

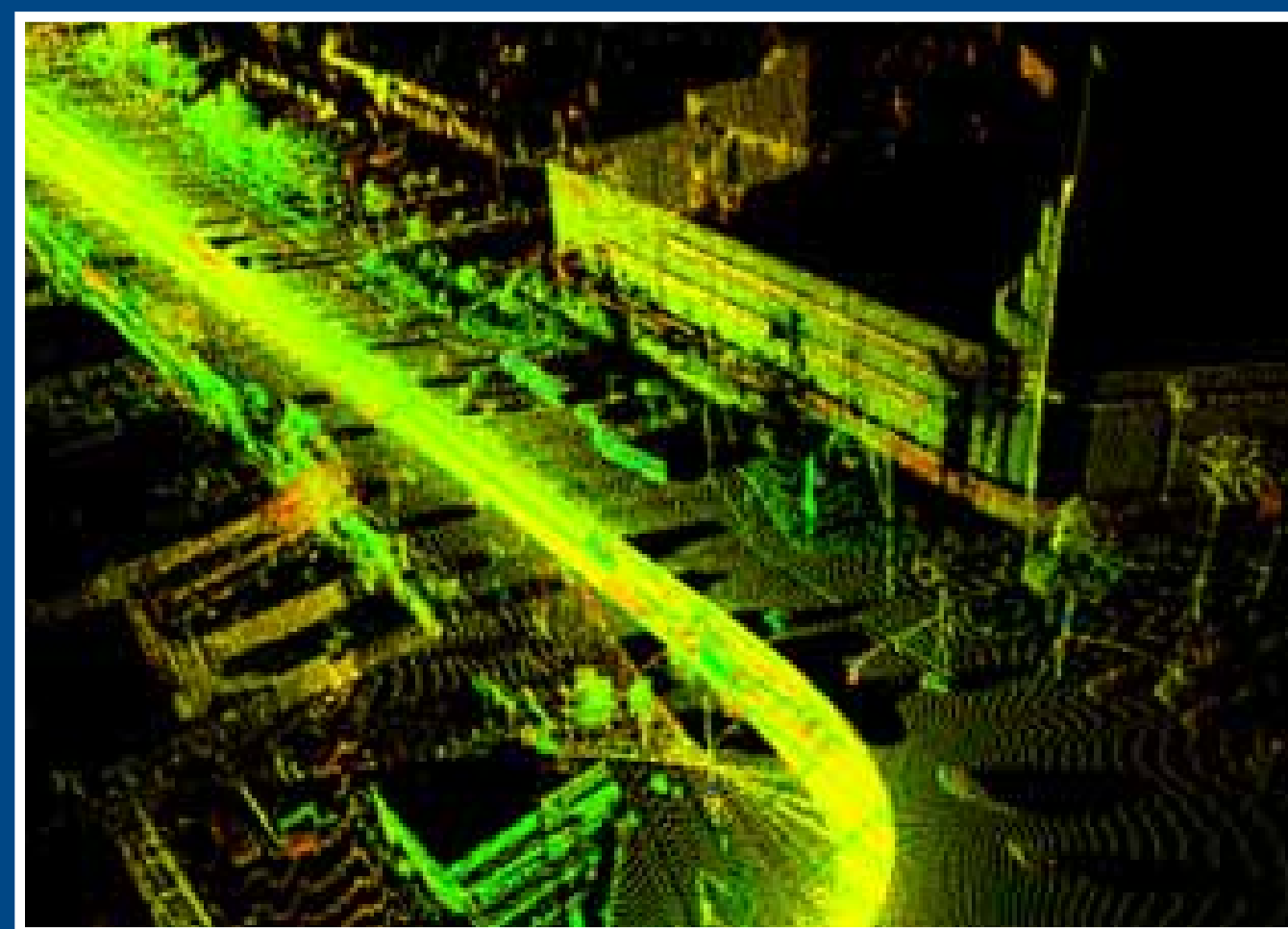
# SPACE SHUTTLE ENDEAVOUR MOVE



The Shuttle awaits its final voyage through the streets of Los Angeles



The crowd watches anxiously as the Shuttle inches by obstacles



3D point cloud of a portion of the Shuttle route



Obstructions Identified  
Trees and Utility Poles Mapped from Point Cloud



Vertical cross-section of innovative true scale cutting plane inserted into 3D point cloud

When selected to receive one of NASA's retired space shuttles, the California Science Center's (CSC's) board of directors began thinking about how to bring their new exhibit home. At 122 feet in length, with a wingspan of 78 feet and a height of 58 feet, Space Shuttle Endeavour faced numerous obstacles to maneuvering successfully from LAX through the streets of Los Angeles. Like any journey, Endeavour needed a map to navigate its trip, and David Evans and Associates, Inc. (DEA) responded. To swiftly and accurately identify obstacles along the 15-mile route, DEA needed to develop a method to identify horizontal and vertical conflicts. The challenge was that because the schedule was extremely expedited, conventional mapping techniques would fail to meet it. This meant using DEA's mobile, 3-D laser scanning system to meet time constraints.

DEA developed the truly unique and innovative approach of using only the shuttle-dimension cutting plane and the 3-D point clouds collected to identify and map all possible conflicts. In a few weeks, DEA's team prepared a spreadsheet identifying more than 700 clash locations, 155 of them being overhead lines. Using existing aerial imagery and the acquired scan data of clash locations, DEA prepared mapping exhibits and virtual animation to help the Shuttle Move Team visualize the conflicts and plan its response. In October of 2012, the shuttle moved successfully and without incident through the streets of Los Angeles, with 1.5 million people lining the streets – an event televised across the nation and around the world.

## CLIENT

California Science Center

## ENTERING FIRM

David Evans and Associates, Inc.