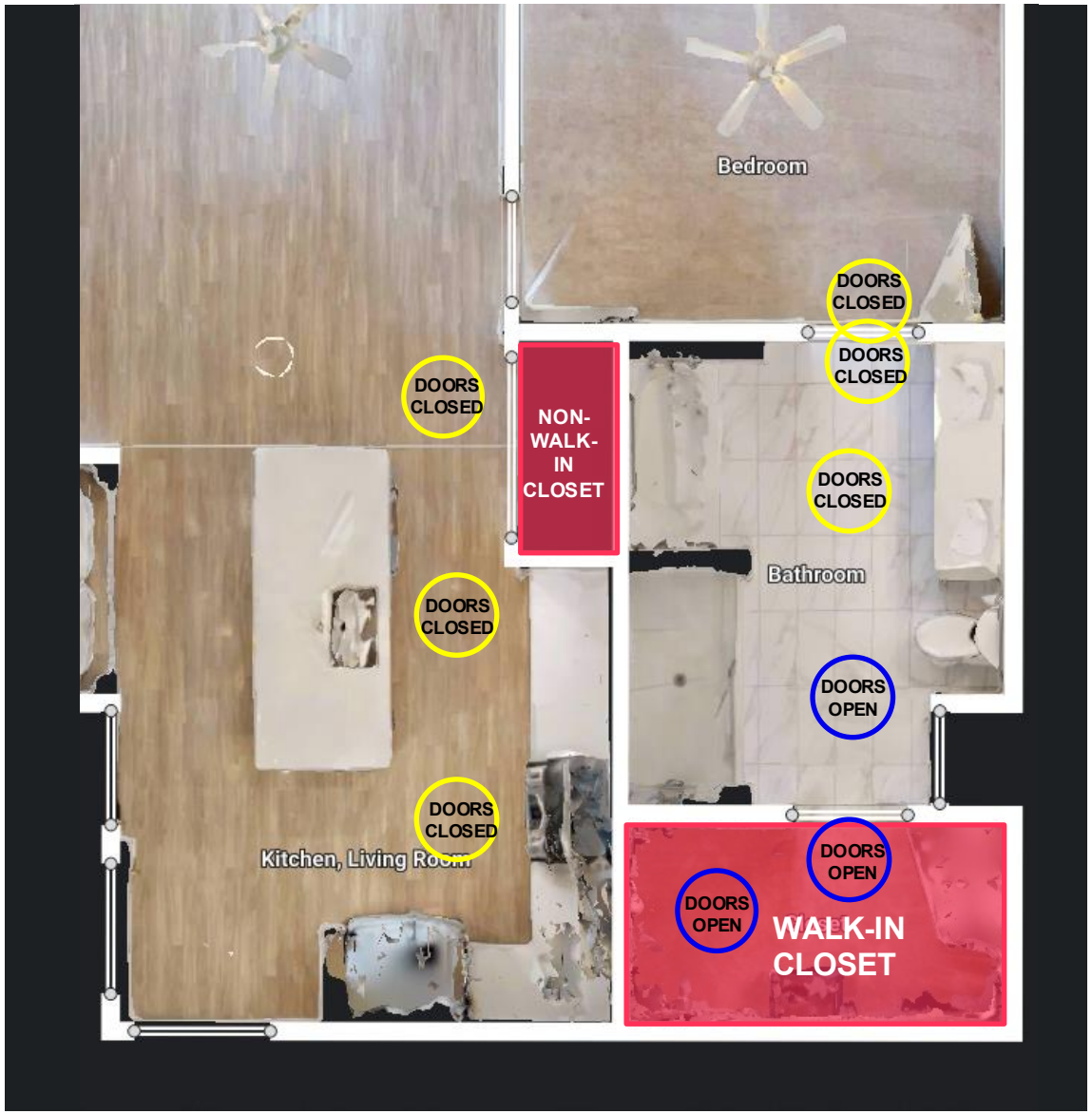
E.g. bedroom walk-in closets, all laundry closets, large storage closets, walk-in pantries

- Scan with closet door closed throughout capture, except for the few scans right before closet.
- When you are within about 5 feet of the closet door, open the door enough to scan a pathway inside but not enough to block navigation elsewhere. Don't forget to scan inside the closet.

Non-Walk-In Closets

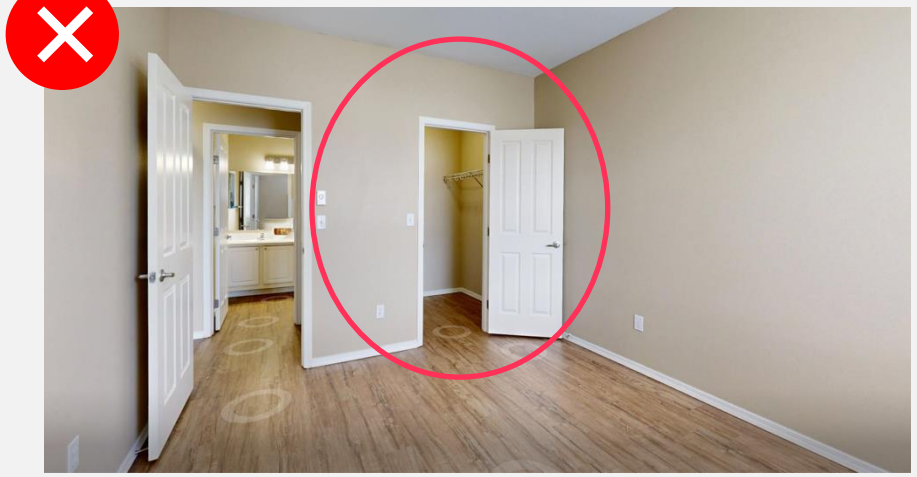
E.g. linen closets, standard bedroom sliding door closets, utility closets, non-walk-in pantries

- Scan with closet door closed throughout capture. No need to show inside of these closets, so keep door shut.

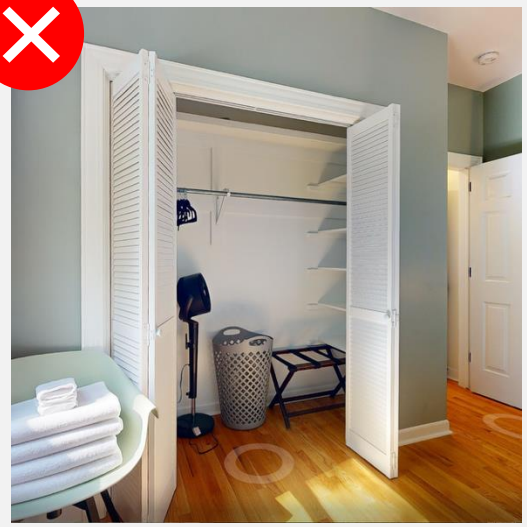


Closets - Examples

EXAMPLE 1: **Walk-in closet** doors should be closed throughout, and then open for the 1-2 scan points right in front of the closet.



EXAMPLE 2: **Non-walk-in closets** doors should be CLOSED throughout.



EXAMPLE 3: All **laundry closet** doors should be closed throughout, and then open for the 1-2 scan points right in front of the closet.

Lesson 2.1

DOORS & DOORWAYS

This lesson explains how to scan around doors for seamless navigation, including the “1-2-3 rule” for scan placement before, in, and after thresholds, and the importance of keeping doors open during scanning.

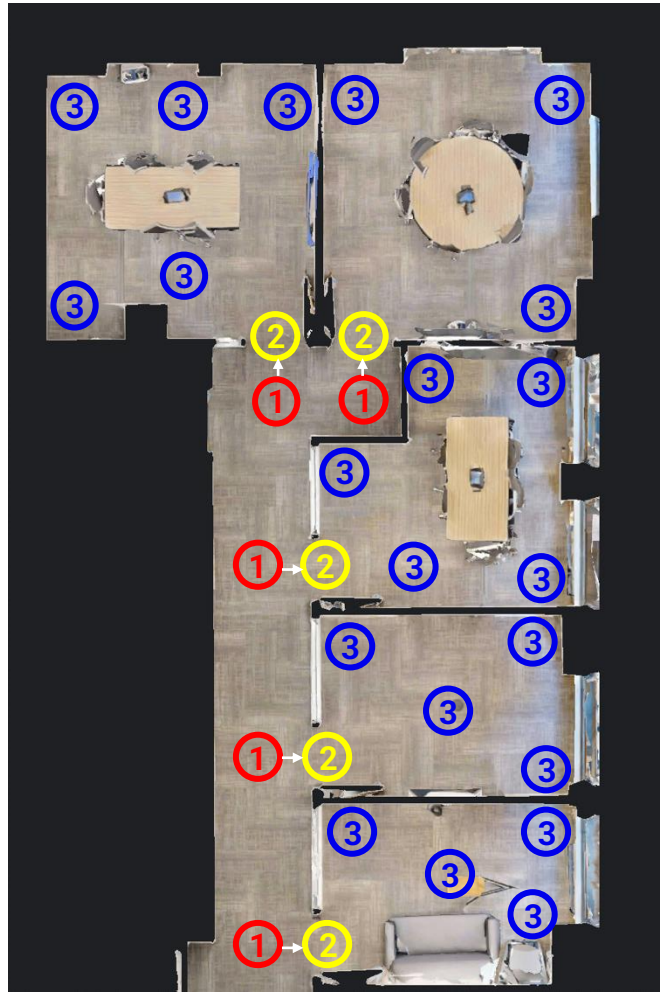
Doorways & thresholds: Off of hallways

For rooms that are accessed via a hallway or corridor, please follow the **1-2-3 Rule:**

