Precedents

Muuraiskallio Sauna, Teemu Tuomi

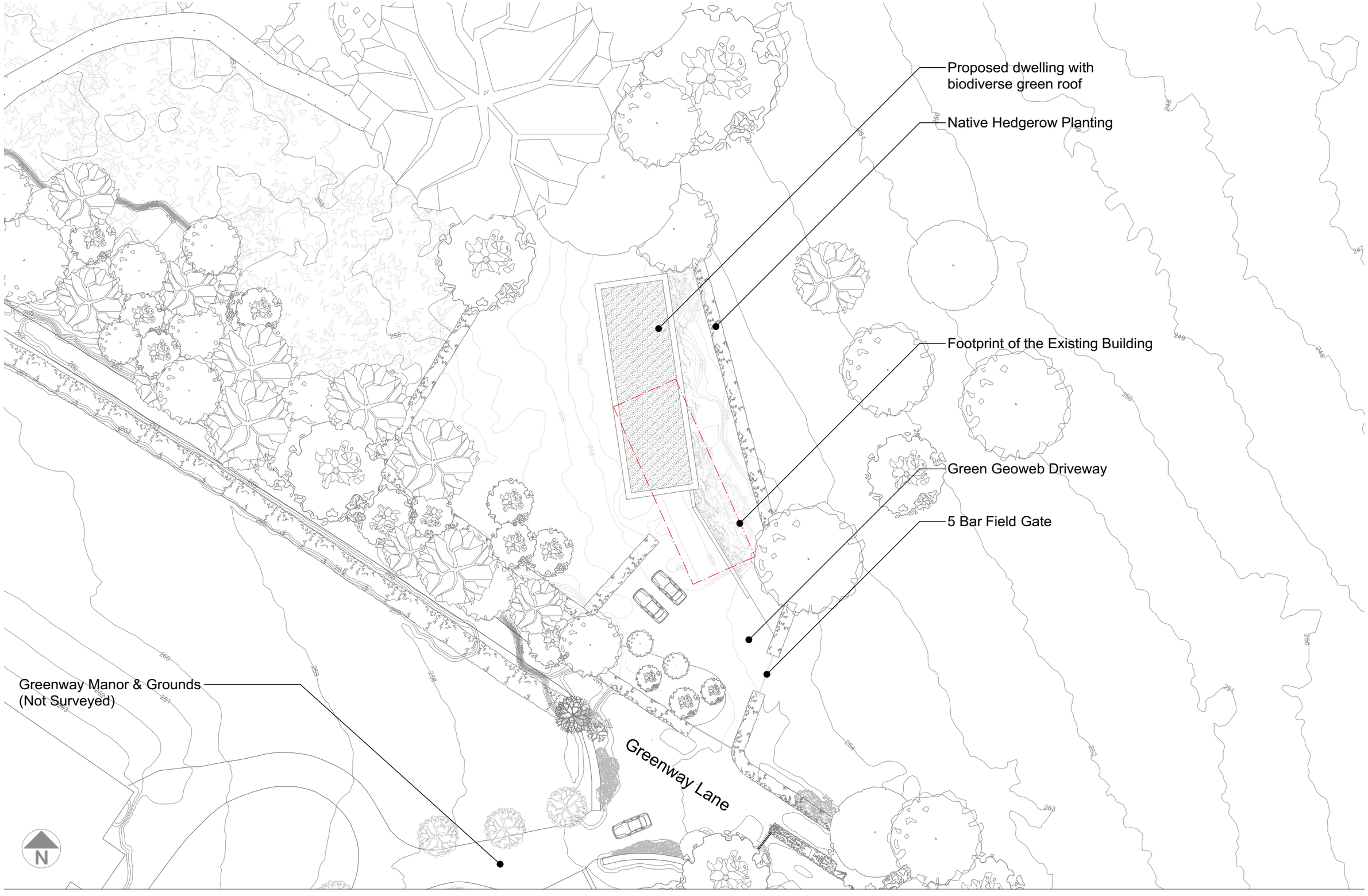
Riverside House, Architecture Brio

Riverside House, Architecture Brio, green roof

Woodlands, Millar Howard Workshop, France Lynch

Riverside House, Architecture Brio

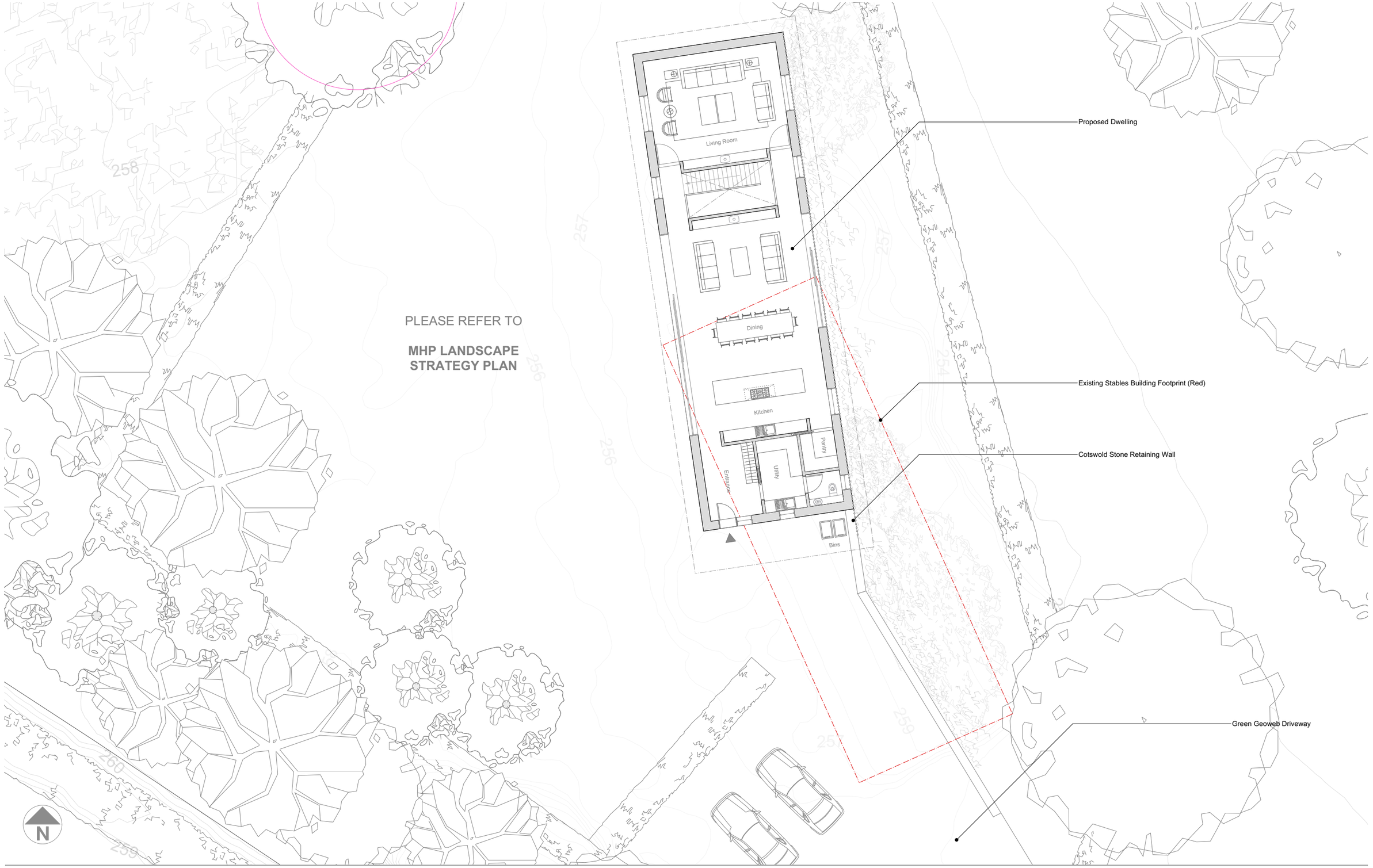
Proposed Site Plan



Proposed Ground Floor Plan

PLEASE REFER TO

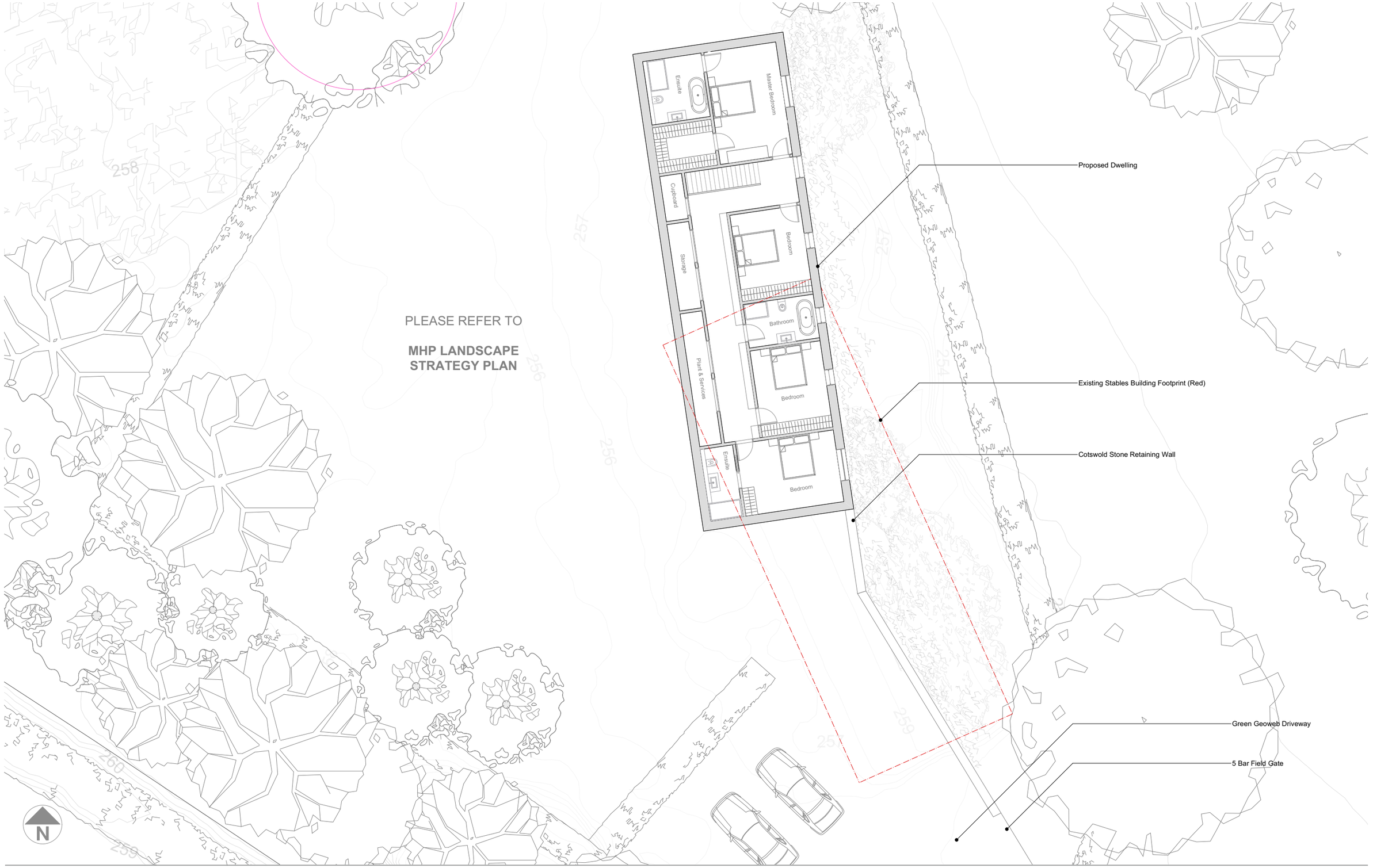
MHP LANDSCAPE STRATEGY PLAN



Proposed Lower Ground Floor Plan

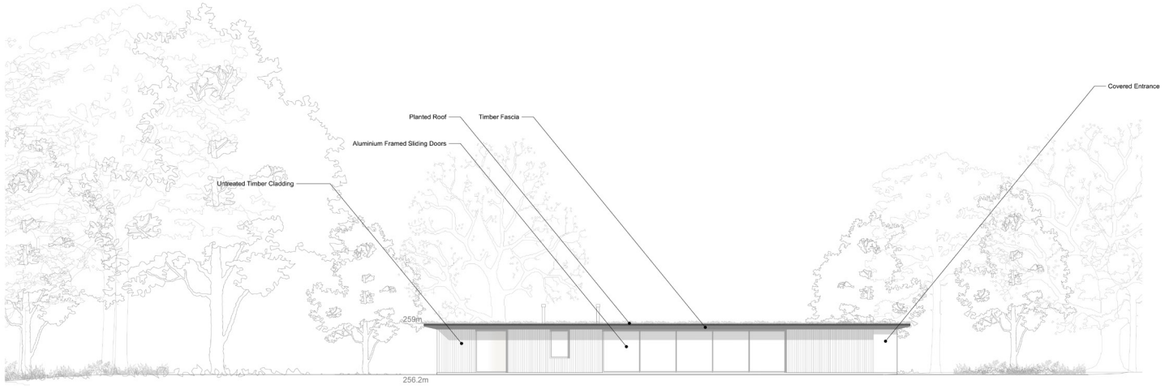
PLEASE REFER TO

MHP LANDSCAPE STRATEGY PLAN



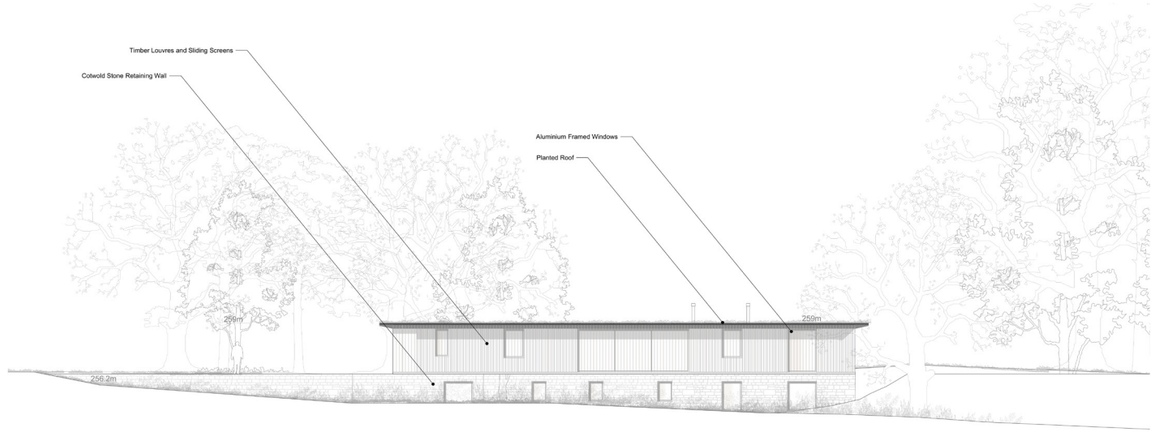
Proposed Roof Plan

Proposed Elevations

