Assessment Modernist Structure Facades: Presentation of Case Studies

*Technical Session:*
SoCal Modernism
Preserving Concrete Modernist Structures

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Promontory Apartments
Chicago, Illinois
Mies van der Rohe, 1949
Approach

- Repair existing distress and deterioration with appropriate and durable repairs to match adjacent elements
- Design repair measures to retain as much of original material as possible, while providing for removal of existing deteriorated concrete to provide sound substrate for a durable repair.
- Conduct samples and mock-ups to develop a mix design and repair procedures to establish a standard of care for technical and aesthetic qualities of the repair
- Perform work in accordance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties
Historic/Architectural Concrete Restoration

Assessment and repair design
- Review history and pertinent documents
- Understanding original construction techniques
- Investigation
- Laboratory analysis
- Develop appropriate options and design repairs for historic concrete
  - Mix design (aggregate sources)
  - Creating initial samples and mock-ups

Construction
- Mix design (aggregate sources)
- Creating samples and trial repairs
- Repair work
Edison Monument
Edison, New Jersey
John J. Earley
1938
Fig. 1 and 2—Day and night views of Thomas Alva Edison Memorial Tower as completed.
Wood formwork at inside of structural concrete

Reinforcing steel for structural concrete

Precast panels as exterior formwork

Completed lifts
Structural/precast concrete

Back-up mix
Mosaic face mix

Precast panel
Graduated Concrete Colors
Morse and Erza Stiles Colleges
Yale University
Eero Saarinen
1961
Rubble Concrete

*Rubble Concrete Mix*

- Fine aggregate – rock fragments and sand
- Coarse aggregate - Millstone Point granite
- Cement
- Water
- Air entrainment
- Pre-placed aggregate
Rubble Concrete

*Coarse aggregate*

- Granite that is 50 percent buff, 50 percent pink
- Size
  - 50 percent passing between 8 and 6 inch sieve
  - 50 percent passing between 6 and 3 inch sieve
  - Some aggregate greater than 12 inches
Rubble Concrete

Characteristics
- F’c grout 5,000 psi
- F’c rubble concrete 3,000 psi
- F’c test method
  - Grout 2 inch x 2 inch x 2 inch cubes
  - Rubble concrete 18 inch x 36 inch cylinders
- Air entrainment 3 to 5 percent
Pre-Placed Aggregate
Thank you