



The Lodge  
178 Bearwood Road

Design + Access Statement

December 2025

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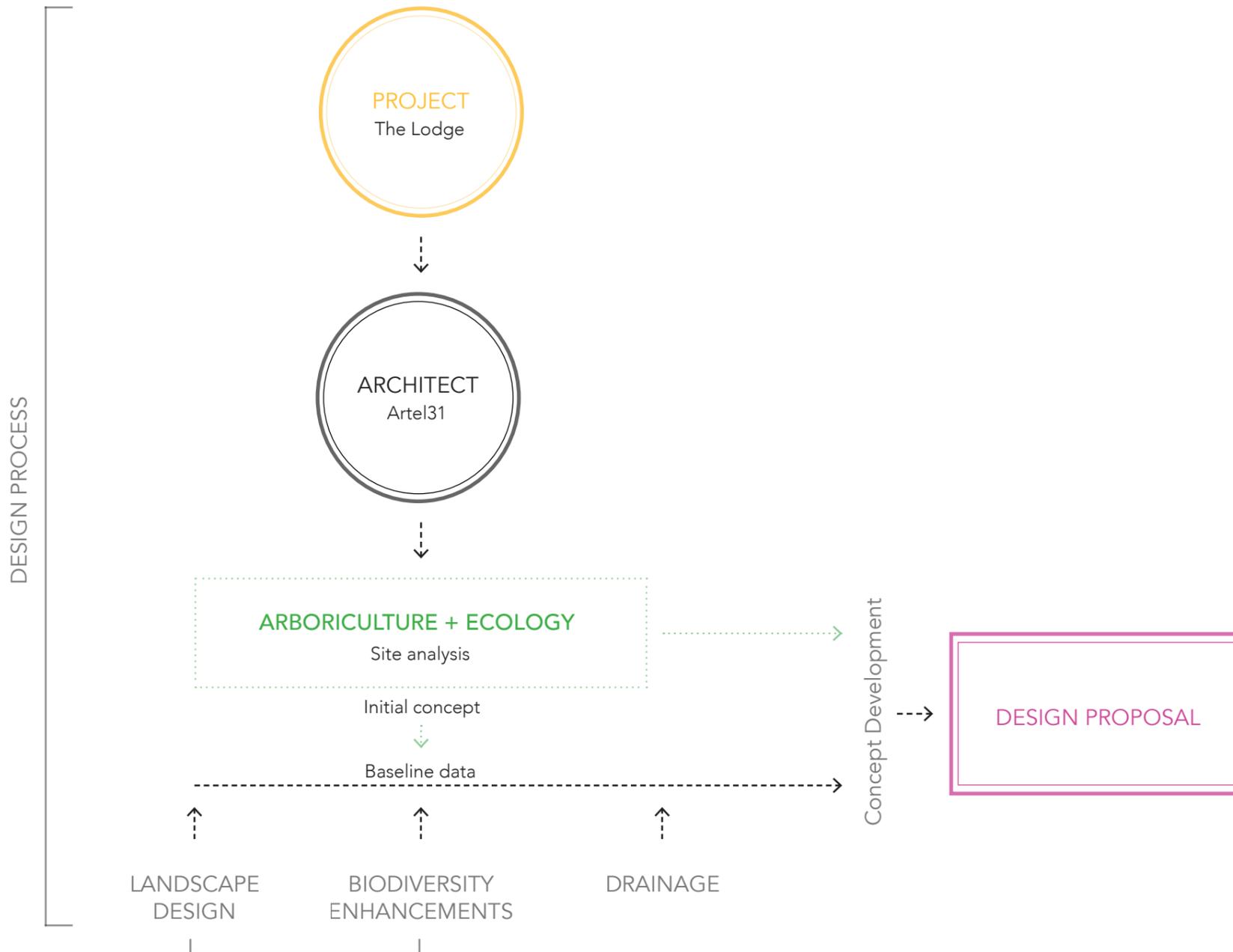
Artel31 have prepared this design statement alongside the planning application. This should be read in conjunction with and in reference to the submitted drawings along with the following supporting reports;

Appendices;

- 1 Arboricultural Assessment - LANDARB
- 2 Preliminary Ecological Appraisal - Ellendale Environmental
- 3 Whole Life Carbon Assessment - Artel31
- 4 Drainage Strategy - Tumu
- 5 Biodiversity Net Gain - Ellendale Environmental



0 - Concept progression diagram



The design process has been lead and informed by the desire to enhance and improve the natural surrounding context. The initial step was to gather site analysis in order to give a level of baseline data to fully understand the existing constraints.

This gave birth to a symbiotic design response that marries site context and built form into one.

Primary analysis;

Site survey

Arboricultural report

Ecological appraisal

This then enabled initial concept responses to be explored whilst further investigations began to shape these concepts into more detailed design.

Further inputs;

Sustainable urban drainage report

Landscape design

Biodiversity enhancements



01 - Wokingham constraints map



The site has no historic or local significance. The existing property is neither a heritage asset nor located within the curtilage of any other listed building. The site falls outside of any conservation areas is not in an AONB or SSI.

Bearwood Road itself has little visual or local significance other than its use as a main commuter road connecting Barkham and Winnersh. It is characterised by high planted vegetation either side of the road, obscuring several set back detached houses situated in large plots.

The overall site is owned by the same generational family and split into 4 plots with four independent dwellings. The current properties have little connection to each other and are constructed of differing architectural styles.

This application relates to 'The Lodge', originally built in 2008 which has recently gained approval under two certificate of lawfulness applications for the house, store and curtilage under applications 231276 and 242499 respectively.

This application seeks to gain approval for a replacement dwelling.

- 02 - 1892 National Library of Scotland historic map
- 03 - 1945 National Library of Scotland historic map
- 04 - 1961 National Library of Scotland historic map
- 05 - 2025 drone shot of site, provided by applicant



The historic maps adjacent show the gradual evolution on the site of the main house at 178 Bearwood road.

The residential curtilage of the original dwellinghouse, 178 Bearwood road, used to span the whole of the site until the addition of The Lodge and The Lakehouse. These were erected on the incidental residential land of the existing dwelling in 2008 and 2013 respectively.

The adjacent woodland boundary is shown consistently since 1945 with the Lodge located outside the woodland boundary, adjacent to an old gravel pit.

A number of substantial developments in the surrounding area have changed the local landscape, such as the large area of housing to the east of the site and the golf course to the south-west. Both of these have reduced the woodland nature of the surrounding context. Despite these relatively recent developments the family plot itself has seen very little built form alteration.

The residential ownership of the woodland has resulted in the owners taking on the substantial and ongoing task of removing invasive species, allowing for future under-storey regeneration in the pursuit of maintaining the plot's historical biodiversity and site identity.

05 - Existing TPOs



- Woodland overrun by Rhododendron
  - Soft fruit area
  - Orchard
- Historically Cleared area by utility company
  - Hazel Stands
- 1978 TPO
  - 1973 TPO

The existing garden has two historic TPOs that incorporate the majority of the north and east of the site. The definition of the TPOs are as follows

20/1973 - Woodland TPO: Mixed hardwoods consisting of mainly Birch, Chestnut and Oak

87/1978 - Woodland TPO: Birch, Chestnut, Oak, Various

Although relevant for the site's ecological context it should be highlighted how the site has developed since the TPOs were initially served to more accurately reflect the site as it is at the time of application.

The *Woodland* to the north of the site, highlighted in green, in diagram 02 is currently overrun by Rhododendron and is regularly managed by the client to ensure they do not begin to dominate this area of the site.

The *Orchard* had pear trees present when the site was bought in 1957 but has since been added to include apple and damson trees.

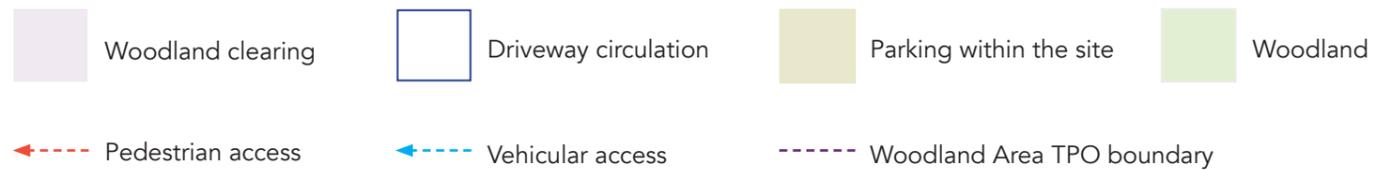
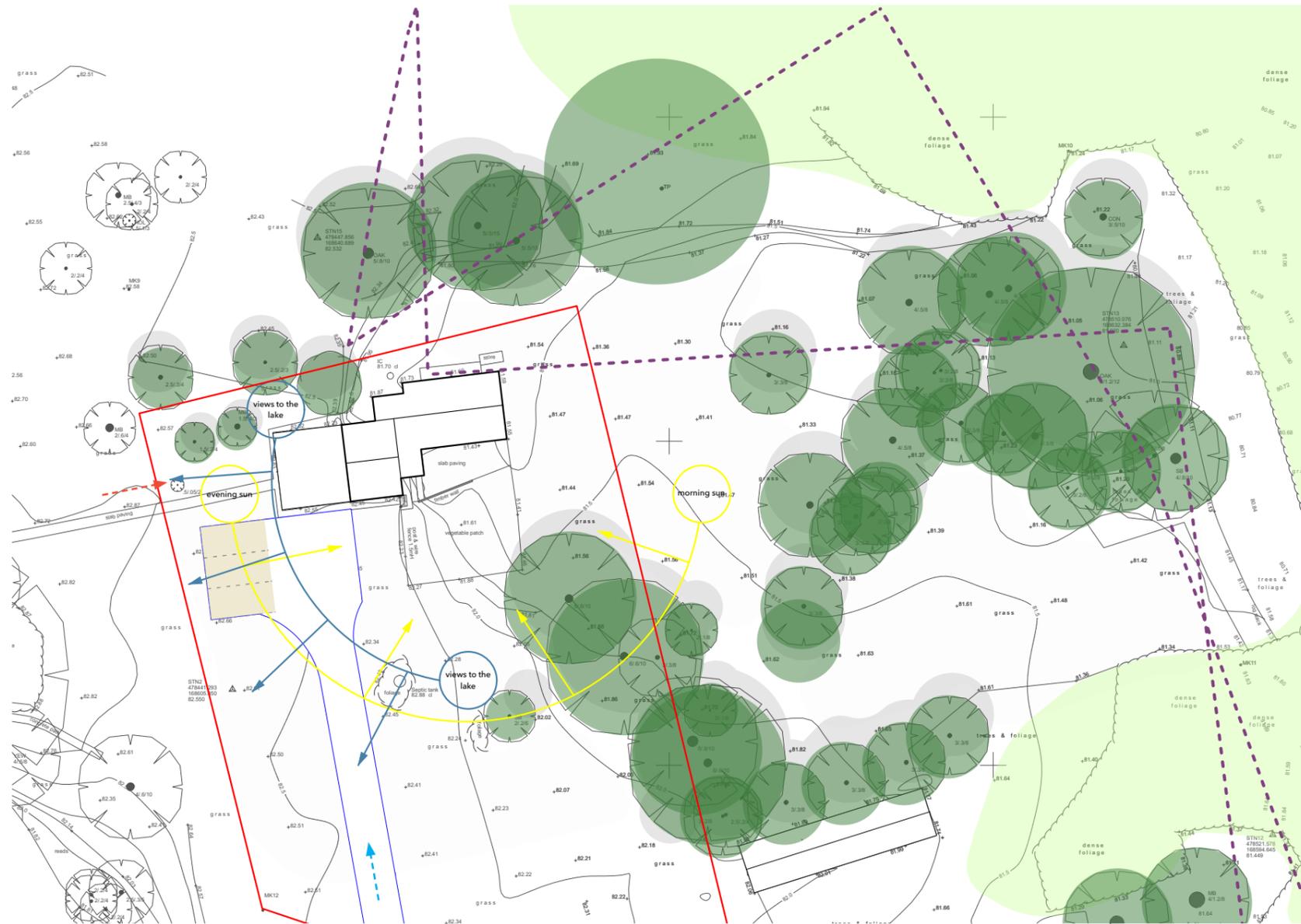
The *Hazel Stands* were also present when the site was purchased and are regularly coppiced to prevent them growing too large.

