

Assessment Modernist Structure Facades: Presentation of Case Studies

Technical Session:

SoCal Modernism

Preserving Concrete Modernist Structures

ACI 2017 Fall Convention

Anaheim, California

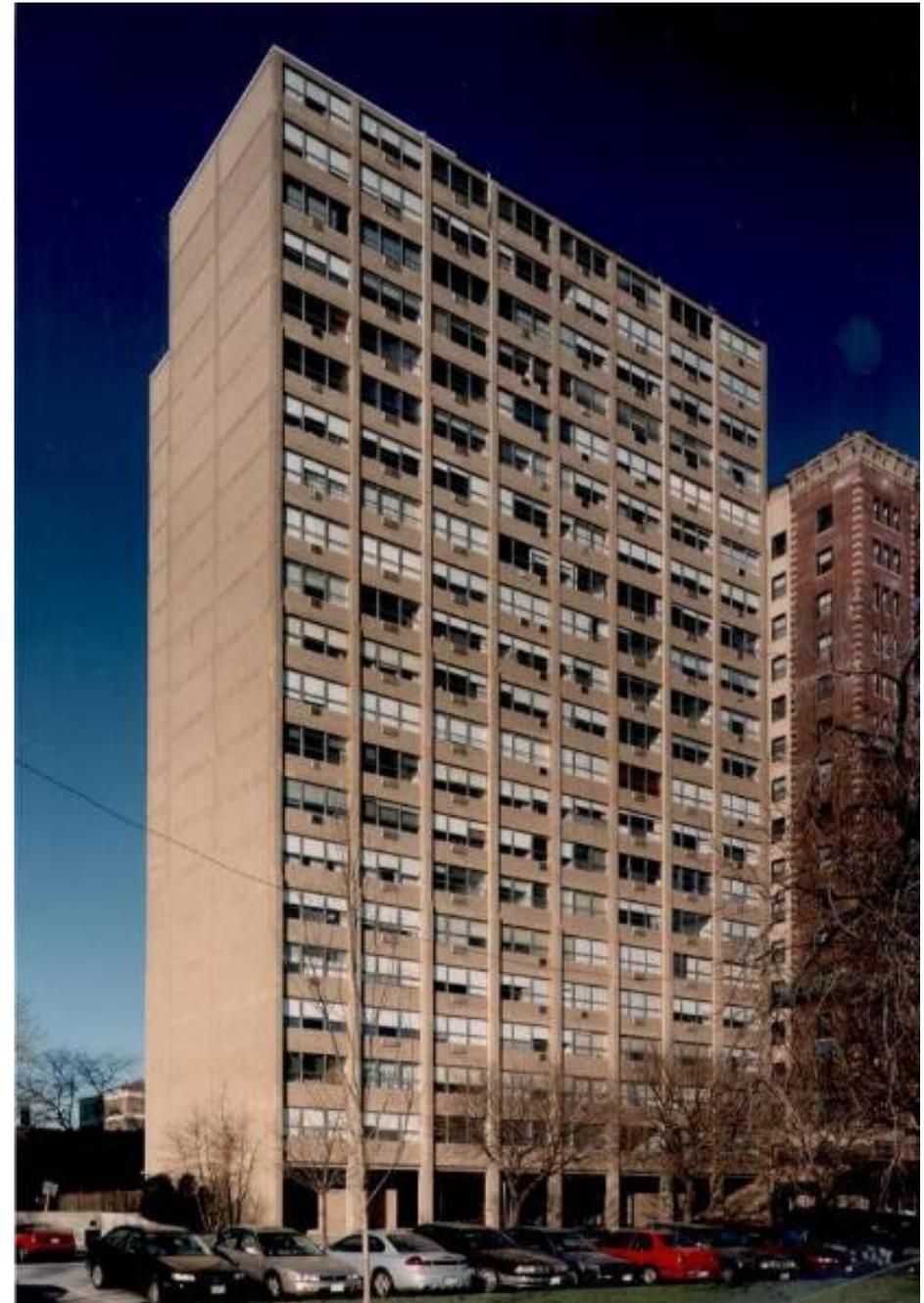
October 17, 2017

Paul Gaudette, Principal

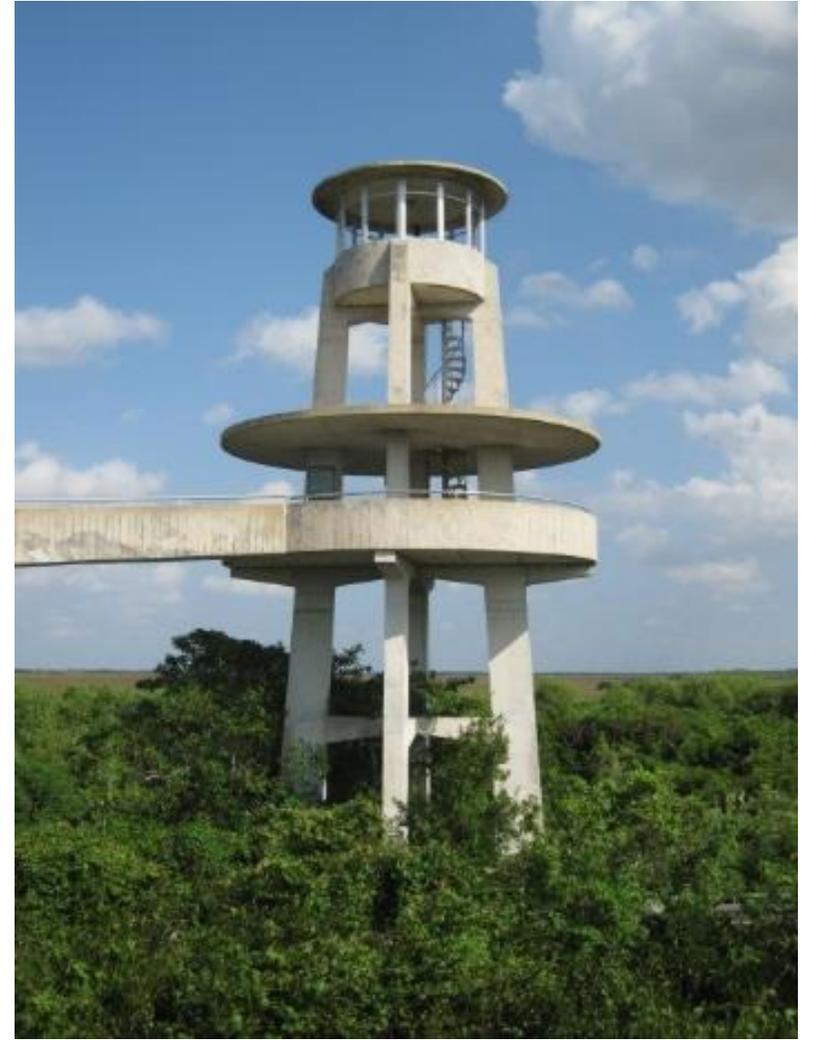
Wiss, Janney, Elstner Associates, Inc.

