SWANN EDWARDS
ARCHITECTURE

DESIGN AND ACCESS STATEMENT

PROPSOED REPLACEMENT DWELLING

AT

BRIDGE HOUSE
FISHERGATE
SUTTON ST JAMES
LINCOLNSHIRE
PE12 0EZ

FOR

MR AND MRS BUTTON

Job No. SE-474

20 November 2015

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Preface

This Design and Access Statement is a working document that has been prepared throughout the design process of the current proposal. At this stage of the process this report is intended to support a Full Planning Application.

The aim of this report is to demonstrate how design and access has been considered and incorporated as part of the proposal.

This document outlines the approach to design that has been implemented to ensure a low carbon development is achieved whilst ensuring the context of the site and the area is respected.

Finally, this document outlines how the current Policies and Guidelines of both SHDC and Government are implemented and addressed.

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1.0 INTRODUCTION

The proposal is for the creation of a single detached replacement dwelling for the Button family that mitigates their impact on the environment both locally and globally.

The design process follows a five step approach with the overall aim of creating a contemporary low carbon project, to meet the government's carbon targets as well as delivering 21st century housing. This approach will also minimise the projects embodied energy whilst maximising the robustness and longevity of the construction.

The proposal recognises the impact of the construction industry and dwelling emissions on the environment, with dwellings accounting for around 25% of the UK's carbon emissions (see figure 1). Its driving ethos of energy efficiency and longevity of construction is informed by, and sets out to exceed, the government's targets of:

- Near Zero Energy dwellings by 2021
- 34% overall greenhouse gas emission reduction by 2020
- 80% overall greenhouse gas emission reduction by 2050.

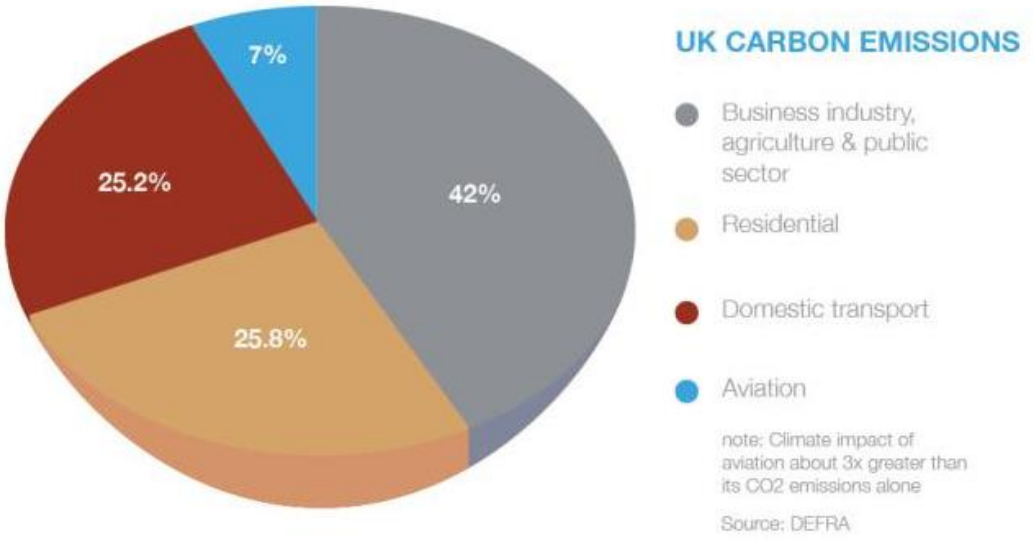


Figure 1 – UK Carbon Emissions

To ensure the environmental impact of the proposal is minimised we have employed a combination of robust construction techniques combined with an amalgamation of passive and active design strategies.

The dwelling itself respects and interacts with the surrounding environment. The spaces within the dwelling and on-site are designed to provide flexible living and afford the occupants the opportunity to work from home.

The intention is to *minimise the impact of the dwelling both local and globally, particularly with regards to energy and sewage, increased biodiversity, enhance the street scene and significantly reduce water consumption*. This approach will ensure that the carbon emissions and footprint in relation to both the dwelling and family lifestyle are truly minimised.

Through this replacement dwelling we are delivering a contemporary interpretation of an agricultural building that is respectful of its rural location with the overall aim of achieving environmentally responsible architecture.

In addition the intended construction techniques and materials selection be of a high quality and will enable the dwelling to address and respect the existing street scene and longevity of up to 60 years before first significant maintenance. This further reduces the life cycle carbon and costs associated with the proposal.

The proposal amalgamates the sustainable design strategies of our five stage approach and traditional site analysis design strategies. This achieves a proposal that is contemporary *derived from Government and Local Policy, the site, its location and neighbouring properties with the ethos of environmentally responsible development and sustainability at its core.*

The application site has an area of 4153m^2 and is currently the site of Bridge House, which this application seeks to replace, as such the site is considered as previously developed residential amenity land.

The site itself consists of residential garden land and has natural boundaries with native hedgerows and a 1.8m high close boarded fence between the property and the neighbouring farm yard. The proposed site use is residential which is consistent with its existing use and the surrounding land uses.

In light of this and the above it is clear that this site is within the built form and not within the open countryside, in addition development of this site would not adversely impact on views to open countryside or the amenity to neighbouring properties.

The site is accessed via an existing access on to Raven's Bank/Fishergate. The access will serve the proposed dwelling providing parking, drive, garage and turning. This is in keeping with the form and character of this area. This approach ensures that there is ample parking and turning for private vehicles to the existing and proposed dwelling.

The site is around 1.2 miles from the centre of Sutton St James and all of the facilities that exist within the village.

The proposed development respects the existing natural boundaries of the site and also respects it's neighbours through the orientation of windows, which will be positioned to avoid overlooking. The proposal is in keeping with the form and character of the area as it continues through the rhythm of development and is agricultural in its form.

The level of accommodation that is proposed on this site, along with the form and massing are conveyed on the proposed drawings. This level of development is considered to provide high quality housing that is in keeping with the built form and character of the area.

The site is located within Flood Zone 3 of the Environment Agency Maps, however, the proposal is for a replacement dwelling and mitigation measures will be incorporated as detailed within the Flood Risk Assessment. This will result in betterment of the existing situation and improve the sustainability of the site.