The *Soft Fruit Area* was established by the client's grandparents following the purchase of the site.

There is a strip within the TPO and woodland area which has been historically cleared by a utility company to maintain a utility pole.

The above highlights that the site blanket TPO does not fully reflect the nature of the site's ecology and how the current owners have continued to maintain and improve the site which will be bettered by the proposed landscaping measures as part of this application to increase the ecological value of the site.

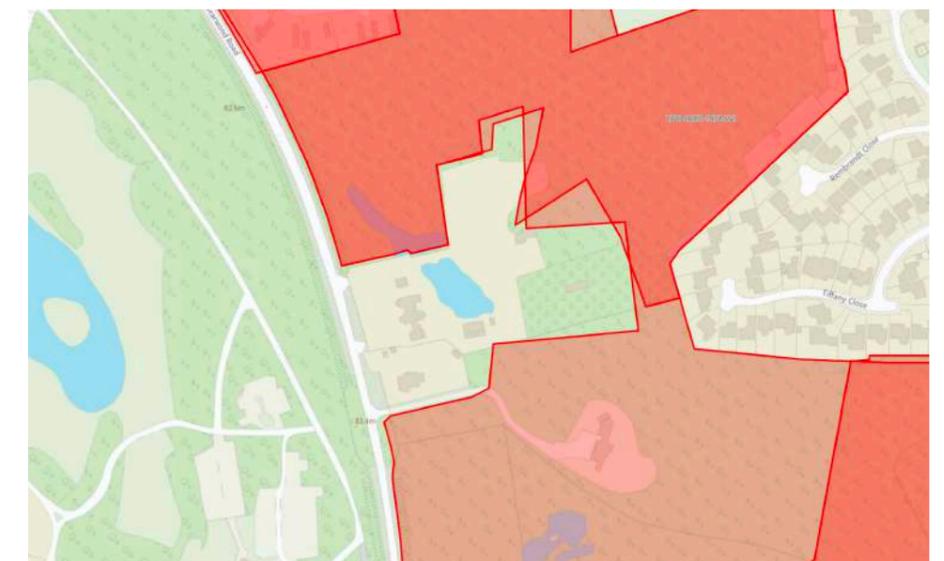
06 - Constraints diagram  
07 - Wokingham Borough Council Protected Tree Map



The duality of the site is evident immediately with a more tightly enclosed area of woodland/scrubland with varying degrees of conservation value and then a more open grassland area which is of much lower conservation value. The existing dwelling sits in the grassland area, and it was felt that the replacement dwelling should also be sited in that zone to ensure that there were no negative impacts on the biodiversity or ecological value of the site.

To the west is a small lake which is used as a carp pond, as such it is primarily of visual and amenity value. There is a large area of TPO's woodland remote from this site but which offers a wonderful opportunity to enhance the value of this site to match or exceed its importance.

The location of the new dwelling has been largely sited where the current building sits but carefully orientated to slot into the existing natural constraints whilst maximising the views and aspect of the locale. The position of the building does not encroach into the Woodland Area Tree Preservation Order but sits adjacent to it to take advantage of these natural constraints as indicated on the Wokingham Borough Council Protected Tree Map below.





**CP11 - Proposals outside Development Limits (including countryside)**

In order to protect the separate identity of settlements and maintain the quality of the environment, proposals outside of development limits will not normally be permitted except where:

- 1) It contributes to diverse and sustainable rural enterprises within the borough, or in the case of other countryside based enterprises and activities, it contributes and/or promotes recreation in, and enjoyment of, the countryside; and
- 2) It does not lead to excessive encroachment or expansion of development away from the original buildings; and
- 3) It is contained within suitably located buildings which are appropriate for conversion, or in the case of replacement buildings would bring about environmental improvement; or
- 4) In the case of residential extensions, does not result in inappropriate increases in the scale, form or footprint of the original building;
- 5) In the case of replacement dwellings the proposal must:
  - i) Bring about environmental improvements; or
  - ii) Not result in inappropriate increases in the scale, form or footprint of the original building.

The proposed development seeks permission for the replacement of an existing, outdated, and energy-inefficient dwelling located outside the defined development limits as identified in the Wokingham Core Strategy. In line with Policy CP11, proposals in such locations must demonstrate either an environmental improvement or avoid an inappropriate increase in scale. This application firmly supports the former.

The replacement dwelling will deliver significant environmental enhancements, addressing both climate and ecological considerations. The existing structure is not fit for purpose and performs poorly in terms of energy efficiency. In contrast, the proposed dwelling will reduce energy consumption through high-performance building fabric, renewable energy technologies, and low-carbon design. Further to this it will integrate a comprehensive suite of biodiversity measures, including native landscaping, habitat enhancements, and biodiversity net gain across the wider site;

These improvements are entirely consistent with Policy CP11, which supports replacement dwellings that improve environmental performance and overall sustainability.

At a national level, the proposal is strongly supported by the National Planning Policy Framework (NPPF):

Paragraph 1 of the NPPF sets out the government’s overarching objective to achieve sustainable development, which this proposal demonstrably achieves through environmental, social, and economic benefits.

Paragraphs 119–123 encourage making effective use of land, particularly when replacing poorly performing buildings with higher quality, sustainable development. In this instance, the new dwelling clearly represents a more efficient and positive use of the site.

Paragraphs 134–136 emphasize the importance of high-quality design. The proposal will deliver a design of both local distinctiveness and national ambition, seeking to set a precedent.



The existing property performs significantly below the thermal standards expected of a modern dwelling. In addition, the current construction method allows for water ingress, leading to ongoing deterioration of the dwelling.

Furthermore, The Lodge is an outlier in scale, environmental performance and suitability for family life in relation to all surrounding dwellings, being currently used as a family home for 4 it does not meet the minimum guidance as set out in the Technical Housing Guidance.

Retaining the building in its current form is not considered viable, as undertaking remedial works to address flood risk and improve thermal performance would not represent a sustainable solution. The nature of the construction itself is not up to modern standards and there is a risk of further degradation through its prolonged retention and future risk of climate change.

As a small timber structure, the property holds no architectural or historical significance within the site and bears no meaningful relationship to neighbouring or surrounding properties.

**Table 1 - Minimum gross internal floor areas and storage (m<sup>2</sup>)**

Number of bedrooms(b)	Number of bed spaces (persons)	1 storey dwellings	2 storey dwellings	3 storey dwellings	Built-in storage
1b	1p	39 (37) *			1.0
	2p	50	58		1.5
2b	3p	61	70		2.0
	4p	70	79		
3b	4p	74	84	90	2.5
	5p	86	93	99	
	6p	95	102	108	
4b	5p	90	97	103	3.0
	6p	99	106	112	
	7p	108	115	121	
	8p	117	124	130	
5b	6p	103	110	116	3.5
	7p	112	119	125	
	8p	121	128	134	
6b	7p	116	123	129	4.0
	8p	125	132	138	



At present the existing house is 304m<sup>3</sup>. As highlighted this is atypical within the context of Bearwood Road.

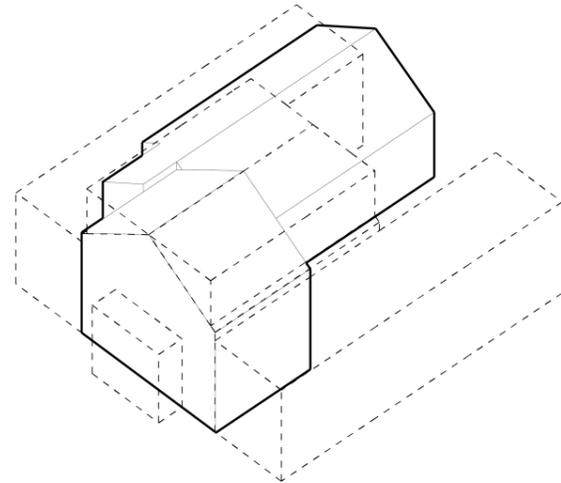
The existing house already has Prior Approval for an additional 262m<sup>3</sup> volume through extensions permissible under permitted development REF250954 resulting in a total dwelling volume of 566m<sup>3</sup>.

In order to achieve the required space a proposed ancillary outbuilding would also be allowed under PD for car parking, gym and a home office.

The resulting maximum volume of built form would be 2721m<sup>3</sup> allowed under the rules of PD. This however would not be considered consummate of the area due to the resulting size of the outbuilding. A more appropriate outbuilding to house the required ancillary spaces would be 674m<sup>3</sup> resulting in a total volume of 1240m<sup>3</sup>.

The proposed PD scheme would provide the space required but is constrained by the existing structure resulting in a compromised layout and the separate ancillary outbuilding results in a disconnected between the two structures and sprawl across the site.

We propose a consolidated replacement dwelling of 1040m<sup>3</sup> which will address the existing dwellings poor performance and inherent fabric issues whilst eliminated piecemeal additions and outbuildings with a coherent singular mass that would have a total volume of 1681m<sup>3</sup> less than that allowed under permitted development.

