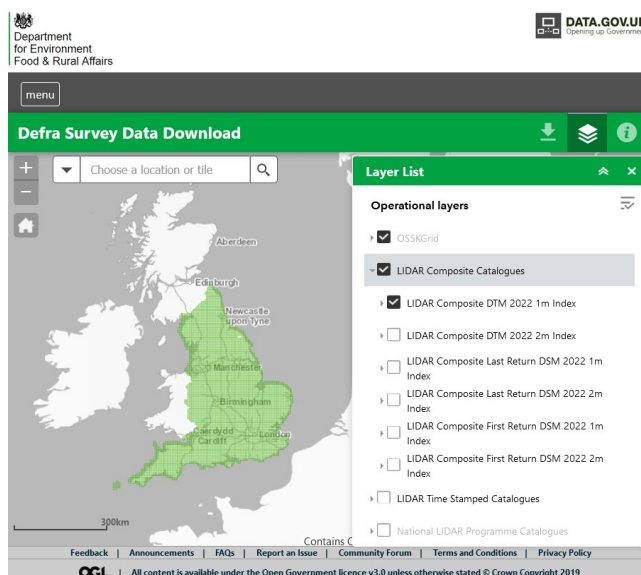


“Lidar at the Desk and in the Field” Information Sheet

CIFA approved 2 day training course

The Environment Agency has been the source of the public lidar data archive for England for over a decade and in 2023 they made available 1m coverage for the entire country. This extensive 3D model of the ground surface created by airborne laser scanning is critical to historic environment professionals and researchers seeking to understand both past human interaction with the landscape and modern impacts on it.

Lidar data now covers more than 95% of England, at 1m resolution and this freely available data set has enormous potential for archaeologists, historic landscape and conservation use. The available archive for other areas is also increasing with Wales also due to release whole country coverage imminently and an increasing archive of data for Scotland also.



But how do you get the best from this expansive resource?

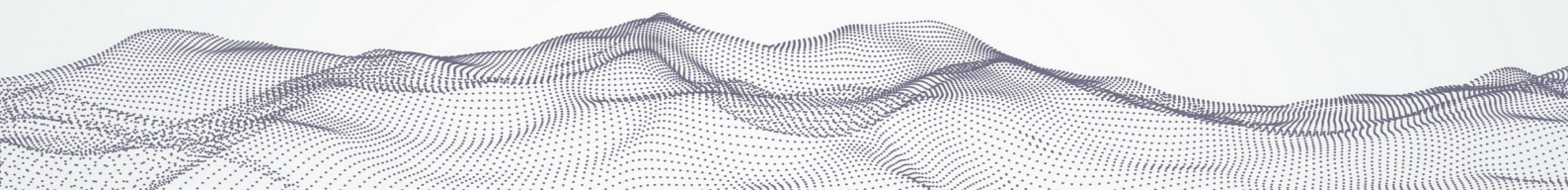
Our two-day course provides the perfect combination of theory and practice, to really help you understand lidar data and how it can help our assessment of historic landscapes.

On day one you'll complete our popular Making the Most of Lidar course. Run by professionals with over a decade's experience in using lidar data for historic landscape analysis, this course covers essential concepts needed to understand and efficiently use lidar data for visualization and analysis.

Through a series of presentations, practical guidance and hands on sessions we will explore how to access, prepare, and manipulate digital lidar data. In addition to the 'hands on' practicals, there will be plenty of opportunity for questions and group discussion during the course of the day. You'll use your own laptop and open-source software for the course ensuring that you are fully set up to apply the new skills you've learnt.



To complement the desk-based training, we will spend day two out on site, putting your new lidar interpretation skills into practice. We'll travel together to a site within 1 hour of our Swindon base where we can explore how features identified in the lidar are represented on the ground. These key skills are critical to taking your understanding of feature identification from lidar data forward, and we are thrilled to be



able to offer the opportunity to explore a real landscape with your data.

Who is the course aimed at?

The course is aimed primarily at archaeological and landscape conservation personnel operating in national agency, local authority and commercial heritage environments. However this course will also be of benefit to professionals working independently and in research environments and to community groups working with airborne lidar data.

Course Aim

"To improve your knowledge and understanding of the use of lidar data for archaeological analysis and interpretation."

