



CONSTRUCTABILITY OF ZERO LOT LINES FOUNDATIONS WITH SHOTCRETE

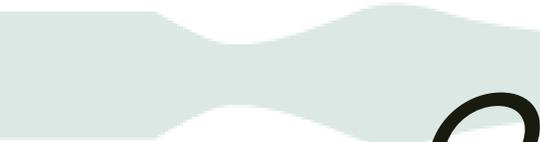
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THE *ORIGINAL* 3D PRINTING



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American Shotcrete Association

Our **Vision** - *"Structures built or repaired with the shotcrete process are accepted as equal or superior to cast concrete"*

Our **Mission** - *"ASA provides knowledge resources, qualification, certification, education, and leadership to increase the acceptance, quality, and safe practices of the shotcrete process".*

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Shotcrete - Definition



“Concrete placed by a high velocity pneumatic projection from a nozzle.”

As defined in ACI CT-18 *Concrete Terminology*

High Velocity – 60 to 80 mph (100 to 130 kph)

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Shotcrete is not a product...



...It is simply a method of placing concrete

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Shoring methods

Sheet Pile

Secant

Slurry walls

Soil nails

Brick

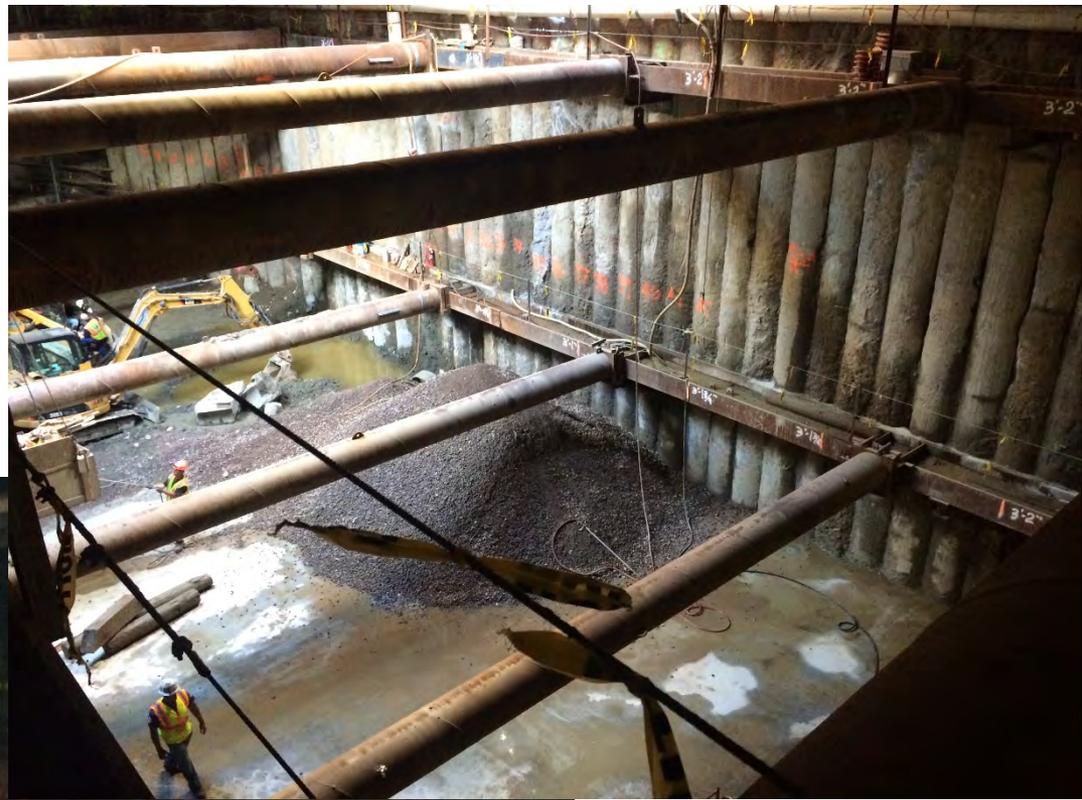
Concrete

Others...

