259: 11 CLAY CLOSE LANE, IMPINGTON_REVISION P1_23/01/2024

DESIGN & ACCESS STATEMENT

11 CLAY CLOSE LANE, IMPINGTON

TWENTY NINE.
ARCHITECTURE + PLANNING

C O N T E N T S :

TWENTY NINE.
ARCHITECTURE + PLANNING

1.0 INTRODUCTION

This Design and Access Statement is submitted in support of a full plans application for the construction of a new dwelling, following the planned demolition of the existing house, outbuildings, and barn located at 11 Clay Close Lane, Impington. The proposal also include altering the existing vehicular access. The proposed development seeks to replace the aging structures with a contemporary dwelling that adheres to current construction standards and prioritises environmental sustainability.

The purpose of this statement is to provide an overview of the project's background, outline the design principles and concepts that have influenced the development, and assist South Cambridgeshire District Council in their assessment of the application. It is essential to consider this document in conjunction with the accompanying plans and reports, which provide additional details regarding the proposed development.

1.1 PHYSICAL CONTEXT AND THE SITE

The site falls under the purview of South Cambridgeshire District Council and is situated outside the established development framework. It encompasses an area of 4108.2m2 and currently consists of an existing dwelling, garages, an annexe/outbuilding, and agricultural barns.

Positioned at the northeastern fringes of the Impington settlement, the site enjoys a strategic location within proximity to both Histon and Impington village centres, offering convenient access to essential local amenities. Furthermore, its sustainability is underscored by its adjacency to public transport infrastructure, with major bus routes traversing along Impington Lane. Notably, a portion of the site lies within the Impington Conservation Area, and the whole site is situated within the Green Belt.

Aerial View

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Impington, situated in the county of Cambridgeshire, England, possesses a distinctive character that emerges from its historical roots, geographical location, and its closely-knit community. Despite its proximity to the city of Cambridge, Impington has managed to maintain a predominantly rural ambiance, serving as a picturesque village just north of the bustling city. This adjacency to Cambridge has left an indelible mark on the village's evolution and character over the years.

Impington's rich historical heritage dates back to at least the Domesday Book in 1086, offering glimpses into its enduring legacy. The village showcases its historical significance through various architectural landmarks, with Impington Hall being a notable example that adds to its character. The village's architectural diversity is a testament to its evolution, encompassing traditional thatched cottages, Victorian-era homes, and more contemporary houses that collectively enhance its visual allure. Additionally, Impington's abundant green spaces and open fields infuse it with tranquillity and scenic beauty, as the surrounding countryside and farmland contribute to its rural charm, dotted with farmsteads and manor homes.

At the heart of Impington's community stands Impington Village College, an esteemed secondary school renowned for its academic excellence. The college is not merely an educational institution but an integral part of the village's cultural and educational identity. The proximity to Cambridge has attracted many residents who commute to the city for work and leisure, offering easy access to urban amenities while basking in the serenity of village life. Effective public transportation, including bus routes along Impington Lane, further enhances connectivity and convenience for residents.
While Impington has historical ties to agriculture, its economic landscape has diversified over time, with residents engaged in various sectors within Cambridge and its surroundings. This economic evolution has contributed to the village's vitality and adaptability.

The character of Impington is an amalgamation of its rich history, verdant surroundings, strong communal bonds, and a distinctive blend of rural charm and suburban accessibility due to its proximity to Cambridge. This unique combination renders Impington an appealing place to reside for those seeking a harmonious balance between rural and urban lifestyles.

In the immediate vicinity, the residential context predominantly comprises properties nestled within expansive gardens, surrounded by farmland. A mix of detached and semi-detached one, two, and three-story residences characterizes the area, with Clay Close Lane displaying variations in height, scale, and architectural form. While many houses are either single or two-story detached structures, there are instances of single-story additions, gable-ended buildings, and porches. Recent property enhancements include dormers, rooflights, and extensions, albeit without a specific architectural theme of note.

The existing dwelling, a two-story structure, is in need of significant refurbishment due to its age and lack of maintenance. Its architectural significance is minimal, except within the context of the Conservation Area. UPVC windows adorn all elevations, with the entrance door situated along the southern boundary. Adjacent to the existing house is a single-story monopitched annexe constructed in red brick, a feature that somewhat detracts from the site's Conservation Area and overall openness. Additionally, several single-story flat-roofed garages and storage structures occupy a substantial footprint on the site, accompanied by two agricultural barns.

Historically, Impington exhibits linear development along its main roads, with clusters of houses branching off from these routes. On the village's outskirts, there are several farm clusters, such as the one under consideration. These typically consist of a central farmhouse surrounded by ancillary outbuildings forming a central courtyard.

Throughout the site and neighbouring gardens, trees have been thoughtfully preserved during the design phase of our proposal, enhancing biodiversity. While individual trees may not hold significant value on their own, when considered as a collective cluster, they contribute to an overall sense of openness within the site.

1.2 SITE CONTEXT

Existing house viewed from Clay Close Lane looking west

Existing house and access viewed from Clay Close Lane looking north

Existing side elevation of house

Existing front elevation of house

Existing access onto Clay Close Lane

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Existing agricultural barns and hardstanding

Existing agricultural barn and hardstanding

Existing access, barns and house viewed from rear of site looking south

Existing barns and neighbouring house viewed from western boundary of site looking east

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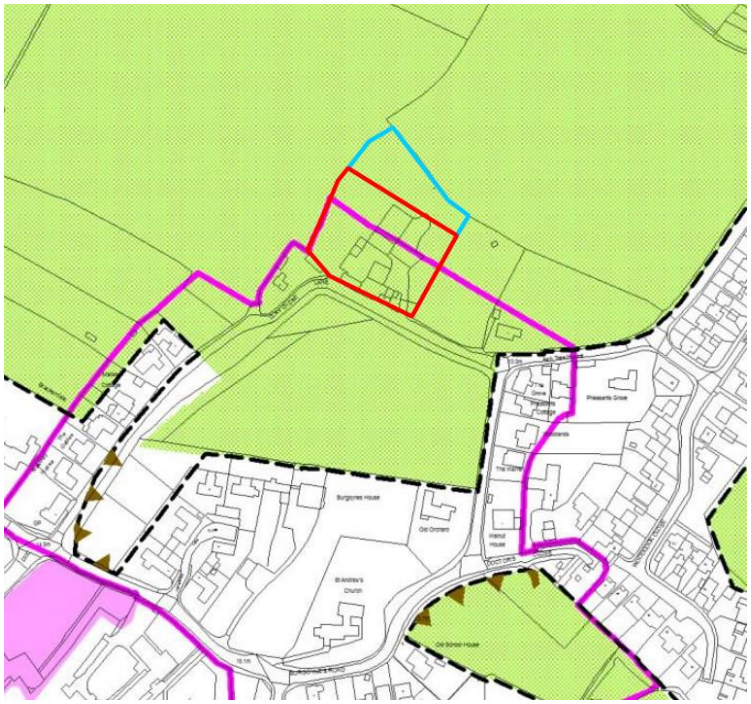
1.3 SOUTH CAMBRIDGESHIRE DISTRICT COUNCIL PLANNING POLICY MAP



