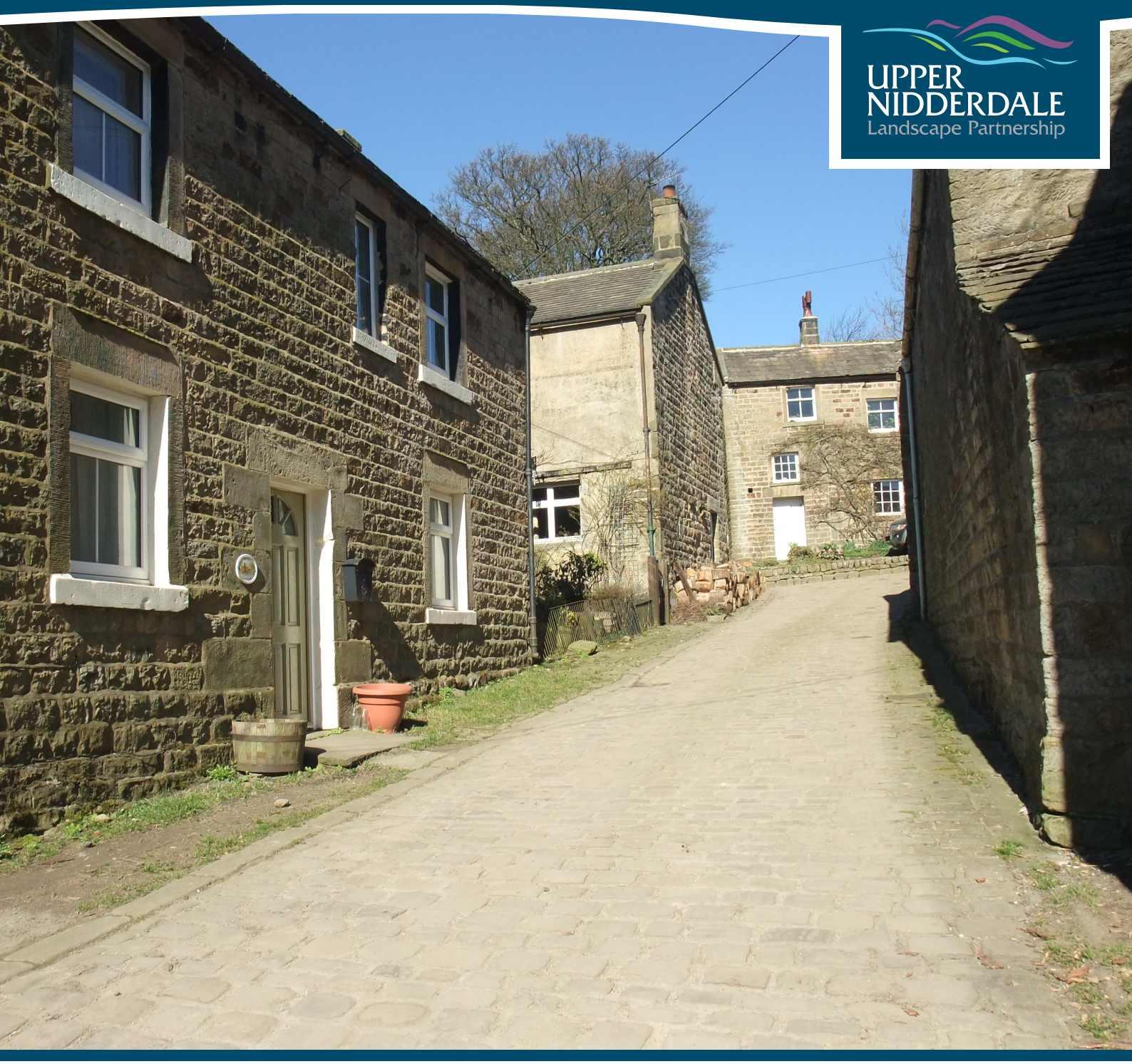


UPPER NIDDERDALE
Landscape Partnership

Conserving the Historic Buildings and Settlements of Upper Nidderdale

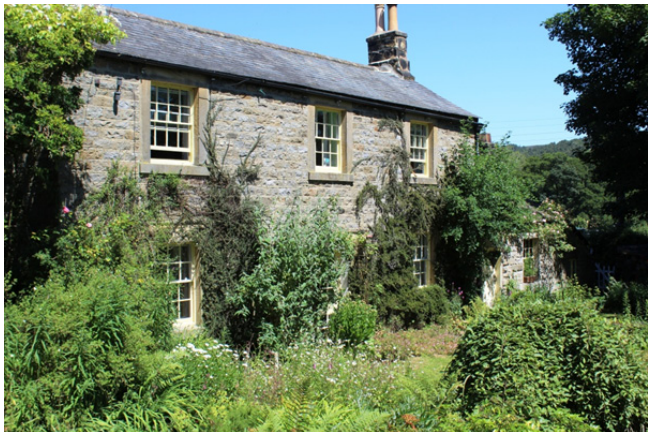
A Practical Guide

heritage lottery fund
LOTTERY FUNDED

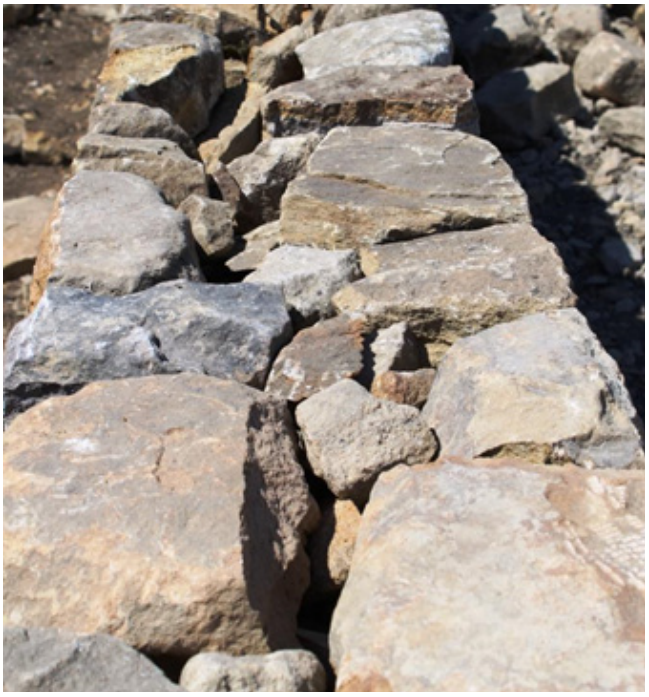
Nidderdale
Area of Outstanding Natural Beauty

INTRODUCTION

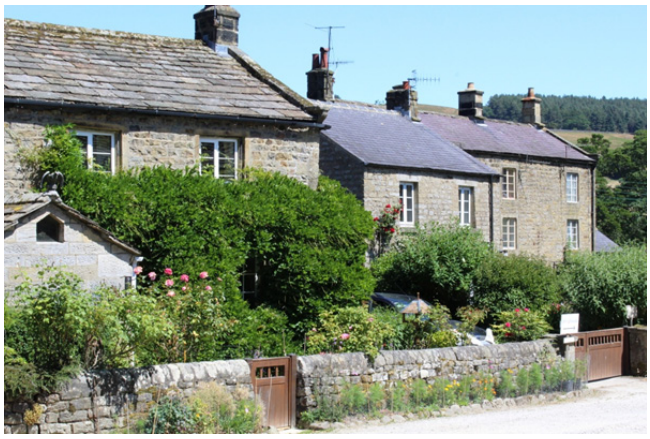
Outcrops of grey sandstone throughout the Dale have provided a source of building material from earliest times. It was readily shaped into precise building blocks and provided a durable material assembled to reflect architectural style of any age but most notably the simple semi-classical designs of the late 18th and early 19th centuries.