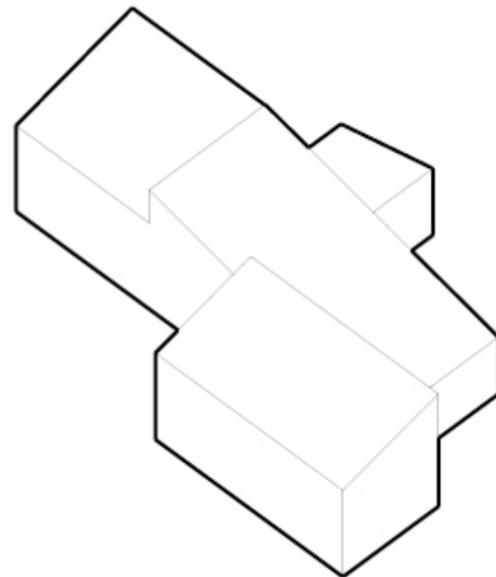


Existing Building = 304m<sup>3</sup>

Extensions permissible under permitted development  
Prior Approval application 250954 = 262m<sup>3</sup>

Outbuilding permissible under permitted development  
= 2155m<sup>3</sup>

Total volume permissible under PD(prior Approval)  
= 2721m<sup>3</sup>

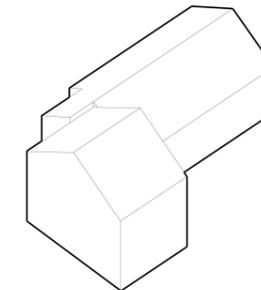


Proposed Dwelling = 1040m<sup>3</sup>



As shown on the adjacent map there have been several neighbouring properties which have increased the size and scale of the existing properties through either extensions or replacement dwellings. This has helped set a local vernacular of family dwellings which fits the proposal within the established pattern of development.

All neighbouring houses shown have planning permission, are at minimum 1000m<sup>3</sup> in volume and 250m<sup>2</sup> in floor area, showing the Lodge to be a clear anomaly. These sizes have clearly been deemed commensurate to their respective surroundings, and a reasonable size for family life, and thus we see fit the same view be taken towards the future of the Lodge.



'The Lodge' 178 Bearwood Road

Volume = 304m<sup>3</sup>

11 - 148 Bearwood Road before works  
 12 - Approved drawings (currently Built) - AEH Architects, available on Planning Portal



## 148 Bearwood Road

Planning reference: 192473

Floor Area = 265m<sup>2</sup>

Volume = 1,890m<sup>3</sup>

As submitted by Boyer Planning, is smallest in neighbouring floor area at 265m<sup>2</sup>, circa 3.5x the lodge as existing, with a volume of 1,890m<sup>3</sup> and a 32% increase over the original dwelling and circa 6.1x the Lodge.

### Form + Materiality

A central two-storey mass with multiple additions. The central coherent form is disrupted with extensions over time creating a piecemeal dwelling.

The works as proposed and completed in the above application has further added to the mass of the dwelling, including a contemporary flat roofed extension and new irregular fenestration. Following the approval the roof tiles have been replaced with non-traditional slates and timber detailing.



South Elevation 1:100



East Elevation 1:100

13 - 174 Bearwood Road - Available on Rightmove.co.uk  
14 - Approved Scheme - Inspiration Chartered Architects, LTD available on Planning Portal



## 174 Bearwood Road

Planning reference: 141362

Floor Area = 540m<sup>2</sup>

Volume = 1,680m<sup>3</sup>

174 is the largest in neighbouring floor area at circa 7x the lodge, with a volume of 1,680m<sup>3</sup> as calculated from the approved drawings in planning application 141362.

### Form + Materiality

Already a large two-storey dwelling 174 Bearwood Road has multiple additions to its central mass; most notably a lean-to porch single storey conservatory and connected garage and annexe creates a sprawling dwelling. Further height is achieved through a prominent chimney. Materiality is characterised by hung clay tiles whilst non traditional pale london stock-brick is utilised in its wall construction.



14 - 176 Bearwood Road Existing - Ridgeway Heritage Consultancy available on Planning Portal  
15 - Approved replacement dwelling - ark tec, available on Planning Portal



## 176 Bearwood Road

Planning reference: 223742

Floor Area = 322m<sup>2</sup>

Volume = 1,043m<sup>3</sup>

As approved the proposal for 176 is smallest volume at only 3.4x the Lodge's existing total volume, with a floor area far greater than the Lodge.

The total volume is the same figure as the proposed replacement dwelling for The Lodge demonstrating it is in-keeping with the size and scale within the pattern of development.

### Form + Materiality

An approved replacement two-story dwelling 176 Bearwood Road replaces the existing single story property. Both the existing and proposed are characterised by piecemeal additions, including dormer, dominant brick chimney and single story 'extension' and large carport. The replacement dwelling will utilise clay roof tiles and red brick.



REAR ELEVATION (north-east facing)  
Scale 1:100 @ A2



SIDE ELEVATION (north-west facing)  
Scale 1:100 @ A2

16 - Approved Scheme at 178 Bearwood Road, By Artel31



## 178 Bearwood Road

Planning reference: 240665

Floor Area = 384m<sup>2</sup>

Volume = 1,200m<sup>3</sup>

178 has planning permission for a replacement dwelling with a floor area of 384m<sup>2</sup> and total built volume of 1,200m<sup>3</sup>.

### Form + Materiality

The other replacement dwelling on site is characterised by a central two-storey form with two single-storey wing additions. Further additional elements are presents through a chimney and external covered kitchen. The materiality uses a pallett of red brick, charred timber cladding and plain clay roof tiles.

### Summary

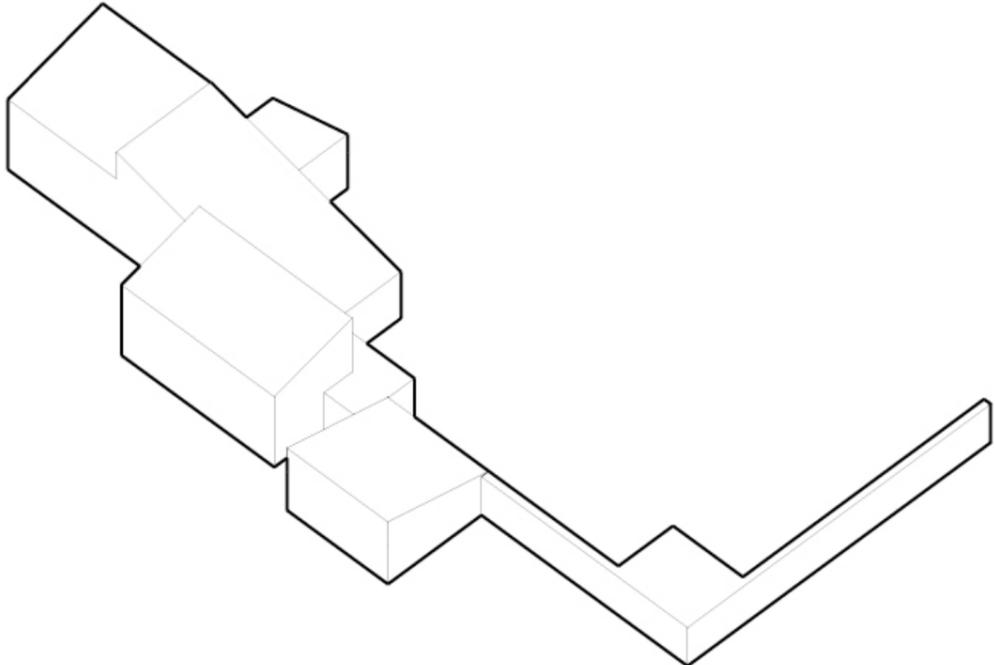
As demonstrated by the prevailing pattern of development along Bearwood Road, the area is characterised by large, detached dwellings, most of which are visible from the main road.

Many of these properties have been significantly extended, or in the case of No. 178, replaced entirely with a new dwelling. This illustrates that The Lodge, in its current form, is an anomaly in terms of both scale and massing, and should be considered an outlier within the contextual typology.

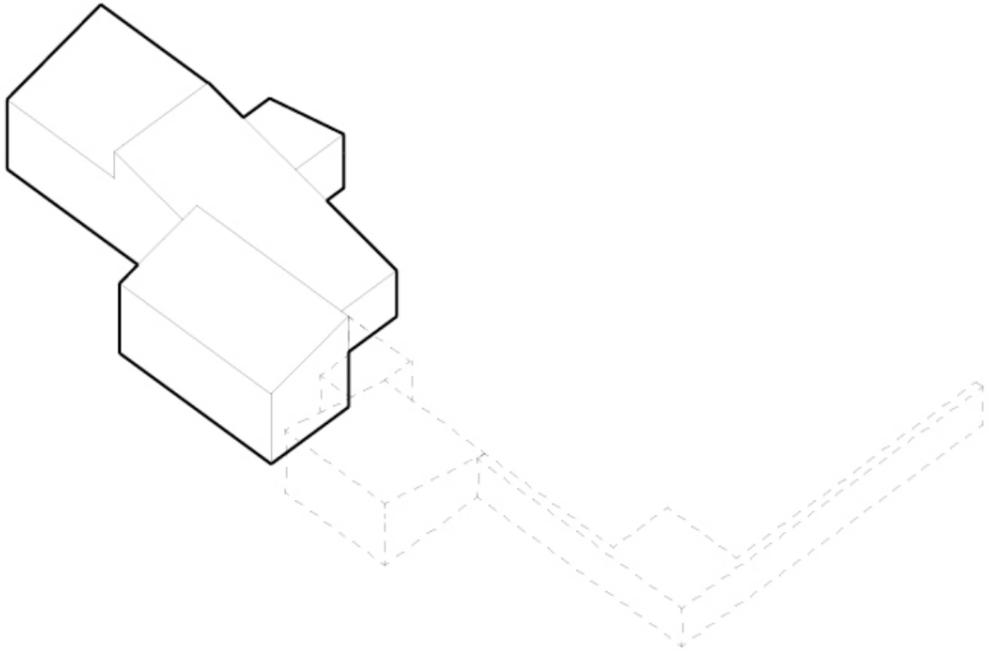
Therefore, the proposal for a replacement dwelling that is commensurate with the local vernacular should be considered appropriate within this context. At 1,040m<sup>3</sup>, the proposed dwelling would represent the smallest property in volume along Bearwood Road.

Furthermore, given the variety of dwelling sizes in the local area — including several two-storey properties such as the immediately adjacent at 178 Bearwood Rd — the proposed dwelling would not appear materially different in scale, form, or footprint from many of the surrounding homes. This is particularly relevant when compared to the notably smaller size of the existing dwelling as demonstrated in the previous contextual analysis.

