

Design & Access Statement

Including Ecosystem Services & Sustainability Statements.

782_North Hall Cottage

October 2024

Chris and Sarah Mellish

North Hall Cottage
Mallions Lane
Staplefield
RH17 6AT

Demolition of existing modern annex and modern conservatory.
Construction of new extension, internal alterations and associated
landscaping

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This document must be read in conjunction with the full plans associated to this application.

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Ecotecture

Since starting Ecotecture, we've prioritised conscious and mindful practice, always considering and minimising our impact. This commitment is reflected in our name, Ecotecture.

At Ecotecture, we pride ourselves on being proactive designers specialising in energy-efficient architecture. We ensure we have early input from the council, structural engineers, heating engineers, and cost consultants, where possible.

This proactive design ethos allows us to develop solutions that are well-informed and tested by a myriad of experienced industry professionals, giving you confidence in our capabilities.

Our Values

We design buildings that enable people to lead better, more sustainable lives by combining our expertise in historic building conservation, energy efficiency, and retrofit.

We adhere to Quaker principles: Simplicity, Peace, Integrity, Community, Equality, and Stewardship of the Earth.

Our Design Approach

We follow the five Passivhaus principles:

- 1 – High quality insulation.
- 2 – Heat control and robust joinery
- 3 – Airtight construction
- 4 – Heat recovery ventilation.
- 5 – Thermal bridge free design.

Sustainability is our core ethos, not an afterthought. Our values are evident in our work and extends to our business operations and community activities.

We set annual objectives and measure our progress alongside our financial performance, reporting each New Year.

At Ecotecture, we think green, live green and design green.



01 Introduction

Introduction

This statement supports a proposed single-storey rear extension to North Hall Cottage, a charming property in the village of Staplefield, West Sussex. Although officially listed as a 17th-century building, some features, like the rear wooden mullions, suggest the cottage could be even older. The current owners, who purchased the property in 2023, love the cottage’s historic character but want to adapt it for modern living. The plan is to create a spacious, open-plan kitchen, dining area, and accessible WC/shower room. This involves removing an unsightly outbuilding visible from the road and replacing a modern conservatory with a more fitting glazed link extension leading to a new kitchen/diner.

Vision

The aim is to carefully blend the cottage’s historic charm with a modern extension that provides a brighter, more open space. The existing cottage feels small and divided into smaller rooms, so the extension will introduce a more functional layout while respecting the original architecture. Traditional materials will be used, but in a more contemporary way, ensuring the extension complements the old building.

As part of the plan, the outbuilding and conservatory will be removed, improving the overall look of the property. The new extension will be smaller in total footprint than the structures being removed and designed to fit seamlessly with the cottage, even incorporating a catslide roof that mirrors its form. Sustainability is also a priority, with the extension designed to Passivhaus principles and incorporating solar panels for renewable energy.

Key principles of the concept plan include:

- Architectural Design: The design is appropriate and sympathetic to its setting in terms of height, massing, density, roof form, and materials. It complements and respects the character of the existing listed cottage.
- Holistic Approach: The design respects the local character through sensitive and high-quality design that positively contributes to the overall character and appearance of the area.
- Energy Efficiency

A key element of the design was the surface area to volume ratio. Simplifying the form of the buildings enhances efficiency. The design follows the fabric-first approach, prioritizing the thermal performance and airtightness of the building envelope. This strategy aims to minimize energy consumption by optimizing the building’s fabric before considering mechanical and electrical systems.



Aerial View of The Site

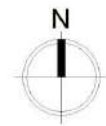
Google Earth 2024

(Red line is indicative, please refer to legal deeds for definitive line)





ProMap
2022
(Red line is indicative, please refer to
legal deeds for definitive line)