Course Objectives

- 1. To provide theoretical background on the collection of lidar data and its use for historic landscape survey.*
- 2. To provide guidance on how to access the Environment Agency archive and the different types of data available*
- 3. To provide practical guidance on how to prepare and manipulate digital lidar sets.*
- 4. To provide guidance and discussion on the appropriate use of lidar data and some of the pitfalls / problems that might be encountered*

This course provides skills and knowledge in support of the following National Occupational Standards:

AC8 - Undertake analysis and interpretation of archaeological material and data;

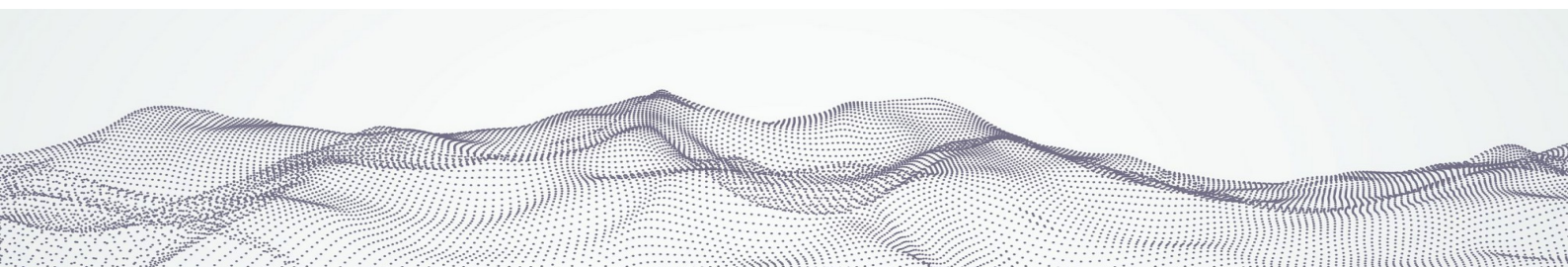
AC1- Research and analyse information to achieve objectives

AC2 - Conduct non-intrusive archaeological investigations

The Additional Information section below covers these standards in more detail.

Why should I attend?

Lidar data can be a tricky resource to get to grips with. On one hand it appears just like an aerial photograph – a snapshot view of terrain from the air, but the full potential of this 3D data source is sometimes overlooked by historic environment professionals. What's more, the subtle topography that typifies archaeological remains can be tricky to identify using typical visualisations such as hillshades. In this course, you will be introduced to a series of visualisation techniques that have been specifically developed to support the identification of micro-topography ie. archaeological features. You will also learn how to integrate lidar data with other data sources to create more complete understanding of the historic environment. Many professionals using lidar data currently use it as like 2D aerial image. This course will show you how to move beyond this and maximise the potential for interpreting and understanding your sites.



Cost and Booking Information?

The course is **£400** per participant, including lunch and refreshments. Paypal payment via our website preferred. Please go to <http://www.pushingthesensors.com/booking-form/>

Numbers are limited to 8 places so pre-booking is essential and bookings close two weeks before the course date (or earlier if all spaces are filled). If you find that you can't attend we will refund the cost of the course minus an administrative fee of £30 until noon 14 days prior to the course date. Refunds will not be made after this point, but transferring your place to another individual or credit for a future course will be considered where possible.

Requirements

You will need to bring your own laptop and mouse [Windows 8 or newer, Mac OS High Sierra (10.13) or linux with at least 8GB RAM, 1GB memory] with the latest version of QGIS installed (don't worry full instructions on how to do this will be sent out with your welcome pack).

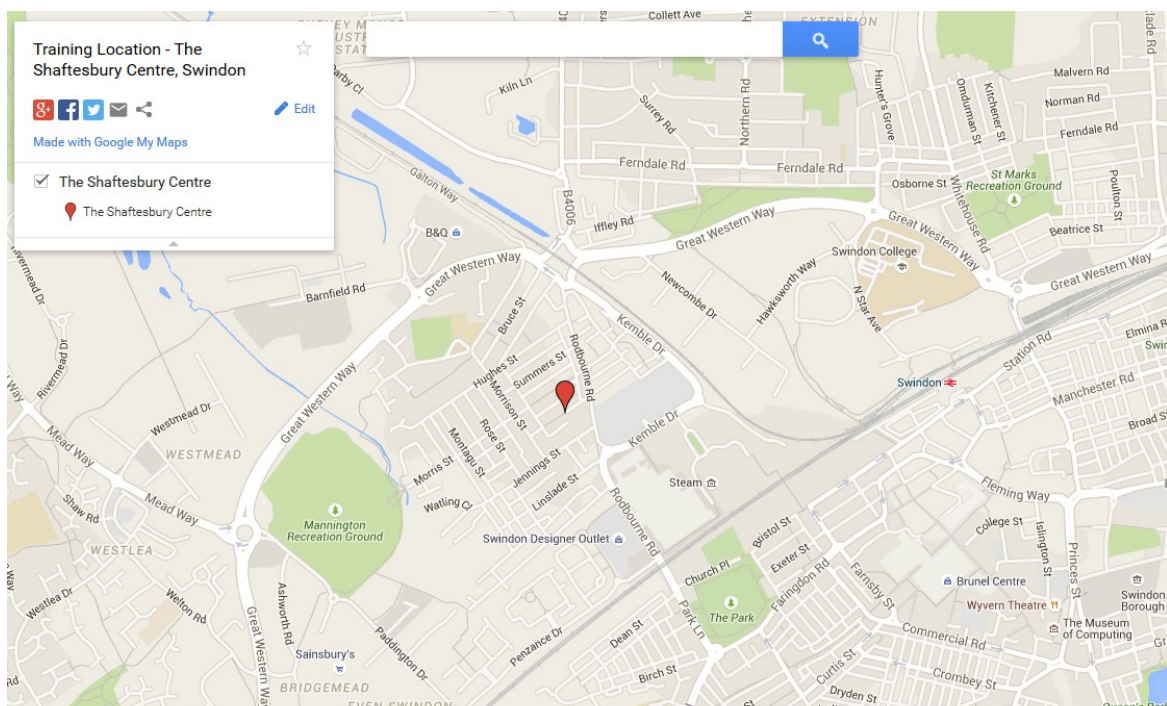
Some previous experience of working with GIS would be an advantage but is not essential.

