



Digital Surveys Uses EdgeWise MEP to Cut Modeling Time by 70%

Modeling MEP in London's Historic Park Lane Hotel

"I can't see how it would have been physically possible to do it...the time scale and cost wouldn't have been viable," said Ben Bennett, CTO of Digital Surveys, Ltd., a London-based scanning and modeling service provider. But not only did the firm successfully scan, extract and model the historic Park Lane Hotel's interior MEP, they modeled to a level of detail they didn't think was possible.

The Park Lane Hotel in Central London was preparing for an upgrade of the heating and ventilation systems throughout the nearly century-old structure. At the heart of the retrofit was a complex plant room in the basement that was overcrowded with MEP elements spread out over several levels, covering 3,800 square feet. In

addition, another even larger plant room – just as packed with pipes – was located on the roof. Both had to be scanned and modeled.

"We mounted a Leica P20 laser scanner on a tripod and took about 35 scans in both plant rooms," said Bennett. "They were crammed with boilers, vessels, valves, heating and electrical pipes, all in very small spaces."

"I honestly don't think we could have completed the project on time and on budget without EdgeWise MEP."

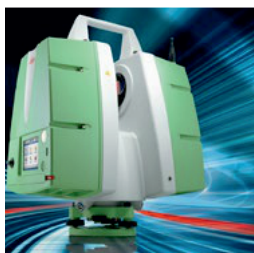
-Ben Bennett, CTO, Digital Surveys, Ltd.

Modeling Manually in Revit Not an Option

Digital Surveys relies on Revit for much of its design work and had limited success in the past using that software for extracting and modeling pipes from laser scan point clouds. In Revit, those processes are entirely manual, which would have been incredibly

time consuming given all the odd twists and turns taken by the thousands of pipes in the plant rooms, according to Bennett.

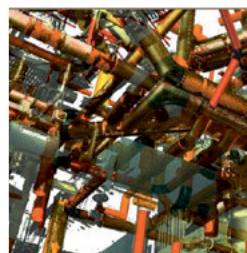
Digital Surveys Workflow



Leica P20



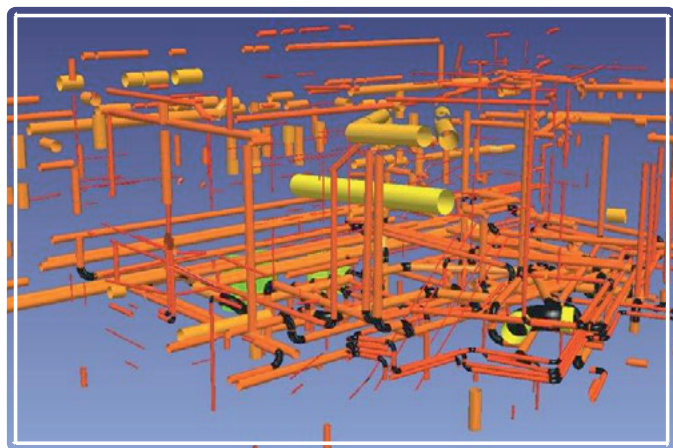
Cyclone Register



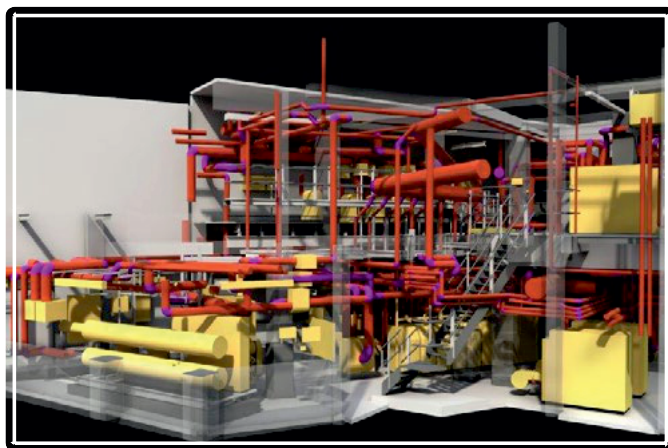
EdgeWise MEP



Autodesk Revit



EdgeWise MEP automatically extracted about 85% of the pipes in the project.



Final rendered model of Park Lane Hotel plant room delivered in Revit.

"In Revit, you have to model on a defined work plane, and since the pipes are twisting and going through tight spaces, you have to set up a plane for each bend," said Bennett. "We thought this was an ideal time to try EdgeWise MEP, which we had experimented with on smaller projects. We had no formal training on the software and picked it up in about two hours."

EdgeWise MEP Cuts Modeling Time by 70%

Bennett said that once he had the point clouds on his computer from the 70 scans, it just took a few clicks in EdgeWise MEP to automatically extract the pipe geometries and model them for export into Revit where the quality control and editing was done. The extraction and modeling took less than an hour in the automated software.

"The build-up of the pipe models was almost instantaneous in EdgeWise MEP," said Bennett. "It was even automatic to put in the elbows and join the pipes, again just a few clicks. It was very intuitive."

Bennett estimates that incorporating EdgeWise MEP into their workflow reduced the project time by 70% for Digital Surveys compared to manual modeling. "I honestly don't think we could have completed the project on time and on budget without EdgeWise," he said.

Digital Surveys' client, an engineering company with no experience using 3D scanning for as-built modeling, was impressed with the accuracy and timeliness of the results. The alternative would have been to use whatever construction drawings were available from decades past.

Bennett said that Digital Surveys plans to deploy the EdgeWise automated extraction software on future modeling projects. Like the United States, Great Britain is seeing a surge in the use of BIM technology both in historic preservation and commercial building projects.



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Formed in 1988, Digital Surveys is a privately owned company offering a range of specialist survey, dimensional control and industrial measurement services. Over the years they have built an excellent reputation as an innovator in the survey sector. The firm were early adopters of 3D laser scanning and LiDAR technologies, and have embraced the latest 3D data capture methods and techniques. www.digitalsurveys.co.uk/about_us