



**UNIQUE FEATURES
OF THE REDEVELOPMENT
OF BORE HILL FARM:**

**INTEGRATED BIOGAS PLANT
&
B1 EMPLOYMENT UNITS**

**Bore Hill Farm
Warminster
Wiltshire**

Introduction

This document is designed to be read as a free standing summary as justification for the development proposals Malaby Biogas is putting forward for Bore Hill Farm, Warminster, Wiltshire. In recognition of the rural character and redundant use of Bore Hill Farm, the redevelopment of part of the land and run down buildings fall into two distinct areas:

1. The redevelopment of the existing farmstead of redundant farm buildings, yards and access way to create a new group of low impact commercial business units (Class B1 use) specifically designed to attract new business employment opportunities to the Warminster area. There will be approximately 1,300 sq m of office and light industrial space divided across 6 buildings. The layout recognises the farmstead configuration of the existing structures and the agricultural heritage of the site.
2. The installation of a small biogas generating plant in the disused field adjacent to the A36 road which forms the south western boundary of the property. The biogas plant will process imported farm slurry and food waste to produce biogas to generate renewable heat and electricity for onsite and export use.

There will be a symbiotic relationship between the two areas as aim is for the biogas plant to provide affordable renewable heat and power to the commercial units. The sites will also share access to Deverill Road which forms the eastern boundary of the site and which, via a roundabout at the southern end of the site provides excellent access to the main trunk road transportation network throughout the south west region. Due to the interdependency of the two uses and in recognition that the bulk of development lies with the biogas plant, the Bore Hill Farm proposals are being designed and submitted as one waste development planning application. This has been done in agreement with Wiltshire Council.

The information in this document has been collected and assessed by a range of specialist consultants. Their names and areas of expertise are shown at the end of this document.

This document is intended to provide information identifying four features of the proposed development at Bore Hill Farm which are considered unique and which drive its design and implementation. While there is, inevitably, a great deal of cross over between the unique features, they have been identified separately to ensure a clear understanding of the benefits that the proposals offer.

Throughout the design development of the scheme certain central principles have been used to ensure integrity, success and originality. They are:

- Development in sympathy with the surroundings
- Application of sustainable and environmentally beneficial methods
- Useable and efficient facilities
- Promotion of innovative technologies with consideration for their setting
- Creation of interest and employment

Each of the four unique features is addressed on the following pages.

1. Strategic Location

Bore Hill Farm is located on the southern edge of Warminster in the land between the A36T, the urban border of the town and Deverill Road which is the southern access between the town centre and the A36T Warminster By Pass. The junction of the A36T and Deverill Road is a roundabout forming the southern boundary of the site which also acts as the connection with the main A350 road to Poole, Dorset.

The A350 is the main road between the Poole and Bournemouth to the M4 at Chippenham. The A36T is the main trunk road from the southern ports of Southampton and Portsmouth to Bristol. Ten miles west of Bore Hill Farm is the junction of the A36T and the A303T which provides dual carriage way access to the M3 motorway to the east and Exeter to the west. Via the interconnection of the A36T, A350 and A303T direct access to Poole, Bournemouth, Southampton, Portsmouth, Andover, Swindon, Chippenham, Bristol, Exeter and the M3 and M4 motorways is within 90 minutes drive of Bore Hill Farm. Both the A36T and A350 around Warminster are Strategic Lorry Routes designated by Wiltshire Council to encourage HGVs to minimise their impact on the environment and local residents.

The county town of Trowbridge is 10 miles north along the A350, Frome in Somerset is 8 miles to the west and Bath and Salisbury are 16 and 20 miles west and east respectively along the A36T.

Given the above road network connection it is clear that the proposed development will be uniquely placed to ensure that all vehicles using the site will have minimal impact on the traffic load of Warminster. Economies of scale can be also be used to ensure that financial and carbon transportation costs can be minimized as much as possible.

In addition to the benefits of road connections the site is also well placed to gain from good connections to the electricity network. To export the electricity generated in the biogas plant to the national electricity network a sufficiently robust grid connection is required within an economically feasible distance. At Bore Hill Farm this can be achieved by establishing a short underground cable route to a connection point on Ludlow Close. This has been approved by the local distribution network operator and will be installed with no visible overhead cables. Establishing a low impact and economically viable grid connection is often one of the major hurdles to the development of biogas plants in the UK. Farm locations are often in isolated positions which require expensive and intrusive over head connections across considerable distances of open farm land. Additionally the poor road connections do not allow for the efficient use of network capacity in the event of a good grid connection being available.

