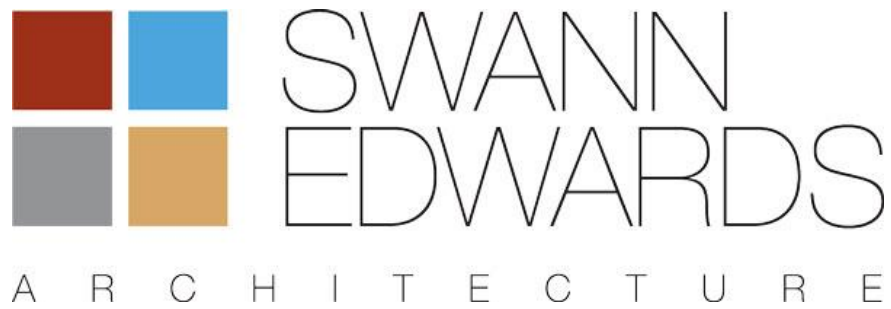




DESIGN AND ACCESS STATEMENT

PROPOSED SHIPPING CONTAINER PASSIVHAUS

AT

LAND SOUTH WEST OF
LIFT & SHIFT
BROADGATE
SUTTON ST JAMES

FOR

MR & MRS REED

Job No. SE-564

August 2017

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1.0 Introduction

This Design and Access Statement is a working document that has been prepared throughout the design process of the current proposal on behalf of the applicants Mr and Mrs Reed.

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 will also record how the design has progressed in collaboration with informal consultations with South Holland District (SHDC) Planning Officers and the design team.

The aim of this report is to demonstrate that this proposal complies with Paragraph 55 of the NPPF and outline the design ethos that has been implemented to ensure a low carbon development is achieved, whilst ensuring the context of the site and the area is respected. In addition, the proposal affords SHDC the opportunity to approve a scheme that will be a contemporary low carbon exemplar project. This project will create the first certified passivhaus dwelling from recycled waste shipping containers in South Holland and support and existing and expanding business.

This design statement outlines the provisions made in the design to enhance the form and character, quality of environment, living condition, site access, accessibility, and takes account of Flood Risk.

Finally, this document outlines how the current Policies and Guidelines of both SHDC and Government are implemented taking in to account recent similar approvals within the district.

1.1 Project Aim & Overview

This project has been driven by the client's desire to improve the setting of the area and efficiently utilise a parcel of previously developed brownfield land comprising of a former blacksmiths forge and scrub land of low ecological and biodiversity value.

The clients are the owners of the adjacent business Lift and Shift. The driving force behind this application is to allow the clients to live adjacent their existing business to reduce their travel to work (increased sustainability through reduced vehicle movements) and to improve security for the area. The client's also own the adjacent South West Land to the site, which they are currently in the process of developing a financially viable small holding to supplement their income and also allow them to produce much of their own food on-site.

The proposal comprises of the demolition of the existing blacksmiths forge, construction of a certified passivhaus dwelling from recycled shipping containers sourced from the site adjacent and a comprehensive landscaping scheme. In addition, the application includes for the change of use to the existing land North West of Lift and Shift to allow the existing storage business to expand. As such this proposal should be supported to enable the clients to reduce their environmental impact and support and grow an existing successful rural business.

2.0 Planning Policy, Planning History and Pre-Application Consultations

2.1 Five Year Housing Supply

SHDC do not currently 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 accordance with paragraph 14 of the NPPF 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 this document outlines it is clear that the proposal is delivering high quality sustainable development on brownfield land with a comprehensive landscaping scheme that enhances the biodiversity of the area and allows an existing business to grow. 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.

2.2 National Planning Policy Framework

Nationally, guidance for new housing is set out in the National Planning Policy Framework – March 2012.

The NPPF recognises the need to achieve sustainable development. *'sustainable development is about positive growth – making economic, environmental and social progress for this and future generations.*

The NPPF promotes sustainable development and directs Local Authorities to approve planning applications where there is a presumption in favour of sustainable development. *Planning law requires that applications for planning permission must be determined in accordance with the development plan, unless material considerations indicate otherwise. The National Planning Policy Framework must be taken into account in the preparation of local and neighbourhood plans, and is a material consideration in planning decisions.* As outlined above material considerations as a result of the lack of a five year land supply meant that Local Plan is out of date and the proposal should be considered in accordance with the NPPF.

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. We have outlined below how this proposed development contributes to each of the three dimensions:

- *Economic Role* – This proposal provides the opportunity for Mr and Mrs Reed to live and work on adjacent sites and allow enhanced security and growth of their business. They will utilise locally sourced materials and trades and labour to complete the project. In addition, the proposal will recycled previously used shipping containers in to a dwelling and allow the un-required parts such as doors and panels to be re-purposed in container repairs. This will support the growth of an existing rural business and provide increased employment opportunities in the area and inevitably bring interested parties from around the country to learn from this exemplar project. Finally, the proposal will continue to support the local facilities of nearby Sutton St James (namely the shops, church, post office, pub and butchers).
- *Social Role* – As outlined above the proposal will allow Mr and Mrs Reed to live and work essentially on the same site and allow their business to grow. In addition the dwelling will be **SHDC's first certified passivahus shipping container dwelling creating a low cost low carbon exemplar project**. This dwelling has been designed to reflect and enhance its traditional rural setting, reflecting the highest standards in architecture and materiality in this rural location. This reflects the community's needs alleviating the occupants from the threat of fuel poverty and supporting its health, social and cultural wellbeing. In addition this will support the community of Sutton St James.
- *Environmental Role* – The proposal comprises of a single dwelling that is created from recycled shipping containers from the adjacent self-storage business and that will be a certified Passivhaus, incorporating a new access and electric car charging point to deliver a project that will be an exemplar project for the district. The dwelling will mitigate the client's impact on the environment both locally and globally, whilst creating a benchmark for high quality sustainable architecture and the re-use and repurposing of an otherwise waste product.

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
- Supports and improves the bio-diversity of the existing site through the retention of the existing boundary hedges and the provision of a comprehensive landscaping scheme
- Provides a high quality architecturally rich inclusive design solution that provides flexible lifetime accommodation for its inhabitants
- 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.

PARAGRAPHS 11 & 14

We believe that this Design and Access Statement, accompanying drawings, 3d Visuals, Landscape Design and Statement, Structural Design and Passivhaus Assessment and Local Plan Summary demonstrates how this development broadly conforms to the requirements of the NPPF and specifically meets the requirements of paragraph 55 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.

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 through the use of the village's facilities and allow the client to live and work from the same site. In addition the proposal creates flexible working/living practices.

PARAGRAPH 34

The proposal will create an additional dwelling in the area, however, traffic movements will decrease in the area as this will allow the clients to live and work from the same site. The scheme seeks to further minimise required movements from the site by providing provision to produce the occupant's own fuel and sewage treatment. In addition, the scheme incorporates electric charging points for the client's electric cars to reduce the carbon emissions associated with their travel.

PARAGRAPH 42

As well as supporting the sustainable economic growth of the village as outlined above the proposal will have access to broadband, telephone, electricity and water. The scheme will reduce its demand on the existing water system through rainwater harvesting.

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 passivhaus dwelling constructed from recycled shipping containers. This is truly an innovative and high-quality scheme that will be an exemplar and first of its type in South Holland.

PARAGRAPH 55

This paragraph is crucial in the support of this scheme. The proposal is not isolated as it will allow the clients to live and work from the same site and allow the growth of an established profitable business. In addition, the proposal has been demonstrated to be sustainable and offer economic support and enhance community cohesion of the village.

As detailed throughout this document we believe that this proposal is truly innovative as it will result in the first passivhaus constructed from recycled shipping containers in SHDC and perhaps even England. This combined with the other project features of rainwater harvesting, renewable energy generation, electrical car charging, powerless sewage treatment, landscaping, superinsulation, and the benefits of live and working on the same site delivers a innovative high quality dwelling.

The aesthetic is driven by the use of shipping containers and the form of the proposed dwelling is deliberately simple and modest to reflect the simplistic agricultural structures typical of the area. In addition, material pallet has been selected to reflect the typical rural materiality comprising of corrugated cladding and CorTen rusted steel to reflect the natural weathering of farm buildings.

As such, this proposal complies with the fourth bullet point of Paragraph 55 of the NPPF. The submitted Passivhaus Assessments demonstrates compliance with this criteria, similarly the submitted structural strategy demonstrates that the proposal can be constructed and the landscaping scheme enhances the biodiversity of the area.

PARAGRAPHS 56 & 58

Furthermore the proposal amalgamates the sustainable design strategies of our five stage approach, the Passivhaus Standard and traditional site analysis design strategies. This achieves a proposal that is contemporary low carbon exemplar project constructed from recycled shipping containers, which draws reference to its agricultural heritage and 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*. Ultimately, the proposal delivers a high quality innovative scheme, delivering the first passivhaus constructed from shipping containers in SHDC that is informed by and grounded in rigorous assessment to ensure maximum sustainability and deliverability.

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, if approved, 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.
- 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.

It is clear that this proposal meets this important criteria of the NPPF as it will create the first passivhaus constructed from recycled shipping containers in South Holland that strives to achieve carbon and energy neutrality. This approach will also minimise the projects embodied energy whilst maximising the robustness and longevity of the construction *in anticipation of the inevitable the low carbon economy*.

PARAGRAPH 66

The applicant has consulted with the direct neighbours, District and Parish Councillors during the pre-application process that we have undertaken a pre-application enquiry with SHDC on their behalf.

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 is clear from the submitted planning package that this proposal meets these criteria as it achieves the passivhaus standard, low energy and CO₂ emissions, provides compost facilities, food production, animal rearing and waste water treatment on-site, enhances the sites biodiversity, harvests its rainwater and generates its own electricity.

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 boundary hedgerows – providing habitat corridors
- Introduction of a landscaping scheme to increase the biodiversity on the site – please refer to landscape scheme that accompanies the application.

NPPF CONCLUSION

We believe that the previous NPPF assessment and the remainder of this document demonstrates that the proposal meets the overarching aim of the NPPF and will not result in significant or demonstrable harm. The proposal will deliver sustainable development on brownfield land that is truly innovative and reflects the highest standards in architecture. In addition, the proposal will reduce the occupant's requirement to travel to work as it will allow them to live on-site of their storage business and also develop their small holding to further reduce their environmental impact. The proposal complies with the NPPF and as outlined later in this document the overarching aims of the Local Plan and should be approved.

