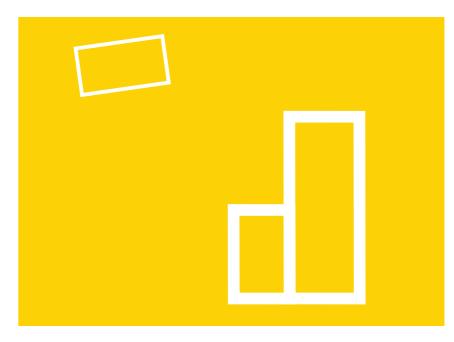
# Springfield

Design & Access Statement



April 2023













### **Project Information**

PROJECT ADDRESS:

Springfield

The Street

Regil

BS40 8BD

CLIENT:

Martin Brice & Jenna Brice

JOB REFERENCE:

2217

DOCUMENT TITLE:

Design & Access Statement

**REVISION STATUS:** 

Issue 1 Date: March 2023

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### Site Location



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### **Executive Summary**

#### The Site

- The site is made up of a detached dwelling surrounded by An area with significant likelihood of flooding semi-mature amenity garden with ornamental planting, shrubs and some scattered trees.
- scattered mature trees.
- The proposed plans for the site include demolition Consultants Appointed of the existing dwelling and garage and erection of • Ecologist - Ecological Impact Assessment larger replacement dwelling and new garage (in similar • Drainage Designer locations on the site).

#### Brief

- A new self-build home with improved thermal Scale: A new home designed as a modern designed Bike storage in garage performance that meets the needs of a growing family.
- Demolish and rebuild the existing house to build a well proportioned 4 bed home with open plan kitchen, dining
- New workshop / garage to replace the existing garage
- New bike and bin storage provsion
- New landscaped terrace

#### **Planning Context**

The Site is affected by the following constraints;

- Within the green belt
- Outside any established settlement boundary
- within the 'open countryside'
- within Zone C of North Somerset and Mendips Bats SAC

The site is not;

• Within the Mendips AONB

• Listed or within a conservation area

#### **Proposed Approach**

• The wider landscape is rural, and is predominately • A 'replacement dwelling' demolish and rebuild characterised by agricultural land, hedgerows and 150% of the floor area of the existing dwelling. • Sitting room

#### Overview of proposal

Somerset Longhouse.

Location on the Site: Situated in the same location on the SUSTAINABILITY site as the existing house.

Massing / Form: A linear form that runs parallel with the • Air Source Heat Pump, existing hedgeline.

Materials: The building sits on the edge of the village and is designed as with modern agricultural materials.

#### **GROUND FLOOR**

- Entrance & Utility
- Office
- Plant and WC
- Kitchen / dining / living

#### FIRST FLOOR

- Master bedroom with ensuite and dressing room
- Two bedrooms
- Bathroom
- Guest room with ensuite

#### **FXTFRIOR**

- New Garage / Workshop with bat loft over
- Bin storage

- A desire to build to Passivhaus standard
- PV's & thermal store

### 2. Introduction & Existing Site

Barefoot Architects are an award winning RIBA Chartered Practice working on homes, housing and community projects in the South of England and Wales.

Our clients have instructed us to develop a planning application for a proposal to demolish and re-build their detached house in Bristol's green belt.

The existing house sits in within an established garden with far reaching views. Our intention is to enhance the relationship between the landscape, views, solar orientation for both environmental performance and users enjoyment of the house.



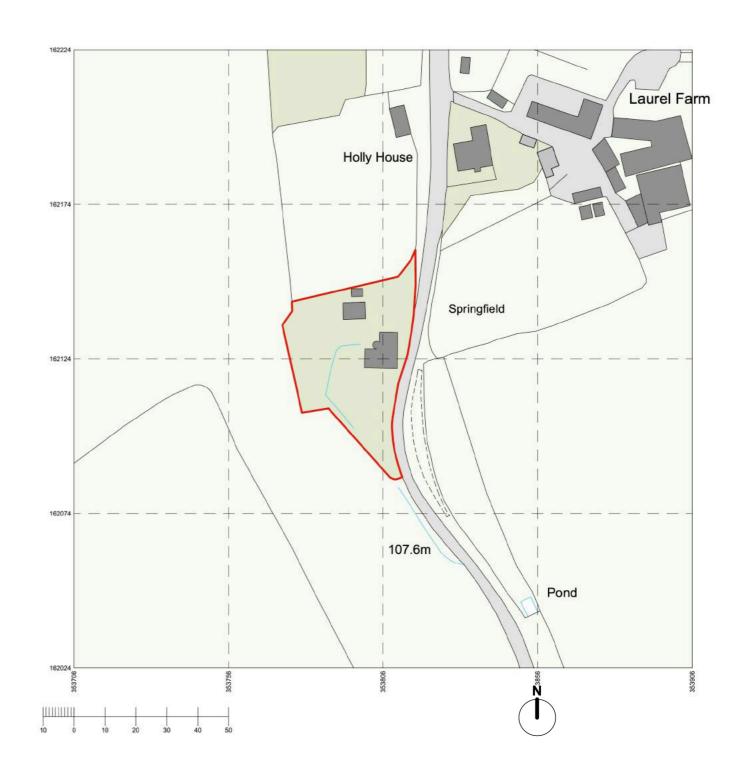






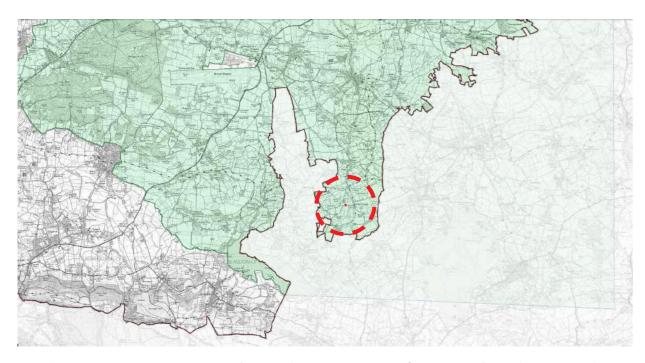
### 2.1 Location Plan

The house sits on the edge of the village of Regil. The house sits as a threshold building between agricultural farms and the residential village and sits within a large garden.

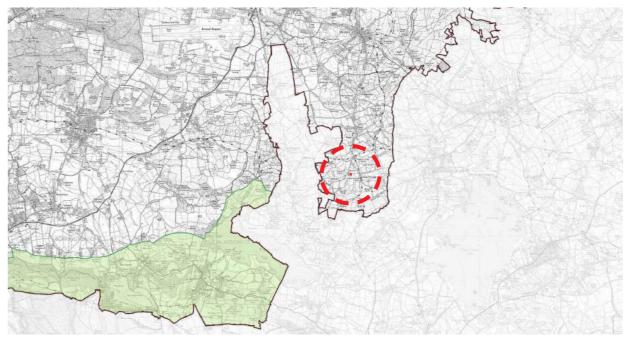


### 3. Planning Context - Green Belt & AONB

- The site is within the green belt
- The site is outside of the Mendips Area of Outstanding Natural Beauty.