Bore Hill Farm benefits uniquely from its location with excellent road and grid connections which ensure that the flows of input material and exported energy and fertiliser digestate combine as efficiently as possible. The high proportion of transport related costs in the operation of any business venture mean that existing network capacity needs to be utilised as efficiently as possible. This is true for economic costs as well as the softer environmental costs relating to carbon consumption and the emission of greenhouse gases.

2. Current Site Redundancy

Bore Hill Farm had been vacant and for sale for a long period of time during which it had failed to sell privately and at auction. The standard of the buildings had been allowed to deteriorate to the point that the farm house was not habitable and the farm buildings were in a very poor state of repair. Local security concerns had meant that modern roller shutter doors and motion sensitive external lighting had been installed to reduce the risk of further damage.

During 2009 the farm house was renovated to preserve its integrity and with the enclosure of the garden it became a viable dwelling that has subsequently been let. Two of the existing buildings have been temporarily modified to provide secure storage space and site welfare for use during the current planning phase of redevelopment.

The current land uses are not sustainable in the long term because the facilities are rudimentary and inadequate to support any viable modern farming business. The grass quality is poor and the topography and available area do not allow for efficient land management practices. Topography also severely restricts the usability of the land as it restricts the ability to provide safe access ways to yards, buildings and the land. Thus day to day vehicular movement of agricultural equipment is severely limited to the point that economic viability is not possible.

Perimeter fencing and hedgerows are in poor condition with extensive repair and replacement work needed to ensure proper long term use of the land. As a result of neglect and dilapidation over recent years the ecological merits of the site are poor with little ungrazed cover for ground species and similar lack of facilities for aerial species either in trees or buildings.

External influences which contribute to the poor agricultural amenity of Bore Hill Farm include:

- Noise, air and light pollution associated with road traffic from the A36 and Deverill Road
- Litter in verges and fields from road side disposal
- Land locked nature of the site makes incorporation into larger farms unfeasible
- Existing land area is too small to make it economically viable as a farm.

Notwithstanding the redundant nature of the site it retains an important position on the southern edge of Warminster acting as a transition between the urban development to the north and the rural landscape to the south. Ensuring that this transitional character of the site is retained is crucial to the successful redevelopment of Bore Hill Farm. By implementing the redevelopment proposals the site can be brought back into economic use. Applying the central design principles mentioned in the introduction will ensure that this economic use will be innovative and sustainable while also ensuring that there is sufficient consideration paid to the location, surroundings and previous land use. Ensuring that the agricultural heritage of the site is retained will be essential to this and it should be noted that the types of structures used in the proposals have been specifically chosen to fit within the farming character of the site. While having a biogas plant may not be a traditional farming use it is recognised as a legitimate operation to be supported in farm diversification and the types of elements used (silos, barn, containers and yard areas) are in common usage in normal farming operations.

Thus it is considered that the successful implementation of the proposals will be in keeping with the traditional use of the site and will ensure a successful future for Bore Hill Farm.

In order to implement the proposals it will be noted that a significant amount of land modelling and reconstruction will take place and the extent to which this is proposed is necessary to ensure the reduction of any impacts on the surroundings or the neighbouring residential developments. By utilising the land with the least economic use will ensure that the rural character of Bore Hill Farm is retained.

3. Geographical Farming Node

The biogas plant intends to take some of its feedstock inputs from farm in the form of cattle slurry. Although the majority input volume will be food waste there is an identified difficulty in farmers disposing of their cattle slurry on the farm in the winter months. This arises from the implementation of the Nitrate Vulnerable Zones (NVZ) regulations which state that farmers are not allowed to dispose of their slurries directly to the land during closed periods which are determined by soil type and cropping regime. In order to comply with NVZ regulations farmers are obliged to increase their slurry storage capacity, at their own expense, to accommodate production during the closed period. As a solution Malaby Biogas intends to offer digestion capacity at Bore Hill Farm to assist local farmers in complying with the NVZ regulations.

The biogas plant also intends to control the feedstock quality to ensure the fertiliser digestate complies with the Publicly Acceptable Standard 110 (PAS110). This standard has been developed specifically to provide quality assurance for the material output from anaerobic digestion and allows it to be reclassified as a product for beneficial use in agriculture. As a fertiliser the digestate will be able to assist farmers in increasing the fertility and structure of their soils at a lower cost than by using conventional chemical fertilisers. This is especially beneficial to chalk land arable farmers where fertility is low and the soil structure is thin. Due to the high proportion of non farm based feedstock being used in the biogas plant there will be approximately 200% more fertiliser by weight available for agricultural use compared to the farm slurries supplied as inputs.

By establishing a Farm Collaboration Scheme Malaby Biogas intends to offer the fertiliser at preferential rates to those supplying input slurries. For those participating to receive fertiliser without any input it will be provided at a very significant discount to chemical fertilisers.