2.3 Local Plan

Although SHDC do not have a 5 year housing supply and as a result their housing policies are considered to be out of date we have undertaken a review of the current Local Plan adopted in 2006 and assessed the proposal against its criteria.

Policy SG1- General Sustainable Development

Planning permission for development will be granted where the Council is satisfied that the proposal is consistent with the principles of sustainable development, and where:

- 1) the quality of life for residents is unimpaired or enhanced;
- 2) reasonable measures have been taken to conserve energy and natural resources; and
- 3) South Holland's essential character and main environmental assets are not damaged.

This proposal meets the criteria to comply with this policy. The proposal will result in the development of Brownfield Land which will allow the residents to enhance their quality of life by living adjacent to their place of work, limiting travel time. This will also allow them the opportunity to develop their small holding on adjacent land to produce their own food and supplement their income.

The proposed dwelling is inherently sustainable and conserve energy and natural resources. It will be the first shipping container passivhaus and is to be constructed from recycled shipping containers from the client's adjacent business. The proposed structure respects the rural agricultural nature of the area through its material selection and the proposed landscaping will enhance the biodiversity of the site.

Policy SG2 - Distribution of Development

All proposals for development must be located having regard to sustainable development principles. They should:

- 1) adopt a sequential approach which gives priority to the use of previously developed land and buildings within defined settlement limits, then to greenfield land within defined settlement limits and finally to land adjacent to defined settlement limits;
- 2) make efficient use of land;
- 3) ensure that, wherever possible, development is served by a choice of transport modes including existing public transport or by improvements to public transport infrastructure linked directly to the development and the existing highway network; and
- 4) ensure that the development is acceptable in terms of traffic generation and road safety in the surrounding area.

This proposal meets the criteria to comply with this policy. The proposal comprises of the extension of the existing business and re-development of brownfield land to allow the occupants to live adjacent their business. The traffic generated as a result of this development will result in a reduction of the existing situation as the occupants will not have a need to drive to and from their place of business.

Policy SG3 - Settlement Hierarchy

For the purposes of controlling and regulating development, and also to reflect the wider functions of settlements the following hierarchy will be applied:

- 3) **Group Centres**
The villages of Cowbit, Deeping St Nicholas, Fleet Hargate, Gedney Hill, Gosberton, Moulton, Moulton Chapel, Pinchbeck, Sutton St James, Weston and Whaplode will act as local service centres for the surrounding rural area. New development should support or improve their role as a focus for local social and economic activity, having regard to their role within clusters or groups of settlements.

Although this proposal is outside of the settlement area boundary of Sutton St James the site is within 1.5 miles of the centre of Sutton St James and all of its facilities. As such, this proposal will support the role of the group centre as well as its economic and social activities.

Policy SG4 - Development in the Countryside

Planning permission will only be granted for development in the open countryside which is essential in the proposed location and cannot reasonably be accommodated within defined settlement limits. Development proposals that would result in an unacceptable impact upon the landscape character of an area, either individually or cumulatively, will only be permitted where:

- 1) the need for the development in that location outweighs its impact; and
- 2) no other site or solution exists to accommodate the proposed development.

The National Planning Policy Framework was adopted in March 2012 and as such supersedes this policy. As outlined previously it is considered that this proposal complies with the NPPF and does not result in significant or demonstrable harm, in particular the proposal meets the requirement of Paragraph 55 of the NPPF.

Policy SG5 - Non-Agricultural Development On Agricultural Land

Planning Permission will only be granted for the development of the best and most versatile agricultural land (Grades 1, 2 and 3a) where:

- 1) land of a lower agricultural grade is not available to accommodate the proposed development;
- 2) available lower grade land has an environmental value recognised by a wildlife, landscape or historic designation that outweighs agricultural considerations;
- 3) the development is proposed on land of the lowest possible grade.

This proposal complies with this policy as the land is brownfield land comprising of a former blacksmiths forge.

Policy SG7 - Energy Efficiency

Development proposals will be encouraged where they are designed to provide maximum energy efficiency, through site layout and orientation, through the layout and design of individual buildings, including maximizing solar gain especially for residential buildings, and where they make full practical use of energy from renewable resources.

All development with a floor space of 1000 sq. m. or more, or 10 or more residential units, will be required to demonstrate good practice in energy efficiency and to incorporate renewable energy production equipment to provide at least 10% of its predicted energy requirements.

As outlined through this document this proposal complies fully with this proposal, it amalgamates the sustainable design strategies of our five stage approach, the Passivhaus Standard and traditional site analysis design strategies. This achieves a proposal that is contemporary low carbon exemplar project constructed from recycled shipping containers, which draws reference to its agricultural. The dwelling will mitigate the client's impact on the environment both locally and globally, whilst creating a benchmark for high quality sustainable architecture and the re-use and repurposing of an otherwise waste product.

Policy SG8 - Water Efficiency

Planning permission will only be granted for development where its demand for water can be adequately met without detriment to existing users and the water environment. Applicants will be expected to demonstrate that every opportunity has been taken to include water efficiency and conservation measures in their proposals.

An adequate water supply exists within the vicinity of the site. In addition the dwelling will mitigate its demand for water through rainwater recycling and water efficient fixtures and fittings.

Policy SG9 - Development and Flood Risk

In areas of flood risk planning permission will only be granted where a flood risk assessment has been carried out and submitted to the Council. Proposals shall, where necessary, include details of measures designed to reduce the risk and consequences of flooding.

For permission to be granted the Strategic Flood Risk Assessment and site specific assessment will need to demonstrate how the proposed development will be defended from flooding for its proposed life, taking into account proposed mitigation measures.

Built development that would be at high risk of flooding, or which may be subject to rapid inundation, will not normally be permitted unless exceptionally required for operational reasons.

Although the site is in Flood Zone 3 on the Environment Agency Flood Maps the recently updated SHDC SFRA demonstrates that the site is in fact in Flood Zone 1. This further enhances the sustainability of the proposal and passes the sequential test.

Policy SG11 - Sustainable Urban Drainage Systems (SUDS)

Development generating surface water run-off, likely to result in increased flood risk, will be permitted provided that:

- 1) The development's surface water management system accords with sustainable development principles and has been designed as part of the development layout; and
- 2) The system will effectively control and adequately mitigate or attenuate any adverse effects from surface water run-off on people, habitats of acknowledged importance and property; and
- 3) Developers can ensure long term maintenance of the drainage systems, where necessary through planning obligations.

Where this is not possible the developer will be required to implement an alternative method of surface water disposal that is to the Council's satisfaction.

The proposal incorporates rainwater harvesting and an on-site pond to allow all the water to be adequately dealt with on-site. In addition, permeable surfaces are used to reduce the surface water and meet the requirements of this policy.

Policy SG12 - Sewerage and Development

Proposals for development which would give rise to foul sewage discharge will only be granted planning permission if they include provision for its effective collection, treatment and disposal as follows:

- 1) new development shall be served by mains foul sewers and sewage treatment works, wherever the opportunity exists;
- 2) where it is impracticable to provide mains foul sewerage (and if there are no works programmed which would enable such connection) development shall normally be served by a package treatment plant;
- 3) septic tanks will only be acceptable as an alternative to package treatment plants where:
 - (i) only a single dwelling or small group of dwellings is proposed, and
 - (ii) ground conditions (in terms of the structure and drainage of the soil) are proven by the applicant to achieve long term acceptable levels of performance, and
 - (iii) the plot is of sufficient size to provide an adequate subsoil drainage system.

The proposal incorporates a Clearfox non-electrical sewage treatment system, which filtrates sewage by 99.9% allowing the water to be discharged into the pond on-site. This low tech low energy solution ensures that all sewage is effectively dealt with using minimal energy.

Policy SG14 - Design and Layout of New Development

New development should be designed to ensure that it makes a positive contribution to the architectural and visual quality of its surroundings. It should normally respect the vernacular architecture of the area in which it is located although high quality contemporary design will be supported in appropriate contexts. In assessing the design and layout of new development the following matters will be taken into consideration:-

- 1) local distinctiveness;
- 2) the choice of materials;
- 3) the historic pattern of development in the locality;
- 4) the relationship of the development to the character, form and scale of existing buildings nearby;
- 5) the scale, form and height of the proposed development;
- 6) architectural detailing;
- 7) the effect of the development on the amenity of nearby residents in terms of noise, smell, general disturbance, overlooking and loss of light;
- 8) planting and measures to promote biodiversity;
- 9) the layout of vehicular access, parking and manoeuvring facilities and the provision of facilities for cyclists and pedestrians;
- 10) the needs of disabled persons;
- 11) the use of sustainable materials and methods of construction;
- 12) measures to reduce the potential for crime and disorder.

Development that would have an adverse effect on the character and appearance of the locality, or which would prejudice the comprehensive development or redevelopment of an area, will not be permitted.

The proposal has been designed as a fully inclusive dwelling with a bespoke landscaping scheme to integrate the dwelling fully in to the Fenland landscape and to increase bio-diversity on the site.

As previously outline this scheme re-purposes brownfield land and waste shipping containers, combined with passivhaus and low energy design techniques to truly minimise its environmental impact. The scheme will not adversely impact on neighbours or the countryside and will in fact create an exemplar project within South Holland.

The scale and form of the dwelling is subservient to the existing industrial building and storage units at Lift and Shift and through its choice of materials corrugated and rusted cladding seeks to reflect the rural nature of the area.

The area comprises of sporadic development comprising of industry, agriculture and dwellings, as such, this proposal fits in with the surrounding land uses and development pattern in this location.

Ultimately, the proposal delivers a high quality innovative scheme, delivering the first passivhaus constructed from shipping containers in SHDC that is informed by and grounded in rigorous assessment to ensure maximum sustainability and deliverability.

Policy SG15 - New Development: Facilities For Road Users, Pedestrians And Cyclists

Proposals for development shall provide safe and convenient access to and within the site for motor vehicles, cyclists, pedestrians, the less able-bodied and people with disabilities to accommodate the potential increase in movement generated by the proposal. New and improved roads, cycleways and footpaths shall reflect through layout and design the anticipated nature of future traffic and the character of areas to be served.

Adequate site access is to be provided from Broadgate with visibility achieved in both directions. Ample space is provided onsite for parking and turning on-site to ensure all vehicles can enter and leave the site in forward gear.

