

Planning design and Heritage statement

Brookdale Barn

Site location: Land to the rear of 31 Brookdale, Dale Road, Elloughton, Hu151hy

Project: Design of low impact 'beyond zero' eco house

December 2023_Rev B

Introduction:

This report is prepared to support the planning application for a beautifully simple and elegantly designed 3 bed 'beyond zero emission' home.

The proposed occupants would be the current owners of Brookdale who are looking to stay within the local area and downsize from the main house Brookdale.

The couple who currently live within Brookdale have 2 older children who have grown up at Brookdale and are now continuing their studies at university and pursuing their international professional sport careers.

Proposed site:

The proposed site is a heavily screened, sloping, underused northern end of the residential curtilage of 31 Dale Road, Elloughton.

The proposed scheme would occupy less than 23% of the residential curtilage of 31 Dale Road (Brookdale) leaving the parent site at 31 Dale Road a very meaningful and useable large garden for such a property.

Brookdale would retain a very large garden to front, sides and rear with a 3 bay oak framed garage and ample space for parking, tuning vehicles within the site. The retained land at Brookdale is sizeable especially to the rear garden which suitable size to play a meaningful game of short tennis, football or golf croquet.

The proposed design has been prepared by 2 local RIBA award winning architects with specialism in super low and zero energy housing. They have worked for many years in the design of low energy housing and have contributed chapter to a publication by the Rowntree Trust on the future of UK housing design. Their work as designers has been published and exhibited internationally and their design work is part of V&A permanent collection.

Existing site use and site history / heritage statement

The owner and residents of 31 Dale Road have used the proposed site for a variety of residential amenities over the past 11 years including at one time a small vegetable plot, large pond, trampoline play area and most recently training area for the applicants 2 children (now approaching their 20's) who are national (British team) / international level athletes with specialism in mountain biking.

The proposed site is mostly laid to grass / gravel and low shrubs with very well-established high hedging to the South, North and East. There is a gravel pathway border at the far end of the garden space and it is the intention to retain this feature.



