

Buildings archaeology and development

The following pages present case studies that highlight the broad application of buildings archaeology. They show the breadth of skills and knowledge that buildings archaeologists offer. Each case study shows that understanding is the primary focus of the buildings archaeologist. Understanding incorporates not only an appreciation of the significance of the historic building, but also an interpretation of how it may have influenced or have been influenced by its local and national context.

A buildings archaeologist can help the stakeholders in a historic building or area to understand its values and how they contribute to significance. This includes communal value. Community is partly manifested through a city or town's heritage assets, many of which house important local services, such as libraries, and also businesses or projects. The historic environment is part of the fabric of day-to-day existence, and it contributes significantly to people's quality of life. It is on this understanding that a buildings archaeologist engages with all types of clients and assists in the development of proposals for historic buildings. The archaeologist's input enables those proposals to be informed by an interrogative, robust and thorough assessment of significance and an understanding of the opportunities and constraints a building presents, and to be focused on sustainable and viable uses that benefit communities.

We hope that the following case studies illustrate some of the contributions brought by an archaeological approach to understanding buildings and inspire those who are responsible for finding new uses for old structures to seek advice and support from a ClfA-accredited professional.



Teesworks industrial zone



Eastward Farmhouse and attached barns, The Lake District



A strategic approach to adaptive reuse

TEESWORKS INDUSTRIAL ZONE

A case study of the challenges of industrial archaeology and historic building recording

Amir Bassir MCIfA, Senior Historic Environment Consultant at The Environment Partnership (TEP) Ltd

Built heritage varies considerably, from a single small structure to an entire cohesive landscape of interconnected buildings and sites. Each site will present its own logistical challenges and the methodology for recording will need to be adapted to work within a project's timeframe, the level of detail required, and health and safety and access constraints.

The historic environment team at The Environment Partnership (TEP) Ltd was instructed by the Tees Valley Combined Authority, advised by the Teesworks Heritage Taskforce, to undertake historic building recording of a substantial industrial site comprising the Redcar Iron Works, the

*Basic Oxygen
Steelmaking (BOS)
plant ©TEP*



Lackenby Steelworks, and plant at South Bank. This area is collectively referred to as the Teesworks Industrial Zone or Teesworks. The work was not in accordance with a condition of planning but was undertaken as part of the local authority's commitment to the area's industrial heritage.

TEP is a CifA Registered Organisation, which gave the commissioning body confidence that the archaeological recording would be undertaken ethically, to professional standards and by competent experts. TEP produced a detailed methodology for the proposed works as part of the commission, which ensured that the work would meet the needs of the client and the public.

Exterior view of BOS Plant ©TEP





*BOS Plant Teeming Bay,
showing a de-gasser unit*
©TEP

THE SITE

Teesworks is located at Redcar, North Yorkshire, and is currently being redeveloped to transform Europe's largest brownfield site into a multi-sector industrial zone focused on clean energy and advanced manufacturing. The site covers 4,500 acres and will include the UK's first carbon capture utilisation and storage facility. It is envisaged to create 20,000 new jobs and contribute £1 billion annually to the Tees Valley economy.

The extensive site is over 5km from end to end and the larger buildings can be hundreds of metres long, with multiple levels, and containing substantial equipment and machinery. The principal objective of the survey was to produce an archaeological record of the site, including the various processes of materials movement and manufacturing that took place in the different areas of the works. The scope of recording encompassed many large and complex buildings and plant, including a blast furnace which at the time of construction in 1979 was Europe's largest and most technologically advanced.

The main areas to be recorded included raw materials handling facilities, coke ovens and by-products plant, sinter plant, power station and turbine hall, gasholders, workshops and offices, and the Basic Oxygen Steelmaking (BOS) plant. These were supported by an array of ancillary equipment including a network of conveyors and a dedicated rail system that carried raw materials around the site.

