

Design & Access Statement

PROJECT TITLE

Outline Application for Erection of Subterranean Dwelling
and creation of new woodland and wildlife habitats

On land located at:

Denby Lane, Between High Flatts & Upper Denby,
Huddersfield, HD8 8XZ (E-421678 / N-407308)

JOB NUMBER

1179

CLIENT

Mr G Fisher

DATE

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Prepared By:

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1. Existing Use of Site

1.1 The site is located approximately ½ mile from Upper Denby village and 4 miles from the town of Penistone.

1.2 Previously a sandstone quarry, dating back to the early 1850's. It was one of many such quarries in the area (i.e. rushby delf (sandstone), birds edge quarry (sandstone), fall edge quarry (sandstone), green lane quarry and summer ford hill). Most of the surrounding area was more than likely constructed in the stone extracted from these quarries over the past 170yrs.

1.3 The land once formed part of Moor Royd Nook, now the neighbouring dwelling to the west.

1.4 The existing development site is currently waste ground, with the surrounding land being agricultural green belt land.

1.5 With a private gated access from Denby Lane from the south. Surfaced in gravel and hardcore, with stone boundary walls. Good sight lines in both directions along Denby Lane.

1.6 The site consists of an existing barn/storage shed and various small chicken/hen huts. The surrounding green belt land is currently used by the applicant for grazing livestock, including horses and sheep. The foundations of an old barn are also visible at the top of the site, which has long since been demolished.

1.7 Boundary walls are constructed in a mixture of stone and agricultural wire fences.

1.8 The site faces North, sloping down away from Denby Lane, leading to the existing dike. It enjoys views out over Denby Dale and beyond.

1.9 Neighbouring properties are located to the West, South and South East, all of which are located at a higher elevation looking North.

2. History of Subterranean Dwellings

2.1 There are thought to be fewer than 30 underground homes in the UK, each with a unique design and history. This number makes up a tiny fraction of the overall homes in Britain of around 20 million.

2.2 Under-hill near Holmfirth was the first "modern" earth-sheltered house in Britain and was built in 1975. It is now the home of its architect Arthur Quarmby, a pioneer of earth-sheltered buildings - the snuggest form of energy conservation. Mr Quarmby once quoted the American architect Malcolm Wells, who likened earth sheltering to 'drawing a blanket around one's shoulders.'

2.3 The potential of underground living was recognised in the West during the oil shortages of the early 1970s. The desire for sustainable building and energy efficiency saw a surge in the number of underground dwellings in the USA and Continental Europe in particular. There are up to 100,000 semi-subterranean or fully underground dwellings in the USA but, right now, Japan seems to be at the forefront of underground innovation. This overcrowded island has embraced the concept of subterranean living like no other nation. Its estimated around 40million people live underground in China alone.

2.4 Underground homes are among the most energy efficient dwellings in the world. Utilising the earth around them to provide unrivalled insulation and acoustic benefits, over that of traditional above ground dwellings.

2.5 Underground housing also provides much better protection against the elements.

3. Proposed use for site

3.1 The proposed development is to provide a family home, which can be used by the applicant, so he may run his business from the site, without the need for travelling too and from his current residence.

3.2 As well as the creation of a new dwelling, the proposals also include the formation of new woodland and wildlife habitats throughout the overall site. Landscaping is also proposed around the area of the proposed dwelling, to provide further enhancement.

3.3 The existing barn/shed is to be re-clad in a mixture of cedar wood and stone. The roof is to be replaced with a grass living roof and incorporates PV solar panels, which will feed across to the new dwelling and also store energy within the barn.

3.4 Accommodation comprises of five bedrooms with shared en-suites (three in total), atrium/viewing area, lounge, kitchen/dining room, cinema room, utility, two guest toilets and boiler room.

3.5 The whole dwelling will be built into the existing hillside and will be totally hidden from view from Denby Lane.

3.6 The neighbouring dwellings will not be effected by the development and their views will remain undisturbed to the North.

3.7 The external walls will be perforated, hexagon concrete, allowing grass and turf to grow through, forming a living wall. The roof will be turfed over and blended into the hillside and contours of the land. Sandstone extracted from the ground will be used to construct the inner faces to the walls and floors.

3.8 The large triple glazed atrium, teamed up with the inner double glazed rooms will provide two functions. One will be to allowing light and air to circulate through the rooms and be controlled by the user. The second will be to collect heat during the day and then allow that heat to be dispersed into the desired areas. This will also help to keep heat in during the winter months, which will be provided by a mixture of ground source heat pumps from the under floor heating and a biomass boiler for the hot water and additional heating as required.