Secants



Secants



Replacement of Lagging



Smoothing



Slurry wall



Soil Nail



Soldier Pile and Lagging



Soldier Pile



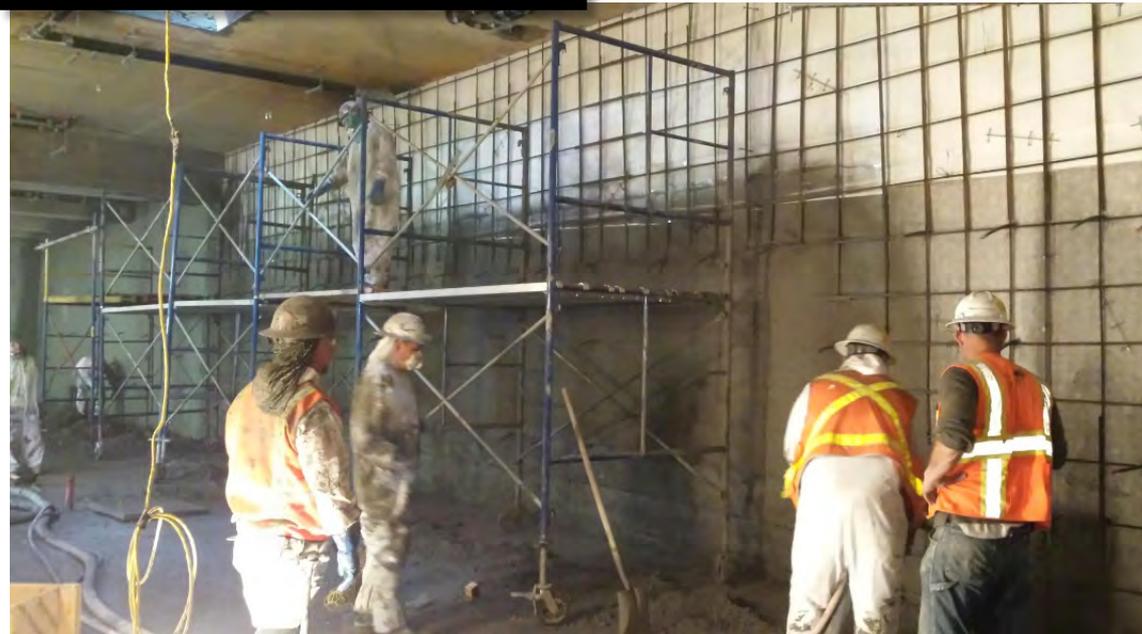
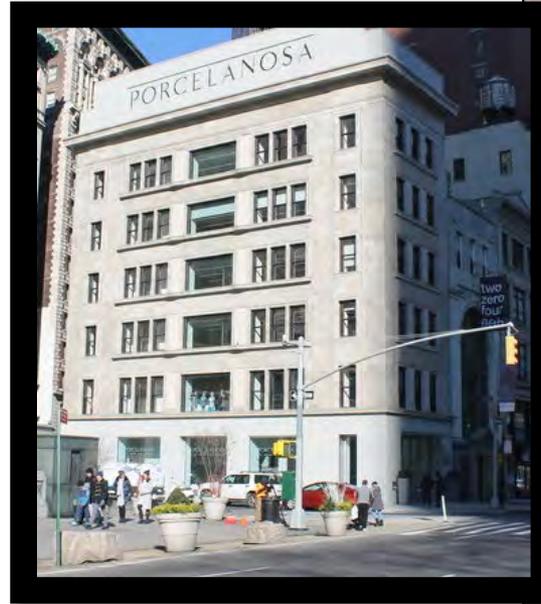
Soldier Pile and Lagging



