

**EXECUTIVE DEPARTMENT  
OFFICE OF GENERAL SERVICES  
DESIGN AND CONSTRUCTION GROUP - DIVISION OF DESIGN**

**PROFESSIONAL CONSULTATION REPORT**

**Professional Consultation S0980**

August 27, 2004

Study to Investigate Cracks, Building A  
Ella McQueen Residential Center  
Office of Children and Family Services  
41 Howard Avenue  
Brooklyn, NY 11221

**FIELD SURVEY**

On Thursday, July 22, 2004, Ruijia Mu of OGS Design and Construction inspected the cracked wall of the Ella McQueen Residential Center, at Brooklyn. Mr. Oktiz of the Facility was present during this inspection.

**BACKGROUND**

The Ella McQueen Residential Center consists of three parts. Parts A and B are two older buildings. Building A has five floors above ground and building B has four floors above ground. The original construction dates are unknown. A new four floor addition was built to connect buildings A and B to form a single building. The new addition was built around 1968. The new addition is steel framed and cavity wall construction. The cavity walls are structural concrete unit masonry inside and brick veneer outside.

**FINDINGS**

The field survey found two cracks in the brick veneer sidewalls of the new addition near the two front corners of the addition. The cracks are approximately a quarter of inch wide starting just below the roof parapet. The cracks travel down 6 to 7 feet and gradually reduce to hairline cracks and continue to the first floor. The inner concrete masonry structural walls appear to be in good condition. Some concrete coping stones on the parapet are cracked and mortar joints are open. The original design drawings show that the walls have no horizontal or vertical expansion joints. We believe the cracks are mainly caused by expansion of the brick veneer. Because the walls have no expansion joint, the brick movements were not controlled and resulted in cracked brick veneer. Other factors such as concrete wall contraction, water from parapet wall, and thermal expansion may also contribute to the problem.

**RECOMMENDATIONS**

Base on the field inspection and original design drawings, we believe the cracks on the outside wall do not impact the structural stability of the building. However, further deterioration of the face brick walls will eventually cause the walls to fail, a safety hazard for the pedestrians on the street. We recommend removing and rebuilding the brick parapet and a small part of the brick veneer. The rest of the wall shall be repaired by pinning the brick veneer to concrete masonry back-up wall in isolated areas. A new horizontal expansion joint shall be provided under the shelf angle at the roof level. The broken coping stones on the parapet shall be replaced. Saw cut the existing sidewalls at existing crack lines to provide two new full building height vertical expansion joints.

The brick parapet is about 4 feet high by 27 feet wide. The area of brick veneer to be rebuilt runs from the roof elevation to 6 feet below that and 27 feet wide. The new horizontal expansion joint will be 27 feet long. Two new vertical expansion joints will be approximately 50 feet height each.

**ESTIMATE AND FEES**

The attached Project Estimate dated August 19, 2004, indicates an estimated bid amount of \$35,000 and field order allowances of \$2,600 for the recommended works.