▼  
17 -Previous Design  
18 -Reduction in volume



=1240m3

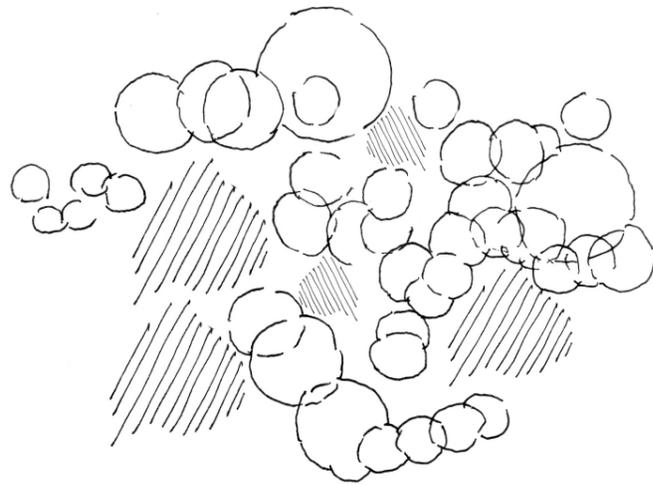


=1040m3

**Reduction in Volume and Mass**

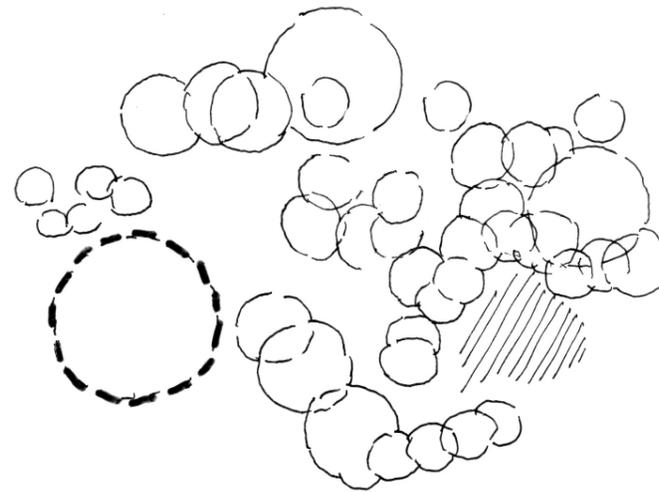
A pre-application was submitted in October 2024. Headline feedback received in December 2024 indicated that the scale of the scheme should be reduced, stating that the “sprawling layout” would have a harmful impact on the character of the site.

In response to this, the external boundary wall, porch, and garage have been removed. This has resulted in a measurable volumetric reduction of approximately 200m<sup>3</sup>, alongside a visual decrease in massing. The previously piecemeal layout has been consolidated into a single coherent form, reflecting the local vernacular and aligning with the recently approved scheme at 178 Bearwood Road.



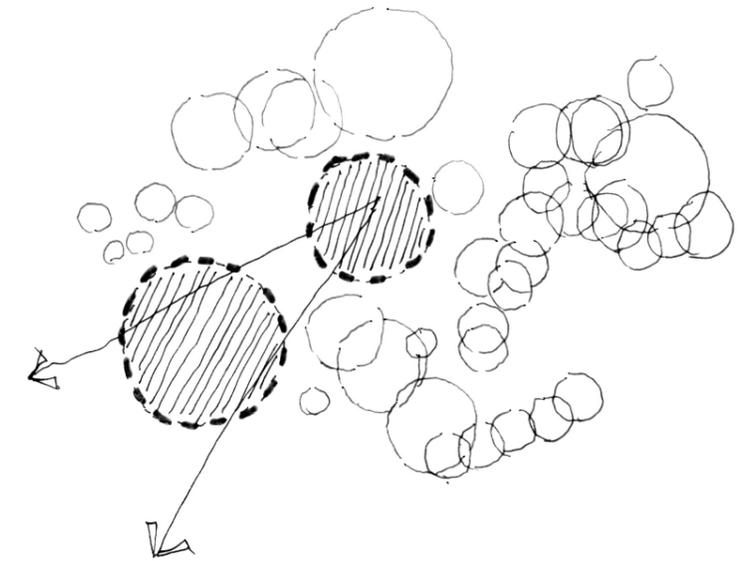
Ecological Enhancements

Parallel to design of a replacement dwelling the improvement of the surrounding environment has be critical to the proposal.



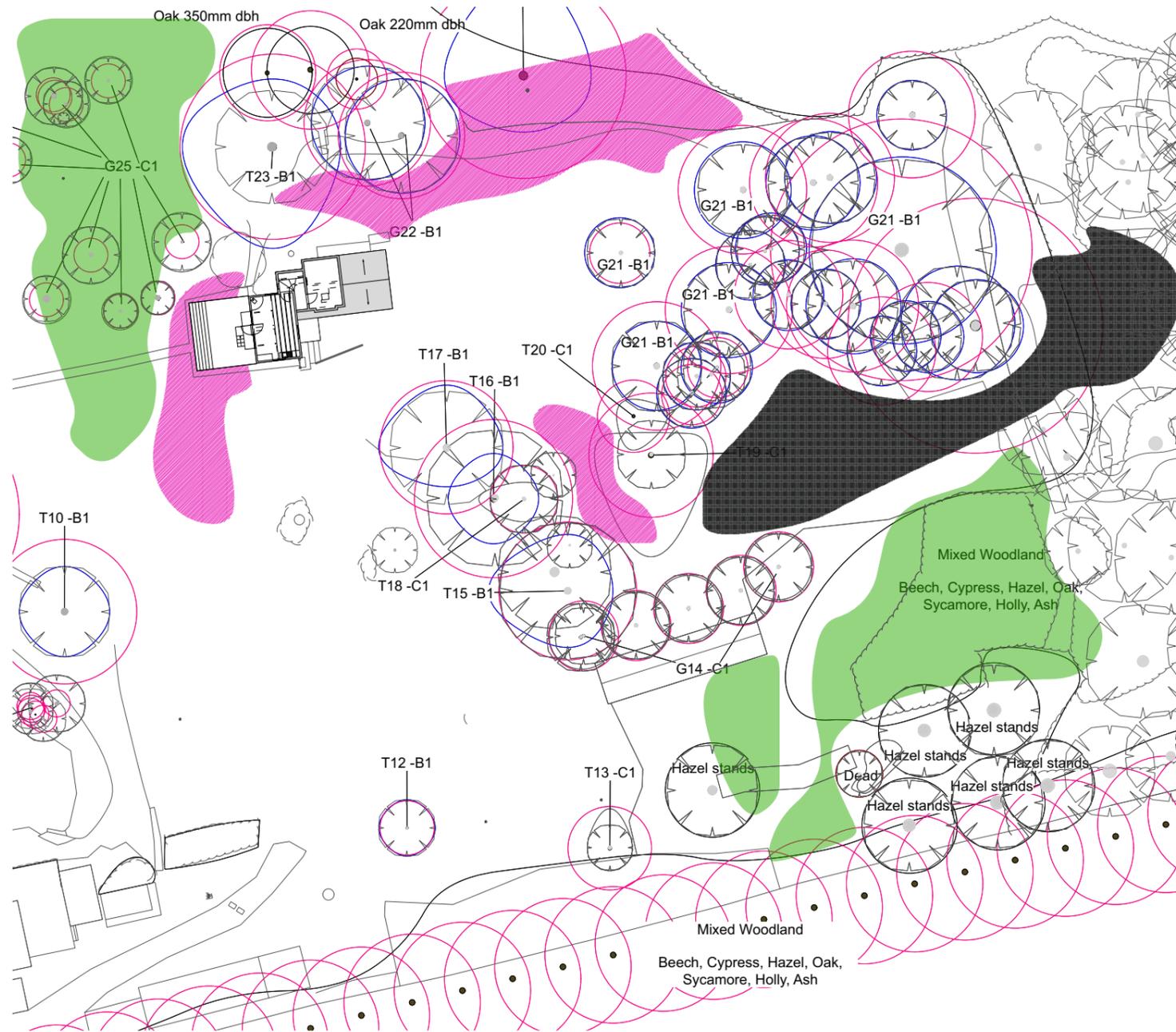
Embedding within Context

The woodland area has two key clearings with one key south-westerly view out between the existing trees and towards the lake. Siting the replacement dwelling within the landscape will tie the structure into nature but will not encroach towards the lake towards neighbouring boundaries.



Views + Connection to Nature

The proposal will provide connection to the surrounding garden and nature through position of openings providing views in each direction and access from east to west.



## 01- Ecological Enhancements

From the earliest opportunity an Ecologist and Ecological Landscape Designer were appointed to work alongside the design team ensuring an exceptional level of biodiversification and environmental enhancement were achieved. As discussed separately the house itself was evaluated by our inhouse Passivhaus designer to ensure minimal energy usage, materials were evaluated to again minimise embodied carbon and an LCA was undertaken as submitted.

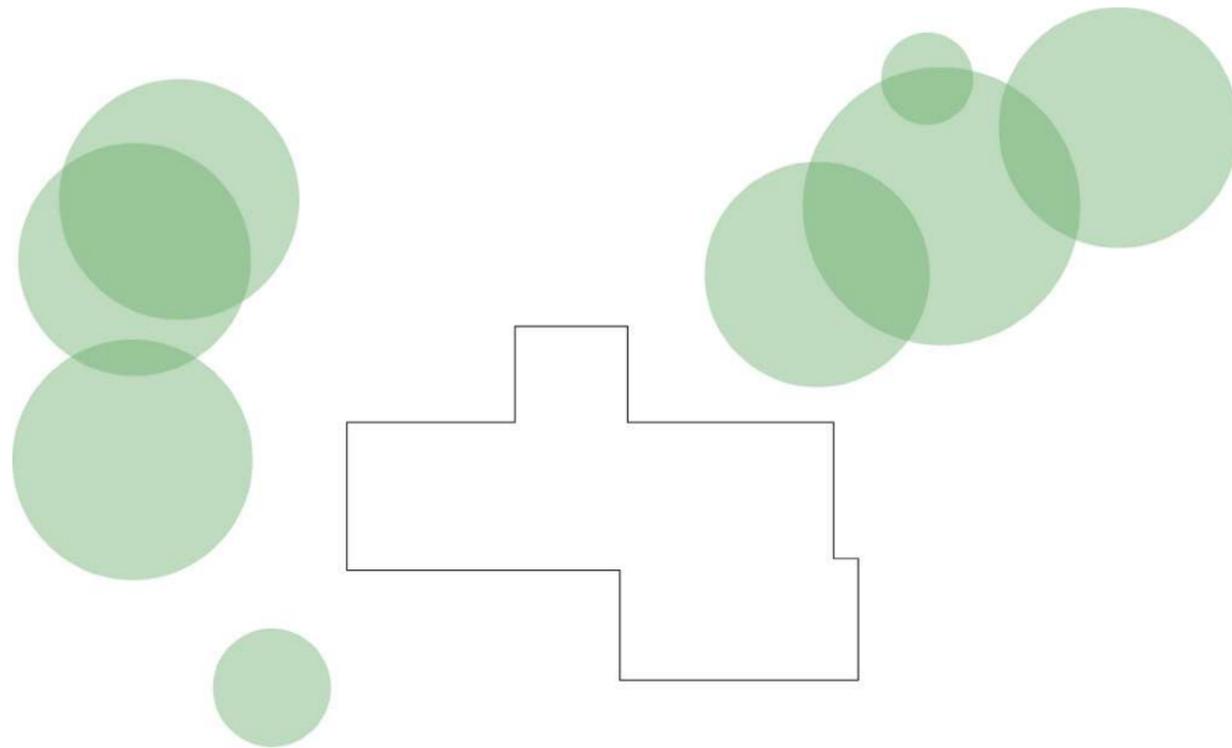
Although the property is exempt from BNG as a self-build dwelling a full BNG has been carried out in conjunction with this application.

