



February 28, 2023

Re: Landmarks Commission Meeting – CMSD Gallagher School

Osborn would like to summarize the decisions made to rebuild the existing walls at Gallagher School and provide insight into the current design. A study was done by Osborn engineering dated October 4th, 2022, which concluded the original brick was failing due to poor original production likely from being left in the oven for too long. This has caused the brick to be brittle and shorted its expected lifespan. With each freeze thaw cycle the brick has continued to fail and flake off. This flaking is likely to increase over time. CMSD, The Ohio Facilities Construction Commission (OFCC), and the co-owners decided it would be wise and money well spent to rebuild the exterior walls back for all the architectural and engineering reasons stated below after the studies and discussions with the architects, engineers, and construction team.

The existing recessed windows were originally designed and constructed with unreinforced masonry construction from the slab on metal deck to the windowsill. The existing walls were under designed for the lateral wind loads applied to the structure over time. This deflection has caused cracked masonry and expansion joints that have failed.

Rebuilding the recessed cantilevered walls would require removing large portions of the existing slab construction to provide new steel framing to support a cantilevered structural steel frame below each window. The number of brick expansion joints at these locations, extending both vertically and horizontally would require continued maintenance over the life of the building to maintain a sound structural envelope. This configuration is also more prone to water intrusion and shorten the lifespan of the construction and is not recommended. Rebuilding the entire wall system and moving the windows out to the same plane will eliminate this problem.

The proposed design allows for a significant amount of insulation to be added to the walls which reduces the heating and cooling loads for the new building. This allows the mechanical equipment to be reduced in size and saves energy in operating costs for the life of the building. This proposed design will also be a more cost-effective design in the short term as well as over the long term due to there being less mass, detailing, and places of failure of the building envelope.

Moving the windows out to the same plane instead of the recessed cantilevered sills is a better wall system for the building envelope. This recessed cantilevered sills historically are prone to causing leaks inside of the building which over time can be detrimental to the interior of the building (mold, structural concerns freeze/thaw of water within the wall system). Moving the windows out to the same plane also increases daylighting into the space, and it achieves better direct lines of sight to the outdoors which is a recommended design practice to increase quality views. This is encouraged by the U.S Green Building Council for LEED buildings.

Sincerely,

OSBORN ENGINEERING

A handwritten signature in blue ink, appearing to read "Brian Kane".

Brian Kane, PE, LEED AP
Director of Mechanical Engineering

A handwritten signature in blue ink, appearing to read "John Pollner".

John Pollner
Manager of Structural