

A woman with brown hair in a ponytail, wearing a blue and white striped shirt and a headset, is seen from the side, working on a laptop. She is in a room with white bookshelves filled with books in the background. A teal semi-transparent banner is overlaid across the middle of the image, containing the title and date.

Leveraging Technology to Complete EHS Tasks Remotely

April 23, 2020



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Benchmark your programs via events, online learning, research and executive networks

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Learn tools & techniques to execute your strategy and be inspired by peers

Build

Build a network of peers whose experience can help you solve your challenges

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Actionable strategies to empower
EHS&S leaders to make an impact

EHS Operational Excellence – Virtual Conference

Sustaining EHS During Times of Business Interruption

May 21st

- Featuring Speakers on:

- Lessons Learned from the Frontlines Running A Cross Functional COVID-19 Taskforce
- Spotlight on Mental Health & Wellness Best Practices During COVID-19
- The Urgent Call for Leaders - Keeping EHS Steady and Effective During Crisis

- Buzz Sessions to Network & Problem Solve with Peers



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www.naem.org/opex



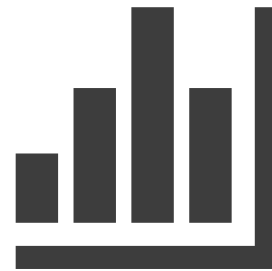
NAEM'S Special Resources for COVID-19



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Quick Polls



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Today's Presentation

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Introduction: Current Environment demands Business Agility



Becky Corbin,
CHMM, CPEA

- Senior Principal
- Certified Professional Environmental Auditor
- Certified Hazardous Materials Manager



Erika Lloyd

- Principal
- Virtual Technology Leader



Dean Boudreau

- Associate Principal
- 3D Scanning Discipline Leader
- Autodesk Certified Professional





Leveraging Remote Technology to Drive Operational Agility & Continuity in EHS&S

National Association for EHS&S Management Webinar - April 23, 2020

COMMITMENT & INTEGRITY DRIVE RESULTS





Remote Technology Drivers

Facilitate operational agility and regulatory compliance,
and promote business continuity



Inability of certain
personnel/experts to
access site



Physical access
restrictions such as
confined spaces



Personnel
safety
concerns



Avoid
disturbing
sensitive
environments



Cost





Agenda



Overview of some remote technology options



EHS&S application ideas for the technologies



Deep dive into two technologies



Questions





Remote Technologies



GoPro



Remote Assist
Mobile *



Remote Assist
HoloLens



Matterport
Camera *



Drones

* Deep Dive



Add QuickPoll

Have you used any of these technologies before? (Multi-click)

- GoPro
- Remote Assist Mobile or other type of remote viewing
- Remote Assist HoloLens or other type of virtual technology
- Matterport Camera or other Laser Scanner
- Drones





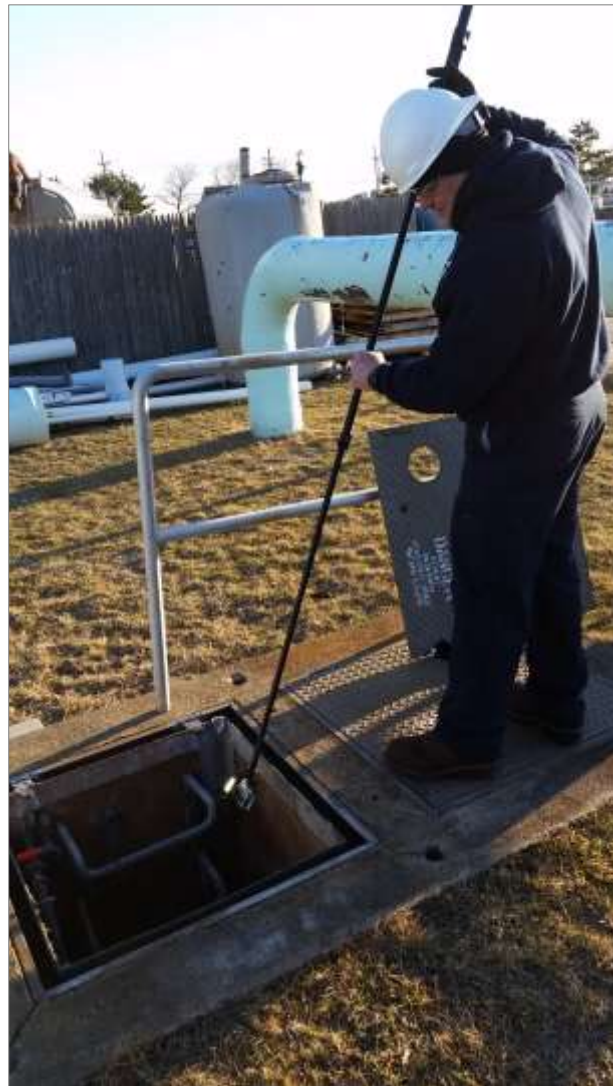
GoPro - What is it?



Small digital camera that captures photos and high-resolution video that can be viewed in real time.



GoPro - How do you use it?



- Various mounting options available
- Connect to iPad for live streaming
- Video and/or photos



GoPro - Features & Benefits



- Versatile, easy to use
- Small, rugged, waterproof
- Inexpensive
- Excellent video quality for price
- Multiple angle, zooming
- Promotes safe information gathering



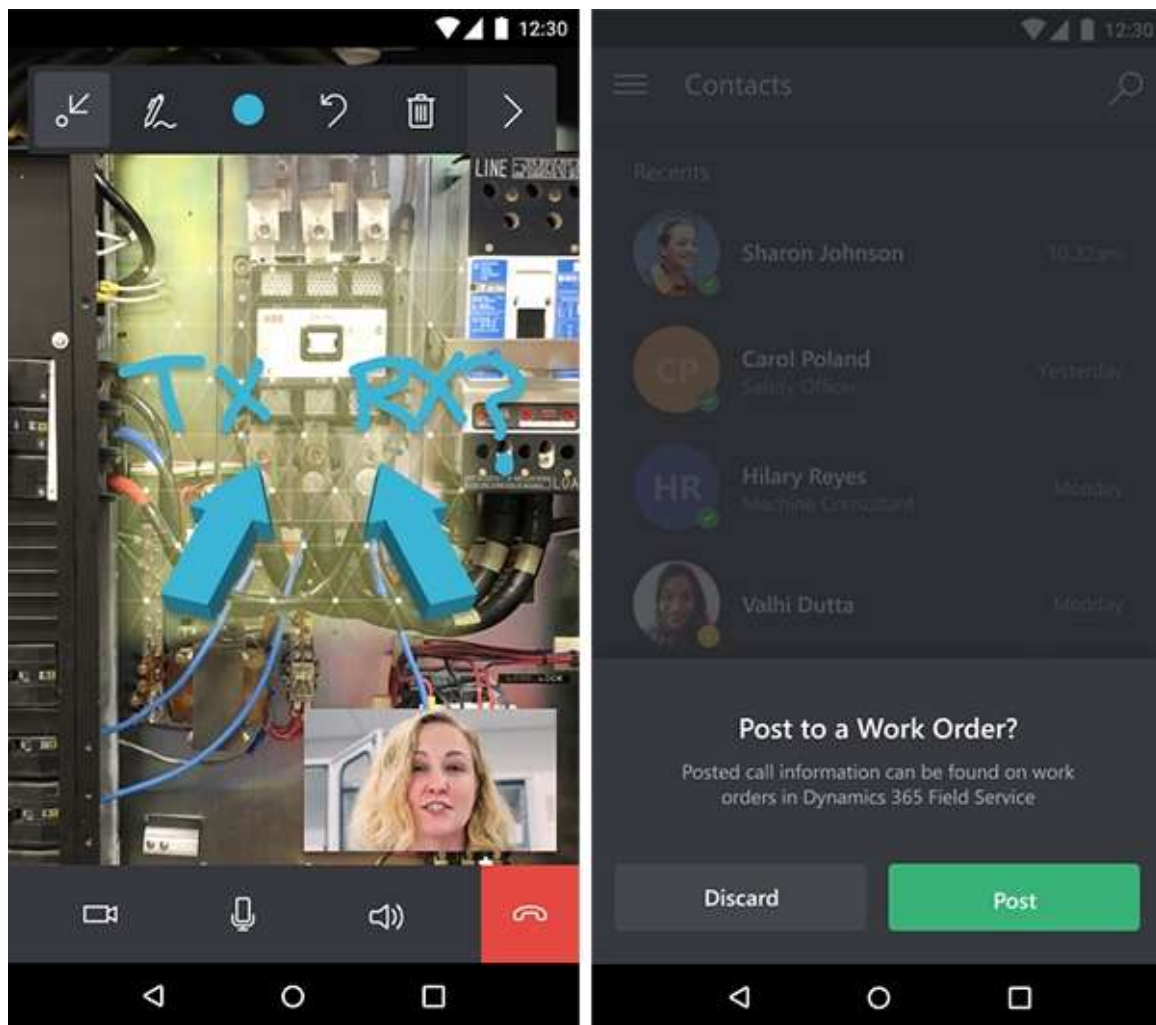
Dynamic 365 Remote Assist Mobile- What is it?



