



Best Scanning Practices for Residential Real Estate



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Scan Positions

When scanning any small to medium size rooms, it is best practice to include scans in positions that provide a view of as much of the space as possible. We recommend capturing scans on the other side of the room from the windows, to include plenty of natural light.



1. Corners of Rooms

Scans in corners of rooms provide good vantage points from which you can see the entire room in a single snapshot. This also allows photos to be generated that feature dramatic angles in the final composition.

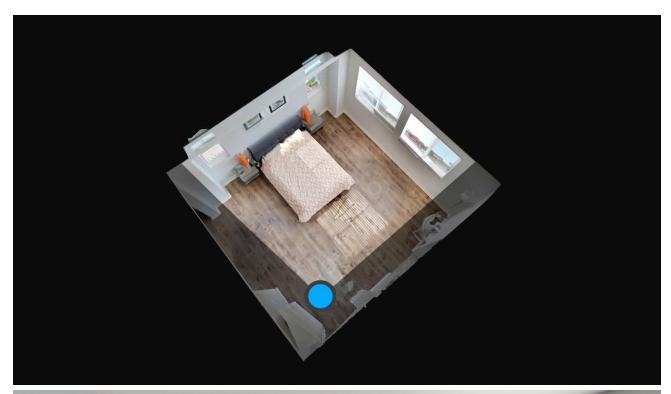
2. Edges of Rooms

Scans positioned at the edge of the room also provide good vantage points to view the entire space. Resulting photos from this viewpoint will have symmetrical composition.



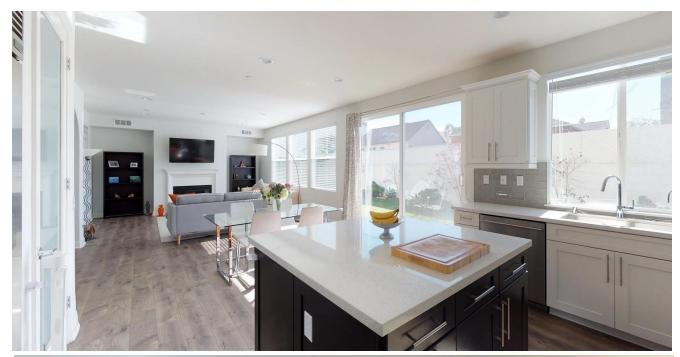
1. Corners of Rooms

Corners of rooms provide the best possible vantage points from which to scan for both 3D tours and 2D snapshots. For the best possible lighting, It is best practice to **scan corners which are on the opposite side to the windows.**





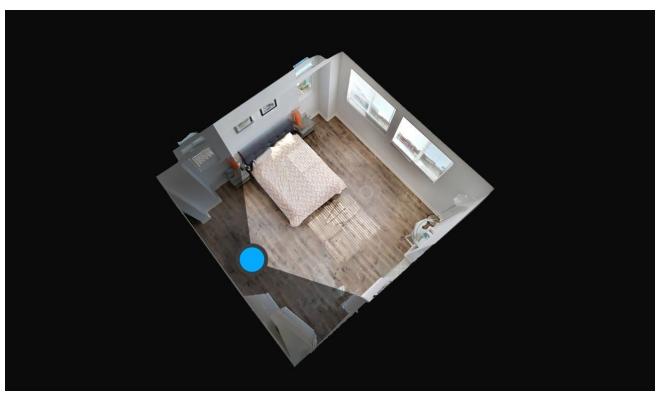
Examples of 2D snapshots captured from corners of rooms:





2. Edges of Rooms

When scanning at the edge of the room to assist in producing 2D snapshots from the 3D model, It is best practice to place the camera in the middle of the wall. This is a good position to capture a symmetrical snapshot.





Examples of 2D snapshots captured from edges of rooms:







Distance From Walls

1. 60 cm (24 in) From Walls

When scanning in the corners or at the edges of a room, It is best practice that your camera remains 60 cm (24 in) from any wall. This is so the scan looks good in the 3D model (is not directly next to a wall), and it also provides a lot of depth for your 2D snapshot.

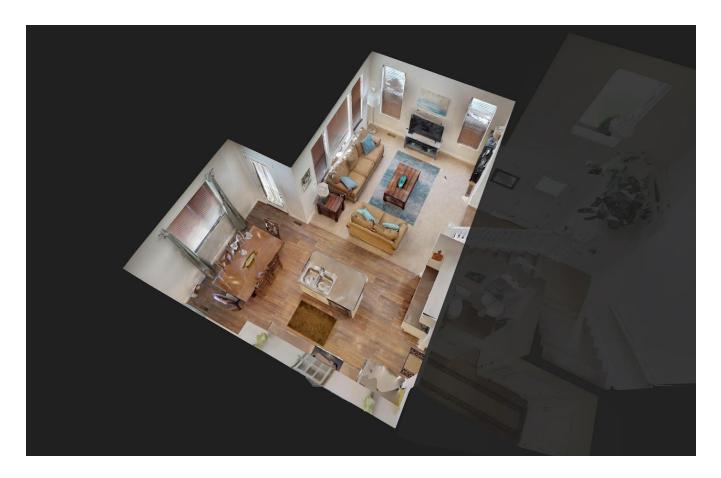


Doorways to rooms often provide the best vantage points for the 2D snapshot generated through the 3D model. When scanning near a doorway you can often move the camera nearer to the perimeter of the room while remaining more than 60 cm (24 in) from any wall.