METHODOLOGY AND CHALLENGES

Producing a comprehensive record of the site, including all major buildings as well as the associated networks of conveyors and stockyards, presented the team with a logistical challenge because of time and safety constraints.

A detailed programme for the archaeological works was drawn up and included provision for project set up, archive visits, site survey, reporting and production of illustrations and archiving. The programme included a schedule of client meetings and updates, as part of which the project manager would keep the client team informed of progress and raise any risks to delivery. The team was able to keep to this tight schedule, delivering each stage of works within the allocated timeframe.

At the time of the archaeological recording, the site had been given over to demolition and was under Construction (Design and Management) regulations, requiring the team to prioritise areas in accordance with the demolition schedule and to undertake works in line with strict health and safety procedures, which limited access in certain areas and buildings.

The number and large scale of the buildings and site presented a major challenge as the on-site element of recording had only a two-week timeframe. The site was divided into recording areas and a daily recording schedule was created to ensure each area was completed. This schedule was communicated to all key stakeholders ahead of time and necessary site managers were put in place to enable access to all areas on the designated date.

Over 4,000 high-resolution digital photographs were taken over a two-week period and included main elevations, views of principal rooms and spaces, and details of plant and equipment. Interviews were carried out with key plant operators and site managers to provide technical information regarding the operation of the site. An archive visit was also carried out to help provide a comprehensive historic background and to aid in understanding the social significance of the site for the local area.

A particular challenge to photographic recording was the restricted access to parts of the site and interior of some of the buildings. The internal spaces were often large and poorly lit; flash photography was of relatively little use in lighting these spaces. The limited fieldwork time and strict recording schedule also restricted the use of long tripod exposures, requiring a balance between rapid data capture and image quality. Because of safety concerns and limited access, it was not possible to use tripods in certain areas and hand-held photography was the only option. The use of high-quality cameras with high ISO and recording in RAW helped to provide the best possible images in these conditions.



Interior view ©TEP



Blast furnace charging conveyor ©TEP

A highlight of the site and recording project was the blast furnace, which was prioritised early in the recording schedule because of its heritage significance and the level of detail required. Built in 1979, the uppermost plant was almost the same height as the top of St Pauls Cathedral, rising to approximately 104m. The blast furnace was the focal point in the flow of materials around the Redcar site and its primary purpose was to produce molten iron to a specific tonnage and quality as required at the steel plant. Although at first glance often taken as comprising the upstanding furnace, the blast furnace facility actually contains a wider sprawl of associated infrastructure including gas and dust collection, cleaning and processing, conveyors and charger, slag and waste material processing, as well as the gas, air and water required to drive the process. At the height of operation, the furnace provided the continuous production of iron at a capacity of 63,000 tonnes per week. The team was fortunate to be able to gain access into the blast furnace facility and was able to record the principal elements from inside the structure and from the multitude of working platforms.

The Basic Oxygen Steelmaking (BOS) Plant received the molten iron from the blast furnace. The iron was transferred into 240-tonne-capacity converter vessels where oxygen was blown in to convert the iron to high-quality steel. The steel works building was made up of a series of steel-framed bays measuring up to 700m in length and with the larger bays being up to 70m in height. Large overhead cranes were used to carry heavy ladles filled with molten metal around the various stations. The molten steel was poured into continuous casting moulds where it was formed into straight ingots for immediate use in adjacent rolling mills or for sale as raw material. The survey provided a record of the structure and layout of the building and there was specific emphasis on documenting and describing the process of manufacturing and materials through the building and its place within the wider site.

It was found that little published or archival material was available for the site because of its relatively recent construction and decommissioning. A large number of documents and plans were present in various site offices but had not been organised or digitised. It was considered vital, therefore, to make use of the knowledge of the site staff, many of whom came from generations of iron and steel workers. The team was accompanied by the relevant plant manager for each recording area, who were able to provide on-going commentary and explanation of each building and works process. On completion of the fieldwork a series of informal interviews was carried out, which considerably aided our understanding of the site and provided a valuable level of technical detail.