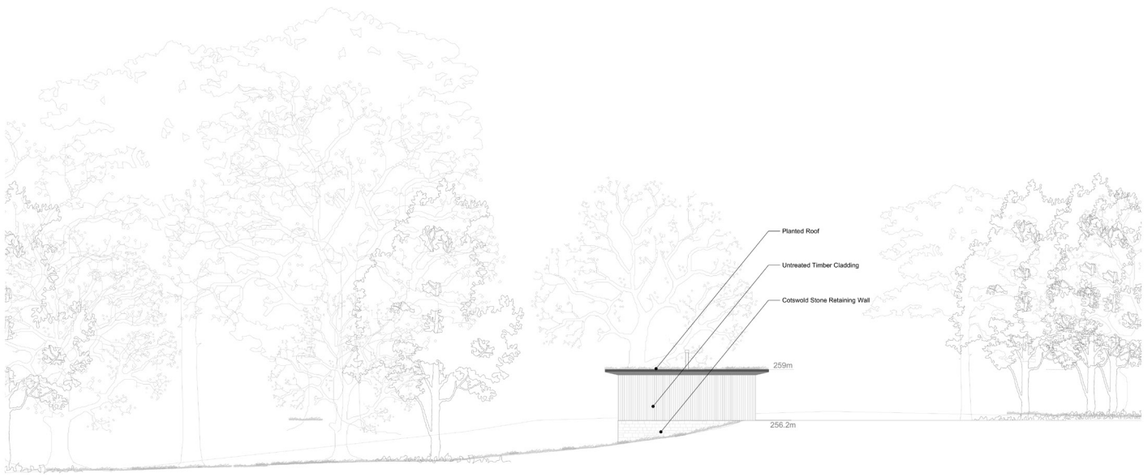


Please refer to MHP Landscape Strategy drawing for detailed proposed landscape

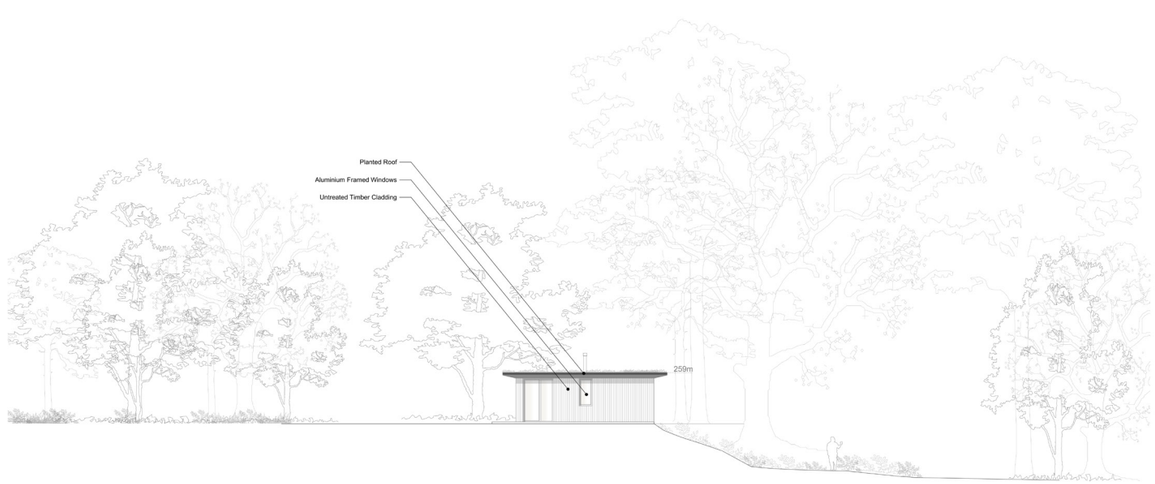
Proposed West Elevation



Proposed East Elevation



Proposed North Elevation



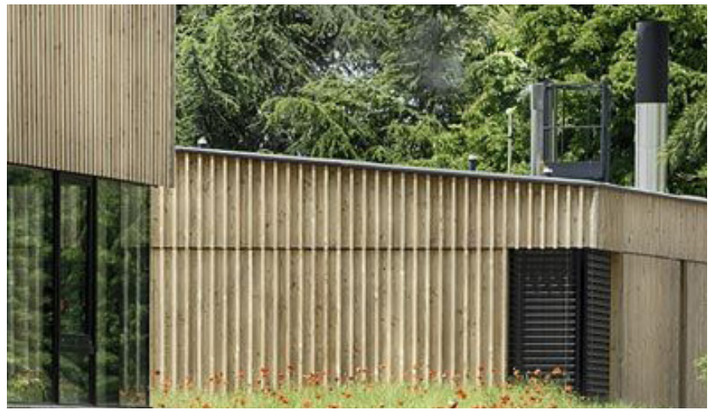
Proposed South Elevation

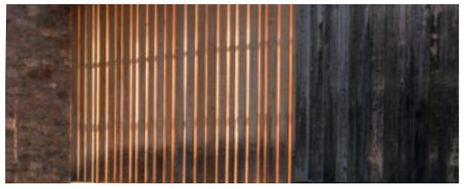
4. Proposal.

Materiality

The site is located within the Cotswold AONB and an approach has been taken to minimise any impact to the landscape character of the site.

Proposed materiality is reflective of the surrounding context and will comprise of low dry stone walling for the retaining