Scan Positions in Open Plan Spaces

When scanning open plan spaces (where the room has multiple purposes), It is best practice to position scans to showcase the entire space, in addition to showing each particular functional area alone (just the kitchen, living, or dining).



1. Full-Length View of Space

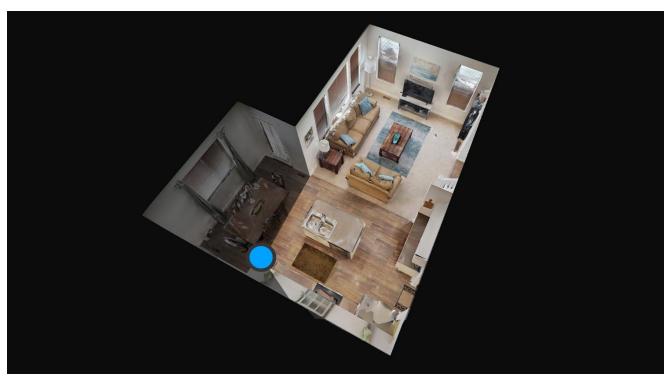
It is best practice to Include scans from which you can see the full length of the open-plan space. You can refer to the guides in the Scan Positions section on page 3.

2. Views of Specific Areas

Open plan rooms are multi-purpose and often include kitchens, dining rooms and living rooms. It is best practice to treat each small area as its own room by including scans in the corners or near the edges of each area.

1. Full-Length View of Space

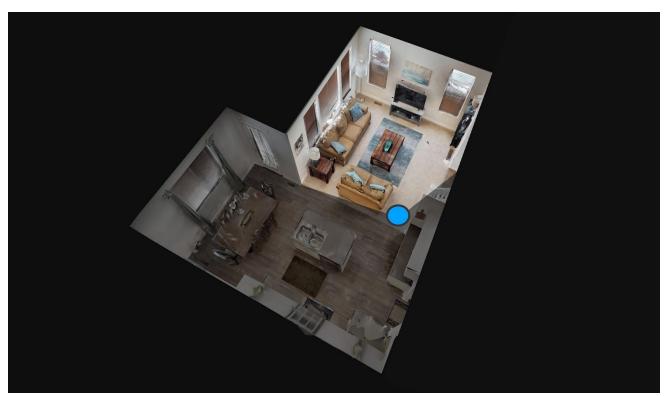
The example below illustrates a scan in the corner of the kitchen which provides a view of the kitchen and living room. The resulting 2D snapshot overlook shows the full length of the space.





2. Views of Specific Areas: Example 1

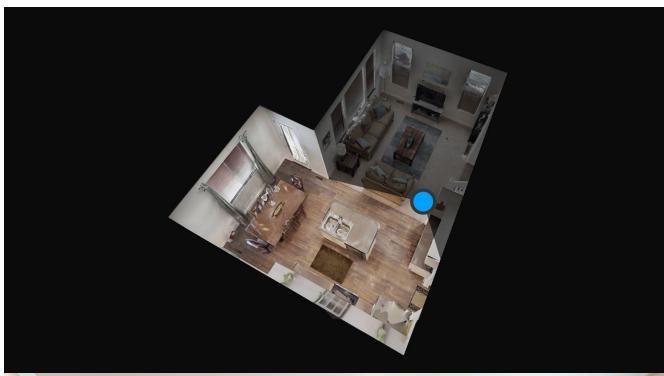
The example below illustrates a scan in the corner of the living room which provides a view of the living room.





2. Specific Areas in View: Example 2

From the same position as the previous example, this scan point also allows a 2D snapshot of the kitchen and dining room.





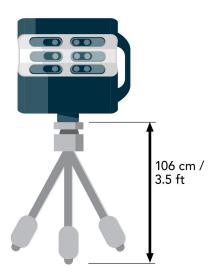


Camera Height For Scans

Option 1: Standard Low Height for All Scans

If you would like to scan the entire property at a standard height, we recommend setting the tripod so the height of the camera is 4 ft or 122 cm (from lens to ground). This height often provides views whereby the floor space is visible in 2D snapshot.