The proposal will retain as much of the existing landscaping as possible and introduce hedgerows and trees as indicated on the proposed plans.

The proposal should be seen as the best use of the site as directed by national government, and we believe is sympathetic to its surrounding neighbours. In addition there have been recent approvals within the area for similar forms of development.

National Planning Policy Framework (NPPF)

We have thoroughly reviewed this proposal against the NPPF and have set out below how this proposal meets the Framework requirements and the overarching aim of achieving sustainable development.

PARAGRAPHS 7 & 8

The purpose of the NPPF and the planning system is to contribute to the achievement of sustainable development. As part of this the government define three dimensions of sustainable development; an economic role, a social role and an environmental role.

As suggested in the NPPF we have considered these three facets of sustainable development as a whole and not in isolation as they are mutually dependant. We believe that this approach demonstrates the sustainability of this proposal when considered against economic, social and environmental gains.

PARAGRAPH 9

As identified above we believe that through the pursuit of sustainable development this proposal enhances the quality of the built and natural environment as well as improving the quality of life of its inhabitants. In addition this development:

- Supports the existing facilities and services within the village as well as also providing the potential from working from home
- Supports and improves the bio-diversity of the existing site through the retention of the existing boundary hedges and proposed landscaping.
- Provides a high quality architecturally rich inclusive design solution that provides flexible lifetime accommodation for its inhabitants as well as providing potential for combined commercial and residential uses.
- This proposal improves the standard and widens the choice of high quality homes in the district and village. Essentially this scheme will improve the conditions in which its inhabitants will live and work in whilst supporting the public transport, leisure and facilities.

PARAGRAPHS 11 & 14

We believe that this Design and Access Statement, accompanying drawings and Local Plan Summary overleaf demonstrates how this development conforms to the requirements of the NPPF. Predominately the NPPF and Local Plan (LP1) state that there is a presumption in favour of sustainable development and that sustainable development should be seen as the golden thread running through both plan-making and decision-taking.

We believe that this package demonstrates the sustainability of the proposal and meets the overarching requirements of the NPPF and does not cause demonstrable harm.

PARAGRAPH 17

Core Planning Principles outline a set of 12 core land use principles that should underpin both plan-making and decision-taking. We believe that that this proposal fulfil or adhere these 12 core principles particularly those of:

- Sustainable development
- Recognising and enhancing the intrinsic character of the area
- Providing high quality design with a good standard of amenity
- Support a low carbon future, renewable energy generation and mitigating the risk of climate change and flood risk
- Conserving and enhancing the natural environment

PARAGRAPHS 21 & 28
This proposal will enhance and support the economic sustainability of the village and the use of the village's facilities and services. In addition the proposal creates a flexible working/living practices by providing the potential to work from home thereby potentially integrating residential and commercial uses within the same site.

PARAGRAPH 42
As well as supporting the sustainable economic growth of the village as outlined above the proposal will have access to Broadband (key if a home office is to be utilised), telephone, electricity and water.

PARAGRAPHS 49 & 50
As outlined above we believe this proposal meets the three requirements for sustainable development as set out in the NPPF, as such, this application should as a housing application be considered in the context of the presumption in favour of sustainable development.

In addition to this the proposal creates a high quality sustainable dwelling that will enhance the existing community.

PARAGRAPHS 56 & 58
The proposal amalgamates the sustainable design strategies of our five stage approach and traditional site analysis design strategies. This achieves a proposal that is a contemporary interpretation of an agricultural building which is derived from Government and Local Policy, the site, its location and neighbouring properties with the ethos of environmentally responsible development and sustainability at its core.

As a result the proposal can be deemed to offer an architecturally rich, high quality development that can be considered as 'Good Design', for which the government attaches great importance to and is also a key aspect of sustainable development and good planning.

In line with the NPPF the proposal will ensure that the development:

- Adds to the overall quality of the area over the lifetime of the development
- Enhances the sense of place and streetscape
- Optimises the potential for flexible use of combined residential and commercial uses as well as supporting the local facilities and transport links of the village.

- Draws inspiration and responds to the local character of the area in terms of the form, rhythm, massing and materiality of the development
- Creates a safe accessible environment through natural surveillance
- Is visually attractive as a result of good architecture and landscaping that is underpinned by a rigorous rationale and design ethos.

PARAGRAPH 63
In accordance with the NPPF great weight should be given to outstanding or innovative designs which help raise the standard of design more generally in the area.

PARAGRAPHS 93, 94, 95, 96, 97, 99 & 100
As outlined in the NPPF planning plays a key role in reducing greenhouse gas emissions, minimising vulnerability and resilience to climate change and supports the delivery of renewable energy. It states are central to the economic, social and environmental dimensions of sustainable development.

It is clear from the submitted planning package that this proposal meets these criteria as it minimises its operational and embodied CO_2.

PARAGRAPHS 109 & 118
The proposal through its landscaping scheme seeks to retain and enhance the site's biodiversity. This is achieved by:

- Retaining the existing native boundary hedgerows and many trees – providing habitat corridors
- Planting of proposed hedge and trees

Five Year Housing Supply

SHDC do not have a 5 year housing supply, as such, the National Planning Policy Framework (NPPF) dictates that all of the council's policies with regards to housing are out of date. Essentially the NPPF is now the driving policy document for all housing applications and it states that all housing applications should be considered in context of the presumption in favour of sustainable development. In reality this means:

- Where the development plan is absent, silent or relevant policies are out-of-date, granting permission unless:
    - Any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the NPPF taken as a whole; or
    - Specific policies in the NPPF indicate development should be restricted (eg. Protect sites, SSSI, green belt, local green space, AONB, national park etc)

As outlined above it is clear that the proposal is delivering high quality sustainable development as part of a replacement dwelling application. As such the proposal will not cause significant and demonstrable harm to the area and will result in numerous benefits in accordance with the NPPF.

2.0 PROCESS

It is widely acknowledged that in developed countries buildings consume over half the energy produced and emit a concomitant amount of CO2. With Britain's construction industry responsible for approximately 300 million tonnes of carbon dioxide each year.

However, an important point to note is that the initial embodied energy and environmental impact of construction is far outweighed by the operational energy and carbon emissions during the buildings life cycle. (see figure 2).

