



Chillenden Forge,
Chillenden,
Canterbury,
Kent,
CT3 1PS

Date: 15.03.24

Version: 01

Authors: Chris Palmar & Phil Ward

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1.0 INTRODUCTION

1.1 EXECUTIVE SUMMARY

1.1 EXECUTIVE SUMMARY

This Design Statement is to accompany the main Planning Design & Access Statement by Rebus Planning, and supports the Listed Building Application and Full Planning Application.

It explains how the proposed development is a suitable response to the site and its setting. The document also explains the design principles and concepts that have been applied to this proposal.

Client:
Nicola Clear and Tony Hewer

Site Address:
Chillenden Forge, Griffin Hill, Chillenden, Canterbury, Kent, CT3 1PS

1.2 DESCRIPTION OF DEVELOPMENT

Chillenden Forge is situated about 10 miles South-East of Canterbury City centre, and is accessed off Goodnestone Road in Chillenden, via connected routes several miles off the A2 by-pass for direct links to central Canterbury and Dover.

The site is situated on northwestern outskirts of the village of Chillenden, close to the Village Hall.

Chillenden and Chillenden Forge both have a rich histories.

For the former, Chillenden itself is a *“former civil parish, now in the parish of Goodnestone in the Dover district.*

In the Domesday Book of 1086, Chillenden was recorded as ‘Cilledene’. Chillenden was home to the families of Thomas Chillenden and William Chillenden, as indicated by their surnames.”

For the latter, “Chillenden Forge was a blacksmith’s workshop built in around the C17 and extended in the mid-C19, and is listed as Grade II...is a relatively rare and early surviving example of a forge or blacksmith’s workshop.”

The Forge is no longer used as a blacksmith’s, and ceased operations in the 1990’s

LOCATION AUTHORITY: Dover District Council

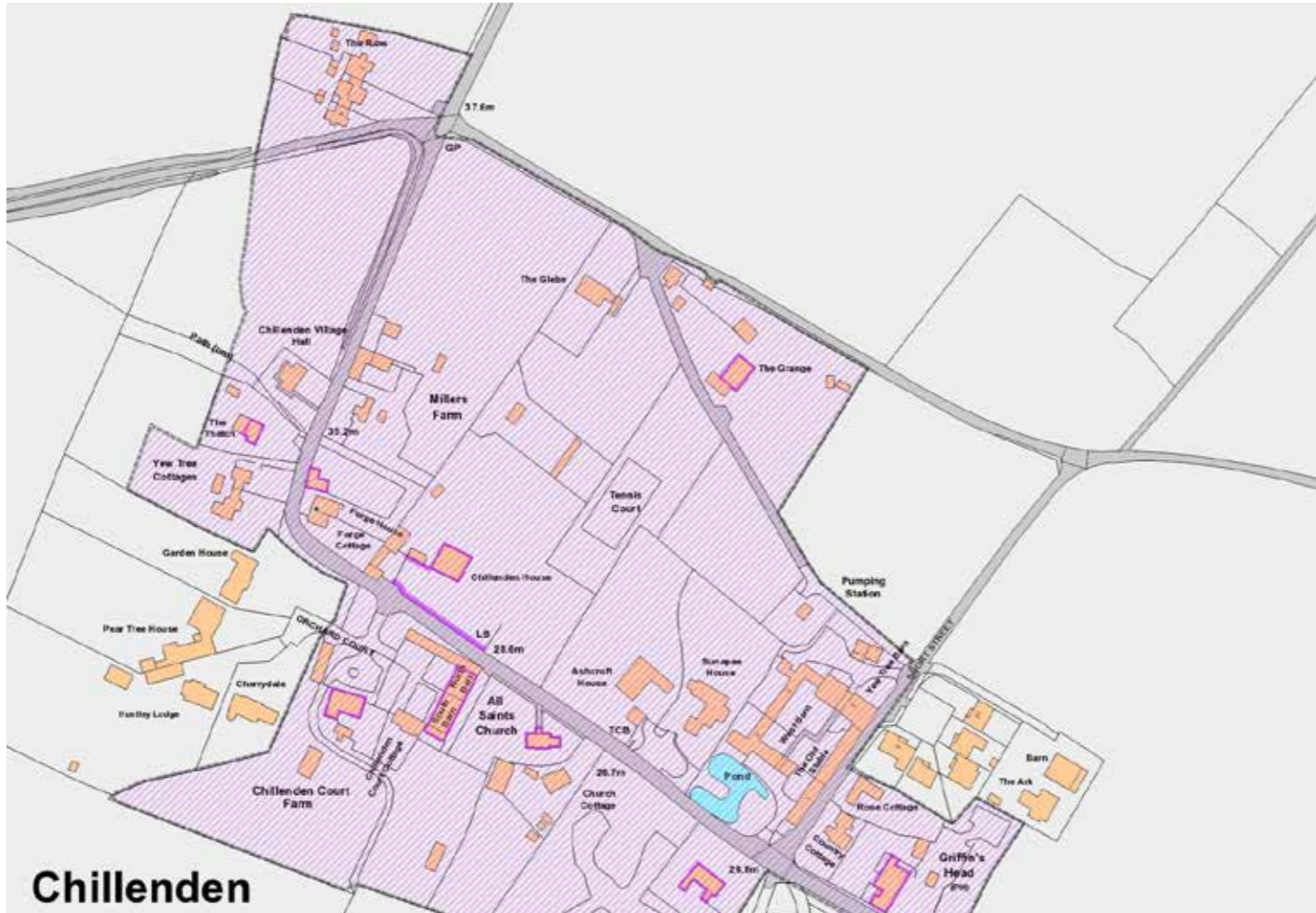


FIG. 01: MAP SHOWING CHILLENDEN FORGE WITH THE SITE HIGHLIGHTED IN RED, AND THE REMAINING CLIENT OWNERSHIP BOUNDARY IN BLUE.

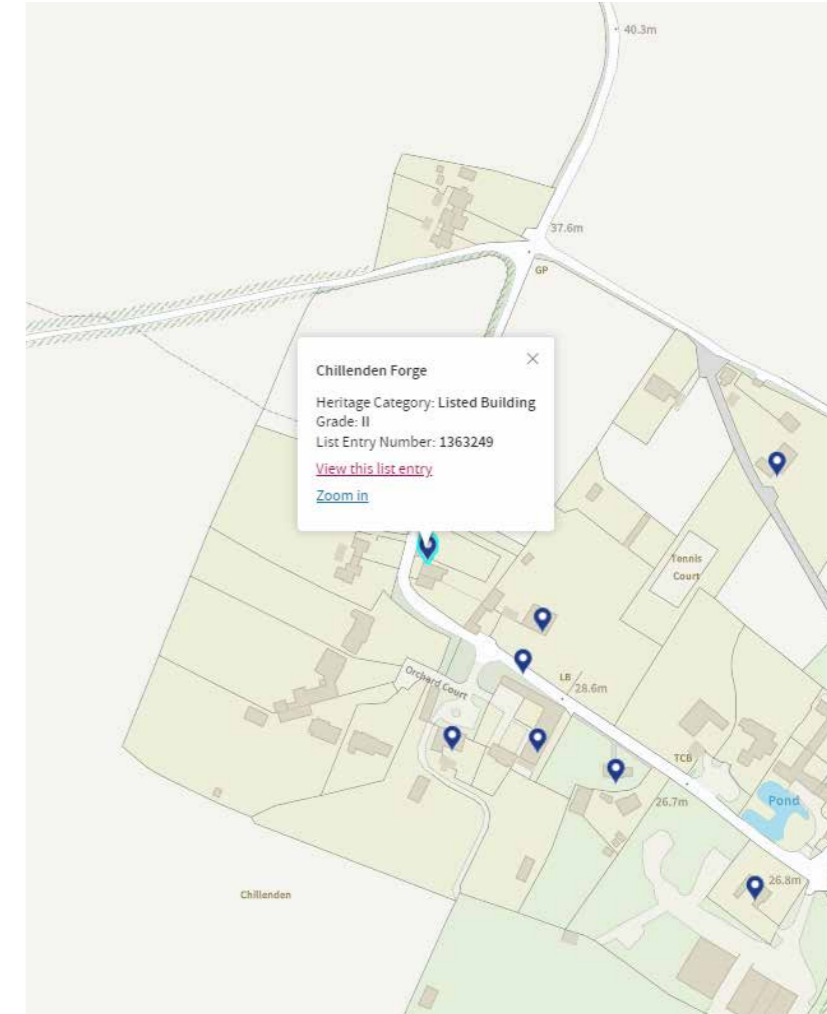
1.3 SITE HISTORY

Chillenden Forge is situated within the Conservation Area (see map to the right), is Grade II Listed, situated next to Forge House of 1868 (not listed) which is also owned by the applicant.

Opposite to The Forge is a property known as 'The Thatch' which a Grade II listed house that dates back to the 18th Century.



Chillenden



HISTORIC ENGLAND MAP OF CHILLENDEN



HISTORIC ENGLAND MAP OF THE THATCH

LISTED BUILDING AND CONSERVATION AREA MAP



Heritage Category:	Listing
List Entry No :	1363249
Grade:	II
County:	Kent
District:	Dover
Parish:	Goodnestone

For all entries pre-dating 4 April 2011 maps and national grid references do not form part of the official record of a listed building. In such cases the map here and the national grid reference are generated from the list entry in the official record and added later to aid identification of the principal listed building or buildings.

For all list entries made on or after 4 April 2011 the map here and the national grid reference do form part of the official record. In such cases the map and the national grid reference are to aid identification of the principal listed building or buildings only and must be read in conjunction with other information in the record.

Any object or structure fixed to the principal building or buildings and any object or structure within the curtilage of the building, which, although not fixed to the building, forms part of the land and has done so since before 1st July, 1948 is by law to be treated as part of the listed building.

This map was delivered electronically and when printed may not be to scale and may be subject to distortions.

List Entry NGR:	TR2686653703
Map Scale:	1:1250
Print Date:	3 October 2023

Name: Chillenden Forge

This is an A4 sized map and should be printed full size at A4 with no page scaling set.



HISTORIC ENGLAND LISTING PAGE OF CHILLENDEN FORGE



1872-1873 MAP



1896-1898 MAP



1906-1907 MAP



1938-1945 MAP



AERIAL VIEW OF CHILLEDEDN FORGE AND FORGE HOUSE - CIRCA 1977



FORGE HOUSE (1868)



THE THATCH (OPPOSITE)

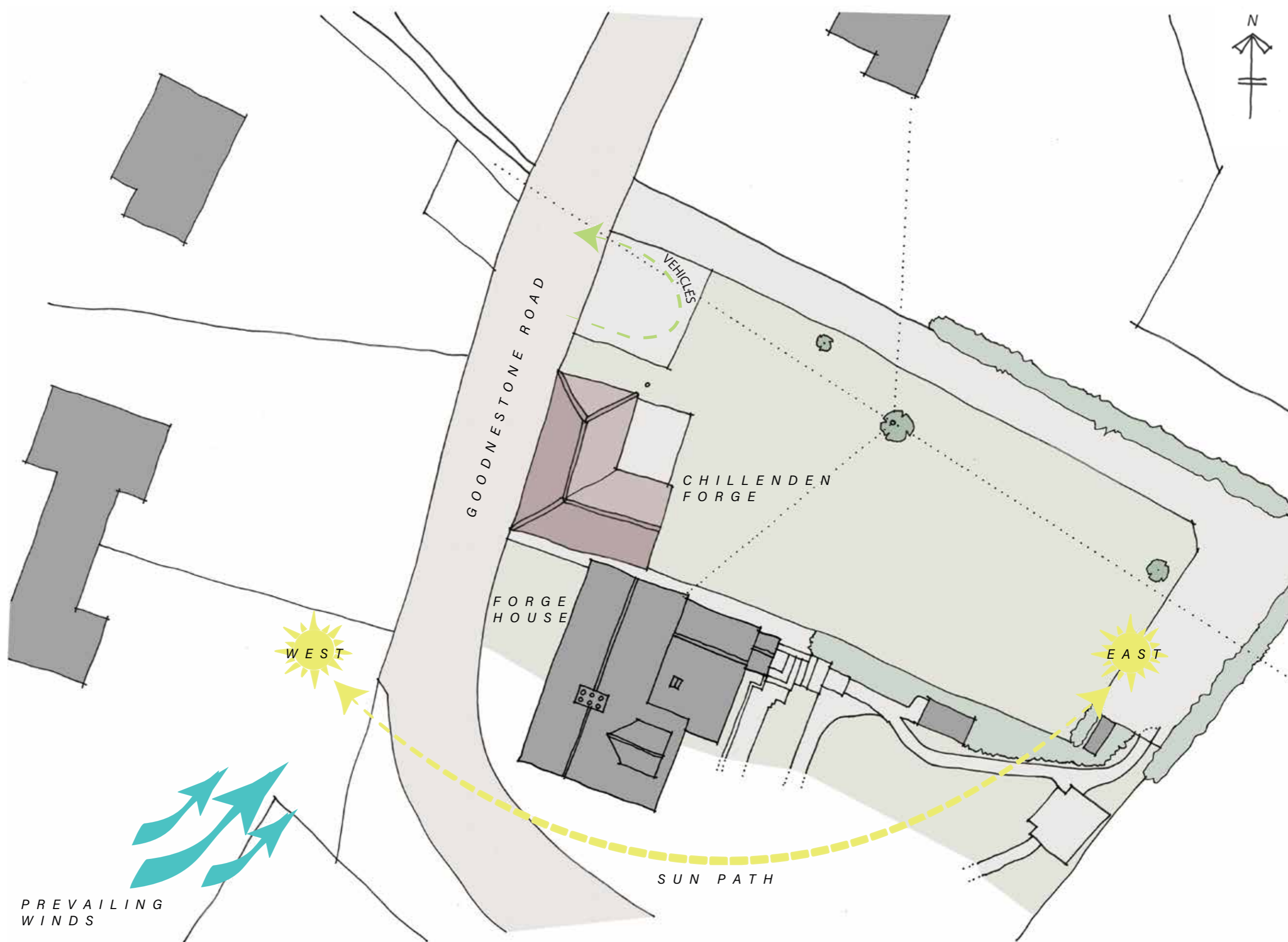
2.0 EVALUATION OF EXISTING PROPERTY

2.1 EXISTING SITE ANALYSIS

Chillenden Forge is positioned in very close proximity to Forge House to the south, but sits closer to Goodnestone Road than the house, which unlike the Forge, enjoys a degree of protection / privacy and is set-back from the road edge, whereas the western facade of the Forge makes for a hard vertical edge to the main road.