wall, timber cladding and a green planted biodiverse roof in order to enhance the setting and embedding characteristics of the Cotswold AONB. A low linear form reflective of dry stone field walls will allow the building to sit quietly and respectfully within the landscape.





Key Views: Proposed View from Field (Direction of Leckhampton Hill)

Artistic Impression

Key Views: Existing View from Greenway Lane

The existing view of the site is dominated by hardstanding crushed stone, concrete an tarmac which form the site access and entrance. The existing building is a prominent feature of the site too, detracting from the expansive view beyond.

Key Views: Proposed View from Greenway Lane

Artistic Impression

A Geoweb green driveway is proposed to replace the existing hardstanding area. A native hedgerow is also proposed to replace the existing post and wire fencing with additional low level native planting to open and soften the view from the Cotswold Way.

Green Belt Analysis

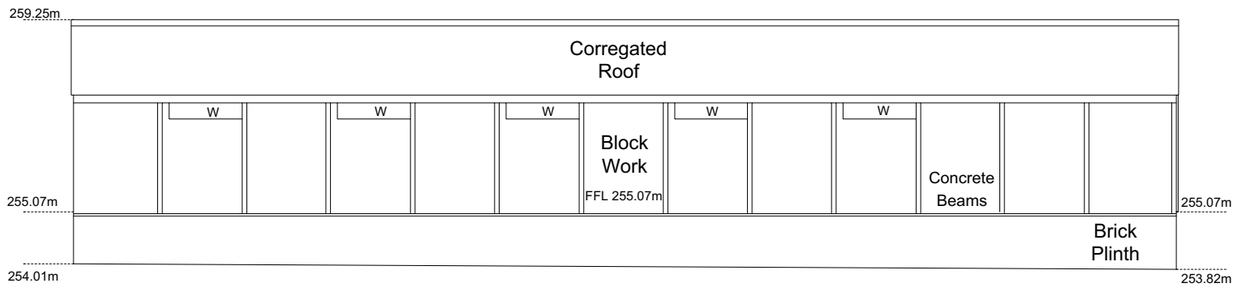
With consideration for the impact upon the Green Belt, the table below shows a comparison of existing approved foootprint for the dwelling and proposed footprint of the dwelling with relation to height and volume.

