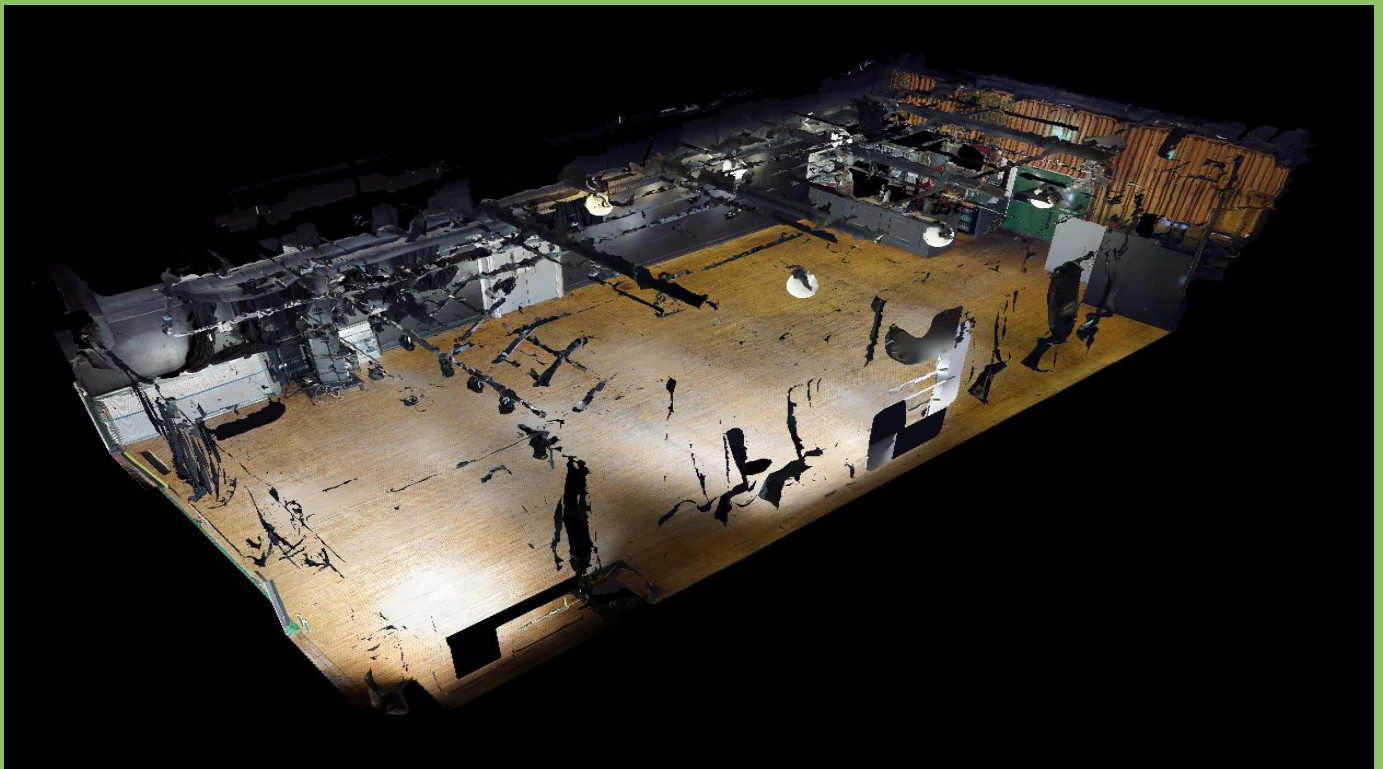




Newhampton Arts Centre (NAC) is a creative venue in the heart of Wolverhampton that nurtures new talent and new ideas. With a wide range of facilities it offers opportunities to enjoy and engage with the arts. As a creative hub it supports thirty resident organisations. NAC is a registered charity and is accessible and open to everyone.

EnTRESS solutions

- Digital scanning
- Energy efficiency
- Process efficiency



Background to the support provided

The company's premises include a converted school dating from 1922 but its style is reminiscent of late Victorian Gothic Architecture. The charity was looking for opportunities to expand operations, enhance community engagement and develop the efficiency of its operation while reducing operating costs.

It was thought that energy use could be minimized by improving the facilities management of the historic buildings. The charity was also interested in generating data to be used in grant funding applications for future building improvement projects.