When within the site ramped access and level access thresholds ensure that access for all is achieved.

Policy SG16 - Parking Standards in New Development

Development proposals will be required to provide appropriate parking and servicing arrangements.

Parking will be required in the form of residential or operational car and cycle spaces, which shall be provided in accordance with the maximum parking standards appended. Where appropriate, provision will be assessed as an average across the development rather than on a plot by plot basis.

The precise level of provision will be determined by negotiation to reflect the proposed use, its location and potential for access by public transport.

Please refer to the response to SG15 above.

Policy SG17 - Protection of Residential Amenity

Planning permission will be granted for development which would not cause material harm to residential amenity.

In considering proposals the following criteria will be taken into account:-

- 1) the extent of any overlooking or loss of privacy;
- 2) the extent of any overbearing or overshadowing effect;
- 3) potential noise nuisance including that associated with vehicular activity;
- 4) the levels of smell, emissions and pollutants.

Please refer to the response to SG14 above

Policy SG18 - Landscaping of New Development

Proposals for new development should, where appropriate, incorporate landscaping proposals as an integral part of their design and layout and a landscaping strategy will be required to support all major development proposals. Particular attention will be paid to:-

- | | |
|----|--|
| 1) | the protection of any existing trees and hedgerows, and any other attractive landscape features; |
| 2) | the provision of strategic tree planting of indigenous species to improve the setting of development within the wider landscape; |
| 3) | the maintenance and establishment of wildlife habitats and corridors. |

The proposal has been designed as a fully inclusive dwelling with a bespoke landscaping scheme to integrate the dwelling fully in to the Fenland landscape and to increase bio-diversity on the site. Please refer to the landscape design and statement submitted with the application.

Policy SG21 - Extension of Curtilages

The extension of residential or other curtilages beyond the defined development limits of settlements will only be permitted where there would be no harm to the setting, character and appearance of the settlement.

In the case of residential and other uses outside defined settlement limits, the extension of curtilages will only be permitted where there would be no harm to the character, appearance and landscape quality of the area.

Permitted development rights, including those for the erection of curtilage structures and means of enclosure, will normally be withdrawn. Special regard will also be had to landscaping and boundary treatment.

As outlined we consider that there will be no harm as a result of the proposed dwelling. The proposed extension of the lift and shift yard will be screened from the public realm through the proposed landscaping and will not adversely impact on the countryside.

Policy HS7 - New Housing in the Open Countryside including Other Rural Settlements

Outside the defined settlement limits of Spalding, Area Centres and Group Centres, new housing development will only be permitted where:

- 1) it is proven to be essential to meet the needs of agricultural, forestry or other workers and complies with Policy HS12; or
- 2) the proposal is for small scale, rural exception affordable housing that complies with Policy HS9.

The National Planning Policy Framework was adopted in March 2012 and as such supersedes this policy. As outlined previously it is considered that this proposal complies with the NPPF and does not result in significant or demonstrable harm, in particular the proposal meets the requirement of Paragraph 55 of the NPPF.

Policy EC3 - Existing Employment Areas/Premises

Proposals for new development, redevelopment and changes of use for employment uses within existing employment curtilages and / or proposals for the expansion of existing employment undertakings will be permitted provided they are acceptable in terms of environmental impact, the level of traffic movement and intrusion into the open countryside.

Exceptionally, the redevelopment and/or change of use to non employment uses will be permitted where the existing use is unsatisfactory or where the benefit of the proposed use outweighs the need to retain the existing use.

This proposal will allow the expansion of an existing rural employment area and allow the existing business of Lift and Shift to continue to grow. In addition the proposed dwelling will also support the growing business allowing the business owners to live on-site reducing travel time to and from work as well as increasing security.

As previously outlined we believe the proposal meets the requirement of paragraph 55 of the NPPF and will not result in demonstrable harm to the countryside setting.

Policy EN2 - Wildlife Corridors and Other Areas

Development will be permitted which does not directly or indirectly destroy or adversely impair the integrity of wildlife corridors and other areas such as: hedgerows; drains and ditches; linear tree belts etc which are of major importance for wild fauna and flora, including brownfield sites. The District Council will, in co-operation with others, seek opportunities to consolidate and strengthen wildlife corridors. Appropriate management of features will be sought by the imposition of conditions, by the use of planning obligations, and by concluding management agreements with landowners and developers.

The proposal has been designed as a fully inclusive dwelling with a bespoke landscaping scheme to integrate the dwelling fully in to the Fenland landscape and to increase bio-diversity on the site. The landscaping scheme incorporates native planting and a specific wildlife area. Please refer to the landscape design and statement submitted with the application.

2.4 Precedents and Permitted Development Planning Policy

It is noted that a recent approval was granted in the district for a Paragraph 55 dwelling at SHDC Planning Committee as they considered the materials are reflective of the area and of a high quality, and meets the criteria of paragraph 55. This was application reference H02-0968-15 and we believe that this proposal meets the criteria of paragraph 55 (outlined below) and we are keen to work with SHDC Planning Officers to deliver a scheme that they can support and approve.

Paragraph 55 of the NPPF states:

“To promote sustainable development in rural areas, housing should be located where it will enhance or maintain the vitality of rural communities. For example, where there are groups of smaller settlements, development in one village may support services in a village nearby. Local planning authorities should avoid new isolated homes in the countryside unless there are special circumstances such as:

- *the essential need for a rural worker to live permanently at or near their place of work in the countryside; or*
- *where such development would represent the optimal viable use of a heritage asset or would be appropriate enabling development to secure the future of heritage assets; or*
- *where the development would re-use redundant or disused buildings and lead to an enhancement to the immediate setting; or*
- *the exceptional quality or innovative nature of the design of the dwelling. Such a design should:*
 - *be truly outstanding or innovative, helping to raise standards of design more generally in rural areas;*
 - *reflect the highest standards in architecture;*
 - *significantly enhance its immediate setting; and*
 - *be sensitive to the defining characteristics of the local area.”*

The applications below represent a number (additional approvals can be provided if required) of Paragraph 55 dwellings within the area and neighboring authority Fenland District Council. The summary below also details how this application complies with Paragraph 55 in light of these decisions:

- *H02-0968-15* - This proposal is for an exemplar dwelling on a site which is in open countryside. As such this application was approved under Paragraph 55 of the NPPF at the December Planning Committee. The Planning Committee voted to approve the scheme, against Officer's recommendation, as they considered the materials are reflective of the area and of a high quality, and meets the criteria of paragraph 55 meaning that it is:
 - Truly outstanding or innovative, helping to raise standards of design more generally in rural areas
 - Reflects the highest standards in architecture
 - Significantly enhances its immediate setting; and
 - Is sensitive to the defining characteristics of the local area.

This proposal is similar to this recently approved scheme in its use of materials, reflecting the surrounding area and vernacular, its simple form reflecting industrial and agricultural buildings typical of the area. In addition this proposal enhances its immediate setting, raises the standard of design in this rural area and is sensitive to the defining agricultural characteristics of the local area as it draws on agricultural and pumping station buildings.

Simply this current scheme will result in a high-quality development that is contemporary in appearance, but references the traditional vernacular, responds to the site location and enhances the form and character of the area.

- *F/YR13/0188/F* – This application is also located in Gorefield, however, it is two miles from the centre of the village. Although the site is located outside the settlement of Gorefield this was recommended for approval on the basis that it was the first dwelling to be a certified passivhaus in Fenland and as such this was an innovative exemplar project and therefore met the requirements of Paragraph 55 of the NPPF. – As noted elsewhere in this document this proposal will create the first recycled shipping container passivhaus in SHDC and this was reinforced as a positive as part of a pre-application meeting with Richard Fidler.
- *F/YR15/0296/F* – This was a single dwelling approved in Wisbech St Mary. This application was submitted following the application above on the basis as the second passivhaus within the District and the quality of the proposal. No detailed information was submitted to demonstrate that this scheme would meet the passivhaus standard. However, this application was approved under delegated powers on the basis that it was innovative (as the second passivhaus in the district), sustainable (despite being detached from the main settlement of Wisbech St Mary), enhanced visual amenity and the retention of the existing barn on-site.

- *F/YR12/0870/F - This was a single dwelling approved several miles from the centre of Wisbech. This proposal does not comply with the replacement dwellings policy, however, it was approved on the basis the design was innovative in design and appearance to comply with Paragraph 55.*

In addition to the nearby paragraph 55 dwellings outlined it should be noted that in April 2016 that Class PA was introduced to Part 3 of 2015 General Permitted Development Order. This change allows for the conversion of light industrial B1 buildings (which is the use class of the existing building on the lift and shift site) to a C3 dwelling from September 2017. In light of this it is considered that the principal of a residential dwelling in this area is broadly acceptable as it could be achieved from September 2017 under the GPDO. In addition this scheme provides the opportunity to create a high quality sustainable dwelling directly adjacent the existing building allowing the existing business to continue to operate. We believe that this approach is preferable and will avoid converting the existing building under the GPDO and constructing a new building (subject to approval) to allow the business to continue to operate.

2.5 Pre-Application Advice

The site has been the subject of a previous pre-application enquiry in 2013 (Ref: PE-00090-2013). In their response, the officer advises that the site is within open countryside, does not meet criteria HS16 and justification would need to be provided to justify the proposal under Local Plan Policy HS7. The Officer also mentions Paragraph 55 of the NPPF and this application seeks approval under Paragraph 55 of the NPPF working in collaboration with SHDC through the pre-application process.

Swann Edwards Architecture Ltd submitted a further pre-application during the first half of 2016 to re-open dialogue with SHDC and to develop a collaborative relationship to successfully deliver this Paragraph 55 development. The initial response received from David Grant focussed on an tied dwelling to the business, but acknowledged that this is only usually for agricultural workers, however, the intention of the submission was to pursue the innovative and high quality elements of paragraph 55, as such further discussions were held with Richard Fidler.

