



An In-Depth Look at an APA Award Winning Project

ENCORE BOSTON
NORTHERN DESIGN
2020 DESIGN AND MANUFACTURING AWARD WINNER

Overview

Encore Boston, is a \$3.3 Billion Hotel & Casino that was completed in a two-year timeframe. The primary façade of the building was EIFS, Natural Limestone and GFRC. The entire building was skirted with precast base panels, yellow in color when under EIFS (exterior insulation and finishing system) and white on the more visible, front elevations (where the natural stone and GFRC were utilized). Architectural precast was also used for façade window trim, wall caps, tread & riser assemblies and dozens of other landscape elements. The crown jewel of this project, however, was the precast balustrade assemblies. They were incorporated into the building façade and around the entire perimeter of the Convention Wing and Hotel Entrance of the structure, creating a beautiful transition from the terrace down to the ground / water level.

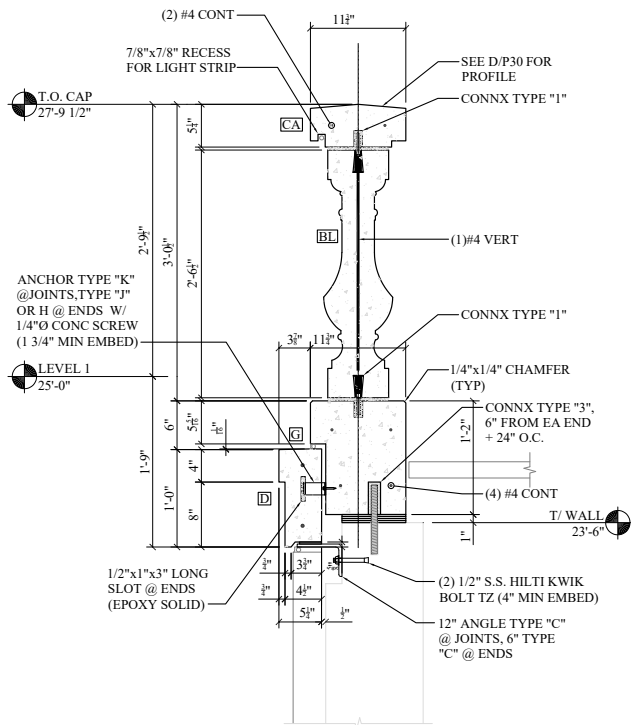
By the Numbers

- Molds produced: 530 (wood, Styrofoam & rubber)
- Time to build 530 molds: 12 months
- Pieces produced: just under 10,000 (including 1200 balusters and 200 newel posts, to name a few)
- Square feet of architectural precast: 45,000

Precast Elements

Most of the precast elements tie together. This detail of the balustrade section shows the exterior band stones, which tuck under the base stones, which act as a seat for the balusters, which are all capped with the top stone:

This component of the project had many variations throughout (newel posts, transitions and end conditions). The base stones varied in height depending on how



"D/G/BL/CA" SERIES SECTION VIEW
SCALE: 1" = 1'-0"