What was accomplished?

The Knowledge Transfer Process

NAC's theatre was digitally scanned by EnTRESS on two separate occasions; without seating and with seating in place. A total of 38 scans were recorded in various positions in the theatre. The data was then stitched together using Matterport software to produce interactive 3D imagery which was then uploaded to the Matterport Cloud.

The scans captured valuable detail including object measurements, positioning of building services, and the complex configuration of the theatre lighting.

NAC was given access to the point cloud data. The EnTRESS team demonstrated how the data could be used;

- Several JPEG photos and MP4 'fly-through' videos were available to download.
- The "3D showcase" can be explored online in dollhouse and floorplan modes. The space can be explored in a way similar to Google Street View i.e. the user can move around the space viewing the surroundings from different angles in the positions the camera was located in during scanning. The size of objects can be measured in the 3D showcase.

EnTRESS transferred the 3D model of the theatre with seating in place to NAC who are now able to invite other users to view the data. In addition, NAC can:

- View the 3D imagery in mesh format
- Edit the data online by adding labels and "Mattertags" to objects. Mattertags allow additional information to be saved within the 3D imagery, files like documents and photographs can be uploaded or links to external web pages can be saved.
- Purchase a schematic floorplan, publish to Google Street View or download a "MatterPak Bundle", a package of files aimed at architects.



What's available from EnTRESS?

- Fully-funded, one-to-one mentoring and business support, for the development and / or adoption of environmental technologies, processes and improvements.
- Access to, and collaboration with, leading research provided through the University of Wolverhampton.
- Fully-funded, in-house resource efficiency audits for SMEs.
- Technical review workshops providing assessments on current products and associated R&D opportunities.
- Environmental impact challenges set by large commercial and public organisations, providing SMEs with business opportunities.
- Technology showcases promoting the uptake of environmental innovations developed by SMEs.

Solutions Identified

The digital modelling by EnTRESS will provide the management team with a tool that will record current facilities, and feed into their cyclical maintenance and Five Year Planned Programmed replacements to ensure new equipment can be sourced and operated sustainably;

- The downloadable high quality photographs and fly through videos can be used for online marketing and printed literature.



- The ability for NAC to give external organisations view only access to the Matterport cloud data will be very useful when applying for funding or writing reports as it facilitates a better understanding of the NAC set up without the need to visit in person. In addition it will allow theatre groups to plan their stage, seating and lighting requirements without the need for pre-visiting the site. Less travel will benefit the environments through less carbon emissions.
- The 3D data may also prove useful for theatre renovations in future; it could speed up the process of planning and design. It may aid the management team plan future energy efficiency improvements particularly with regard to heating and lighting of the room.
- There is great potential for the Mattertag functionality as a tool to store meaningful business information and improve the efficiency of processes. For example, fire extinguishers could be labelled with expiry dates; fire doors could have the associated exit plans attached. The various theatre lights could be labelled and technical information uploaded.

Newhampton Arts Centre

Based in Wolverhampton NAC is a creative venue that nurtures new talent and ideas. They are a creative hub home to thirty resident organizations. They host regular events such as live music, comedy nights and theatre. They also have space available to book.

The Matterport camera EnTRESS used scans a space using lasers. This data is stitched together to create 3D imagery.

At NAC, this scan can be used in marketing of the venue. It will give customers the chance to see the venue without having to visit in person.

The scans capture valuable detail about a space and can be used to configure a room and may be used for future renovations at NAC including energy efficiency improvements.



The Matterport 3D camera used in this project features:

- Structured light (infrared) 3D sensor
- 20 seconds capture time per scan/ sweep
- 99% accuracy within range
- 15 ft (4.5 m) maximum range
- 3D Data Registration: Automatic
- Depth Resolution: 10 points per degree (3600 points at equator, 1800 points at meridian, about 4 million points per pano)

What is EnTRESS?

EnTRESS is an environmental innovation project drawing on University of Wolverhampton expertise, part funded by the European Regional Development Fund (ERDF).

What we do?

Support for SMEs who want to modify their practices for increased sustainability.

Eligibility criteria

Open to Small to Medium Size Enterprises (SMEs).

Definition of an SME

'The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million' - Extract of Article 2 of the annex to Recommendation 2003/361/EC

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