Summary

The making of the Plexiglas stands for the Bolivian dolls went basically as planned. Changes were made in the shape of the top bar of the stands to better accommodate the dolls shapes. It was planned that a block of wood would supply the shape required for the top bar but shaping them flat on the table and using a drawn template turned out to be easier as well as provided a better shape for the dolls.

Design

The T shape Plexiglas stand design worked well, no changes were needed to the basic design of the stand, except for the previously mentioned shape of the top bar of the stand.

Safety

I found in practicing the bending of the Plexiglas that a heat gun was easier to use and there was less chance of overheating or burning the plexi than when using the butane torches. I still worked under the fume hoods and wore protective work gloves and glasses. I found that the sheets and the different sized rods reacted differently to the heat, so practicing using scrap material was useful to gain confidence and technique but practice using a sample of the final project material is essential.

Tips

The tip section in the conservation proposal was useful, so I will repeat them here. After snapping or cutting, blow away any dust or debris from your Plexiglas sheet with a fan or a hair dryer. Don’t attempt to clean the sheet until you have blown away all particles, dust and debris. If you wipe down the hard plastic while it has debris on it, you will scratch the surface. Keep your workbench or table clean and free of dirt, chips and sawdust. If you are working with an older piece of Plexiglas that does not have a protective paper covering, you should cover your work area with a piece of cloth or foam so that you don’t scratch the plastic sheet while you are snapping or cutting it. I will also add that there are Plexiglas polishes that can remove scratches but it is much easier to avoid making scratches in the first place.

Supplies

The list on the Conservation Proposal was almost complete, with the addition of metal clamps to hold the Plexiglas and rulers in place, small metal files for shaping the groove on the vertical
bars and sandpaper for polishing the edges (400 and 600 grit). I did not use the drill or the table saw for this project. Instead of the wire saw, I used a hacksaw blade and it worked well. The Plastic cutter was an essential piece of equipment for cutting the Plexiglas sheets.

Instructions

I would like to stress that the accuracy when making measurement is extremely important and it will save on time and extra work. I cut the plexi sheets using a plastic cutter and the snap method. On the longer cuts I needed help in applying the pressure evenly to ensure a clean snap. I did not have any problems with the small pieces. I then polished the bases edges with 400 and 600 grit sandpaper until they were smooth, they did not require heat polishing (see figure 1 and 2). I next cut all the Plexiglas rods using a hacksaw blade with fine metal serrations (see figure 3 and 4).
I then practiced the bends I was planning on making out of scrap strips of Plexiglas sheets on the wood blocks I was going to use for shapes. I test fitted these practice shapes on a few dolls and found them too straight and that the forks were difficult to keep even. I found the when bending the rods it was easier to shape them flat on the table using a template to shape them (see figure 5). Once I had bent all the top bars, I test fitted them to the dolls and found they fit well. I also double checked the length of the vertical bars in case any changes were required.
I then moved on to making a groove on the top of the vertical bars to accommodate the gluing of the top bent rods and plastic coated wires using several small metal files and sandpaper. This worked well, I kept trying a samples into the groove until I thought they fit well enough to be glued in place (see figure 6).

Figure 5 (above): Templates for the shaping of the top bar of the T stands
I moved on to test gluing under the fume hood. For the first test gluing I used epoxy glue and was not happy with the results. I then got the proper acrylic glue and did another set of gluing tests and was pleased with the results (see figure 7). I then glued all the stands and was pleased with the results except for one vertical bar. This bar was leaning and I broke it off and re-glued it and was happy with the second result (see figure 8 and 9). After the stands dried I was pleased with how well the glue worked on the plexi and the plastic coated wires.
Figure 8 (above): Finished Plexiglas stand with the molded top Plexiglas bar.

Figure 9 (above): Finished Plexiglas stand with the plastic wire glued to the vertical bar.

Figures 10 to 12(left, above, right) Dolls in their custom stands.
Once the stands were dry I tried all the dolls in their individual stand and was pleased with their fit and stability (see figure 10, 11 and 12).