Masonry Preservation
& Enhancement Specialists
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PROVIDE NEW TECHNIQUES TO SAVE HISTORIC MASONRY STRUCTURES

Course Description

1. Identify and discuss new techniques for nondestructive masonry evaluation.
2. Identify and discuss new techniques to repair structural inadequacies in historic masonry structures.
3. Understand compatibility issues and special requirements.
4. Be qualified to identify and specify new techniques to repair structural inadequacies of historic masonry structures.

Curriculum

1. Evaluating Masonry
1.1. Investigation objectives
1.1.1. As-built, current conditions using nondestructive methods
1.1.2. Engineering properties determined with in-place testing
1.2. Nondestructive evaluation
1.2.1. Rebound hardness (of units and mortar), pulse velocity determination (ultrasonic and sonic), microwave radar, infrared thermography, metal location, borescope investigations
1.3. In-place testing
1.3.1. Flatjack methods
1.3.1.1. In situ stress (ASTM C 1196)
1.3.1.2. In situ deformability (ASTM C 1197)
1.3.2. Bed joint shear strength (ASTM C 1531)

2. Stabilizing Masonry
2.1. Preservation principles
2.1.1. Minimize intervention, use existing capacities rather than demolish and rebuild, use compatible repair materials
2.1.2. Using nondestructive methods to verify repair quality
2.2. CIF (Compatible injection fill)
2.2.1. Research and development
2.2.2. Materials
2.2.3. Wall stabilization, crack repair

2.3. Wall anchorage
2.3.1. Local: retrofit ties to replace cracked or missing headers
2.3.2. Global: structural connections between walls, floors, roof

3. ICCP: Impressed Current Cathodic Protection
3.1. Principles behind metal corrosion in masonry walls
3.2. System design and utilization
3.3 Electro-osmotic pulse

4. Case Studies
4.1. Summary
4.2. Questions