Bathrooms: If scanning at a standard height for the property, we suggest that you make exceptions for small bathrooms and toilets. It is often best to reduce the camera height to less than 4 ft. You can check whether the height is suitable for capturing a snapshot by using preview mode described in the 'Preview Scan' section of this guide.



Option 2: Lower Camera Height for Specific Scans

Instead of all scans at the low height (4 ft or 122 cm), you can instead scan at your normal/preferred height (recommended 5 ft 6 in or 168 cm). Then when you are taking scans that are meant to assist in the generation of 2D snapshots, lower the tripod to 4 ft (or use Preview Scan to determine an appropriate height) and then capture.

It is best practice to use the Preview Scan feature in Matterport Capture to make sure this height looks good for a snapshot.



Floor to Ceiling Ratio

When using Preview Scan, you are able to check that you can see more of the floor space than ceiling. It is recommended that the ceiling should take up no more than ½ of the view when the vertical walls in the room are aligned with the edge of the preview scan window. This will provide a good height to produce a 2D snapshot.



Good Camera Height for Snapshot



Poor Camera Height for Snapshot



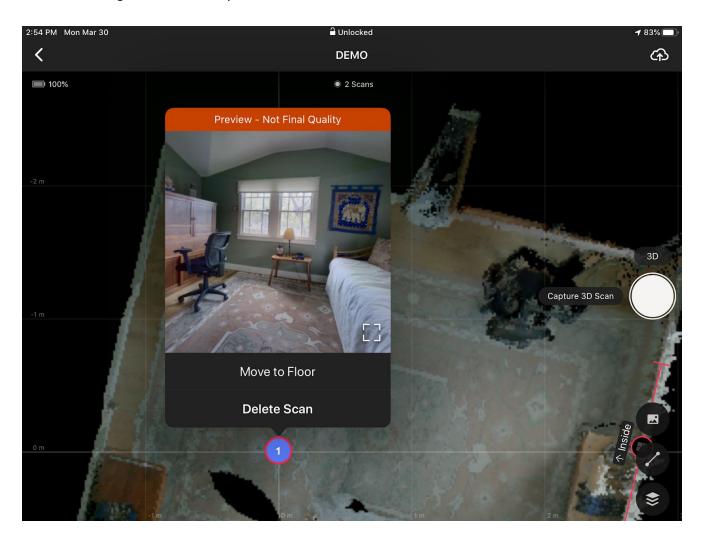
Preview Scans

Why Preview Scans and How To Do It

When scanning for the purpose of creating snapshots, you can use the **Preview Scan** feature in the Matterport Capture App to check whether the height and position of the camera will produce a good snapshot.

If you preview a scan that does not appear to provide a good vantage point from which to capture a snapshot, you can adjust the height and position of the camera and create a new scan.

You can find a guide on how to preview a scan. Learn more.





Mirrors, Windows & Trim Marks

Marking windows, mirrors and trim in a model are a critical part of creating an immersive user experience. Marking features after every scan taken in Capture can reduce alignment issues and vastly improve the quality of the finished Matterport model. Taking these actions will result in a clean and well-defined 3D model in Dollhouse view.

Marking Mirrors

The Matterport camera cannot see or define a mirror (or any reflective surface) the way humans can. Because of this, when the camera processes a reflection, it believes there is a room on the other side of the mirror. This can lead to major alignment issues when scanning.

When a mirror is marked in the Capture app, the app is told to ignore what it sees in the mirror. It is best to immediately mark mirrors as soon as the camera can see them.

- 1. Tap the "Mark Features" icon (bottom-right) in Matterport Capture app.
- 2. Tap the "Mirror" icon.

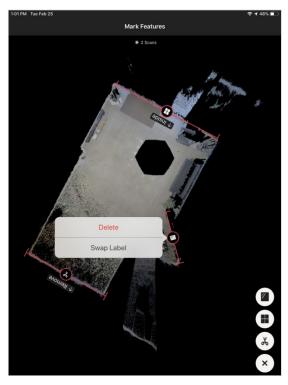


- 3. In the preview pane, tap one end of the mirror and drag the line to the other end of the mirror.
- 4. Release your finger from the screen to stop the marking.
- 5. Aim the "Front" label toward the inside of the room.
 - a. To change the orientation, tap the "mirror" icon in the middle of the marking and select "Swap Label."



App Controls for Marking Mirrors

- Delete A Mirror Marking
 - Tap the "Mirror" icon in the middle of the marking line and select "Delete" in the pop-up window.



- Extend Or Rotate A Marking
 - Tap and drag on the endpoint of the marking line. Move outwards to extend and up or down to rotate
- Move The Entire Marking
 - o Tap and drag on the "Mirror" icon in the middle of the marking.



Marking Windows

The Matterport camera cannot interpret windows the same way as humans can and will attempt to collect 3D data from the other side of the window.

When a window is marked, the Matterport Capture app is told to ignore what it sees outside (grass, trees, neighboring properties, parked cars, etc.).

