Digital Design Methods I (2022F)
Institute of Landscape and Urban Studies (LUS)
D-ARCH, ETH Zurich

Assignment Final

Digital Design Methods I

OVERVIEW

For the final assignment of this year's *Digital Design Methods I*, your task is to use everything learnt during this semester, as well as your previous skills as an architecture graduates to conduct a topography design & modification task.

The goal of this assignment is to 'connect the dots into lines' and hopefully help you to formalize a mature workflow for your later professional life.

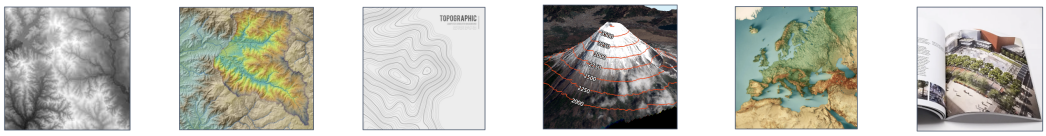

Figure 1: The recommended steps you may consider in this assignment.

ASSIGNMENT

Naturally formed topographic landscapes are beautiful and have their unique beauty. While humans learned how to adapt our living styles based on the natural resources available in a specific habitat, we also gradually modified the earth's shape by building infrastructures and cities. These processes mutually shape our way of living and the environment surrounding us.

In this assignment, you are asked to modify a site of your selection to adapt a specific human activity to the site. For instance, you can flatten an area inside the mountain to build a village, form a basin area to make an artificial lake for water storage, or build a canal to guide the water to the nearest city.

You are allowed to choose the site and the proposed activity freely, but the design decisions should be made based on substantial analyses of the site.

SITE SELECTION (10%)

Select a site with rich topographic features in either Switzerland or around the studio site in Mexico. The site should fulfil the following requirement:

- Contains 30% mountain area;
- Within the 200km to the nearest city;
- The size of the site should be leaset 3000m $\times$ 3000m.

SITE ANALYSIS (25%)

Choose one or more features of the site (water, slope, etc.), and use the topographic analysis tools in QGIS to analyze the feature(s) of your site.

The chosen analysis should be relevant to your design proposals and you're not limited to the tools or plugins taughted during the class.

COUNTOURS & MODELLING (20%)

Export a set of contours with your chosen density into your modeling software (not limited to Rhino) and use the techniques taught in class to model your existing site. You can add labels or additional information to the model to support your design proposal (for instance, you can visualize existing site conditions on top of your 3D model).

DESIGN IN 3D (25%)

Design/Modify the topography of the site to fulfil your design.

For this part, you can encourged to develop your own approach to modify the site systematically. You can either manually edit the topography or parametrically edit it using Grasshopper. The evaluation is based on the design, not the tools.

DOCUMENTATION (20%)

Document the project with the following requirement images:

- site selection: 1+ labelled map showing your site location, 1 DEM (geoTIFF);
- topographic analysis: 3+ (depends on your analyses);
- countour drawing: 1+;
- diagrams explaining your design (conceptural, procedural): project dependent.
- rendering: 1+ isometric, 1+ top-view (for both the original and the modified topography).

Text such as project descriptions, reasons for site selection, design proposals should be added accordingly.

Figure 2: The recommended workflow.

A recommended workflow is shown in Figure 2, but you're free to define your own workflow.

INPUT FILE

- `Assignment_final.pdf` (this file)
- `ddm-documentation-template.indd`

SUBMISSION

DEADLINE

- 20/12/2022 (23:59)

Submission(s) beyond the deadline will not be counted.

FORMAT

Please submit the following document to the folder:

`\\nas22.ethz.ch\arch_lus_mscla_student\5_HS_22\02_DDM-I\90_Submission\AS_Final`

containing:

- a `.pdf` file and a InDesign Package Folder containing at least the above required documentation;
- a `.3dm` file (or the format for your modelling program) with contourlines, origin topography model, and modified topography model;
- any additional document that support your assignment (if any).

The naming of the submission file should follow: **LastName_FirstName_AS_Final.xxx**

LINKS

The following site contains various Grasshopper methods for landscape design use:

- Generative Landscape

You are also recommended to find drawing/diagram inspirations on Pinterest.