- Ancient Woodlands (Policy NH/7)
- Conservation Area (Policy NH/14)
- Country Park (Policies CE/21(1) & CSF/5(1a))
- County Wildlife Site (Policy NH/5)
- Development Frameworks (Policy S/7)
- Employment Allocation (Policies E/2, E/3, E/4 & E/5)
- Established Employment Area (Policy E/15 (2a - m))
- Green Belt (Policy S/4)
- Historic Parks & Gardens (Policy NH/14)
- Housing Allocation (Policy H/1 (a-h))
- Important Countryside Frontage (Policy NH/13)
- Improved Landscaping (Policies CSF/5 (1b-e) & CSF/5 (2f-m))
- Landscape Buffer (Policy NS/13(1))
- Local Nature Reserve (Policy NH/5)
- Local Green Space (Policy NH/12)
- Lordsbridge Restricted Area (Policy TI/7)
- Lordsbridge Consultation Area 1 (Policy TI/7)
- Lordsbridge Consultation Area 2 (Policy TI/7)
- Major Development Site (Policies CSF/3, NS/3, NW/4, SS/1, SS/2, SS/3 (1a), SS/3 (1b), SS/4, SS/5, SS/6, SS/7, SS/8)
- Safeguarded Land (Policy SS/3 (4))
- Protected Village Amenity Area (Policy NH/11)
- Scheduled Ancient Monument (Policy NH/14)
- Site of Special Scientific Interest (Policy NH/5)
- Special Policy Area (Policies E/1, E/6, E/7, E/8, H/2, H/3, H/4, H/5, H/6, H/7 NS/11, SC/1 (1a-c, 2d-e), TI/1, TI/6)

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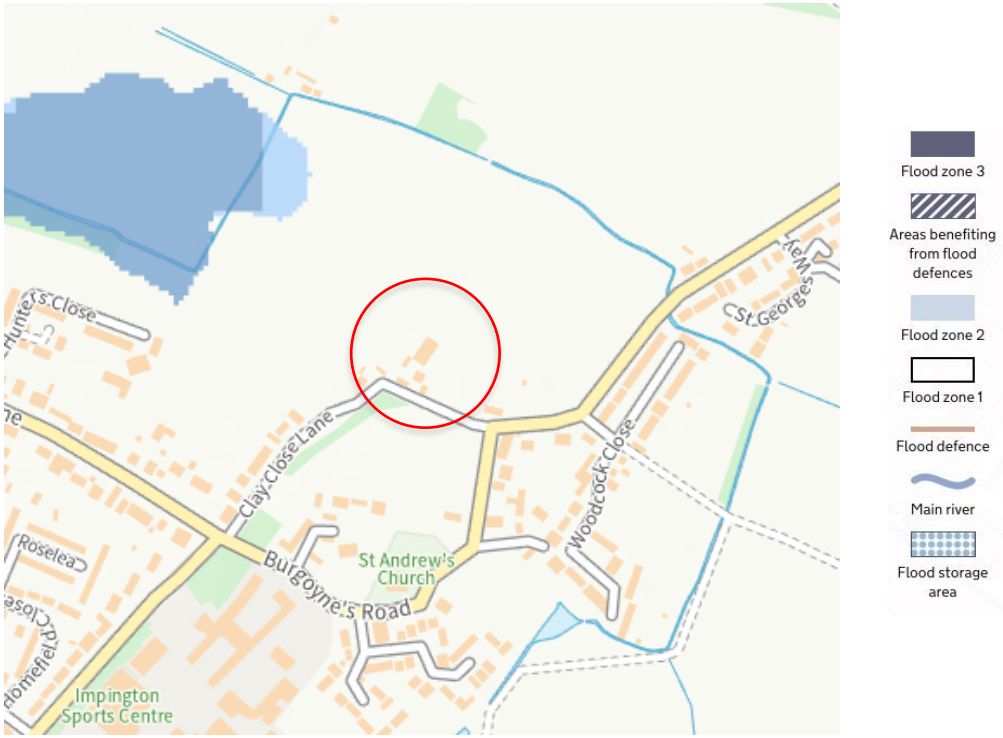
1.4 ENVIONMENT AGENCY LONG TERM FLOOD RISK INFORMATION FOR RIVERS AND SEAS (2023)



1.5 ENVIONMENT AGENCY LONG TERM FLOOD RISK INFORMATION FOR SURFACE WATER (2023)

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1.6 PRE-APPLICATION

A formal Pre-Application request was submitted to Greater Cambridge Shared Planning and a meeting was held with the case officer at the property to discuss the proposals. The pre-application sought the 'Demolition of existing building and erection of new family home' and reference 23/50435/PRELV3.

Submitted Pre-Application Drawings

Officers reviewed the submitted plans and felt there was areas which required addressing prior to a submission. A summary of the councils response is as below'

- ***'While demolition of the annex and dwelling could be considered acceptable, the proposal needs to retain the frontage which characterizes the site within the Conservation Area. The Conservation Officer has raised concern that the amalgamation of the design of the dwelling and the reorientation of the site with having the dwelling deeper in the plot would not preserve or enhance the existing character and appearance of the conservation area.'***

After a more detailed site review and discussions with the planning officer, the scheme has undergone a comprehensive redesign to address the raised concerns. A new annex, adopting a simple gable form, has been introduced along Clay Close Lane to establish a cohesive visual identity along this thoroughfare. Importantly, this new structure maintains a footprint akin to that of the existing property.

Acknowledging the Conservation Officer's assessment that the existing house lacks architectural merit but contributes to the characteristic massing of the surrounding context, the decision has been made to erect a new built form in this location. This preservation is deemed essential to enhance and safeguard the prevailing character of the area.

Additionally, the orientation of the new dwelling has been adjusted to align harmoniously with the existing agricultural buildings situated at the rear of the property. The proposed site sections illustrate that the gable frontages of the new building mirror those of the existing structures, maintaining a similar footprint without extending further north or east.

Furthermore, it is recognized that while the existing buildings exhibit an agricultural form, their 20th-century construction and design, aside from their purpose and massing, do not hold historical merit in terms of design. This consideration underscores the rationale behind the decision to prioritize the built form rather than its design for contextual character rather than historical significance.

- **'The proposed replacement dwelling will be materially larger than the existing dwelling on site. However, the footprint and volume of the replacement dwelling will not be larger than the sum of the footprints of the dwelling, annex, two outbuildings and the agricultural barn with prior approval, therefore with regards to its footprint and volume it will not be materially larger to the total of these buildings'**

A comprehensive exercise has been carried out confirming the building is not materially larger than the buildings they replace and therefore should still be considered acceptable

- ***'While the recent prior approval has established a residential use to the rear of the site, the proposed barn conversion is distinctly agricultural in its appearance therefore retains the agricultural character towards the rear of the site. As it is a conversion of the barn, the scale and massing would be retained which minimises its impact on the character of the countryside and its impact on views in the street scene. The proposed plans do not reference the scale and massing and orientation of the permitted dwelling under prior approval'***

As outlined in this design statement, a thorough examination of both the existing structures and the proposed designs has prompted significant alterations to address the concerns raised by the Council. The redesign of the new dwelling takes inspiration from the prevailing aesthetic of the existing agricultural barns, characterized by their distinctive double gables and varied building widths and heights.

