

CASE STUDY

OVERSIZE CUSTOM LED BACKLIT
GLASS ILLUMINATION



**SAND CANYON &
DISCOVERY BAY OFFICES**
IRVINE, CA



OVERVIEW

SAND CANYON & DISCOVERY BAY OFFICES

IRVINE COMPANY OFFICE PROPERTIES | IRVINE, CA

architect LPA Design Studios

lighting design LPA Design Studios

developer Irvine Company

product LUXFIT™ LED Light Panel

manufacturer LEDCONN

As the line between work and personal life becomes increasingly blurred, today's workspaces are now starting to reflect this cultural shift. Successful modern workspaces provide functional working environments that pull together the workplace community, transforming it into an integrated social, creative, and innovative cultural hub. For the Irvine Company, this very vision of success was the impetus for an impressive architectural workspace lobby revitalization project spanning multiple business complexes spread throughout the city of Irvine.

With the goal of attracting forward-thinking businesses seeking workspaces that seamlessly integrate work-life balance, the building lobbies needed to be transformed into attractive entryways that create excellent first impressions for current and future business tenants. Guided by the creative

visionaries at LPA Design Studios, the revitalization of the Irvine Company Business Complex lobbies have helped provide a focal point for the lobby spaces.

Featuring a clean aesthetic, this intriguing lobby entrance creates a seamless, pure wall of light behind glass panes to pull off a modern, refreshing look. Over 84 custom pieces of LED light panels called LUXFIT were used to seamlessly illuminate oversize panels of glass reaching heights as tall as 12ft to create the clean lines of the Sand Canyon and Discover Bay office building lobbies. Because each lobby facade was slightly different in size and appearance, customizing for this project and coordinating all of the moving parts was certainly challenging but not impossible.

SURFACE MATERIAL

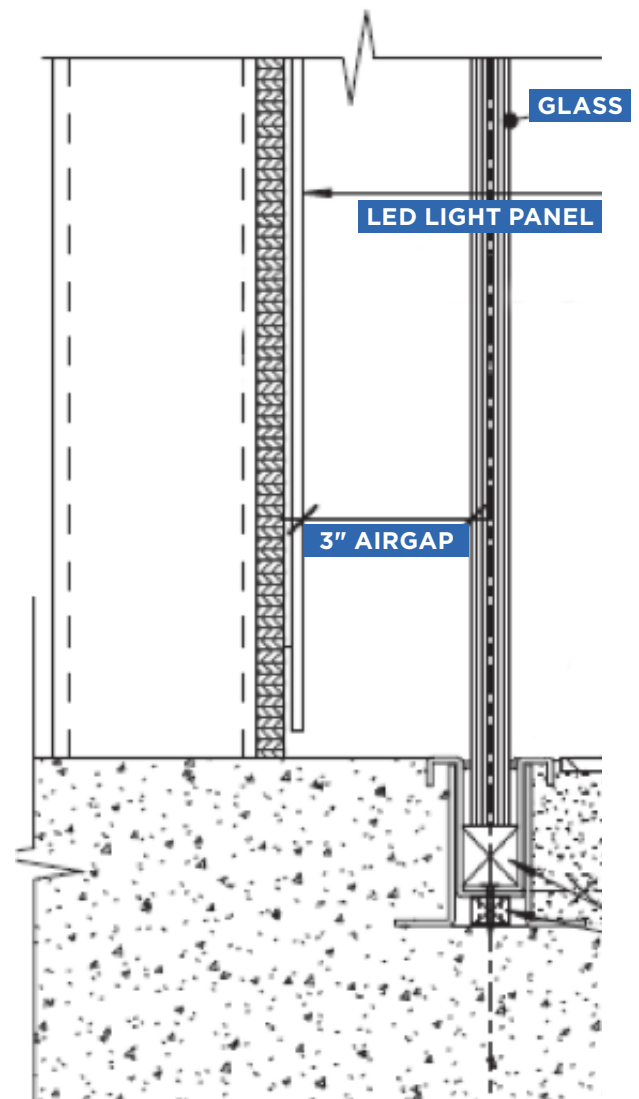
GLASS

For this forward-facing lobby facade sized at 12ft x 31ft, the designer selected glass as the preferred surface material because their design intent was to create a pure, even, seamless wall of light. Multiple ranges in opacity were brought to the designer, who was looking for a specific color and brightness to make the oversize wall illumination look clean, without hotspots or seamlines.