Within the L-shaped area of the Forge, the remnants of an old derelict structure and foliage remains.

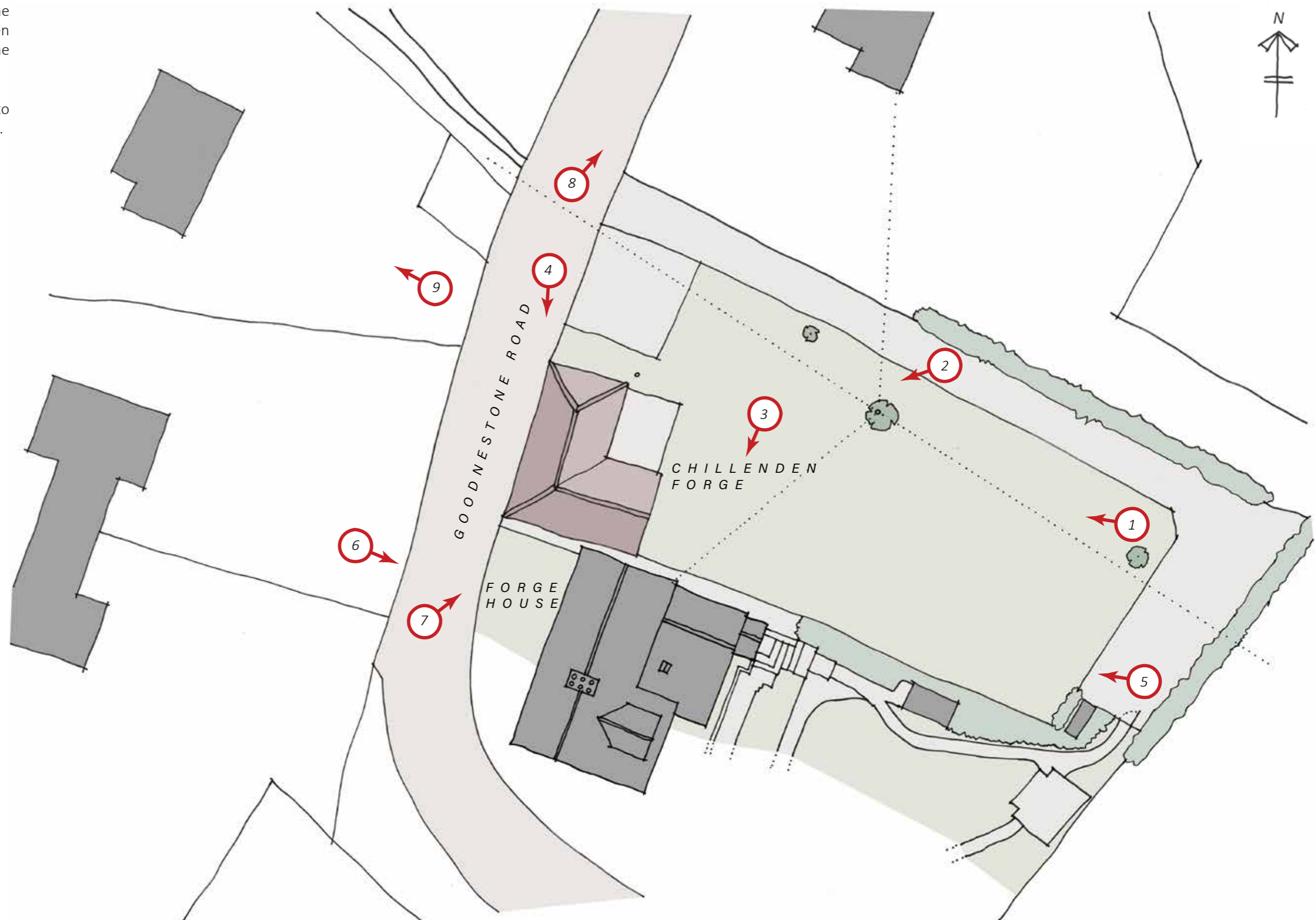
To the East of the Forge there is a large open area which is well managed albeit it remains largely un-landscaped and, historically, forms part of the garden associated with Forge House . This open area is defined by the driveway to the northern and eastern boundary that leads to the parking area for Forge House, and a mixture of close boarded fence and post and rail fence to the south which currently divides Chillenden Forge with Forge House's garden.



2.2 SITE VIEWS - KEY

The plan to the right depicts the locations of the photographs taken around the site shown on the following page.

These photos on the next page help to give some context to the site overall.



2.3 SITE PHOTOGRAPHS



VIEW 01



VIEW 02



VIEW 03



VIEW 04



VIEW 05



VIEW 06



VIEW 07



VIEW 08



VIEW 09

2.4 EXISTING BUILDING PLANS

Chillenden Forge is set across a single storey floor plate, with access into the building via three areas:

1. Double sliding Cart doors (north west).
2. Single door (south west).
3. Opening in the brickwork to the north east (adjacent to the derelict lean-to).

The Forge's appearance and overall building form has evolved over time, adapting (presumably) to the increasing consumer demands of a Forge (cart wheels, re-shoeing horses, home furnishings etc).

The records describe the original Forge as being a rectangular structure with the furnace and chimney stack originally being in situ to the south east end, which has since been removed (with evidence of where the stacked penetrated the roof), however local records show a grainy photo of this furnace in action, prior to it's complete removal. The Early Forge was built in red brick using English Bond.

Our plan to the right attempts to anticipate how this may have presented itself on site (early Forge / later Forge).

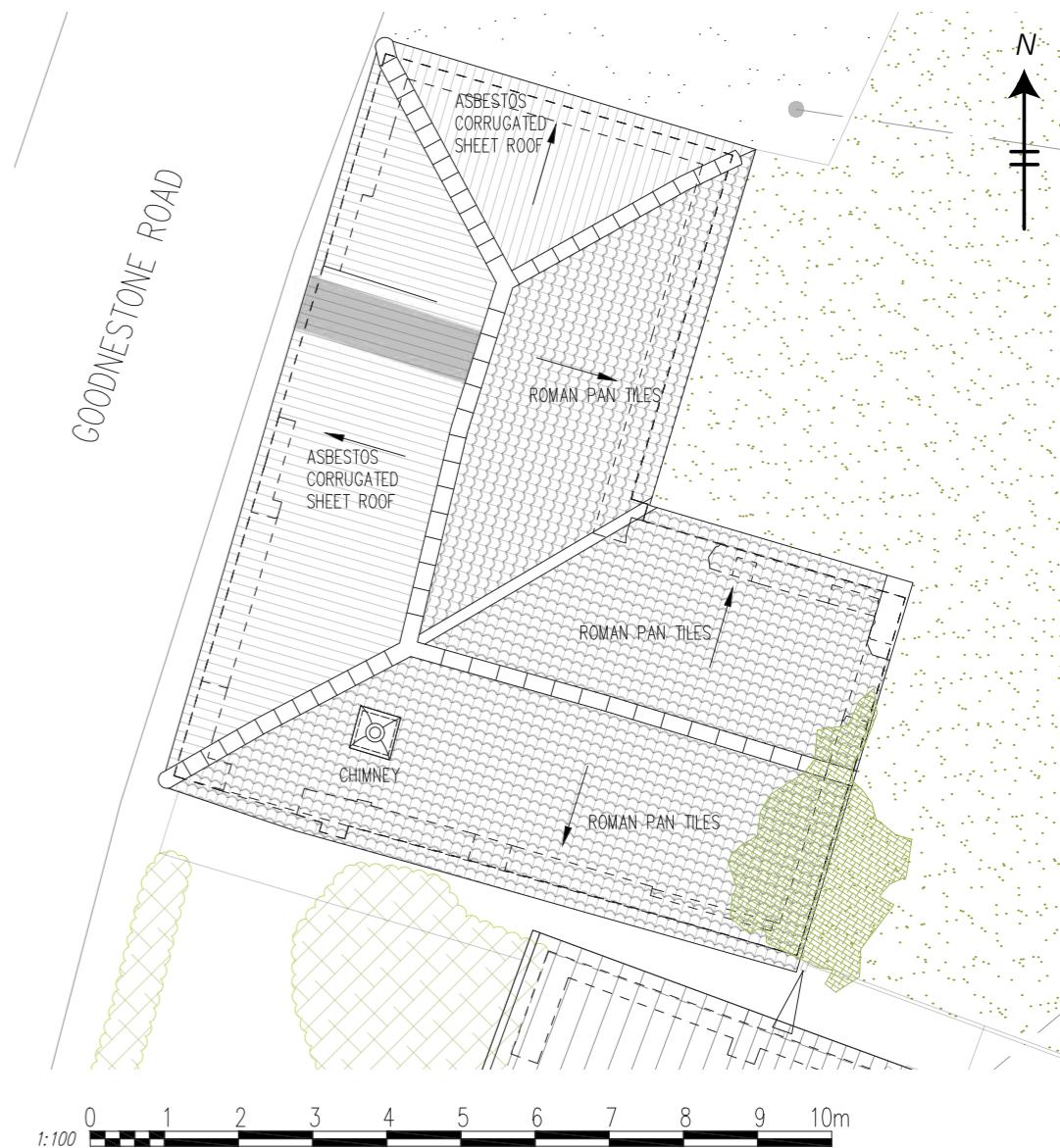
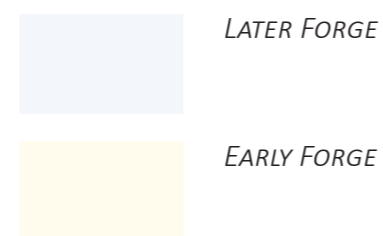
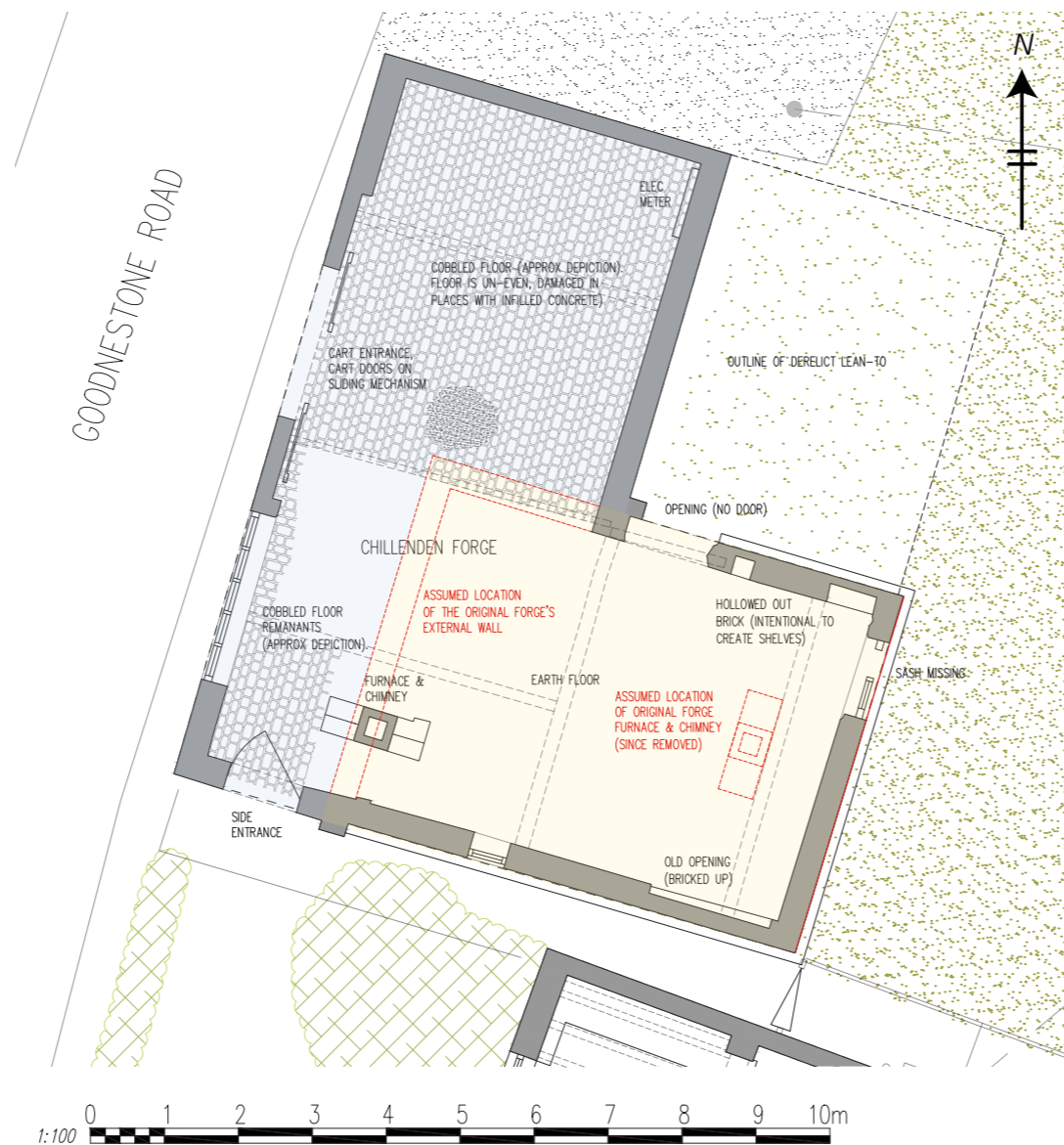
Latterly, the Forge was extended to the west/ north west right up to the edge of the current road, and an extra wing built to the north / north east. This later extension to the Forge was built using Flemish Bond.

There is evidence on the walls that the north wing extension, which is cobbled, was used to tie horses on to allowing the blacksmith to re-shoed them.

The roof is hipped, with an array of clay roman pan tiles and clay hip and ridge tiles, with the front and side elevation being roofed in asbestos corrugated sheet roofing and asbestos hip tiles.