North Somerset District Council Map showing extent of Green Belt and proposed site



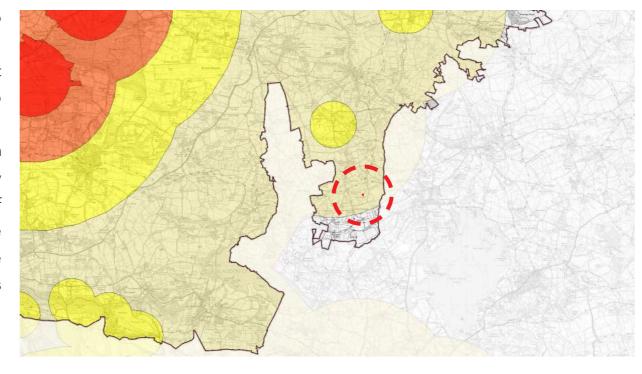
North Somerset District Council Map showing extent of Mendips AONB and proposed site

#### Further to the above;

- The house is not listed or in a conservation area
- The site is not within a flood zone

### 3.1 Planning Context - Horshoe Bat Consultation Zones

- The site lies within The North Somerset and Mendip special area of Conservation (SAC).
- The Site is in Horseshoe Bat Zone C and so a consultant Ecologist was appointed and their advice taken to support the application.
- A Preliminary Ecological Appraisal has been undertaken. In response to the guidance set-out by the ecologist a bat loft is proposed in the loft space of the new workshop / garage. This will be phased to be built in advance of the demolition of the main house and constructed in accordance with the ecologists recommendations.



North Somerset and Mendip Bats SAC Consultation Zone Map



#### Planning Policy Appraisal 4.

Presented here are the most relevant national and local North Somerset Council Development Management planning policies to this project.

#### **NPPF**

Paragraph 149 of the 2021 National Planning Policy Framework states that;

'A local planning authority should regard the construction of new buildings as inappropriate in the Green Belt. Exceptions to this are: ...

- c) the extension or alteration of a building provided that it does not result in disproportionate additions over and above the size of the original building;
- d) the replacement of a building, provided the new building is in the same use and not materially larger than the one it replaces.

We have developed the design of the new house to ensure that it is not disproportionate and is 150% of the existing house. The new house is proposed on a very similar footprint to the existing and its form and scale will ensure it does not impact on the openness of the Green Belt.

The new garage / workshop is designed as a single story space with bat loft over. It will sit subordinate to the new house.

### **Policies**

Policy DM12: Development in the Green Belt states that;

'Inappropriate development is, by definition, harmful to the Green Belt and will not be approved except in very special circumstances.

EXTENSIONS ALTERATIONS OR REPLACEMENT OF **EXISTING BUILDINGS** 

The extension or alteration of a building will not be regarded as inappropriate provided that it is within the existing curtilage and it does not result in disproportionate additions over and above the size of the original building. For North Somerset 'original' relates to the building as existing on 26 July 1985 or for buildings constructed after this date as so built. The determining factors in assessing whether the extension is disproportionate will be the size of the proposed extension in relation to the size of the original building. An extension will not normally be regarded as disproportionate provided it does not exceed 50% of the gross floor area of the original building.

The replacement of an existing building is not regarded as inappropriate provided the new building is in the same use and is not materially larger than the one it replaces.

A replacement building will not normally be regarded as materially larger provided it does not exceed 50% of the gross floor area of the original building.

In determining planning applications consideration will be given to the impact on the openness of the Green Belt for both extensions and replacement buildings and regard will be taken of the design (including bulk, height and floorspace), siting and overall scale of the development on the site.

The location, visual character of the site and surroundings and the effect of the proposal on the open and rural character of the area in general, prominence, visual and physical impact (including the impact of lighting) and plot size will all need to be assessed.

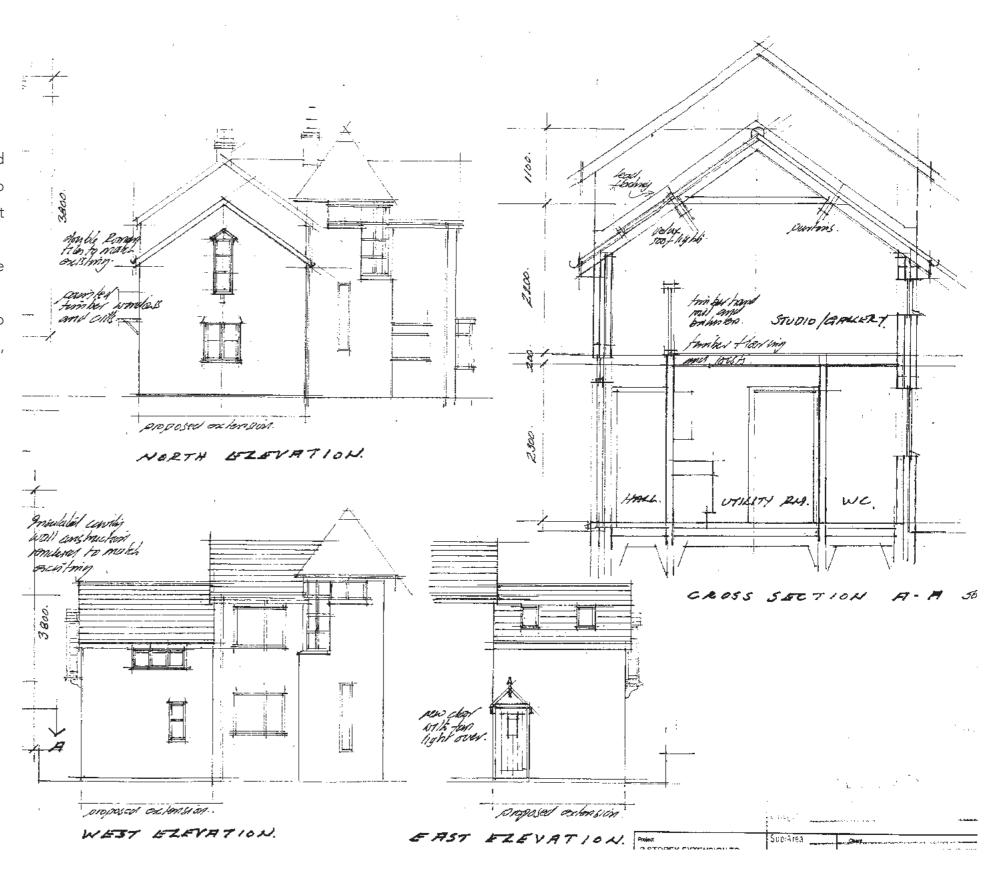
In the case of proposals to extend replacement buildings, the original floor space will be calculated as that of the original building that was on the site on or prior to 26 July 1985 and not that of the replacement building.