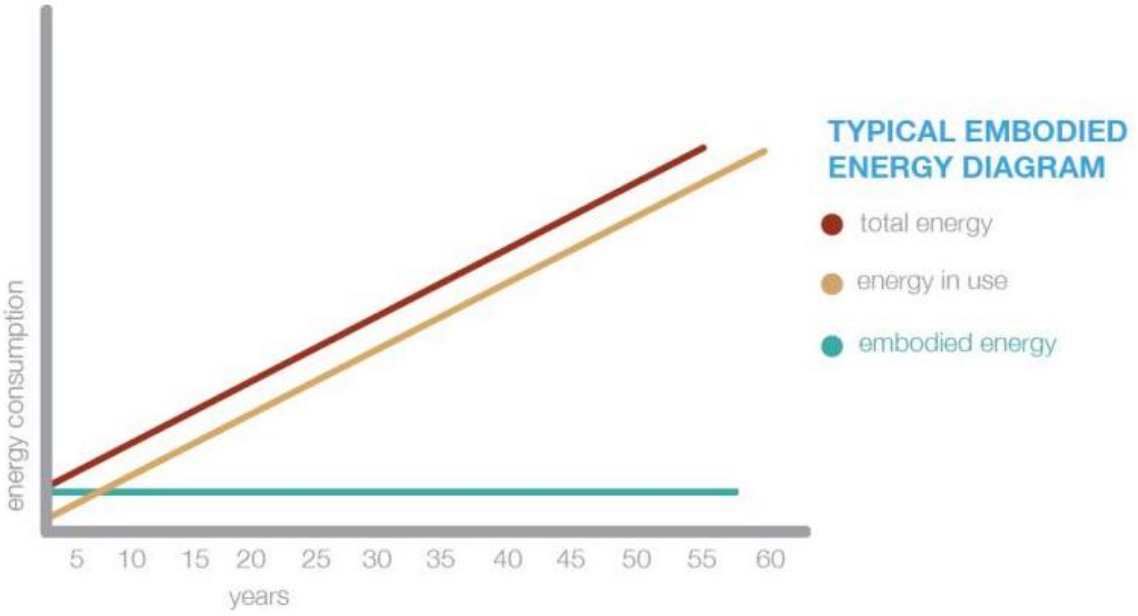


Figure 2 – Typical Embodied Energy Diagram

With this in mind, it is clear that the responsibility of the designer is to 'design intelligently', ensuring longevity and minimal maintenance of the building and that the required internal environmental conditions are met with little or no energy use.

The most effective method of achieving this is to combine both **Passive** and **Active** Design Strategies. Manipulating the sites characteristics and climatic conditions to optimise the building design, combined with efficient M&E systems and renewable technologies, in an attempt to meet the buildings energy requirements.

In addition to reducing the dwelling's operational energy and CO2 the minimal maintenance, longevity and robustness of the construction and materials should be sought with minimal embodied energy. The result is an evolving architecture informed by its site, context, climatic conditions and locally available materials.

This approach to responsible architecture is embodied in our 'Path to Low Carbon'. (See figure 3) This is a hierarchical five stage approach to design which rigorously tests each design decision against proven techniques to ensure the potential to achieve the overall aim of carbon neutrality is maximised.