Microsoft Application that allows on-site personnel to connect to and collaborate with remote experts and others using phone or tablet.



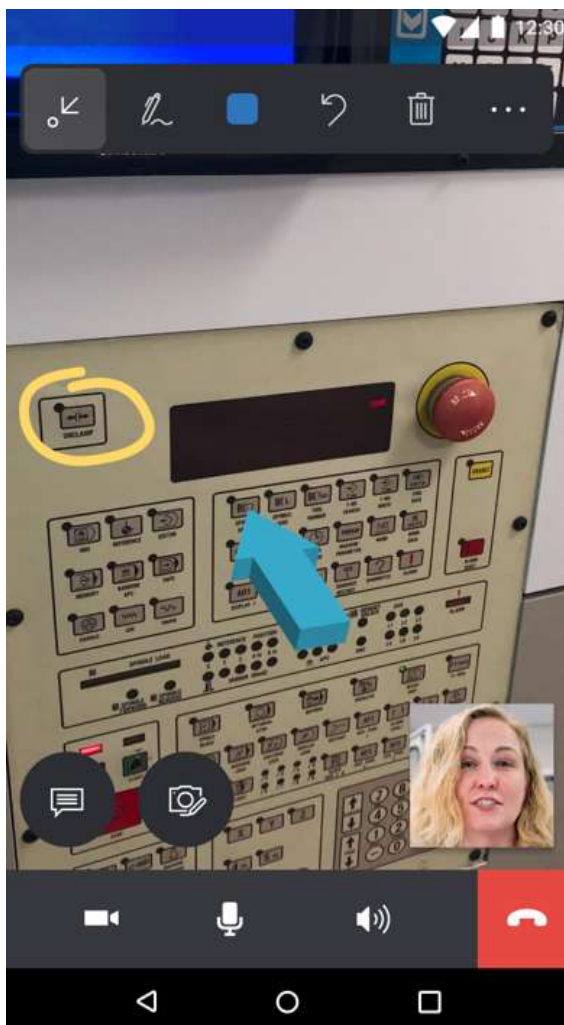
Dynamic 365 Remote Assist Mobile - How do you use it?



- Launch call using Microsoft Teams
- Live one-to-one video calling
- Mixed reality annotations
- Send and receive message, images and files through text chat
- On-site personnel can share what they see with others to troubleshoot problems, gather information, conduct inspections, etc.



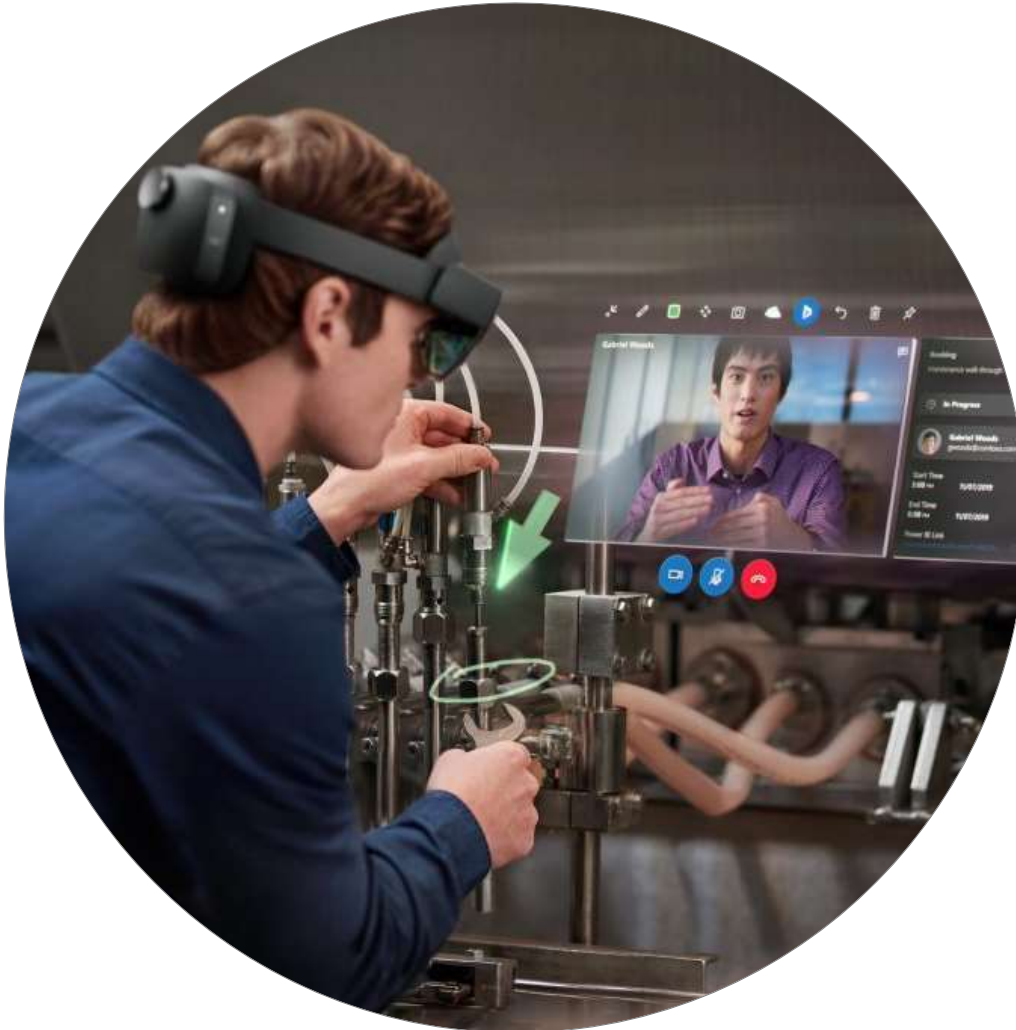
Dynamic 365 Remote Assist Mobile - Features & Benefits



- Easy to use
- Use iPad or iPhone
- View the site without being on-site
- Solve problems in real time
- Bring critical information into view
- Communicate detailed and complex information visually



Dynamic 365 Remote Assist HoloLens - What is it?



