



Drone Usage in AEC

Revolutionizing the AEC Industry With Drone Technology



Drone Applications For The AEC Industry

- Construction
- Architecture
- Surveying
- GIS Management
- Engineering
- 3D Modeling & Design
- Remediation and Restoration of Structures
- QA/QC & Inspection

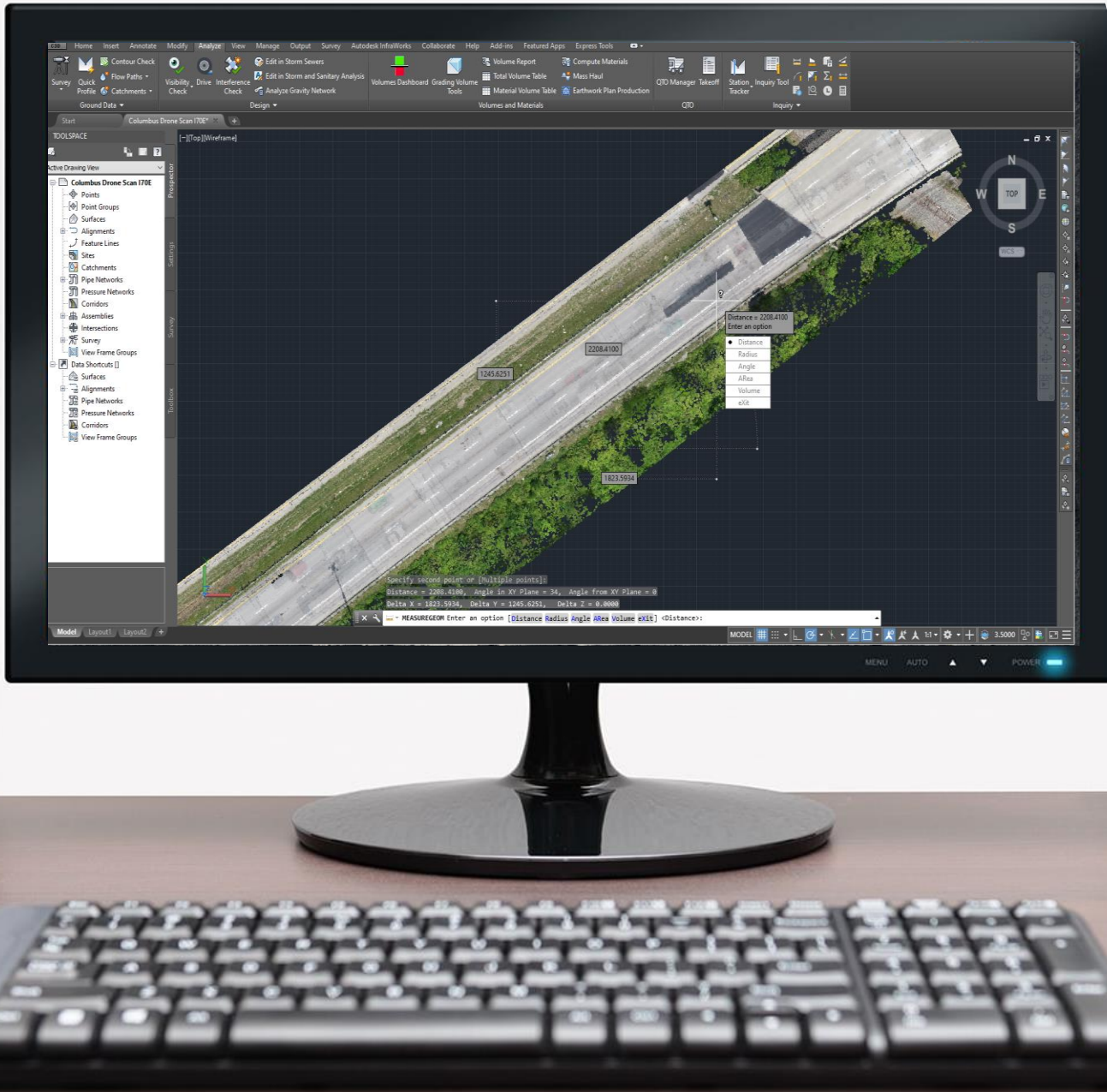
Drone Usage in Pre-Construction

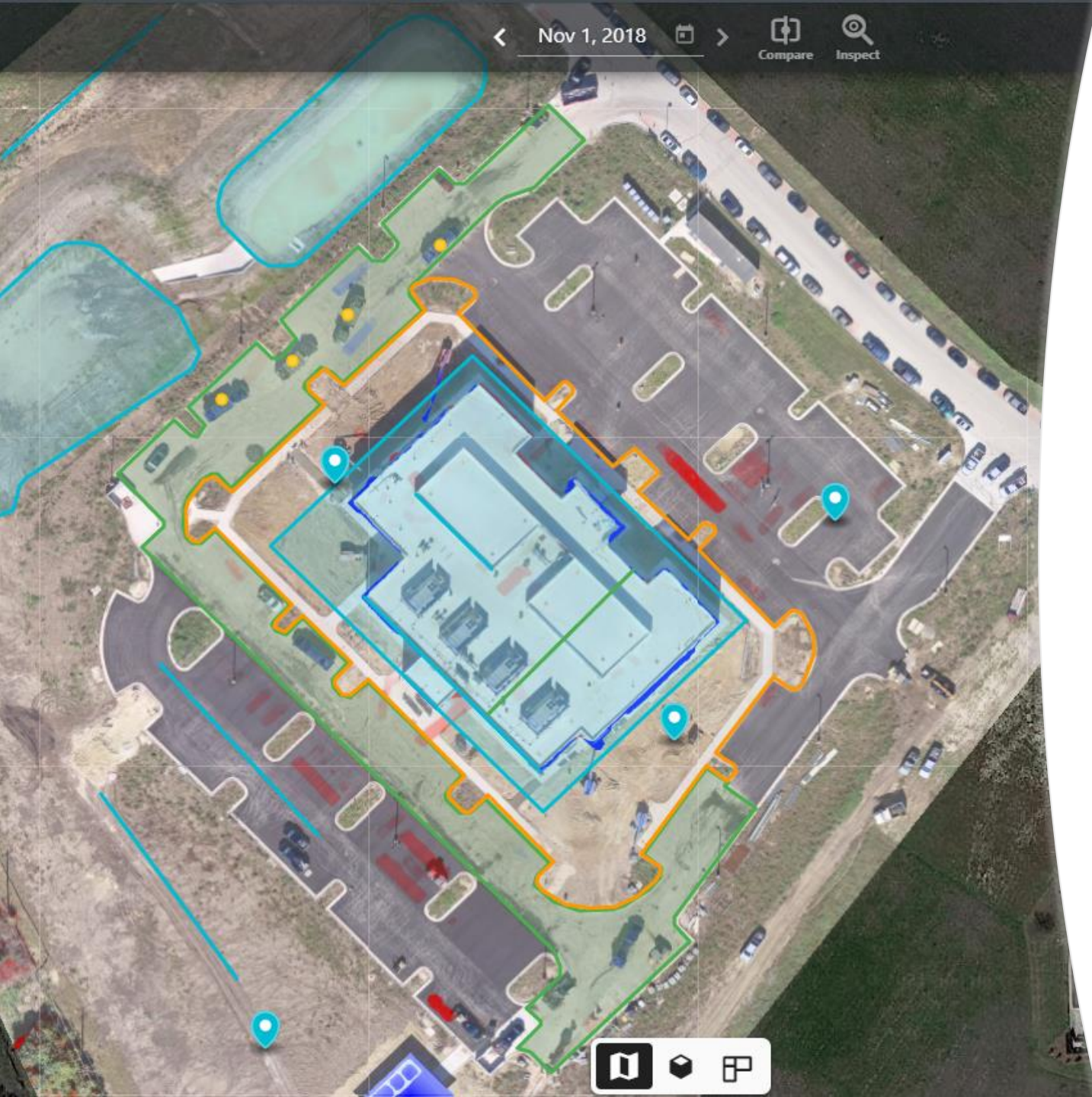
- Drones can provide your entire team with real-time visual documentation of every stage of the construction cycle
- Create 360 degree virtual tours of the project to assist in planning and coordination
- Expediate pre-construction planning and design from bid to earthworks with accurate aerial maps, 3D models and point clouds
- Drone data makes is easy to digitize project reporting



Explore and Access Project Data in One Place

- Analyze your project data with greater insights to make more informed decisions
- View and compare elevation, project health and thermal data in minutes.
- Compare as-built to as-designed with design plan overlays
- Explore 2D and 3D mapping solutions accompanied by 4K video in one solution.