On return to the office, the photographic archive and all notes were reviewed and any areas of deficiency or which required further detail were identified. Return visits to specific areas were then arranged to ensure the record was as robust as possible.

CONCLUSION

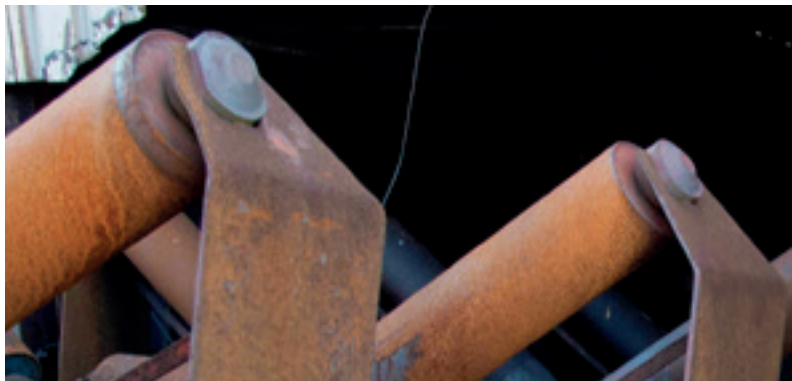
The recording project was noted by Historic England as being among the largest of this type of recording undertaken by archaeologists of an industrial site. The archaeological survey was part of a wider effort by the Teesworks Heritage Taskforce to explore ways to capture, record and recognise the cultural economic and industrial heritage of the Teesworks site.

It was noted from the outset that there is considerable local community interest in the site and the project was designed specifically to engage with and enhance the public record. As an important site in Britain's steel and iron industry there is also a significant national as well as international audience.

The survey created a comprehensive and high-quality visual record of the site prior to demolition and the report provided a systematic descriptive account of the history and development of the local iron and steel industry, as well as a technical description of all the main buildings and manufacturing processes. A separate archive gap analysis was also produced which provided recommendations for ongoing and long-term heritage management, including public engagement and outreach and publicly accessible publications to help raise awareness of Teesside's rich iron and steelmaking heritage.

The work was well received by the client and has helped with the ongoing management of the site, which remains under development, providing guidance in the potential retention or conservation of heritage assets and historic features and forming a baseline for any further heritage projects and publication.

The grey literature report is available to the public through the Archaeological Data Service and the archive is held by the Teesside Archive.



Blast Furnace detail
©TEP

Eastward Farmhouse and attached barns, The Lake District

Catherine Bell, Listed Building Caseworker, Council for British Archaeology (CBA)



Front elevation of the farmhouse, with the south barn to the left
©www.parti.global

As a national amenity society, the Council for British Archaeology (CBA) assesses hundreds of applications for proposed changes to the historic environment each week. The majority are for adaptation of listed buildings to better meet contemporary needs. The principle of change is accepted; it just needs to be informed by an understanding of which aspects of a site contribute towards its significance and therefore where opportunities for alterations lie. Good Listed Building Consent (LBC) applications use an assessment process to understand a site and identify those areas that can be altered with no or minimal harm to those features of a site that hold value or special interest. Well-considered schemes also seek to retain the legibility of how a place has evolved over time.

The CBA's criteria for commenting centres around a site's archaeological interest, or evidential value. As a result, we often comment on multi-phased buildings which contain considerable quantities of archaeological interest (or evidential value) about how past people have lived and worked at a site, adapting them with changes in technologies, fashions, wants and needs.

In early 2022 an application for Eastward Farm in the Lake District landed in our inbox. It is an exceptionally well-preserved site, with many layers going back to at least the 17th century, and has evidence for a substantial 18th-century expansion. These layers illustrate the ways of life and agricultural practices that have typified the Lake District for centuries. The farm is crying out for the skills of a buildings archaeologist to get to grips with the full extent of its archaeological and historical interest.