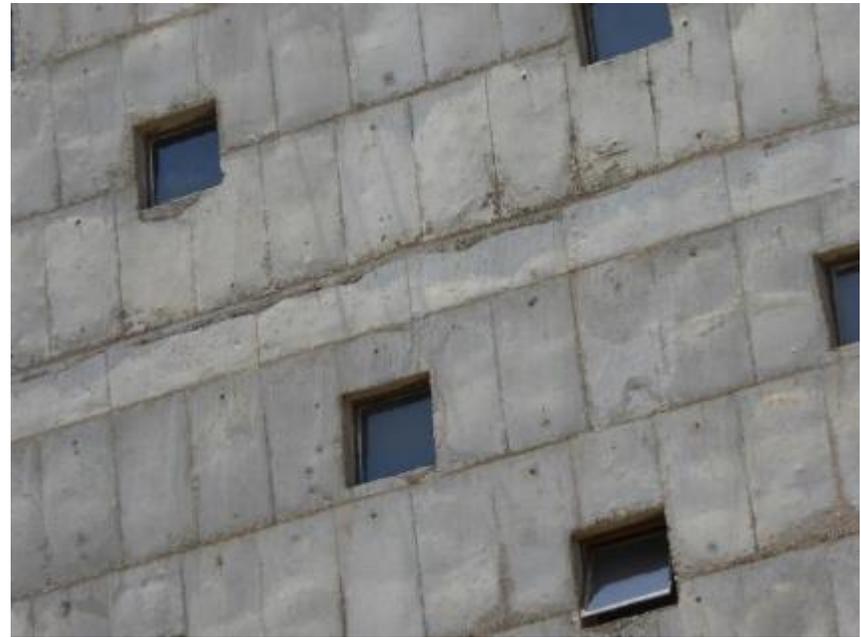


Promontory Apartments
Chicago, Illinois
Mies van der Rohe, 1949