Richard's initial email response advised that he did not consider the scheme to meet the criteria of Paragraph 55, however, he was willing to meet to discuss and develop the proposal. The outcome of the meeting was that Richard gained more of an understanding about the proposal and how this could meet the requirements of Paragraph 55. It was advised that it would be an on balance decision and invited us to submit an application and to work through any issues throughout the application process with a view to securing a positive approval and he wanted to reiterate that they do not wish to be negative. Some of the key points that were raised are:

- Reach the Passivhaus standard and focus on the fact that this would be the first Passivhaus constructed from recycled shipping containers and as such would be innovative for SHDC.
- Reiterate that the site has a previous use and building that isn't agricultural, as such, it is a brownfield site
- Possibly link the proposal to the business
- Engage a landscape designer to ensure the proposal is fully integrated in to the Fenland landscape
- Reiterate that there may be potential to convert the existing building located at lift and shift under new permitted development rights, but that this is best avoided to ensure the future growth of the business
- Use examples of paragraph 55 houses from neighbouring Local Authorities
- Speak with the Parish Council to secure their support
- Secure Local Support
- Secure Local Councillor Support

As part of this application Richard's advice has been incorporated in to the submission as outlined throughout this document. In addition, the clients have contacted their Parish and District Councillors.

Councillor Harrison sits on the Parish Council and advised in an email on 15 November 2016 that he supports the proposal as he supports local people and the growth of local business. He considers that this proposal would allow this to occur and overcome security issues on the site.

Councillor Seymour is District Councillor for the area and advised by email on 23 October 2016 that he was interested in the proposal and concept and in particular the reduction of environmental impact and was looking forward to the progress of the scheme. Following this, we understand that Councillor Seymour discussed the proposal with the Chairman of the Planning Committee and advised that an application should be submitted and reinforced with landscape design, environmental impact reduction measures and flood risk assessment.

As can be seen the Local Councillors are in support of the scheme and their advice has been followed as outlined throughout this document.

3.0 Site and Context

3.1 Site

The proposed site is located to the South West of Lift and Shift and is currently underutilised land and houses a former blacksmiths forge as indicated on the Location Plan. As such the site is previously developed land. The Pre-Application response received does not consider the existing building of 'no real intrinsic quality' and as such demolition is deemed to be acceptable allowing replacement with a dwelling.

The site is located within Flood Zone 3 as shown on the Environment Agency Flood Map below, as is most of Sutton St James as shown. However, the site is within Flood Zone 1 of the recent SHDC SFRA placing the site at the lowest risk of flooding and meeting the requirements of the exception and sequential test.



Figure 1 – Aerial View Showing Site in Context to Sutton St James



Figure 2 – Aerial View of The Site

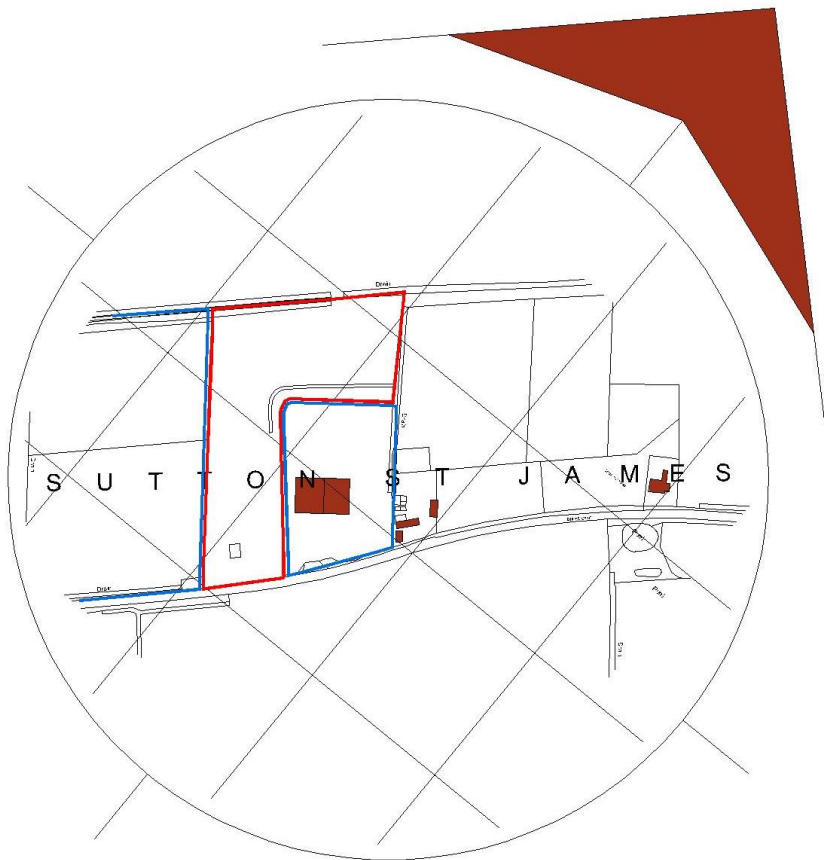


Figure 3 – Location Plan

The site itself is orientated North West/South East and comprises of grass and a former blacksmiths forge. The existing Eastern boundary is treed, which provides significant screening of the site and the boundary to the West comprises of a 1.2m high post and rail fence.

The surrounding land uses comprise of B1 Industrial Use, Residential and Agricultural land. The site will be accessed via an access on to Broadgate with the access serving the proposed dwelling with ample parking and turning for private vehicles.

The proposed application site has an area of 12990m² and comprises of the demolition of the former blacksmiths forge, change of use of land to allow lift and shift business expansion and the construction of a recycled shipping container passivhaus dwelling.

The site is around 1.5 miles from the centre of Sutton St James and all of the facilities that exist within the village. In addition, the site is located directly adjacent the client's business ensuring that they do not have to drive to work and are essentially working from home. This will also increase the security of the existing site.

3.2 Context

The form and character of the area in this location is of sporadic development comprising of agricultural buildings, industrial buildings and dwellings in clusters interspersed with generous agricultural gaps. The existing dwellings in this location are on typically large plots with landscaping and are typically road frontage.

Sutton St James and the surrounding has no overriding vernacular and the area comprises of numerous traditional and modern agricultural and industrial buildings as well as residential buildings from a variety of architectural styles.

This is typical of the Fenland landscape and villages, which have developed incrementally over time resulting in the mix of new and old architecture, which is intrinsic to the character of the area.

This proposal seeks to reflect the history of the area through the amalgamation of agricultural and industrial architecture with a view to creating a high quality, architecturally coherent dwelling that makes a positive contribution to the local area and built environment.

4.0 Design Proposals

The proposal comprises of a single dwelling that is created from recycled shipping containers from the adjacent self-storage business and that is designed to the Passivhaus standard, incorporating a new access and electric car charging point to deliver a project that will be an exemplar project for the district. The dwelling will mitigate the client's impact on the environment both locally and globally, whilst creating a benchmark for high quality sustainable architecture and the re-use and repurposing of an otherwise waste product.

The proposal will repurpose and use 8No. 40ft shipping containers and a pallet of materials comprising of cladding and corten steel to reflect the agricultural nature of the area and the surrounding agricultural and industrial buildings which is integral to the form and character of the area.

The client's passion for low carbon environmentally responsible architecture will ensure the proposals energy use and carbon emissions are minimised, if not neutralised. This is embodied in the client's approach and Environment Reduction Proposals below:

- Zero electricity sewage treatment system discharging clean water in to the on-site pond
- Renewable technology including photovoltaics and air source heat pumps
- Rainwater harvesting and efficient fixtures and fittings to minimise water usage
- Re-use of parts from the shipping containers not used for the building i.e. use of doors and panels to repair damaged shipping containers
- Recycling shipping containers no longer suitable for use – these shipping containers are on-site at Lift and Shift, this means that no shipping is required to or from the site
- The client owns much of the equipment and facilities required for the site, which are on the Lift and Shift Site. These include JCB, Dumper, Forklift, Crane, Storage containers, offices and toilet blocks. Much of the client's plant has the state of the art eco-friendly Euro 5 engine with low emissions and high efficiency. The client will also ensure all of the plant is operated at the correct revs to maximise efficiency. As this equipment is already on-site and in use as part of their business delivery and collections are minimised and this will also ensure the efficient use of plant in construction to further reduce embodied carbon.
- The client owns waste skips that can be used as part of the build. This will allow them to control and separate out any waste generated for recycling purposes.
- The client's business involves them in collecting and delivering shipping containers on their own truck, which has an integrated crane. This means that when travelling back from a container delivery the client can collect materials for the project and maximise their efficiency using the backloading principle. This will limit the number of purpose made visits to the site for deliveries as the client's truck would be returning to the site in any event, further reducing the embodied carbon of the site.

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 carbon neutrality and longevity of construction is informed by, and sets out to exceed, the government's targets of:

- 'Zero Carbon' dwellings by 2016
- 34% overall greenhouse gas emission reduction by 2020
- 80% overall greenhouse gas emission reduction by 2050.

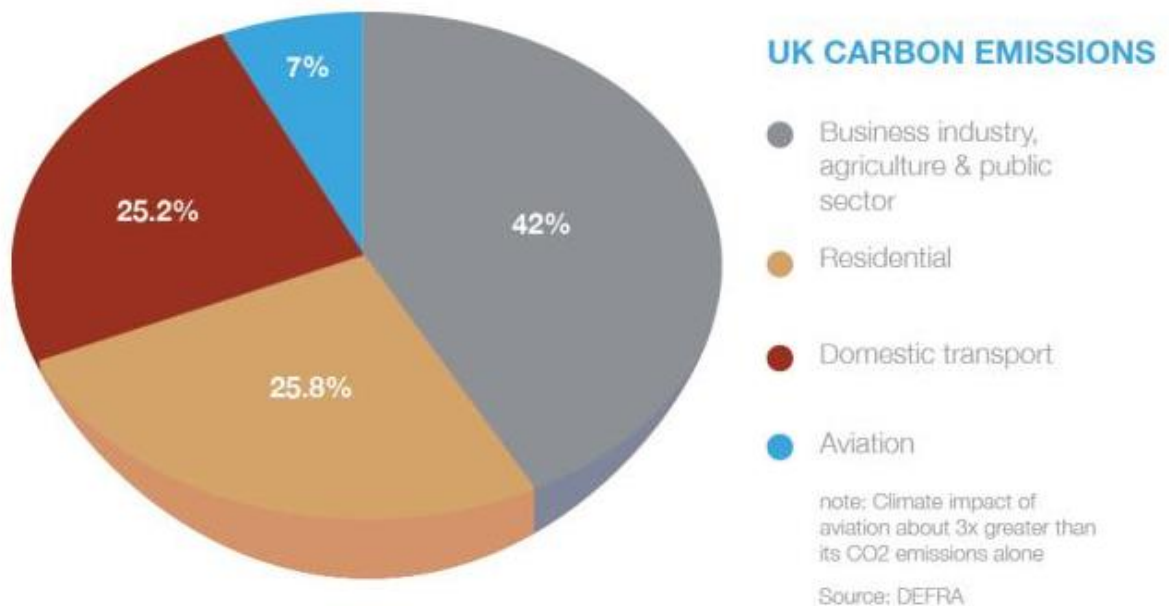


Figure 4 – UK Carbon Emissions

The intention is to utilise the most sustainable methods and facilities available 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.