The wider site will be left to continue to develop naturally and maintain the current level of biodiversity and will be improved through the planting of additional trees.

## 02 - Embedding within Context

The proposed dwelling respects the historic Tree Preservation Order (TPO) lines by being sited no further north than the existing building. An arboricultural impact assessment has been undertaken, which has informed the siting of the new dwelling to ensure it is sensitively embedded within the natural setting while safeguarding nearby trees.

Although the proposed dwelling will remain comfortably outside all root protection areas and will not encroach upon any tree canopies, it will still benefit from being well integrated into the landscape.



## 03 - Connection to Nature

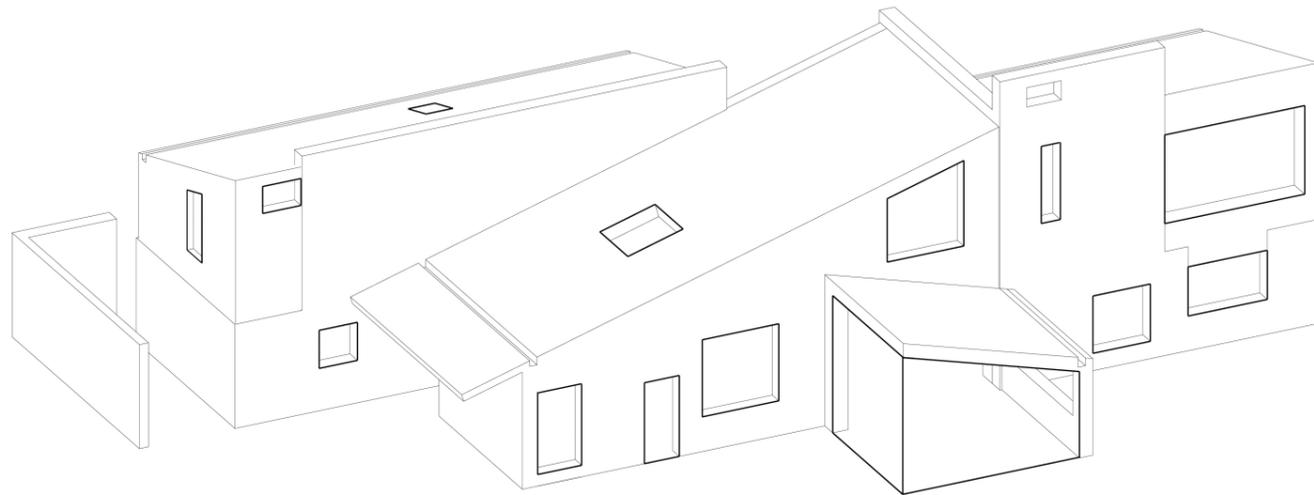
The location and design of the proposed replacement dwelling takes advantage of the rich natural site which the current house fails to achieve.

The layout of the building exploits the natural views from the open vistas across the ponds and large oak as well and the rich built up woodland to the north and east.

### - Fenestrations and Views

The design incorporates key principles of biophilic design, which has been shown to positively impact mental well-being and quality of life through a deeper connection to nature. Central to this approach is the integration of natural light and views of the surrounding landscape. As such, careful attention has been given to window placement and scale, ranging from large-format glazing that maximises visual connection to nature, to smaller, picture windows that thoughtfully frame specific views.

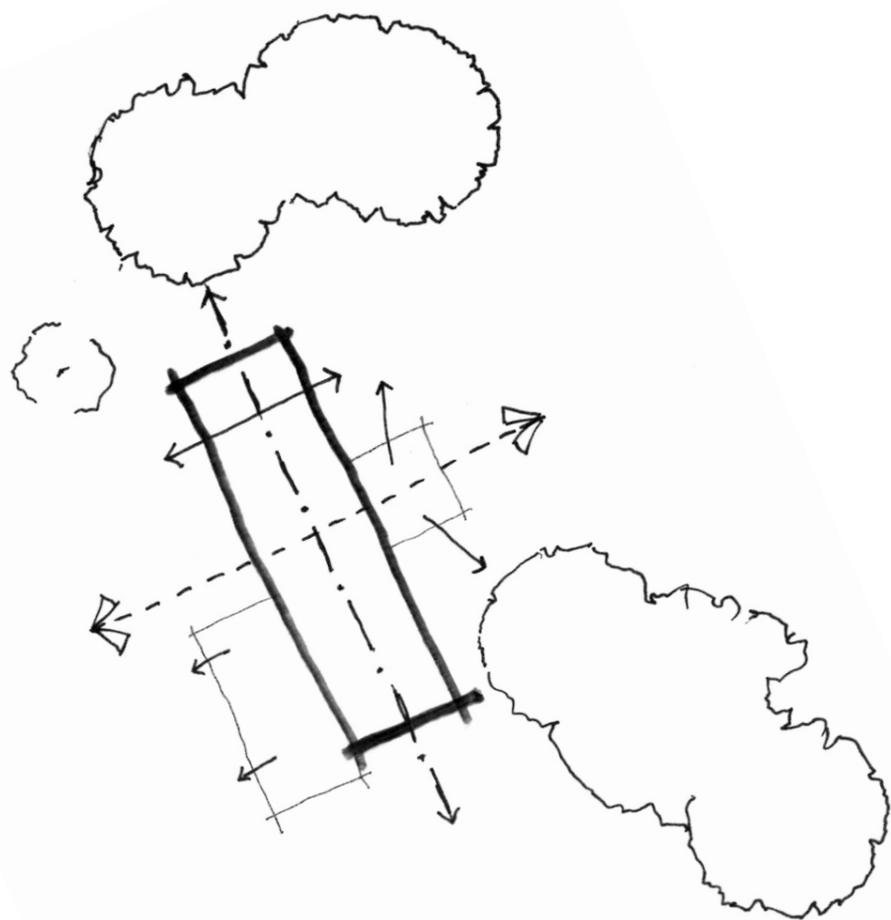
This results in a non-traditional fenestration layout that is purposefully tailored to respond to the site's unique context. Technically, window cill heights have been varied according to the function of each space. For instance, higher-level cills in circulation areas maximise daylight without distraction, while lower cills in more static areas allow for seated views, encouraging rest, reflection, and a momentary pause. In contrast, the eastern volume features floor-to-ceiling glazing that provides an immersive, uninterrupted connection to the adjacent woodland, enhancing the sense of openness and reinforcing the biophilic intent.



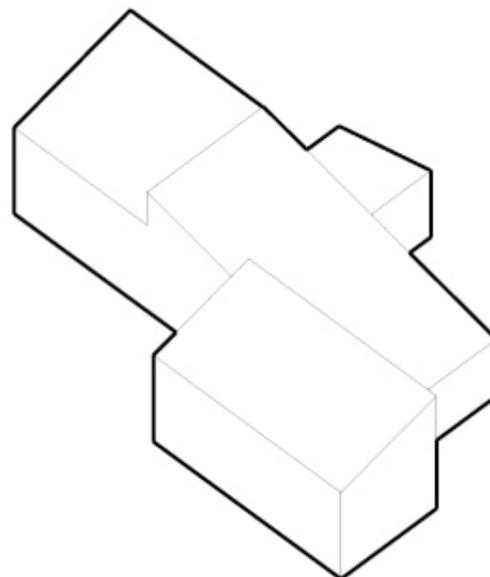
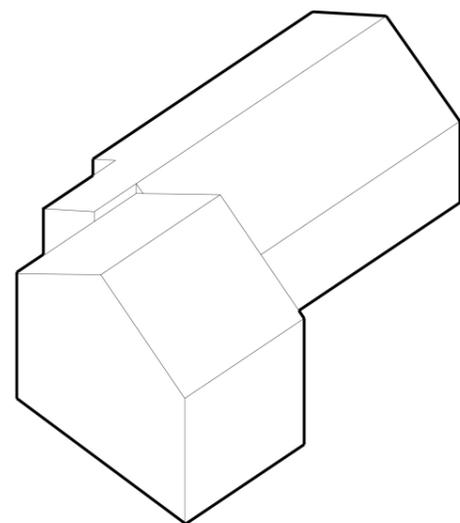


The central mass of the proposal forms two key elevations which the associated fenestration is designed to frame particular views. The linear central mass provides a continuous connection either side from the entrance of the proposed property through to the office at the far northern end.

The two wings take the approach to view framing differently with the western element closest to neighbouring properties constricting views for privacy which is reflected within the internal uses of the space whilst the eastern elements utilises large expanses of glass to exploit the woodland to the rear.



19 - Existing massing  
20 - Proposed massing



The elemented massing of the form takes its inspiration from the existing dwelling of connected masses and sloped roofs whilst achieving a more rationalised aesthetic and orientation that maximises the aspect of the locale.

The new dwelling is of a scale that is commensurate to the site whilst incorporating all the necessary ancillary requirements of modern family life.

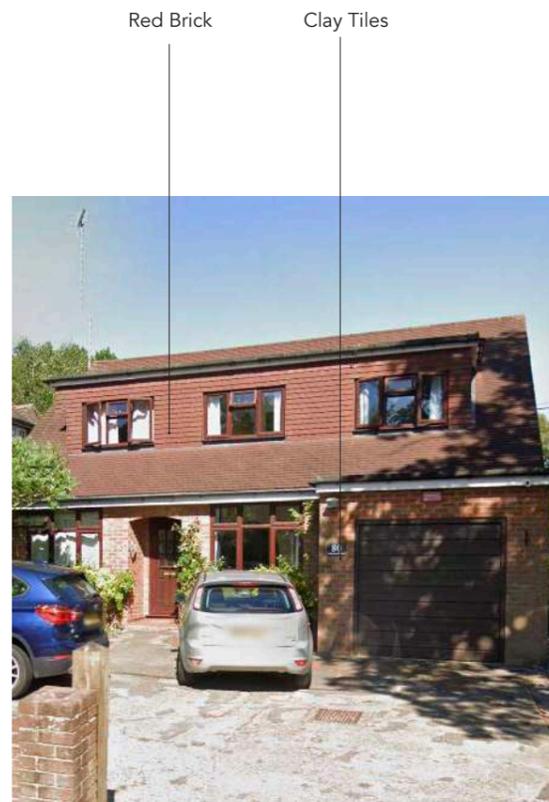
As shown in contextual vernacular there is a two storey central mass with single storey and two storey wing additions to the main form. Unlike surrounding properties to reduce visual impact the central mass has a sloped roof which also helps the dwelling site better within its context.





Local Vernacular

Much of the local vernacular in the Wokingham area is characterised by red brick and hung tiles. The existing lodge is in current contrast to the immediate area with its timber cladding highlighting the nature as an outlying outbuilding within the immediate site.





