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Land at Salley Street
Littleborough
Rochdale

PROPOSED ERECTION OF NEW DWELLING

PLANNING APPLICATION 2024

INTRODUCTION



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History

The site forms an open grassed parcel of land that historically has not seen specific use aside from housing small storage sheds.

Client Background

The client is a local business person and resided in the Littleborough / Summit area for a number of years.

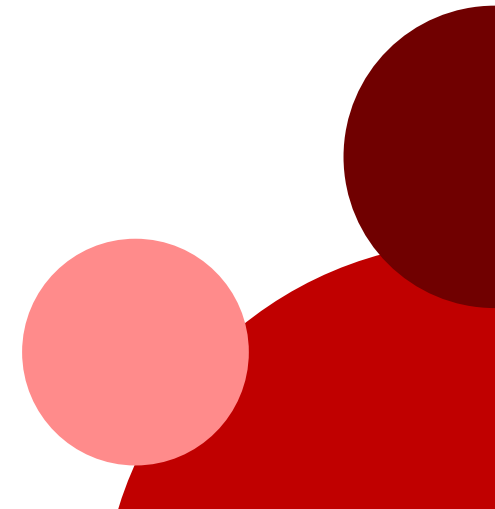
The client is looking to build a new property within the land that carefully combines a mixture of modern and traditional design principles to create an exceptionally unique home influenced by local historical elements and local landscaping while also having high emphasis on sustainability and energy efficiency



Aerial Site Photograph



Site Street Level Photo





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1.0

Site Location

1.1 Site Location and Context

1.2 Build Character

1.3 Local Area

1.1 SITE AND CONTEXT

The site is located along Salley Street, Littleborough. Salley Street itself is an extension of Calderbrook Road that leads from the centre of Littleborough to Warland (approx. 1.3 miles from the centre of Walsden). Salley Street offers around 10 – 15 dwellings along its length which consist of mews dwellings and larger detached properties, all of which provide a heavy focus on stone and natural materials in their appearance.

Salley Street runs in parallel to Todmoden Road which is located to the east at a much lower level to Salley Street, this level difference creates unique opportunity offer incredible views of the old Summit Quarry to the east as well as the hills surrounding Higher Chelburn Reservoir.



Salley Street facing east



Front Site Boundary

The surrounding area is characterised by large open fields, many of which are used for agricultural purposes. The site itself rises steeply in level towards the north west (rear of the site) up to Higher Calderbrook Road.

The site is mostly clear of shrubs and trees with smaller shrubs located along the Salley Street boundary along with a drystone wall that extends along the entirety of the site along Salley Street and meets the existing farm buildings adjacent.

1.2 BUILD CHARACTER



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The area is characterised by traditional houses designs typical of the rural setting. The below images provide an understanding of the local build character surrounding the site.