The construction techniques and materials are 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, the Passivhaus principals 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*.

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 4).

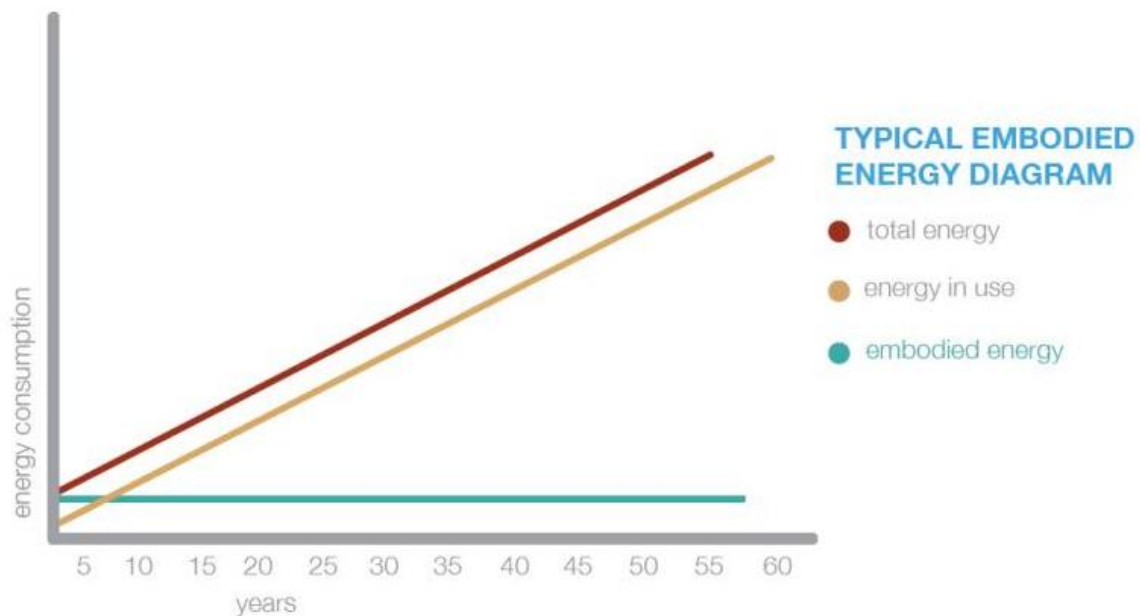


Figure 5 – Typical Embodied Energy Diagram

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 6) 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.

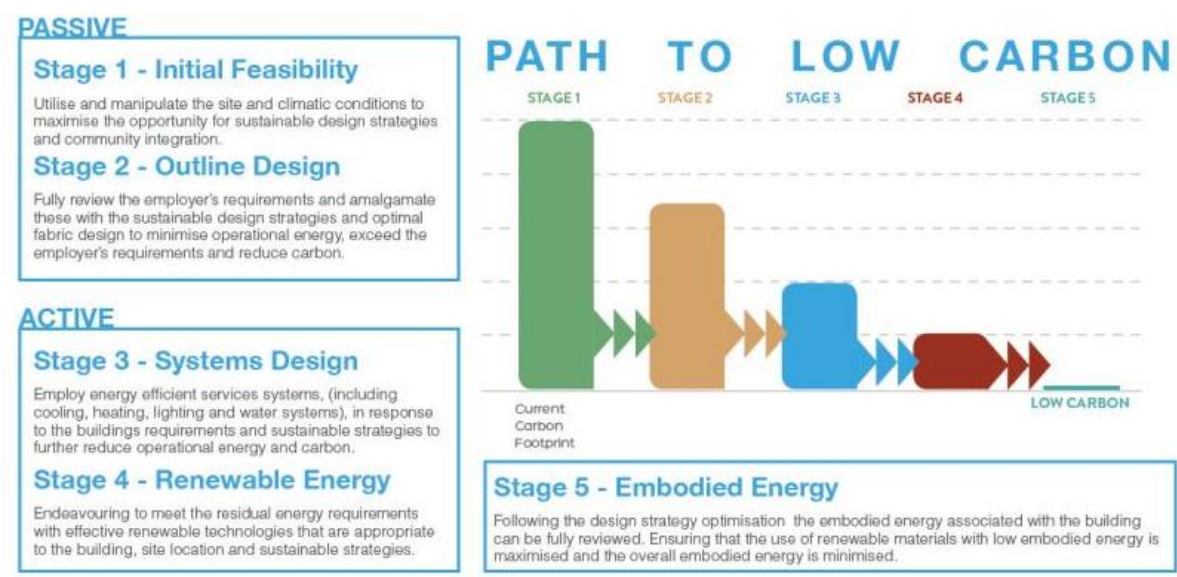


Figure 6 – Path to Low Carbon

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),
- prevailing weather including wind frequency and wind
- temperature analysis,
- average temperature
- Direct Solar Radiation
- average rainfall,
- average cloud cover
- average relative humidity

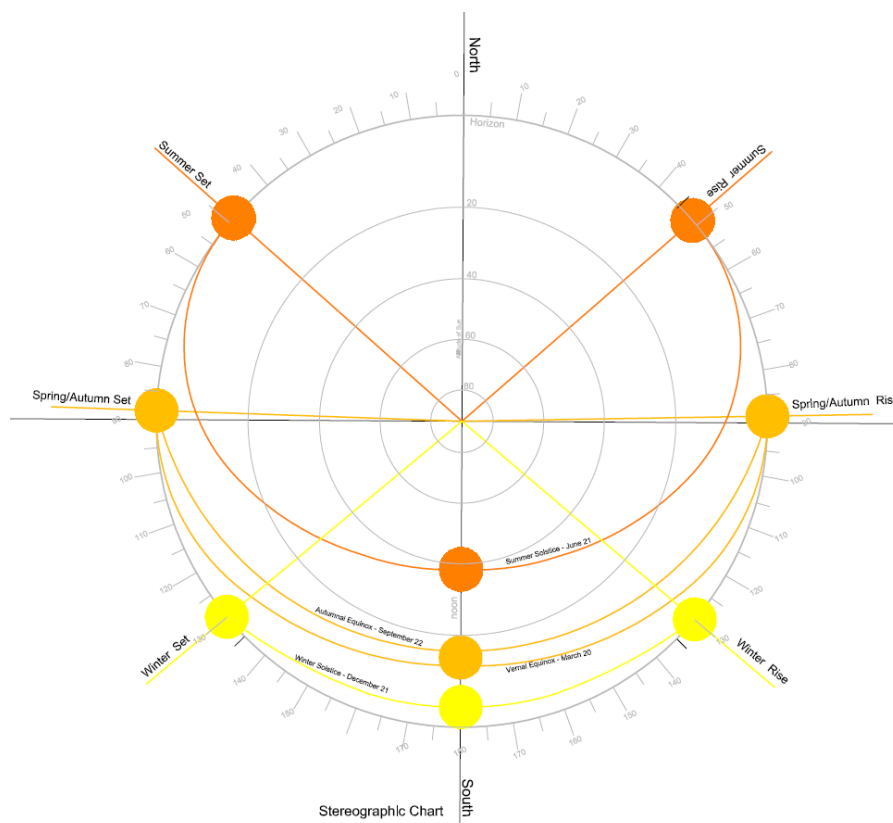
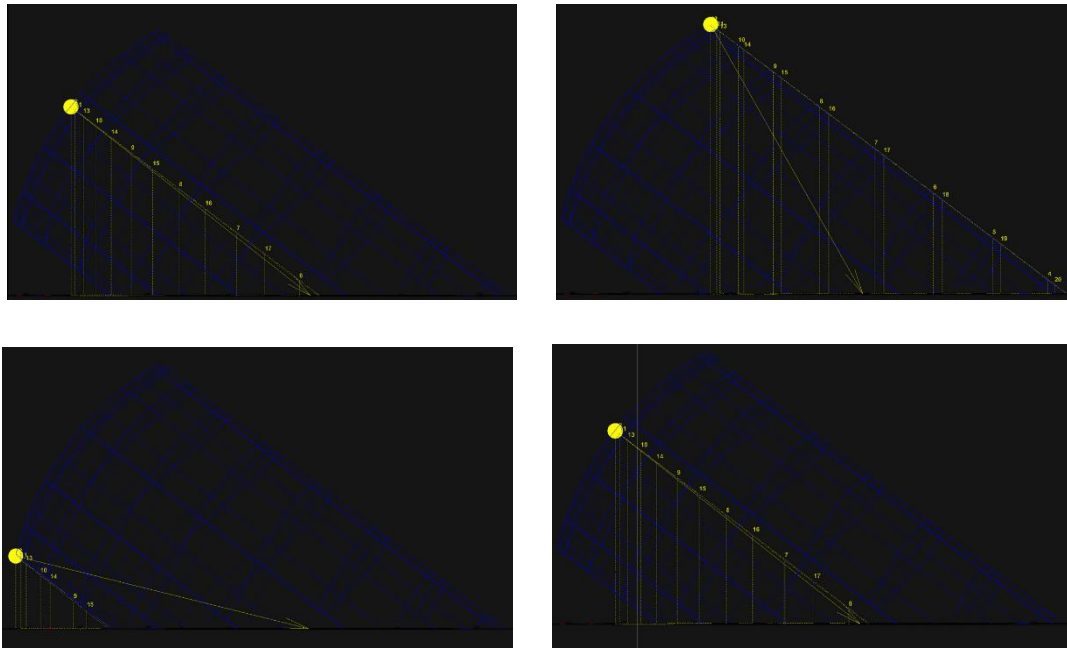
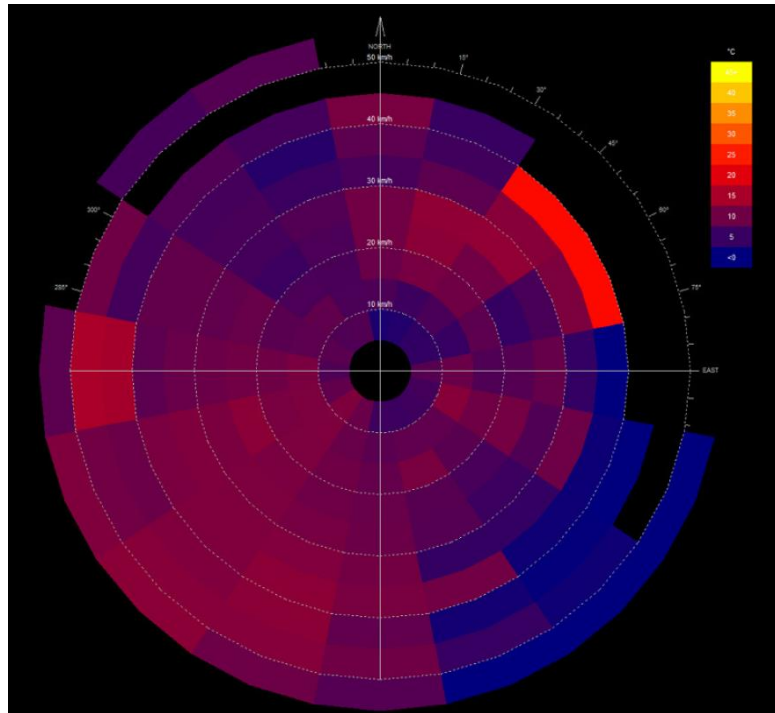
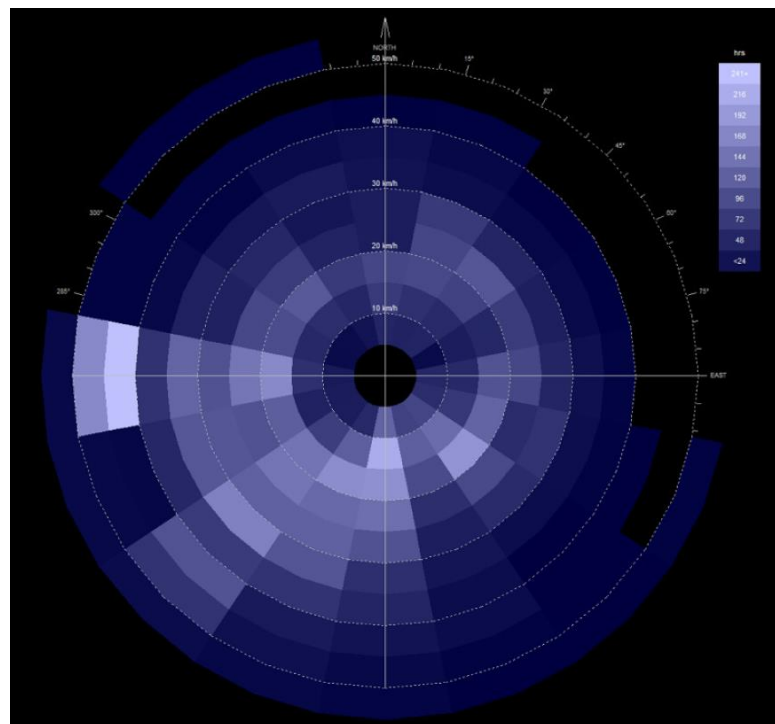