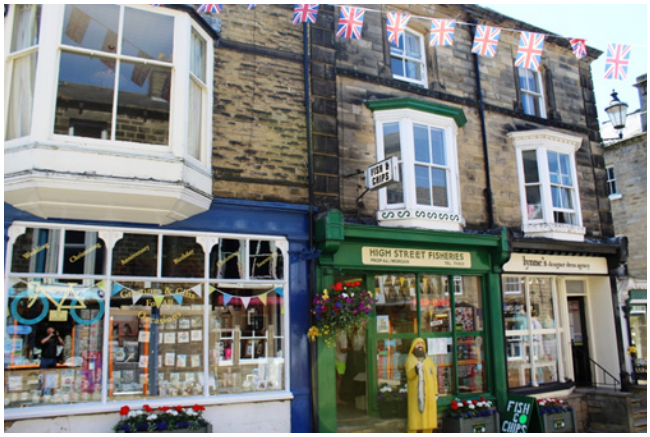
Outcrops of limestone provided quicklime for agricultural and building purposes. Most of the traditional building stock is constructed with an inner and outer face of sandstone set in a lime mortar with rubble-stone infill in the core of the wall.



Structures were built on shallow foundations with no damp course, relying on the permeable or hygroscopic nature of the lime mortars and renders to avoid dampness or moisture retention. Historically, sandstone flags were cleaved to form roofing slates laid in diminishing courses with larger stones at the level of the eaves and smaller tiles along the ridges. However the coming of the railways in the 19th century brought Welsh and Lakeland slates into the area.



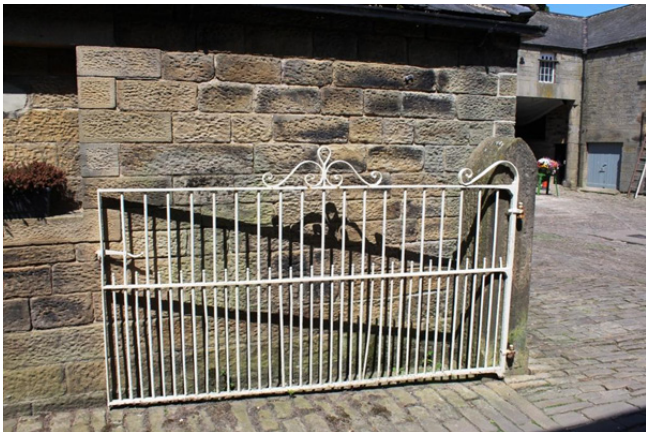
Within the small towns such as Pateley Bridge, shops, offices, places of worship and of entertainment provide a rich variety of building form and detail telling a story of independence from the outside world but a prosperity which supported rich architectural adornment and detail. These features are now integral to the recognised character of the area and their conservation is important to local distinctiveness.

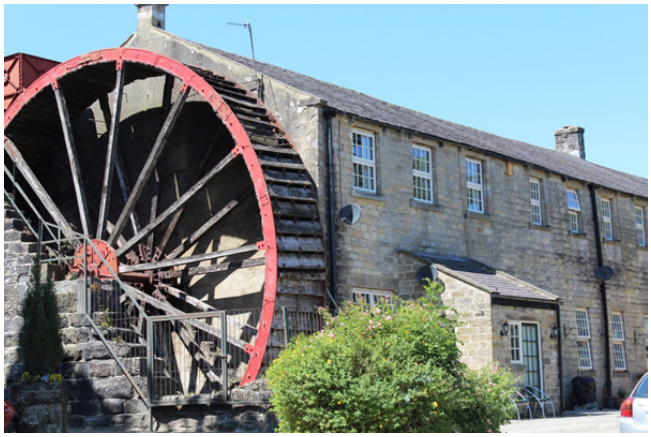


Building conservation: A historic building is a carefully balanced structure providing shelter for its occupants and resistance to weather erosion. It is a breathable entity where moisture content in walls and surfaces is regulated by the permeable nature of materials and air flow throughout the property. In order to maintain its continued survival, damaging alterations must be avoided but sensitive upgrading to reflect contemporary living requirements is perfectly reasonable. Intervention in the building system must be undertaken in an informed manner where the principles of the original construction are recognised and maintained.

Setting: The setting of an historic building contributes greatly to historic character and appearance, and can include traditional floor surfaces such as flagstones and cobbles, period walling and ironwork, and subsidiary structures such as bread ovens, pig sties, wells, waterwheels, etc that often reveal links to an agricultural or industrial past.

In Nidderdale the integral activities of farming and lead mining extend the setting of buildings and settlements far into the landscape and support interpretation through many visible features.

