DATA CENTERS / SUPPORTING POWER INFRASTRUCTURE

Energy Infrastructure

V&M Systems Group's Energy Infrastructure service, powered by V&M SiteWatch.

01 REPEAT COVERAGE

Follow the physical buildout

Repeat views and a consistent baseline.

02 MEASURABLE CHANGE

Measure what is visible

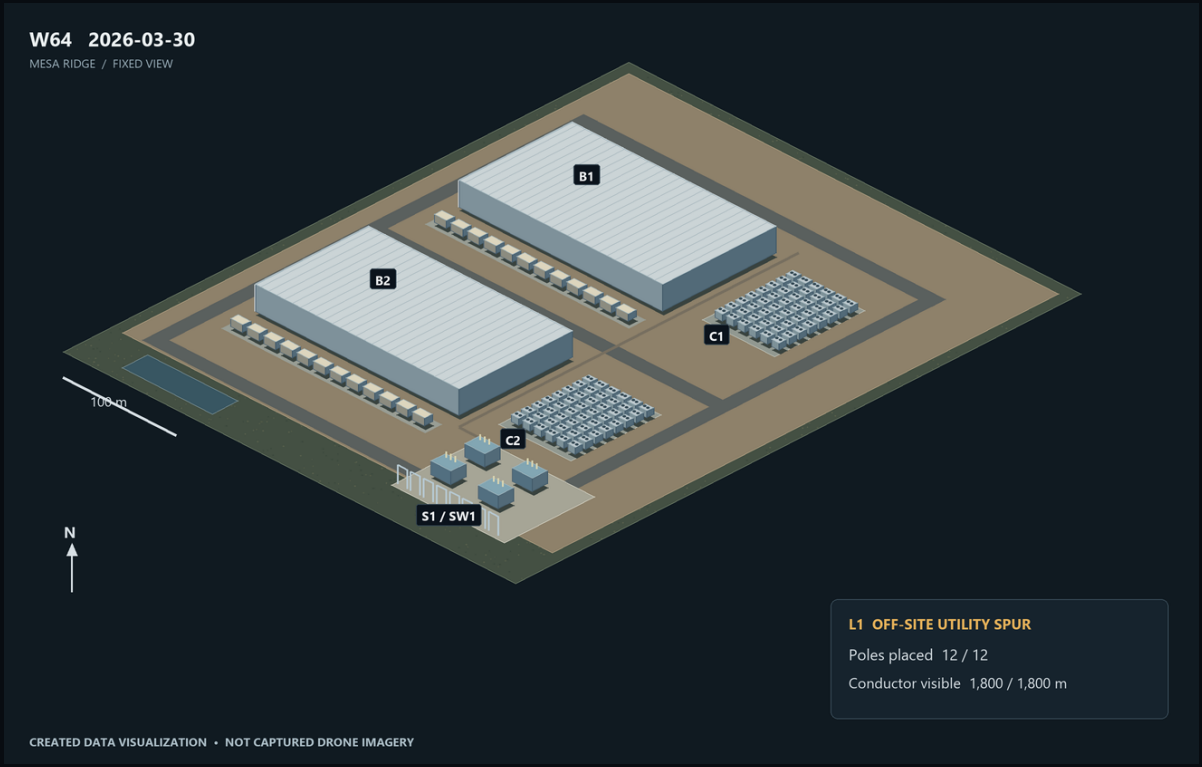
Areas, volumes, equipment and temperatures.

03 CLIENT EVIDENCE

Connect progress to decisions

Records for planning, research and risk.

ILLUSTRATIVE CAMPUS



Mesa Ridge demonstration. Created visualization, not captured drone imagery.

Coverage across the site

Five coverage areas

01 **Buildings & expansion**
Foundations, structure and enclosure

02 **Earthworks**
Clearing, grading and terrain change

03 **Cooling infrastructure**
Equipment placement and installation

04 **Electrical infrastructure**
Substations, utility works and lines

05 **Thermal observations**
Surface patterns and repeat review

Construction facts for your models.

Our methodology

What our drones capture, what we calculate, and how measurements stay comparable.

01 RGB IMAGERY & PHOTOGRAMMETRY

Dimensions, areas and equipment

Overlapping aerial photographs become georeferenced maps and 3D models. We measure building footprints, roof coverage, cleared acreage and distances between visible features. Imagery also documents construction stages and the count and placement of identifiable cooling units, generators, transformers and other equipment.