Figure 7 – Solar Exposure/Availability



Directional Temperature



Directional Frequency

Figure 8 – Prevailing Weather

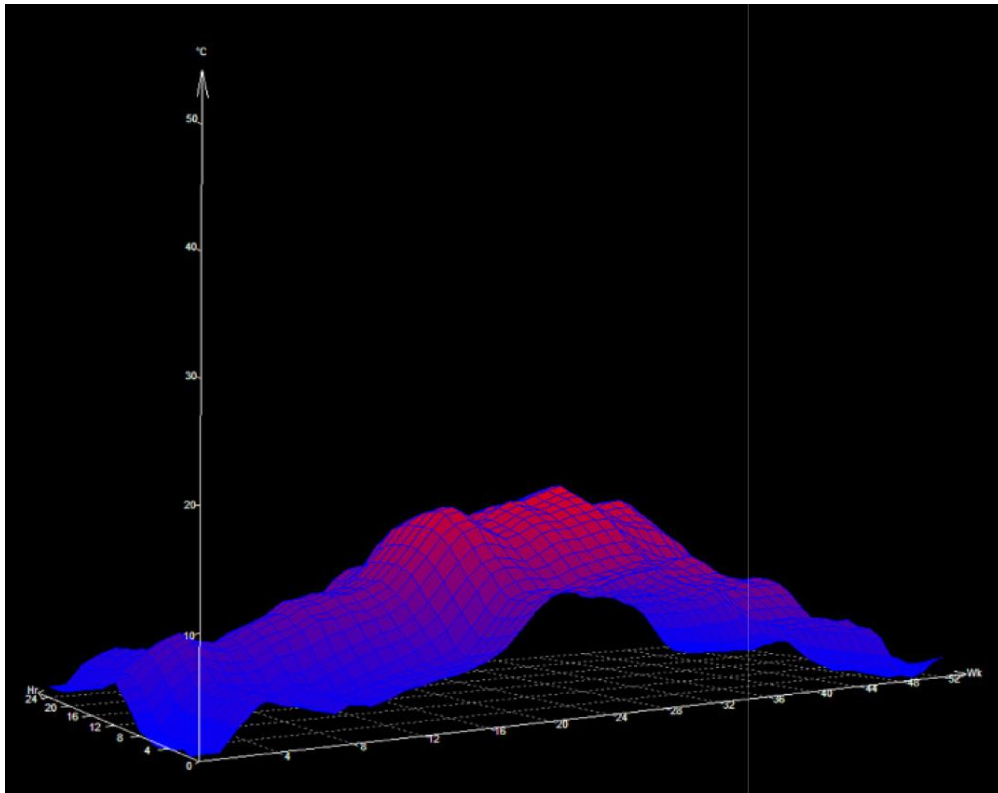


Figure 9 – Average Temperature

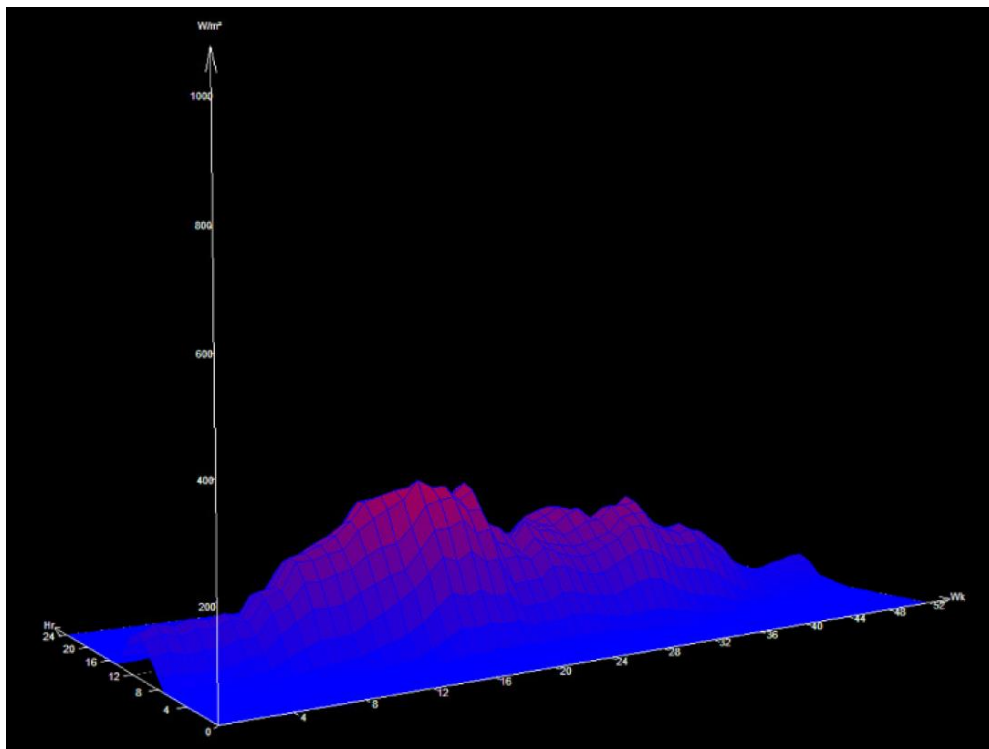


Figure 10 – Direct Solar Radiation

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:

- Orientating the dwelling around the path of the sun
- Solar Control – Passive Solar Shading has been incorporated to provide 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. This is assisted with the cantilevered shipping containers to minimise overheating.
- Maximising Daylight
- Micro-climate generation (deciduous planting to the south and south west parts of the site (allowing summer shading, shelter from prevailing weather and winter sun) and evergreen planting to the northern part of the site to shelter from cooler northerly weather.

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.

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.
- Optimise Glazing Design - Utilising sealed triple glazed units to minimise heat loss.
- 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 - Creating microclimates around both the North and South elevations to create sheltered external spaces that are up to 2 degrees cooler in summer and 2 degrees warmer in winter and will provide protection from prevailing weather and ultimately reduce the rate of heat loss through the building fabric.

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

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 ensure this scheme is truly outstanding and achieves the status of the first recycled shipping container passivhaus, 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:

- LED energy lighting
- Task lighting
- Low flow taps
- Low flow showers
- 2&4L cistern WC's
- Rainwater harvesting
- Zero electricity sewage treatment
- Mechanical ventilation heat recovery with 90% efficiency

Stage 4 – Renewable Energy

Following Stages 1-3 the building's residual energy requirements are met 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 Source Heat Pump – this will be used for heating and hot water and has a co-efficient of performance of at least 250%. Simply, this means that for every single unit of energy input you will achieve 2.5 units of heat or hot water.
- Photovoltaic System – Positioned on flat roofs (to screen from view) these will generate electricity to meet the residual energy requirements of the building and charge the electric car.