Mews Housing
Salley Street



Detached Cottage
Salley Street / Calderbrook Road



Semi Detached Cottages
Salley Street / Calderbrook Road



Semi Detached Housing
Salley Street



Detached Cottage Extension
Salley Street / Calderbrook Road

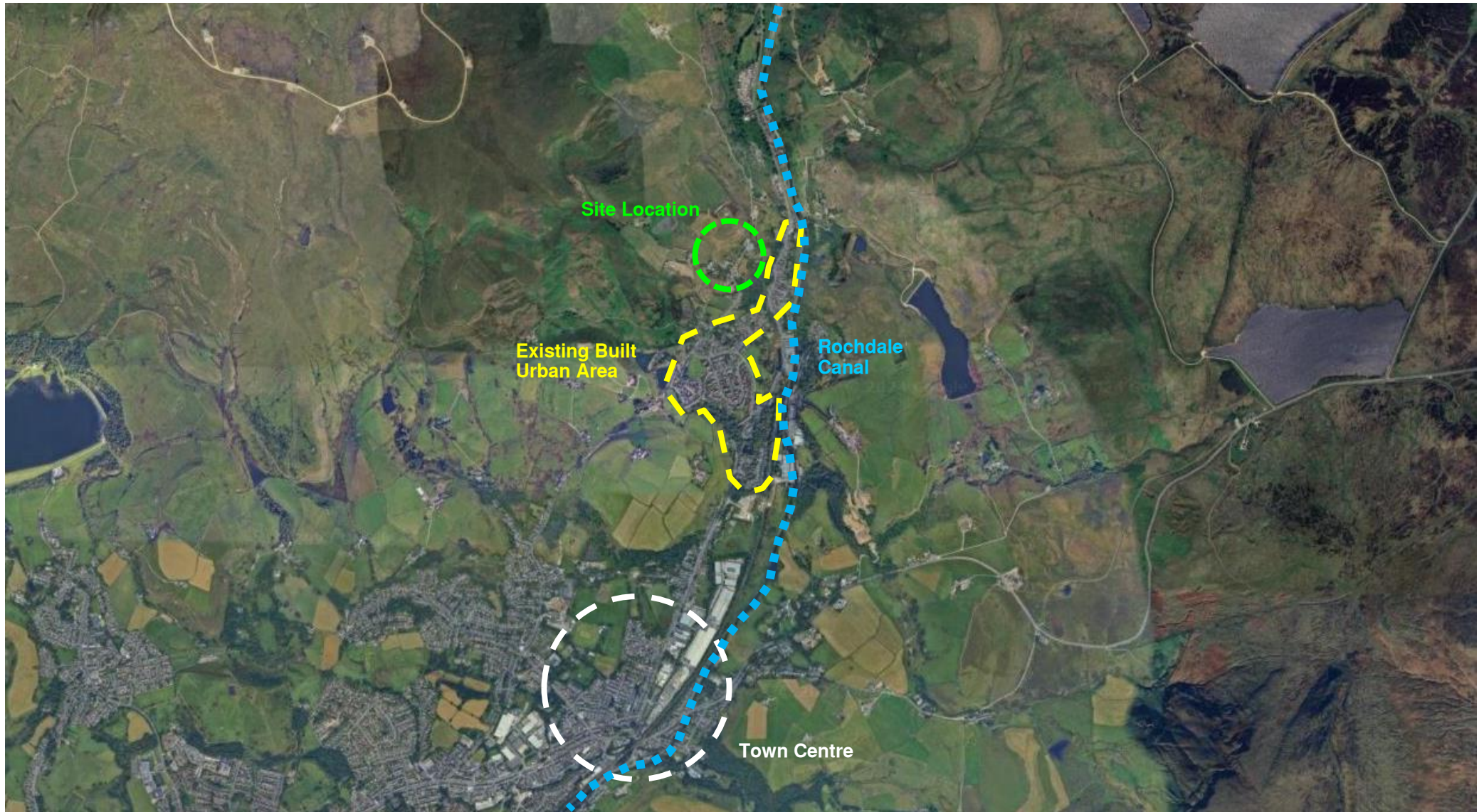


Farm House and Outbuildings
Salley Street

1.3 LOCAL AREA



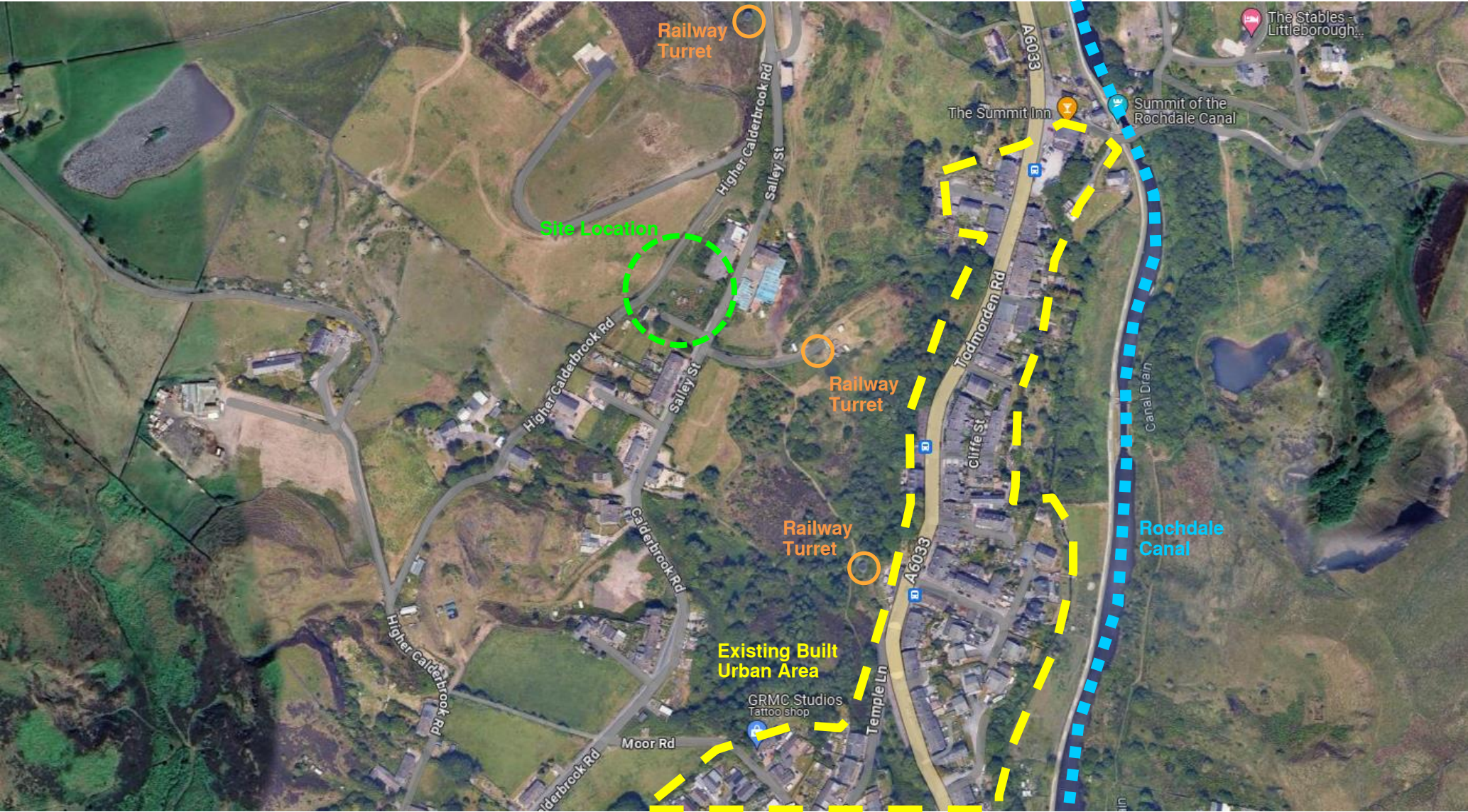
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1.3 LOCAL AREA



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1.3 LOCAL AREA



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2.0

Concept and Theory

2.1 Concept

2.2 Initial Designs

2.3 Design Progression

2.4 Pre Application

2.1 CONCEPT



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Design Brief

The design brief provided by the client was to provide a new modern dwelling to the site with at least 4 bedrooms that takes key consideration of the setting, implements local landscaping influences and maximises the views of the valley and Summit Quarry.

The building should be unique and free flowing in its layout with heavy emphasis on energy efficiency and sustainability.

Design Approach

The design approach and process is always directed by the client brief; however the brief merely provides an outline to begin the design process, from this outline JCA established the following elements that would influence the design concept which can then be progressed to a final design:

1. Create a home that is comfortable and meets the clients brief while including modern features and elements expected of homes in 2024;
2. Provide a design that works with the existing land to maintain the existing rural setting as much as possible while still achieving a modern aesthetic;
3. Achieve a design that is rooted fundamentally into the local area and environment;



Summit Quarry View from Proposal Site

2.1 CONCEPT

Design Concept / Inspiration

The design concept for the new dwelling was born from the inspired Summit railway Tunnel, with its unique “Horse Shoe” tunnel design and inventive smoke vents that protrude out of the moorland grass.

Introduction

The Littleborough to Walsden railway tunnel, featuring a distinctive horseshoe design, is an engineering marvel situated in the heart of the Pennines. This tunnel, part of the historic railway line connecting Manchester to Leeds, played a crucial role in facilitating transportation and commerce during the 19th century industrial boom.

Early Development

The concept of a railway tunnel between Littleborough and Walsden emerged in the early 19th century as the Industrial Revolution necessitated efficient transportation networks across the rugged Pennine terrain. The Manchester and Leeds Railway Company, founded in 1836, spearheaded the project, aiming to improve connectivity and reduce travel times between the two burgeoning industrial cities.

Design and Construction

The tunnel's horseshoe design was chosen for its structural benefits, providing stability and strength to withstand the pressures exerted by the surrounding rock. This design was particularly advantageous in the challenging geological conditions of the Pennines.

Construction of the tunnel commenced in the late 1830s, involving arduous manual labor and primitive engineering techniques. Workers, often referred to as “navvies,” endured harsh conditions, using basic tools to excavate the tunnel through solid rock. Despite these challenges, progress was steady, and the tunnel was completed in 1841.

Significance and Impact

Upon its completion, the Littleborough to Walsden tunnel became a vital component of the Manchester and Leeds Railway. The tunnel facilitated the efficient movement of goods, particularly textiles and coal, between Manchester and Leeds, significantly boosting the regional economy. Additionally, it improved passenger travel, reducing journey times and enhancing connectivity between the cities. The tunnel's horseshoe design not only ensured structural integrity but also contributed to the tunnel's longevity. Its unique shape provided resilience against the natural shifting and settling of the earth, ensuring safe passage for trains for decades to come.

