Case Study: **National Stadium**  
Lima, Peru
Translate sound and movement into emotion, transforming facades into interactive landmarks that reflect the energy within.

Background

Peru’s National Stadium in Lima is a multi-purpose entertainment venue and home to the country’s highly popular soccer team. In 2010 and 2011, the stadium underwent major renovations, including the construction of hundreds of luxury boxes, a multitude of underground parking spaces, and a new hospitality tower. When the renovations were approaching completion, the Peruvian government decided to expand the project and revitalize the stadium’s façade with architectural lights.

Project Goals & Requirements

To achieve the most stunning and innovative lighting scenario for National Stadium’s renovated façade, the government sponsored a contest, inviting top lighting industry professionals to submit their most innovative ideas.

Claudia Paz, an internationally-renowned lighting designer, developed an interactive concept using advanced lighting and control products from Traxon & e:cue. She proposed using sensors inside the stadium to measure sound and motion cues. These cues would then be reflected in the stadium’s dynamic façade lighting, which would shift and change, based on the level of fan energy detected in the stands. With Paz’s concept, inhabitants of the surrounding city would only need glance at National Stadium to gauge the level of excitement inside.

The entire city of Lima tends to stop and take notice when a soccer game is being played at National Stadium. Given the level of fan interest, it was no surprise that the Peruvian government selected Paz’s pioneering concept to communicate the action on the field far beyond the stadium and further involve the populace.

The Peruvian government gave Paz 100 days to complete this massive architectural and interactive lighting installation. Since Paz had such strict time, as well as budgetary constraints, she requested support from professionals at Traxon & e:cue, with whom she had successfully partnered in the past.
Concept Realization

Primarily, the National Stadium installation relies on Traxon’s Media Tube RGB Diffused, a slim-profile fixture that produces medium-to-high resolution graphical content and emphasizes architectural features. Approximately 1,400 of these fixtures were used, in a custom two-pixel configuration.

Media Tube’s slim profile, customizable pixel count and color, result in a crisp, precise media installation, whether designed as a linear run or configured as a large-scale media screen.
The Media Tube RGB Diffused fixtures were supplemented with 235 Wall Washer XB-36 RGB, 20 Wall Washer XB-36 Warm White, and 144 Media Tube RGB Non-Diffused fixtures.

One powerful Traxon & e:cue Lighting Control Engines, a high-performance server, orchestrates all devices and fixtures within the National Stadium installation. Five Butlers—DMX512 Engines, which replay and loop lighting shows—were also incorporated. As flexible controls allow a variety of third-party products to be incorporated and controlled with ease, two Cinemod Studio Interactive Systems, five microphones, and several searchlights were connected. The entire installation corresponds with the existing lighting system in the stadium, allowing for seamless operation.

Compact yet powerful, this fixture combines high-intensity LEDs and multiple customization options, to illuminate with a rich, even wash or graze. Suitable for interior and exterior environments, Wall Washer XB offers a broad range of color options. An anodized aluminum finish acts as a natural heat dissipation system resulting in longevity of the fixture.

Available in several lengths, Media Tube customization options include LED color (RGB, warm white, or cold white), number of pixels per linear fixture, and a choice of direct or diffused view.
Soccer is Peru’s most beloved pastime—a sport supported by legions of dedicated enthusiasts. Now, National Stadium, home of the country’s soccer team, is an attraction in itself. During soccer games, sensors measure the sound and movement of the fans in the stands; these cues then are translated into a dazzling light show on the stadium’s façade. The highly-visible spectacle embodies the energy of the fans in National Stadium and amplifies the energy of the proud fans around Lima.

To imbue the lighting installation with meaning, distinctive designs were developed to correspond with specific fan emotions. Each unique design varies in color, intensity, speed, and direction of movement. With the help of professionals from Traxon & e:cue, lighting designer Claudia Paz created more than 100 designs, grouped to reflect four main moods: boredom, excitement, disappointment, and celebration.
The National Stadium installation displays the power of LEDs and the capability of advanced controls to transform the appearance and functionality of a façade. Although the installation is considered low-resolution, the intensity and custom colors of Traxon’s LED fixtures, paired with e:cue’s precision controls, allow the façade to communicate effectively over long distances. Moreover, LEDs and precision controls allow interactive design elements to be realized at an affordable price.