1. Place a scan in the hallway, approximately **2 feet** before the doorway or threshold
2. Enter the room and place a scan just inside the doorway **(approx. 3-6 inches)** inside the room

   If this scan point does not give a clear shot of the entire room, add another scan right where the room opens up **(approx. 3-6 inches)**

3. Add additional scans where needed

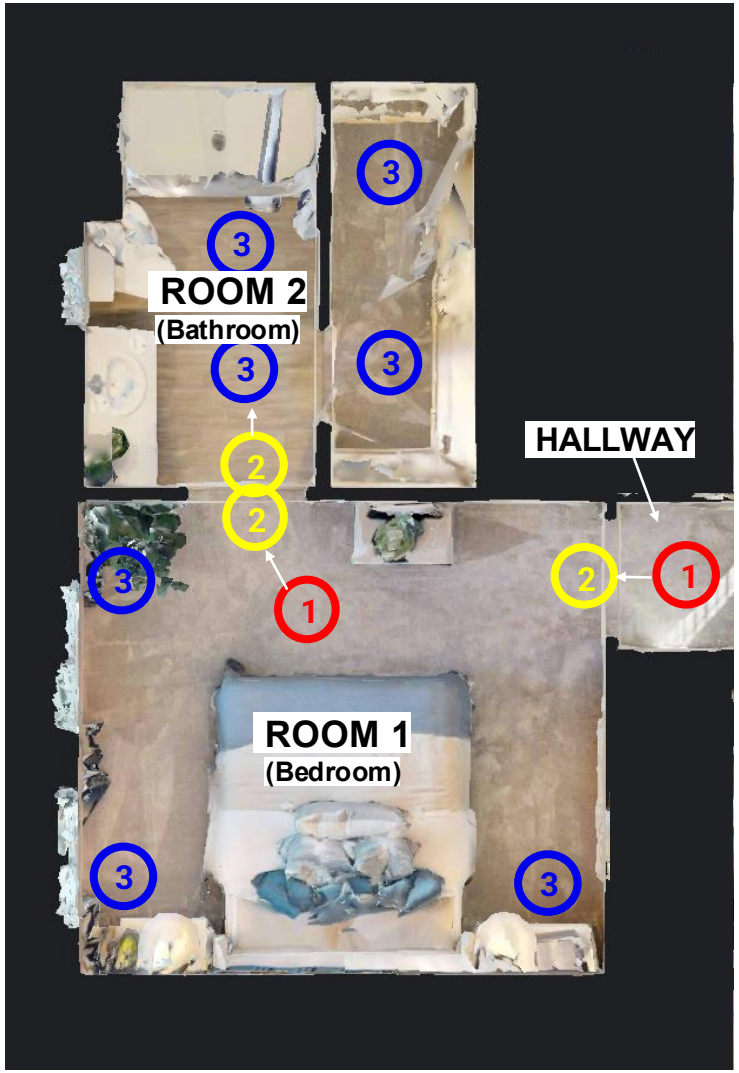


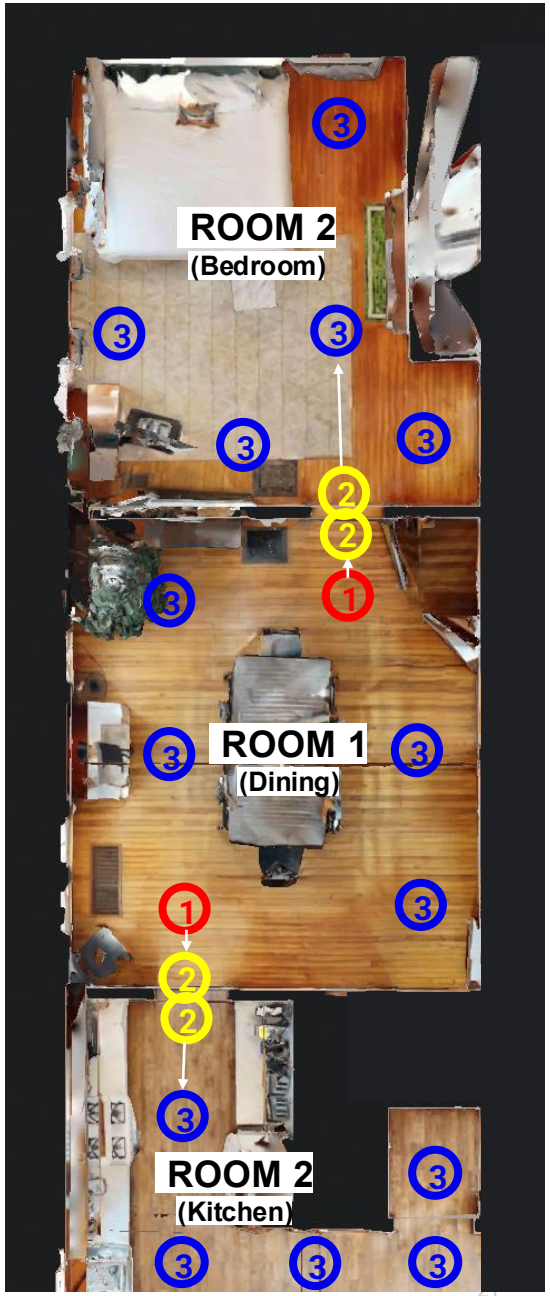
Doorways & thresholds: Conjoined Living Spaces

For rooms or living spaces that are connected to each other via a door or threshold, follow the **1-2-3 Rule** with one addition:

1. In Room 1, place a scan approximately 2 feet before the doorway or threshold leading to Room 2
2. Move towards the threshold and place a scan right before the threshold **(approx. 3-6 inches)**
2. Then, enter Room 2 and place a scan just inside the threshold **(approx. 3-6 inches)** inside the room*
3. Add additional scans inside the room where needed

***Scans on either side of the threshold/doorway are needed for extracting ideal 2D photography shots.**





Lesson 2.2

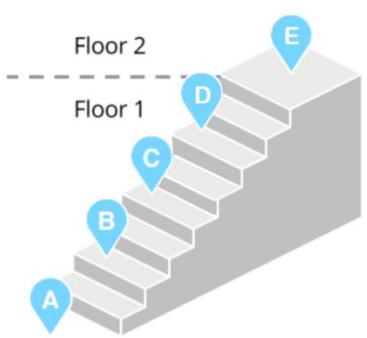
STAIRS & MULTIPLE FLOORS

This lesson details scanning techniques for open and closed staircases, including scan spacing, floor labeling, and strategies to avoid misalignments in multi-story properties.

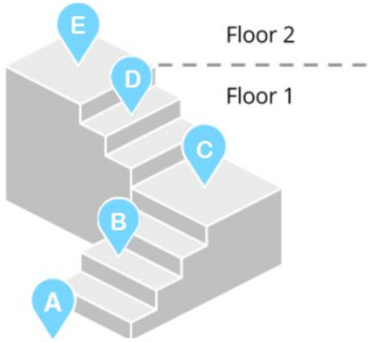
Stairs & Multiple Floors

How to scan stairs

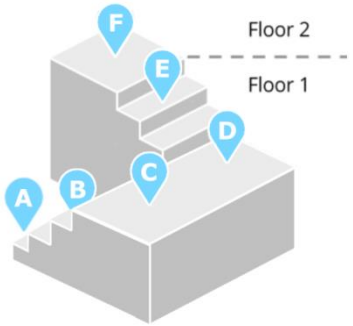
1. Take a scan at the bottom of the staircase
2. Proceed up the stairs, scanning every 2-4 steps
3. If there is a landing, place a scan on the landing in line-of-sight of the last stair scan. If stairway is a “U-shape”, then add a 2nd scan on the landing in front of the next portion of stairs
4. When you get to the top of the staircase, click “Select Floor” icon in the App. Don’t change the floor for intermediate landings – only once you get to next floor.
5. Click “Add new floor”; Continue scanning on the next floor



Straight

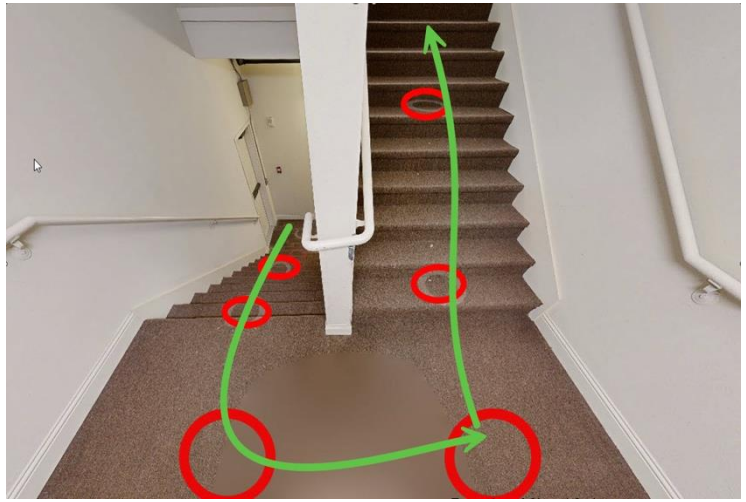


L Shape



U Shape

L Shape



U Shape

Lesson 2.3

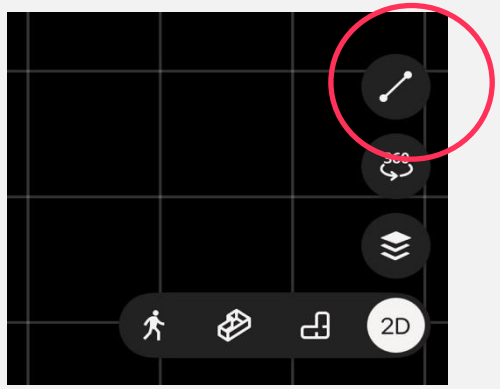
MIRRORS, WINDOWS & TRIMS

This lesson focuses on marking reflective and transparent surfaces to prevent alignment errors and improve model quality, using the Matterport app’s marking tools.