The HoloLens is a headset device with integrated mixed reality smart glasses.

Using multiple sensors, advanced optics, and holographic processing, these holograms can be used to display information, blend with the real world, or even simulate a virtual world.



Dynamic 365 Remote Assist HoloLens - How do you use it?



- Launch call using Microsoft Teams using Remote Assist License
- Live one-to-many video calling
- Allows others see through technician's eyes to help with tasks and even draw on top of technician's line of vision
- Allows collaboration and communication with one or multiple remote personnel



Dynamic 365 Remote Assist HoloLens - Features & Benefits



- Hands free and untethered
- Voice Activate controls
- Familiar Windows 10 look
- Ergonomic
- Share remote images with multiple people
- Simultaneous virtual display of documents, specs, diagrams, etc.



Matterport - What is it?



A three-dimensional camera system to create realistic, fully immersive experiences.

Capture imagery, collect measurements and process data to create, edit and share a 3D rendering of your location.





Matterport - How do you use it?



- Tripod mounted
- Connect wirelessly to iPad
- Press button to capture photo
- Relocate every 5 – 8 feet throughout the space
- Upload data to Matterport site when complete



Matterport - Features & Benefits



- 3D virtual walk throughs
- Floor plans with measurements
- Still photos captured from scan
- Point cloud
- Inexpensive
- Easy to use
- Integrates with design software



Drones - What is it?



A flying robot that can be remotely controlled or fly autonomously through software-controlled flight plans.



Drone - How do you use it?



- Register drone
- Fly drone at or below 400 feet
- Keep drone within line of sight
- Can connect to device for live streaming
- Be aware of FAA Airspace Restrictions



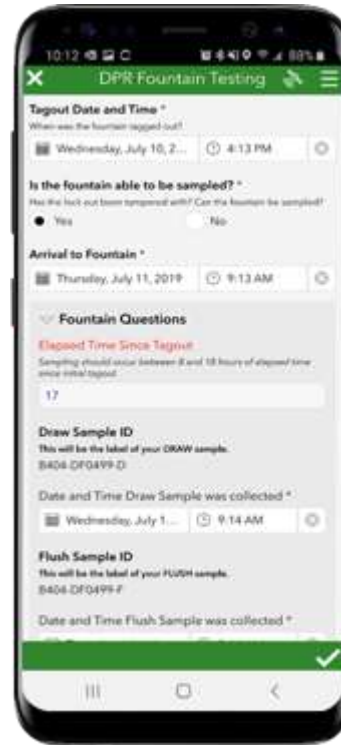
Drone - Features & Benefits



- Access remote, difficult to get to or unsafe areas
- Visually inspect large area quickly
- Access project sites that are environmentally sensitive or unsafe
- Live stream and recorded video and photos
- Orthoimagery, 3D modeling, contours, volume calculation, thermal imaging, other sensors



Remote Technology Combined with Field Data Collection





EHS&S Remote Technology Applications

Personnel operated video devices (GoPro, Remote Assist Mobile and HoloLens)

- Confined spaces
 - Avoid entering
 - Gather info on space prior to entering
 - Document conditions
- Work with remote personnel/experts
 - Audits
 - Sampling - provide instruction or oversight
 - Job hazard assessments
 - Training
 - Equipment calibration/adjustment
 - Site or equipment assessment
 - Incident/spill evaluation and response





EHS&S Remote Technology Applications

■ Matterport Camera

- Emergency planning and response
- Redesigning workspaces to accommodate social distancing
- Review spaces remotely with experts
- Insurance documentation
- Engineering design

■ Drones

- Rooftop emission point surveys, air modeling data
- Inspections of inaccessible areas – stormwater outfalls
- Inspections of large remediation sites
- Inspections of environmentally sensitive areas
- Thermal imaging and other data collection



Dynamics 365 Remote Assist Mobile





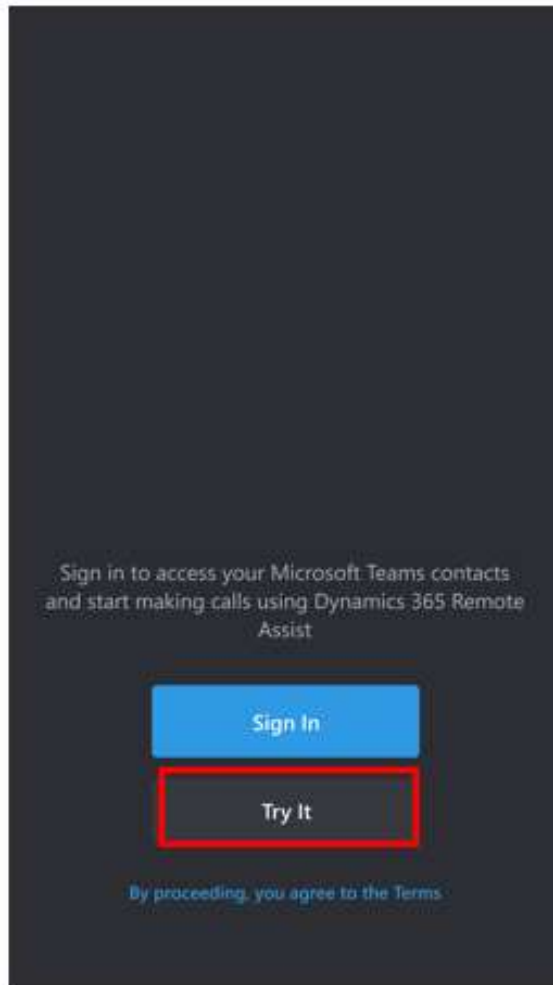
Remote Assist Mobile – What you need

- An android or iOS augmented reality (AR) compatible device
- Download Dynamics 365 Remote Assist for Mobile
- Dynamics 365 Remote Assist for Mobile License
- Runs on Microsoft Teams platform





Remote Assist Mobile – Account and Security



Microsoft Azure

Additional security verification

Secure your account by adding phone verification to your password. [View video](#)

Step 1: How should we contact you?

Authentication phone

United States (+1)

Method

☐ Send me a code by text message

☒ Call me

[Contact me](#)

Your phone numbers will only be used for account security. Standard telephone and SMS charges will apply.

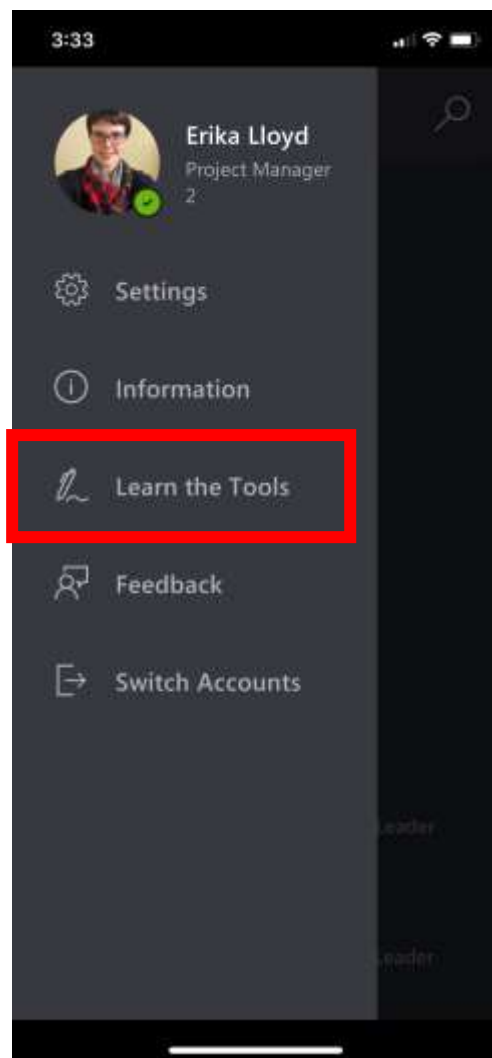
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- User Account
- Remote Assist License
- Sign in and go through Security Authentication



Remote Assist Mobile – Tools



- 1.
- 2.
- 3.
- 4.
- 5.