Kitchen range
©www.parti.global





South barn interior
©www.parti.global

The house has retained many features that have commonly been ripped out and have little or no record. The fragile, 18th-century timber panel partition walls are intact and the worn groove in the flagstones demonstrates how long it has defined the movement of people between the kitchen and parlour. A large inglenook in the old kitchen contains a tidy 19th-century range within an earlier stone fireplace. Within the inglenook there are multiple metal hooks, and the inner face of the fire beam has a series of crude cupboards, some with butterfly hinges. Fitted stone benches and shelving survive in the cold butteries/dairies to the rear, showing how, up until the recent past, most Lakeland farms made their own butter and cheese. The contrast between these functional aspects of the house and the quality of the 18th-century joinery in fitted cupboards, shutters and window reveals in the 18th-century extension how farmers aspired towards the aesthetic tastes of polite society during this period.

The large 18th-century threshing barn and combination barn also demonstrate the prosperity of the farm and the importance of mixed agriculture in an area that, since the late 19th-century, has been best-known for its pastoral landscape grazed by sheep and cattle. In the 18th-century barns, timber stall partitions and a manger are still in place in the cattle housing. Unusually, there is still a stone-flagged threshing floor. This is so often replaced by a more practical concrete screed. Substantial numbers of roof timbers and trusses are still in good order across the site. With reference to Historic England's Farmstead and Landscape Statement for the High Fells (<https://historicengland.org.uk/research/current/discover-and-understand/rural-heritage/farmsteads-character/>), it is clear that the whole group is outstanding for its evidential interest, the way that it illustrates how farming developed in the Lake District and also for the architectural and aesthetic interest of its fabric and detail.

Kitchen parlour
©www.parti.global



Eastward Farm presents a challenge to those of us who are familiar with rural heritage – a site which has been in the same family, either tenanted or owner-occupied, for generations until its sale and then is at risk from alterations which, however well-intentioned, could cause cumulative harm to the site’s historical and archaeological interest. In this case, new owners have applied to upgrade the site into a single holiday unit and are prepared to make a considerable investment in conserving the historic fabric and sympathetically bringing Eastward Farm into the 21st century.

So how best to move forward? This is where the skills of a buildings archaeologist are critical in providing an illustrated and written record that identifies the different phases of a site and its significance in a national and local context, and reaching a balanced judgement on how it can be adapted for future use while minimising harm to its legibility and character.

National and local planning legislation, policies and guidance protect the historic environment from unjustified levels of harm and seek to conserve sites so that their significance is retained and enhanced. In this case, the CBA decided that the listing of the farmhouse with its attached barns at Grade II – the most common listing grade, which affects 92 per cent of buildings on the statutory list – did not adequately capture its outstanding degree of preservation and interest. In order for a balanced planning judgement to be proportional to Eastward Farm’s historical and archaeological interest the CBA applied to Historic England for the site’s designation to be reassessed.

Historic England has since carried out a full inspection and the Secretary of State has decided to amend Eastward Farm’s designation to Grade II*. This will ensure that works to upgrade the site will be proportionate to its outstanding historical and archaeological interest. The CBA’s hope is that a Level 4 Building Recording of the site (see *Understanding Historic Buildings: A Guide to Good Recording Practice*, Historic England, 2009) will inform a revised scheme that retains more of the extant fabric and character as a proportionate response to Eastward Farm’s significance and potential for sensitive adaptation