There are three types of mark features: Windows, Mirrors, & Trim

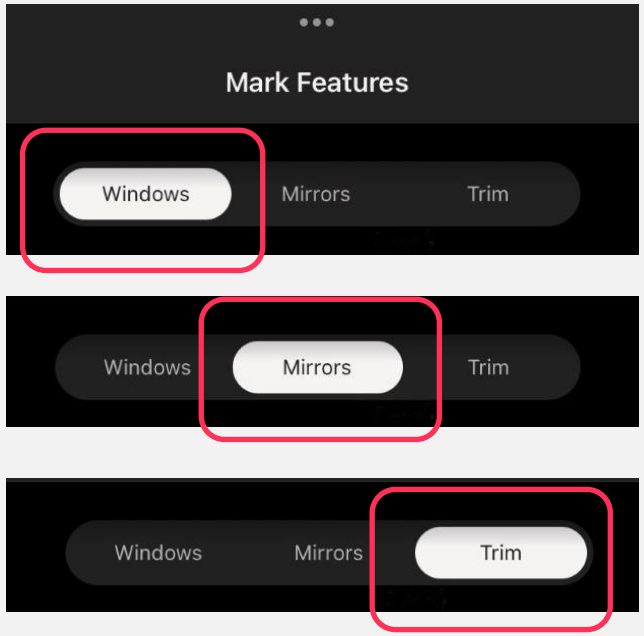
1

Select the Marking Tool in Capture App



2

Select the correct Marker type needed



3

Click the 'Add...' button at the bottom

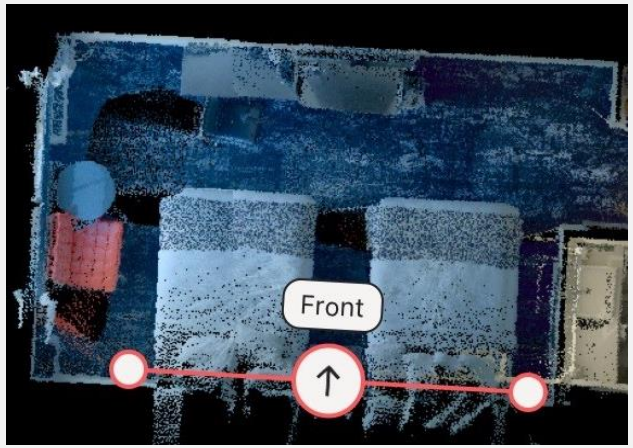
Windows, Mirrors, & Trim

WINDOWS

Arrow pointing towards the inside of the room, stretching across the entire window

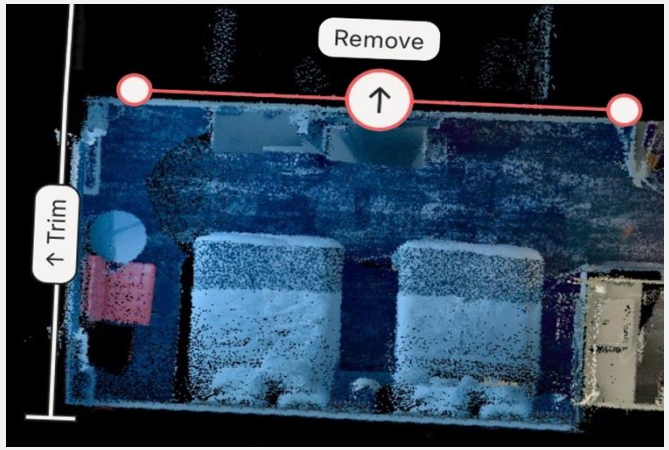
MIRRORS

Arrow pointing towards the inside of the room, stretching across the entire mirror

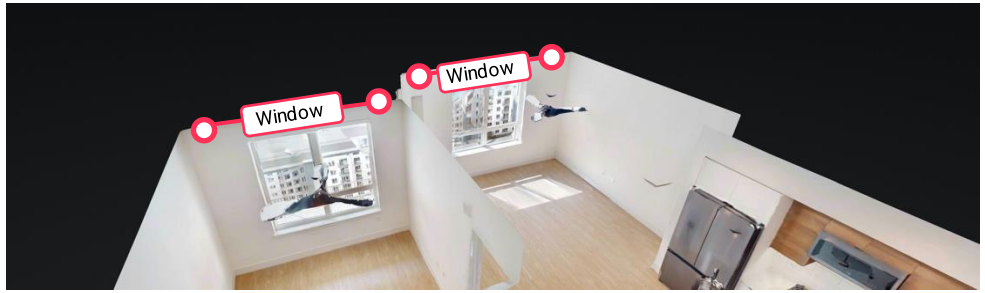


TRIM

Arrow pointing toward area to be removed

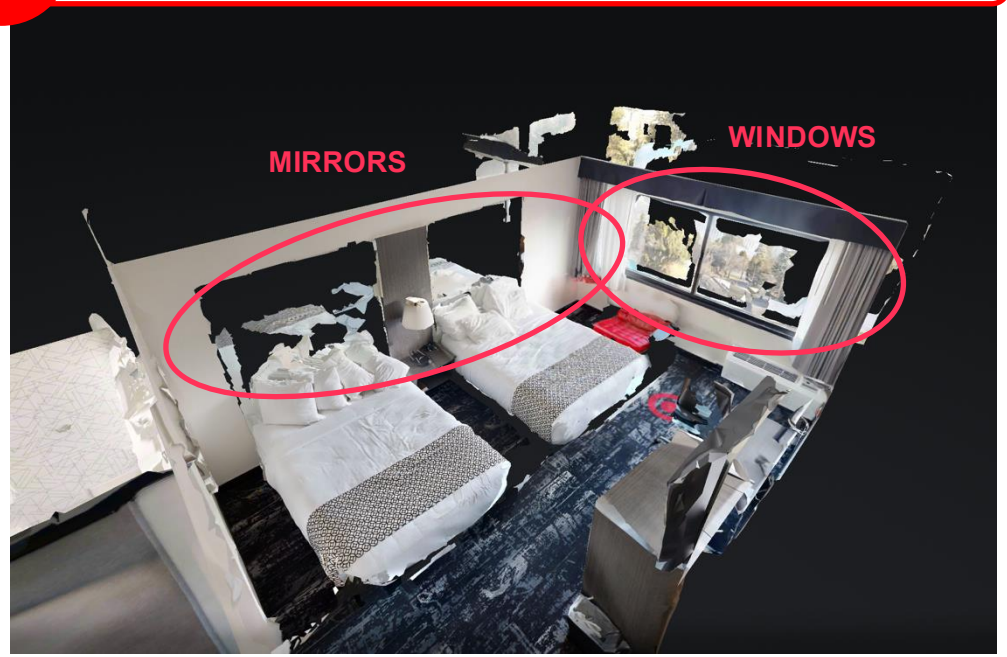


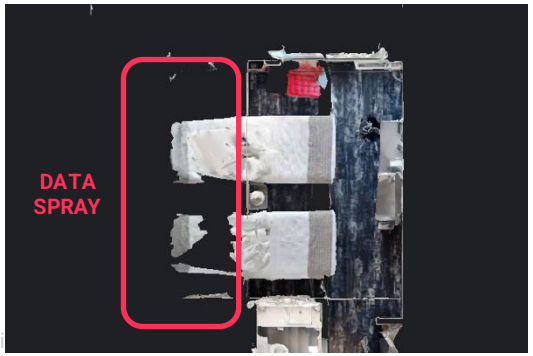
Place your window markers directly on top of the windowpane, regardless if the window is recessed or not. Extend the ends of your marker slightly beyond the mirror, window, or trimmed area for best results.



