



BR ARCHITECTURE

Green Infrastructure Statement

for

Proposed Alterations, Extensions & New Build Garage

at

Hudson Heights, Wynnstay Lane, Marford,
Wrexham. LL12 8LH



May 2024

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BR Architecture

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1. Introduction

This is a householder application.

Following changes to Chapter 6 of Planning Policy Wales a green infrastructure statement should now be submitted with all planning applications. This will be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal. **In the case of minor development this will be a short description and should not be an onerous requirement for applicants.**

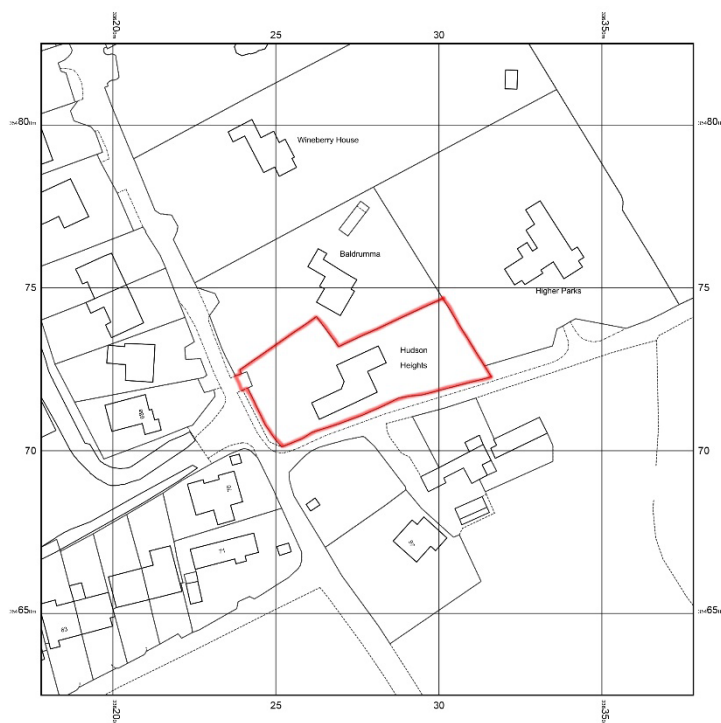
Notwithstanding the above, this is a comprehensive report that has been produced covering the requirements of the published changes going beyond the requirement for a short statement as outlined.

2. Summary of Proposal:

Proposed Alterations and Extensions to an Existing Residential Dwelling.

2a. Site

The proposed development is located at Hudson Heights, Wynnstay Lane, Marford, Wrexham. LL12 8LH



The site does not lie within a protected area

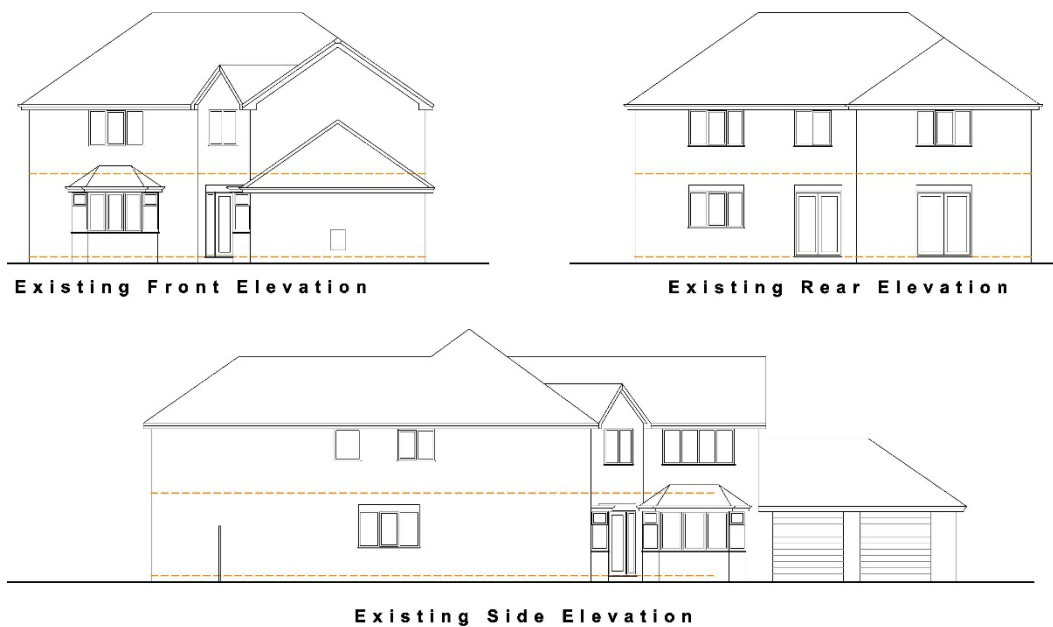
The site does not lie within a flood zone

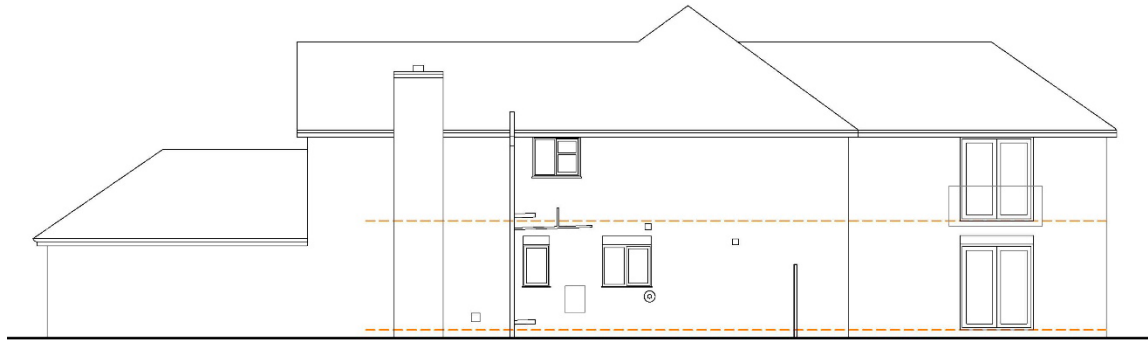
2b. Development

The development will include:

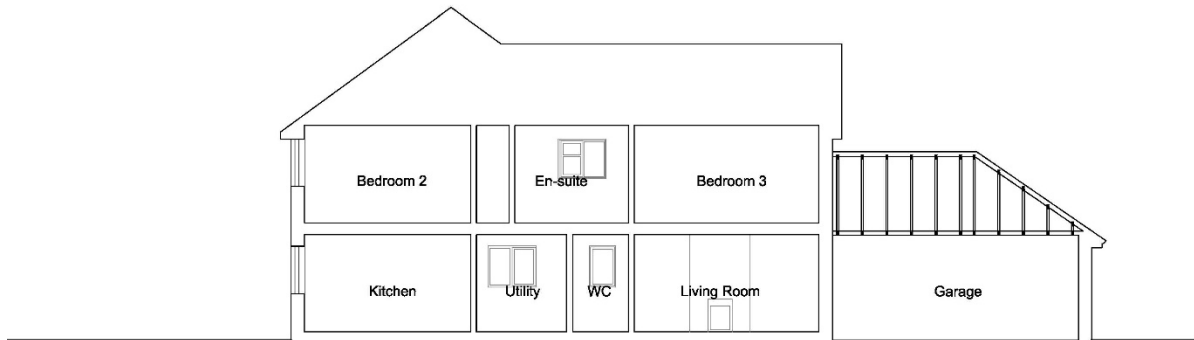
The alterations and extension of an existing dwelling