Proposals for domestic outbuildings and garages within existing residential curtilages are not considered to be inappropriate development and should be of a scale and height subordinate to the original dwelling and should not adversely affect the openness of the Green Belt. Normally they should be small scale and single storey. Account will be taken of the scale and number of outbuildings already on the site and the scale by which the original dwelling has increased.'

### 4.1 Site Planning History

### **Planning Application History**

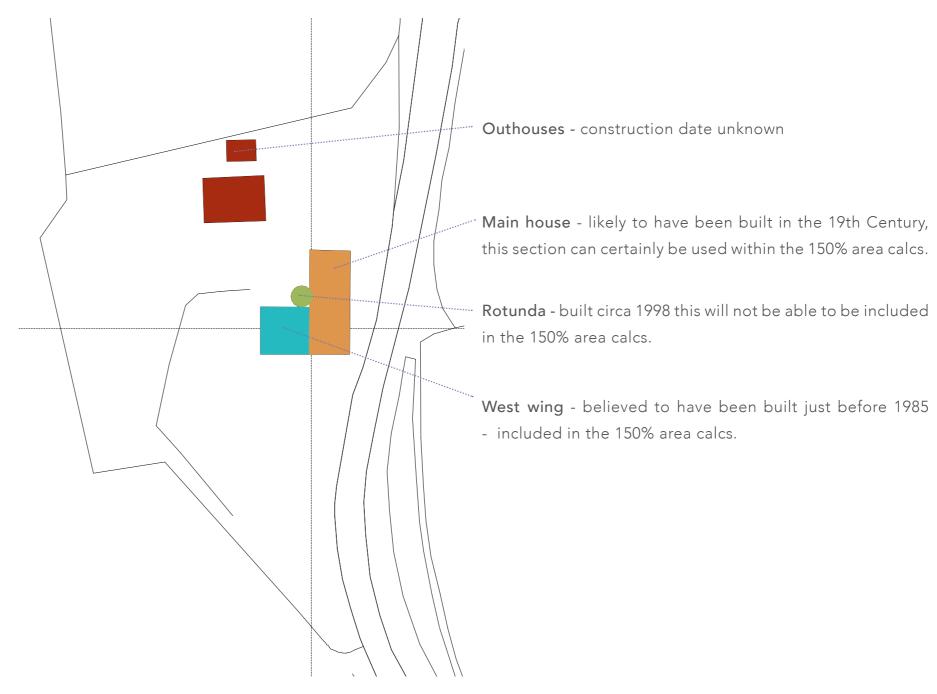
- In 16/05/1985 planning permission was granted to extend the house which was then known as Myrtle Cottage. No details of the application are given, but it seems likely that this refers to the west wing.
- In 1998 Planning permission was granted to relocate the stairs into a new external stair rotunda.
- In 2005 Permission was granted to replace the small lean to on the north of the house with a larger two storey extension, (shown to the right) this extension was never constructed.



• Historic planning drawings for an extesion that was never implemented.

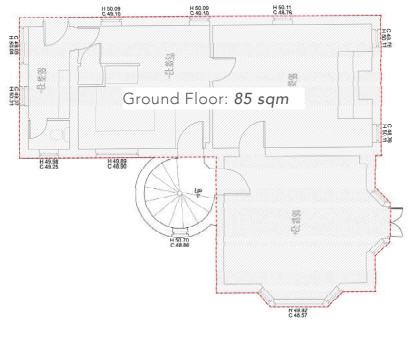
### 5. Site History - Historical Timeline & 'Existing House' Policy

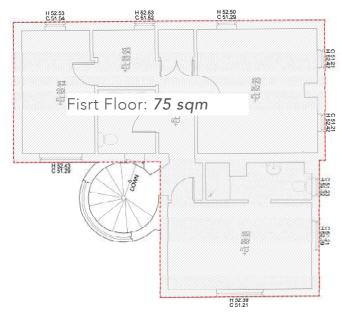
As per policy DM12, North Somerset Council consider that the 'original house' for which development of 150% is acceptable is considered to be the building as it existed on 26th July 1985, which includes the main north/south wing and west wing. It will not include the rotunda.



## 6. Areas - Existing House & Proposed House in accordance with Policy DM12

+150%





**Existing House** - The existing footprint of the house pre-1985 is *160m2*.

150% of the floor area of the house as existing minus the rotunda is: 240m2

shower plant plant staif plant shower plant antrance lobby entrance lobby shower plant shower pl



Ground Floor: 126 sqm First Floor: 114sqm

Total 240m2

### 7. Ecology - Overview

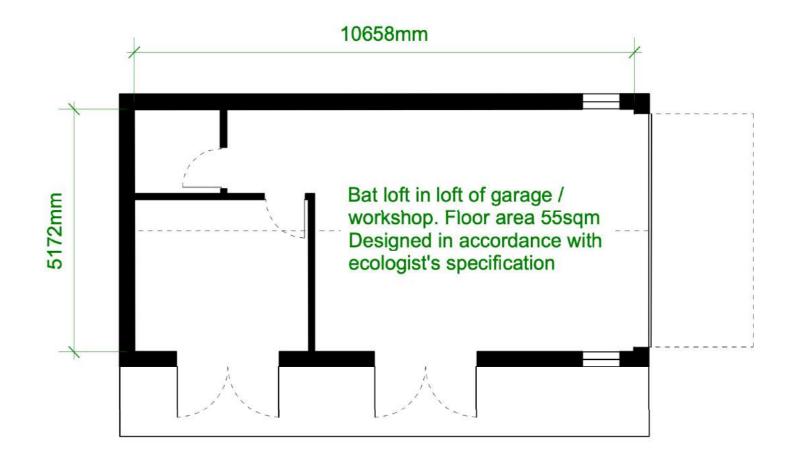
- An Extended Phase 1 Habitat Survey of the land was undertaken in July 2022, with the aim of identifying any features, habitats and rare or protected species which would constitute potential constraints to the development taking place, and assessing the ecological value of the survey area, in order to make recommendations for any further actions which may be required.
- The Extended Phase 1 Habitat Survey was subsequently followed up with the completion of three bat emergence/reentry activity surveys. The aim of this survey was to assess the levels of bat foraging/commuting activity present within the site.
- A Bat Mitigation Licence (BML) or Bat Mitigation Class License (BMCL) registration will be required from Natural England, in order to allow works which would otherwise be illegal.
- Protection of pond and measures to minimise risk to great crested newts during clearance and construction through implementation of a CEMP.
- The pond will be protected in accrodance with the ecologists advise & methedologies through the demolition & construction works.
- A district licence is applied for through Natural England, in conjunction with submitting the planning application to the LPA for the development.
- With the above mitigation and enhancement measures, it
  is considered that the proposed development can avoid/
  minimise the potential impacts on the species considered
  within this assessment, and result in no net loss for biodiversity
  within the site. Following the successful implementation
  of the above ecological enhancement measures, it is
  considered that the proposed development will likely result