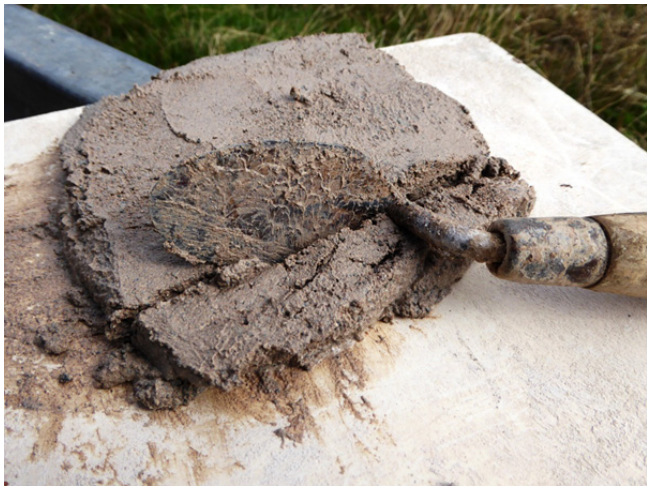




REPAIRING AND MAINTAINING HISTORIC BUILDINGS

Lime mortar: Lime mortars work by providing a flexible bedding medium for the stone walling. They are able to absorb the gradual stresses of seasonal ground movements, thermal excess, and the wetting and drying of rainfall and humidity. Over long periods of time the mortar is sacrificial being softer and more absorbent than stone, wicking moisture from the walling and evaporating it from its surface matrix. In times of frost it can be vulnerable to microscopic shedding of its outer skin; small drops of water expand as ice is formed and particles of sand become dislodged. Such erosion commonly takes hundreds of years before repointing is required. At this point a simple analysis of crushing original mortar to a powder and agitating with water in a clear glass jar will reveal the colour and type of component material, with larger items settling at the bottom and finer aggregates and sand uppermost. Lime will dissolve in the water but the mix is commonly 1 part lime putty to 3 parts sand/aggregate by volume. If existing pointing has eroded well behind the face of the adjacent stonework it should be carefully cleaned/ removed using a plugging chisel to a depth of 1½ times the width of the joint.

All loose and deleterious material should be blown (a leaf blower is ideal) or washed from the joint and the prepared mix well rammed into the wetted joint, taking care to avoid smearing excess material on the face of the stonework. Often stonemasons customise trowels by shaping with an angle grinder to create a round-ended 'spoon' trowel ideally controlled to follow the contours of jointing particularly in rubble stonework. By compacting the mortar on a hawk (a mortar holder) to create a bed approximately the same width as the joint to be filled it becomes easier to cut 'slices' that can be pushed into the joint without any excess staining the masonry.



The mortar should be left proud of the joint to begin its setting and in periods of hot weather, winds or rainfall which would cause rapid drying or washing out, protection with hessian is necessary. When firm enough, usually in one to three days depending on time of year, the mortar may be scraped back to the face of the stone and tamped with a stiff bristled brush to expose the aggregate. This creates a weathered surface with a greater surface area than a smooth finish so improving permeability. Such work maintains the original technology of the building.

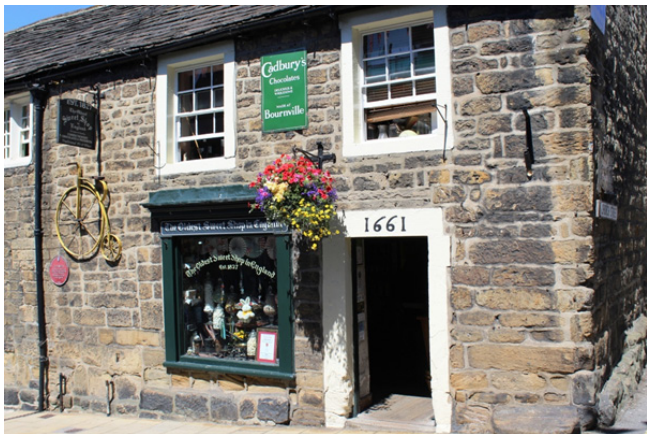
However many buildings have been disfigured by imprecise cutting out of old mortar with an angle grinder and commonly replacement with a hard sand cement mix that seals the joint and destroys the wicking nature of lime. Stone or brickwork then remains damp for much longer periods and may remain saturated presenting a vulnerability to frost attack and gradual delaminating.