3.9 Due to there once being a well located at Moor Royd Nook to the West and another to the East, it is appropriate for a bore hole to be drilled and utilised for the water to the dwelling. The bore hole will provide drinking water, whilst surface/rain water will be collected and stored for grey water (see environmental considerations)

4. Environmental Considerations & Provisions

4.1 Due to the building being underground, with only one exposed wall, the insulation and acoustic benefits over a traditional dwelling are huge. The thick, heavy insulated retaining walls, along with the insulating properties of the surrounding earth, result in the temperature of the building being maintained at a comfortable level throughout the year. It will therefore require less heating.

4.2 Triple glazed solar glazing is proposed throughout, to help maintain a good temperature and resist the effects of heat loss through the windows. This will also allow the building to be cool during the summer.

4.3 No piped gas supply is proposed for the dwelling. Instead a combination of two technologies will provide the hot water and heating. The first being a 23kw pellet burning, biomass boiler, which is carbon neutral and utilises renewable energy. The waste bi-products produced by the boiler can then be used as fertiliser for the gardens and surrounding fields. The second is a

ground source heat pump, which when linked to the underfloor heating will maintain a constant even temperature within the dwelling.

4.4 Rain water will be collected and stored in underground water storage tanks, capable of holding around 4000gallons of water (enough to provide an average family of four with 7 days supply of water). This will then be filtered and recycled back into the dwelling and used for washing and grey water. No mains water supply is proposed. Instead a bore hole will provide fresh drinking water.

4.5 A mains electrical supply will be provided, but will be heavily supplemented by a 4 to 4.5KWP solar system, with feedback loop. Producing approximately 3500KWHS pa. The panels will be fixed to the roof of the existing barn (as explained above).The energy will then be stored and called upon when needed. Any additional energy produced will be fed back into the grid, thus lowering the energy usage and costs of the dwelling. The solar cells should provide enough energy to power the building, without the need for calling upon the mains supply, although both will effectively cancel each other out, due to the feedback system. To further enhance this lighting fixtures are to be led with an average wattage of around 3 to 9 watts. The entire house could be lit and only draw around 1000 watts of energy. External lighting will have self contained solar panels and built in batteries to further decrease the energy footprint.

4.6 Recycled concrete will also be used as the sub-base layer for the hardcore, etc. By using recycled concrete it provides many advantages including keeping concrete debris out of landfill, reduces pollution and for every ton recycled, around 1,360 gallons of water and 900kg of co2 are saved.

4.7 Locally sourced recycled timber will be used throughout. For every ton recycled, over 18,000,000 BTUs of heat energy is saved.

5. Social Context

5.1 The applicant is happy for the building to be used as research for local schools or colleges, who are interested in eco/green design. Allowing pupils and teachers access to the dwelling to teach and learn about how we can be sustainable, whilst still creating great places to live.

5.2 There appears to be no impact on local services or the surrounding properties.

6. Planning Policies

6.1 NPPF Paragraph 14

'...At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking....'

It would be fair to say that the development is highly sustainable, using a variety of sustainable materials and building processes. The energy usage during the building life will also be extremely low, again adding to the sustainability.

6.2 NPPF Paragraph 126

'...local planning authorities should take into account:

....the desirability of new development making a positive contribution to local character and distinctiveness; and....'

2) Opportunities to draw on the contribution made by the historic environment to the character of a place....'

The design and construction method of this dwelling is distinctive and different, whilst drawing on the use of locally sourced materials. Only around 30 other properties like it exist in the UK to date, so one could argue that the desirability of such a bespoke and rare building can only provide a positive contribution to the local character of the area. With Huddersfield being the birth place for the idea of underground living and constructing the first underground house in the UK.

6.3 NPPF Paragraph 140

'Local planning authorities should assess whether the benefits of a proposal for enabling development, which would otherwise conflict with planning policies but which would secure the future conservation of a heritage asset, outweigh the disadvantages of departing from those policies.'

In essence the proposal would significantly add to the character of the conservation area. In layman's terms it is not a skyscraper or a factory. It's not a corporate designed, faceless development, with the sole intention to make money. It's a high quality development, which embraces all the best green and ecological features currently available.

6.4 NPPF Paragraph 197

'In assessing and determining development proposals, local planning authorities should apply the presumption in favour of sustainable development'

6.5 NPPF Paragraph 204

'Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition.'