- 1. Tap the "Mark Features" icon (bottom-right) in Matterport Capture app.
- 2. Tap the "Windows" icon.



- 3. Tap on one end of the window and drag to the other end of the window.
- 4. Release your finger from the screen to stop marking.
- 5. Aim the "Inside" label toward the inside of the room.
 - a. To change the orientation, tap the "Mirror" icon in the middle of the marking and select "Swap Label."

App Controls for Marking Windows

- Delete A Window Marking
 - Tap the "Window" icon in the middle of the marking line and select "Delete" in the pop-up window.
- Extend Or Rotate A Marking
 - Tap and drag on the endpoint of the marking line. Move outwards to extend and up or down to rotate
- Move The Entire Marking
 - Tap and drag on the "Window" icon in the middle of the marking.

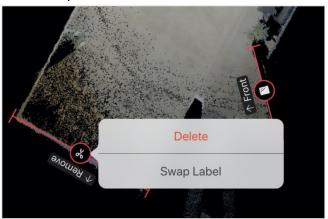


Marking Trim

The trim tool can eliminate unwanted 3D depth data, similar to the way cropping eliminates unwanted areas in 2D images. The trim tool can remove unwanted objects, artifacting lines and jagged edges.

Any 3D data that exists outside of trim markings will not appear in the Dollhouse or Floor Plan views.

- 1. Tap the "Mark Features" icon (bottom-right) in Matterport Capture.
- 2. Tap the "Trim" icon.
- 3. Create a trim mark along the wall with the capture data that needs removal.
 - a. The "Remove" label should be pointed toward the 3D data that needs removal. To change the orientation of the label, tap the "Trim" icon in the middle of the trim marking and select "Swap Label."



App Controls for Marking Trim

- Delete A Trim Marking
 - Tap the "Trim" icon in the middle of the marking line and select "Delete" in the pop-up window.
- Extend Or Rotate A Marking
 - Tap and drag on the endpoint of the marking line. Move outwards to extend and up or down to rotate
- Move The Entire Marking
 - Tap and drag on the Trim" icon in the middle of the marking.

Tips for Marking Windows, Mirrors and Trim Tool

- Place the marking on the wall or slightly outside of the wall when marking windows or mirrors.
- Extend your marking line.
 - We recommend making your marking line slightly longer than the actual window or mirror on your minimap without covering any doors or hallways.
- Group multiple mirrors or windows into one.
 - If a single wall contains multiple windows or mirrors, make one long marking that covers them all in a single marking.
- Ensure that no trim markings intersect with any scan points. If removing 3D data beyond a certain wall, trim just outside and not directly on the wall.



Exterior 360 Views - Best Practices Guide

Where to Position the Camera for Exterior Views?





1. Angle Scan

A snapshot taken from an angle to the front of the property. The front of the property is clearly visible in the generated 2D snapshot.

2. Straight Scan

The straight scan is taken from directly in front of the property.

Distance From Property and Camera Height



Good Distance and HeightWhole Property is Visible

The complete property is visible and the sky above the property can be seen in the generated 2D snapshot.



Poor Distance and Height Entire Roof is Not Visible

Some of the roof is missing. This is not an ideal generated 2D snapshot.

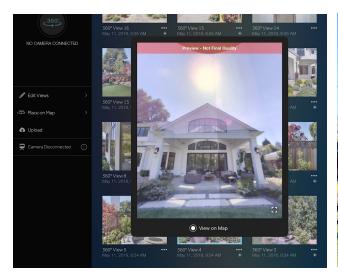


How to Avoid Sun Flares

Sun flares can be caused when the camera is facing towards the sun. Sun flares cause rings or circles to appear and will also affect the image's colour.

You can Avoid sun flares by checking the 360 views of the exterior using the Preview Scan feature described in the 'Preview Scan' section of this guide. Lens flares can be caused by the position of the camera or even its height. If a lens flare appears, you can adjust the position and height of the camera and create a new 360 view.

Example:





Matterport Capture App

Resulting Snapshot



Indicate the Correct Property

If a 360 view is captured in the middle of the street or on the boundaries between properties, it can be difficult to determine which is the correct property.

To help identify which property is the correct property, you can include a 360 view by the entrance of the property. As a Best Practice, The 360 view should be within line of sight of other 360 views taken at the front of the property.





Recommendations and Preparation

Remove For Sale Signs, Sensitive Information, and Unsightly Objects

Before capturing a property, it is best practice to remove sales signs at the property. Before you arrive on site, Matterport will ask homeowners and agents to check there are NO photos with faces visible and to clean the property first. If something small is missed however it is best practice to remove or hide potentially private/sensitive or otherwise unsightly objects from view before beginning to scan.

