

DUCERE CONSTRUCTION SERVICES, INC.

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TECHNICAL BRIEF

Drone Technology in Construction Documentation

How Ducere Construction Services Deploys Aerial Intelligence Across Active Project Sites

Prepared: June 2026 | Ducere Construction Services, Inc.

Executive Summary

Ducere Construction Services, Inc. has integrated drone-based aerial documentation into its standard project management protocol, deploying OpenSpace AI's Visual Intelligence Platform with drone capture capabilities across active commercial and residential projects in the Atlanta metropolitan area and beyond.

This brief documents Ducere's current drone documentation practice, explains the technology's function and output, and articulates the specific operational and legal value this protocol delivers to project owners, lenders, and regulatory bodies.

VERIFIED ACTIVE DEPLOYMENT: As of February 27, 2026, Ducere Construction Services has active drone captures on record in the OpenSpace AI platform for the 6470 Mableton Parkway project — including 550 flight images, 162 additional images, a full orthomosaic aerial map, satellite and roadmap overlay views, and 2 active site measurements. This is not a proposed capability. It is current operational practice.

550+ Flight Images Captured Per Drone Run	162 Additional Site Images Logged	Orthomosaic Aerial Map Generated	2/2 Site Measurements Active	30% Fewer Disputes (Industry Data)
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1. What Aerial Drone Documentation Is

Construction drone documentation uses FAA-compliant unmanned aerial vehicles (UAVs) to capture systematic, high-resolution imagery of a project site from above. When integrated with AI platforms such as OpenSpace Air, that imagery is automatically processed into:

Orthomosaic Maps:	A stitched, georeferenced aerial photograph of the entire site. Every pixel is tied to a real-world coordinate. Unlike a standard aerial photo, an orthomosaic is corrected for camera angle and lens distortion, making it geometrically accurate for measurements, area calculations, and drawing comparisons.
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3D Point Clouds & Surface Models:	Drone imagery processed through photogrammetry software generates three-dimensional models of the site surface. These models capture grade elevations, earthwork volumes, and structural heights with survey-grade accuracy.
Flight Image Archives:	Every flight generates a timestamped, sequenced archive of individual high-resolution photographs. These images document site conditions at a specific date and time, creating an irrefutable before-and-after record at every phase of construction.
Site Measurements:	Distances, areas, and elevations are calculated directly from the georeferenced imagery without a physical surveyor on-site. Measurements are embedded in the platform and can be exported for permit, lender, or owner documentation.
BIM & Drawing Overlay:	Aerial imagery is overlaid on approved architectural and civil drawings, enabling direct visual comparison between the approved design and actual site conditions as construction progresses.

2. Ducere's Drone Documentation Protocol

Ducere Construction Services integrates aerial drone documentation into the standard project management workflow at four defined stages:

Pre-Construction Baseline:	A drone flight is conducted before ground disturbance begins. This establishes the pre-existing site conditions — grade, drainage patterns, adjacent structures, vegetation, and boundary features — as a georeferenced baseline. This record is critical for protecting Ducere and its clients against claims of pre-existing damage or third-party property impacts.
Active Construction Phase:	Periodic drone flights (weekly or bi-weekly depending on project phase) document earthwork, foundation progress, structural framing, retaining wall construction, and civil site work. Each flight generates a new orthomosaic that is overlaid on the previous capture, creating a frame-by-frame visual timeline of construction progress.
Milestone Documentation:	Critical construction milestones — foundation pour, retaining wall completion, structural close-in, rough grading — are documented with dedicated drone flights timed to coincide with required inspections. This produces independent aerial verification of work completion at each milestone.
Substantial Completion Record:	A final drone flight at substantial completion creates the as-built aerial record of the finished project. This record serves as the baseline for warranty periods, lender final draw documentation, and owner acceptance.