The Forge has fallen into disrepair since 1990's when a Blacksmith was no longer in demand or sustainable, and presently is in much need of re-purposing and repairing, to ensure it's heritage is sustained.

Chillenden Forge was recently acquired by the applicants, who wish to sensitively repair and adapt the structure, and convert it in to a dwelling.



2.5 EXISTING BUILDING HISTORY

Chillenden Forge, which is Grade 2 Listed, is best described in the following extracts taken directly from Historic England's Official recently-enhanced listing entry.

A separate Structural Inspection Report was also commissioned by the applicant, which is separately attached, and was produced by James Miller (Conservation Accredited Engineer) and Ian Rafter from CTP Consulting Engineers (Heritage), which looks at the condition of the current building, and offers strategies for repairs.

Official list entry

Heritage Category: **Listed Building**

Grade: **II**

List Entry Number: **1363249**

Date first listed: **03-Dec-1986**

Date of most recent amendment: **09-Sep-2022**

List Entry Name: **Chillenden Forge**

This List entry helps identify the building designated at this address for its special architectural or historic interest.

Unless the List entry states otherwise, it includes both the structure itself and any object or structure fixed to it (whether inside or outside) as well as any object or structure within the curtilage of the building.

For these purposes, to be included within the curtilage of the building, the object or structure must have formed part of the land since before 1st July 1948.

[Understanding list entries](https://historicengland.org.uk/listing/the-list/understanding-list-entries/) (<https://historicengland.org.uk/listing/the-list/understanding-list-entries/>)

[Corrections and minor amendments](https://historicengland.org.uk/listing/the-list/minor-amendments/) (<https://historicengland.org.uk/listing/the-list/minor-amendments/>)

Location

Statutory Address: **Chillenden, Canterbury, Kent, CT3 1PS**

The building or site itself may lie within the boundary of more than one authority.

County: **Kent**

District: **Dover (District Authority)**

Parish: **Goodnestone**

National Grid Reference: **TR2686653703**



EARLY FORGE

EXISTING BUILDING HISTORY

Official list entry

Heritage Category:	Listed Building
Grade:	II
List Entry Number:	1363249
Date first listed:	03-Dec-1986
Date of most recent amendment:	09-Sep-2022
List Entry Name:	Chillenden Forge
Statutory Address 1:	Chillenden, Canterbury, Kent, CT3 1PS

Summary

Blacksmith's workshop. Built in around the C17 and extended in about the mid-C19.

Reasons for Designation

Chillenden Forge, a blacksmith's workshop built in around the C17 and extended in the mid-C19, is listed at Grade II for the following principal reasons:

Architectural interest:

* as a relatively rare and early surviving example of a forge or blacksmith's workshop, built in around the C17 and extended in about the mid-C19, which retains a cobbled floor, furnace, chimney, wheel clamp, casement windows, timber-boarded doors and a cart entrance; * Blacksmith's workshops have suffered high rates of alteration and loss and this freestanding example survives comparatively well.

Historic interest:

* as an interesting and poignant reminder of the important role of small metal industry within rural communities.

Group value:

* with The Thatch, an adjacent C18 house (Grade II).

History

A forge or blacksmith's workshop is a building housing the ironworking processes of a blacksmith

where iron objects and farm implements could be made or repaired and horseshoeing could be carried out. Forges required bellows for working the forge, anvils and benches for iron working, as well as wide doorways and access to a water supply. A feature of farms, villages and towns since the medieval period, the number of blacksmith's workshops fell dramatically over the C20 as their use became largely obsolete as new transportation and construction technologies developed. Most of those related to domestic and small industry activities have been converted to other uses, often to dwellings, or have been demolished and replaced. A feature sometimes associated with a forge is a wheel clamp used for putting an iron tyre onto a cartwheel. The hub is inserted into the central hole where it can be fixed with the rim of the wheel lying on the metal plate.

The forge at Chillenden was built in around the C17. The original handmade brickwork laid in English bond can be seen in the rear cross range. English bond brickwork was commonly used until about the end of the C17 (Clifton-Taylor 1972, 249). The cross range is shown on the 1843 tithe map as a rectangular building and described in the apportionments. In about the mid-C19 the forge was extended with an additional north-south orientated range to the west, altogether forming an L-shaped footprint. This addition was built in Flemish bond brickwork and adjoined the west side of the earlier range, which subsequently had the west wall removed to form a single internal space. The forge is shown as an L-shaped building on the 1872 OS map (1:2500) where it is labelled 'Smithy'. By 1897, an enclosed yard or shed had been added at the north-east angle. The building is shown with this footprint on the 1907, 1938 and 1957 OS maps. It was in use as a forge in 1986 when it was listed at Grade II. The roof structure has been at least partly replaced, probably in the C20. In 1991 it was recorded that planning permission was granted for replacement of Kent peg tiles with Roman pan tiles on part of the roof (although the original 1986 List entry describes pre-existing pan tile and asbestos sheet roof coverings at that time).

South of the forge is a former pair of cottages now forming one dwelling called Forge House with a datestone of 1868. Immediately to the north-west of the forge is a Grade II-listed early C18 thatched house called 'The Thatch'.

Details

Blacksmith's workshop. Built in around the C17 and extended in about the mid-C19.

MATERIALS: constructed of red brick with a timber roof structure covered in pan tiles and asbestos sheets.

PLAN: L-shaped in plan comprising a mid-C19 range orientated north-south, fronting on to the village lane, which adjoins a C17 cross range extending from the south end of the east (rear) elevation. A small shed also adjoins the rear of the forge at the north-east.

EXTERIOR: a single-storey building covered by a hipped roof, which fronts onto the village lane. The main elevation of the mid-C19 range is two-bays wide with a timber-boarded sliding cart door and a segmental-headed five-light casement window. The north elevation is blind (without any

EXISTING BUILDING HISTORY

openings). This mid-C19 range is built onto the earlier cross range; a buttress in the south elevation appears to mark a joint in the brickwork between the two ranges. The brickwork of the C17 cross range is largely handmade red brick laid in English bond, which contrasts with the mid-C19 brick which is laid in Flemish bond. The south elevation has a brick plinth, a timber-boarded door and a single-light segmental-headed casement window, as well as a blocked opening. A tall brick chimney stack with a clay chimney pot also rises from this side of the building. The east elevation of the cross range has a two-light casement window situated off-centre, which is currently (2022) missing one light and the glazing. This rear elevation appears to retain the original C17 brickwork to the full height of the gable, albeit with some repairs and refacing. The brickwork to the plinth is currently falling away in places. The north wall of the cross range has a blocked window and a door opening where some of the brickwork has fallen away. Attached to the north-east of the building is a timber and corrugated iron shed*, which is currently in a dilapidated condition and is not of special interest. Set into the ground next to the shed is a stone or concrete wheel clamp that would have been used for putting an iron tyre onto a cart wheel.

INTERIOR: the forge contains a brick furnace and chimney and the floor is partly earthen and partly cobbled; the latter to the mid-C19 extension. A scar in the south wall of the building appears to mark the location of the former return wall of the C17 range; this wall was probably dismantled when the mid-C19 range was built adjoining it. The forge is open to a timber hipped roof structure, which has tie beams and collar ties strengthened with iron straps.

EXCLUSIONS * Pursuant to s1 (5A) of the Planning (Listed Buildings and Conservation Areas) Act 1990 ('the Act') it is declared that the timber and corrugated iron shed attached to the north-east of the building is not of special architectural or historic interest. However, any works to this structure which have the potential to affect the character of the listed building as a building of special architectural or historic interest may still require Listed Building Consent (LBC) and this is a matter for the Local Planning Authority (LPA) to determine.

WHEEL CLAMP

It is worth noting that although the listing discusses a stone or concrete wheel clamp, this has not yet been discovered certainly since the current owners have been in possession of the building. Should the wheel clamp be located during the works we will notify the Conservation Officer immediately to discuss re-siting it on site (subject to its condition)



EARLY FORGE CASEMENT WINDOW (DAMAGED)