Checklist

Best Practices

- O Remove For Sale Signs (if required) and sensitive objects (if property is very unclean or has not been prepared, then the capture can take place without intervention).
- O Lower tripod to 4 ft (122 cm)
- O Preview a scan after you capture it if needed
- O Place camera in corners, doorways, or edges of all rooms.
- O Lower the camera height for small rooms, such as bathrooms.
- O Avoid direct sunlight on the camera's lenses

Recommended Number of Scans Captured To Produce high quality 3D model and 2D Snapshots

Scanning		360 Views	
O Living Room	2 to 3	O Front corner (Angle to Property)	2
O Kitchen	2 to 3	O In Front of Property	1 to 2
O Dining table	1 to 2	O Entrance to Property	1
O Master Bedroom	2 to 3	O Garden (Facing Rear of Property)	2
O Other Bedrooms	1 to 2	O Garden (Facing Garden)	2
O Master Bathroom	2 to 3	O Additional Outdoor Features	2
O Other Bedroom	1 to 2		
O Study	1 to 2		
O Other Rooms	1 to 2		







Best Scanning Practices for Commercial Real Estate



OVERVIEW

When scanning a Commercial Real Estate (CRE) Space you want to consider what the scan will be used for when planning out your scan process.

Customers will market a space with our scans for potential tenants to evaluate the space and determine if it is right for their business and use case. Potential tenants will use the scan to evaluate the dimensions of the space, and how they can build it out to suit their needs and evaluate the common areas and their functionality for their needs.

For these reasons it is important to collect accurate data through the scanning process for a correct representation and evaluation of the space

Types of Commercial Spaces

It is important to understand the different types of spaces you will encounter while working with CRE. Spaces can be broken down into 2 basic categories.

- 1. Office Space
- 2. Retail Space

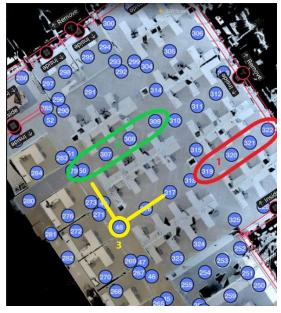
Office Space Scan Positions

Office spaces can vary in size (anywhere from 1,000 - 50,000 sqft spaces), shape, and density. We want to make sure to include as much detail as possible in the scan so that the customer can use each model to extract as much data from the space as possible. The more detailed coverage we have of each space, the easier it is to get accurate results from our tools such as the Measurement tool, that will be used to plan the layout of the space. There are usually a number of different types of spaces inside of a commercial office space.

We will go over the best practices for each type of space here.

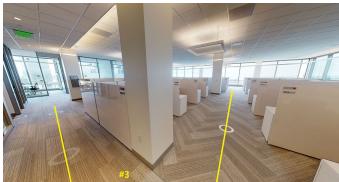
Workstations/Desks/Cubes

- 1. Keep scan patterns linear and as straight as possible when navigating through rows of desks.
- 2. Keep scans equidistant from one another, as well as desks and workstations when moving through these areas. This will give a clean path of travel through the space for viewers.
- 3. Where 2 walkways intersect, make sure there is a scan at that point, this will allow a smooth transition between aisles when **navigating** the space.





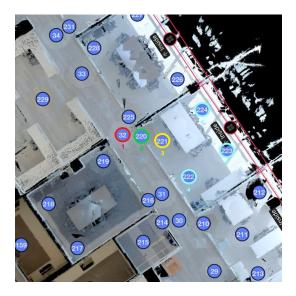




Conference rooms/offices

When scanning any small to medium size rooms, it is best practice to include scans in positions that provide a view with as much of the space as possible. Make sure you navigate around furniture and obstacles with the camera to capture all of the space and **leave little to no black empty spaces** in the capture. This will eliminate black spots in the dollhouse view of the space.

- 1. To enter any room you need to make sure that there is a reference point scan outside of the door to each office/conference room. This will allow for transition in and out of each room.
- 2. First scan should be in the doorway of the room. The camera should be placed directly in the middle of the doorway equidistant to each side of the door frame.
- 3. The next scan should be inside the room in a direct line of sight to the scan that was done in the door jam.
- 4. Work your way around the room and its features with the camera to capture as much detail as possible.





Common Areas: kitchen/cafeteria/breakrooms/coffee rooms

This is usually a high point of interest for potential tenants, as they are the most high traffic areas in the space. Highlight all features of the common areas and make it easy for the customer to see all of the amenities.





Windows & Views

- 1. Place the camera in front of a clean unobstructed window. Make sure the view is not obstructed by a window frame or furniture in the office
- 2. Scan notable views from the suite that may be presentable for the customer
- 3. Take window shots from all available points in the office.if there is access. It is important to capture as many window shots as possible, make sure to capture window shots from all offices, conference rooms, workstation areas, cafeterias, and break rooms.