Modern Era

In the modern era, the Littleborough to Walsden tunnel continues to serve as a critical part of the railway network. While technological advancements have reduced the reliance on such tunnels for transportation, the historic structure remains a testament to 19th-century engineering prowess. Efforts have been made to preserve the tunnel's historical significance, with various heritage initiatives highlighting its importance in the development of the region's railway infrastructure. The tunnel stands as a reminder of the industrial heritage of the Pennines and the ingenuity of early railway engineers.

Conclusion

The Littleborough to Walsden railway tunnel, with its innovative horseshoe design, is a remarkable feat of engineering from the 19th century. Its construction marked a significant advancement in transportation, contributing to the economic growth and industrial development of the region. Today, it remains a symbol of the enduring legacy of the early railway pioneers and their contributions to modern infrastructure.

2.1 CONCEPT

Main Architectural Features

Summit Tunnel Southern Portal

The southern entry to the tunnel, known as the Southern Portal, is a mark of engineering and architectural brilliance. Opened 1841 by the Manchester Leeds Railway Co. Engineer, G Stephenson. The distinct features are the Ashlar and rock-faced stone. Horse shoe arch with radial rustication to the voussoirs and two bold bands running at parapet level. The Southern Portal is grade II listed.

Summit Tunnel Northern Portal

The northern entry to the tunnel, known as the Northern Portal, follows the same architectural design features as the Southern Portal, it also features Ashlar and rock-faced stone a Horse shoe arch with radial rustication to the voussoirs and two bold bands running at parapet level.

Viewing Oval / Vent at the Northern Portal

One of the unique features of the Littleborough to Walsden tunnel is the viewing oval / vent located at the Walsden end (Northern Portal). This oval aperture served several purposes.

Ventilation: The oval / vent hole allowed for the dispersion of smoke and fumes from steam locomotives, improving air quality inside the tunnel.

Inspection and Maintenance:

It provided a vantage point for engineers to inspect the tunnel's condition and monitor train movements, ensuring safety and facilitating maintenance.

Light: The hole allowed natural light to penetrate the tunnel, aiding visibility for workers during construction and maintenance.

Statement: The viewing oval / vent is very much a statement of superior engineering brilliance, it is a mere 34m from the Northern Portal entrance, an almost conservative yet ostentatious display of innovative engineering, a statement to the world that Britains finest engineering brains were very much on the map.

Circular Ventilation Chimneys / Shafts:

The inclusion of circular ventilation shafts was a significant innovation. These vents allowed for the dispersion of smoke and fumes from steam locomotives, improving air quality within the tunnel and enhancing the safety and comfort of train crews and passengers.

New Dwelling Design Inspiration:

The new dwelling has been designed with a plan view replicating the "Horse Shoe" tunnel shape, paying homage to its engineering and architectural prowess, the idea of sinking the dwelling into the hillside is a reflection of the tunnels engineering marvel and design, the horse shoe shape, is significant and the circular ventilation chimneys / shafts is ingenious yet very practical and simple in nature. The new dwelling shares these similarities in a respectful attempt to portray this marvellous landmark. The tunnel / turret at the top of the dwelling will protrude from the moorland grass and allow a flood of light to enter the dwelling from above. It is key to note this is a reflections and as such the scale and height of the tunnel / turret has been scaled down approx. 50% of its actual proportions.

2.1 CONCEPT



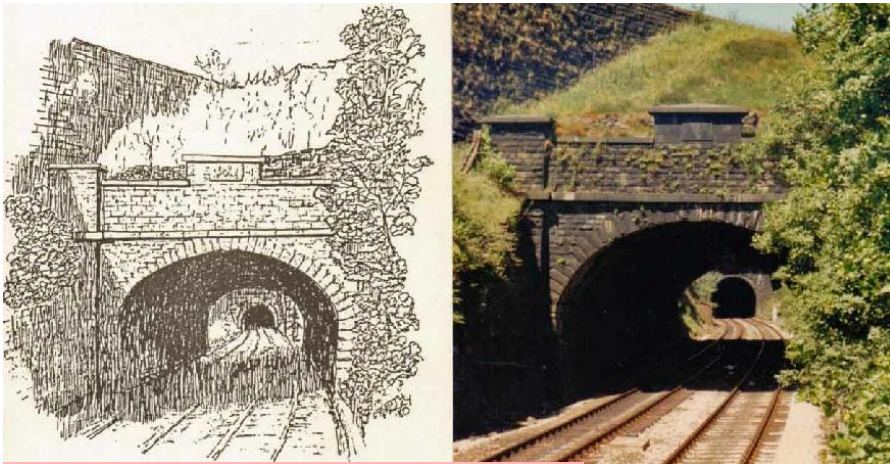
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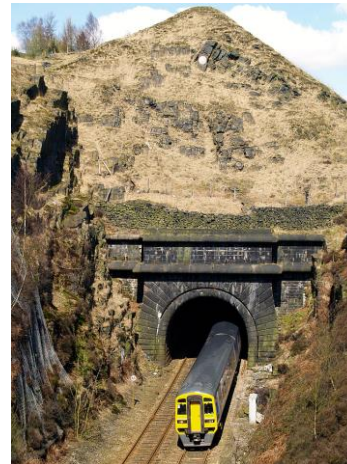
Viewing Oval / Vent – Internal View



Viewing Oval / Vent – External View



Northern Portal



Southern Portal – Grade II Listed

2.2 INITIAL DESIGNS

Early Designs and Sketches

The key external design features included a turret style window to mimic the formerly mentioned vent tunnels, entrance tunnel from Salley Street which also conceals the building from the street and an internal circular courtyard with a raised central patio area.

Early ideas included the influence of the Summit railway Tunnel vents as a main feature which permeated through the entire design with a curved / circular shape motif used throughout. Once the inspiration of the tunnel was established, it became very clear that a rectangular or squared form did not aid the design; meaning, very early on, a curved building design was the clear way forward for the design. As an extension to this concept idea, the building would be sat into the hill side with grass and soft landscaping sweeping over the dwelling and around the tunnel vent feature, replicating the existing railway tunnel vents scattered throughout the valley.

A secondary concept was to hide the building from the street as much as possible so it would be almost invisible from the street.