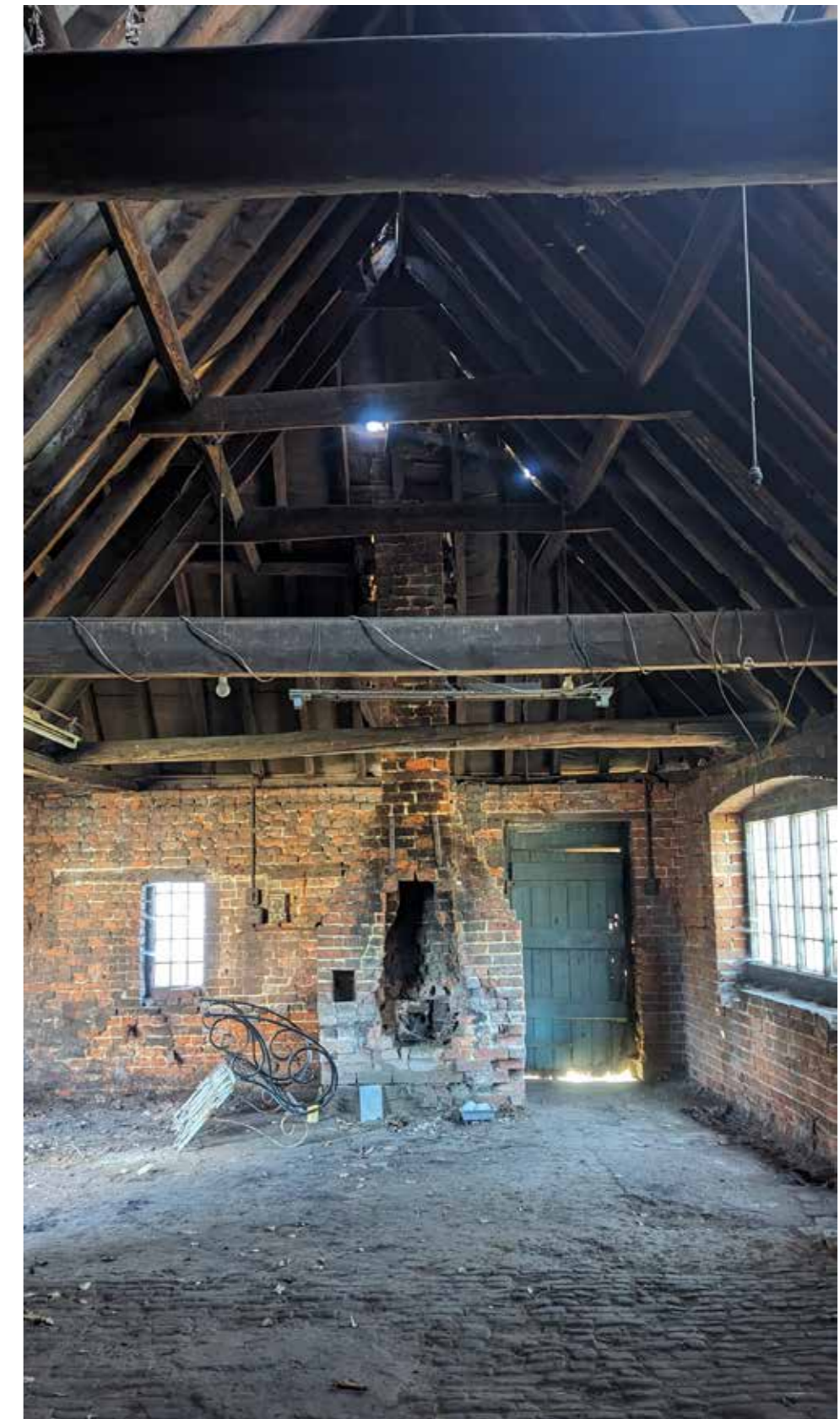
EARLY FORGE ROOF STRUCTURE



LATER FORGE 5-LIGHT CASEMENT WINDOW

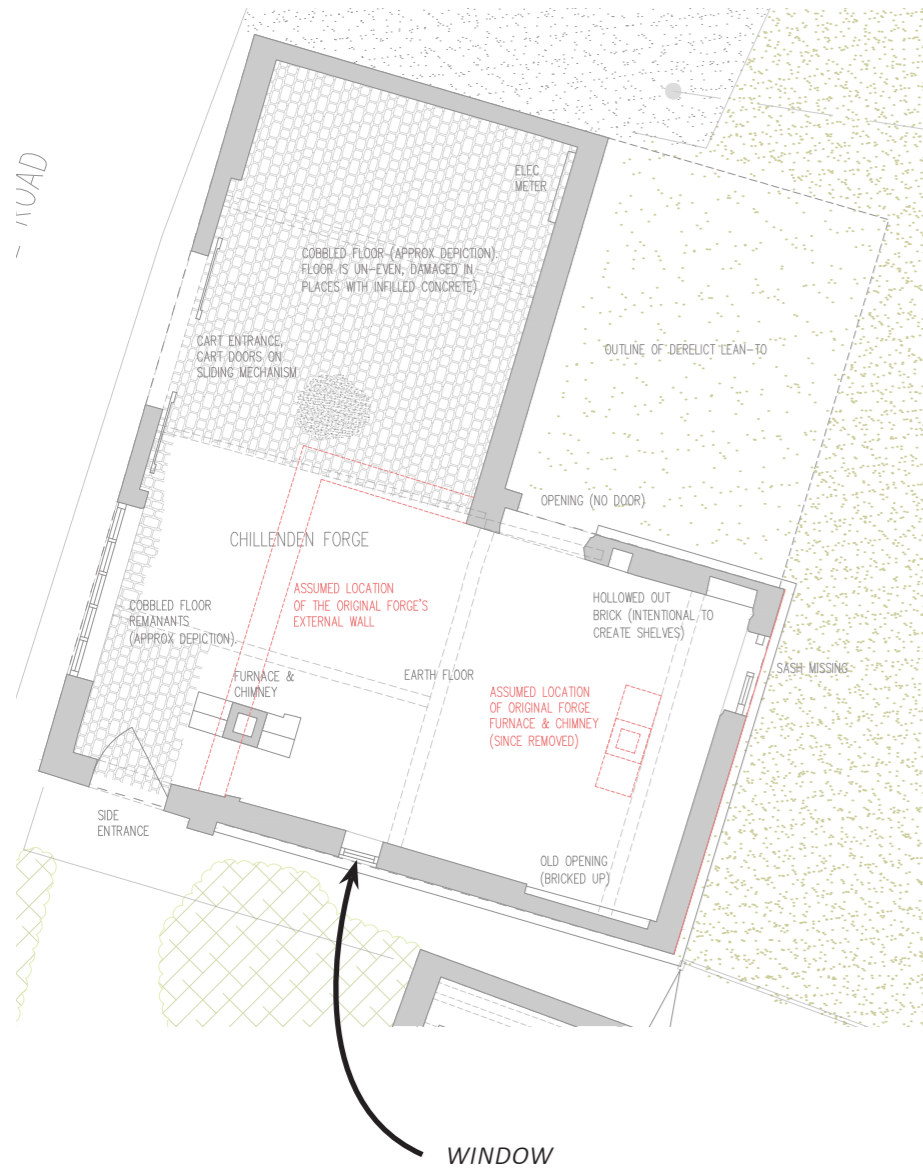


EARLY FORGE (ASSUMED) OPENING, BRICKED IN



LATER FORGE, COBBLED FLOOR AND (LATER) FURNACE

2.6 KEY HERITAGE ASSETS - WINDOWS



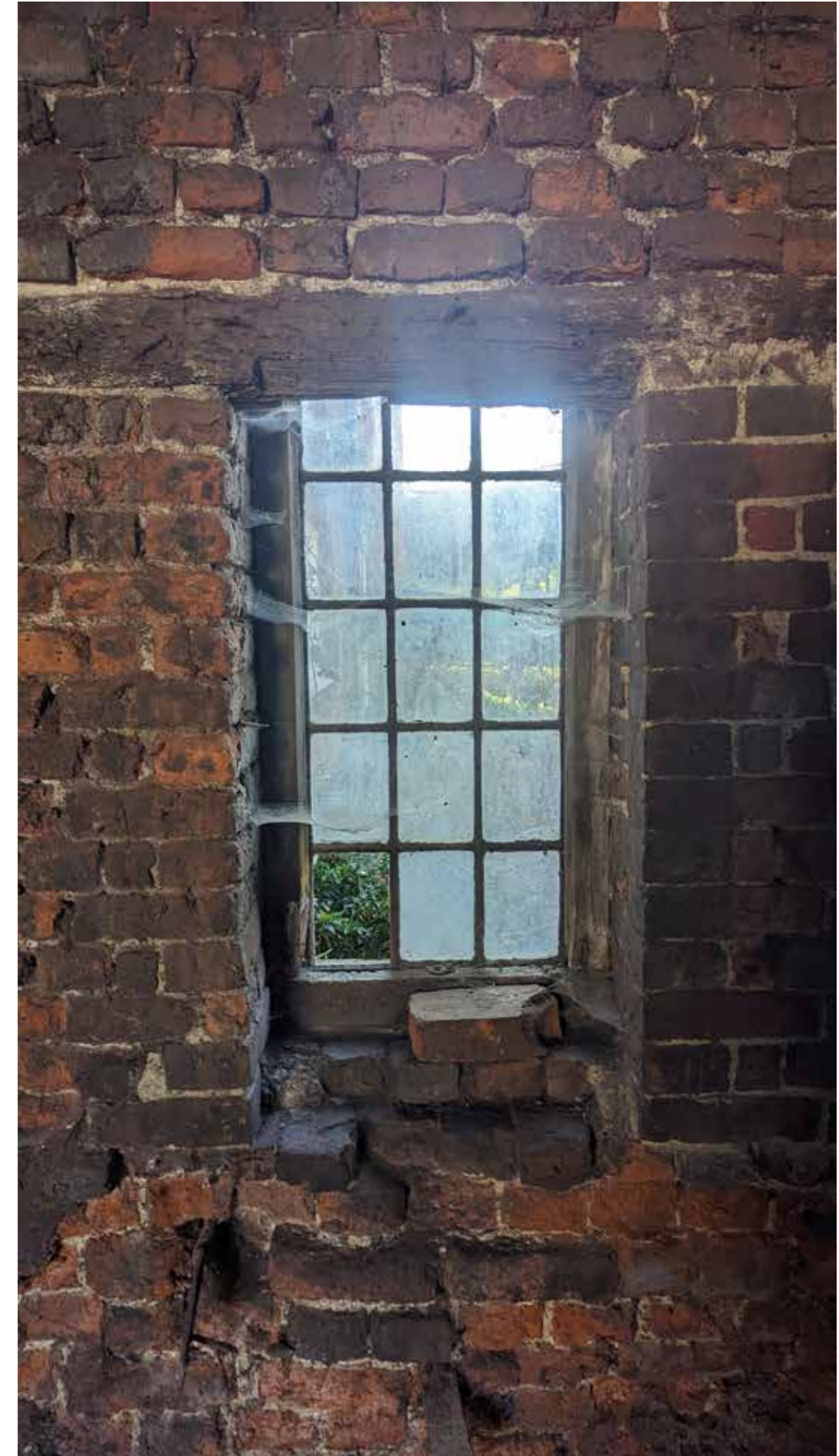
The side window (south west) will be carefully removed and fully repaired and refurbished, with rotten timbers replaced by specialist joiners. The missing glass will be replaced.

It is believed that this is not an original window from the early forge but, is in fact a replacement window that was installed when the later extension was added. Evidenced by the fact that it matches the style of the window to the northwest elevation.

Should the existing window be irreparable, a new single glazed window will be made like for like to the exact profiles and mouldings.

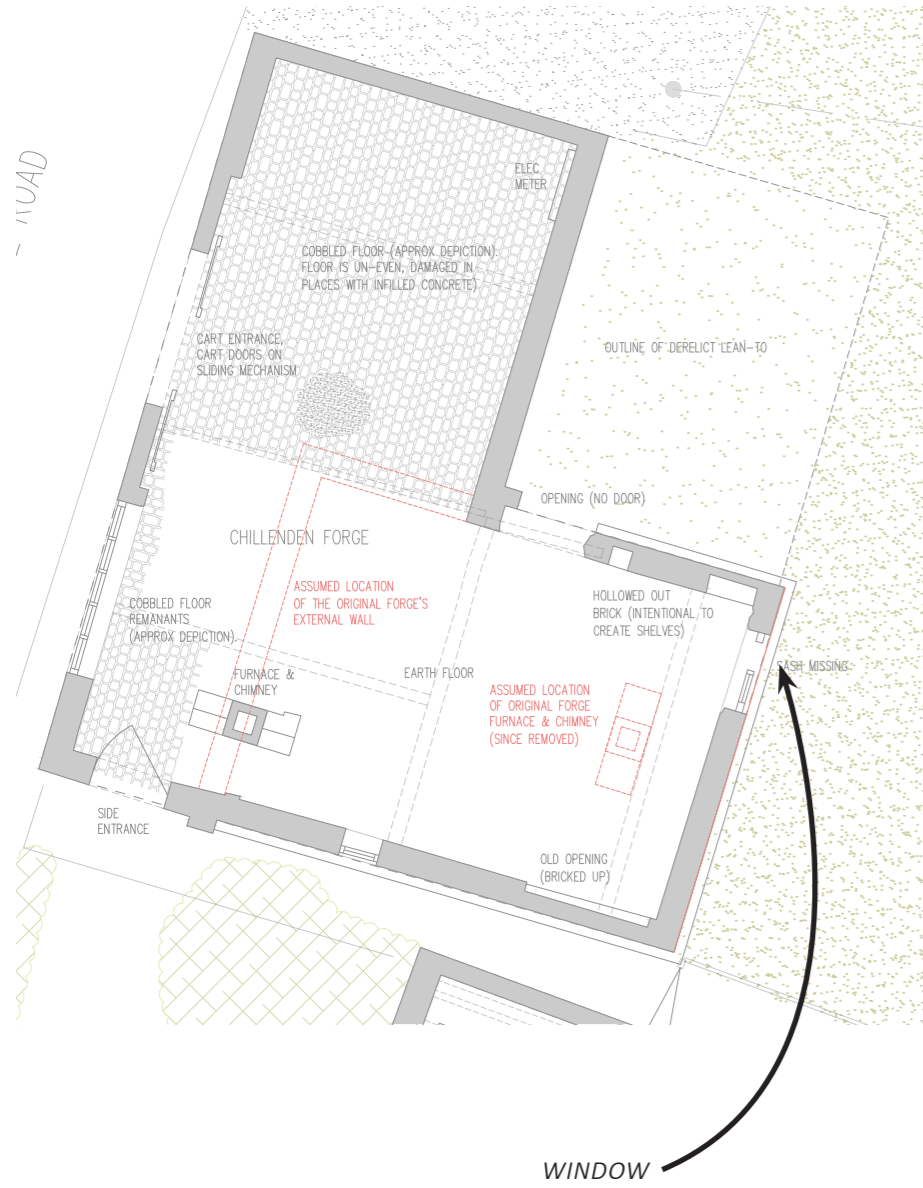


(EXTERNAL) EARLY FORGE 5X3 REPLACEMENT SIDE WINDOW



(INTERNAL) EARLY FORGE 5X3 REPLACEMENT SIDE WINDOW

KEY HERITAGE ASSETS - WINDOWS



(INTERNAL) DETACHED / DAMAGED / ROTTEN CASEMENT WINDOW



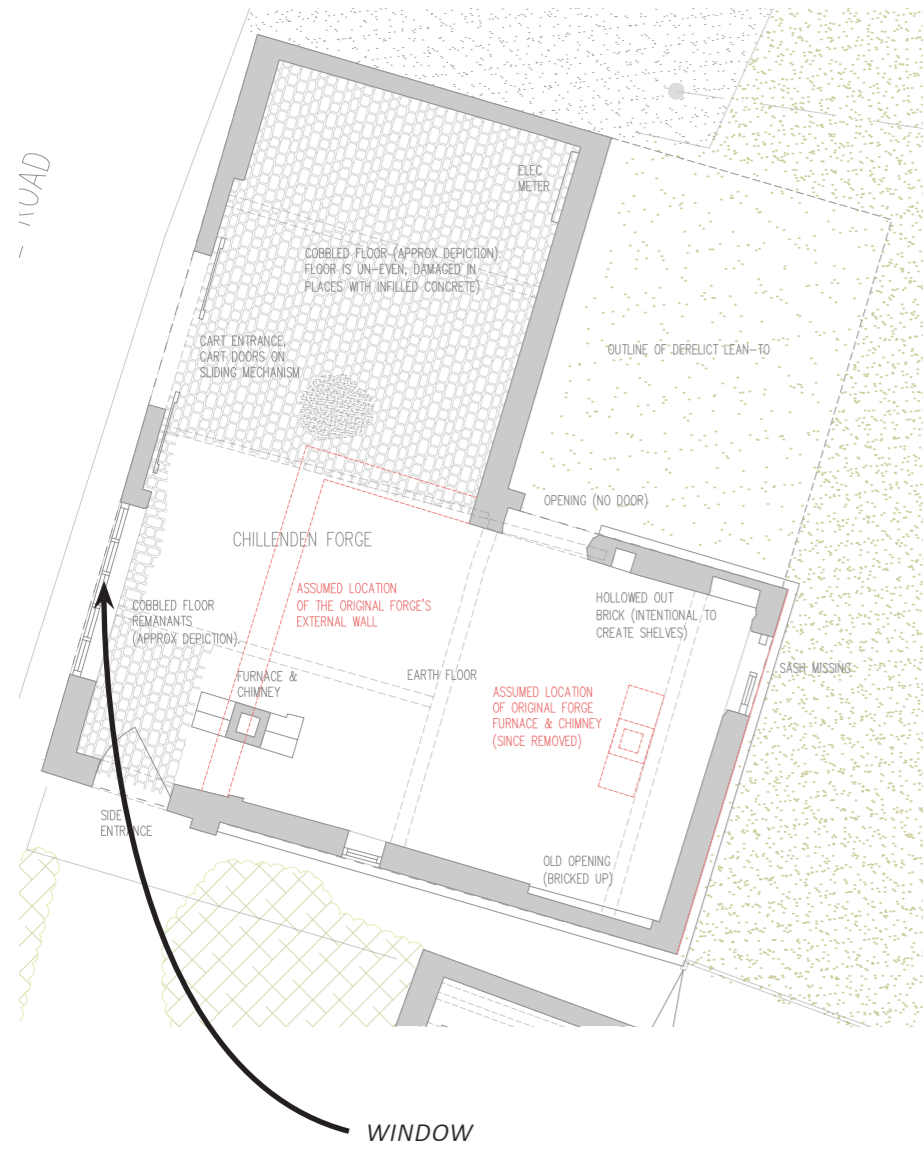
(EXTERNAL) EARLY FORGE CASEMENT WINDOW



(INTERNAL) EARLY FORGE CASEMENT WINDOW

The existing window will be removed and re made like for like to the exact profiles and mouldings., and will include a flying mullion as this window will provide both light, ventilation and fire escape from the proposed bedroom.

KEY HERITAGE ASSETS - WINDOWS



The window (facing North West) will be fully repaired and refurbished, with rotten timbers replaced by specialist joiners.

Should the existing window be irreparable, a new single glazed window will be made like for like to the exact profiles and mouldings.

