

7 E. Redwood Street

Location: Baltimore, MD

Client name: Cushman and Wakefield – managing agent

City of Baltimore – building owner

Project partners: N/A

Prominently positioned at the corner of East Redwood Street and Light Street in downtown Baltimore is the historic 20-story building 7 East Redwood. Erected in 1924, this architectural gem represents a pivotal point in American architectural history, as it seamlessly blends both masonry and metal construction techniques. During its construction era, this hybrid approach gained popularity, particularly for the creation of expansive industrial facilities and towering urban buildings. Spanning 153,000 sf, it has a striking exterior comprised of terracotta accent banding, brick masonry units, and limestone panels. Owned by the City of Baltimore, it serves as the central hub for various local government offices.

In 2020, concerns arose regarding the structural integrity of the building's exterior. Pieces of the terracotta accent banding were observed to be falling into the adjacent alleyway, causing alarm to the city. It was at this juncture that the BECS team was engaged to conduct a building envelope assessment, including a comprehensive façade investigation and roof valuation. Over the course of three days, the dedicated Façade Access Support Technicians, known as the FAST Team, executed eight drops along various elevations to assess the deteriorating ledge and roof system. The subsequent findings and recommendations report identified several unsafe conditions necessitating immediate repair and stabilization. The uppermost ledge became known as the water table and cornice required the highest priority due to deteriorated terracotta at the 19th floor. There were comprised mortar joints across elevations, cracks and loose masonry material beneath the water table, and sagging corners at the cornice, among other issues. Additionally, potentially hazardous conditions such as spalls at terracotta near pipes, biological growth at water tables, and various cracking concerns were identified. While prior repairs had been attempted, the majority of the sealant repairs had failed.

As the project advanced, continuous communication among all stakeholders remained a fundamental priority. The BECS team was secured to design and plan for the façade repairs. Before any work commenced, a series of safety measures were put in place, including the installation of overhead protection along Redwood and Light Street for pedestrians. Additionally, a swing stage was deployed to facilitate access to the building, albeit subject to challenges posed by the height of the building, fluctuating weather conditions, and occasional poor air quality.

During the inspections, it became apparent that the terracotta had topside cracks along most of the building. Upon removing identified sections, it was discovered that the terracotta lacked proper support from the onset, succumbing to water damage and a lack of iron rod reinforcement. Given the extent of corrosion and material cracking, the team evaluated the traditional Rip Out and Replace (ROAR) approach versus Stabilize in Place (SIP) approach to address the root of the problem, especially considering the building's historic significance.

The original design employed glass-fiber reinforced concrete supported by structural steel. However, due to extensive lead times exacerbated by COVID-related delays and protracted shop drawing process, an alternate solution was sought. The result was the utilization of CastaCotta™ material, as a terracotta

alternative that replicated the original terracotta in both form and function. This innovative material stands out due to its remarkably low density, making it much lighter than precast concrete or stone and allows the units to be supported in the same manner as terracotta. By using stainless steel components, the added benefit of reducing the potential for future corrosion and spalling was integrated into the project.

The team's commitment and expertise were the driving forces behind the successful restoration and revitalization of this iconic Baltimore landmark.