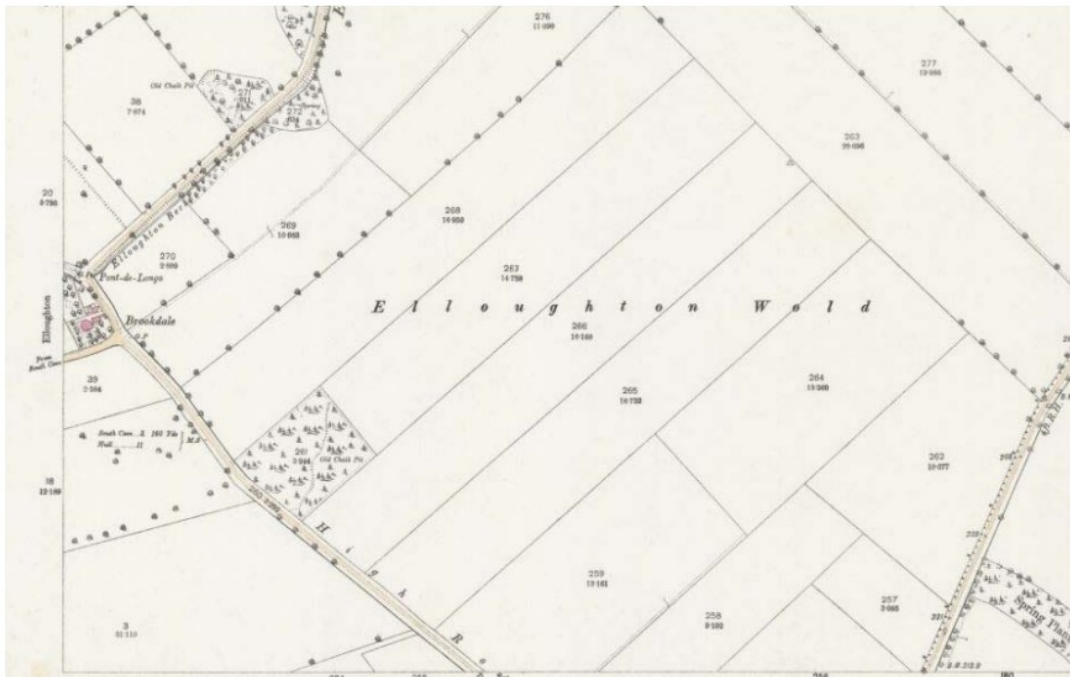
Image: recent photo of proposed site

Historical research

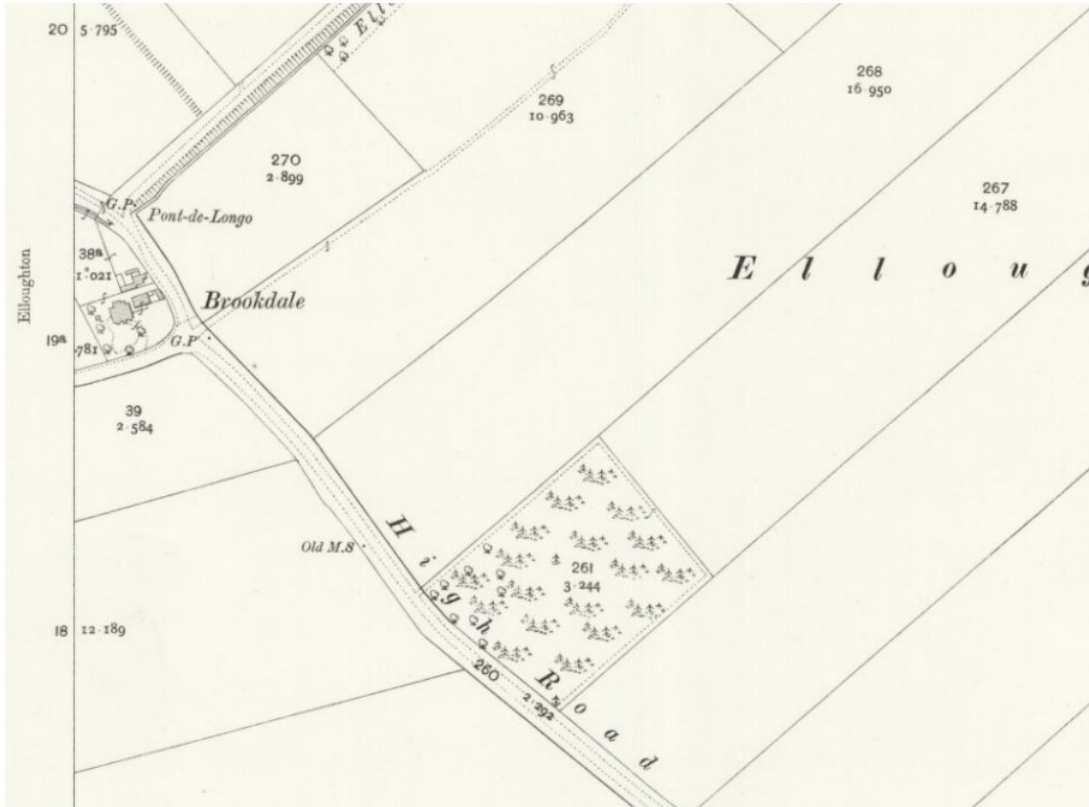
Following an in-depth study of the plans at the history library there is no evidence of any previous building or activity on the site. The plans below highlight the site area over a wide range of historical mapping data.



1895 – First evidence in map showing Brookdale (31 Dale road)



Map detail zoomed in on 1890 map – Brookdale shown pink middle left



Further map from 1890 – showing possible earlier routing of brook along bottom garden boundary of Brookdale.