Effective Project Communication

- UAV data offers enhanced project communication using real-time data.
- Progress of an area, sub or material count can be shared in just a few clicks, keeping members of various teams informed.
- Manually inspecting asset and surveying sites is a time-consuming task
- 4K video can be inserted into project reports for full spectrum views

Equipment, Material Delivery and Placement

- Real-time aerial maps aid in accurate site planning for deliveries of materials and equipment.
- Drones accurately capture the whole site to make design and drop-off locations easy to plan and communicate.
- Aerial maps created from UAVs have powerful annotation tools that make it easy to pinpoint exact locations, calculate distance, elevations, area and volumes to aid in the planning and management process.

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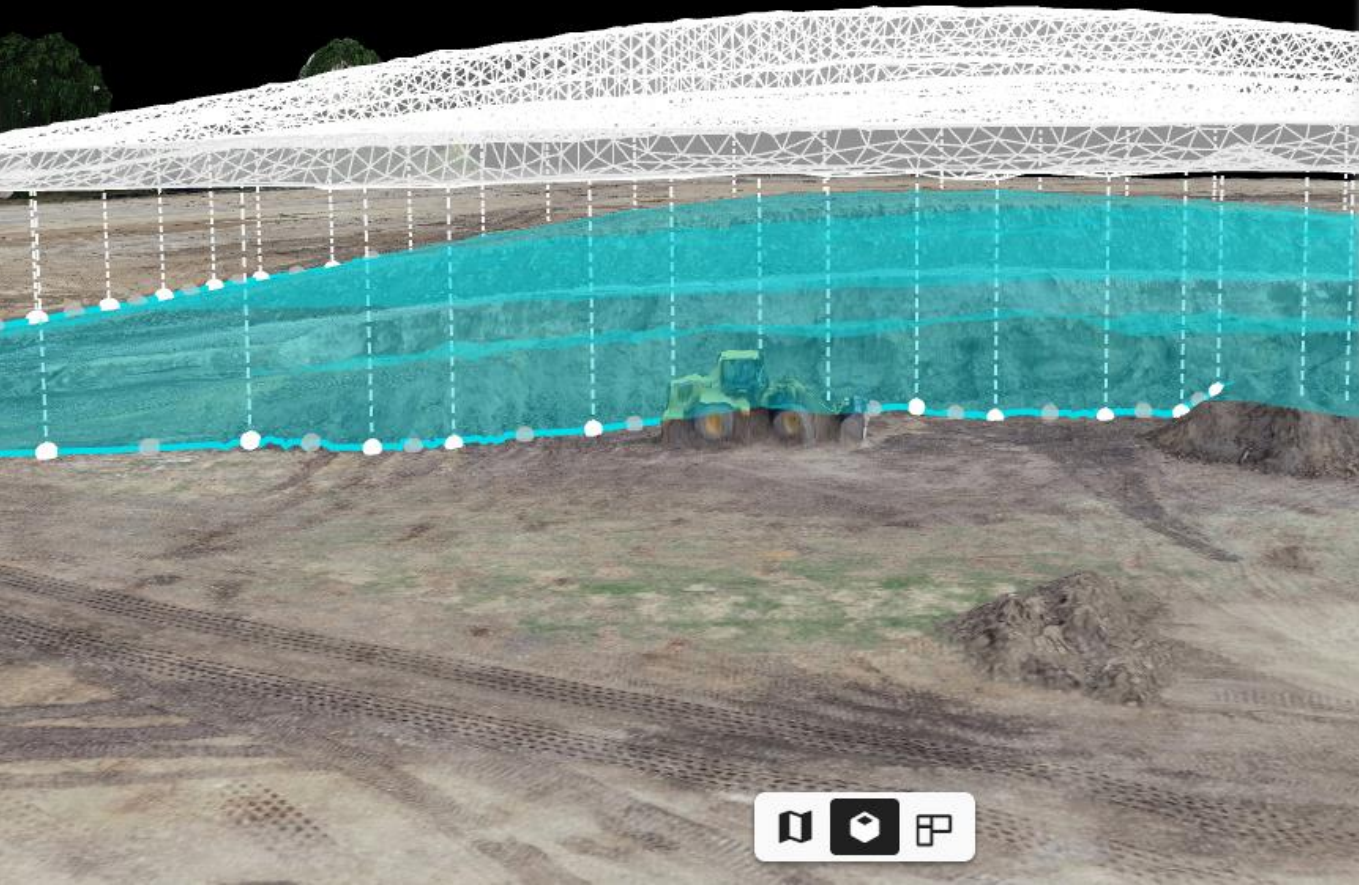