While introducing a steeper pitch to the new building, deliberate measures have been taken to effectively reduce its width and its proximity to the northern boundary. The proposed design encompasses a thoughtful play with variation in ridge and eaves heights, featuring a strategic step-down along both the northern and southern boundaries. Additionally, a single-storey projection to the south has been introduced, mirroring the existing buildings and contributing to a harmonious integration with the surrounding context.

A feature of the proposal is the inclusion of a glazed link, serving as a deliberate homage to the existing buildings, which currently share a single flat connection. This glazed element is thoughtfully set back to accentuate the design and further emphasize the connection between the new and existing structures. This intentional design choice not only pays homage to the existing context but also introduces a contemporary touch that enhances the overall visual appeal of the development.

- ***'The proposed design of the dwelling is considered to have lost the agricultural character, which is integral part of the character of the site. This is particularly important to retain given that the proposal seeks to reposition the residential use further into the site in the position of the existing agricultural use. In addition to this, domestic paraphernalia will be located further into the site will also contribute to the residential character.'***

As previously highlighted, a meticulous examination of the existing on-site structures has been conducted, revealing a distinctive character inherent in their 20th-century construction. However, it is acknowledged that their design and detailing, while contributing to a sense of character, do not explicitly align with the traditional farmstead archetype. In response to this nuanced understanding, design decisions have been made to draw inspiration from the form of these structures but in a contemporary manner, embracing a design ethos that speaks to the requirements of modern living rather than opting for a direct replication of the existing design.

This thoughtful design approach is not merely an homage to the past but a deliberate effort to integrate traditional elements into a modern context. The repositioning of the proposed structure to align with the existing buildings enhances this connection, creating a visual continuity that highlights the evolution of the site's character.

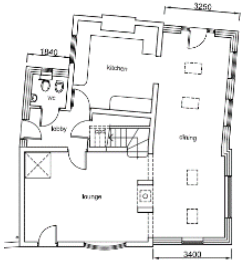
Furthermore, the redesign facilitates the strategic placement of residential garden along the western boundary, a decision made with a keen eye on privacy and aesthetics. By situating the garden away from public view and concealing it from the public realm, the proposed development aims to preserve the openness along the northern and eastern boundaries. This ensures that the site's unique character is not only maintained but also subtly enhanced, fostering a harmonious integration of contemporary living spaces with the inherent charm of the existing structures.

1.7 PERMITTED DEVELOPMENT RIGHTS AND EXISTING BUILT FORM

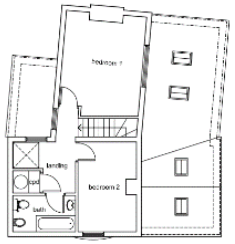
As a crucial component of the site redevelopment project, it is essential to gain a comprehensive understanding of the client's options in relation to the current structures and existing planning approvals. This understanding will serve as the foundation for determining the appropriate size of any replacement dwelling.

To achieve this, our assessment encompasses both the existing buildings on the site and a thorough review of recent and historic planning approvals. This comprehensive analysis aims to establish a baseline value that will help us ensure that the new construction minimally affects the openness and ambiance of the building within the Green Belt and Conservation Area.

Single storey side and rear extensions to existing dwelling
Ref: 20/01248/HFUL
Approved 12 January 2021



GROUND FLOOR PLAN



FIRST FLOOR PLAN

Change of Use of Agricultural Building to 1 No. Dwellinghouse (Use Class C3), and for building operations reasonably necessary for the conversion
Ref: 23/03397/PRIOR
Approved 30 October 2023


GROUND FLOOR PLAN - PROPOSED


FIRST FLOOR PLAN - PROPOSED

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Examining the current buildings and the site's surroundings, in conjunction with recent planning applications, furnishes us with foundational data for footprint, gross internal area, volume, ridge height, and eaves height. These baseline figures are as follows, encompassing the entire site:

Existing Building Schedule					
Building	Footprint (m2)	GIA (m2)	Volume (m3)	Ridge (m/AOD)	Eaves (m/AOD)
Building 1- House with approved with Extensions	83.9	114.3	450.4	(+)19.56	(+)17.30
Building 2- Garage	122.7	113.7	401.9	(+)15.38	N/A Flat Roof
Building 3- Annexe	70.2	61.5	289.3	(+)16.73	(+)14.50
Building 4- Garage	55.5	50.8	175.9	(+)14.99	N/A Flat Roof
Building 5- Barn	104.2	96.0	513.4	(+)17.39	(+)16.25
Building 6- Barn as per prior approval	211.8	342.8	1,125.0	(+)18.22	(+)15.92
Total/ Maximum	**648.3**	**779.1**	**2955.9**	**(+)19.56**	**(+)17.30**

Whilst the above provides a baseline for all buildings across the site, it is acknowledged that not all are within residential use and as such for the purposes of this exercise Building 5 has been omitted as per the table below and which provides the actual target figures.

Existing Building Schedule					
Building	Footprint (m2)	GIA (m2)	Volume (m3)	Ridge (m/AOD)	Eaves (m/AOD)
Building 1- House with approved with Extensions	83.9	114.3	450.4	(+)19.56	(+)17.30
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Building 6- Barn as per prior approval	211.8	342.8	1,125.0	(+)18.22	(+)15.92
Total/ Maximum	**544.1**	**683.1**	**2442.5**	**(+)19.56**	**(+)17.30**

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The project entails the construction of a new dwelling, necessitating the demolition of the existing house, outbuildings, and the altering the existing vehicular access.

From the outset, there was a thoughtful consideration of a contemporary architectural approach, which is well-suited to its surroundings and the area's character. Consequently, the design of this unit has been meticulously crafted to harmonize with the local ambiance and the neighbouring properties, thereby presenting a harmonious built form reminiscent of a traditional farmstead. The proposal conscientiously references the local architectural context, meticulously addressing considerations of scale, massing, and density, while simultaneously delivering a high-quality development that aligns seamlessly with the area's aesthetic. It was apparent from the early stages of design that the development must exemplify the utmost quality to maintain its cohesion with the surrounding environment.

Use and Amount

The proposal aims to demolish the current structures and replace them with a new dwelling that occupies a similar building footprint and volume. The schedule below illustrates a comparison of footprint, volume, gross internal area (GIA), and eaves height, while aligning the ridge height with that of the existing house. We believe this approach is acceptable.