Existing Plans & Elevations

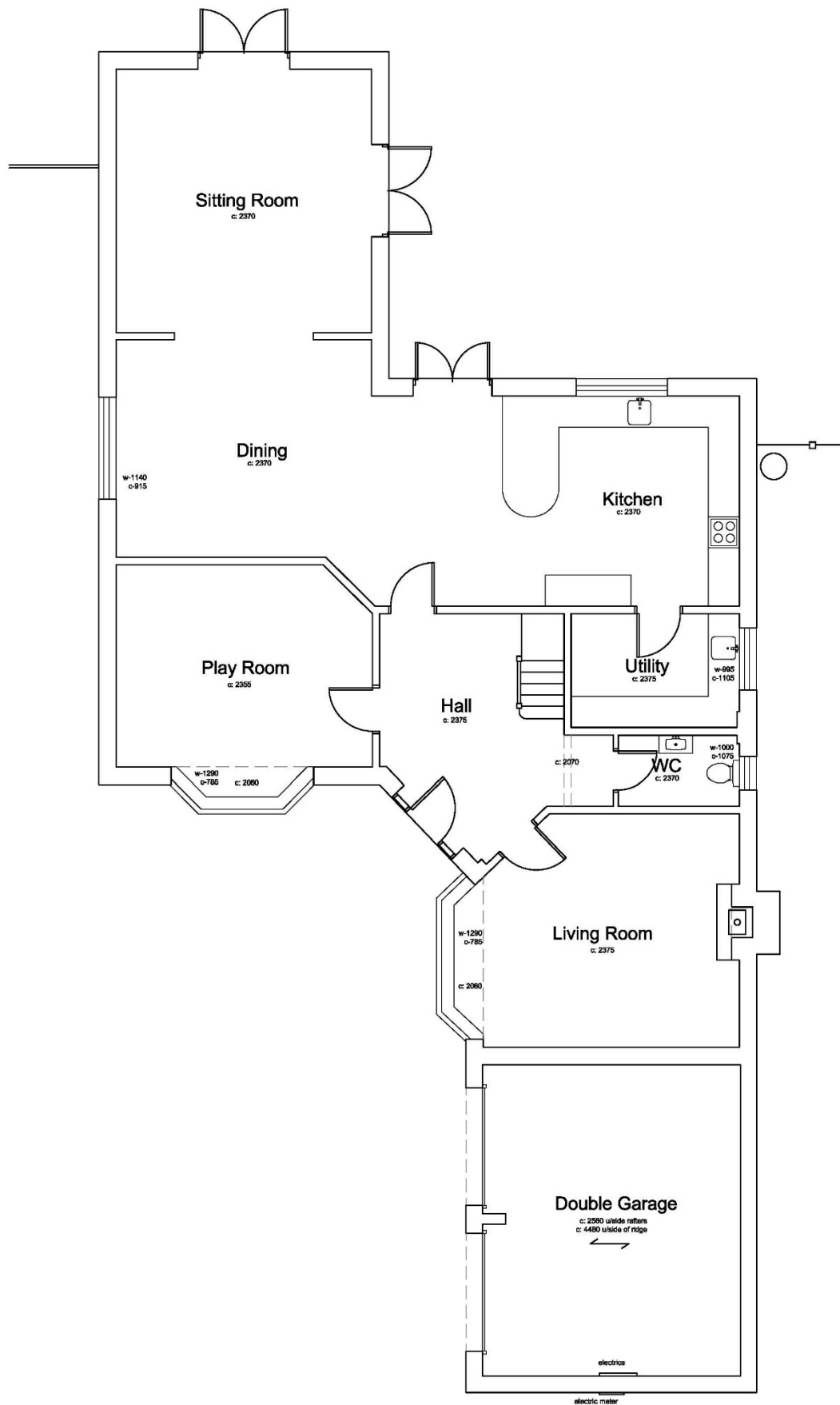




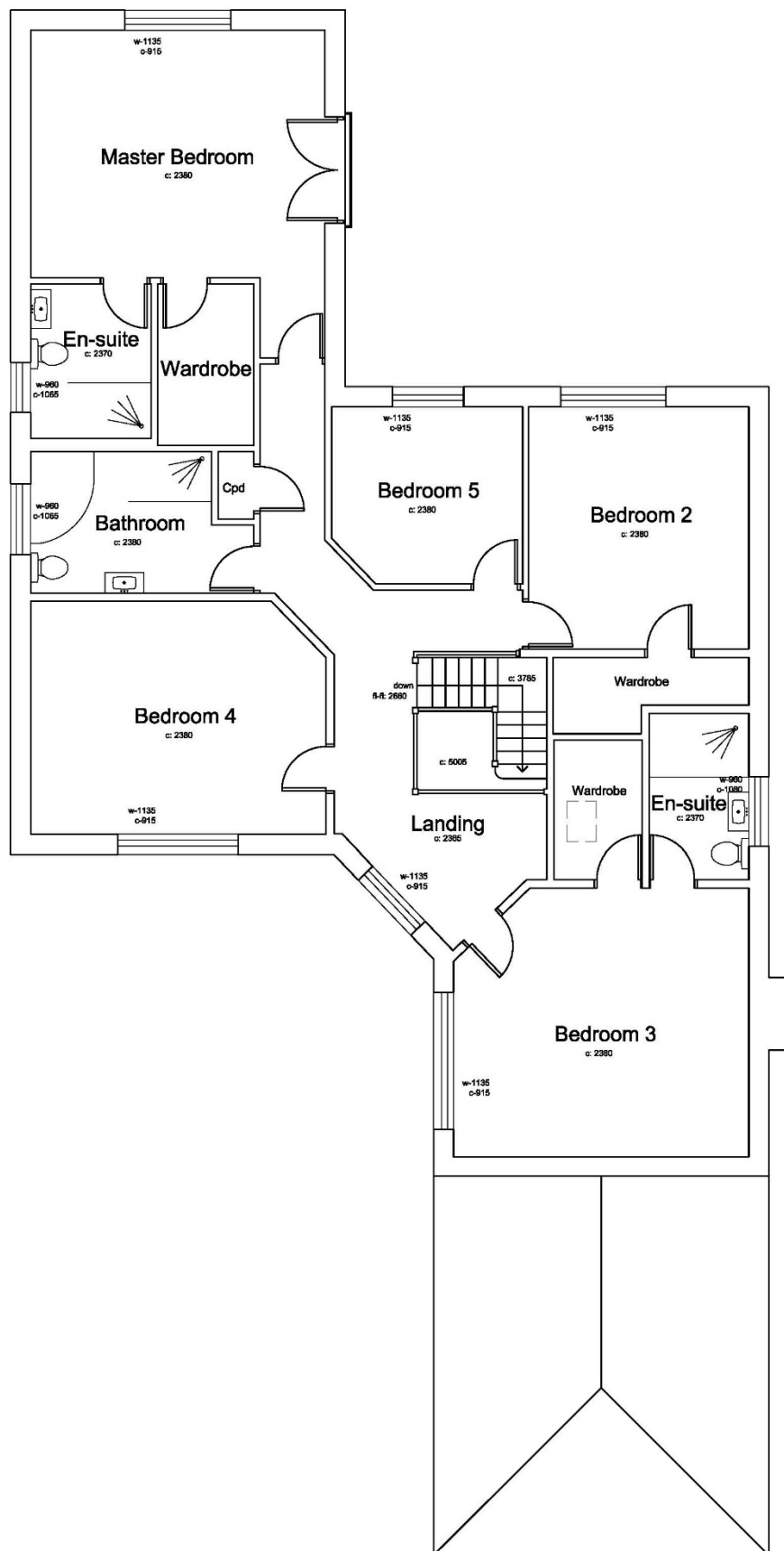
Existing Side Elevation



Existing Section



Existing Ground Floor Plan



Existing First Floor Plan

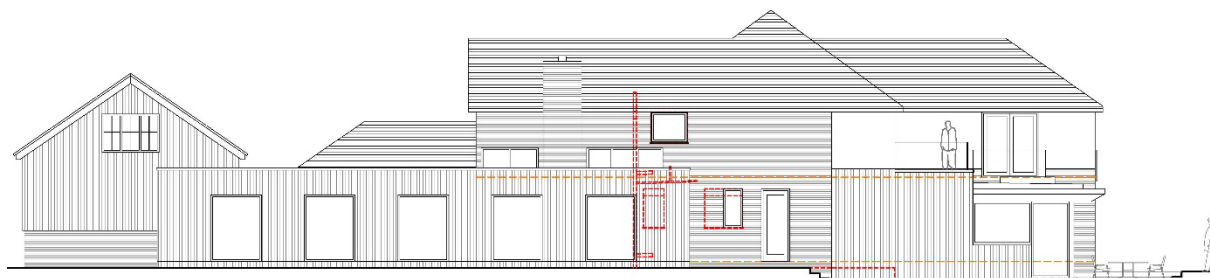
Proposed Plans & Elevations



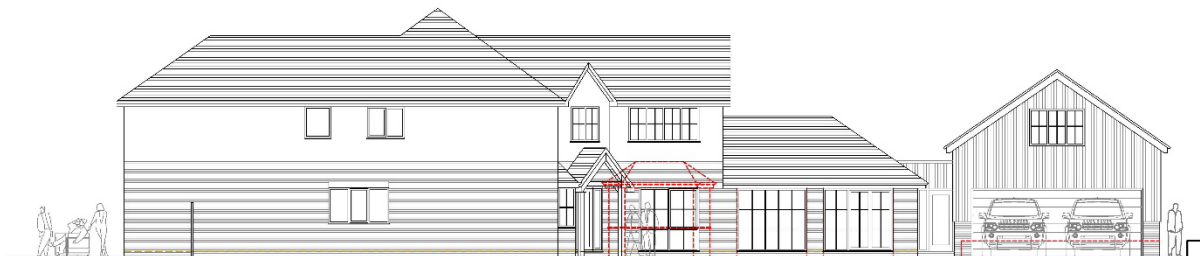
Proposed Rear Elevation



Proposed Front Elevation

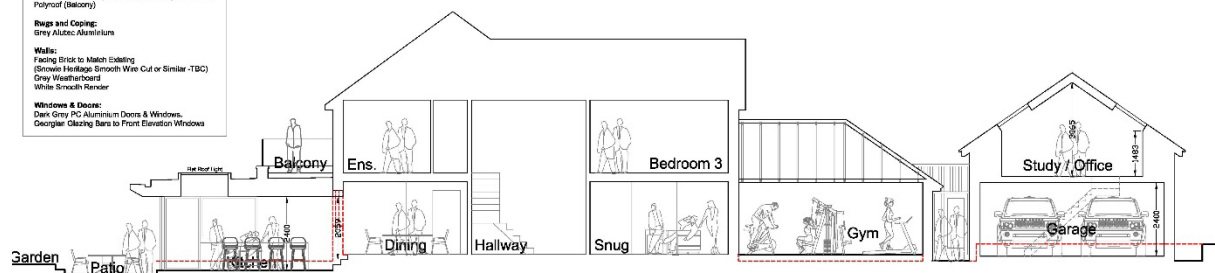


Proposed Side Elevation



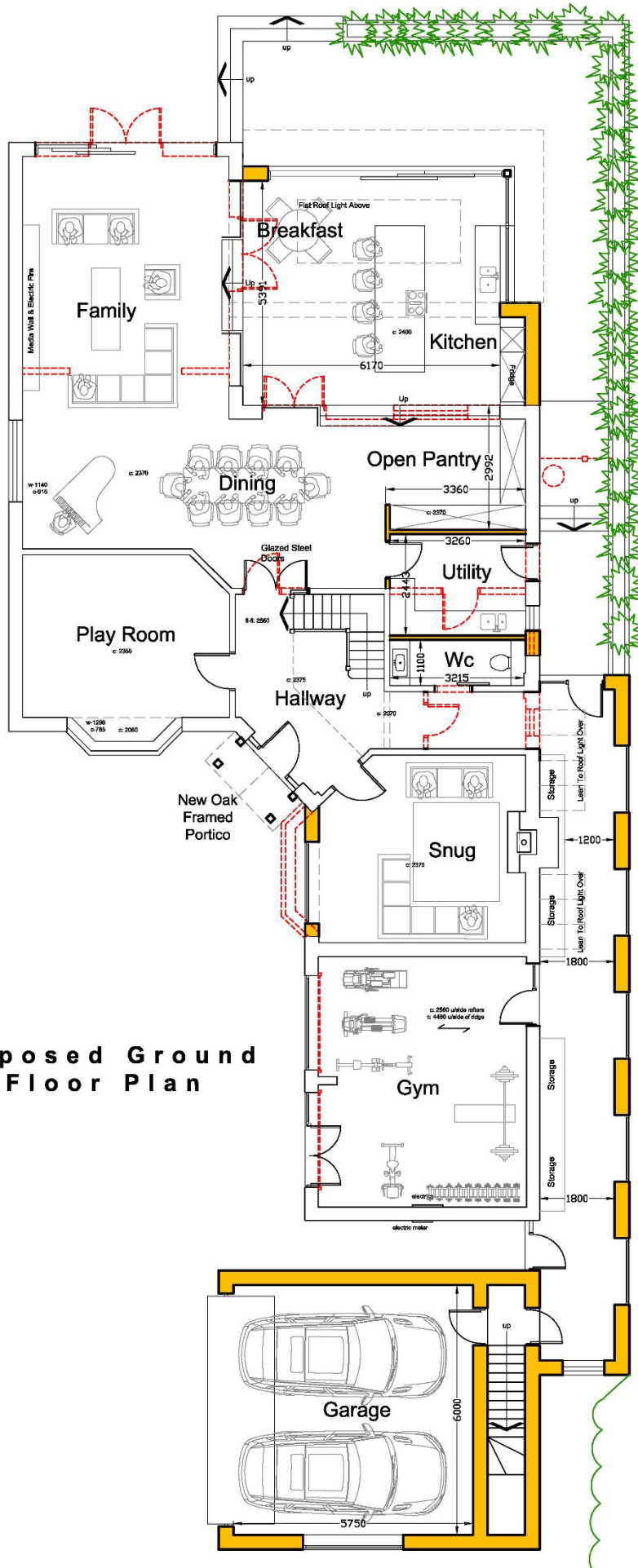
Proposed Side Elevation

- External Finishes:**
- Roof:**
 - Natural Roof Slates
 - Flat Roof - Dark Gray Slate Tonal Roofing Membrane
 - Polyroof (Balcony)