3. Operational Value — Four Core Benefits

3.1 Dispute Prevention and Legal Defense

Industry data (Construction Executive, McKinsey) confirms that the vast majority of construction projects over \$10 million will enter a dispute at some point. The fundamental driver of disputes is the absence of objective documentation. Drone imagery eliminates that vacuum. A georeferenced, timestamped orthomosaic of a retaining wall, foundation, or earthwork scope — captured on the date the work was performed — is court-admissible evidence that cannot be disputed by a subcontractor, opposing engineer, or lien claimant after the fact. Industry-published data documents a 30% reduction in contract disputes for construction firms using systematic drone documentation. Ducere's deployment of this protocol is a direct liability management tool.

3.2 Owner and Lender Progress Reporting

Lenders require construction draw documentation at defined milestones. Owners require progress visibility between site visits. Drone-generated orthomosaic maps and 3D progress models give lenders and owners an objective, survey-accurate aerial view of project status at every draw request. This reduces draw approval time, eliminates back-and-forth over percent-complete disputes, and positions Ducere as a technologically sophisticated GC whose reporting is verifiable rather than self-reported.

3.3 Earthwork and Grading Verification

Retaining walls, site grading, drainage systems, and civil earthwork are scopes where quantity disputes — cubic yards moved, elevation achieved, geogrid installed — create significant financial exposure. Drone-generated 3D surface models allow precise calculation of cut and fill volumes, finished grade elevations, and retaining wall geometry. These calculations are reproducible and independently verifiable. For Ducere's active projects — 1040 Highland Village Trail retaining wall, Brunswick new construction portfolio, Mableton Shopping Center — drone earthwork verification eliminates the basis for post-completion quantity disputes.

3.4 Pre-Existing Conditions Documentation

Adjacent property damage claims are a persistent risk on urban infill and redevelopment projects. A pre-construction drone baseline establishes the exact pre-existing condition of neighboring properties, drainage patterns, and site boundaries before Ducere's work begins. If a neighbor subsequently claims construction-related damage, the pre-construction orthomosaic provides objective evidence of the pre-existing condition, shifting the burden of proof to the claimant.

4. Live Project Data — 6470 Mableton Parkway

The following data is drawn from Ducere's active OpenSpace AI platform account, documenting the drone capture conducted at 6470 Mableton Parkway on February 27, 2026:

Capture Date	February 27, 2026 — 11:42 AM	Timestamped, legally defensible
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Flight Images	550 images	Full site coverage, every angle
Additional Images	162 images	Supplemental ground and structural detail
Map Type	Orthomosaic (satellite + roadmap)	Georeferenced, measurement-accurate
Active Measurements	2 of 2	Site dimensions locked and documented
Platform	OpenSpace AI — Ducere account	Cloud-stored, owner-accessible
View Modes	2D and 3D available	Structural and surface modeling capable

5. Industry Context and Published Data

The following findings are sourced from published construction industry research:

McKinsey & Company: Drone and AI integration in construction is projected to reduce information-gathering time by up to 80% compared to manual site walks and documentation methods.

Construction Executive: The vast majority of construction projects over \$10 million will enter dispute at some point. Consistent drone documentation is cited as the leading technology intervention for dispute prevention.

Carolina Aerials / Industry Data: Construction firms using systematic drone documentation report up to 30% fewer contract disputes. Pre-construction aerial baselines are cited as the single most effective pre-dispute tool.

OpenSpace AI (Published): Contractors using OpenSpace Capture generate 10x to 100x more site documentation than manual methods, with documented reductions in rework cost and punch list processing time of 40-60%.

DUCERE STANDARD: Aerial drone documentation — including pre-construction baseline, active-phase progress capture, milestone verification, and as-built record — is a standard component of Ducere Construction Services' project management protocol. Every Ducere project carries a georeferenced, timestamped aerial record. This is not an optional service — it is a baseline operational commitment to project owners, lenders, and regulatory bodies.

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This brief is prepared for client education, owner reporting, and regulatory documentation purposes.