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



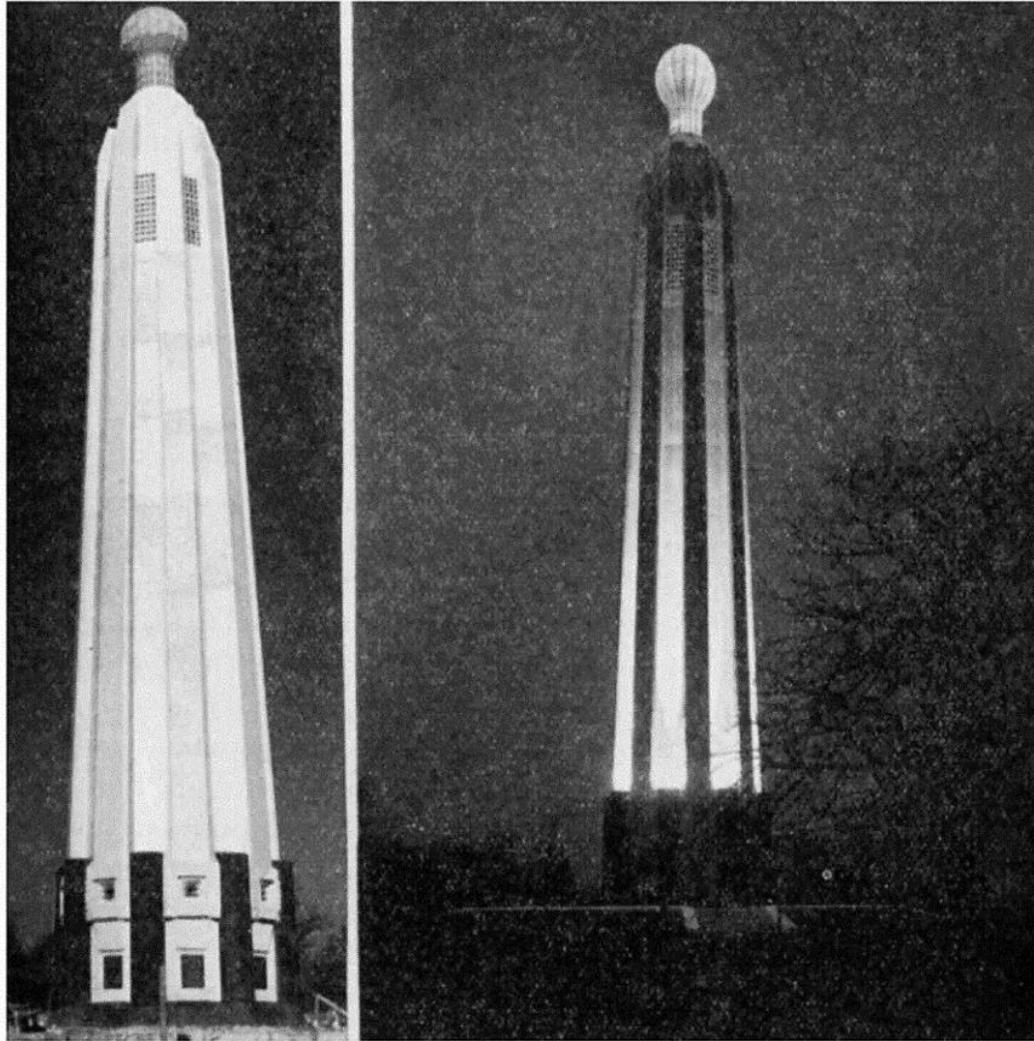
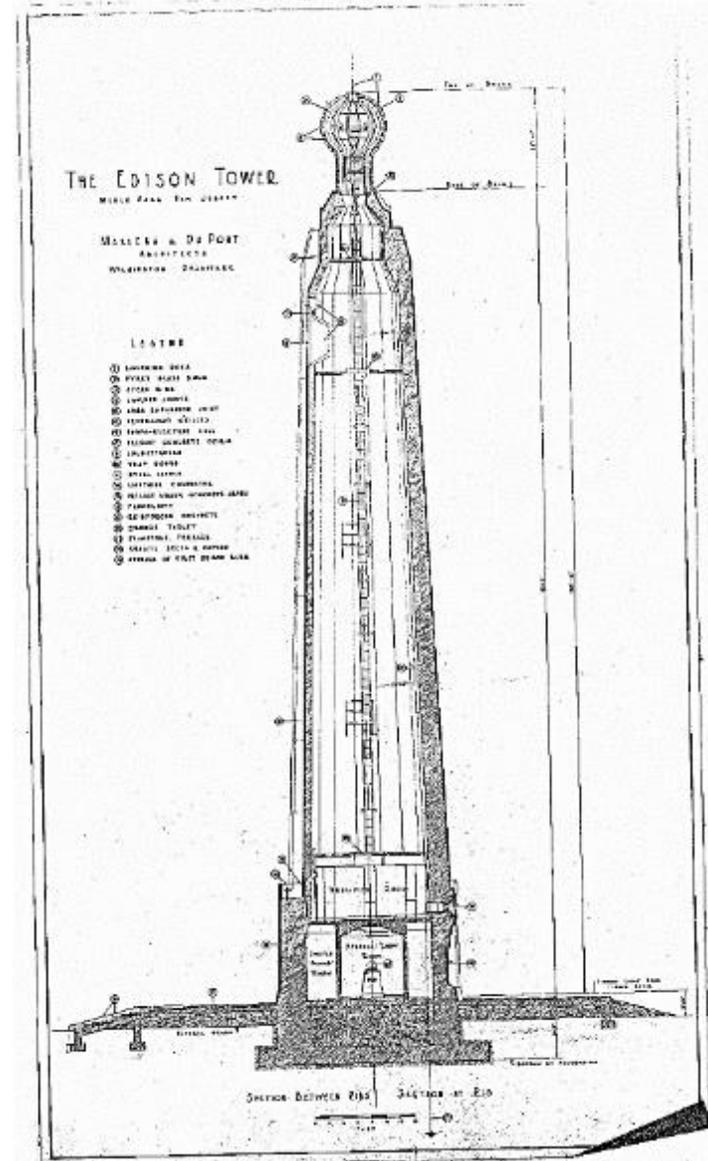