Proposed perspective



Existing perspective

02 Site Photos



EED Photos



EED Photos



EED Photos



EED Photos



EED Photos



Google Maps



EED Photos



EED Photos



EED Photos

03 Local Materials and Character



Mallion's Ln
Google



Staplefield Ln
Google



Staplefield Ln
Google



Staplefield Ln
Googles



Cuckfield Rd
Google



Staplefield Ln
Google



Staplefield Ln
Google

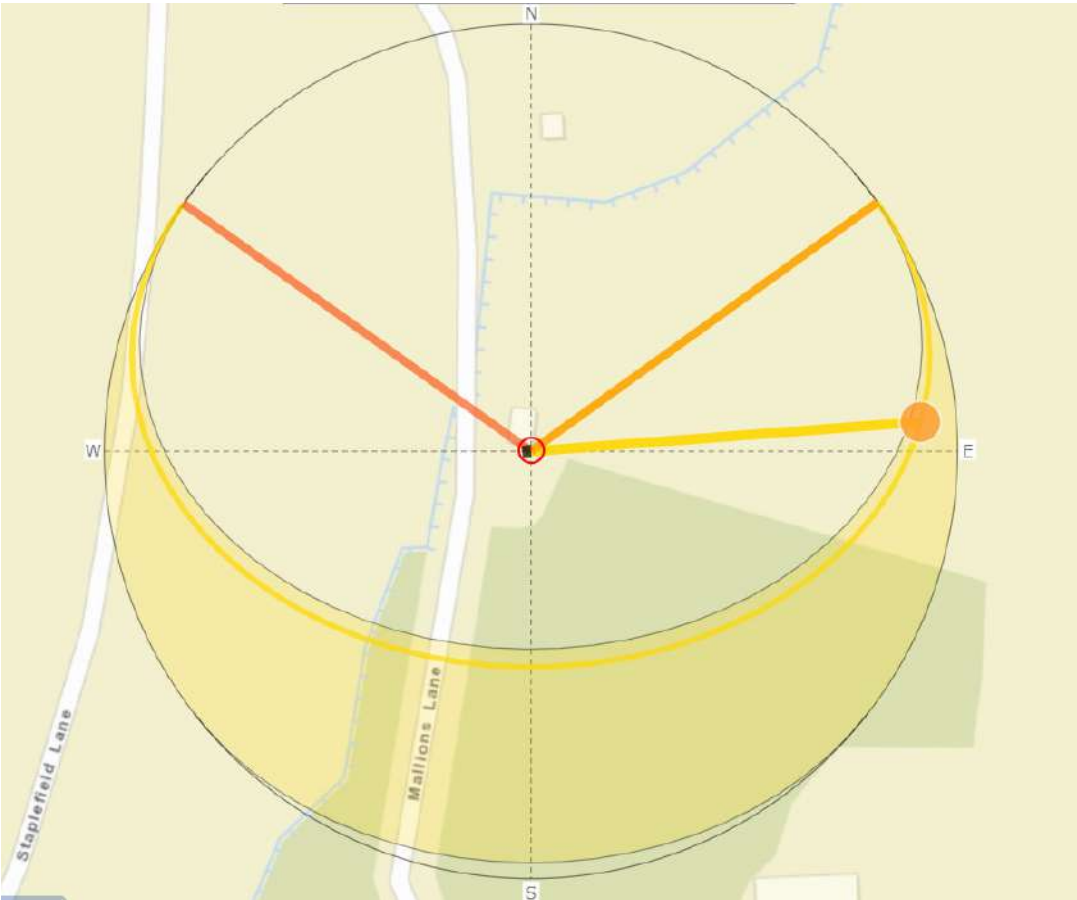


Staplefield Ln
Google



Staplefield Ln
Google

04 Site Analysis



Sun path



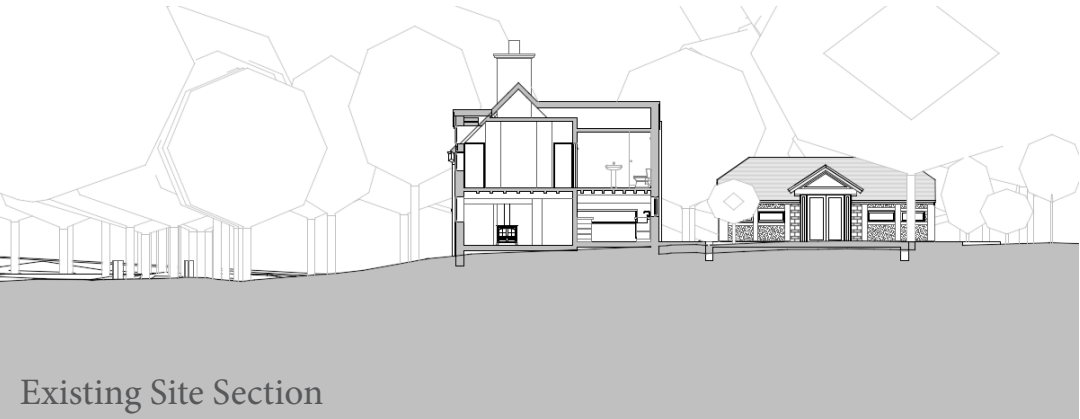
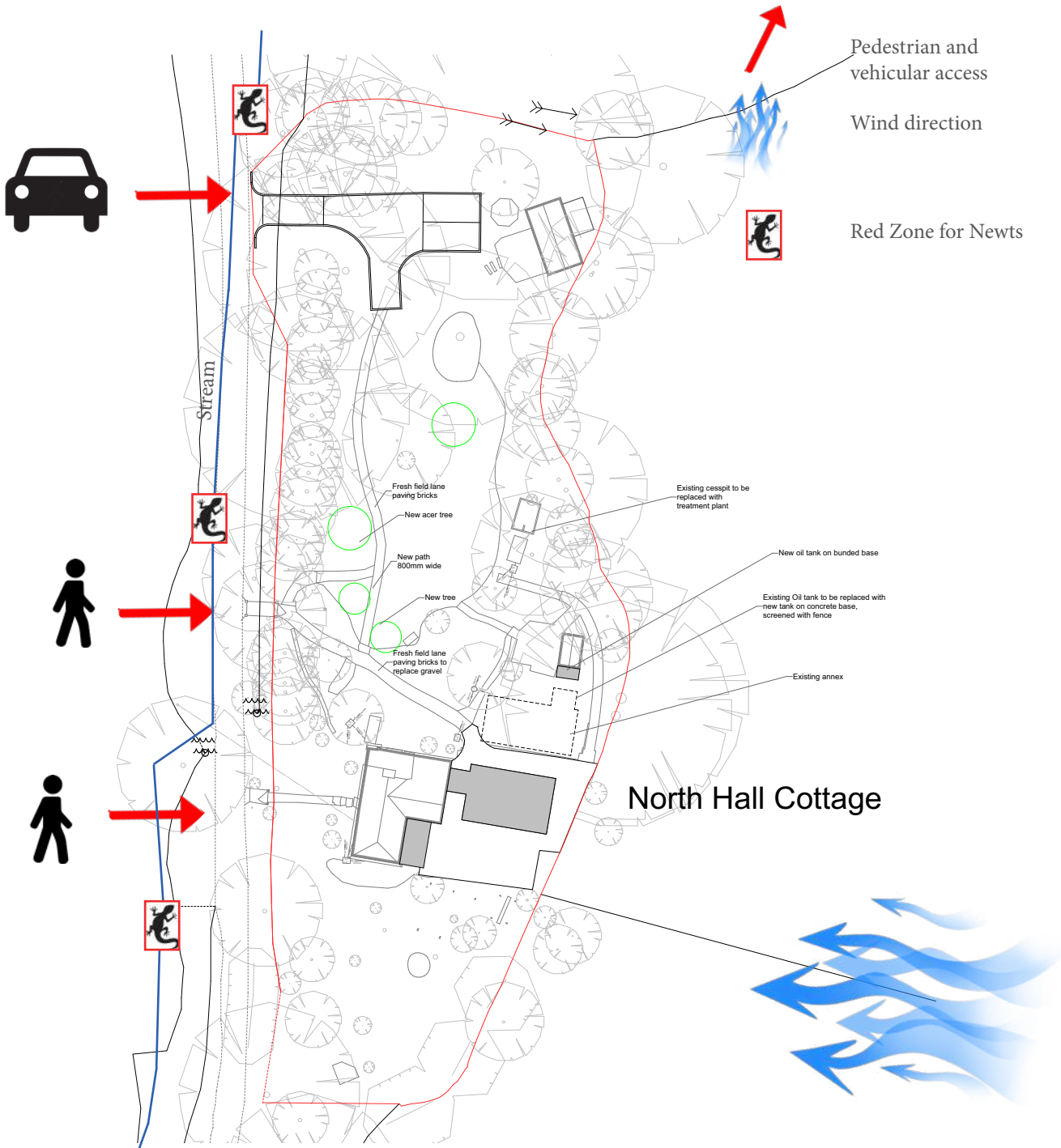
Site Layout
The surrounding built forms have played a crucial role in shaping the design of the proposed extension, ensuring it appropriately responds to the site's characteristics. The careful integration of these elements will ensure the new development complements the existing landscape and architectural context.

Contextual Mapping
The initial design and site layout focused on contextual mapping of the footprints of surrounding houses. Historical development is important in determining how we move forward.

Overlooking and Privacy
A significant consideration was ensuring that there is adequate space around the buildings to provide good amenity and privacy.

Existing site section demonstrating site topography and position of the house in relation to the road.

Existing street elevation demonstrating the predominance of the elevated modern extension and the opportunity for enhancement with its removal and relocation to a more obstructed view.



05 Topographical Survey



06 Flood Map

Flood Avoidance
The proposed site lies outside of a flood plain according to the Environment Agency's flood maps and is within a zone considered to have a low risk of flooding from surface water. Although the site is outside the flood plain, the Environment Agency recommends that habitations within proximity to a flood plain "be prepared." The hard surface landscaping design has been approached with a light touch, intending to use permeable surfacing wherever practicable throughout the design.