 - Rugs and Coping:**
 - Grey Anzaco Aluminium
 - Walls:**
 - Facing Brick to Match Existing
 - (Stonewall Heritage Smooth Wire Cut or Similar -TBC)
 - Grey Weatherboard
 - White Smooth Render
 - Windows & Doors:**
 - Dark Grey PC Aluminium Doors & Windows
 - Georgian Glazing Bars to Front Elevation Windows

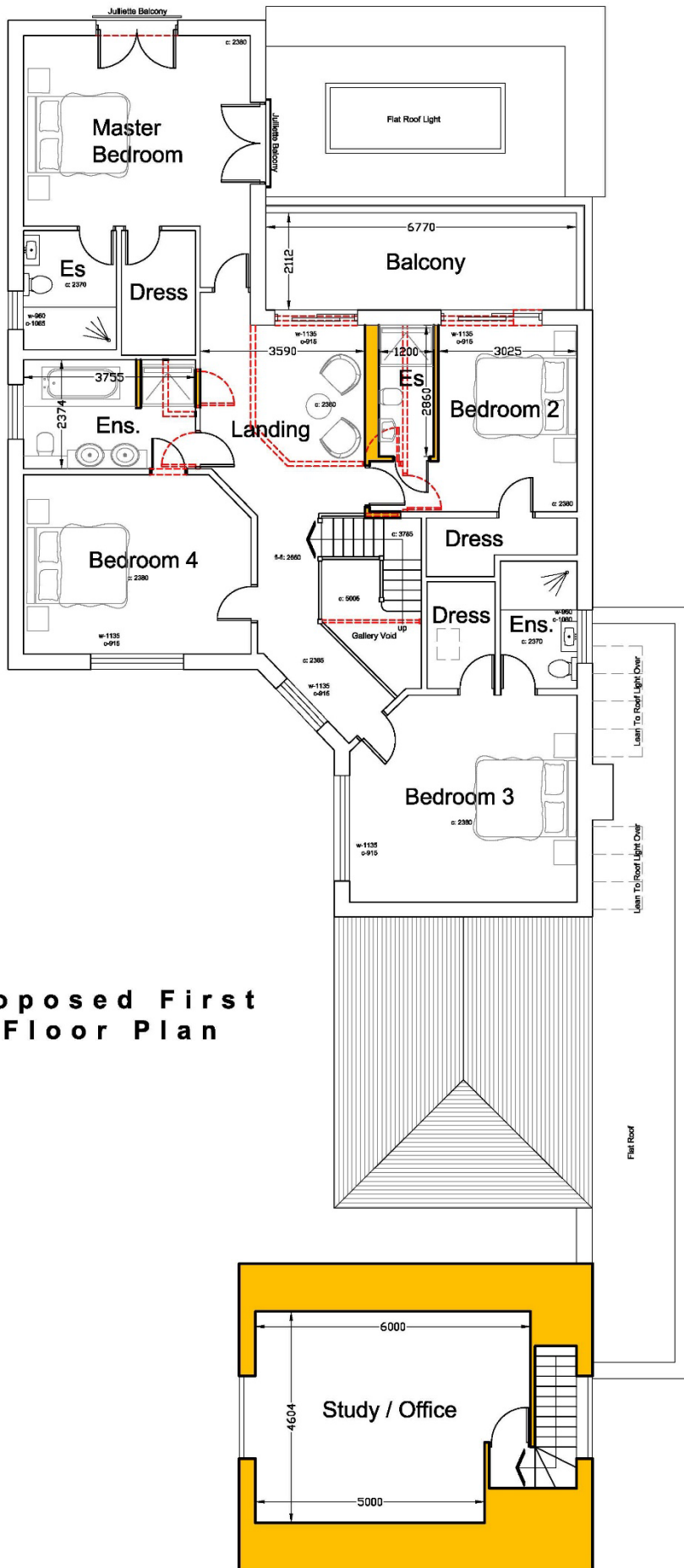


Proposed Section A-A

Proposed Ground Floor Plan



Proposed First Floor Plan



2c. Summary of development works

The development will entail the alteration and extension of existing dwelling to include a New Kitchen and Breakfast Room, Link Extension to access New Build Garage with Study above.