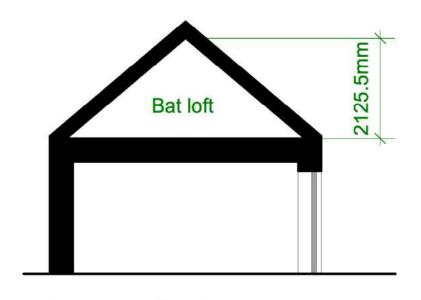
- in a minor net gain in the site's value for biodiversity.
- >50 droppings which could not be identified to species level were found scattered within the roof void of the house.
   A collection was sent to Swift Ecology for DNA analysis in order to determine the species from which they were derived, the droppings were found to be brown long-eared bat droppings.
- No evidence of bats was found during the inspection if the garage.
- Due to the presence of bat droppings on both the exterior and interior roof void, the house was treated as a 'confirmed' roost.
- Due to the presence of bat droppings on both the exterior and interior roof void, the house was treated as a 'confirmed' roost.
- Due to the presence of bat droppings in/on the house and the "high suitability" of the garage a total of three separate bat surveys were completed on the dwelling, comprising two dusk emergence surveys and one dawn re-entry survey.
- A well-managed amenity grassland represented majority of the site, with the sward height of below 5cm during the time of the survey.
- Birds:
- The house displayed several active house Martin nests on the north and south facing elevations, underneath the eaves of the house. Additionally, the overall site provides nesting opportunities for bird species within the hedgerow and trees on the boundaries of the site.
- Newts:
- The ponds, hedgerows, the shrub planting and log/habitat piles on site are of high value to great crested newts (if present). However, The data search identified no records of

- reptiles within 2km of the site.
- With mitigation, through the implementation of a non-licenced precautionary method of working, it can be ensured that this risk is removed and there will be no impact on individuals.
- Apart from a small area of well-managed amenity grassland and some shrub/garden planting, no other habitats within the site will be lost or damaged as a result of the proposed development. All existing hedgerows will be retained, and no trees within the wider area will be impacted. Furthermore, no changes to the management regime of the remaining grassland within the site are anticipated.
- In summary, due to the nature and very small scale of the proposed development, as well as the relatively poor ecological value of the habitats which will be lost, the proposed development is considered unlikely to result in a significant impact on the value of the site for biodiversity post-construction, and therefore no mitigation or compensation measures in relation to habitat loss are considered necessary. Furthermore, an assessment to quantify the habitat gains and losses within the site using the DEFRA Biodiversity Metric was considered disproportionate to the scale and likely impacts of the proposed development, and therefore the completion of a biodiversity metric assessment was not deemed to be required.
- It is believed that potential impacts of the proposed development on commuting and foraging bats can be mitigated for to ensure their protection into the future. Therefore, with mitigation, including the implementation of a sensitive external and internal lighting design, it can be ensured that the proposed development will have no/ minimal impact(s) on bats.

#### Ecology - Recommendations 7.1

- Artificial lighting designed sensitively to minimise A bat loft in the roof of the proposed new workshop / garage impacts of artificial lighting on boundary hedgerows/ features and other adjacent habitats of value to foraging/ commuting bats.
- Provision of two artificial House Martin nests as a compensation for the loss of nests present on the house.
- A Bat Mitigation Licence (BML) will be required from Natural England, in order to allow works which would otherwise be illegal.
- Great Crested Newts An eDNA survey of the pond onsite and off-site pond is to be undertaken in April 2023. Further great crested newt surveys (and a population assessment) may be required following traditional methodology if presence is determined. A mitigation licence from Natural England may then be required following these surveys.
- Demolition of existing buildings and any shrub removal should be undertaken outside of nesting bird season (typically March - August inclusive).
- The lighting plan for the site wasn't drafted at the time of writing, however, the lighting mitigation measures could be secured by way of an appropriately worded planning condition. These general principles will apply: 6.4.2 All boundary hedgerows will be kept as dark zones where light levels cannot exceed 0.5lux/existing light levels due to the presence of light-sensitive species like horseshoe bats recorded on site during activity surveys.
- Bee bricks to house and garage at a minimum height of 1m, with no vegetation obstructing the holes.
- Recommended that bee-friendly plants should be located nearby so that the bees using the bricks have food, otherwise it is unlikely that the bricks will be used.





## 8. Site Analysis



- Concealed from road with hedges
- House set back from the entrance
- Good solar orientation
- Mature garden surrounded by high hedges and trees
- Edge of settlement
- Context more agricultural
- Beginning of more farm buildings than domestic

### 9. Local Vernacular - Somerset Longhouse





#### **Historic Example**

Adjacent is a historic example of a traditional Somerset Longhouse.

The scale and form of the proposed new house is informed by the traditional vernacular of the historic longhouse design.

The form also works well in the context of the site with the building spanning along the flattest section of the site, on the existing footprint of the current house.