Proposed Pallett

1 Brick

Reclaimed red imperial pressed bricks with a light sandstone mortar. A naturally rustic and weathered appearance with various colours to give a unique reclaimed look. English Garden wall bond to external walls and running bond to those bordering internal spaces

2 Clay tile

Plain clay tiles will envelop single storey forms to element the massings. Two storey volumes will be visually broken up by clay tile clad first floors that are detailed to appear to slot into brick ground floor forms. Again, these clay tiles will be locally sourced and are a vernacular material of the area.

3 Solar panels

Solar panels will generate clean energy to run the building and its ancillary uses. These will be set into the roof to appear as a homogeneous form.



1



2



3

23 - Proposed access diagram



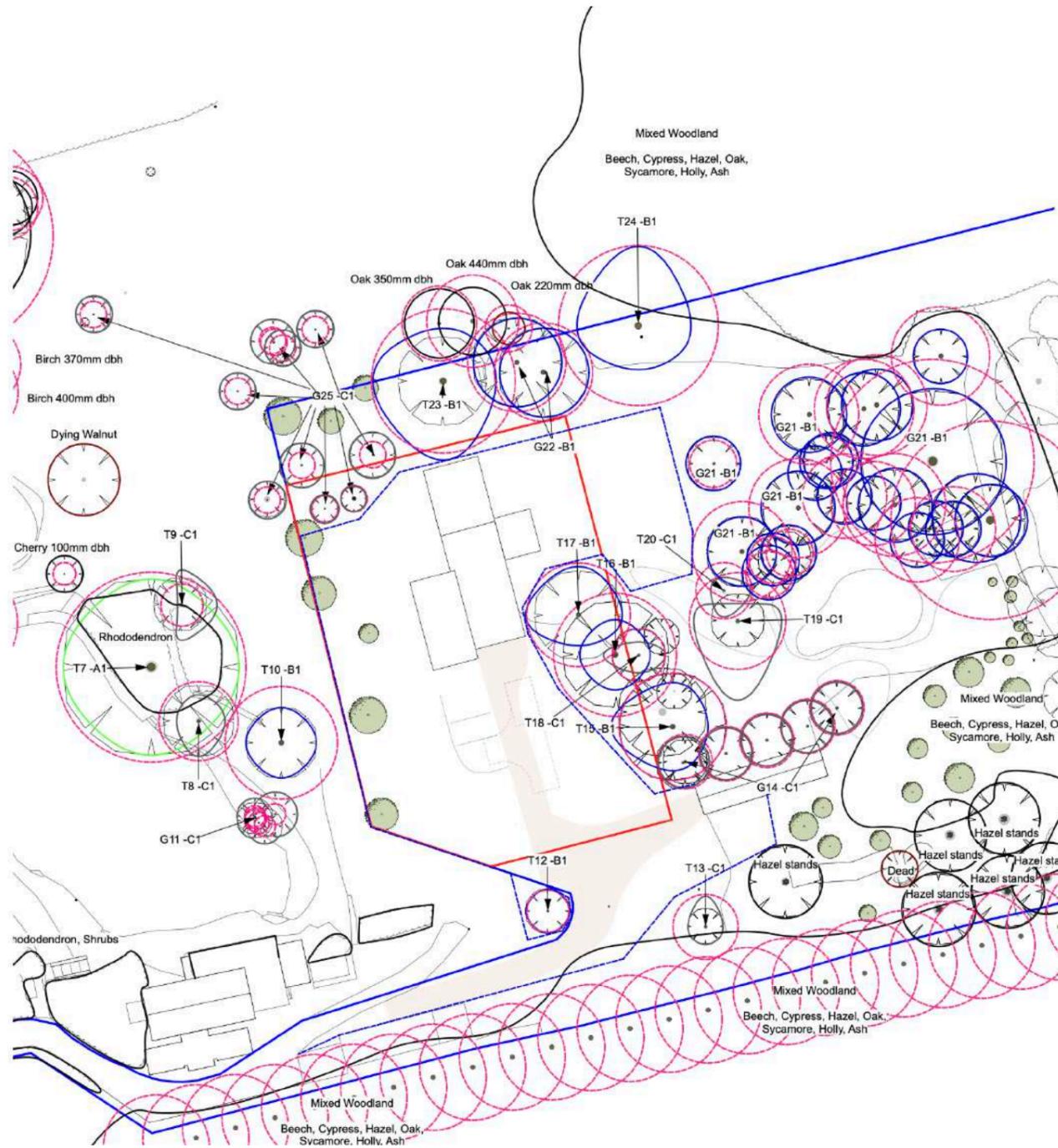
The existing vehicular access from Bearwood Road will remain as the primary site access. As the track enters the site, it will augment slightly to account for an altered site ownership and arrive at the front door of the dwelling.

There are no material changes to the pedestrian access, though the primary access to the dwelling has increased legibility and shelter as compared to the existing dwelling.

Ample parking is provided for the owners and visitors along with turning space for delivery vehicles. There is further ancillary storage externally through the utilisation of the existing outbuilding which can house bikes and bins if needed.







## Arboriculture

As part of the design process an arboricultural consultant was appointed who carried out a comprehensive assessment of the site. Care has been taken to ensure the the proposal not only does not negatively impact the existing trees but makes a positive contribution by making connection and views.

As part of the proposed landscape design new trees are proposed as well as a raft of ecological enhancements.

25 - Exert from BNG matrix  
26 - EX and PR habitat areas

The Lodge, Beaumont Road, Wokingham				
Headline Results				
Scroll down for final results				
<b>On-site baseline</b>		Habitat units	0.21	
		Hedgepole units	0.00	
		Watercourse units	0.00	
<b>On-site post-intervention</b> <small>(including habitat retention, creation &amp; enhancement)</small>		Habitat units	0.80	
		Hedgepole units	0.03	
		Watercourse units	0.00	
<b>On-site net change</b> <small>(units &amp; percentage)</small>		Habitat units	0.59	28.29%
		Hedgepole units	0.03	N/A
		Watercourse units	0.00	0.00%
<small>See baseline units - % cannot be extrapolated</small>				
<b>Off-site baseline</b>		Habitat units	0.00	
		Hedgepole units	0.00	
		Watercourse units	0.00	
<b>Off-site post-intervention</b> <small>(including habitat retention, creation &amp; enhancement)</small>		Habitat units	0.00	
		Hedgepole units	0.00	
		Watercourse units	0.00	
<b>Off-site net change</b> <small>(units &amp; percentage)</small>		Habitat units	0.00	0.00%
		Hedgepole units	0.00	0.00%
		Watercourse units	0.00	0.00%
<b>Combined net unit change</b> <small>(including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>		Habitat units	0.59	
		Hedgepole units	0.03	
		Watercourse units	0.00	
<b>Spatial risk multiplier (SRM) deductions</b>		Habitat units	0.00	
		Hedgepole units	0.00	
		Watercourse units	0.00	
FINAL RESULTS				
<b>Total net unit change</b> <small>(including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>		Habitat units	0.59	
		Hedgepole units	0.03	
		Watercourse units	0.00	
<b>Total net % change</b> <small>(including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>		Habitat units	28.29%	
		Hedgepole units	N/A	
		Watercourse units	0.00%	
<b>Trading rules satisfied?</b>		Yes ✓		
Unit Type	Target	Baseline Units	Units Required	Units Deficit
Habitat units	18.00%	0.21	0.20	0.00
Hedgepole units	18.00%	0.00	0.00	0.00
Watercourse units	18.00%	0.00	0.00	0.00
<small>No additional area habitat units required to meet target ✓</small>				
<small>No additional hedgepole units required to meet target ✓</small>				
<small>No additional watercourse units required to meet target ✓</small>				