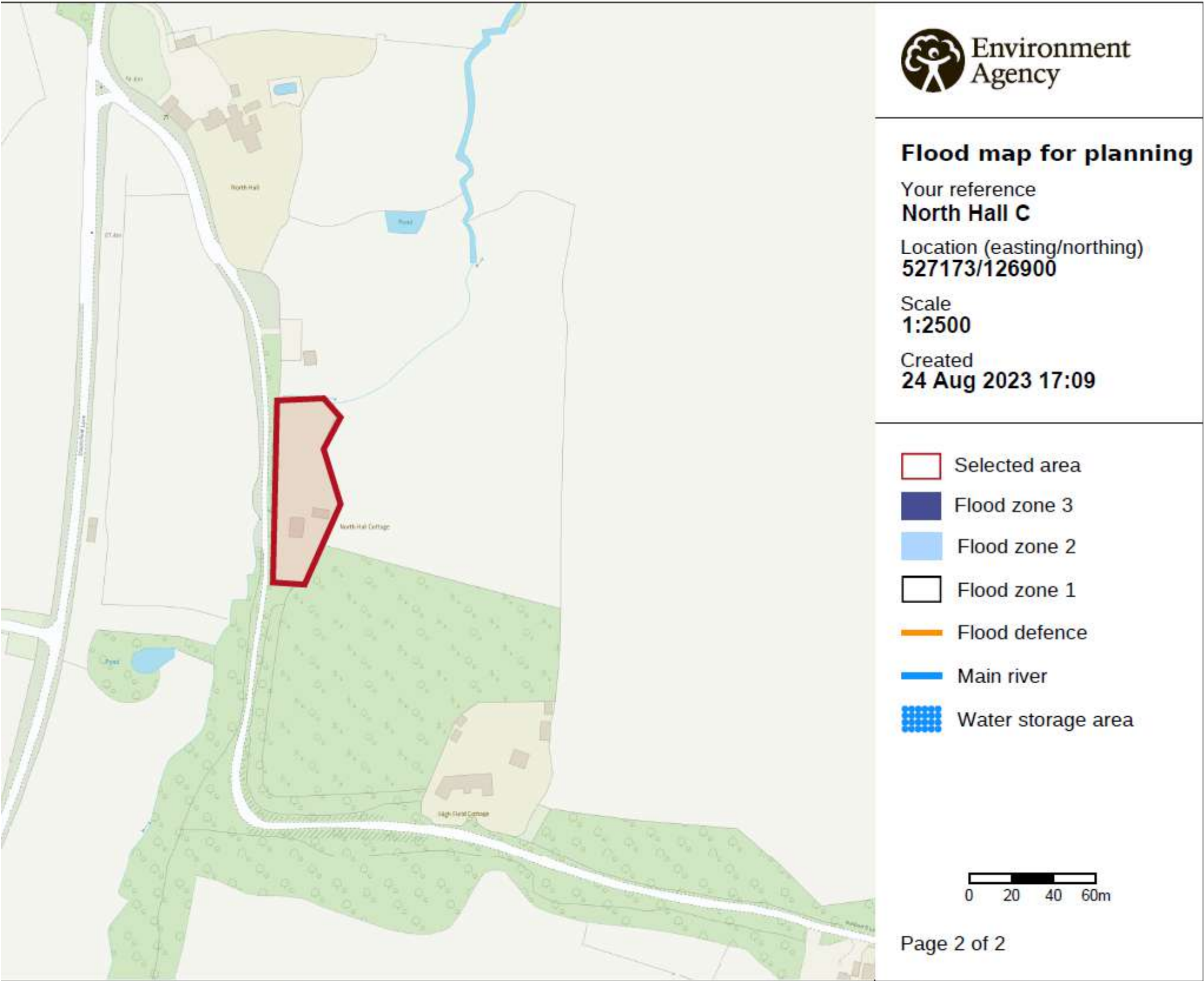
Flood Mitigation
The extension has been designed to encourage surface water to bypass the building footprints, thereby reducing the need for ad-hoc flood defences. The potential for rainwater harvesting on the site will be explored before commencement, aligning with the goal of reducing water consumption per person per day.

Water Efficiency

Reduction of Water Consumption
The site benefits from access to a well. The water will be used for garden irrigation and car washing. This will reduce the overall water consumption of the dwelling.

In addition to complying with Building Regulations Part G 2010 for water conservation, the development will utilize 2/4 litre low flush toilets and aerated taps and showerheads. This will help reduce water consumption to less than 105 litres per person per day. Rainwater harvesting systems will be considered as part of the overall water conservation and Sustainable Urban Drainage Systems (SUDs) strategy.

Utilisation of On-site Water Resources
There are no watercourses, such as natural springs, within practical reach of the site. However, as mentioned in the 'Reduction of Water Consumption' section, opportunities to reduce mains water consumption through the installation of rainwater harvesting will be considered as part of the overall strategy.



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07 Appearance and Materials

Several considerations were taken into account when choosing the palette of materials, with particular reference to the local vernacular. The design is traditional but given a contemporary twist. The Sussex traditional vernacular typically features a brick finish on the ground floor, while the upper floor is tile-hung, render or boarded. In designing the extension, we have followed the same rationale, using vertical cedar boarding with a brickwork plinth. Additionally, a contemporary twist is introduced with glass link between the existing house and the extension .

The dwelling is set back from the access road. The carefully considered landscaping includes native species hedging and tree planting, which will enhance the street elevation and contribute positively to the area.

Plain clay tiles, sourced from local suppliers to match the existing architectural landscape, will be used for the roof to blend the building with the surrounding site. If possible, the client will consider using reclaimed tiles to maintain an authentic look and promote sustainability.

Openings are strategically placed based on orientation to optimise energy efficiency. With rear gardens, larger openings on the south side will utilise triple-glazed windows to maximise solar gain, while smaller, double-glazed windows on the north side will minimise heat loss. The fenestration is designed to maximise daylight penetration, reducing the need for artificial lighting.



