



## Engineering & Construction Innovations, Inc.

Engineering & Construction Innovations (ECI) is a recognized leader in complex civil and geotechnical construction solutions. As an ASA Corporate Member, ECI is proud to contribute deep technical expertise in structural shotcrete to infrastructure projects across the Midwest. From slope stabilization to shaft and tunnel applications, ECI's shotcrete crews bring industry-best safety and innovation to every job.

### SHOTCRETE CAPABILITIES & INNOVATION

ECI specializes in wet-mix shotcrete placement with a strong emphasis on robotic placement, overhead application, and confined-space execution. While the company doesn't claim proprietary methods, our team is nationally recognized for rare and technically demanding work as exemplified by one project where we site-batched

and pumped concrete 2300 ft (700 m) down into a mine shaft, followed by overhead shotcrete placement.

The firm frequently integrates shotcrete with systems like ground freezing, lattice girders, and slope stabilization techniques. Every shotcrete project is supported by ACI-certified shotcreters, rigorous quality control, and a 100% safety compliance record to date.

### PROJECT HIGHLIGHTS

#### 10TH AVENUE WATER MAIN CROSSING - MINNEAPOLIS, MN

On this project for the City of Minneapolis, ECI used reinforced shotcrete as the primary shaft liner within a 30-ft (9 m) diameter, 80-ft (24 m) deep shaft constructed in conjunction with ground freezing. The shaft concrete was shotcreted using remotely manipulated nozzle equipment.



10<sup>th</sup> Avenue Water Main Crossing in Minneapolis, MN: Crews place shaft shotcrete using a remotely manipulated nozzle arm.

## CORPORATE MEMBER PROFILE



10<sup>th</sup> Avenue Water Main Crossing in Minneapolis, MN: Slope stabilization is achieved using hand nozzling for shotcrete placement.



Soudan Mine Shaft Rehabilitation in Soudan, MN: 2300 ft underground, crews used shotcrete placement in one of Minnesota's deepest mine shafts. Zero incidents. Total precision.



Lake Elmo West Connection in Lake Elmo, MN: Crews utilize shotcrete placement and lattice girders as a structural liner for the microtunnel receiving shaft.

Slope stabilization shotcrete was placed by hand nozzling for enhanced safety and efficiency.

### LAKE ELMO WEST CONNECTION - LAKE ELMO, MN

As part of an interceptor extension, ECI installed a lattice girder and shotcrete shaft lining system to stabilize deep excavations for microtunnel launch structures. The team's shotcrete work ensured structural integrity in high-traffic, utility-dense areas, minimizing disruption and delays.

### RAMSEY COUNTY JAIL (WEST PUBLISHING DECONSTRUCTION) - ST. PAUL, MN

In an urban rock bluff setting, ECI employed shotcrete with rock anchors to stabilize slopes and excavations during the deconstruction of the former West Publishing site. The combination of access-challenged terrain and structural sensitivity made this a prime example of shotcrete adaptability.

### SOUDAN MINE SHAFT REPAIRS - SOUDAN, MN

At a depth of 2300 feet, ECI site-batched and direct-pumped concrete for sloped overhead shotcrete placement inside one of Minnesota's deepest mine shafts on two different projects — once in 2010, and again in 2022. This logistically complex project was completed from elevated platforms in confined spaces with zero incidents and full safety compliance.

### TRAINING, CERTIFICATION & SAFETY

ECI maintains a crew of ACI-certified shotcreters, and all shotcrete operations are led by highly experienced foremen and superintendents. Projects regularly require confined-space and elevated-platform work, supported by a strong safety culture and continuous training. The company boasts a zero-incident record on all shotcrete work to date.

### LOOKING AHEAD

As demand for technically advanced concrete solutions grows, ECI continues to lean into its strengths in wet-mix shotcrete and remotely manipulated nozzling equipment, and always focusing on integrating new technologies and methods. With a commitment to safety, quality, and execution under pressure, ECI remains at the forefront of structural shotcrete innovation in the U.S. market.

### CONTACT INFORMATION:

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