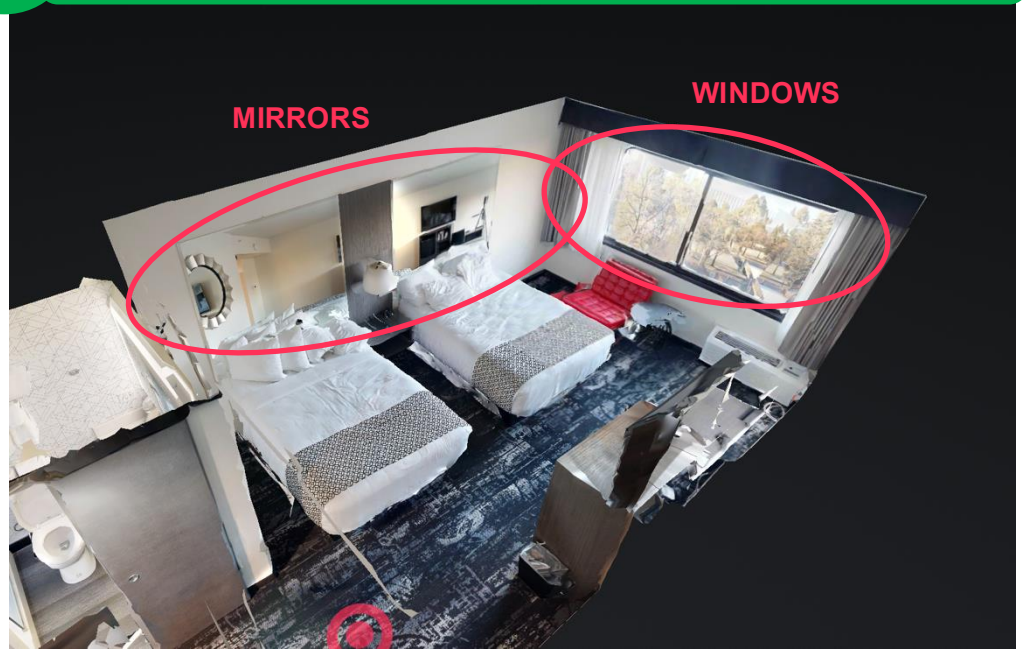
Windows, Mirrors, & Trim

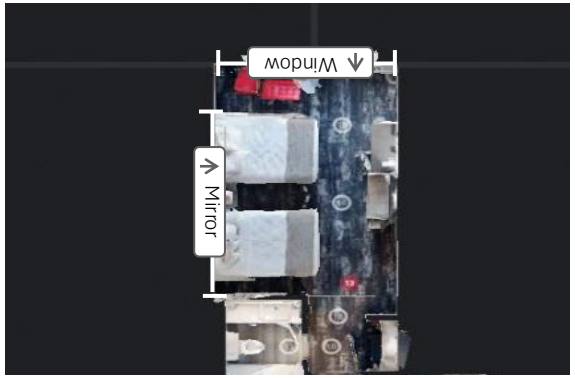
Missing, or incorrect markers = “Data Spray” and/or ”black holes” through windows and mirror reflections





Using the right marker for the right scenario and applying them correctly = filled-in data, and clean models

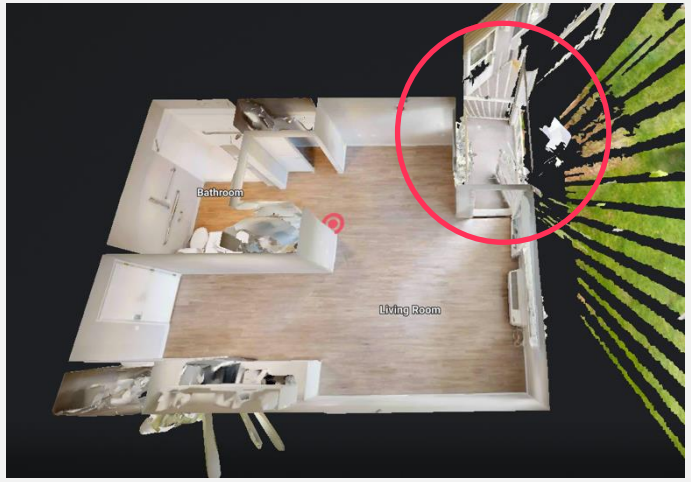




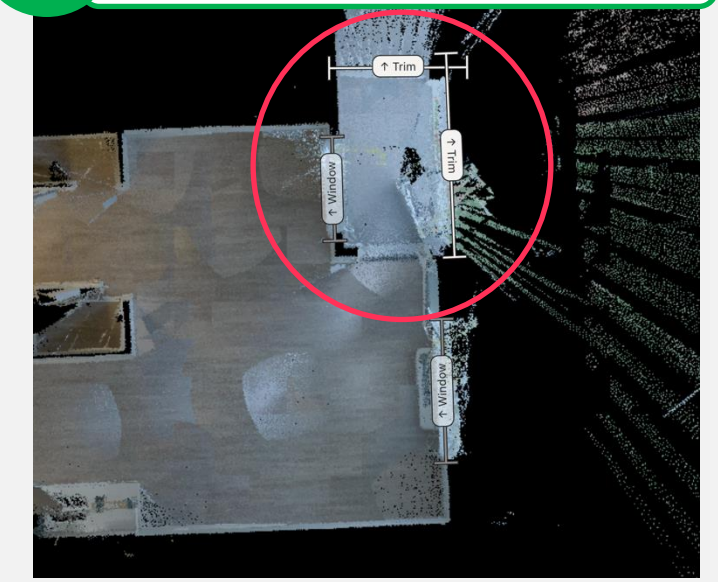
Trim Tool

When scanning exterior spaces, or interior spaces with exterior components, like a balcony, apply trim markers along the exterior area edges to clean up dollhouse view and eliminate unnecessary data spray.

Missing Trim markers =
“Data Spray” off of balcony

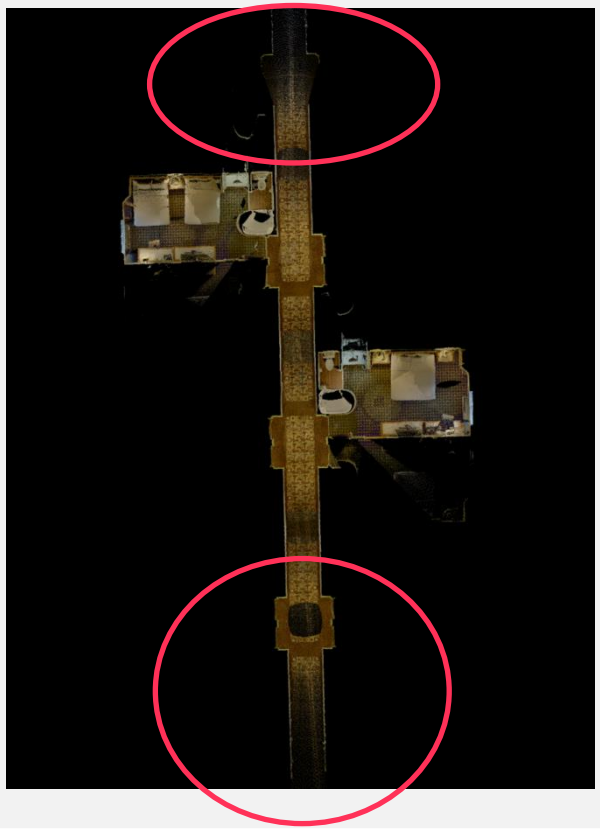


Applied Trim markers =
clean dollhouse



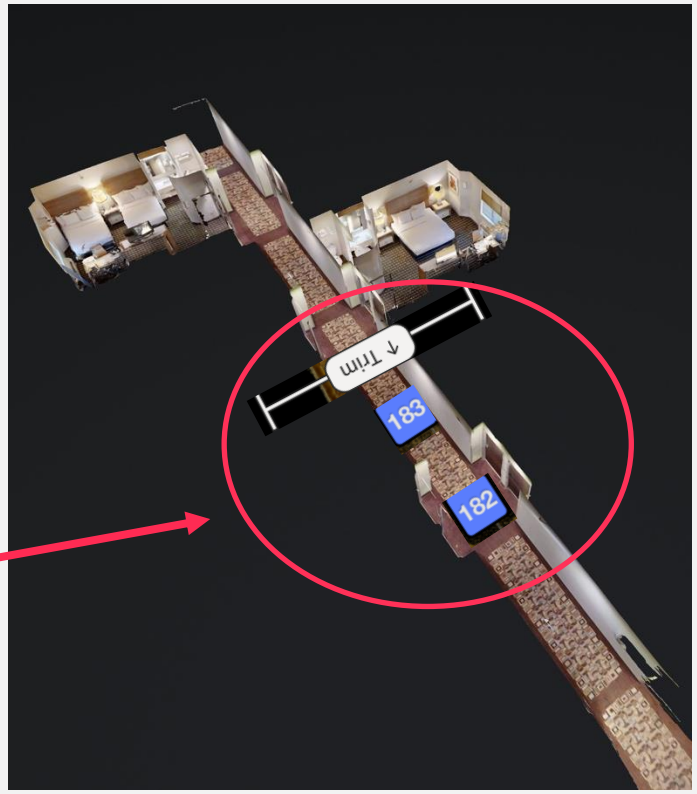
The importance of trimming out unused areas

Some scan points may create "spray" into areas that should not be included in the final model



Apply Trim Marker with the arrow facing towards the unwanted area (away from the model)

NOTE: Scan points outside of the trim area cause the trim marker to be ignored after uploading



Lesson 2.4

SCANNING FOR PHOTOGRAPHY

This lesson highlights how jobs flagged as needing Photography Services require adjusted techniques to ensure high quality 2D photos for marketing purposes.

Standard vs. Photography Services

All jobs should follow the guidelines outlined in this **Scanning Best Practices** guide, unless the Additional Details section of the Job Request specifies otherwise.