Comparison of Buildings					
Building	Footprint (m2)	GIA (m2)	Volume (m3)	Ridge (m/AOD)	Eaves (m/AOD)
Existing Buildings	544.1	683.1	2442.5	(+)19.56	(+)17.30
Proposed Buildings	445.7	623.0	2477.2	(+)19.60	(+)16.40
Difference	**-98.4**	**-60.1**	**+34.7**	**+0.04**	**-0.9**

The proposed development seeks consent for the erection of 1No. detached dwelling and annexe on the site. The NPPF seeks to encourage the development of housing in sustainable locations and encourages the recycling of 'previously developed' land. The application scheme is considered as being demonstrably capable of providing residential accommodation in a highly sustainable location and therefore is fully compliant with the provisions set out in NPPF, and the development plan.

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Design and Appearance

The design of the proposed dwelling has been crafted to align with the client's specific requirements, all the while responding thoughtfully to the unique challenges and opportunities presented by the site and the Heritage Assets. Key features of this design include:

1.Modern Living: The primary goal is to create a new dwelling that meets the modern living requirements and standards of the clients.
2.Greenbelt Sensitivity: Given the site's location within the Greenbelt, careful consideration has been given to the existing property's footprint and its placement to respect the surrounding environment.
3.Height Consideration: To minimize its impact on the local surroundings, particular attention has been paid to the building's height. This has been achieved through strategic adjustments to ground levels, effectively reducing ridge and eave heights and limiting impact onto the north and eastern boundaries
4.Contemporary Integration: The design seamlessly integrates contemporary elements while respecting the existing context, materials, and architectural forms.
5.Farmstead Inspiration: Drawing inspiration from the existing farmstead, the design takes cues from the functional and environmental factors that have historically shaped the existing structures.
6.Consultative Approach: The design has evolved through continuous consultation with both the client and various consultants and the council, ensuring that all parties inputs are considered and integrated.
7.Sustainability: The building will be of a design and construction that seeks to minimise reliance on fossil fuels and create a building that is environmental friendly unlike the buildings it is to replace.

Clay Close Lane represents a proposal for a detached home, tailored to the needs of a local family deeply rooted in Cambridgeshire's economic and social fabric. Importantly, this project involves the redevelopment of an existing agricultural complex, encompassing a farm house and agricultural outbuildings that have outlived their original purpose. In this sense, the scheme represents a revitalization of an already-established site rather than the development of a pristine greenfield location. The positioning of the new dwelling respects the scale, massing and volume of the existing structures and comprises a group of interconnected buildings, varying in height to minimize its visual impact on the Greenbelt and aligning within the existing built forms. Emphasizing single-story living spaces, the first-floor accommodation has been limited to two building forms which reflect the double gables of the existing barn with interconnecting flat roof.

The design of the building draws inspiration from the pre-existing agricultural barns on-site, which have historically been influenced by functional and environmental considerations like storage, access, and shelter.

The primary building material is brick and timber cladding, particularly in buff and black, with minimalist detailing, and widespread use of plain tiled roofs. Roof forms are either gabled to reflect the gable forms on site but with a steeper pitch and narrower width to reflect more closely to the existing built forms.

In instances where contemporary elements have been introduced, they serve either functional purposes, such as profiled metal sheeting, or aim to faithfully replicate the original forms and materials. The characteristic gable-fronted barns, common in the local area and this site feature open fronts for shelter and storage, usually with brick or timber-clad walls and expansive front openings.

Through a process of deconstruction and reinterpretation, the design distils the essential elements of the existing built form, including its layout, position, materials, and rhythm. These elements have been thoughtfully reimagined in a contemporary context, resulting in proposals that evoke a sense of familiarity and belonging to the locale while remaining functionally and aesthetically contemporary.

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Form and Layout

The current form and layout of the existing property reflects the evolution of a historic farmstead to accommodate modern farming practices. Comprising a farmhouse and two spacious storage barns capable of housing contemporary machinery, the utilitarian design incorporates additional structures like a monopitched annexe along Clay Close Lane and various outbuildings for ancillary purposes. The buildings are strategically organized around a single access point along the eastern boundary, connected by a large hardstanding area. The cohesive design emphasizes functionality, serving as a vital link between the farmhouse and other structures.

The proposed layout and design draw inspiration from the existing architectural elements and the symbiotic relationship between form and function found in the current structures. The parallel arrangement of architectural masses delineates working and living areas, while gable forms facilitate the movement of large machinery in and out of agricultural buildings. The repositioned building, respecting the established footprint, interprets stepped massing and gable structures with a flat roof link between them, maintaining the original functional connection.

The thoughtfully designed dwelling prioritizes simplicity, featuring a rectangular shape with gabled roofs enclosing a central link and single-storey projecting elements to the south. This reduces the building envelope and varies ridge heights. The primary entrance door leads to a hallway connecting living/dining and kitchen areas on the ground floor, with sleeping accommodation situated on the first floor. The internal layout optimizes space, incorporating open dining/kitchen and living areas for flexible family use.

The dwelling's orientation places the gabled facade towards the east and west boundaries, with eaves levels along the north and south boundaries mitigating massing and reducing the built form by 8.5m from the northern edge, enhancing the sense of openness. This orientation maximizes sunlight exposure throughout the day. The layout ensures harmonious integration with neighbouring structures, heritage assets, and the Green Belt. Proposed landscaping includes new hedging and mature trees along all boundaries to enhance biodiversity and minimize environmental impact.

Vehicular access remains via Clay Close Lane, with a altered driveway meeting Highways Standards. The dwelling includes a garage with two parking spaces, complying with the council's requirement. The design embraces a simple agricultural layout, emphasizing individual unit shaping. Traditional materials, known for durability and low maintenance, such as brick and block construction, will be used. Timber sourced from renewable, sustainable sources will be employed, aligning with the commitment to environmental responsibility. Natural lighting in all habitable rooms contributes to energy conservation, reinforcing the focus on sustainability.

Landscaping and Boundary Treatments

The site's development approach has been strongly rooted in landscape considerations. Consequently, a robust landscape structure forms an integral part of the overall design strategy. We aim to incorporate existing landscape features wherever possible, while also introducing new landscape elements. A key focus following the pre-application meeting has been to retain the openness to the north and eastern boundaries. This has been achieved by citing the new buildings on a similar footprint to the existing built forms, retaining the openness along the eastern boundary and reducing the massing closest to the northern edge.

Planting plays a crucial role in enhancing the site's edges and creating a well-defined boundary framework that seamlessly integrates the development. The selection of trees for the project leans toward predominantly native species or cultivars of native species. Occasional use of exotic species is considered to introduce variety and visual interest.