FIG. 1 AND 2—DAY AND NIGHT VIEWS OF THOMAS ALVA EDISON MEMORIAL TOWER AS COMPLETED



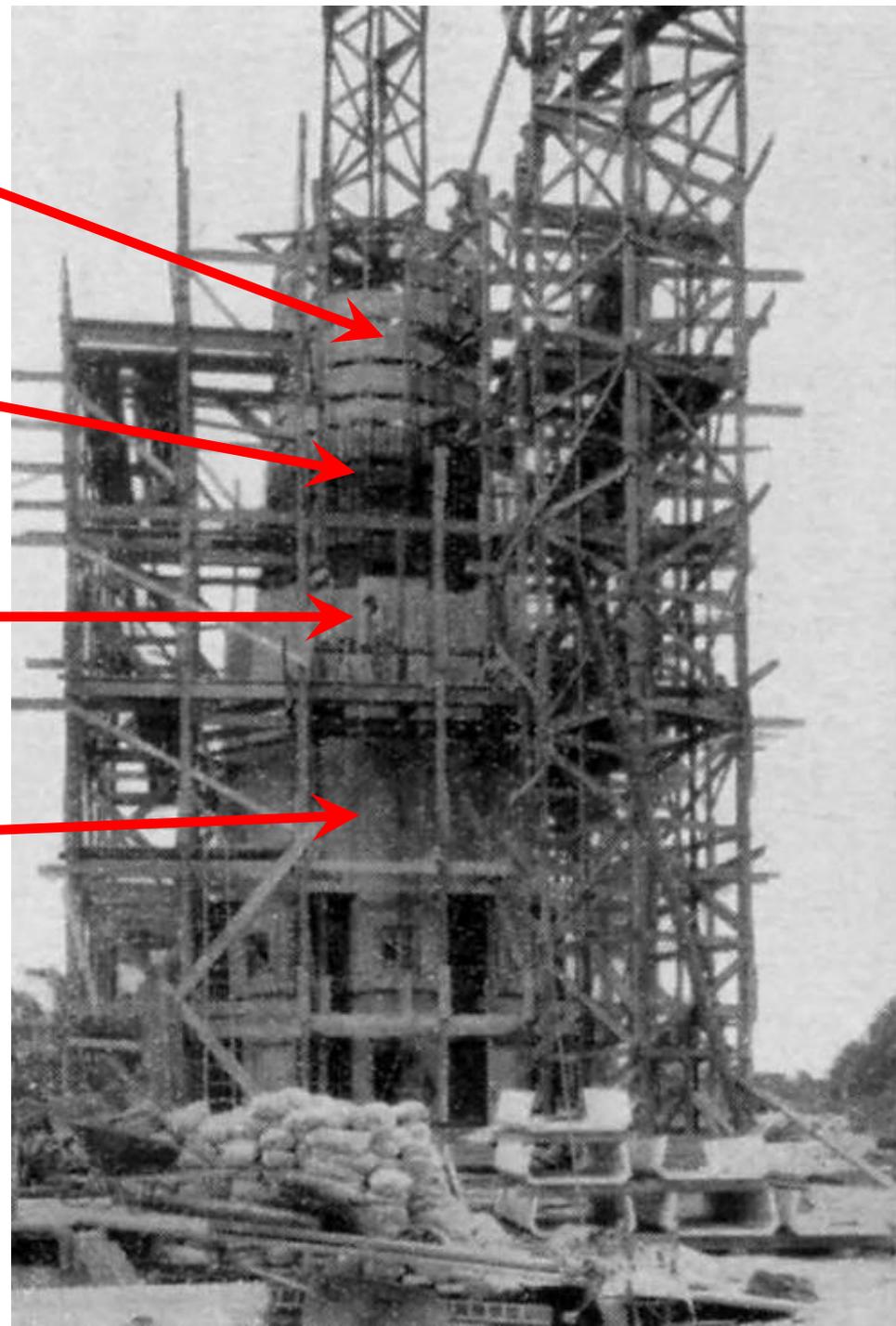


Wood formwork at inside
of structural concrete

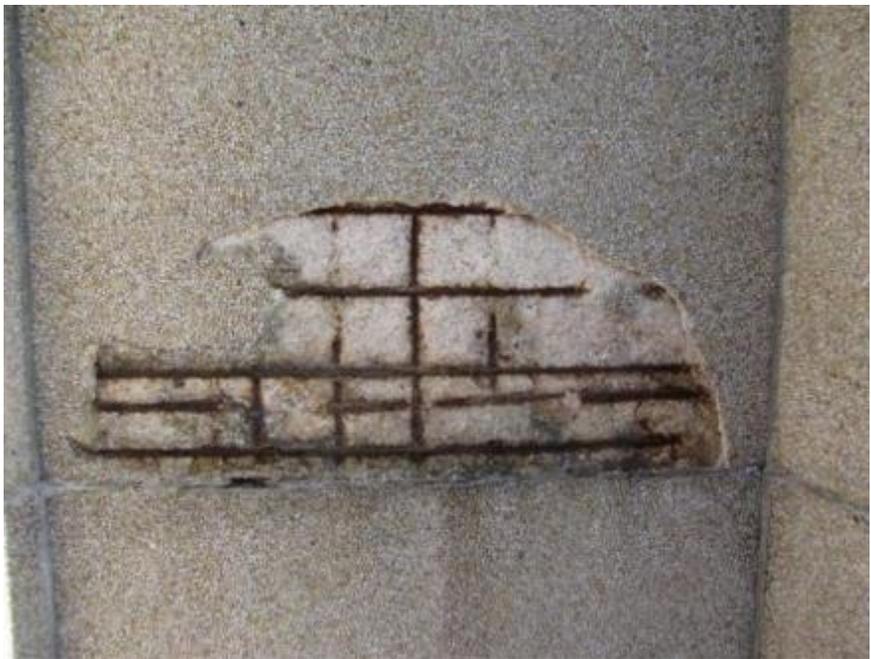
Reinforcing steel for
structural concrete