When the Additional Details indicate that a job requires Photography Services, it means Matterport's post-production team will be extracting and editing 2D images from the Matterport tour for delivery to the customer. Most customers utilizing Photography Services will be using these edited photos for marketing purposes. Because of this, a few of the best practices in the Scanning Best Practices guide need to be adjusted to ensure optimal results for jobs that include **PHOTOGRAPHY Services**. This includes:

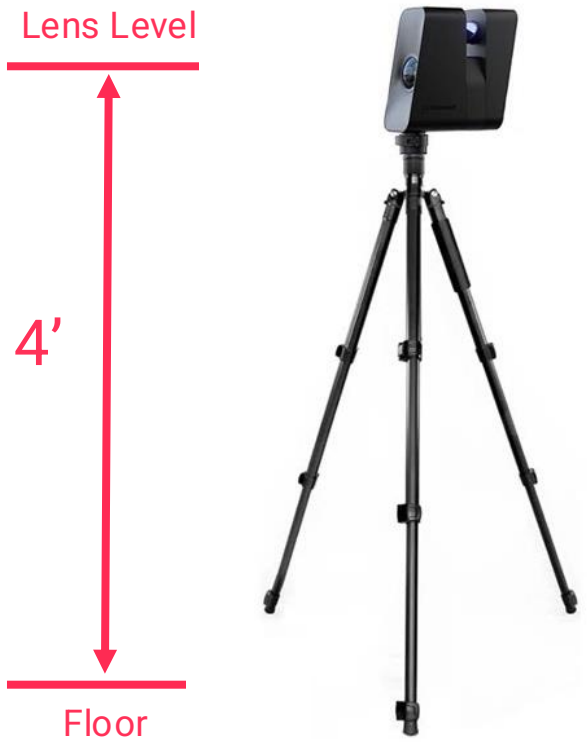
- Camera Height
- Extra Scan Placement

Camera Height

Photography Services Height for Interior Capture:

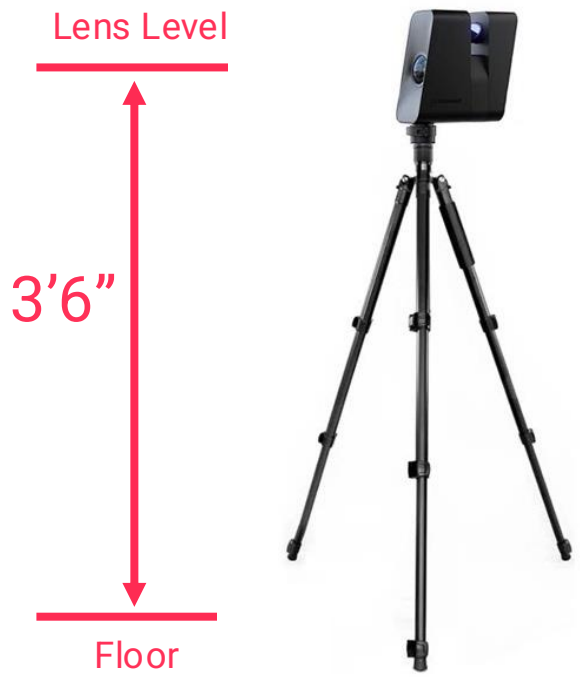
All areas *(except bathrooms)*

The camera lens should be at **4 feet** (1.2 meters) from the ground to center lens.



Bathrooms

For bathrooms, lower the height to **3 feet 6 inches** (1.0 meters) from the ground to the center lens.



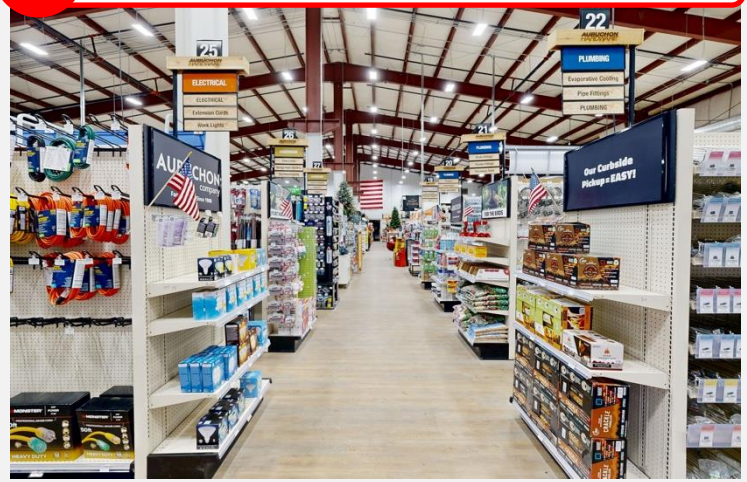
Camera Height

Although a camera height of 4 feet (and 3 feet, 6 inches in bathrooms) may seem low, these heights provide **the most effective composition for 2D photo extraction.**

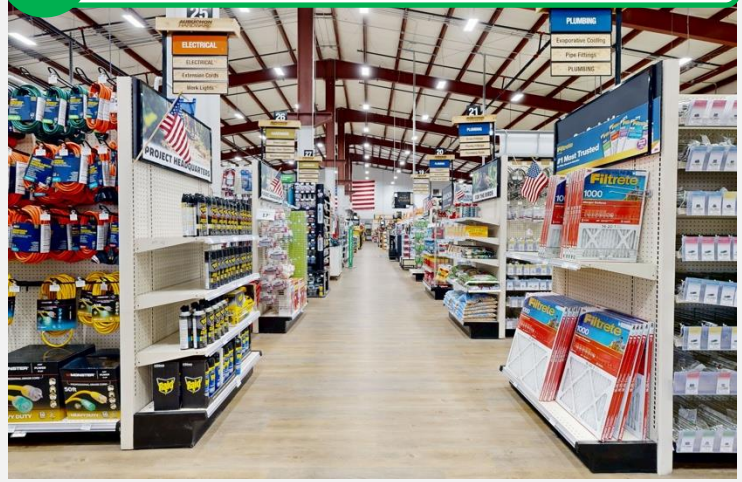
Shooting from these lower levels captures **the full character of a room without emphasizing the ceiling**, which often happens when the camera is positioned too high.

Lowering the camera even further in bathrooms helps highlight important details such as the vanity, flooring, and bathtub, ensuring a more complete and visually appealing representation of the space.