PLANNING ROUTES FOR TRUCKING

- Proper planning for material delivery and earthwork removal in a timely efficient process is critical.
- Determining how many (or none) trucks can fit on one road, grading and elevations changes are necessary before site arrival
- UAV mapping can provide PMs with measurements to help evaluate the width and grade in minutes with just a few aerial passes.
- This information saves time, unneeded resources and cuts cost that result from improper site planning

Material Inventory and Tracking With UAVs

- Insights gained from drone imagery can assist with material Inventory
- Quickly determine Needed materials, location or projected production with UAV mapping
- UAV software tools can aid in earthworks and cut/fill reports by providing a complete record of stockpile materials in minutes
- Having this information on hand ensures the appropriate amount of materials will remain on site and helps in limiting waste



We've Created a More Efficient Process



Our drone management solutions can literally take weeks out of the project schedule. We provide you with much higher quality data insights than traditional methods and our processes are safer.

We create accurate, high-resolution 3D digital replica models, generate real-time 2D maps and build complete 360 degree full immersion virtual tours for any construction site or structure.



How Drones are Being Used in Architecture

- Marketing
- Building site surveys and 3D mapping
- Progress reporting and site monitoring
- Site logistics
- Safety
- Remediation and Restoration of buildings



Architectural Marketing Using Drones

- Marketing is where the use of a drone really sticks out.
- High-rise buildings mean high elevation images, and a cherrypicker will simply not help.
- Drones can create 360-degree immersive images and videos that will make your promotions stand out.
- You can use the 3d mapped data, add model of your building to create a beautiful render. This alone can put you ahead of the rest because you now have an accurate photoreal presentation for would-be investors.

Building Site Surveys and 3D Mapping

- Fewer ground control points means less time spent on surveying the site.
- Drones make it easy for a surveyor to map a site accurately and in less time.
- The data itself is comprehensive, making it ideal for detailed 3d mapping and modeling.
- Software like Autodesk and Drone Deploy allow provide the ability to upload data online and process it so its ready to be inserted into AutoCAD, Revit or any other Bim application.

Progress Reports and Jobsite Monitoring



UAV integration allows effective daily sharing of project updates and progression in real-time from site to anywhere there's a computer or phone.

Progress tracking can be completed in minutes to hours instead of several days.


Data can be gathered using photos, 4K video or live-streamed

Reports generated from UAV processing software can be completely digitized for easy access and storage.



Site Logistics

- Drones help with site logistics from the design stage throughout the final phase of construction by providing up-to-date insights.
- Satalite imagery is often months/years old and unreliable.
- Drones help provide consistent updates of the project.
- Drone flights can be automated to compare side-by-side comaprison for BIM
- Drones allow you to catch design errors early instead of making costly end mistakes.



UAVs Reduce Safety Risk to Workers

- Drones can conduct façade inspections
- Eliminate the need for dangerous scaffolding and catch baskets
- Photos are geo-tagged and can be used for accurate measurements
- Drones can take 4K video that is easily storable and sharable across platforms
- Drones save time and reduce the cost of hiring multiple individuals to conduct high-risk inspection



Engineering Inspections With UAVs

- With Drones you can capture the whole scene safely
- See and access hard-to-reach places
- Build consistent automated capture everytime
- Have your project flown manually while accessing real-time video remotely
- Review you site in an immersive 2D or 3D experience
- Close with confidence, review the latest imagery to check the issue status

Benefits of Surveying With Drones

- Reduce field time and survey cost
- Provide accurate and exhaustive data
- Map otherwise inaccessible areas
- High resolution orthophotos for accurate distances and measurements
- Stockpile volumetric measurements
- Urban planning and ease of aerial scanning
- Geo-tagged point cloud data is easily transferable to CAD



Why Project Managers Should Integrate Drones Into their Workflow

- Keep projects on schedule and report more efficiently.
- Manage logistics with site reality.
- Cut cost and material delays by using aerial maps
- Report to owners and investors real-time project progression
- Keep better track of subcontractors, equipment and materials
- Reduce slip/trip/fall hazards with daily flyovers and check of the grounds.



Owners and Executives

- Stay connected with aerial and ground data without ever stepping on-site
- Review aerial data alongside ground data from 360 cameras for a comprehensive view of project progress
- Increase trust with your clients by sharing an accurate digital twin reconstruction of your job site
- Automatically share AVT Drone maps in your project management solutions like Procore and Autodesk BIM 360



Conclusion

Save time, improve communication, and reduce cost by using aerial and ground data to perform surveys, conduct inspections, and document every job site. We provide full site documentation into one easy to use UAV solution. AVT Drones enables you to capture interior, exterior, ground, and aerial data which processes into a digital twin of your job site with in-depth analysis.