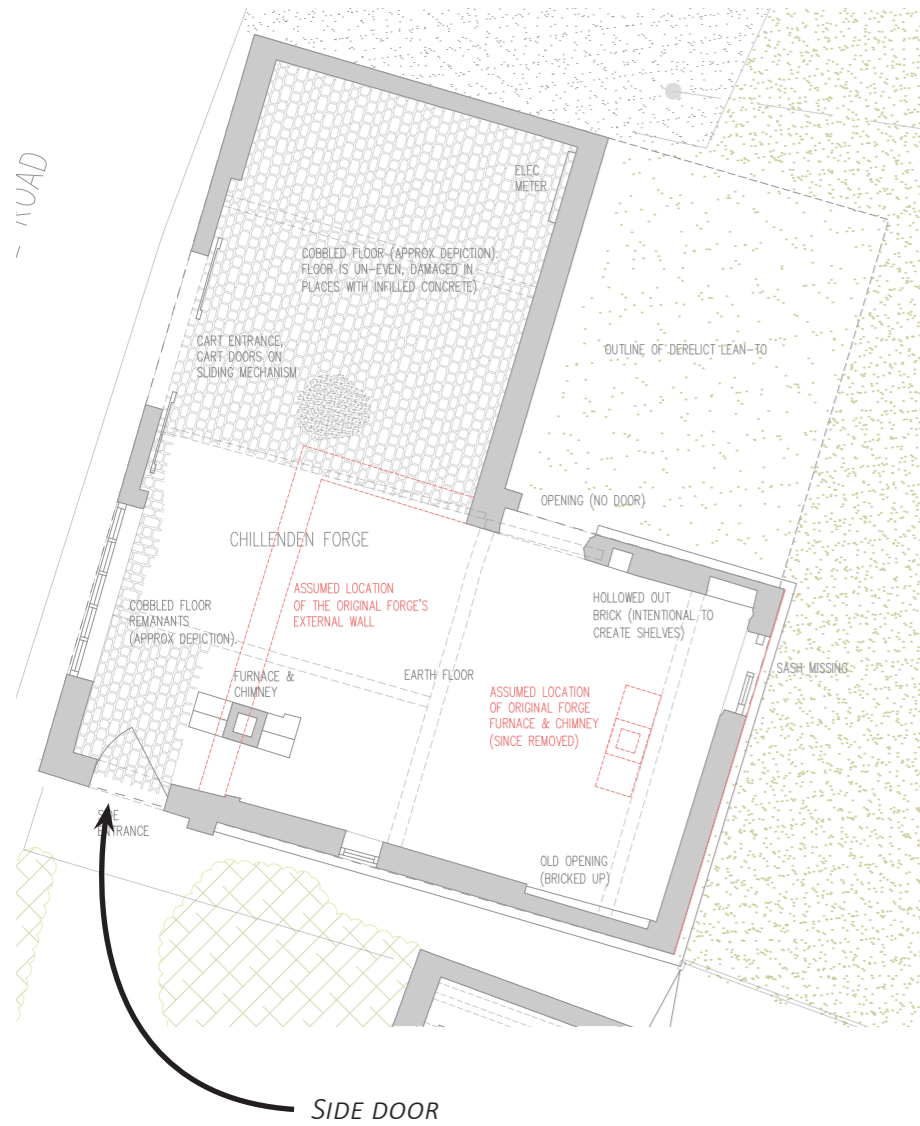


(EXTERNAL) LATER FORGE 5-LIGHT CASEMENT WINDOW



(INTERNAL) LATER FORGE 5-LIGHT CASEMENT WINDOW

KEY HERITAGE ASSETS - DOORS



The side door will be removed and fully repaired and refurbished, with rotten timbers replaced by specialist joiners, with replacement like for like ironmongery.

The door will remain a functional part of the new dwelling, but will not constitute the main entrance.

Should the existing door be irreparable, a new door will be made like for like to the exact profiles and mouldings.



(EXTERNAL) LATER FORGE SIDE DOOR



(INTERNAL) LATER FORGE SIDE DOOR

2.8 KEY HERITAGE ASSETS - INSIDE THE FORGE



LATER FORGE MARKINGS ON THE FRAME OF THE CART DOORS



JUNCTION OF EARLY AND LATER FORGE AND SIDE OPENING



LATER FORGE AND COBBLED FLOOR. NOTE ELECTRICAL DIS' BOARD TO THE TOP RIGHT



EARLY FORGE ROOF STRUCTURE



LATER FORGE AND COBBLED FLOOR. NOTE ELECTRICAL DIS' BOARD TO THE TOP RIGHT AND SIDE OPENING, LEADING INTO EARLY FORGE.



EARLY FORGE'S CHIMNEY ROOF OPENING (REMOVED)



EARLY FORGE ROOF STRUCTURE



EARLY FORGE (ASSUMED) OPENING, BRICKED IN



LATER FORGE, COBBLED FLOOR AND (LATER) FURNACE AND CHIMNEY STACK

2.9 KEY HERITAGE ASSETS - OUTSIDE THE FORGE



EARLY FORGE DAMAGED AND MISSING BRICKS TO PLINTH.



EARLY FORGE AND LATER FORGE IN BACKGROUND, WITH DIRT MOUND.



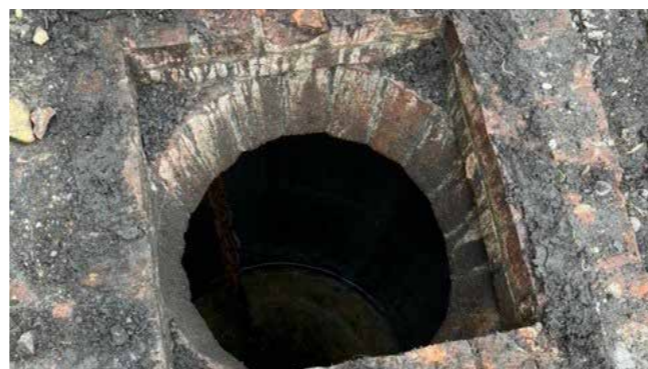
EARLY FORGE SIDE OPENING, WITH DIRT MOUND. TIMBER TO LEAN TO FIXED TO WALL.



OPENING TO SIDE OF EARLY FORGE, WITH APPARENT TIMBER LINTEL (ROTTEN BEYOND REPAIR)



MARKINGS ON BRICK BUTTRESS (INITIALS OF THE LATER FORGE BUILDER?)



EARLY FORGE WELL IN GARDEN, NEAR GABLE.



EARLY FORGE'S REAR GABLE, DAMAGED BRICK AND INVASIVE FOLIAGE



EARLY FORGE WATER SOURCE TO BELOW REAR GABLE (CONNECTED TO WELL)



BUTTRESS DEFINING LATER FORGE (FOREGROUND) AND EARLY FORGE (BACKGROUND)

3.0 DESIGN PROPOSAL

DESIGN

3.1.2 PROPOSED ROOF PLAN

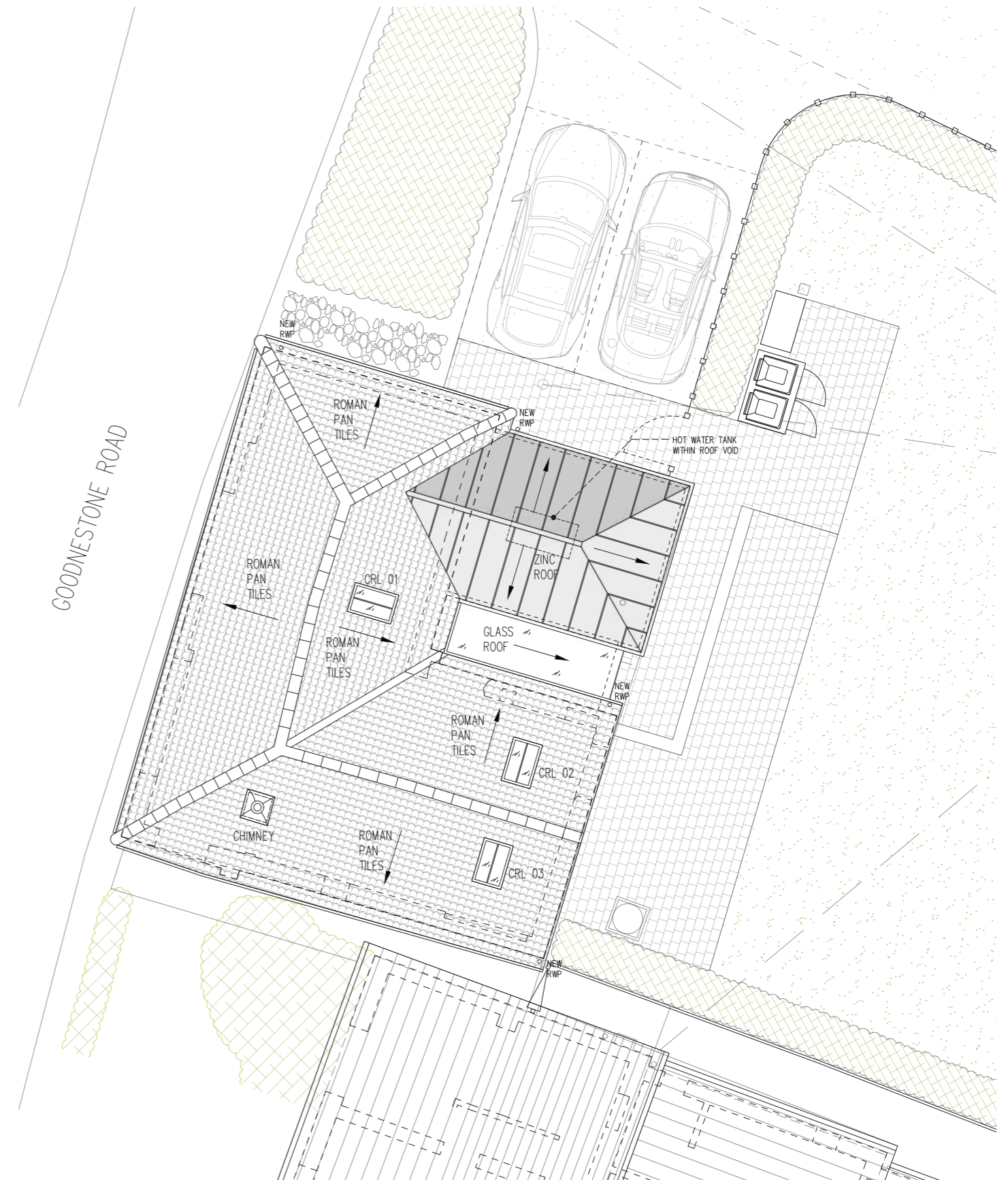
The existing roof, which is a mixture of existing pan tiles and asbestos corrugated sheet, is to be removed in its entirety, with the pan tiles set aside for re-use. The roof timbers will be thoroughly checked by a specialist (likely the appointed Heritage Engineer) and openings made for the proposed conservation roof lights to be inserted in to. Thereafter, the roof will be re-recovered with a breather membrane, tanted battens and Roman pan tiles (re-used and reclaimed only).

Reclaimed clay hip and ridge tiles will be installed using lime mortar. The roof of the Forge will be completed, by introducing new black metal gutters and down pipes, along with new timbers for the respective barge boards on the south east gable.

For the new extension roof, this will blend into the south east part of the Forge's roof, and its eaves line will sit below that of the Forge, to ensure it remains subservient. The configuration of the new roof is hipped to match the other hipped roofs on the Forge. This will be finished in standing seam Antra-Zinc.

The flat roof section above the entrance into the dwelling (between the old and new hipped roofs) will sit below the eaves lines of both respective roofs and will be fully glazed to provide a light touch between the old and the new.

By undertaking this work and removing the unwelcome asbestos sheets, using the Roman Pan Tiles across the whole of the Forge roof will ensure the renovated building preserves and enhances its historic setting.



PROPOSED ROOF PLAN

DESIGN

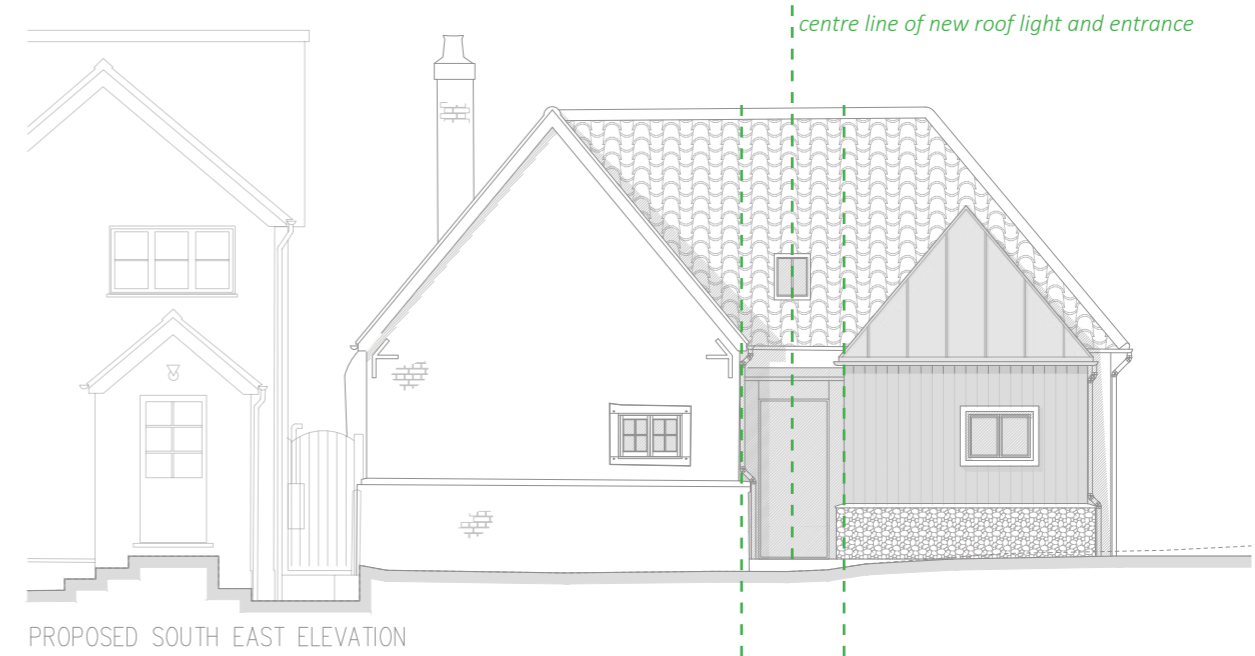
3.1.3 PROPOSED ELEVATIONS

The primary objective of the proposal was to have a minimal impact on the setting of the Grade 2 heritage asset.

With respect to the massing and scale of the proposed small extension, it has been designed to remain subservient to the Forge. As the images show, the eaves of the new extension intentionally sit below the Forge eaves, which was to ensure the original mass of the Forge and the eaves lines, although interrupted, still prevails on both sides of the extension. The roof covering of the new entrance area has been set further down still, lower than the main part of the extension and the Forge, so as to ensure the abutment into the internal corner of the Forge remained low scale and sensitively managed.

The positioning of the bathroom window in the new extension has been set in exactly the same position as the Forge, i.e. the distance from the corner, overall size and lines up with the sill and head. This ensures that, proportionally and aesthetically, it works with the Forge, rather than against it, otherwise it affect the overall composition.