Precast panels as
exterior formwork

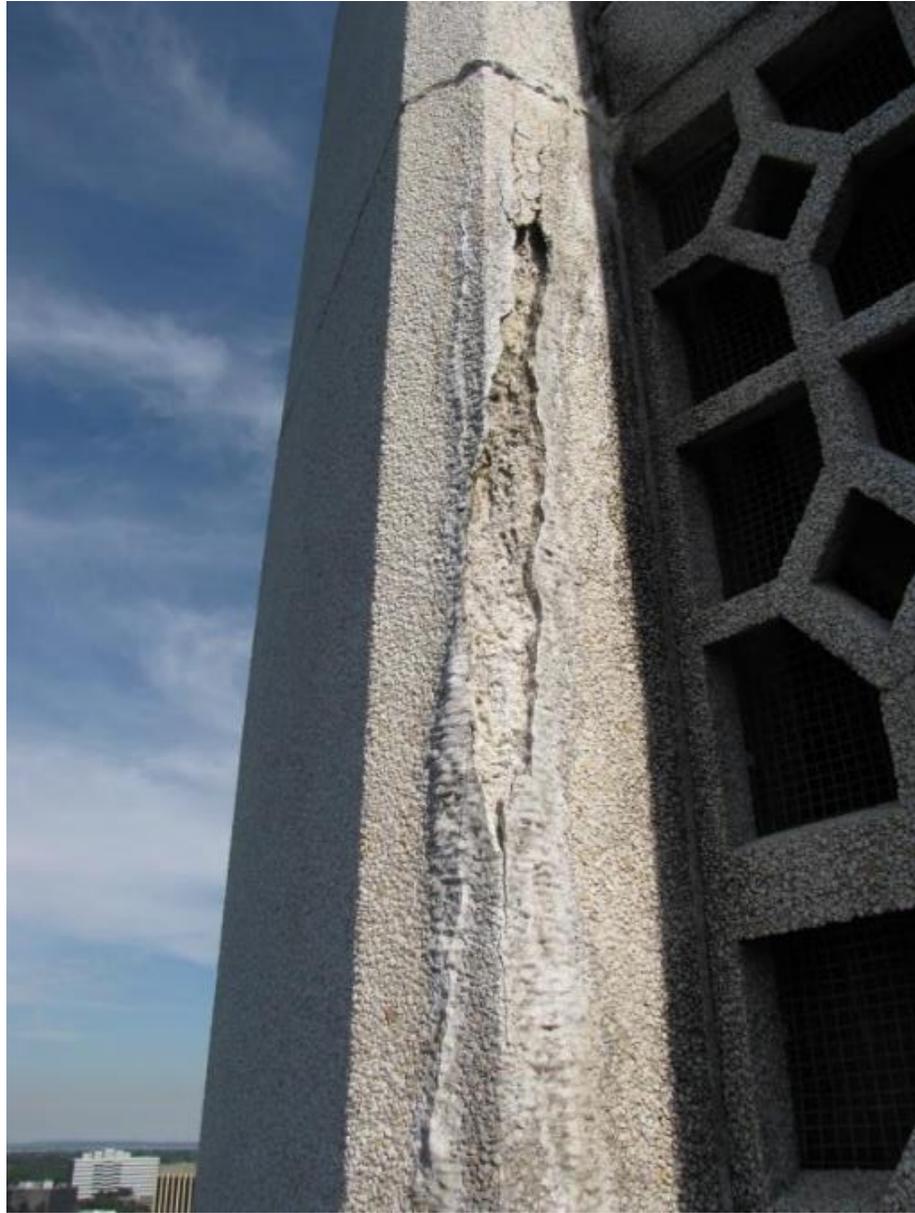
Completed lifts











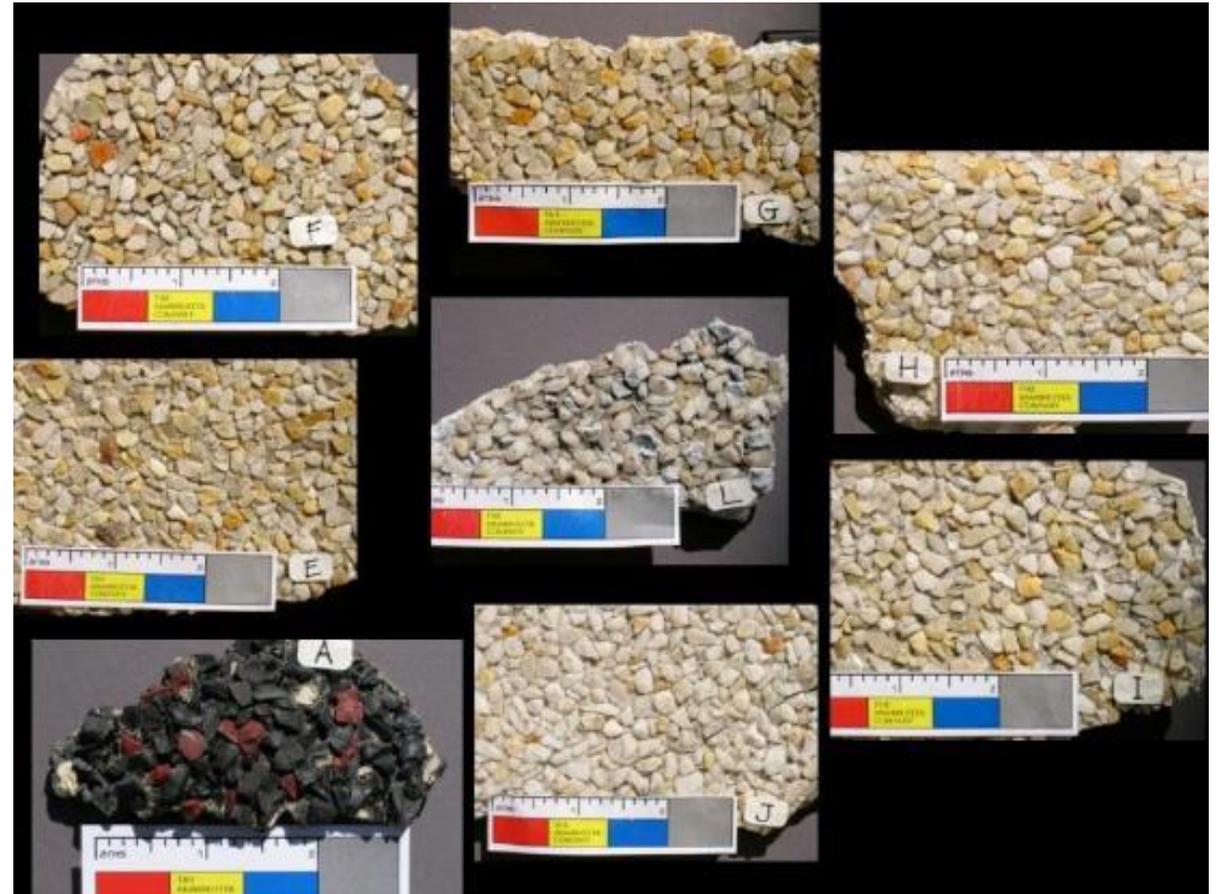
Structural/precast concrete

Back-up mix Mosaic face mix



Precast panel





Graduated Concrete Colors