Stage 5 – Results

Our five-stage approach is reinforced by the rigorous calculations undertaken to ensure the proposal meets the Passivhaus Standard. The requirements of the Passivhaus Standard are summarised below:

- Heating Demand – 15 kWh/m²/a or lower
- Heating Load – 10 kWh/m²/a or lower
- Overheating – 10% or lower
- Primary Energy – 120 kWh/m²/a or lower
- Airtightness – 0.6 l/h or lower

Passivhaus buildings provide a high level of occupant comfort while using very little energy for heating and cooling. They are built with meticulous attention to detail and rigorous design and construction according to principles developed by the Passivhaus Institute in Germany, and can be certified through an exacting quality assurance process. Evidence and feedback to date shows that Passivhaus buildings are performing to standard, which is crucial, given that the discrepancy between design aspiration and as-built performance for many new buildings in the UK can be as much as 50-100%. (http://www.passivhaustrust.org.uk/what_is_passivhaus.php)



The heat losses of the building are reduced so much that it hardly needs any heating at all. Passive heat sources like the sun, human occupants, household appliances and the heat from the extract air cover a large part of the heating demand. The remaining heat can be provided by the supply air if the maximum heating load is less than 10W per square metre of living space. If such supply-air heating suffices as the only heat source, we call the building a Passive House.

Univ. Prof. Dr Wolfgang Feist Head of Energy Efficient Construction/ Building Physics at the University of Innsbruck, Austria and Director of the Passive House Institute, Darmstadt, Germany.



Figure 11 – Quote from http://www.passivhaustrust.org.uk/what_is_passivhaus.php

Swann Edwards Architecture Ltd are Certified Passivhaus Designers by the Passivhaus Institute and have used the Passivhaus Planning Package (PHPP) to calculate the performance of the proposed building. This software is a series of interlinking spreadsheets to create one of the most accurate and powerful tools for designing low energy buildings. Please refer to the PHPP report summary submitted for full details, however, the results are summarised overleaf.

The key outputs are indicating that the proposal will meet the Passivhaus criteria and achieve the following:

- Heating Demand – 14.494 kWh/m²/a
- Heating Load – 11.037 kWh/m²/a
- Overheating – 5.8%
- Primary Energy – 105 kWh/m²/a
- Airtightness – 0.6 1/h

These results indicate that the proposal based on current design assumptions meet the passivhaus standard. There are areas that require further investigation and improvement, including further thermal bridging and foundation connection details as the detailed design is development. In addition, areas of concern are the overheating, which is over 5% and relies and occupant control and the Primary Energy Demand due to the inclusion of renewable technologies and potential specification changes.

Extracts below from the PHPP worksheets demonstrate that the proposal meets the Passivhaus requirements previously outlined (subject to certification, which cannot be completed until construction is finished).

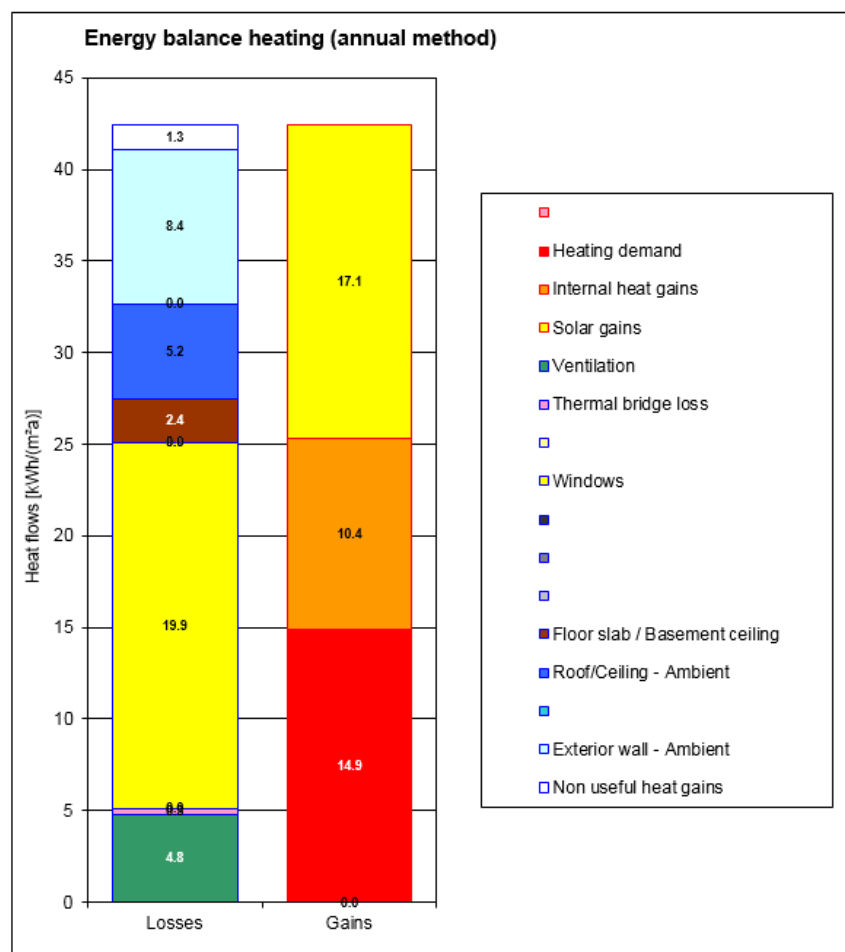


Figure 12 – PHPP Energy Balance

Passive House verification



Building:	Proposed Shipping Container Dwelling, Adjacent Lift and Shift		
Street:	Broadgate, Sutton St James		
Postcode / City:	PE12 0HD		
Country:	UK		
Building type:	Detached Dwelling		
Climate:	[UK] - East Anglia (Hemsby)	Altitude of building site (in [m] above sea level):	2
Home owner / Client:	Mr and Mrs Reed		
Street:	As above		
Postcode/City:	As above		
Architecture:	James Burton - Swann Edwards Architecture Ltd		
Street:	Fen Road, Guyhirn		
Postcode / City:	PE13 4AA		
Mechanical system:	TBC		
Street:			
Postcode / City:			
Year of construction:	2018	Interior temperature winter:	20.0 °C
No. of dwelling units:	1	Interior temperature summer:	25.0 °C
No. of occupants:	5.0	Internal heat sources winter:	2.1 W/m²
Spec. capacity:	60 Wh/K per m² TFA	Ditto summer:	3.2 W/m²
		Enclosed volume V _e m³:	595.0
		Mechanical cooling:	

Specific building demands with reference to the treated floor area				
	Treated floor area	258.6 m²		
Space heating	Heating demand	14.494 kWh/(m²a)	15 kWh/(m²a)	yes
	Heating load	11.037 W/m²	10 W/m²	-
Space cooling	Overall specif. space cooling demand	kWh/(m²a)	-	-
	Cooling load	W/m²	-	-
	Frequency of overheating (> 25 °C)	5.8 %	-	-
Primary energy	Heating, cooling, dehumidification, DHW, auxiliary electricity, lighting, electrical appliances	105 kWh/(m²a)	120 kWh/(m²a)	yes
	DHW, space heating and auxiliary electricity	73 kWh/(m²a)	-	-
	Specific primary energy reduction through solar electricity	kWh/(m²a)	-	-
Airtightness	Pressurization test result n ₅₀	0.6 1/h	0.6 1/h	yes

* empty field: data missing; '-': no requirement

Passive House?	yes
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We confirm that the values given herein have been determined following the PHPP methodology and based on the characteristic values of the building. The PHPP calculations are attached to this application.

Name:		PHPP Version 8.4
Registration number PHPP:		
Surname:		Issued on:
Company:		Signature:

Figure 13 – PHPP Verification Sheet

4.1 Use

The site is currently unused previously developed land with an existing building on-site that is known to be a previous blacksmiths forge.

The site itself is orientated North West/South East and the surrounding land uses comprise of B1 Industrial Use, Residential and Agricultural land.

The proposed application site has an area of 12990m² and comprises the demolition of the former blacksmiths forge, change of use of land to allow lift and shift business expansion and the construction of a recycled shipping container passivhaus dwelling. As such the proposed land use is residential and industrial, which fits with the surrounding land uses.

4.2 Layout and Amenity

The proposal is both functional and enjoyable and in the process creates an environmentally responsible dwelling that creates an exemplar project within SHDC. The design approach adopted will alleviate the occupants from the threat of fuel poverty and securing Sustainable Development in South Holland.

The proposed layout of the site and dwelling has been informed by our five stage approach to achieving low carbon architecture, the passivhaus standard and use of recycled shipping containers. The proposal 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. The site has no immediate residential neighbours, as such, no amenity issues arise as a result of the location, scale, massing or positioning of windows.

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 effectively allow the occupants the opportunity to work from home. The habitable rooms requiring the most heat are positioned and orientated to maximise solar gain with ancillary accommodation located to the North. The gardens are arranged to provide a south garden that is in receipt of plentiful sunlight with trees and planting for shelter and summer shading and shelter from the prevailing weather. The proposal inherently informed by the desire to be as autonomous as possible with food production areas and the opportunity to develop a small holding on their land adjacent.

Vehicle access to the site is from Broadgate which achieves adequate vision splays. 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.