As well as the unique feature of the Farm Collaboration Scheme, the biogas plant at Bore Hill Farm is also uniquely placed at the cross roads of differing agricultural practices. Different soil types and topography mean that Bore Hill Farm is located between livestock and arable farming which have differing needs and problems. The mainly arable chalk uplands of Cranborne Chase, the West Wiltshire Downs and Salisbury Plain have thin soils and open fields where crop production predominates. The more fertile lowlands of the Wylde Valley, Blackmore Vale and Somerset levels have wetter pasture land used for grazing and cattle production. Placed between these two forms of agriculture allows Bore Hill Farm to act as a conduit to direct fertility to land most in need and reduce nitrate pollution caused by the over spreading of slurries.

Finally it should be noted that by using the beneficial road network the transportation of slurries and fertiliser can occur with the minimum of transport disruption which often occurs with farms using small country lanes or driving through villages and towns.

4. Development Integration

At Bore Hill Farm there is the unique opportunity to site an energy production facility so close to a centre of energy consumption. By integrating the movement of the energy between the two from the point of design allows both sites to gain from the efficient use of the energy produced. While the cost of integration is high in terms of installing transfer conduits, pumps, valves, manifolds and metering equipment the resulting energy efficiency and reduction in utility costs will ensure that the commercial development is attractive to new or relocating businesses with an interest in energy security and positive environmental credentials. While the commercial development will be an independent self supporting venture, the security benefits of locating close to the biogas plant are clear.

Most biogas plants in operation across Europe are not well placed to maximise the use of the heat generated as a byproduct of their exporting electricity. By ensuring a beneficial use of the heat at Bore Hill Farm there is the opportunity to significantly increase the efficiency of the plant and its environmental credentials. The capital cost of implementation is high however the opportunity to apply some of the central principles means that it would make the Bore Hill Farm proposals unique.

The development proposals are intended to establish Bore Hill Farm as an exemplar development. To this end the biogas plant (and its integration with the commercial site) will command significant external interest and be used a reference in the establishment of other plants across the UK. Thus the benefits of the site to the local community and the broader renewable energy and waste management industry as an economic and educational resource will be considerable.

To this end the design of the site has incorporated a visitor centre to provide access and facilities to support the educational activities that will arise. In order to safely integrate the visitor centre into the operational activity of the biogas plant, a dedicated viewing gallery will be installed in the main reception building. One of the neighbouring commercial units will act as the main visitor centre with meeting spaces, educational resources and welfare accommodation. Additionally there will be closed circuit viewing opportunities in the main building to supplement the access provided via the viewing gallery.

As a whole, the innovative integration of the visitor centre in the design, construction and operational phases of the development will provide Bore Hill Farm with a unique opportunity to present itself as an exemplary educational resource as well as a leader in a growing sector of the renewable energy industry. While costly to implement, allowing broad access to the biogas plant will enable the development of educational events. The visitor centre will be able to host seminars, training courses or corporate education days to promote the broader sustainability aims that drove the initial redevelopment of the site. As a discreet business with wide community and industry attraction, the visitor centre will be able to promote renewable energy as well as educate interested members of the public and industry on the benefits of integrated sustainable development. Providing community use of such a unique resource will be a key factor in delivering the educational benefits and this will need to be closely managed with the economic development of such a resource.

Conclusion

Using its experience in sympathetically redeveloping redundant rural sites Malaby Biogas intends to establish Bore Hill Farm as a beacon in combining renewable energy generation, waste management and economic regeneration. By working within the limitations of the site and making the most of the opportunities it offers, a successful project will bring renewed life to a run down site. By identifying four unique features of the site proposals Bore Hill Farm can be established as an exemplary destination to educate and promote sustainability. At the heart of the proposals is the existing site and its position as a crossroads between town and country, redundancy and success and between waste and resource.

Identifying and promoting the unique features will help ensure the long term viability of Bore Hill Farm. The innovative integration of facilities will provide delivery of the unique features. Throughout the design process Malaby Biogas has worked to enshrine its central principles using modern technology to support a sympathetic scheme. By being true to the principles and recognising the influence the development will have on others Malaby Biogas will be able to bring success to a well supported scheme.

Consultant Team

Listed below are the members of the consultant team that contributed specialist information and assessments used in this document.

Company

nash
partnership

GL HEARN
Property Consultants

Macgregor + Smith
Landscape Architects

FMW
consultancy

JMH
James Miles~Hobbs
Rural Development Associates

SLR
CONSULTING

eg environmental gain

Specialisation

Architectural Design & Integration

Planning Advice

Landscape Integration

Transport Assessment

Logistics, Agricultural Inputs & Outputs

Land Modelling

Ecology & Environmental Integration