James Shilstone (Jay) is the 3rd generation of Shilstones to be involved in concrete quality control and follows after his father, Jim, in working with architectural concrete. Jay has been involved in architectural concrete projects worldwide with an accumulated value of over $4,000,000,000. His most recent efforts involve the development of performance specifications for architectural concrete. Jay is a member of ACI 303, Architectural Concrete, as well as multiple ACI, NRMCA, ASTM and TRB committees dealing with concrete and quality control.
Concrete: The Ultimate in Functional Artistry

- Understand Concrete
  - Plastic
  - Hardened
- Understand the Concrete Process
- Know the Materials available
- Recognize the limitations of the Material and the Process
- Stone vs. wood vs. concrete

Drawings & Specs

- PPPPPP
  - BRE (1975) – 500 bldgs
  - 60% of problems originate from design
  - 35% from workmanship
  - 10% from materials
- Constructability
- Prebid conference
- Preconstruction conference
- Mockups

Construct-ability
“Exposed” concrete is the most difficult finish to achieve.

Performance Architectural Specs

Rock pockets due to segregation

Mixture Ingredients

Aggregate Grading
Material Color

Beware of Contamination

Limitless possibilities

Finish impacts appearance
Gap Graded Mixes

Reinforcing steel congestion

BIM can help but it isn't the entire answer

Understand tolerances

Cover on Reinforcing Steel

The Devil in the Details
Steel directs the vibrator

The Mirror of the Form

Formwork Materials

Formwork Problems
Placement Equipment

Placement Technique

Consolidation Equipment

Reinforcing Steel Clear Space
Consolidation - Training

Consolidation Problems

Finishing Equipment & Technique

Uniform equipment & technique
Impact Hammer

- Scale (light)
- Bush (medium)
- Jack (heavy)
- Tool (heavy)

Patching

Murphy’s Law

“Nothing is as easy as it looks. Everything takes longer than you expect. And if anything can go wrong – it will. At the worst possible moment.”
Case Histories

Southern Bell, Atlanta
- White Cement
- Granite sand
- White & black granite stone
- Steel Forms
- Bushhammer finish

1515 Poydras, New Orleans

Kennedy Memorial, Dallas
- Cast in place
- White cement
- Needle scaled finish
- Post Tensioned

Park West, Dallas
- Cast in place matched precast
- Type III and Type I cement with fly ash
- Tan sand
- Tan stone
- Light sandblast

One Main Place, Dallas
- White Cement
- White and Black Granite Arbeton method
- Heavy Sandblast
Summer Palace, Iran
Preplaced aggregate
Injected grout

Mississippi Power & Light, Gulfport

Water Gardens, Ft. Worth, TX
Tan Cement
River Gravel
Heavy Sandblast

Park Central, Dallas
Blue-gray cement
As Cast Finish
Later painted

Thank you for your attention.