The proposals include the creation of new woodland, with badger sets and rabbit warrens, throughout the whole site. By doing so will further enhance and increase the biodiversity of the site. All of which will meet the standards of environmental protection and practice set out in the UK Forestry Standard and its supporting guidelines and the habitats regulations 2008. Also by doing so it decreases the overall carbon footprint of the development and its overall impact on the land, drastically.

This type of biodiversity is also supported in NPPF Paragraph 117

'promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan'

6.6 PPS7 – Key Principles 1(vi) states:

'All development in rural areas should be well designed and inclusive, in keeping and scale with its location, and sensitive to the character of the countryside and local distinctiveness.'

It continues in Paragraph 4 with:

'Planning authorities should set out in LDDs their policies for allowing some limited development in, or next to, rural settlements that are not designated as local service centres, in order to meet local business and community needs and to maintain the vitality of these communities. In particular, authorities should be supportive of small-scale development of this nature where it provides the most sustainable option in villages that are remote from, and have poor public transport links with, service centres.'

The paragraphs below provide substantial to why we truly believe the development is justifiable -

PPS7 – Paragraph 11

'Very occasionally the exceptional quality and innovative nature of the design of a proposed, isolated new house may provide this special justification for granting planning permission. Such a design should be truly outstanding and ground-breaking, for example, in its use of materials, methods of construction or its contribution to protecting and enhancing the environment, so helping to raise standards of design more generally in rural areas. The value of such a building will be found in its reflection of the highest standards in contemporary architecture, the significant enhancement of its immediate setting and its sensitivity to the defining characteristics of the local area.'

Paragraph 12

'Many country towns and villages are of considerable historic and architectural value, or make an important contribution to local countryside character. Planning authorities should ensure that development respects and, where possible, enhances these particular qualities. It should also contribute to a sense of local identity and regional diversity and be of an appropriate design and scale for its location, having regard to the policies on design contained in PPS1 and supported in By Design2. Planning authorities should take a positive approach to innovative, high-quality contemporary designs that are sensitive to their immediate setting and help to make country towns and villages better places for people to live and work.'

The design was inspired by the work of the Huddersfield architect Arthur Quarmby, a pioneer of earth-sheltered buildings (as stipulated above).

Taking this into consideration the proposed dwelling and associated works, adds to the local identity and showcases the regional diversity of the area. The use of truly locally sourced materials and the location of the dwelling, further adds to what Mr Quarmby achieved in 1975. It reflect today's new and best technologies and energy conservation methods. Its shows what true 'eco' dwellings are about. Under-hill set a precedent, we are merely following that and improving upon it, making it relevant to its location and surroundings.

Paragraph 13

'Local planning authorities should prepare policies and guidance that encourage good quality design throughout their rural areas, in accordance with Annex C to PPS1, and utilising tools such as Landscape Character Assessments and Village or Town Design Statements, and the design elements of Village or Parish Plans prepared by local communities.'

This proposal promotes good design in rural areas, by utilising locally sourced construction materials and integrated design.

Above all it showcases what the quarries were about and what they provided. Chiselled into the hills, reflecting what lies beneath, standing as testament to the 170 years of quarrying in the area. Showing a modern use for an age old material.

7. Highways

7.1 Existing access from the highway provides good sight lines to the east and west of denby lane

7.2 The existing road surface is to receive an additional layer of gravel and hardcore. It is proposed that ten metres from the highway the road surface will be tarmac, so to prevent any gravel from being dragged onto Denby Lane.

