

Courts Engineering delivers intricate projects with Veesus Point Clouds for Rhino

Challenge	Solution	Results
<ul style="list-style-type: none"> ▶ Unusual, complex projects needing precise measurements ▶ Needed to minimise on-site building and utilise point cloud data effectively 	<ul style="list-style-type: none"> ▶ Veesus Point Clouds for Rhino plug-in ▶ Enables Rhino users to edit point clouds of any size natively in Rhino 	<ul style="list-style-type: none"> ▶ High-profile, complex projects completed to a high standard ▶ Clients amazed, and reputation for excellence secured



The Challenge

A complex build nobody believed possible

Deep in the bowels of BioProducts Ltd's plant, the staff held their breath. Through the ceiling, a customised platform was being lowered that would take the weight of a new 37-ton machine for sterilising and filling medicine vials. The legs of the platform needed to fit precisely among an incredibly complex network of pipes, to avoid damaging critical infrastructure.

"If we were even 5% off, the whole project would have failed," says Arnold Court, Owner at Courts Engineering. "Everybody was convinced it couldn't be done."

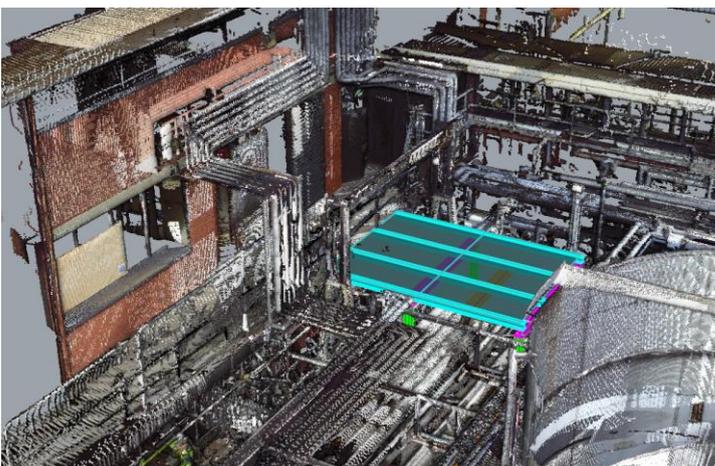
Projects like this are a speciality for Courts – but even they'd found this project a challenge. However, Arnold was quietly confident. And sure enough, as the platform was slowly lowered into place, the legs of the platform fitted perfectly into the gaps between the pipes to rest securely on the floor.

Arnold's confidence came from the 3D scans Courts had taken of the pipes – and from the software they'd found to help them use that point cloud data in their designs. It was Courts' first project using 3D scans – but they knew they had the tools to make it a success.

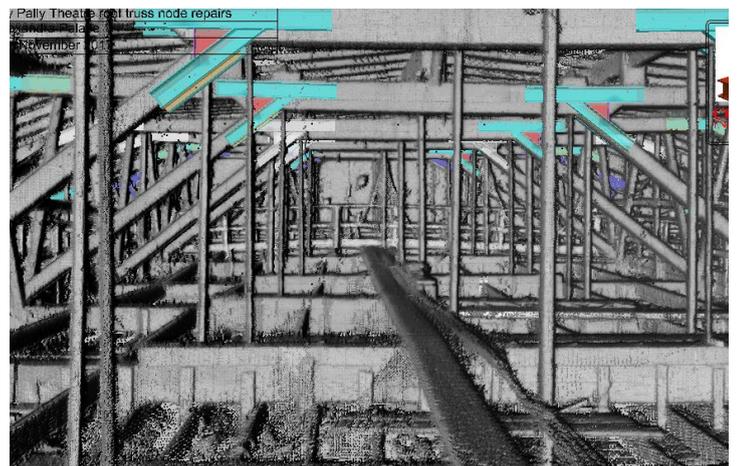
"We knew that the scan data alone wasn't enough," Arnold reflects. "We needed a way to process that data and integrate it into our design processes. Sophie discovered Veesus, and it changed everything for us."

About the company – Courts Engineering

Courts Engineering is a specialist engineering and construction consultancy based in South East London. A husband-and-wife team, Arnold and Sophie have been in business for 20 years, and have developed a reputation for tackling complex challenges that other firms can't handle. Using 3D scanning and Veesus software, that reputation has only been enhanced.



Point cloud of the space in BPL's plant where Courts Engineering custom-built a platform to take a 37-ton machine. The machine and the platform were lowered through the roof to fit precisely among the pipe network.



New roof trusses designed by Courts Engineering for Alexandra Palace. When inspecting the roof, Courts noticed targets on the walls indicating that scans had already been done; nobody else had been able to use the data.



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“That feeling of delivering something the client thought was impossible is what gets me out of bed in the morning – and with Veesus, I know that we’ll be able to keep delivering projects like this for years to come.”

Arnold Court

Owner, Courts Engineering

The Solution

Veesus Point Clouds for Rhino plug-in

Courts uses the Veesus Point Clouds for Rhino plug-in, which allows them to manipulate and edit point clouds of any size natively within Rhino.

“It’s very intuitive,” Arnold adds, “and its functionality is great. The slicing tool, for instance, allows me to remove all the extraneous data when working on a design and focus solely on the piece of the point cloud I need.”

Armed with Veesus, Courts has been able to delight other clients by delivering projects to an extremely high standard. A particular project that stands out is a refurbishment of the historic Alexandra Palace. Courts was asked to design steelwork to support the original oak trusses, as well as lighting rigging access points in the ceiling that wouldn’t damage the Victorian decorative mouldings. Courts was able to use existing scan data to aid the design process. Arnold explains:

“The company gave us the scan data and told us nobody had been able to use it. Having Veesus meant we could, which the client absolutely loved.”

More recently, Courts has used Veesus to support construction of the £20 million Chelsea Design Centre, delivering stainless steel cladding for a complex shape on the roof of the building that the original contractor was unable to deliver. Using Veesus meant that Courts could design and fabricate all the cladding off-site and install it once ready.

“Designing and fabricating on-site is always complex, and difficult,” Arnold comments, “so being able to do this off-site is great. With Veesus, we only need to go on site twice – to take the scan, and to install what we’ve made.”

The Results

Continuing to lead the way in complex projects

Thanks to Veesus, Courts has been able to scale its operations to handle multiple complex projects at once – as many as five in tandem, compared to working on one project at a time beforehand. Partly that’s down to the software, but partly down to Veesus itself.

“Veesus is very loyal to us,” Arnold explains. “Any time we have a question, or a problem, they are there, and they respond quickly. For a small business like ours, that responsiveness means the world.”

Courts is continuing to win and deliver unusual and challenging projects. They’ve just been asked to create a custom fire escape for the newly constructed Pears building at the Royal Free Hospital, working around extensive ducting and piping.

“It’s the challenge that keeps things interesting for me,” Arnold reflects, “and Veesus is what enables us to keep delivering these complex projects. People just don’t know how we manage to pull them off. That feeling of delivering something the client thought was impossible is what gets me out of bed in the morning – and with Veesus, I know that we’ll be able to keep delivering projects like this for years to come.”



For more information:

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