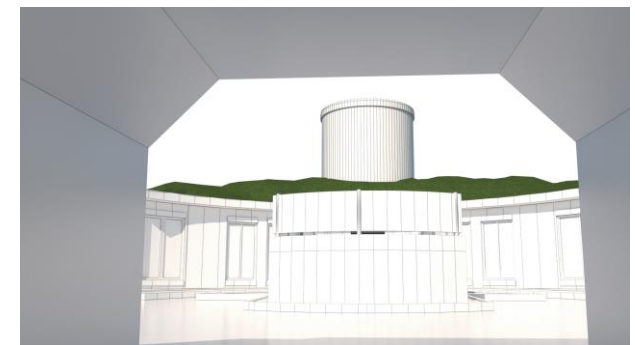
The following images show 3D drawings which were explored during the initial design process.



Early 3D Model Concept with Materials



Early 3D Model Concept Aerial View



Early 3D Model Concept Entrance Tunnel View

2.3 DESIGN PROGRESSION

Design Progression

Following the initial concepts and sketches, the design evolved while maintaining the key concept influences.

The evolution of the design saw alterations such as:

- Inclusion of a first floor lounge area to maximise the eastern views;
- Incorporation of a terrace area accessed from the first floor lounge;
- Reduction in height of the raised patio area to the courtyard;
- Alteration of the rendered courtyard walls to weathered stone to reflect dry stone walling;
- Inclusion of stable / storage buildings and a garage structure built within the landscape.

The following images illustrate the progression of the design.



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Scheme 1 – Front Aerial View



Scheme 2 – Front Aerial View

2.4 PRE APPLICATION



Scheme 2 – Side Aerial View

Pre Application Response

During 2018 JCA submitted a pre application enquiry using the scheme drawings previously discussed. The pre application response focussed greatly on the design of the proposal given the setting and Green Belt nature of the site.

Within the pre application response it was acknowledged that the design and concept is of high quality:

'It is clear from the current submission and from our meeting that the intention is that this proposed development create a property of high quality design on the site.'

Equally the response outlined that the overall design would be supported as the proposal would increase the number of high quality high value properties which are missing throughout the Borough; the Councils policies reflect this through the current Housing Strategy which promotes high quality design and encourages applications that propose an increase in high value homes (Tax E or above).

Design alterations and suggestions were specified within the pre app response and are listed below:

- Ensure that the proposed tunnel window does not detract from the existing railway tunnel vents;
- Removal of the first floor patio area;
- Continue the curved theme to the courtyard patio;
- Material considerations including non reflective glazing to prevent long reaching view of the site.

A Planning Statement has been provided as part of this submission which provides justification of the proposal under Planning Policies and Planning precedent.



Scheme 2 – Rear Aerial View

2.4 PRE APPLICATION

Post Pre Application Response

Following the pre application response, the design changes were considered and implemented which ultimately led to basis for the final proposed design. The following images were produced following the pre app design changes.