Camera too high

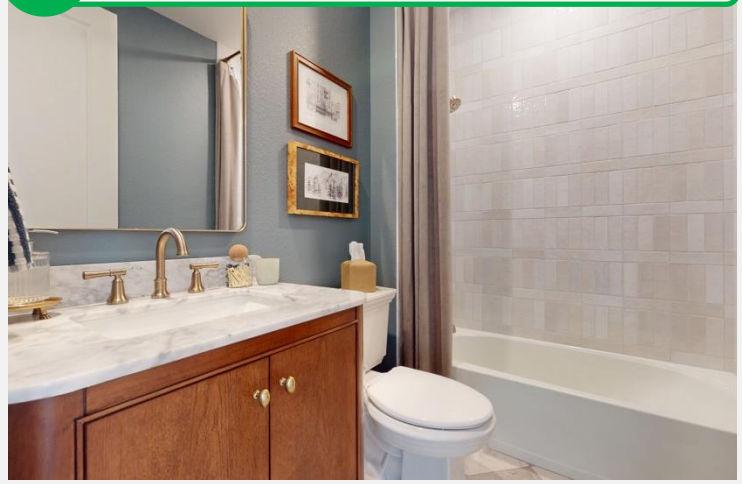


Camera at correct height



Camera too high

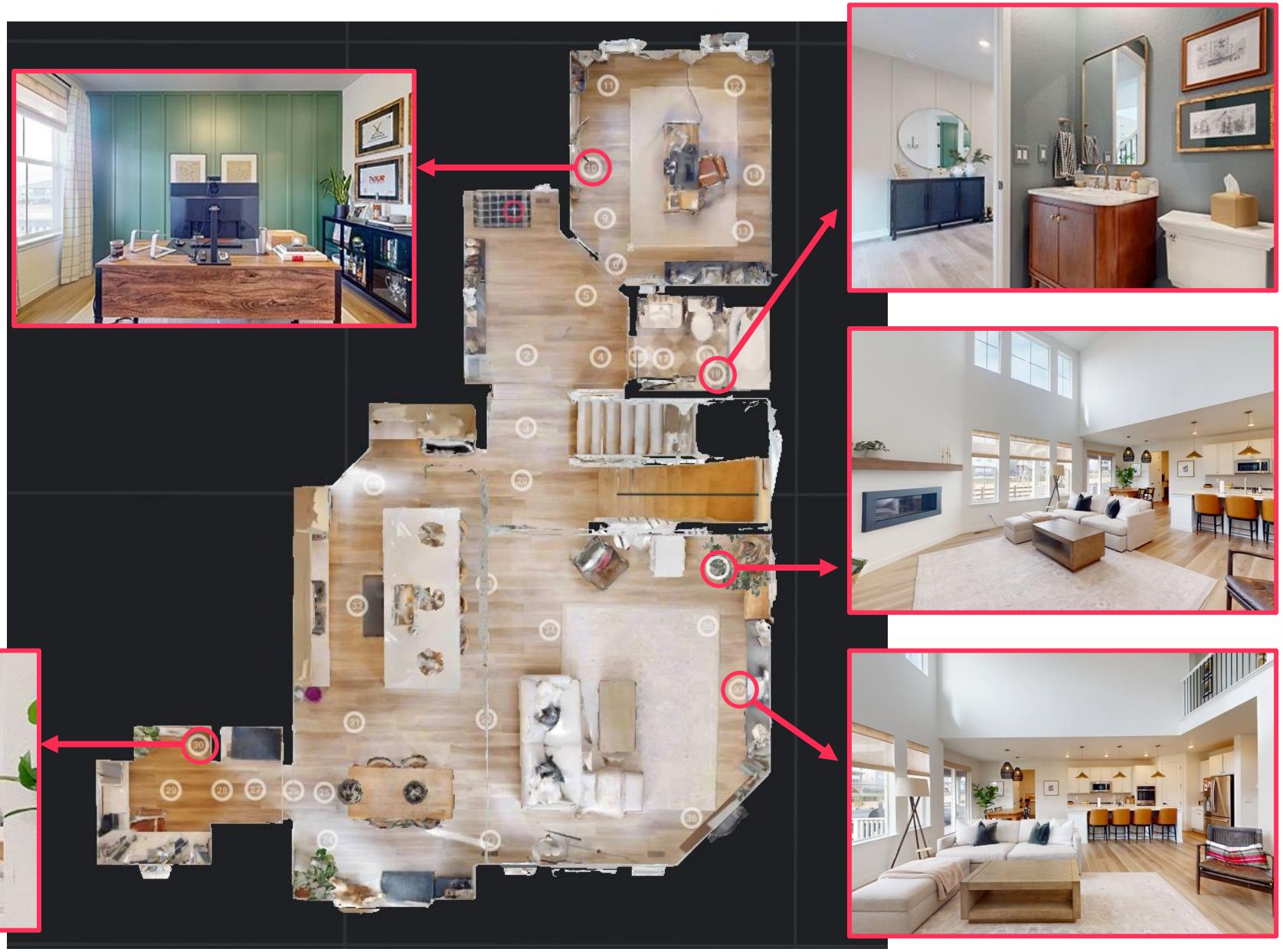
Camera at correct height



Extra Scan Placement

In addition to the regular scan points needed for standard capture and navigation, **jobs with Photography Services may need (1-2) extra scan points in some rooms to allow for better vantage points for extracted photos.**

Use your best judgement and think about composition when choosing if and where to place extra scan points for photography.



Lesson 3

EXTERIOR CAPTURE

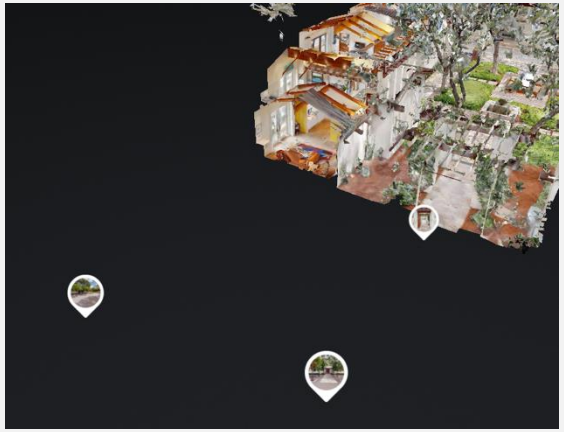
This lesson outlines best practices for scanning building exteriors, including recommended camera height, scan spacing, perimeter coverage, and integration with interior scans.

Exterior Capture

There are two ways that a customer may request exteriors to be captured: **360° Capture** or **3D Scans**. Be sure to review the Additional Details in every Job Request to see if exteriors are needed, and if so, how the customer wants them captured.

360° Capture (Panoramas)

- Captures 360° imagery only (no depth information = no measurement capability)
- No navigation between 360° captures
- Less immersive, but efficient to capture



3D Scan

- Collects full 3D depth data with accurate measurements
- Requires aligned scan points you can navigate between
- Increases captured square footage

Exterior Capture: 360° Capture

Best Practices

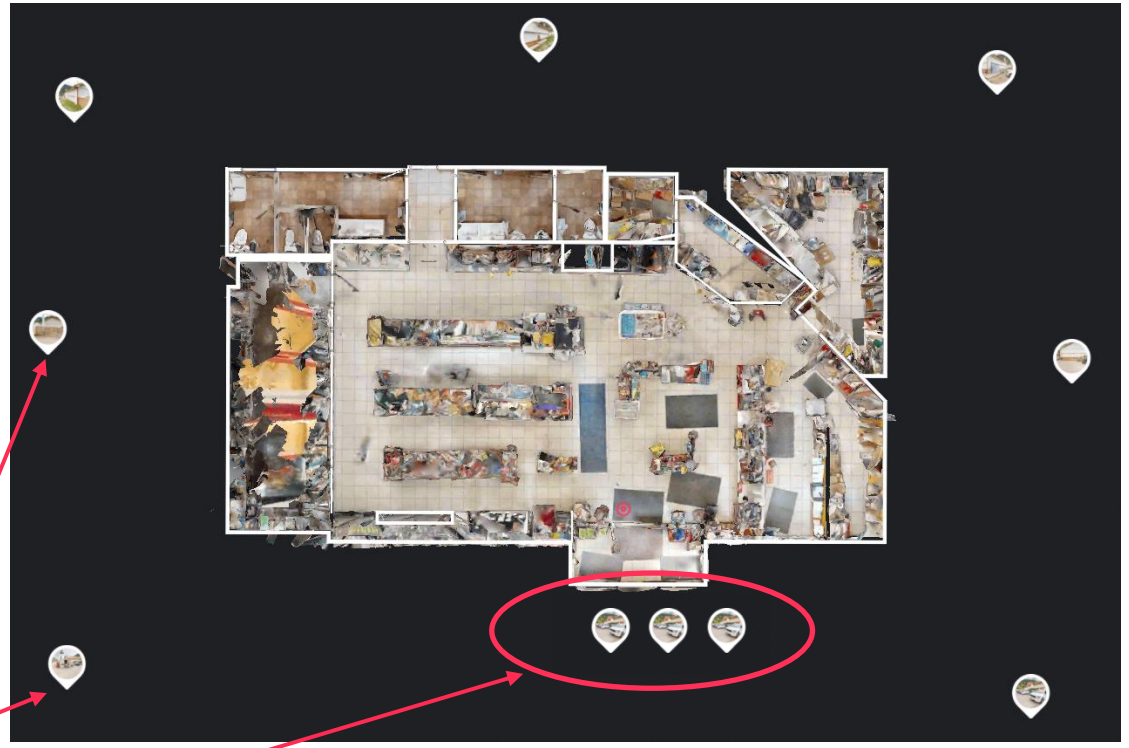
- **Camera lens height & direction:** 6 feet from the ground to the center lens; set the camera with the lens pointed at the primary structure or areas being captured

- **Tripod placement:** Always defer to the Additional Details on where the customer wants the 360°s to be taken. Set the camera in a position that clearly captures the listed areas from an ideal vantage point.

- **360° Bubble placement:**

  - Perimeter 360°s: Place the 360° icon bubble where they were captured in relation to the interior space.

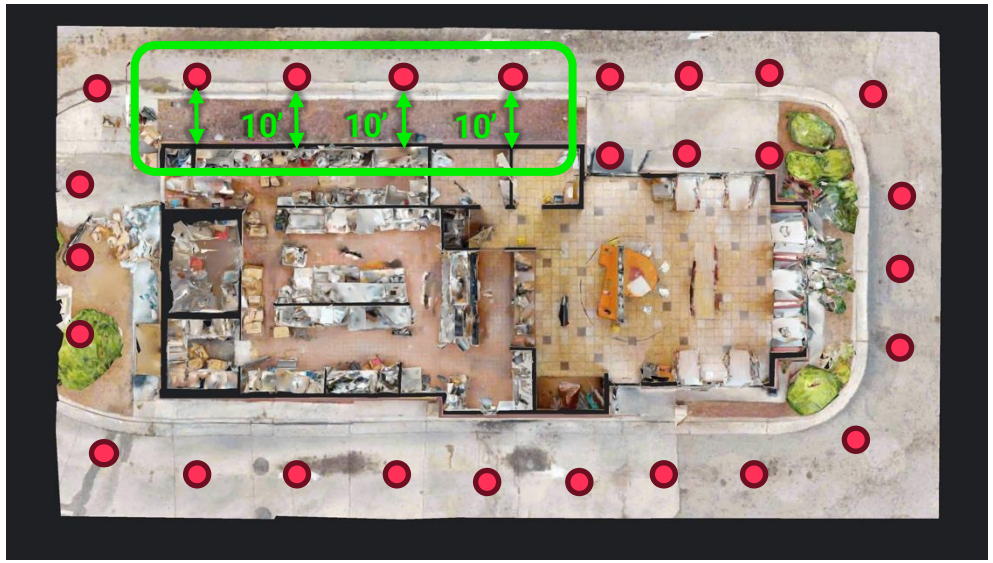
  - All other 360°s: Place the 360° icon bubble at the nearest door.