#### **Modern Somerset Longhouse Precedent**

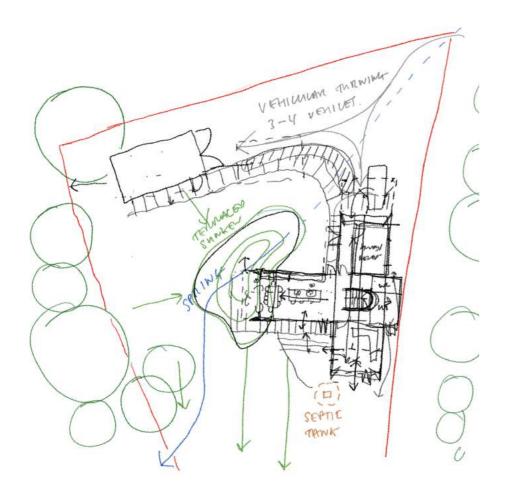
by NCA Architects

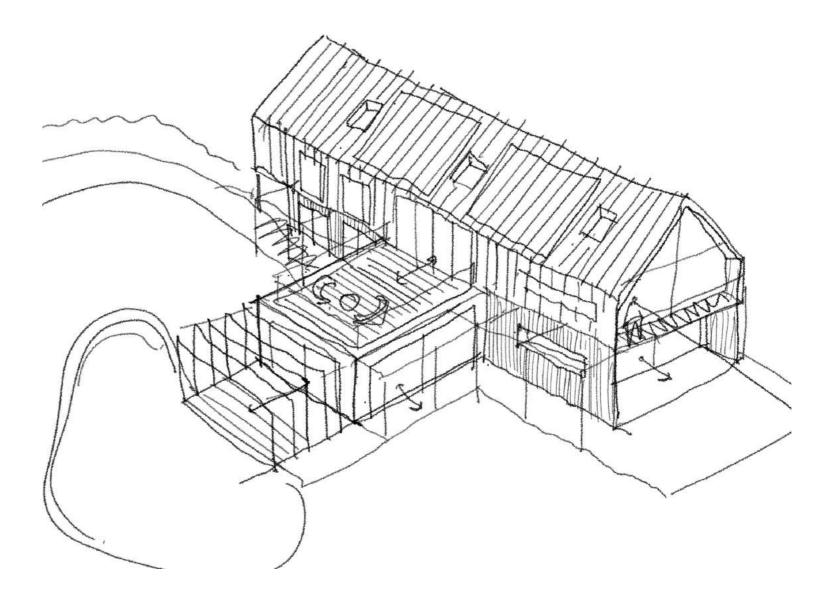
This precedent has a similar approach to the design proposed. It is a modern take on the form of a traditional Somerset Longhouse and utilises timber and zinc with solar shading and integrated landscaping.

### 9.1 Initial Sketch Ideas - for a Somerset Longhouse

Initial sketch demonstrating the new house in the same location as the existing and a new garage / workshop

This sketch explores ideas for the internal layout and the principles of circulation within the house. The garage is proposed situated a little further back on the site to enable improved vehicular turning.





### 9.2 Initial Sketch Ideas



### 10. Scale - Proposed Overview



The proposed house is located in the same area of the site as the existing house. It is moderately larger than the footprint of the existing.

The garage / workshop has been designed to sit in keeping with but subservient to the main house.

The eaves sit low to the head of the windows. As demonstrated on the page before scale of the building is proportionate to the size of the site with the two structures representing only 18 percent of the overall site area.

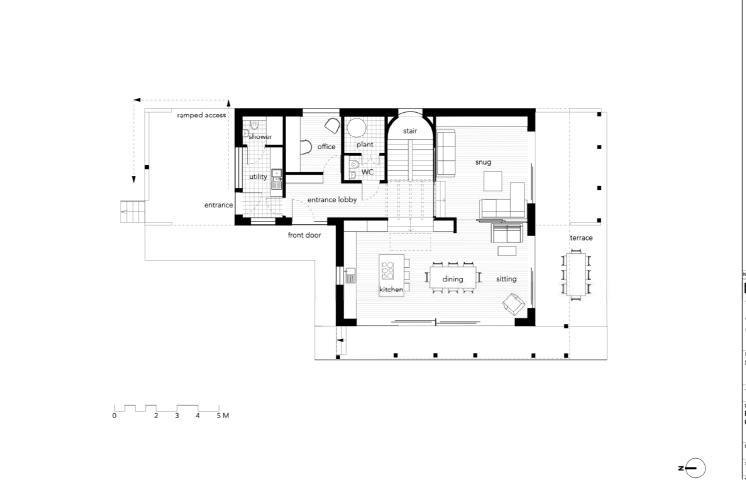
The scale is appropriate to the site and its context.

### 10.1 Amount - Proposed Site Layout



### 11. Layout - Proposed House

- The proposed house is a four bedroom family home with open plan ground floor kitchen, dining area and sitting room. All main spaces are located facing south and west for both views across the valley but importantly the solar orientation suitable for Passivhaus design.
- The house has additional ancillary accommodation located in the spaces with reduced passive solar gain / natural light with utility, bathroom, office, plant etc. located facing in the lower north and east parts of the house. At first floor the master bedroom captures the south sun and other bedrooms designed to capture the east morning light.
- Projecting solar shading to the master bedroom is proposed to reduce overheating.
- The bedrooms are designed to meet Space Standards for double bedrooms.
- The existing garage will be replaced with a new garage and workshop. The client is a well established local builder and will utilise the workshop for tool storage.
- As discussed above the solar orientation has remained the key focus for the design. This has shaped the fundamental principles of the layout of the house.
- The covered area adjacent to the utility / plant room will
  act as a useful location for access into the house on wet
  days to leave muddy boots and hang wet coats to dry.
- The space will also assist with level ramped access into the building fom the driveway level into the utility space (see the site plan).



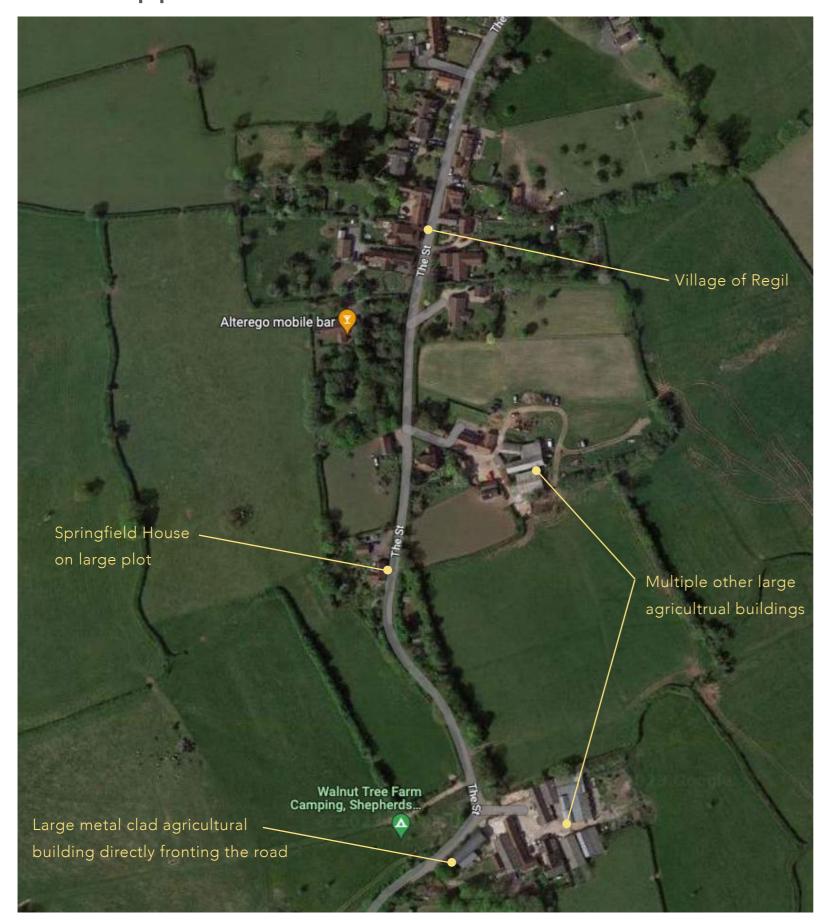
Option D - Ground Floor - 128sqm



Option D - First Floor - 114sqm

TOTAL: 240sqm

### 12. Appearance / Materials











The house is designed as a new sustainable home that bridges connection between the farm typologies on the edge of the village with the village's residential vernacular. It will act as a threshold building uniting the two.

