Launched by the University of Florida’s Historic Preservation Program in 2012, the Envision Heritage initiative explores how new and emerging technologies can be used to document, interpret and manage heritage sites, landscapes, buildings and interior spaces. The research projects of Envision Heritage utilize a 3D laser scanner to quickly and accurately document the physical conditions of a heritage property. Laser scanning is a highly accurate and efficient means to create a spatial database of an existing site and can be used to generate other work products, such as virtual “point cloud” models, photorealistic views, plans, elevations and animated walkthroughs.

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Laser scanning reduces the time and increases the accuracy of recording historic landscapes, sites, buildings and interior spaces. The 3D laser scanner sends out a laser beam which collects data by measuring the distance of the beam to objects in space. The scanner assigns distances to these objects by calculating the time of flight of the laser in relation to the known speed of light. Multiple scans are used to collect data from many vantage points and these scans are then combined into a single virtual 3D model. From the 3D model, many types of representational products can be created, including, photorealistic perspective and orthogonal views, (site plans, floor plans, sections, and elevations), line drawings that meet the Historic American Building Survey (HABS) standards, and animated digital walkthroughs of the site.