

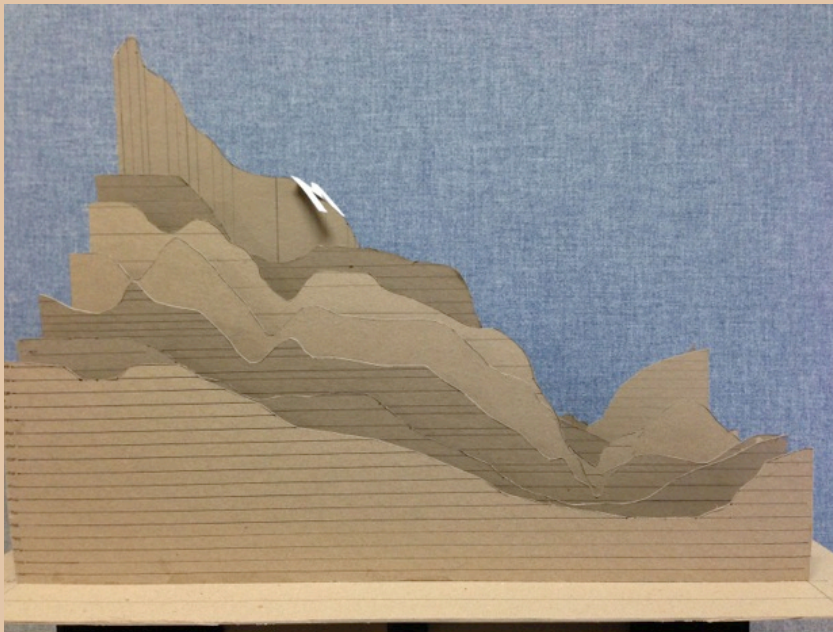
Course Focus

HORT 335 - Site Development

By Rebecca VanWieren



Site Development introduces landscape design students to relevant concepts in site *engineering*. Now, you may be asking, “Why does someone who designs landscapes and planting plans need to know about engineering?” Site engineering encompasses principles of landform, grading, drainage, earthwork, and stormwater management design. These engineering concepts are key considerations that landscape designers take into account when assessing site conditions and proposing design ideas. Essentially, *grading* (landform manipulation) *is design*, with soil as a medium, and it provides the base for which a landscape plan is built upon. The course covers the functional, ecological, and aesthetic implications of landform manipulation, including ADA accessibility and EPA stormwater management regulations, with the intent to prepare students to utilize an ecological and artistic approach to grading and drainage design.