The LEDCONN team facilitated a mock up process to further help the lighting designer narrow down the specific opacity of glass to use with the chosen light source. The luminaire was tested with glass samples featuring varying levels of opacity to ensure lighting quality and appearance before committing to the final selected opacity.

KEY CHALLENGE

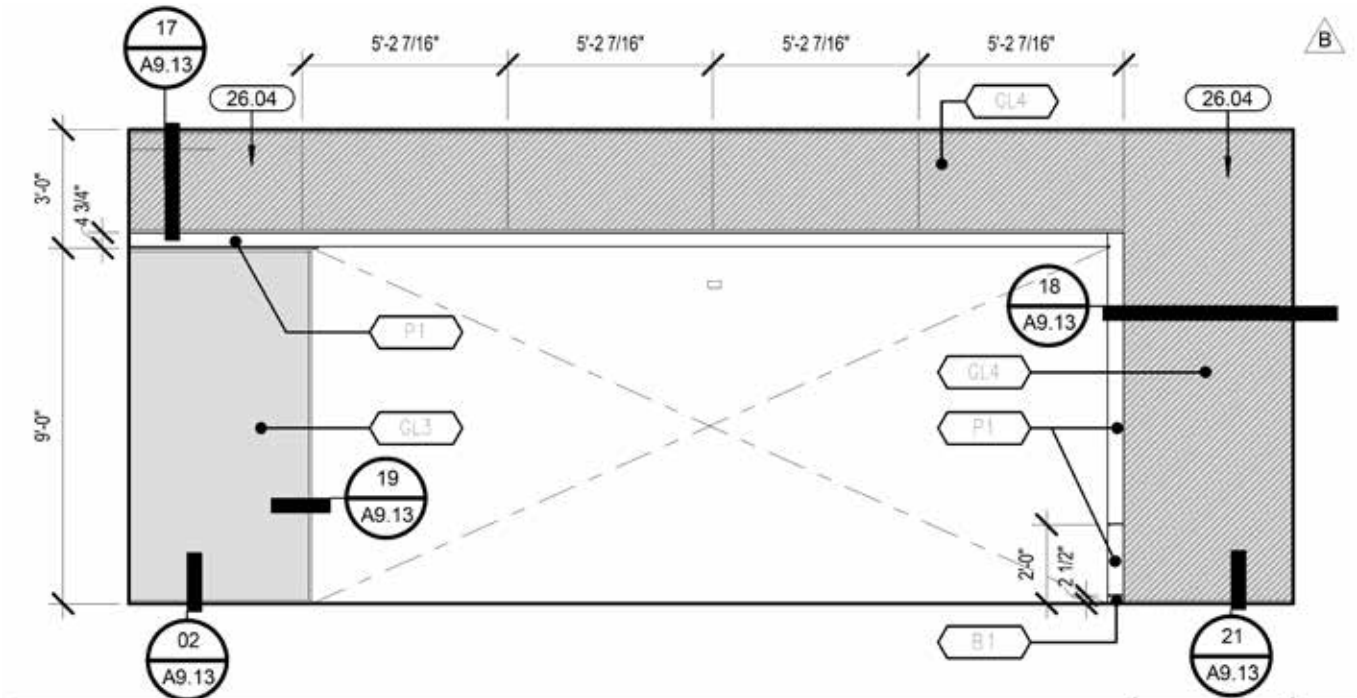
Aesthetically, the primary challenge faced was ensuring the transparency of the large glass surfaces illuminated successfully with the oversize light panels. With limited space for an airgap given the oversize glass and need for multi-paneling, finding the right product to customize successfully would certainly be challenging.