Post Pre App Salley Street Image



Post Pre App Aerial Site Image



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3.0

Design

3.1 Orientation and Layout

3.2 Material Considerations

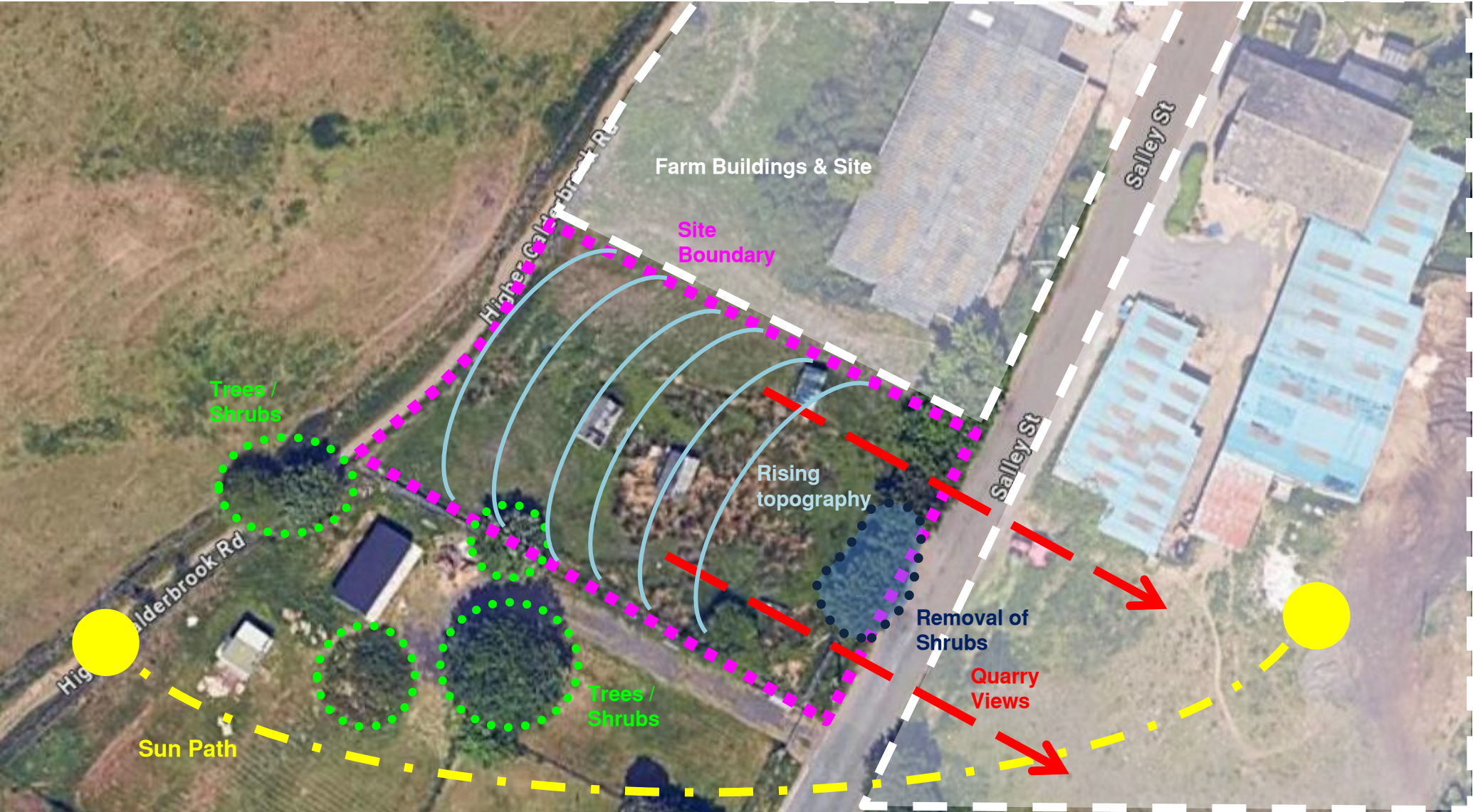
3.3 Landscape Design

3.4 Appearance and 3D Views

3.1 ORIENTATION AND LAYOUT



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3.1 ORIENTATION AND LAYOUT



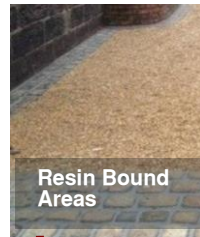
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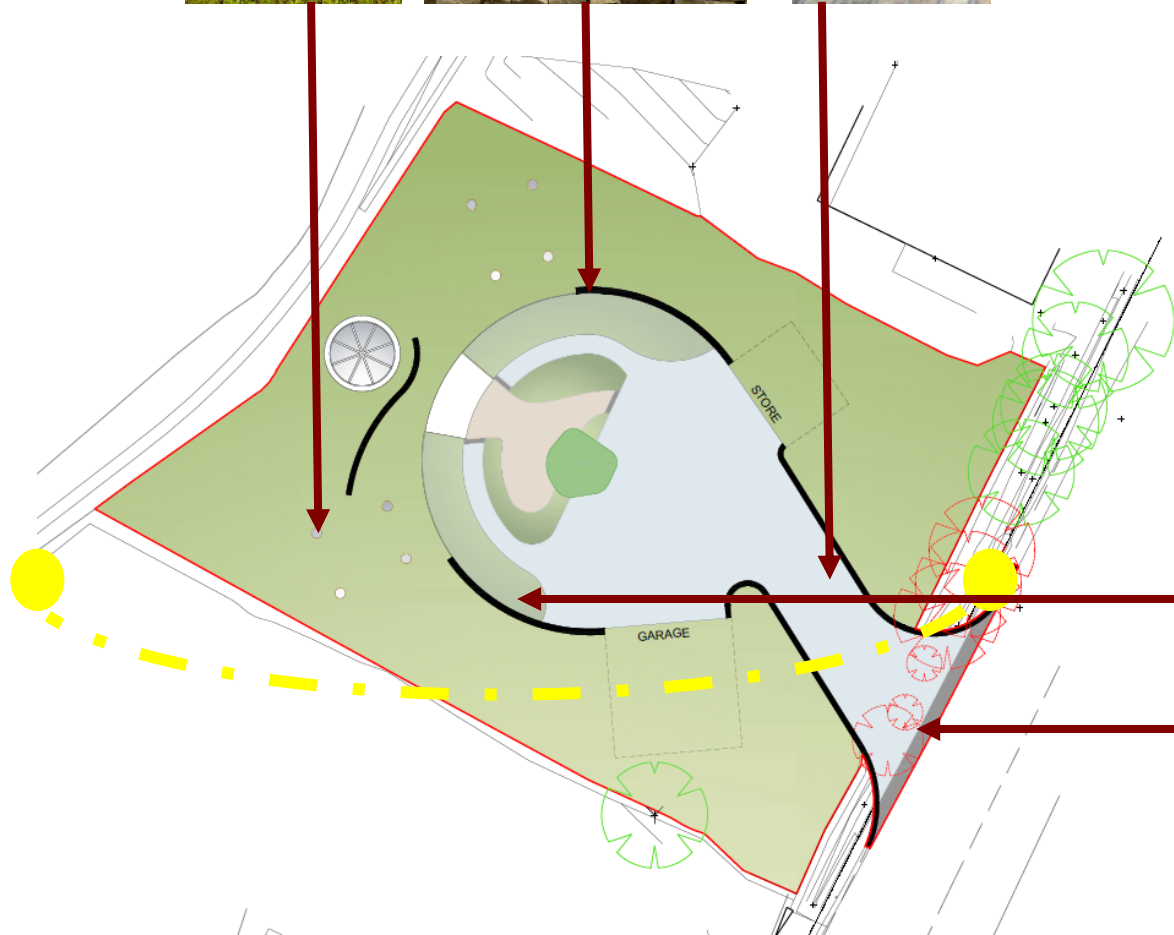
Circular Roof Lights



Drystone Walling



Resin Bound Areas



Proposed Site Plan

Site Plan Proposal

Following the progressive design process and the pre application response, the proposed design was altered to reflect the various comments and concerns; in addition to the implementation of a robust landscape design.

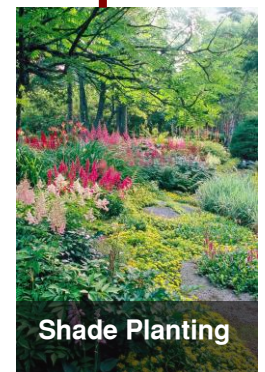
The proposed site plan illustrates the various changes from a site layout perspective with the entrance becoming more open with an angled design to lead users into the site giving the access a sense of direction.

The central courtyard provides a more organic shape and increased area to enhance the amenity of the dwelling with the addition of a central feature tree which adds a focal point to the courtyard and softens the front elevational view.

Dry stone walling is proposed around the site entrance with matching stone retaining walls to the courtyard; this drystone wall feature is extended to the roof area of the proposal with a dilapidated appearance drystone wall built to the front of the turret window matching the curve of the turret.



Grey Stone Rumble Strip



Shade Planting

3.1 ORIENTATION AND LAYOUT

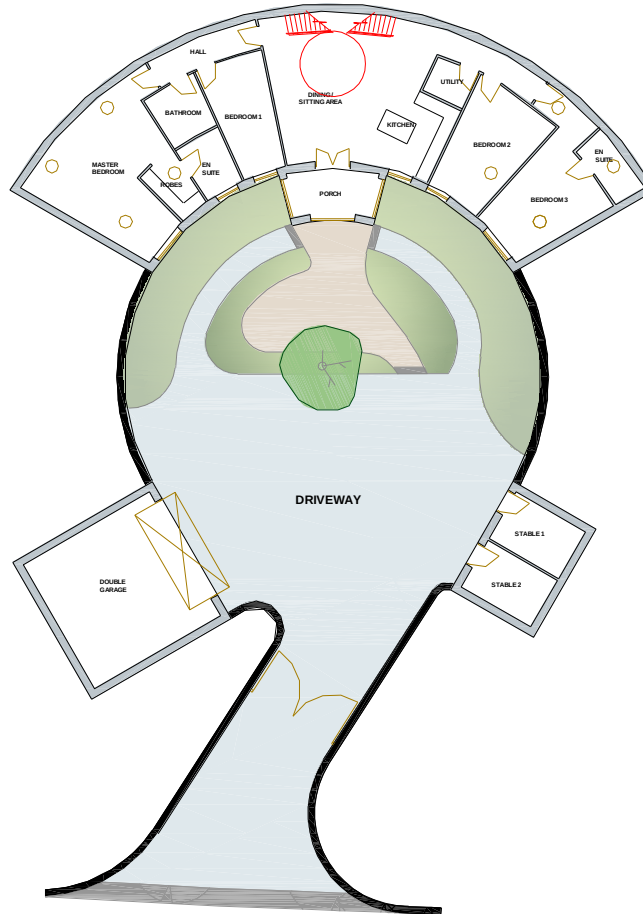
Internal Layout

The proposed internal layout of the dwelling adopts a curved design which continues through from the courtyard walls. Internally the dwelling offers a large open kitchen dining area to the centre with bedrooms flanking at either end of the curve. Each room is serviced by a full length window to maximise sunlight ingress; natural light penetration is increased further through the inclusion of circular roof lights located over each bedroom.