White Timber Windows



Deep Flow Black Aluminium Gutters



Timber Cladding



Frameless Glass Links



Black Timber Fascia



Dark Timber Windows



Dark Aluminium Doors



Plain Clay Tiles

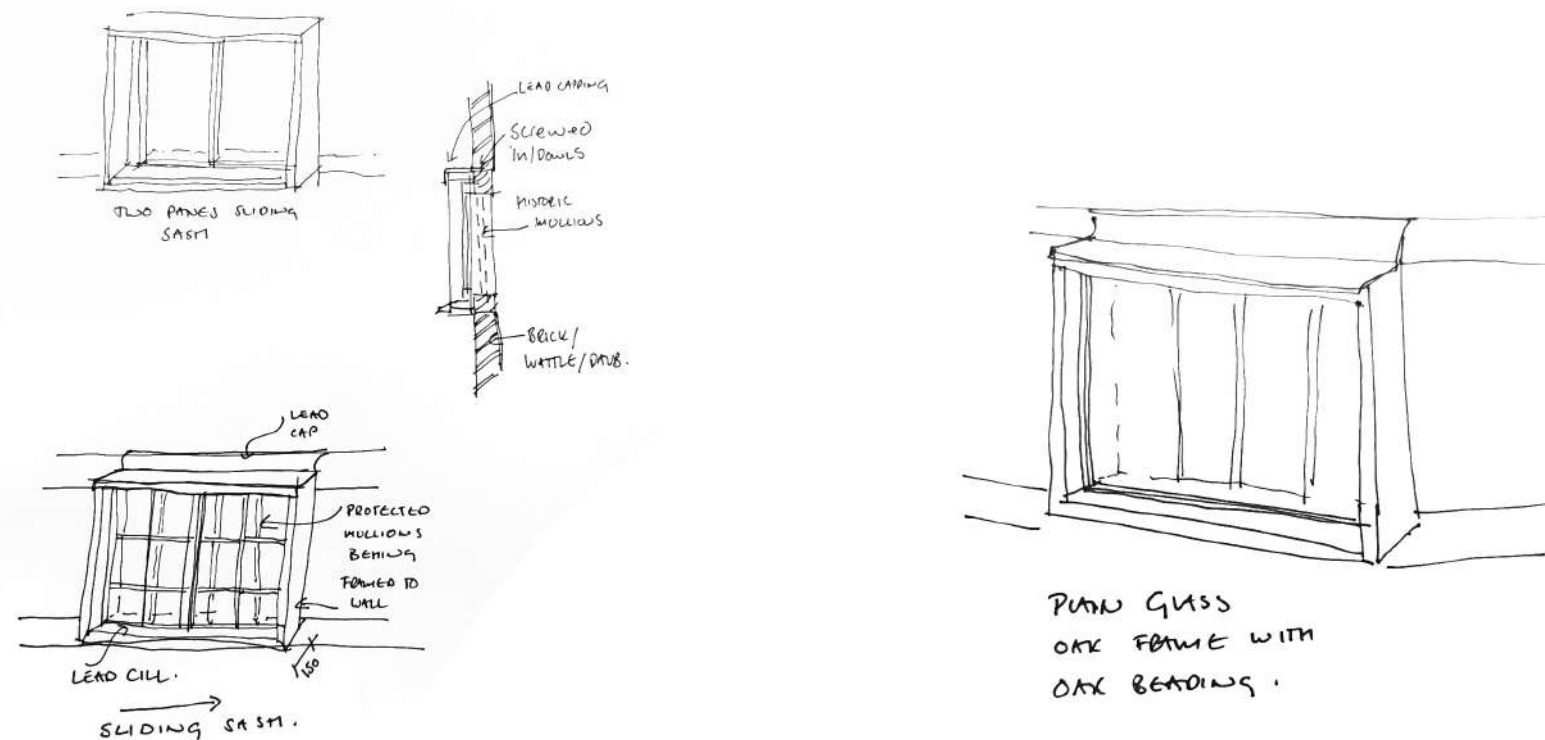


Black Painted Brickwork English Bond



Red Brick Paving Slabs

07 Appearance and Materials



The existing framed timber mullioned windows will be protected by the construction of a traditional protruding window frame fixed to the existing house frame in stained oak. Various styles were considered horizontal sliding sash with and without mullions and the conclusion was the original vertical timber mullions were best conserved and enhanced by being set behind a single pane of slim line double glazing or vacuum glazing as shown in the right hand illustration. A secret trickle vent is proposed within the oak frame.



Integral PV's flush to roof

TIMBER FRAMED BUILDINGS EXPLAINED

Windows

Medieval timber framed buildings originally had windows that were simply a gap in the frame with vertical wooden mullions inserted within. These were set into diamond-shaped sockets top and bottom so the sharp edge of the mullion faced out (ones set square tend to be later replacements or replicas). At this date glass was expensive and limited in availability so most houses had wooden shutters, which slid horizontally, or occasionally vertically, in grooves on the inside of the frame (external hinged shutters are a later fashion). In more basic housing, oiled cloth may have been hung instead, but whatever the solution, the building was open to the elements or very dark if not! In most cases the exterior face of the window was plain,

although the edge of the opening could be chamfered or moulded. In the finest buildings, carved pieces could be inserted between the top of the mullions or across the whole head to create the effect of pointed Gothic windows.

By the Tudor period projecting windows could be found on the finest buildings. These more elaborate fittings were a separate frame, which was tenoned onto the timber around a gap in the wall so they would protrude out for either just the thickness of the frame or, more commonly, by sufficient depth for a small window to be squeezed into

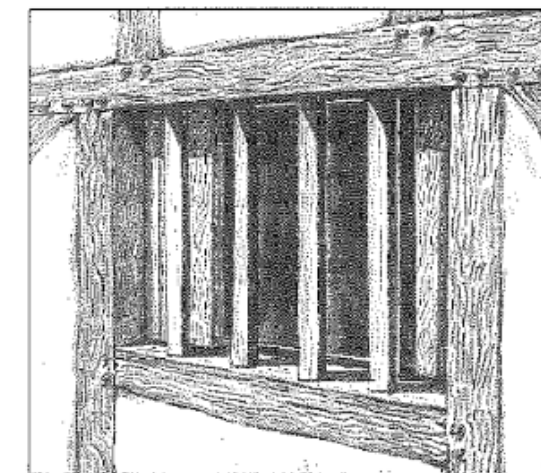


FIG 7.2: A mullion window in its original form, with sliding internal shutters just visible behind. The diagonally fitted mullions could have had glazing added between them at a later date or would have been filled in, leaving just an outline in the wall.

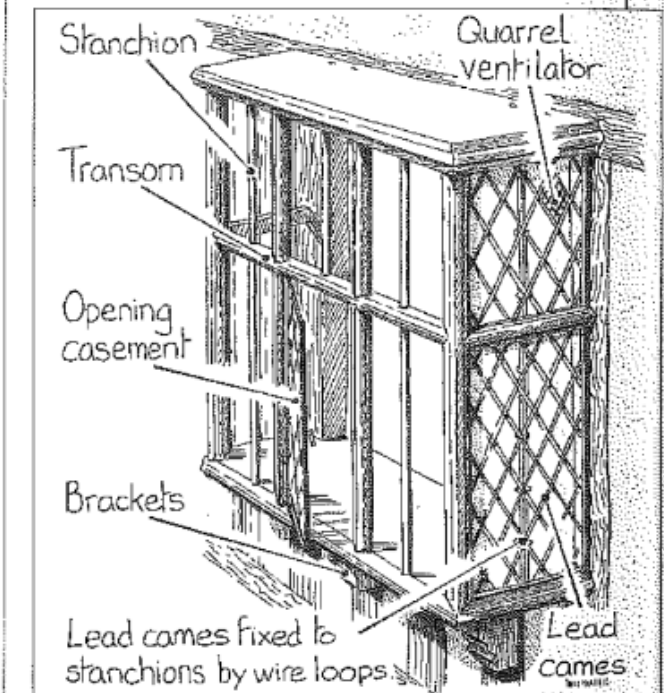


FIG 7.3: A projecting window with the glass removed from the front face to expose its frame and parts. An air flow through the sealed window could have come from a hinged casement in one of the lights or a vent in a quarrel.