2d. Current ecological state of site



The site comprises of an existing dwelling with stone driveway and lawned garden to the front of the property area and garden to the rear of the property.

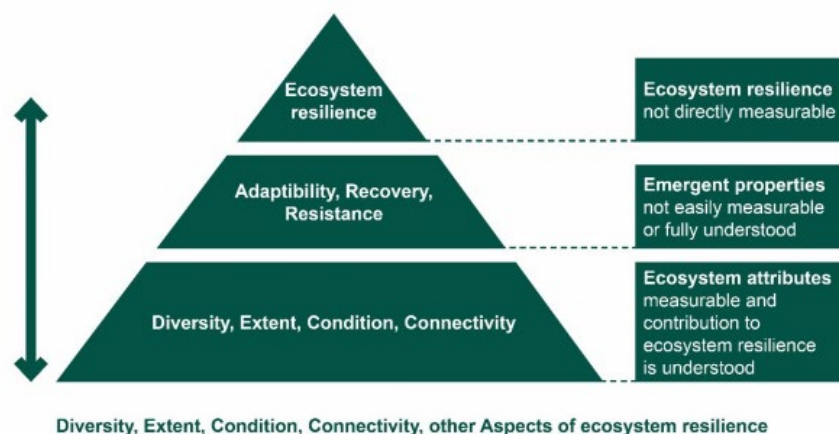
2e. Clearance of vegetation prior to building works.

The clearance of vegetation (partial lawned garden, non-native species in borders) will not adversely affect any species or habitats of ecological value.

In mitigation, all vegetative materials will be disposed in accordance with best practices, and native species planting, and the incorporation of bird boxes will only serve to enhance biodiversity the site currently lacks.

3. DECCA (Diversity, Extent, Condition, Connectivity, other Aspects).

DECCA framework showing the relationship between the attributes and the emergent properties of resilience.



3a. Diversity

This means strategic planning and individual development proposals should avoid negative impacts on biodiversity, by considering how biodiversity assets, can be maintained and enhanced;

There is no evidence of the presence of protected or notable species or habitats that would be impacted by the proposed works.

3b. Extent

This means that strategic planning and individual development proposals must avoid loss in the extent of biodiversity and incorporate measures to appropriately maintain and enlarge existing habitats, especially where extent is small or declining, through habitat restoration and creation with adjoining and nearby areas, green infrastructure features and networks;

The development of the site will include an enhanced biodiversity and opportunities for the creation of habitats.

3c. Condition

individual development proposals must not compromise the condition of ecosystems.

The development will not adversely affect ecosystems.

3d. Connectivity

Individual development proposals should identify and incorporate measures which enable appropriate links to be made between the site and its surroundings so as to improve connectivity

Consideration has been given to ensure that connectivity between the site and its surroundings is achieved by retaining hedgerow boundaries and by ensuring that holes are put into hard boundaries to ensure there will be no impediment of local species to transverse this area.

3e. Adaption

individual development proposals should identify impacts to the ecosystem resilience attributes of biodiversity, using the pressures identified in SoNaRR. They should incorporate measures to ensure that biodiversity's ability to adapt to, resist and recover from pressures is enhanced

The impact of ecosystem resilience is negligible as there are not existing significant species and habitats identified.

4. The State of Natural Resources Report (SoNaRR) for Wales.

4a. Key pressures and impacts

<https://naturalresources.wales/evidence-and-data/research-and-reports/state-of-natural-resources-report-sonarr-for-wales-2020/sonarr2020-our-assessment/sonarr-2020-natural-resources-registers/?lang=en#Pwysau>





OPPORTUNITIES FOR ACTION TO HELP WALES TOWARDS ACHIEVING SMNR

Access to nature
 Community engagement
 Dietary change
 Education and awareness
 Energy efficiency
 Habitat adaptation
 Habitat creation
 Habitat protection
 Habitat restoration
 Improve species diversity
 Integrated plans and strategies
 Nature based solutions
 Payment for ecosystem services
 Pollution management
 Renewable energy
 Research and technology
 Soil protection
 Sustainable agriculture and forestry
 Sustainable construction
 Sustainable transport
 Water efficiency

4b. Opportunities for action

Opportunities for Action - Aims

Aim 1: Stocks of Natural Resources are Safeguarded and Enhanced Sustainable transport [Synergy] with reduced greenhouse gas emissions, reduced environmental noise, and reduced air pollution Low carbon, energy efficient housing [Synergy] with reducing fuel poverty From Water Efficiency Chapter Reduce water use to reduce energy used for heating, pumping and treating water. – Protect large trees in urban areas and promote the planting of street trees. [Synergy] with: reduced energy demand through summer cooling, reduced risk of local flooding, increased air quality, increased mental well-being). Increase the rate of new woodland creation and plant more trees. SoNaRR2020 Register urban key pressures and opportunities 8 Monitor the change in selected mammal and invertebrate species in urban areas.

Aim 2: Resilient Ecosystems SUDS in existing developments [Synergy] with biodiversity and provision of accessible green space Water efficiency measures, Green space management [Synergy] with human well-being and reduction in anti-social behaviour Protect existing large urban trees and plant more street trees [Synergy] with biodiversity, local property values and human well-being Innovative deployment of renewables (such as, solar roof tiles, wind integration with agriculture and forestry can reduce land use pressures, as well as avoid landscape disturbances caused by fossil fuels and nuclear energy) Implement water efficiency measures such as off-line storage, rainwater harvesting and grey water recycling. Initiate behavioural change to a more conservative use of water.