As discussed, the form is an iteration of a Somerset longhouse for which the form can be seen in the village of Regil. (See image 3). The light timber cladding will sit comfortably with the woodland setting and of a similar tone to the brick and stone used in the village.

The metal cladding will form a robust natural finish and speak of the agricultural context. The next building to the South fronting the road is an agricultural barn with a dark corrugated roof. Other agricultural barns with metal roofs sit within 100m of Springfield house.

### 13. Precedents - solar shading barn typology







#### **Solar Shading**

The building has been assessed by a company specialising in Passivhaus design. They advised on the overheating risks and as a result we have added solar shading to the proposed design.

This constitutes slatted timber fins to the master bedroom gable end and horizontal solar shading is proposed as a pergola structure to the perimeter of the South and West elevations. This will allow natural light whilst minimising solar gain and overheating.

The images adjacent are precedent examples of buildings utilising a similar approach for solar shading.

### 14. Appearance / Materials - Street View

These visuals show the view of the house from the driveway entrance to the existing & proposed Springfield house.

The light timber gable end of the proposed will create a subtle elevation in keeping with the tree / hedge context. The removal of the conical roof of the existing and single pitched roof will create a new home that sits more appropriately in the site and context.

The single story elements will have a green roof for subtle appearance compared to the projecting gable of the existing.

The metal cladding of the first floor will be set back from the road's hedge-line forming a subtly crisp elevation with minimal glazing.



View from Street - Existing



View from Street - Proposed

### 15. Appearance / Materials



The house is designed as a crisp modern take on a traditional Somerset longhouse. External timber cladding is proposed at ground floor & gable ends with standing seam zinc to the first floor.

Timber / aluminium composite windows are proposed with slim frames maximising natural light. These will sit subtly with the zinc. Timber solar shading will wrap the south and west elevations cooling the house in the hottest months. To the south a deep projecting overhang is proposed to shade the master bedroom's large glazed facade.



Left: Proposed bay study

Above: South view of the new house & deck and solar shading. New native hedge planting is proposed around the deck edge to soften it's appearance, provide for increased biodiversity and connect the house to the existing landscape.

### 15.1 Landcsaping & Access

**The landscaping on the site** will include the removal of some ornamental shrubs and their replacement along the new bank / retaining that forms the terrace.

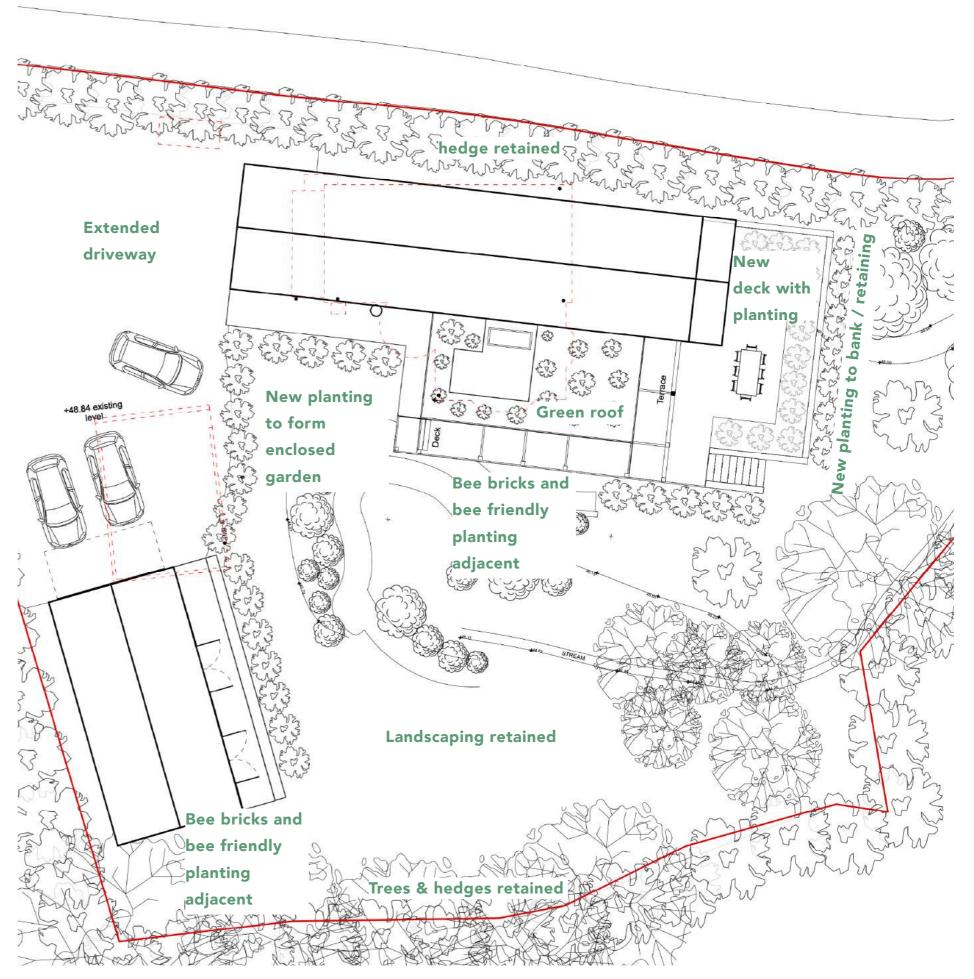
Espalier trees and new shrubs for biodiversity will form a sense of enclosure of the garden from the driveway.

The garage will be set back on the site to form a slightly enlarged driveway to assist with vehicular turning on the site.

The deck will be designed with a new planting buffer.

#### Access

- The house is designed with a ramped access to the front door from the driveway. This will be designed to a 1:20 fall.
- Due to the levels on the site internally the house has a level change between the entrance corridor and kitchen / dining / living room. There is potential for internal ramped access to accommodate this step if required by the users.
- Door thresholds will be detailed flush to allow level access to the terrace.
- The stair will be designed with handrails and the ground floor has a WC and shower room.
- The village of Regil and the existing house sits 3 miles from Chew Magna with a local coop shops and pubs.
   Bristol is about 8 miles away.
- Covered bike storage is provided in the garage.
- Refuse will be located in a covered store adjacent to the new garage. The existing refuse strategy will remain as the existing house.