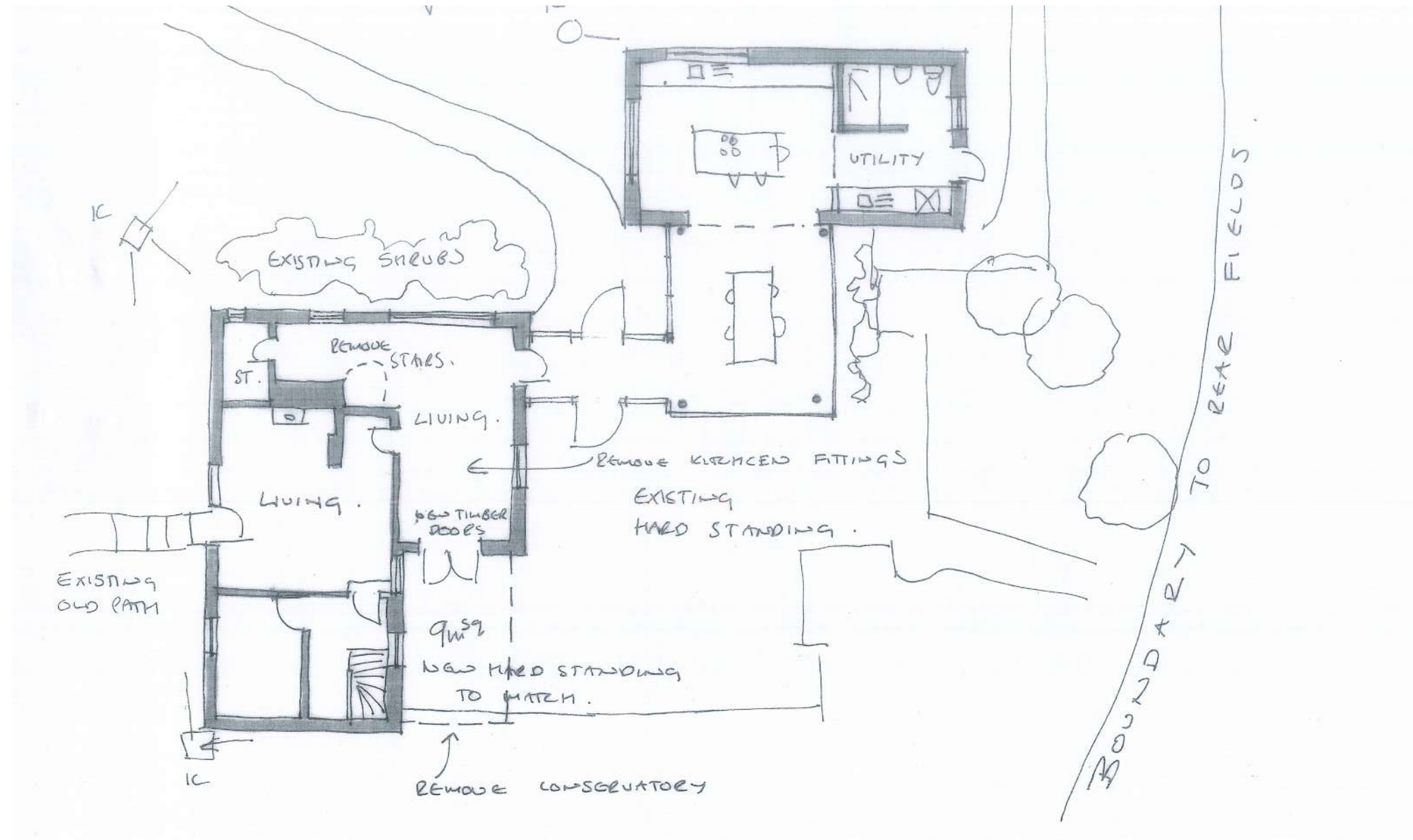
07 Appearance and Materials



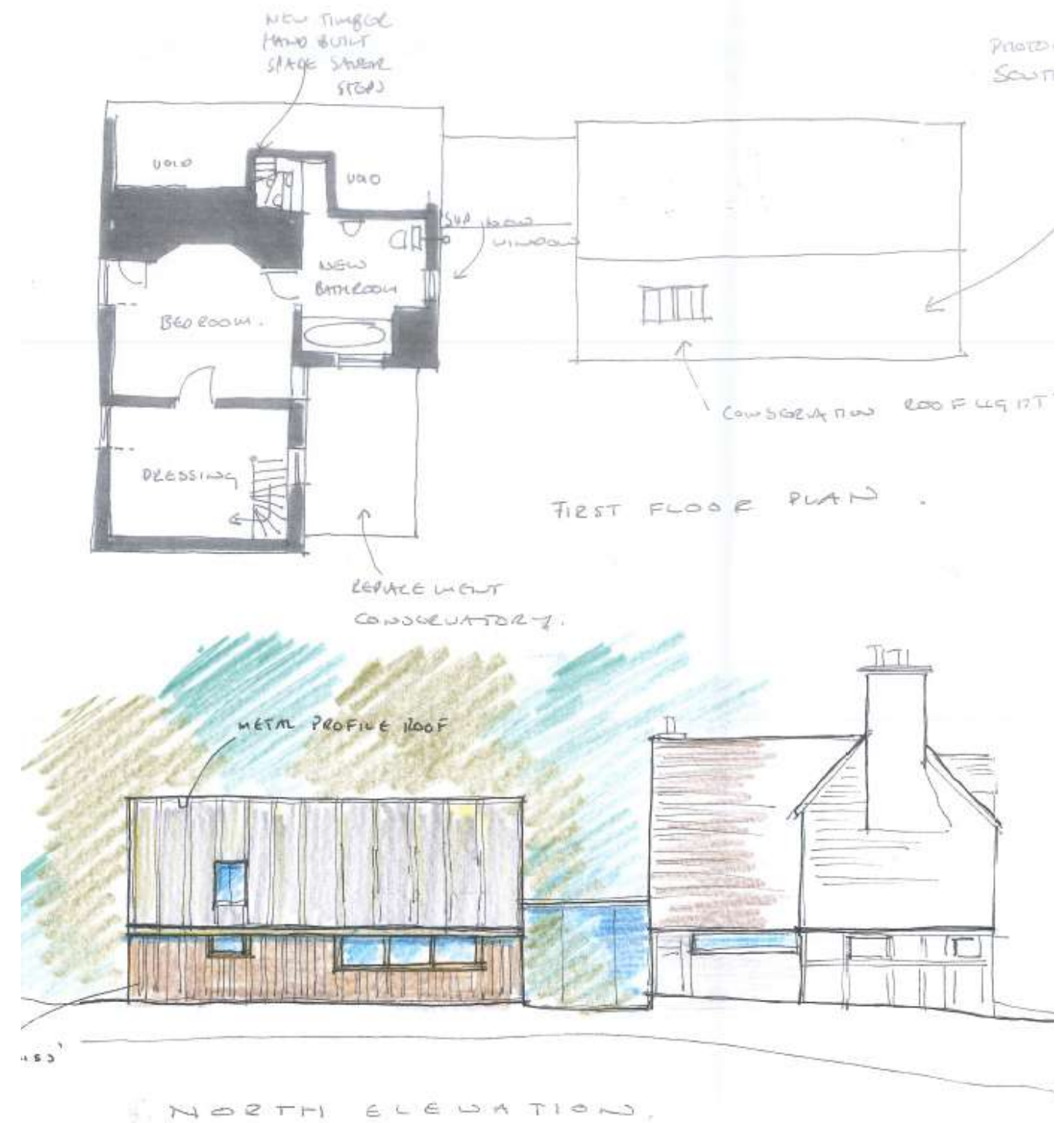
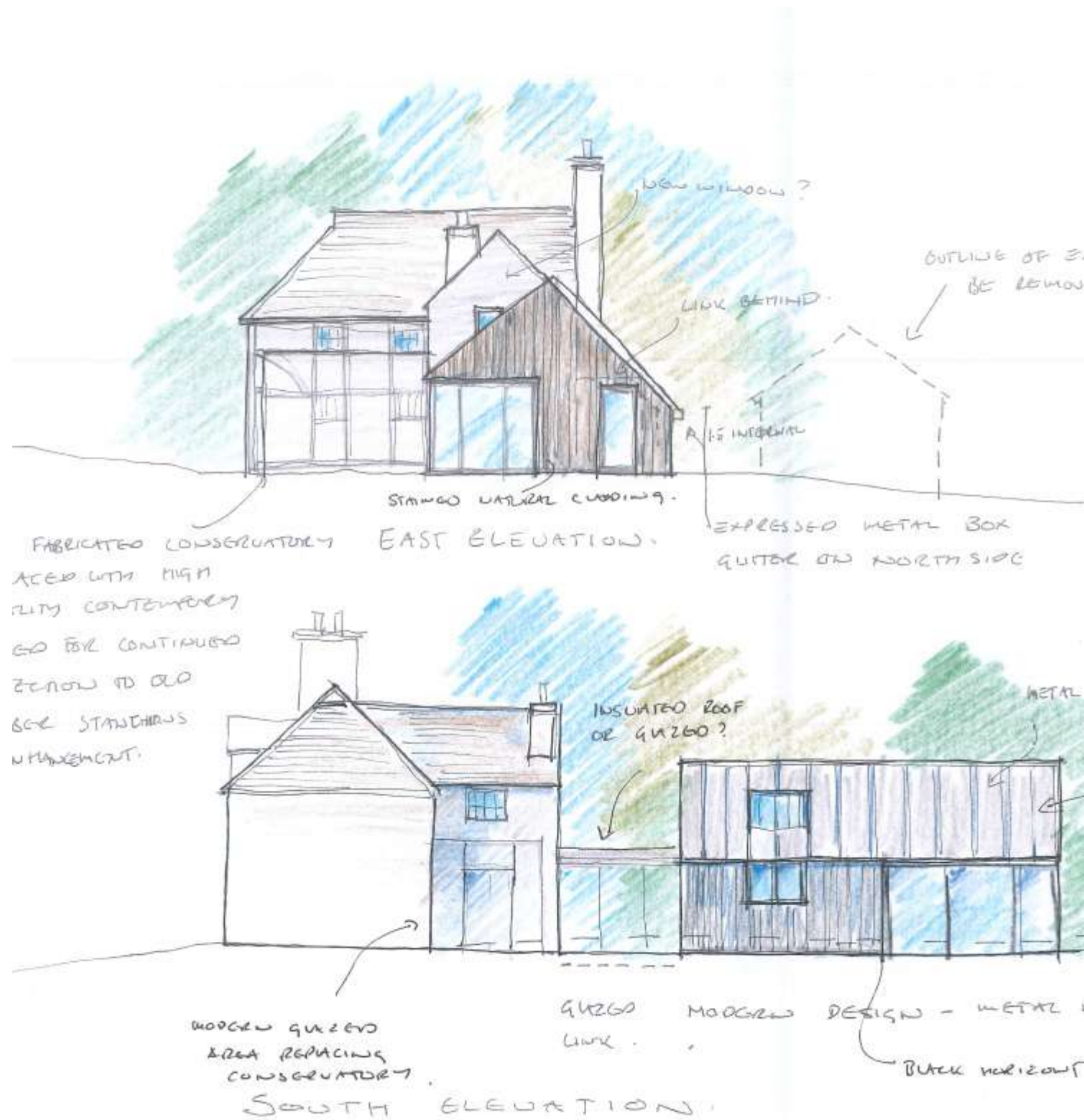
08 Site Design Approach, Design Evolution and Rationale