Exterior Capture: 3D Scan

Best Practices

- **Camera lens height:** 6 feet from the ground to the center lens
- **Scan placement and spacing:**
  - Maintain a 10-15 feet distance from exterior walls, and 10-15 feet between scan points
  - Create a uniform grid pattern when possible
  - Adjust for on-site conditions and navigation purposes
  - Place scan point at edge of property / areas being captured
- **Trim markers:** Always apply trim markers along the outside of the outermost 3D scans at the edge of the area outlined in the job requirements.



Exterior Capture: 3D Scan

Importance of Trimming

- After scanning the exterior areas in 3D, you must apply trim markers along the outermost edge of the 3D exterior scan points. This ensures:
  - The final model looks polished, and does not show unsightly mesh or fragments
  - The correct exterior square footage size is collected upon processing
- Be sure the arrow on each trim marker is facing outwards, towards the area you want removed:

NO Trim Markers were applied before uploading the model

Trim Markers were applied tightly around exterior 3D scan points

Lesson 4

MISALIGNMENTS & NAVIGATION

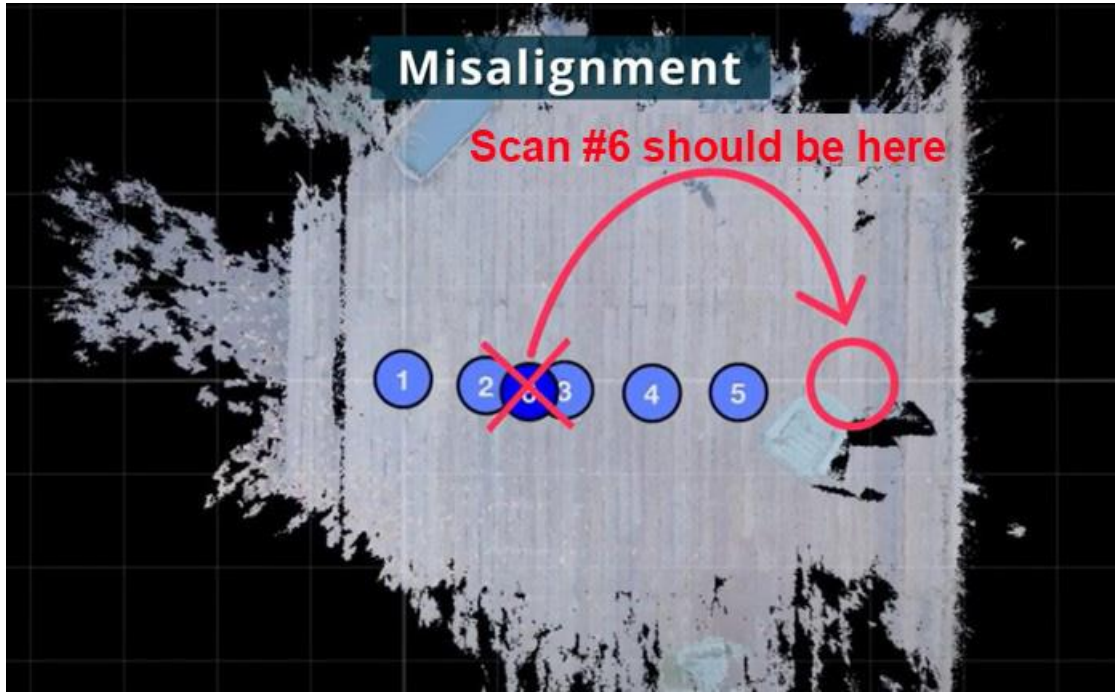
This lesson provides guidance on identifying, correcting, and preventing scan misalignments, including recovery steps and maintaining consistent scan patterns for smooth navigation.

Misalignments: Scan points placed incorrectly on the mini map

In areas that are highly repetitive and similar, scan points may not align in the spot you scanned.

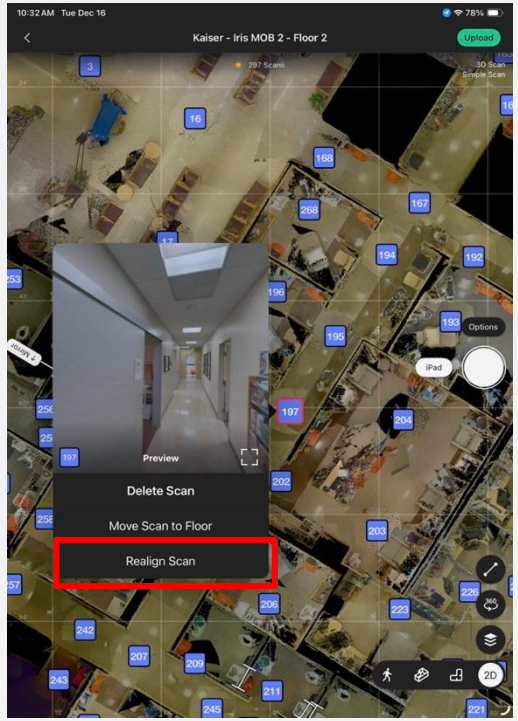
Recovering from Misalignments

1. Delete the misaligned scan
2. Move camera closer to last correct scan point and rescan at shorter distance
3. Wait for new scan to show up in capture app to ensure location of scan is accurate
4. Continue to shorten the distance between the last correct scan point if issue persists



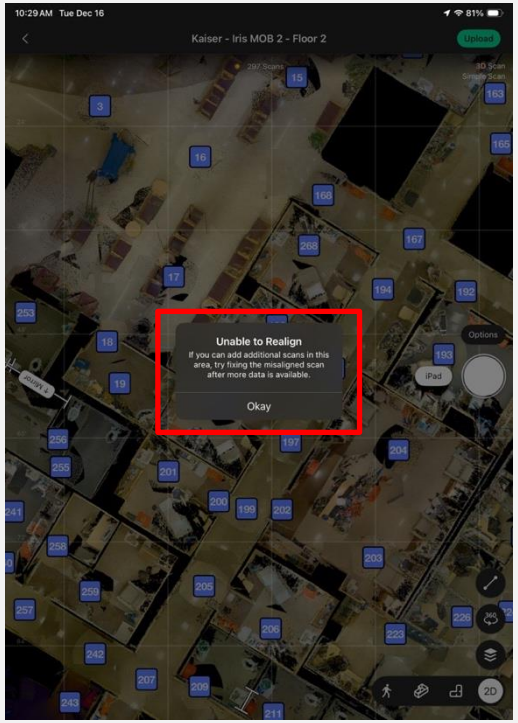
Advanced Scan Realignment

Select the scan that needs to be realigned. Then select “Realign Scan”.

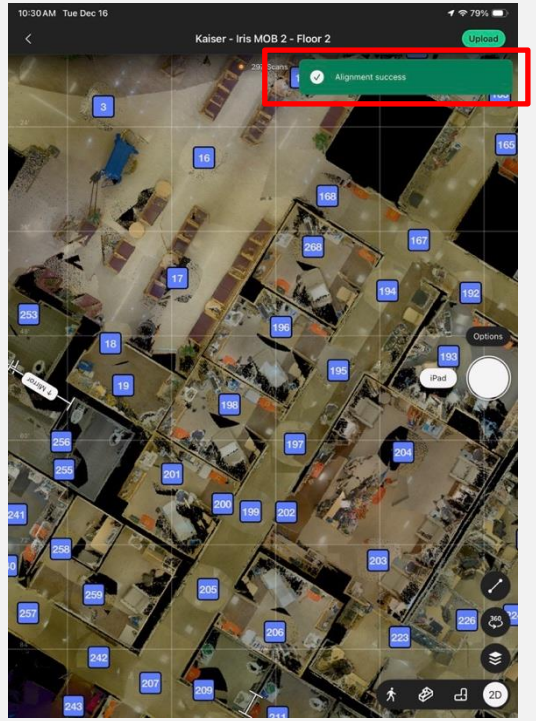


Once selected, it will highlight the data that was captured with that scan point.

If the realign fails, you will get an error. Try again and pay attention to where the scan data matched up.



If the scan aligns properly, you will see the message in green. You can continue scanning.