1. Add arrow
2. Add ink
3. Change color of arrow or ink
4. Undo last action
5. Delete everything on screen, including expert's annotations



Chat Pictures Video

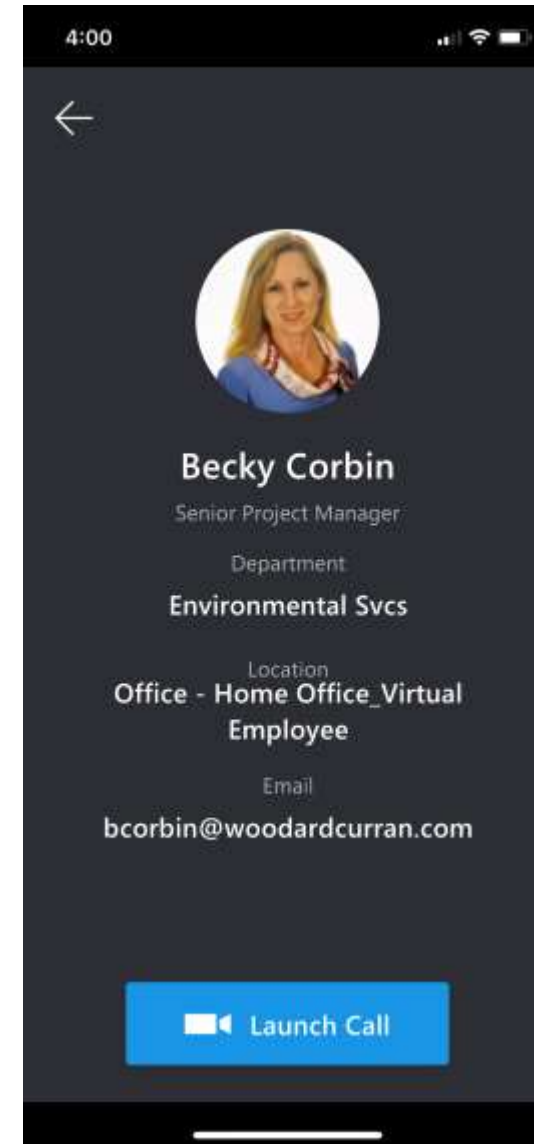
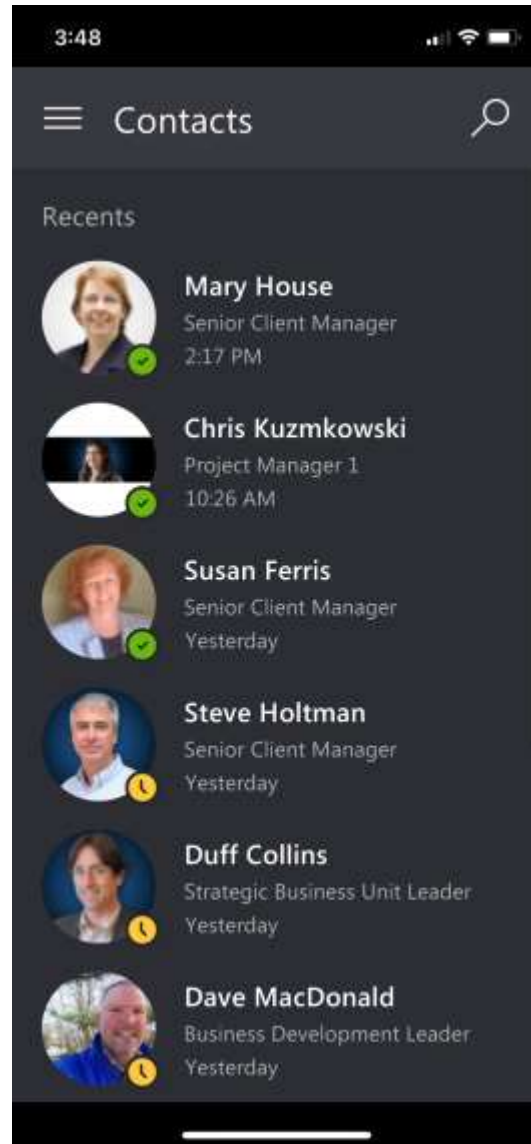
- 1.
- 2.
- 3.
- 4.