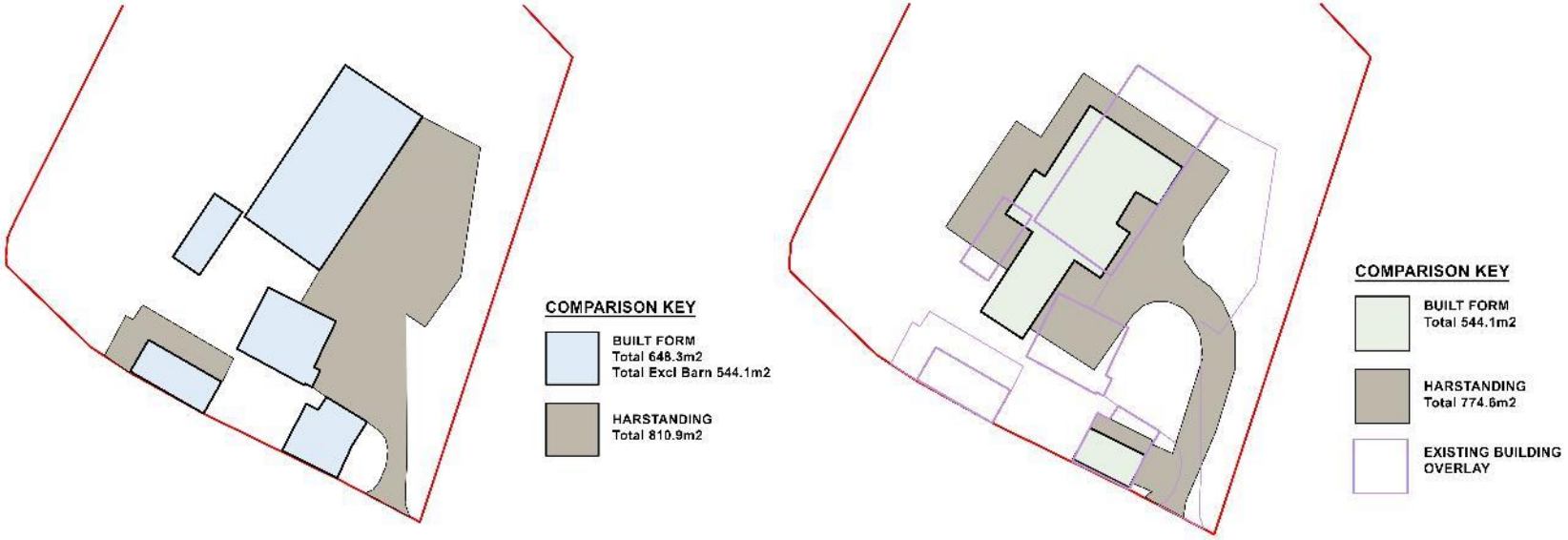
In particular, we've paid careful attention to the boundary improvement along Clay Close Lane. We have removed the existing annexe and house that faced the highway, opting to create a new annexe building at single storey to retain the built form which characterises the Conservation Area and also incorporate a brick wall along this boundary which will utilise reclaimed bricks from the current house. This new brick wall and building align with the architectural character of other buildings in the Conservation Area. Soft vegetation and planting are incorporated to provide visual enhancements to the boundary edge.

The orientation and setback of the building structure have been planned to diminish its perceived massing, further contributing to the openness of the road and north and eastern boundaries. By utilising natural materials which have an agricultural feel, we aim to ensure that the building seamlessly integrates into its rural surroundings, harmonising with the natural environment while adhering to the Conservation Area and Green Belts character.

Footprint Analysis

The following illustrates a comparison between the current and proposed building footprints, as well as the existing hardstanding.

The proposed dwelling has been strategically aligned to harmonize with the existing built. Simultaneously, adjustments have been made to position the building farther away from the northern boundary, effectively minimizing the built form closest to the Countryside. This relocation of the building serves to substantially diminish its overall mass and visual impact, all the while preserving an open and unobtrusive character along the eastern boundary.



As depicted above, the proposed plans present a noteworthy reduction in the building footprint and hardstanding. The primary building has been repositioned an additional 8.5 meters away from the northern boundary, aligning its frontages with the existing barns situated at the rear of the site.

Key Metrics:
Reduction in Built Form: 17.47%
Reduction in Hardstanding: 8.5%

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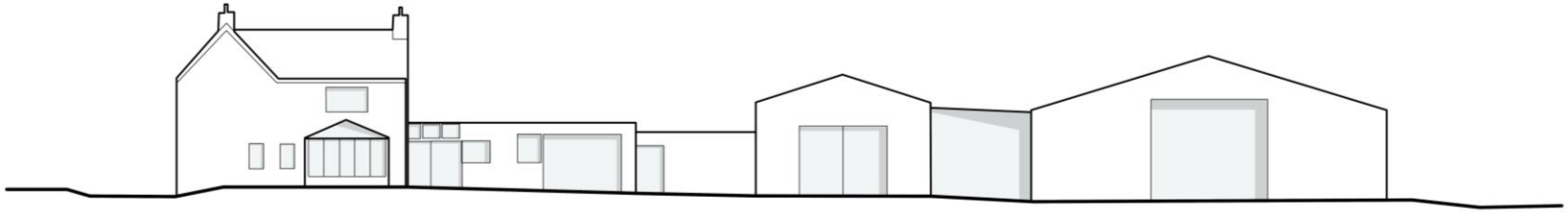
Elevation Analysis

The following illustrates a comparison between the current and proposed buildings. The new structure is envisioned with two gables that align with the existing structures, albeit in a more traditional gable form characterized by steeper pitches. This design choice reduces the building's width, creating a greater sense of openness towards the northern boundary. Lower eaves have been incorporated to minimize visual impact when observed from the street and its surroundings. Additionally, openings are reduced when viewed from the east. Notably, adjustments to the site levels contribute to ensuring that the massing of the building remains comparable to the existing landscape when seen from the public domain.



Existing Site Section viewed from Eastern Boundary

Elevation Area- 241.5m2
Glazed/Opening Area- 68.3m2

Proposed Site Section viewed from Eastern Boundary

Elevation Area- 170.3m2
Glazed/ Opening Area- 57.2m2

As depicted above, the proposal endeavours to preserve the double-gabled aesthetic of the existing barns, opting for steeper pitched roofs that align more closely with the traditional farm building style, departing from the 20th-century structures it replaces. The introduction of a glazed/open link between these gables not only preserves the identity of the existing built forms but also contributes to a reduction in overall massing. The strategic placement of the built form farther from the northern boundary diminishes the linear massing across the site.

Key Metrics:
Elevation Areas Reduction: 29.5%
Glazed/Opening Area Reduction: 16.3%

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Appearance

The following precedents explored when designing the proposed scheme in relation to the overall appearance and individual characteristics of the project:

1. Large window openings to mimic traditional farmstead openings
2. Glass links between separate building functions
3. Traditional materials for walls and roof elements
4. Timber cladding
5. Projecting single storey elements

Form

The following precedents explored when designing the proposed scheme in relation to the form and composition of the building:

1. Contemporary openings in traditional farmstead typology and exposing elements including rainwater pipes etc
2. Interconnecting structures
3. Openings within gable end walls of a dwelling
4. Connection of timber clad, single and two storey individual structures to create a holistic dwelling
5. Connection between timber and masonry constructions along a facade

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Architectural Examples

The proposals take precedent from successful schemes which have incorporated a contemporary approach to agricultural buildings on farmsteads as below. These proposals provide a mix of material palettes to elegantly split the massing and volumes across the buildings whilst appearing utilitarian in their form.