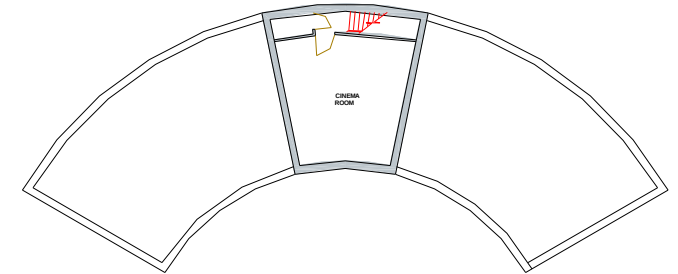
The basement level offers storage space and a cinema room and is accessed through the open staircase in the dining areas.

The first floor offers a large open lounge space with a front facing balcony accessed through sliding doors which offers an incredible view over the Summit Quarry. The feature turret structure also offers a high level window to the lounge with the circular shape echoing through to the kitchen space at ground floor via a circular cut out within the first floor that creates a light well through the ground and first floor of the dwelling.

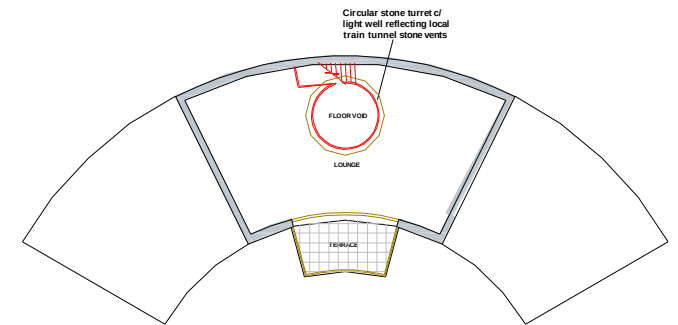
Bin storage is provided through an external storage area off the proposed courtyard. The refuse management to be adopted is to match that of the houses located along Salley Street.



Proposed Ground Floor Plan



Proposed Basement Floor Plan



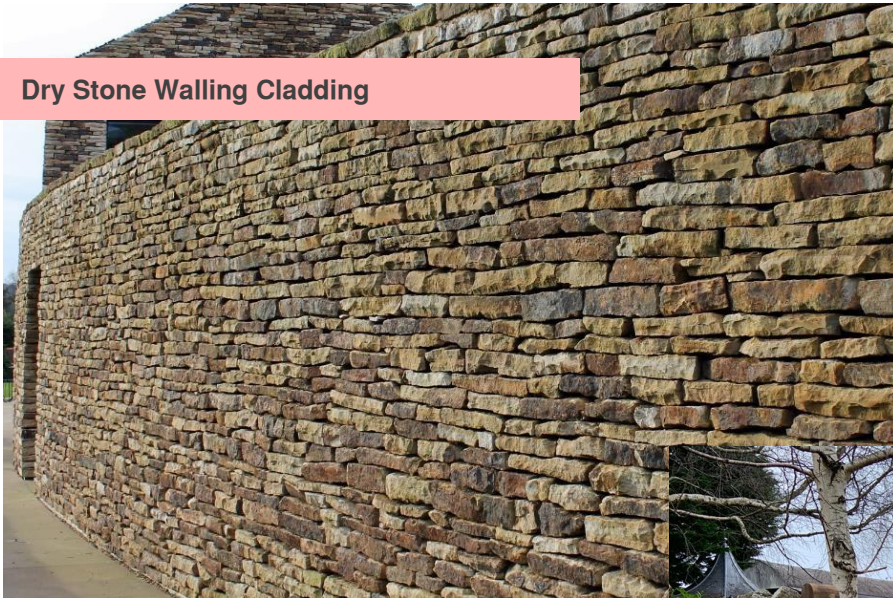
Proposed First Floor Plan

3.2 MATERIAL CONSIDERATIONS

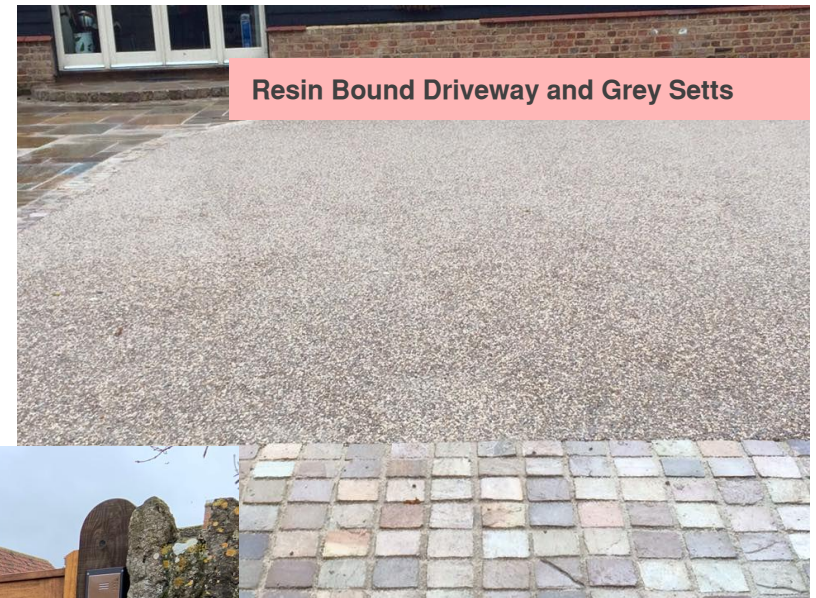


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Dry Stone Walling Cladding



Resin Bound Driveway and Grey Setts



Electric Timber Gates



3.2 MATERIAL CONSIDERATIONS



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Grass Roof



Dry Stone Walling



3.3 LANDSCAPE DESIGN



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Proposed native hedgerow to western boundary, forming a screen from Higher Calderbrook Road

Dry stone wall to form an edge to lightwell feature



Resin bound surfacing to courtyard space (light grey)
Thresholds to include contrast strip formed of 3 rows of cobbles (dark grey)

Stone retaining wall
Proposed sun loving planting to beds

Proposed feature tree to courtyard
Swathes of meadow grass to surrounding landscape

Resin bound gravel (warm grey) to surfacing within entrance zone

Proposed dry stone wall to boundaries
Proposed shade planting to beds

Proposed gated access into property
(6m between gate and road to allow for car pull in)

Rumble strip formed of 8 rows of cobbles (dark grey)

3.3 LANDSCAPE DESIGN



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Proposed Native Meadow and Hedgerow

The proposed landscape strategy incorporates predominantly native species which provide both visual interest and a source of food and habitat for birds, insects and small mammals all year round.