This situation is compounded if 'strap' pointing creates ledges for water to be directed into the walls as well as changing the overall aesthetic. By sealing external jointing, moisture is more likely to travel to an internal face onto flooring or into plasterwork to seek evaporation. Ground moisture can also rise by capillary action and thereafter support fungal growth. If a new insulated floor has been inserted into a building it is even more important to maintain breathability in the walling as this then becomes the main conduit for the release of moisture sodden earth.

Lime plaster: Traditional building in Nidderdale maintained solid wall construction principally up to the Second World War with internal walls lime plastered. Replacement with cementitious or gypsum mortars traps dampness in the walling often leading to moisture travelling considerable height up the walls and presenting a cold, damp, mould embedded surface which can be injurious to health as well as aesthetically disfiguring.

Guttering and downpipes: Keeping a building dry also involves attention to rainwater collection and disposal. Guttering and downpipes should be maintained in sound operational condition and ground drainage working efficiently to avoid ponding or localised saturation, particularly close to the base of walling. If localised water collection occurs it softens the ground and reduces its load bearing capability promoting subsidence or bulging as differential support occurs between the outer and inner leaves of a wall.

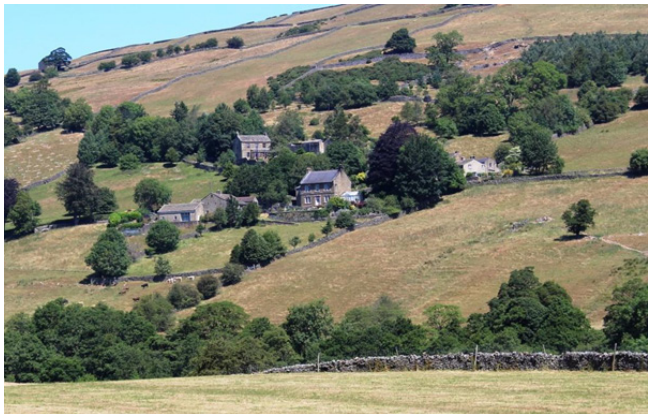
Windows: As most older buildings in Nidderdale originate from the 18th/19th centuries windows are commonly small-paned, single-glazed wooden structures of casement or sash design. The elegant design of the windows contributes significantly to historic character and their retention or replication is an important component of maintaining the outstanding beauty of the area. Varied window designs of different architectural periods similarly contribute to the story of a building's evolution.



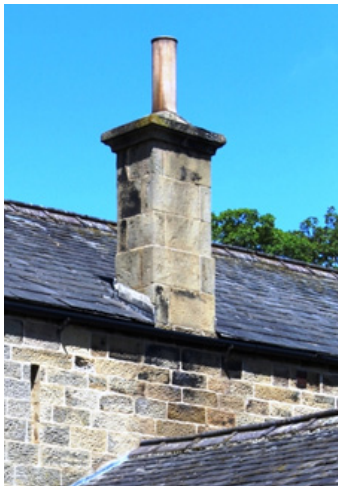
Timber used in historic windows was carefully selected to include highly resinous slow growing Baltic and Canadian pines and knot-free indigenous hardwoods. They should be considered an irreplaceable part of the antique of a building and every effort made to safeguard their retention and like for like repair where necessary. A skilled joiner is able to carefully splice in replacement elements, commonly bottom rails, using closely matched timber in terms of species and grain alignment. Where thermal upgrading is a requirement then use of discreet draught-proofing seals are particularly

effective. Secondary glazing with parting frames aligned to sashes or mullions achieves an invisibility which maintains period appearance. Thick well-fitted curtains or retention of/making operational internal window shutters similarly create very noticeable reduction in draughts.

Roof: The roof of an historic building comprises a significant visible area of the external envelope of houses and cottages in Nidderdale particularly as the landscape topography gives added prominence.