1. Pause video feed
2. Mute call
3. Turn on speaker phone
4. End call

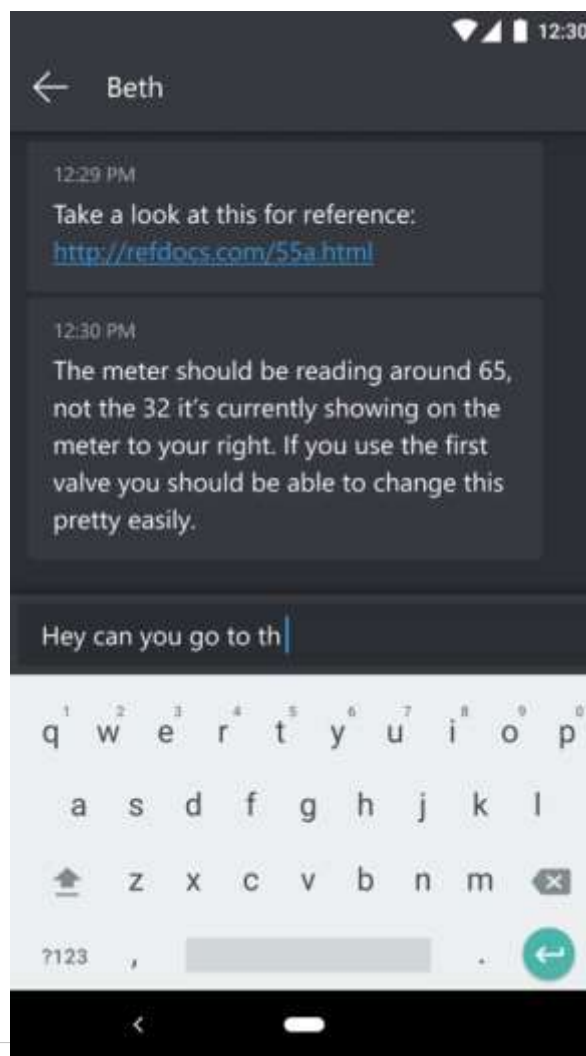


Remote Assist Mobile – Launch Call





Remote Assist Mobile – Communications

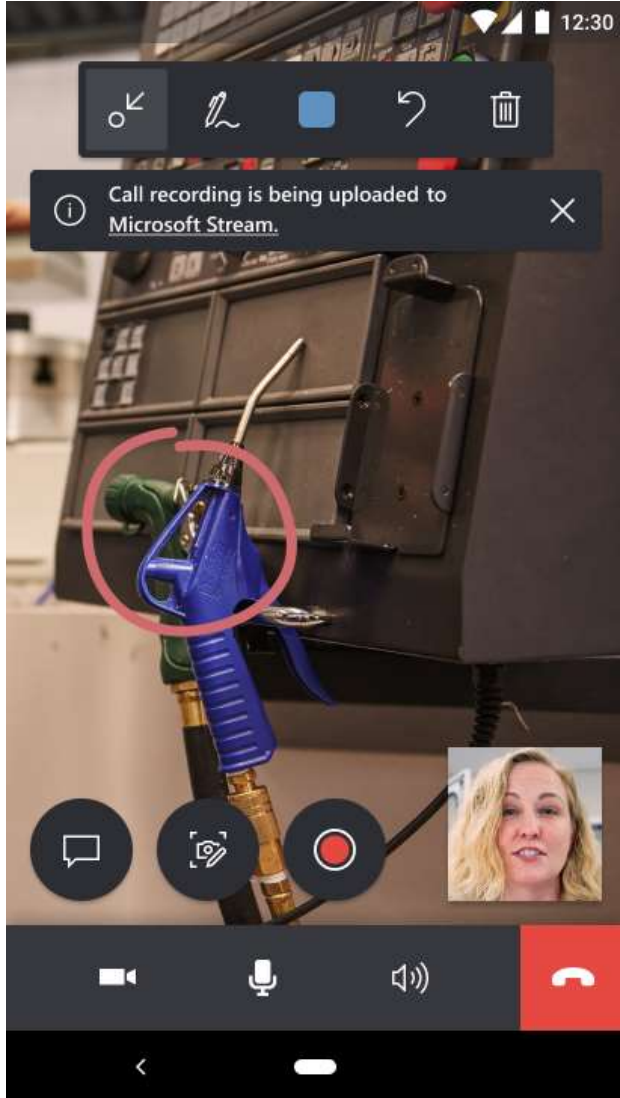


On-site Technician and Remote Collaborator

- Chat
- Send documents, photo, etc.
- Texts and pictures attached to Teams conversation and on device camera roll



Remote Assist Mobile - Documentation



- Photos and videos stored on camera roll of device
- Videos sent to Microsoft Stream
- Email is sent to both callers to view and share video