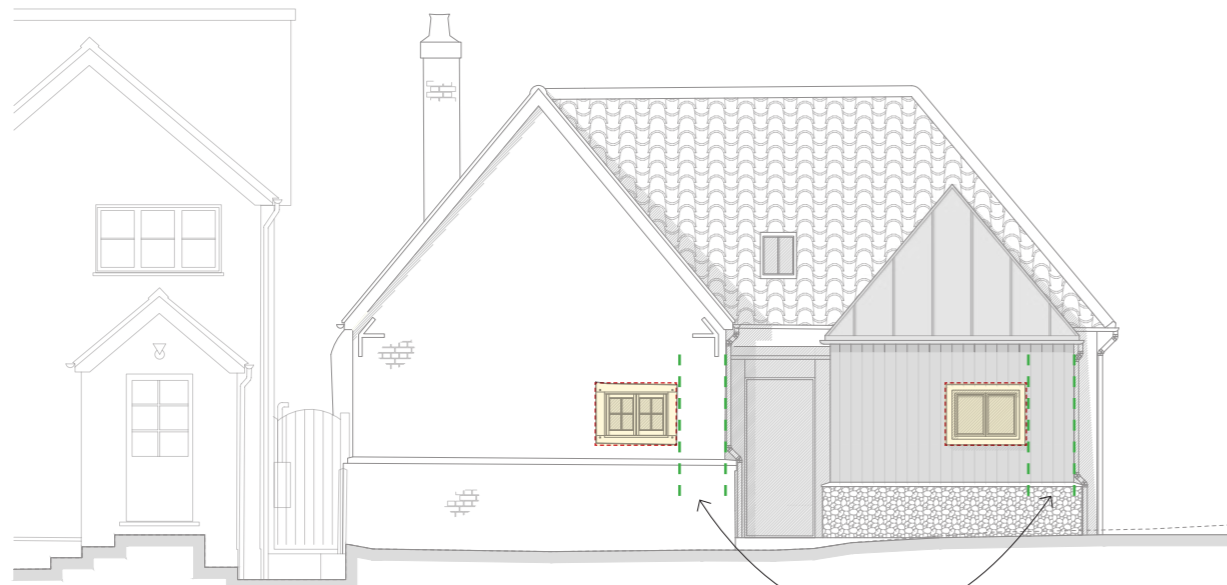
The chosen materials look to reflect the various characteristics of the local area; primarily, the Forge's original use (Blacksmith's, working with metal), the local vernacular (brick, flint, dark materials), as well as the rural/ agricultural context (weathered timber cladding, barn outbuildings).



PROPOSED SOUTH EAST ELEVATION

A light-weight connection between the old Forge and new extension with a reduced mass compared to the new extension and Forge, helps to maintain the new intervention as subservient.

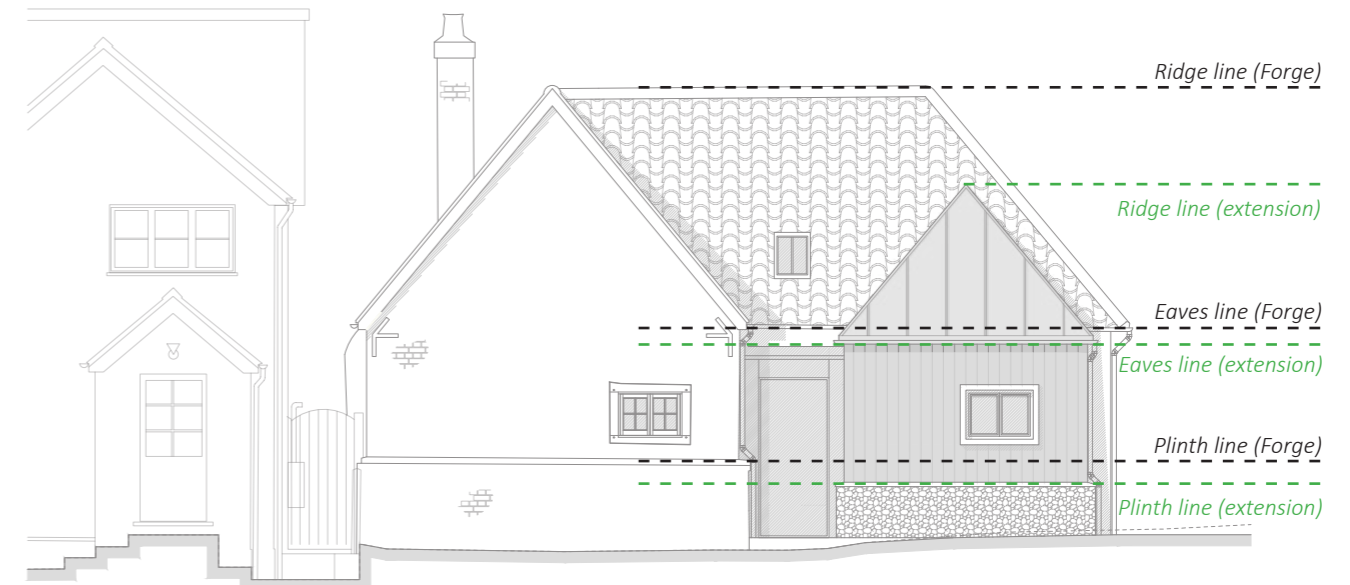
PROPOSED SOUTH EAST ELEVATION - BALANCE & VERTICAL BUILDING LINES



PROPOSED SOUTH EAST ELEVATION

matching proportions

PROPOSED SOUTH EAST ELEVATION - BALANCE WITH WINDOWS



PROPOSED SOUTH EAST ELEVATION

PROPOSED SOUTH EAST ELEVATION - BALANCE & HORIZONTAL BUILDING LINES

DESIGN

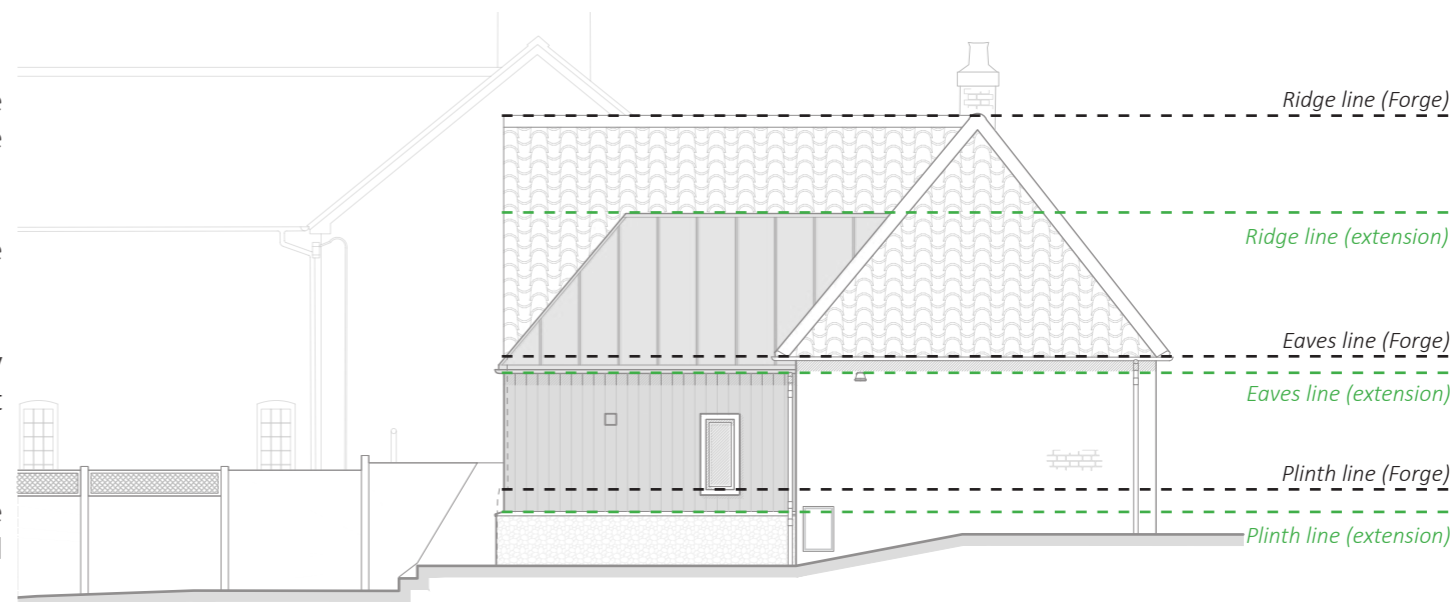
3.1.4 PROPOSED ELEVATIONS

Continuing with the primary objective of the proposal having a low impact on the setting of the Grade 2 heritage asset, to the side of the Forge, the massing and scale of the proposed small extension has been designed to be subservient to the Forge.

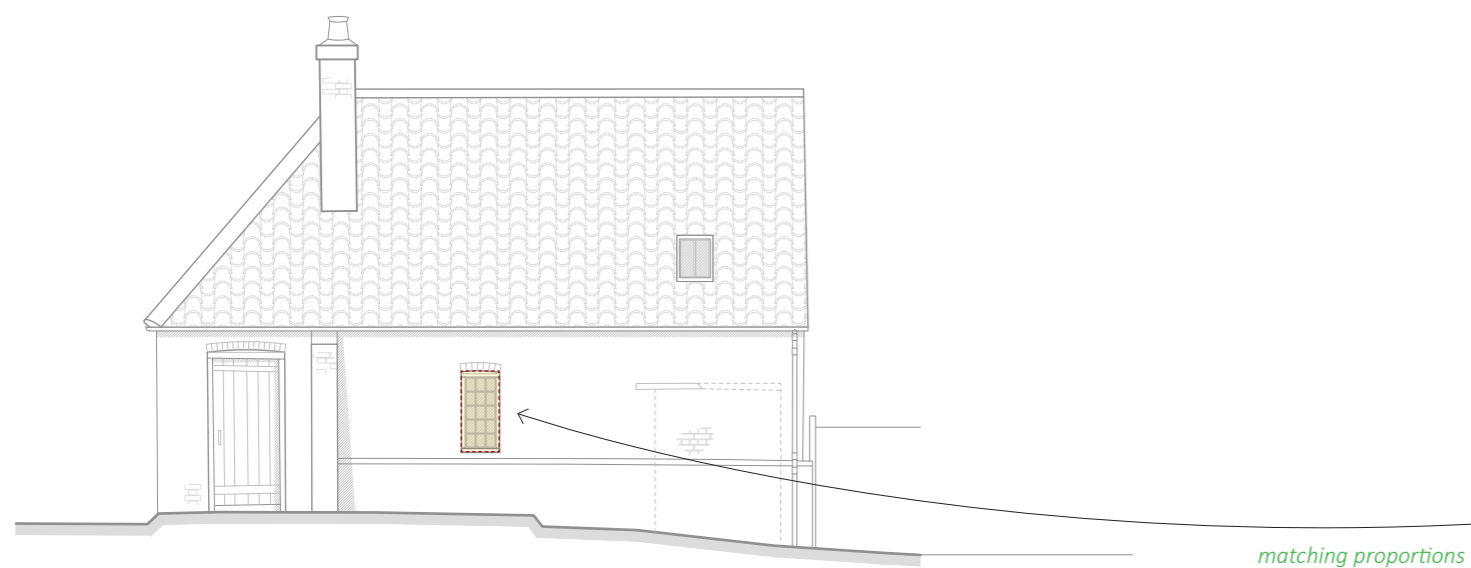
As the elevations show, the eaves of the new extension continue to sit below the Forge eaves, which ensures the original mass of the Forge and the eaves lines, although interrupted, still prevails on both sides of the extension.

The size of the bathroom window in the new extension has been matched to that of the side window of the Early Forge. This ensures that, proportionally and aesthetically, the new extension works with the Forge, rather than against it, otherwise it would affect the overall composition.

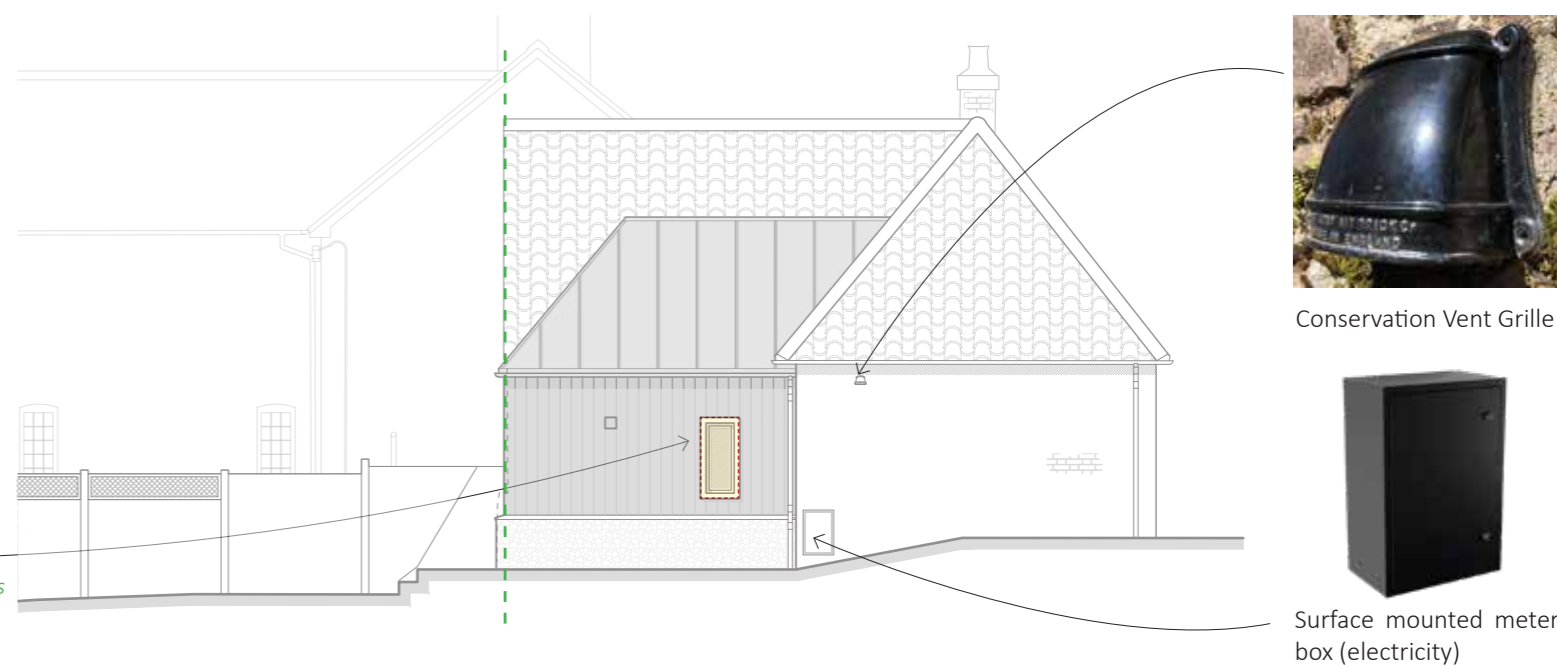
The chosen materials look to reflect the various characteristics of the local area; primarily, the Forge's original use (Blacksmith's, working with metal), the local vernacular (brick, flint, dark materials), as well as the rural/ agricultural context (weathered timber cladding, barn outbuildings).