Aim 3: Healthy Places for People Provide adequate garden space for homes likely to house children [Synergy] with SUDS provision Increase biodiverse, accessible green space [Synergy] with reducing flood risk, air pollution and extreme summer temperatures Manage road verges for biodiversity [Synergy] with good financial management) Convert lawns around public buildings to biodiverse meadows [Synergy] with good financial management

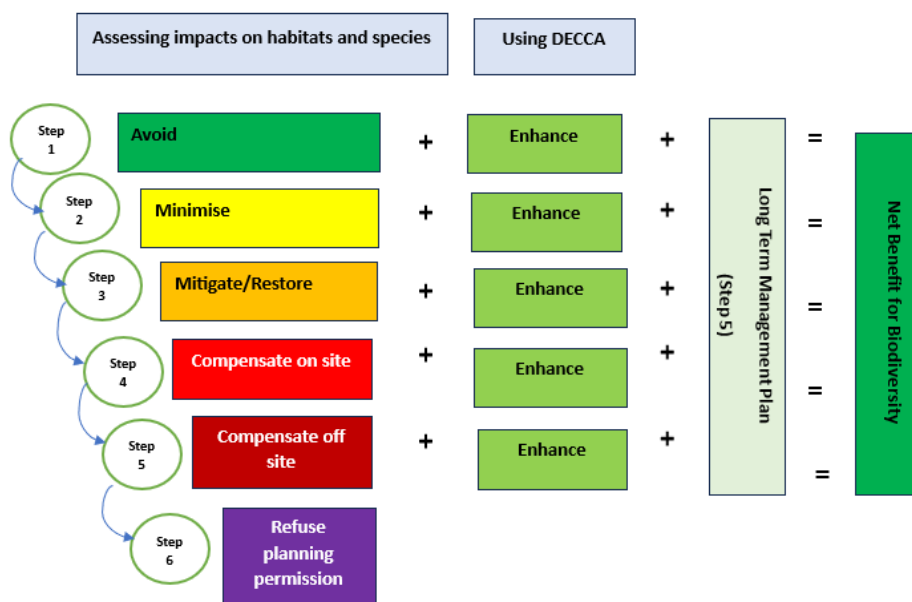
Aim 4: A Regenerative Economy Increase energy efficiency of housing stock [Synergy] with reducing fuel poverty Use more timber in construction to help reduce emissions and support the timber industry [Synergy] with a resilient economy From Water Efficiency Chapter Increase the amount of highly water-efficient domestic appliances installed in new and existing homes.

Key Drivers, Pressures and Impacts on the Urban Ecosystem			
Driver	Pressure	Impact	Opportunities for Action
Climate Change	1. Changing Weather Patterns	1.1. Leading to people being put at risk Confidence Assessment: HIGH SMNR Aim 3 1.2. Increase the risk of flooding in Wales Confidence Assessment: HIGH SMNR Aim 3	The property is unlikely to be impacted by changing weather patterns.
	2. Sea Level Rise	2.1 Increase the risk of flooding in Wales Confidence Assessment: HIGH SMNR Aim 3	The site is not in a flood risk zone.
Pollution	3. Air Pollution	3.1 Harm to human health. Confidence Assessment: HIGH SMNR Aim 3	The scale of the alterations and extensions will limit the amount of air pollution. The development will be carried out in accordance with the relevant building regulations. The development will endeavour to reduce air pollution to as low as reasonably practical.
Pollution	4. Land Pollution	4.1. Decrease water quality. Increase risk of ill health. Confidence Assessment: HIGH SMNR Aim 2 and 3 4.2. Land contamination leading to harming animals and plant life. Confidence Assessment: HIGH SMNR Aim 2 4.3. Lowers the value of land and tourism decline Confidence Assessment: HIGH SMNR Aim 3 and 4 4.4. Community well-being decline Confidence Assessment: HIGH SMNR Aim 3	This is a modest development for the alteration and extensions to an existing dwelling within its own curtilage and therefore will have no impact on neighbouring land or properties. Water quality and land contamination will not be adversely affected.
Pollution	5. Noise Pollution	5.1. Increases the risk of ill health and poor quality of life Confidence Assessment: HIGH SMNR Aim 3	The development will endeavour to limit noise pollution to as low as reasonably practical.

Pollution	6. Water Pollution	6.1. Point Source pollution leading to harm to aquatic ecosystems and risk to human health. Confidence Assessment: To be provided SMNR Aim 2 and 3 6.2. Diffuse pollution leading to harm to aquatic ecosystems and risk to human health. Confidence Assessment: To be provided SMNR Aim 2 and 3 6.3. Increased costs and carbon footprint due to increase in water treatment needs. Confidence Assessment: HIGH SMNR Aim 4	6.1 There are no aquatic ecosystems that will be impacted by the development. 6.2 The development will be contained within the curtilage. All personnel involved in the development will be made familiar with Health & Safety legislation that pertains to risk to human health. 6.3 there will be no increase in water treatment needs.
Land Use Change	7. Built Development and Infrastructure	7.1. Increases carbon footprint Confidence Assessment: HIGH SMNR Aim 4 7.2. Consumes more natural resources Confidence Assessment: HIGH SMNR Aim 1 and 4 7.3. Leads to the loss of high-grade agricultural land and soil sealing Confidence Assessment: HIGH SMNR Aim 1, 3 and 4 7.4. Contributes to landfill and waste. Confidence Assessment: HIGH SMNR Aim 4	7.1 – 7.4 This development is of a very modest scale and does not impact on any identified ecosystems. The current dwelling will be upgraded by alterations and extensions and the provision of new habitats and planting will serve to provide the potential for new ecosystems to be introduced.
INNS, Pests and Disease	8. INNS	8.1. Impacts on built structures, human health and environmental systems Confidence Assessment: HIGH SMNR Aim 2 and 3	No INNS were identified.
Over exploitation		Note: demands for ecosystem goods and services by people living in urban areas are a significant driver of overexploitation of other ecosystems.	The site is already within an established residential area, as this is an existing dwelling and not a new build this will reduce any impact.

5. The Step-Wise Approach

Summary of the Step-Wise Approach



The Stepwise Approach

Planning Policy Wales makes clear that, when making planning decisions, the Local Planning Authority must follow a stepwise approach. Such an approach ensures that planning decisions maintain and enhance biodiversity and build resilient ecological networks. This approach also serves to ensure adverse environmental effects of development are first avoided, then minimised, mitigated and, as a last resort, compensated for. The same National Guidance states that enhancement of biodiversity must be secured wherever possible.

Step 1. Avoid

The first priority for planning authorities is to avoid damage to biodiversity in its widest sense (i.e. the variety of species and habitats and their abundance) and ecosystem functioning. Where there may be harmful environmental effects, planning authorities will need to be satisfied that any reasonable alternative sites (including alternative siting and design options) that would result in less harm, no harm or benefit have been fully considered.