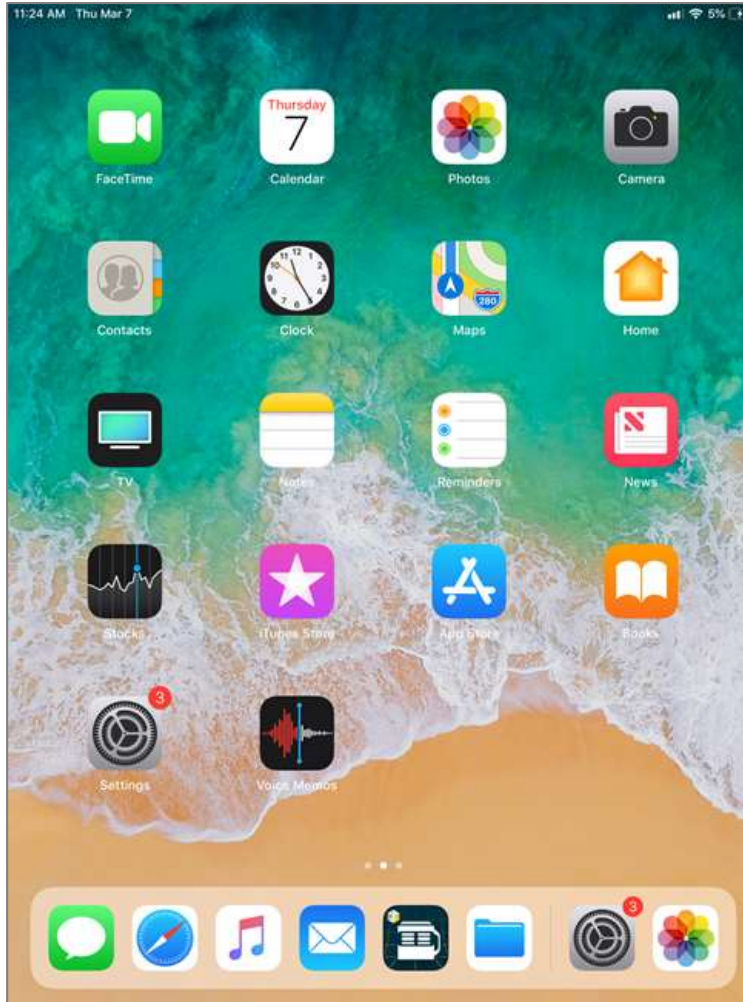
Remote Assist Mobile Video Demo





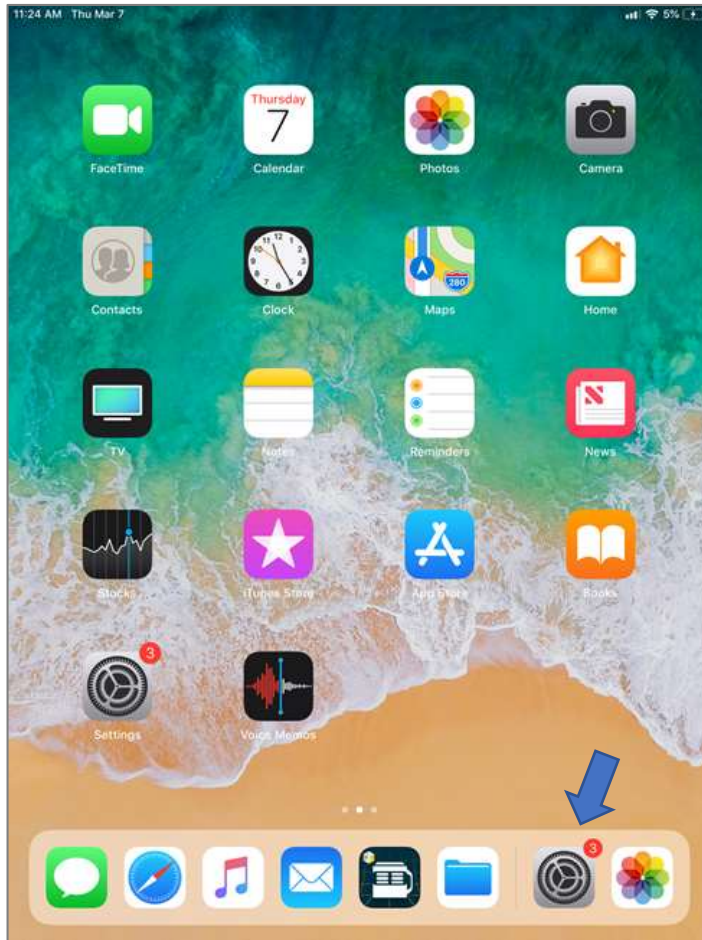
Matterport Camera – What you need

- Matterport Camera
- Tripod
- iPad

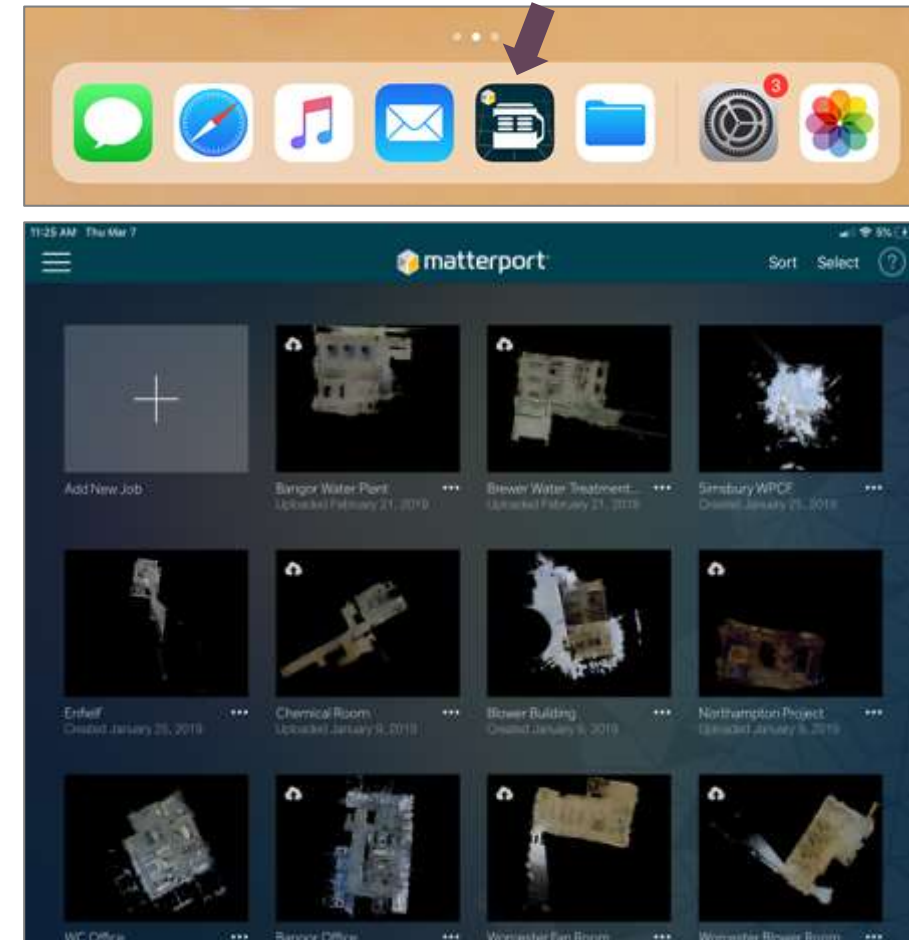




Matterport Camera – Startup



Launch the Matterport App



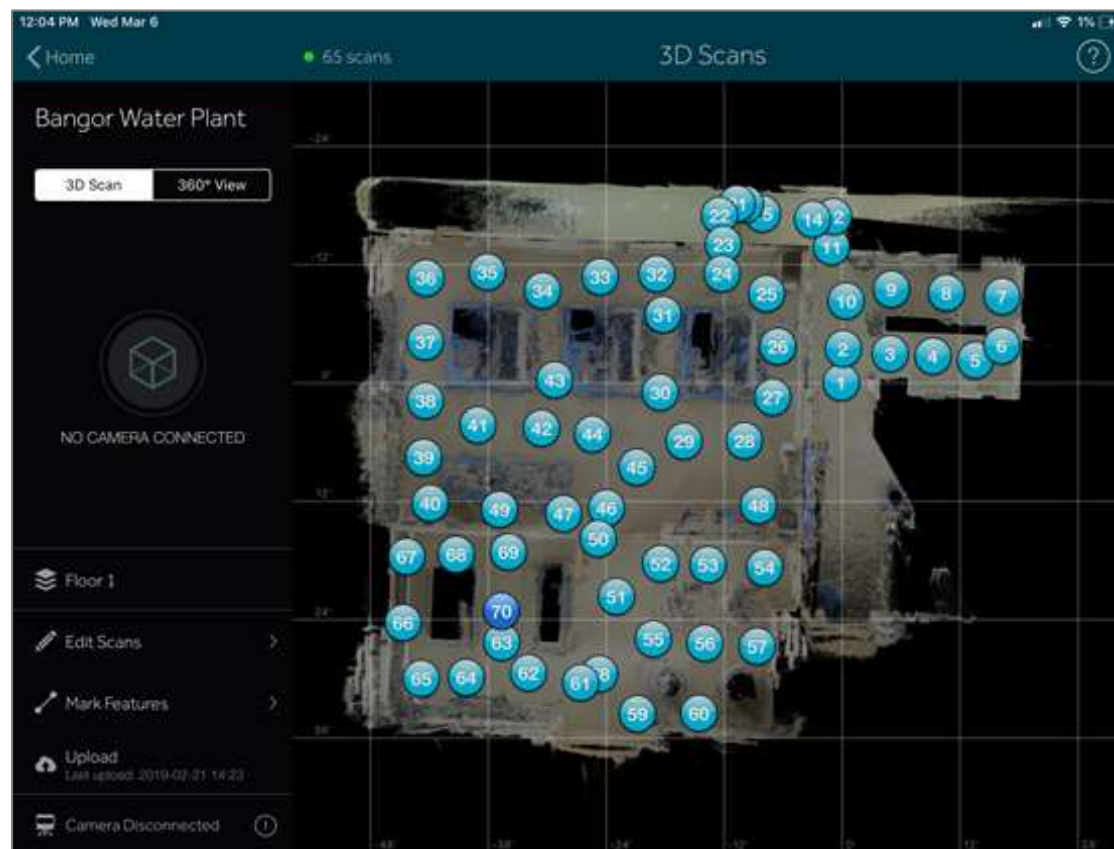


