UNCSA: 2019 Spring Opera
Rodelinda: Technical Direction Summary
Technical Director: Duncan Jenner-Bennett

In the early stages of this production we dealt with the added complication of having a scenic designer on the other side of the country. We incorporated video conferencing into the early meetings, and spoke on the phone as well as through email regularly.

The scenery design consisted of a painted floor, false proscenium with a 3' angled reveal, masking walls, and two 15' tall x 20' wide pivoting walls each with two archways and sliding "doors" and transoms to create different locations.

Floor:

Initially there was no expectation of having to purchase a floor material. It quickly became apparent that a hard floor would be necessary, with complexity of the paint treatment prohibiting painting the theatre deck during load in.

Being the latest show in the semester we had effectively no stock masonite to use for a floor. We did have nearly enough ¼" MDF from previous floors to cover half of the stage. We still had to purchase the remaining sheets to finish the floor, however the total was significantly less. The down side was that all of the sheets required trimming to be made true 4'x8'.

Portal:

The portal involved of two distinct large challenges. The first one was that the reveal was initially a full 3'9". This led to the decision to use expanded polystyrene foam (bead foam), as it is lightweight and can be easily cut with a hotwire. The second challenge presented shortly before the first greenlight meeting, in the form of changing the reveal angle to 15 degrees instead of perpendicular to the plasterline. This required a significant amount of time in the office to ensure we could afford the materials required with the new shape. It also resulted in much more complicated and involved drafting and construction processes.

Pivot Walls:

The first goal of the pivoting walls was to engineer the structure such that it wouldn't touch the ground, and was only supported by the pivot point itself. This was ultimately achieved, involved many hours of hand calculations, and eventually the use of a specific structural analysis computer application to aid in solving the more complex forces.

In order to keep the walls off the ground they had to be light. So their construction was kept as minimal as possible, and close attention was paid to everything that would be attached to them.

The bottom of the pivot points where secured to a 4'x8' sheet of ¼" steel, which was then lag bolted to the stage floor. This provided and extremely stable base for each wall, and was the same level as the rest of the MDF floor.

The top of the pivot points consisted of four casters built into a bracket, provided by MoCo, that was connected to the DeMille catwalk via several pieces of unistrut. This method was poorly researched by me, and we ended up using the unistrut is a much less efficient way that it is designed. Had I properly investigated how the connection hardware we had was intended to be used it would have saved significant time and trouble during load in.

Each of the four archways on the walls had to have four separate looks, that involved a prison door, curtains, and an upper transom. It was eventually decided to open and close the prison doors and curtains on a frame that would ride on individual tracks. Since the tracks had to be staggered there was a gap between the archway reveal an the curtains that ran in a track upstage of the prison doors. The magnitude of this issue wasn't fully realized until the end of load it, and required fixing during technical rehearsals.

The crown molding on top of the walls was an exercise in learning opportunities. We were introduced to the foam molding cutting lathe that was built some years ago, and has been in storage. The lathe has been modified so that a steel blade cut to the negative of the molding profile desired can be mounted and spun while the foam is fed through and carved into the designed shape. Initially this seemed to be a fast, and inexpensive solution for creating the large crown molding out of foam. Unfortunately we discovered that the profile we were attempting was too aggressive and would stall the motor of the lathe. The solution we found was to cut the foam blanks in half, and run them separately to reduce the load on the motor. This increased the amount of time

require to fabricate the molding by more than a factor of three, as the foam needed to be first cut on the table saw before being passed through the lathe in two pieces, and then reassembled. A better solution would have been to order the molding custom cut from Carpenter Co.

The rocks for the wall were planned to be extruded polystyrene (blue board foam) from the beginning. The fact that it is light, and easy to carve made it ideal for this application. We choose to use the CNC router to cut the basic shapes of the stone walls first, then carve in detail by hand. This method worked well for the most part, however building the toolpaths for the CNC machine took more time than I had anticipated, which put the project behind schedule.

Masking Walls:

The masking walls were a simple build, consisting of stock flats with extra custom flats built to create the designed broken edges. They were double skinned with luan so that the texture applied by Paints wouldn't permanently mar the stock flats, and could be removed during strike. This method worked out quite well.

The ground row was a late addition. The need for which was discovered after the lighting designer communicated that she would need to place strip lights on the floor in front of the drop. Fortunately we were able to salvage the groundrow from a previous show and do minor modifications.

Drop:

When ordering the drop from RoseBrand I made the mistake of using the dimensions the designer drafted, and did not check the height of the theatre myself. This resulted in us purchasing a drop that was 4' too tall for DeMille. Once this error we recognized by one of the scenic artists who looked at the dimensions written on the box we quickly came up with three solutions. Resew the drop ourselves, cut the bottom 3' off and roll the remaining foot around a ground pipe, ship the drop back to RoseBrand for them to resew it. The final decision was to send the drop back, since we had the available budget and did not have the labor to fix it in house.

Once the drop was hung during load in nearly everyone expected it would have to be side stretched, and I had begun setting up to do so.

After it was sprayed with hot water once it was clear that side stretching would not be needed.

Other Points:

Because we fell behind with the CNC work on the foam, and the molding the scene shop missed our primary deadline of having the rocks all mounted on the walls early enough before load in for the scenic artists to touch up the seams between panels. This lead to them working additional hours during the end of load in to finish hiding the seams. I failed to notice early enough that we were going to miss that milestone, and should have put the molding on hold to ensure the scenic artist had the time they needed in the shop with the scenery.

Anything that interfaces with the DeMille grid should be engineered and tested early, if not first. Mockups from cardboard of the interfacing components are extremely helpful.

DeMille is not symmetrical. Everything must be specifically checked for fit in it's specific location.

The units that were carefully planned from the beginning worked well and were easy to load in. Unsurprisingly, the units that did not have as much attention spent on them early were problematic to deal with later.