7.3 Existing surface allows rain water to drain through and this will be left as existing

8. Supporting Documents

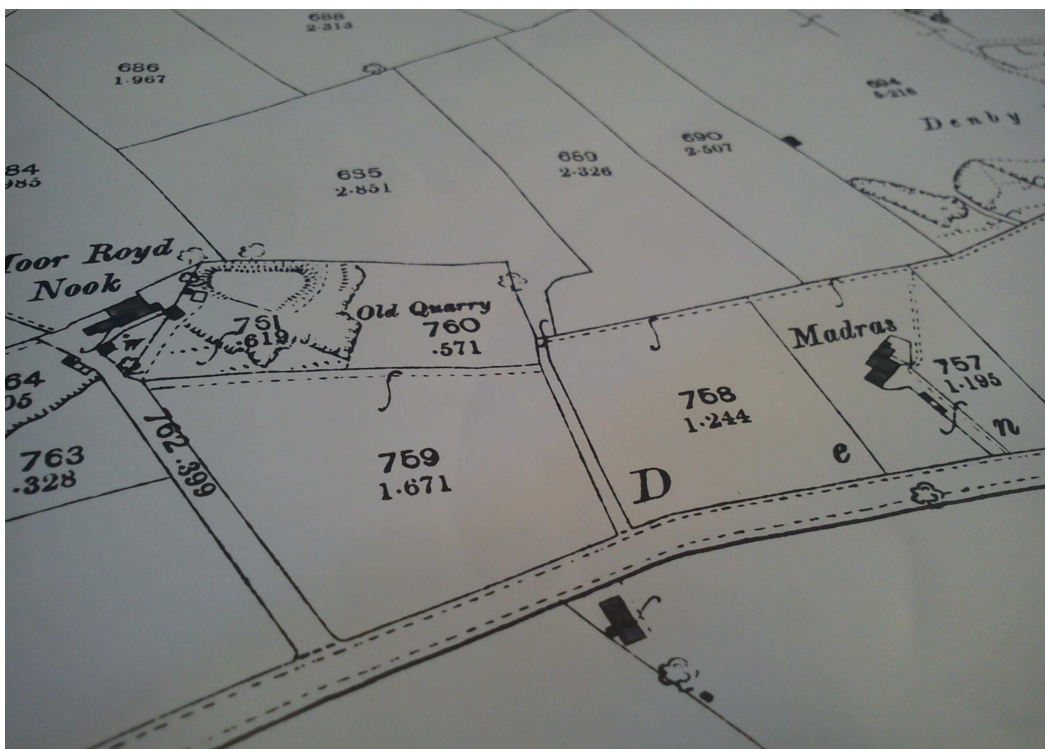
8.1 Cadvis3d drawing 1179 A(10)-01 Plans & Elevations – As Proposed.

8.2 Visuals and key features document – 1179 Introduction to Old Quarry House

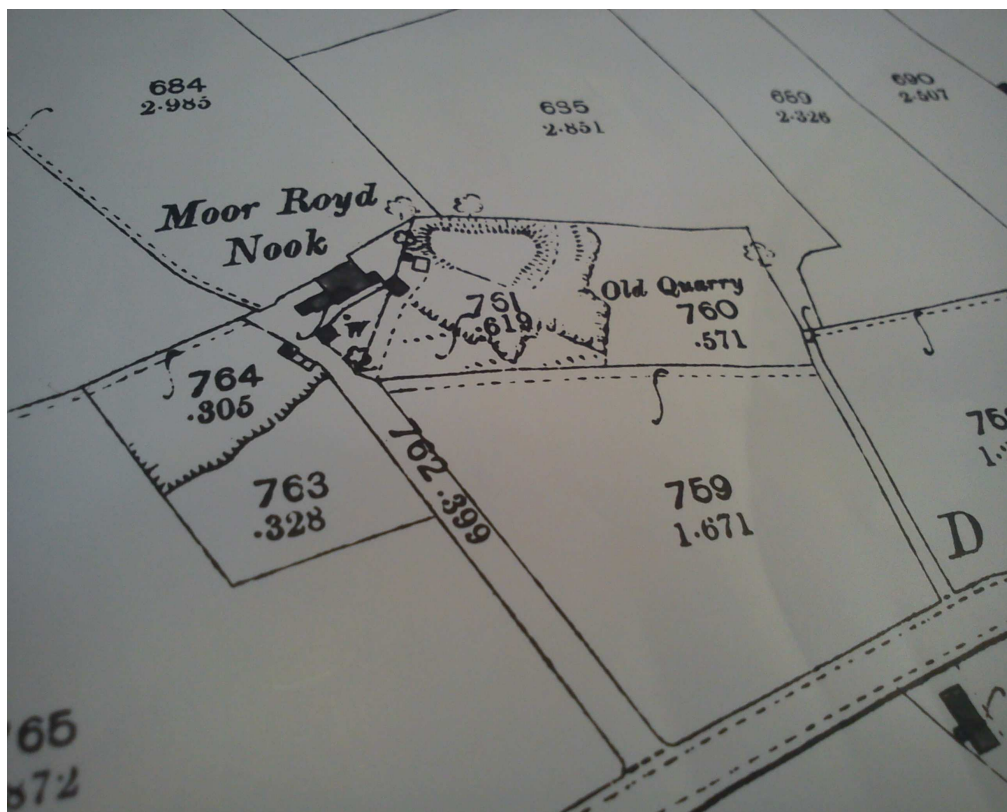
9. Historical Images



1850



1891



1891



2002



2003



2009

End of Report