Entrance/Lobby

- 1. When possible capture path from elevator to office/lobby
- 2. Scan the walking path through the lobby, making sure that the scans capture the walls and shape of the room. If needed take a scan closer to the wall so that a defined shape is visible in the model.







Scanning Specifics

1. Corners of Rooms

Scans in corners of rooms provide good vantage points from which you can see the entire room in a single snapshot. This also allows photos to be generated that feature dramatic angles in the final composition.

Corners of rooms provide the best possible vantage points from which to scan for both 3D tours and 2D snapshots. For the best possible lighting, It is best practice to **scan corners which are on the opposite side to the windows**.



2. Edges of Rooms

Scans positioned at the edge of the room also provide good vantage points to view the entire space. Resulting photos from this viewpoint will have symmetrical composition.

When scanning at the edge of the room to assist in producing 2D snapshots from the 3D model, It is best practice to place the camera in the middle of the wall. This is a good position to capture a symmetrical snapshot.



Distance From Walls

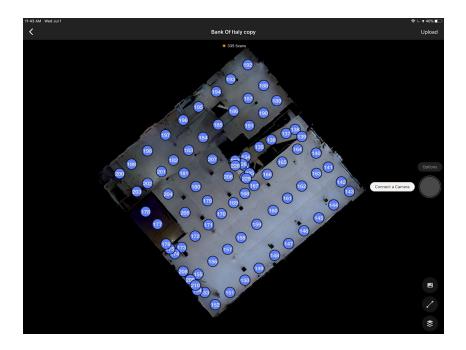
1. 60 cm (24 in) From Walls

When scanning in the corners or at the edges of a room, It is best practice that your camera remains 60 cm (24 in) from any wall. This is so the scan looks good in the 3D model (is not directly next to a wall), and it also provides a lot of depth for your 2D snapshot.

Doorways to rooms often provide the best vantage points for the 2D snapshot generated through the 3D model. When scanning near a doorway you can often move the camera nearer to the perimeter of the room while remaining more than 60 cm (24 in) from any wall.

Scan Positions in Open / Empty / Shell Spaces

When scanning open / empty / shell spaces (where the office has no furniture or is in construction phase), it is best practice to position scans in linear and keep the scan positions equidistant from each other. Keeping the scans organized and detailed will help you make the model easy to navigate, as well as provide the most detail possible for the space.



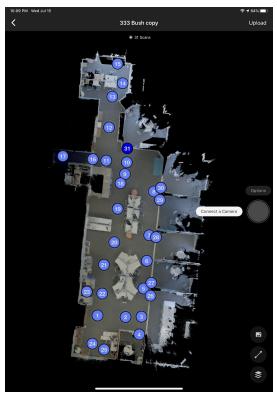


Shooting a Complete Scan and Filling in the "Dark Empty" Space

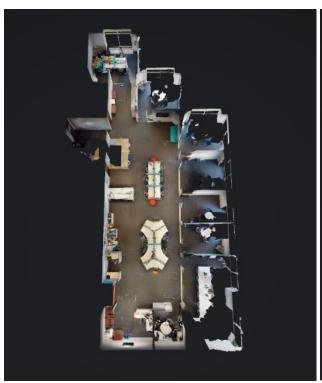
When arriving on site for a large commercial space, it can be overwhelming at times. Things will look very repetitive, and all of the furniture can look the same. You will naturally want to try and move through the space as quickly as you can, but you must make sure that you do not sacrifice the integrity of the scan for the sake of moving quickly.

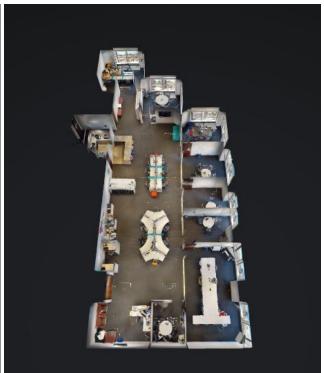
The biggest problem areas in commercial spaces are in offices, conference rooms, and repetitive desking or cubes. You need to make sure that you are creating a complete scan that can be seen as complete not just in the first person view in the scan, but in the dollhouse view of the space.

The photos below illustrate this issue. You can see in the first photo that the photographer just took a scan of each office/conference room from the doorway, and never completed scanning the entire office/conference room. The view from the first person view in the model will be the same, but the dollhouse and floor plan views will be incomplete and will not give an accurate depiction of the space. You must make sure to complete scans in each room and make sure that you can see the shape of the room and all furniture in the capture app. Take as many scans as needed to get rid of all of the dark empty spaces.