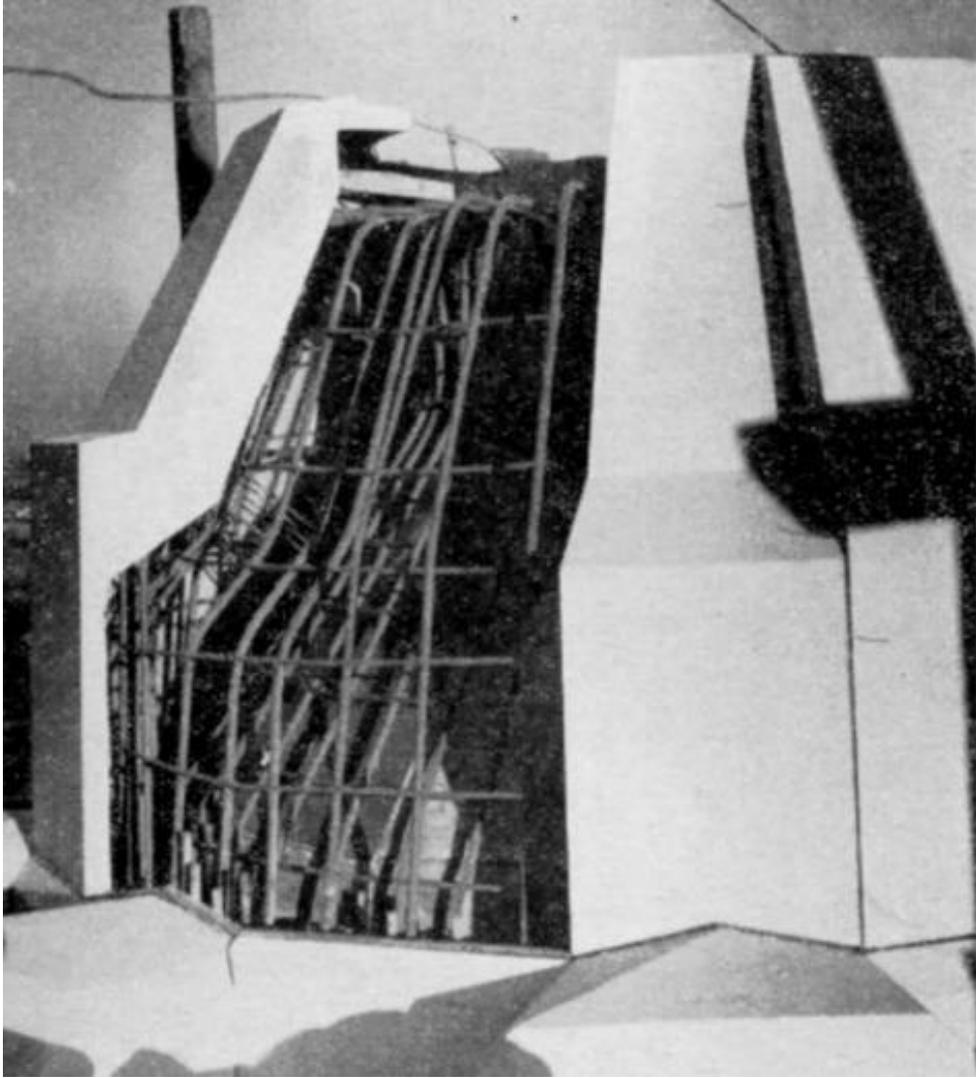


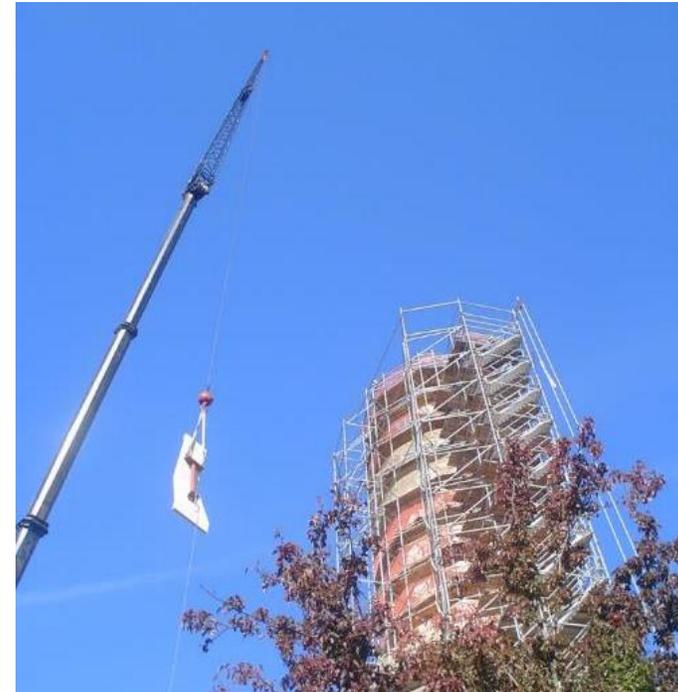






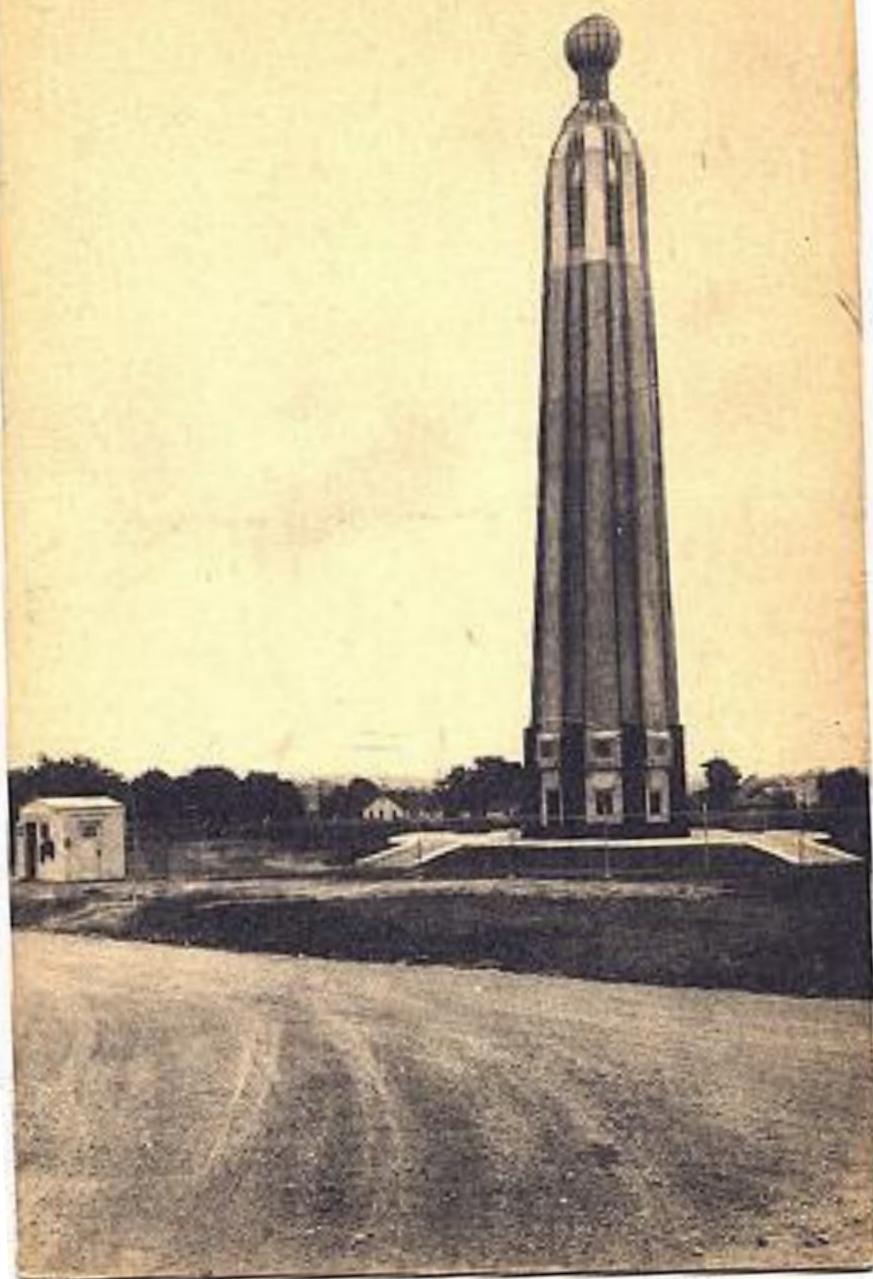








THOMAS A. EDISON MONUMENT, MENLO PARK, N. J.



Morse and Erza Stiles Colleges
Yale University