Soldier Pile and Lagging



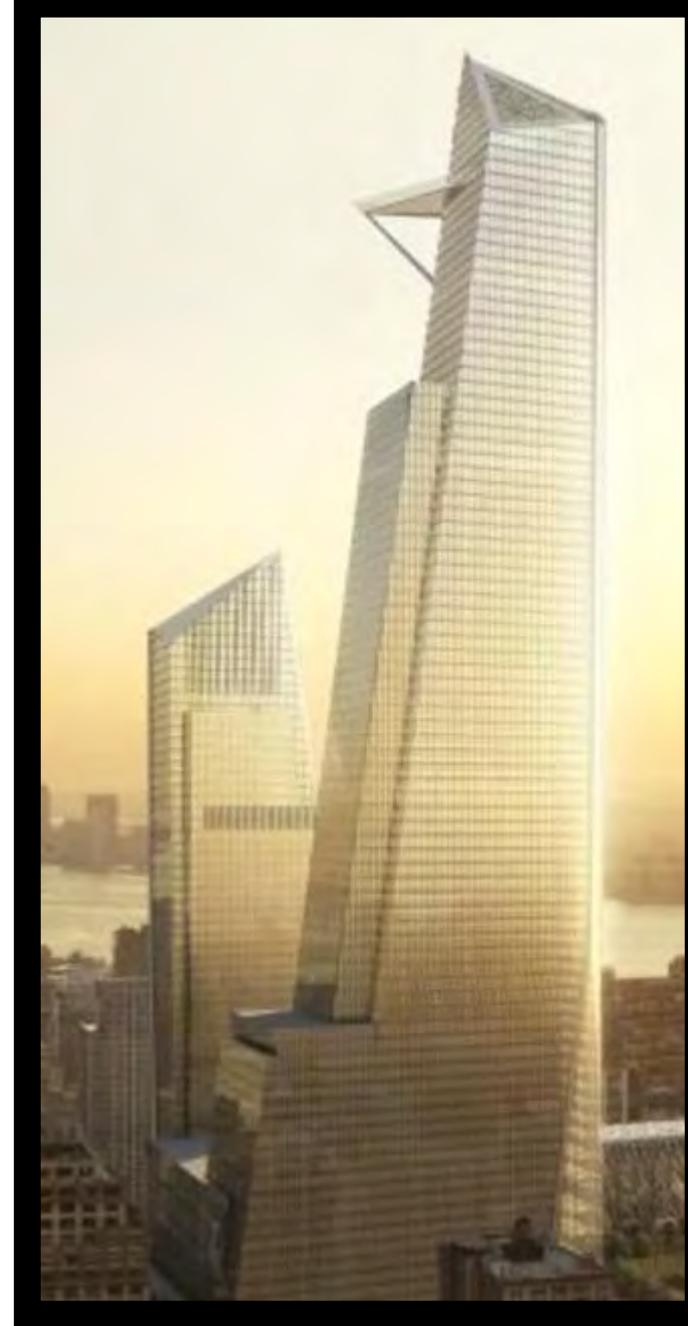
Building Retrofits



Shear Walls



Shear Walls



Building Retrofits



Building Retrofits



Retaining wall



Retaining Walls



Tie backs

- Temp versus permeant
- Shoot around versus cost of specialty formwork



Sequencing flexibility



So What, why Shotcrete?

- Save time, no forms, no support, no strip, no rub and no patch
- Less equipment, no crane, no generators
- More operating space for concurrent operations
- Less man-hours
- Flexible access and schedule
- Creative shapes



Form and Place



Shotcrete



ACI Nozzleman Certification Program

**So what are you
still waiting for?**



**It's time to get your
nozzlemen trained
and certified!**

The American Shotcrete Association, in partnership with the American Concrete Institute, has developed a comprehensive program to upgrade the knowledge and skills of shotcrete nozzlemen and to facilitate ACI examination and certification. Provide your clients with the assurance that your nozzlemen have demonstrated that they have the capabilities to perform the job right—the first time!

To learn more or to schedule an ASA training session and an ACI Shotcrete Nozzlemen Certification examination, visit www.shotcrete.org or call (248) 848-3780.



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Use Qualified Contractors

It is the responsibility of the owner/specifier to ensure that the shotcrete contractor and his crew are qualified to properly complete the project.

This responsibility starts (but does not end) with nozzleman certification!

ASA Shotcrete Contractor Qualification

- Available now
- Evaluates projects, shotcrete team, equipment
- Basic (minimum 3 years, 15 projects)
 - *Lightly reinforced, thinner, vertical*
- Advanced (minimum 5 years, 15 projects)
 - *Structural sections, thicker, overhead*
- Full-day ASA Shotcrete Contractor Education

ACI Shotcrete Inspector

- Program rolled out 2019 – ACI Policy CPP 661.1-18
- Prerequisites:
 - *ACI Concrete Field-Testing Tech – Grade 1*
 - *Work Experience in Shotcrete (3 years)*
- 90 Minute open-book written exam
- Study References from ACI, ASA and ASTM (CP-61)
- ASA Education counts towards work experience
 - *Full-day Shotcrete Inspector Education (12 months)*
 - *Full-day Shotcrete Nozzleman Education (6 months)*
- ACI On-Demand Shotcrete Specific Courses

Useful Tools and Resources

- www.Shotcrete.org (Buyer's guide, many resources)
- www.ACIcertification.org (nozzleman & inspector certification)
- ASA Main Office – 248-963-0210 or info@Shotcrete.org
- ASA Technical Inquiries – 248-983-1701 or Charles.Hanskat@Shotcrete.org