In keeping with the local area and character of the rural setting, the proposal is designed to minimise the impact upon the Green Belt. Reflecting the local agricultural vernacular, the design keeps the form of the stables, but is redesigned with a flat roof for a lower lying building set within the landscape. With no greater impact upon the setting and Green Belt than the existing, the proposal in comparison is lower in height, lower in volume and sits more subtly within the wider landscape.

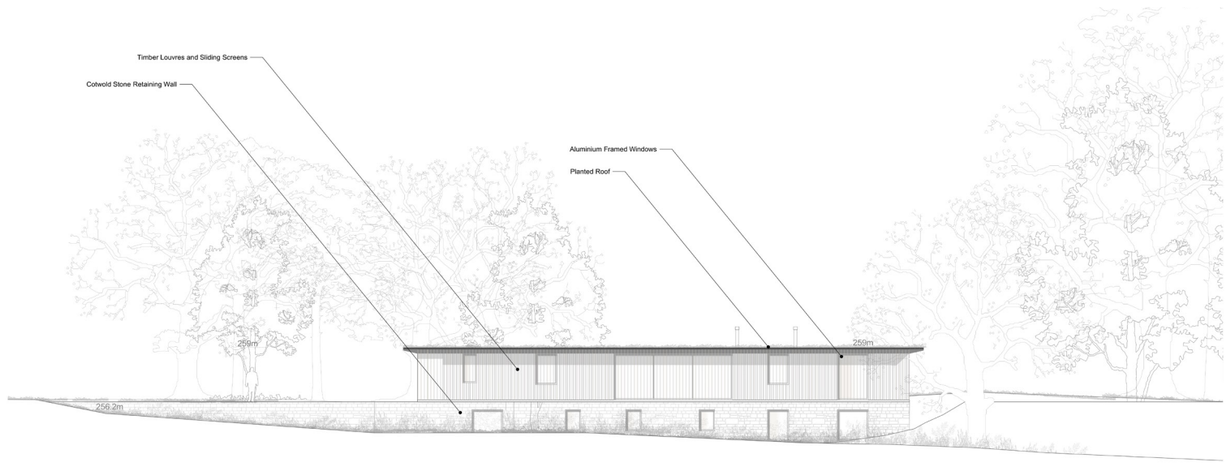
	Footprint	Height*	Above Ground Volume
Existing Building	200.6 m^2	3.74 m	750.2 m^3
Proposed Dwelling	200.6 m^2	2.80 m	740 m^3