### 15.2 Landcsaping & Drainage

- A drainage design has been developed by 'TJ Infrastructure' for the new house and garage / workshop.
- There will be a new upgraded package treatment works for foul drainage
- And new attenuation tank for surface water
- The design takes into consideration the ecology of the site and the new treatment will enhance both surface water discharge and foul water treatment of the site compared to the existing house's provision.
- New outfalls are proposed to run seperately to the existing watercourse to protect the site's ecology.



### 16. Environmental Strategy

#### Materials

In terms of the materials used to construct the house the most sustainable strategy is to minimise the amount of steel and concrete necessary and to specify natural, renewable materials, such as timber, and to insulate with wood fibre, recycled newspaper or sheepswool.

The new house is proposed to be built as a highly insulated timber frame. We will explore the use of a system called PH15 which utilises a timber frame designed to meet the stringent requirements of Passivhaus.

We will try to retain the use of some of the exiting foundations of the current house and work with an engineer to test the viability of this at RIBA Stage 4.

Heating is proposed using an air source heat pump (ASHP), with PVs on the east and west roof (min 4kw output) and mechanical ventilation and heat recovery (MVHR) as the new building will be very air tight.



An interactive materials carbon calculator shows the relative environmental impact of various construction materials - we generally aim to specify materials from the lower sections - https://www.materialepyramiden.dk

#### Conclusion of Benefits 17.

The use of the site will remain residential with the existing house replaced with a new insulated family home on a very similar footprint to the existing home.

- The house will be a self-build by the client who has extensive construction experience. It will be used as their family home. They want a house with low bills that is sustainable, modern and beautiful. We will be exploring construction options at RIBA Stage 4 and are considering the use of a prefabricated system such as PH15 (adjacent).
- A replacement house with enhanced thermal performance close to Passivhaus standards
- Bin & bike storage
- Solar shading
- Passive solar gain
- Materials with low embodied energy which also sit subtly in the rural context
- Form and massing to reflect that of a traditional Somerset longhouse
- A precedent of a sustainable new home for climate resilience and reduced fuel demand.
- The existing garage, sheds will be removed and replaced with a new insulated garage / workshop.
- New planting
- New and improved surface water treatment and foul drainage.











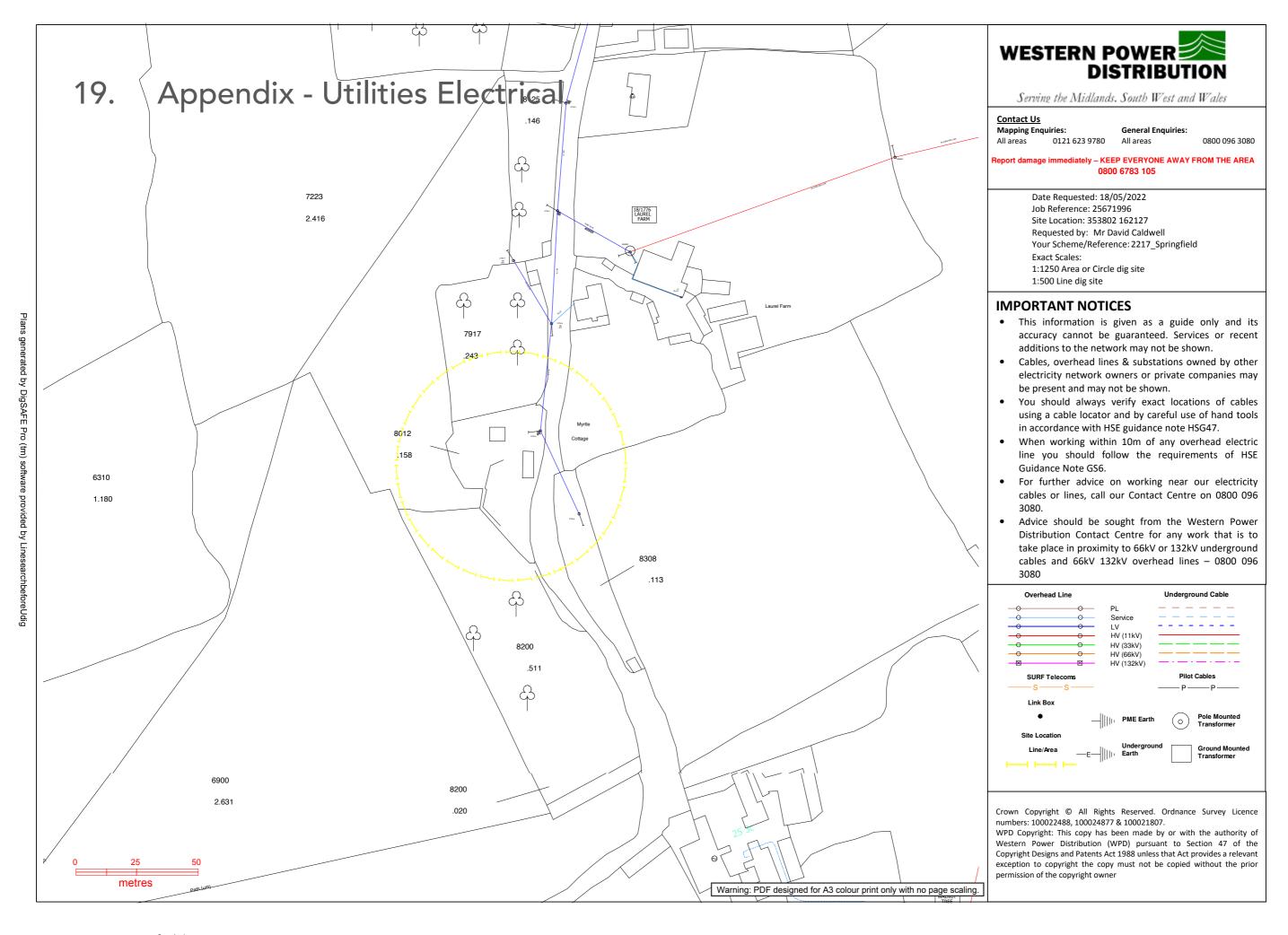


### 18. Contact Details

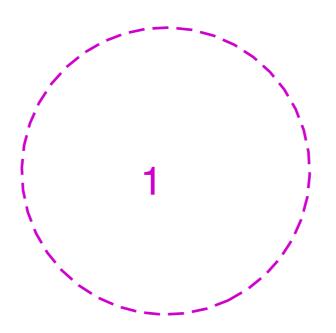
Barefoot Architects, Unit 5.2, Paintworks, Bristol, BS4 3EH