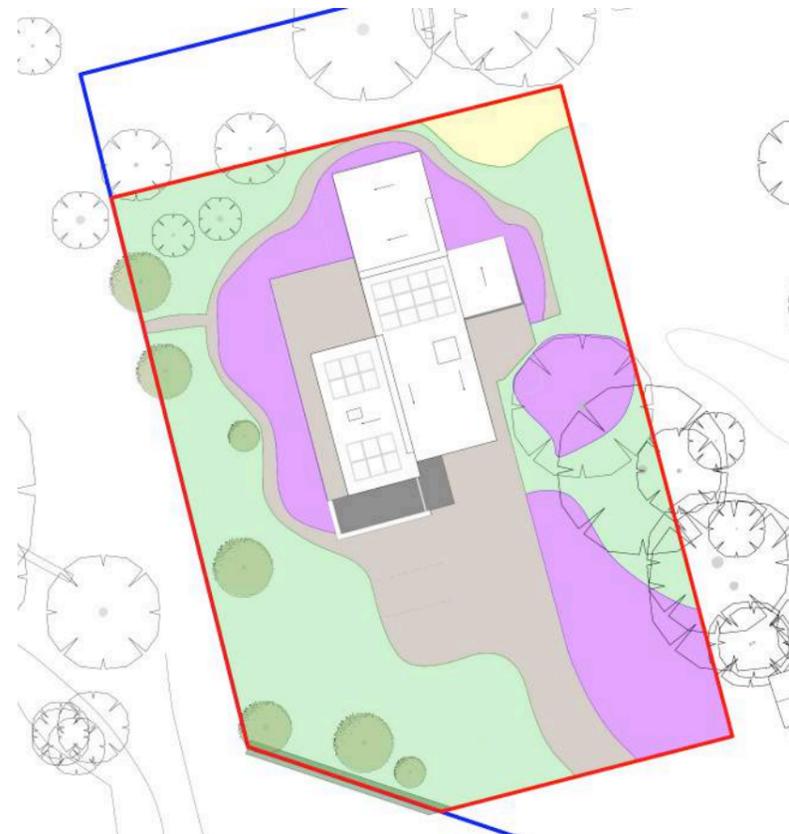
## Biodiversity Net Gain

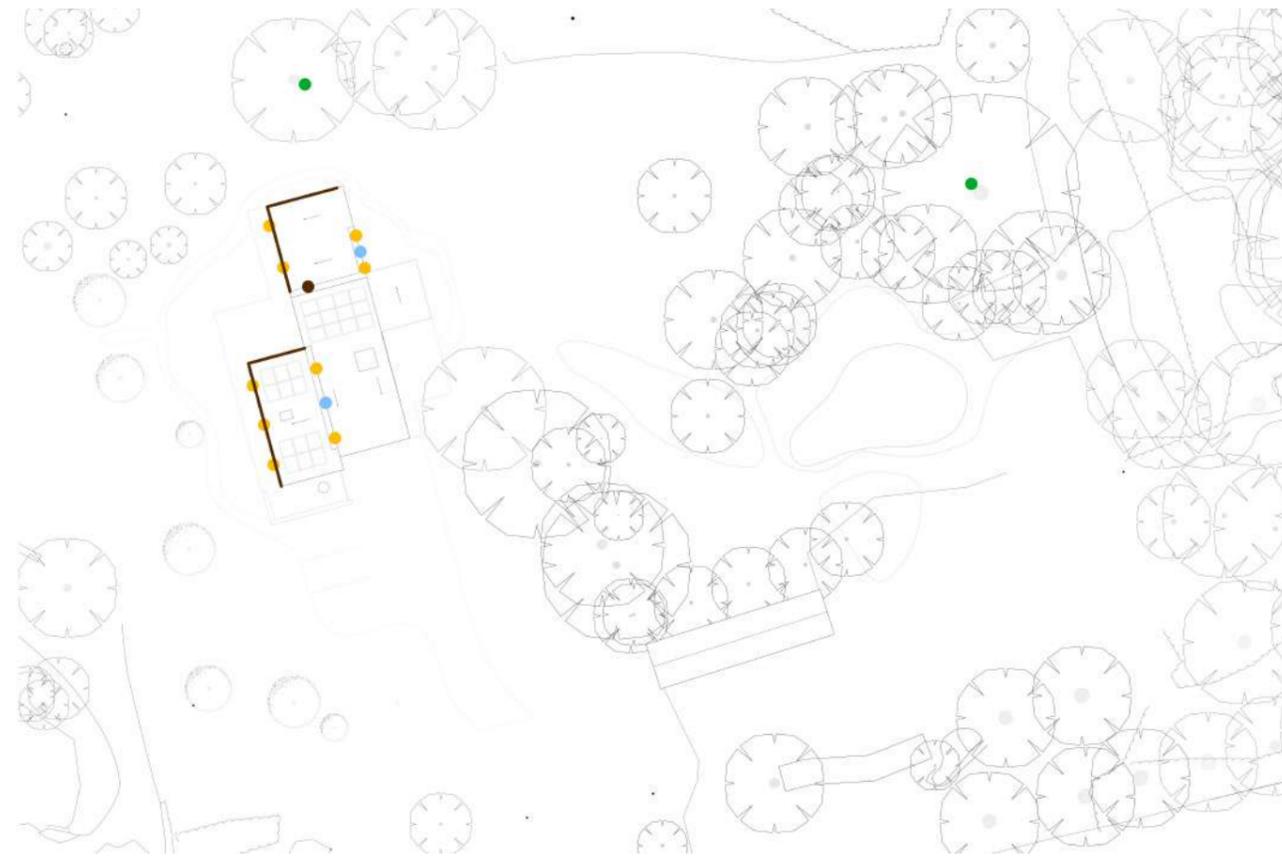
As highlighted, as a self build the replacement dwelling will be exempt from BNG requirements. Despite this improving on the existing on-site habitat is a key part of the proposal.

Alongside the priority ecology appraisal Ellendale Environmental have carried out a full biodiversity net gain assessment which should be read in conjunction with this statement. Extracts of the report can be seen in the adjacent diagrams demonstrating that alongside the proposal dwelling the landscape design results in a 26.29% increase on the existing baseline. This is 16.29% above the required 10% for new building developments.

Required BNG Baseline Increase = 10%

Proposed BNG Baseline Increase = 26.29%





-  Plain clay roof tile laid with bat crevice
-  Bee brick
-  Swift block
-  Owl box
-  Bat block

## Bats

Habitat creation of wetlands and wildflower meadows will support prey and feed for bats whilst bat blocks and lifted clay tiles will provide roosting spaces for crevices dwelling species.

## Swifts, Bees & Owls

Nesting boxes and Bee bricks will be built into the building to enhance populations. New woodland creation will support the habitat required to retain these priority species.

## Great Crested Newts

The site is situated in a red zone for Great Crested Newts. The landscape design includes new wildlife pond within the site which will enhance the local habitat for newts. The new pond will include a hibernacula designed specifically for great crested newts.



Timber Bird Box



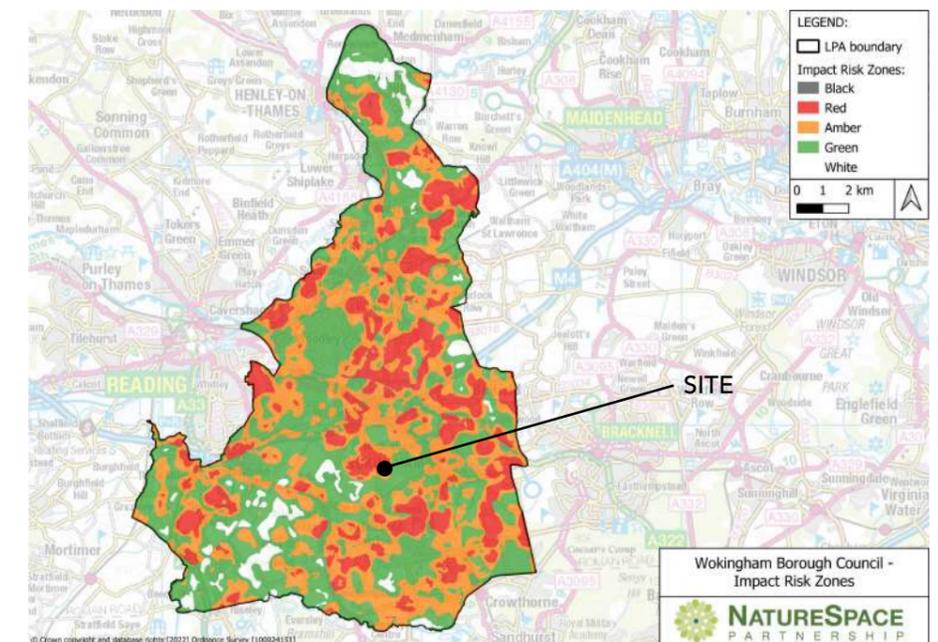
Green&Blue Bee Brick  
Solitary masonry bees



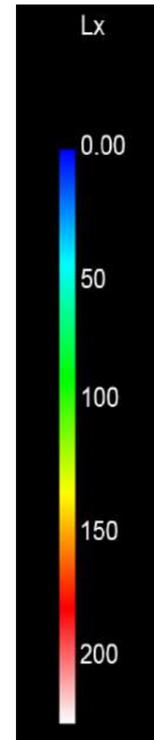
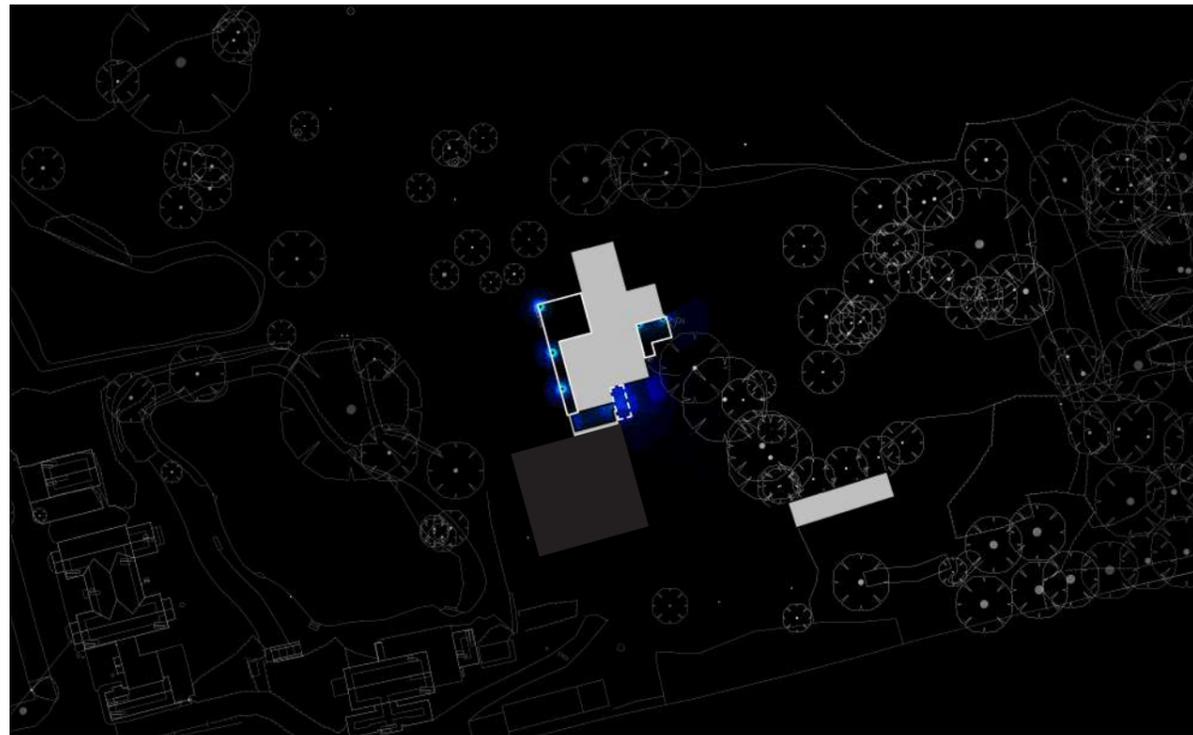
Green&Blue Swift Block  
Swift nesting box



Green&Blue Bat Block  
Generic bat species



Wokingham Borough Council  
Newt Zone Map



Recommended Lux Lvl

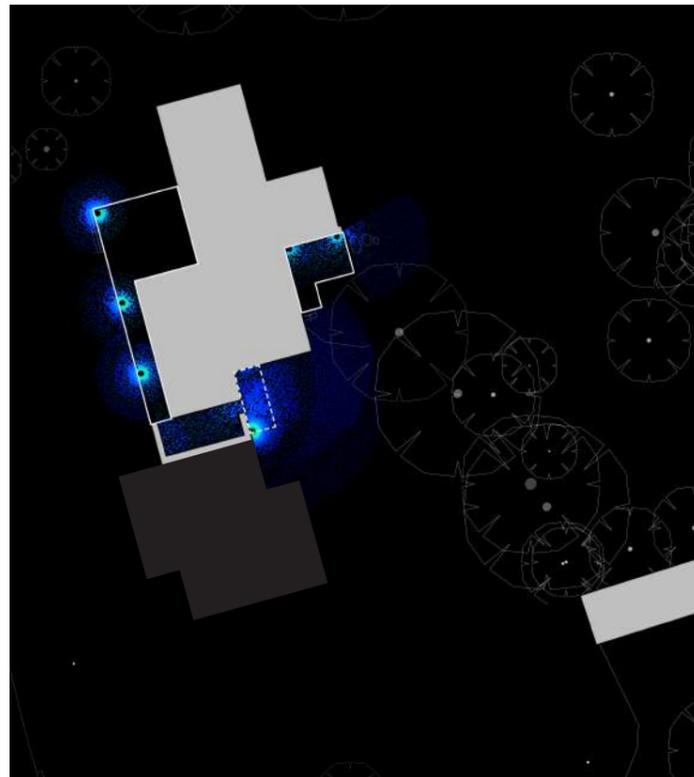
## External Lighting

The biodiversification strategies previously highlighted will increase habitat creation and the variety of species within the site. The ecological consultant has highlighted the importance of external lighting strategies to minimise disruption to these species.