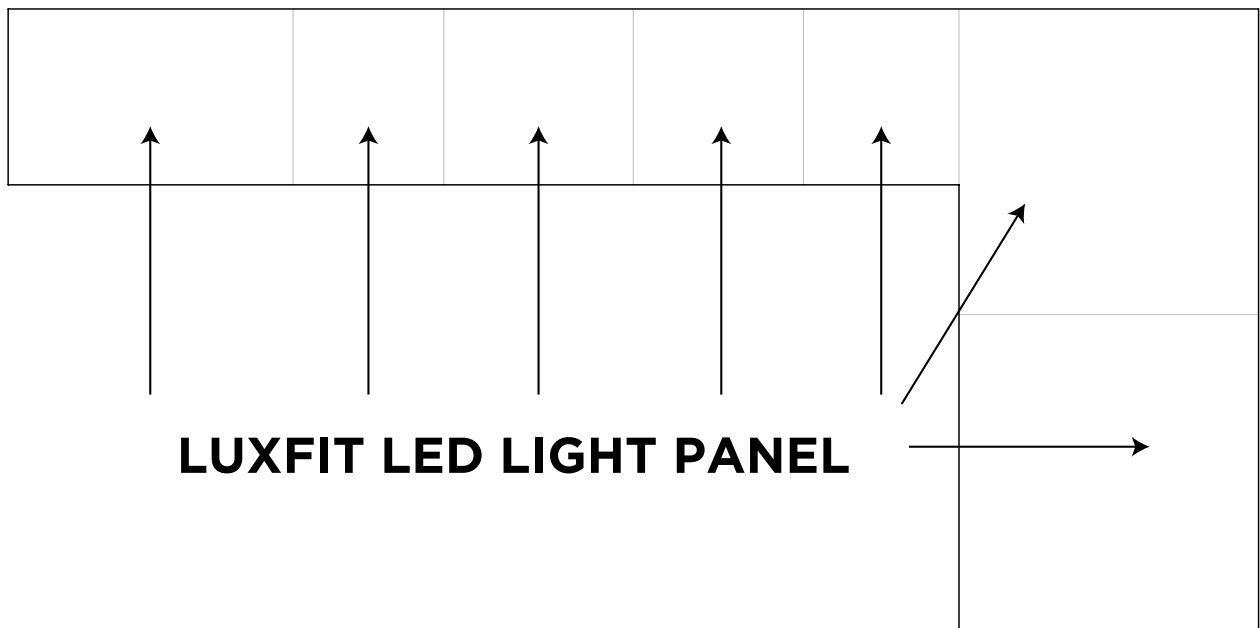
STRUCTURE

LOBBY FACADE

ARCHITECTURAL DESIGN LAYOUT



ENGINEERING DESIGN LAYOUT



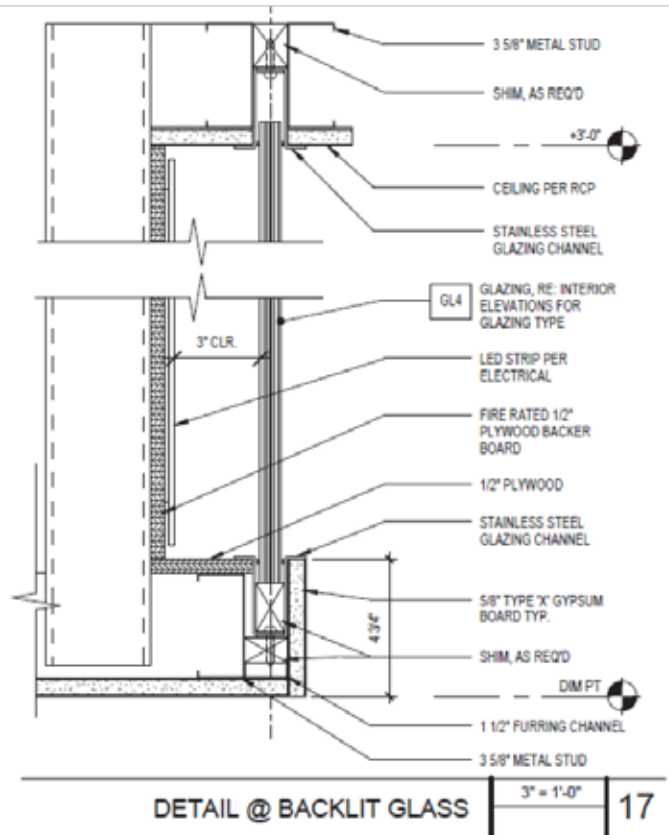
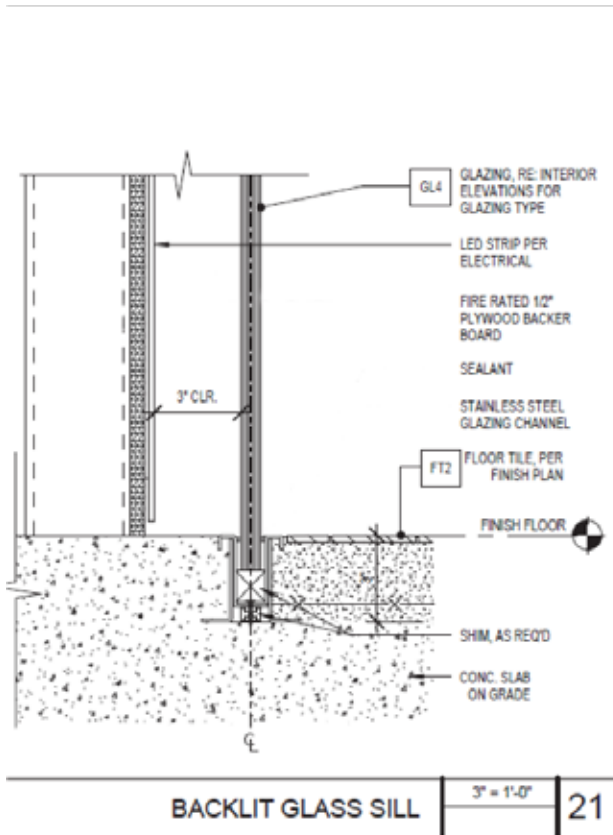
STRUCTURE

DETAILS

To achieve a clean look and make installation as easy as possible for the general contractors, LEDCONN's engineering team took the following measures to ensure the best outcome for the project:

ENGINEERING DESIGN PROCESS

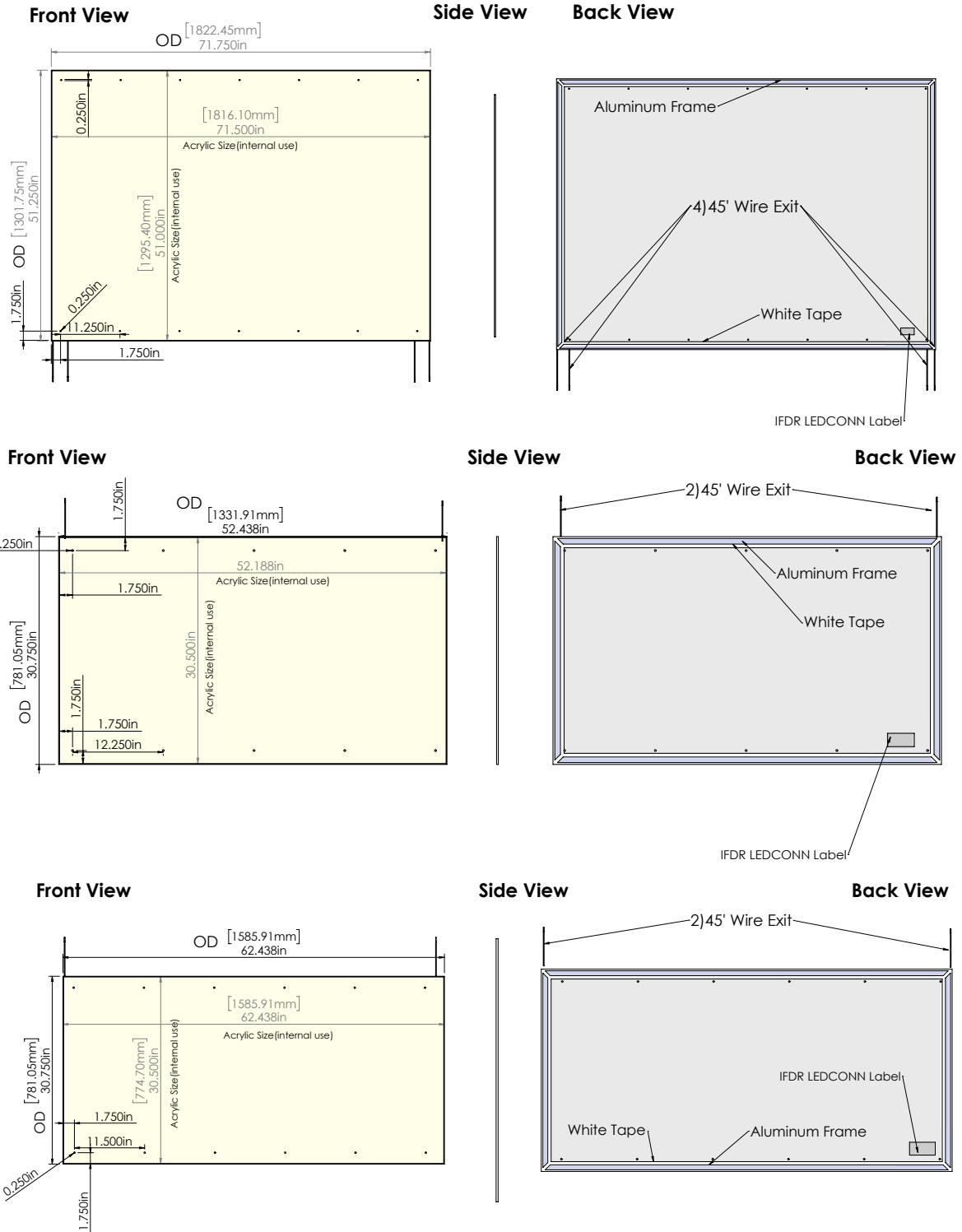
- LEDCONN coordinated with all parties involved to confirm final field dimensions to ensure products were cut to size for maximum quality and custom pre-cut each product accordingly
- Light panel sizes were streamlined to match the glass surfaces dimensions
- Predrilled mounting holes were provided to guide the install process, facilitate easier installation, and prevent possible warping



STRUCTURE

INSTALLATION

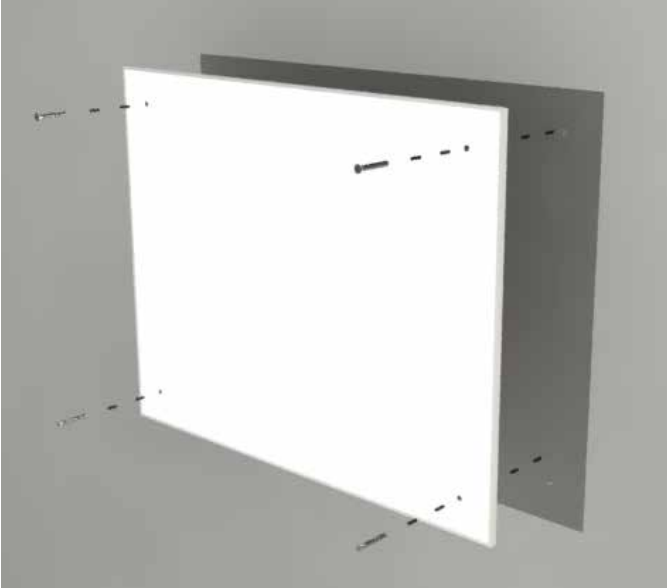
Adding predrilled holes to the panels prior to installation made it very easy for the installer to easily screw panel to plywood backer board. Special diffusing tapping was used to mask the appearance of LED hot spots.