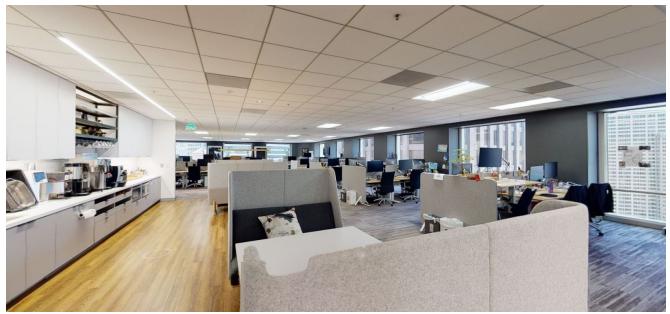


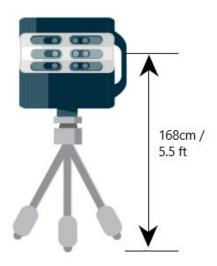


Camera Height For Scans

Standard Height for All Scans

If you would like to scan the entire property at a standard height, we recommend setting the tripod so the height of the camera is 5 ft 6 in or 168 cm (from lens to ground). This height often provides views above furniture and equipment to give good vantage points of the entire office while offering details visuals of the space around each scan







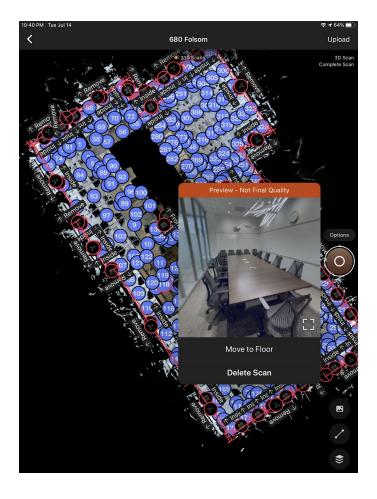
Preview Scans

Why Preview Scans and How To Do It

When scanning for the purpose of creating snapshots, you can use the **Preview Scan** feature in the Matterport Capture App to check whether the height and position of the camera will produce a good snapshot.

If you preview a scan that does not appear to provide a good vantage point from which to capture a snapshot, you can adjust the height and position of the camera and create a new scan.

You can find a guide on how to preview a scan. Learn more.





Mirrors, Windows & Trim Marks

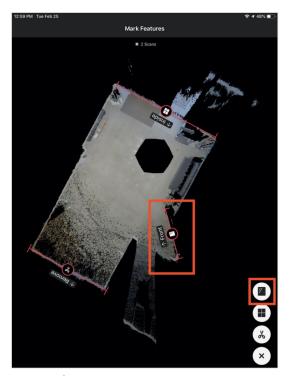
Marking windows, mirrors and trim in a model are a critical part of creating an immersive user experience. Marking features after every scan taken in Capture can reduce alignment issues and vastly improve the quality of the finished Matterport model. Taking these actions will result in a clean and well-defined 3D model in Dollhouse view.

Marking Mirrors

The Matterport camera cannot see or define a mirror (or any reflective surface) the way humans can. Because of this, when the camera processes a reflection, it believes there is a room on the other side of the mirror. This can lead to major alignment issues when scanning.

When a mirror is marked in the Capture app, the app is told to ignore what it sees in the mirror. It is best to immediately mark mirrors as soon as the camera can see them.

- 1. Tap the "Mark Features" icon (bottom-right) in Matterport Capture app.
- 2. Tap the "Mirror" icon.

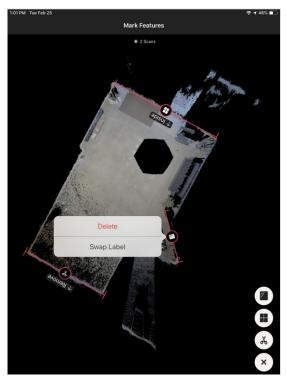


- 3. In the preview pane, tap one end of the mirror and drag the line to the other end of the mirror.
- 4. Release your finger from the screen to stop the marking.
- 5. Aim the "Front" label toward the inside of the room.
 - a. To change the orientation, tap the "mirror" icon in the middle of the marking and select "Swap Label."



App Controls for Marking Mirrors

- Delete A Mirror Marking
 - Tap the "Mirror" icon in the middle of the marking line and select "Delete" in the pop-up window.



- Extend Or Rotate A Marking
 - Tap and drag on the endpoint of the marking line. Move outwards to extend and up or down to rotate
- Move The Entire Marking
 - Tap and drag on the "Mirror" icon in the middle of the marking.

Marking Windows

The Matterport camera cannot interpret windows the same way as humans can and will attempt to collect 3D data from the other side of the window.

When a window is marked, the Matterport Capture app is told to ignore what it sees outside (grass, trees, neighboring properties, parked cars, etc.).

- 1. Tap the "Mark Features" icon (bottom-right) in Matterport Capture app.
- 2. Tap the "Windows" icon.





- 3. Tap on one end of the window and drag to the other end of the window.
- 4. Release your finger from the screen to stop marking.
- 5. Aim the "Inside" label toward the inside of the room.
 - a. To change the orientation, tap the "Mirror" icon in the middle of the marking and select "Swap Label."