It is therefore important that traditional materials are retained in refurbishment works and the use of alternatives such as concrete tiles, fibre cement slates or Far Eastern stone are avoided as these change both the appearance and the weathering characteristics of an historic composition. Similarly chimneys comprise a significant, often highly detailed feature of a roof profile and should be retained and not demolished even when changes to heating systems are embraced.



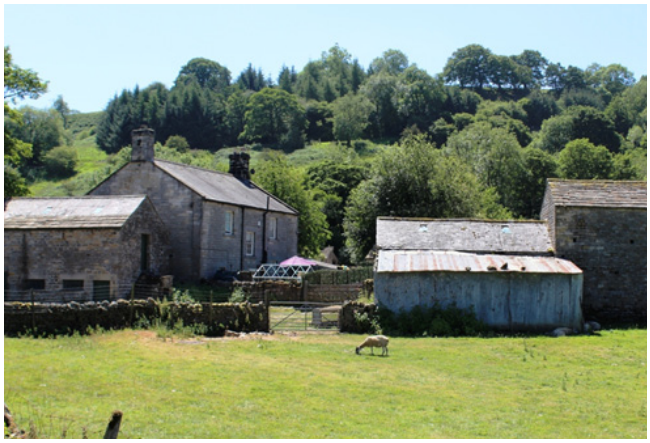
Historic interiors: Most traditional buildings have a language of architectural detail which extends throughout a structure and is closely related to the style at the time of construction. Examples such as wooden panelled doors, fireplace surrounds, fitted cupboards, panelling, staircases, etc all contribute to period character and should be retained. Later alterations of a high quality further add to this interest. Not only does this retain the period aesthetic but frequently gives added economic value to a building.

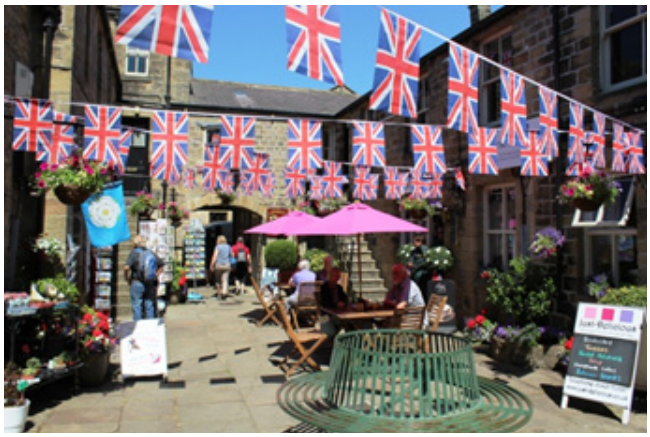
ENERGY CONSERVATION

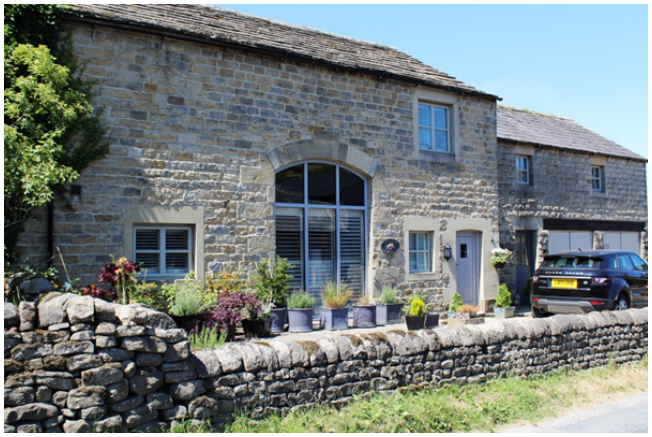
Historic buildings with thick walling, deep reveals for windows and large overhangs at eaves level are designed to resist the impact of excessive weathering. However, simple additions to fixtures and fittings such as closely fitted brush type seals on the bottom of doors, reflective foil behind radiators, thick entrapped air underlays on timber upper floors, and good quality (ideally breathable sheep's wool) loft insulation, reduce heat losses and supplement energy saving appliances elsewhere in the home.

