ContextCapture

Reality Modeling for infrastructure

Statement: Capture part of the existing conditions of a structure and produce a detailed and precise 3D model, to provide real-world context for expansion projects.

Aim:

Select an object or structure of interest that is outdoors and that you can view from a perspective of 360 degrees, without any obstructions to your sight lines (such as a statue, sculpture, or small structure). If you will be capturing photos from the ground, then we highly recommend selecting something no more than 20 feet tall, so you can capture the entire top surface without difficulty.

Take a series of photographs of the selected object, use ContextCapture to convert those photos into a highly detailed 3D reality model, and compare measurements to ensure accuracy.

Tasks to perform:

1. Carefully capture the details of the object or structure.

2. Using smartphone or DSLR camera take a series of photograph of an appropriate example representing this problem, with a minimum of 60% overlap between pictures.

3. Record the length of at least 3 segments of the object.

4. Using ContextCapture software, create a 3-dimensional model of your infrastructure example.

   a. Perform Aero-Triangulation.

   b. Generate a fully rendered 3D Model in standard format of the software (.3MX)

5. Use Acute 3D Viewer software to view the ContextCapture model. Use Measure/ Distance/ Area/ Volume tools within the viewer to estimate lengths, areas and volumes of some features in your object of interest.

Judging Criteria:

1. Clarity and accuracy (including measurement comparison) of ContextCapture model
2. Complexity/difficulty of capturing the selected object (e.g. photos captured at multiple heights, or using a combination of a drone and ground-based photography, etc.)
3. Quality of MicroStation file