The site is already in existence and the alterations and extensions to the dwelling not only avoids any harm from building on a more sensitive site but by introducing planting and bird boxes it will generate a more diverse ecosystem.

The site is not in an environmentally or ecologically significant area.

The site does not lie in an ecologically sensitive area.

Every effort will be made to protect and enhance existing ecological networks and ecosystems.

Step 2. Minimise

1.b) Proposals in statutory designated sites are, as a matter of principle unacceptable, and therefore must be excluded from site searches undertaken by developers. This principle also extends to those sites containing protected species and habitats which are irreplaceable and must be safeguarded. Such sites form the heart of resilient ecological networks and their role and the ecosystem services they provide must be protected, maintained, and enhanced and safeguarded from development. It will be wholly exceptional for development to be justifiable in such instances.

The site does not lie in an ecologically sensitive area. Every effort will be made to protect and enhance existing ecological networks and ecosystems.

Step 3. Mitigate/Restore

When all locational, siting and design options for avoiding damage to biodiversity have been exhausted, applicants, in discussion with planning authorities must seek to minimise the initial impact on biodiversity and ecosystems by:

- maintaining the largest possible area of existing habitat supporting biodiversity and functioning ecosystems, particularly Section 7 habitats and species where present, by minimising development size and appropriate orientation on site, paying due regard to the potential for continued long term maintenance and management of retained areas to benefit biodiversity; 8 Habitats, including the natural resources which underpin them, which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. Examples include, ancient woodland and veteran trees, ancient hedgerows, wet woodlands, sand dunes, peatland, species rich grassland, long undisturbed soils, blanket bog, salt marsh and lowland fen.*

This is a very modest development. The site has been found to have no existing significant species and habitats identified that cannot be mitigated for.

New Bat Boxes to be added to new Build Garage in line with Bat Report

- ensuring that retained habitats continue to be well connected to adjacent habitats to provide connectivity for key species and ensuring that the favourable conservation status of local species populations is maintained;*



Holes will be put in to facilitate a hedgehog highway which will connect gardens, enabling hedgehogs to roam freely and forage for food and shelter without restriction. This will also be of benefit to other small native species.

- *retaining existing features, develop a management plan for their future care (e.g., trees, hedgerows, species rich grasslands, heath, wetlands, ponds and freshwater habitats) and use appropriate buffers to protect these from construction and operational impacts.*

A green management plan will be put in place and adhered to. This will require that planting is checked and any dead or dying trees/vegetation replaced in first planting season following identification, along with the management of any overgrown hedging or trees in need of pruning/reduction to ensure long term health. Bird boxes will be checked to ensure soundness and hedgehog/wildlife highways will be monitored to prevent obstruction

During construction Contractors to be briefed on the Countryside and Wildlife Act prior to works commencing and be aware of their responsibilities relating there to.

- *using proven innovative/creative solutions (where required) to minimise damage and maintain existing biodiversity features and ecosystems in tandem with robust monitoring and rectification strategies.*

Complimentary planting schemes will be considered to ensure that this is ecologically sustainable with native species planted if required.

Where, after measures to minimise impact, biodiversity and ecosystems could still be damaged, or lost through residual impacts, the proposed development should mitigate that damage. Mitigation measures must be put in place to limit the negative effects of a development.

Although the built environment can be responsible for the loss of green space and habitats, developers working together with property managers/occupiers, can reverse this trend by considering biodiversity in the way a property is designed and managed. Biodiversity relates to the variety and amount of flora and fauna, i.e., plants and animals, that exist in a location.

By introducing planting and bird boxes it will generate a more diverse ecosystem where previously there had been none of significance.

Step 4. Compensate on site/off site.

3.b) Effective mitigation or restoration measures should be incorporated into the design proposal following the consideration of steps one and two above. Mitigation or restoration measures must be designed to address the specific negative effects by repairing damaged habitats and disturbed species. They should seek to restore in excess of like for like, accounting for disturbance and time lags for the recovery of habitat and species, and in every case, mitigation or restoration measures should seek to build ecosystem resilience within the site and where possible the wider area.

In some circumstances, where like for like mitigation measures are not possible, particularly in respect of restoration measures, it may be necessary to consider on site compensation measures in the first instance. In designing mitigation measures where uncertainty exists, applicants should follow the precautionary principle and assume a significant effect. Off[1]site compensation measures should be considered as a last resort.

Compensation measures are not appropriate for this development in this instance, the following mitigation measures will be introduced.

Bat & Bird boxes will be incorporated during the development.

planting native species trees

Considered exterior lighting

6. Building with Nature



Building with Nature is for policy makers, developers, asset owners and other professionals who want to play their part in making high-quality green infrastructure integral to placemaking in the UK and in doing so put nature at the heart of development in a way that is good for people and for wildlife.

Typically, it is applied to green infrastructure projects allied to some form of property-led development in the UK, i.e. residential, commercial, or mixed-use development. It is best suited to 'major' or 'significant' sites (10+ dwellings; 0.5 hectares or more; 1000+ square metres of floor space) and 'strategic' sites, such as major regeneration schemes or urban extensions. It can also be applied to standalone green infrastructure projects, i.e. a park or nature reserve or external retrofit of an urban area undergoing some form of landscape re-development.

LINKED STANDARDS

The CORE Standards link very closely with the themes of Wellbeing, Water and Wildlife and complement the Standards for each of these categories. As they form the foundations of what good green infrastructure looks like, projects that meet the CORE Standards can go some way to meeting the purpose and requirements of all the other Standards.



Every effort has been made to adhere to standards where practicable to adopt the building with nature ethos, however, this is a minor development and the standards set out apply broadly to significant or major sites.