Eero Saarinen
1961





Yale University Library, Manuscripts and Archives, image 007010



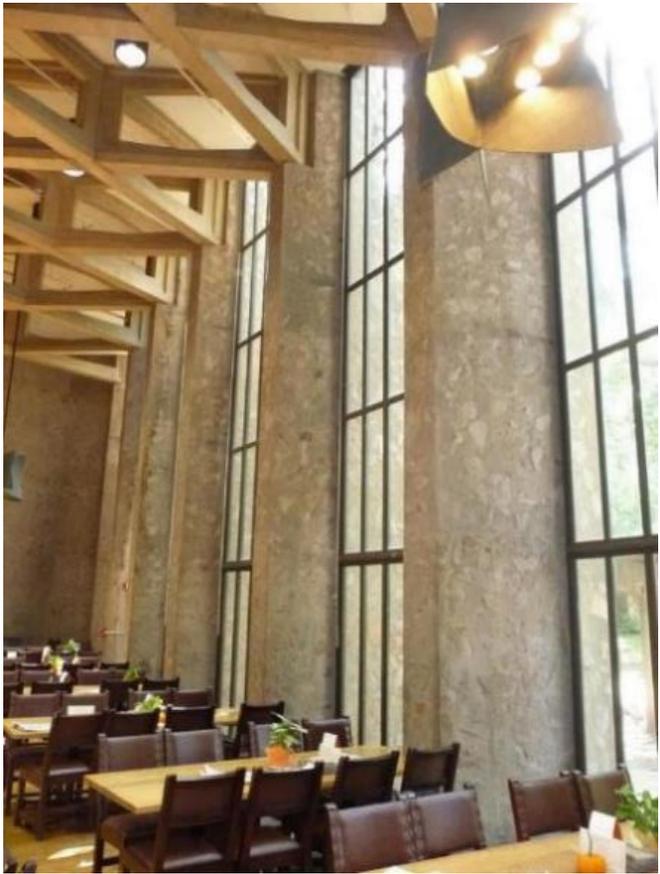
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Yale University Library, Manuscripts and Archives, image 007007