* Height taken from existing Ground Floor Level

Existing Building



Proposed Dwelling



Dark Skies & Light Mitigation

The Environmental zone, as per the ILP Guidelines, is considered to be E1: Natural - Intrinsically dark lighting environment, which covers National Parks and Areas of Outstanding Natural Beauty. Lighting proposals for the site will be aiming for the requirements of E1 that aims to conserve areas of dark skies.

Overarching Principles:

The following overarching principles will be applied to all aspects of the external lighting as it will ensure light pollution is kept to an absolute minimum:

- Only light areas which need to be lit, and use the minimal level of lighting required to comply with guidance such as Institute of Lighting Engineers Guidance Notes for the reduction of Obstructive Light (2005)
- Type of fixtures must be carefully considered e.g. downward-facing lighting only. Uplighting of trees or any other structure is prohibited.
- When used, Bollard Lighting should keep light spill below 1m from ground floor level with illumination levels kept to a minimum.
- Lighting should be designed to avoid light spill onto the woodland.
- Efficient light sources, control gear and luminaire optics will be used to help focus light onto the desired surfaces.
- Lighting will be carefully focused once installed, Lockable luminaires will be used, where possible, to ensure that they are not accidentally refocused during servicing and maintenance.
- Provision should be made for louvers, cowls, snoots, and other accessories that control upward light spill and reduce glare or light trespass.
- The final lighting scheme should comply with both the ILE Guidance Notes for the Reduction of Light Pollution and the CIBSE SLL Lighting Guides for The Outdoor Environment.
- Warm white with a colour temperature between 2700-300K should be used only for all internal and external lighting.
- The amount of light, its distribution and direction and the manner in which it is delivered and controlled must be carefully considered.

The proposed sliding screens for the new dwelling are designed to mitigate light spill from the house and reduce glare or light trespass. No skylights are proposed within the roof. The proposed dwelling is intended to blend into the landscape with a low ridge height, planted roof, timber screening, sympathetic materials and the proposed new planting.

Following the Ecologist recommendations, the scheme will only include the use of lighting where absolutely necessary. This will be directional warm white LED lighting; for example: down spots at 2.5 m high using warm white (2700 K) 8W LED lamps, 550 lumens, 35 degree beam angle.





Precedents for Timber Screened Facades Dwellings Source: Pinterest.

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Sustainability.

Sustainability Overview

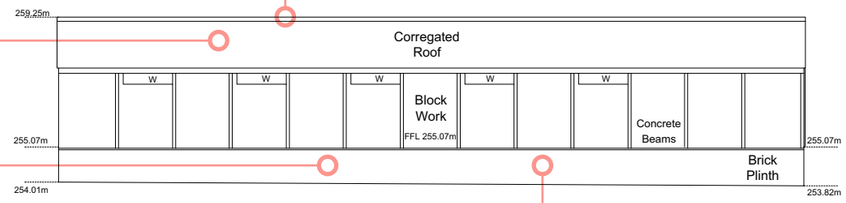
1. Materiality

2. Heating and cooling

3. Structural Analysis

Existing

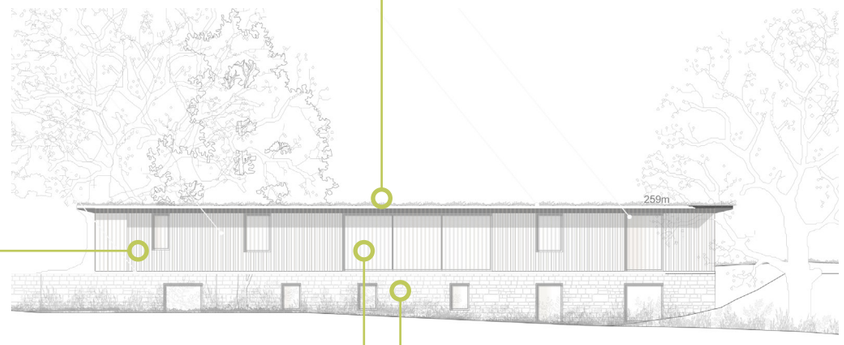
- Asbestos roof (cannot be re-used) and Concrete Block See pg. 33
- Poor thermal performance (numerous cold bridges) See pg. 33
- Damp proofing measures required See pg. 30
- Substantial new concrete floor slab required to support new load-bearing walls.