7. Enhancements

Under section 6 of the Environment (Wales) Act 2016 it places a duty on public authorities to 'seek to maintain and enhance biodiversity' and 'promote the resilience of ecosystems'. The following enhancement measures would help to ensure compliance with Section 6 of this Act:

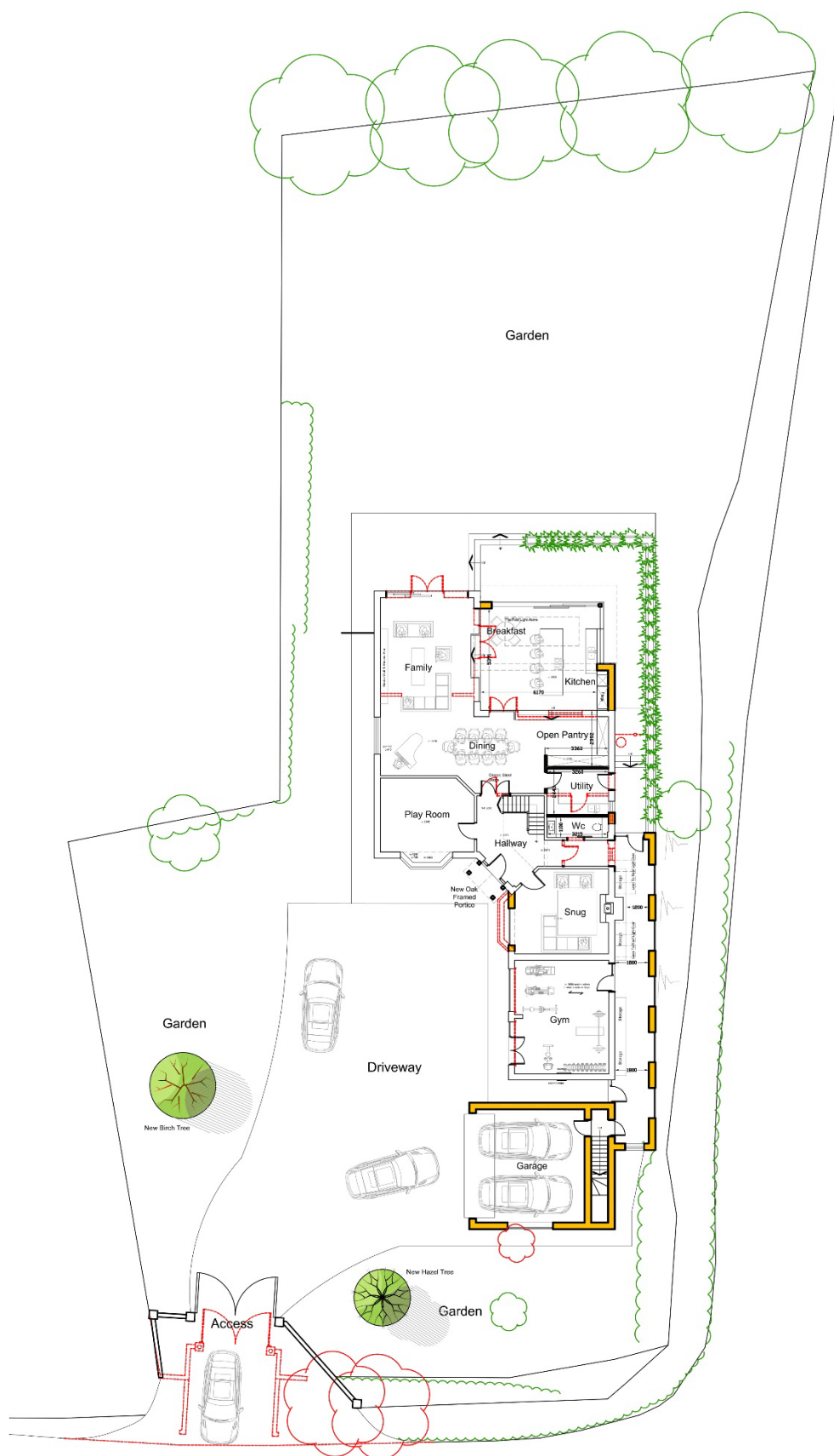
Lighting

All external lighting is to be installed should adhere to the following:

- Be directly facing the ground (with a cowling to prevent any external light upwards).
- Be of low luminance and illumination, be on the warm white spectrum (ideally <2700Kelvin), LED bulbs shall be used.
- Be on a timer to reduce the amount of light pollution and disturbance.
- Luminaires should feature peak wavelengths higher than 550nm.

There should be no light illuminating the newly installed nature boxes and their flight paths to nearby vegetation.

Planting



Proposed Site Plan

New planting on site will need to follow the below points:

- No herbicide, pesticide and artificial fertiliser to be used on site.

- Tree tubes used should be biodegradable.
- If mulch is to be used it will be organic (not synthetic).
- If soil/compost is to be used it will be peat free.
- Trees will require watering within the first 2years of planting, especially during periods of drought.
- If any individual plantings fail within the first 5years they shall be replanted.

Hedgehogs

Natural boundaries will be considered in favour of fencing. However, where fencing is necessary, holes will be put in to facilitate a hedgehog highway which will connect gardens, enabling hedgehogs to roam freely and forage for food and shelter without restriction. This will also be of benefit to other small native species.

Development sites are hazardous places for foraging hedgehogs with the potential for animals to become trapped in open excavations for footings etc, and on larger developments such as this, exposed pipe systems such as storm drains, sewage pipes etc can potentially lead to the entrapment of animals. The simple precautionary measures below have therefore been recommended.

- Escape ramps must be fitted to any excavations left open overnight to allow animals to escape.
- These excavations must be checked for the presence of animals prior to work commencing each morning
- Any exposed pipe systems must be capped at the end of each working day and never left open overnight
- Site hygiene with regards to food waste must be enforced to reduce the chances of animal being tempted to stray onto the construction site overnight.

Birds

The installation of a Schwegler Bird Boxes at the site will provide additional nesting habitat for birds.

These boxes will be placed on the northeast or western elevations of the building, located around 3m – 5m from the ground with a clear flight path into the boxes and away from wind and direct sunlight.



Bats

The installation of a Schwegler Bat Boxes at the site will provide additional habitat and mitigation for bats.

- Where bats are known to feed and navigate (close to hedges and tree lines);
- Ideally at least 4m above the ground (where safe installation is possible);
- Away from artificial light sources (to protect them from predation); and
- Sheltered from strong winds and exposed to the sun for part of the day (usually south, south-east or south-west).



8. Conclusion

In Wales the biodiversity duty is set out under Section 6 of the Environment (Wales) Act 2016. It requires public authorities to “seek to maintain and enhance biodiversity in the exercise of its functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions”

A Green Infrastructure Statement should be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal. In the case of minor development this should be a short description and is not expected to be an onerous requirement for applicants.

The Green Infrastructure Statement will be an effective way of demonstrating positive multi-functional outcomes which are appropriate to the site in question and must be used for demonstrating how the step-wise approach has been applied.

This statement shows the approach taken regarding the green infrastructure of the site and how the ecology will be enhanced and maintained meeting the requirements of the amended Planning Policy Wales.