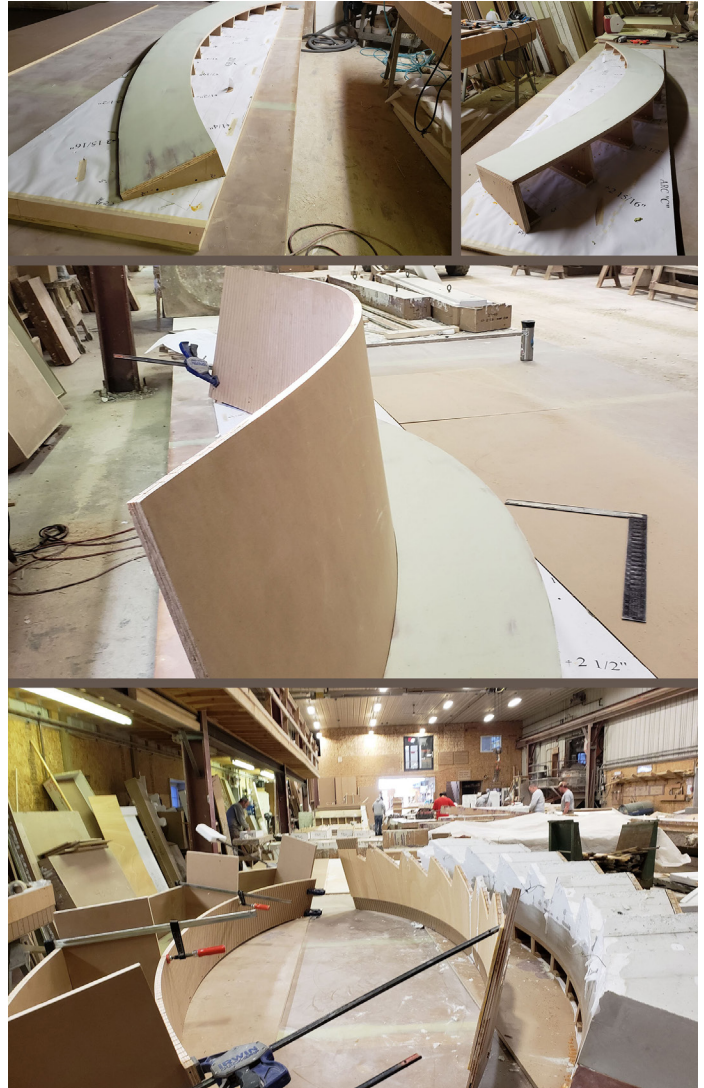
far off the building the terrace stretched, since it was pitched to drain water away from the structure. The flow of material from one set of stairs to the next was paramount as everything had to line up and fit perfectly. The balustrade layout drove the size, shape and full extent of the red & wheat precast treads and risers. The color scheme of those elements was designed to blend with the brick paving throughout the terrace, landings and pathways beneath.

Natural Surroundings

The owner and design team took a significant amount of industrial land and turned it into a magical place. The building itself is massive but the outdoor public space was a much needed addition to the community. The precast balustrade and site elements act as a bridge from the building to the banks of the Mystic River.

Function and Innovation

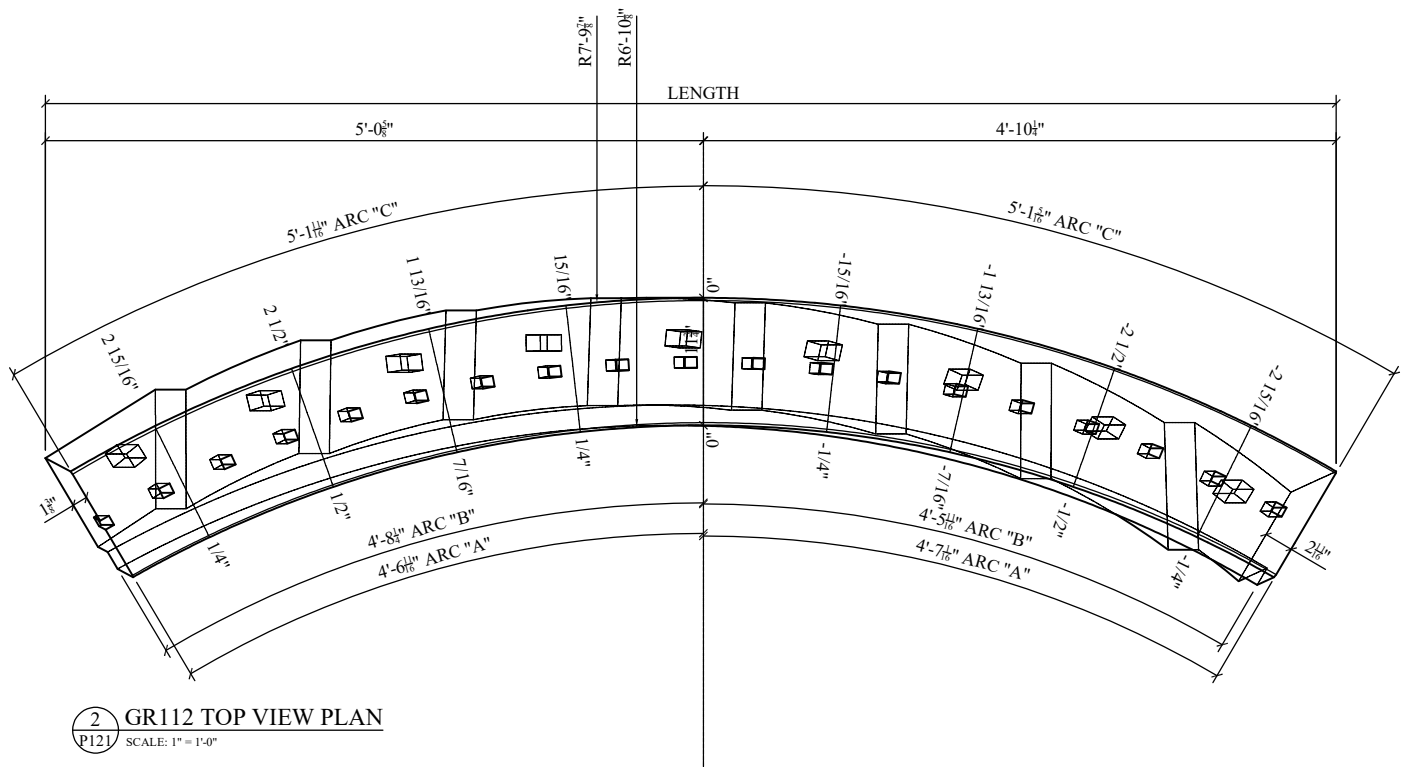
Using precast base panels was a logical plan to bridge grade up to the cladding materials above. The color