Interior view
©www.parti.global

A strategic approach to adaptive reuse

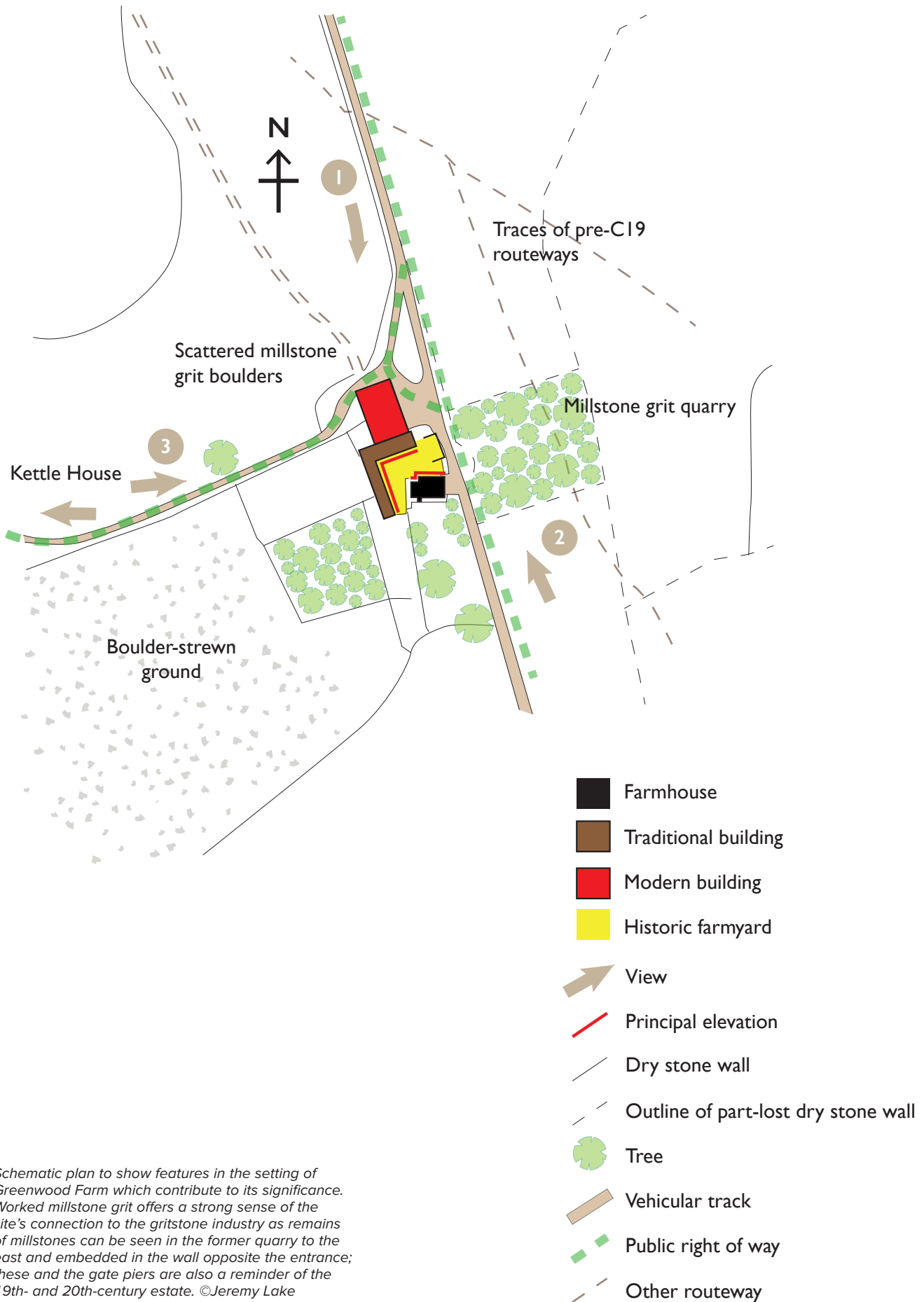
Jeremy Lake, MCIfA, MLI



View of the farmstead from the west, showing the fragments of the early 20th-century shelter shed which has been retained as part of the scheme, and the main L-plan range to the right of the image.
©Jeremy Lake

In addition to preparing illustrated and written records to different levels of specification, accredited buildings archaeologists are also well-placed to deliver high-level and strategic assessments of buildings in their landscape and historic context. In this instance, the National Trust has commissioned a rapid assessment of the historic character, significance and potential for change of its traditional farm buildings in the Peak District to inform options for adaptive reuse following Historic England's advice on this.

