



## Pointools Software Supports Reconstruction of Russian Orthodox Church

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A project to reconstruct a Russian Orthodox Church located in the Czech Republic has deployed state of the art 3D laser scanning technology to quickly and accurately measure existing conditions; slashing survey times and costs. Local survey company, BW Precision Systems, in co-operation with design office Medika Projekt Karlovy Vary, first used a FARO Focus 3D laser scanner to complete the survey and afterwards used Pointools point cloud software to generate images, produce animations, and deliver coordinated plans, sections, and elevations to support future restoration work.

“Laser scanning has transformed our business. Using traditional survey techniques to accurately measure a building of this size and complexity we would be onsite for at least 30 days. With the 3D laser scanner in hand we were in and out in just ten days. That’s 3-times faster!” explained Jiri Blazek, co-founder of BW Precision Systems.

The orthodox Church of St Peter and St Paul is located in the Czech spa city of Karlovy Vary; formerly known as Karlsbad or Carlsbad. Constructed in the last decade of the 19<sup>th</sup> century in a Neo-russian style, the outside is finished with rich decoration and a central tower and is surrounded by four smaller towers, all with onion shaped gilded domes. The church is full of intricately rendered icons and complex decorations including a relief featuring a rendering of Tsar Peter the Great.



“Because this church is so intricate 3D laser scanning was our only option – we could never capture the same levels of detail without it,” continued Blazek. “The laser scanner can measure tens of thousands of points per second which records unparalleled levels of detail. However, its speed and accuracy presents us with new challenges when processing the massive volumes of measurements. That’s where the Pointools software came in.”

The BWPS team completed 140 scans from different locations both inside and outside the church and the rectory. 41 scans measured the exterior of the church – including several from the roofs of surrounding buildings. 51 scans measured the church interior including the nave, sanctuary, and educational facilities. And a further 48 scans measured the inside and outside of the rectory. All of the laser scans were combined and exported to Pointools where they were unified to produce a point cloud with 500 million points. Using the Pointools Plug-in for Rhino, BWPS was then able to create their many required deliverables.

“Using Pointools we can work with huge point clouds without loss of software performance or data quality, we can work in a number of CAD environments, and we can create high resolution orthographic point cloud images and high quality videos for presentation purposes,” continued Blazek. “That is why Pointools has become an integral and essential part of our scan data processing workflow.”

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**Note to editors:**

The **Pointools** suite of software leverages the high-performance Pointools POD format for working with the largest point cloud models inside the broadest range of applications. Used by architects, engineers, contractors and surveyors to work with 3D laser scan data, Pointools software supports multiple workflows including Art & Entertainment, Forensics, GIS & Mapping, Infrastructure, Manufacturing, and Security & Defence.

Pointools offerings include stand-alone applications, CAD software plug-ins, and a third-party development platform for point cloud processing and visualisation; uniquely enabling point cloud model reuse across Bentley, Autodesk, Rhino, and SketchUp applications without time-consuming translation.

**BW Precision Systems** is a specialist land and engineering surveying company. Founded in 2010 to provide services in many surveying fields with emphasis towards modern methods of spatial data mass collection they offer an extensive range of highly specialized services and products for architects, civil engineers, developers, archaeologists, cultural heritage offices and finally individual end customers. Read more at [www.bwps.eu/en](http://www.bwps.eu/en)