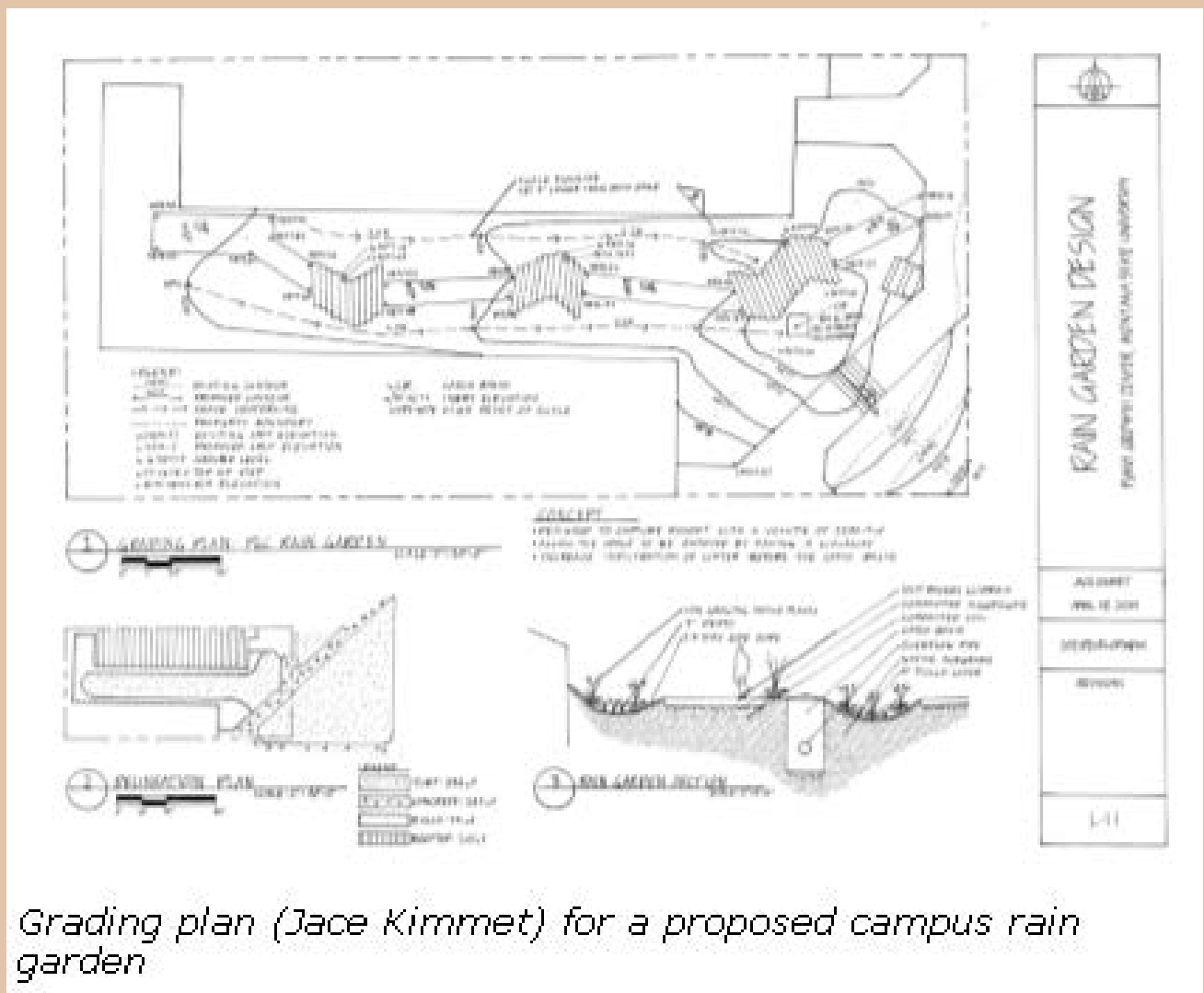
Physical topographic model in cross-sections of the “M”

The first half of the course is spent learning how to communicate grading and drainage information through technical drawings (i.e. construction documents), so that, ultimately, a landscape design can be built. Learning how to draw topographic maps and other grading details requires the use of many mathematical formulas and application of the slope formula in more ways than students imagine. Visualization skills are needed to translate three-dimensional concepts into two-dimensional drawings. Students calculate and draw grading plans for elements like sidewalks, roads, swales, recreational fields, walls and berms, as well as larger site plans.

The second half of the course is dedicated to designing stormwater management strategies, using an ecological approach. Nowadays, municipal codes require

development projects of a certain size to manage rainwater that falls on the property at pre-development rates and patterns. This stormwater is conventionally managed through hard engineering solutions, like drains, pipes, and detention ponds. In this course, students learn how to manage this stormwater by also integrating “soft engineering” solutions, like infiltration basins, swales, and permeable paving, where the landscape performs filtration, evapotranspiration, percolation among other benefits. Students learn how to calculate rainwater volumes, size pipes, and design ponds. Stormwater management is an area of the field where landscape designers have the opportunity to work with civil engineers, hydrologists, and ecologists.

For the final course project, students design and draft the technical drawings for a rain garden. Last year’s class designed a potential campus rain garden near the Plant Growth Center. The goal is that a student-designed rain garden be installed somewhere on the central part of campus in the future.



Grading plan (Jace Kimmet) for a proposed campus rain garden