The Venue

The course will be held at Air Photo Services Ltd, the Shaftesbury Centre, Swindon [SN22AZ](#) (within easy reach of Swindon train station). Bus route 5 connects the station to Rodbourne Road and a taxi one-way should be around £7.50.

There is ample free public parking off Morris Street, to the rear of the Shaftesbury Centre building.

The training room is on the second floor with lift access. Please let us know if you will need any specific modifications to make your training day more comfortable.



Travel and Hotel Information

The venue is located 4 miles from junction 15 of the M4 (or 6 miles from junction 16) and within walking distance (20mins) from Swindon town centre and the railway station. Swindon is on the Great Western Bristol-London route, serving London, the Midlands, South West England, the South Coast and South Wales.

If you need to stay overnight there are a range of hotels in Swindon, with the closest to the venue being:

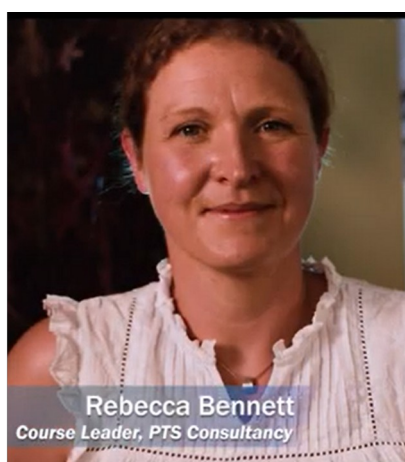
Holiday Inn Express Swindon City Centre, Bridge Street, SN1 1BT
The Great Western Hotel, 73 Station Rd, SN1 1DH
Jurys Inn, Fleming Way, SN1 2NG

Please check online for prices and reviews.

Pre- Course Reading

If you are a super keen bean, you can take a look at the free download from Historic England as a starting point: <https://historicengland.org.uk/images-books/publications/using-airborne-lidar-in-archaeological-survey/>

About the Trainer



Rebecca Bennett is one of the UK's leading researchers in airborne remote sensing including airborne laser scanning (lidar), multi and hyper-spectral imaging for archaeological prospection. Over the last decade she has introduced students and professionals across Europe to the wonders of integrating airborne laser scanned data into their research through the use of open-source software QGIS and GRASS. She is currently collaborating with colleagues across Europe to prepare the EAC Guidelines for the use of Lidar in Heritage Management. You can find out more about her interests and publications at www.pushingthesensors.com

Additional Details - National Occupational Standards Outcomes

This course provides skills and knowledge in support of the following National Occupational Standards for Archaeology (ordered by most relevant first).

AC8	Undertake analysis and interpretation of archaeological material and data	P1-5 K1-13	Performance Criteria <ul style="list-style-type: none"> • Accurately identify requirements for analysis and interpretation • Identify and apply relevant technical and ethical standards • Analyse and assess the accuracy, currency and completeness of data and identify any additional data and material requirements • Obtain additional data and material from relevant sources as appropriate • Select, propose and agree appropriate methods for analysis and interpretation Knowledge and Understanding <ul style="list-style-type: none"> • How to carry out analysis and interpretation • Data protocols • Relevant technical and ethical standards • Types of analysis and interpretation • Types of method • How to conduct analysis and interpretation • Sources of specialist information and advice • How to observe and measure accurately • How to adapt analysis and interpretation procedures and practices to suit different conditions • How and where to record and store analysis and interpretation data • Types and modes of analysis and interpretation • Circumstances and conditions which can affect analysis and interpretation activities • Data protocols used in different analysis and interpretation methods
AC1	Research and analyse information to achieve objectives	P13-14	Performance Criteria <ul style="list-style-type: none"> • Ensure the methods are appropriate to the type of data and the research aims • Analyse information accurately according to the appropriate methodology
AC2	Conduct non-intrusive archaeological investigations	P22-P24	Performance Criteria <ul style="list-style-type: none"> • Verify that data collected during investigation is sufficient for analytical purposes and is collated accurately • Check and verify investigation data for accuracy and integrity • Process investigation data accurately and present it in a format that will assist in making a balanced interpretation