OUTPUTS / Area, distance, equipment count, visible stage

02 LIDAR & 3D MEASUREMENT

Elevations, heights and volumes

LiDAR on the DJI Matrice 400 with Zenmuse L3 captures 3D surface measurements. From those models we calculate terrain elevations, exterior structure heights, stockpile volumes, and excavation or fill changes against defined reference surfaces. Survey coverage and consistent reference surfaces govern each comparison.

OUTPUTS / Elevation, exterior height, material volume

03 RADIOMETRIC THERMAL IMAGING

Surface temperatures and differences

Radiometric sensors record apparent surface temperatures in °F or °C on visible roofs, cooling equipment and electrical assets. We compare temperature differences and patterns, recording surface materials, weather, viewing conditions and operating conditions where known. Comparable patterns can prompt closer review.

OUTPUTS / Apparent surface temperature, reference differences

04 REPEATED GEOREFERENCED COMPARISON

Measurable change between visits

Precision ground control, repeat views and stable asset identifiers align captures to the same geographic reference. We quantify added building and roof area, changes in terrain and material volumes, and newly placed equipment. Dates, units and visibility limits remain with each comparison to build a consistent history of construction pace.

OUTPUTS / Dated changes, visible milestones, change rates

A CLEAR MEASUREMENT BOUNDARY

Measured changes, visual observations and external records remain distinct. Energization, operating duty, actual MW demand and fault diagnosis require additional evidence.

Capability references: V&M fleet DJI LiDAR Skydio thermal PIX4D measurements

What clients receive

From each survey to a consistent site and portfolio record.

01

SiteWatch views

Site and portfolio dashboards with dated imagery, annotated maps and before-and-after comparisons. Where scoped, georeferenced maps, 3D models and thermal findings support the visual record.

02

Progress reports

Downloadable summaries of current and prior quantities, measured differences with units, visible milestones and construction pace. Record pauses in observed measures with relevant supporting evidence.

03

Structured datasets

CSV and structured records for research and models, linked to imagery. Retain site and asset IDs, location, observation dates, units, visibility flags, sources, timestamps and revision histories.

Place each project in grid context

Project records. Utility filings, disclosed power agreements and permitting milestones, with dates and source links.

Energy context. Regional demand, generation assets and electricity price benchmarks, including EIA data.

Conditions. Weather and capture context relevant to comparison and interpretation.

Choose the capture interval

Weekly

Every two weeks

Monthly

Agree sites, asset zones, sensor scope, tracked measures and report outputs at setup.

An auditable record after each visit

SITE / ASSET / DATE / MEASUREMENT / UNITS / SOURCE / VISIBILITY / REVISION

Why it matters

One record of physical progress. Different decisions for each client.

Utilities & grid planners

Ground future demand scenarios in observed progress. Compare campus and grid infrastructure milestones, identify schedule mismatches, and support coordination around customer connections and network upgrades.

Investment firms & asset managers

Compare visible progress with public disclosures, track development across companies and regions, and strengthen research on data center operators, utilities and power producers. Add site evidence to portfolio reviews and growth assumptions.

Private equity & infrastructure funds

Support acquisition and development diligence, monitor owned assets against reported milestones, and compare portfolio execution. Inform follow-up with management or contractors, investment plan reviews, and reporting to investment committees and investors.

Investment banks & transaction advisers

Add documented progress to M&A diligence, project financing and capital raising discussions. Compare milestones with transaction assumptions, examine supporting power dependencies, and give sponsors, buyers and financing partners a consistent project record.

Lenders, private credit & credit risk

Supplement borrower updates and independent engineer reports. Support construction loan monitoring and funding reviews, flag discrepancies, and inform assessments of schedule changes affecting funding needs, repayment timing and refinancing assumptions.

Insurers & risk engineering teams

Document visible conditions, equipment placement and construction stage changes. Support underwriting and engineering reviews, prioritize closer inspections, and retain baseline imagery for comparisons after weather events and for claims documentation.

Energy traders & trading desks

Track projects affecting demand, generation and transmission scenarios. Compare physical progress with assumed delivery dates, and add evidence to regional supply and demand research, natural gas demand assumptions, congestion analysis and market exposure reviews.

Energy researchers & consultants

Build consistent time series, compare sites and regions, and examine announced schedules against observed progress. Combine construction, energy, permit and weather records to strengthen demand scenarios, infrastructure studies and client research.

CONCLUSION SiteWatch gives your team a traceable record of physical progress.

Discuss your sites, metrics and reporting needs: operations@vmsystemsgroup.com vamsgc.com