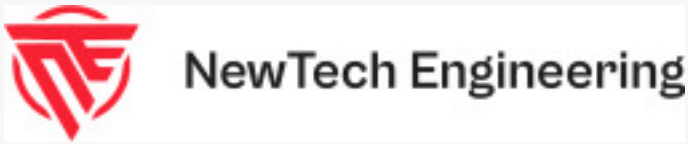
Research Reveals 1 in 3 Construction Projects Face Cost Overruns Tied to Poor Soil Data - Experts Explain How to Prevent

Geotechnical engineer Kerry Cooper explains why early soil investigations help construction projects avoid costly surprises.



NewTech Engineering logo

PINEVILLE, NC, UNITED STATES, July 13, 2026 /EINPresswire.com/ -- Construction projects rarely fail because of what can be seen above ground. More often, the biggest risks lie beneath the surface.

Industry experts say inadequate geotechnical information continues to be one of the leading causes of unexpected project costs, schedule delays, and design changes. And as construction costs continue rising, engineers say investing in thorough soil investigations before construction begins is becoming increasingly important to reduce costs, delays, and safety woes.

> “Strong foundations begin with accurate soil data, not assumptions.”
>
> *Kerry Cooper, Owner, NewTech Engineering*

According to research from Bentley Systems and Oxford Global Projects, approximately one in three engineering and construction projects experience significant cost overruns, with unforeseen ground conditions among the most common contributing factors.

"Every construction project starts with the ground it sits on," said Kerry Cooper, owner of NewTech Engineering. "When developers don't fully understand the soil conditions before building, small assumptions can quickly become very expensive problems."

Why soil data matters more than ever

Before foundations are designed, engineers rely on geotechnical investigations to understand how soil will behave under the weight of a structure. These studies evaluate soil composition, groundwater conditions, bearing capacity, settlement potential, and other underground characteristics that directly influence foundation design.

Without accurate information, projects can encounter unstable soils, excessive settlement, hidden fill material, high groundwater levels, or unsuitable bearing conditions after construction has already begun.

"When unexpected soil conditions appear during construction, contractors often have little choice but to redesign foundations, import additional materials, or delay the project," Cooper explained. "Those changes almost always cost significantly more than identifying the issue during the planning phase."

The hidden costs of poor site investigations

Construction professionals say inadequate site investigations rarely affect only one part of a project. Unexpected subsurface conditions can trigger redesigns, equipment downtime, permitting delays, additional excavation, material changes, and schedule extensions that affect multiple contractors simultaneously.

According to the Federal Highway Administration, geotechnical engineering plays a critical role in managing construction risk because subsurface conditions often represent one of the largest unknown variables during project planning.

Industry studies have consistently shown that early geotechnical investigations reduce uncertainty and improve project budgeting by allowing engineers to design foundations based on actual site conditions rather than assumptions.

Why the Carolinas present unique challenges

North and South Carolina contain a wide variety of soil conditions that can change significantly within short distances. Depending on location, projects may encounter expansive clay soils, loose sands, weathered rock, high groundwater tables, uncontrolled fill, or residual soils formed from underlying bedrock.

Engineers say these changing conditions make site-specific geotechnical engineering assessments particularly important throughout both states.

"No two sites are exactly alike," Cooper said. "Even neighboring properties can have completely different subsurface conditions, which is why relying on nearby projects instead of testing your own site creates unnecessary risk."

Prevention starts before construction begins

Experts say many construction problems can be avoided through geotechnical investigations during the planning stage.

A typical investigation may include soil borings, laboratory testing, groundwater evaluation, and engineering recommendations for foundations, pavement design, retaining walls, and site preparation.

The American Society of Civil Engineers emphasizes that understanding subsurface conditions early allows project teams to reduce uncertainty before construction contracts are finalized.

"Geotechnical reports don't just identify problems," Cooper explained. "They help engineers design around them before construction begins, which is almost always the most cost-effective approach."

Growing awareness among developers

As construction budgets tighten and schedules become more demanding, developers, architects, municipalities, and contractors are placing greater emphasis on early site investigations.

Rather than treating geotechnical engineering as a regulatory requirement, many project owners now view it as an investment in risk management that can prevent expensive surprises later in the construction process.

For engineering professionals, the shift reflects a broader industry focus on improving project predictability through better planning and more reliable site data.

About NewTech Engineering

NewTech Engineering is a North Carolina-based geotechnical engineering firm serving commercial, residential, and infrastructure projects throughout North and South Carolina.

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