Photos from Library of Congress, photographer Balthazar Korab, 1958–1962



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

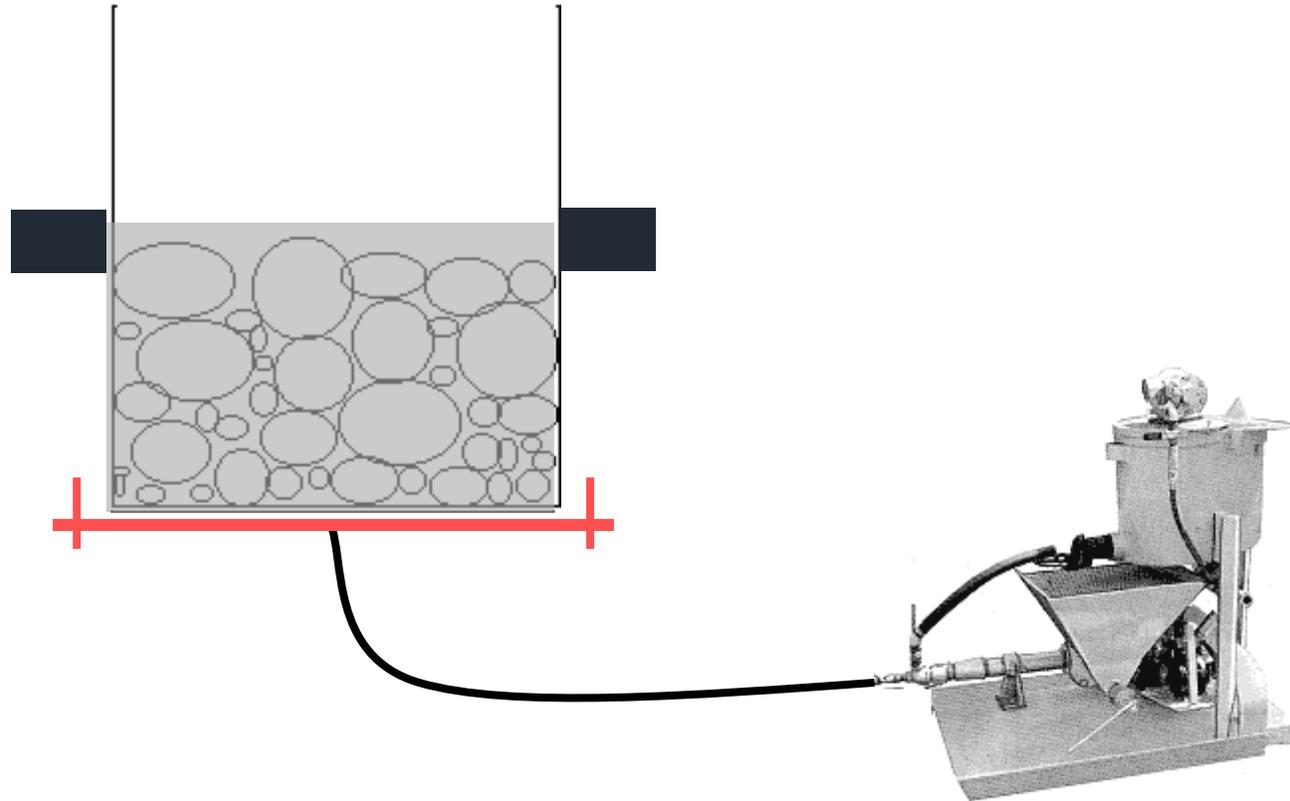
- Granite that is 50 percent buff, 50 percent pink
- Size
 - 50 percent passing between 8 and 6 inch sieve
 - 50 percent passing between 6 and 3 inch sieve
 - Some aggregate greater than 12 inches

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



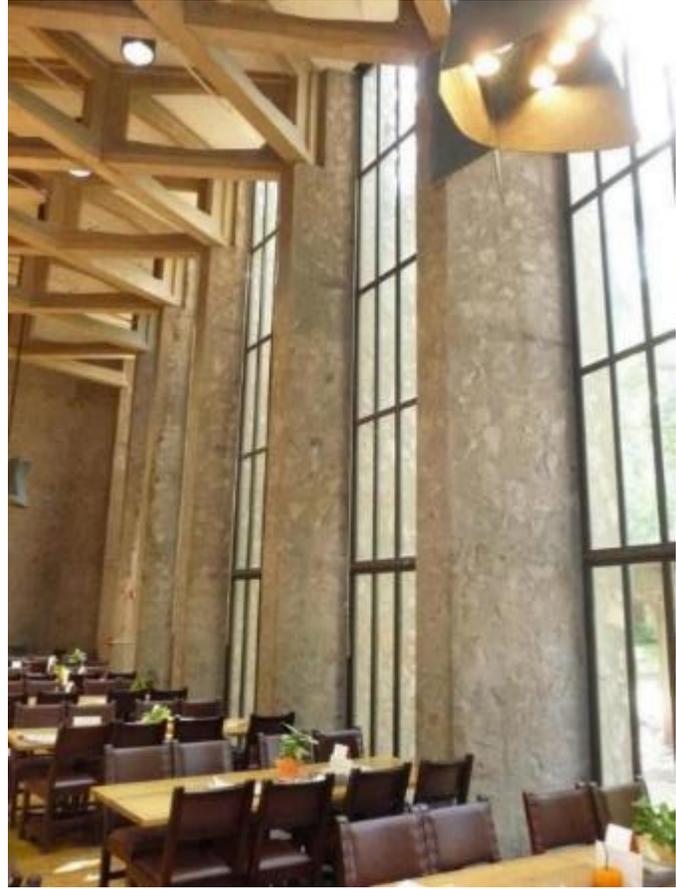
















Thank you