PROPOSED NORTH EAST ELEVATION - BALANCE & HORIZONTAL BUILDING LINES



PROPOSED SOUTH WEST ELEVATION - BALANCE WITH WINDOWS



PROPOSED NORTH EAST ELEVATION - BALANCE WITH WINDOWS & FEATURES

DESIGN

3.1.5 PROPOSED NEW WINDOW- NORTH WEST

The proposed dining room / kitchen features a set of original cart doors (sliding), which will be fully refurbished and become working internal privacy screen (effectively a curtain), rather than being retained as an entrance way as per the original use, as explained further on.

We decided to implement a new window to fit within the existing aperture, as this would give the new space the best chance to enjoy natural light and ventilation. Retaining the function of doors as an access, would not be conducive to thermal performance, as well as occupant safety, as the building's edge is tight up against Goodnestone Road.

The formation of the proposed new window takes precedent from the adjacent window and the original cart doors. Overall, the window would take on the appearance on the cart doors with a distinctive rebate running vertically down the middle to create the impression of two separate doors. The new window will be made from hardwood, and built off a new low level brick plinth (using matching brick, toothed in).

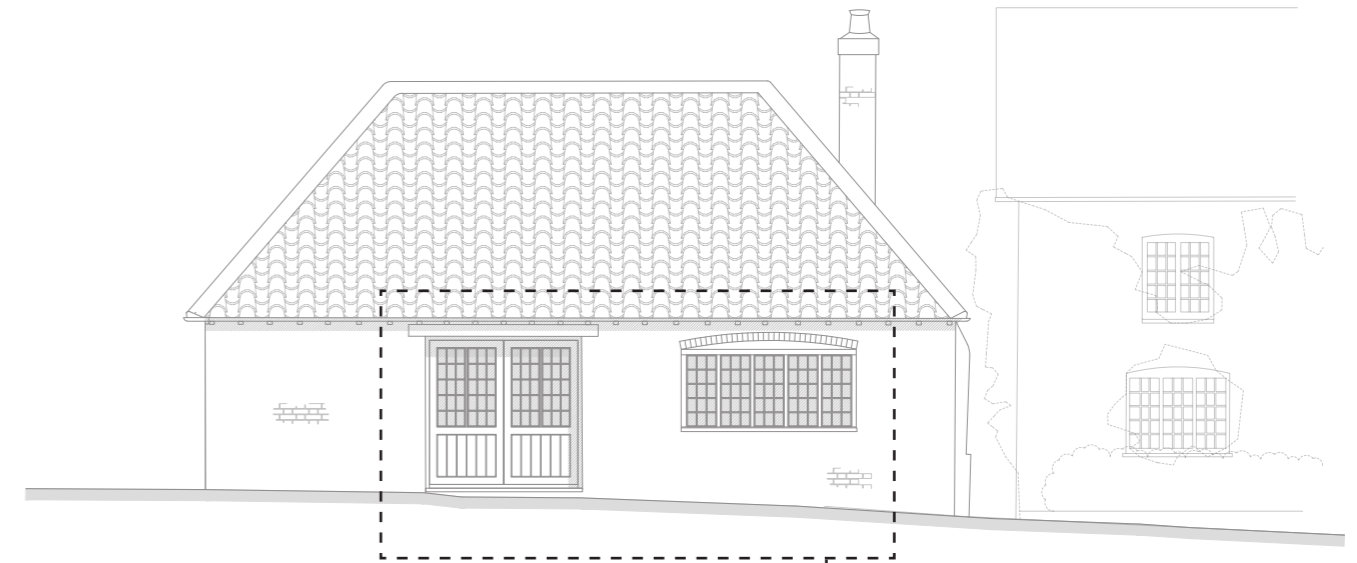
In the top half of the new window to each respective half, the glazing bars and glass will match the 3x5 arrangement of the adjacent window. On the lower half, the panelling would replicate the number of vertical timbers (six per door) of the original cart doors.



ORIGINAL CART DOORS (GOODNESTONE ROAD)



ORIGINAL WINDOW (GOODNESTONE ROAD)



PROPOSED NORTH WEST ELEVATION (Goodnestone Road)

PROPOSED NORTH WEST ELEVATION - WINDOW DESIGN



3.2 THERMAL ENVELOPE

In order to improve the thermal efficiency of the Forge, the most pragmatic approach will be to insulated the floors, walls and roof with breathable and natural materials. The target in the Building Regulations will be to improve the existing u-values to satisfy 4.13 Table 4.3, and at the same time avoid excessive thicknesses of insulation that could lead to interstitial condensation. The regulations also support heritage assets, providing limitations that balance thermal performance over the loss of floor space and damaging the fabric.

Early advice from experts, follows the recommendation as below:

Outer walls, insulated from inside:

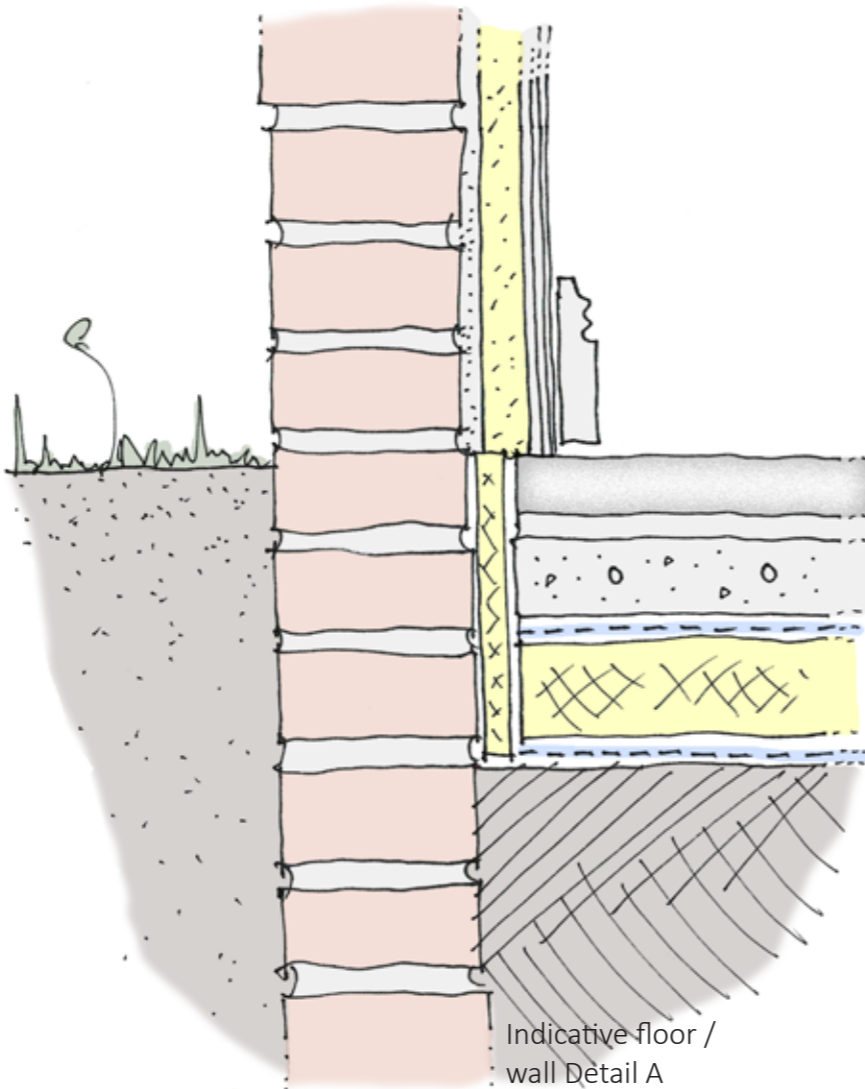
Repair and re-point brick with lime, ensure fabric is dry, line internal walls with 20mm lime plaster, 10mm adhesive coat, 40mm woodfibre, 3 layers of hemp plaster (15mm), total build up circa 85mm, Improved u-value circa from 2.5 W/(m2K) to 0.6 W/(m2K).

Indicative Floor details:

Various options:

Detail A:

Remove cobbles, excavate to desired depth (tbc by S.Engineer), install Geotextile membrane over soil, install 150mm Foamglass (acts as insulation, DPM and structural floor), geotextile membrane on top, 100mm Limecrete floor with 16mm underfloor heating pipes imbedded, install floor finish (for example stone). Install an optional 40mm cork board to perimeter. Install a perimeter french drain externally (where possible). This detail could be implemented i)



Indicative floor / wall Detail A

throughout the Forge, or ii) where there is no existing cobbles, only a dirt floor (i.e. area of early Forge)

The floor finish in this option could be a new floor though or reuse the lifted cobbles and provide a 2m or 3m section directly in line with the kitchen units to retain this asset

Detail B:

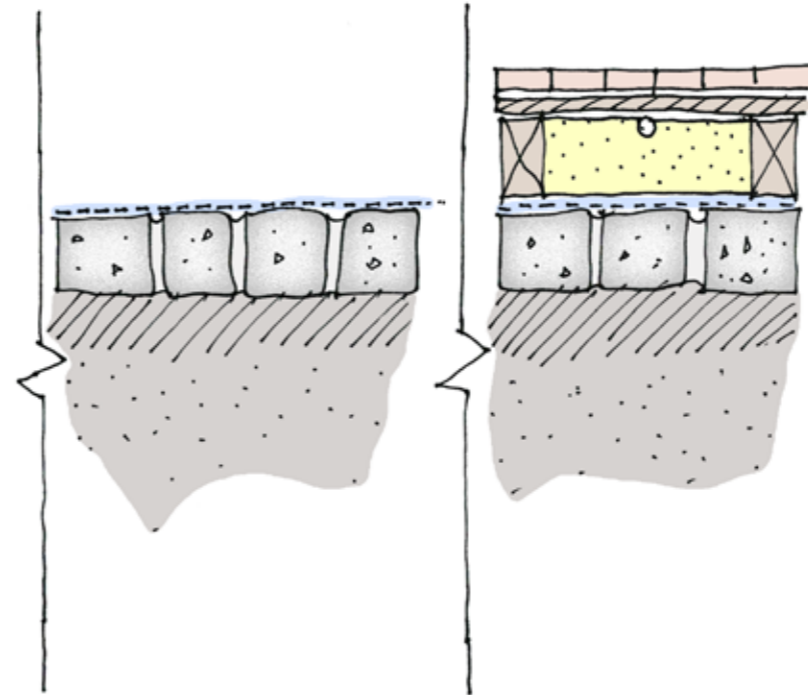
In the area of the existing cobbles (later Forge), an option could exist where the cobbles are treated with a natural breathable stone sealant, and the floor remains un-insulated /

uneven / damaged in places.

Detail C:

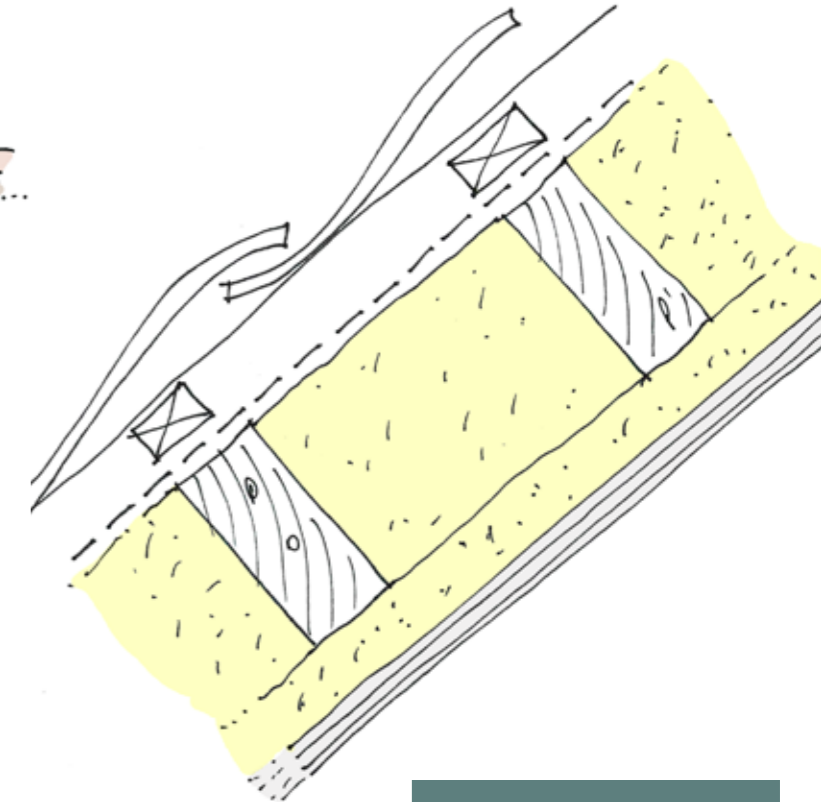
In the area of the existing cobbles (later Forge), an option could exist where the cobbles are treated with a natural breathable stone sealant, and a raised timber floor is installed over the top, which is then insulated between the joists with woodfibre, finished with a timber floor. This detail would have a step between one half of the Forge and the other, and could work with Detail A.