Image :Photo of proposed site looking towards property named as 'Fir Trees' - Over the past 11 years the site has been extensively worked for many years as vegetable patch, large pond and recreational area including sunken trampoline and mountain bike training jumps. The gravel path along the bottom edge of the site would also be retained.



Image: photo showing some of the earth works from previous pond and mountain bike training jumps – soil is mostly dark top soil with typical chalky shale very common in this area.

Setting and scale within Conservation area

The design direction for the proposed scheme is for a high quality contemporary rural style building with a barn like scale and feel. The scale and form of this barn type building is common within the conservation area of Elloughton and also adjacent settlements in Welton, Brantingham and Ellerker.

The proposed building would be bungalow type design with bedroom accommodation in the roof space. Roof lights will be provided at high level so there is no loss of privacy or amenity to adjacent properties.

There would be a single storey garage and entrance porch building which is part earth sheltered by the sloping site and existing and proposed tall native hedging.

Below are some precedent study examples of exemplar UK buildings which also follow this sensitive approach to high quality design and context.



Having considered the figure ground plan for this site the proposed design would sit comfortably along a clear cluster of smaller scale residential properties all of which are subservient to the principle elevations of 31 Dale Road / Brookdale.

By using the natural slope in the site and significant screening from existing established hedging the visual impact of the proposal is mitigated.

The siting of the proposal is specifically considered to ensure alignment away from key vista's and the proposal will be an enhancement to the conservation area setting in providing a quality piece of contemporary architecture which is delicately nestled into the site.

Whilst none of the views to and from of through the site are strategic views the applicants as leading professionals in this area of design have considered all key planning strategic guidance when developing their design so it is a net contribution to the quality and beauty of the setting.

Open space and amenity land

Compared to the other surrounding properties both 31 Dale Road (Brookdale) and the new proposed Brookdale Barn would retain significant open space around each property. The layouts also take into consideration amenity of adjacent properties and there is no window less than 18m to a facing residential window.

As above we have set out how great care has been given to consider views through into and out of the conservation area. This is one reason why the scheme is pushed more towards the North East boundary so the view up the long driveway of Brookdale is not impacted.



Image: Photo from Dale road towards dominant front elevation of 31 Dale road 'Brookdale' – the view up the long driveway to the landscape beyond is retained.

Essentially the proposed scheme hides behind the principal elevation of Brookdale from Dale Road and uses the sloping site and tall native established hedging to screen itself.

Another key view into the conservation area is from the road as you walk down towards Peggy farrow lane which is a public footbath and bridleway. Whilst most views will be from people in moving cars there are occasional walkers on the road who will approach the site from the direction.



Image: View from road towards proposed site. Site is heavily screened by evergreen and deciduous planting. Also note no public foot path to view of site is mostly from vehicles.



Image: View down Peggy farrow lane (public footpath) with proposed site to right hand side – note: site is not visible due to significant screening from mature planting, fencing and minimum 15m distance and also has the internal private road between this lane and the site.

There is a very limited view towards the site from Peggy Farrow lane which is a public foot path but this view of the site is screened by evergreen hedging, tall fence and dense tree border as seen in the below:



Image: View directly towards the rear elevation of Brookdale – site is not visible due to heavy established hedging screening

Site access and waste collection

Access to the site would be via private lane which serves 2 other properties. Waste collection would be as currently provided at the end of the lane with residents taking out and taking back in their bins and recycling on collection days.

There is no requirement currently for a waste collection vehicle to access the site but there is an existing turning head within the access road which is currently used by delivery vehicles. As shown on the plans there is sufficient space within the proposed site to enter and exit to Dale Road in a forward gear.

Lighting:

There would be no high-level lighting and all lights low level lower power LED for wayfinding – these would be powered from the onsite solar battery storage system. This is to ensure the character of the conservation area remains a low light area as existing. It is also beneficial to wildlife to have low level lighting rather than elevated spotlights.