0117 9070 971

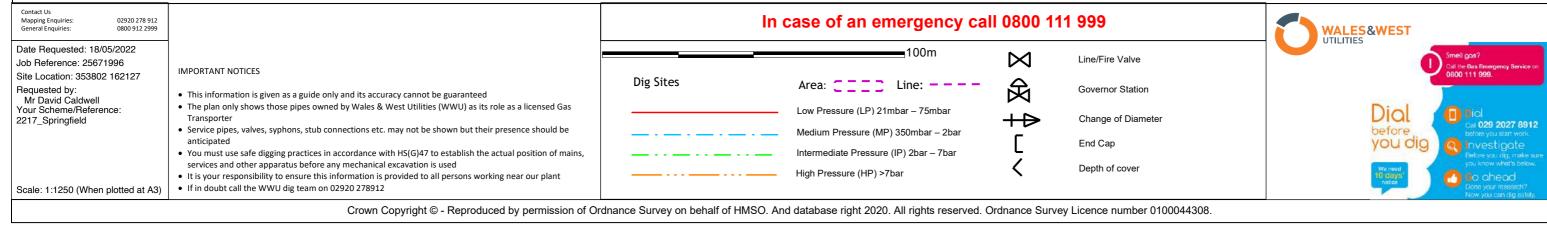
info@barefootarchitects.co.uk

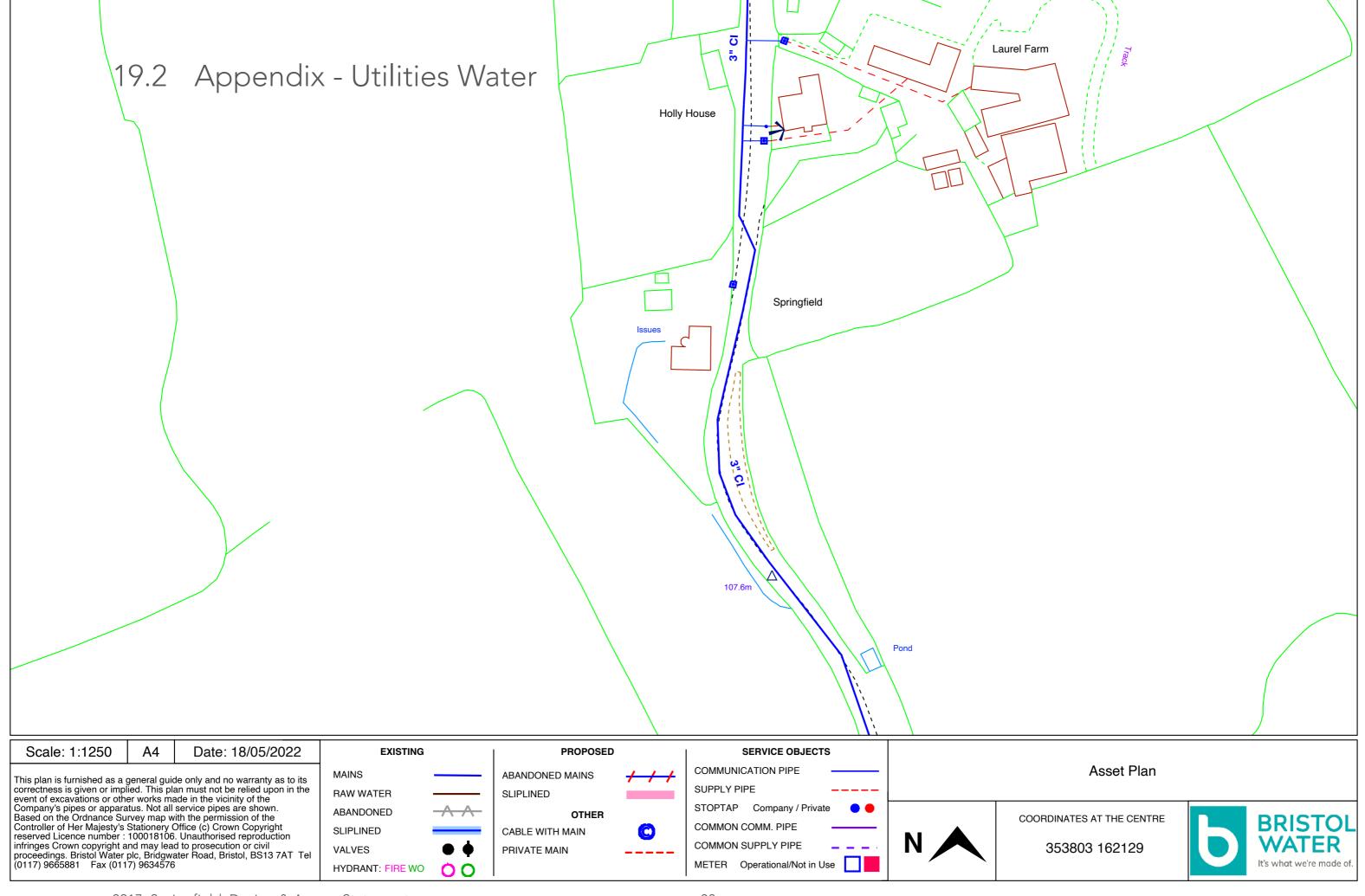


### 19.1 Appendix - Utilities Gas



### Warning: PDF designed for A3 colour print only with no page scaling





### 19.3 Appendix - Radon



# Report of address search for radon risk



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Address searched: Springfield, The Street, Regil, Winford, Bristol, BS40 8BD

Date of report: 14 September 2022

#### **Guidance for existing properties**

Is this property in a radon Affected Area? - No

A radon Affected Area is defined as where the radon level in at least one property in every hundred is estimated to exceed the Action Level.

#### The estimated probability of the property being above the Action Level for radon is: 0-1%

The probability result is only valid for properties above ground. All basement and cellar areas are considered to be at additional risk from high radon levels.

The result may not be valid for buildings larger than 25 metres.

If this site if for redevelopment, you should undertake a GeoReport provided by the British Geological Survey.

This report informs you of the estimated probability that this particular property is above the Action Level for radon. This does not necessarily mean there is a radon problem in the property; the only way to find out whether it is above or below the Action Level is to carry out a radon measurement in an existing property.

Radon Affected Areas are designated by the UK Health Security Agency. UKHSA advises that radon gas should be measured in all properties within Radon Affected Areas.

If you are buying a currently occupied property in a Radon Affected Area, you should ask the present owner whether radon levels have been measured in the property. If they have, ask whether the results were above the Radon Action Level and if so, whether remedial measures were installed, radon levels were re-tested, and the results of re-testing confirmed the effectiveness of the measures.

Further information is available from UKHSA or https://www.ukradon.org

# Guidance for new buildings and extensions to existing properties What is the requirement under Building Regulations for radon protection in new buildings and extensions at the property location? - None

If you are buying a new property in a Radon Affected Area, you should ask the builder whether radon protective measures were incorporated in the construction of the property.

See the Radon and Building Regulations for more details.