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2.2 MATERIALS

Materials have been thoughtfully chosen to pay homage to, and in part, emulate those commonly found in the local area. These materials are not only durable but also possess a textured quality that exudes a sense of craftsmanship and excellence. The selected material palette harmoniously aligns with the design brief, adding to the development's robust and captivating visual character.

Our approach integrates both modern and traditional agricultural materials in a contemporary fashion, preserving recognizable design elements such as language, articulation, and proportions. We aim to strike a balance between time-honoured building practices and modern sensibilities.

To further enhance the architectural richness and visual appeal of the project, we incorporate timber detailing, adding layers of depth and interest to the overall design.

Vertical Timber Louvres

Buff/ Light Grey brickwork. Linear brickwork in lime mortar

Powder-coated aluminium Velfac windows.(Bronze and black)

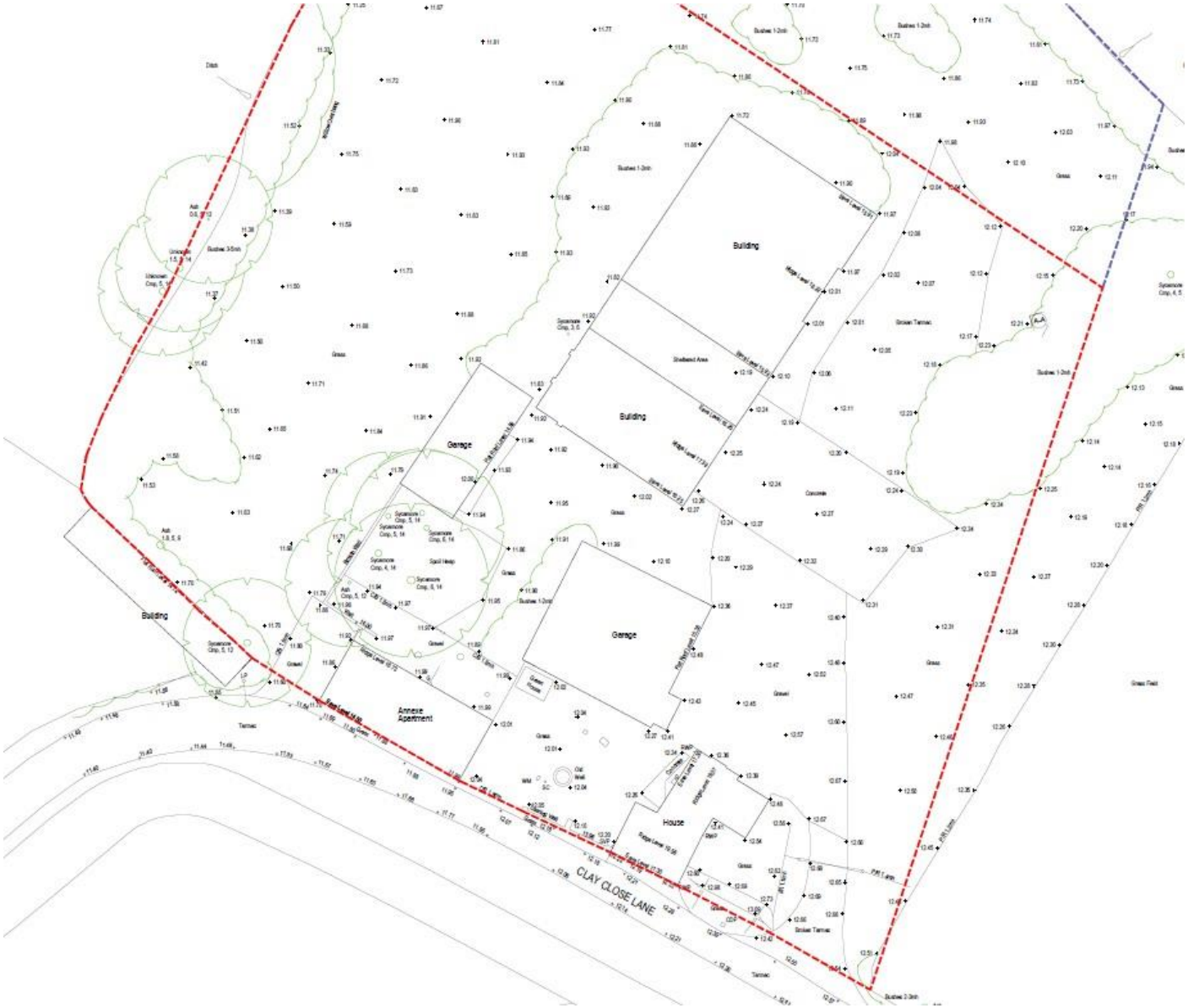
Metal Roof- Zinc

Black Vertical Timber Cladding

Red/ Brown Clay Plain Tiles

TWENTY NINE. ARCHITECTURE + PLANNING

2.3 EXISTING SITE

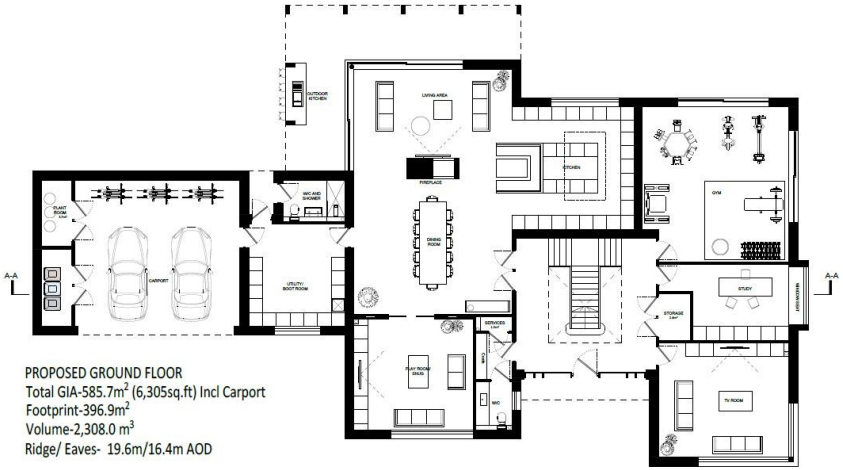


TWENTY NINE. ARCHITECTURE + PLANNING

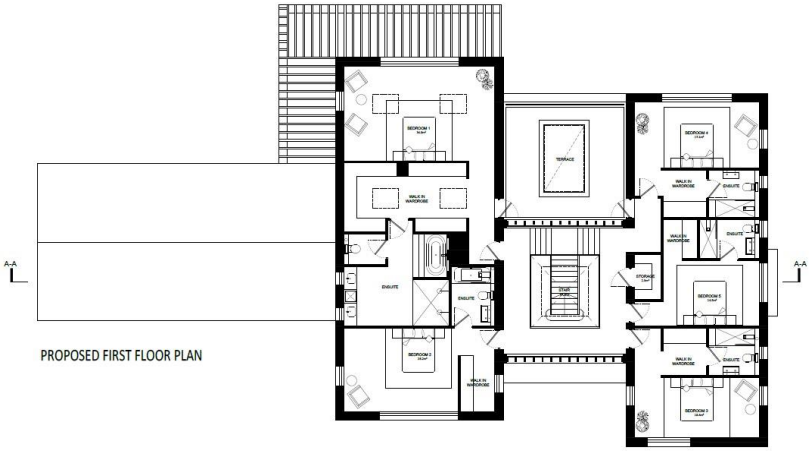
2.4 PROPOSED SITE

TWENTY NINE. ARCHITECTURE + PLANNING

2.5 PROPOSED FLOOR PLANS



PROPOSED GROUND FLOOR
Total GIA-585.7m^2 (6,305sq.ft) Incl Carport
Footprint-396.9m^2
Volume-2,308.0 m^3
Ridge/ Eaves- 19.6m/16.4m AOD



