

Small Scale Plant Model Challenges Fall 2014

Location: Computer facility

Skills: 3D printing, AutoCAD, MathCAD

Fall 2013

The Fall 2013 team used 3D printing to print different components of the plant then used these pieces to assemble a small scale plant model. For these models, AutoCAD drawings were manipulated in Rhinoceros 5 and formatted for 3D printing.

Goals

In the past, small scale plant models have been designed in Rhinoceros 5 then 3D printed and manually assembled. This semester the process will be optimized by avoiding Rhinoceros 5 and instead using AutoCAD. AguaClara is very familiar with AutoCAD so using it will eliminate the need to learn how to use a new program. Research will need to be done on 3D printing using AutoCAD because we can no longer depend on the students and faculty of the College of Architecture Art and Planning who use Rhinoceros 5 to 3D print. The transition to use only AutoCAD may involve updating the MathCAD to AutoCAD (MtA) code in order to format drawing files that so they can be 3D printed. Due to the design of the plant, it is difficult to print the entire plant at once. So, it may be easier to make the small scale plant model a kit that people need to put together themselves while learning about the function of each component. The ultimate goal is for the team to be able to print a small scale plant model of the most up to date version of the plant every time the design of the plant is changed.