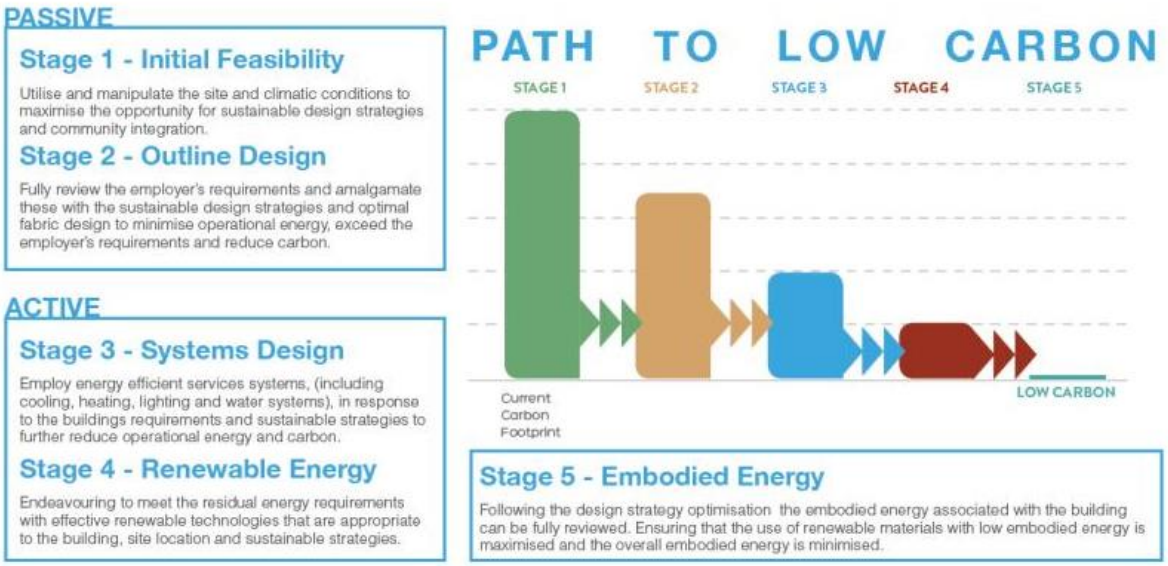


Figure 3 – Path to Low Carbon

2.0 PROCESS

2.1 Stage 1 - Feasibility

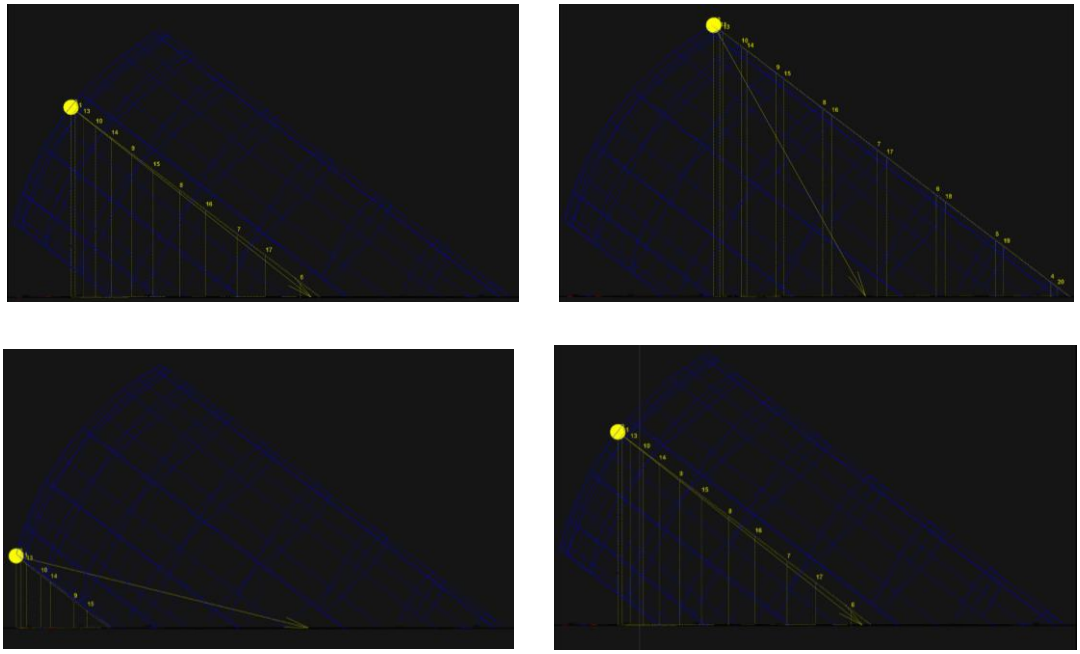
The first step of our approach to ensuring responsible architecture, which is grounded in the site and time, is achieved is to undertake a detailed site analysis to maximise the inherent site potential.

The site analysis undertaken includes the 'traditional' site investigations such as:

- site levels relative to aOD
- boundary conditions
- site access
- locations of services
- locations of trees
- proximity of surrounding structures
- built environment pattern (building lines and density)
- character analysis of the area