PROPOSED FIRST FLOOR PLAN

PROPOSED GROUND FLOOR-ANNEXE
Total GIA-37.3m^2 (401sq.ft)
Footprint-48.8m^2
Volume-169.2 m^3
Ridge/ Eaves- 17.0m/14.8m AOD

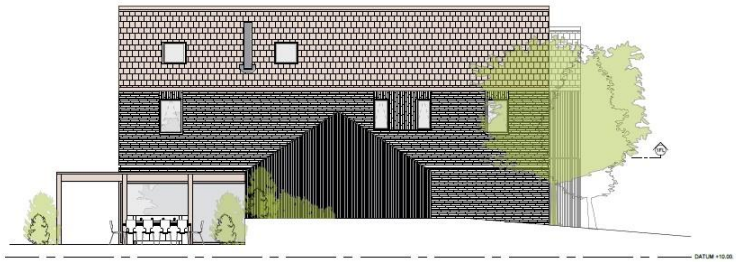
TWENTY NINE. ARCHITECTURE + PLANNING

2.6 PROPOSED ELEVATIONS

FRONT ELEVATION- EAST

REAR ELEVATION- WEST

SIDE ELEVATION-NORTH



SIDE ELEVATION-SOUTH

TWENTY NINE. ARCHITECTURE + PLANNING

2.7 CGI VISUALISATION OF PROPOSAL

TWENTY NINE. ARCHITECTURE + PLANNING

TWENTY NINE.
ARCHITECTURE + PLANNING

3.0 VEHICULAR/ CYCLE PARKING AND ACCESS

The proposed development will include 2 off-street parking spaces for the new dwelling, in alignment with the parking standards established in the South Cambridgeshire Planning Policies, which mandate a minimum of 2 spaces per dwelling. The site's strategic location in proximity to local amenities and transportation options in Impington and Histon reinforces its sustainable nature.

To cater to the site's needs, we intend to slightly alter the existing access from the highway in compliance with the Highways Authority's standards. Adequate visibility splays have been achieved, and the road surface will consist of a bound material to prevent debris from spilling onto the highway. Thus, the access and egress arrangements fully adhere to the guidelines set forth by the Highways Authority, rendering the access road suitable for residential use.

Cycle parking has been meticulously designed in accordance with the Council's current standards outlined in "Cycle Parking in Residential Developments" (2010). The property will feature covered and secure storage areas for bicycles as indicated on the plans.

4.0 WASTE STORAGE AND RECYCLING

The proposal incorporates a designated bin storage area within the dwelling's curtilage, as illustrated on the site plan. This area is allocated for green waste, dry recyclables, and residual waste, with stepped areas avoided to ensure easy access.

The design of the proposal is such that refuse vehicles will not need to enter the site. Instead, residents are expected to bring their bins to the highway on designated collection days. While the bin storage area is located farther than 25 meters from the collection point, we believe this is acceptable, given the site's nature and current refuse collection arrangements. Internally, kitchens will be equipped with integral waste containers to encourage recycling, all in compliance with the RECAP Waste Management Design Guide.

5.0 DISABILITY DESIGN AND ACCESS

The proposed development incorporates features to facilitate easy access for all individuals, including those using wheelchairs and prams. By designing streets and spaces to accommodate low vehicle speeds, we ensure that all users can confidently navigate the routes within the site.

Disabled access, compliant with the current Approved Document Part M of the Building Regulations, has been provided. External surfaces and parking areas will be paved with smooth, hard materials suitable for wheelchair use. All doors will have level thresholds, with widths sufficient for wheelchair access. Double doors will have one leaf of a minimum width of 900mm.

Within each unit, WC accommodations have been designed to accommodate disabled visitors. Light switches, electrical socket outlets, and intercom door entry systems will be positioned at heights suitable for disabled use, ensuring inclusivity and ease of access for all residents and visitors.

TWENTY NINE. ARCHITECTURE + PLANNING

6.0 SUSTAINABILITY STRATEGY

Sustainable design principles are at the core of the new dwelling's ethos, and they have been diligently integrated across every aspect of the project to deliver a low-impact design that harmonizes with the site's demands and natural setting. A holistic approach has been adopted to reduce reliance on external sources of energy, not only during construction but also throughout the lifetime of the project.

The design places a strong emphasis on four key sustainability areas:

1.Energy and Carbon Dioxide Emissions
2.Water
3.Waste
4.Pollution

We have developed a comprehensive list of available technologies, assessing their viability and suitability for the site. The most suitable systems have been chosen to form the sustainability strategy for the project and seek for a gas free home that focuses on a fabric first approach. To maximize efficiency, our site-wide strategy is grounded in an energy hierarchy: "Mean," focusing on energy efficiency in building design; "Lean," emphasizing energy-efficient supply and conversion of energy; and "Green," centered around renewable energy provision.

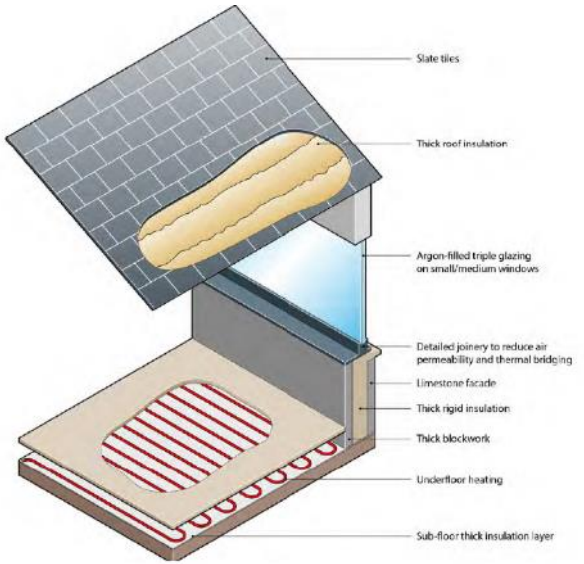
All recommendations align or exceed with the National Planning Policy Statement: Sustainable Development in Rural Areas. Our focus has been on achieving exceptional quality and innovative design while preserving the site's natural surroundings.

