

## Difficult Access and Drone Survey



### SERVICES

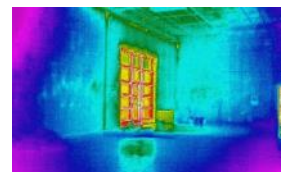
- Access to hard-to-reach locations
- Access to special access and controlled air space
- Visual inspections and condition surveys
- Photogrammetry
- Energy audits with FLIR thermal imaging
- Materials sampling and nondestructive testing

Buildings, bridges, and other structures require periodic condition surveys and, occasionally, emergency inspections. Traditional access methods—such as visual inspections from grade or the use of suspended scaffolding, supported scaffolding, aerial lifts, or crane suspended platforms—may be impractical or inadequate given the configuration of the structure, its location, historic sensitivity, or time and safety constraints. Faced with such conditions, WJE employs our industrial rope access team or drone capabilities to provide clients with the answers they seek.

WJE's Difficult Access Team (DAT) is often called upon to provide access to hard-to-reach locations on buildings and other structures. Employing established industrial rope access techniques, DAT members perform close-up visual inspections, materials sampling, and nondestructive testing. The DAT enables WJE to evaluate problems within arm's length of the work.



WJE's fleet of unmanned aircraft systems—or drones—is operated by more than twenty FAA-licensed drone pilots. These WJE professionals conduct precise and efficient architectural and structural inspections, collecting high-resolution video and photography to record and assess minute details at otherwise inaccessible distances and angles. From this documentation, WJE develops 3-D models and photogrammetry to better assess the whole structure.



These access methods offer safe and effective solutions to the limitations of traditional access methods. Often, these methods can be deployed in a shorter period of time and potentially at less cost, allowing WJE to efficiently respond to issues.



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### REPRESENTATIVE PROJECTS

- Church of the Saviour - Cleveland Heights, OH: Drone survey of architectural stone connections
- Fenn Tower - Cleveland, OH: Inspection and repair design of intricate stone facade
- Gateway Arch - St. Louis, MO: Corrosion investigation
- Miami-Dade County Courthouse - Miami, FL: Inspection and restoration of historic courthouse terra cotta facade
- Minnesota State Capitol - St. Paul, MN: Comprehensive facade inspection and marble assessment
- Montana Department of Transportation - Helena, MT: Drone infrared survey of bridge deck
- Perry's Victory & International Peace Memorial - Put-in-Bay, OH: Assessment and repair recommendations of 352-foot-tall Doric column monument
- Rock and Roll Hall of Fame - Cleveland, OH: Drone visual and infrared survey of glass roof and panel facade over water
- San Francisco City Hall - San Francisco, CA: Condition survey and assessment of seismic damage to historic dome
- Tribune Tower - Chicago, IL: Investigation and repair recommendations for intricate facade
- Washington Monument and Washington National Cathedral - Washington, D.C.: Condition assessment of post-seismic damage using difficult access techniques and repair recommendations
- Waterbury Republican-American - Waterbury, CT: Drone survey for tower restoration