Existing Building

Proposed

- Rebuild roof as bio diverse plant roof. Rebuild structure with timber and local stone. See pg. 34
- Reuse concrete blocks from the stable as a substrate for under the Geoweb. See pg. 33
- Built to a Passivhaus standard and utilising a fabric first approach. See pg. 35
- Sun shading (solar gain) -
  Minimal glazing on north elevation
  Triple glazed windows and doors. See pg. 35
- Typical light double timber stud detail. See pg.33
- Efficient building form. See pg. 35



Proposed Dwelling

Comparitive Analysis of Existing vs Proposed: Build Quality & Impact

EXISTING

Concrete Brick Structure

Mould and mildew from long exposure to dampness

In order to reuse the concrete block, the structure would first have to be dried out and a substantial amount of additional material would be necessary to improve the poor concrete blockwork thermal performance to reach a PassivHaus standard. This would be close to equal the amount required if building new and utilising a new well insulated timber stud framework. In addition, there would be continued cold bridging and rising damp would need to be suitably addressed with a damp proof course introduced.

Asbestos Roof

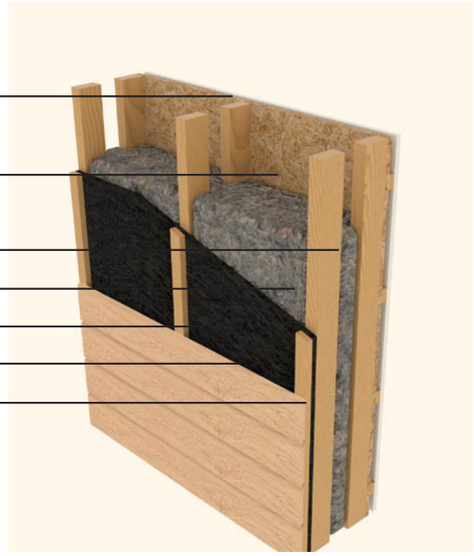
Due to the presence of asbestos in the roof, there is no opportunity for reuse of any kind. The roof needs to be removed, and replaced. The proposal highlights the use of a green biodiverse roof to take the place of the asbestos roof, which will give opportunity for wildlife habitats and biodiversity to occur on the site .

Green biodiverse roofs also offer great insulation and water management qualities.

PROPOSED

Double Stud Timber Construction

12.5mm plasterboard and skim coat
on 25mm batten service void
Sheathing board taped at joints
to create air tight layer
Double timber frame construction
300mm Warmcell insulation
25mm Wood Fibre Board
Breather membrane
Timber cladding 25mm battens



The new timber stud frame would not only preform better, but actually reduce the carbon footprint due to the carbon retained within the timber. The concrete blocks would be crushed and reused as ground substrate, so will have very minimal carbon foot print in that process as well.

Green Biodiverse Roof

A green Biodiverse roof is proposed for its numerous environmental and visual benefits including:

- Green roofs offer undisturbed habitat for wildlife
- Protection of visual amenity
- Stormwater management, reducing the rainwater run-off

Sustainability Material Appraisal

Designing in sympathy with local site conditions is widely recognised as a fundamental principle of good sustainable building design. The materials chosen for the proposal have been carefully selected with consideration for the natural and local context with sustainable principles at the forefront of the design process.

With this in mind, the detail design will employ build ups that allow for the use of sustainable materials. Each design choice made (ie. small and simple form to reduce energy usage) and materials (timber, natural stone and biodiverse roof) have been chosen with CO2 considered at every stage. The primary building material, timber has a high level of embodied carbon and one cubic metre of timber can store around one tonne of CO2. As a secondary building material, natural stone requires minimal operational energy when compared to other materials such as concrete. The project will also reuse the old cement blocks as substrate which in turn retains the pre-existing embodied carbon within the project site.

Biodiverse Green Roof

Sourced within 20 miles. Locally grown and absorbs CO2.

Cotswold Stone

Sourced within 15 miles. Incredibly long lasting and sustainable.

Timber

Sourced locally within 20 miles. Untreated with natural weathering.