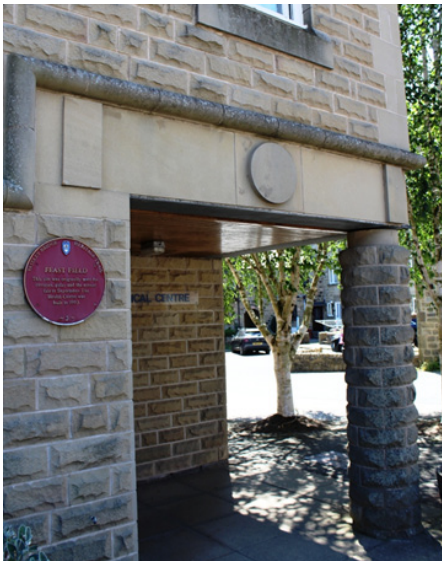
NEW DEVELOPMENT

Changing patterns of farming and industry have left distinctive buildings and areas of townscape obsolete in terms of their original use but they remain key features in maintaining historic character. Re-use provides opportunities to secure the long term maintenance and conservation of such buildings and, if sensitively executed, enhances individual structures and locations. Whilst concessions need to be made to accommodate alternative use, retention of original openings and features can allow a building to be clearly interpreted and display its history and evolution.

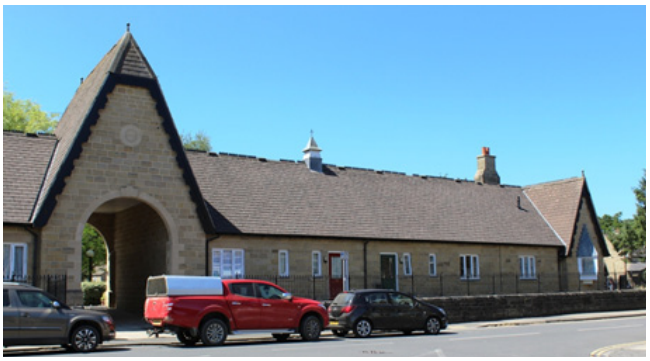


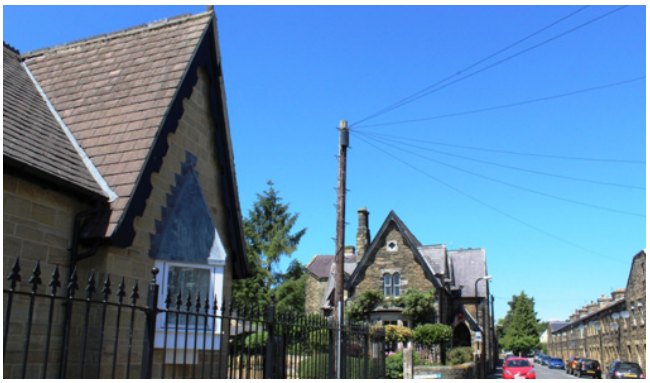


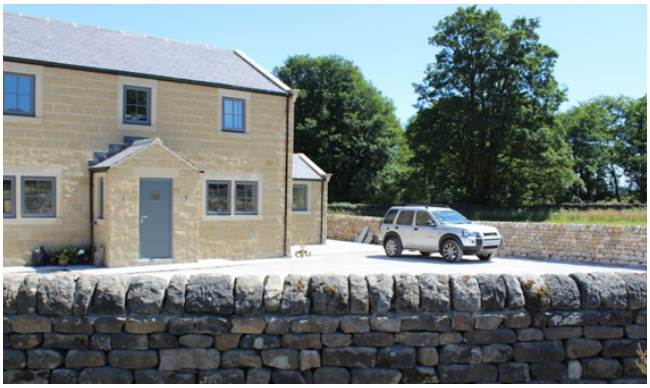




With new design and extensions to historic buildings the starting point is to understand the predominant character and detail of the host building or site and either accurately embrace the original site or design in a contemporary manner utilising form and materials that are complimentary and compatible with the location. Pateley Bridge has many successful examples of this approach.







CONCLUSION

Any intervention in a historic building should respect historic features and details, and repair rather than replacement should be the primary objective. Maintenance of breathability is key to ensuring that dampness is not encouraged or created with consequent support to fungal and insect attack. New design or extension that pays due regard to context will be more successful and maintain the outstanding character of Nidderdale and its dramatic local environment.

Prepared by Colin Richards, CJR Heritage Services Ltd. 2018

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