Figure 14 – Proposed Site Layout

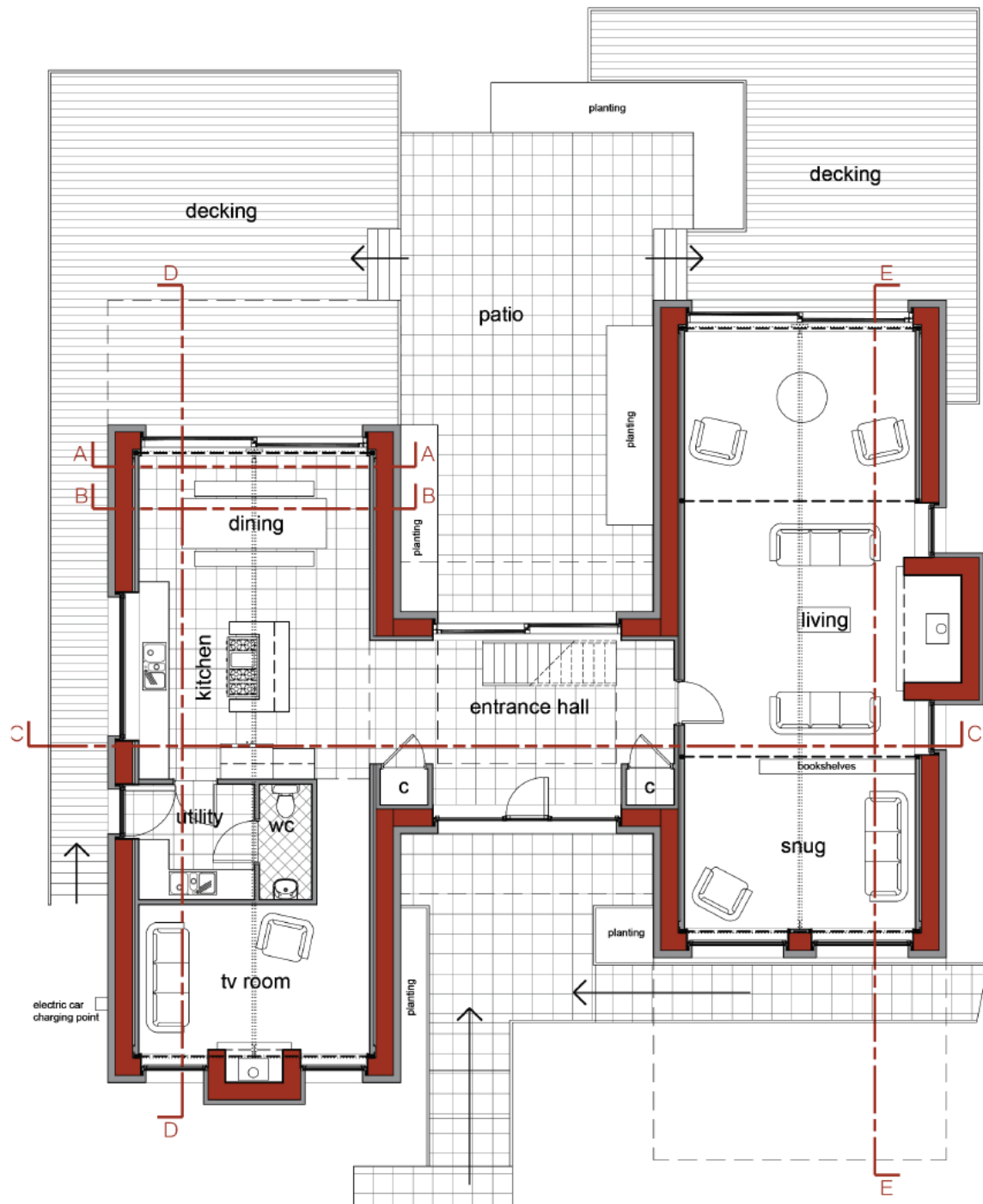


Figure 15 – Proposed Ground Floor Layout



Figure 16 – Proposed First Floor Layout

4.3 Appearance

The form and character of the area in this area is of sporadic development comprising of agricultural buildings, industrial buildings and dwellings in clusters interspersed with generous agricultural gaps. The existing dwellings in this location are on typically large plots with landscaping and are typically road frontage.

Sutton St James and the surrounding has no overriding vernacular and the area comprises of numerous traditional and modern agricultural and industrial buildings as well as residential buildings from a variety of architectural styles.

This proposal reinforces this form and character by creating a dwelling associated with an existing industrial development combined with a bespoke landscape scheme to enhance the immediate setting and raise biodiversity. This creates a grouping of residential and business use typical of the area, whilst retaining the gapping between development to avoid a continuous built form.

The aesthetic is driven by the use of shipping containers and the form of the proposed dwelling is deliberately simple and modest to reflect the simplistic agricultural structures typical of the area. In addition, material pallet has been selected to reflect the typical rural materiality comprising of corrugated cladding and CorTen rusted steel to reflect the natural weathering of farm buildings.

The following elevations and visuals describe the appearance of the proposed dwelling.

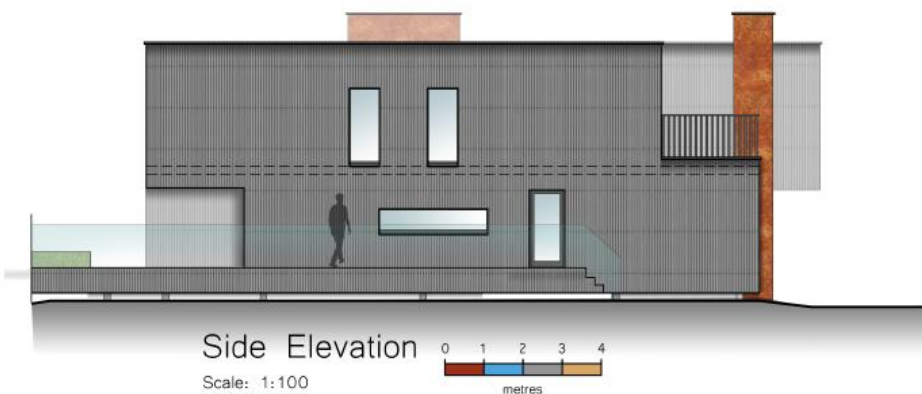
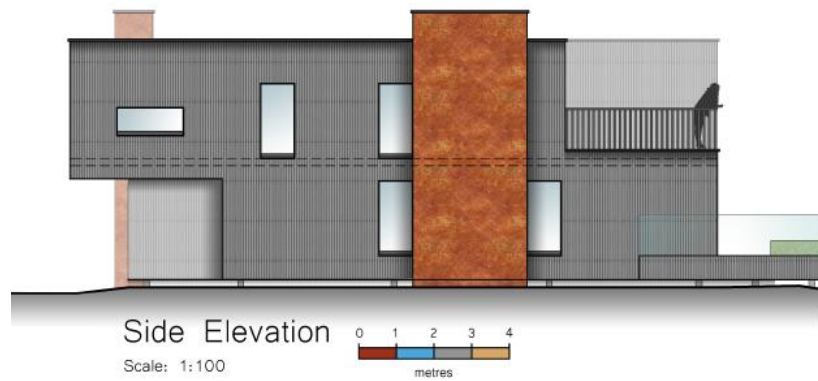


Figure 17 – Proposed Elevations



Figure 18 – 3D Visual from Site Entrance



Figure 19 – 3D Visual from Dwelling Entrance



Figure 20 – 3D Visual from Rear Garden

4.4 Landscaping

A comprehensive landscaping scheme to integrate the dwelling fully in to the Fenland landscape and to increase bio-diversity on the site has been prepared by James Brunton Smith. Please refer to the submitted landscaping scheme for full details.

4.5 Connectivity and Accessibility

By road, the towns of Spalding, Holbeach 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

Vehicle access to the site is from Broadgate which achieves adequate vision splays. 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.

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.

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

4.6 Drainage and Flood Risk

The site is located within Flood Zone 3 of the Environment Agency Maps, however the site is within Flood Zone 1 of the recent Strategic Flood Risk Assessment. As such this further enhances the sustainability of this proposal and development is encouraged in these areas. The proposal is not at risk of flooding and will not increase the risk of flooding on other sites.

Flood probability

Your proposed development is in an area with a high probability of flooding

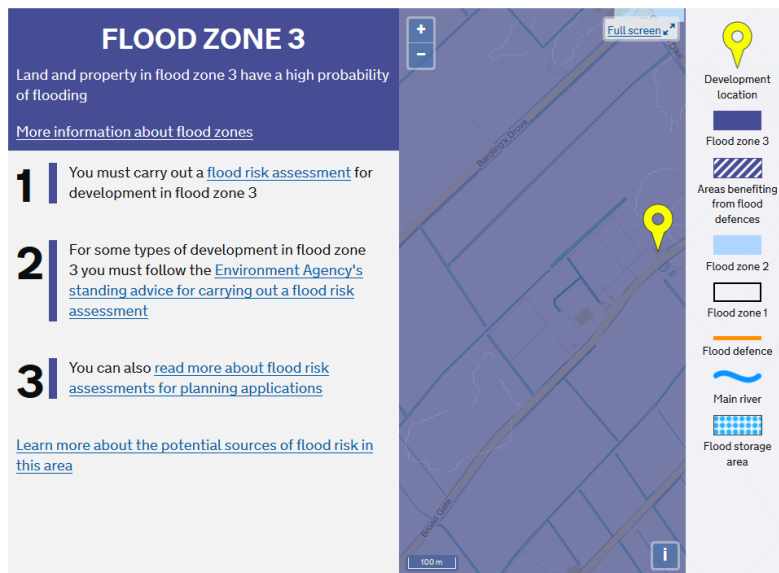


Figure 21 – Environment Agency Flood Zone Map

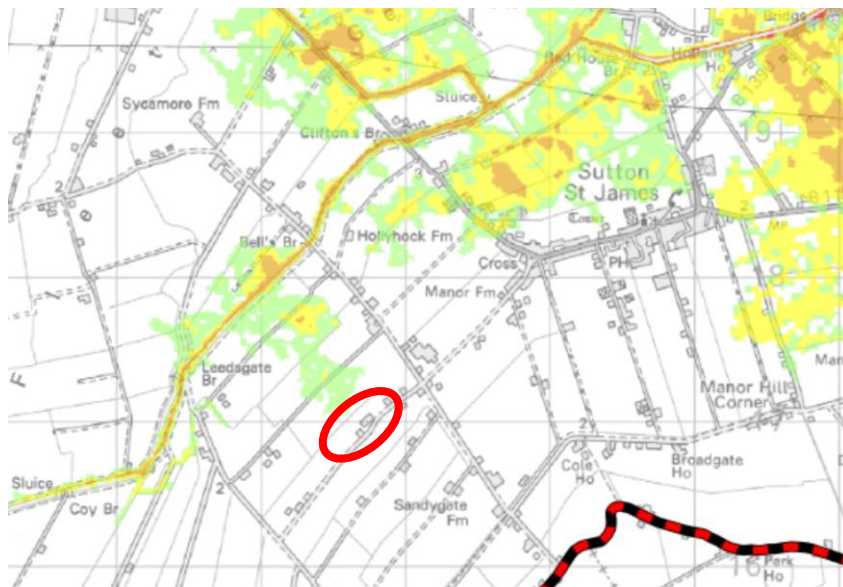


Figure 22 – SHDC SFRA Flood Zone Map

The proposed development will incorporate rainwater harvesting with an overflow to the pond onsite, in addition a non-electric sewage treatment system will be provided on-site to fully filter all foul drainage, also with a discharge in to the on-site pond.