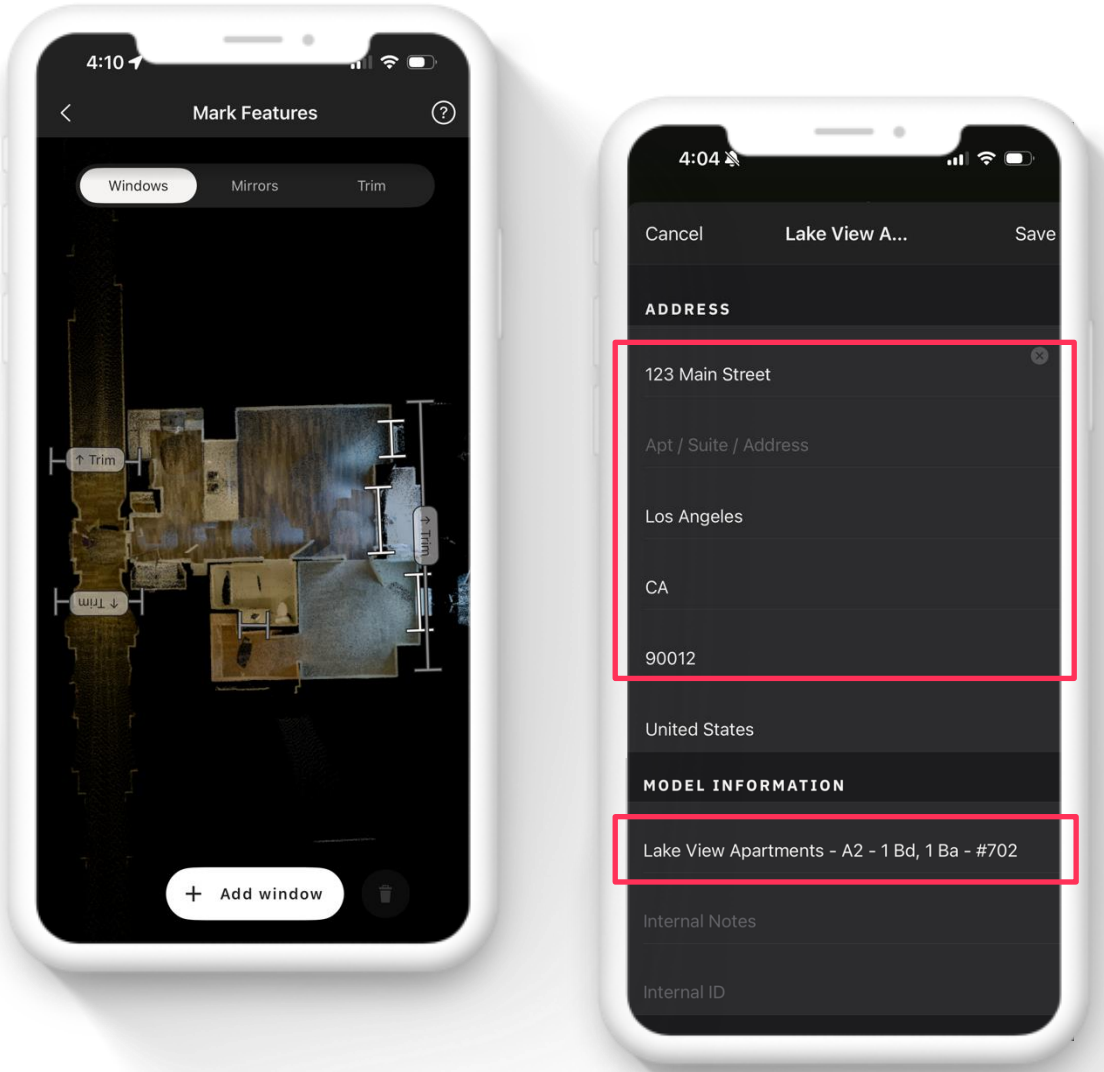
Lesson 5

COMPLETING THE JOB

This lesson covers procedures for finishing on-site, finalizing the model data, and uploading the models for processing.

Before you leave the job…

- Review the REMINDER email and these capture guidelines once more to ensure you have captured everything to the customer's specifications and our standards.
  - If our guidelines and/or the specific job requirements are not followed, you will be asked to return to fix the issues.
- Leave the space as you found it.
- If applicable: lock exterior doors, return any keys to lockbox or personnel, and notify the on-site contact that you are finished.

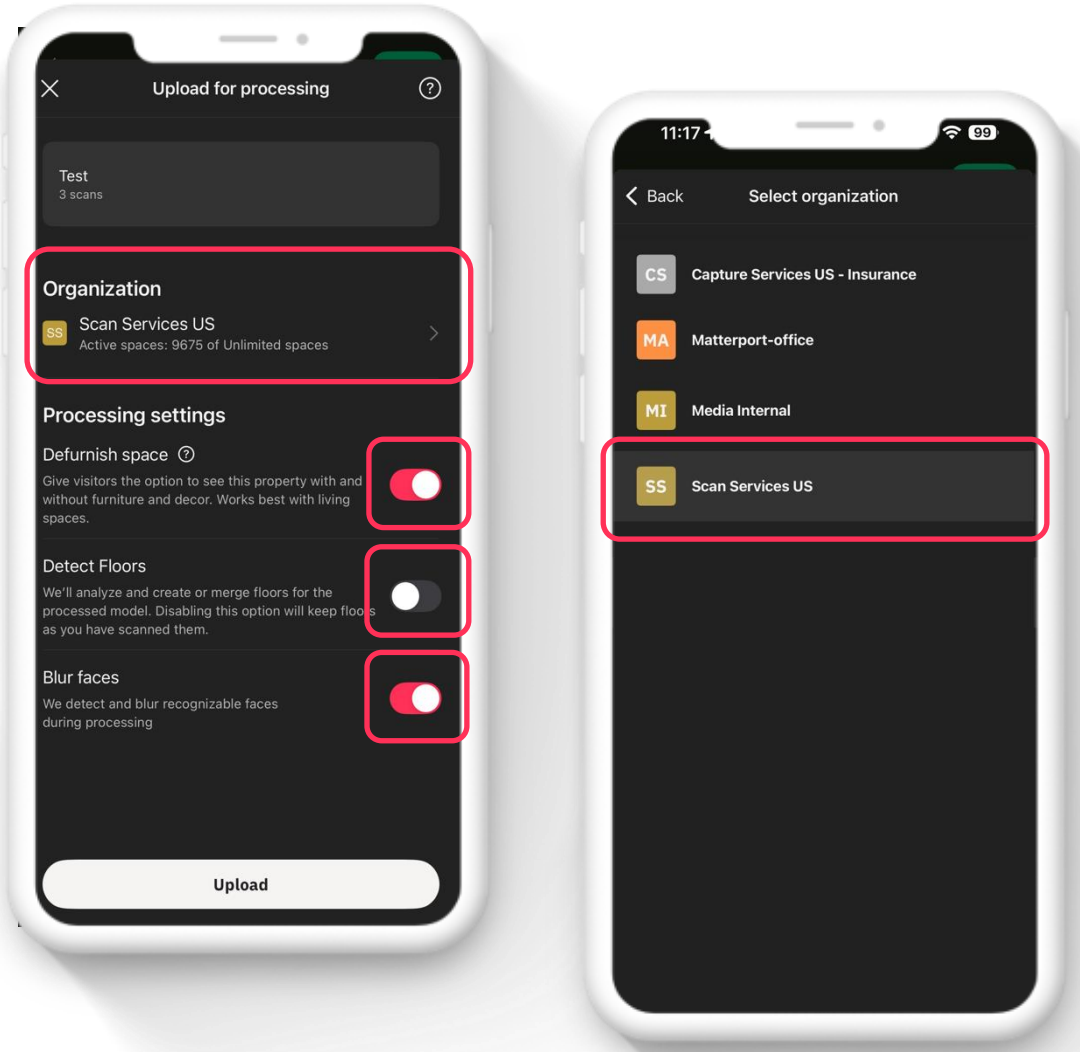


Finalizing the Model

- Mark all windows and mirrors. Apply trim markers as needed.
- Click on Edit Model Details and confirm the Address and Showcase Name follow our rules:
  - In the Address fields, enter the full address from the Reminder email. If it auto-fills, verify and correct it.
  - For Showcase Name, use the Project Name from the Reminder email. For multiple spaces/units, add "- *[space name/ number]*" to distinguish each model.

Upload the Model

- Once your model is ready, click the "Upload" button
- In the Upload window that appears:
  - Under Organization, if it says anything other than "Scan Services US", click on the arrow. This will then show you all of the accounts you are a collaborator on.
  - Click on "Scan Services US" in this panel. It should then show up under Organization on the Upload window.
- Make sure 'Defurnish space' and 'Blur faces' options are toggled ON. Turn Detect Floors OFF.
  - These should always be on, unless otherwise specified in the Job Request details.



REMINDER

You must upload model(s) within **6 hours** of completing the job.

Helpful Training Videos

General Video about the Capture
https://www.youtube.com/watch?v=hGRh2TRxcEw&list=PLj5dR1tyJldk0Sqzgc7hMUfRGOpvNP8LE&index=2

Filling “Black” Areas
https://www.youtube.com/watch?v=WLsT7k0L9Hw

Alignment and Misalignment Errors
https://www.youtube.com/watch?v=dYfXt2jnOrQ&list=PLj5dR1tyJldk0Sqzgc7hMUfRGOpvNP8LE&index=59

Multiple Floors
https://www.youtube.com/watch?v=kE_33mGC9-0&t=5s
https://www.youtube.com/watch?v=kE_33mGC9-0&list=PLj5dR1tyJldk0Sqzgc7hMUfRGOpvNP8LE&index=60

Scanning Stairs
https://www.youtube.com/watch?v=pCYajE2DSgU&list=PLj5dR1tyJldk0Sqzgc7hMUfRGOpvNP8LE&index=27
https://www.youtube.com/watch?v=kYowbAvlj5I&list=PLj5dR1tyJldk0Sqzgc7hMUfRGOpvNP8LE&index=54

Scanning Repetitive Spaces
https://www.youtube.com/watch?v=CfT2h83x0H0&list=PLj5dR1tyJldk0Sqzgc7hMUfRGOpvNP8LE&index=28

Marking Windows, Mirrors, and Trim
https://www.youtube.com/watch?v=sF18isYSvFE&list=PLj5dR1tyJldk0Sqzgc7hMUfRGOpvNP8LE&index=35

Upload the Model
https://www.youtube.com/watch?v=m5vv5xQCP4A