



KAFD CMA Tower Façade Access System Design

KAFD CMA TOWER, RIYADH, KINGDOM SAUDI ARABIA

The Lerch Bates Façade Access Consulting Group, as part of the King Abdullah Financial District (KAFD) Capital Market Authority (CMA) tower Design Team, which includes HOK and Omrania, have been commissioned for the design of a new iconic 400 meter tower in Riyadh, Kingdom Saudi Arabia.

The CMA Tower will be taller than any current building within the Kingdom of Saudi Arabia once constructed. As such, the building has unique challenges associated with Façade Access. The main body of the tower has laminated metal fins laminated externally fixed to a unitized curtainwall. Triple glazing is paired with a monolithic lite to create a cavity system encapsulating operable internal blinds, all of which must be considered during the design of Façade Access Equipment (FAE).

Tower Façade Access Systems

- The FAE systems are being designed to allow for cleaning cycles of 15 cycles per year in perfect conditions. That is 3.75 times faster than the 4 times recommend for this area.

This is all calculated with three Building Maintenance Units (BMUs) on roof with capacity for three workers per platform. Each of the primary BMU's is complete with a multiple part telescopic and luffing boom. The BMU's will be able to "luff" up at such an angle as to reach over the petal walls if necessary and also position the platform above the PV panels to clean the PV panel array at the roof. When the BMU's are not in use they will be able to fully retract to minimize the visual impact.

- As the platform descends it will pass the monorail track suspended from the catwalk above. The worker will connect one end of a retractable lanyard from the monorail track trolley and the other end of the retractable lanyard will be connected to the workers safety harness. Once the workers reach the catwalk floor they will secure the platform to the catwalk and the worker that is attached to the retractable lanyard attached will dismount the platform.
- As the workers walk along the catwalk they will be protected from falling by their retractable safety lanyard. A cart to secure equipment such as extension poles, buckets, squeegee's dust rags, etc. will be designed to roll along a track at the catwalk level. The workers will be able to push the cart along as the traverse the catwalk during their cleaning cycle.
- Glass Replacement: Workers bring the glass or fin up to the roof using the elevators. Or lower the platform to the ground to pick up the glass from the ground. Workers rig the glass to the "six-pack" glass handling unit and lift the glass over the side. The glass will be suspended by a separate hoist that can accommodate the load of the glass. The glass will be positioned to the outside of the platform to insure it won't be damaged during transport down the building. Once the glass is in position the workers will secure the platform to the catwalk so that it won't drift away from the building. Workers will use tag lines to maneuver the glass over to the catwalk side of the platform. Once the glass or fin is in position the workers will transfer the glass from the glass handling unit suspension line to a suspension line attached to the monorail track above the catwalk. The glass will be transported along the catwalk while suspended from the monorail trolley's and guided by the workers so it doesn't damage the building façade.