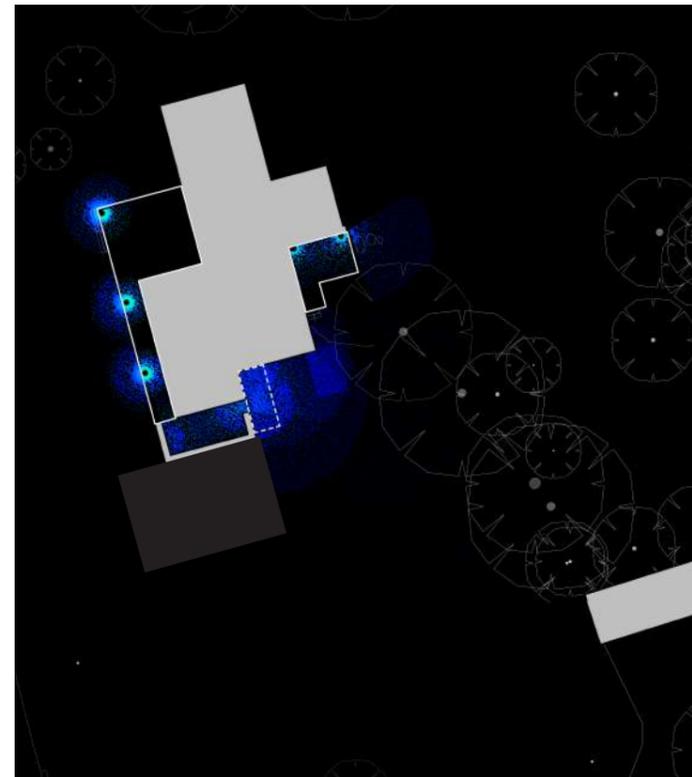
It is recommended the site lighting should be in accordance with guidance set out in '*Bats and artificial lighting at night*', 2018. A formal lighting analysis study was carried out to see the impact of proposed external lighting on the wider site. As per diagram 06 we can see that external lighting has minimal impact to site as whole.

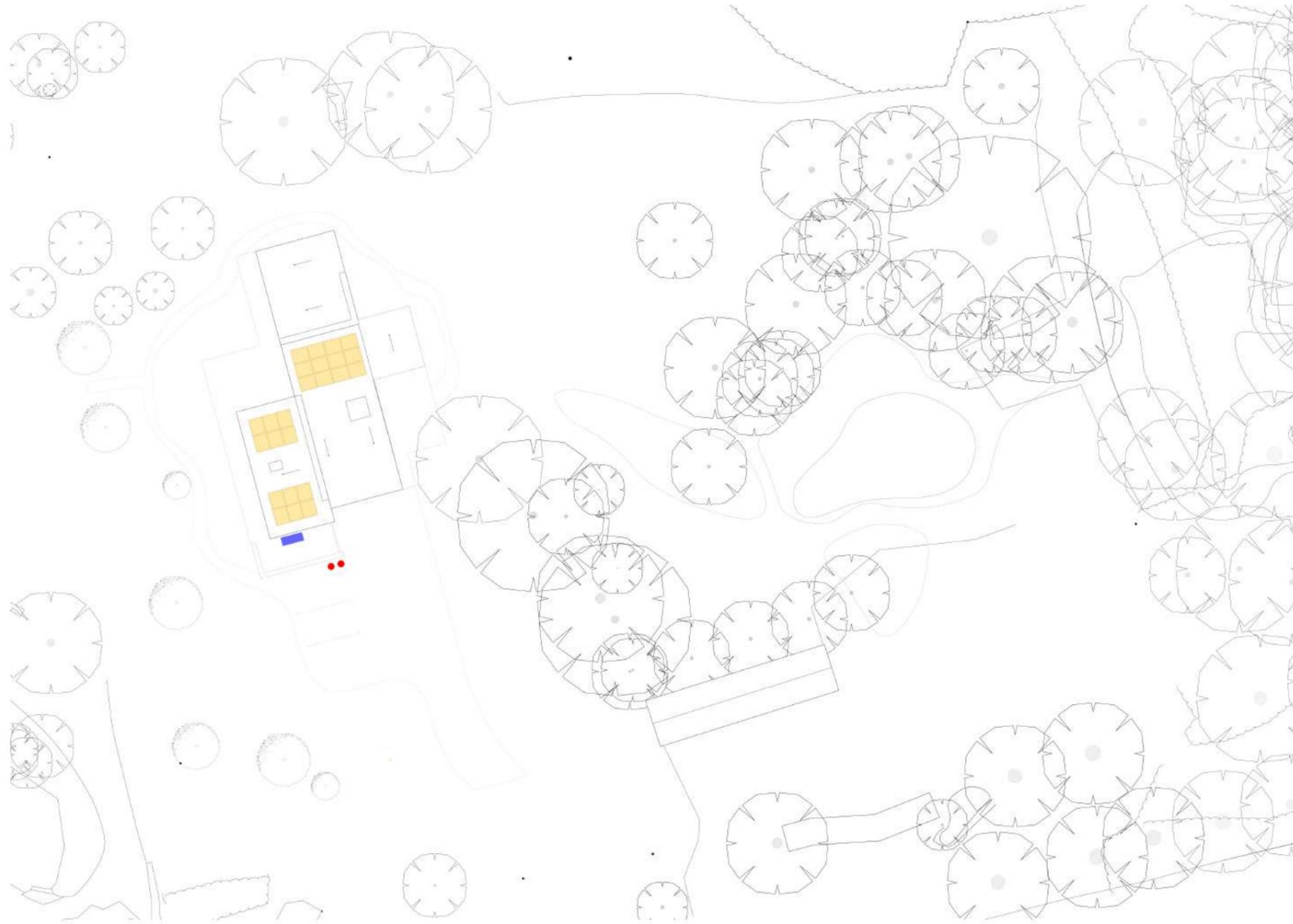
Further to this external lighting will be specified to be warmer hues (>5700 Kelvin) as per guidance set out in the '*Bats and artificial lighting at night*'. Provision of local lighting controls to be both automatic with manual control internally to allow for separate control of lighting in each zone and to switch off automatically when not required.

No PIR



With PIR

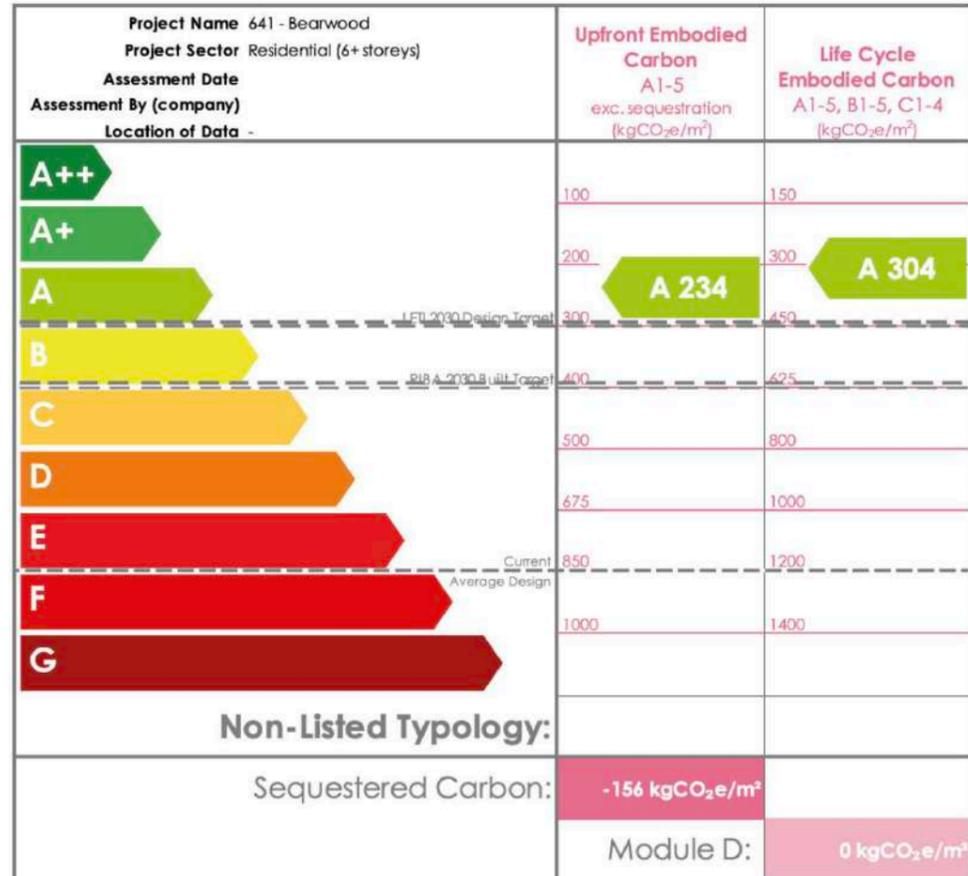




Alongside the raft of biodiversity measures highlighted the design of the building itself will be exemplar in its thermal performance and application of renewable energy measures and minimise lifetime carbon analysis.

### Renewables

PV panels, heat pumps, MVHR and EV charge points are proposed to the building to minimise carbon emissions and offset energy usage.



Building Target	Equivalent letter banding
LEI Design 2020 Target	<b>C</b>
LEI Design 2030 Target	<b>A</b>
RIBA Built 2030 Target	<b>B</b>

## Lifetime Carbon Analysis

Whole life carbon is formed of two key components Operational Carbon + Embodied Carbon

Operational Carbon: A new building with net zero operational carbon does not burn fossil fuels, is 100% powered by renewable energy, and achieves a level of energy performance in-use in line with our national climate change targets.

Embodied Carbon: Best Practice targets for embodied carbon are met, and the building is made from re-used materials and can be disassembled at its end of life in accordance with circular economy principles.

Due to the operational energy demands of the dwelling being met by the PV's, while providing significant excess, the operational carbon of the dwelling is considered to be Net Zero.

The Embodied carbon of the dwelling for 60 years, including repairs, the eventual demolition, disposal and recycling of the dwelling come to 304 kgCO<sub>2</sub>e/m<sup>2</sup>, less than 1/3 of the national average, and far above the RIBA and LETI 2030 target.

The upfront cost of the dwelling (A1-A5) also comfortably exceeds the RIBA and LETI 2030 target of 234 kgCO<sub>2</sub>e/m<sup>2</sup>. Therefore, we view this building as be incredibly sustainable for both for the present day and future use.



The current house is an evolutionary form which has a significant number of detailing issues meaning retention and extension is not a feasible proposal. In replacing the dwelling the opportunity arises to create a sustainable, contemporary, eco-home that meets the requirements of modern family life whilst also enhancing the local wildlife area and surrounding natural environment.

The proposed scheme results in an exemplar design that responds to its site in its immediate context through its form and to the wider context in materiality. Set back from the road, the site is completely hidden from public view minimising any visual impact.

Furthermore, its larger size ensures the long term viability of retaining the wider site's ecology in perpetuity.