

## CASE STUDY



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Elvet Construction Consultants  
The Greenhouse  
Greencroft Industrial Park  
Annfield Plain  
County Durham, DH9 7XN



**Client** The Greenhouse  
**Project** BIM Survey  
**Role** 3D Scanning / Surveyor  
**Completion** January 2020

### OVERVIEW

The Greenhouse is an Eco-friendly Business Centre, based in Annfield Plain, Stanley. With a strong focus on sustainability, the building integrates an array of renewable technologies into its unique design, to minimise its impact on the local ecology.

Host to over 20 businesses, the site both caters for the demands of modern business, and the environment at large with an integrated lake to support the local fauna and flora. Alongside its own dedicated wind turbine, photovoltaic panels, geo-thermal underground heating and rainwater recycling system.

The scan was undertaken during the working week, to demonstrate the feasibility of the 3D scan to be undertaken on live sites, with minimal intrusion upon the public and the buildings occupants.



### BACKGROUND

To promote the Building Information Modelling (BIM) side to the business, we envisioned that the recreation of The Greenhouse would help demonstrate the applications of 3D scanner technology.

As a means to facilitate more collaboration within the construction industry, the 3D Scanning and BIM technologies, provide several key benefits to Projects, Contractors and Clients alike, including;

- **Reliability** – knowledge that the reproduced model in mm accurate, ahead of any major refurbishment works. This kind of reassurance can offer confidence to all involved in terms of building quantities, cost information and time scales on site.
- **Conservation** – with an accurate record, properties can be monitored and preserved within the digital space. This level of information can be invaluable in the event of reinstatement works, and can also help monitor ongoing deformation.
- **Inspection** – Defects can be identified and addressed, as the building data can be interrogated for areas of disrepair. A safe survey can undertake from afar, to prevent the need access to areas at height.

In production of this model, Elvet completed a comprehensive scan of the buildings elevations, roof structure and surrounding landscape. The subsequent data was processed with the Autodesk® Software packages to produce the 3D model, seen within the banner and the attached video.

This model demonstrates the ability of Elvet's Surveyors to deliver the key benefits of BIM, as part of the construction industries progression into collaborative working.



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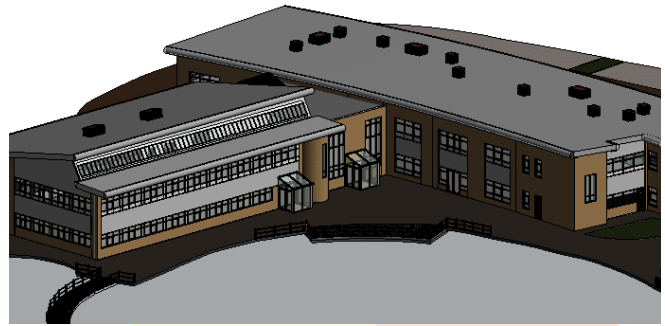
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### ADDED VALUE

For Clients, a 3D reproduction of a building or design can be helpful to visualise any adjustments made to a building in real time. But not only that, as BIM enables quantities and cost information to be integrated into these changes. As an integral part to any model, this information can be used in the production of programmes, Bills of Quantities, specification's and more. As a fully-fledged BIM model can be interrogated in terms life cycle costing, clash detection and the scheduling of works.

Elvet's Surveyors were able to produce an accurate model of The Greenhouse, which can be used to demonstrate any desired changes by the Client in the future.



### INNOVATION

Our Surveyors are highly skilled and trained to operate state-of-the-art high precision Trimble TX8 Scanner, which is capable of measuring over one million points per second with less than 1mm spacing. Furthermore, with a range of over a 120m and a 360° x 317° field of vision, we can demonstrate superior measurement capabilities.

Elvet is committed to investing in the Autodesk® Software packages and the associated training. This guarantees that our Surveyors have the skills and knowledge to undertake and reproduce these technical surveys, into workable models; which can facilitate collaborative working within a project team, as it can be assessed by all the disciplines within a project team.



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