08 Site Design Approach, Design Evolution and Rationale



08 Site Design Approach, Design Evolution and Rationale



08 Site Design Approach, Design Evolution and Rationale



08 Site Design Approach, Design Evolution and Rationale



08 Site Design Approach, Design Evolution and Rationale

The clients approached Ecotecture in 2023, having just purchased this charming listed cottage and wishing to link the out building with the house in some way. They also wished to create a larger, more modern kitchen with space to sit and eat with a utility room.

The first application post purchase was DM/23/2212 which involved the creation of a vehicular access to the north of the site: Construction of new vehicular bridge and new parking with turning area. This is essential as it will form the access route for the proposed work

Site Design Approach

The initial design was first looked at using traditional pitched roofs. This proved to be very difficult due to the low eaves on the modern outbuilding and different levels. It led to a clunky solid detail that would not enhance the heritage asset.

Subsequently we looked at playing around with shapes and forms. The next idea looked at creating a very contemporary box in the position of the existing outbuilding, and a large glazed area with glass link which provided an additional kitchen, living, dining area, which was particularly important to the clients as the existing house is tiny with the original room sizes. This was pre apped with the council, who advised that it was over large and needed to come down in size, however the glazed link with clear definition between now and old was considered acceptable.

Following very productive pre-application enquiry and in conjunction with the client, a new design proposed demolishing the outbuilding, and moved its position behind the house with a smaller glazed link. A pallet of materials was suggested, traditional form with a contemporary modern finish was suggested.

Following this amended design, discussion still focused around how to manage the removal of the modern conservatory and its replacement. On our first visit it was clear that the List entry was not accurate and the building was in fact far older, mid C16C with the discovery of rear ground floor windows with framed timber triangular mullions intact. These would have had goat skin attached to them. A visit and subsequent report by Joe Thompson a Timber-frameologist (Weald and Downland Living Museum) confirmed the exact dates and suggested a catslide might be a good way of replacing the conservatory.

This idea was examined in detail, with a catslide roof in tile, extending the original house, and glazing beneath. This however didn't really enhance the building, it cut across the building and created a smaller space than the existing conservatory. Eventually the clients agreed with the suggestion of a glazed canopy to protect the rear walls and special mullions with a new box with lead flashing, using the traditional materials but in a simplified contemporary finish conversant with the modern extension.

We examined several ideas for the two new window covers , and eventually we agreed simple one pane, with a discreet hidden trickle vent for ventilation would best reveal the triangular mullions behind. The series of explored options are shown here.

Amount

The existing footprint of the house, outbuilding and conservatory is 108sqm

This application involves firstly the proposed demolition of modern elements of the site, including the old outbuilding to be demolished 33sqm and the conservatory to be removed 10sqm.

The new footprint of the building including the link and new extension equates to 104sqm.



09 Access

The site is located on a narrow country road, Mallion's Lane in Staplefield. The proposed scheme intends to use the existing access for the purpose of this planning application. The existing parking spaces are situated at the bottom of the garden, and a new path is proposed to link them with the house. By landscaping and using ramps, level access is provided for access to the new extension.

Pedestrian Access:

The site has a designated pedestrian access at the front of the house. Access for pedestrians is directly from Mallion's Ln, over a small pedestrian bridge over the stream.

Vehicular Access:

Vehicular access to the site is facilitated by an existing vehicular bridge connected to Mallion's Lane. The driveway is suitable for passenger vehicles and will be the primary means of access to the property.

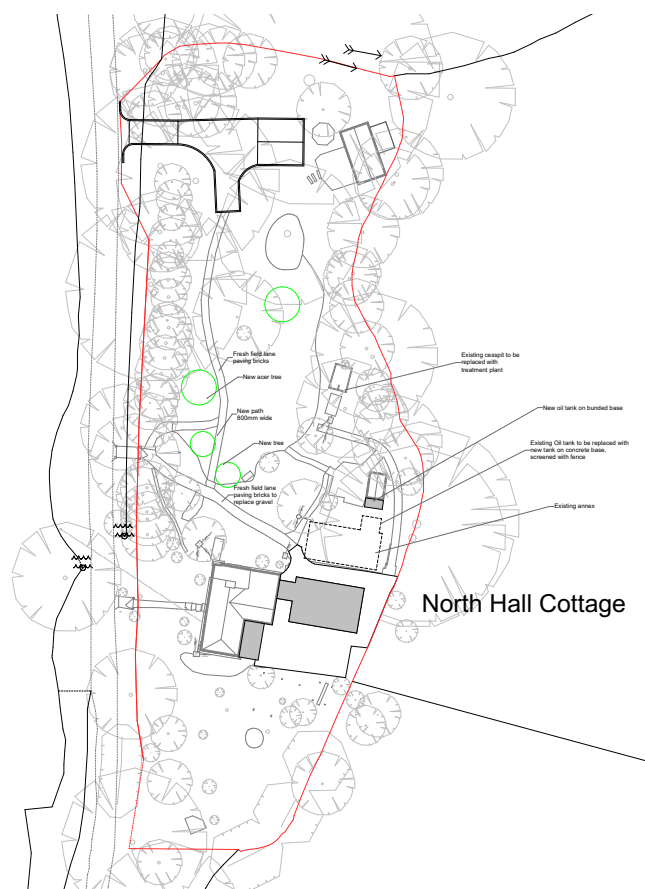
Public Transportation:

The site is located only 4 min walk to the closest bus stop serving routes 4 and 6. That would take people to Staplefield from where bus 271 links Staplefield to Crawley.

