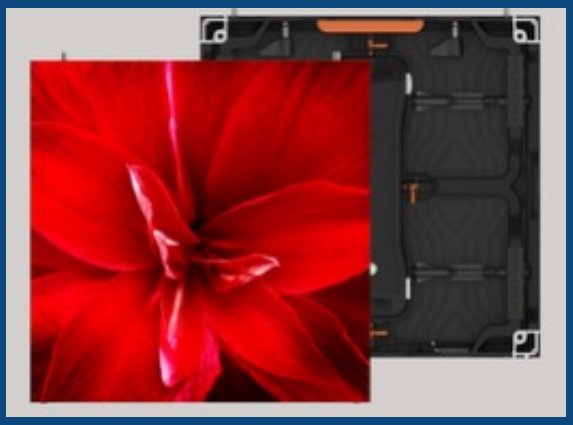
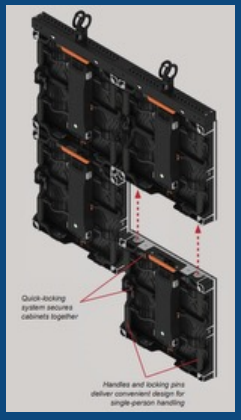
Case Study | 3.13.25

LIFTING TV SCREEN

CONCEPT:
We had a customer seeking a large 23' x 12' outdoor lifting media wall that is composed of (84) 14'' Planar LED displays and (12) 250 Watt JBL speakers. The lifting screen would be installed on the backside of an infinity pool of a spec home in Bel Air, CA.



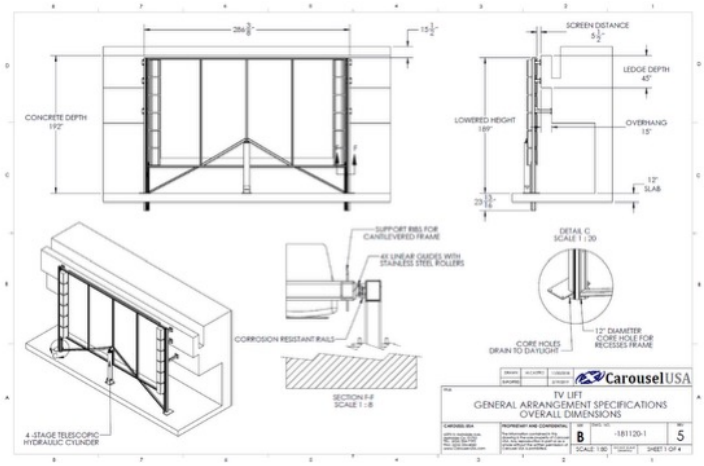


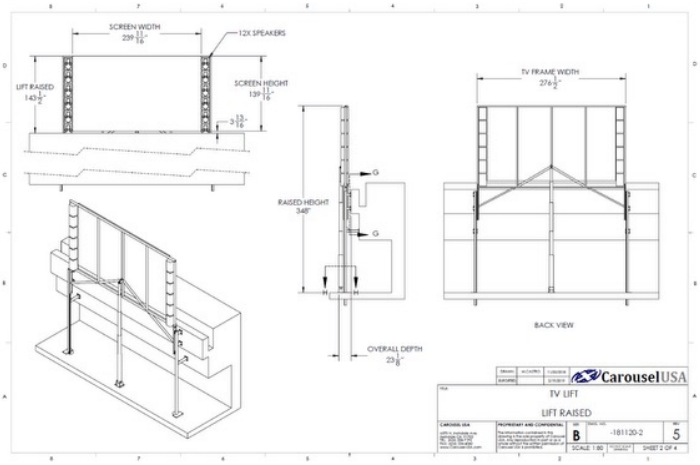
PROBLEM:
Designing a robust lifting mechanism that could safely lift and lower 3,000 LB reliably. Additionally, installing a large vertically lifting platform on the backside of an uneven hillside wall was going to be a challenge.

SOLUTION:
Linear elevator rails were selected to guide the lifting frame, and they were tied into a uniquely designed fully adjustable mount. The mounts allowed us to precisely adjust the guide system on the backside of a concrete wall which had major imperfections. Additionally, Carousel USA designers had to take environmental considerations in mind and ensure that the lift system would sustain during wind events. The use of FEA analysis played a significant role in designing a lifting system that would prove to meet our specific environmental loading conditions. However, the lift was designed with an anemometer which indicated wind speed to the controller and moved the lift to a safe and lowered position when the wind speed exceeded 20 mph.

Our engineers worked with architects and media wall specialists to develop the frame which housed all of the electronic media devices. The LED displays were housed in structural steel and tied in with unique mounting points that made for easy installation and removal of screens.

CarouselUSA





FEATURES AND SPECIFICATIONS: OUTDOOR TV LIFT

- Overall dimensions: 23’ x 12’
- Load capacity: 3,000 LB
- Lifting time: 30 seconds
- Travel: 157’’
- Lift actuation: 4-stage hydraulic cylinder with 2 HP HPU system
- Electric actuated pivoting lid
- Controls: Custom controller with integrated E-stop and anemometer sensor, UL508A Approved

IMPLEMENTATION:
Our team used a crane to hoist our equipment over to the hillside and carefully mounted and adjusted our lifting system onto the vertical hillside wall. It was challenging, but all plans worked accordingly, and we ended up with a successful installation. Our customer could not have been more satisfied.