ENERGY AND CARBON – MEAN

BUILDING FABRIC
The proposal targets a high level of fabric efficiency to mitigate heat gains and losses. To achieve this goal, we've assessed heat loss across the building and made recommendations for improvements in various building elements, including floor, roof, windows, wall heat loss, air permeability, and thermal bridging. The U-value, a measure of heat loss, for building materials has been carefully considered and specified to achieve a high thermal efficiency that would not rely solely on renewable technologies.

PASSIVE SYSTEMS
Passive systems have been incorporated into the building design to minimize the need for active mechanical heating or cooling systems. Several passive systems have been specified for Clay Close Lane:
•**High Thermal Mass:** Thick masonry walls with a high thermal mass provide insulation against temperature fluctuations by absorbing excess heat during the day and releasing it at night.
•**Natural Ventilation:** The ventilation strategy maximizes the cross flow of air, with high windows allowing hot air to escape while drawing in cooler air from windows below.
•**Site Orientation:** Large windows on the southern-facing facade maximize daylight penetration, reducing the need for artificial lighting and further enhancing the dwelling's energy efficiency.

These sustainable design principles not only contribute to a greener and more energy-efficient dwelling but also align with our commitment to preserving and enhancing the natural environment of the site.



TWENTY NINE. ARCHITECTURE + PLANNING

ENERGY AND CARBON – GREEN

LOW CARBON TECHNOLOGIES

Low carbon technologies reduce carbon dioxide emissions by offsetting the emissions associated with conventional fuels such as oil and gas. As well as reducing greenhouse gas emissions, the provision of such technologies also helps conserve finite fossil fuel resources and over the lifetime of the systems, reduces the cost of energy used.

AIR SOURCE HEAT/ GROUND SOUCE HEAT PUMPS

All heating and hot water is to be provided by renewable technologies in the form of either air source or ground source heat pumps. This technology extracts heat from the air or ground into the circulating fluid within the system, which then passes through a heat exchanger into the heat pump. This raises the temperature of the fluid and then transfers that heat to water.

SOLAR PHOTVOLTAIC PANELS

As shown on the plans, an array of solar panels could occupy a plan area of approximately 40m2. This array will be linked to the house and assuming an active area of 40m2, will provide 12kWp of solar power. Based on SAP calculations this would generate enough electricity to reduce CO2 emissions by 20%, compared to a baseline reliance on grid electricity. In addition, during periods of high incident sunlight, excess power generated will be stored in battery provision to supplement the needs of the building during hours of reduced daylight.

AIR TIGHTNESS

The proposal will seek an air tightness target of 3m3/m2. By providing a more airtight the building, less energy will be required to maintain a comfortable internal temperature due to it limiting heat loss. Further to this, airtight homes provide better indoor air quality because an effective air barrier blocks dust, pollen, smoke and other outdoor pollutants.

ENERGY AND CARBON – LEAN

'Lean' energy efficiency relates to the energy efficient supply, conversion and control of energy. The following systems and measures will be deployed at Clay Close Lane to enhance the energy efficiency of the mechanical and electrical systems.

MECHANICAL VENTILATION AND HEAT RECOVERY (MVHR)

Heat recovery ventilation creates a healthy indoor environment for its occupants whilst optimising energy efficiency. It works on the principle of absorbing heat from exhaust air and transferring this heat to incoming air for space heating. The layout of the dwelling is well suited to in situ MVHR units as areas requiring conditioning are grouped together spatially.

The key benefits delivered by the MVHR ventilation system are as follows:

- Humid air is extracted from wet rooms, preventing condensation.
- As air is extracted it is passed through a heat exchanger which recovers up to 85% of the heat energy within the air before transferring that heat to the incoming air.
- Incoming fresh air is filtered before being delivered directly to each habitable room.
- As ventilation is provided by the MVHR unit the dwelling can be made virtually airtight, reducing infiltration and in turn, the space heading demand for the house.

ENERGY DISPLAY DEVICES

Occupant behaviour and awareness of systems is key to achieving the energy targets that have been set. A home user guide will be provided to enable the occupants to understand and operate their home efficiently. In addition, electricity and primary heating fuel consumption data will be displayed to users via an energy display device (this may comprise an online measurement platform accessible by devices such as a tablet or computer)

TWENTY NINE. ARCHITECTURE + PLANNING

WATER
A comprehensive water strategy has been developed to mitigate the demand for both potable (drinking) and non-potable (non-drinking) water. Given the increasing scarcity of water as a resource, our site has set a stringent target to minimize water consumption and avoid any increase in demand on the local water network.

NON-PORTABLE WATER
To reduce the demand for non-potable water, we conducted a demand assessment for the development. Based on local requirements, we will meet the target of 110 litres/person/day through the following measures:

•**Low Flush WCs:** We've specified dual-flush cisterns designed to reduce water consumption during flushing, with options for a partial flush for liquids and a full flush for solids.
•**Delayed Inlet Valves:** These valves prevent water from entering the cistern until it has completely emptied, allowing for precise water volume discharge independent of water pressure.

SURFACE WATER
To ensure that the peak runoff rate over the development's lifetime does not exceed that of the pre-development site, we employ two key strategies:

1.Sustainable Drainage Systems (SuDS): These systems, such as permeable paving and slotted French drains, enhance stormwater infiltration, offsetting the increase in impermeable surfaces. Collected rainwater will be used for various purposes including for watering of gardens and green spaces

SEWERAGE DISPOSAL
Both electric and non-electric sewerage treatment plants have been chosen in accordance with Environment Agency regulations for discharge to watercourses and ditches. Where discharge to watercourses is not feasible, a soakaway drainfield will be implemented for outfall water disposal. This drainfield will adhere to Section H2 of the Building Regulations and BS 6297, with a minimum distance of 15 meters from any building and 2 meters from any boundary. It will also maintain sufficient distance from other soakaways, including those for roof water. Sewerage sludge will be collected by a private contractor every 2-5 years, as required by the circumstances.

7.0 CONCLUSION

Given the lack of need and poor condition of the current properties on the site, the imperative to replace it with a new energy-efficient dwelling is evident.

Our proposal presents a meticulously designed dwelling that effectively addresses the existing limitations and opportunities presented by the site while adhering to the planning policy outlined in the National Planning Policy Framework (NPPF). Situated within the Greenbelt and Conservation Area, our design takes careful consideration of the scale, massing and volume of the existing buildings while delivering significant visual improvements that enhance the overall setting within the broader context.

Our proposal introduces a new dwelling that draws inspiration from the local architectural heritage, particularly the existing built forms on the site. This design approach seamlessly integrates the house into the local context and enhances the site's boundary along Clay Close Lane, thereby making a positive contribution to the local area.

Furthermore, the proposal addresses the client's need for increased ceiling heights in the family areas, which are currently below modern expectations. In addition to these design considerations, the client's sustainability goals are central to our proposal. We aim to significantly reduce the carbon footprint on the site, including the incorporation of renewable energy sources. In conclusion, the site will transform into a contemporary dwelling inspired by rural aesthetics, enriching the character of Impington and the surrounding area.

TWENTY NINE. ARCHITECTURE + PLANNING