Closest train station is Haywards Heath, 16 min drive away or 27min on a bike. Haywards Heath train station offers reliable and quick access to both Brighton and London.

Cycle Storage:

Existing storage shed exists on site



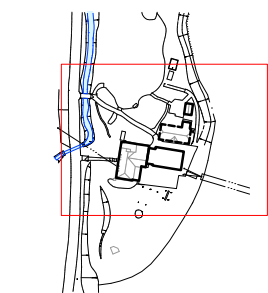
Access to the site



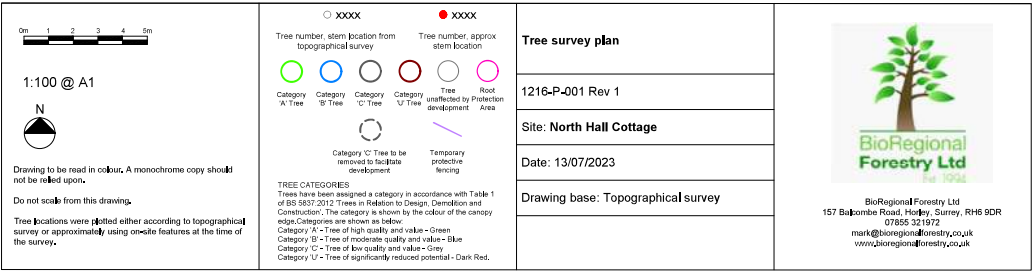
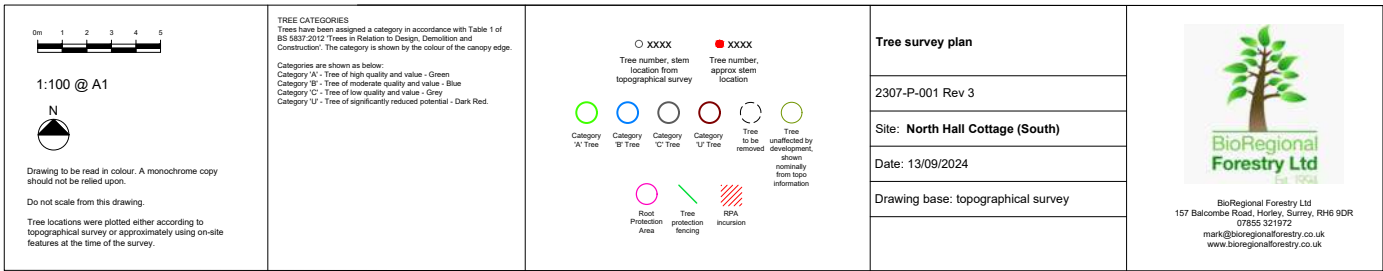
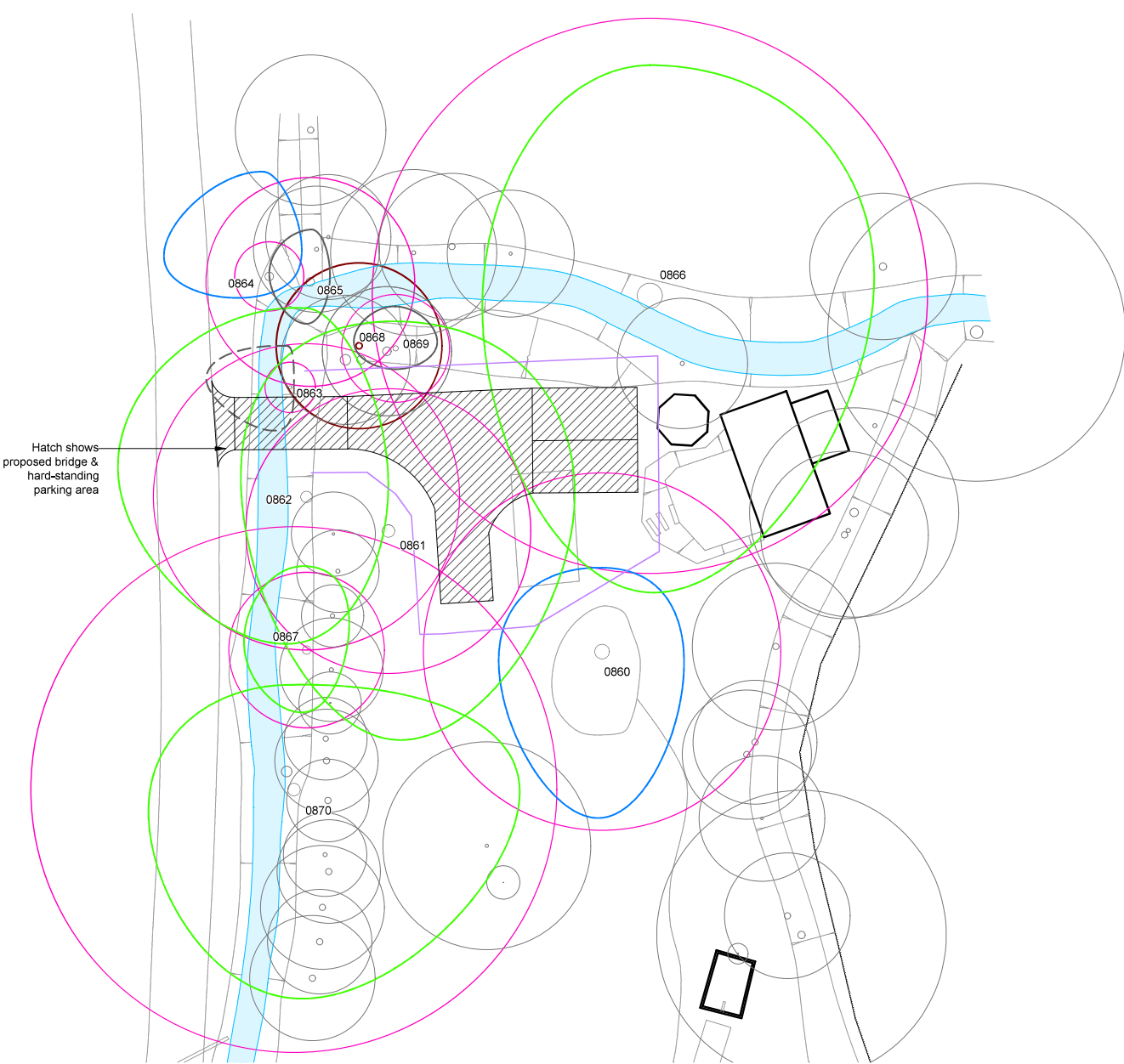
Access to the site



10 Ecology - Trees



LOCATION IN WIDER SITE (NTS)



11 Ecosystem Services

The South Downs National Park Local Plan sets out a commitment to an Ecosystem Services approach to planning decision making and management of the National Park, defined as the benefits people and society get from the natural environment.