- contamination studies (if required)
- ecological and archaeological surveys (if required)
- tree surveys (if required)

However, of primary importance is a climatic condition analysis, which is required to determine:

- site orientation,
- solar exposure and availability on-site (summer/winter solstice vernal and autumnal equinox locations), - Figure 4
- prevailing weather including wind frequency and wind – Figure 5
- temperature analysis,
- average temperature – Figure 6
- Direct Solar Radiation – Figure 7
- average rainfall,
- average cloud cover
- average relative humidity



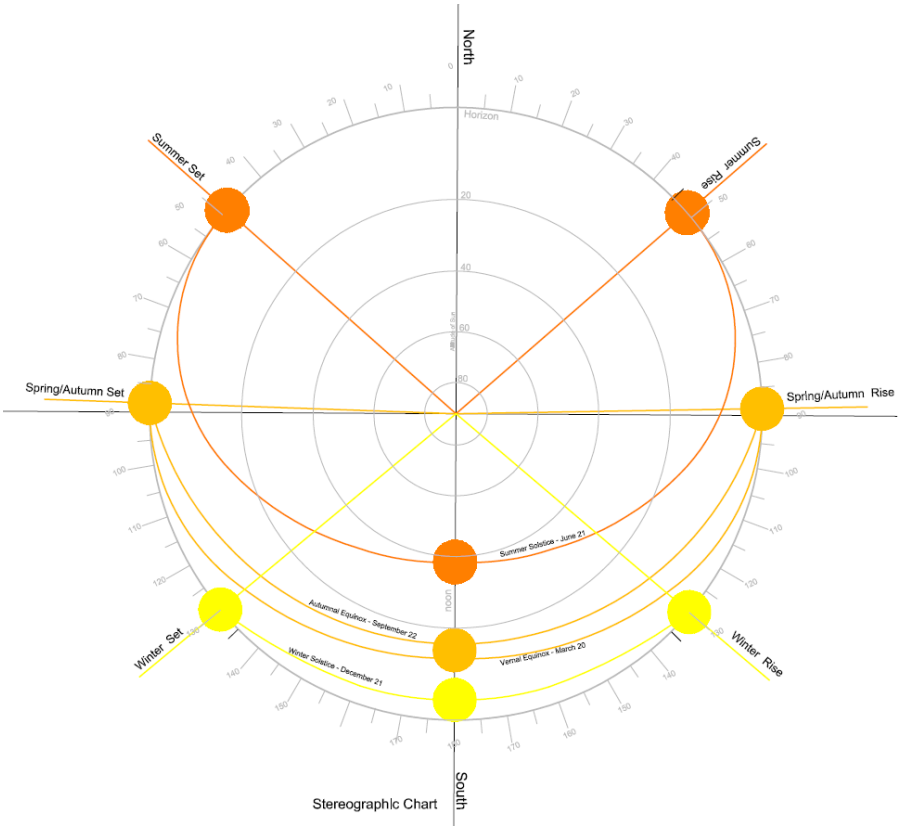
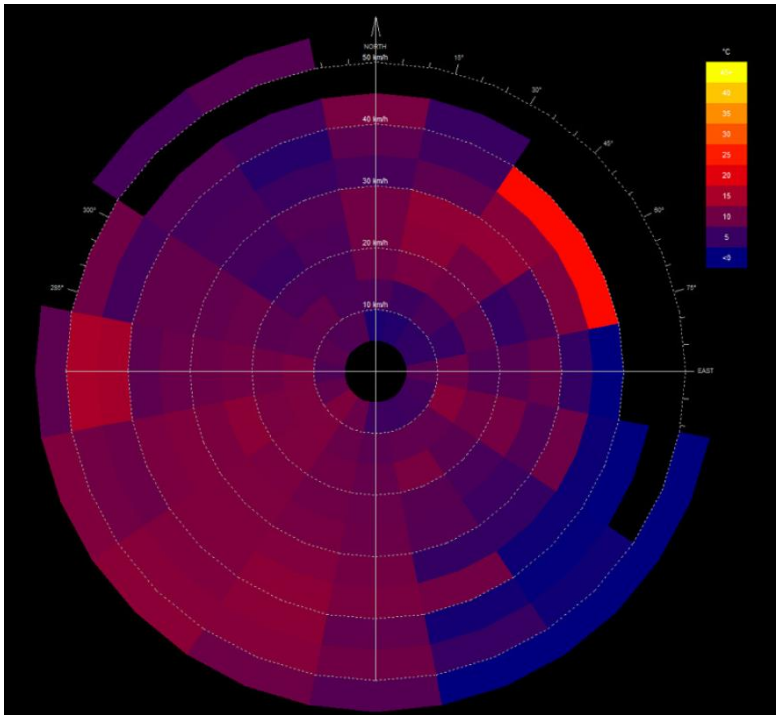
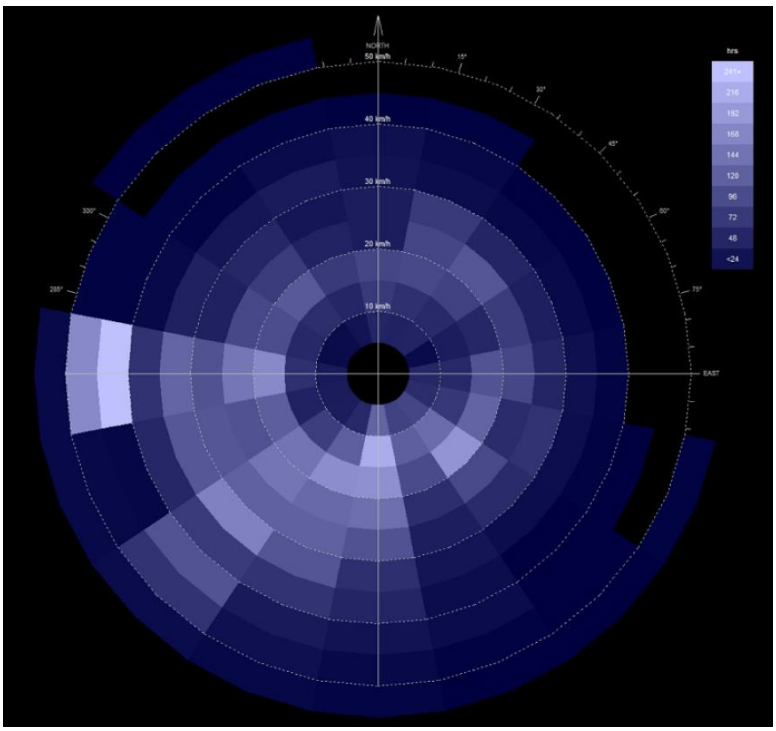