We would welcome further discussion on this topic as the project develops



Indicative floor Detail B

Indicative floor Detail C



Indicative roof detail



Element	U-value ¹⁾ W/(m ² ·K)	
	(a) Threshold	(b) Improved
Roof ²⁾	0.35	0.16
Wall – cavity insulation ³⁾	0.70	0.55
Wall – internal or external insulation ⁴⁾	0.70	0.30
Floor ⁵⁾	0.70	0.25

NOTES:

- Area-weighted average values.
- For dormer windows, 'roof' includes the roof parts of the windows and 'wall' includes the wall parts (cheeks).
- If meeting such a standard would limit head room, a lesser standard may be appropriate. In such cases, both of the following should be achieved.
 - The depth of the insulation plus any required air gap should be at least to the depth of the rafters.
 - The insulant should be chosen to achieve the lowest practicable U-value.
- If there are problems with the load-bearing capacity of the frame or height of the upstand, for a flat roof or roof with integral insulation, a lesser standard may be appropriate.
- This applies only to a wall that is suitable for cavity insulation. Where this is not the case, it should be treated as 'wall – internal or external insulation'.
- If meeting such a standard would reduce the internal floor area of the room bounded by the wall by more than 5%, a lesser standard may be appropriate.
- The U-value of the floor of an extension may be calculated using the exposed perimeter and floor area of the whole enlarged dwelling.
- If meeting such a standard would create significant problems in relation to adjoining floor levels, a lesser standard may be appropriate.

3.3 AIR SOURCE HEAT PUMP (ASHP)

The proposal looks to implement an Air Source Heat Pump (ASHP), subject to a full assessment by a specialist to produce a final EPC.

The importance of achieving the necessary thermal upgrades in the floors, walls and roof of the Forge cannot be stressed enough; this will be balanced between ensuring the heritage asset is preserved, whilst achieving a suitable performance to ensure it's introduction would be sustainable and economically viable.

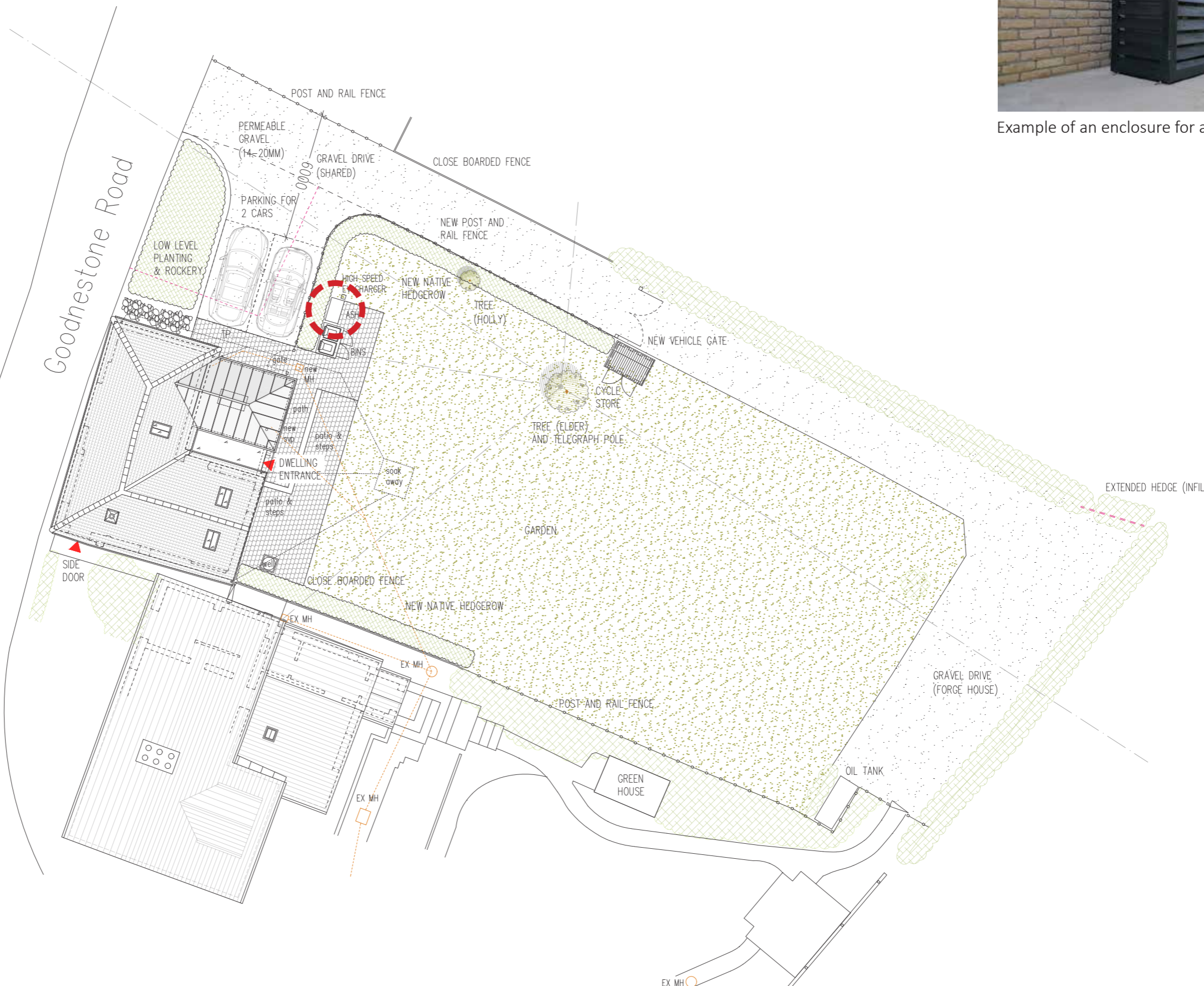
The ASHP would provide the Forge with the necessary outputs to facilitate a complete underfloor heating system.

In addition, the new system would require the installation of a supporting hot water cylinder within the roof space of the new extension, in the form of a horizontal tank.

For the ASHP to be connected, the pipe work from the Forge would run in the ground and connect to a discrete external enclosure housing the ASHP unit, and this can be installed no more than 20m away.

The Grants available to the application for an ASHP (for example the BUS-Boiler Upgrade Scheme) presently can be found on the link below:

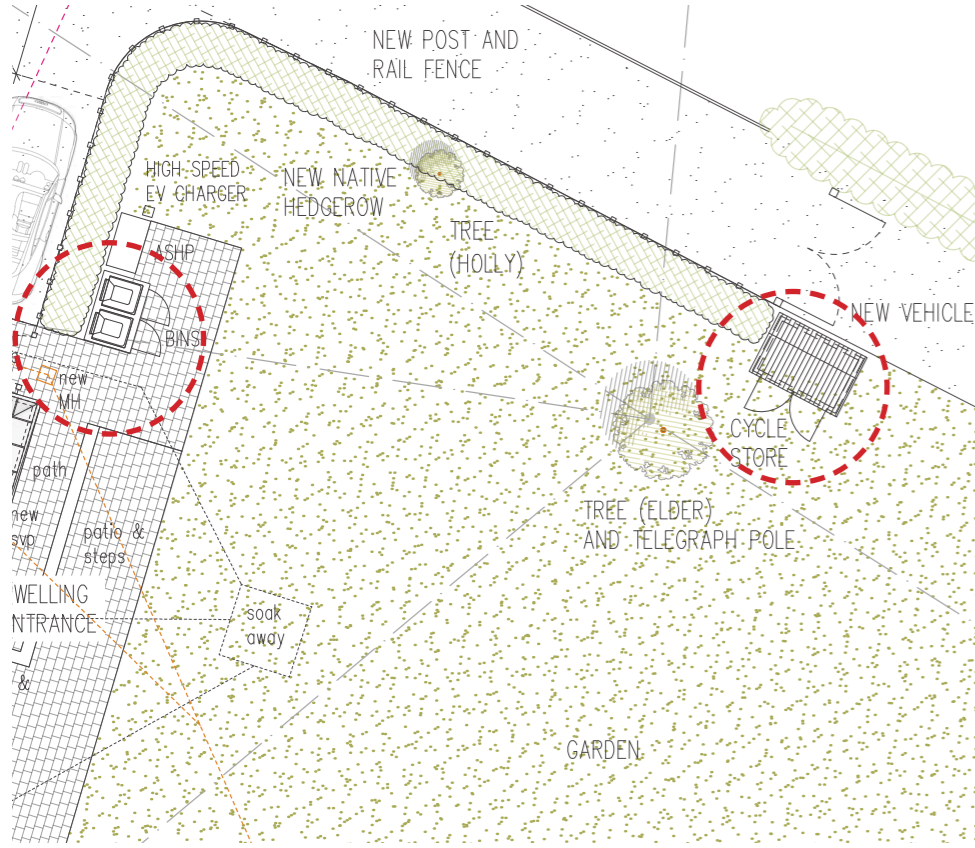
<https://www.reinagroup.co.uk/heat-pumps/boiler-upgrade-scheme/>



Example of an enclosure for an ASHP



3.4 CYCLE & REFUSE STORE



CYCLE STORAGE AND REFUSE LOCATION

A location within the garden is also provided for covered secure cycle storage and refuse storage. Details of the proposed cycle storage is shown below and will have the capacity to store up to 2 no. bikes.

The refuse storage area has the necessary capacity to accommodate both refuse and recycling bins in line with the local waste collections requirements.



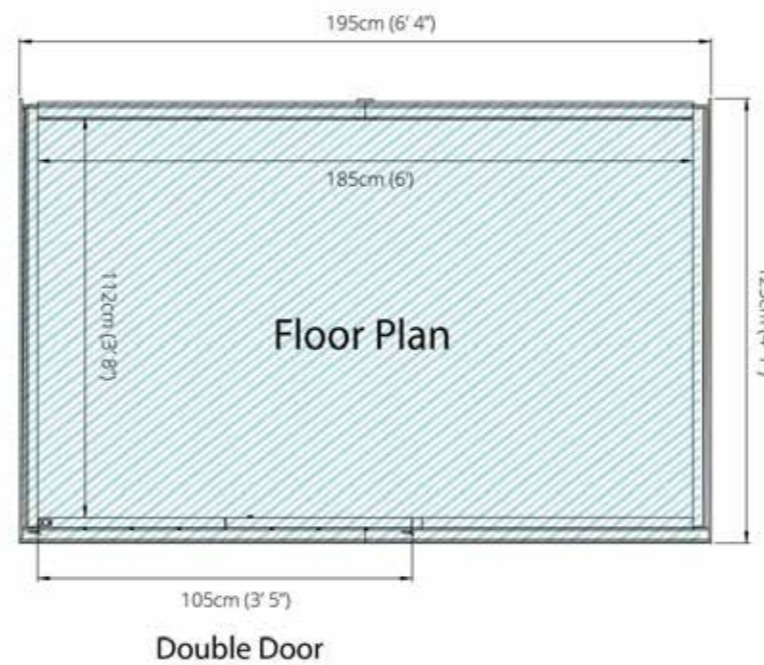
EXAMPLE OF THE PROPOSED BIN STORE AND DIMENSIONS



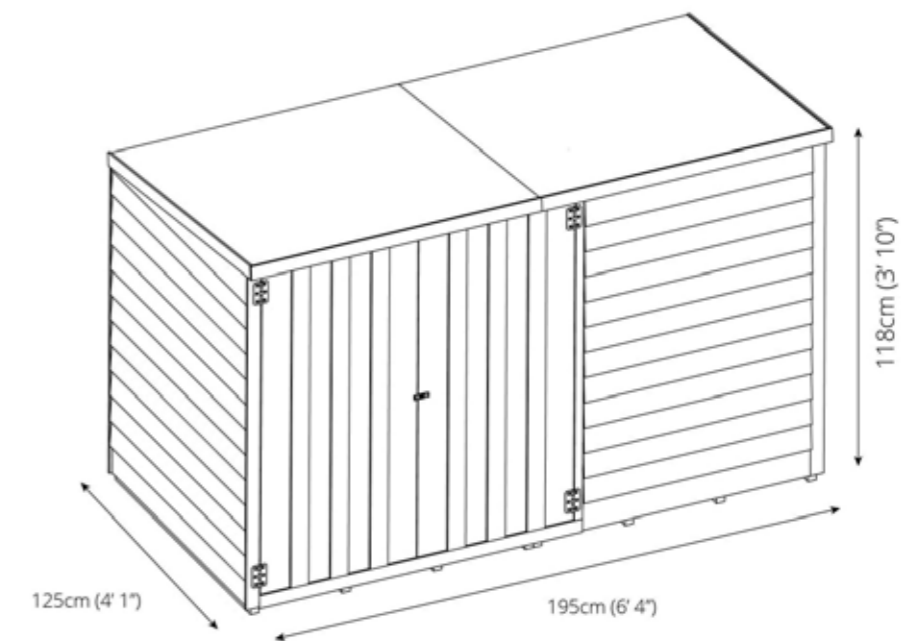
EXAMPLE OF THE PROPOSED BIN STORE



EXAMPLE OF THE PROPOSED CYCLE STORE



EXAMPLE OF THE PROPOSED CYCLE STORE PLAN AND DIMENSIONS



EXAMPLE OF THE PROPOSED CYCLE STORE OVERALL DIMENSIONS

4.0 ARTISTS IMPRESSIONS

4.1 PROPOSED ARTISTS IMPRESSIONS



NORTH EAST VIEW (REAR)

PROPOSED ARTISTS IMPRESSIONS



NORTH WEST VIEW (FRONT)

PROPOSED ARTISTS IMPRESSIONS



SOUTH EAST VIEW (REAR). FORGE HOUSE TO THE LEFT.

PROPOSED ARTISTS IMPRESSIONS



NORTH EAST - CLOSE UP VIEW (REAR)

5.0 MATERIAL PRECEDENTS

5.1 MATERIALS



FLINT WALL (REFLECTS LOCAL MATERIALS)



STANDING SEAM GREY ZINC



SHOU SUGI BAN CHARRED TIMBER CLADDING (PROFILED).



SHOU SUGI BAN (CLOSE UP)



WINDOW SHROUDS



GLASS DOOR ABUTMENT TO OLD BRICK (LIGHT)



ALUMINIUM CAST IRON STYLE GUTTERING



ZINC GUTTERING

-END-