The purpose of the policy is to embed a holistic approach to managing our natural resources sustainably for the future. Development proposals should take a positive approach to the delivery of ecosystems services and take adequate account of the economic benefit of enhancing ecosystem services.

Because the site has a strong relationship to the natural environment surrounding it and is in an area predominantly dominated by nature, the new proposal intends to enhance and improve the existing landscaping to reinforce the relationship with the surrounding context.

Actions:

- A Bat block by Green and Blue will be considered for the new buildings to support any local bat population.
- Wildflower mixes will be planted and are great for insects and provide a food source for bats.
- Compost heap created in the garden for compostable waste; this will help to improve soils.
- Log piles will be created in the garden where possible and grassed areas left long and mature to create new habitats.
- New indigenous mix species planting will be created in the gardens behind the fronting boundary walls; these will help to improve the air quality.
- Plants will be selected to provide a variety of food for wildlife, e.g. nectar rich berries and grasses.
- The new planting in the gardens will be used to connect up nearby habitats, creating links with adjoining properties and boundaries.
- Lawns will be minimised to heavily managed grass and more areas of wildflower and meadow mixes to be used on the perimeters of the garden where possible.



Bat Boxes



Ecourage biodiversity



Log piles



Wildflower grass



Permeable hard surfaces



Wildflower mix



Planting

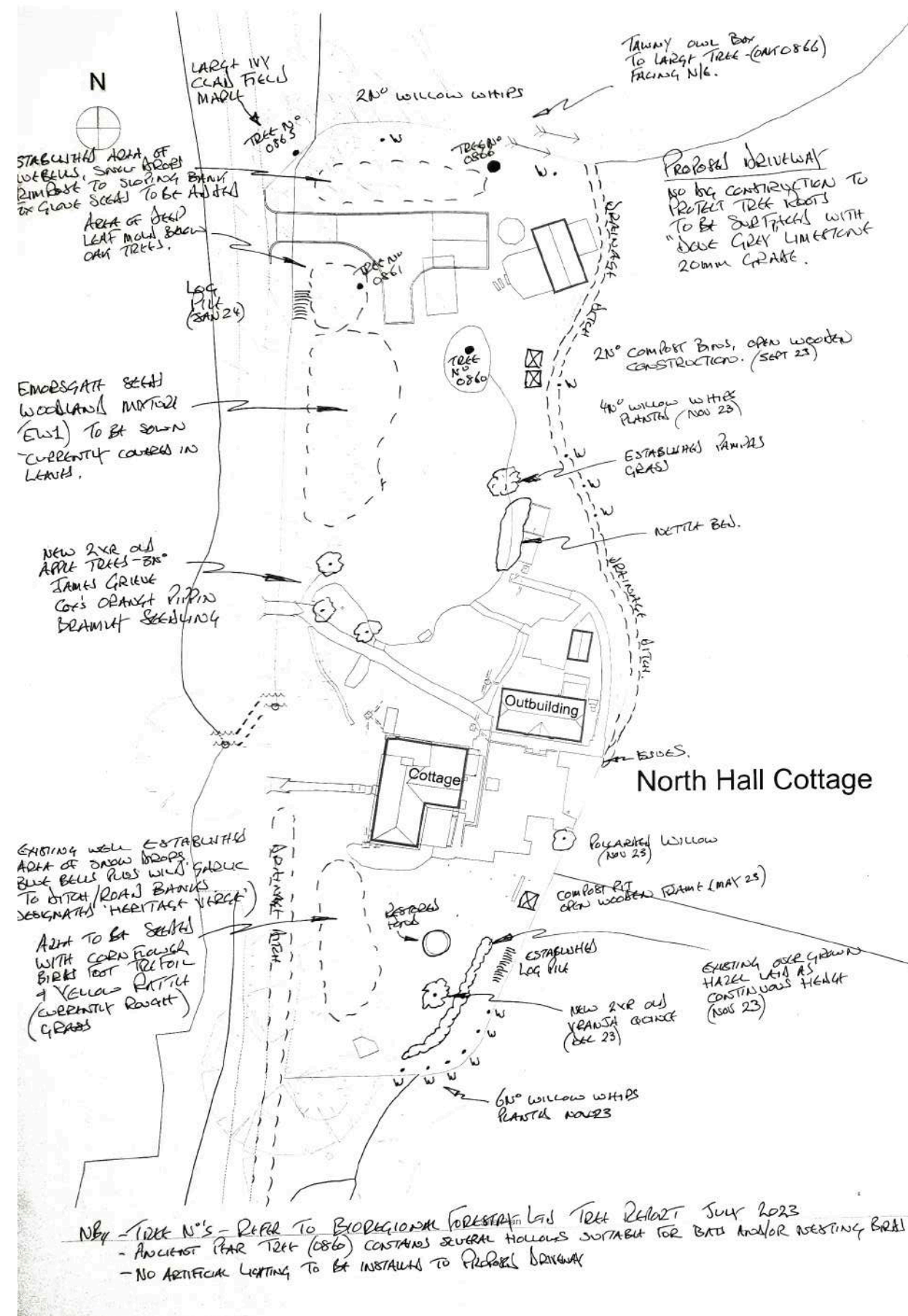


Compost heap



Gravel access

11 Ecosystem Services



12 Sustainable Energy

Energy Efficient Design

The new extension has a compact shape, minimising the energy required for heating and cooling. The high performance windows and doors specified are to reduce thermal bridging.

Renewable Energy & Sustainable Heat

Our client has shown interest in installing the photovoltaic array; however, we have recommended that they prioritise the fabric efficiency of the dwelling over the use of 'bolt-on' technologies. Should planning be successful, cost analysis will be carried out on the array to ensure that their installation does not end up compromising the energy efficiency goals at the core of the project.

Natural Daylighting Strategy

As an integral part of high-quality architecture and sustainable design, natural daylighting is considered throughout the design development process. At Ecotecture we use a 6m daylighting rule which informs many of our design decisions. By limiting the depth of floor-plan for any regularly used habitable space to a maximum of 6m from any external window, we ensure the levels of natural daylight achieved are to a good level throughout the design.

Summertime Cooling Strategy

When insulating and sealing a building, it is important to consider the risk of summertime overheating. As mentioned under 'appliances' low energy kit will reduce risks of overheating due to internal heat gains as a result of technology.

Appliances

Dedicated low energy lighting is to be installed throughout the new dwelling. A+ white goods and low energy technologies such as LED TV's are to be used to prevent excessive internal heat gains and save energy in use.

Planting

The landscape and ecology strategy aims to enhance the surrounding natural environment with ecological enhancements to improve, where possible, the biodiversity of a site and to enhance the living environment for the benefit of human and wildlife inhabitants. Habitat creation and bio-diversity enhancement would include successful tree planting supplemented with shrub planting.

The landscaping design will incorporate native planting and tree species across the site, creating a diverse range of habitats and improving connectivity across the site through the creation of linear features such as hedgerows and tree lines.

Construction Waste

A construction waste management plan will be drawn up in which a strategy for resource efficient construction process will be defined.

The goals of the site waste management plan will be:

- Reduction of unnecessary construction waste
- The re-use of materials from existing site structures where viable within the new build elements of the development.
- Choosing lower embodied construction methods where appropriate. (This has a potential conflict with flood resilience in construction.)
- Reducing water and energy use during the construction phase.