Figure 4 – Solar Exposure/Availability



Directional Temperature



Directional Frequency

Figure 5 – Prevailing Weather

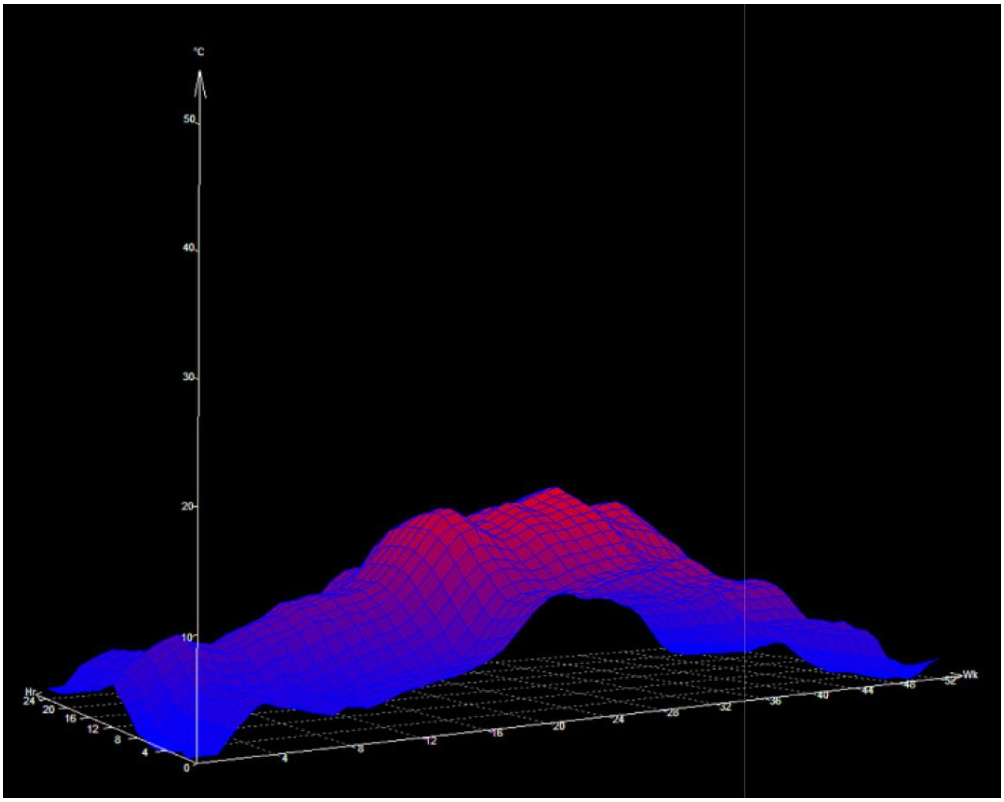


Figure 6 – Average Temperature

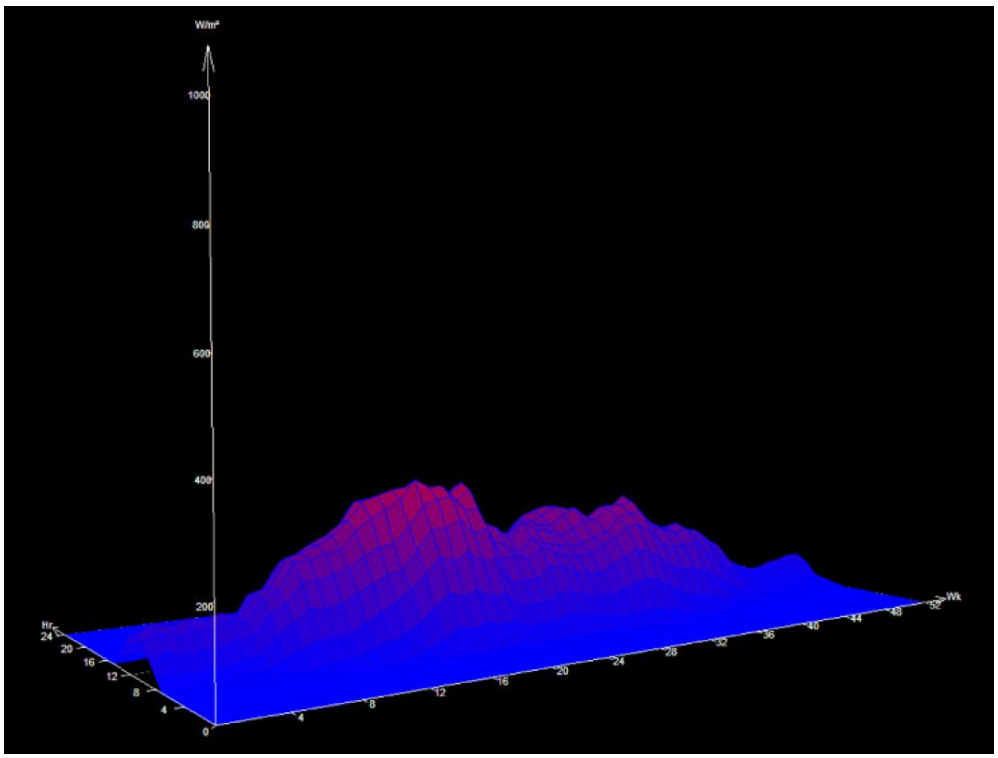


Figure 7 – Direct Solar Radiation

The combined information from the 'traditional' and climatic condition analysis along with the client's brief allows us to undertake a feasibility assessment of the site, produce an initial site layout and establish our sustainable strategies that include:

- Elongating the building along the East West Axis (maximise south facing glazing and roof)
- Orientating the dwelling around the path of the sun
- Solar Control – Passive Solar Shading has been incorporated in to the scheme. This provides shading from the eastern and western suns and also the window is set back in the reveal to shelter it from southern suns to reduce overheating.
- Maximising Daylight
- Micro-climate generation

Establishing site specific sustainable strategies during the initial feasibility stage can significantly reduce the operational energy and associated carbon emissions of a dwelling. ***For example, simply making the building the right shape and the correct orientation can reduce the buildings energy consumption by 30-40% with little, or no, additional cost.***

2.2 Stage 2 – Outline Design

We optimise the building design and fabric to minimise its operational energy. In order to achieve this we have employed a number of design strategies to create a passively designed building that requires minimal energy input to maintain comfortable internal conditions.

These design strategies include:

- Orientating the Building Around the Path of the Sun – maximising southerly glazing
- Minimising glazing the east and west to reduce overheating in summer
- Include minimal glazing to the north, only taking advantage of the views – to reduce heat loss but induce cross ventilation.
- This approach also maximises daylighting reducing the artificial lighting loads
- The use of the shallow plan rooms with north facing windows provides optimal performance of passive solar heating, day lighting and natural cooling.
- Passive Solar Shading has been incorporated in to the scheme to reduce overheating.
- Maximise Thermal Mass - Utilising thermal mass effectively, within a layer of insulation, reduces energy consumption, reduces and delays peak heating and cooling loads and improves thermal comfort.
- Optimise Glazing Design.
- Minimise thermal bridging and air leakage - Utilising enhanced robust details to further reduce thermal bridging and minimising air leakage
- Maximise Super-insulation - Minimising the fabric loss load of the building
- Microclimate Creation

This approach has been demonstrated to achieve a zero-heated status with the operational energy requirements reduced by up to 80-90%

2.3 Stage 3 – Systems Designs

As previously outlined the design strategies employed during Stages 1 & 2 aim to reduce the operational energy required by principally reducing the services and heat loss loads through a ***Fabric First Approach.***

However, to further reduce the operational energy and carbon it is essential that the most energy efficient services systems are specified and included as part of the initial design.

As part of the passive 'low tech' approach and to further minimise the operational energy and carbon emissions we are incorporating:

- Low energy lighting
- Task lighting
- Low flow taps
- Low flow showers
- 2&4L cistern WC's
- Mechanical ventilation heat recovery for winter ventilation

2.4 Stage 4 – Renewable Energy

Following Stages 1-3 we attempt to meet the building's residual energy requirements with effective renewable technologies.

As part of this process we consider the full spectrum of renewable technologies on a site-by-site and building-by-building basis.

Following investigations in to the site, the surroundings, the clients brief and budget the following are deemed to be the most appropriate technologies:

- Air or Ground Source heating to provide heating and hot water to the dwelling.

3.0 USE & AMOUNT

The application site has an area of 4153m^2 and is residential land as part of Bridge House, which is to be replaced as part of this application.

The proposed and existing use for this site is residential, and the proposal is for a detached dwelling and garage.

The size, layout and accommodation are driven by the desire to provide good quality, modern living accommodation for the occupants and users of the dwelling.