Swathes of meadow grass will be planted along the slopes of the site, in the same orientation as the contours to complement the topography.

While the meadow grass planting will be an attractive feature, it will also improve the overall biodiversity value of the site.

A length of mixed native hedgerow is proposed to the western boundary of the site along Higher Calderbrook Road.



3.3 LANDSCAPE DESIGN



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Proposed Courtyard Planting (shade)

The main courtyard will include planting areas of native heather and ornamental grasses in the southfacing beds

A single feature tree, a native Sorbus variety, will provide form and seasonal interest in the courtyard whilst also proving shade for a seating area and food for birds in the winter.



3.3 LANDSCAPE DESIGN



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Proposed Courtyard Planting (sun)

The north-facing beds within the courtyard will comprise of native ferns, shade-tolerant grasses and species that naturally occur in the uplands of the region.

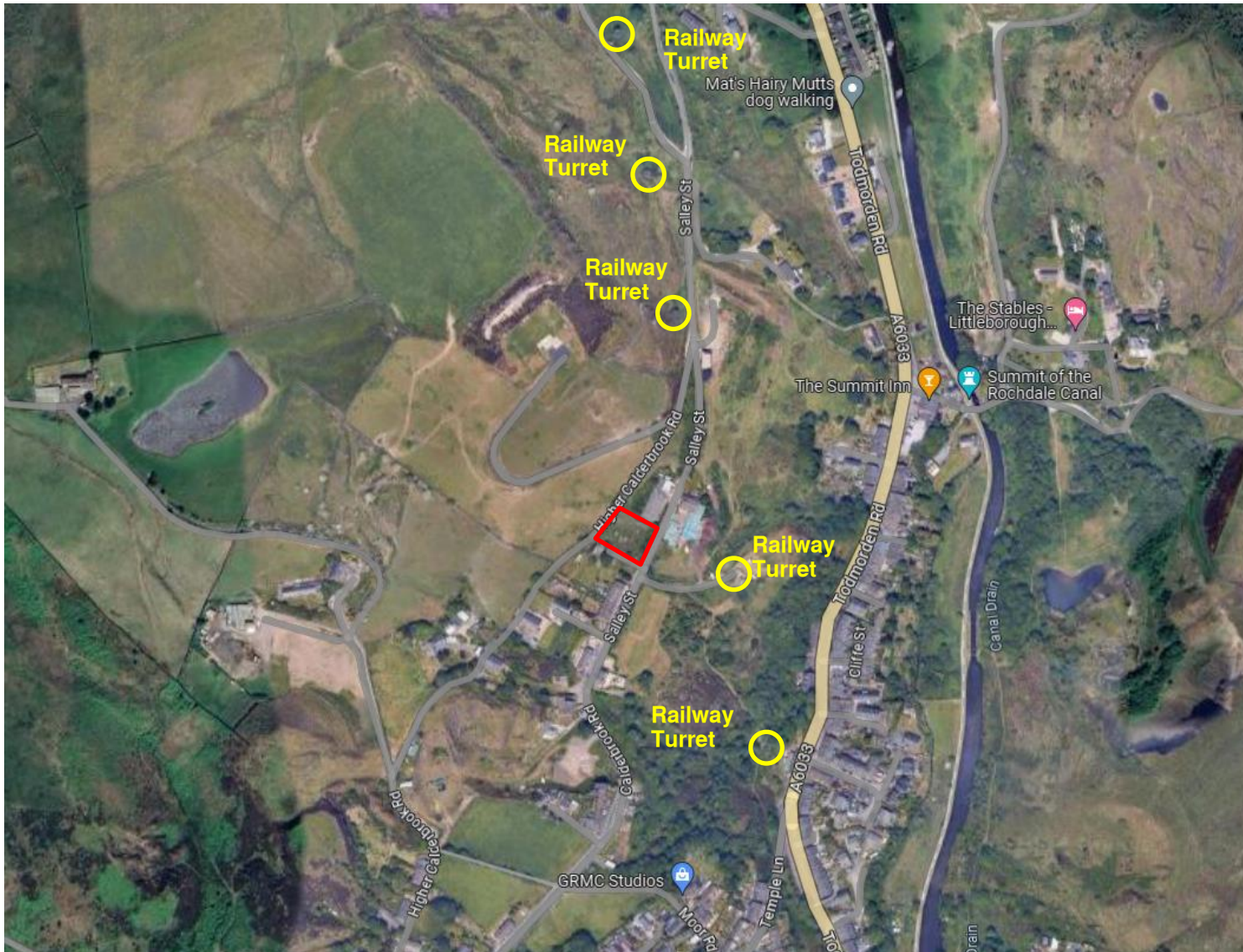
The foliage will provide structure and interest all year round, while berries will support wildlife.



3.4 APPEARANCE AND 3D VIEWS



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Existing Railway Turrets

Sensitivity to the existing railway turrets has been achieved by analysing the existing railway turret layout and determine how to design the proposed turret so that it does not harm the historic turrets.

The proposed dwelling is located 100m from the second turret following the Summit Tunnel portal and therefor is quite a distance from the main railway line, the proposed turret design is also to be far smaller than the existing turrets, this allows the overall turret concept to have a distinct impact on the proposal while never competing with the existing turret layout from an aerial perspective.

