

Fletcher Chapin's Individual Contribution Page

Fall 2016 Contributions

I just joined AguaClara's Design Team, and I'm currently acquainting myself with Mathcad by doing the provided training exercises. Once I learn Mathcad I will familiarize myself with the team challenges and contribute as much as I can to solving those issues. Right now I'm planning on focusing most of my time on the section cut challenge, which will require me to work with AutoDesk in trying to fix this issue. If I have extra time outside of the section cut challenge, I will help my other team members with their challenges.

To work towards the section cuts challenge I contacted Ethan and Skyler to get a sample of final section cuts used on actual plants in Honduras. Nandini and I worked to replicate these designs ourselves in AutoCAD so that we could provide the AutoDesk team with feedback and a step-by-step list of what commands are required to create the section cuts. Once we compiled a file that included a 3D model of the plant, section cuts using the current automated tool, and ideal section cuts created manually with the help of the team in Honduras, we sent that file to AutoDesk. We are currently waiting for them to make a new and improved version of the automated section cuts tool so that we can test it and provide feedback.

We also took on the challenge of altering the drawing code for the sedimentation tank to reflect a new design. The focus was redesigning the plate settler supports so that there are fewer pipes, elbows, and tees and it's easier to construct in the plant. In order to do this we created 6 cross pipes with a single central pipe going the length of the sedimentation tank. The cross pipes are secured by notches in the lamella support ledge and the central pipe has a bolt on each end that secures it to the cross pipes. We completed this design in Mathcad and the results have been uploaded to the server.