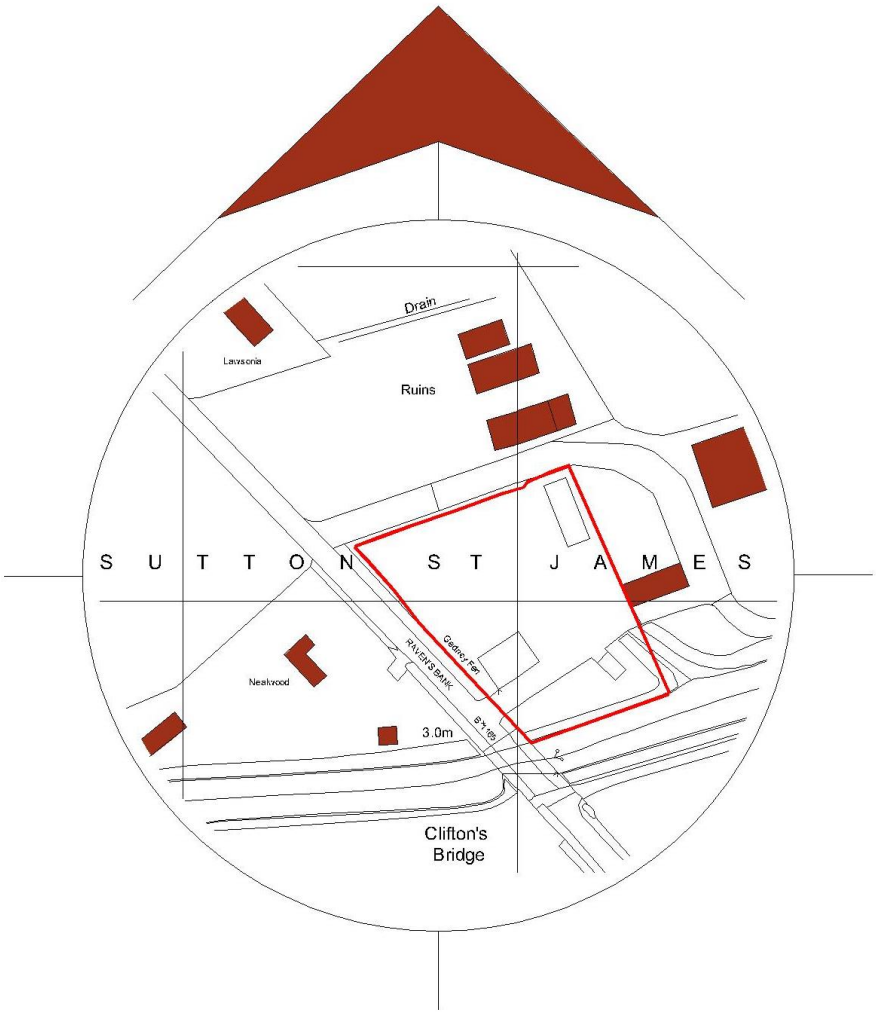


Figure 8: Location Plan

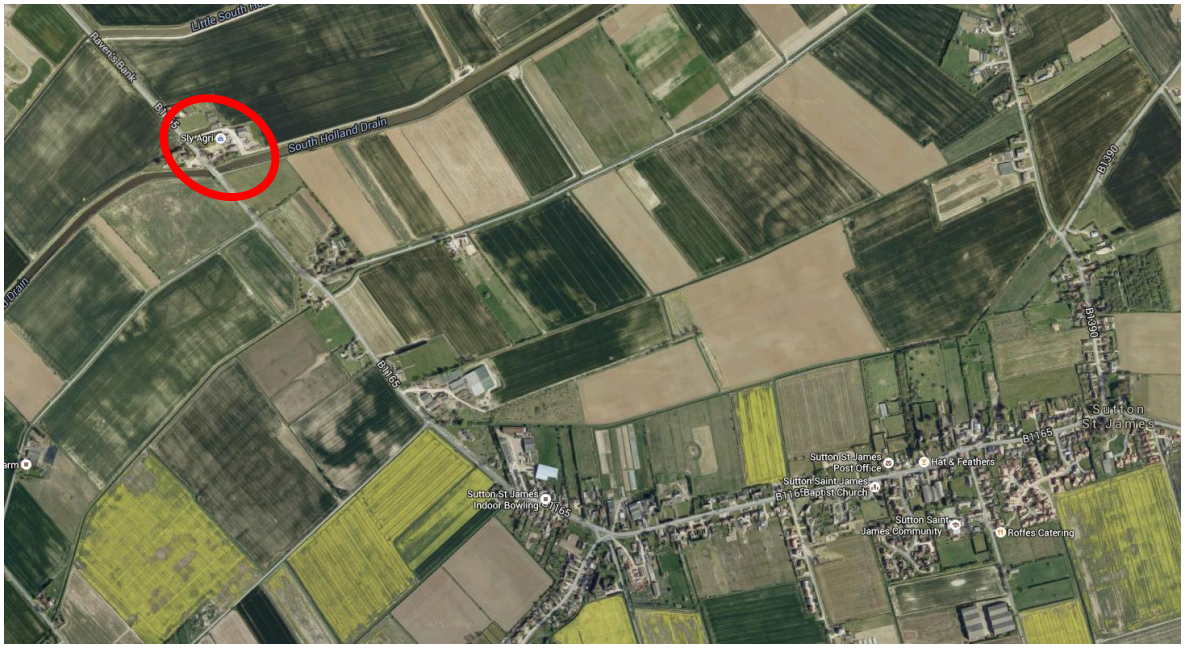


Figure 9: Aerial View

4.0 LAYOUT

The proposal is both functional and enjoyable and in the process creates an environmentally responsible dwelling.

The proposed layout of the site and dwelling has been informed by our five stage approach to achieving low carbon architecture and takes in to account and complements the existing street scene, building line and development pattern.

The proposed development respects the existing natural boundaries of the site and also respects it's neighbours through the orientation of windows, which will be positioned to avoid overlooking. The proposal is in keeping with the form and character of the area as it continues through the rhythm of development along this side of the road.



Figure 10 – Proposed Site Plan

The dwelling itself is designed to ensure that habitable rooms requiring the most heat are positioned and orientated to maximise solar gain with ancillary accommodation located to the North. In addition the gardens are arranged to provide a south garden that is in receipt of plentiful sunlight with deciduous trees for shelter and summer shading and the North gardens strategically sheltered with evergreen trees. Furthermore the intended shelter planting will increase the sites biodiversity.

Vehicle access to the site utilises the existing access to the North which achieve adequate vision splays and does not require an additional access to be formed. In addition the site has been laid out to accommodate the required parking and cycling spaces and to allow cars to pull into the site, park, turn and exit in forward gear.

Finally the layout of the site ensures that Part M compliant wheelchair access is achievable with ramped and stepped approaches to the principal entrances. The ground floor layouts are designed to enable wheelchair accessibility.

5.0 AMOUNT AND SCALE

The amount and scale of the proposed development has been designed to follow the pattern of development in the area.

This approach creates a hierarchy in the proposal that enhances the street scene whilst complimenting the existing form, rhythm and massing of the rural area.



Figure 11 – Proposed Floor Plans

6.0 LANDSCAPING

The proposed dwelling will include landscaping and driveway to the front garden with planting to soften the front of the property. The rear garden will be levelled and seeded with grass.

The proposal will retain as much of the existing landscaping as possible and introduce a new driveway and front garden. Proposed trees and hedges will also enhance the sites landscaping and biodiversity.

7.0 APPEARANCE

This area is predominately agricultural in nature, as such, the architectural style is simple in its form and is intended to be a contemporary interpretation of an agricultural building.

