



For Immediate Release

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21st Century 3D Scanning Techniques Used to Re-Create Historical Monument

What: Owings Mills-based Direct Dimensions, Inc. is using proprietary processes to accurately scan and recreate the historic monument at The Monumental Church in Richmond, VA. This endeavor is critical because the marble monument is decaying rapidly due to pollution. Historians fear that soon the original monument will disintegrate beyond recognition. The digital imaging technology provided by Direct Dimensions will precisely duplicate the revered monument.

Who: Direct Dimensions works closely with industries ranging from manufacturing and the military to museums and sculptors to produce precise three-dimensional measurements and accurate 3D computer models for production, research or historic preservation. In a related assignment, the firm scanned a large portion of the Lincoln Memorial in Washington, D.C., receiving national recognition. Other work includes several original Wright Bros. propellers for the upcoming 100th anniversary celebration.

When: Direct Dimensions will begin the three-day scanning process Monday, April 14 at the site. This project is part of a larger renovation project through the Historic Richmond Foundation to renovate the Monumental Church.

“It’s not uncommon for older marble statues to disintegrate over time, a process known as sugaring,” says Michael Raphael, president, Direct Dimensions, Inc. “By capturing the precise specifications of this priceless monument, we can recreate it in its entirety.” While photographs and video can document the monument in 2D, only these proprietary three-dimensional imaging techniques allows for exact reproduction – down to elements that are smaller than a single strand of human hair.

Direct Dimensions, Inc. measures in three-dimensional space – x, y, and z. The process uses laser scanners that collect high-accuracy / high-resolution data from complex sculptured surfaces. The collected data can be turned into actual models at any scale of the original. Moreover, the scanner picks up fine details, such as sculpted lines, engraved names, even barely visible marks so that the “copy” is an exact replica.

Direct Dimensions has worked with historical monuments before. It scanned a portion of the Lincoln Memorial in Washington, D.C., a project that was requested soon after the events of 9/11. “In the unlikely event that these precious monuments of our history are damaged, we could recreate them,” adds Raphael.



Built to honor the memory of 72 people who were killed in a fire at the Richmond Theater in 1811, The Monumental Church is considered one of the more architecturally significant buildings in the United States. The building was designed by Robert Mills, the first native-born American to train as an architect. Later, Mills designed the Washington Monument.

The monument itself features six Greek Doric columns. In the center, the tomb combines a sarcophagic base with a Roman-inspired urn, adorned with funerary symbols including drapery, stars and a wreath with flying ribbons. The names of the victims are carved into the sarcophagus' walls.

Direct Dimension's measuring capabilities are applicable to most every industry. The firm has measured and analyzed unique vehicles, including the one-of-a-kind \$3 million Cunningham Car; space shuttle components for NASA, and the interiors of helicopters, trucks, planes and school buses. Recently, the firm worked with the Israeli Navy to create and deliver a custom solution for the measurement and analysis of large naval ship propellers. This ability is important because propellers, while seemingly simple forms, are among the most complex engineering shapes in existence.

Other notable projects include several original Wright Brothers airplane propellers, an entire commercial jet airliner, a re-creation of Leonardo daVinci's famous horse sculpture called "The Perfect Horse," and Olympic kayak paddles. It has also re-created a human ear form and knees for prosthesis purposes and created accurate computer models of complete airplanes and helicopters. Future projects include the complete electronic re-creation of the Parthenon in Greece, at the request of the Greek government, in honor of the 2004 Athens Olympics.

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