Matterport Camera – Begin Scanning

Set up the camera with built-in level



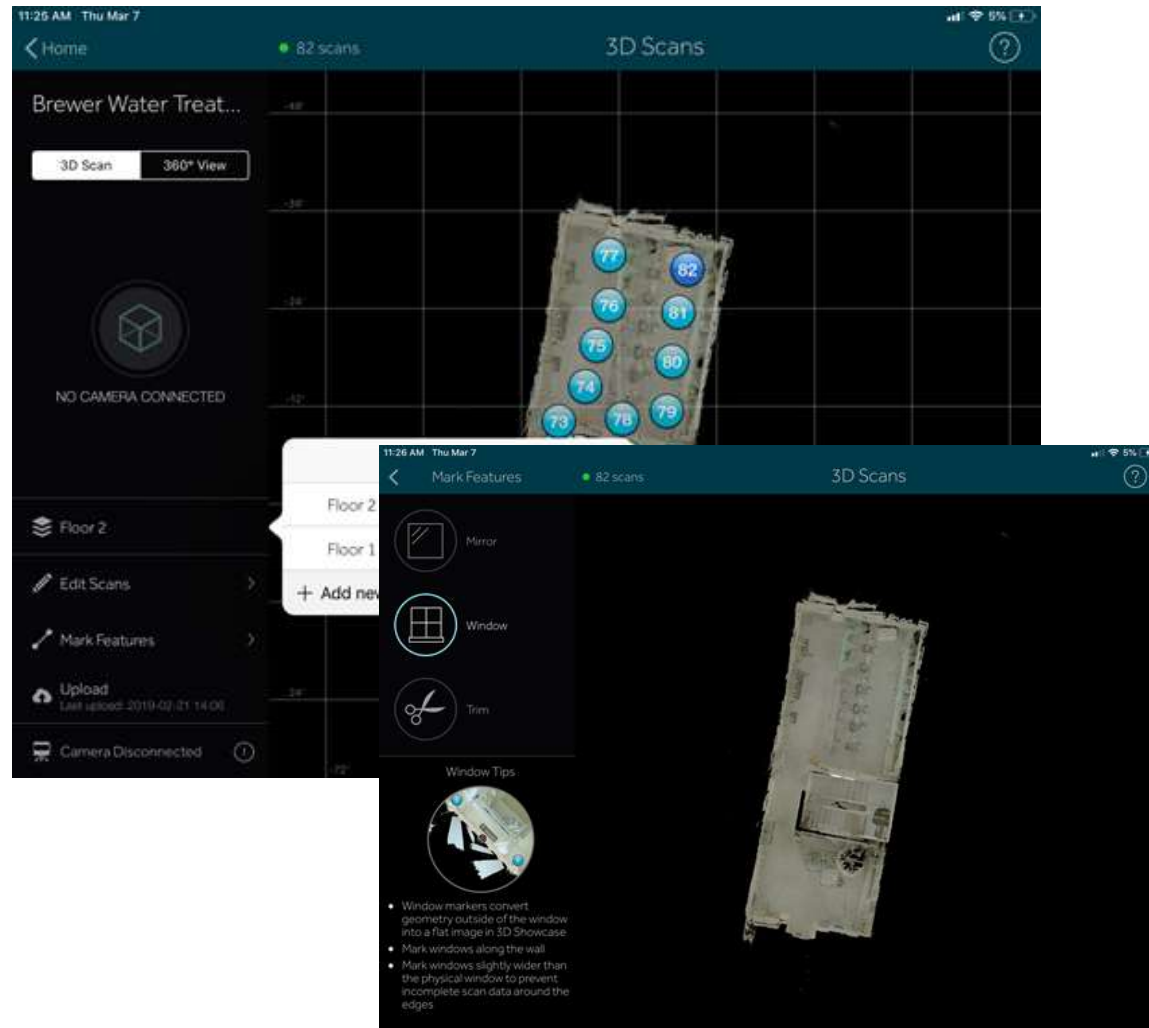
Choose 3D Scan or 360 view and begin scanning
(repeat every 5-8 feet as needed)





Matterport Camera – Edit and Upload

Add floors, windows, mirrors

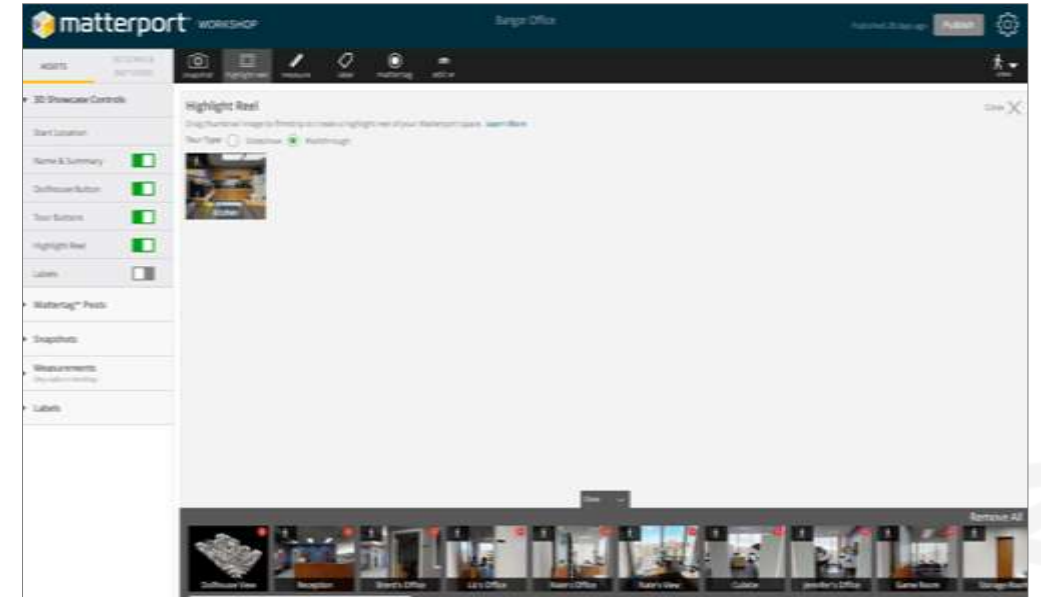
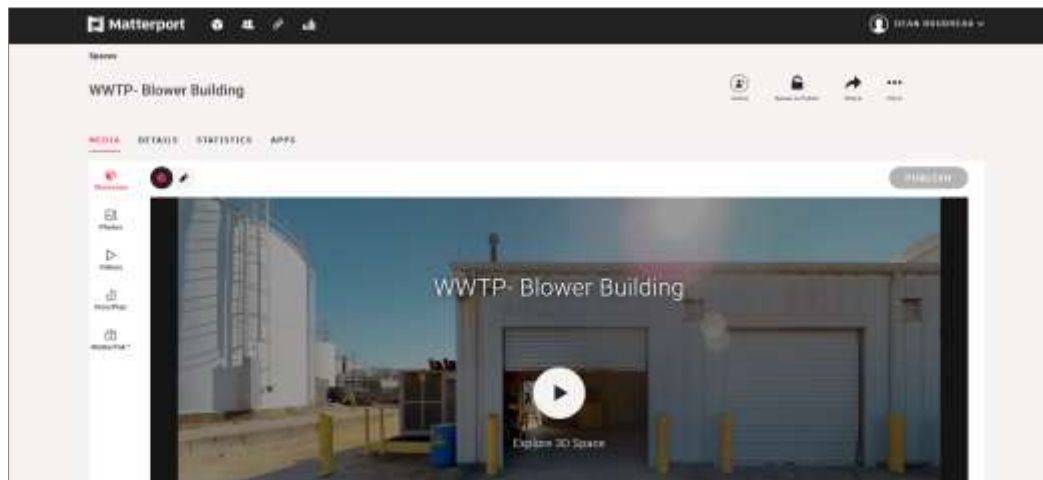