STRUCTURE

INSTALLATION: MOUNTING

Using the predrilled holes, GCs were able to quickly mount panels into the installation with screws.



GCs need only to identify the holes and thread screws through to secure the panels.



Once fastened, panels stay securely fixed to the substrate. Each panel provided to the job site was prepared and installed in this way.

STRUCTURE

EVEN DIFFUSION

The following steps were taken to create even lighting diffusion

- Mockup prior to installation was key to achieving an even look
- Panel seamlines were cut to match the dimensions of the glass to create a clean, seamless appearance
- Special white "paper wings" taping was used to blend with the glass to mask hot spots

MISMATCHED PANEL SEAMLINES TO GLASS PANES



**MESSY APPEARANCE,
PANELS DISTRACT
VISUALLY**

PANEL SEAMLINES MATCHED TO GLASS PANES

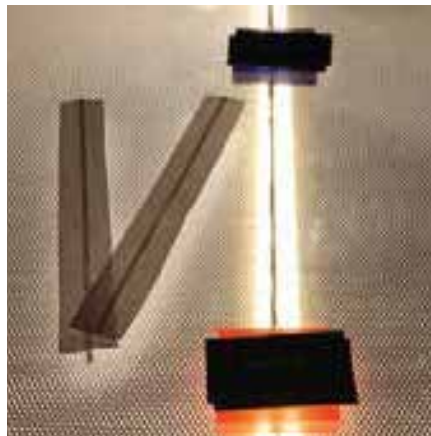


**CLEAN APPEARANCE,
PANELS DO NOT
DISTRACT VISUALLY**

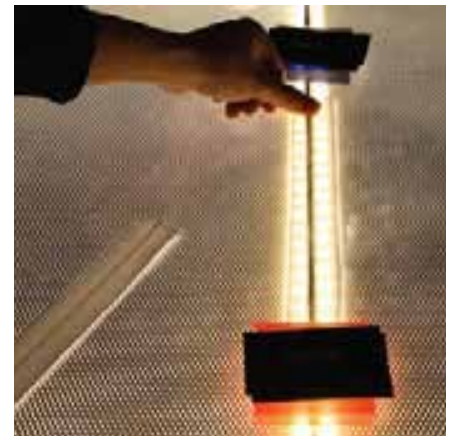
The photos below represent how the application of paper wings help conceal brighter seamlines.



We cut sheets of diffused "paper wings" sized at 2" x 11" and placed a single strip of double sided tape on the backs of each cut piece.



Paper wings were then applied to the center of the seam using double-sided tape.



Pressing firmly on the center of the applied double sided tape ensured secure adhesion.