Boundary treatment:

North, East and West boundaries will remain as existing established dense and tall evergreen native hedging mix. The North boundary also features a traditional local style black metal estate railing which was installed by the current owners. This would be retained and enhanced with a metal gate in the same traditional style.



Images of existing boundary treatment – (left to right) East boundary, Northern boundary, Western boundary all mix of evergreen and native dense hedging. The new Southern boundary will be a newly planted semi mature hedge to match the other boundaries as shown here.

Environmental strategy

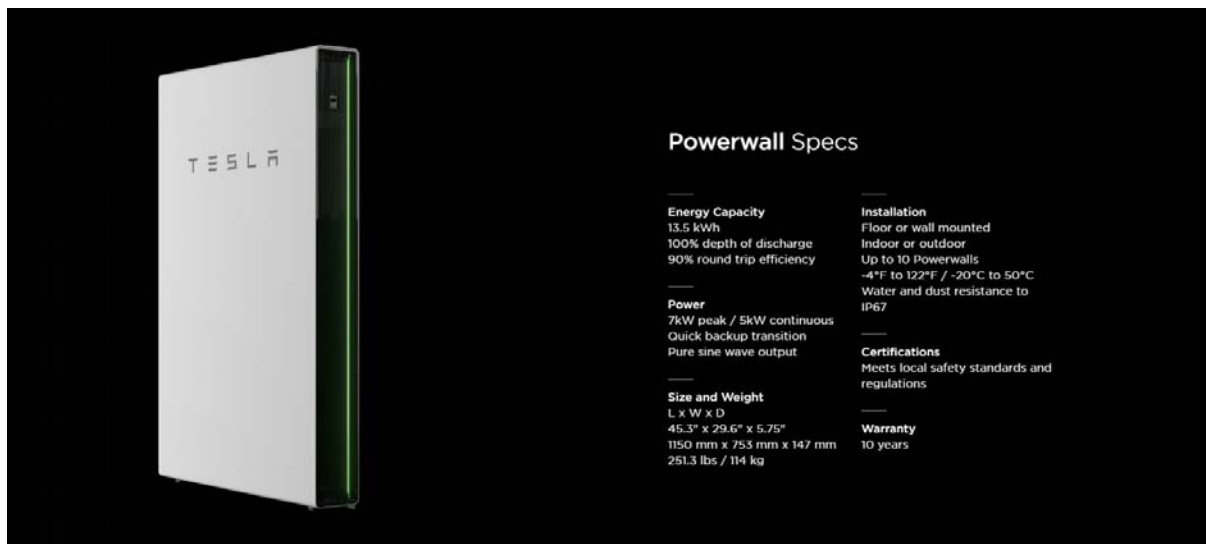
The environmental design of this proposal is a key driver for both its location and design. In considering designing a net or below zero home orientation a core understanding of passive house design is a key driver.

The design aims to capture as much solar gain for heat internally to the building and also benefit from solar panels where possible. Given the site setting in a conservation area the area of solar panels face south west inwards to the conservation area and are not visible when looking into the conservation area.

Once the building has gathered the energy, the proposal is to hold onto it with storage in batteries and also within the warmth of the building fabric through the use of thermal mass.

The solar panels will be combined with 2 battery storage systems which will provide the majority of the power for the property and sufficient to keep charged an electric vehicle.

The battery solution proposed are the Tesla 13.5Kw units which can also take off peak power to make the system more efficient.



Combined with excellent air tightness and insulation levels far in excess of building regulation requirements the property aims to be 'net zero' in terms of carbon emissions in use – it may even be able to operate as a nett generator of power and feed back to the grid during summer months.

Additional space heating will be provided by underfloor heating powered by air sourced heat pumps.

We considered ground source heat pumps but feel that given the high level of insulation the lower heat output from air sourced will be provide ample space heating in addition to stored solar power in the house batteries. As a result of these innovative solutions there would not be a need to connect the property to the gas main.