The first step, held at a workshop attended by the National Trust and the Peak District National Park Authority, was to identify any key issues and establish common ground including the criteria for assessing significance. There followed a rapid analysis of each site in its landscape setting and to then consider their significance in the context of the whole National Park. The staged approach for assessment follows that set out in *Peak District National Park Farmsteads Assessment Framework* and its accompanying guidance (www.peakdistrict.gov.uk/looking-after/living-and-working/farmers-land-managers/historic-farmsteads-guidance). A high-level approach conducted by an accredited archaeologist was essential in this respect, as it ensured that the different phases of construction could be correctly identified and related to the historic character presented by the patterns of fieldscapes and other heritage assets in the landscapes around them. A second workshop then considered the results of this assessment, the capacity and potential for change of each site and the issues to inform the options for design.



Schematic plan to show features in the setting of Greenwood Farm which contribute to its significance. Worked millstone grit offers a strong sense of the site's connection to the gritstone industry as remains of millstones can be seen in the former quarry to the east and embedded in the wall opposite the entrance; these and the gate piers are also a reminder of the 19th- and 20th-century estate. ©Jeremy Lake



Exterior view
©Jeremy Lake

It is possible to report on one site, due for completion later this year, which was granted planning permission and listed building consent. Greenwood Farm comprises a farmhouse (listed Grade II) dating from the mid-18th-century and an L-shaped combination barn, stables and cattle housing of mid-19th-century date with fragments of earlier fabric. This type of formal courtyard layout comprises 6 per cent of recorded farmsteads in the National Park, regular courtyard farmsteads being most commonly found on estates that were investing in improved agriculture in the 19th-century. This formal layout is echoed in the straight-sided and survey-planned enclosures along the fringes of the moorland and in the routeway, straightened as an estate drive, that continues south past the site; this offers a striking contrast to the looser layouts with 17th-century and earlier recorded buildings set in more ancient landscapes that are characteristic of this part of the Dark Peak and the valley slopes of the Derwent Valley. Similarly the house, which faces away from the group into its own garden, illustrates changing standards of living from a vernacular tradition into more classical-influenced symmetry that reflects the history of the estate and the aspirations of its farming tenants. The land to the east and north of the site is scattered with evidence for the quarrying and manufacture of millstone grit, an industry which often developed in combination with farming; although any historic association between Greenwood Farm and local industry has not yet been proven. There are tentative references to the use of the stables for transporting products to the local railway station.

Understanding the constraints and opportunities offered by the historic buildings has been a critical factor in informing the design and consideration of the site in its context, including the substantial rebuilding of a partially-extant early 20th-century shelter which had been absorbed into modern sheds but commands wonderful views over the Derwent Valley; this has taken pressure off the historic barn space and use of the enabled access around the northern side of the buildings to this part of the site. The assessment of this site and across the Peak District has also highlighted significant opportunities, with reference to the National Park's 'Landscape First' approach and the Statements of Environmental Opportunity for the Dark Peak and other National Character Areas, to realise opportunities for the enhancement of the landscape and habitats around the site, and to interpret Greenwood Farm and its historic landscape context for the benefit of visitors to the property and those using the Public Rights of Way.

The advantage of this approach is that, in delivering a rapid and high-level understanding of sites on a whole estate or across a wide area, it offers a framework for the more detailed consideration of these issues when putting together more detailed plans for planning permission or listed building consent. Besides being far more cost-effective than a piecemeal and 'site-by-site' approach it meets a key concern for the PDNPA, which gives greater weight to the development of Whole Estate Plans which enable proposals to be seen within the context of a whole estate rather than on a 'one-off' basis. This rapid assessment can then be used to prepare Farmstead Assessments, Statements of Significance and Design and Access Statements for sites that are then being put forward for changes of use that require planning permission and listed building consent.