This proposal utilises the development pattern of the area as part of its design ethos and seeks to fully integrate with the existing development pattern and rhythm. This is achieved through the main roof addressing the road with the subservient garage building creating a ‘courtyard’ to the north.

The positioning of the building has been informed by the projects sustainable strategies, form and character of the area and the desire to front the main drain.

The materials are informed by the agricultural vernacular with slates for the roof, facing brickwork for the walls and metal fenestration.

The elevations and 3D visuals describe the proposed agricultural appearance of the dwelling and its integration in to the area.

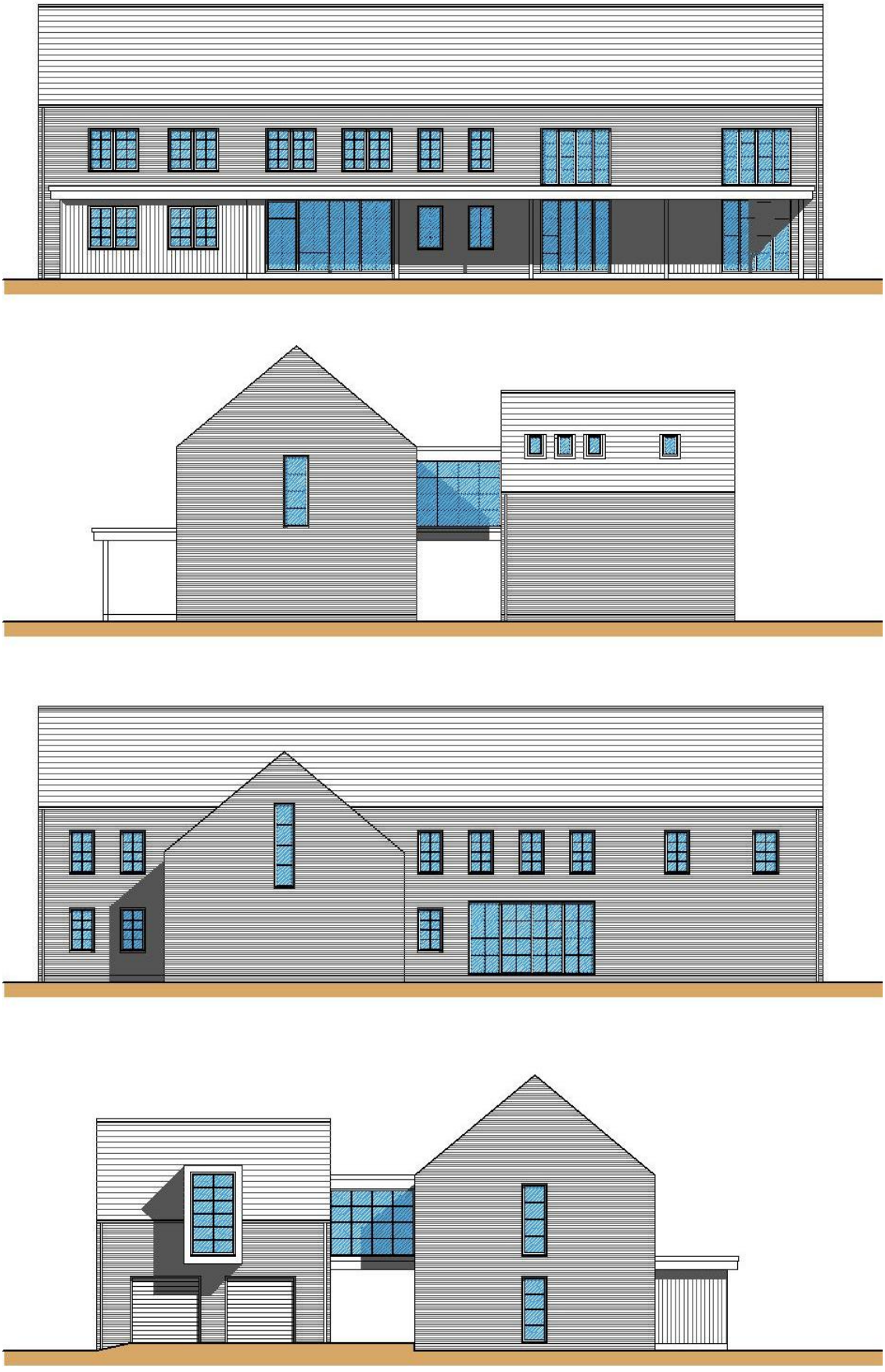


Figure 12 – Elevations







Figure 13 – 3D Visuals

8.0 FLOOD RISK

The site sits within Flood Zone 3 of the Environment Agencies flood map. As such, all sleeping accommodation is located at first floor along with a refuge point. The proposal will be completed in accordance with the submitted Flood Risk Assessment.



Figure 14: Environment Agency Flood Zone Map

9.0 SECURITY

Security lighting is to be provided to the dwelling over the rear garden and parking areas, which will be dusk to dawn sensor controlled intruder lighting in line with Secured by design New Homes 2014 guidance.

In addition an intruder alarm and CCTV will be installed to the new dwelling and outbuilding.

10.0 VEHICULAR AND TRANSPORT LINKS

By road, the towns of Spalding and Wisbech and the city of Peterborough are short distances away offering shops and services associated with larger market towns and cities.

These public amenities as well as many more are within a short distance from the proposed site of development:

- Local shop/general store
- Public House
- Post Office
- Butchers

11.0 SITE ACCESS

The existing access serving the existing dwelling will be re-used as part of this development. Motor cars will have easy access to the front door of the property. There are ample parking spaces for the dwelling. Upon alighting from a parked vehicle a hard surfaced area will lead the occupant or visitor directly to the front door.

12.0 INCLUSIVE ACCESS

The topography of the site is generally level and will comply with Part 'M' of the Building Regulations.

A large front door with a level access threshold will allow access to the dwelling whilst all doors, including an outward opening door to the w.c, will allow access throughout the ground floor of the dwelling. In addition the proposal is designed to provide flexible living and to achieve the Lifetime Homes standard.

13.0 FIRE APPLIANCE TURNING

The close proximity of the road allows easy access to the Fire Brigade should the event of a fire take place.