The proposed scheme will also gather and store rainwater as part of a grey water recycling system and use this for garden irrigation and other non-potable uses. This also has the added benefit of not discharging rain or surface water into the mains water systems. The proposed design benefits from the exiting mains sewer connection which runs across the site and is less than 25m away.

Construction materials and methodology

The construction of the building would be traditional with lightweight thermally efficient brick and block as its internal skin and super insulated skin. Steel would be kept to a minimum with some framing and bracing to the end gables and openings.

The elevations would then be wrapped in timber skin and over clad in a high quality 'heritage style' metal standing seam system. This is often used on the roofs of churches and chapels as weathers to a dull grey, lead like finish. It is also highly durable, and maintenance free meaning a long useful life and retains high quality look and feel for many years.

Gable ends would be clad in part with responsibly sourced high quality hardwood timber 'stop start' cladding and weather struck boarding and be left to weather down to a dull grey silver over time.

Windows frames would be dark grey matt finish high efficiency units with thermally broken frames and double and triple glazed openings. The roof lights would be low profile heritage type.

The floor would be a super insulated raised beam and block system to provide both thermal mass and suitable subfloor for highly efficient underfloor heating connected to the air sourced heat pumps.

Site access

All site access would be via the existing private road would then be repaired and resurfaced up to the entrance to the new site after construction is completed.

No material will be stored near any protected trees on the site or adjacent sites. Any waste materials from the construction process will be separated for recycling where appropriate. Image below shows existing private access road.



Image: Existing private access road currently serves 2 properties – new property entrance will be to lhs of this image

Trees

There are no trees on site other than some small saplings planted by the applicant. These trees will be retained and allowed to mature. Further suitable scaled native trees will be planted along with semi mature dense hedge to the Southern boundary with Brookdale.

Appendix: High efficiency long lasting solar panels proposed – 25 year operational life



DUAL GLASS MONOCRYSTALLINE MODULE

PRODUCT: TSM-NEG9.2B

POWER RANGE: 400-425 W

425 W

MAXIMUM POWER OUTPUT

0/+5 W

POSITIVE POWER TOLERANCE

21.9%

MAXIMUM EFFICIENCY



Small in size, bigger on power

- Generates up to 425 W, 21.9 % module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping, lower series resistance, improved current collection and enhanced reliability
- Reduces installation cost with higher power bin and efficiency



Dual-glass Design, High Reliability

- Excellent fire rating and resistance to harsh environmental conditions
- 5,400 Pa snow load and 4,000 Pa wind load (test loads)



Maximize Energy Harvest

- Up to 25 years product warranty and 30 years power warranty
- 1% first-year degradation and 0.4 % annual degradation enabled by N-type technology

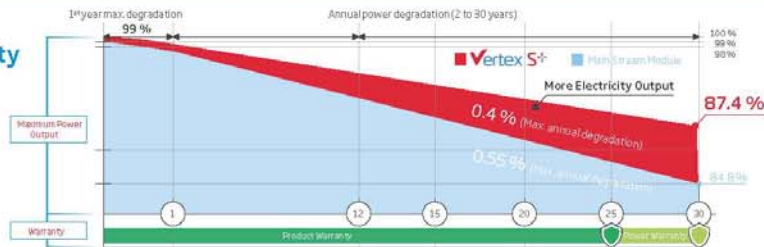


Universal solution for residential and C&I rooftops

- Designed for compatibility with existing mainstream inverters, optimizers and mounting systems
- Perfect size and low weight for easy handling. Optimized transportation cost
- Flexible installation solutions for system deployment

Extended Vertex S+ Warranty

- 1%**
1st year max. degradation
- 0.4%**
Max. annual degradation from year 2 to 30
- 25 Years**
Product Workmanship Warranty



Comprehensive Products and System Certificates



ISO 9001: Quality Management System
 ISO 14001: Environmental Management System
 ISO14064: Greenhouse Gases Emissions Verification
 ISO45001: Occupational Health and Safety Management System