LIGHTING FIXTURES



LUXFIT CUSTOM LED LIGHT PANELS

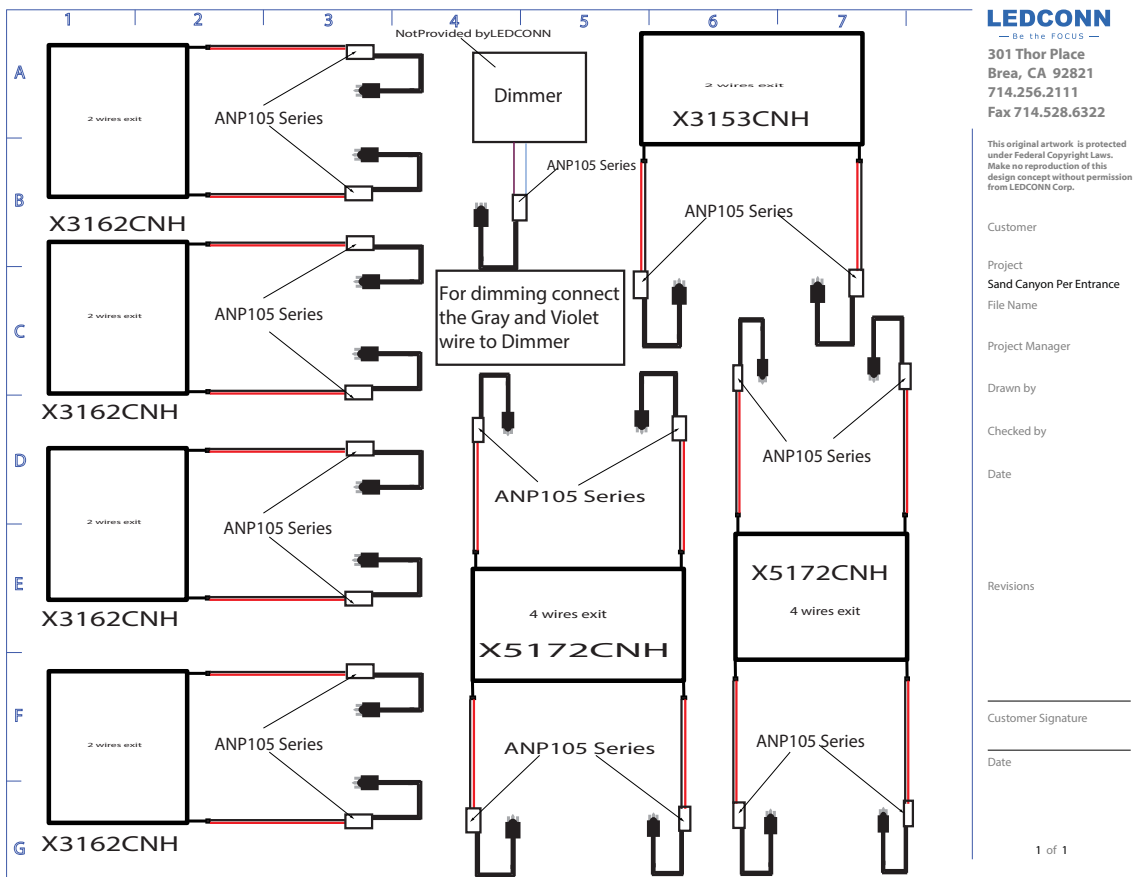
- Customizable product allows for lighting fixture size to match glass surface dimensions.
- Large panel sizes up to 5ft x 10ft
- Requires minimal airgap and still looks hotpot free/seamless
- Arrives pre-cut to spec dimensions. May be provided with predrilled holes for easy installation depending on application need.

LIGHTING

WIRING + CONTROL

LEDCONN engineered a backlit wiring system to ensure each panel received ample power without compromising lighting quality due to voltage drop and stayed within energy limitations. To ensure project success, LEDCONN Engineering shared their structural and electrical expertise with designers through shop drawings and the wiring diagram pictured here.

Wire exits were positioned in the best position for the panel. Wires were designed to run appropriately through a slotted area that allowed power to be routed properly to the junction box. This strategic approach to the wiring system would allow for easier wire management overall. For the control system, the LEDCONN team made sure to honor the designer's specific request for a standard 0-10V dimming system.



THE FINAL RESULT

- Clean, seamless, and even glass illumination
- Dimmable LED control system
- Successfully stayed true to the original design intent
- Easy installation & low maintenance backlighting solution
- Custom solution that fits perfectly into the application dimensions



Designer, GC, and manufacturer worked harmoniously together resulting in a smoothly executed lobby facade that reinforced design integrity and allowed for easy installation of high quality product.

Thank you to everyone who helped make this project a success!

Do you need a lighting solution for your project? Our team is ready to help.

Reach out to us for a complimentary lighting consultation today!