scheme was a primary aspect of the design, tying together different materials with very little contrast. The site elements (planters, light poles, wall caps, harbor walk perimeter pavers) create a strong transition from the building, terrace and balustrade system right down to the public space and all the way to the water's edge. A recess on the exterior edge off all the balustrade caps allowed for continuous LED lighting. An unseen groove was designed in the newel post caps so the strips could run through freely. Hollow newel posts were necessary to run electrical and provide connection points so the lighting would appear truly continuous.

Unique Detailing

The base stones varied in height, which made things challenging with regard to detailing, molding and



fabrication. The further away from the building the balustrade sat, the lower the terrace was (due to the cast in place concrete (CIP)/ paver pitch). The bases stones also needed to account for the CIP steps. Most sets of stairs were radial, so the precast had to twist in order to hold plane and transition. A top view of one of the twisting base stones shows the detailing challenges which were also evident with the band and cap stones and sloping radius areas.

Color Consistency

The majority of the precast was white, which always harbors great color consistency. Many of the more decorative elements, such as the balustrades and newel posts, were poured vertically since all sides were visible. This required extensive finishing and patching in order to fill any unsightly blemishes. Each baluster required the better part of 20 minutes to finish, post fabrication, exemplifying the time commitment required to ensure that the color and texture were consistent throughout.

The base panels on the back of the building were a yellow color, in order to compliment the EFIS panels

above. There were also some yellow base panels at the balustrade landings, where EIFS was present. The yellow color was finicky and the Northern Design team took careful and extensive steps during the finishing process to ensure color consistency. The same rang true with the red and wheat treads and risers – both are tricky colors to execute consistently. There was minimal variation after installation and the Northern Design finishing team worked closely with the installers to develop a cleaning protocol and iron out any color variation. In the end, the color schemes on the project were critical to the design intent.

Other Challenges

Apart from color consistency (mentioned above) accuracy in detailing was mandatory. A major challenge of the project was detailing and molding all the different twisting elements for the balustrade system. There were 12 different sets of large stair areas, all of which had different configurations, radii and slopes each twisting mold took 4 – 5 days to complete.



A Few Keys to Success

The aggressive schedule required a good deal of communication and coordination, which is time consuming. Many team members were dedicated to navigating changes, modeling, detailing and templates for the more challenging molds.

10 different shop drawings were issued in order to prioritize, execute and delivery material on a 'just-in-time' basis.

Northern Design printed templates showing the depth and length of the offsets and worked backwards to account for the build-up in the mold (which creates the shape of each profile).

Summary

The Northern Design Team is proud of the work they performed on this project and the recognition by the APA with a 2020 Design and Manufacturing Excellence Award. They navigated a complex and difficult project with adept skill and professionalism -- the results show it.