Existing Turret Diameter = 6m

Proposed Turret Diameter = 3.5m

3.4 APPEARANCE AND 3D VIEWS



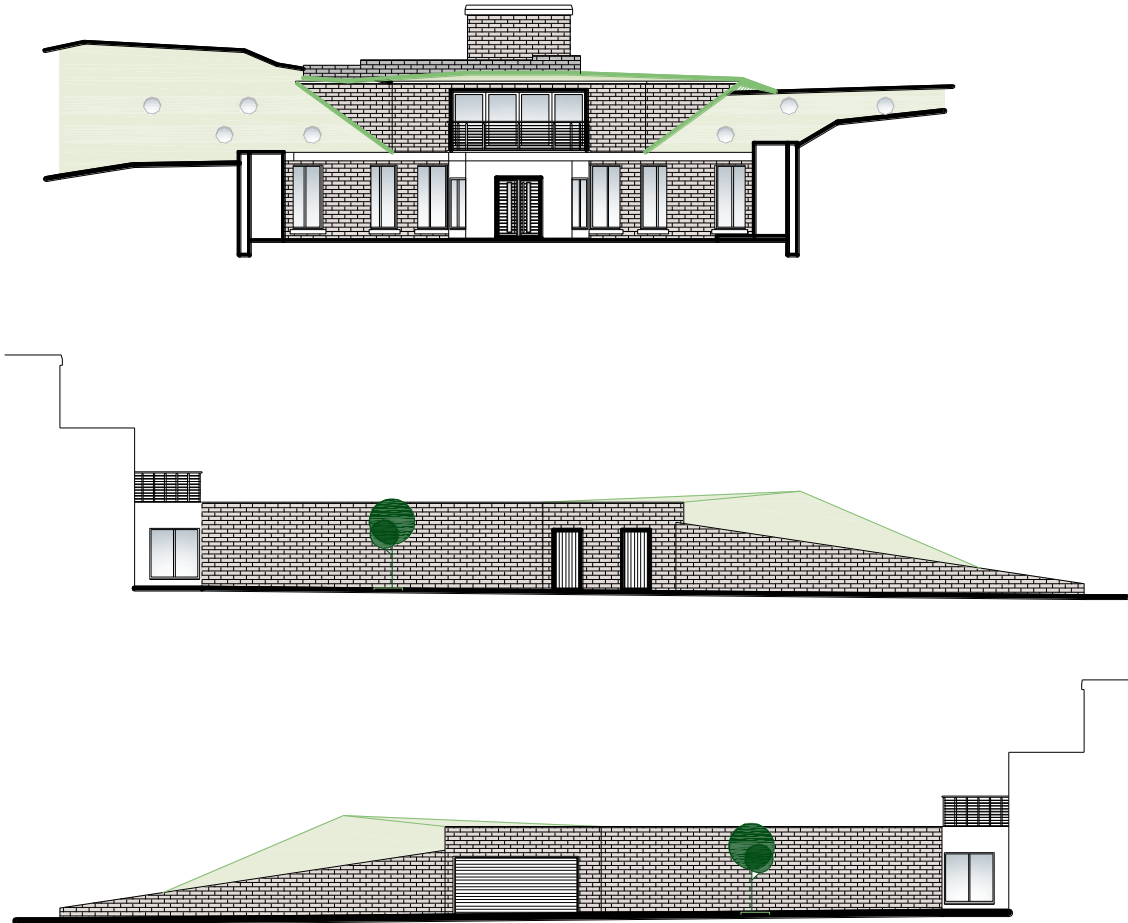
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Appearance

The appearance and overall aesthetic of the proposed house and the development as a whole is influenced by the rural setting mixed with a modern form. The use of traditional, natural materials such as stone emphasise the rural setting and match the predominant building material found in the area.

Originally, the proposal concept attempted to hide the building as much as possible; however as the proposal has developed, the proposal has become more open from Salley Street chiefly due the input of landscape designers.

The proposed grass roof over all of the proposed structures allows the dwelling to sit within the site comfortably and from a distance would be disguised, this is also true from the views along Higher Calderbrook Road where the turret would be the only truly visible element to the design.



3.4 APPEARANCE AND 3D VIEWS



Salley Street Image

3.4 APPEARANCE AND 3D VIEWS



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Aerial Image



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3.4 APPEARANCE AND 3D VIEWS



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Rear Image / Eastern View Image



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3.4 APPEARANCE AND 3D VIEWS



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Orthographic Site Image



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4.0

Sustainability

4.1 Design & Energy Conservation

4.2 Technology

4.2 Biodiversity

4.1 DESIGN AND ENERGY CONSERVATION



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Design and Energy Conservation

Sustainability and energy conservation are key to the proposal and the clients brief. The design of the dwelling together with modern sustainable technologies greatly improve the sustainability of the site.

Design considerations have been implemented at concept stage such as:

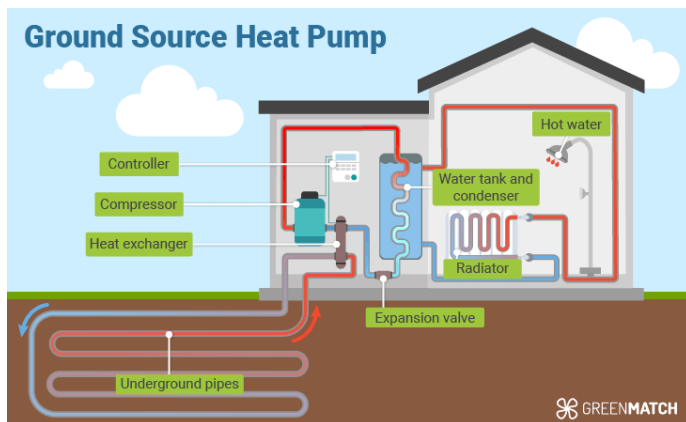
- Maximising natural light ingress throughout the dwelling through combination of full length windows and roof lights;
- Increased amounts of high quality insulating materials to minimise heat loss surpassing Building Regs. Uvalues;
- Installation of energy efficient lighting and electrical fittings;
- Triple glazed windows and insulated external doors;
- Installation of water efficient sanitary fittings and appliances;
- Provision of EV charging to emphasise eco friendly transport.



4.2 TECHNOLOGY

Technology

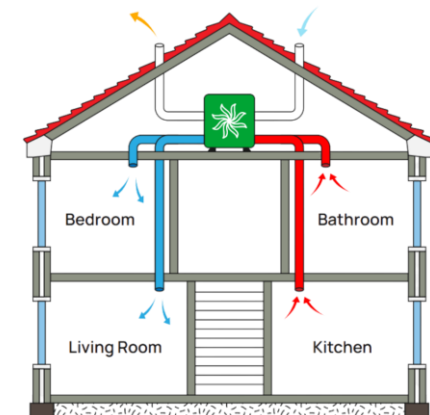
As well as design considerations and energy efficiency from a design perspective, various modern technologies are to be installed to further increase the proposed dwellings energy efficiency and overall sustainability. These technologies are:



Ground Source Heat Pump



Photovoltaic Cells



MVHR (Mechanical Ventilation and Heat Recovery) System

4.3 BIODIVERSITY

Biodiversity

Given the unique setting and the nature of the existing site, biodiversity has been heavily considered throughout the design process. Various design considerations have been implemented that enhance the biodiversity of the site, such as:

Shade Tolerant Foliage

The proposed foliage will provide structure and interest all year round, while berries will support wildlife.



Dry Stone Walls

Provides they provide favourable conditions for several species of flora and fauna, including natural enemies of pests



Native Landscape Species

Native species provide both visual interest that is inherently tied to the area and a source of food and habitat for birds, insects and small mammals all year round.



Proposed Hedgerows

A length of mixed native hedgerow is proposed to the western boundary of the site along Higher Calderbrook Road providing further habitat diversity.

