

Nathan Gundlach, P.E.

Engineer

Mr. Gundlach helps clients collect data, respond to adverse events, and make informed decisions, leveraging his extensive capabilities and experience. In the field, Mr. Gundlach gathers information through inspection and testing, coordinates project activities, and oversees repairs. During inspections, he employs infrared thermography and small unmanned aircraft system (sUAS, or “drone”) flight to obtain comprehensive documentation. His non-destructive testing (NDT) portfolio includes acoustic hammer sounding and chain dragging, ground-penetrating radar (GPR), ultrasonic pulse velocity (UPV), impulse response (IR), ultrasonic shear wave tomography (MIRA), spray water, and half-cell corrosion potential testing. When semi-destructive testing is required, he implements material sampling for physical, chemical, and petrographic testing. During repairs, he monitors work to ensure quality. Mr. Gundlach also enjoys developing and implementing novel techniques to improve efficiency and quality.

In the office, Mr. Gundlach reduces field information to provide concise, actionable conclusions. He also examines project documents, reviews applicable codes and literature, models structures using state-of-the-art software, performs pen-and-paper analysis, and conducts laboratory testing. He also enjoys developing and implementing novel techniques to improve results and efficiency. Applying these skills, Mr. Gundlach has managed and assisted with an eclectic array of projects, some of which are highlighted below.

Representative Project Experience

New Construction

- Determined extent of deleterious inclusions in a partially constructed precast concrete parking structure in Lansing, MI, using non-destructive evaluation (GPR, MIRA).
- Monitored proof load testing of a new precast concrete parking structure in Chicago, IL.
- Performed/managed concrete core sampling and subsequent testing to verify material properties of precast concrete tank panels near Milwaukee, WI.

In-Service Structures

- Determined concrete surface delamination magnitude and extent of the Davis-Besse Nuclear Plant shield building, Oak Harbor, OH using borescope inspection and IR testing.
- Evaluated condition of mechanical stay-cable dampers on the East Huntington Bridge, WV, through field dynamic testing and subsequent data reduction.
- Visually inspected concrete and masonry condition, located subgrade voids through GPR, and oversaw grout injection and concrete repair of a mental hospital near Chicago, IL.



Academic Credentials

B.S. in Civil Engineering, University of Notre Dame, 2020

Licensure & Certifications

Professional Engineer: IL, IN, MI, MO, and OH

FAA Part 107 sUAS Remote Pilot Certification (Cert. No. 4422155)

OSHA 10

Suspended Scaffold Operator

Aerial Boom Lift 3b Operator

TWIC

Contact Information

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In-Service Structures (Continued)

- Oversaw and documented repairs to a precast concrete parking structure in Waukegan, IL.
- Conducted spray water testing and documented exterior façades using sUAS (drone) at two public schools in New York, NY, for the School Construction Authority.

Post-Event Analysis and Litigation Support

- Determined extent and causation of damage to myriad residential, commercial, and industrial structures across the United States through field inspection and document review.
- Oversaw on-site sampling, inspected preserved evidence, performed structural modeling, and reviewed document production in support of multiple tragic structural collapse investigations in the United States.