Elmore Court Gillyflower, Millar Howard Workshop, Gloucestershire

Gloucester M5 services, Glenn Howells Architects

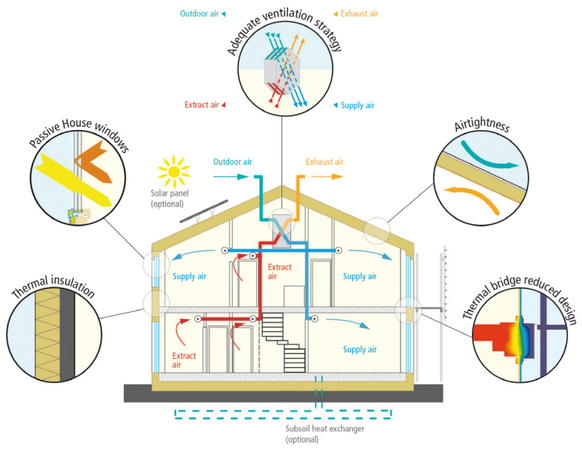
Outhouse, Lyon & Co Architects, Forest of Dean

Enegry and Resource Considerations

The building technical design will be aiming for PassivHaus standard, as well as implementing the 'fabric first' approach. This involves maximising the performance of the components and materials that make up the building fabric itself, before considering the use of mechanical or electrical building services systems. This can help reduce capital and operational costs, improve energy efficiency and reduce carbon emissions. A fabric first method can also reduce the need for maintenance during the building's life.

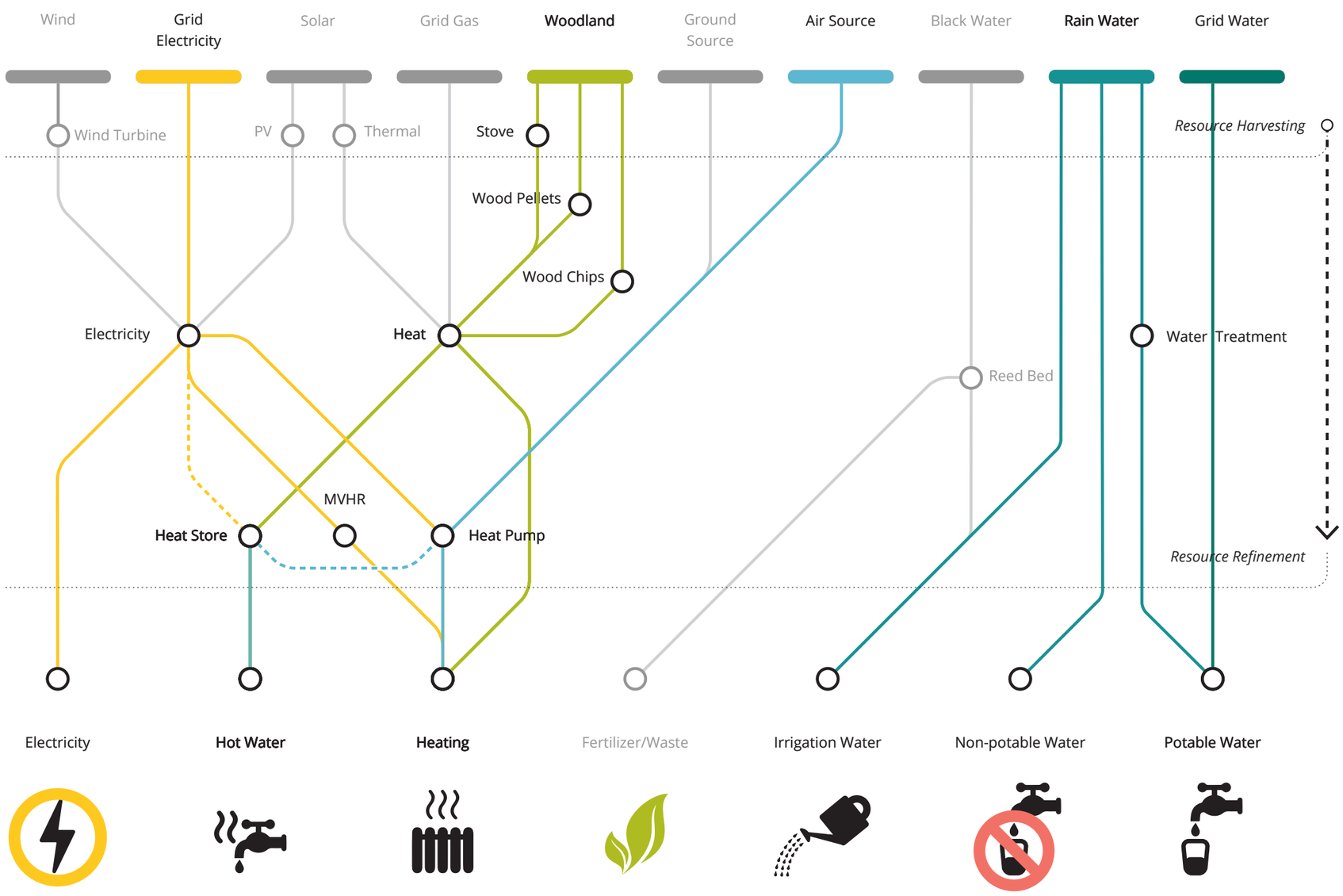
This means the building will be:

- Maximising air tightness
- Using very high insulation
- Optimising solar gain through the provision of openings and shading
- Optimising natural ventilation
- Using the thermal mass of the building fabric
- Using the energy from the occupants



PassivHouse Principles

Sourced from the PassivHouse Institute



M+HW