Upload to Matterport





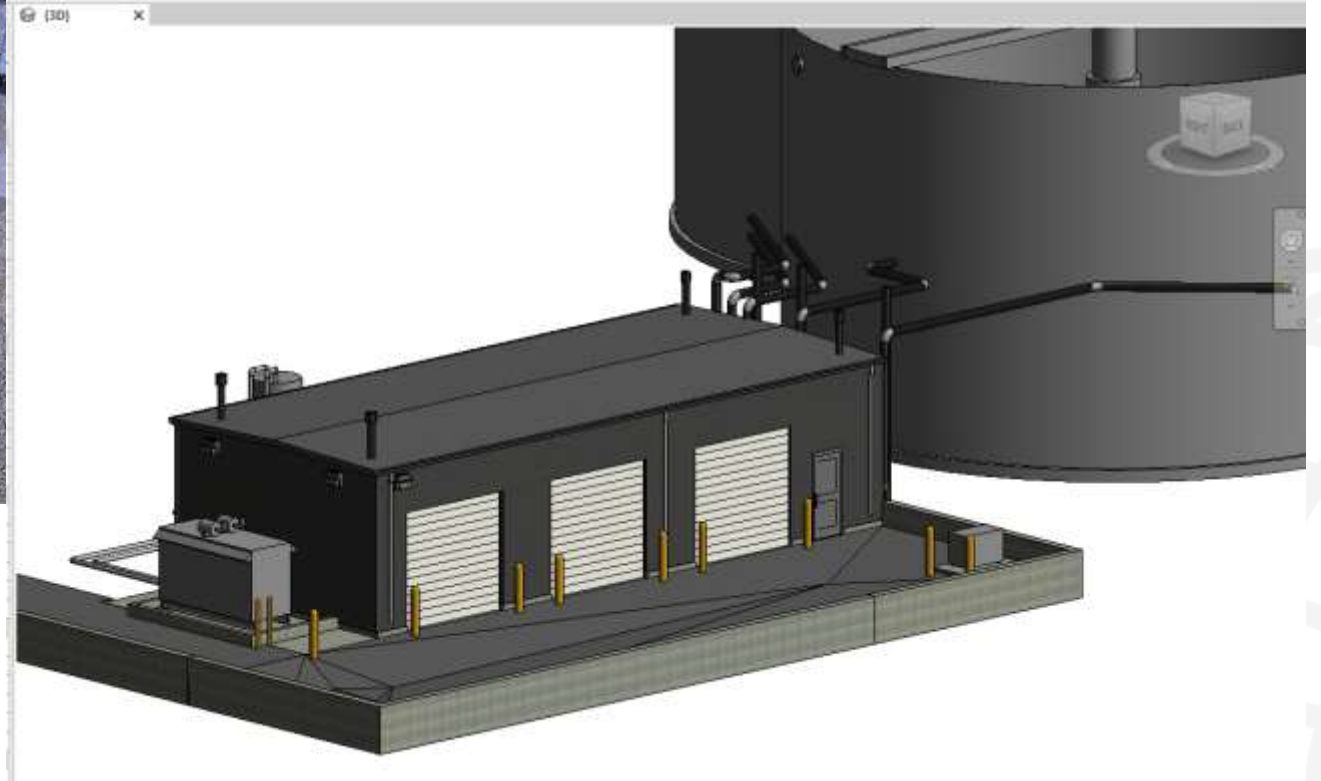
Space Workshop





Matterport Camera - Output

Point cloud for use in Autodesk products





Matterport Camera - Output

3D Walkthrough and Pictures



Scan your job site once with Matterport and you can get all of the following outputs:

- [3D Showcase](#)
- [3D Measurements](#)
- [2D Photography](#)
- [360° Photospheres](#)
- [Colorized Point Clouds](#)
- [High-Resolution Floor Plan Image](#)
- [Reflected Ceiling Plan Image](#)
- [3D Mesh File \(OBJ\)](#)



Remote Technology Feature Matrix

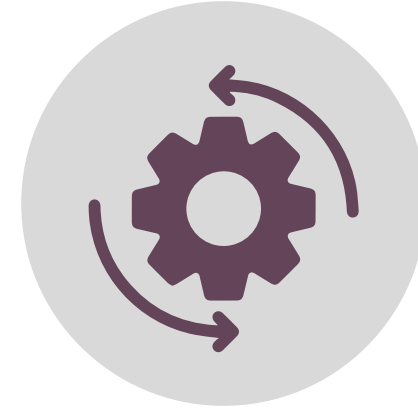
	GoPro	Remote Assist Mobile	Remote Assist HoloLens	Matterport Camera	Drones
Virtual Interaction with Remote User	Yes	Yes	Yes (Multiple users)	No	Yes
Ease of Use	Easy	Easy	Additional Training	Easy	Pilot needed
Cost Range Comparison	Low	Low	Medium	Medium	Medium-High
Handsfree Option	Yes	No	Yes	No	No
User On-site	Yes	Yes	Yes	Yes	No



Woodard & Curran – Your Remote Partner



We can work with you using our remote technologies to accomplish EHS&S tasks and projects now and as we move out of the COVID-19 circumstances

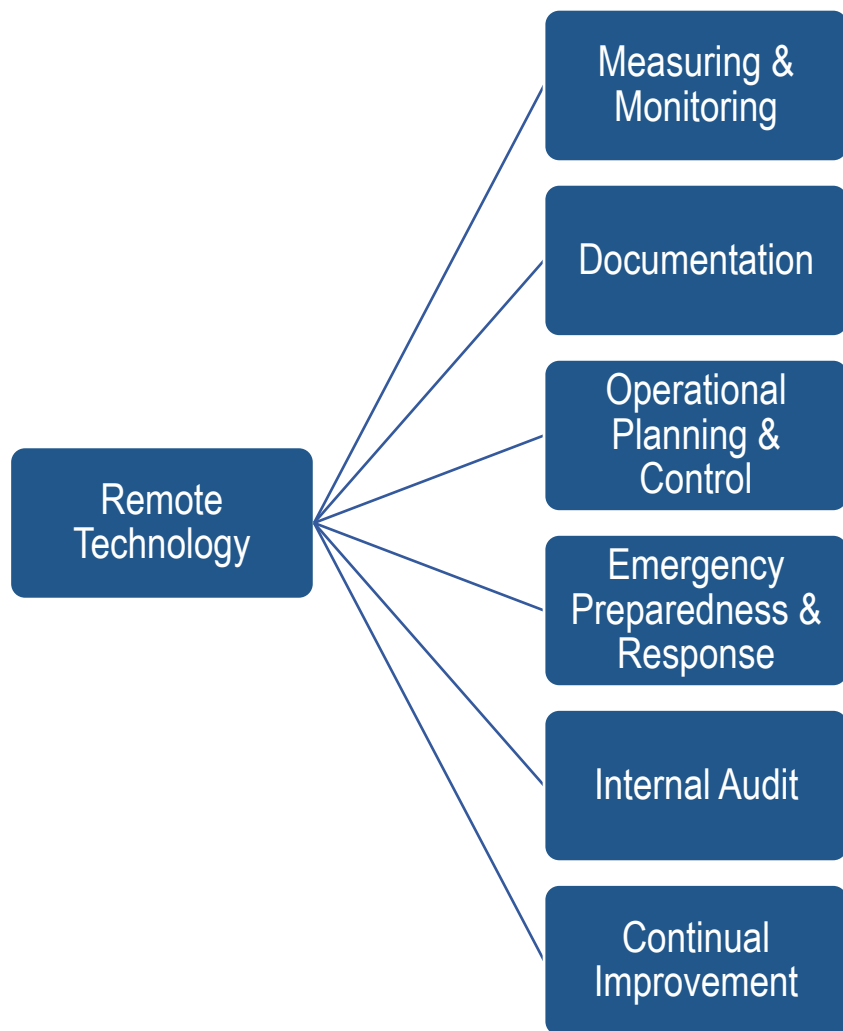


We can help you select and implement these and other remote technologies to promote business continuity, complete specific projects or enhance safety





Remote Technologies to Enhance EHS Management System Strategy





Contact



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- Identifying and sourcing protective & safety materials
- Managing health, safety and mental health of a remote workforce
- Ensuring the health & safety of essential, on-site employees during COVID-19
- Effectively communicating to employees to facilitate behavior changes
- Continuing operations after an exposure incident
- Assessing and articulating the business risks from COVID-19 for the C-suite

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April 30



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EHS&S Staffing,
Structure & Budget*

May 28



*How to Build
Corporate Social
Responsibility in
Your Supply Chain*

June 11



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EHS Operational Excellence

• May 21



Sustainability Impact

• Aug 3-5



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Thank you for Attending!



**A recording will be
available in 3-4 days.
You will receive an
email once it's posted
to our site.**



Have a safe & healthy day!