App Controls for Marking Windows

- Delete A Window Marking
 - Tap the "Window" icon in the middle of the marking line and select "Delete" in the pop-up window.
- Extend Or Rotate A Marking
 - Tap and drag on the endpoint of the marking line. Move outwards to extend and up or down to rotate
- Move The Entire Marking
 - Tap and drag on the "Window" icon in the middle of the marking.

Marking Trim

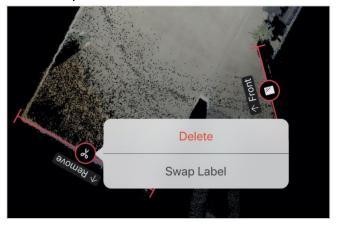
The trim tool can eliminate unwanted 3D depth data, similar to the way cropping eliminates unwanted areas in 2D images. The trim tool can remove unwanted objects, artifacting lines and jagged edges.

Any 3D data that exists outside of trim markings will not appear in the Dollhouse or Floor Plan views.

- 1. Tap the "Mark Features" icon (bottom-right) in Matterport Capture.
- 2. Tap the "Trim" icon.



- 3. Create a trim mark along the wall with the capture data that needs removal.
 - a. The "Remove" label should be pointed toward the 3D data that needs removal. To change the orientation of the label, tap the "Trim" icon in the middle of the trim marking and select "Swap Label."



App Controls for Marking Trim

- Delete A Trim Marking
 - Tap the "Trim" icon in the middle of the marking line and select "Delete" in the pop-up window.
- Extend Or Rotate A Marking
 - Tap and drag on the endpoint of the marking line. Move outwards to extend and up or down to rotate
- Move The Entire Marking
 - o Tap and drag on the Trim" icon in the middle of the marking.

Tips for Marking Windows, Mirrors and Trim Tool

- Place the marking on the wall or slightly outside of the wall when marking windows or mirrors.
- Extend your marking line.
 - We recommend making your marking line slightly longer than the actual window or mirror on your minimap without covering any doors or hallways.
- Group multiple mirrors or windows into one.
 - If a single wall contains multiple windows or mirrors, make one long marking that covers them all in a single marking.
- Ensure that no trim markings intersect with any scan points. If removing 3D data beyond a certain wall, trim just outside and not directly on the wall.



Amenities / Exterior 360 Views - Best Practices Guide

Where to Position the Camera for Exterior Views?

- 1. You want to set the space with one 3d scan. The camera and software wil proces 1 3D scan. You will not be able to upload a Matterport model with only 360° Views...they MUST be attached with at least one 3D Scan.
- 2. Once you have done 1 3D scan of the space, switch the camera to "360 View" and take 20+ 360 scans of the space. Be sure to take 360° Views of various vantage points and points of interest in the amenity space, to show a variety.
- 3. Once you are done capturing the 360 views, and BEFORE you upload your model, access the 360 views at the bottom right corner of the capture app and select each photo and click "pin to Map" in the upper right corner of the iPad screen.
- 4. Once you have "pin to Map" all 360 views you are ready to upload the space.

How to Avoid Sun Flares

Sun flares can be caused when the camera is facing towards the sun. Sun flares cause rings or circles to appear and will also affect the image's colour.

You can Avoid sun flares by checking the 360 views of the exterior using the Preview Scan feature described in the 'Preview Scan' section of this guide. Lens flares can be caused by the position of the camera or even its height. If a lens flare appears, you can adjust the position and height of the camera and create a new 360 view.

Example:





Matterport Capture App

Resulting Snapshot



Recommendations and Preparation

Remove For Sale Signs, Sensitive Information, and Unsightly Objects

Before you arrive on site, Matterport will ask the client to clean and straighten the property in the way they want it presented before the Capture Tech arrives on site. If something small is missed however it is best practice to remove or hide potentially private/sensitive or otherwise unsightly objects from view before beginning to scan.



Onsite Checklist - please print and bring this onsite during Commercial jobs

Best Practices Checklist

O Remove For Sale Signs (if required) and sensitive objects (if property is very unclean or has not been prepared, then the capture can take place without intervention) O Have a "plan of attack" for your scan process to capture efficiently O Set tripod height to 5ft 6in (168 cm) O Preview a scan after you capture it if needed O Place the camera in corners, doorways, and edges of all rooms O Avoid direct sunlight on the camera's lenses O When in doubt, take an extra scan! You can always disable a scan but missing a scan may be costly O Review the completed scan on the ipad and inspect to make sure that you have detailed all offices, conference rooms, common areas, and work areas. If you see any spaces that need to be addressed, go back and complete the scanning of those spaces O Make sure that you have filled in all of the dark "empty" space O Mark any windows or mirrors that were captured during the scan O Trim the perimeter of the model before uploading